UNITED STATES OF AMERICA
DEPARTMENT OF STATE

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

WATER BULLETIN NUMBER 71

Flow of the Rio Grande

and

Related Data

From Elephant Butte Dam, New Mexico

to the Gulf of Mexico

2001

CONTENTS

Quantity of Water

Quality of Water

Climatological Data and Drainage Basin and Irrigated Areas

Supplementary Data

FOREWORD

This bulletin presents the seventy-first 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 2001.

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 2001 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, diversions, and return flow channels 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. Major reservoirs in the basin have a total storage capacity of approximately 15,218,200 thousand cubic meters, in addition to the International Amistad and Falcon Reservoirs, which have a combined conservation capacity of 7,160,512 thousand cubic meters. In the Rio Grande basin, a total area of 471,176 hectares is irrigated below Elephant Butte Dam on the Rio Grande and above Girvin in Texas 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 1954-2001, this flow has averaged 816,710 thousand cubic meters annually.

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 Natural Resource 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 Natural Resource Conservation 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 City of El Paso; the Maverick County Control and Improvement District No. 1; the Ministry of Agriculture and Hydraulic Resources of Mexico; the National Water Commission of Mexico; the Meteorological Service of Mexico; the 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
LENGTH				
Millimeters	x	0.03937	=	Inches
Meters	x	3.28084	=	Feet
Kilometers	x	0.62137	=	Miles
AREA				
Square Meters	x	10.76391	=	Square Feet
Hectares	x	2.47105	=	Acres
Square Kilometers	x	0.38610	=	Square Miles
VOLUME				
Cubic Meters	x	35.31467	=	Cubic Feet
1,000 Cubic Meters	x	0.81071	=	Acre-Feet
WEIGHT				
Kilograms	x	2.20462	=	Pounds
Megagrams	x	1.10231	=	Tons (2,000 lbs.)
TEMPERATURE				
Degrees Celsius	x	1.8 + 32	=	Degrees Fahrenheit

GENERAL HYDROLOGIC CONDITIONS FOR 2001

Along and Adjacent to the International Portion of the Rio Grande

During the year 2001, temperatures were about 1.1 degree Celsius above average on the watershed of the Rio Grande below El Paso, Texas. Evaporation was 121% of average. Precipitation was 45% of average from El Paso to Amistad Dam, 78% of average from Amistad Dam to Falcon Dam, 97% of average from Falcon Dam to Rio Grande City, and 85% of average in the Lower Rio Grande Valley on the United States side.

The yearly volume of flow of the Rio Grande was below average from El Paso to the confluence of the Rio Conchos with the Rio Grande and below 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 98% of average, ranging from 60% of average at Above Rio Conchos to 111% at El Paso; in the reach between the confluence of the Rio Conchos and Amistad Reservoir, where most of the flows normally originate from releases from Luis L. Leon Reservoir (El Granero) on the Rio Conchos, the flow was 23% of average; and in the reach between Amistad Dam and Falcon Reservoir, where flows mostly originate from releases from Amistad Reservoir, the flow was 60% of average. Most of the flows passing the Rio Grande stations below Falcon Dam originated from releases from Falcon Reservoir, which in 2001 amounted to 1,422,949 thousand cubic meters, or 50% of the average for the forty-eight years of operation, 1954-2001. The estimated volume of flow passing to the Gulf of Mexico was 141,662 thousand cubic meters, which is 17% of the average for this forty-eight year period.

The total annual flow of all measured tributaries below Fort Quitman was 33% of average. The total flow of these tributaries in the United States was 488,026 thousand cubic meters, or 69% of average. For Mexico, the measured tributary flow, excluding Rio Alamo and Rio San Juan, was 359,234 thousand cubic meters, or 24% of average. The flows of the Rio Alamo and Rio San Juan were 17% and 3.1% of their respective averages.

Return flow to the Rio Grande at Maverick Power Plant near Eagle Pass was 816,048 thousand cubic meters, or 93% of the thirty-four year average. Return flow to the Rio Grande through various drains in the Maverick County Irrigation District, excluding storm inflow, amounted to 29,149 thousand cubic meters, or 27% of the thirty-four year average.

No significant flooding occurred on the Rio Grande in 2001. The highest peak flows recorded on the Rio Grande were, above Falcon Dam. 717 cubic meters per second at El Indio, Texas and Villa Guerrero, Coahuila and below Falcon Dam, 331 cubic meters per second at Rio Grande City, Texas near Camargo, Tamaulipas.

For all reservoirs in the Rio Grande basin having a capacity greater than 18,500 thousand cubic meters, except for Amistad and Falcon International Reservoirs, the average amount of water in storage in 2001 was 4,318,800 thousand cubic meters, or 68% of the average 6,338,800 thousand cubic meters. In the United States, stored water in these reservoirs was 98% of average, while in Mexico it was 50% of average.

In International Amistad Reservoir there was a net decrease in storage during the year of 382,100 thousand cubic meters. Storage ranged from a high of 1,702,600 thousand cubic meters on several days in March to a low of 1,071,200 thousand cubic meters on September 7 and averaged 1,380,500 thousand cubic meters during the year, or 43% of the average for the period 1969 through 2001. In International Falcon Reservoir, there was a net increase in storage during the year of 134,500 thousand cubic meters. The storage ranged from a high of 571,100 thousand cubic meters on December 16 to a low of 245,500 thousand cubic meters on August 2 and averaged 424,200 thousand cubic meters during the year, or 20% of the average for the period 1954 through 2001.

Diversions from the Rio Grande in the United States were 91% of average. Diversions into the American Canal were 123% of average, into the Maverick Canal, 84% of average and in the United States below Falcon Dam, 89% of the average for the period 1958-2001. In Mexico, diversions were 11% of average. Diversions into the Acequia Madre were 119% of average, while diversions through the Anzalduas Canal in Mexico were 5% of the 1952-2001 average.

In 2001, the total reported irrigated area from the Rio Grande and its tributaries below Caballo Dam showed a 21% decrease from the previous year. On the United States side, there was a decrease of about 5% above Falcon Dam and a decrease of about 1% below Falcon Dam, for an overall average decrease of 1.0%. On the Mexican side, there was a decrease of about 27% reported above Falcon Dam and a decrease of about 65% below Falcon Dam, for an overall decrease of 52%.

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 08'55", 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 19 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 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.31	36.2	43.6	45.9	* 47.6	48.4	41.3	41.9	24.0	* 10.2	* 0.20	0.22
2	* .27	* 44.2	* 43.9	* 46.2	47.6	48.1	* 59.8	41.9	24.2	10.3	.19	.22
3	.37	43.9	44.2	46.2	48.1	48.1	60.6	42.2	24.3	10.3	.19	* .22
4	.40	43.3	43.9	46.2	48.4	* 47.0	41.1	42.5	24.4	10.3	.19	.22
5	.42	* 50.1	43.9	45.9	48.7	47.0	60.6	42.8	24.2	17.5	.21	.22
6	.45	60.3	44.7	45.9	48.7	47.0	60.3	42.5	24.6	42.2	.19	.22
7	.48	58.3	43.9	45.9	49.0	47.3	39.9	42.5	24.6	41.9	.20	.23
8	.51	* 69.1	43.9	46.4	49.0	47.3	39.9	42.8	24.6	41.6	.19	.23
9	.57	43.9	43.9	46.7	49.3	47.3	60.9	42.5	24.8	27.2	.19	.24
10	.59	43.3	44.5	45.9	49.3	47.3	60.9	42.5	24.6	.48	.19	.24
11	.62	43.0	44.5	46.4	48.7	44.7	60.3	42.8	24.5	.45	.18	.31
12	.65	* 68.5	44.7	46.2	48.7	47.6	58.3	43.0	24.3	.45	.18	.37
13	.68	67.4	45.9	46.2	48.4	46.7	61.7	43.6	24.2	.45	.18	11.3
14	.71	68.5	45.0	46.2	48.4	46.7	39.6	43.3	23.8	.45	.18	8.44
15	.76	* 69.1	45.0	46.2	48.7	46.7	39.4	43.3	23.7	.45	.18	8.47
16	.79	44.2	45.0	* 46.2	48.7	47.0	* 53.2	43.3	23.7	.48	.18	8.50
17	.85	43.3	45.3	46.4	48.7	* 47.6	59.2	43.9	23.6	.40	.19	8.50
18	.88	42.8	45.0	46.4	49.0	47.9	60.0	44.2	23.5	.31	.20	1.53
19	.93	43.0	45.0	46.4	49.3	48.7	60.6	44.5	22.7	.25	.20	6.40
20	.96	43.6	29.5	46.7	49.6	48.7	61.2	45.3	11.0	.25	.22	8.64
21	1.02	62.6	45.3	46.4	49.3	49.3	40.5	* 45.3	10.9	.24	.20	8.69
22	1.08	62.3	45.9	46.4	49.3	69.1	40.8	44.7	10.7	.24	.20	8.78
23	1.10	43.0	45.3	46.4	50.7	49.0	62.9	45.0	10.7	.23	.20	8.81
24	1.22	43.3	45.0	46.4	51.0	49.6	61.7	45.0	10.6	.23	.20	8.86
25	1.33	43.6	45.6	47.0	50.1	68.5	62.9	45.6	10.6	.23	.21	8.89
26	1.64	43.9	45.9	46.4	49.0	68.3	60.0	46.4	10.6	.22	.20	14.2
27	1.50	43.6	45.6	46.7	48.4	67.4	41.3	46.7	10.6	.22	.20	18.9
28	1.53	43.9	45.6	46.7	48.4	62.0	41.3	47.0	10.6	.22	.22	18.6
29	1.59		45.6	47.0	49.0	62.6	41.6	37.1	10.6	.22	.21	9.09
30	15.0		46.2	47.3	45.3	41.6	41.6	23.7	10.5	.21	.22	9.09
31	21.7		45.9		48.4		41.6	* 23.8		.21		9.18
Sum	60.91	1,412.2	1,377.2	1,391.2	1,512.8	1,534.5	1,615.0	1,311.6	575.7	218.39	5.89	187.81

Current Year 2001 | Period 1938-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	@ High	Extreme-Cubic Meters per Second @ Low Day	@ Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.			31	21.7	2	0.27	1.96	5,263	29,582	147,406	247
Feb.			! 8	69.1	1	36.2	50.4	122,014	54,853	207,297	232
Mar.			30	46.2	20	29.5	44.4	118,990	92,668	174,074	1,261
April			30	47.3	! 1	45.9	46.4	120,200	106,172	199,454	13,824
May			24	51.0	30	45.3	48.8	130,706	116,918	576,485	632
June			22	69.1	30	41.6	51.2	132,581	129,537	447,576	20,862
July			!23	62.9	15	39.4	52.1	139,536	124,250	305,796	51,006
Aug.			28	47.0	30	23.7	42.3	113,322	94,218	178,200	11,761
Sept.			9	24.8	30	10.5	19.2	49,740	45,099	159,174	201
Oct.			6	42.2	30	.21	7.04	18,869	20,372	154,731	183
Nov.			!20	.22	!11	.18	.20	509	16,102	195,408	91.5
Dec.			27	18.9	! 1	.22	6.06	16,227	22,471	160,055	112
Yearly				69.1		0.18	30.7	967,957	852,242	2,243,367	226,236

* Discharge measurement(s) made on this day @ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 65 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 2001.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. In addition to the outflow from Caballo Dam listed below, 1,381 TCM of water were diverted in 2001 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.08	0.08	25.5	53.0	* 39.3	* 55.8	56.0	53.8	50.1	27.7	0.12	0.03
2	.08	8.52	* 25.6	51.0	43.8	63.7	57.9	51.8	49.8	* 28.7	.12	.03
3	.08	* 15.2	25.7	* 48.0	45.4	63.6	* 59.3	49.2	49.4	33.5	.12	.03
4	.08	15.2	* 31.9	47.4	* 37.2	58.6	59.1	50.1	* 47.5	* 36.8	.12	.03
5	.08	11.9	35.7	* 47.7	32.7	* 54.8	60.7	50.1	48.5	36.0	.12	.03
6	.08	* 8.55	* 32.7	* 47.4	33.2	56.2	* 62.7	51.4	48.5	* 38.9	.12	.03
7	.08	8.58	31.0	45.7	37.4	56.3	62.7	* 53.0	* 41.5	40.9	.12	.03
8	.08	8.61	31.9	45.8	* 41.9	* 56.1	62.5	56.0	38.2	40.9	.16	.03
9	.08	8.58	* 38.1	43.4	47.1	57.4	62.0	58.5	38.0	* 34.6	.19	.03
10	.08	8.61	43.2	43.9	49.6	57.4	* 61.8	* 59.8	37.9	21.2	.19	.03
11	.08	8.64	43.0	* 45.7	* 46.6	60.3	66.4	56.7	* 40.0	.68	.19	.03
12	.08	8.64	44.7	44.0	46.6	* 63.6	66.6	52.3	43.9	1.33	.19	.03
13	.08	8.64	* 45.9	* 36.6	46.7	68.2	66.4	46.8	40.9	4.56	.19	.03
14	.08	8.67	55.9	31.7	41.8	71.4	68.6	* 45.4	32.5	4.59	.19	.03
15	.08	8.69	* 65.8	31.8	* 33.4	* 68.1	68.5	48.7	28.2	4.62	.19	.03
16	.08	8.72	66.0	34.9	31.4	65.2	71.6	47.6	28.2	4.53	.19	.03
17	.08	8.72	65.6	* 40.2	31.5	65.5	* 73.5	* 45.5	28.3	3.77	.19	.03
18	.08	8.72	65.3	45.2	37.9	68.4	70.8	45.5	* 26.1	.68	.19	.03
19	.08	8.72	65.1	47.2	42.8	* 70.0	68.0	45.5	24.2	.12	.19	.03
20	.08	11.2	* 64.7	* 46.0	42.6	70.5	* 62.5	48.3	24.1	.12	.15	.03
21	.08	* 13.8	63.4	45.9	47.7	68.5	57.1	* 50.7	* 25.1	.12	.15	.04
22	.08	13.8	59.6	45.5	* 52.6	* 64.7	57.1	50.4	26.2	.12	.11	.04
23	.08	* 15.5	* 54.1	42.7	55.7	68.7	56.8	47.0	25.9	.12	.11	.04
24	.08	17.2	51.5	* 37.2	52.3	68.4	* 53.9	* 46.7	29.2	.12	.11	.05
25	.08	17.1	51.7	34.9	* 48.7	67.0	51.5	49.4	* 33.0	.12	.11	.05
26	.08	* 24.6	55.0	35.0	49.1	63.2	49.1	49.4	32.3	.12	.07	.05
27	.08	* 28.2	* 57.3	* 33.7	48.7	59.4	* 48.5	53.1	29.7	.12	.07	.05
28	.08	27.0	59.0	31.9	53.6	54.5	50.6	* 56.7	* 26.4	.12	.03	.05
29	.08		60.7	32.1	56.4	52.8	50.6	56.4	24.9	.12	.03	.05
30	.08		* 56.1	34.5	56.8	56.2	50.6	53.0	24.9	.12	.03	.05
31	.08		52.2		51.6		50.6	* 50.5		.12		.05
Sum	2.48	340.39	1,523.9	1,250.0	1,382.1	1,874.5	1,864.0	1,579.3	1,043.4	365.52	4.06	1.12

Current Year 2001 | Period 1938-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	@ High	Extreme-Cubic Meters per Second @ Low Day	@ Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.			! 1	0.08	! 1	0.08	0.08	214	5,514	146,403	23.7
Feb.			27	28.2	1	.08	12.2	29,410	18,176	138,207	14.4
Mar.			16	66.0	1	25.5	49.2	131,665	113,724	200,839	30,675
April			1	53.0	14	31.7	41.7	108,000	101,004	261,905	31,417
May			30	56.8	16	31.4	44.6	119,413	102,539	508,691	92.8
June			20	71.4	29	52.8	62.5	161,957	137,079	436,371	31,193
July			17	73.5	27	48.5	60.1	161,050	145,103	309,079	34,748
Aug.			10	59.8	14	45.4	50.9	136,452	128,279	220,412	25,320
Sept.			1	50.1	20	24.1	34.8	90,150	67,526	223,812	8,335
Oct.			7	40.9	!19	.12	11.8	31,581	13,288	151,369	19.1
Nov.			! 9	.19	!28	.03	.14	351	3,511	101,642	8.8
Dec.			!24	.05	! 1	.03	.04	96.8	4,784	180,557	7.5
Yearly				73.5		0.03	30.8	970,340	840,527	2,215,231	254,198

* Discharge measurement(s) made on this day @ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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. Medium to high flow measurements are made from a cableway located about 60 meters upstream from the bridge. The zero of the gage is 1,134.56 meters above mean sea level, U. S. C. & G. S.datum.
RECORDS: Based on 18 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.26	2.18	19.3	23.0	17.5	26.8	28.6	30.0	28.3	15.5	5.46	3.39
2	3.27	* 2.15	* 17.0	23.1	16.2	23.1	33.6	35.4	28.5	14.3	* 5.21	3.36
3	3.16	2.44	16.6	24.4	16.6	27.3	* 32.3	32.7	32.9	13.5	5.17	* 3.36
4	3.16	2.49	16.1	22.9	20.3	36.3	30.6	33.7	34.0	13.4	5.13	3.34
5	3.16	4.81	16.3	* 21.1	18.3	* 37.0	30.5	30.7	30.5	* 12.1	5.02	3.30
6	3.17	11.4	18.9	19.4	15.7	35.3	30.3	32.8	26.6	10.1	4.87	3.31
7	3.15	12.2	21.4	19.1	14.6	31.8	29.7	31.3	25.8	10.8	4.82	3.26
8	3.06	9.12	20.8	22.4	14.0	27.1	31.3	29.9	24.3	11.1	4.80	3.22
9	3.05	8.45	16.3	21.4	* 14.2	25.7	31.8	29.0	22.8	16.2	4.76	3.17
10	3.06	8.56	17.7	27.4	17.0	30.8	30.4	28.6	22.4	19.2	4.71	3.18
11	3.09	8.76	21.5	24.9	14.5	33.6	30.5	28.5	21.8	21.3	4.63	3.22
12	3.02	9.03	26.6	22.2	16.7	31.5	29.1	39.6	* 18.9	19.8	4.43	3.16
13	2.94	9.28	25.7	23.8	15.6	32.5	32.4	36.9	22.5	17.3	4.24	3.13
14	2.89	10.3	25.2	21.7	19.0	32.3	29.5	35.2	30.5	12.6	4.03	3.05
15	2.85	7.95	26.1	23.4	25.7	32.6	32.1	28.9	32.1	11.1	4.03	3.06
16	2.84	8.60	31.3	21.3	22.3	30.3	35.6	25.9	25.9	11.6	3.92	3.03
17	2.82	8.45	33.8	21.6	15.9	27.8	35.8	26.9	23.9	10.7	3.78	2.93
18	2.83	9.04	34.4	17.4	11.9	29.1	* 38.2	25.6	26.6	9.37	3.67	2.96
19	* 2.78	9.71	34.5	* 19.4	12.0	* 29.2	36.6	25.4	23.4	9.54	3.60	2.97
20	2.79	9.64	* 33.3	22.5	15.8	28.2	37.3	27.1	21.2	10.0	3.53	2.92
21	2.83	9.86	34.7	23.4	22.5	28.5	33.4	* 27.1	17.5	9.09	3.48	2.86
22	2.76	9.62	33.9	21.4	21.9	28.6	35.1	27.7	16.8	8.19	3.47	2.78
23	2.74	9.79	32.2	23.7	* 23.0	27.6	36.6	29.0	13.7	7.64	3.43	2.74
24	2.70	10.5	26.0	26.1	26.7	32.4	38.1	28.5	14.3	7.22	3.34	2.73
25	2.64	10.5	23.5	25.5	25.7	40.5	34.3	24.2	15.1	6.92	3.30	2.69
26	2.53	12.6	20.9	22.7	23.0	38.1	30.4	26.0	14.4	6.79	3.25	2.69
27	2.53	14.4	21.1	20.1	19.9	36.2	26.7	30.3	17.0	6.50	3.29	2.66
28	2.58	16.8	22.2	20.9	24.6	34.1	27.2	31.2	17.0	6.35	3.27	2.65
29	2.55		* 24.2	20.0	25.5	31.3	26.6	31.7	16.8	6.15	3.24	2.61
30	2.51		24.1	19.5	29.2	25.9	28.9	32.0	16.2	5.92	3.28	2.56
31	2.43		25.6		30.0		31.6	31.7		5.67		2.55
Sum	89.15	248.63	761.2	665.7	605.8	931.5	995.1	933.5	681.7	345.95	123.16	92.84

Current Year 2001							Period 1938-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
			High		Low				
Month	High	Low	Day		Day	Average	Total	Average	Maximum	Minimum
Jan.	0.980	0.905	2	4.11	31	2.39	2.88	7,703	11,169	150,048	271
Feb.	1.365	.885	28	20.3	1	2.06	8.88	21,482	13,479	122,304	167
Mar.	1.680	1.260	21	35.4	9	15.2	24.6	65,768	49,713	140,433	2,204
April	1.560	1.300	10	28.7	18	16.4	22.2	57,516	52,551	171,563	8,414
May	1.695	1.205	30	36.5	18	11.1	19.5	52,341	56,879	439,894	644
June	1.955	1.350	25	60.0	2	18.5	31.1	80,482	69,995	375,353	7,421
July	1.780	1.480	18	40.7	1	22.7	32.1	85,977	79,183	244,070	11,904
Aug.	1.845	1.390	12	50.0	25	21.0	30.1	80,654	72,601	194,405	6,007
Sept.	1.740	1.195	15	40.7	23	12.6	22.7	58,899	49,691	211,481	2,995
Oct.	1.465	1.030	11	24.4	31	5.53	11.2	29,890	23,532	163,710	186
Nov.	1.045	.920	1	5.98	!28	3.16	4.11	10,641	12,826	124,457	282
Dec.	.970	.905	11	3.61	31	2.52	2.99	8,021	12,653	197,341	254
Yearly	1.955	0.885		60.0		2.06	17.7	559,374	504,272	1,923,317	70,867

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 gage, 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 16 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 2001.
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 American Canal Extension and into the Franklin Canal. The transmitter relays gage height data via GOES satellite.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.66	* 2.10	* 17.8	16.3	14.2	18.7	22.1	21.2	18.7	* 14.3	4.92	3.60
2	1.00	2.42	16.5	16.1	13.6	16.7	26.7	* 25.9	18.3	13.5	* 4.76	3.47
3	2.16	2.84	15.9	* 17.1	14.0	19.3	25.5	23.1	20.4	12.7	4.80	3.52
4	2.53	3.02	15.2	16.5	16.5	26.4	23.5	23.9	21.3	13.0	4.77	* 3.32
5	2.59	5.67	15.2	15.5	15.4	* 26.9	* 23.5	22.3	19.4	11.6	4.43	3.37
6	2.67	13.0	16.7	14.2	13.7	26.1	23.8	23.8	17.2	10.2	4.28	2.78
7	2.70	13.4	18.4	14.2	12.8	23.2	23.8	22.0	16.2	9.80	4.44	3.24
8	2.55	10.6	17.7	15.1	* 12.4	19.6	25.2	20.4	15.6	10.3	4.42	3.21
9	2.61	10.1	* 14.5	15.8	13.0	18.5	25.6	19.9	14.4	12.1	4.44	3.22
10	2.75	10.1	15.5	18.6	15.1	21.5	25.9	19.6	14.2	15.8	5.05	3.28
11	2.70	10.4	17.8	17.8	13.2	24.6	25.8	19.5	13.5	18.8	4.53	3.55
12	2.65	10.6	22.1	16.0	14.5	23.2	24.9	26.4	* 11.1	17.3	4.39	3.49
13	2.77	10.7	21.4	16.6	13.8	24.2	25.4	26.8	13.1	16.0	4.17	3.41
14	3.09	11.6	21.0	15.4	16.5	24.7	28.0	24.8	17.5	12.8	3.97	3.32
15	3.43	9.49	20.3	16.3	20.7	25.1	25.5	20.4	18.5	10.8	3.83	3.35
16	2.75	10.0	23.5	15.1	18.1	23.7	30.4	17.9	14.9	10.7	4.13	3.34
17	2.38	9.74	25.5	15.1	14.0	22.0	31.2	18.5	16.3	10.4	4.06	3.30
18	2.52	10.3	25.0	12.0	11.1	22.8	33.0	17.9	17.8	9.19	4.04	3.23
19	* 2.40	10.9	25.0	13.0	11.7	23.5	32.4	17.8	16.7	8.96	3.92	3.27
20	2.68	10.7	25.1	15.1	15.8	22.8	32.5	19.0	15.4	8.29	3.84	3.17
21	2.93	10.8	25.1	15.8	18.1	23.2	29.1	18.0	13.4	7.47	3.92	3.18
22	2.97	10.5	24.2	15.0	18.0	23.3	29.5	18.3	13.1	7.73	3.83	3.06
23	3.11	10.7	23.0	16.4	18.4	22.6	30.9	18.9	11.2	7.03	3.76	3.00
24	2.01	11.3	18.4	17.9	20.6	25.7	30.0	18.5	11.5	6.54	3.53	3.12
25	* .04	11.2	16.6	17.6	19.9	28.8	27.6	16.1	12.2	6.57	3.45	3.09
26	* .01	12.9	14.9	15.7	18.8	30.9	22.5	15.6	* 11.8	6.13	3.56	3.19
27	.01	14.4	15.0	13.7	16.6	31.3	19.8	19.0	14.0	5.57	3.38	3.14
28	.01	16.2	15.5	14.0	19.1	28.7	19.8	19.4	14.5	5.45	3.50	3.20
29	1.88		16.8	13.5	20.0	26.2	19.0	19.5	14.8	5.25	3.50	3.22
30	2.88		16.9	14.8	22.9	21.4	20.4	20.6	14.7	4.96	3.59	3.20
31	2.75		17.8		22.2		23.0	20.2		5.12		3.17
Sum	68.19	275.68	594.3	466.2	504.7	715.6	806.3	635.2	461.7	314.36	123.21	101.01

Current Year 2001 | Period 1939-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Day	Extreme-Cubic Meters per Second Low	Day	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	1.340		3.83	16	0.01	2	2.20	5,892	5,361	51,241	0
Feb.	2.385	.655	18.6	28	0	1	9.85	23,819	9,417	62,253	0
Mar.	2.850	2.085	27.0	!16	13.7	! 9	19.2	51,348	41,200	69,130	0
April	2.515	1.885	19.7	10	11.2	18	15.5	40,280	36,676	87,408	0
May	2.930	1.865	29.7	!30	10.6	18	16.3	43,606	35,770	85,163	0
June	3.050	2.125	34.2	25	14.1	2	23.9	61,828	47,026	80,984	0
July	3.120	2.435	35.8	18	18.4	29	26.0	69,664	54,734	87,171	0
Aug.	3.075	2.210	32.3	12	13.7	25	20.5	54,881	52,691	92,064	0
Sept.	2.875	2.000	23.4	!14	10.4	12	15.4	39,891	37,266	77,877	0
Oct.	2.630	1.515	19.3	11	4.88	30	10.1	27,161	18,396	59,131	0
Nov.	1.580	1.320	5.40	10	3.14	27	4.11	10,645	8,701	37,208	0
Dec.	1.425	.850	4.05	11	.30	6	3.26	8,727	7,993	55,112	0
Yearly	3.120		35.8		0		13.9	437,742	355,231	668,068	7,603

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- 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 63 current-meter measurements during the year, and a continuous record of gage heights. Computations by shifting control methods. Records available: June 1938 through 2001.
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		1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.65	1.14	0.45	5.13	2.45	* 5.36	5.82	* 6.26	5.24	0.58	* 0.52	0.20
2	2.14	.77	.44	* 5.28	* 2.37	5.27	* 5.80	6.20	5.46	* .43	.55	.20
3	.93	.75	.40	5.20	2.01	5.39	5.45	* 6.16	5.64	.38	.55	.19
4	.90	.74	.37	5.13	* 2.12	5.19	5.53	6.13	* 5.40	.37	.55	* .16
5	.87	* .76	* .41	5.12	2.22	4.96	5.61	6.08	5.37	.38	.53	.12
6	.83	.75	.45	* 5.28	2.21	4.75	* 5.68	* 6.44	5.61	.37	.54	1.15
7	.80	.71	.49	5.43	* 2.22	4.75	5.66	6.16	* 5.80	.35	.53	.51
8	.74	.66	.47	5.34	2.24	* 4.98	5.62	6.18	5.61	.35	.53	.38
9	.72	.61	.47	* 5.30	2.29	5.29	* 5.58	6.09	5.51	.36	.46	.30
10	.62	.58	.45	5.42	2.17	5.38	5.51	* 5.98	* 5.44	.40	.39	.24
11	.60	.54	.51	5.25	* 2.26	* 5.38	5.51	5.94	5.65	.43	.40	.17
12	.88	.53	.68	5.23	2.45	5.35	5.42	7.81	5.71	* .37	.44	.14
13	.82	.52	.77	* 5.33	2.52	5.39	* 5.47	* 6.26	5.70	.34	.41	.14
14	.74	.50	.79	5.33	* 2.53	5.31	5.71	6.00	* 5.87	.32	.42	.12
15	.71	.50	* 2.48	5.40	2.38	* 5.24	6.17	6.05	5.59	.33	.39	.15
16	.69	* .49	* 3.37	* 5.24	2.18	5.09	* 6.08	6.23	5.32	.28	.41	.13
17	.68	.45	4.78	5.28	2.08	5.14	5.95	6.19	1.72	.77	.38	.11
18	.67	.41	5.65	5.24	2.10	* 5.20	5.80	6.00	* .80	.31	.38	.11
19	.68	.42	* 5.68	5.32	2.09	5.35	5.81	5.95	.89	.33	.40	.10
20	.68	.40	5.64	* 5.44	1.99	5.32	* 5.82	* 5.98	.85	.33	.40	.10
21	.69	.40	5.86	5.46	* 2.05	5.30	5.55	5.89	.88	.32	.38	.09
22	.70	.41	5.88	5.46	2.08	* 5.28	5.77	5.95	.98	* .32	.34	.09
23	.67	.43	* 5.53	* 5.53	2.20	5.28	* 5.75	6.00	1.03	.30	.33	.08
24	1.52	.43	5.27	5.40	2.24	5.41	5.70	* 5.88	1.02	.30	.26	.09
25	3.11	.40	5.61	5.23	* 2.33	10.3	5.57	5.72	1.06	.40	.25	.08
26	3.01	.41	* 5.65	5.11	2.38	7.06	5.68	5.85	1.07	1.19	.24	.08
27	3.05	.41	5.61	* 5.20	2.32	5.31	* 5.76	* 5.96	1.09	.79	.26	.08
28	3.13	.43	5.72	5.21	2.36	5.44	5.76	5.71	* 1.05	.71	.22	.08
29	1.57		5.75	5.06	* 2.28	5.50	5.83	5.63	.84	.67	.21	.08
30	.74		* 5.57	* 3.38	2.26	5.44	* 5.96	5.53	.76	* .60	* .20	.07
31	.79		5.31		* 4.29		6.14	* 5.40		.59		.07
Sum	38.33	15.55	96.51	156.73	71.67	164.41	177.47	187.61	102.96	13.97	11.87	5.61

	Current Year 2001						Period 1939-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
Month	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.770	1.485	24	4.70	11	0.57	1.24	3,312	5,905	98,781	0
Feb.	1.740	1.455	1	4.17	!18	.37	.56	1,344	3,975	60,041	0
Mar.	1.835	1.455	26	6.45	! 3	.35	3.11	8,338	7,840	79,572	99.8
April	1.805	1.545	10	5.76	30	1.14	5.22	13,541	15,116	91,915	2,752
May	1.795	1.610	31	5.56	4	1.80	2.31	6,192	20,318	369,945	31.1
June	2.540	1.745	25	36.4	8	4.47	5.48	14,205	22,110	308,855	0
July	1.830	1.760	31	6.77	! 4	5.22	5.72	15,333	24,460	191,605	1,193
Aug.	2.120	1.740	12	16.8	5	5.00	6.05	16,210	19,224	140,115	46.3
Sept.	1.820	1.440	14	6.53	30	.61	3.43	8,896	11,638	152,960	66.4
Oct.	1.885	1.400	17	8.86	17	.23	.45	1,207	4,918	104,679	22.2
Nov.	1.450	1.380	3	.61	30	.10	.40	1,026	4,106	87,256	0
Dec.	1.705	1.350	6	4.72	!30	.07	.18	485	4,631	142,194	0
Yearly	2.540	1.350		36.4		0.07	2.86	90,089	144,241	1,349,111	12,337

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 45'36", longitude 106 30'32", 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 2001. 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: Based on 76 current-meter measurements and a continuous record of stage.
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.	7.42	May 1942	Min.	0	Several months each year	
Yearly:	Max.	3.28	1942	Min.	0.26		1964

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	5.02	2.46	* 4.93	5.58	* 4.93	4.97	0	0	0
2	0	0	0	* 5.14	* 2.33	5.00	5.44	4.90	4.97	0	0	0
3	0	0	0	4.99	1.60	5.19	5.04	* 4.97	* 5.23	0	0	0
4	0	0	0	* 4.76	* 1.97	* 5.26	5.08	4.98	5.04	0	0	0
5	0	0	0	* 4.77	1.83	5.01	5.24	4.82	* 4.77	0	0	0
6	0	0	0	* 4.83	1.81	* 4.84	5.37	* 5.01	4.83	0	0	0
7	0	0	0	5.01	* 1.89	4.80	5.31	4.93	* 4.84	0	0	0
8	0	0	0	5.05	2.00	* 4.92	5.33	* 5.49	4.72	0	0	0
9	0	0	0	* 4.96	* 2.12	5.36	* 5.24	5.24	4.63	0	0	0
10	0	0	0	5.15	2.03	5.43	* 5.25	* 5.17	* 4.58	0	0	0
11	0	0	0	* 4.89	* 2.20	* 5.51	* 5.33	5.11	4.74	0	0	0
12	0	0	0	4.75	2.42	5.47	* 5.28	5.13	* 4.79	0	0	0
13	0	0	0	4.98	2.44	* 5.48	* 5.38	5.17	4.89	0	0	0
14	0	0	0	4.99	* 2.44	5.39	5.46	5.21	* 5.17	0	0	0
15	0	0	* 1.75	5.02	2.36	* 5.35	5.79	* 5.25	4.98	0	0	0
16	0	0	* 3.18	* 4.85	* 2.18	5.17	* 5.51	5.51	4.71	0	0	0
17	0	0	4.67	4.69	2.25	5.30	5.59	* 5.68	1.48	0	0	0
18	0	0	5.60	* 4.66	* 2.26	* 5.40	* 5.56	5.58	0	0	0	0
19	0	0	* 5.38	4.95	2.44	5.39	5.45	5.41	0	0	0	0
20	0	0	5.16	* 5.13	2.47	* 5.30	* 5.58	* 5.62	0	0	0	0
21	0	0	5.36	5.22	* 2.24	5.30	5.17	5.54	0	0	0	0
22	0	0	5.31	5.32	1.89	* 5.23	5.40	* 5.65	0	0	0	0
23	0	0	* 5.30	* 5.44	* 2.10	5.32	* 5.33	5.61	0	0	0	0
24	0	0	5.19	5.27	2.20	5.37	5.41	* 5.37	0	0	0	0
25	0	0	5.49	* 5.10	* 2.29	* 5.56	* 5.21	5.18	0	0	0	0
26	0	0	* 5.47	* 5.04	2.36	5.18	* 5.38	5.22	0	0	0	0
27	0	0	5.29	* 5.29	2.31	* 5.10	* 5.47	* 5.60	0	0	0	0
28	0	0	* 5.35	5.60	* 2.34	5.48	5.24	5.29	0	0	0	0
29	0		5.41	5.63	2.29	* 5.62	5.51	* 5.10	0	0	0	0
30	0		* 5.24	* 3.55	* 2.13	5.58	* 5.71	5.25	0	0	0	0
31	0		5.02		* 3.88		5.34	* 5.17		0		0
Sum	0	84.17	150.05	69.53	158.24	166.98	163.09	79.34	0	0	0	0

Current Year 2001 | Period 1938-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Day	Extreme-Cubic Meters per Second Low	Day	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0	0	0	! 1	0	! 1	0	0	39.1	2,504	0
Feb.	0	0	0	! 1	0	! 1	0	0	144	9,264	0
Mar.	1.510	0	5.80	18	0	! 1	2.72	7,272	2,589	9,807	0
April	1.500	.690	5.70	29	1.50	30	5.00	12,964	10,603	15,274	0
May	1.470	.640	5.50	31	1.30	2	2.24	6,007	10,385	19,869	0
June	1.660	1.220	6.03	26	3.92	6	5.27	13,672	11,225	19,360	0
July	1.780	1.460	6.44	27	4.89	4	5.39	14,427	11,626	18,714	0
Aug.	1.770	1.420	5.89	17	4.28	5	5.26	14,091	11,212	15,665	0
Sept.	1.760	0	5.84	15	0	!17	2.64	6,855	5,303	15,269	0
Oct.	0	0	0	! 1	0	! 1	0	0	57.0	1,743	0
Nov.	0	0	0	! 1	0	! 1	0	0	0	0	0
Dec.	0	0	0	! 1	0	! 1	0	0	0	0	0
Yearly	1.780	0	6.44		0		2.39	75,288	63,187	103,511	8,207

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- 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 23 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 2001.
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	Frequently
Monthly:	Max.	142	May 1942	Min.	0	Several months since 1951
Yearly:	Max.	49.8	1942	Min.	0.07	1965

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.08	5.18	5.36	3.33	* 4.61	3.30	3.15	3.84	3.35	6.55	7.80	5.23
2	7.00	4.88	6.09	3.83	4.15	3.11	3.15	3.52	3.28	6.65	8.06	4.98
3	7.13	5.20	6.18	3.93	3.89	2.91	2.97	2.89	3.71	* 6.51	7.53	4.61
4	6.63	5.16	6.13	* 4.06	3.72	2.64	2.61	3.16	3.97	6.21	7.82	4.67
5	5.87	5.28	5.29	3.46	2.99	2.54	2.81	2.86	* 3.28	6.36	6.92	* 5.10
6	5.92	5.40	4.34	3.62	* 2.58	* 2.59	4.20	3.20	3.49	7.78	* 6.09	5.06
7	6.04	* 6.99	* 4.67	3.90	2.59	2.77	3.70	* 3.20	3.06	6.74	7.24	4.46
8	5.82	11.1	6.14	4.21	3.09	2.83	2.87	3.76	3.24	6.20	8.29	4.29
9	5.40	9.61	5.12	4.30	2.94	3.15	2.73	3.32	2.98	6.33	8.45	4.41
10	5.25	7.67	5.19	4.97	3.14	2.77	* 2.64	4.53	4.02	6.16	10.1	5.45
11	5.21	8.21	4.67	5.45	2.78	2.62	2.82	5.41	3.92	6.85	9.41	5.26
12	5.17	7.63	4.72	8.15	3.27	3.09	2.77	4.79	3.17	7.65	8.06	* 4.56
13	5.22	7.91	4.59	6.99	3.38	2.67	2.22	5.10	3.52	17.1	6.56	4.80
14	5.48	8.01	4.40	6.15	4.77	2.42	2.22	10.0	4.44	37.3	7.33	6.87
15	5.42	7.99	3.25	6.53	3.30	2.72	2.42	5.12	5.01	29.2	8.17	6.71
16	5.15	7.31	3.16	7.41	3.42	2.65	2.32	5.01	5.29	15.9	8.11	6.68
17	* 5.24	6.49	2.90	7.26	4.25	2.54	2.15	5.63	5.68	9.65	8.23	6.82
18	5.00	6.35	2.86	* 6.70	4.38	3.00	1.60	5.19	4.66	9.53	8.73	6.94
19	4.90	6.81	3.04	5.87	3.61	3.60	.90	6.57	* 5.34	8.84	8.61	6.97
20	5.26	6.75	3.15	5.21	3.05	* 3.11	13.5	5.36	5.37	9.50	7.66	6.98
21	5.06	* 6.46	* 3.38	6.08	3.26	2.91	4.61	6.07	6.04	11.2	7.97	6.94
22	4.93	5.29	3.24	7.53	2.91	2.62	3.97	5.07	6.24	11.7	8.19	7.17
23	5.10	4.26	3.27	8.48	2.84	2.51	4.37	4.38	6.62	* 8.88	8.55	7.28
24	4.47	4.21	3.29	5.93	2.92	2.95	3.97	4.16	7.71	8.93	8.06	7.25
25	4.57	3.94	4.01	6.26	2.87	3.07	* 3.15	4.03	5.98	8.84	7.70	7.04
26	4.57	4.55	3.68	7.74	2.95	3.09	3.55	4.07	5.05	8.76	6.35	6.84
27	4.42	4.31	4.17	9.03	3.27	4.75	4.34	4.21	4.94	8.57	5.39	6.81
28	4.61	4.32	3.43	7.74	3.30	4.50	4.21	* 3.40	5.63	8.36	5.79	6.96
29	4.68		3.04	7.95	2.80	4.04	4.29	3.44	6.77	7.86	5.31	7.05
30	4.75		3.64	6.35	3.05	3.53	5.22	3.18	7.14	6.91	5.34	7.07
31	* 4.64		3.95		2.99		4.12	3.13		7.78		6.95
Sum	167.99	177.27	130.35	178.42	103.07	91.00	109.55	137.60	142.90	314.80	227.82	188.21

Current Year 2001								Period 1938-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters		
			High		Low					
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.	1.910	1.465	1	21.9	28	3.90	5.42	14,514	11,428	96,674	0
Feb.	1.760	1.425	8	12.9	25	3.62	6.33	15,316	8,890	68,720	0
Mar.	1.930	1.295	7	24.2	14	1.53	4.20	11,262	8,103	72,889	0
April	1.745	1.390	27	10.6	1	3.09	5.95	15,415	10,248	94,942	0
May	1.755	1.350	14	10.9	7	2.37	3.32	8,905	15,472	381,665	0
June	1.680	1.355	27	8.37	! 5	2.29	3.03	7,862	13,898	295,595	0
July	2.765	1.225	20	83.7	19	.74	3.53	9,465	19,771	173,266	4.7
Aug.	1.855	1.405	14	15.0	9	2.57	4.44	11,889	18,488	158,563	20.6
Sept.	1.680	1.400	24	8.34	1	2.64	4.76	12,347	21,253	181,266	0
Oct.	2.435	1.560	14	60.6	! 1	5.77	10.2	27,199	21,330	114,377	0
Nov.	1.735	1.475	10	10.7	28	4.53	7.59	19,684	14,683	106,523	0
Dec.	1.695	1.350	14	10.0	9	2.64	6.07	16,261	14,814	152,593	0
Yearly	2.765	1.225		83.7		0.74	5.39	170,119	178,378	1,569,390	2,050

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-3712.00 RIO GRANDE NEAR CANDELARIA, TEXAS
AND SAN ANTONIO DEL BRAVO, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and graphical water-stage recorder located on the left bank of the Rio Grande at San Antonio Diversion Dam, latitude 30 10'30", longitude 104 41'10" and river kilometer 1,672, 0.5 river kilometer upstream from Capote Creek and about 4.0 kilometers north of Candelaria, Presidio County, 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 30 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: November 19, 1975 through 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.37	5.18	3.60	2.88	6.15	1.56	2.20	3.16	1.77	2.58	5.68	5.95
2	6.29	5.30	4.24	2.59	* 5.92	1.27	2.18	* 2.35	1.87	* 3.35	5.63	5.61
3	* 6.19	5.04	3.93	3.12	5.76	1.25	* 1.88	2.24	1.47	4.03	5.37	5.63
4	6.13	5.03	4.11	* 2.88	4.99	* 1.28	1.48	1.91	1.29	4.13	5.06	* 5.61
5	6.16	* 5.32	* 5.07	2.50	3.29	1.51	6.23	1.50	* 1.07	3.73	* 5.20	5.56
6	6.10	5.21	5.67	2.76	2.55	1.34	4.76	1.26	1.09	3.81	5.09	5.62
7	6.12	5.49	5.63	2.78	2.43	1.25	4.95	.91	1.22	3.93	5.05	5.62
8	6.11	5.53	5.55	2.75	2.06	1.13	3.31	1.76	1.30	3.95	5.23	5.37
9	6.08	5.43	4.88	2.30	2.74	1.05	2.62	.88	1.07	4.15	4.85	5.32
10	6.20	5.58	4.33	2.29	1.91	1.01	2.38	1.12	.94	4.40	4.30	5.36
11	6.29	6.10	3.94	2.37	1.21	1.06	1.64	2.52	.82	4.25	4.48	5.45
12	6.14	6.74	3.69	2.57	6.94	1.12	1.09	2.01	.74	3.92	4.93	5.48
13	5.86	7.31	3.74	2.77	2.60	1.25	.92	1.61	.65	3.78	5.43	5.64
14	5.68	7.81	3.85	3.03	3.65	1.00	.88	1.97	.95	3.75	5.62	5.67
15	5.75	7.85	3.64	3.96	2.77	.94	.99	2.33	1.28	3.94	* 5.65	5.45
16	5.81	7.63	3.67	5.14	* 3.17	1.04	.95	* 1.82	3.88	* 4.19	5.72	5.22
17	5.92	7.61	3.56	* 5.17	3.09	.84	* .79	4.29	* 3.28	4.61	5.43	5.45
18	5.94	7.56	3.79	4.96	2.49	* .69	.89	3.31	2.74	5.00	5.48	5.72
19	5.86	7.50	* 3.42	5.23	1.79	1.16	.90	3.39	2.32	5.48	5.57	5.92
20	5.72	* 7.23	3.19	5.52	2.18	.80	1.19	4.10	2.64	5.80	5.64	6.02
21	5.56	6.82	2.90	5.51	2.89	.60	1.82	2.28	3.04	5.97	5.77	6.09
22	* 5.65	6.76	2.76	5.29	2.85	.73	2.28	1.87	2.34	6.01	5.97	5.94
23	5.76	6.88	2.74	4.29	2.05	1.06	2.03	2.17	3.66	5.92	6.03	5.74
24	5.87	6.72	2.83	3.59	1.74	1.10	1.47	2.16	4.63	5.88	6.01	5.69
25	5.90	6.15	3.07	3.93	1.61	.82	2.30	2.73	3.36	5.91	5.99	5.69
26	5.74	5.36	2.96	4.73	1.46	2.07	1.73	34.3	3.54	6.04	6.05	5.54
27	5.57	4.37	2.91	5.24	1.39	1.16	3.58	5.75	4.00	6.11	6.15	4.93
28	5.10	3.97	2.98	4.41	1.39	.96	4.56	4.90	4.23	6.05	6.14	4.73
29	5.35		3.54	4.61	1.39	2.09	4.41	3.10	3.48	5.84	5.86	4.85
30	5.11		3.38	6.26	1.38	2.03	4.08	3.23	2.82	5.81	6.28	4.80
31	5.24		3.54		1.59		2.40	2.49		5.76		4.96
Sum	181.57	173.48	117.11	115.43	87.43	35.17	72.89	109.42	67.49	148.08	165.66	170.63

Current Year 2001							Period 1975-2001		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	2.020	1.975	1	6.53	28	4.84	5.86	15,688	19,941	183,420	0
Feb.	2.055	1.945	15	7.94	28	3.64	6.20	14,989	14,929	122,892	0
Mar.	1.990	1.900	6	5.78	23	2.67	3.78	10,118	12,425	101,919	0
April	2.025	1.900	30	6.94	10	2.16	3.85	9,973	12,639	91,771	10.5
May	2.915	1.830	12	120	11	1.16	2.82	7,554	15,188	169,009	0
June	1.975	1.765	24	6.90	21	.56	1.17	3,039	18,251	186,724	178
July	2.685	1.740	5	75.9	24	.39	2.35	6,298	23,570	148,433	97.6
Aug.	3.480	1.795	26	273	9	.79	3.53	9,454	23,878	88,466	755
Sept.	2.030	1.840	24	6.37	13	.61	2.25	5,831	28,963	166,806	447
Oct.	2.030	1.930	27	6.18	1	2.47	4.78	12,794	30,521	125,676	537
Nov.	2.040	1.985	30	6.40	10	4.18	5.52	14,313	22,655	132,602	0
Dec.	2.035	1.995	1	6.24	28	4.67	5.50	14,742	21,550	187,408	0
Yearly	3.480	1.740		273		0.39	3.96	124,793	244,510	1,191,590	18,685

* Discharge measurement(s) made on this day

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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) and data collection platform 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 23 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 2001.
REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The data collection platform is operated in cooperation with the National Weather Service, and relays gage height data upon interrogation by telephone via commercial circuits. 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.77	5.35	4.46	2.52	3.17	0.65	1.09	2.76	1.76	1.69	3.59	4.40
2	6.76	5.30	4.31	2.48	* 4.22	.68	.92	* 2.09	1.59	* 1.44	3.53	4.59
3	* 6.55	5.32	4.61	2.27	4.41	.84	.99	2.23	1.42	1.32	3.49	4.50
4	6.45	5.29	4.97	* 2.24	4.33	* .90	1.04	1.94	1.17	1.47	3.36	* 4.12
5	6.30	* 5.36	* 4.98	2.37	4.17	.68	.81	1.67	* 1.04	1.60	* 3.18	4.13
6	6.22	5.32	4.61	2.25	3.84	.54	.89	1.50	.75	2.22	3.03	4.07
7	6.42	5.22	4.78	2.26	3.25	.54	2.18	1.01	.72	2.17	3.18	4.08
8	6.47	5.18	4.88	2.12	3.14	.53	2.76	.80	.66	1.97	3.25	4.20
9	6.76	5.16	4.99	2.12	5.08	.54	* 2.44	.60	.65	1.94	3.34	4.28
10	6.95	5.02	4.96	2.12	2.65	.68	2.28	.71	.69	1.87	3.37	4.22
11	6.56	5.20	4.58	2.05	2.35	.47	2.29	.65	.70	1.97	3.35	4.13
12	6.42	5.47	4.03	2.01	2.24	.45	1.72	.57	.72	2.15	3.09	4.23
13	6.53	6.15	3.66	2.25	2.01	.40	1.10	.85	.66	2.06	3.09	4.16
14	6.44	7.04	3.70	2.82	2.75	.29	.79	.68	.57	1.92	3.02	4.12
15	6.16	7.52	3.57	3.10	2.41	.40	.53	.75	.51	1.88	* 3.14	4.09
16	6.03	7.62	3.40	3.09	2.59	.43	.41	* .67	.44	* 1.88	3.24	4.24
17	6.12	7.69	3.27	* 2.97	2.06	.34	.33	.89	* .76	1.82	3.48	4.14
18	6.30	7.62	3.30	3.47	1.84	* .35	2.25	1.46	1.20	1.90	3.64	4.08
19	6.49	7.34	* 3.20	4.09	1.84	.35	* 7.68	3.45	1.30	2.02	3.62	4.08
20	6.49	* 6.92	3.38	11.6	2.04	.28	4.31	2.05	1.13	2.22	3.94	4.25
21	6.45	6.75	2.97	4.87	* 1.74	.23	1.13	1.86	1.08	2.45	3.89	4.50
22	* 6.22	6.44	2.83	4.63	1.95	.30	1.10	2.29	1.24	2.70	3.99	4.74
23	5.95	6.23	2.57	4.39	1.91	.33	1.24	1.79	1.58	3.21	4.11	4.75
24	5.75	6.29	2.82	4.22	1.66	.47	.82	1.56	1.29	3.36	4.19	4.68
25	5.94	6.28	2.83	3.91	1.41	.54	1.07	1.67	1.71	3.41	4.20	4.48
26	6.18	6.30	2.82	3.38	1.27	.36	.51	4.73	2.07	3.55	4.06	4.30
27	6.06	5.75	2.75	3.53	1.23	.42	1.58	3.49	1.75	3.59	3.85	4.22
28	6.12	5.01	2.66	3.63	1.30	.67	5.51	5.15	1.76	3.73	4.27	4.15
29	5.97		2.54	3.45	1.02	.84	4.89	4.09	1.78	3.76	4.36	3.97
30	5.51		2.60	3.25	.76	.64	2.89	3.11	1.74	3.75	4.50	3.87
31	5.58		2.62		.66		7.41	2.19		3.63		3.96
Sum	194.92	170.14	113.65	99.46	75.30	15.14	64.96	59.26	34.44	74.65	108.35	131.73

Current Year 2001							Period 1938-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
Month	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.670	0.585	! 9	6.96	!30	5.40	6.29	16,841	12,150	183,346	0
Feb.	.710	.540	16	7.82	28	4.61	6.08	14,700	9,372	119,491	0
Mar.	.570	.420	9	5.03	!23	2.47	3.67	9,819	7,262	91,778	0
April	1.285	.385	20	22.1	!11	2.00	3.32	8,593	6,575	87,920	0
May	.875	.225	8	11.2	31	.62	2.43	6,506	11,659	295,521	0
June	.285	.115	4	1.00	!21	.16	.50	1,308	13,299	267,019	0
July	1.090	.140	31	16.2	18	.29	2.10	5,613	17,383	191,983	0
Aug.	.815	.205	26	8.94	11	.47	1.91	5,120	18,115	164,116	0
Sept.	.415	.200	26	2.20	16	.41	1.15	2,976	20,791	185,694	0
Oct.	.525	.315	29	3.86	3	1.24	2.41	6,450	21,329	129,311	0
Nov.	.550	.445	30	4.55	12	2.78	3.61	9,361	12,594	125,343	0
Dec.	.575	.510	23	4.81	30	3.86	4.25	11,381	12,634	167,944	0
Yearly	1.285	0.115		22.1		0.16	3.13	98,668	163,163	1,450,617	1,174

* Discharge measurement(s) made on this day ! And other days
** Period June 1900-March 1914; September 1919-March 1920; and 1924-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-3730.00 RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank at latitude 29 34'57", longitude 104 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 780.40 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 245 discharge measurements during the year. Records available: 1896 through 1913; 1924 through 2001. 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, and Luis L. Leon Reservoir are located 405, 393, 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., 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 1968-2000) 2,020 CMS, on September 30, 1978 with a 7.53 meter gage height. The greatest recorded flow occurred September 11, 1904 with a peak flow estimated at 4,590 CMS. Min. 0.21 CMS on June 12, 1995 with a 0.46 meter gage height. During the period 1996 to 1998, it is very probable that a minimum momentary flow smaller than the referenced one occurred; however, that data is not available.

Average Flow in Cubic Meters per Second**

Daily:	Max.	1,490	Oct. 1, 1978	Min.	0.09	June 11, 1996
Monthly:	Max.	496	Sept. 1991	Min.	0.39	May 1996
Yearly:	Max.	83.6	1991	Min.	2.38	1995

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	16.1	* 17.9	* 1.87	1.50	2.30	* 1.39	2.36	* 4.87	2.10	* 1.41	* 0.29	0.31
2	* 16.4	* 17.9	* 1.87	* 1.55	2.02	1.42	* 2.21	* 4.74	2.11	* 1.40	.26	.31
3	* 16.2	16.7	1.87	* 1.52	2.03	1.29	* 2.15	* 2.78	* 2.11	* 1.44	.28	* .31
4	* 16.2	17.5	1.75	* 1.43	* 2.10	* 1.29	* 1.95	2.46	* 2.05	* 1.43	.28	* .31
5	16.4	17.3	* 1.87	* 1.62	2.21	* 1.29	* 2.03	2.30	* 1.87	* 1.42	* .26	* .31
6	16.4	* 16.9	* 1.87	* 1.69	1.89	* 1.37	* 2.65	* 2.12	* 1.83	1.42	* .26	* .34
7	16.8	* 16.9	* 1.87	1.67	* 2.26	* 1.42	14.0	* 1.83	* 1.81	1.41	* .29	* .34
8	* 17.0	* 16.5	* 1.87	1.66	* 2.58	* 1.44	7.61	1.70	1.81	* 1.41	* .27	.34
9	* 17.0	* 15.3	* 1.87	* 1.77	* 2.51	1.60	* 10.7	* 1.60	1.82	* 1.41	* .26	.34
10	* 17.3	16.5	1.82	* 1.69	* 2.70	3.23	* 5.53	1.60	* 1.76	* 1.31	.26	* .37
11	17.1	16.5	1.82	* 1.75	* 2.31	* 3.23	* 2.94	1.60	* 1.69	* 1.36	.26	* .37
12	* 17.1	* 16.9	1.82	1.83	1.97	* 2.76	* 2.22	1.64	* 1.69	* 1.14	.29	* .36
13	17.0	* 17.3	* 1.82	1.84	1.92	* 2.47	* 2.18	* 1.63	* 1.69	1.06	* .29	* .37
14	17.0	* 11.0	* 1.82	1.83	* 6.52	* 2.07	2.11	* 1.62	* 1.68	.94	* .29	* .38
15	* 17.0	* 6.88	* 1.75	2.26	* 6.36	* 1.83	2.13	* 1.61	1.62	* .94	* .26	.41
16	* 17.0	* 5.18	* 1.82	* 2.58	* 6.49	1.71	2.10	* 1.62	1.59	* 1.31	* .26	.41
17	* 16.8	* 4.62	* 1.82	* 2.84	* 2.67	2.20	* 1.99	* 3.98	* 1.56	* 1.15	.29	* .42
18	17.1	4.41	1.75	* 2.72	* 2.19	* 2.85	* 2.25	43.6	* 1.57	* 1.12	.26	* .40
19	* 17.5	4.31	1.75	* 2.56	1.92	* 2.20	* 3.01	32.7	* 1.58	* 1.04	.29	* .39
20	17.5	* 3.82	* 1.75	* 4.75	2.03	* 2.77	* 2.28	* 19.6	* 1.58	.82	.33	* .38
21	17.9	3.47	1.69	2.64	* 1.90	* 2.07	2.96	* 5.41	* 1.52	.61	* .33	.38
22	* 18.7	* 3.21	* 1.63	2.79	* 1.81	* 1.77	1.84	* 4.00	1.52	* .51	* .33	.40
23	* 18.5	* 2.98	* 1.67	* 2.55	* 1.89	1.79	* 1.88	* 5.08	1.58	* .49	* .33	.40
24	* 18.3	2.91	1.63	* 2.19	* 1.73	1.89	* 2.08	* 2.89	* 2.72	* .48	.33	* .42
25	* 18.5	2.83	1.63	* 2.00	* 1.64	* 2.20	* 1.99	2.27	* 1.77	* .43	.32	.41
26	* 18.3	* 2.42	* 1.63	* 1.73	1.59	* 2.76	* 1.91	2.15	* 1.63	* .43	* .32	* .40
27	17.7	* 2.42	* 1.63	* 1.73	1.42	* 2.76	* 1.86	* 3.00	* 1.57	.40	* .32	* .42
28	17.7	* 2.36	* 1.63	1.67	* 1.54	* 2.91	3.96	* 3.03	* 1.51	.39	.32	.43
29	* 17.7		* 1.57	1.97	* 1.40	* 2.47	8.95	* 3.38	1.50	* .34	* .32	.42
30	* 17.7		* 1.57	* 2.32	* 1.41	2.07	* 5.86	* 2.68	1.42	* .34	* .32	.44
31	* 17.7		1.57		* 1.37		* 12.8	* 2.28		* .32		* .45
Sum	535.6	282.92	54.30	62.65	74.68	62.52	120.49	171.77	52.26	29.68	8.77	11.74

Month	Current Year 2001 Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	High Day	Extreme-Cubic Meters per Second Low	Low Day	Average	Volume-Thousand Cubic Meters Total	Period 1968-2001 Average	Maximum	Minimum
Jan.	0.700	0.620	18.7	!22	15.6	1	17.3	46,276	39,520	263,658	2,115
Feb.	.675	.210	17.9	! 1	2.00	28	10.1	24,444	36,843	210,479	1,972
Mar.	.210	.170	2.00	! 3	1.51	27	1.75	4,692	46,330	248,201	1,352
April	.500	.160	8.56	4	1.39	2	2.09	5,413	41,796	110,860	1,158
May	.615	.150	14.3	29	1.29	2	2.41	6,452	53,701	211,231	1,047
June	.145	.145	6.25	4	1.27	2	2.08	5,402	66,383	361,843	5,321
July	1.055	.165	35.0	18	1.40	2	3.89	10,410	74,366	297,613	6,230
Aug.	2.040	.175	104	15	1.52	2	5.54	14,841	124,633	708,584	7,205
Sept.	.400	.145	5.22	23	1.14	2	1.74	4,515	173,116	1,285,546	4,515
Oct.	.170	.090	1.44	!29	.32	2	.96	2,564	111,699	809,127	2,564
Nov.	.125	.075	.65	2	.24	2	.29	758	41,046	169,500	758
Dec.	.195	.105	.46	1	.30	2	.38	1,014	27,600	81,372	1,014
Yearly	2.040	0.075	104		0.24		4.02	126,781	837,033	2,636,721	75,095

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-3740.00 ALAMITO CREEK NEAR PRESIDIO, TEXAS

DESCRIPTION: Gravity well and graphical water-stage recorder located on the downstream side of the highway bridge on Farm-to-Market Road 170 at latitude 29 31'25", longitude 104 17'15", about 400 meters upstream from its confluence with the Rio Grande, and about 9.7 kilometers southeast of Presidio, Presidio County, 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 771.785 meters above mean sea level U.S.C.&G.S. datum.
RECORDS: Based on 25 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 2001.
REMARKS: A small irrigation reservoir (San Esteban) 16.9 kilometers south of Marfa, Presidio County, Texas and irrigation diversions below the reservoir modify the flow of this spring-fed creek. Back water 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	Occasionally
Monthly:	Max.	28.3	Sept. 1974	Min.	0	Oct. 2001
Yearly:	Max.	2.75	1974	Min.	0.01	2001

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.09	0.03	0	0	0.01
2	.02	.02	.02	.02	.01	.01	.01	.10	.01	0	0	.01
3	.02	.02	.02	.02	* .01	.01	.01	.10	.01	0	0	.01
4	* .02	.02	.02	.02	.01	.01	.01	.11	.01	0	0	.01
5	.02	.02	.02	* .02	.01	.01	.01	.09	.01	0	0	* .01
6	.02	.02	.02	.02	.01	* .01	.01	.01	* .01	0	0	.01
7	.02	* .02	* .02	.02	.01	.01	.01	0	.01	0	0	.01
8	.02	.02	.02	.02	.01	.01	.01	0	.01	0	0	.01
9	.02	.02	.02	.02	.01	.01	.01	0	.01	0	0	.01
10	.02	.02	.02	.01	.01	.01	* .01	0	0	0	.01	.01
11	.02	.02	.02	.01	.01	.01	.01	0	0	0	.01	.01
12	.02	.02	.02	.01	.01	.01	.01	0	0	0	.01	.01
13	.02	.02	.02	.01	.01	.01	.01	0	0	0	.01	.01
14	.02	.02	.02	.01	.01	.01	.01	0	0	0	* .01	.01
15	.02	.02	.02	.01	.01	.01	0	0	0	0	.01	.01
16	.02	.02	.02	.01	.01	.01	0	0	0	0	.01	.01
17	.02	.02	.02	.01	.01	.01	0	0	0	0	.01	.01
18	.02	.02	.02	* .01	.01	.01	0	0	0	0	.01	.01
19	.02	.02	.02	.01	.01	* .01	0	.01	0	0	.01	.01
20	.02	.02	* .02	.01	.01	.01	0	.01	0	0	.01	.01
21	.02	* .02	.02	.01	.01	.01	0	.01	0	0	.01	.01
22	.02	.02	.02	.01	.01	.01	0	* .01	0	0	.01	.01
23	* .02	.02	.02	.01	* .01	.01	0	.01	0	0	.01	.01
24	.02	.02	.02	.01	.01	.01	0	.01	0	0	.01	.01
25	.02	.02	.02	.01	.01	.01	0	0	0	0	.01	.01
26	.02	.02	.02	.01	.01	.01	0	.02	0	0	.01	.01
27	.02	.02	.02	.01	.01	.01	0	.01	0	0	.01	.01
28	.02	.02	.02	.01	.01	.01	.01	.01	0	0	.01	.01
29	.02		.02	.01	.01	.01	.01	.01	0	0	.01	.01
30	.02		.02	.01	.01	.01	.01	.01	0	0	.01	.01
31	.02		.02		.01		.12	.01		0		.01
Sum	0.62	0.56	0.62	0.39	0.31	0.30	0.29	0.63	0.11	0.00	0.21	0.31

Current Year 2001						Period 1932-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters		
			High		Low			
Month	High	Low	Day		Day	Average	Total	Average	Maximum	Minimum
Jan.	1.190	1.170	! 1	0.02	! 1	0.02	0.02	53.6	149	370	53.6
Feb.	1.190	1.170	! 1	.02	! 1	.02	.02	48.4	194	3,853	48.4
Mar.	1.190	1.160	! 1	.02	! 1	.02	.02	53.6	164	1,256	46.7
April	1.405	1.100	! 1	.02	!10	.01	.01	33.7	278	4,550	25.9
May	1.400	1.160	12	.02	! 1	.01	.01	26.8	873	10,530	16.4
June	1.315	1.145	!18	.02	! 1	.01	.01	25.9	1,995	15,607	25.9
July	1.455	1.055	31	.45	!14	0	.01	25.1	3,112	22,813	11.7
Aug.	1.305	.140	5	.13	! 6	0	.02	54.4	3,296	20,167	26.8
Sept.	1.380	.140	1	.18	! 9	0	0	9.5	5,073	73,244	9.5
Oct.	.140	.140	! 1	0	! 1	0	0	0	1,909	23,731	0
Nov.	.925	.140	!10	.01	! 1	0	.01	18.2	203	3,150	18.1
Dec.	.940	.925	! 1	.01	! 1	.01	.01	26.8	156	503	26.8
Yearly	1.455	0.140		0.45		0	0.01	376	17,402	86,682	376

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 23 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1955 through 2001. 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 partially 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.	0.26	June 12, 1996
Monthly:	Max.	544	Sept. 1991	Min.	1.84	May 1996
Yearly:	Max.	98.1	1991	Min.	6.80	1998

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22.7	22.7	5.47	3.75	4.76	1.58	2.69	8.55	5.49	2.37	3.53	4.79
2	23.0	22.6	6.12	3.74	4.83	1.36	2.16	8.13	3.47	2.05	3.53	4.94
3	22.8	22.7	5.84	* 3.57	* 5.73	1.49	2.08	5.05	3.18	* 2.03	3.53	5.06
4	22.5	22.7	5.30	3.19	5.97	1.93	2.08	3.65	2.74	2.11	3.31	4.57
5	22.5	22.5	5.48	2.89	6.76	1.76	1.90	3.36	2.38	2.34	3.33	* 4.44
6	22.0	* 22.1	* 6.07	2.60	6.03	* 1.56	1.48	* 3.23	* 1.90	2.51	3.27	4.45
7	22.4	22.2	6.20	3.39	5.94	1.99	12.0	2.92	1.76	3.07	* 3.08	4.41
8	* 22.8	22.3	5.94	3.32	5.19	1.96	8.84	2.38	1.68	2.69	3.09	4.40
9	22.6	22.1	6.03	3.02	9.27	1.42	8.16	2.06	1.73	2.64	2.84	4.74
10	23.2	22.5	6.05	2.84	5.95	2.32	* 11.8	1.99	1.75	2.54	3.05	4.72
11	23.1	23.3	5.93	2.85	4.82	4.20	5.22	2.37	1.80	2.51	3.09	4.61
12	23.3	23.9	5.22	2.75	5.16	3.00	3.28	2.13	1.94	2.59	3.06	4.51
13	23.6	24.3	4.50	2.92	4.49	2.49	2.47	2.07	1.75	2.79	3.00	4.59
14	23.7	22.7	4.68	3.06	6.76	1.94	1.69	1.83	1.44	2.56	3.03	4.28
15	23.7	18.7	4.57	4.16	12.0	1.75	1.58	1.67	1.13	2.48	2.97	4.73
16	23.6	17.1	4.51	4.74	10.1	2.04	1.63	1.52	1.14	2.35	3.07	4.88
17	23.3	14.8	4.37	5.53	5.83	1.99	* 1.56	5.71	1.13	2.21	3.13	4.87
18	23.7	14.5	4.61	* 6.05	3.76	3.25	1.72	23.3	* 1.66	2.20	3.64	4.56
19	24.3	16.4	4.33	6.37	3.53	2.24	9.71	49.1	2.22	2.29	3.70	4.55
20	24.5	13.8	4.45	17.1	4.08	* 2.14	8.12	22.0	2.01	2.49	* 3.95	4.75
21	24.6	11.4	* 4.05	9.40	3.97	2.18	4.58	* 9.89	1.63	2.72	4.27	4.87
22	24.6	* 9.33	3.96	8.31	3.44	1.48	3.10	7.44	1.51	* 2.89	4.20	5.30
23	24.3	9.30	3.63	7.42	3.74	1.63	2.45	7.58	2.08	2.97	4.37	5.27
24	* 23.6	8.74	3.82	6.20	* 3.16	2.05	2.17	3.57	3.06	3.19	4.41	5.50
25	23.3	8.05	4.14	5.39	3.06	2.04	2.03	2.69	2.36	3.41	4.42	5.25
26	23.6	7.37	4.36	4.24	3.07	2.39	1.63	4.85	2.88	3.40	4.34	5.11
27	23.3	6.95	4.05	3.80	2.86	2.50	2.38	5.29	2.63	3.44	4.04	4.76
28	23.2	6.56	3.72	4.20	2.96	2.78	6.45	6.74	2.33	3.67	4.58	4.95
29	23.0		3.49	4.33	2.60	3.24	15.3	8.35	2.29	3.75	4.70	4.70
30	22.9		3.27	5.02	1.98	2.66	10.5	5.35	2.30	3.80	4.79	4.66
31	22.8		3.52		1.52		19.2	4.25		3.57		4.86
Sum	722.5	481.60	147.68	146.15	153.32	65.36	159.96	219.02	65.37	85.63	109.32	148.08

Current Year 2001									Period 1968-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters			
Month	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.370	1.330	!21	24.7	! 6	21.8	23.3	62,424	55,155	277,577	17,506
Feb.	1.370	1.075	!13	24.5	28	5.16	17.2	41,610	47,942	223,569	5,853
Mar.	1.100	1.000	! 2	6.51	!30	3.19	4.76	12,760	55,959	275,997	5,653
April	1.405	.955	20	27.5	6	2.21	4.87	12,627	51,076	199,909	7,401
May	1.225	.910	14	15.7	31	1.39	4.95	13,247	64,003	243,287	4,939
June	1.075	.890	11	6.00	! 2	1.14	2.18	5,647	81,474	383,789	5,647
July	1.410	.900	31	28.8	6	1.24	5.16	13,821	95,346	325,218	13,821
Aug.	2.010	.920	19	95.2	17	1.37	7.07	18,923	153,860	866,134	18,923
Sept.	1.155	.840	1	11.2	16	.86	2.18	5,648	292,954	1,410,221	5,648
Oct.	1.020	.920	30	3.95	4	1.96	2.76	7,398	145,197	871,689	7,398
Nov.	1.045	.975	30	4.89	9	2.77	3.64	9,445	58,131	197,536	9,445
Dec.	1.070	1.030	22	5.65	!13	4.28	4.78	12,794	45,169	229,318	12,794
Yearly	2.010	0.840		95.2		0.86	6.86	216,344	1,146,266	3,092,559	214,513

* Discharge measurement(s) made on this day ! And other days ** Period 1968-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-3745.00 TERLINGUA CREEK NEAR TERLINGUA, TEXAS

DESCRIPTION: Cableway, bubbler gage, graphical water-stage recorder located on the left bank at latitude 29 12'10", longitude 103 37'10", 4.3 creek kilometers upstream from its confluence with the Rio Grande, and about 13.6 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 670.83 meters above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on 28 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 2001.
REMARKS: Irrigation diversions upstream of the station modify the flow of this spring-fed creek.
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.	0.01	Several months 1995-96
Yearly:	Max.	4.28	1990	Min.	0.10	1994

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.06	* 0.06	* 0.05	0.04	* 0.05	0.04	0.04	* 0.06	2.83	* 0.03	* 0.02	0.05
2	* .06	.06	.05	* .04	.05	.04	* .04	.06	1.25	.03	.02	.05
3	.06	.06	.05	.04	.05	.04	.04	.06	.27	.03	.02	* .05
4	.06	.06	.05	.04	.05	.04	.04	.06	* .20	.03	.02	.05
5	.06	.06	.05	.04	.05	* .04	.04	.06	.07	.03	.02	.05
6	.06	.06	.05	.04	.05	.04	.30	.06	.05	.03	.03	.05
7	.06	.05	.05	.04	.05	2.87	.11	.06	.04	.03	.03	.05
8	.06	.05	.05	.04	.07	.32	.05	.06	.04	.03	.03	.05
9	.06	.05	.05	.04	.05	.06	.03	.62	.04	.03	.03	.05
10	.06	.05	.04	.04	.05	.05	.03	4.17	.04	.03	.03	.04
11	.06	.05	.04	.04	.05	.05	.03	3.33	.04	.03	.03	.04
12	.06	.05	.04	.04	.32	.04	.03	2.12	* .04	.03	.03	.04
13	.07	.05	.04	.04	.05	.04	.03	.07	.04	.03	.03	.04
14	.07	.05	.04	.04	.04	.04	.03	.06	.04	.03	.03	.04
15	.07	* .05	* .04	.04	.11	.06	.03	.06	.04	.03	.04	.04
16	.07	.05	.04	.04	.05	.05	* .03	.06	.04	.03	.04	.04
17	.06	.05	.04	.04	.04	.04	.03	16.3	.04	* .03	.04	* .04
18	.06	.05	.04	.04	.04	.04	.09	7.30	.04	.03	.04	.04
19	.06	.05	.04	* .04	.04	.04	.07	1.86	* .25	.03	* .04	.04
20	.06	.05	.04	1.67	.04	.04	.25	* .64	.04	.03	.04	.04
21	.06	.05	.04	.10	.04	* .04	.08	.10	4.43	.03	.04	.04
22	.06	.05	.04	.07	* .04	.04	.06	5.19	.64	.03	.04	.04
23	.06	.05	.04	.06	.04	.04	.05	.93	.08	.03	.04	.04
24	.06	.05	.04	* .06	.04	.04	.04	.07	.06	.03	.04	.04
25	* .06	.05	.04	.06	.04	.04	.03	.06	.04	.02	.04	.04
26	.06	.05	.04	* .06	.04	* .04	.03	.06	.04	.02	.05	.04
27	.06	.05	.04	.06	.04	.04	.04	.06	.04	.02	.05	.04
28	.06	.05	.04	.05	.04	.04	20.3	.06	.04	.02	.05	.04
29	.06		.04	.05	.04	.04	1.53	.06	.03	.02	.05	.04
30	.06		.04	.05	.04	.04	.42	.06	.03	.02	.05	.04
31	.06		.04		.04		.10	.08		.02		.04
Sum	1.90	1.46	1.33	3.05	1.74	4.38	24.02	43.80	10.87	0.86	1.06	1.33

Current Year 2001							Period 1932-2001			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters			
			High		Low					
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.	0.945	0.895	! 7	0.07	! 1	0.06	0.06	164	221	1,079	26.8
Feb.	.940	.915	! 1	.06	!17	.05	.05	126	276	5,431	25.1
Mar.	.955	.930	! 1	.05	! 9	.04	.04	115	287	2,978	26.8
April	1.925	.925	20	18.5	! 1	.04	.10	264	1,524	23,016	25.9
May	1.600	.985	12	4.46	!10	.04	.06	150	3,959	32,095	100
June	2.610	.990	7	121	16	.03	.15	378	8,172	67,640	73.4
July	2.665	1.110	28	87.9	!25	.02	.77	2,075	8,918	35,429	141
Aug.	2.350	.615	17	176	! 1	.06	1.41	3,784	8,472	79,182	80.4
Sept.	2.075	.500	21	105	30	.03	.36	939	10,123	84,339	124
Oct.			! 1	.03	!25	.02	.03	74.3	4,078	34,414	62.7
Nov.			!26	.05	! 1	.02	.04	91.6	542	7,015	80.1
Dec.			! 1	.05	!10	.04	.04	115	341	3,800	92.4
Yearly	2.665			176		0.02	0.26	8,276	46,913	135,031	3,032

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

DESCRIPTION: Cableway, gravity well, graphical 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 24 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: April 1936 through 2001.
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.	0.09	June 11,	1996
Monthly:	Max.	470	Sept. 1991	Min.	1.21	May	1996
Yearly:	Max.	97.0	1991	Min.	6.74		2001

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	21.2	* 21.9	* 7.29	3.18	* 3.56	1.44	0.58	* 18.4	4.65	* 1.07	* 2.96	5.03
2	* 22.1	21.2	7.19	* 3.10	4.15	.91	* .93	13.8	3.96	1.09	2.84	4.93
3	22.7	21.0	6.81	2.95	4.31	.52	1.07	6.82	3.73	1.09	2.52	* 4.39
4	22.4	21.1	6.84	3.16	3.93	.68	1.00	5.71	* 3.46	1.29	2.56	5.02
5	21.8	20.7	7.04	2.97	4.28	* .85	.98	4.49	2.79	1.17	2.74	5.16
6	21.8	20.5	7.42	2.72	4.66	.75	.94	3.76	2.29	1.14	2.76	4.55
7	21.2	20.1	7.16	2.82	5.67	.70	2.65	3.21	2.11	1.37	2.57	3.97
8	21.4	19.7	6.20	2.54	5.63	11.3	2.08	2.78	1.86	1.03	2.53	3.24
9	22.4	19.0	6.16	2.45	6.21	1.63	9.65	2.42	1.47	1.16	2.30	3.08
10	23.1	19.1	6.05	2.85	6.17	1.11	9.63	2.95	1.24	1.65	1.92	3.63
11	23.7	19.4	5.89	2.50	9.30	.99	12.7	1.96	1.22	1.50	1.97	3.98
12	23.6	20.4	4.85	2.31	11.7	.97	7.98	1.69	1.19	1.29	2.04	4.05
13	23.6	21.3	4.88	2.43	11.6	1.05	5.53	1.50	1.20	1.29	2.28	3.64
14	23.9	22.4	5.31	2.34	4.81	1.63	3.34	1.32	1.08	1.28	2.60	3.69
15	24.0	* 22.0	* 5.37	2.25	6.84	1.58	2.13	1.16	* .90	1.37	2.53	4.00
16	23.9	16.0	5.20	2.12	8.75	2.95	* 1.50	1.01	.75	1.59	2.33	3.52
17	23.4	14.1	5.36	2.36	10.1	1.34	1.37	.90	.62	* 1.82	2.49	* 3.82
18	23.1	12.6	5.39	3.28	9.22	.97	1.30	52.7	.51	1.52	2.75	4.69
19	23.8	12.4	5.38	* 3.47	5.61	.97	3.66	11.0	.61	1.83	* 2.79	5.63
20	24.9	12.3	5.53	10.5	3.62	1.59	1.89	* 48.9	1.35	1.79	3.19	5.03
21	24.7	11.4	4.93	11.7	3.22	* 1.96	12.0	15.2	1.00	1.56	4.39	4.96
22	24.7	10.6	4.21	13.7	* 3.11	1.72	6.82	12.3	22.1	1.51	5.43	5.26
23	24.4	9.97	3.90	8.61	3.28	1.35	3.28	5.67	2.09	1.47	4.78	5.57
24	23.6	8.86	3.39	8.12	2.57	1.30	2.41	5.02	.85	1.70	4.23	5.96
25	* 22.7	8.04	2.67	7.14	2.13	1.02	2.19	4.67	.59	1.75	3.97	6.16
26	22.6	7.62	2.56	6.18	1.94	.81	2.06	4.45	.64	1.68	4.17	6.21
27	23.2	7.42	3.67	5.17	2.01	.62	1.94	7.82	1.08	1.73	3.99	6.06
28	22.7	7.42	4.31	4.14	1.80	1.14	39.6	4.24	1.11	1.74	4.68	5.79
29	22.6		3.95	3.39	1.65	.72	20.5	4.13	1.05	1.93	4.27	5.33
30	22.5		3.54	3.21	1.58	.56	8.14	6.52	1.16	2.42	4.59	5.38
31	22.4		3.41		1.38		13.2	4.24		2.91		4.98
Sum	714.1	448.53	161.86	133.66	154.79	45.13	183.05	260.74	68.66	47.74	95.17	146.71

Current Year 2001						Period 1968-2001			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters			
	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.535	1.470	20	25.1	! 1	21.0	23.0	61,698	56,251	306,158	17,634
Feb.	1.505	1.235	15	23.6	28	7.09	16.0	38,753	47,403	239,000	9,551
Mar.	1.245	1.030	1	7.59	25	2.24	5.22	13,985	53,416	261,098	7,484
April	1.515	.995	20	28.3	!16	2.03	4.46	11,548	48,346	183,591	4,154
May	1.765	.955	12	51.4	31	1.32	4.99	13,374	65,670	228,534	3,230
June	1.660	.845	8	41.2	3	.41	1.50	3,899	88,946	442,109	3,899
July	2.320	.865	28	117	1	.54	5.90	15,816	105,306	355,631	15,373
Aug.	2.275	1.070	18	86.9	18	.82	8.41	22,528	158,659	818,986	20,992
Sept.	2.205	.865	22	98.3	18	.48	2.29	5,932	108,821	1,217,635	5,619
Oct.	1.050	.915	31	3.10	8	.98	1.54	4,125	164,408	927,275	4,125
Nov.	1.185	.985	22	7.63	10	1.87	3.17	8,223	60,533	183,566	8,223
Dec.	1.180	1.045	25	6.45	! 8	2.85	4.73	12,676	46,488	220,460	12,676
Yearly	2.320	0.845		117		0.41	6.74	212,557	1,004,247	3,058,852	212,557

* Discharge measurement(s) made on this day ! And other days ** Period 1968-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Val Verde County, Texas. The zero of the gage is 352.71 meters above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on 30 current-meter measurements during the year, 24 by the United States Section and 6 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 2001.
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 Amistad Dam office.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 4,190 CMS on November 5, 1978 with a gage height of 11.63 meters. Min. 2.54 CMS on October 12, 2000.

Average Flow in Cubic Meters per Second**

Daily:	Max.	2,310	Sept. 20, 1974	Min.	2.66	October 11,	2000
Monthly:	Max.	443	Sept. 1991	Min.	6.00	May	2000
Yearly:	Max.	110	1991	Min.	12.9		2001

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.0	27.6	15.2	9.85	10.3	7.45	6.36	19.6	12.5	6.33	7.56	10.4
2	26.1	27.4	15.0	* 10.1	9.64	8.99	* 6.53	14.2	18.0	6.14	7.66	10.4
3	26.6	27.4	14.9	9.86	9.46	7.22	5.44	12.5	15.4	* 6.45	7.70	* 10.1
4	27.1	27.3	14.6	9.76	12.1	* 7.21	4.98	16.2	* 13.2	6.98	7.80	9.76
5	27.5	* 26.7	* 14.7	9.67	8.93	12.4	5.19	17.2	12.8	7.83	8.37	10.1
6	27.4	26.6	14.1	9.51	9.04	9.39	5.16	* 13.1	11.7	16.7	* 8.57	10.0
7	27.3	26.9	13.8	9.42	* 9.45	8.11	5.17	11.4	10.6	7.48	8.88	* 9.80
8	* 27.2	26.8	13.8	9.33	10.2	7.43	5.19	10.6	9.74	8.15	8.54	9.52
9	26.3	26.7	13.8	9.33	9.54	6.78	5.08	9.37	8.90	9.98	8.45	9.55
10	25.7	26.2	13.9	9.30	9.14	8.28	5.48	8.41	8.32	8.80	8.43	9.18
11	26.2	25.9	13.6	9.10	9.41	7.29	9.72	7.73	8.01	7.84	8.44	8.76
12	26.9	25.7	15.1	9.06	10.8	8.41	9.28	7.11	7.95	7.43	8.50	8.84
13	27.1	26.0	13.0	8.95	12.5	9.40	9.71	6.79	7.87	7.24	8.80	8.62
14	28.4	26.6	13.2	9.04	13.7	8.34	11.8	6.46	7.72	6.43	8.70	8.88
15	28.7	27.3	12.7	9.21	16.5	* 7.55	13.5	7.35	7.38	* 6.20	69.6	9.39
16	29.7	27.6	12.1	* 8.97	16.6	6.83	* 11.3	7.05	7.09	6.30	14.1	9.54
17	30.5	28.0	11.8	8.43	12.7	6.30	9.89	* 6.64	* 6.96	6.26	11.4	* 9.30
18	30.5	26.4	12.4	8.22	13.6	* 6.20	8.89	12.5	6.77	6.14	10.1	9.02
19	30.7	22.6	* 12.2	12.7	11.5	6.06	8.00	12.5	7.26	6.16	* 9.65	9.28
20	30.3	* 21.3	12.0	* 14.0	12.7	6.94	7.22	* 33.7	6.50	6.70	10.3	9.29
21	29.7	19.9	11.8	10.3	* 12.9	9.40	6.60	33.6	6.71	6.98	8.93	9.02
22	* 29.5	19.5	11.7	8.98	11.8	7.77	9.07	51.1	8.16	7.07	8.97	9.38
23	29.5	19.7	11.5	8.88	10.5	6.74	9.38	32.4	6.50	7.23	9.26	9.90
24	29.4	18.8	11.5	12.4	9.49	6.03	8.33	27.4	6.23	6.97	9.16	9.88
25	29.3	17.8	11.2	15.0	8.56	5.86	10.2	23.0	14.1	7.08	9.32	9.86
26	29.0	17.0	10.5	13.0	8.30	7.33	9.95	15.9	14.0	* 6.95	10.1	9.97
27	28.3	16.6	10.2	12.0	8.24	6.86	* 8.52	13.1	10.6	6.91	10.0	10.3
28	27.7	15.7	10.1	11.6	8.39	6.48	7.70	11.3	8.56	6.92	10.0	10.6
29	27.9		9.87	11.2	7.92	6.28	7.06	13.9	7.69	6.87	10.0	11.0
30	27.6		9.37	10.6	7.63	6.34	6.42	16.3	6.95	7.04	9.89	11.1
31	27.3		9.49		7.58		17.7	13.9		7.37		11.0
Sum	871.4	672.0	389.13	307.77	329.12	225.67	254.82	492.31	284.17	228.93	337.18	301.74

	Current Year 2001						Period 1968-2001			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters			
Month	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.725	0.680	19	31.1	10	25.4	28.1	75,289	74,929	259,502	34,197
Feb.	.700	.580	17	28.3	28	15.3	24.0	58,061	66,909	289,215	26,895
Mar.	.600	.515	12	17.1	30	9.19	12.6	33,621	74,136	277,246	24,409
April	.625	.495	19	19.9	!16	8.22	10.3	26,591	70,062	192,692	17,728
May	.775	.475	14	39.3	31	7.16	10.6	28,436	91,415	289,647	16,069
June	.555	.450	5	13.8	!24	5.52	7.52	19,498	119,262	477,792	19,498
July	.700	.440	31	29.8	4	4.72	8.22	22,016	127,259	435,732	22,016
Aug.	.955	.465	22	78.8	14	6.11	15.9	42,536	183,459	929,405	23,366
Sept.	.630	.455	2	21.3	24	5.91	9.47	24,552	229,878	1,147,133	22,748
Oct.	.755	.455	6	38.2	2	5.81	7.38	19,780	210,209	1,112,382	19,780
Nov.	1.140	.470	15	131	! 1	6.73	11.2	29,132	93,284	441,434	29,132
Dec.	.530	.495	!29	11.2	13	8.36	9.73	26,070	67,216	217,549	26,070
Yearly	1.140	0.440		131		4.72	12.9	405,582	1,408,018	3,465,652	405,582

* Discharge measurement(s) made on this day ! And other days ** Period 1968-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Val Verde County, Texas. The zero of the gage is 345.36 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 31 current-meter measurements during the year, 25 by the United States Section and 6 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 2001. 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. 1.14 CMS on August 4, 1998 with a gage height of 0.425 meters.

Average Flow in Cubic Meters per Second

Daily:	Max.	4,330	Sept. 20 , 1974	Min.	1.19	August 4, 1998
Monthly:	Max.	382	Sept. 1974	Min.	1.53	July 1998
Yearly:	Max.	42.5	1974	Min.	3.27	1999

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.94	5.30	4.65	4.18	3.27	2.39	1.77	1.43	2.28	* 2.11	2.31	7.25
2	5.92	5.11	4.68	* 4.13	3.27	2.52	* 2.26	1.41	2.40	2.13	2.36	6.99
3	5.86	5.11	4.71	4.10	3.10	2.53	2.62	1.40	2.35	2.08	2.43	* 6.76
4	5.78	5.13	4.72	4.09	3.24	* 2.31	2.27	1.38	2.59	2.05	2.41	6.51
5	5.69	* 5.14	* 4.72	4.07	8.25	2.22	2.09	1.37	* 4.67	2.16	* 2.39	6.29
6	5.59	5.14	4.72	4.10	4.44	2.21	2.02	* 1.34	3.55	2.51	2.24	5.99
7	5.64	5.17	4.71	4.10	* 3.92	2.22	1.95	1.31	3.33	2.32	2.06	* 5.72
8	* 5.59	5.14	4.68	4.10	3.75	2.20	1.93	1.30	3.11	2.53	1.92	5.53
9	5.41	5.14	4.68	4.01	3.52	2.19	1.90	1.31	3.15	2.51	1.81	5.36
10	5.67	5.17	4.68	3.77	3.20	2.17	1.92	1.34	2.98	2.55	1.64	5.24
11	5.81	4.90	4.68	3.77	2.99	2.12	1.92	1.37	2.97	2.64	1.57	5.12
12	5.60	4.84	4.67	3.77	3.00	2.05	1.86	1.38	2.77	2.61	1.48	5.13
13	5.56	4.84	4.65	3.80	3.01	1.99	1.81	1.43	2.66	2.48	1.36	5.08
14	5.46	4.84	4.65	3.78	3.02	2.07	1.79	1.40	2.46	2.42	1.40	4.98
15	5.35	4.94	4.65	3.77	3.02	* 2.07	1.76	1.39	2.46	* 2.35	6.10	4.94
16	5.25	5.25	4.65	* 3.77	3.03	2.17	* 1.69	1.38	2.29	2.28	* 33.6	4.97
17	5.37	4.94	4.62	4.17	3.04	2.00	1.69	* 1.61	* 2.18	2.22	12.9	* 4.94
18	5.36	4.84	4.62	3.98	2.80	* 1.97	1.68	1.72	2.12	2.30	14.2	4.88
19	5.45	4.88	* 4.47	3.52	2.80	1.87	1.67	1.80	2.09	2.35	* 29.4	4.89
20	5.39	* 4.88	4.19	* 3.49	2.81	1.79	1.65	* 1.80	2.03	2.35	20.8	4.87
21	5.36	4.88	4.06	3.49	* 2.82	1.79	1.63	1.83	1.96	2.34	14.3	4.78
22	* 5.34	4.89	3.96	3.51	2.74	1.81	1.60	1.81	1.94	2.29	11.5	4.74
23	5.23	4.92	3.93	3.57	2.62	1.92	1.58	1.82	1.93	2.27	10.2	4.76
24	5.04	4.94	3.99	3.52	2.63	2.08	1.57	1.73	2.06	2.32	9.86	4.70
25	5.04	4.94	4.02	3.38	2.58	1.76	1.55	1.66	2.00	2.26	8.98	4.66
26	5.04	4.82	3.97	3.24	2.52	1.70	1.53	2.29	2.01	* 2.21	8.27	4.62
27	5.04	4.65	4.17	3.24	2.48	1.60	* 1.52	8.75	2.06	2.17	7.85	4.64
28	5.06	4.66	4.34	3.24	2.37	1.51	1.51	2.41	2.10	2.17	7.72	4.65
29	5.22		4.38	3.24	2.31	1.48	1.49	2.11	2.07	2.19	7.70	4.64
30	5.42		4.34	3.24	2.36	1.48	1.48	2.24	2.06	2.27	7.52	4.61
31	5.44		4.30		2.38		1.46	2.23		2.30		4.55
Sum	168.92	139.40	138.26	112.14	97.29	60.19	55.17	57.75	74.63	71.74	238.28	162.79

Current Year 2001							Period 1967-2001		
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Day	Extreme-Cubic Meters per Second Low	Day	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.615	0.585	! 1	6.00	!23	5.04	5.45	14,595	14,750	36,067	8,714
Feb.	.600	.570	!15	5.55	26	4.62	4.98	12,044	13,625	31,348	7,452
Mar.	.575	.550	5	4.81	23	3.86	4.46	11,946	13,712	27,290	8,331
April	.605	.525	17	5.68	26	3.22	3.74	9,689	15,068	64,098	7,956
May	.760	.490	5	13.7	!29	2.27	3.14	8,406	18,559	56,812	5,182
June	.500	.455	3	2.63	29	1.40	2.01	5,200	16,871	56,469	5,200
July	.500	.450	3	2.80	!30	1.46	1.78	4,767	18,079	94,844	4,767
Aug.	.845	.435	27	23.6	! 7	1.24	1.86	4,990	20,676	199,892	4,990
Sept.	.580	.465	5	5.04	!22	1.88	2.49	6,448	48,097	992,293	5,550
Oct.	.505	.470	6	2.85	4	1.98	2.31	6,198	24,311	140,507	6,198
Nov.	1.015	.425	16	50.3	13	1.24	7.94	20,587	17,608	73,681	6,979
Dec.	.655	.570	1	7.35	31	4.46	5.25	14,065	15,491	46,697	8,187
Yearly	1.015	0.425		50.3		1.24	3.77	118,935	236,847	1,341,805	103,647

* Discharge measurement(s) 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 2001.

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 2001

Month and Day				
May 4	2.72			
5	2.53			

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
May	4	0.975	58.6	454
Yearly		0.975	58.6	454

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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", longitude 101 00'00", 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 29 current-meter measurements during the year, 24 by the United States Section and 5 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 2001. 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11.0	10.5	9.27	9.27	8.43	7.67	6.61	6.07	5.39	5.44	5.15	7.69
2	11.1	10.4	9.85	* 9.21	8.35	7.59	* 7.19	6.08	5.36	5.45	5.16	7.74
3	10.9	10.1	10.0	8.99	8.25	7.55	7.52	6.11	5.64	* 5.40	5.14	* 7.70
4	10.9	10.1	9.95	8.96	25.7	* 7.27	6.97	6.05	* 6.83	5.45	5.18	7.57
5	10.8	* 10.1	* 9.71	8.94	45.1	7.23	6.71	5.92	5.93	5.47	* 5.14	7.56
6	10.8	10.2	9.50	8.82	15.1	7.23	6.59	* 5.88	5.67	5.73	5.03	7.50
7	10.7	10.2	9.53	8.72	* 12.2	7.21	6.48	5.70	5.53	5.39	4.88	7.54
8	* 10.5	10.3	9.47	8.62	11.1	7.13	6.39	5.66	5.50	5.35	4.84	7.24
9	10.5	10.1	9.45	8.57	10.4	7.04	6.28	5.62	10.9	5.54	4.66	7.22
10	11.2	10.1	9.42	8.51	9.82	7.12	6.22	* 5.64	11.0	5.37	4.64	7.23
11	11.1	10.4	9.57	8.22	9.36	7.03	6.22	5.59	7.44	5.39	4.58	7.28
12	10.7	10.5	10.2	8.31	13.1	7.03	6.23	5.59	6.75	5.31	4.53	7.15
13	10.9	10.5	9.45	8.23	9.99	7.04	6.22	5.57	6.36	5.31	4.42	7.06
14	10.7	10.5	9.46	8.34	9.42	7.04	6.18	5.58	6.13	5.27	5.05	7.06
15	10.6	10.7	9.11	8.30	9.25	6.99	6.05	5.47	5.88	* 5.27	203	7.09
16	10.7	* 16.6	9.10	* 8.03	9.15	6.92	* 6.03	5.46	5.77	5.17	107	7.03
17	10.7	8.73	9.09	7.82	9.14	7.05	6.02	5.54	* 5.66	5.19	16.2	* 6.91
18	10.7	8.38	9.47	8.11	* 8.84	* 7.09	6.01	5.57	5.63	5.27	11.0	6.89
19	10.9	8.31	* 9.56	8.07	8.65	7.04	6.02	5.56	5.51	5.24	* 9.89	6.85
20	10.7	8.42	9.34	8.35	8.51	6.94	6.01	5.62	5.37	5.28	9.07	6.88
21	10.5	8.43	9.22	8.46	* 8.06	6.98	6.00	* 5.41	5.27	5.21	8.63	6.83
22	* 10.5	8.57	9.21	8.58	7.90	* 6.98	5.99	5.37	5.24	5.16	8.35	6.87
23	10.5	8.76	9.31	11.8	7.92	7.25	6.01	5.33	5.27	5.23	* 8.24	6.83
24	10.5	8.70	9.21	9.01	7.90	6.96	6.08	5.30	5.25	5.12	7.98	6.64
25	10.5	8.61	9.18	8.53	7.90	6.79	6.09	5.30	5.24	4.99	7.73	6.51
26	10.6	8.67	9.26	8.47	7.79	6.76	6.12	5.38	5.27	5.08	7.71	6.56
27	10.6	9.12	9.44	* 8.57	7.72	6.70	6.16	5.55	5.32	5.11	7.60	6.49
28	10.6	9.11	9.53	8.58	7.66	6.56	6.16	5.32	5.35	5.06	7.74	6.58
29	10.9		9.47	8.54	7.64	6.57	6.17	5.36	5.37	5.07	7.82	6.36
30	10.6		9.32	8.40	7.79	6.60	6.12	5.44	5.40	5.07	7.81	6.35
31	10.5		9.32		7.77		6.09	5.45		5.06		6.38
Sum	332.4	275.11	292.97	259.33	335.91	211.36	194.94	173.49	181.23	163.45	504.17	217.59

	Current Year 2001						Period 1960-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
Month	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.695	0.660	10	11.8	!25	9.93	10.7	28,719	19,863	35,576	5,732
Feb.	.950	.660	16	33.2	18	8.21	9.83	23,770	18,386	52,636	4,933
Mar.	.685	.645	12	10.9	15	8.82	9.45	25,313	17,932	41,204	5,163
April	.750	.620	23	16.2	17	7.43	8.64	22,406	17,790	47,831	5,575
May	1.390	.615	4	237	!27	7.58	10.8	29,023	19,580	49,101	5,572
June	.620	.590	! 1	7.74	28	6.42	7.05	18,262	21,853	67,011	5,253
July	.630	.580	2	8.10	!22	5.89	6.29	16,843	26,467	230,071	4,976
Aug.	.585	.560	6	6.24	24	5.15	5.60	14,990	46,625	504,380	4,878
Sept.	.815	.560	9	22.9	25	5.07	6.04	15,658	49,229	621,065	6,167
Oct.	.575	.555	4	5.85	!14	4.88	5.27	14,122	35,379	272,093	6,172
Nov.	1.715	.555	15	554	13	4.30	16.8	43,560	23,518	105,909	5,590
Dec.	.625	.590	3	7.84	!29	6.33	7.02	18,800	20,612	38,316	5,794
Yearly	1.715	0.555		554		4.30	8.61	271,466	317,234	872,184	89,420

* Discharge measurement(s) 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 relocated 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 2001.
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. 2,280 CMS on August 23, 1998, with a gage height of 4.420 meters. Maximum volumes: Monthly, 30,502 TCM in August 1998; yearly, 30,502 TCM in 1998.

Average Flow in Cubic Meters per Second

Daily:	Max.	249	Aug. 23, 1998	Min.	
Monthly:	Max.	11.4	Aug. 1998	Min.	see REMARKS
Yearly:	Max.	0.97	1998	Min.	

Mean Daily Discharge in CMS 2001

Month and Day			
	No flow during 2001		

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Yearly				

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 relocated 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 2001.
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. 438 CMS on August 24, 1998, with a gage height of 2.870 meters. Maximum volumes: Monthly, 11,697 TCM in August 1998; yearly, 11,697 TCM in 1998.

Average Flow in Cubic Meters per Second

Daily:		81.9	Aug. 24, 1998	Min.	
Monthly:		4.37	Aug. 1998	Min.	see REMARKS
Yearly:		0.37	1998	Min.	

Mean Daily Discharge in CMS 2001

Month and Day			
	No flow during 2001		

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Yearly				

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 relocated 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 2001.
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. 253 CMS on August 23 & 24, 1998, with a gage height of 3.750 meters. Maximum volumes: Monthly, 10,670 TCM in August 1998; yearly,10,670 TCM in 1998.

Average Flow in Cubic Meters per Second

Daily:	Max.	67.1	Aug. 23, 1998	Min.	
Monthly:	Max.	3.98	Aug. 1998	Min.	see REMARKS
Yearly:	Max.	0.34	1998	Min.	

Mean Daily Discharge in CMS 2001

Month and Day			
Sept. 04 0.31	Nov. 15 1.71		

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Sept.	4	0.510	3.77	26.8
Nov.	15	0.640	11.5	148
Yearly		0.640	11.5	175

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 relocated 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 2001.
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. 1,560 CMS on August 23, 1998, with a gage height of 3.425 meters. Maximum volumes: Monthly, 18,121 TCM in August 1998; yearly, 18,121 TCM in 1998.

Average Flow in Cubic Meters per Second

Daily:	Max.	96.8	Aug. 23, 1998	Min.	
Monthly:	Max.	6.77	Aug. 1998	Min.	see REMARKS
Yearly:	Max.	0.57	1998	Min.	

Mean Daily Discharge in CMS 2001

Month and Day
No Flow during 2001

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Yearly				

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 relocated 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 2001.
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. 714 CMS on August 23, 1998, with a gage height of 2.180 meters. Maximum volumes: Monthly, 23,342 TCM in August 1998; yearly, 23,342 TCM in 1998.

Average Flow in Cubic Meters per Second

Daily:	212	Aug. 23, 1998	Min.	
Monthly:	8.71	Aug. 1998	Min.	see REMARKS
Yearly:	0.74	1998	Min.	

Mean Daily Discharge in CMS 2001

Month and Day			
	No flow during 2001		

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Yearly				

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4508.05 CARMINA SPRINGS NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 2.00 CMS capacity and staff gage located on a creek about 40 meters upstream from its confluence with the Rio Grande, at latitude 29 26'37", longitude 101 03'27", 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 a continuous record of gage heights and the weir rating table. Records available: 1969 through 2001.
REMARKS: At least 104 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.80	0.87	0.87	0.90	0.87	0.80	0.75	0.66	0.58	0.58	0.54	0.60
2	.80	.86	.87	.90	.87	.80	.75	.66	.58	.58	.55	.60
3	.80	.86	.90	.90	.86	.80	.74	.65	.58	.58	.55	.60
4	.80	.86	.88	.90	.87	.80	.73	.64	.58	.58	.55	.60
5	.80	.86	.88	.90	.90	.80	.73	.63	.57	.58	.56	.60
6	.80	.85	.90	.90	.90	.80	.73	.62	.56	.58	.56	.60
7	.80	.85	.90	.90	.88	.80	.73	.62	.56	.58	.56	.62
8	.80	.85	.90	.90	.87	.80	.73	.62	.56	.56	.56	.62
9	.80	.86	.90	.90	.86	.80	.73	.62	.56	.56	.56	.62
10	.80	.86	.90	.88	.86	.80	.73	.60	.56	.56	.56	.62
11	.80	.86	.90	.88	.85	.80	.73	.60	.56	.56	.56	.62
12	.80	.86	.90	.90	.85	.80	.72	.60	.56	.56	.56	.62
13	.80	.87	.90	.90	.84	.80	.71	.60	.55	.56	.56	.60
14	.80	.87	.90	.90	.82	.80	.71	.60	.54	.56	.56	.60
15	.80	.87	.87	.90	.82	.80	.71	.62	.54	.56	.56	.60
16	.80	.87	.87	.90	.81	.80	.70	.64	.54	.56	.56	.59
17	.83	.87	.87	.90	.81	.79	.69	.62	.54	.56	.58	.58
18	.87	.87	.87	.90	.81	.77	.69	.62	.54	.56	.58	.58
19	.87	.87	.87	.90	.82	.75	.69	.62	.54	.56	.58	.58
20	.87	.87	.87	.90	.82	.75	.69	.62	.54	.56	.58	.58
21	.87	.87	.87	.90	.81	.75	.71	.60	.54	.56	.58	.60
22	.87	.88	.87	.90	.82	.75	.71	.60	.54	.56	.58	.60
23	.87	.90	.87	.90	.82	.74	.71	.60	.54	.56	.58	.60
24	.87	.87	.87	.90	.81	.73	.70	.59	.56	.56	.58	.61
25	.87	.87	.87	.88	.81	.73	.72	.58	.56	.55	.58	.62
26	.87	.87	.90	.88	.81	.73	.72	.58	.58	.54	.58	.62
27	.87	.87	.90	.87	.81	.73	.71	.58	.58	.54	.58	.62
28	.87	.87	.90	.87	.81	.73	.71	.58	.58	.54	.58	.62
29	.87		.90	.87	.81	.75	.70	.58	.58	.54	.58	.62
30	.87		.90	.87	.80	.75	.69	.58	.58	.54	.60	.60
31	.87		.90		.80		.69	.58		.54		.60
Sum	25.81	24.26	27.47	26.80	25.90	23.25	22.16	18.91	16.78	17.37	17.05	18.74

Current Year 2001						Period 1969-2001			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
Month	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.265	0.250	18	0.87	! 1	0.80	0.83	2,230	3,411	5,155	449
Feb.	.270	.220	22	.90	! 7	.85	.87	2,096	3,095	4,603	460
Mar.	.270	.265	! 3	.90	! 2	.87	.89	2,373	3,380	5,046	648
April	.270	.265	! 1	.90	!27	.87	.89	2,316	3,191	4,512	776
May	.270	.250	! 5	.90	!16	.80	.84	2,238	3,178	4,604	874
June	.250	.235	! 1	.80	!23	.73	.78	2,009	3,021	4,411	738
July	.240	.225	! 1	.75	!16	.69	.71	1,915	3,089	4,553	658
Aug.	.220	.200	! 1	.66	!25	.58	.61	1,634	3,139	4,460	666
Sept.	.200	.190	! 1	.58	!14	.54	.56	1,450	3,118	4,199	731
Oct.	.200	.190	! 1	.58	!25	.54	.56	1,501	3,387	4,750	1,024
Nov.	.205	.190	30	.60	1	.54	.57	1,473	3,307	4,701	1,189
Dec.	.210	.200	! 7	.62	!16	.58	.60	1,619	3,450	5,019	1,329
Yearly	0.270	0.190		0.90		0.54	0.72	22,854	38,766	53,373	11,201

! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 2001.
REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted.

	Current Year 2001							Period 1969-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters			
Month	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.	0.085	0.085	! 1	0.04	! 1	0.04	0.04	107	145	199	107
Feb.	.085	.085	! 1	.04	! 1	.04	.04	96.8	132	228	96.8
Mar.	.085	.085	! 1	.04	! 1	.04	.04	107	146	258	107
April	.085	.080	! 1	.04	! 1	.04	.04	104	141	171	95.0
May	.080	.080	! 1	.04	! 1	.04	.04	107	142	176	80.4
June	.085	.080	! 1	.04	! 1	.04	.04	104	137	181	77.8
July	.085	.080	! 1	.04	! 1	.04	.04	107	140	187	55.3
Aug.	.080	.075	! 1	.04	! 1	.04	.04	107	142	187	53.6
Sept.	.075	.075	! 1	.04	! 1	.04	.04	104	137	181	36.3
Oct.	.075	.075	! 1	.04	! 1	.04	.04	107	142	187	26.8
Nov.	.075	.075	! 1	.04	! 1	.04	.04	104	137	181	20.7
Dec.	.075	.075	! 1	.04	! 1	.04	.04	107	139	187	0
Yearly	0.085	0.075		0.04		0.04	0.04	1,262	1,680	2,085	793

@ Mean daily ! 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 up stream from its confluence with the Rio Grande, at latitude 29`26'20 ", longitude 101`03'35", and about 17.7 kilometer northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 922, 19.0 kilometer 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 2001.
REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted.

	Current Year 2001							Period 1969-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters			
Month	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.	0.030	0.030	! 1	0.01	! 1	0.01	0.01	26.8	173	321	26.8
Feb.	.035	.030	!21	.02	! 1	.01	.01	31.1	155	290	31.1
Mar.	.035	.030	! 1	.02	!22	.01	.02	44.9	165	297	44.9
April	.030	.030	! 1	.01	! 1	.01	.01	25.9	155	278	25.9
May	.030	.030	! 1	.01	! 1	.01	.01	26.8	155	268	26.8
June	.030	.030	! 1	.01	! 1	.01	.01	25.9	146	259	25.9
July	.030	.025	! 1	.01	! 1	.01	.01	26.8	147	285	26.8
Aug.	.025	.025	! 1	.01	! 1	.01	.01	26.8	145	295	26.8
Sept.	.030	.025	! 1	.01	! 1	.01	.01	25.9	144	289	25.9
Oct.	.030	.025	! 1	.01	! 1	.01	.01	26.8	160	299	26.8
Nov.	.025	.025	! 1	.01	! 1	.01	.01	25.9	159	311	25.9
Dec.	.025	.025	! 1	.01	! 1	.01	.01	26.8	167	321	26.8
Yearly	0.035	0.025		0.02		0.01	0.01	341	1,871	3,345	341

@ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, 3.4 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 22 current-meter measurements during the year, 10 by the Mexican Section and 12 by the U.S. Section, 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 2001. 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 2001 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, 3.4 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.	1.19	August 26, 1998
Monthly:	Max.	609	Sept. 1974	Min.	1.72	October 1971
Yearly:	Max.	140	1974	Min.	16.3	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20.3	29.9	32.7	70.0	73.9	77.2	47.2	103	61.4	18.0	19.3	19.3
2	21.3	30.8	32.9	70.2	73.5	74.2	49.4	101	62.1	18.0	19.3	19.3
3	22.1	31.5	31.5	74.3	73.1	76.5	46.7	102	62.5	18.6	19.3	19.3
4	21.3	30.4	33.2	71.4	74.2	73.1	46.7	144	62.8	18.6	19.3	18.6
5	21.6	31.5	28.7	73.7	75.0	73.3	43.9	149	43.6	18.6	19.3	18.6
6	20.0	30.5	30.4	73.6	77.6	72.8	46.7	145	45.0	18.6	19.3	18.6
7	21.8	31.4	30.3	73.5	76.6	73.6	46.1	143	46.0	18.6	19.3	18.0
8	21.2	32.1	30.2	72.6	74.4	75.5	47.6	145	30.7	18.0	19.3	18.0
9	21.1	30.2	31.1	71.6	74.9	74.0	45.2	144	31.4	18.6	19.3	18.0
10	21.6	30.9	32.4	70.4	79.5	75.8	45.6	144	30.8	* 18.6	19.3	18.0
11	21.2	30.0	31.0	73.0	73.6	73.5	45.0	126	16.7	* 18.6	19.3	18.0
12	21.0	30.1	31.7	72.7	77.7	72.5	45.5	104	20.0	18.6	19.3	18.0
13	22.3	30.5	30.1	38.8	75.8	* 71.1	43.6	103	* 20.0	18.6	18.6	18.0
14	21.9	* 31.0	* 29.8	44.7	75.3	71.6	46.5	103	20.0	18.6	* 18.6	18.0
15	21.9	31.4	* 29.7	44.7	76.6	73.2	49.0	97.9	15.5	18.6	18.6	18.0
16	22.5	30.4	30.8	78.9	73.7	71.6	46.2	103 *	11.0	18.6	18.6	18.0
17	20.4	30.9	29.6	73.0	73.2	73.3	45.4	98.2	11.6	18.6	18.3	18.0
18	* 21.2	30.5	29.6	* 71.1	75.2	70.5	45.1	99.2	11.6	18.6	18.3	18.0
19	20.2	31.8	29.5	71.9	74.3	71.2	* 44.3	99.8	14.4	18.6	18.3	18.0
20	21.0	30.7	29.0	72.2	74.5	71.4	43.7	97.4	18.0	18.6	18.3	* 18.0
21	20.7	33.5	31.6	73.0	71.6	70.8	45.3	99.4	18.0	18.6	18.3	18.0
22	21.7	31.1	32.4	73.9	73.6	* 72.0	43.8	101	18.0	18.6	18.3	18.6
23	20.9	32.0	32.0	73.7	* 73.9	72.4	45.2	100	18.0	19.3	18.3	18.6
24	22.2	30.5	31.2	* 73.8	74.9	72.2	46.0	101	18.0	18.6	18.3	18.6
25	21.2	33.0	30.8	74.7	76.7	58.4	45.6	101	18.0	18.6	18.3	18.6
26	21.6	31.5	31.3	75.7	76.7	44.2	45.5	97.3	18.0	18.6	18.6	18.6
27	20.7	32.7	32.3	74.6	74.8	46.4	50.1	102	18.0	18.6	18.6	18.6
28	21.2	32.7	* 31.7	74.3	77.4	46.4	46.6	99.3	18.0	18.6	18.6	18.6
29	21.6		31.5	75.3	76.3	47.5	99.3	101 *	18.0	18.6	19.3	18.6
30	21.6		32.5	74.5	74.4	49.6	102	103	18.0	18.6	* 19.3	18.6
31	* 28.5		30.7		75.9		103	63.8		19.3		18.6
Sum	667.8	873.5	962.2	2,105.8	2,328.8	2,045.8	1,591.8	3,420.3	815.1	575.6	565.1	569.7

	Current Year 2001					Period 1968-2001			
	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters			
Month	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.470	0.080	13	51.0	1	1.45	21.5	57,698	109,232	258,803	6,560
Feb.	.635	.090	21	91.2	9	1.83	31.2	75,470	143,978	576,288	15,378
Mar.	.480	.095	21	53.0	9	1.96	31.0	83,134	177,614	530,496	8,969
April	.940	.100	12	194	10	2.04	70.2	181,941	198,841	511,229	34,007
May	.845	.105	26	156	!21	2.47	75.1	201,208	270,627	665,712	29,773
June	.845	.110	7	156	6	2.75	68.2	176,757	202,583	495,331	20,251
July	.980	.135	30	123	!22	3.59	51.4	137,536	167,348	452,036	28,595
Aug.	1.010	.120	16	222	!24	3.70	110	295,514	184,314	816,834	19,229
Sept.	.700	.110	3	109	5	2.75	27.2	70,425	211,991	1,578,960	14,565
Oct.	.290	.270	23	20.7	! 1	18.0	18.6	49,732	193,090	1,002,326	4,606
Nov.	.280	.270	! 1	19.3	!14	18.0	18.8	48,825	113,472	619,574	5,599
Dec.	.280	.270	! 1	19.3	! 7	18.0	18.4	49,222	99,484	266,786	5,994
Yearly	1.010	0.080		222		1.45	45.3	1,427,462	2,072,574	4,398,694	514,104

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- 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", longitude 101 02'40", 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 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.01	0.01	0.01	0.01	0.01	0	0	0	0	0	0	0
2	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
3	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
4	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
5	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
6	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
7	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
8	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
9	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
10	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
11	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
12	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
13	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
14	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
15	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
16	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
17	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
18	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
19	.01	.01	.01	.01	.01	0	0	0	0	0	0	0
20	.01	.01	.01	.01	0	0	0	0	0	0	0	0
21	.01	.01	.01	.01	0	0	0	0	0	0	0	0
22	.01	.01	.01	.01	0	0	0	0	0	0	0	0
23	.01	.01	.01	.01	0	0	0	0	0	0	0	0
24	.01	.01	.01	.01	0	0	0	0	0	0	0	0
25	.01	.01	.01	.01	0	0	0	0	0	0	0	0
26	.01	.01	.01	.01	0	0	0	0	0	0	0	0
27	.01	.01	.01	.01	0	0	0	0	0	0	0	0
28	.01	.01	.01	.01	0	0	0	0	0	0	0	0
29	.01		.01	.01	0	0	0	0	0	0	0	0
30	.01		.01	.01	0	0	0	0	0	0	0	0
31	.01		.01		0		0	0		0		0
Sum	0.31	0.28	0.31	0.30	0.19	0	0	0	0	0	0	0

Current Year 2001							Period 1969-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
			@ High		@ Low				
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.	0.030	0.030	! 1	0.01	! 1	0.01	0.01	26.8	76.6	162	26.0
Feb.	.030	.030	! 1	.01	! 1	.01	.01	24.2	69.6	152	24.0
Mar.	.030	.030	! 1	.01	! 1	.01	.01	26.8	68.7	150	26.8
April	.030	.030	! 1	.01	! 1	.01	.01	25.9	65.0	130	25.9
May	.030	.025	! 1	.01	!20	0	.01	16.4	67.8	139	16.0
June	.025	.020	! 1	.01	! 1	0	0	0	58.4	149	0
July	.020	.020	! 1	0	! 1	0	0	0	58.9	131	0
Aug.	.025	.020	! 1	0	! 1	0	0	0	59.5	150	0
Sept.	.025	.025	! 1	0	! 1	0	0	0	63.7	204	0
Oct.	.020	.020	! 1	0	! 1	0	0	0	75.2	402	0
Nov.	.020	.020	! 1	0	! 1	0	0	0	71.3	249	0
Dec.	.020	.020	! 1	0	! 1	0	0	0	70.6	162	0
Yearly	0.030	0.020		0.01		0	0	120	805	1,680	120

@ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4509.05 ARROYO DE LOS JABONCILLOS NEAR CD. ACUNA, COAHUILA

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 during the year. Mean daily discharge determined by prorating between readings. Records available: 1969 through 2001.
REMARKS: At least 70 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.50	0.55	0.58	0.58	0.47	0.41	0.36	0.30	0.29	0.26	0.26	0.27
2	.51	.55	.58	.58	.46	.41	.36	.30	.29	.26	.26	.27
3	.51	.55	.58	.58	.46	.41	.36	.29	.29	.26	.26	.27
4	.51	.55	.57	.58	.46	.41	.36	.29	.28	.26	.27	.27
5	.51	.55	.57	.57	.46	.40	.36	.29	.28	.26	.27	.27
6	.52	.55	.57	.56	.47	.40	.36	.29	.28	.26	.27	.27
7	.52	.55	.57	.55	.47	.40	.36	.28	.28	.26	.27	.28
8	.52	.55	.58	.54	.47	.39	.36	.28	.28	.26	.27	.28
9	.52	.56	.58	.53	.47	.39	.36	.28	.28	.26	.27	.29
10	.52	.56	.59	.52	.47	.39	.36	.28	.28	.26	.27	.29
11	.53	.56	.59	.51	.47	.39	.36	.28	.28	.26	.27	.30
12	.53	.56	.60	.51	.47	.38	.36	.27	.28	.26	.27	.30
13	.53	.57	.60	.51	.46	.38	.36	.27	.28	.26	.27	.30
14	.53	.57	.61	.51	.46	.38	.36	.27	.27	.25	.27	.29
15	.54	.57	.61	.51	.46	.37	.36	.27	.26	.25	.27	.29
16	.54	.57	.60	.51	.46	.37	.36	.28	.26	.25	.26	.29
17	.54	.57	.60	.51	.46	.37	.36	.28	.26	.25	.26	.29
18	.54	.58	.60	.51	.45	.37	.36	.28	.25	.25	.26	.28
19	.54	.58	.59	.51	.45	.36	.35	.28	.25	.25	.26	.28
20	.54	.58	.59	.51	.45	.36	.35	.28	.25	.25	.25	.28
21	.54	.58	.58	.51	.45	.36	.34	.28	.25	.25	.25	.28
22	.54	.58	.58	.50	.44	.36	.33	.28	.25	.25	.25	.28
23	.54	.58	.58	.50	.44	.36	.32	.28	.25	.25	.26	.27
24	.54	.58	.58	.50	.44	.36	.32	.28	.25	.25	.26	.27
25	.54	.58	.58	.50	.43	.36	.31	.28	.25	.25	.26	.27
26	.54	.58	.58	.49	.43	.36	.31	.29	.25	.25	.26	.27
27	.54	.58	.58	.49	.43	.36	.31	.29	.25	.25	.27	.27
28	.55	.58	.58	.48	.43	.36	.31	.29	.25	.26	.27	.27
29	.55		.58	.48	.42	.36	.30	.30	.25	.26	.27	.27
30	.55		.58	.47	.42	.36	.30	.30	.26	.26	.27	.28
31	.55		.58		.42		.30	.29		.26		.28
Sum	16.48	15.87	18.14	15.61	14.00	11.34	10.63	8.80	7.98	7.92	7.93	8.67

Current Year 2001					Period 1969-2001		
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High Day	Extreme-Cubic Meters per Second Low Day	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.280	0.260	31	0.55	! 1	0.50	0.53	1,424	3,685	5,822	431
Feb.	.290	.280	!21	.58	! 1	.55	.57	1,371	3,349	5,189	470
Mar.	.300	.285	!14	.61	! 7	.57	.59	1,567	3,627	5,642	649
April	.290	.250	! 1	.58	30	.47	.52	1,349	3,392	5,359	785
May	.250	.235	1	.47	!30	.42	.45	1,210	3,370	5,600	889
June	.230	.210	! 1	.41	!19	.36	.38	980	3,123	5,021	836
July	.210	.185	! 1	.36	!29	.30	.34	918	3,126	5,387	698
Aug.	.185	.175	! 1	.30	!29	.27	.28	760	3,087	5,330	760
Sept.	.180	.165	! 1	.29	!20	.25	.27	689	3,183	5,448	689
Oct.	.170	.165	! 1	.26	!17	.25	.26	684	3,507	6,428	684
Nov.	.175	.165	! 7	.27	!21	.25	.26	685	3,521	5,979	685
Dec.	.185	.175	!12	.30	! 1	.27	.28	749	3,664	5,808	749
Yearly	0.300	0.165		0.61		0.25	0.39	12,386	40,634	63,943	12,152

! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.03
2	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
3	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
4	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
5	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
6	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
7	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
8	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
9	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
10	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
11	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
12	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
13	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
14	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
15	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
16	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
17	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
18	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
19	.04	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03
20	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
21	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
22	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
23	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
24	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
25	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
26	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
27	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
28	.04	.04	.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
29	.04		.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
30	.04		.04	.04	.03	.03	.03	.03	.02	.02	.03	.03
31	.04		.04		.03		.03	.03		.02		.03
Sum	1.12	1.24	1.20	1.12	0.90	0.93	0.93	0.79	0.62	0.71	0.93	1.24

Current Year 2001						Period 1969-2001		
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	@ High	@ Low Day	@ Low	Average	Total Volume-Thousand Cubic Meters
Jan.	0.080	0.070	! 1	0.04	! 1	0.04	0.04	107
Feb.	.080	.080	! 1	.04	! 1	.04	.04	96.8
Mar.	.080	.080	! 1	.04	! 1	.04	.04	107
April	.080	.080	! 1	.04	! 1	.04	.04	104
May	.080	.070	! 1	.04	!20	.03	.04	96.8
June	.070	.070	! 1	.03	! 1	.03	.03	77.8
July	.070	.060	! 1	.03	! 1	.03	.03	80.4
Aug.	.060	.060	! 1	.03	! 1	.03	.03	80.4
Sept.	.060	.060	! 1	.03	!20	.02	.03	68.3
Oct.	.060	.050	! 1	.02	! 1	.02	.02	53.6
Nov.	.060	.050	!20	.03	! 1	.02	.02	61.3
Dec.	.060	.060	! 1	.03	! 1	.03	.03	80.4
Yearly	0.080	0.050		0.04		0.02	0.03	1,014

Period 1969-2001 Volume-Thousand Cubic Meters		
Average	Maximum	Minimum
172	241	83.8
156	213	84.7
168	227	80.1
163	220	78.0
167	229	80.1
158	223	77.8
159	213	54.0
161	241	54.0
159	233	52.1
166	241	53.6
162	233	61.3
169	241	80.1
1,960	2,650	892

@ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 upupstream 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 2001.

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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.18	0.18	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.18	0.18	0.18
2	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
3	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
4	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
5	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
6	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
7	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
8	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
9	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
10	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
11	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
12	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
13	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
14	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
15	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
16	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
17	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
18	.18	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18
19	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
20	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
21	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
22	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
23	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
24	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
25	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
26	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
27	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
28	.18	.18	.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
29	.18		.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
30	.18		.18	.17	.17	.17	.17	.17	.18	.18	.18	.18
31	.18		.18		.17		.17	.17		.18		.18
Sum	5.58	5.04	5.58	5.28	5.27	5.10	5.27	5.27	5.22	5.58	5.40	5.58

Current Year 2001					Period 1961-2001			
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	Extreme-Cubic Meters per Second @ High	Extreme-Cubic Meters per Second @ Low Day	Extreme-Cubic Meters per Second @ Low	Average	Total	Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.	0.210	0.210	! 1	0.18	! 1	0.18	0.18	482	439	651	8.4
Feb.	.210	.210	! 1	.18	! 1	.18	.18	435	403	624	6.7
Mar.	.210	.210	! 1	.18	! 1	.18	.18	482	438	725	11.5
April	.210	.205	! 1	.18	!19	.17	.18	456	453	937	7.8
May	.205	.205	! 1	.17	! 1	.17	.17	455	483	1,092	13.4
June	.205	.205	! 1	.17	! 1	.17	.17	441	431	664	7.8
July	.205	.205	! 1	.17	! 1	.17	.17	455	423	657	8.0
Aug.	.205	.205	! 1	.17	! 1	.17	.17	455	441	653	8.3
Sept.	.210	.205	!19	.18	! 1	.17	.17	451	452	648	8.1
Oct.	.210	.210	! 1	.18	! 1	.18	.18	482	475	671	8.0
Nov.	.215	.210	! 1	.18	! 1	.18	.18	467	440	638	7.8
Dec.	.215	.215	! 1	.18	! 1	.18	.18	482	445	664	8.0
Yearly	0.215	0.205		0.18		0.17	0.18	5,543	5,323	7,674	268

@ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 01'55", 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 2001.

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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.26	0.25	0.25	0.26	0.26	0.25	0.25	0.25	0.25	0.25	0.25	0.25
2	.26	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25
3	.26	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25
4	.26	.25	.26	.26	.26	.25	.25	.25	.25	.25	.25	.25
5	.26	.25	.26	.26	.26	.25	.25	.25	.25	.25	.25	.25
6	.26	.25	.26	.26	.26	.25	.25	.25	.25	.25	.25	.25
7	.26	.25	.26	.26	.26	.25	.25	.25	.25	.25	.25	.25
8	.26	.25	.26	.26	.26	.25	.25	.25	.25	.25	.25	.25
9	.26	.25	.26	.26	.26	.25	.25	.25	.26	.25	.25	.25
10	.26	.25	.26	.26	.26	.25	.25	.25	.26	.25	.25	.25
11	.26	.25	.26	.26	.26	.25	.25	.25	.26	.25	.25	.25
12	.26	.25	.26	.26	.26	.25	.25	.25	.26	.25	.25	.25
13	.26	.25	.26	.26	.26	.25	.25	.25	.26	.25	.25	.25
14	.25	.25	.26	.26	.26	.25	.25	.25	.26	.25	.25	.25
15	.25	.25	.26	.26	.26	.25	.25	.25	.26	.25	.25	.25
16	.25	.25	.26	.26	.26	.25	.25	.25	.26	.25	.25	.25
17	.25	.25	.26	.26	.26	.25	.25	.25	.25	.25	.25	.25
18	.25	.25	.26	.26	.26	.25	.25	.25	.25	.25	.25	.25
19	.25	.25	.26	.26	.26	.25	.25	.25	.25	.25	.25	.25
20	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
21	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
22	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
23	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
24	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
25	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
26	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
27	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
28	.25	.25	.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
29	.25		.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
30	.25		.26	.26	.25	.25	.25	.25	.25	.25	.25	.25
31	.25		.26		.25		.25	.25		.25		.25
Sum	7.88	7.00	8.03	7.80	7.94	7.50	7.75	7.75	7.58	7.75	7.50	7.75

Current Year 2001							Period 1961-2001		
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	Extreme-Cubic Meters per Second @ High	Extreme-Cubic Meters per Second @ Low Day	Extreme-Cubic Meters per Second @ Low	Average	Total	Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.	0.090	0.075	1	0.26	!17	0.25	0.25	681	693	1,152	5.4
Feb.	.080	.050	! 1	.25	! 1	.25	.25	605	621	1,136	5.0
Mar.	.085	.080	! 7	.26	! 1	.25	.26	694	682	1,179	7.0
April	.090	.085	!25	.26	! 1	.26	.26	674	684	1,217	10.4
May	.085	.080	! 1	.26	!20	.25	.26	686	741	1,624	10.7
June	.080	.075	! 1	.25	!27	.25	.25	648	718	1,719	7.4
July	.080	.080	! 1	.25	! 1	.25	.25	670	736	1,693	9.8
Aug.	.080	.065	! 1	.25	!29	.25	.25	670	751	1,524	7.6
Sept.	.090	.065	!12	.26	! 1	.25	.25	655	766	1,434	13.3
Oct.	.075	.065	1	.25	!17	.25	.25	670	825	1,752	13.4
Nov.	.070	.065	!14	.25	! 1	.25	.25	648	762	1,650	12.7
Dec.	.075	.070	!12	.25	! 1	.25	.25	670	717	1,464	10.7
Yearly	0.090	0.050		0.26		0.25	0.25	7,971	8,696	16,058	74.3

@ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Val Verde County, Texas. This stream enters the Rio Grande from the United States at river kilometer 916, 7.4 river kilometers downstream from Amistad Dam and 13.4 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 or observations of no flow during the year. Mean daily discharges determined by prorating between measurements. Records available: March 1961 through 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

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

Current Year 2001					Period 1961-2001		
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	Extreme-Cubic Meters per Second @ Low Day	Average	Total	Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.			! 1	! 1	0	0	124	363	0
Feb.			! 1	! 1	0	0	116	396	0
Mar.			! 1	! 1	0	0	121	386	0
April			! 1	! 1	0	0	111	313	0
May			! 1	! 1	0	0	112	412	0
June			! 1	! 1	0	0	96.0	264	0
July			! 1	! 1	0	0	96.0	481	0
Aug.			! 1	! 1	0	0	94.1	369	0
Sept.			! 1	! 1	0	0	93.5	296	0
Oct.			! 1	! 1	0	0	105	412	0
Nov.			! 1	! 1	0	0	106	396	0
Dec.			! 1	! 1	0	0	112	349	0
Yearly					0	0	1,287	3,567	0

* Discharge measurement(s) made on this day @ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4511.40 MCKEE SPRING NEAR DEL RIO, TEXAS

DESCRIPTION: This spring is located on the left floodplain 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 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.05	0.07	0.09	0.07	0.07	0.07	0.05	* 0.08	0.06	* 0.06	0.05	0.06
2	.05	.07	.09	.07	* .07	.07	.05	.08	.06	.06	.05	.06
3	.05	.07	.10	.07	.07	.07	.05	.08	.06	.06	.04	* .06
4	.05	.07	.10	* .07	.07	.07	.05	.08	.06	.06	.04	.06
5	.05	.07	.10	.07	.07	.07	.05	.08	* .06	.06	.04	.06
6	.05	.07	.10	.07	.07	* .07	* .05	.08	.06	.06	.04	.06
7	.05	* .07	* .10	.07	.07	.07	.05	.08	.06	.06	.04	.06
8	.05	.07	.10	.07	.07	.07	.05	.08	.06	.06	.04	.06
9	* .05	.07	.10	.07	.07	.07	.05	.08	.06	.06	.04	.06
10	.05	.07	.10	.07	.07	.07	.05	.07	.06	.06	.04	.06
11	.05	.07	.10	.07	.07	.07	.06	.07	.06	.06	.04	.06
12	.05	.08	.09	.07	.07	.07	.06	.07	.06	.05	.04	.06
13	.05	.08	.09	.07	.07	.07	.06	.07	.06	.05	.04	.06
14	.05	.08	.09	.07	.07	.06	.06	.07	.06	.05	.04	.06
15	.05	.08	.09	.07	.07	.06	.06	.07	.06	.05	* .04	.06
16	.05	.08	.09	.07	.07	.06	.06	.07	.06	.05	.04	.06
17	.06	.08	.09	.07	.07	.06	.06	.07	.06	.05	.04	.06
18	.06	.08	.09	.07	.07	.06	.06	.07	.06	.05	.04	.06
19	.06	.08	.09	.07	.07	.06	.07	.07	.06	.05	.04	.06
20	.06	.08	.09	.07	.07	.06	.07	.07	.06	.05	.05	.06
21	.06	.09	.08	.07	.07	.06	.07	.07	.06	.05	.05	.06
22	.06	.09	.08	.07	.07	.06	.07	.07	.06	.05	.05	.05
23	.06	.09	.08	.07	.07	.06	.07	.07	.06	.05	.05	.05
24	.06	.09	.08	.07	.07	.06	.07	.07	.06	.05	.05	.05
25	.06	.09	.08	.07	.07	.06	.07	.07	.06	.05	.05	.05
26	.06	.09	.08	.07	.07	.06	.07	.07	.06	.05	.05	.05
27	.06	.09	.08	.07	.07	.06	.07	.07	.06	.05	.05	.05
28	.06	.09	.08	.07	.07	.06	.08	.06	.06	.05	.05	.05
29	.06		.08	.07	.07	.05	.08	.06	.06	.05	.06	.05
30	.06		.08	.07	.07	.05	.08	.06	.06	.05	.06	.05
31	.07		.07		.07		.08	.06		.05		.05
Sum	1.71	2.21	2.76	2.10	2.17	1.91	1.93	2.22	1.80	1.66	1.35	1.76

	Current Year 2001						Period 1961-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
Month	High	Low	@ High Day	@ High	@ Low Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			31	0.07	! 1	0.05	0.06	148	316	649	0
Feb.			!21	.09	! 1	.07	.08	191	298	628	0
Mar.			! 3	.10	31	.07	.09	238	322	650	0
April			! 1	.07	! 1	.07	.07	181	314	604	0
May			! 1	.07	! 1	.07	.07	187	338	633	.7
June			! 1	.07	!29	.05	.06	165	309	580	0
July			!28	.08	! 1	.05	.06	167	318	692	0
Aug.			! 1	.08	!28	.06	.07	192	322	622	0
Sept.			! 1	.06	! 1	.06	.06	156	310	591	0
Oct.			! 1	.06	!12	.05	.05	143	320	640	0
Nov.			!29	.06	! 3	.04	.05	117	303	636	0
Dec.			! 1	.06	!22	.05	.06	152	310	596	0
Yearly				0.10		0.04	0.06	2,037	3,780	6,978	0.7

* Discharge measurement(s) made on this day @ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

DESCRIPTION: Cipolletti weir of 1.00 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 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.06	0.06	0.06	0.06	0.04	0.06	0.07	0.02	0.04	0.06	0.06	0.07
2	.06	.06	.06	.06	.04	.06	.07	.02	.04	.06	.06	.07
3	.06	.06	.06	.06	.04	.06	.07	.02	.04	.06	.06	.07
4	.06	.06	.06	.06	.04	.06	.07	.02	.04	.06	.06	.07
5	.06	.06	.06	.06	.04	.06	.07	.02	.04	.06	.06	.07
6	.06	.06	.06	.06	.04	.06	.07	.02	.04	.06	.06	.07
7	.06	.06	.06	.06	.04	.06	.06	.02	.04	.06	.06	.07
8	.06	.06	.06	.06	.04	.06	.06	.02	.04	.06	.06	.07
9	.06	.06	.06	.06	.04	.06	.06	.02	.04	.06	.06	.07
10	.06	.06	.06	.06	.04	.06	.06	.02	.04	.06	.06	.07
11	.06	.06	.06	.06	.05	.06	.06	.03	.04	.06	.06	.07
12	.06	.06	.06	.05	.05	.06	.06	.03	.05	.06	.06	.07
13	.06	.06	.06	.05	.05	.06	.05	.03	.05	.06	.06	.07
14	.06	.06	.06	.05	.05	.06	.05	.03	.05	.06	.06	.07
15	.06	.06	.06	.05	.05	.06	.05	.03	.05	.06	.06	.07
16	.06	.06	.06	.05	.05	.06	.05	.03	.05	.06	.06	.07
17	.06	.06	.06	.05	.05	.06	.05	.03	.05	.06	.06	.07
18	.06	.06	.06	.05	.05	.06	.05	.03	.05	.06	.06	.07
19	.06	.06	.06	.05	.05	.06	.04	.03	.05	.06	.06	.07
20	.06	.06	.06	.05	.05	.07	.04	.03	.05	.06	.07	.06
21	.06	.06	.06	.05	.05	.07	.04	.03	.05	.06	.07	.06
22	.06	.06	.06	.05	.05	.07	.04	.03	.05	.06	.07	.06
23	.06	.06	.06	.05	.05	.07	.04	.03	.05	.06	.07	.06
24	.06	.06	.06	.05	.05	.07	.04	.03	.05	.06	.07	.06
25	.06	.06	.06	.05	.05	.07	.03	.03	.05	.06	.07	.06
26	.06	.06	.06	.04	.05	.07	.03	.03	.06	.06	.07	.06
27	.06	.06	.06	.04	.05	.07	.03	.03	.06	.06	.07	.06
28	.06	.06	.06	.04	.05	.07	.03	.04	.06	.06	.07	.06
29	.06		.06	.04	.06	.07	.03	.04	.06	.06	.07	.06
30	.06		.06	.04	.06	.07	.03	.04	.06	.06	.07	.06
31	.06		.06		.06		.02	.04		.06		.06
Sum	1.68	1.86	1.56	1.48	1.91	1.52	0.87	1.44	1.86	1.91	2.05	

Current Year 2001						Period 1961-2001		
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	Extreme-Cubic Meters per Second @ High	Extreme-Cubic Meters per Second @ Low Day	Extreme-Cubic Meters per Second @ Low	Average	Total	Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.	0.105	0.105	! 1	0.06	! 1	0.06	0.06	161	199	348	18.7
Feb.	.105	.100	! 1	.06	! 1	.06	.06	145	183	317	17.1
Mar.	.105	.105	! 1	.06	! 1	.06	.06	161	201	403	17.5
April	.105	.075	! 1	.06	!26	.04	.05	135	209	373	13.0
May	.095	.075	!29	.06	! 1	.04	.05	128	205	323	7.3
June	.110	.095	!20	.07	! 1	.06	.06	165	195	313	5.2
July	.110	.060	! 1	.07	!31	.02	.05	131	188	312	0
Aug.	.070	.055	!28	.04	! 1	.02	.03	75.2	194	398	0
Sept.	.100	.070	!26	.06	! 1	.04	.05	124	203	337	16.2
Oct.	.105	.100	! 1	.06	! 1	.06	.06	161	216	348	14.9
Nov.	.110	.100	!20	.07	! 1	.06	.06	165	202	382	17.5
Dec.	.110	.105	! 1	.07	!20	.06	.07	177	205	382	18.7
Yearly	0.110	0.055		0.07		0.02	0.06	1,728	2,400	4,026	308

@ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.15	0.15	0.16	0.15	0.14	0.14	0.13	* 0.11	0.15	* 0.17	0.17	0.15
2	.15	.15	.16	.15	* .14	.14	.13	.11	.15	.17	.17	.15
3	.15	.15	.16	.15	.14	.14	.13	.11	.15	.17	.17	* .15
4	.15	.15	.16	.15	.14	.14	.13	.11	.15	.17	.17	.15
5	.15	.15	.16	* .15	.14	.14	.13	.11	* .15	.17	.17	.15
6	.15	.15	.16	.15	.14	* .14	* .13	.12	.15	.17	.17	.15
7	.15	* .15	* .16	.15	.14	.14	.13	.12	.15	.17	.17	.15
8	.15	.15	.16	.15	.14	.14	.13	.12	.15	.17	.17	.15
9	* .15	.15	.16	.15	.14	.14	.13	.12	.15	.17	.17	.15
10	.15	.15	.16	.15	.14	.14	.13	.12	.15	.17	.17	.16
11	.15	.15	.16	.15	.14	.14	.13	.12	.15	.17	.17	.16
12	.15	.15	.16	.15	.14	.14	.13	.12	.16	.17	.17	.16
13	.15	.15	.16	.15	.14	.14	.12	.12	.16	.17	.17	.16
14	.15	.15	.16	.15	.14	.14	.12	.12	.16	.17	.17	.16
15	.15	.15	.16	.15	.14	.14	.12	.13	.16	.17	* .17	.16
16	.15	.15	.16	.15	.14	.14	.12	.13	.16	.17	.17	.16
17	.15	.15	.16	.15	.14	.14	.12	.13	.16	.17	.17	.16
18	.15	.15	.16	.14	.14	.14	.12	.13	.16	.17	.17	.16
19	.15	.15	.16	.14	.14	.14	.12	.13	.16	.17	.17	.16
20	.15	.15	.16	.14	.14	.14	.12	.13	.16	.17	.16	.16
21	.15	.16	.16	.14	.14	.14	.12	.13	.16	.17	.16	.16
22	.15	.16	.15	.14	.14	.13	.12	.13	.16	.17	.16	.16
23	.15	.16	.15	.14	.14	.13	.12	.14	.16	.17	.16	.17
24	.15	.16	.15	.14	.14	.13	.12	.14	.16	.17	.16	.17
25	.15	.16	.15	.14	.14	.13	.12	.14	.17	.17	.16	.17
26	.15	.16	.15	.14	.14	.13	.11	.14	.17	.17	.16	.17
27	.15	.16	.15	.14	.14	.13	.11	.14	.17	.17	.16	.17
28	.15	.16	.15	.14	.14	.13	.11	.14	.17	.17	.16	.17
29	.15		.15	.14	.14	.13	.11	.14	.17	.17	.15	.17
30	.15		.15	.14	.14	.13	.11	.14	.17	.17	.15	.17
31	.15		.15		.14		.11	.14		.17		.17
Sum	4.65	4.28	4.86	4.37	4.34	4.11	3.78	3.93	4.75	5.27	4.97	4.96

Current Year 2001							Period 1961-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
			@ High		@ Low				
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.			! 1	0.15	! 1	0.15	0.15	402	427	697	0
Feb.			!21	.16	! 1	.15	.15	370	385	749	0
Mar.			! 1	.16	!22	.15	.16	420	420	907	0
April			! 1	.15	!18	.14	.15	378	395	780	0
May			! 1	.14	! 1	.14	.14	375	403	750	0
June			! 1	.14	!22	.13	.14	355	376	675	0
July			! 1	.13	!26	.11	.12	327	382	671	0
Aug.			!23	.14	! 1	.11	.13	340	386	668	0
Sept.			!25	.17	! 1	.15	.16	410	391	661	0
Oct.			! 1	.17	! 1	.17	.17	455	428	777	0
Nov.			! 1	.17	!29	.15	.17	429	408	768	0
Dec.			!23	.17	! 1	.15	.16	429	417	734	0
Yearly				0.17		0.11	0.15	4,690	4,818	8,063	0

* Discharge measurement(s) made on this day @ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Val Verde County 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 at Cienegas Creek and 12 current-meter measurements at 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 2001. 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.31	0.31	0.34	0.28	0.23	0.24	0.27	* 0.23	0.28	* 0.27	0.30	0.31
2	.31	.31	.34	.27	* .23	.24	.27	.23	.28	.27	.30	.31
3	.31	.31	.34	.27	.23	.24	.28	.23	.29	.27	.30	* .31
4	.31	.31	.34	* .27	.23	.24	.28	.24	.29	.27	.30	.31
5	.31	.31	.35	.27	.23	.24	.28	.24	* .29	.27	.30	.31
6	.31	.31	.35	.27	.23	* .24	* .28	.24	.29	.28	.30	.31
7	.31	* .31	* .35	.27	.23	.24	.28	.24	.29	.28	.30	.31
8	.31	.31	.35	.26	.23	.24	.28	.24	.29	.28	.30	.32
9	* .31	.31	.35	.26	.23	.24	.28	.25	.29	.28	.30	.32
10	.31	.32	.34	.26	.24	.25	.28	.25	.29	.28	.31	.32
11	.31	.32	.34	.26	.24	.25	.27	.25	.29	.28	.31	.32
12	.31	.32	.33	.26	.24	.25	.27	.25	.29	.28	.31	.32
13	.31	.32	.33	.26	.24	.25	.26	.25	.29	.28	.31	.31
14	.31	.32	.33	.26	.24	.25	.26	.26	.29	.28	.31	.31
15	.31	.32	.33	.25	.24	.25	.26	.26	.29	.29	* .31	.31
16	.31	.32	.32	.25	.24	.25	.26	.26	.29	.29	.31	.31
17	.31	.32	.32	.25	.24	.25	.26	.26	.29	.29	.31	.32
18	.31	.32	.32	.25	.24	.26	.26	.26	.27	.29	.31	.32
19	.31	.33	.32	.25	.24	.26	.25	.26	.27	.29	.32	.32
20	.31	.33	.32	.25	.23	.26	.25	.26	.27	.29	.31	.32
21	.31	.33	.31	.25	.23	.26	.25	.26	.27	.29	.31	.32
22	.31	.33	.30	.24	.23	.26	.25	.26	.27	.29	.31	.32
23	.31	.33	.30	.24	.23	.26	.25	.26	.27	.29	.31	.32
24	.31	.34	.30	.24	.23	.26	.25	.27	.27	.29	.31	.32
25	.31	.34	.30	.24	.23	.27	.25	.27	.27	.29	.31	.33
26	.31	.34	.30	.24	.23	.27	.24	.27	.27	.29	.31	.33
27	.31	.34	.29	.24	.23	.27	.24	.27	.27	.29	.31	.33
28	.31	.34	.29	.24	.24	.27	.23	.27	.27	.29	.32	.33
29	.31		.29	.23	.24	.27	.23	.28	.27	.29	.31	.33
30	.31		.29	.23	.24	.27	.23	.28	.27	.29	.31	.32
31	.31		.28		.24		.23	.28		.29		.32
Sum	9.61	9.02	9.96	7.61	7.27	7.60	8.03	7.93	8.42	8.80	9.23	9.86

Current Year 2001							Period 1965-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
			@ High		@ Low				
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.			! 1	0.31	! 1	0.31	0.31	830	970	1,532	163
Feb.			!24	.34	! 1	.31	.32	779	893	1,512	121
Mar.			! 5	.35	31	.28	.32	861	930	1,563	85.6
April			1	.28	!29	.23	.25	658	861	1,388	59.2
May			!10	.24	! 1	.23	.23	628	865	1,430	81.7
June			!25	.27	! 1	.24	.25	657	810	1,322	18.1
July			! 3	.28	!28	.23	.26	694	789	1,884	9.3
Aug.			!29	.28	! 1	.23	.26	685	789	1,531	8.0
Sept.			! 3	.29	!18	.27	.28	727	792	1,287	16.2
Oct.			!15	.29	! 1	.27	.28	760	900	1,400	19.1
Nov.			!19	.32	! 1	.30	.31	797	884	1,378	31.1
Dec.			!25	.33	! 1	.31	.32	852	931	1,441	78.6
Yearly				0.35		0.23	0.28	8,928	10,414	15,992	856

* Discharge measurement(s) made on this day @ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- 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 29 current-meter measurements during the year, 24 by the United States Section and 10 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 2001. 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 366 meters downstream at the international highway bridge; and from September 1954 through the current year 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.7	29.0	* 30.9	65.0	76.5	* 64.3	44.9	* 97.3	55.4	19.5	21.2	22.7
2	23.1	* 30.5	30.3	70.1	71.8	63.0	48.1	98.1	56.7	19.7	21.2	23.0
3	22.1	31.8	29.7	73.1	69.0	66.6	45.7	96.7	58.5	19.8	21.3	23.1
4	23.2	31.5	30.0	72.3	* 69.3	65.9	45.7	130	60.0	19.6	21.5	* 23.4
5	* 22.0	32.9	29.9	73.1	62.4	72.4	43.7	139	* 46.1	* 20.0	21.6	23.5
6	20.7	32.8	29.7	* 68.2	68.9	67.7	* 45.2	140	43.4	20.3	* 21.9	23.3
7	20.7	31.4	29.7	64.8	68.2	72.7	44.0	139	40.9	20.4	22.0	23.1
8	21.2	30.4	30.5	65.1	69.7	69.7	42.6	140	29.8	20.2	21.9	23.2
9	20.4	30.4	31.2	67.7	67.1	72.2	44.8	141	31.4	20.3	21.5	22.8
10	20.8	30.3	32.4	68.3	72.9	71.3	43.2	141 *	29.3	20.2	21.3	22.9
11	20.9	31.2	32.9	68.3	70.8	70.9	42.7	130	20.6	20.2	21.1	22.7
12	20.7	30.7	32.0	67.3	72.5	71.8	43.0	103	19.9	20.2	21.1	22.5
13	20.0	30.6	31.2	75.6	76.4	69.3	42.3	105	20.0	20.3	20.8	22.3
14	22.1	31.1	31.3	71.0	73.0	66.5	43.7	105	20.3	20.1	20.6	22.5
15	20.9	* 32.2	30.7	72.0	76.3	70.6	47.0	101	18.8	20.1	20.9	22.7
16	21.4	32.1	* 31.7	72.3	75.4	71.4	43.8	101	13.0	* 19.4	20.7	22.7
17	20.6	31.1	30.5	73.9	* 63.3	72.3	42.4	* 94.9	12.9	19.2	20.5	22.6
18	21.3	31.4	30.4	71.1	64.3	70.5	42.0	91.9	* 12.8	19.0	20.6	* 22.3
19	* 21.4	32.1	30.1	73.9	62.2	71.9	43.3	93.7	13.8	19.1	20.6	22.1
20	21.0	32.2	29.5	74.0	65.7	* 67.7	* 39.5	92.3	19.0	19.2	* 20.4	22.0
21	21.5	31.3	31.7	73.9	63.4	70.6	39.1	94.3	18.8	19.0	20.6	22.1
22	20.8	33.4	31.5	74.6	65.9	* 68.5	40.2	93.5	18.8	19.1	20.8	22.1
23	21.1	31.9	32.2	73.5	66.3	69.2	40.5	91.3	19.0	19.3	* 20.8	22.0
24	22.0	32.1	32.2	* 71.6	68.5	70.5	39.9	93.6	19.3	19.7	21.2	22.0
25	21.3	32.0	31.9	85.8	68.8	60.2	41.2	94.7	19.3	19.8	21.3	21.8
26	21.9	33.1	31.8	81.0	71.8	42.7	41.6	93.3	19.1	20.3	21.4	21.7
27	21.9	31.8	33.7	* 80.8	69.3	44.1	44.5	93.9	19.3	20.5	21.6	21.6
28	22.0	32.0	33.8	79.3	75.9	46.2	42.8	93.0	19.6	21.0	21.8	21.5
29	21.8		33.4	77.1	74.5	45.0	89.6	94.3	19.7	21.1	22.3	21.3
30	22.1		33.8	78.0	71.1	47.5	97.3	87.3	19.7	21.3	22.6	21.3
31	27.0		32.2		71.4		102	55.7		21.2		21.3
Sum	666.6	883.3	972.8	2,182.7	2,162.6	1,953.2	1,496.3	3,264.8	815.2	619.1	637.1	694.1

Current Year 2001						Period 1968-2001			
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Day	Extreme-Cubic Meters per Second Low	Day	Average	Total	Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.	0.655	0.430	42.7	!14	6.83	1	21.5	57,594	115,176	272,866	17,882
Feb.	.780	.440	76.6	21	8.12	9	31.5	76,317	148,205	552,852	22,983
Mar.	.680	.435	49.3	11	7.51	4	31.4	84,050	182,066	489,370	21,337
April	.975	.455	157	13	10.4	10	72.8	188,585	205,518	566,611	41,748
May	.960	.445	146	15	8.97	18	69.8	186,849	276,567	669,284	38,149
June	.940	.440	138	8	8.12	2	65.1	168,756	206,436	512,957	28,546
July	1.070	.465	201	31	11.2	21	48.3	129,280	171,219	452,566	38,823
Aug.	1.090	.460	211	16	10.6	31	105	282,079	191,655	827,137	35,556
Sept.	.850	.460	100	3	10.2	9	27.2	70,433	219,741	1,637,441	47,921
Oct.	.530	.515	21.4	!30	18.6	21	20.0	53,490	200,454	1,005,540	14,281
Nov.	.535	.525	23.0	30	20.2	!20	21.2	55,045	121,095	650,690	16,830
Dec.	.540	.530	23.8	5	21.1	!29	22.4	59,970	105,502	282,187	17,168
Yearly	1.090	0.430	211		6.83		44.8	1,412,448	2,143,634	4,617,893	627,328

* Discharge measurement(s) made on this day ! And other days ** Period 1968-2001

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

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 66 current-meter measurements during the year, 62 by the Mexican Section and 4 by the U.S. Section, 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 2001.

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	Occasionally
Monthly:	Max. 29.8	June 1961	Min. 0.01	Occasionally
Yearly:	Max. 2.74	1961	Min. 0.08	1952

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.27	0.26	0.16	0.18	0.05	0.09	0.28	0.32	0.03	0.03	0.02	0.04
2	.26	* .26	.19	.18	.06	.04	.35	.32	.03	.03	.02	.04
3	.26	.26	.16	* .19	* .05	.04	.28	.32	.02	.04	.02	.04
4	.26	.26	.15	.25	.12	.04	.18	.31	1.04	* .03	.03	.05
5	.27	.26	.21	* .32	.07	* .04	* .34	.31	* .24	.03	.04	.04
6	.27	.26	.13	.34	.06	.04	.28	.31	* .06	.04	.05	.04
7	.27	.26	.15	.19	* .06	* .04	.28	.31	.06	.03	.03	.04
8	.27	.26	* .14	.19	.06	.10	.28	.31	.05	.03	.02	.05
9	.26	.26	.11	.12	.06	.04	.28	* .31	29.0	.04	.02	.06
10	.29	.27	.13	* .12	* .05	.02	.23	.31	.59	.04	.03	.04
11	.26	.27	.18	* .10	.04	.03	.28	.31	.10	* .04	.04	.04
12	.27	.27	.17	.11	.05	* .03	.28	.31	.06	.03	.03	.04
13	.28	.27	.15	.10	.05	.03	* .28	.31	.05	.03	.03	.04
14	.26	.26	.18	.10	.04	* .03	.28	.31	.06	.04	.05	.04
15	.26	* .26	.14	.08	* .04	.08	.28	.31	.06	.02	.05	.04
16	.26	.26	.16	.09	.03	.03	.28	.31	.05	.02	.08	.04
17	.27	.28	.16	* .10	* .04	.04	.23	.31	.04	.03	.04	.04
18	.26	.27	.19	.10	.04	.03	.23	.31	.05	.02	.04	.04
19	.28	.27	.20	* .08	.04	* .03	.23	.31	.04	.03	.04	.04
20	.27	.25	.19	.14	.04	.02	* .28	.30	.04	.05	.04	* .05
21	.27	.26	.15	.05	.03	* .02	.28	.30	.05	.05	.04	.05
22	.28	.26	.14	.06	* .04	.06	.28	.30	.06	* .02	.04	.06
23	.28	.27	.15	.06	.03	.03	.28	.30	.04	.02	.04	.06
24	.26	.26	.15	* .06	* .04	.03	* .28	.30	.04	.02	.04	.06
25	.26	.25	.15	.06	.03	.02	.28	.30	.04	.02	.04	.06
26	.26	.25	* .15	* .06	.03	* .03	* .32	.30	.02	.02	.04	.08
27	.26	.26	.18	.06	.03	* .02	.28	.30	.04	.03	.04	.06
28	.29	.35	.19	.06	.03	* .02	.28	.30	.04	.03	.05	.07
29	.31		* .18	.06	* .03	.01	.28	.29	.04	* .03	* .04	.06
30	.27		* .17	* .06	.03	.02	.28	.28	.03	.03	.04	.07
31	.27		.18		* .03		.23	* .27		.03		.08
Sum	8.36	7.43	5.04	3.67	1.40	1.10	8.50	9.46	32.07	0.95	1.13	1.56

Month	Current Year 2001 Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	High Day	Extreme-Cubic Meters per Second Low	Low Day	Average	Volume-Thousand Cubic Meters Total	Period 1938-2001 Average	Maximum	Minimum
Jan.	0.210	0.130	0.59	28	0.15	! 2	0.27	722	507	1,420	38.9
Feb.	.330	.120	2.04	28	.11	!15	.27	642	609	7,339	40.6
Mar.	.240	.100	.86	2	.06	6	.16	435	730	3,214	72.6
April	.230	.075	.77	2	.02	21	.12	317	1,523	20,483	93.3
May	.185	.075	.41	4	.02	21	.05	121	1,532	11,194	111
June	.195	.040	.42	1	.01	29	.04	95.0	2,606	77,118	53.6
July	.270	.045	.93	2	.02	24	.27	734	1,524	20,240	31.0
Aug.	.270	.040	.93	27	.01	! 1	.31	817	1,970	31,967	51.8
Sept.	2.870	.050	311	9	.02	! 3	1.07	2,771	2,964	61,139	45.8
Oct.	.100	.050	.09	!14	.02	! 1	.03	82.1	1,738	25,218	27.6
Nov.	.150	.050	.23	16	.02	! 4	.04	97.6	502	3,521	25.9
Dec.	.105	.070	.10	31	.04	! 1	.05	135	462	1,372	26.8
Yearly	2.870	0.040	311		0.01		0.22	6,969	16,667	86,384	2,554

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 graphic water-stage recorder located on the left side of the canal under the US 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 graphic water-stage recorder located on the left bank about 91 meters downstream from the US 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 and 52 current-meter measurements at each station respectively, during the year, and continuous records of gage heights. Computations are 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 2001.

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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.07	3.17	3.36	3.00	* 3.14	3.15	3.93	3.40	3.60	3.76	3.27	3.28
2	* 3.01	3.16	3.34	3.10	3.19	3.17	3.64	3.36	3.65	* 3.29	3.27	3.23
3	2.97	3.18	3.30	* 3.09	3.08	3.11	* 3.55	3.27	3.82	3.29	3.23	3.28
4	3.01	3.17	3.33	3.06	2.98	3.10	3.53	3.30	3.59	3.28	3.24	* 3.34
5	2.98	3.18	3.30	3.18	3.01	* 3.00	3.53	3.27	3.52	3.27	3.32	3.31
6	3.01	* 3.17	* 3.24	3.27	2.99	3.07	3.64	3.51	* 3.58	3.23	* 3.42	3.33
7	2.98	3.24	3.22	3.37	3.05	3.00	3.51	* 3.74	3.62	3.24	3.39	3.29
8	2.95	3.26	3.18	3.42	2.88	3.03	3.42	4.18	3.66	3.40	3.29	3.30
9	* 3.03	3.30	3.19	3.45	2.81	3.00	3.41	4.30	3.68	3.35	3.30	3.33
10	3.06	3.37	3.25	3.28	2.80	2.84	3.56	4.18	3.67	* 3.39	3.26	3.41
11	3.19	3.40	3.21	3.25	* 2.92	3.03	3.55	4.15	3.71	3.28	3.29	* 3.50
12	3.24	3.45	3.21	3.40	2.82	3.18	3.53	4.15	3.80	3.26	3.30	3.53
13	3.38	3.50	* 3.20	* 3.41	2.88	3.09	* 3.56	4.21	* 3.81	3.21	* 3.20	3.49
14	3.47	* 3.53	3.13	3.41	3.15	3.06	3.48	4.32	3.72	3.27	3.30	3.47
15	3.59	3.52	3.17	3.21	* 3.42	* 3.07	3.49	4.31	3.61	3.42	3.14	3.46
16	* 3.69	3.48	3.15	3.35	3.37	3.07	3.48	4.06	3.50	* 3.41	2.96	3.39
17	3.67	3.47	3.13	* 3.38	3.31	3.15	* 3.45	* 3.74	3.44	3.34	2.96	3.42
18	3.61	3.43	3.11	3.38	3.24	3.52	3.64	3.51	* 3.58	3.36	3.05	* 3.32
19	3.63	3.41	3.11	3.41	3.13	* 3.40	3.75	3.41	3.66	3.31	3.13	3.26
20	3.61	* 3.36	* 3.14	3.44	3.21	3.43	3.42	3.60	3.86	3.27	* 3.21	3.15
21	3.60	3.38	3.17	3.28	3.51	3.19	3.21	* 3.53	4.08	3.26	3.25	3.22
22	3.62	3.34	3.21	3.29	3.22	3.08	3.33	3.64	4.09	3.26	3.22	3.26
23	* 3.56	3.34	3.19	3.22	3.27	3.07	3.43	3.75	4.08	3.22	3.24	3.33
24	3.52	3.39	3.05	3.35	* 3.22	3.14	3.56	3.80	4.03	* 3.18	3.24	3.41
25	3.40	3.41	3.22	3.26	3.16	3.21	3.60	3.80	4.13	3.15	3.25	3.47
26	3.46	3.40	3.11	3.08	3.12	3.27	* 3.59	3.70	3.90	3.13	3.37	3.56
27	3.32	3.42	* 3.04	* 3.05	3.11	3.16	3.71	3.42	* 3.78	3.06	3.35	* 3.64
28	3.31	* 3.40	2.96	3.14	3.14	* 3.17	3.61	3.30	3.73	3.03	3.34	3.61
29	3.24		2.95	3.18	3.22	3.58	3.60	* 3.43	3.69	3.10	* 3.46	3.57
30	* 3.18		2.95	3.15	3.18	3.88	3.49	3.51	3.70	* 3.20	3.33	3.54
31	3.17		3.03		* 3.21		* 3.43	3.64		3.26		3.53
Sum	102.53	93.83	98.15	97.86	96.74	95.22	109.63	115.49	112.29	101.48	97.58	105.23

Current Year 2001								Period 1961-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters		
			@ High		@ Low					
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.			16	3.69	8	2.95	3.31	8,859	8,707	11,558	2,805
Feb.			14	3.53	2	3.16	3.35	8,107	7,720	10,129	2,614
Mar.			1	3.36	!29	2.95	3.17	8,480	8,459	11,137	2,917
April			9	3.45	1	3.00	3.26	8,455	8,173	10,610	2,826
May			21	3.51	10	2.80	3.12	8,358	8,513	11,471	3,506
June			30	3.88	10	2.84	3.17	8,227	8,250	11,162	3,060
July			1	3.93	21	3.21	3.54	9,472	8,457	11,523	2,731
Aug.			14	4.32	! 3	3.27	3.73	9,978	8,376	11,751	2,608
Sept.			25	4.13	17	3.44	3.74	9,702	8,216	11,038	3,152
Oct.			1	3.76	28	3.03	3.27	8,768	8,697	11,408	3,094
Nov.			29	3.46	!16	2.96	3.25	8,431	8,410	11,058	2,941
Dec.			27	3.64	20	3.15	3.39	9,092	8,737	11,633	2,948
Yearly				4.32		2.80	3.36	105,929	100,715	133,083	45,119

* Discharge measurement(s) made on this day @ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Val Verde County, 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 29 current-meter measurements during the year, 24 by the United States Section and 5 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: September 1931 through 2001.

REMARKS: The flow of this spring-fed creek is greatly modified by municipal and irrigation diversions upstream from the 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 at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 3,340 CMS on August 24, 1998, with a gage height of 7.705 meters. Min. 0.01 CMS on July 20, 1953.

Average Flow in Cubic Meters per Second

Daily:	Max.	464	August 24, 1998	Min.	0.04	July 21, 1953
Monthly:	Max.	22.8	June 1935	Min.	0.13	July 1953
Yearly:	Max.	3.97	1998	Min.	0.71	1953

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.00	3.11	3.17	2.65	* 2.47	1.95	2.09	1.64	2.42	2.23	2.51	3.47
2	* 3.10	3.23	3.05	2.69	2.41	2.06	2.64	1.53	2.37	* 2.48	2.34	3.44
3	3.20	3.09	3.01	* 2.69	2.49	2.06	* 2.68	1.48	3.07	2.71	2.40	3.24
4	3.49	3.25	3.03	2.74	2.86	1.99	2.65	1.55	3.76	2.76	2.31	* 3.11
5	3.38	3.01	2.90	2.72	2.50	* 2.05	2.42	1.86	4.14	2.83	2.33	2.87
6	3.36	* 2.86	* 2.80	2.55	2.56	2.10	2.45	1.82	* 3.26	2.92	* 2.33	2.82
7	3.18	2.86	2.87	2.45	2.56	2.16	2.36	* 1.88	3.31	2.90	2.26	2.78
8	3.17	2.74	2.98	2.61	2.51	2.19	2.33	1.68	3.33	2.80	2.32	2.82
9	3.09	2.86	2.62	2.54	2.46	2.19	2.49	1.56	7.46	2.86	2.33	2.78
10	3.44	3.04	2.20	2.68	* 2.49	2.12	2.33	1.64	3.17	2.87	2.44	2.69
11	3.51	3.14	2.26	2.68	2.70	2.07	2.13	1.76	3.25	3.11	2.49	2.60
12	3.28	3.16	2.14	2.51	2.69	1.99	2.07	1.84	3.30	3.10	2.42	2.67
13	3.08	2.74	2.35	2.48	2.42	2.08	2.00	1.71	3.41	2.86	2.41	2.90
14	2.83	2.59	2.36	2.56	2.30	* 2.03	2.04	1.64	3.23	2.86	2.53	2.96
15	2.92	2.69	2.43	2.70	* 2.20	1.97	1.85	1.61	3.08	2.75	2.71	2.97
16	* 3.19	2.98	2.37	2.60	2.04	2.04	1.86	1.97	3.13	* 2.81	2.96	2.97
17	3.18	2.88	2.47	* 2.68	1.91	2.07	* 1.96	2.36	2.88	2.99	3.05	3.00
18	3.16	2.98	2.61	2.70	1.90	1.88	1.78	2.58	* 2.83	2.92	3.09	* 3.03
19	3.15	2.98	2.57	* 2.61	1.99	* 1.80	1.51	2.41	2.66	2.97	3.08	3.27
20	3.21	* 3.04	* 2.87	2.49	2.03	1.78	1.67	2.25	2.50	2.88	* 3.16	3.45
21	3.25	3.04	2.86	2.57	2.10	1.86	2.00	* 2.05	2.46	2.81	3.11	3.33
22	3.09	3.06	2.80	2.47	1.94	1.84	2.05	2.00	2.43	2.58	3.20	3.22
23	3.15	3.08	2.73	2.60	1.81	1.85	1.84	2.03	2.37	2.46	3.23	3.24
24	3.19	2.89	2.74	2.55	1.84	1.91	1.68	1.95	2.33	2.17	3.17	3.35
25	3.08	3.09	2.83	2.57	1.85	1.89	1.65	1.99	2.20	2.18	3.03	3.47
26	3.19	3.14	2.84	2.60	2.11	1.95	1.69	2.03	2.26	2.46	2.72	3.42
27	3.31	3.01	2.70	2.56	2.14	1.94	1.47	2.54	2.39	2.65	2.85	3.46
28	3.16	3.20	2.74	2.54	1.82	1.85	1.52	2.65	2.44	2.61	2.83	3.40
29	* 3.20		2.67	2.47	1.80	1.72	1.67	2.81	2.34	2.49	3.30	3.49
30	3.32		2.66	2.50	1.87	1.68	1.73	* 2.62	2.28	2.67	3.48	3.65
31	3.23		2.65		1.87		1.74	2.48		2.65		3.48
Sum	99.09	83.74	83.28	77.76	68.64	59.07	62.35	61.92	90.06	84.34	82.39	97.35

Current Year 2001							Period 1932-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
Month	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.495	1.345	11	4.08	14	2.29	3.20	8,561	6,864	10,985	1,152
Feb.	1.480	1.340	16	3.94	7	2.19	2.99	7,235	5,790	10,642	601
Mar.	1.460	1.295	2	3.68	12	1.79	2.69	7,195	5,584	10,304	850
April	1.400	1.340	15	2.89	24	2.18	2.59	6,718	5,784	12,836	698
May	1.640	1.275	4	5.49	28	1.53	2.21	5,930	6,508	21,697	912
June	1.390	1.245	3	2.52	!29	1.36	1.97	5,104	6,616	59,059	370
July	1.595	1.240	2	5.02	!27	1.24	2.01	5,387	5,653	27,232	352
Aug.	1.410	1.265	29	3.10	! 3	1.40	2.00	5,350	5,777	47,764	432
Sept.	2.590	1.325	9	22.7	!25	1.98	3.00	7,781	6,603	35,373	1,076
Oct.	1.485	1.320	11	3.85	1	1.85	2.72	7,287	6,809	17,551	1,233
Nov.	1.500	1.335	16	4.02	8	2.03	2.75	7,118	6,030	10,567	649
Dec.	1.480	1.380	30	3.88	11	2.44	3.14	8,411	6,283	10,660	612
Yearly	2.590	1.240		22.7		1.24	2.60	82,077	74,301	125,323	22,441

* Discharge measurement(s) 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 Creek Siphon, about 12.1 kilometers north-northwest of Quemado, Maverick County, Texas and 20.6 kilometers downstream 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 157 current-meter measurements during the year and a continuous record of gage heights. 24 measurements were made by the U.S. Section, and 133 measurements were made by the Maverick County Water Control and Improvement District No. 1. 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 2001.

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 2001, 5,257 hectares of land were irrigated between this station and the power plant, and 10,326 hectares were irrigated from the extension, making a total of 15,583 hectares. A total of 845,197 TCM returned to the Rio Grande at the power plant and through irrigation system returns published in the 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24.2	30.5	* 35.3	32.6	* 35.0	38.3	33.2	33.3	33.8	* 13.8	20.9	22.1
2	24.5	* 30.3	35.4	* 34.1	37.6	38.1	32.1	* 33.7	33.4	* .35	* 21.0	22.4
3	26.4	30.8	35.9	* 38.1	* 37.3	38.7	* 33.3	34.1	34.8	* .30	20.7	* 22.8
4	* 26.6	* 31.5	36.0	38.1	37.2	* 39.1	32.5	35.0	* 35.4	* .25	* 20.3	* 22.4
5	26.1	* 30.9	* 36.2	* 38.9	37.5	* 39.2	33.2	35.5	* 35.4	* 12.3	20.3	* 21.5
6	26.1	* 30.7	35.7	38.4	37.7	* 37.6	33.3	36.9	33.7	21.2	20.3	21.8
7	* 25.9	* 30.0	34.9	38.3	37.0	37.2	33.6	* 35.7	* 32.5	21.0	* 20.5	* 21.8
8	26.3	30.4	* 34.3	38.6	* 37.1	* 37.4	* 33.3	* 34.3	32.9	* 21.2	20.6	22.6
9	* 26.1	30.5	34.5	* 38.9	* 37.0	37.8	* 33.7	* 34.0	31.5	21.2	20.8	21.5
10	26.2	30.3	34.7	* 38.6	* 38.0	37.8	33.8	34.0	25.6	21.3	20.3	* 21.3
11	* 26.3	30.3	* 35.2	* 38.1	* 38.2	* 38.0	* 32.7	33.4	* 30.7	* 21.0	20.6	21.5
12	* 26.1	30.5	* 34.7	38.9	37.1	* 38.2	32.7	32.5	* 23.9	21.3	20.7	* 21.5
13	25.7	32.4	* 34.9	39.1	36.2	* 37.6	32.4	* 32.9	24.6	21.4	* 20.6	21.3
14	26.5	33.1	34.5	39.2	35.6	36.8	32.9	* 33.2	24.6	21.3	21.0	21.1
15	* 26.6	* 33.1	* 34.6	38.9	* 35.8	37.2	33.6	33.4	24.7	* 21.4	21.9	21.1
16	28.7	* 33.7	34.4	* 38.3	36.0	37.1	* 33.3	* 35.0	* 22.7	21.3	21.8	21.5
17	30.6	33.2	35.0	39.1	* 36.3	37.1	* 32.0	* 34.4	17.5	* 20.8	22.1	* 21.5
18	* 31.7	* 33.1	35.3	* 38.9	37.2	* 36.8	* 31.6	33.5	* 16.4	* 20.2	21.9	* 21.3
19	29.2	33.1	* 35.6	* 38.4	38.1	36.6	32.3	33.3	* 16.0	20.3	22.2	* 21.3
20	* 25.5	* 33.7	* 35.4	38.9	38.3	* 36.7	32.1	* 33.7	16.8	20.6	* 22.5	21.4
21	25.3	33.4	35.0	38.1	* 38.8	* 37.1	31.9	34.4	20.0	20.5	21.9	21.2
22	24.8	31.7	* 34.9	38.4	38.4	* 37.1	31.9	* 34.5	20.1	20.6	21.8	21.4
23	* 25.3	* 33.9	33.5	* 38.0	* 38.5	37.0	* 32.1	34.4	20.4	* 20.7	21.9	21.4
24	* 26.3	34.2	* 32.5	* 37.7	* 38.5	37.8	* 32.3	* 33.7	* 20.8	20.7	21.9	21.4
25	* 26.4	* 33.9	33.6	38.0	38.2	* 37.9	31.8	33.6	20.2	20.6	21.7	21.7
26	26.3	* 33.7	* 34.7	* 39.2	38.0	* 36.4	* 30.8	33.7	* 19.8	* 20.5	* 21.7	* 21.7
27	26.1	33.5	* 35.4	39.1	37.7	34.2	31.9	34.1	19.6	20.5	21.9	21.5
28	* 26.1	34.0	35.2	31.0	37.7	33.6	32.4	* 34.1	19.0	20.5	* 21.7	21.8
29	26.6		* 34.6	2.44	* 38.4	* 32.2	31.2	34.5	18.8	* 20.7	* 21.6	22.1
30	* 26.6		34.5	3.92	38.4	33.0	* 32.3	35.0	18.2	20.8	21.8	22.3
31	26.8		34.9		38.7		33.2	* 35.2		20.8		22.6
Sum	821.9	900.4	1,081.3	1,068.26	1,161.5	1,109.6	1,009.4	1,059.0	743.8	569.40	638.9	672.8

Current Year 2001							Period 1968-2001		
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Day	Extreme-Cubic Meters per Second Low	Day	Average	Total	Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.	2.570	1.960	18	33.2	1	20.3	26.5	71,012	86,096	120,225	25,730
Feb.	2.975	2.475	!20	36.2	! 1	26.8	32.2	77,795	85,360	113,996	20,233
Mar.	2.980	2.595	5	38.7	23	29.8	34.9	93,424	96,646	122,230	34,141
April	2.955	.155	27	41.7	30	1.36	35.6	92,298	97,641	123,587	50,229
May	2.915	2.355	!21	41.4	1	27.9	37.5	100,354	102,694	126,490	49,910
June	2.940	2.335	! 4	41.9	29	27.1	37.0	95,869	98,296	116,310	38,497
July	2.775	2.350	10	36.4	!26	26.9	32.6	87,212	98,024	120,518	44,129
Aug.	2.810	2.515	6	37.3	12	30.1	34.2	91,498	97,985	119,784	45,279
Sept.	2.780	1.650	5	36.9	20	15.7	24.8	64,264	92,073	117,876	35,450
Oct.	1.995	.120	13	21.6	3	.24	18.4	49,196	91,840	121,971	27,426
Nov.	2.180	1.985	20	22.8	6	19.6	21.3	55,201	84,399	115,209	27,737
Dec.	2.305	2.030	8	23.2	19	20.4	21.7	58,130	84,097	120,494	29,007
Yearly	2.980	0.120		41.9		0.24	29.7	936,253	1,115,151	1,337,047	565,712

* Discharge measurement(s) made on this day ** Period 1968-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Val Verde County, 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 21 current-meter measurements during the year, 16 by the United States Section and 5 by the Mexican Section of the Commission, and a continuous record of gage heights. Records available: September 1955 through 2001 at this station, and November 22, 1928 through August 1955 at a site 6.3 kilometers upstream.

REMARKS: Flow of this spring-fed creek is modified by small irrigation diversions upstream from the station. When flow in the Rio Grande exceeds about 2,270 CMS at the mouth of this creek, backwater may reach the station. At this station during the Rio Grande flood of June 1954, backwater reached a gage height of 8.78 meters, or an elevation of 256.79 meters above mean sea level.

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	1932	Min.	0.04	1980

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.19	0.37	0.44	0.42	* 0.24	0.10	0.01	0.02	0	0.08	0.12	0.21
2	.20	.38	.45	.42	.23	.09	.08	.02	0	.09	.12	.23
3	.21	.37	.52	* .41	.23	.09	* .11	.02	.19	* .09	.12	.25
4	.20	.37	.52	.42	.69	.07	.10	.02	.77	.10	.13	* .25
5	* .20	.37	.51	.43	.73	* .07	.09	.02	* .29	.11	.12	.24
6	.21	* .39	* .45	.42	.42	.06	.10	.02	.79	.12	.12	.24
7	.22	.40	.45	.41	.32	.05	.09	* .01	.17	.14	* .12	.24
8	.22	.41	.44	.41	.27	.05	.06	.01	.10	.15	.12	1.15
9	.21	.38	.43	.40	.25	.04	.04	.01	.33	.15	.11	.66
10	.26	.35	.43	.38	* .24	.04	.02	0	.14	.15	.11	.41
11	.28	.38	.44	.35	.23	.03	.02	0	.13	.17	.11	.34
12	.29	.40	.43	.33	.23	.03	.02	0	.12	.16	.10	.32
13	.29	.44	.42	.35	.23	.03	.03	0	.11	.16	.09	.31
14	.28	.45	.48	.37	.22	* .03	.03	0	.10	.13	.82	.29
15	.29	.47	.45	.37	.21	.02	.03	0	.07	.14	.62	.32
16	.30	.52	.43	.34	.21	.03	.02	0	.07	.15	.68	.39
17	.31	.48	.42	.32	.20	.04	.02	0	.07	.14	1.29	.36
18	.32	.44	.46	.30	.20	.04	.02	0	.07	.13	.47	.26
19	.35	.43	.48	* .31	.20	.03	.02	0	.07	.14	.30	.06
20	.35	.45	.45	.34	.21	.02	.02	0	.07	.14	.24	* .08
21	.33	.47	.43	.34	.20	.02	.02	0	.06	.13	* .26	.09
22	.32	.47	.41	.34	.18	.02	.02	0	.07	* .14	.22	.09
23	.33	.49	.42	.31	.16	.02	.02	0	.07	.13	.20	.08
24	.35	.48	.42	.27	.15	.06	.02	0	* .07	.12	.18	.08
25	.37	.43	.43	.27	.14	.06	.02	0	.06	.11	.16	.07
26	.37	.43	.43	.25	.14	.04	.02	0	.07	.11	.16	.13
27	.38	.44	.43	.25	.12	.02	.02	0	.08	.10	.17	.32
28	.39	.46	.42	.25	.11	.01	.02	0	.08	.11	.17	.32
29	* .41		.43	.24	.11	.01	.02	0	.08	.11	.18	.31
30	.45		.44	.24	.10	.01	.02	0	.08	.11	.19	.28
31	.40		.43		.10		.02	0		.12		.29
Sum	9.28	11.92	13.79	10.26	7.27	1.23	1.15	0.15	4.38	3.93	7.80	8.67

Current Year 2001							Period 1929-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
			High		Low				
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.	0.335	0.255	30	0.46	1	0.17	0.30	802	716	2,784	0
Feb.	.355	.305	16	.57	10	.33	.43	1,030	752	7,106	0
Mar.	.350	.325	! 3	.55	! 9	.41	.44	1,191	692	3,085	0
April	.340	.280	5	.44	!26	.23	.34	886	1,418	33,464	0
May	.740	.230	4	3.66	!28	.10	.23	628	2,020	36,248	0
June	.235	.195	1	.11	!21	.01	.04	106	4,250	69,981	0
July	.255	.175	2	.17	! 1	.01	.04	99.4	212	37,030	0
Aug.	.195	.155	! 1	.02	! 9	0	0	13.0	2,227	60,070	0
Sept.	.555	.185	3	1.79	! 1	0	.15	378	2,243	60,397	0
Oct.	.265	.225	11	.20	1	.07	.13	340	1,340	12,133	0
Nov.	1.045	.235	14	10.6	!13	.09	.26	674	631	3,196	0
Dec.	.585	.220	8	2.07	26	.04	.28	749	721	3,041	0
Yearly	1.045	0.155		10.6		0	0.22	6,896	17,222	94,053	1,178

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 29 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: Based on 85 current meter measurements, 81 measurements by the Mexican Section, and 4 by the U. S. Section, the weir discharge table and a continuous record of gage heights. Records available: October 1932 through 2001.

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.	0.07	July 1996
Yearly:	Max.	17.6	1976	Min.	0.68	1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.62	2.72	* 1.25	0.97	1.25	0.38	0.17	0.28	1.66	0.66	0.48	0.79
2	1.62	2.72	1.25	.97	1.40	.51	.45	.24	1.71	* .66	.48	.80
3	1.62	2.61	1.48	* .97	* 1.40	.53	* .54	* .20	2.09	.63	.60	.82
4	1.62	2.49	1.48	.97	1.40	.38	.48	.20	* 2.46	.64	.60	* .83
5	1.52	2.49	1.40	.97	1.40	* .38	.43	.20	2.00	.71	.60	.86
6	1.42	* 2.49	* 1.32	.84	1.22	.28	.38	.20	1.71	.71	* .66	.89
7	1.42	2.49	1.25	.84	1.04	.28	.38	* .20	1.55	.71	.63	.92
8	1.52	2.49	1.25	.84	* .90	.28	.33	.20	1.48	.71	.66	.94
9	* 1.62	2.16	1.11	.78	* .78	.28	.28	* .20	35.4	* .71	.71	.97
10	1.83	1.94	1.11	* .84	.71	.28	* .28	.20	5.51	.71	.57	1.00
11	1.83	1.83	1.11	.78	.66	.28	.24	.16	* 3.42	.71	.48	* 1.03
12	1.75	1.62	1.11	.66	.71	* .28	.20	.11	2.36	.71	.48	1.03
13	1.62	1.62	* 1.11	.66	.71	.28	.16	.11	1.73	.71	* .48	1.03
14	1.62	1.62	1.11	.66	.60	.28	.11	* .16	1.36	.66	12.5	1.03
15	1.62	* 1.62	1.04	.71	* .48	.28	.11	.20	1.18	.54	* 12.4	1.03
16	1.62	1.83	.97	.66	.48	.28	.11	.20	.97	* .48	1.77	1.03
17	1.62	1.83	.97	* .66	.48	.28	* .11	.20	.97	.48	1.56	* 1.03
18	1.62	1.62	1.06	.71	.43	.20	.11	.20	.90	.56	1.28	* 1.03
19	1.62	1.62	1.11	.71	.38	* .20	.11	.20	* .76	.50	2.78	1.01
20	1.62	* 1.62	* 1.11	.66	.38	.20	.11	.20	.71	.50	2.30	1.00
21	1.62	1.62	1.11	.64	.38	.20	.11	.24	* .66	.48	1.18	.98
22	1.62	1.62	1.04	1.12	* .38	.20	.11	.28	2.04	.48	* 1.06	.97
23	* 2.32	1.83	.97	1.51	.38	.20	.11	.28	.92	* .48	.97	.95
24	2.81	1.83	.97	1.63	.38	.16	* .16	.28	.71	.60	.97	.94
25	2.95	1.50	.97	1.71	.38	.20	.20	.28	* .71	.60	.97	.92
26	2.95	1.22	.97	1.63	.38	* .20	.20	.20	.60	.60	.97	.91
27	2.95	* 1.22	* 1.14	* 1.55	.38	.16	.24	.92	.60	.60	* .94	.89
28	2.95	1.22	1.11	1.40	.38	.11	.20	* .66	.60	.60	.92	.95
29	2.95		1.11	1.32	* .38	.11	.20	.48	.66	.60	* .97	1.00
30	* 2.95		.97	1.40	.38	.14	.20	.48	.66	* .60	.97	1.06
31	2.95		.97		.38		* .20	1.44		.54		1.12
Sum	61.37	53.49	34.93	29.77	20.99	7.82	7.02	9.40	78.09	18.88	51.94	29.76

	Current Year 2001							Period 1932-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters		
			High		Low					
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.	0.110	0.065	24	2.96	! 5	1.40	1.98	5,302	10,135	44,937	2,300
Feb.	.100	.060	1	2.73	!25	1.22	1.91	4,622	7,973	31,769	1,279
Mar.	.070	.050	! 3	1.55	! 9	.97	1.13	3,018	7,163	33,352	797
April	.075	.035	25	1.71	!12	.60	.99	2,572	7,891	49,678	698
May	.065	.020	2	1.40	!26	.28	.68	1,814	13,314	148,269	395
June	.035	.010	! 2	.60	!27	.11	.26	676	14,781	133,550	282
July	.035	.010	3	.60	!13	.11	.23	607	16,506	167,938	179
Aug.	.120	.010	27	3.36	!11	.11	.30	812	14,454	112,553	392
Sept.	1.505	.035	9	183	!26	.60	2.60	6,747	20,387	116,770	843
Oct.	.040	.030	! 5	.71	!15	.48	.61	1,631	24,780	180,878	1,011
Nov.	1.540	.030	14	191	! 1	.48	1.73	4,488	17,189	84,231	990
Dec.	.055	.040	27	1.14	13	.71	.96	2,571	12,363	55,901	1,389
Yearly	1.540	0.010		191		0.11	1.11	34,860	166,936	557,477	21,508

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 34 current-meter measurements during the year, 22 by the Mexican Section and 12 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 1968 through 2001. 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. 4,250 CMS on August 24, 1998, with a gage height of 12.1 meters. Min. 0.05 CMS on September 21, 1995, with a gage height of 0.055 meters.

Average Flow in Cubic Meters per Second

Daily:	Max.	3,220	August 25, 1998	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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.45	2.32	5.00	2.24	45.8	38.5	16.2	73.4	37.9	12.7	3.10	4.09
2	2.88	5.79	4.29	35.5	43.9	39.0	17.5	72.4	37.4	25.5	3.19	4.18
3	2.66	7.30	5.00	37.1	42.9	38.6	20.9	73.1	34.9	23.7	3.19	4.32
4	2.66	7.92	4.11	43.4	44.6	39.7	17.4	96.2	41.5	27.7	3.19	* 4.32
5	2.45	7.15	4.99	41.5	48.7	37.9	17.0	113	41.1	12.9	3.19	4.09
6	2.45	8.89	* 3.41	43.5	44.0	36.4	14.7	114	26.0	3.87	3.42	4.09
7	2.04	8.41	2.54	42.3	44.8	37.7	16.6	111	21.7	3.87	3.33	4.09
8	1.34	9.34	2.75	42.3	44.2	39.0	16.9	108	20.4	3.87	3.22	19.7
9	1.50	9.13	3.30	39.5	44.4	38.5	16.0	110	86.1	3.64	3.19	7.44
10	1.67	7.62	3.75	41.0	* 41.1	38.3	15.2	112	42.1	3.64	3.30	5.43
11	1.67	7.59	4.80	40.2	42.3	39.7	14.5	108	9.02	3.64	3.30	4.76
12	1.67	8.36	4.24	40.0	42.0	38.9	14.1	78.1	5.09	3.87	3.42	4.54
13	1.85	5.83	3.10	40.4	44.1	38.5	16.1	78.5	2.98	3.64	* 3.42	4.76
14	1.67	6.02	2.96	41.3	42.5	* 38.1	15.2	75.4	2.20	3.64	12.2	4.67
15	1.67	5.47	2.74	40.4	40.1	37.6	15.5	78.7	1.84	3.42	60.4	4.67
16	1.85	* 6.98	2.32	42.2	41.8	39.2	17.5	72.4	1.62	3.42	11.1	4.89
17	1.85	4.42	2.52	41.9	40.4	39.3	14.9	74.7	1.39	3.42	8.24	4.76
18	1.85	4.90	2.70	43.0	39.2	40.2	15.8	68.4	* 1.18	* 3.64	5.04	* 4.76
19	* 2.04	3.95	2.48	* 41.8	39.3	36.4	15.3	70.2	* 1.01	3.64	5.62	4.98
20	2.45	* 5.54	* 2.51	42.6	38.0	37.1	15.7	72.3	1.01	3.64	* 8.94	4.76
21	2.45	3.90	2.30	43.0	39.5	38.7	16.5	* 69.2	* 1.62	3.64	4.51	4.76
22	2.45	8.08	2.70	42.6	* 35.7	39.6	16.2	71.3	4.09	3.64	* 4.20	4.89
23	2.45	4.90	3.10	* 43.5	38.6	40.8	16.7	69.6	3.64	3.42	4.09	4.89
24	2.88	5.61	3.21	41.1	37.2	39.8	16.6	71.1	3.42	3.42	4.09	4.76
25	2.88	4.24	2.69	45.8	38.8	* 40.0	16.5	71.9	3.19	* 3.19	3.87	4.76
26	2.88	5.48	2.61	42.5	39.4	25.9	17.2	72.7	2.97	3.19	3.87	4.76
27	2.45	* 4.64	* 2.81	43.6	40.2	12.9	* 17.3	78.0	* 3.10	3.19	3.87	* 4.54
28	2.45	5.35	2.98	51.2	38.6	14.7	19.4	70.7	3.10	3.19	3.64	4.54
29	* 2.45		2.67	78.1	40.5	18.0	19.0	68.7	3.19	* 3.19	3.81	4.54
30	2.45		2.57	77.2	37.9	16.4	63.8	* 71.3	3.10	* 3.19	4.09	4.45
31	2.45		2.49		35.7		70.9	70.5		3.19		4.45
Sum	68.91	175.13	99.64	1,290.74	1,276.2	1,055.4	613.1	2,544.8	447.86	193.81	194.04	160.64

Current Year 2001 | Period 1968-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	High Day	Extreme-Cubic Meters per Second Low	Low Day	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.140	0.080	3.85	28	1.34	! 7	2.22	5,954	56,274	216,588	5,954
Feb.	.340	.100	19.4	22	2.04	1	6.25	15,131	88,447	495,046	7,139
Mar.	.230	.080	9.60	3	1.34	16	3.21	8,609	108,913	486,605	2,805
April	.985	.085	124	!29	1.50	1	43.0	111,520	135,040	502,502	6,204
May	.815	.140	89.8	1	3.85	20	41.2	110,264	202,150	608,342	8,109
June	.770	.120	81.5	8	2.88	!29	35.2	91,187	141,433	489,197	2,061
July	1.090	.115	148	31	2.75	19	19.8	52,972	115,148	384,578	2,864
Aug.	1.270	.205	191	27	7.78	!17	82.1	219,871	142,184	876,848	6,347
Sept.	2.180	.055	454	9	1.01	!19	14.9	38,695	166,559	1,559,261	14,929
Oct.	.420	.100	28.7	4	2.97	31	6.25	16,745	161,419	1,025,395	13,827
Nov.	1.860	.100	361	15	3.10	1	6.47	16,765	73,811	615,686	10,933
Dec.	.570	.125	48.4	8	4.09	5	5.18	13,879	52,693	223,396	9,234
Yearly	2.180	0.055	454		1.01		22.2	701,592	1,444,071	3,909,913	256,561

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4571.00 RIO SAN RODRIGO AT EL MORAL, COAHUILA

DESCRIPTION: Bubbler gage, control weir of 130 cms capacity, and water-stage recorder located on the left bank at 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 53 current-meter measurement during the year, 4 by the United States Section, and 49 by the Mexican Section, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1962 through 2001.
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. La Fragua Dam, located about 19 river kilometers upstream from this station, began operation in 1991. 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.	0.07	1996

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	* 0.01	0	0.01	* 0.01	* 0.49	* 0.07	0
2	0	0	0	0	0	.01	* .10	.01	.01	* .46	.07	0
3	0	0	0	0	0	.01	.10	.01	* .01	* .44	.06	0
4	0	0	0	0	0	.01	.10	.01	1.86	.38	.05	0
5	0	0	0	0	0	* .01	.10	.01	.06	* .38	.04	0
6	0	0	0	0	0	.01	.09	.01	.02	.38	* .05	0
7	0	0	0	0	0	.01	.09	.02	.01	.38	.05	0
8	0	0	0	0	0	.01	.09	.02	.69	* .34	.05	0
9	0	0	0	0	0	.02	* .09	.02	42.7	* .30	.04	0
10	0	0	0	0	0	.02	.08	.02	* 7.76	.29	.04	0
11	0	0	0	0	0	* .02	.07	.02	* 4.33	.28	.03	0
12	0	0	0	0	0	.03	.06	.02	* 3.85	* .28	* .03	0
13	0	0	0	0	0	.03	.06	.02	* 3.45	.25	.01	0
14	0	0	0	0	0	.04	.05	* .02	* 3.07	.23	.01	0
15	0	0	0	0	0	.04	.04	.02	2.86	* .23	.05	0
16	0	0	0	0	0	.05	* .03	.02	2.62	* .21	.07	0
17	0	0	0	0	.01	.05	.03	.02	* 2.18	.21	.09	0
18	0	0	0	0	.02	* .06	.03	.02	* 1.91	.19	.04	0
19	0	0	0	0	.02	.06	.03	.02	* 1.72	.19	.02	0
20	0	0	0	0	.03	.05	.02	.02	* 1.54	.17	.01	0
21	0	0	0	0	.04	.05	.02	.01	* 1.42	.17	.01	0
22	0	0	0	0	* .05	.04	.02	.01	1.25	.15	* .01	0
23	0	0	0	0	.04	.04	* .02	.01	1.09	* .15	.01	0
24	0	0	0	0	* .04	.03	.02	.01	* .94	.15	.01	0
25	0	0	0	0	.03	* .03	.02	.01	* .89	* .13	.01	0
26	0	0	0	0	.03	.02	.02	.01	* .85	.13	.01	0
27	0	0	0	0	.02	.02	.02	* .01	* .76	.12	0	0
28	0	0	0	0	.02	.02	.01	* .01	* .67	.12	0	0
29	0		0	0	* .01	.01	.01	.01	.57	* .10	0	0
30	0		0	0	.01	0	.01	0	.53	* .10	0	0
31	0		0		.01		* .01	0		.09		0
Sum	0.00	0	0.38	0	0.81	1.44	0.43	89.63	7.49	0.94	0	

Current Year 2001						Period 1962-2001		
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Extreme-Cubic Meters per Second Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.750	0.750	! 1	0	0	0	4,343	20,066	0
Feb.	.750	.750	! 1	0	0	0	3,049	12,251	0
Mar.	.750	.750	! 1	0	0	0	2,707	18,325	0
April	.750	.750	! 1	0	0	0	4,743	46,663	0
May	.850	.750	22	.05 ! 1	0	.01	32.8	4,466	36,113	0
June	.920	.750	18	.06 30	0	.03	70.0	8,069	127,224	0
July	.935	.750	! 2	.10 1	0	.05	124	30,280	560,796	0
Aug.	.800	.750	! 7	.02 !30	0	.01	37.2	12,629	109,801	0
Sept.	3.980	.750	9	241 8	0	2.99	7,744	17,888	65,176	0
Oct.	1.100	1.010	1	.54 !30	.09	.24	647	14,649	80,464	0
Nov.	1.030	.750	16	.15 25	0	.03	81.2	9,772	103,632	0
Dec.	.750	.750	! 1	0 ! 1	0	0	0	6,026	25,993	0
Yearly	3.980	0.750		241	0	0.28	8,736	118,621	748,140	2,288

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Maverick County, 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 (MCWCID 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 and MCWCID No. 1. There were 92 current-meter measurements made during the year. 24 measurements were made by U.S. Section of the Commission and 68 measurements were made by MCWCID No. 1. Records available: 1949 through 2001.

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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24.1	* 27.2	* 33.3	32.3	14.1	30.3	27.3	25.4	29.2	15.9	* 17.2	21.7
2	22.1	28.3	33.7	* 34.1	31.1	30.8	27.8	* 24.6	28.2	5.40	* 18.0	21.7
3	24.8	28.2	33.8	33.4	* 30.3	31.9	30.4	25.2	29.6	0	17.6	* 21.8
4	* 24.9	28.5	33.5	33.4	* 30.3	32.5	* 30.1	24.9	* 30.4	0	17.8	21.4
5	24.6	* 28.8	* 33.4	* 33.0	34.4	* 31.5	* 30.2	26.0	30.8	0	17.9	* 21.1
6	* 24.9	27.6	33.1	34.1	35.2	30.9	30.1	27.7	28.8	14.1	16.8	* 21.2
7	25.0	26.9	* 32.2	33.8	* 34.0	* 29.4	30.8	26.8	* 27.2	17.2	* 17.4	* 21.0
8	24.7	27.0	32.1	34.7	31.0	30.9	30.0	26.1	27.9	17.2	18.3	21.6
9	24.1	27.7	32.3	* 34.8	31.9	31.9	* 29.2	* 26.8	28.9	16.9	18.3	21.3
10	24.6	27.8	31.8	34.5	32.5	31.9	* 29.5	26.3	25.5	17.2	17.5	* 20.9
11	25.9	27.9	32.2	33.8	34.0	30.8	27.7	26.6	* 27.6	* 16.9	18.3	21.1
12	25.1	28.0	* 33.2	34.0	33.0	30.2	26.4	26.4	24.8	17.5	* 18.3	21.0
13	25.0	29.7	32.0	33.8	* 33.5	30.1	26.2	* 24.8	22.0	17.7	17.6	* 20.9
14	24.9	* 30.8	31.7	34.5	33.0	30.3	26.1	24.8	21.2	17.5	* 18.3	20.7
15	* 25.5	31.3	* 31.9	35.3	32.5	* 30.7	28.0	25.0	21.6	17.7	19.7	20.7
16	* 24.9	* 19.9	31.5	* 34.0	31.2	31.9	28.3	* 26.4	21.0	18.1	19.6	20.9
17	25.2	31.7	31.8	33.7	* 31.1	33.2	* 26.4	27.3	* 16.3	17.7	20.5	21.0
18	* 24.5	* 32.0	32.3	33.6	32.5	32.5	* 24.6	27.9	14.5	17.6	20.2	20.5
19	24.8	32.0	* 32.3	* 31.8	33.3	* 30.7	24.5	28.3	* 14.4	* 18.4	20.1	19.4
20	24.5	* 32.1	31.5	32.8	34.6	29.6	25.0	27.3	14.2	18.4	* 20.7	* 20.0
21	24.1	32.1	31.0	32.1	* 34.4	* 29.7	25.0	28.3	16.9	18.3	20.5	19.6
22	* 24.2	30.0	31.7	33.1	27.6	29.6	24.8	* 27.3	18.0	17.4	20.6	19.6
23	24.1	* 32.0	* 31.4	* 33.6	30.0	29.9	25.1	27.5	18.7	* 17.9	20.6	19.8
24	* 24.4	32.4	31.8	32.7	30.6	31.4	* 24.7	* 26.3	* 18.4	18.2	20.6	19.8
25	24.7	32.5	31.9	32.0	* 30.5	31.3	24.7	27.1	18.3	* 18.2	20.4	20.3
26	24.5	* 32.3	31.1	32.8	30.8	* 30.2	* 24.0	28.1	17.4	18.3	* 20.6	20.3
27	24.8	32.5	32.1	32.2	31.8	28.1	23.5	* 28.6	17.7	18.1	20.6	* 20.1
28	24.9	32.2	33.0	32.3	31.6	26.8	23.5	28.8	* 18.5	18.3	20.4	20.4
29	25.0		33.3	5.10	32.9	25.9	23.9	29.1	18.3	* 17.0	20.5	21.0
30	* 24.9		32.8	0	31.5	26.9	24.2	29.6	18.0	16.0	21.0	20.8
31	24.8		32.7		30.3		24.3	30.3		16.5		20.8
Sum	764.5	829.4	1,002.4	941.30	975.5	911.8	826.3	835.6	664.3	475.60	575.9	642.4

Current Year 2001						Period 1968-2001			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Average	Volume-Thousand Cubic Meters			
			@ High		@ Low					
	High	Low	Day		Day		Total	Average	Maximum	Minimum
Jan.			11	25.9	2	22.1	24.7	66,053	71,854	116,090	6,108
Feb.			25	32.5	16	19.9	29.6	71,660	71,981	108,078	6,008
Mar.			3	33.8	21	31.0	32.3	86,607	74,988	109,909	7,047
April			15	35.3	30	0	31.4	81,328	73,980	115,145	5,305
May			6	35.2	1	14.1	31.5	84,283	81,550	113,668	17,131
June			17	33.2	29	25.9	30.4	78,780	73,427	102,070	8,162
July			7	30.8	!27	23.5	26.7	71,392	70,521	96,639	6,830
Aug.			31	30.3	2	24.6	27.0	72,196	71,002	97,044	22,766
Sept.			5	30.8	20	14.2	22.1	57,396	74,285	111,197	16,949
Oct.			!19	18.4	! 3	0	15.3	41,092	75,853	109,382	13,750
Nov.			30	21.0	6	16.8	19.2	49,758	69,607	106,644	3,951
Dec.			3	21.8	19	19.4	20.7	55,503	69,656	112,566	3,217
Yearly				35.3		0	25.9	816,048	878,704	1,158,234	207,661

* Discharge measurement(s) made on this day @ Mean daily ! And other days
** Period 1968-2001

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, Maverick County 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 2001. Records computed by the U.S. Section of the Commission prior to 1996. Beginning in 1996, the Maverick County Irrigation District computes and provides the discharge data through the Texas Natural Resource Conservation Commission. 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	1968	Min.	0.41		1985

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.16	0.70	0.82	0.91	1.02	0.86	1.00	0.99	1.04	0.82	0.81	0.51
2	.56	.73	.82	.95	1.05	.87	.93	.99	1.06	.46	.77	.51
3	.61	.83	.79	.98	1.12	.93	1.18	1.03	1.08	.22	.72	.52
4	.67	.76	.80	1.18	1.17	.95	1.01	1.07	1.10	.17	.71	.52
5	.66	.74	.79	1.18	1.22	.92	.94	1.04	1.09	.16	.70	.53
6	.69	.68	.79	1.30	1.10	.93	.93	1.07	1.07	.73	.70	.54
7	.71	.69	.84	1.40	1.02	.97	.93	1.06	1.05	.81	.83	.54
8	.70	.82	.81	1.31	1.08	1.12	.90	1.08	1.03	.82	.80	.56
9	.70	.72	.81	1.27	1.16	1.15	.91	.99	1.03	.84	.68	.59
10	.70	.67	.84	1.24	1.17	1.06	.93	1.04	.94	.87	.66	.55
11	.72	.63	.94	1.25	1.05	1.03	.93	1.07	.98	.89	.66	.52
12	.70	.60	.98	1.15	1.10	.99	.93	1.07	1.00	.88	.65	.51
13	.69	.61	.92	1.18	1.08	1.00	.93	.96	.93	.82	.69	.51
14	.67	.65	1.14	1.39	1.01	1.01	.96	.97	.97	.82	.71	.49
15	.70	.71	1.00	1.31	.94	1.12	.99	.99	1.01	.80	.73	.49
16	.68	.74	.89	1.14	1.09	1.13	1.03	1.07	.99	.78	.67	.49
17	.69	.74	.95	1.31	1.06	1.07	1.08	1.07	.83	.80	.64	.48
18	.67	.75	.94	1.33	1.02	1.14	1.08	1.04	.77	.86	.62	.45
19	.67	.73	.90	1.25	1.05	1.24	1.02	1.06	.76	.89	.61	.44
20	.66	.74	.93	1.18	1.04	1.10	1.00	1.02	.76	.89	.60	.46
21	.64	.71	.96	1.28	1.00	1.03	.98	1.05	.90	.87	.59	.51
22	.61	.76	1.03	1.35	.97	1.13	1.03	1.05	.94	.91	.59	.49
23	.61	.77	.99	1.30	.97	1.04	1.05	1.12	.93	1.02	.58	.46
24	.61	.76	.91	1.32	1.00	1.01	1.01	1.08	.93	1.02	.58	.46
25	.63	.72	.84	1.17	1.14	1.05	1.03	1.06	.96	.91	.58	.47
26	.63	.74	.83	1.22	1.14	1.10	1.04	1.06	1.17	.89	.57	.46
27	.65	.77	.82	1.71	1.07	.99	1.03	1.06	1.10	.88	.56	.46
28	.64	.78	.85	1.63	1.02	.99	1.01	1.08	1.09	.87	.55	.46
29	.64		.86	.93	1.03	1.04	.99	1.08	1.09	.86	.54	.46
30	.63		.88	.73	.95	1.14	1.02	1.08	1.09	.87	.53	.46
31	.63		.88		1.01		1.01	1.08		.85		.46
Sum	19.93	20.25	27.55	36.85	32.85	31.11	30.81	32.48	29.69	24.28	19.63	15.36

Current Year 2001					Period 1968-2001			
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	Extreme-Cubic Meters per Second @ High	Extreme-Cubic Meters per Second @ Low Day	Extreme-Cubic Meters per Second @ Low	Average	Total	Volume-Thousand Cubic Meters Average	Volume-Thousand Cubic Meters Maximum	Volume-Thousand Cubic Meters Minimum
Jan.			11	0.72	1	0.16	0.64	1,722	3,325	9,424	1,097
Feb.			3	.83	12	.60	.72	1,750	3,165	7,556	1,158
Mar.			14	1.14	! 3	.79	.89	2,380	4,178	7,940	1,383
April			27	1.71	30	.73	1.23	3,184	4,393	9,615	1,016
May			5	1.22	15	.94	1.06	2,838	4,147	10,087	1,048
June			19	1.24	1	.86	1.04	2,688	4,148	11,334	640
July			3	1.18	8	.90	.99	2,662	4,307	10,060	405
Aug.			23	1.12	13	.96	1.05	2,806	4,390	11,423	486
Sept.			26	1.17	!19	.76	.99	2,565	3,767	9,472	356
Oct.			!23	1.02	5	.16	.78	2,098	3,821	8,097	1,337
Nov.			7	.83	30	.53	.65	1,696	3,594	10,726	1,019
Dec.			9	.59	19	.44	.50	1,327	3,231	7,122	860
Yearly				1.71		0.16	0.88	27,716	46,466	112,857	12,834

@ Mean daily ! And other days ** Period 1968-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 43 discharge measurements during the year, 30 by the Mexican Section, and 13 by the United States Section, 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 2001. 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.	3,810	Aug. 25, 1998	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 SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	33.0	* 28.7	* 36.0	33.3	66.1	65.4	39.7	92.6	78.6	* 23.0	* 20.6	23.6
2	29.6	* 32.6	* 36.4	* 36.6	72.7	65.5	40.8	* 96.7	70.9	21.2	20.6	23.6
3	33.0	33.3	36.7	40.0	* 73.0	67.0	45.8	94.6	* 69.7	25.3	20.6	* 23.0
4	* 33.3	34.6	36.7	43.3	* 74.1	* 68.4	47.5	96.9	81.8	24.6	21.2	22.4
5	* 33.0	36.0	36.0	* 46.6	82.3	65.9	* 44.0	128	79.8	* 25.5	21.2	21.8
6	33.3	36.7	35.3	50.0	77.9	67.1	43.3	155 *	60.8	20.6	21.2	* 21.8
7	33.3	36.7	34.6	53.3	80.5	* 61.1	42.0	147	* 53.1	22.2	21.2	21.2
8	33.0	36.7	34.6	56.7	75.4	68.0	43.2	145	51.4	* 23.0	21.2	24.9
9	33.0	36.7	33.9	* 60.0	73.9	67.6	43.0	146	201	23.4	21.2	32.4
10	33.6	36.7	33.3	64.2	70.3	69.3	42.6	146	236	23.4	21.2	23.6
11	33.9	36.0	33.3	65.8	75.4	* 68.9	40.9	146	61.8	23.4	21.2	22.4
12	33.9	35.3	35.3	65.4	73.0	66.4	38.8	133	46.1	23.0	* 21.2	21.8
13	33.3	36.0	34.6	66.7	74.8	66.7	38.2	110 *	36.4	23.0	21.2	20.6
14	32.6	36.0	33.9	68.9	* 76.4	65.3	39.0	106	33.0	23.0	21.2	20.6
15	32.3	36.0	33.3	68.7	69.3	64.1	40.6	107	32.3	* 22.4	74.2	20.6
16	31.7	35.3	33.3	75.5	69.4	67.2	42.4	103	31.4	22.4	37.4	20.6
17	31.3	36.0	33.3	74.5	71.2	67.8	41.8	106	26.5	22.4	31.3	20.6
18	30.7	36.0	33.3	75.0	67.7	* 65.5	38.9	101	* 21.9	21.8	28.1	20.0
19	30.0	35.3	* 33.9	72.1	71.4	60.8	37.9	99.8	* 19.7	21.8	* 25.5	18.9
20	30.0	34.6	33.3	73.1	71.3	59.5	39.1	102 *	18.5	22.4	27.4	19.5
21	28.7	35.3	32.6	72.5	* 73.0	60.0	39.6	100	20.2	22.4	26.8	18.9
22	* 28.1	33.9	32.6	73.3	65.9	61.8	40.1	101	23.7	22.4	24.3	18.3
23	27.4	34.6	32.0	* 74.7	66.6	61.9	39.9	102	26.5	22.4	24.3	19.5
24	27.4	36.0	33.3	72.5	64.9	63.8	40.4	98.1	* 25.6	22.4	23.6	20.0
25	28.1	36.0	33.3	72.6	67.4	* 64.6	40.5	100	25.0	22.4	23.0	21.2
26	28.7	35.3	32.6	75.2	66.6	58.7	40.2	102	23.8	22.4	* 22.4	20.8
27	28.7	35.3	32.6	70.7	68.8	47.6	40.0	116 *	23.2	22.4	22.4	20.6
28	28.7	35.3	33.9	72.7	* 66.7	36.3	39.4	112	24.9	22.4	22.4	20.8
29	28.7		34.3	84.9	70.4	36.0	41.2	106	24.7	22.4	22.0	21.8
30	28.1		34.6	77.0	67.0	39.2	63.4	107	23.9	22.4	23.0	21.8
31	27.4		33.9		63.7		84.6	106		22.4		21.8
Sum	957.8	986.9	1,056.7	1,935.8	2,207.1	1,847.4	1,338.8	3,511.7	1,552.2	704.2	753.1	669.4

Current Year 2001 | Period 1968-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Day	Extreme-Cubic Meters per Second Low	Day	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	1.035	0.980	34.6	10	27.4	!23	30.9	82,754	140,562	352,875	32,306
Feb.	1.050	.980	36.7	! 5	27.4	1	35.2	85,268	165,472	552,787	43,917
Mar.	1.050	1.010	36.7	! 2	31.3	26	34.1	91,299	190,622	563,328	25,779
April	1.565	1.020	126	29	32.6	1	64.5	167,253	211,665	570,326	29,641
May	1.500	.975	113	5	26.8	1	71.2	190,693	287,950	726,365	44,643
June	1.435	1.020	100	10	32.6	9	61.6	159,615	233,480	594,778	23,750
July	1.550	1.020	123	31	32.6	18	43.2	115,672	223,390	961,969	32,194
Aug.	1.900	1.130	200	6	48.2	24	113	303,411	230,512	916,834	70,131
Sept.	3.355	.900	611	9	17.7	20	51.7	134,110	262,760	1,611,965	63,668
Oct.	.970	.900	26.1	5	17.7	2	22.7	60,843	256,216	1,099,958	59,953
Nov.	1.810	.920	179	15	20.0	! 1	25.1	65,068	160,145	704,160	56,497
Dec.	1.100	.900	43.7	9	17.7	19	21.6	57,836	138,792	356,400	32,314
Yearly	3.355	0.900	611		17.7		48.0	1,513,822	2,501,566	4,629,385	870,435

* Discharge measurement(s) made on this day ! And other days ** Period 1968-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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", longitude 100 31'00", about 5.0 kilometers southwest of Piedras Negras, Coahuila, 8.0 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 67 discharge measurements during the year, 63 by the Mexican Section and 4 by the U.S. Section, and a continuous record of gage heights. Records available: October 1932 through 2001.

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 stage of 224.61 meters above mean sea level. 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. 7.29	1987	Min. 0.07	1956		

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.87	0.91	0.73	0.68	0.15	0.06	0.06	0.04	0.03	* 0.12	0.12	0.13
2	.87	* .91	* .73	* .64	.14	.05	.06	.04	0	.12	.12	.13
3	.87	.91	.78	.39	.12	.06	.06	.03	0	.13	.12	* .13
4	* .83	.91	.81	.37	* .57	* .04	.06	.03	1.85	.13	.12	.13
5	.83	.91	.81	.36	1.20	.04	.06	.03	.12	.13	.11	.13
6	.83	.91	.81	.34	.81	.04	.05	* .03	.02	.13	.11	.13
7	.82	.91	.81	.33	.34	.03	.05	.04	.01	.14	.11	.12
8	.78	.91	.81	.33	.26	.03	.05	.04	.01	* .14	.11	.12
9	.76	.91	.78	* .27	.23	.03	.05	.05	13.5	.14	.11	.12
10	.90	.91	.81	.26	.20	.03	.05	.05	.71	.14	.11	* .12
11	.88	.91	.93	.25	.16	* .03	.05	.06	.16	.14	* .11	.12
12	.87	.91	.98	.21	.15	.03	.05	.06	.12	.13	.11	.12
13	.87	.91	.98	.21	.15	.03	.05	* .07	.15	.13	.11	* .12
14	.87	.91	.98	.21	* .12	.04	.05	.07	.14	.13	.11	.13
15	.87	.91	.98	.24	.11	.10	.05	.06	.10	* .13	.10	.13
16	.91	.91	.98	* .23	.10	.04	* .05	.06	.08	.13	.16	.13
17	.95	.91	.98	.30	.08	.03	.05	.05	.06	.13	.30	* .13
18	1.03	.91	.98	.33	.07	* .02	.05	.05	.06	.13	.10	.14
19	1.05	* .91	* .98	.30	.06	.02	.05	.04	.06	.13	* .10	.14
20	1.07	.91	1.02	.26	.10	.02	.05	* .04	.06	.13	.10	.15
21	1.07	.91	1.02	.22	* .08	.02	.05	.04	.06	.13	.11	.15
22	* 1.11	* .91	1.02	.20	.07	.02	.05	.04	.06	.13	.11	.16
23	1.26	.91	1.02	* .17	.09	.02	* .05	.04	.06	.13	.11	.16
24	1.24	.91	1.01	.15	* .10	.02	.05	* .03	.06	.13	.11	* .17
25	1.21	.91	.82	.14	.09	* .02	.05	.03	.06	.13	.12	.17
26	1.21	.87	.74	.14	.09	.02	.05	.03	.06	.13	* .12	.17
27	1.21	.89	.74	.14	.09	.02	.04	* .03	.06	.13	.12	.17
28	1.21	.89	.74	.14	* .07	.02	.04	.03	.06	.13	.12	.17
29	1.12		.74	.16	.06	.01	.04	.04	.05	.13	.13	.17
30	1.07		.70	.17	.08	.01	.04	.04	.04	.13	.13	.17
31	1.03		.70		.06		.04	.04		.13		.17
Sum	30.47	25.40	26.92	8.14	6.00	0.95	1.55	1.33	17.81	4.06	3.62	4.40

Current Year 2001						Period 1932-2001		
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Extreme-Cubic Meters per Second Low	Average	Volume-Thousand Cubic Meters Total	Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.	0.330	0.250	23	1.26	! 8	0.60	0.98	2,633	3,968	23,350	53.6
Feb.	.290	.265	! 1	.91	26	.70	.91	2,195	3,105	17,803	48.4
Mar.	.305	.265	!20	1.02	!30	.70	.87	2,326	2,630	14,070	114
April	.265	.140	! 1	.70	28	.12	.27	703	2,789	27,069	100
May	.490	.105	4	3.49	31	.06	.19	518	4,338	31,418	190
June	.205	.065	14	.35	!28	.01	.03	82.1	3,367	31,888	74.3
July	.285	0	2	.85	!29	0	.05	134	3,064	32,694	64.8
Aug.	.110	0	!13	.07	! 4	0	.04	115	4,394	37,135	0
Sept.	1.770	0	9	86.8	! 2	0	.59	1,539	5,945	60,665	21.6
Oct.	.145	.095	! 8	.14	! 1	.04	.13	351	6,054	49,084	53.6
Nov.	.245	.105	17	.59	! 1	.06	.12	313	4,722	31,743	53.6
Dec.	.190	.115	!11	.30	! 1	.07	.14	380	4,167	27,140	82.9
Yearly	1.770	0		86.8		0	0.36	11,289	48,543	229,999	2,163

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 2001. Records computed by the U.S. Section of the Commission prior to 1996. Beginning in 1996, the Maverick County Irrigation District computes and provides the discharge data through the Texas Natural Resource Conservation Commission. Records prior to 1976 were published under the "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	Jan. 1, 2001	
Monthly:	Max.	7.00	July 1968	Min.	0.01	Jan. 2001	
Yearly:	Max.	5.10	1971	Min.	0.05	2001	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0.01	0.02	0.06	0.08	0.15	0.02	0.01	0.04	0.08	0.04	0.02
2	.01	.01	.02	.06	.07	.12	.02	.03	.03	.07	.04	.02
3	.01	.01	.02	.06	.07	.04	.09	.08	.03	.07	.06	.02
4	.01	.01	.02	.07	.06	.03	.05	.07	.04	.07	.22	.02
5	.01	.07	.02	.05	.20	.03	.03	.06	.06	.07	.22	.02
6	.01	.07	.02	.05	.11	.28	.02	.06	.04	.07	.11	.02
7	.01	.03	.02	.05	.12	.33	.02	.06	.02	.08	.06	.02
8	.01	.03	.02	.05	.28	.20	.02	.05	.02	.16	.08	.02
9	.01	.03	.02	.04	.20	.07	.02	.05	.02	.16	.08	.02
10	.02	.03	.02	.04	.12	.04	.02	.05	.03	.11	.07	.01
11	.02	.02	.02	.04	.08	.06	.02	.05	.04	.09	.05	.01
12	.02	.02	.02	.04	.06	.04	.02	.05	.06	.08	.04	.01
13	.02	.02	.02	.04	.05	.04	.02	.05	.09	.07	.03	.01
14	.01	.02	.02	.03	.05	.03	.02	.05	.12	.07	.03	.01
15	.02	.02	.02	.03	.05	.05	.02	.05	.14	.06	.03	.01
16	.01	.01	.02	.02	.05	.05	.02	.05	.16	.06	.03	.01
17	.02	.01	.02	.02	.04	.04	.02	.05	.16	.06	.04	.01
18	.02	.01	.01	.03	.04	.03	.02	.05	.16	.06	.03	.01
19	.02	.01	.01	.04	.03	.03	.02	.06	.16	.06	.03	.01
20	.02	.01	.01	.03	.03	.03	.02	.06	.15	.05	.03	.01
21	.02	.01	.01	.02	.02	.02	.02	.07	.14	.05	.02	.02
22	.02	.01	.01	.02	.02	.01	.02	.17	.13	.05	.02	.03
23	.01	.01	.03	.03	.02	.01	.01	.16	.12	.04	.02	.02
24	.01	.01	.04	.05	.03	.01	.01	.10	.12	.04	.02	.02
25	.01	.01	.04	.05	.02	.01	.01	.08	.11	.04	.02	.01
26	.02	.01	.04	.05	.02	.01	.01	.07	.10	.03	.02	.01
27	.02	.01	.04	.15	.02	.01	.01	.06	.09	.02	.02	.01
28	.02	.01	.04	.13	.02	.01	.01	.05	.08	.02	.02	.01
29	.02		.04	.06	.03	.01	.01	.05	.08	.02	.02	.04
30	.01		.05	.06	.09	.01	.01	.05	.08	.03	.02	.10
31	.01		.06		.11		.02	.04		.05		.10
Sum	0.45	0.53	0.77	1.47	2.19	1.80	0.65	1.94	2.62	1.99	1.52	0.66

Current Year 2001						Period 1968-2001			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters			
			@ High		@ Low	Average	Total		
	High	Low	Day		Day			Average	Maximum	Minimum
Jan.			!10	0.02	1	0.01	38.9	4,986	15,700	38.9
Feb.			! 5	.07	! 1	.02	45.8	4,160	13,204	45.8
Mar.			31	.06	!18	.02	66.5	5,438	14,401	66.5
April			27	.15	!16	.05	127	5,892	18,066	114
May			8	.28	!21	.07	189	5,514	17,672	116
June			7	.33	!22	.06	156	5,717	17,742	107
July			3	.09	!23	.02	56.2	5,597	18,723	56.2
Aug.			22	.17	1	.06	168	5,248	14,290	118
Sept.			!16	.16	! 7	.09	226	4,425	11,301	139
Oct.			! 8	.16	!27	.06	172	4,137	10,138	161
Nov.			! 4	.22	!21	.05	131	4,247	13,309	108
Dec.			30	.10	!10	.02	57.0	4,448	15,785	57.0
Yearly				0.33		0.05	1,433	59,809	161,048	1,433

@ Mean daily ! And other days ** Period 1968-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Maverick County, 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 24 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: 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 2001 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. 25,800 CMS in June 1954, was determined by slope-area computation, with an elevation of 190.29 meters. Min. 1.54 CMS occurred 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.	4,310	August 25, 1998	Min.	9.26	June 29 & 30, 1972
Monthly:	Max.	617	Sept. 1974	Min.	14.2	June 1969
Yearly:	Max.	150	1974	Min.	35.0	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	27.2	28.2	38.4	37.7	77.3	70.1	41.0	* 93.1	105	19.7	18.6	25.1
2	27.2	30.8	39.4	37.4	* 77.5	70.4	47.7	96.1	87.5	19.2	18.4	25.9
3	* 26.9	32.3	41.1	65.3	75.9	69.7	47.9	95.8	78.1	20.9	18.4	25.6
4	28.3	35.5	41.2	* 75.1	77.8	71.5	47.6	95.9	74.2	* 21.9	18.5	25.4
5	28.3	36.9	40.1	76.2	89.4	71.9	* 43.1	115	72.7	21.3	18.7	* 25.0
6	28.3	35.6	39.0	75.7	94.0	* 66.2	42.2	126	* 66.8	22.0	19.0	24.9
7	28.3	* 34.7	* 39.3	78.7	80.7	66.2	40.3	130	56.4	19.4	* 18.9	31.8
8	28.4	34.4	37.5	78.3	79.0	65.5	41.9	128	51.1	20.8	19.2	27.5
9	28.5	34.9	37.1	79.2	76.9	67.5	41.5	126	293	20.9	20.6	25.2
10	28.9	36.3	36.9	77.3	76.6	65.9	39.7	127	312	20.7	20.7	24.9
11	29.4	36.3	36.9	73.6	74.8	65.3	39.6	126	91.5	21.2	20.6	25.1
12	29.5	35.7	37.2	66.9	77.4	66.2	37.2	119	58.8	20.9	20.7	24.8
13	29.1	35.8	38.0	67.7	77.1	65.3	36.1	97.4	47.8	21.0	21.5	24.7
14	29.4	35.5	36.4	73.3	78.7	65.1	36.8	93.4	42.0	20.5	21.5	24.6
15	29.5	34.5	37.0	71.2	74.2	68.8	37.2	102 *	38.3	20.2	73.3	24.6
16	* 29.6	36.2	36.8	71.9	* 70.6	67.8	38.3	111	36.0	19.9	43.5	24.5
17	28.5	36.5	36.6	72.0	70.8	69.0	41.6	108	33.6	* 19.9	33.8	24.1
18	29.6	37.0	36.5	* 75.6	67.8	68.9	* 37.4	105	30.8	19.8	31.7	24.3
19	29.3	35.4	36.4	75.8	65.5	68.1	36.9	104	26.1	20.0	29.5	* 23.9
20	29.2	34.7	36.2	71.4	67.9	* 64.2	36.9	104	22.5	20.0	28.7	22.5
21	28.5	* 37.3	* 33.5	73.6	66.2	63.1	37.3	104	* 17.7	20.0	30.4	22.8
22	28.1	39.7	32.4	72.4	68.6	63.9	37.6	103	15.5	20.3	28.2	22.5
23	27.8	37.0	32.8	75.4	62.6	65.0	38.3	103	17.3	20.0	27.4	22.2
24	27.8	38.0	33.7	75.8	63.8	64.9	39.1	99.8	19.0	19.9	26.5	22.2
25	28.2	37.5	35.3	75.0	68.3	66.2	38.9	98.6	19.2	20.2	25.6	22.1
26	28.2	37.4	35.2	75.7	74.5	65.9	39.4	101	19.1	20.4	* 24.7	22.4
27	28.2	37.3	35.1	74.5	74.6	53.4	39.8	109	18.9	20.4	24.2	22.2
28	28.2	37.6	36.6	74.8	75.1	40.0	39.0	105	18.6	20.2	23.7	22.2
29	28.3		37.7	76.9	71.8	38.3	41.1	100	19.2	20.0	24.1	22.5
30	28.0		38.3	81.3	73.5	40.2	41.7	98.0	19.9	19.5	23.7	23.0
31	28.3		37.8		70.6		82.2	106		19.2		22.8
Sum	883.0	999.0	1,146.4	2,155.7	2,299.5	1,914.5	1,285.3	3,330.1	1,808.6	630.3	774.3	751.3

Current Year 2001 | Period 1968-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Day	Extreme-Cubic Meters per Second Low	Day	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	1.870	1.830	31.0	!19	26.6	3	28.5	76,291	149,876	344,184	44,366
Feb.	1.935	1.850	40.3	21	28.2	! 1	35.7	86,314	174,705	548,741	63,322
Mar.	1.950	1.890	42.9	3	30.8	21	37.0	99,049	198,107	567,475	46,184
April	2.295	1.910	115	30	36.0	! 1	71.9	186,252	222,088	584,928	46,115
May	2.295	1.915	114	6	40.8	2	74.2	198,677	305,108	740,332	62,566
June	2.195	1.905	89.1	! 9	35.6	!29	63.8	165,413	249,081	681,150	36,768
July	2.290	1.870	117	31	32.5	21	41.5	111,050	234,526	972,830	45,920
Aug.	2.440	2.010	163	16	56.8	14	107	287,721	243,287	1,016,428	77,147
Sept.	3.075	1.730	717	9	15.2	!21	60.3	156,263	277,054	1,598,663	72,300
Oct.	1.805	1.755	22.9	3	16.6	3	20.3	54,458	267,978	1,064,503	54,458
Nov.	2.315	1.770	93.8	15	18.4	! 1	25.8	66,900	172,431	681,981	54,285
Dec.	1.925	1.805	40.0	7	21.9	!25	24.2	64,912	146,029	341,125	46,189
Yearly	3.075	1.730	717		15.2		49.3	1,553,300	2,640,270	4,731,321	1,105,710

* Discharge measurement(s) made on this day ! And other days ** Period 1968-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

DESCRIPTION: Bubbler gage and water-stage recorder (graphic and digital) and data collection platform 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. S. datum.

RECORDS: Based on 30 current-meter measurements, 26 current-meter measurements from the US Section and 4 from the Mexican Section 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 kilometer upstream of present site; and June 1990 through 2001 at the present site.

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.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 20,300 CMS on June 30, 1954 was determined by slope-area calculations, with a gage height of 18.44 meters at a site 0.5 kilometer upstream. 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. These were 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	25.7	* 27.4	* 36.4	34.7	* 76.5	* 61.3	32.3	65.1	118	* 20.9	* 17.3	23.9
2	26.2	28.0	35.4	* 34.3	69.2	58.5	* 40.8	* 83.7	109	20.0	15.2	23.9
3	* 26.2	27.3	38.4	34.3	59.5	59.6	42.1	93.0	73.7	19.3	15.9	* 24.4
4	25.1	30.5	39.1	54.5	65.5	60.7	* 49.9	91.6	* 68.6	18.5	16.1	24.7
5	25.0	31.6	39.4	70.0	68.7	63.7	47.4	92.9	92.3	20.2	16.8	24.1
6	28.2	34.2	37.5	74.1	80.6	67.7	45.7	102	100	20.1	16.9	24.5
7	27.5	34.4	35.6	73.9	106	62.4	42.3	140 *	76.4	20.2	16.8	24.1
8	26.9	33.0	35.6	77.3	87.3	67.6	40.9	146	53.6	20.2	17.1	25.4
9	27.3	34.0	35.4	73.8	84.9	59.5	39.3	142	87.8	17.0	17.2	25.2
10	29.7	33.6	35.2	73.4	75.6	64.2	40.2	139	621	19.7	18.6	25.7
11	30.2	33.6	35.7	71.9	74.5	65.2	39.8	142	475	19.3	19.4	33.6
12	30.3	34.3	35.5	73.2	73.2	66.7	38.5	140	139	18.9	17.8	27.8
13	30.8	33.5	35.4	70.1	80.0	65.8	37.6	132	71.2	18.7	17.1	25.2
14	30.4	33.5	* 37.4	69.8	* 75.2	64.6	35.2	110	51.9	18.1	17.7	24.3
15	29.6	* 34.6	36.8	69.7	77.2	* 69.7	34.4	* 93.6	40.0	* 18.0	* 18.1	23.5
16	* 28.9	35.0	34.6	72.4	77.1	68.3	* 34.2	89.2	33.8	19.1	36.4	23.9
17	29.5	34.3	33.6	* 72.9	70.2	65.7	35.1	89.7	* 29.2	19.1	73.5	* 24.0
18	30.1	35.7	34.4	72.5	69.9	67.1	36.7	87.2	28.6	19.2	40.4	24.1
19	29.6	35.8	34.1	72.9	69.9	68.2	37.1	89.4	27.1	18.7	31.4	24.0
20	28.7	35.5	33.7	73.9	69.2	67.3	33.6	103	23.4	18.7	34.8	23.5
21	27.6	36.0	33.3	70.0	71.6	62.5	32.4	87.9	20.6	18.6	29.1	22.5
22	27.5	37.1	32.6	70.8	69.6	61.6	33.1	87.2	21.4	18.9	26.2	21.4
23	26.0	38.4	31.4	69.9	69.3	62.9	33.5	84.4	15.7	19.8	26.5	22.3
24	25.1	37.0	31.7	71.5	61.4	63.9	33.8	84.0	18.8	19.9	24.7	21.9
25	25.2	38.5	33.3	70.3	61.4	60.8	36.1	84.9	21.1	18.2	23.9	21.5
26	25.3	37.2	32.6	68.1	60.3	60.7	34.5	82.2	21.8	18.0	23.3	21.4
27	26.3	36.8	34.4	66.7	62.0	60.3	33.5	82.4	20.4	18.7	23.2	21.4
28	27.1	35.9	33.2	69.0	61.3	48.9	33.3	87.7	20.0	18.8	23.0	21.8
29	27.3		32.4	65.7	* 63.0	40.3	33.6	103	19.6	18.5	22.9	21.4
30	27.3		33.5	* 65.4	60.1	33.0	31.8	113	19.6	18.8	23.0	21.5
31	27.2		35.0		64.5		33.5	235		18.1		21.8
Sum	857.8	956.7	1,082.6	2,007.0	2,214.7	1,848.7	1,152.2	3,303.1	2,518.6	590.2	720.3	738.7

Current Year 2001					Period 1968-2001			
Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	Extreme-Cubic Meters per Second Low	Average	Total	Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.	0.735	0.630	13 / 32.5	5 / 23.3	27.7	74,114	154,403	352,918	44,185
Feb.	.850	.685	25 / 40.7	1 / 26.0	34.2	82,659	181,107	555,809	48,383
Mar.	.840	.695	5 / 41.4	23 / 29.9	34.9	93,537	203,806	609,638	45,757
April	1.150	.725	8 / 92.5	! 1 / 33.2	66.9	173,405	226,963	640,138	43,304
May	1.330	.815	7 / 128	3 / 42.3	71.4	191,350	328,120	817,599	110,911
June	1.095	.690	14 / 85.2	30 / 30.6	61.6	159,728	282,753	857,878	36,616
July	.925	.660	2 / 54.3	31 / 28.9	37.2	99,550	242,305	1,034,298	39,804
Aug.	2.350	.665	31 / 321	1 / 29.3	107	285,388	251,533	979,770	67,452
Sept.	4.055	.480	10 / 690	23 / 12.7	84.0	217,607	290,117	1,500,845	77,026
Oct.	.565	.495	8 / 22.1	9 / 15.3	19.0	50,993	301,918	1,180,391	50,993
Nov.	1.220	.495	17 / 108	2 / 14.4	24.0	62,234	176,540	723,165	53,153
Dec.	.735	.570	11 / 37.5	!22 / 20.8	23.8	63,824	149,733	379,380	48,064
Yearly	4.055	0.480	690	12.7	49.3	1,554,389	2,789,298	4,799,562	1,209,723

* Discharge measurement(s) made on this day ! And other days ** Period 1968-2001

WATER BULLETIN NUMBER 71 -- 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 39.8 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. Since July 1996, the actual measurements and record of gage heights have been obtained at the Nuevo Laredo to Reynosa Highway Bridge approximately 39.7 kilometers downstream from the gaging station near Las Tortillas. The zero of the gage at the Bridge is 89.00 meters above mean sea level, U.S.C. and G.S. datum.

RECORDS: Based on 15 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: September 9, 1953 through 2001. Records are also available for a station at old Cd. Guerrero, 30 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.	93.9	1971	Min.	1.08	1994

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.46	1.38	0.25	32.9	14.8	0	0.03	0.15	4.41	1.82	0	0
2	.48	1.73	.25	31.1	14.5	0	.11	.15	1.11	1.49	0	0
3	.45	1.72	.22	* 29.5	14.3	0	.27	.15	.51	.98	0	0
4	.43	1.38	.20	29.5	14.2	0	.35	.13	.28	.62	0	0
5	.41	1.29	.20	29.5	14.1	0	0	.13	.20	.48	0	0
6	.40	1.21	.20	29.5	14.2	0	0	.04	.14	.46	0	0
7	.41	1.09	.20	29.7	* 14.4	.28	0	0	.05	.48	0	0
8	2.48	.96	.20	29.7	15.2	1.64	0	0	0	.44	0	0
9	29.6	.87	.20	* 29.6	15.9	4.89	0	0	.04	.32	0	0
10	* 32.6	.76	.20	28.3	14.5	3.44	0	0	64.3	.23	0	0
11	33.8	.65	.20	26.4	12.9	1.68	0	.04	133 *	.18	0	0
12	35.6	.62	.20	25.5	12.7	1.08	0	.04	133	.16	0	0
13	36.6	.58	* .20	25.1	12.8	.63	0	.04	* 91.9	.05	0	0
14	36.9	.52	.20	24.6	* 12.5	.44	0	.04	51.0	.03	0	0
15	30.7	.50	.20	19.5	10.2	.56	0	.04	27.3	0	0	0
16	10.4	.50	.17	* 18.3	7.19	1.14	0	.04	17.3	0	0	0
17	4.30	.48	.10	17.0	* 3.40	.63	0	.05	8.30	0	0	0
18	2.54	.46	.10	15.6	1.86	* 3.88	0	.05	3.60	0	0	0
19	2.00	.43	.10	14.9	1.50	3.10	0	.05	2.07	0	.04	0
20	1.90	.41	.09	14.8	1.00	1.87	0	.05	1.76	0	.01	0
21	1.85	.36	.05	14.7	.64	1.53	.02	.05	1.43	0	0	0
22	1.80	.34	.05	14.6	.45	.98	.30	.05	1.12	0	0	0
23	1.75	.32	.05	* 14.7	.37	.62	.40	.05	.72	0	0	0
24	1.72	.30	.02	17.1	.27	.44	.51	.05	14.7	0	0	0
25	1.60	.28	0	16.3	.19	.34	.43	.05	28.8	0	0	0
26	1.60	.27	0	15.4	.20	.28	.10	.05	20.3	0	0	0
27	1.60	.25	0	14.6	.14	.20	.11	.05	24.1	0	0	0
28	1.55	.25	0	14.7	.08	.13	.12	.05	14.1	0	0	0
29	1.57		0	14.5	.02	.09	.12	.05	4.56	0	0	0
30	1.52		13.1	14.8	0	.05	.13	0	1.98	0	0	0
31	1.45		31.0		0		.15	54.7		0		0
Sum	280.47	19.91	47.95	652.4	224.51	29.92	3.15	56.34	652.08	7.74	0.05	0.00

Current Year 2001 | Period 1953-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	High Day	Extreme-Cubic Meters per Second Low	Low Day	Average	Total	Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.	90.230	89.070	37.0	14	0.35	8	9.05	24,233	9,810	73,777	0
Feb.	89.245	89.050	1.86	2	.25	!26	.71	1,720	7,803	82,495	0
Mar.	90.150	89.000	33.0	31	0	!25	1.55	4,143	5,366	36,628	0
April	90.150	89.745	33.0	! 1	14.3	22	21.7	56,367	12,944	250,373	0
May	89.805	89.000	16.7	! 9	0	!29	7.24	19,398	28,155	447,500	0
June	89.685	89.000	12.0	7	0	! 1	1.00	2,585	30,759	304,451	0
July	89.120	89.000	.75	! 3	0	! 1	.10	272	28,028	544,635	0
Aug.	89.950	89.000	84.8	31	0	! 1	1.82	4,868	22,011	259,070	0
Sept.	91.670	89.000	141	11	0	! 1	21.7	56,340	86,276	996,183	2,373
Oct.	89.265	89.000	1.91	1	0	!14	.25	669	52,454	679,329	136
Nov.	89.090	89.000	.45	19	0	! 1	0	4.3	26,038	416,863	0
Dec.	89.000	89.000	0	! 1	0	! 1	0	0	15,790	217,244	0
Yearly	91.670	89.000	141		0		5.41	170,599	325,434	2,961,050	34,122

* Discharge measurement(s) made on this day ! And other days ** Period September 1953-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Starr County, Texas and 139 river kilometers downstream from the old international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas. A gravity well and graphic water-stage recorder located 4.1 river kilometers downstream and a cableway located 1.6 kilometers 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 cableway during spillway gate operations. During 2001 there were 5 current-meter measurements made at the cableway by the United States Section. Records available: 1958 through 2001. 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. This 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.	39.6		1997

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.6	49.6	18.5	57.0	35.6	114	64.1	64.2	10.0	24.5	53.8	17.5
2	33.1	34.9	15.8	64.6	38.2	114	56.5	59.6	13.9	23.4	44.7	13.5
3	36.0	22.6	23.3	60.6	45.7	112	33.6	40.6	27.6	24.8	39.2	11.5
4	33.2	17.4	20.5	56.5	48.8	106	26.7	38.3	27.1	22.6	39.6	14.5
5	24.8	14.8	30.7	58.0	45.8	96.8	26.7	51.1	23.4	19.7	* 38.9	14.5
6	36.2	16.2	33.2	73.0	45.7	86.7	33.5	59.6	23.4	17.5	24.3	12.3
7	33.5	9.80	33.5	85.2	40.7	92.5	55.7	61.4	28.7	15.5	22.4	8.30
8	43.9	9.80	25.5	90.5	35.4	90.5	55.7	57.8	33.4	21.4	32.6	11.0
9	55.8	9.30	30.5	96.1	35.7	84.1	58.6	53.9	27.1	19.9	32.3	12.5
10	55.8	21.2	45.6	116	40.6	76.7	62.1	47.8	7.20	16.5	27.4	12.5
11	51.0	23.2	45.6	99.7	51.5	74.3	52.2	68.4	3.50	16.5	37.4	12.5
12	48.4	23.5	47.0	98.3	56.3	91.6	54.7	73.5	3.50	17.5	38.3	12.5
13	45.9	21.2	50.7	98.0	48.3	91.5	48.7	73.5	3.50	25.8	32.5	12.5
14	45.9	16.0	* 50.7	106	48.2	94.2	69.2	73.3	3.50	29.4	44.8	12.8
15	45.8	13.5	51.2	106	52.9	73.4	69.5	66.4	4.00	32.0	34.6	17.7
16	53.0	15.9	48.5	103	65.6	17.2	74.1	62.4	4.50	34.5	24.8	20.4
17	55.5	18.5	50.7	111	76.0	9.80	71.7	58.3	4.50	35.9	5.90	20.5
18	43.5	18.7	50.9	111	80.5	16.5	71.7	72.7	5.80	31.2	13.6	25.3
19	40.7	24.1	51.0	99.0	91.0	19.2	76.8	76.4	6.90	35.9	22.3	29.7
20	45.8	27.3	52.0	* 89.8	87.5	16.8	75.3	76.2	9.30	47.4	14.8	23.8
21	45.7	* 24.9	55.5	97.9	93.5	15.7	72.9	66.5	22.5	47.7	4.00	25.6
22	45.7	25.2	58.2	99.1	83.1	14.8	72.8	55.3	29.9	47.5	12.5	18.7
23	50.7	25.1	55.8	92.8	82.9	29.6	72.4	64.5	31.0	47.5	21.5	16.5
24	50.6	29.8	71.3	59.3	101	29.8	78.4	66.3	24.9	46.2	21.5	15.5
25	43.2	30.0	68.3	32.5	111	28.2	77.8	75.0	27.6	44.4	24.1	14.5
26	42.7	35.5	66.0	30.1	111	36.8	79.3	74.1	19.5	46.7	21.0	16.7
27	45.0	30.8	60.1	21.8	111	41.9	77.7	77.8	15.0	54.6	19.5	18.6
28	44.6	23.0	55.2	26.7	98.6	36.6	77.2	65.2	10.3	57.3	18.5	23.5
29	49.7		50.2	26.7	* 90.8	41.6	75.9	45.3	10.5	63.7	17.5	28.5
30	44.9		49.3	27.4	103	61.7	74.2	35.6	20.8	63.3	17.5	28.4
31	46.8		51.9		113		64.9	27.1		60.6		28.3
Sum	1,368.0	631.80	1,417.2	2,293.6	2,168.9	1,814.50	1,960.6	1,888.1	482.80	1,091.4	801.80	550.60

Month	Current Year 2001 Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	@ High	Extreme-Cubic Meters per Second @ Low Day	@ Low	Average	Volume-Thousand Cubic Meters Total	Period 1954-2001 Average	Maximum	Minimum
Jan.			! 9	55.8	5	24.8	44.1	118,195	246,008	664,934	12,802
Feb.			1	49.6	9	9.30	22.6	54,588	171,061	453,153	13,796
Mar.			24	71.3	2	15.8	45.7	122,446	164,252	487,987	27,900
April			10	116	27	21.8	76.5	198,167	401,174	861,235	14,541
May			31	113	8	35.4	70.0	187,393	445,989	882,527	26,611
June			! 1	114	17	9.80	60.5	156,773	302,564	830,101	24,322
July			26	79.3	! 4	26.7	63.2	169,396	194,685	482,117	15,837
Aug.			27	77.8	31	27.1	60.9	163,132	250,819	1,823,919	74,233
Sept.			8	33.4	!11	3.50	16.1	41,714	178,539	1,333,232	1,761
Oct.			29	63.7	7	15.5	35.2	94,297	237,329	2,463,696	2,383
Nov.			1	53.8	21	4.00	26.7	69,276	125,840	1,391,291	1,727
Dec.			19	29.7	7	8.30	17.8	47,572	112,363	573,923	10,807
Yearly				116		3.50	45.1	1,422,949	2,830,623	6,188,898	1,247,998

* Discharge measurement(s) made on this day @ Mean daily ! And other days
** Period 1954-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 27'02", longitude 99 09'06", 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 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 2001.
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 stage of 67.64 meters above mean sea level. 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.	0.21	2000

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.35	0.30	0.30	0.10	0	0	0	0	0	0	0	1.35
2	.36	.39	.30	.10	0	0	0	0	0	0	0	1.40
3	.40	.36	.30	.10	0	0	0	0	0	0	.11	1.40
4	.40	.31	.30	.10	0	0	0	0	0	0	.49	1.40
5	.40	.30	* .30	.05	0	0	0	0	0	0	.45	1.36
6	.40	.30	.18	0	0	0	0	0	0	.18	.44	1.35
7	.40	.30	.10	0	0	0	0	0	0	0	.40	1.35
8	.39	.30	.10	0	0	0	0	0	0	0	.40	1.41
9	.36	.30	.10	0	0	0	0	0	0	0	.40	1.41
10	.40	.30	.10	0	0	0	0	0	40.9	0	.40	1.38
11	.39	.30	.10	0	0	0	0	0	44.3	0	.40	1.36
12	.35	.30	.10	.70	0	0	0	0	9.31	0	.40	1.40
13	.35	.30	* .10	1.15	0	0	0	0	2.15	0	.40	1.38
14	.39	.30	.10	1.13	0	0	0	0	1.52	0	.40	1.35
15	.40	.30	.10	1.12	0	.58	0	0	1.35	0	.40	1.34
16	.40	.29	.10	1.08	0	.44	0	0	1.25	0	6.47	1.30
17	.40	.25	.10	1.05	0	.06	0	0	1.19	0	.79	1.30
18	.40	.25	.10	1.03	0	0	0	0	1.15	0	.49	1.14
19	.39	.25	* .10	1.00	0	0	0	0	.48	0	3.29	0
20	.35	.25	.10	1.00	0	0	0	0	.05	0	33.4	0
21	.35	.25	.10	1.00	0	0	0	0	.05	0	2.56	0
22	.35	.25	.10	.99	0	0	0	0	.08	0	1.61	0
23	.35	.25	.10	.98	0	0	0	0	.49	0	1.45	0
24	.35	.24	.10	1.00	0	0	0	0	* 1.22	0	1.39	0
25	.35	.20	.10	1.00	0	0	0	0	.03	.52	1.31	0
26	.35	.21	.10	1.00	0	0	0	0	0	.79	1.30	0
27	.35	.50	.10	.50	0	0	0	0	0	0	1.31	0
28	.35	.50	.10	.12	0	0	0	0	0	0	1.30	0
29	.31		.10	.02	0	0	0	0	0	0	1.30	0
30	.30		.10	0	0	0	0	0	0	0	1.34	0
31	.30		.10		0		0	0		0		0
Sum	11.39	8.35	4.18	16.32	0	1.08	0	0	105.52	1.49	64.40	24.38

Current Year 2001 | Period 1924-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	High Day	Extreme-Cubic Meters per Second Low	Low Day	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	57.440	57.430	0.40	2	0.30	!29	0.37	984	1,999	43,079	0
Feb.	57.450	57.420	.50	27	.20	!25	.30	721	2,523	65,959	0
Mar.	57.430	57.410	.30	! 1	0	12	.13	361	2,048	24,456	0
April	57.515	57.400	1.15	!12	0	! 6	.54	1,410	5,426	44,665	0
May	57.400	57.400	0	! 1	0	! 1	0	0	9,319	168,990	0
June	57.640	57.400	3.00	15	0	! 1	.04	93.3	10,652	102,675	0
July	57.400	57.400	0	! 1	0	! 1	0	0	6,482	76,780	0
Aug.	57.400	57.400	0	! 1	0	! 1	0	0	17,610	253,778	0
Sept.	59.385	57.400	112	10	0	! 1	3.52	9,117	39,029	535,810	167
Oct.	57.830	57.400	7.90	25	0	! 1	.05	129	17,066	238,962	0
Nov.	59.530	57.400	133	20	0	! 1	2.15	5,564	3,622	31,041	0
Dec.	57.550	57.400	1.50	8	0	!18	.79	2,106	2,511	19,714	0
Yearly	59.530	57.400	133		0		0.65	20,485	118,287	747,096	6,479

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on a continuous record of gage heights. Computations by shifting control methods. Discharge prorated between measurements during times of extremely low flow. Records available: 1954 through 2001.

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 stage of 52.57 meters above mean sea level. Min. no flow occurs frequently.

Average Flow in Cubic Meters per Second

Daily:	Max.	3,250	Sept. 25, 1967	Min.	0	Frequently
Monthly:	Max.	894	Sept. 1967	Min.	0	Frequently
Yearly:	Max.	113	1967	Min.	0.02	1992

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	17.3	0	0	0
2	0	0	0	0	0	0	5.20	0	15.8	0	0	0
3	0	0	0	0	0	0	2.62	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	1.72	0	0	0
10	0	0	0	0	0	0	0	0	19.2	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	20.3	0	0	0	0	0	0
16	0	0	0	0	0	17.4	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	3.40	0	0	0	0	0	0	0
22	0	0	0	0	8.38	0	0	0	0	0	0	0
23	0	0	0	0	.15	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0		0	0	0	0	0	0	0	0	0	0
30	0		0	0	0	0	0	.05	0	0	0	0
31	0		0		0		0	4.50		0		0
Sum	0	0	0		37.7		7.82	4.55	54.02	0	0	0
	0	0		11.93								

Current Year 2001							Period 1954-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
			High		Low				
Month	High	Low	Day		Day	Average	Total	Average	Maximum	Minimum
Jan.	39.400	39.400	! 1	0	! 1	0	0	8,652	118,256	0
Feb.	39.400	39.400	! 1	0	! 1	0	0	5,105	79,341	0
Mar.	39.400	39.400	! 1	0	! 1	0	0	2,628	30,236	0
April	39.400	39.400	! 1	0	! 1	0	0	2,336	44,253	0
May	39.760	39.400	21	14.0	! 1	0	.38	1,031	3,364	35,412	0
June	40.670	39.400	15	71.3	! 1	0	1.26	3,257	14,960	412,734	0
July	39.760	39.400	2	14.0	! 1	0	.25	676	23,995	421,148	0
Aug.	39.980	39.400	31	24.0	! 1	0	.15	393	17,864	337,857	0
Sept.	41.650	39.400	10	156	! 3	0	1.80	4,667	108,446	2,316,989	0
Oct.	39.400	39.400	! 1	0	! 1	0	0	0	92,638	1,111,977	0
Nov.	39.400	39.400	! 1	0	! 1	0	0	0	25,530	283,859	0
Dec.	39.400	39.400	! 1	0	! 1	0	0	0	15,256	190,901	0
Yearly	41.650	39.400		156		0	0.32	10,024	320,774	3,566,125	648

! And other days ** Period 1954-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, Huizache, and Morillo Drains. Only the portion of water reaching the Rio Grande via drains located upstream from the Rio Grande City Gaging Station is shown below. Drain water reaching the Rio Grande through the Rio San Juan channel is included in the Rio San Juan tabulation.
RECORDS: Based on 7 discharge measurements during the year by the Mexican Section. 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. All storm water measured at these two drains was deducted and is not included in the tabulation below. Records available: 1953 through 2001. Records prior to 1976 include Rio San Juan flow.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0.10	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	.60	0	0	0	0	0	0	0	0
12	0	0	0	.40	0	0	0	0	0	0	0	0
13	0	0	0	.20	0	0	0	0	0	0	0	0
14	0	0	0	.20	0	0	0	0	0	0	0	0
15	0	0	0	.30	0	0	0	0	0	0	0	0
16	0	0	0	.40	0	0	0	0	0	0	0	0
17	0	0	0	.50	0	0	0	0	0	0	0	0
18	0	0	0	.50	0	0	0	0	0	0	0	0
19	0	0	0	.40	0	0	0	0	0	0	0	0
20	0	0	0	.40	0	0	0	0	0	0	0	0
21	0	0	0	.40	0	0	0	0	0	0	0	0
22	0	0	0	.30	0	0	0	0	0	0	0	0
23	0	0	0	.60	0	0	0	0	0	0	0	0
24	0	0	0	.80	0	0	0	0	0	0	0	0
25	0	0	0	.80	0	0	0	0	0	0	0	0
26	0	0	0	.70	0	0	0	0	0	0	0	0
27	0	0	0	.50	0	0	0	0	0	0	0	0
28	0	0	0	.40	0	0	0	0	0	0	0	0
29	0		0	.20	0	0	0	0	0	0	0	0
30	0		0	.10	0	0	0	0	0	0	0	0
31	0		0		0		0	0		0		0
Sum	0		8.70		0		0			0		0
	0		0		0.10		0			0		

Current Year 2001						Period 1954-2001		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters		
			@ High		@ Low	Average	Total	
	High	Low	Day		Day			Average / Maximum / Minimum
Jan.			! 1	0	! 1	0	0	314 / 1,470 / 0
Feb.			! 1	0	! 1	0	0	406 / 1,157 / 0
Mar.			! 1	0	! 1	0	0	311 / 952 / 0
April			!24	.80	! 1	0	.29	752 / 414 / 1,338 / 0
May			1	.10	! 1	0	8.6	752 / 1,807 / 8.6
June			! 1	0	! 1	0	0	641 / 1,551 / 0
July			! 1	0	! 1	0	0	379 / 3,573 / 0
Aug.			! 1	0	! 1	0	0	318 / 3,902 / 0
Sept.			! 1	0	! 1	0	0	297 / 2,416 / 0
Oct.			! 1	0	! 1	0	0	218 / 983 / 0
Nov.			! 1	0	! 1	0	0	177 / 794 / 0
Dec.			! 1	0	! 1	0	0	166 / 610 / 0
Yearly				0.80		0	0.02	761 / 4,393 / 13,656 / 224

@ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 Natural Resource Conservation 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 Watermaster.

During 2000, 1,671 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 2001 in this river reach was 10,321 TCM, or 1.0% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of 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.	4.59	May 1,	1998	Min.	0	Occasionally	
Monthly:	Max.	1.58	April	1984	Min.	0.06	March	1957
Yearly:	Max.	0.65		1989	Min.	0.20		1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.20	1.28	1.08	0.32	1.00	0.44	0.15	0.22	0.26	0.40	0.24	0.19
2	.20	.43	.72	.55	.62	.50	.15	.20	.17	.34	.28	.24
3	.20	.34	.45	.59	.70	.37	.15	.22	.17	.40	.26	.24
4	.20	.21	.27	.59	.82	.40	.18	.22	.21	.36	.26	.24
5	.20	.21	.28	.72	.62	.50	.15	.21	.19	.30	.31	.24
6	.20	.34	.34	.65	.54	.36	.15	.25	.18	.29	.42	.24
7	.19	.34	.48	.73	.61	.35	.15	.24	.18	.25	.41	.25
8	.19	.31	.55	.52	.58	.35	.16	.27	.19	.30	.47	.24
9	.19	.41	.61	.54	.70	.21	.24	.29	.14	.37	.42	.24
10	.19	.31	.58	.51	.53	.14	.28	.32	.14	.37	.32	.25
11	.21	.25	.45	.59	.57	.19	.47	.25	.14	.35	.31	.25
12	.21	.30	.60	.68	.63	.40	.43	.24	.20	.44	.40	.31
13	.21	.31	.65	.52	.50	.59	.38	.31	.27	.36	.34	.29
14	.18	.45	.62	.46	.54	.54	.24	.36	.21	.34	.36	.23
15	.22	.39	.68	.34	.63	.55	.24	.37	.16	.29	.30	.27
16	.21	.50	.62	.53	.67	.41	.25	.53	.15	.31	.29	.26
17	.32	.47	.63	.59	.76	.41	.24	.44	.15	.42	.26	.28
18	.29	.36	.55	.59	.60	.41	.24	.45	.16	.48	.22	.29
19	.33	.40	.60	.69	.56	.41	.24	.19	.15	.49	.22	.30
20	.31	.50	.53	.61	.46	.14	.24	.27	.17	.40	.22	.29
21	.24	.37	.57	.66	.51	.14	.24	.38	.16	.22	.22	.30
22	.21	.55	.69	.52	.40	.14	.22	.38	.16	.33	.22	.29
23	.25	.53	.61	.55	.31	.14	.35	.30	.20	.34	.22	.29
24	.34	.49	.62	.54	.30	.13	.35	.34	.21	.41	.22	.30
25	.47	0	.35	.52	.29	.14	.36	.21	.22	.37	.11	.12
26	.46	0	.51	.68	.32	.14	.40	0	.20	.36	.11	.12
27	.47	0	.50	.57	0	.14	.28	0	.26	.26	.11	.14
28	0	0	.58	.43	0	.16	.28	0	.28	0	.11	.37
29	0		.53	0	0	.35	0	0	.29	0	.11	.37
30	0		.60	0	0	.33	0	0	0	0	.11	0
31	0		.56		0		0	0		0		0
Sum	6.89	10.05	17.41	15.79	14.77	9.48	7.21	7.46	5.57	9.55	7.85	7.44

Current Year 2001							Period 1960-2001		
Month	Average Rainfall** Millimeters 2001	Average Rainfall** Millimeters 1960-2001	Extreme-Cubic Meters per Second @ High Day	@ High	Extreme-Cubic Meters per Second @ Low Day	@ Low	Volume-Thousand Cubic Meters Average	Volume-Thousand Cubic Meters Total	Volume-Thousand Cubic Meters Average	Volume-Thousand Cubic Meters Maximum	Volume-Thousand Cubic Meters Minimum
Jan.	13	24	!25	0.47	!28	0	0.22	595	937	1,828	196
Feb.	28	27	1	1.28	!25	0	.36	868	1,140	2,198	275
Mar.	16	16	1	1.08	4	.27	.56	1,504	1,518	2,558	549
April	14	35	7	.73	!29	0	.53	1,364	1,626	4,088	440
May	43	63	1	1.00	!27	0	.48	1,276	1,283	3,237	260
June	61	66	13	.59	24	.13	.32	819	1,119	3,217	258
July	26	35	11	.47	!29	0	.23	623	953	1,897	343
Aug.	33	54	16	.53	!26	0	.24	645	902	1,798	343
Sept.	149	111	29	.29	30	0	.19	481	750	1,745	220
Oct.	8	49	19	.49	!28	0	.31	825	1,064	2,109	448
Nov.	55	28	8	.47	!25	.11	.26	678	766	1,793	260
Dec.	38	23	!28	.37	!30	0	.24	643	728	1,490	179
Yearly	484	531		1.28		0	0.33	10,321	12,786	20,497	6,154

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

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

DESCRIPTION: Cableway, bubbler gage, water-stage recorders (graphic and digital), and digital transmitter located on the left bank at Fort Ringgold, latitude 26 22'00", longitude 98 48'10", and river kilometer 378; about 1.6 kilometers 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 24 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: January 1955 through 2001. 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.

Average Flow in Cubic Meters per Second

Daily:	Max.	5,860	Sept. 23, 1967	Min.	0.36	March 5, 1985
Monthly:	Max.	1,400	Oct. 1958	Min.	6.66	March 1957
Yearly:	Max.	259	1958	Min.	43.3	1997

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28.2	* 50.0	* 23.1	55.9	27.4	114 *	66.6	* 65.6	79.2	* 13.3	* 59.0	13.7
2	31.3	51.7	19.0	61.0	* 33.3	116	* 72.2	60.7	39.8	28.0	53.2	13.0
3	* 34.8	40.3	15.4	64.3	39.0	117	57.3	61.6	16.5	26.0	44.1	* 12.1
4	38.2	25.3	20.6	* 60.9	45.9	114	36.1	41.5	* 22.4	28.2	36.8	10.6
5	34.5	18.9	19.5	56.3	48.4	109	27.7	34.7	35.8	25.6	36.5	10.2
6	27.2	14.2	28.8	59.6	46.1	96.8	28.0	46.6	32.4	24.3	37.2	10.6
7	37.8	17.5	32.9	76.7	46.5	91.0	37.6	59.0	29.7	19.1	26.3	10.7
8	36.0	11.7	31.9	85.5	38.9	103	59.9	63.9	34.0	16.1	17.7	8.84
9	49.7	9.71	22.6	89.1	34.6	94.2	60.8	57.1	45.4	18.5	26.8	7.54
10	59.6	9.86	29.8	105	35.1	85.9	63.3	56.9	151	23.0	32.9	8.93
11	59.4	17.6	44.5	111	40.5	83.9	64.6	51.3	272	19.5	26.0	9.85
12	55.0	23.9	43.3	99.7	55.2	86.0	57.1	67.8	102	17.7	34.8	10.2
13	51.5	* 23.9	46.6	97.3	56.0	101	57.7	77.8	31.6	16.3	37.9	9.92
14	49.4	22.1	* 50.1	103	48.4	101	56.2	* 78.3	12.5	21.4	* 35.6	10.5
15	49.4	16.9	51.3	109	* 50.3	128	70.7	79.1	8.13	33.9	40.3	10.6
16	50.3	12.2	50.2	108	55.8	114	73.0	72.7	6.27	* 34.5	41.2	12.1
17	* 55.8	14.1	48.4	106 *	68.7	28.5	* 78.4	69.1	5.32	36.8	48.8	18.9
18	56.8	17.5	51.5	113	74.3	12.6	73.9	65.9	* 5.21	37.8	23.1	* 20.6
19	46.3	18.4	51.3	112	81.9	* 17.2	76.5	79.8	5.48	36.4	13.0	25.0
20	45.0	24.2	50.9	98.4	89.7	20.0	81.0	87.7	5.57	35.1	47.4	30.0
21	49.2	27.3	52.7	93.4	86.5	16.5	78.1	89.0	6.30	47.9	44.1	26.2
22	51.0	25.7	57.2	103	105	15.2	76.0	79.2	12.8	49.9	15.6	27.0
23	53.8	27.4	58.9	103	76.9	14.0	75.3	66.8	31.7	49.1	8.52	21.0
24	53.2	26.4	60.0	91.1	84.5	25.9	74.7	75.9	46.7	48.1	12.7	15.1
25	49.5	29.7	72.0	58.3	99.9	30.1	79.2	82.1	37.1	45.8	18.4	14.5
26	44.1	31.7	69.7	37.6	108	29.0	79.6	92.4	33.9	44.1	19.1	13.5
27	48.6	37.9	67.5	32.6	110	39.0	80.4	95.7	28.2	45.8	19.7	13.9
28	48.5	32.1	60.8	24.6	108	44.8	79.6	101	17.9	51.6	16.1	19.6
29	48.8		55.8	26.8	96.2	41.5	78.9	90.8	13.7	54.2	15.8	22.7
30	51.2		52.2	26.8	90.2	48.6	77.3	68.0	10.6	59.3	14.5	27.9
31	47.1		52.2		108		75.8	57.9		61.4		28.6
Sum	1,441.2	678.17	1,390.7	2,368.9	2,089.2	2,037.7	2,053.5	2,175.9	1,179.18	1,068.7	903.12	493.88

Month	Current Year 2001 Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High	High Day	Extreme-Cubic Meters per Second Low	Low Day	Average	Total	Period 1954-2001 Volume-Thousand Cubic Meters Average	Maximum	Minimum
Jan.	8.205	7.885	60.8	10	24.9	6	46.5	124,520	257,121	628,819	20,625
Feb.	8.180	7.660	55.3	2	8.60	9	24.2	58,594	195,049	464,530	31,488
Mar.	8.330	7.765	73.1	26	14.4	3	44.9	120,156	169,397	470,016	17,787
April	8.670	7.905	122	11	23.5	28	79.0	204,673	378,954	878,161	20,156
May	8.695	7.935	114	31	25.8	1	67.4	180,507	449,772	850,281	45,271
June	9.225	7.710	224	16	11.3	18	67.9	176,057	337,236	811,943	97,028
July	8.490	7.955	81.6	20	27.0	5	66.2	177,422	218,528	707,768	27,479
Aug.	8.610	8.085	107	!28	30.4	5	70.2	187,998	269,585	1,853,522	30,778
Sept.	9.700	7.570	331	11	4.90	18	39.3	101,881	326,783	3,346,077	52,327
Oct.	8.280	7.690	62.2	31	9.79	1	34.5	92,336	338,683	3,758,177	37,009
Nov.	8.450	7.655	86.4	20	6.98	23	30.1	78,030	157,451	1,778,975	28,132
Dec.	7.970	7.650	32.7	20	7.35	9	15.9	42,671	135,608	665,515	39,434
Yearly	9.700	7.570	331		4.90		49.0	1,544,845	3,234,167	8,165,042	1,364,475

* Discharge measurement(s) made on this day ! And other days ** Period 1954-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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, 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, Ranccherias 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. Records available: 1953 through 2001.

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.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0.10	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	.30	0	0	0	0	0	0	0	0
12	0	0	0	.20	0	0	0	0	0	0	0	0
13	0	0	0	.20	0	0	0	0	0	0	0	0
14	0	0	0	.20	0	0	0	0	0	0	0	0
15	0	0	0	.20	0	0	0	0	0	0	0	0
16	0	0	0	.20	0	0	0	0	0	0	0	0
17	0	0	0	.30	0	0	0	0	0	0	0	0
18	0	0	0	.30	0	0	0	0	0	0	0	0
19	0	0	0	.40	0	0	0	0	0	0	0	0
20	0	0	0	.20	0	0	0	0	0	0	0	0
21	0	0	0	.20	0	0	0	0	0	0	0	0
22	0	0	0	.20	0	0	0	0	0	0	0	0
23	0	0	0	.40	0	0	0	0	0	0	0	0
24	0	0	0	.90	0	0	0	0	0	0	0	0
25	0	0	0	.60	0	0	0	0	0	0	0	0
26	0	0	0	.50	0	0	0	0	0	0	0	0
27	0	0	0	.40	0	0	0	0	0	0	0	0
28	0	0	0	.10	0	0	0	0	0	0	0	0
29	0		0	.10	0	0	0	0	0	0	0	0
30	0		0	.10	0	0	0	0	0	0	0	0
31	0		0		0		0	0		0		0
Sum	0		6.00		0		0			0		0
	0		0		0.10		0		0		0	

	Current Year 2001						Period 1954-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
			@ High		@ Low				
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.			! 1	0	! 1	0	0	0	2,764	9,405	0
Feb.			! 1	0	! 1	0	0	0	3,188	8,707	0
Mar.			! 1	0	! 1	0	0	0	2,184	6,526	0
April			24	.90	! 1	0	.20	518	3,893	12,815	0
May			1	.10	! 1	0	0	8.6	8,765	37,225	0
June			! 1	0	! 1	0	0	0	8,445	106,021	0
July			! 1	0	! 1	0	0	0	4,402	60,172	0
Aug.			! 1	0	! 1	0	0	0	2,323	16,395	0
Sept.			! 1	0	! 1	0	0	0	2,372	13,905	0
Oct.			! 1	0	! 1	0	0	0	2,709	12,127	0
Nov.			! 1	0	! 1	0	0	0	1,871	12,904	0
Dec.			! 1	0	! 1	0	0	0	2,335	41,991	0
Yearly				0.90		0	0.02	527	45,251	221,389	527

@ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 Natural Resource Conservation 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 Watermaster.

During 2001, 65,109 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 24.3% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2001 in this river reach was 191,677 TCM, or 17.8% 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 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.29	6.69	7.70	5.67	4.93	7.23	7.26	8.82	1.27	3.96	11.6	2.51
2	3.35	5.02	4.79	9.63	4.33	6.11	9.12	9.26	6.89	4.69	9.18	1.74
3	3.66	3.03	2.52	11.6	4.50	7.67	6.63	7.16	4.48	4.18	6.58	2.54
4	4.03	2.29	2.29	12.1	3.74	12.0	3.14	5.28	5.62	4.88	4.70	.23
5	2.97	3.05	6.57	10.7	2.59	12.3	2.80	5.00	5.47	4.24	6.73	.16
6	2.84	2.77	9.79	9.87	2.02	12.6	4.26	7.68	5.13	2.72	6.96	.71
7	2.71	1.00	8.61	8.01	5.41	12.3	3.35	8.23	4.26	2.62	6.64	1.02
8	3.35	1.13	7.85	6.59	6.16	9.37	4.56	7.65	3.34	2.72	7.15	1.84
9	4.40	2.10	7.32	11.0	8.28	7.11	5.23	6.58	3.33	2.07	9.80	.77
10	4.50	3.40	6.73	13.2	7.74	6.43	5.27	7.51	4.44	3.03	9.45	1.39
11	3.87	2.07	6.49	13.6	5.50	10.3	5.94	6.32	4.14	3.30	9.40	1.97
12	3.85	3.38	9.81	12.0	3.81	11.5	6.04	5.74	.91	4.28	10.1	3.08
13	2.85	3.06	11.3	7.63	3.09	12.9	7.18	10.3	1.76	4.09	9.12	3.20
14	2.53	4.15	11.4	6.53	5.21	11.2	7.48	11.2	2.47	3.46	5.92	2.75
15	4.37	3.50	11.9	5.90	5.24	8.63	8.93	11.4	.76	4.42	11.1	1.22
16	3.76	3.74	10.0	12.1	6.95	7.57	10.9	11.2	2.44	6.55	8.08	1.53
17	3.67	3.29	5.48	13.1	7.89	6.33	11.1	9.65	5.41	6.21	3.98	3.09
18	3.33	3.37	6.33	12.9	8.23	4.81	11.6	8.93	4.13	5.36	1.64	2.98
19	2.61	7.46	12.0	12.7	6.22	.48	10.7	9.65	4.25	5.20	2.11	2.82
20	2.23	8.11	12.1	10.2	6.92	1.59	9.14	11.0	4.39	4.37	3.31	3.44
21	2.20	8.87	12.1	8.75	10.9	1.59	8.96	7.68	4.36	4.06	3.18	2.30
22	4.41	7.62	11.6	9.65	10.6	1.57	10.5	8.08	3.83	7.78	.34	1.95
23	4.93	6.85	9.85	12.4	10.7	1.46	13.2	8.15	2.87	8.08	.62	1.46
24	4.02	4.47	8.17	12.2	6.14	1.15	13.5	13.1	5.96	8.19	1.22	1.07
25	3.82	4.66	7.31	11.5	7.31	2.97	12.1	9.45	5.02	6.91	1.19	.64
26	3.92	8.11	10.6	6.47	5.12	3.57	9.60	7.59	3.23	7.04	2.60	6.16
27	3.74	8.95	11.5	3.95	5.14	6.91	7.95	12.5	1.81	5.40	.98	5.05
28	2.58	9.43	11.0	1.59	8.57	6.61	6.08	12.2	2.15	6.43	1.66	4.37
29	6.45		11.1	.76	10.3	5.66	6.51	6.04	2.28	10.5	3.06	3.41
30	7.00		8.72	2.06	10.4	5.30	9.57	4.39	1.20	9.60	2.93	.23
31	5.51		5.72		10.4		16.3	5.05		10.0		0
Sum	115.75	131.57	268.65	274.36	204.34	205.22	254.90	262.79	107.60	166.34	161.33	65.63

Current Year 2001						Period 1960-2001			
Month	Average Rainfall** Millimeters 2001	Average Rainfall** Millimeters 1960-2001	Extreme-Cubic Meters per Second @ High Day	@ High	Extreme-Cubic Meters per Second @ Low Day	@ Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	8	28	30	7.00	21	2.20	3.73	10,001	15,844	35,458	2,479
Feb.	42	27	28	9.43	7	1.00	4.70	11,368	17,736	47,610	4,040
Mar.	18	19	!20	12.1	4	2.29	8.67	23,211	27,548	51,495	8,288
April	10	32	11	13.6	29	.76	9.15	23,705	31,404	53,085	4,216
May	47	63	21	10.9	6	2.02	6.59	17,655	27,061	55,732	3,919
June	73	68	13	12.9	19	.48	6.84	17,731	26,588	73,847	6,181
July	53	35	31	16.3	5	2.80	8.22	22,023	26,945	57,262	6,973
Aug.	60	51	24	13.1	30	4.39	8.48	22,705	27,516	44,751	8,469
Sept.	118	94	2	6.89	15	.76	3.59	9,297	17,947	42,873	5,102
Oct.	35	57	29	10.5	9	2.07	5.37	14,372	21,462	46,570	4,358
Nov.	70	24	1	11.6	22	.34	5.38	13,939	18,853	45,171	3,614
Dec.	33	26	26	6.16	31	0	2.12	5,670	14,986	30,837	3,091
Yearly	567	524		16.3		0	6.08	191,677	273,890	424,806	168,318

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

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 33 discharge measurements during the year, 31 by the Mexican Section and 2 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 2001.

REMARKS: Diversions by this canal are for irrigation and domestic use in Mexico. For area irrigated during the year 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 19 kilometers and 37 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

Daily:	Max.	279	May 17, 1994	Min.	0	Frequently
Monthly:	Max.	215	April 1993	Min.	0	Several months
Yearly:	Max.	60.3	1989	Min.	1.61	2001

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	* 8.10	0	0	16.6	0	0	0
2	* 7.40	* 6.90	0	0	0	0	0	0	16.6	0	2.80	0
3	0	5.70	0	* 5.60	0	0	0	* 11.5	* 9.90	0	* 7.20	0
4	0	0	0	0	0	0	* 5.30	9.70	2.90	0	0	0
5	0	0	0	0	0	0	* 7.30	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	1.70
7	0	0	0	0	0	0	0	0	0	0	3.80	2.40
8	0	0	0	0	* 6.00	* 9.80	0	0	0	0	0	0
9	0	0	* 5.10	0	2.70	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	6.30	0	0	0
11	0	0	0	* 17.2	0	* 5.80	0	0	* 75.2	0	0	0
12	0	0	0	0	0	3.60	0	0	105 *	0	0	0
13	0	0	* 5.20	0	0	0	0	0	11.5	0	0	0
14	0	0	* 3.00	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	8.90	0	0	0	0	0	0
16	0	0	0	4.50	0	* 27.1	0	0	0	0	0	0
17	0	0	0	* 10.5	0	* 17.9	0	0	0	0	3.20	0
18	0	0	0	0	0	0	0	0	0	0	13.5	0
19	* 6.90	0	0	0	0	0	0	0	0	0	4.40	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	* 26.8	0
22	0	0	0	0	0	0	0	* 8.00	0	0	11.7	0
23	0	0	* 5.20	0	* 8.40	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	5.00	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0		0	0	0	0	0	4.00	0	0	0	0
30	0		0	0	0	0	0	* 10.1	0	0	0	0
31	0		0		0		* 8.20	* 14.2		0		0
Sum	14.30	17.60	18.50	37.80	17.10	81.20	20.80	57.50	244.00	0	73.40	4.10

Current Year 2001 | Period 1952-2001

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second @ High Day	@ High	Extreme-Cubic Meters per Second @ Low Day	@ Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.			2	7.40	! 1	0	0.46	1,236	123,492	439,093	0
Feb.			2	6.90	! 1	0	.63	1,521	96,871	310,245	0
Mar.			!13	5.20	! 1	0	.60	1,598	44,352	182,376	1,182
April			11	17.2	! 1	0	1.26	3,266	189,024	557,401	2,950
May			23	8.40	! 1	0	.55	1,477	247,905	531,533	467
June			16	27.1	! 2	0	2.71	7,016	111,228	333,959	0
July			31	8.20	! 1	0	.67	1,797	49,055	200,370	392
Aug.			31	14.2	! 1	0	1.85	4,968	90,122	333,642	698
Sept.			12	105	! 5	0	8.13	21,082	58,875	204,486	131
Oct.			! 1	0	! 1	0	0	0	56,162	258,526	0
Nov.			21	26.8	! 1	0	2.45	6,342	16,453	103,226	0
Dec.			7	2.40	! 1	0	.13	354	26,802	205,654	0
Yearly				105		0	1.61	50,657	1,110,341	1,903,119	50,657

* Discharge measurement(s) made on this day @ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- 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 07'51", longitude 98 19'53", 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 201 discharge measurements during the year, 161 by the Mexican Section and 40 by the United States Section of the Commission, and a continuous record of gage heights. Records available: 1952 through 2001.
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 stage of 34.48 meters above mean sea level. 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.	1,071	Oct. 1958	Min.	0.16	March 1957
Yearly:	Max.	182	1958	Min.	4.49	1957

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	17.4	41.2	* 17.2	39.8	24.4	* 92.7	* 34.7	* 59.4	* 37.5	* 13.6	* 34.5	11.0
2	* 23.6	* 38.6	* 10.8	* 39.9	* 25.6	90.3	* 49.3	* 51.8	32.3	14.7	37.0	14.7
3	24.5	* 29.6	8.17	* 38.7	* 26.6	90.3	52.1	42.5	28.0	* 13.1	36.6	* 12.1
4	24.5	* 21.7	14.1	* 37.1	* 31.5	* 90.3	* 43.7	* 38.6	* 16.5	* 11.3	36.7	* 11.3
5	24.8	18.4	* 17.2	* 42.4	32.9	90.3	* 27.6	* 38.3	* 15.6	* 12.4	* 34.9	* 9.57
6	20.1	* 16.3	* 17.4	* 47.2	32.1	88.6	* 27.0	42.5	* 15.4	12.2	32.8	* 10.8
7	25.0	* 14.9	* 18.5	* 51.1	* 32.6	* 80.4	* 30.4	45.4	* 13.5	12.4	* 28.5	8.88
8	* 30.6	* 13.8	* 22.7	* 59.8	* 32.5	* 79.4	* 36.7	* 43.8	15.6	* 11.5	* 21.5	8.41
9	* 30.7	* 12.2	* 17.8	* 61.9	* 30.6	79.6	* 42.2	* 40.0	24.4	* 10.9	21.3	9.69
10	41.8	10.3	15.7	* 67.4	* 30.8	* 74.3	45.1	39.9	* 20.7	* 13.8	18.7	* 9.51
11	* 44.2	* 15.3	* 25.7	* 79.6	* 30.8	* 64.4	* 44.0	46.2	45.8	17.6	21.1	* 8.74
12	* 43.0	* 15.8	* 28.9	* 78.9	30.1	63.4	* 45.3	* 54.6	82.5	19.4	* 20.4	* 8.28
13	39.5	* 15.9	* 32.3	82.1	37.5	* 68.6	47.4	* 58.1	76.5	15.5	19.6	* 7.58
14	42.7	* 16.3	* 36.9	87.5	* 39.2	* 70.6	40.6	56.2	35.2	17.3	18.9	* 7.49
15	* 42.7	12.8	* 39.5	88.9	38.0	72.3	* 50.6	* 51.4	15.3	* 17.7	16.7	8.38
16	42.7	* 8.90	* 36.6	89.0	* 39.7	87.6	* 55.2	* 47.6	3.37	19.1	* 16.6	10.7
17	* 46.7	9.10	31.9	* 90.4	* 49.0	75.3	57.3	49.7	1.15	* 17.9	32.3	* 13.6
18	* 46.5	9.80	33.6	87.7	* 54.2	* 30.9	* 58.0	56.1	2.85	19.5	30.0	* 11.7
19	* 41.3	* 11.0	* 37.5	* 82.5	55.6	22.6	* 50.8	60.4	1.28	20.2	21.6	* 10.2
20	31.2	* 16.6	* 36.3	* 81.0	65.0	* 19.9	49.9	* 60.4	1.26	24.2	14.3	* 11.9
21	36.1	* 16.9	41.9	77.0	* 82.7	* 15.0	49.6	* 58.9	12.5	* 28.2	20.0	13.1
22	* 41.8	* 17.2	* 40.0	* 78.8	* 82.8	* 14.0	* 56.8	* 51.6	* 15.0	* 32.0	26.3	11.8
23	* 41.8	* 15.7	* 40.8	* 79.8	* 82.6	* 12.0	* 58.3	* 50.2	13.3	* 32.4	25.5	15.3
24	* 41.7	13.5	42.2	76.3	* 84.0	14.1	59.6	54.6	* 8.96	* 31.3	* 12.7	* 15.3
25	* 40.7	21.1	47.6	69.2	* 83.3	* 23.0	* 63.4	* 57.7	* 8.57	* 33.4	10.4	16.6
26	* 38.0	* 22.4	* 51.9	* 34.4	84.1	* 25.4	66.3	56.5	6.84	35.5	17.2	* 15.4
27	36.9	* 22.0	* 48.3	* 21.7	92.5	* 26.5	66.8	* 57.0	7.68	37.1	20.5	* 12.4
28	36.6	* 21.0	* 50.1	18.1	* 92.2	* 27.2	60.6	56.4	* 21.6	38.9	* 18.6	12.2
29	* 38.2		* 49.6	22.1	* 86.5	* 27.3	61.7	* 46.9	13.8	* 39.3	* 17.4	10.3
30	* 38.1		* 43.0	* 25.2	* 86.4	25.8	* 59.5	44.9	12.4	* 37.8	* 15.9	14.8
31	* 39.6		* 31.9		* 92.7		* 57.1	36.4		* 35.6		* 22.9
Sum	498.30		1,835.5		1,642.1		1,554.0		695.8			364.63
	1,113.0	986.07		1,688.5		1,547.6		605.36		698.5		

Current Year 2001							Period 1952-2001			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters			
Month	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	24.670	23.630	17	47.8	1	13.0	35.9	96,163	107,964	401,561	1,340
Feb.	24.610	23.420	2	45.2	16	8.34	17.8	43,053	86,382	341,107	1,024
Mar.	24.610	23.440	26	55.2	3	7.85	31.8	85,196	96,780	348,805	418
April	25.300	23.810	!17	90.9	28	17.7	61.2	158,587	141,900	507,514	3,898
May	25.380	23.990	27	98.1	! 1	24.4	54.5	145,886	183,086	591,520	43,410
June	25.525	23.580	17	116	22	11.2	54.7	141,877	211,862	838,797	1,828
July	25.030	23.985	!26	66.8	1	24.2	49.9	133,713	155,428	687,079	2,461
Aug.	24.960	24.150	19	62.0	31	29.3	50.1	134,266	151,661	1,489,882	1,163
Sept.	25.365	23.150	13	96.5	!16	1.15	20.2	52,303	230,746	2,297,808	4,831
Oct.	24.630	23.560	29	47.4	! 4	10.6	22.4	60,117	258,310	2,868,998	2,138
Nov.	24.470	23.520	4	40.3	!21	9.64	23.3	60,350	127,311	1,773,274	1,770
Dec.	23.960	23.400	31	23.2	!13	6.90	11.8	31,504	95,427	666,198	1,855
Yearly	25.525	23.150		116		1.15	36.2	1,143,015	1,846,857	5,724,004	141,538

* Discharge measurement(s) made on this day ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 2001, 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 2001, no flood flow was diverted through Retamal Floodway or Anzalduas Canal.

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 Natural Resource Conservation 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 Watermaster.

During 2001, 45,733 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 17.1% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2001 in this river reach was 232,050 TCM, or 21.5% 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.37	13.1	10.7	6.99	12.2	16.0	7.57	6.39	3.06	3.08	9.49	0.19
2	5.74	12.9	4.57	10.2	13.9	15.6	6.77	9.21	.95	5.57	11.4	.27
3	7.55	4.27	3.23	10.5	15.8	10.2	8.53	9.36	2.58	5.66	5.34	2.64
4	7.93	2.92	4.52	10.1	15.4	14.7	3.94	4.71	3.32	5.39	5.00	3.94
5	7.26	3.17	7.75	12.7	14.4	15.7	3.21	3.31	1.39	5.43	10.4	4.33
6	1.96	3.30	8.25	11.9	10.7	15.3	1.67	3.99	1.35	3.45	11.3	1.42
7	1.60	1.48	8.39	10.9	12.0	12.9	.33	3.58	1.40	1.56	11.3	.36
8	6.58	1.70	8.62	5.96	13.0	11.8	.12	8.36	.44	5.94	7.54	0
9	8.93	1.84	6.70	10.8	11.5	10.4	5.87	7.03	2.60	7.47	5.61	0
10	8.89	2.20	3.41	12.6	12.5	6.88	5.40	8.35	6.16	6.66	3.06	.90
11	8.98	3.41	3.58	12.8	11.7	12.7	5.63	6.82	6.43	6.91	2.70	.89
12	8.90	8.32	9.32	13.8	11.6	14.7	9.18	2.81	3.89	8.02	6.83	.70
13	4.04	7.66	12.1	12.4	7.13	15.2	9.38	8.71	2.18	5.57	7.82	.47
14	2.86	6.65	11.5	10.9	14.0	17.7	7.59	11.8	.77	3.60	7.60	.64
15	5.84	5.65	12.5	5.87	14.9	18.7	6.60	11.9	.27	8.11	7.05	.19
16	7.87	4.07	13.5	13.4	14.4	17.4	11.3	11.5	.08	8.37	6.05	0
17	8.45	1.83	10.3	14.0	16.1	1.76	13.3	10.5	2.50	9.04	3.00	4.44
18	10.5	1.35	5.15	15.4	15.7	1.28	12.6	7.83	6.26	8.53	2.68	6.46
19	10.7	1.47	12.3	14.2	16.6	1.33	11.0	3.77	7.00	8.75	4.58	6.12
20	6.12	4.23	13.1	12.2	9.74	1.09	8.14	11.6	5.91	5.28	2.44	5.80
21	1.99	7.43	9.92	11.3	14.3	.25	6.06	11.1	4.00	6.31	2.17	7.25
22	7.35	7.34	11.2	6.86	14.9	1.68	4.44	11.5	2.33	10.2	0	1.98
23	10.3	7.26	10.8	11.8	14.3	.40	7.90	11.4	1.40	10.6	.47	.44
24	10.0	4.04	7.35	13.9	10.7	0	10.2	12.8	4.91	9.26	1.63	1.61
25	9.89	4.85	7.36	12.1	15.3	4.17	10.6	8.77	4.75	8.73	.54	1.60
26	9.86	8.23	11.6	8.86	13.1	10.0	11.5	8.37	1.67	8.11	1.68	4.66
27	3.39	12.0	12.9	9.12	9.20	9.77	9.65	9.69	1.65	8.30	1.44	4.08
28	3.37	10.4	12.8	6.82	11.4	11.4	8.31	11.8	4.58	9.90	4.28	2.85
29	6.34		12.6	4.44	10.7	11.7	4.37	8.10	3.58	9.01	5.87	2.79
30	7.59		12.8	10.7	9.83	10.6	7.79	7.59	1.29	9.07	1.69	1.73
31	8.26		8.76		13.3		12.2	7.41		8.50		.58
Sum	209.41	153.07	287.58	323.52	400.30	291.31	231.15	260.06	88.70	220.38	150.96	69.33

Current Year 2001 | Period 1960-2001

Month	Average Rainfall** Millimeters 2001	Average Rainfall** Millimeters 1960-2001	Extreme-Cubic Meters per Second @ High Day	@ High	Extreme-Cubic Meters per Second @ Low Day	@ Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	9	31	19	10.7	1	0.37	6.76	18,093	16,660	43,121	892
Feb.	32	31	1	13.1	18	1.35	5.47	13,225	14,554	35,196	2,522
Mar.	13	22	16	13.5	3	3.23	9.28	24,847	22,614	44,562	6,924
April	38	35	18	15.4	29	4.44	10.8	27,952	26,829	48,447	3,758
May	23	71	19	16.6	13	7.13	12.9	34,586	27,684	53,225	1,008
June	111	68	15	18.7	24	0	9.71	25,169	31,967	59,901	5,184
July	40	39	17	13.3	8	.12	7.46	19,971	28,521	49,928	8,137
Aug.	38	60	24	12.8	12	2.81	8.39	22,469	21,997	33,973	9,192
Sept.	148	106	19	7.00	16	.08	2.96	7,664	14,377	34,885	3,964
Oct.	12	59	23	10.6	7	1.56	7.11	19,041	17,928	38,509	2,540
Nov.	59	29	2	11.4	22	0	5.03	13,043	14,858	41,712	1,252
Dec.	37	30	21	7.25	! 8	0	2.24	5,990	12,384	24,623	2,284
Yearly	560	581		18.7		0	7.36	232,050	250,373	398,520	149,260

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

WATER BULLETIN NUMBER 71 -- 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 Natural Resource Conservation 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 Watermaster.

During 2001, 125,420 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 46.8% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2001 in this river reach was 520,892 TCM, or 48.2% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of 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.	63.0	May 1995	Min.	1.52	March	1957
Yearly:	Max.	27.6	1989	Min.	10.4		1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.10	25.2	5.30	17.6	3.73	53.9	17.5	24.6	20.5	1.20	11.0	3.95
2	8.43	24.0	3.46	22.4	3.80	52.5	20.8	24.6	20.7	2.06	13.9	0
3	12.6	20.4	.60	21.3	3.84	55.2	22.3	24.0	13.9	.87	7.65	1.78
4	14.6	16.0	0	23.1	1.71	53.9	21.6	19.8	7.93	2.06	7.50	2.80
5	14.7	7.96	2.33	22.4	7.12	55.0	23.0	21.5	7.36	2.11	13.6	4.85
6	14.4	6.56	3.09	27.1	7.44	54.6	20.1	23.5	4.61	.91	16.1	4.63
7	13.7	5.15	3.14	29.0	8.55	53.3	15.8	20.7	3.85	.05	18.6	3.84
8	18.1	4.86	3.19	26.8	10.0	53.1	11.8	19.0	0	1.13	11.6	0
9	19.2	3.84	5.61	33.7	10.8	48.3	20.4	18.3	1.08	2.39	8.15	1.04
10	19.4	1.96	8.61	38.8	10.9	45.1	27.1	22.4	5.87	2.70	5.43	2.72
11	19.6	1.99	5.29	39.1	10.1	42.5	27.1	17.1	11.7	3.94	1.94	1.56
12	18.9	1.98	9.89	39.4	8.90	39.0	27.0	19.2	13.5	5.46	4.53	.82
13	23.3	2.85	12.5	43.2	8.87	35.8	25.6	20.3	12.0	6.87	5.21	1.41
14	23.0	3.40	12.5	45.9	15.8	35.2	20.6	23.7	6.69	6.53	5.19	.58
15	26.3	4.98	12.8	44.4	17.9	37.8	22.0	23.1	4.58	5.92	3.16	0
16	23.7	4.51	12.0	51.4	16.1	32.4	22.4	22.2	4.58	2.59	2.26	0
17	26.0	1.84	10.6	53.8	15.8	37.7	29.9	22.2	4.93	4.52	10.2	0
18	25.7	1.90	10.7	54.3	19.0	16.7	34.1	17.7	6.56	7.36	13.7	.84
19	26.9	1.90	13.1	48.4	25.1	16.2	31.2	21.0	8.13	7.97	14.5	1.45
20	21.0	2.78	13.5	54.6	25.9	8.10	31.7	26.3	9.44	8.38	14.2	3.12
21	20.6	3.39	11.5	53.2	33.1	4.26	29.4	27.6	9.13	6.45	11.1	2.47
22	19.8	3.36	14.6	49.4	40.3	2.99	27.5	29.1	8.56	9.48	6.56	1.90
23	23.2	3.86	16.6	47.1	42.4	.58	26.8	29.1	6.25	15.0	5.94	1.80
24	24.2	4.09	14.8	37.8	42.5	.45	30.3	24.8	4.97	13.7	12.2	1.90
25	24.2	5.85	15.2	36.8	43.9	3.76	29.6	15.7	4.30	15.5	5.79	3.67
26	24.2	9.19	19.9	35.5	38.2	4.37	30.4	22.1	1.06	17.8	4.64	3.33
27	19.0	5.99	21.9	23.4	43.5	5.43	28.2	22.7	0	15.0	6.02	4.86
28	18.4	5.21	24.8	8.48	45.4	6.15	20.6	24.4	5.97	12.9	4.92	3.90
29	21.2		24.0	2.05	51.8	7.28	21.1	24.4	11.9	14.0	6.72	2.09
30	20.8		25.2	2.97	55.9	8.73	18.2	22.6	3.72	6.82	11.5	0
31	21.3		20.4		55.8		44.2	41.1		4.68		0
Sum	610.53	185.00	357.11	1,033.40	724.16	870.30	778.3	714.8	223.77	206.35	263.81	61.31

Current Year 2001 | Period 1960-2001

Month	Average Rainfall** Millimeters 2001	Average Rainfall** Millimeters 1960-2001	Extreme-Cubic Meters per Second @ High Day	@ High	Extreme-Cubic Meters per Second @ Low Day	@ Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	6	36	19	26.9	1	4.10	19.7	52,750	47,545	119,807	6,010
Feb.	48	38	1	25.2	17	1.84	6.61	15,984	28,253	75,228	5,929
Mar.	11	27	30	25.2	4	0	11.5	30,854	35,560	84,858	9,551
April	47	43	20	54.6	29	2.05	34.4	89,286	62,490	125,384	4,333
May	7	74	30	55.9	4	1.71	23.4	62,567	95,841	168,687	8,409
June	84	73	3	55.2	24	.45	29.0	75,194	82,391	162,181	13,724
July	33	47	31	44.2	8	11.8	25.1	67,245	60,196	114,350	13,947
Aug.	45	70	31	41.1	! 25	15.7	23.1	61,759	45,264	88,370	15,710
Sept.	161	129	2	20.7	! 8	0	7.46	19,334	29,156	68,815	5,314
Oct.	7	72	26	17.8	7	.05	6.66	17,829	30,107	71,743	6,347
Nov.	59	38	7	18.6	11	1.94	8.79	22,793	24,658	66,002	4,252
Dec.	18	34	27	4.86	! 2	0	1.98	5,297	23,391	55,789	5,297
Yearly	526	681		55.9		0	16.5	520,892	564,852	868,544	328,940

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

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 01'51", longitude 97 43'37", 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 48 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 25, 1953, and December 1953 through 2001.

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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.09	* 6.76	* 4.42	7.43	* 12.8	* 10.8	4.53	* 18.0	18.1	* 10.3	* 8.28	5.66
2	4.88	5.86	4.35	* 8.04	9.93	12.5	* 3.35	17.6	18.3	9.64	6.02	12.0
3	* 4.44	5.81	3.85	8.94	8.86	11.1	5.91	17.2	19.2	8.70	10.2	* 12.7
4	3.69	5.01	4.77	3.29	9.72	11.4	10.7	14.8	* 20.1	8.88	15.7	9.98
5	1.93	7.37	5.61	.94	8.46	11.9	11.4	10.4	20.0	7.83	15.4	6.33
6	1.97	12.0	5.35	.57	6.49	10.9	6.89	* 9.12	19.8	6.95	8.94	6.02
7	3.50	10.4	5.10	.30	7.43	11.2	9.02	7.29	18.9	8.25	4.56	8.44
8	3.93	10.2	4.90	.60	7.38	* 10.8	13.1	11.1	18.7	9.59	2.03	9.68
9	2.37	8.35	* 4.43	* 8.68	5.14	11.6	* 12.2	9.67	18.3	* 8.63	2.05	10.7
10	* 1.60	7.78	4.07	4.31	5.10	12.5	8.18	8.00	18.0	5.21	8.13	10.4
11	2.49	7.74	3.94	3.10	4.50	13.1	5.39	5.09	17.1	4.26	12.5	10.1
12	11.3	7.75	5.31	9.52	5.68	13.9	3.66	9.67	15.6	3.42	12.5	9.71
13	14.4	9.48	4.40	10.9	5.91	12.7	3.39	* 15.2	21.6	2.94	* 10.4	8.40
14	8.71	* 6.13	3.05	11.0	7.83	11.8	6.74	15.8	19.0	3.01	8.52	7.64
15	8.97	5.21	* 5.09	14.2	5.30	* 11.9	8.11	12.7	18.0	* 3.80	7.84	8.03
16	8.97	5.04	9.82	15.2	* 3.72	16.5	* 7.77	10.3	15.0	8.02	10.3	8.07
17	7.41	4.85	12.0	12.2	2.89	18.2	6.30	9.15	* 9.61	8.70	13.1	* 8.92
18	* 7.66	4.59	11.0	10.2	6.56	* 24.5	2.59	11.4	6.97	5.80	7.92	9.43
19	7.10	4.77	8.98	11.0	8.65	18.9	4.90	15.9	4.68	3.92	* 12.3	7.96
20	5.90	5.18	10.4	10.2	6.34	14.6	5.06	* 16.9	3.83	3.06	7.73	5.95
21	4.36	5.80	9.54	6.78	5.57	* 12.7	5.50	15.1	7.95	2.62	7.16	3.66
22	5.87	* 6.67	* 10.6	8.67	* 5.78	13.0	7.10	11.5	8.52	* 4.67	6.91	3.15
23	10.2	5.96	10.4	12.9	10.4	12.8	* 10.3	7.68	7.05	7.19	7.83	2.99
24	6.40	5.22	10.7	18.1	14.6	12.6	10.4	3.52	* 12.5	4.84	11.4	5.02
25	* 5.00	4.70	12.7	23.0	17.9	* 11.8	9.40	7.60	10.4	4.50	12.1	8.61
26	4.53	3.81	* 15.3	19.7	19.4	10.4	11.9	12.5	7.72	4.23	9.91	8.61
27	4.91	6.10	12.9	13.4	21.8	9.04	14.0	* 11.9	9.08	6.18	8.19	7.89
28	7.39	4.86	6.88	9.10	30.9	8.05	16.2	12.8	8.69	13.1	11.6	7.12
29	9.98		6.53	13.3	27.0	7.16	18.0	15.9	3.81	15.8	* 11.8	6.00
30	9.11		6.97	13.8	11.2	4.84	* 22.7	16.8	4.07	13.3	9.58	7.43
31	7.68		7.06		9.05		22.3	16.8		10.2		7.29
Sum	190.74	183.40	230.42	289.37	312.29	373.19	286.99	377.39	400.58	217.54	280.90	243.89

Current Year 2001							Period 1954-2001		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	10.795	10.450	13	15.6	10	1.10	6.15	16,480	50,110	393,481	3,601
Feb.	10.755	10.570	6	12.6	26	3.57	6.55	15,846	50,729	447,576	4,168
Mar.	10.870	10.545	26	17.0	14	2.77	7.43	19,908	44,317	444,640	3,164
April	10.930	10.440	25	23.9	7	.22	9.65	25,002	54,673	430,013	9,689
May	11.140	10.510	!28	34.2	17	2.58	10.1	26,982	81,653	472,420	7,830
June	11.635	10.575	18	26.6	30	4.52	12.4	32,244	90,284	647,984	19,815
July	11.505	10.490	!30	23.8	18	2.18	9.26	24,796	74,973	552,457	5,790
Aug.	11.385	10.515	1	19.0	24	3.07	12.2	32,606	77,986	1,020,220	3,827
Sept.	11.455	10.535	13	25.4	30	2.85	13.4	34,610	131,130	787,894	9,513
Oct.	10.880	10.510	29	16.1	21	2.46	7.02	18,795	160,757	1,086,522	4,737
Nov.	10.905	10.480	! 4	16.3	8	1.76	9.36	24,270	78,341	816,665	6,699
Dec.	10.795	10.520	3	13.8	23	2.91	7.87	21,072	64,908	591,018	2,992
Yearly	11.635	10.440		34.2		0.22	9.28	292,611	959,861	3,383,956	179,397

* Discharge measurement(s) made on this day ! And other days ** Period 1954-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 Natural Resource Conservation 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 Watermaster.

During 2001, 28,252 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 10.6% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2001 in this river reach was 122,217 TCM, or 11.3% 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.27	9.28	1.94	1.66	7.83	8.39	3.33	7.69	3.44	3.37	2.23	4.21
2	1.27	4.60	1.59	1.72	5.54	8.10	3.47	7.41	5.67	1.38	3.08	4.97
3	1.27	2.56	1.62	1.51	5.37	6.93	2.80	8.46	7.50	1.04	3.14	3.37
4	1.27	1.31	1.56	1.62	5.13	7.05	2.04	7.40	9.77	1.06	2.98	1.38
5	1.42	3.37	1.66	1.97	5.53	8.68	3.03	8.55	6.57	1.02	8.01	1.63
6	1.27	6.16	1.52	3.45	4.78	8.70	1.98	8.63	1.72	.85	6.83	2.14
7	1.27	5.87	2.09	2.73	5.19	10.1	1.89	3.02	1.58	.78	8.05	2.55
8	1.39	5.68	2.54	2.77	5.36	7.72	1.94	3.33	1.67	1.18	5.31	1.91
9	1.56	5.62	2.63	2.68	5.85	7.67	1.70	2.07	1.55	3.59	3.34	1.52
10	1.96	4.94	3.86	3.44	5.30	7.01	1.65	2.35	3.25	6.10	2.34	.96
11	3.58	4.39	3.90	2.54	6.30	6.43	1.76	2.86	5.17	.96	2.30	.96
12	3.63	3.63	3.46	2.05	5.03	6.05	1.60	2.21	5.58	1.15	1.63	1.06
13	6.52	2.73	2.17	2.50	2.54	5.03	2.51	2.47	8.41	1.15	2.54	.88
14	8.40	2.56	1.78	3.60	2.03	5.38	2.54	6.07	5.46	.97	4.90	2.84
15	6.52	2.24	1.75	5.46	2.35	5.53	2.34	8.45	2.96	1.11	7.03	1.72
16	2.73	1.84	2.29	7.53	2.58	4.35	2.74	8.69	2.95	1.98	5.89	.84
17	2.98	1.41	3.55	7.14	2.06	4.91	3.40	8.81	4.21	2.97	3.08	1.01
18	2.68	1.38	4.18	6.75	2.10	6.68	3.77	7.86	6.66	2.93	2.95	.84
19	3.55	2.14	3.80	6.93	2.90	7.76	2.96	8.56	7.84	3.79	3.10	2.48
20	4.09	2.05	5.73	7.12	2.77	8.23	1.98	8.09	5.50	2.66	4.15	2.53
21	4.05	2.00	6.88	5.34	5.10	7.78	1.95	6.25	1.30	1.95	4.10	3.62
22	4.34	2.00	7.31	4.84	4.62	7.48	2.34	6.31	1.24	2.26	3.87	.52
23	4.57	2.04	7.99	6.69	4.83	7.07	4.36	6.57	1.05	2.81	1.99	.97
24	4.59	1.87	8.56	4.80	5.70	8.01	5.52	6.14	.69	1.48	1.11	.97
25	4.23	1.27	8.29	6.40	6.62	7.24	5.86	4.25	.57	1.16	1.15	.97
26	4.72	1.31	8.20	4.65	6.59	6.15	6.22	2.96	1.08	1.29	1.23	1.01
27	3.89	1.30	8.06	4.46	6.48	6.16	5.73	1.65	1.09	1.33	1.14	2.38
28	3.50	1.28	8.14	4.50	6.26	5.79	6.00	3.63	3.78	1.01	1.10	2.48
29	3.55		7.18	3.90	7.92	6.00	1.61	4.25	6.25	1.08	.97	2.04
30	3.55		6.75	4.26	8.53	3.79	1.59	2.75	4.02	.85	2.97	0
31	3.50		5.69		8.55		3.33	5.17		1.10		0
Sum	103.12	86.83	136.67	125.01	157.74	206.17	93.94	172.91	118.53	56.36	102.51	54.76

Current Year 2001						Period 1960-2001		
Month	Average Rainfall** Millimeters 2001	Average Rainfall** Millimeters 1960-2001	Extreme-Cubic Meters per Second @ High Day	Extreme-Cubic Meters per Second @ High	Extreme-Cubic Meters per Second @ Low Day	Extreme-Cubic Meters per Second @ Low	Average	Volume-Thousand Cubic Meters Total	Volume-Thousand Cubic Meters Average	Volume-Thousand Cubic Meters Maximum	Volume-Thousand Cubic Meters Minimum
Jan.	7	40	14	8.40	! 1	1.27	3.33	8,910	12,387	30,303	1,871
Feb.	53	36	1	9.28	25	1.27	3.10	7,502	9,076	25,442	1,268
Mar.	8	25	24	8.56	6	1.52	4.41	11,808	9,175	18,745	1,777
April	53	47	16	7.53	3	1.51	4.17	10,801	14,148	34,233	2,823
May	12	73	31	8.55	14	2.03	5.09	13,629	19,087	59,789	1,956
June	62	71	7	10.1	30	3.79	6.87	17,813	20,109	39,816	4,612
July	3	43	26	6.22	30	1.59	3.03	8,116	15,417	29,633	4,548
Aug.	68	76	17	8.81	27	1.65	5.58	14,939	11,947	21,680	4,021
Sept.	80	136	4	9.77	25	.57	3.95	10,241	7,730	14,796	1,081
Oct.	18	77	10	6.10	7	.78	1.82	4,870	7,032	14,503	1,962
Nov.	57	40	7	8.05	29	.97	3.42	8,857	5,788	11,127	2,215
Dec.	32	37	2	4.97	!30	0	1.77	4,731	6,168	11,785	2,484
Yearly	453	701		10.1		0	3.88	122,217	138,064	199,208	87,788

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

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 52'33", longitude 97 27'18", 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 44 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1934 through 2001.
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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.29	* 0.98	* 2.09	1.91	* 5.82	* 2.80	4.09	* 7.72	5.03	* 3.07	* 4.74	13.3
2	2.38	1.11	2.05	* 2.91	4.88	2.11	4.70	18.0	4.92	3.37	7.17	9.09
3	* 2.30	.94	1.81	3.32	5.60	1.87	5.22	16.4	3.94	3.74	8.79	* 7.04
4	2.28	.93	1.48	3.94	4.26	2.10	4.53	15.6	* 2.70	4.53	8.17	7.64
5	2.37	1.43	1.30	3.67	2.83	2.22	3.62	10.2	2.61	5.21	8.59	11.6
6	2.35	.89	1.28	3.17	2.80	1.96	3.09	* 6.17	5.01	5.96	11.4	12.2
7	2.01	.39	1.67	2.27	3.33	1.76	3.68	5.19	11.7	6.75	11.1	9.90
8	1.71	.33	1.79	1.84	3.38	1.54	4.68	5.59	12.7	7.17	7.97	7.63
9	1.65	.81	* 1.18	* 1.50	* 2.28	1.28	5.13	6.70	12.4	* 7.14	5.35	7.05
10	* 1.47	1.80	.75	1.29	2.06	1.15	6.01	6.31	* 13.9	6.36	4.87	8.04
11	.98	1.65	.67	1.32	2.09	1.08	7.28	5.42	10.0	5.05	4.61	10.3
12	.78	1.37	.74	1.30	2.00	1.33	7.56	4.92	7.43	4.78	5.90	12.2
13	.80	1.38	1.04	1.32	1.83	3.02	6.97	4.35	5.05	4.92	* 8.03	13.3
14	.69	* 1.77	1.21	1.40	1.77	4.66	5.87	3.75	6.29	5.00	10.2	13.2
15	.62	2.10	1.50	1.76	1.91	* 4.81	4.63	3.66	16.2	* 4.80	10.2	11.1
16	.61	1.87	* 1.54	1.42	* 2.11	6.67	3.35	3.60	20.3	3.56	8.33	8.90
17	.86	1.75	1.43	1.21	2.29	8.34	2.49	* 3.39	* 18.0	2.89	14.1	* 8.32
18	1.97	2.10	1.60	2.57	2.11	* 12.8	2.43	2.60	9.12	2.52	15.1	7.88
19	1.48	2.14	1.35	3.43	1.87	* 13.4	2.70	1.91	5.23	2.34	15.2	7.62
20	1.56	2.15	1.21	3.06	1.58	13.3	2.94	* 1.52	7.95	2.89	14.2	8.85
21	1.49	2.16	1.39	3.08	1.38	9.37	2.71	1.45	10.8	2.99	11.4	9.01
22	1.05	* 2.32	* 1.95	2.76	* 1.16	6.57	2.41	1.78	11.9	* 2.68	8.68	9.89
23	.80	2.69	2.79	1.66	1.00	5.24	2.19	2.45	6.66	2.21	6.25	8.18
24	.66	3.06	2.36	* 2.59	.86	5.08	1.85	2.12	* 6.11	2.30	5.46	6.61
25	* .75	2.86	2.03	6.14	.67	6.61	1.61	1.72	6.06	2.33	6.61	5.75
26	.80	2.61	1.27	11.3	.54	7.50	1.42	1.62	7.55	2.34	9.67	5.04
27	.81	2.35	2.50	13.1	.46	7.15	1.46	* 1.88	8.52	2.34	13.0	4.92
28	.83	2.13	4.55	12.3	.68	6.29	1.53	2.77	7.02	2.36	13.4	6.56
29	.82		2.79	8.05	1.83	4.21	1.63	3.83	4.72	2.43	13.0	8.21
30	.86		1.55	6.96	6.75	3.51	1.81	3.74	3.53	2.56	15.2	7.86
31	.88		1.79		6.45		2.43	4.10		3.52		9.47
Sum	40.91	48.07	52.66	112.55	78.58	149.73	112.02	160.46	253.35	120.11	286.69	276.66

Current Year 2001						Period 1954-2001			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Average	Volume-Thousand Cubic Meters			
	High	Low	High Day	High	Low Day	Low		Total	Average	Maximum	Minimum
Jan.	0.945	0.520	5	2.48	16	0.57	1.32	3,535	39,116	407,379	349
Feb.	1.245	.580	24	3.11	8	.26	1.72	4,153	43,360	446,279	1,303
Mar.	1.355	.695	28	4.98	12	.58	1.70	4,550	37,006	445,080	2,532
April	2.550	.860	27	14.1	17	1.14	3.75	9,724	38,367	397,086	1,079
May	2.530	.910	31	8.22	27	.44	2.53	6,789	61,627	438,873	2,807
June	3.345	1.130	!19	14.6	11	1.06	4.99	12,937	69,678	600,151	2,996
July	3.015	1.165	11	7.63	26	1.37	3.61	9,679	62,644	539,704	1,383
Aug.	3.520	1.215	2	22.0	21	1.42	5.18	13,864	64,900	1,001,626	269
Sept.	3.655	1.735	16	21.2	5	2.41	8.45	21,889	116,649	784,150	1,171
Oct.	2.965	1.660	8	7.44	23	2.06	3.87	10,378	149,012	1,094,351	933
Nov.	3.615	2.185	30	16.1	1	3.94	9.56	24,770	72,979	650,763	1,587
Dec.	3.600	2.465	1	15.7	26	4.57	8.92	23,903	61,372	591,508	646
Yearly	3.655	0.520		22.0		0.26	4.64	146,171	816,710	3,263,087	37,722

* Discharge measurement(s) made on this day ! And other days ** Period 1954-2001

WATER BULLETIN NUMBER 71 -- 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 Natural Resource Conservation 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 2001, 1,525 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 0.6% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2001 in this river reach was 4,509 TCM, or 0.4% 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.

EXTREME FLOWS FROM RECORDS:

Average Flow in Cubic Meters per Second

Daily:	Max.	2.78	June 1, 1996	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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0.78	0.14	0.08	1.66	0.46	0	0.09	0	0.18	0.47	0
2	0	.20	.14	.08	.57	.60	0	.09	0	.41	.80	0
3	0	.20	0	.20	.73	.41	0	0	0	.54	.41	0
4	0	.20	0	.17	.55	.61	0	0	0	.26	.16	0
5	0	.35	.06	.44	.49	.38	0	0	0	.23	.27	0
6	0	.36	.06	.39	.48	.43	0	0	0	0	.26	0
7	0	.12	.06	.25	.57	.64	0	0	0	0	.37	0
8	0	.13	0	.08	.36	.63	0	.03	0	.10	.13	0
9	0	.04	0	.10	.43	.58	0	.08	0	.17	.12	0
10	0	.10	0	.17	.57	.24	0	.05	0	.19	0	0
11	.16	.07	0	.35	.54	.46	0	.05	0	.20	0	0
12	.22	0	0	.27	.40	.55	0	.05	0	.27	.02	0
13	.26	0	.16	.27	.23	.40	0	.10	0	.15	0	0
14	.26	0	.27	.27	.43	.34	0	.05	0	.15	.09	0
15	.26	0	.19	.27	.32	.20	0	.05	0	.17	.09	0
16	.24	0	.22	.33	.46	.04	0	.09	0	.30	.11	0
17	.27	0	.11	.18	.46	.04	0	.05	0	.27	.09	0
18	.18	0	.11	.57	.72	0	.08	.05	0	.41	0	.08
19	0	0	.17	.52	.50	0	.08	.05	.07	.35	0	.16
20	0	0	.13	.58	.43	.06	.08	.09	.17	.24	0	.16
21	.16	0	.05	.58	.50	.06	.08	.05	.10	.24	0	.14
22	.23	0	0	.48	.40	.06	0	.07	.10	.39	0	.05
23	.26	0	.05	.51	.44	.06	.04	.07	.10	.18	0	0
24	.27	0	.05	.03	.71	0	.04	.09	.10	.18	0	0
25	.23	0	.05	.27	.50	0	.04	.04	0	.24	0	0
26	.24	0	.13	.61	.55	0	.04	0	0	.12	0	.07
27	.21	0	.13	.54	0	0	.04	0	0	.12	0	.07
28	0	0	.23	.64	0	0	0	0	0	0	0	.07
29	0		.19	0	0	0	0	0	0	0	0	0
30	0		.21	0	0	0	0	0	0	0	0	0
31	0		.11		0		0	0		0		0
Sum	3.45	2.55	3.02	9.23	14.00	7.25	0.52	1.29	0.64	6.06	3.39	0.80

Current Year 2001					Period 1960-2001			
Month	Average Rainfalal** Millimeters 2001	Average Rainfalal** Millimeters 1960-2001	Extreme-Cubic Meters per Second @ High Day	Extreme-Cubic Meters per Second @ High	Extreme-Cubic Meters per Second @ Low Day	Extreme-Cubic Meters per Second @ Low	Average	Total	Volume-Thousand Cubic Meters Average	Volume-Thousand Cubic Meters Maximum	Volume-Thousand Cubic Meters Minimum
Jan.	29	43	!17	0.27	! 1	0	0.11	298	381	1,573	0
Feb.	24	33	1	.78	!12	0	.09	220	294	1,113	0
Mar.	10	23	14	.27	! 3	0	.10	261	200	782	0
April	24	46	28	.64	!29	0	.31	797	355	1,187	0
May	16	66	1	1.66	!27	0	.45	1,210	510	1,673	0
June	36	66	7	.64	!18	0	.24	626	591	1,718	0
July	36	42	!18	.08	! 1	0	.02	44.9	242	960	0
Aug.	62	74	13	.10	! 3	0	.04	111	115	391	0
Sept.	70	139	20	.17	! 1	0	.02	55.3	52.4	262	0
Oct.	26	83	3	.54	! 6	0	.20	524	73.0	524	0
Nov.	59	45	2	.80	!10	0	.11	293	81.8	311	0
Dec.	49	37	!19	.16	! 1	0	.03	69.1	109	613	0
Yearly	441	697		1.66		0	0.14	4,509	3,004	6,212	670

@ 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 Natural Resource Conservation 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 Watermaster.

In 2001, 267,710 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 1,081,864 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 "Diversions from the Rio Grande-United States Side below Rio Grande City" for the period 1922 through 1957 may be found in previous issues of these Water Bulletins. The area irrigated below Rio Grande City is about 99% of the total area 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.23	56.3	26.9	32.3	31.4	86.4	35.8	47.8	28.5	12.2	35.0	11.1
2	19.0	47.2	15.3	44.6	28.8	83.4	40.3	50.8	34.4	14.5	38.6	7.22
3	25.3	30.8	8.42	45.7	30.9	80.8	40.4	49.2	28.6	12.7	23.4	10.6
4	28.0	22.9	8.64	47.7	27.4	88.7	30.9	37.4	26.9	14.0	20.6	8.59
5	26.6	18.1	18.7	48.9	30.8	92.6	32.2	38.6	21.0	13.3	39.3	11.2
6	20.7	19.5	23.1	53.4	26.0	92.0	28.2	44.1	13.0	8.22	41.9	9.14
7	19.5	14.0	22.8	51.6	32.3	89.6	21.5	35.8	11.3	5.26	45.4	8.02
8	29.6	13.8	22.8	42.7	35.5	83.0	18.6	38.6	5.64	11.4	32.2	3.99
9	34.3	13.9	22.9	58.8	37.6	74.3	33.4	34.4	8.70	16.1	27.4	3.57
10	34.9	12.9	23.2	68.7	37.5	65.8	39.7	41.0	19.9	19.1	20.6	6.22
11	36.4	12.2	19.7	69.0	34.7	72.6	40.9	33.4	27.6	15.7	16.7	5.63
12	35.7	17.6	33.1	68.2	30.4	72.2	44.3	30.3	24.1	19.6	23.5	5.97
13	37.2	16.6	38.9	66.5	22.4	69.9	45.1	42.2	24.6	18.2	25.0	6.25
14	37.2	17.2	38.1	67.7	38.0	70.4	38.5	53.2	15.6	15.1	24.1	7.04
15	43.5	16.8	39.8	62.2	41.3	71.4	40.1	55.3	8.73	20.0	28.7	3.40
16	38.5	14.7	38.6	85.3	41.2	62.2	47.6	54.2	10.2	20.1	22.7	2.63
17	41.7	8.84	30.7	88.8	43.1	51.2	57.9	51.7	17.2	23.4	20.6	8.82
18	42.7	8.36	27.0	90.5	46.4	29.9	62.4	42.8	23.8	25.1	21.2	11.5
19	44.1	13.4	42.0	83.4	51.9	26.2	56.2	43.2	27.4	26.6	24.5	13.3
20	33.8	17.7	45.1	85.3	46.2	19.2	51.3	57.4	25.6	21.3	24.3	15.3
21	29.2	22.1	41.0	79.8	64.4	14.1	46.7	53.1	19.1	19.2	20.8	16.1
22	36.3	20.9	45.4	71.8	71.2	13.9	45.0	55.4	16.2	30.4	11.0	6.69
23	43.5	20.5	45.9	79.1	73.0	9.71	52.7	55.6	11.9	37.0	9.24	4.96
24	43.4	15.0	39.6	69.3	66.1	9.74	59.9	57.3	16.8	33.2	16.4	5.85
25	42.8	16.6	38.6	67.6	73.9	18.3	58.6	38.4	14.9	32.9	8.78	7.00
26	43.4	26.8	50.9	56.8	63.9	24.2	58.2	41.0	7.24	34.7	10.3	15.4
27	30.7	28.2	55.0	42.0	64.3	28.4	51.9	46.5	4.81	30.4	9.69	16.6
28	27.9	26.3	57.6	22.5	71.6	30.1	41.3	52.0	16.8	30.2	12.1	14.0
29	37.5		55.6	11.2	80.7	31.0	33.6	42.8	24.3	34.6	16.7	10.7
30	38.9		54.3	20.0	84.7	28.8	37.2	37.3	10.2	26.3	19.2	1.96
31	38.6		41.2		88.1		76.0	58.7		24.3		.58
Sum	1,049.13	569.20	1,070.86	1,781.4	1,515.7	1,590.05	1,366.4	1,419.5	545.02	665.08	689.91	259.33

Current Year 2001							Period 1958-2001			
	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters			
			@ High		@ Low					
Month	2001	1958-2001	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.	12	35	19	44.1	1	8.23	33.8	90,645	90,769	224,987	11,984
Feb.	38	34	1	56.3	18	8.36	20.3	49,179	68,884	155,700	14,537
Mar.	13	21	28	57.6	3	8.42	34.5	92,522	93,782	193,098	19,538
April	31	37	18	90.5	29	11.2	59.4	153,913	136,029	258,994	15,713
May	25	65	31	88.1	13	22.4	48.9	130,956	149,803	306,530	19,823
June	71	68	5	92.6	23	9.71	53.0	137,380	164,951	319,179	32,671
July	32	39	31	76.0	8	18.6	44.1	118,057	133,355	242,015	38,857
Aug.	51	60	31	58.7	12	30.3	45.8	122,645	108,068	182,408	44,662
Sept.	121	110	2	34.4	27	4.81	18.2	47,090	72,177	168,349	15,676
Oct.	18	69	23	37.0	7	5.26	21.5	57,463	77,004	162,305	16,023
Nov.	60	32	7	45.4	25	8.78	23.0	59,608	64,039	163,201	15,633
Dec.	35	30	27	16.6	31	.58	8.37	22,406	58,846	113,823	17,311
Yearly	507	600		92.6		0.58	34.3	1,081,864	1,217,707	1,879,991	785,513

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

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

OUTFALLS FROM SEWERS INTO THE RIO GRANDE

In Thousand Cubic Meters

EL PASO SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande through the outfall of the Haskell Street Wastewater Treatment Plant located 11.4 river kilometers downstream from the American Dam and the Northwest Wastewater Treatment Plant which enters the Rio Grande 0.5 miles upstream from the American Dam. Outfalls from both Plants are measured by means of ultrasonic flow meters with a Parshall flume at the Northwest Plant. Beginning in 1999, the Haskell Street Plant discharges primarily to the American Canal Extension, and these volumes are not reflected in the tabulation below. 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
2001	1,068	784	891	872	922	916	924	948	916	855	871	749	10,716
Average	2,346	2,213	2,283	2,143	2,274	2,189	2,443	2,509	2,308	2,276	2,139	2,140	27,263

Period average 1992-2001

EAGLE PASS SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande at approximately river kilometer 782. The outfall from this plant is measured by means of a flowmeter. The records are furnished by the Eagle Pass Water Treatment Department.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
2001	321	283	326	291	312	263	299	323	317	302	295	327	3,659
Average	264	236	263	246	267	258	258	267	273	283	273	289	3,177

Period average 1992-2001

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
2001	1,557	1,469	1,619	1,671	1,789	1,754	1,811	1,881	1,756	1,707	1,669	1,619	20,302
Average	1,380	1,316	1,467	1,484	1,614	1,586	1,639	1,667	1,496	1,590	1,399	1,427	18,065

Period average 1992-2001

NUEVO LAREDO SEWAGE OUTFALL

The effluent of the International Wastewater Treatment Plant is measured by means of a Parshall flume equipped with an electronic digital recorder, chart recorder, and staff gage. The plant discharges to the Arroyo del Coyote at a point approximately 100 meters upstream from the confluence of the Arroyo with the Rio Grande at river kilometer 569.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
2001	3,146	2,837	3,392	3,158	3,209	3,130	3,194	3,372	3,546	3,246	3,275	3,361	38,866
Average	2,906	2,765	3,095	2,939	3,111	3,019	3,034	3,007	3,045	3,022	2,942	2,980	35,865

Period average 1998-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

OUTFALLS FROM SEWERS INTO THE RIO GRANDE

In Thousand Cubic Meters

ROMA SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande at river kilometer 409.1, 1.3 river kilometers downstream from the Cd. Miguel Aleman, Tamaulipas - Roma, Texas highway bridge. Records furnished by the City of Roma, Texas.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
2001	34.2	33.0	35.0	35.3	35.1	21.8	21.7	25.0	25.5	24.4	24.0	15.0	330
Average	38.0	33.6	37.2	37.0	40.3	26.0	32.2	34.5	36.8	36.3	33.1	30.8	416

Period average 1997-2001

RIO GRANDE CITY SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande at river kilometer 378.5, 0.4 river kilometers upstream from the Rio Grande at Rio Grande City Gaging Station and 0.6 river kilometers upstream from the Cd. Camargo, Tamaulipas - Rio Grande City, Texas highway bridge. Records furnished by Rio Grande City, Texas.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
2001	101	91.6	81.0	97.8	99.6	95.2	98.8	102	103	104	75.6	52.9	1,103
Average	91.5	84.7	89.3	88.3	94.1	89.7	89.5	94.0	100	104	91.3	85.1	1,102

Period average 1997-2001

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
2001	597	562	607	610	639	620	638	651	647	619	598	593	7,381
Average	649	606	669	659	686	666	658	681	671	713	635	635	7,928

Period average 1992-2001

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand 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 partially derived from deep wells. The amount shown below for the city of El Paso is Rio Grande water pumped from the Franklin Canal at the Robertson-Umbenhauer Water Treatment Plant and from the Riverside Canal at the Jonathan W. Rogers Water Treatment 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 was provided by the Chamber of Commerce for each city in the United States, except El Paso, which was provided by the City Planning Office; Falcon Village, estimated by the International Boundary and Water Commission; Del Rio, by the Middle Rio Grande Development Council; 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

	EL PASO (Pop. 583,949)				DEL RIO (Pop. 33,865)			
		Period 1992 - 2001				Period 1992 - 2001		
Month	2001	Average	Maximum	Minimum	2001	Average	Maximum	Minimum
Jan.	0	123	741	0	952	923	1,122	742
Feb.	832	898	1,907	63.0	876	905	1,130	712
Mar.	4,528	5,381	6,678	4,400	996	1,125	1,398	933
April	7,482	7,528	9,017	5,283	1,107	1,321	1,756	876
May	8,839	8,571	10,169	5,321	1,403	1,419	1,844	854
June	8,765	8,389	9,702	5,343	1,894	1,543	2,030	1,020
July	9,027	8,457	10,005	5,076	1,936	1,836	2,277	1,432
Aug.	9,190	8,470	10,300	5,432	2,015	1,751	2,015	1,399
Sept.	8,709	7,642	9,469	5,065	1,165	1,349	1,647	1,047
Oct.	1,591	3,173	7,930	283	1,075	1,210	1,461	1,062
Nov.	0	8.4	83.6	0	838	943	1,289	824
Dec.	0	0	0	0	775	904	1,163	775
Yearly	58,963	58,640	70,268	40,918	15,032	15,229	17,027	11,551

	EAGLE PASS (Pop. 22,413)				LAREDO (Pop. 176,576)			
		Period 1992 - 2001				Period 1992 - 2001		
Month	2001	Average	Maximum	Minimum	2001	Average	Maximum	Minimum
Jan.	477	441	484	348	2,576	2,734	3,385	2,242
Feb.	445	419	486	344	2,493	2,602	3,234	2,093
Mar.	524	501	598	417	2,946	3,037	3,674	2,533
April	634	590	705	374	3,598	3,321	3,949	2,410
May	785	642	857	433	4,749	3,859	4,749	2,768
June	938	675	938	517	5,170	4,017	5,170	3,196
July	916	777	989	612	5,445	4,741	6,552	3,718
Aug.	973	803	973	597	5,528	4,463	5,807	3,224
Sept.	625	632	821	518	3,228	3,612	5,069	2,907
Oct.	625	561	625	513	3,903	3,337	3,903	2,957
Nov.	525	464	525	388	3,381	2,886	3,381	2,458
Dec.	485	458	584	408	2,918	2,753	3,587	2,318
Yearly	7,952	6,963	8,267	5,790	45,935	41,362	48,754	34,118

	LAREDO POWER STATION				RIO BRAVO (Pop. 5,553)			
		Period 1992 - 2001				Period 1992 - 2001		
Month	2001	Average	Maximum	Minimum	2001	Average	Maximum	Minimum
Jan.	85.0	79.1	123	44.2	103	74.8	103	32.2
Feb.	84.2	91.7	115	75.0	76.5	68.6	97.5	40.0
Mar.	54.0	101	137	54.0	90.5	79.7	110	51.1
April	99.0	139	216	99.0	107	96.8	132	52.7
May	125	161	213	124	136	110	144	50.3
June	206	193	260	156	141	109	144	68.6
July	208	235	286	207	148	131	167	87.1
Aug.	194	224	343	146	119	116	142	83.4
Sept.	110	184	239	110	153	102	153	77.1
Oct.	125	141	189	89.0	106	91.5	106	75.5
Nov.	68.7	88.7	145	56.7	107	78.4	107	54.4
Dec.	50.4	87.3	146	45.1	146	77.7	146	39.9
Yearly	1,409	1,725	1,892	1,409	1,433	1,136	1,433	724

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

In the United States

Month	SAN YGNACIO (Pop. 853)				ZAPATA (Pop. 13,567)			
	2001	Period 1992 - 2001			2001	Period 1992 - 2001		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	14.6	13.8	17.0	8.3	148	153	199	93.4
Feb.	15.5	14.3	17.6	10.5	152	148	169	125
Mar.	18.6	17.0	22.6	12.7	208	170	208	132
April	20.9	18.8	24.8	11.2	203	184	244	122
May	25.2	21.6	27.0	12.6	212	202	258	163
June	24.9	21.8	25.2	16.3	275	198	275	163
July	28.6	24.9	29.9	19.9	228	234	305	168
Aug.	26.7	23.4	30.0	17.4	237	225	269	174
Sept.	19.7	18.6	25.3	13.9	222	189	266	142
Oct.	21.2	18.3	21.2	15.7	177	180	231	144
Nov.	17.5	16.0	20.5	12.8	171	157	196	113
Dec.	15.9	15.5	20.6	12.7	184	157	227	115
Yearly	249	224	264	190	2,417	2,197	2,505	1,903

Month	FALCON VILLAGE (Pop. 85)				ROMA (Pop. 9,613)			
	2001	Period 1992 - 2001			2001	Period 1992 - 2001		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	7.4	7.6	10.0	4.2	205	190	217	131
Feb.	8.6	7.3	9.6	3.8	201	191	229	131
Mar.	10.3	8.4	11.7	4.9	226	214	246	175
April	10.5	9.1	12.9	4.5	212	228	278	171
May	11.8	9.9	13.3	5.7	270	260	331	181
June	10.5	9.8	13.3	7.6	225	248	309	200
July	12.1	11.7	14.7	9.7	245	275	325	233
Aug.	13.0	11.5	14.7	7.4	280	271	316	217
Sept.	8.4	9.9	14.1	7.8	150	223	278	150
Oct.	9.6	9.0	10.4	6.3	540	249	540	186
Nov.	8.4	7.8	10.2	5.5	416	220	416	158
Dec.	6.8	7.3	9.9	5.0	218	191	218	141
Yearly	117	109	140	83.4	3,188	2,760	3,188	2,169

Month	RIO GRANDE CITY (Pop. 14,000)				BROWNSVILLE (Pop. 150,000)			
	2001	Period 1992 - 2001			2001	Period 1992 - 2001		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	259	251	315	180	1,958	1,871	1,965	1,759
Feb.	220	203	257	160	1,726	1,757	2,084	1,601
Mar.	334	226	334	112	2,110	2,001	2,258	1,865
April	298	285	440	175	2,323	2,044	2,405	1,630
May	309	292	378	194	2,401	2,232	2,580	1,916
June	350	275	350	212	2,320	2,237	2,515	1,918
July	340	336	450	259	2,761	2,645	3,008	1,945
Aug.	327	286	333	261	2,744	2,512	3,470	2,127
Sept.	271	278	394	174	2,110	2,081	2,437	1,807
Oct.	285	248	317	125	2,266	1,984	2,287	1,733
Nov.	262	228	263	171	1,973	1,855	2,056	1,661
Dec.	324	243	324	183	1,961	1,893	2,128	1,727
Yearly	3,579	3,151	3,755	2,668	26,653	25,112	26,934	23,013

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

In Mexico

Month	CD. MIGUEL ALEMAN, TAMAULIPAS (Pop. 25,704)				CAMARGO, TAMAULIPAS (Pop. 16,787)			
	2001	Period 1992 - 2001			2001	Period 2000 - 2001		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	139	221	245	139	53.6	27.0	54.0	0
Feb.	207	205	238	103	33.3	17.0	33.0	0
Mar.	255	240	257	206	53.6	27.0	54.0	0
April	238	235	259	181	67.4	60.0	67.0	52.0
May	278	259	294	215	63.9	72.0	80.0	64.0
June	256	253	277	236	75.2	64.0	75.0	52.0
July	266	260	295	218	77.8	66.0	78.0	54.0
Aug.	263	256	282	230	80.4	80.0	80.0	80.0
Sept.	257	240	259	215	69.9	71.0	73.0	70.0
Oct.	245	245	320	181	61.3	31.0	61.0	0
Nov.	209	237	338	181	62.2	61.0	62.0	59.0
Dec.	201	226	274	170	51.0	55.0	59.0	51.0
Yearly	2,814	2,877	3,059	2,555	750	630	750	509

Month	CD. DIAZ ORDAZ, TAMAULIPAS (Pop. 16,246)				REYNOSA, TAMAULIPAS (Pop. 420,463)			
	2001	Period 1996 - 2001			2001	Period 1996 - 2001		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	134	141	187	130	4,294	3,897	4,579	3,370
Feb.	128	124	139	110	3,914	4,026	6,566	2,998
Mar.	157	141	157	121	4,648	4,110	4,847	3,413
April	138	133	146	108	5,348	4,366	5,469	3,162
May	152	145	163	124	5,960	4,935	6,229	3,110
June	150	141	150	130	5,806	5,004	5,806	3,266
July	156	147	161	120	6,000	5,432	6,143	3,845
Aug.	155	157	199	135	6,126	5,517	6,126	4,501
Sept.	142	143	164	129	5,694	5,065	5,694	4,069
Oct.	140	141	154	131	5,760	4,834	5,760	4,018
Nov.	126	132	149	124	5,219	4,439	5,219	3,741
Dec.	123	131	149	120	4,730	4,207	4,804	3,491
Yearly	1,701	1,675	1,826	1,519	63,499	55,831	63,499	43,936

Month	CONTROL - VALLE HERMOSO, TAMAULIPAS (Pop. 58,573)				MATAMOROS, TAMAULIPAS (Pop. 418,141)			
	2001	Period 1998 - 2001			2001	Period 1996 - 2001		
		Average	Maximum	Minimum		Average	Maximum	Mimimum
Jan.	366	310	366	250	4,792	4,362	4,856	3,002
Feb.	219	270	326	219	4,393	4,217	4,866	3,006
Mar.	237	231	349	69.0	5,009	4,380	5,058	3,000
April	345	333	401	252	4,845	4,136	4,876	2,903
May	331	311	334	284	5,000	4,603	5,343	3,993
June	276	311	355	274	5,034	4,292	5,120	1,940
July	187	312	395	187	5,290	4,807	5,333	2,853
Aug.	348	329	381	264	5,472	4,729	5,472	3,194
Sept.	342	346	360	334	5,321	4,392	5,321	3,046
Oct.	394	358	394	327	5,281	4,158	5,281	2,980
Nov.	453	378	453	333	5,028	4,438	5,028	2,573
Dec.	314	333	352	314	5,090	4,556	5,145	2,589
Yearly	3,812	3,676	4,046	3,156	60,555	49,453	61,035	19,175

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

In Mexico

	CD. ACUNA, COAHUILA (Pop. 110,487)				RIO ESCONDIDO POWER PLANT			
Month	2001	Period 1992 - 2001			2001	Period 1992 - 2001		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	754	381	754	305	2,213	1,402	2,213	0
Feb.	686	347	686	277	2,303	1,768	2,480	1,105
Mar.	772	386	772	307	2,739	2,065	2,771	929
April	711	377	711	298	2,650	2,157	3,039	1,402
May	798	393	798	298	3,050	1,686	3,050	0
June	788	386	788	291	3,200	2,129	3,200	758
July	1,140	431	1,140	308	3,940	2,683	3,940	1,934
Aug.	1,170	442	1,170	309	3,278	2,665	3,932	1,759
Sept.	1,010	418	1,010	297	1,990	2,148	2,957	999
Oct.	960	419	960	294	2,300	2,230	2,662	1,856
Nov.	920	409	920	296	2,010	1,860	2,373	1,463
Dec.	956	417	956	290	2,540	1,694	2,630	0
Yearly	10,665	4,804	10,665	3,595	32,213	24,487	32,213	19,818

	PIEDRAS NEGRAS, COAHUILA (Pop. 128,130)				NUEVO LAREDO, TAMAULIPAS (Pop. 310,915)			
Month	2001	Period 1992 - 2001			2001	Period 1992 - 2001		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	1,285	1,076	1,522	740	3,701	3,555	4,787	2,218
Feb.	1,262	1,004	1,270	702	3,760	3,262	4,678	1,776
Mar.	1,430	1,138	1,507	779	4,176	3,375	4,925	1,571
April	1,680	1,192	1,680	717	4,370	3,600	4,370	2,160
May	1,642	1,276	1,767	791	4,605	3,868	5,358	2,163
June	1,690	1,324	1,753	888	4,580	3,825	5,011	2,441
July	1,720	1,433	1,838	979	4,770	4,158	4,963	3,151
Aug.	1,876	1,403	1,876	973	5,270	4,138	5,270	3,134
Sept.	1,670	1,309	1,692	906	4,800	4,089	4,843	2,840
Oct.	1,460	1,255	1,643	927	4,870	3,907	4,870	2,127
Nov.	1,350	1,124	1,443	835	4,490	3,789	4,706	2,273
Dec.	1,360	1,117	1,465	818	4,429	3,905	4,864	2,597
Yearly	18,425	14,651	18,699	10,155	53,821	45,471	56,762	31,696

	NUEVA CD. GUERRERO, TAMAULIPAS (Pop. 4,366)				CD MIER, TAMAULIPAS (Pop. 6,788)			
Month	2001	Period 1992 - 2001			2001	Period 1992 - 2001		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	61.3	58.0	73.0	44.0	53.6	59.0	80.0	45.0
Feb.	48.4	53.0	65.0	44.0	43.2	50.0	58.0	43.0
Mar.	56.2	57.0	70.0	52.0	56.2	59.0	76.0	48.0
April	67.4	56.0	72.0	30.0	59.6	60.0	75.0	51.0
May	61.3	61.0	73.0	54.0	70.0	65.0	82.0	37.0
June	51.8	61.0	72.0	52.0	77.8	69.0	79.0	52.0
July	63.9	64.0	74.0	55.0	75.2	77.0	80.0	67.0
Aug.	63.9	65.0	75.0	61.0	70.0	68.0	80.0	54.0
Sept.	69.9	63.0	72.0	49.0	57.0	67.0	78.0	52.0
Oct.	58.8	63.0	74.0	51.0	72.6	64.0	80.0	54.0
Nov.	54.4	59.0	72.0	51.0	70.0	58.0	74.0	47.0
Dec.	53.6	61.0	74.0	49.0	63.7	59.0	72.0	45.0
Yearly	711	723	825	658	769	755	853	683

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Million 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, Sanchez and Platoro from the State of Colorado, Division of Water Resources; Heron, El Vado, Elephant Butte, Caballo, Sumner, and Brantley from the United States Bureau of Reclamation; Abiquiu, Cochiti, Jemez Canyon and Santa Rosa from United States Corps of Engineers; Costilla and Bluewater 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; Delta Lake from the Delta Lake Irrigation District. The data for all reservoirs in the Mexican portion of the watershed were provided by the National Water Commission. The data for Amistad Reservoir (International) and Falcon Reservoir (International) were provided by the International Boundary and Water Commission.

In the United States

	RIO GRANDE (Capacity 63.0)		CONTINENTAL (Capacity 28.0)		SANTA MARIA (Capacity 55.6)		TERRACE (Capacity 21.2)		MOUNTAIN HOME (Capacity 22.9)	
Month	2001	Average 1927-2001	2001	Average 1928-2001	2001	Average 1928-2001	2001	Average 1925-2001	2001	Average 1924-2001
Jan.	14.9	17.7	5.8	5.9	12.0	10.0	6.0	5.7	1.9	4.5
Feb.	17.1	19.0	6.6	6.5	12.2	10.5	6.7	6.2	2.1	4.9
Mar.	19.6	20.9	7.6	7.1	12.6	10.9	7.8	7.0	2.5	5.3
April	22.7	22.5	9.9	8.0	11.6	11.8	9.1	7.5	3.3	6.0
May	38.8	25.9	11.9	9.6	15.2	14.5	9.9	8.5	6.1	8.0
June	15.0	28.8	8.7	9.8	15.0	17.1	7.9	10.0	5.6	8.7
July	7.2	19.0	0.7	7.1	10.8	14.0	5.4	7.9	1.9	6.3
Aug.	7.2	12.2	0.6	4.8	8.1	9.8	4.0	5.4	1.0	4.0
Sept.	7.4	10.6	0.8	4.3	8.0	8.3	3.3	4.4	1.1	3.5
Oct.	7.4	11.0	0.7	4.3	8.1	8.5	2.7	4.4	1.3	3.5
Nov.	10.1	13.4	1.6	4.6	8.5	9.1	3.3	4.8	1.5	3.9
Dec.	12.2	16.1	2.6	5.6	8.8	9.6	3.4	5.2	1.7	4.2
Avg.	15.0	18.1	4.8	6.5	10.9	11.2	5.8	6.4	2.5	5.2
Max.	38.8	67.6	11.9	32.9	15.2	51.9	9.9	21.8	6.1	20.2
Min.	7.2	0	0.6	0	8.0	0	2.7	0	1.0	0

	SANCHEZ (Capacity 127.3)		PLATORO (Capacity 73.5)		COSTILLA (Capacity 19.4)		HERON (Capacity 495.0)		EL VADO (Capacity 229.8)	
Month	2001	Average 1927-2001	2001	Average 1952-2001	2001	Average 1922-2001	2001	Average 1971-2001	2001	Average 1935-2001
Jan.	32.0	20.7	20.8	20.5	5.4	6.0	328.9	343.5	25.9	74.8
Feb.	32.0	20.7	21.0	20.3	5.9	6.4	324.3	339.3	27.7	72.7
Mar.	33.8	21.4	21.2	20.7	6.7	7.1	324.7	327.9	42.1	79.1
April	34.6	22.8	21.7	20.7	8.7	8.4	322.6	323.0	122.3	117.8
May	40.4	25.7	37.0	23.9	1.6	10.6	380.8	362.5	221.9	158.5
June	37.7	27.6	38.4	32.1	12.3	10.2	414.2	393.7	219.2	150.6
July	33.8	23.2	30.8	29.1	8.5	7.0	418.7	396.2	203.6	130.0
Aug.	32.3	19.5	26.6	26.0	6.7	4.7	422.2	394.4	174.8	106.7
Sept.	29.5	19.0	23.4	25.4	3.6	4.0	419.8	388.7	121.2	92.1
Oct.	28.4	19.8	17.4	24.4	4.2	4.5	415.4	386.8	96.8	85.6
Nov.	24.8	20.3	21.1	21.3	4.8	5.0	385.7	382.0	111.2	77.6
Dec.	29.3	20.7	21.1	21.3	5.3	5.5	359.5	359.5	122.3	76.8
Avg.	32.4	21.8	25.0	23.8	6.1	6.6	376.4	366.5	124.1	101.9
Max.	40.4	78.6	38.4	68.2	12.3	20.2	422.2	495.0	221.9	251.0
Min.	24.8	0	17.4	0	1.6	0	322.6	0	25.9	0

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

In the United States

Month	ABIQUIU (Capacity 1,481.4) 2001	ABIQUIU Average 1965-2001	COCHITI (Capacity 619.6) 2001	COCHITI Average 1973-2001	JEMEZ CANYON (Capacity 123.9) 2001	JEMEZ CANYON Average 1965-2001	BLUEWATER (Capacity 47.5) 2001	BLUEWATER Average 1927-2001	ELEPHANT BUTTE (Capacity 2,547.1) 2001	ELEPHANT BUTTE Average 1915-2001
Jan.	117.8	117.8	62.9	71.5	5.7	12.7	3.2	10.4	1,588.2	1,199.0
Feb.	123.4	116.7	61.9	67.7	4.9	12.8	3.3	11.2	1,573.9	1,203.6
Mar.	129.7	115.1	63.0	67.6	4.8	13.7	6.0	15.9	1,512.4	1,164.2
April	134.0	126.0	63.0	74.9	11.6	17.9	6.4	19.8	1,446.5	1,153.5
May	178.8	170.3	61.4	99.6	14.2	18.9	6.1	17.8	1,380.0	1,245.7
June	186.6	160.4	61.7	102.5	9.8	15.8	4.4	15.0	1,341.0	1,272.6
July	163.5	146.5	60.8	80.3	7.5	14.5	4.3	13.1	1,228.1	1,205.0
Aug.	150.4	142.5	59.3	72.9	6.4	13.9	4.1	11.8	1,123.1	1,141.5
Sept.	142.0	136.3	59.5	72.4	4.5	13.1	3.9	11.2	1,063.9	1,113.3
Oct.	135.5	131.6	59.0	75.3	0	12.3	3.7	10.7	1,043.4	1,115.4
Nov.	148.6	124.4	59.1	75.4	0	12.2	3.6	10.5	1,062.3	1,142.6
Dec.	161.8	123.1	61.9	75.1	0	12.4	3.5	10.3	1,096.1	1,175.1
Avg.	147.7	134.2	61.1	77.9	5.8	14.2	4.4	13.1	1,288.2	1,177.6
Max.	186.6	493.8	63.0	471.2	14.2	88.8	6.4	58.1	1,588.2	2,840.5
Min.	117.8	0	59.0	4.4	0	0	3.2	0	1,043.4	4.1

Month	CABALLO (Capacity 408.9) 2001	CABALLO Average 1938-2001	STORRIE (Capacity 28.7) 2001	STORRIE Average 1939-2001	SANTA ROSA (Capacity 542.6) 2001	SANTA ROSA Average 1980-2001	LAKE SUMNER (Capacity 116.8) 2001	LAKE SUMNER Average 1937-2001	BRANTLEY (Capacity 69.4) 2001	BRANTLEY Average 1988-2001
Jan.	49.1	118.7	17.4	11.4	16.9	73.1	41.5	68.1	38.7	31.3
Feb.	98.0	150.1	18.9	11.5	19.2	72.1	46.3	72.3	41.4	34.7
Mar.	131.3	126.4	21.3	12.2	28.0	72.4	49.3	62.1	45.3	39.9
April	113.9	127.7	22.9	12.9	40.1	74.1	45.8	54.8	33.0	31.0
May	123.6	136.2	23.2	13.4	40.1	76.9	13.1	54.6	46.9	34.2
June	101.8	124.0	21.3	12.1	41.9	76.6	9.4	49.2	34.0	37.2
July	80.8	102.0	19.7	12.1	4.9	69.7	11.6	47.2	36.0	28.8
Aug.	65.6	72.2	19.0	12.5	15.5	70.7	9.3	50.0	26.3	29.8
Sept.	31.3	55.7	17.4	12.3	17.1	69.0	5.7	51.3	16.6	29.2
Oct.	8.4	65.2	15.7	11.7	17.8	70.7	3.9	52.8	11.7	23.8
Nov.	11.2	78.6	15.7	11.8	18.8	72.7	9.1	56.8	9.6	24.7
Dec.	18.8	96.9	15.7	11.6	19.7	73.7	12.5	62.4	10.4	26.1
Avg.	69.5	104.5	19.0	12.1	23.3	72.6	21.5	56.8	29.2	30.9
Max.	131.3	427.5	23.2	32.3	41.9	143.5	49.3	192.8	46.9	57.4
Min.	8.4	0	15.7	0	4.9	0	3.9	0.5	9.6	1.1

Month	RED BLUFF (Capacity 357.3) 2001	RED BLUFF Average 1936-2001	DELTA LAKE (Capacity 30.8) 2001	DELTA LAKE Average 1939-2001	TOTAL IN U.S. RESERVOIRS (Capacity 7,509.7) 2001	TOTAL IN U.S. RESERVOIRS Average Estimated
Jan.	84.5	120.7	21.5	19.4	2,501.0	2,363.7
Feb.	88.7	123.1	19.3	18.7	2,554.8	2,401.3
Mar.	92.2	120.3	16.8	18.1	2,578.7	2,335.6
April	75.6	106.8	22.6	18.2	2,581.9	2,366.0
May	62.3	106.2	17.9	18.6	2,731.2	2,640.0
June	53.2	107.3	20.2	18.7	2,659.3	2,679.8
July	43.2	97.7	22.6	18.7	2,404.4	2,475.4
Aug.	40.4	92.7	21.3	17.8	2,224.2	2,315.8
Sept.	40.2	96.5	21.8	19.1	2,042.0	2,239.8
Oct.	37.3	105.5	20.4	18.8	1,939.2	2,246.6
Nov.	41.6	110.1	20.4	19.0	1,972.6	2,280.7
Dec.	46.7	115.5	19.0	18.5	2,032.3	2,325.3
Avg.	58.8	108.5	20.3	18.6	2,351.8	2,389.2
Max.	92.2	404.0	22.6	27.9	2,731.2	
Min.	37.3	12.3	16.8	0	1,939.2	

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

In Mexico

Month	SAN GABRIEL (Capacity 255.4) 2001	SAN GABRIEL (Capacity 255.4) Average 1990-2001	PICO DEL AGUILA (Capacity 50.0) 2001	PICO DEL AGUILA (Capacity 50.0) Average 1993-2001	LA BOQUILLA (Capacity 2,903.4) 2001	LA BOQUILLA (Capacity 2,903.4) Average 1914-2001	FRANCISCO I. MADERO (Capacity 348.0) 2001	FRANCISCO I. MADERO (Capacity 348.0) Average 1948-2001	CHIHUAHUA (Capacity 25.8) 2001	CHIHUAHUA (Capacity 25.8) Average 1961-2001
Jan.	70.3	123.2	17.1	17.3	915.7	1,787.6	154.9	256.1	8.3	9.6
Feb.	70.3	120.3	17.2	16.0	913.6	1,739.3	158.1	251.3	8.0	9.2
Mar.	70.3	115.3	17.2	13.4	926.6	1,662.5	159.3	234.6	7.9	8.7
April	69.3	106.2	12.7	10.0	846.3	1,564.5	141.8	198.2	7.5	8.2
May	53.9	90.0	14.8	9.2	751.9	1,467.5	130.0	165.7	7.1	7.5
June	43.8	78.7	15.6	9.8	660.2	1,382.4	107.6	142.9	6.4	7.1
July	39.0	82.0	8.8	10.5	564.6	1,422.6	65.3	162.7	5.8	7.5
Aug.	31.8	99.7	22.6	14.3	615.4	1,648.6	66.4	207.1	7.3	9.3
Sept.	42.0	116.5	24.3	14.6	863.8	1,855.4	113.4	246.5	7.1	11.2
Oct.	41.6	125.6	16.8	17.0	850.8	1,861.5	99.6	252.2	6.6	11.5
Nov.	41.8	126.2	17.1	17.5	847.6	1,828.9	99.4	253.5	6.4	10.5
Dec.	41.8	125.8	17.1	17.7	842.4	1,818.5	100.4	253.1	6.2	10.1
Avg.	51.3	109.1	16.8	13.9	799.9	1,669.9	116.4	218.7	7.1	9.2
Max.	70.3	475.5	24.3	42.6	926.6	3,402.1	159.3	452.2	8.3	32.7
Min.	31.8	19.8	8.8	6.3	564.6	20.8	65.3	1.7	5.8	0.2

Month	LUIS L. LEON (Capacity 336.7) 2001	LUIS L. LEON (Capacity 336.7) Average 1968-2001	CENTENARIO and SAN MIGUEL (Capacity 45.8) 2001	CENTENARIO and SAN MIGUEL (Capacity 45.8) Average 1934-2001	LA FRAGUA (Capacity 45.5) 2001	LA FRAGUA (Capacity 45.5) Average 1991-2001	VENUSTIANO CARRANZA (Capacity 1,384.2) 2001	VENUSTIANO CARRANZA (Capacity 1,384.2) Average 1930-2001	LAGUNA DE SALINILLAS (Capacity 19.0) 2001	LAGUNA DE SALINILLAS (Capacity 19.0) Average 1931-2001
Jan.	228.6	454.4	29.6	19.5	25.9	35.6	248.9	590.1	7.4	9.8
Feb.	192.3	450.8	34.7	19.5	29.4	35.8	244.3	567.5	8.8	11.3
Mar.	191.8	430.4	37.8	16.7	30.9	32.5	219.4	529.2	9.9	10.1
April	178.9	402.9	37.8	14.8	31.7	31.1	156.8	515.8	12.5	11.4
May	161.0	374.5	34.0	15.1	32.0	29.7	138.4	492.2	11.0	11.3
June	136.7	352.5	30.1	13.4	28.6	28.3	136.3	469.9	9.3	10.5
July	109.5	364.6	24.9	12.6	25.3	28.0	109.5	481.5	15.5	10.2
Aug.	107.7	362.1	21.3	13.1	22.6	28.8	102.0	489.4	12.8	10.2
Sept.	99.2	419.1	19.3	15.1	20.0	31.1	111.8	548.2	11.6	10.6
Oct.	99.6	437.4	20.1	17.3	10.3	32.1	107.5	588.2	9.8	9.9
Nov.	101.5	445.9	16.8	17.9	9.9	32.7	104.2	597.8	8.4	9.5
Dec.	101.4	457.7	15.9	18.4	9.4	32.8	93.5	594.1	14.4	9.5
Avg.	142.4	412.7	26.9	16.1	23.0	31.5	147.7	538.7	11.0	10.4
Max.	228.6	928.9	37.8	43.0	32.0	46.2	248.9	1,435.0	15.5	39.0
Min.	99.2	4.7	15.9	0	9.4	9.4	93.5	1.2	7.4	0

Month	RODRIGO GOMEZ (Capacity 41.5) 2001	RODRIGO GOMEZ (Capacity 41.5) Average 1963-2001	EL CUCHILLO (Capacity 1,123.1) 2001	EL CUCHILLO (Capacity 1,123.1) Average 1994-2001	MARTE R. GOMEZ (Capacity 995.0) 2001	MARTE R. GOMEZ (Capacity 995.0) Average 1943-2001			TOTAL IN MEXICAN RESERVOIRS (Capacity 7,573.4) 2001	TOTAL IN MEXICAN RESERVOIRS (Capacity 7,573.4) Average Estimated
Jan.	29.4	31.7	322.8	268.4	222.3	676.5			2,281.2	4,279.8
Feb.	27.2	31.1	314.0	260.5	224.2	634.4			2,242.1	4,146.8
Mar.	27.5	29.9	300.6	252.4	219.3	607.8			2,218.5	3,943.3
April	30.7	29.1	286.7	243.2	56.6	552.3			1,869.3	3,687.9
May	25.8	28.3	277.4	235.7	47.6	497.1			1,684.9	3,423.7
June	21.3	27.7	270.8	233.0	75.2	502.8			1,541.9	3,258.8
July	25.9	27.7	248.3	222.4	78.8	499.2			1,321.2	3,331.6
Aug.	26.7	27.7	233.2	253.4	74.9	535.8			1,344.7	3,699.4
Sept.	35.5	31.4	596.5	330.3	280.0	670.8			2,224.5	4,300.9
Oct.	37.3	33.5	655.3	368.6	291.5	712.1			2,246.8	4,467.1
Nov.	36.6	33.4	440.5	336.1	583.1	725.6			2,313.3	4,435.4
Dec.	36.1	32.8	454.1	325.9	583.1	723.6			2,315.8	4,420.1
Avg.	30.0	30.4	366.7	277.5	228.1	611.5			1,967.0	3,949.6
Max.	37.3	45.4	655.3	655.3	583.1	1,308.0			2,315.8	
Min.	21.3	0	233.2	140.5	47.6	22.0			1,321.2	

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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.

Storage Capacities
(1992 Survey)

Elevation Meters	Description	At Indicated Elevation: Reservoir Capacity-Thousand Cubic Meters	At Indicated Elevation: Reservoir Area Hectares	Between Indicated Elevations: Storage Volume-Thousand Cubic Meters	Type of Storage
273.710	Original River Bed at Dam Axis	0	0		
				0	
283.465	Lowest Outlet (United States Penstocks)	0	0		
				3,887,094	Silt & Conservation
340.462	Top of Conservation Storage *	3,887,094	26,077		
				2,138,052	Ordinary Flood
347.595	Top of Spillway Gates	6,025,146	34,124		
				499,553	Surcharge
349.025	Maximum Water Surface	6,524,699	35,770		

STORAGE IN MILLION CUBIC METERS AT 24:00 HOURS 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,566.4	1,653.2	1,695.5	1,699.0	1,592.0	1,486.0	1,371.1	1,283.8	1,080.8	1,082.2	1,088.5	1,154.9
2	1,569.7	1,653.2	1,696.2	1,696.2	1,587.3	1,481.5	1,369.3	1,276.7	1,077.9	1,081.8	1,089.5	1,156.4
3	1,572.4	1,655.3	1,698.3	1,694.0	1,583.9	1,477.1	1,367.6	1,270.7	1,076.5	1,081.8	1,090.0	1,157.4
4	1,574.4	1,657.4	1,698.3	1,689.8	1,587.9	1,471.5	1,365.3	1,260.9	1,075.5	1,082.2	1,090.5	1,158.9
5	1,577.8	1,658.8	1,698.3	1,686.9	1,589.3	1,468.4	1,363.0	1,251.1	1,073.6	1,083.7	1,090.5	1,161.4
6	1,580.5	1,659.5	1,698.3	1,684.8	1,585.2	1,465.2	1,360.7	1,241.5	1,072.7	1,084.2	1,090.5	1,162.4
7	1,583.9	1,660.9	1,698.3	1,680.6	1,583.9	1,460.9	1,358.3	1,230.3	1,071.2	1,084.7	1,090.9	1,163.9
8	1,585.9	1,662.3	1,699.7	1,677.8	1,580.5	1,457.2	1,356.0	1,220.2	1,071.2	1,085.1	1,091.9	1,165.0
9	1,587.3	1,663.7	1,699.0	1,672.8	1,575.8	1,452.9	1,353.1	1,210.2	1,075.0	1,087.1	1,091.4	1,165.5
10	1,592.0	1,663.0	1,698.3	1,669.3	1,571.1	1,448.6	1,350.3	1,200.3	1,075.5	1,088.0	1,091.4	1,166.0
11	1,594.0	1,665.8	1,700.4	1,665.8	1,567.7	1,444.3	1,348.0	1,192.5	1,076.5	1,088.0	1,091.9	1,167.0
12	1,596.7	1,667.2	1,700.4	1,661.6	1,564.4	1,439.4	1,345.7	1,184.8	1,077.0	1,089.0	1,092.4	1,168.5
13	1,600.8	1,668.6	1,701.1	1,658.8	1,560.4	1,435.8	1,344.5	1,178.6	1,077.4	1,088.0	1,092.4	1,169.0
14	1,602.8	1,671.4	1,702.6	1,655.3	1,557.0	1,432.1	1,342.8	1,170.5	1,077.4	1,087.6	1,094.8	1,169.5
15	1,604.9	1,674.9	1,701.9	1,651.8	1,553.1	1,427.3	1,340.5	1,163.9	1,077.9	1,088.5	1,115.8	1,171.0
16	1,608.3	1,679.9	1,700.4	1,648.3	1,549.7	1,423.1	1,338.2	1,158.9	1,079.4	1,087.6	1,130.0	1,172.5
17	1,611.1	1,680.6	1,701.1	1,644.1	1,546.4	1,418.9	1,335.4	1,152.4	1,079.4	1,087.1	1,133.5	1,172.5
18	1,615.2	1,682.7	1,702.6	1,638.6	1,542.4	1,414.1	1,333.1	1,145.9	1,079.8	1,087.1	1,135.5	1,173.5
19	1,617.2	1,684.8	1,702.6	1,635.1	1,539.8	1,409.3	1,331.4	1,139.9	1,080.3	1,087.1	1,138.4	1,174.0
20	1,619.3	1,685.5	1,702.6	1,631.0	1,536.5	1,404.6	1,328.6	1,133.5	1,080.3	1,087.1	1,140.4	1,174.6
21	1,622.7	1,686.9	1,701.9	1,626.9	1,532.6	1,400.4	1,327.4	1,129.1	1,080.3	1,087.6	1,141.9	1,175.1
22	1,624.8	1,688.3	1,701.9	1,624.8	1,528.6	1,396.9	1,324.6	1,128.6	1,080.3	1,087.6	1,144.4	1,176.6
23	1,627.5	1,689.8	1,701.9	1,624.1	1,524.7	1,392.1	1,321.8	1,119.7	1,081.8	1,088.0	1,146.4	1,177.1
24	1,630.3	1,691.9	1,703.3	1,620.0	1,520.1	1,386.8	1,320.1	1,115.8	1,081.8	1,088.5	1,147.9	1,178.1
25	1,633.1	1,693.3	1,701.9	1,615.9	1,513.2	1,383.9	1,317.2	1,109.9	1,081.3	1,088.0	1,148.4	1,179.2
26	1,635.8	1,694.7	1,701.1	1,611.7	1,511.7	1,381.6	1,315.0	1,107.5	1,081.8	1,088.0	1,150.4	1,179.7
27	1,638.6	1,695.5	1,701.9	1,607.0	1,507.1	1,379.2	1,312.8	1,102.1	1,081.8	1,088.0	1,151.4	1,180.7
28	1,644.1	1,696.2	1,702.6	1,603.5	1,502.6	1,376.9	1,311.1	1,097.2	1,081.8	1,088.0	1,152.4	1,181.2
29	1,646.2		1,701.9	1,599.4	1,497.5	1,374.6	1,304.4	1,090.9	1,081.8	1,088.0	1,152.4	1,182.2
30	1,649.0		1,701.9	1,595.4	1,493.6	1,372.2	1,297.1	1,085.6	1,082.2	1,088.0	1,153.9	1,183.2
31	1,650.4		1,702.6		1,489.8		1,288.8	1,083.2		1,088.5		1,184.3

Month	2001: MOMENTARY MAXIMUM Elevation	MOMENTARY MAXIMUM Storage	MOMENTARY MAXIMUM Day	2001: MOMENTARY MINIMUM Elevation	MOMENTARY MINIMUM Storage	MOMENTARY MINIMUM Day	2001: Average Storage	Period 1969-2001: Mean Monthly Storage Average	Maximum	Minimum
Jan.	329.080	1,650.4	31	328.465	1,566.4	1	1,608.5	3,353.5	4,971.4	891.3
Feb.	329.405	1,696.2	28	329.100	1,653.2	1	1,674.5	3,341.9	4,952.1	971.6
Mar.	329.450	1,702.6	! 14	329.400	1,695.5	1	1,700.6	3,301.9	4,954.1	1,062.9
April	329.425	1,699.0	1	328.680	1,595.4	30	1,649.0	3,235.5	4,910.5	1,187.6
May	328.655	1,592.0	1	327.880	1,489.8	31	1,547.6	3,120.7	4,723.6	1,281.1
June	327.850	1,486.0	1	326.910	1,372.2	30	1,425.4	3,050.7	4,696.8	1,082.8
July	326.900	1,371.1	1	326.175	1,288.8	31	1,336.9	3,029.7	4,745.6	980.0
Aug.	326.130	1,283.8	1	324.175	1,088.2	31	1,168.9	3,091.7	4,861.4	1,062.2
Sept.	324.165	1,082.2	30	324.050	1,071.2	! 7	1,078.3	3,174.1	5,078.5	1,078.3
Oct.	324.230	1,088.5	! 15	324.160	1,081.8	! 2	1,086.6	3,318.2	5,515.1	1,086.6
Nov.	324.895	1,153.9	30	324.230	1,088.5	1	1,118.7	3,343.7	5,231.7	1,118.7
Dec.	325.195	1,184.3	31	324.905	1,154.9	1	1,171.0	3,353.6	4,970.7	1,171.0
Yearly	329.450	1,702.6		324.050	1,071.2		1,380.5	3,226.3	4,873.4	1,290.5

* When necessary, the Commission may set temporary conservation levels

! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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
(1992 Survey)

Elevation Meters	Description	At Indicated Elevation: Reservoir Capacity-Thousand Cubic Meters	At Indicated Elevation: Reservoir Area Hectares	Between Indicated Elevations: Storage Volume-Thousand Cubic Meters	Between Indicated Elevations: Type of Storage
53.340	Original River Bed at Dam Axis	0	0		
				67	Dead
61.965	Lowest Outlet (Mexican Penstock)	67	10		
				3,273,351	Silt & Conservation
91.805	Top of Conservation Storage *	3,273,418	35,281		
				623,589	Ordinary Flood
93.480	Top of Spillway Gates	3,897,007	39,678		
				993,201	Surcharge
95.770	Maximum Water Surface	4,890,208	46,322		

STORAGE IN MILLION CUBIC METERS AT 24:00 HOURS 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	431.3	403.8	433.6	390.1	389.7	364.2	346.0	247.2	332.8	565.8	498.9	555.1
2	431.3	404.2	434.4	389.7	392.6	358.5	344.1	245.5	341.6	565.2	496.9	555.6
3	430.5	404.2	436.2	390.5	395.5	352.4	343.4	247.8	347.5	563.6	495.0	556.7
4	429.6	406.3	437.1	390.1	396.3	348.6	344.1	251.2	351.2	562.5	492.6	556.7
5	429.1	407.6	436.7	390.1	398.4	344.5	344.9	254.0	353.1	565.8	490.1	558.3
6	428.3	408.9	436.7	390.5	401.3	341.2	345.6	255.8	356.6	564.1	488.2	559.3
7	428.3	410.1	436.2	391.8	403.4	339.4	344.1	257.2	360.8	563.1	487.7	560.4
8	426.5	412.7	437.6	391.8	408.9	336.8	341.9	261.3	363.1	561.5	486.3	563.1
9	423.9	417.4	438.0	391.0	412.3	334.2	339.0	266.4	369.7	559.9	485.3	564.1
10	423.0	417.4	437.1	388.5	415.3	331.7	336.4	271.8	392.6	559.3	483.4	564.1
11	423.0	417.8	436.2	387.7	417.8	330.3	334.2	275.5	451.5	559.3	481.5	565.8
12	423.0	418.7	435.8	386.1	419.6	326.0	331.7	279.6	506.8	559.3	479.5	567.9
13	426.5	419.6	433.1	384.4	421.3	322.8	330.3	282.7	528.0	557.7	476.7	569.0
14	426.5	420.9	431.8	382.0	423.0	320.0	326.7	286.2	538.8	556.1	473.8	569.5
15	428.7	423.0	428.7	380.4	424.3	318.6	322.8	289.1	544.5	554.0	472.4	570.1
16	430.0	425.6	425.6	378.0	423.9	321.8	317.9	290.1	547.2	552.4	485.3	571.1
17	430.0	426.5	424.8	376.0	423.0	326.7	313.8	291.4	548.7	549.8	498.9	571.1
18	429.1	426.5	423.5	372.5	421.3	330.3	310.0	292.7	550.8	547.2	520.9	570.1
19	428.3	427.4	421.3	368.5	419.1	333.2	305.2	293.3	553.0	545.6	544.5	569.0
20	424.8	428.3	418.7	366.2	415.3	336.4	300.9	294.0	554.0	542.5	547.7	567.9
21	422.6	429.1	415.7	364.2	413.5	339.7	296.9	295.3	554.5	539.3	551.4	567.4
22	420.4	429.1	412.7	362.7	409.7	343.4	292.7	297.6	554.5	535.2	554.0	567.9
23	418.7	429.6	410.1	362.7	407.2	344.9	288.1	299.2	555.1	532.6	555.1	567.9
24	417.0	431.8	408.0	363.5	403.8	346.4	283.7	299.9	561.5	529.5	556.7	568.5
25	415.3	431.3	403.0	366.2	398.8	348.2	278.6	299.9	562.5	527.5	555.6	569.0
26	414.0	430.5	399.2	369.7	392.2	348.6	274.0	299.9	563.6	524.4	555.1	569.0
27	411.0	430.5	397.1	374.8	386.9	349.0	269.1	299.9	564.7	520.3	556.1	568.5
28	410.1	431.3	395.1	378.4	382.8	350.1	264.3	300.6	566.3	515.8	557.2	569.0
29	408.0		393.4	382.4	378.8	350.1	259.3	303.2	566.8	511.3	554.0	568.5
30	407.2		392.2	386.5	374.8	348.6	254.0	307.9	566.8	507.8	553.0	567.4
31	405.9		390.5		369.7		250.0	317.6		502.8		565.8

Month	2001: MOMENTARY MAXIMUM Elevation	MOMENTARY MAXIMUM Storage	MOMENTARY MAXIMUM Day	MOMENTARY MINIMUM Elevation	MOMENTARY MINIMUM Storage	MOMENTARY MINIMUM Day	2001: Average Storage	Period 1954-2001: Mean Monthly Storage Average	Mean Monthly Storage Maximum	Mean Monthly Storage Minimum
Jan.	77.875	431.3	1	77.580	405.9	31	422.6	2,356.9	3,787.8	269.8
Feb.	77.875	431.3	28	77.555	403.8	1	420.4	2,255.2	3,712.2	192.7
Mar.	77.940	437.1	! 4	77.395	390.5	31	421.3	2,251.2	3,689.1	279.6
April	77.390	390.1	! 1	77.045	362.7	22	379.9	2,147.7	3,644.4	379.9
May	77.795	424.3	15	77.135	369.7	31	404.5	1,972.5	3,540.0	291.7
June	77.065	346.2	1	76.445	318.6	15	339.6	1,893.6	3,440.3	337.6
July	76.825	346.0	1	75.360	250.0	31	310.8	1,953.1	3,321.4	258.9
Aug.	76.430	317.6	31	75.280	245.5	2	282.4	1,924.1	3,418.5	256.6
Sept.	79.260	566.8	! 29	76.645	332.8	1	483.6	2,029.0	3,541.4	316.0
Oct.	79.250	565.8	! 1	78.640	502.8	31	545.2	2,262.1	4,009.2	351.4
Nov.	79.170	557.2	28	78.325	472.4	15	514.5	2,344.5	3,854.0	403.6
Dec.	79.300	571.1	! 16	79.150	555.1	1	565.6	2,382.9	3,860.4	421.8
Yearly	79.300	571.1		75.280	245.5		424.2	2,147.7	3,410.6	424.2

* When necessary, the Commission may set temporary conservation levels ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 and biochemical analyses by Haskell R. Street Wastewater Treatment Plant laboratory in El Paso; specific conductance determinations by the International Boundary and Water Commission. Additional water quality parameters determined by the Haskell R. Street Wastewater Treatment Plant.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total mg/L	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Oxygen Demand Bio-Chemical (BOD) mg/L
Jan. 04	0820	2.92	2,030	7.8	9.9	410	9.2	1300	3
Jan. 11	0900	NR	2,140	7.2	6.5	380	10.8	9700	3
Jan. 18	0900	3.37	2,120	7.3	3.8	380	11.6	430	3
Jan. 25	0835	2.75	2,180	7.6	6.1	390	11.2	1,200	4
Feb. 02	0825	2.44	2,120	7.5	7.8	360	8.9	69,600	10
Feb. 08	0815	10.8	1,440	7.9	10.5	240	8.5	1,300	4
Feb. 15	0835	6.88	1,620	7.7	8.3	310	9.4	340	4
Mar. 01	0850	18.9	1,240	7.7	10.0	210	8.9	510	4
Mar. 08	0730	20.5	1,120	7.9	10.9	230	8.8	310	4
Mar. 15	0810	18.6	930	7.9	11.5	210	9.3	200	4
Mar. 22	0850	33.7	944	8.1	14.5	210	8.7	380	4
Mar. 29	0840	24.2	1,010	8.1	13.2	220	8.6	1,400	3
Apr. 05	0850	22.3	1,140	7.8	17.8	250	7.3	1,300	2
Apr. 12	0742	20.7	1,070	7.9	12.2	250	NR	700	2
Apr. 19	0840	18.7	1,150	7.9	18.1	280	7.0	1,900	2
Apr. 26	0840	25.4	1,100	8.1	15.9	230	7.9	200	1
May 05	0745	18.6	1,270	8.1	16.8	270	7.9	630	3
May 10	0845	18.9	1,170	8.1	20.4	260	7.2	650	2
May 17	0850	16.6	1,120	8.1	20.5	260	7.1	1,900	2
May 24	0835	26.1	1,090	8.0	21.5	260	6.9	800	2
June 07	0803	32.4	1,040	8.1	22.7	240	6.8	1,100	1
June 14	0835	35.4	1,020	8.2	21.3	264	6.6	500	1
June 21	0830	30.0	994	8.2	23.7	220	6.9	700	2
June 28	0830	32.5	1,080	8.2	25.1	250	6.1	6,500	4
July 05	0850	30.6	1,080	8.3	23.9	252	6.9	1,600	3
July 12	0805	30.5	1,100	8.2	25.9	260	6.2	4,400	2
July 19	0830	37.9	1,040	8.2	25.5	250	6.0	5,800	3
July 26	0835	31.7	1,070	8.1	26.4	250	6.5	3,400	2
Aug. 02	0755	35.9	1,030	8.2	26.3	260	7.4	5,600	4
Aug. 09	0754	30.2	1,060	8.3	24.2	240	6.4	700	2
Aug. 16	0731	25.3	1,100	8.2	24.0	250	6.5	700	3
Aug. 23	0850	28.9	1,140	8.2	24.7	280	6.6	100	2
Aug. 30	0900	31.0	1,140	8.1	23.5	260	6.2	400	6
Oct. 25	0845	7.65	1,770	8.0	14.7	380	7.8	NR	3
Nov. 13	0910	5.47	1,880	8.1	13.9	390	8.8	3,200	2
Dec. 19	0830	3.20	2,160	8.2	4.5	434	11.0	2,100	3

NR - None Reported

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

08-3640.00 RIO GRANDE AT EL PASO, TEXAS

2001 Date	Chloride	Solids Dissolved Total	Sulfate ion (SO4) Dissolved	Ammonia	Turbidity
Jan. 04	224	1220	445	0.421	16
Jan. 11	238	1270	430	0.567	16
Jan. 18	256	1280	446	0.561	14
Jan. 25	252	1160	442	0.490	22
Feb. 02	259	1230	242	NR	43
Feb. 08	164	888	307	0.988	140
Feb. 15	192	942	199	0.209	69
Mar. 01	126	746	167	0.035	326
Mar. 08	91	664	171	0.140	240
Mar. 15	89	560	174	0.110	176
Mar. 22	88	498	199	0.090	135
Mar. 29	93	610	221	0.840	82
Apr. 05	110	708	217	0.090	66
Apr. 12	106	722	249	0.070	68
Apr. 19	122	632	211	0.100	61
Apr. 26	111	630	256	0.070	63
May 05	125	594	237	0.070	50
May 10	112	688	224	0.090	52
May 17	105	704	228	0.160	54
May 24	107	658	196	0.300	76
June 07	93	630	193	0.140	58
June 14	89	678	183	0.060	55
June 21	85	690	204	0.060	61
June 28	98	616	207	0.050	98
July 05	99	680	215	0.130	68
July 12	103	698	147	0.080	62
July 19	67	592	210	0.100	67
July 26	98	686	205	0.240	317
Aug. 02	96	570	213	0.060	112
Aug. 09	94	630	214	0.060	78
Aug. 16	90	672	213	0.050	179
Aug. 23	104	726	214	0.050	73
Aug. 30	105	630	213	0.040	755
Oct. 25	NR	1060	NR	NR	16
Nov. 13	206	1160	428	NR	16
Dec. 19	224	1190	396	0.300	17

NR - None Reported

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1						1,010		1,540		2,360		
2		2,050	1,360	989	1,100		1,050				2,200	
3	1,820							1,500		2,250		2,260
4				1,060	1,130				1,550			
5	1,830	952	1,430			1,000	1,070		1,670	2,360	2,140	2,200
6				1,070		1,030	1,080	1,880				2,280
7		921	1,440		1,080				2,300		2,200	
8	1,610					1,020		1,640				
9		835	1,430	1,070	1,130		1,060			2,270	2,250	
10	2,100							1,550	2,370	2,370		2,170
11				1,040	1,130	990	1,080					
12	2,130	917	1,410						2,370	2,260		2,170
13				1,020		1,010	1,680	1,670			2,270	
14		915	1,440		1,080				2,280		2,250	2,170
15						1,090		1,660		2,280		
16	2,180	911	1,420	1,090	1,040		1,660				2,160	
17	2,130								2,360	2,240		
18				1,170	1,090	1,100	1,550					
19	2,150		1,110						2,370	2,380	2,250	
20		1,430		1,130		1,020	1,640	1,640				
21		1,430	1,120		1,050					2,360	2,260	
22	2,140					1,060		1,560				
23		1,440	1,100	1,090	1,100		1,640					
24	2,130							1,640	2,270			
25				1,130	1,040	1,100	1,640					
26	2,100	1,430	1,110							2,380	2,290	
27				1,080		1,100	1,640	1,600			2,180	
28		1,430	1,110		1,080				2,230			
29	2,130				1,080	1,070		1,520		2,240	2,240	
30				1,110			1,670					
31	2,180		1,120					1,630		2,360		

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

RIO GRANDE ABOVE HASKELL R. STREET WASTEWATER TREATMENT PLANT

LOCATION: Rio Grande 2.4 Kilometers upstream from Haskell R. Street Wastewater Treatment Plant Outfall. This monitoring station is located in TNRCC Segment 2308 downstream of the International Dam. The river bank has been stabilized in this area by lining the bank with concrete to prevent movement of the bank.
RECORDS : Chemical analyses, February 1930 through current year. Biochemical analyses 1976 through current year.
REMARKS : Samples collected by the International Boundary and Water Commission and analyzed by the El Paso Water Utilities laboratory. Additional water quality parameters determined by the Haskell R. Street Wastewater Treatment Plant laboratory in El Paso, Texas.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature Deg C	Hardness, Total mg/L	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Oxygen Demand Bio-Chemical (BOD) mg/L
Jan. 04	0840	NR	2,170	8.0	3.4	380	11.4	2,900	NA
Jan. 11	0920	NR	2,180	7.9	6.4	320	11.3	2,000	NA
Jan. 18	0925	NR	2,190	7.8	4.3	380	12.2	120	NA
Jan. 25	0855	NR	2,160	7.6	7.2	380	11.0	8,900	NA
Feb. 02	0845	NR	2,230	7.7	4.3	380	11.7	11,300	NA
Feb. 08	0830	NR	1,300	7.8	9.9	220	9.5	1,160	NA
Feb. 15	0850	NR	1,470	7.9	6.4	290	11.6	190	NA
Feb. 22	0905	NR	1,530	8.0	9.0	300	10.3	80	NA
Mar. 01	0910	NR	1,320	8.0	9.0	NA	11.3	270	NA
Mar. 08	0730	NR	1,090	8.4	7.6	NA	11.0	NA	NA
Mar. 15	0820	NR	1,120	8.2	8.1	240	11.6	300	NA
Mar. 22	0900	NR	918	8.4	13.7	NA	10.4	220	NA
Mar. 29	0855	NR	1,030	8.2	13.5	NA	10.2	500	NA
Apr. 05	0915	NR	1,080	8.2	16.1	NA	7.4	700	NA
Apr. 12	0810	NR	1,120	8.3	9.6	NA	10.9	900	NA
Apr. 19	0855	NR	1,260	8.1	17.4	NA	7.8	900	NA
Apr. 26	0850	NR	1,110	8.2	15.5	NA	9.2	100	NA
May 05	0805	NR	1,330	8.0	12.8	290	9.1	800	NA
May 10	0905	NR	1,280	8.2	19.9	280	9.2	420	NA
May 17	0850	NR	1,120	8.2	16.4	240	8.5	2,600	NA
May 24	0900	NR	1,030	8.3	19.4	250	9.7	1,000	NA
June 07	0905	NR	1,010	8.3	20.3	240	9.8	500	NA
June 14	0850	NR	1,030	8.2	18.0	241	8.7	100	NA
June 21	0855	NR	1,010	8.3	23.0	230	10.1	3,500	NA
June 28	0855	NR	958	8.4	26.6	250	7.4	6,500	NA
July 05	0905	NR	1,000	8.5	23.8	229	9.2	400	NA
July 12	0820	NR	1,080	8.5	24.9	240	9.7	1,700	NA
July 19	0850	NR	909	8.4	26.2	220	7.4	12,000	NA
July 26	0850	NR	1,010	8.4	25.6	240	9.9	1,200	NA
Aug. 02	0815	NR	1,000	8.2	26.1	250	8.1	2,800	NA
Aug. 09	0825	NR	1,050	8.3	22.3	245	7.7	1,800	NA
Aug. 16	0750	NR	1,090	8.3	22.4	250	8.2	12,600	NA
Aug. 23	0910	NR	1,040	8.4	23.8	260	10.2	2,100	NA
Aug. 30	0920	NR	1,040	8.5	22.7	235	10.5	500	NA
Sept. 20	0910	NR	1,190	8.2	22.9	370	6.7	2,000	NA
Oct. 04	0850	NR	1,540	8.4	18.3	NA	9.3	NA	NA
Nov. 01	0900	NR	2,080	8.2	15.4	NA	12.4	2,100	NA

NR - None Reported

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

RIO GRANDE ABOVE HASKELL R. STREET WASTEWATER TREATMENT PLANT

2001 Date	Chloride	Solids Dissolved Total	Sulfate ion (SO4) Dissolved	Ammonia	Turbidity
Jan. 04	246	1258	450	0.457	18
Jan. 11	252	1226	446	0.439	15
Jan. 18	274	1270	460	0.050	12
Jan. 25	260	1228	437	0.420	34
Feb. 02	272	1338	451	0.547	9
Feb. 08	142	762	207	0.364	38
Feb. 15	165	850	269	0.341	25
Feb. 22	155	876	242	0.357	23
Mar. 01	136	792	216	0.465	40
Mar. 08	NR	NR	NR	NR	NR
Mar. 15	114	680	217	0.330	48
Mar. 22	88	488	163	0.062	46
Mar. 29	98	620	197	0.630	27
Apr. 05	110	620	221	0.030	18
Apr. 12	108	734	222	0.070	18
Apr. 19	108	734	222	0.070	18
Apr. 26	112	624	201	0.030	10
May 05	133	634	261	0.060	15
May 10	134	718	257	0.050	7
May 17	114	650	220	0.230	13
May 24	117	704	232	0.160	7
June 07	94	696	196	0.060	NR
June 14	96	630	190	0.030	9
June 21	90	666	182	0.020	17
June 28	98	616	204	0.060	98
July 05	95	648	192	0.030	24
July 12	102	644	200	0.090	9
July 19	58	544	124	0.060	24
July 26	95	639	193	0.060	29
Aug. 02	92	582	197	0.120	124
Aug. 09	102	658	208	0.050	52
Aug. 16	94	626	211	0.030	49
Aug. 23	107	716	206	0.030	28
Aug. 30	99	500	198	0.020	21
Sept. 20	113	720	233	NR	NR
Oct. 04	187	1150	362	NR	9
Nov. 01	NR	NR	NR	NR	NR

NR - None Reported

WATER BULLETIN 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

RIO GRANDE DOWNSTREAM FROM HASKELL R. STREET WASTEWATER TREATMENT PLANT

LOCATION: Rio Grande 1.3 kilometers downstream from Haskell R. Street Wastewater Treatment Plant Outfall. This monitoring station is located in TNRCC Segment 2308.
RECORDS : Chemical and biochemical analyses 1976 through current year.
REMARKS : Samples collected by the International Boundary and Water Commission and analyzed by El Paso Water Utilities laboratory in El Paso, Texas.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Hardness Total mg/l	Oxygen Demand Bio-Chemical (BOD) mg/L
Jan. 04	0855	0.70	2,170	8.0	3.5	10.9	324	390	2
Jan. 09	0850	0.64	2,210	8.1	6.9	11.8	286	NR	NR
Jan. 11	0930	NR	2,160	7.8	6.1	11.2	370	370	7
Jan. 18	0935	NR	2,180	7.9	3.7	11.9	170	380	6
Jan. 25	0905	NR	2,170	8.0	7.5	10.1	7,900	380	NR
Feb. 01	0855	NR	2,010	7.6	7.2	10.0	4	330	10
Feb. 08	0840	0.64	1,360	8.0	10.2	9.5	224	220	5
Feb. 15	0900	NR	1,470	8.1	7.2	12.0	208	280	3
Feb. 22	0915	NR	1,510	8.1	10.2	10.4	30	297	3
Mar. 01	0920	NR	1,340	8.2	9.5	11.8	160	NR	3
Mar. 08	0805	NR	1,140	8.4	7.9	10.8	530	NR	NR
Mar. 15	0830	NR	1,140	8.3	9.2	11.5	200	240	4
Mar. 22	0910	NR	936	8.5	15.5	10.9	90	NR	3
Mar. 29	0905	NR	1,110	8.2	16.7	10.3	100	NR	2
Apr. 05	0925	NR	1,080	8.2	16.7	6.9	600	NR	3
Apr. 12	0820	NR	1,080	8.3	8.8	10.8	400	NR	2
Apr. 19	0910	NR	NR	8.4	18.7	9.2	530	NR	2
Apr. 26	0905	NR	1,080	8.3	16.9	9.3	200	NR	2
May 05	0815	NR	1,480	8.2	12.2	8.6	720	290	1
May 10	0920	NR	1,280	8.3	21.3	9.6	310	260	3
May 17	0900	NR	1,090	8.4	17.9	9.9	400	240	3
May 24	0915	NR	1,140	8.2	20.8	8.7	100	240	1
June 07	0920	0.15	996	8.8	21.2	12.8	3,700	200	1
June 14	0905	NR	1,030	8.3	18.6	9.2	400	226	1
June 21	0910	NR	1,030	8.3	23.8	10.6	5,000	240	1
June 28	0905	NR	949	8.3	25.7	7.4	1,100	224	2
July 05	0915	NR	1,000	8.5	24.0	9.8	200	218	6
July 12	0830	0.25	1,060	8.5	23.9	9.4	1,100	230	5
July 19	0900	NR	905	8.2	25.0	6.1	18,000	210	3
July 26	0905	NR	1,020	8.3	25.8	8.9	1,200	230	6
Aug. 02	0830	1.37	1,020	8.2	24.6	6.2	1,700	260	3
Aug. 09	0840	NR	1,060	8.5	21.6	8.5	2,300	240	2
Aug. 16	0805	NR	1,070	8.4	22.3	8.3	6,000	250	6
Aug. 23	0920	NR	1,070	8.5	23.4	11.3	300	NR	NR
Aug. 30	0930	NR	1,110	8.4	23.8	10.5	500	NR	4
Sept. 20	0930	NR	1,140	8.2	23.0	6.6	1,000	390	NR
Oct. 04	0855	0.45	1,620	8.4	16.9	10.5	NR	NR	NR
Nov. 01	0915	0.42	2,090	8.2	14.3	10.5	NR	NR	NR
Dec. 06	0910	1.53	2,140	8.1	8.2	10.1	NR	NR	NR

NR - None Reported

WATER BULLETIN 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

RIO GRANDE DOWNSTREAM FROM HASKELL R. STREET WASTEWATER TREATMENT PLANT

2001 Date	Chloride ion Dissolved mg/L	Solids Dissolved Total mg/L	Sulfate ion (SO4) Dissolved mg/L	Ammonia mg/L	Turbidity NTU
Jan. 04	248	1290	449	0.408	23.3
Jan. 09	253	1360	450	0.270	NR
Jan. 11	249	1262	442	0.515	12.6
Jan. 18	272	1234	455	0.426	11.2
Jan. 25	265	1228	434	0.400	38.4
Feb. 01	252	1188	380	0.461	10.2
Feb. 08	143	786	209	0.254	29.9
Feb. 15	167	858	271	0.256	18.7
Feb. 22	155	860	240	0.209	16.8
Mar. 01	141	806	222	0.267	22.5
Mar. 08	104	716	190	0.240	51.8
Mar. 15	117	640	220	0.170	32.4
Mar. 22	90	450	166	0.035	24.0
Mar. 29	116	678	166	0.580	32.0
Apr. 05	106	648	203	0.030	11.9
Apr. 12	109	738	202	0.070	9.7
Apr. 19	134	686	248	0.060	8.0
Apr. 26	110	596	199	0.030	7.8
May 05	149	624	275	0.030	17.5
May 10	138	690	260	0.350	4.0
May 17	106	690	210	0.190	8.1
May 24	124	760	241	0.160	3.2
June 07	95	596	181	0.070	6.8
June 14	100	568	196	0.020	6.7
June 21	94	664	186	0.020	9.7
June 28	81	406	171	0.050	9.7
July 05	97	626	193	0.030	14.0
July 12	103	550	197	0.100	5.0
July 19	57	534	123	0.050	28.0
July 26	95	532	193	0.080	15.0
Aug. 02	93	638	167	0.100	113.0
Aug. 09	105	692	204	0.030	17.0
Aug. 16	92	674	210	0.030	31.0
Aug. 23	105	692	204	0.030	17.0
Aug. 30	122	604	208	0.010	13.0
Sept. 20	NR	720	232	NR	190.0

NR - None Reported

WATER BULLETIN 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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

LOCATION: Rio Grande at Riverside Canal, 1.8 kilometers downstream from Zaragosa International Bridge, located at river kilometer 1991 and 26.8 kilometers downstream from American Dam at El Paso, Texas.
RECORDS: Biochemical analyses, February 1976 through current year. Samples also collected quarterly by the Texas Natural Resource Conservation Commission.
REMARKS: Sampling by the International Boundary and Water Commission. Analyses by the Haskell R. Street Wastewater Treatment Plant laboratory in El Paso, Texas.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Hardness Total mg/l	Oxygen Demand Bio-Chemical (BOD) mg/L
Jan. 04	0915	NR	2,030	7.8	9.9	9.0	4,650	330	3
Jan. 09	0900	NR	2,000	8.2	8.6	10.0	214	NR	NR
Jan. 25	0920	NR	1,830	7.8	11.4	8.0	200	280	NR
Feb. 08	0900	NR	1,580	7.9	12.6	10.0	500	270	6
Feb. 15	0915	NR	1,370	8.3	8.4	11.0	10	270	8
Feb. 22	0930	NR	1,370	8.4	11.6	11.0	400	260	5
Feb. 26	0920	NR	1,320	8.1	11.9	10.0	7	NR	NR
Mar. 01	0935	NR	1,180	8.0	12.7	9.0	190	NR	3
Mar. 08	0820	NR	917	8.5	11.6	10.0	130	NR	4
Mar. 15	0845	NR	991	8.7	11.0	2.0	100	NR	4
Mar. 22	0920	NR	918	9.0	11.9	NR	20	210	8
Mar. 29	0915	NR	1,020	8.4	16.2	9.0	4	NR	4
Apr. 05	0930	NR	1,050	8.5	17.8	6.0	68	NR	2
Apr. 12	0830	NR	1,030	8.7	14.3	14.0	4	NR	3
Apr. 19	0910	NR	1,140	8.7	19.4	9.0	4	NR	3
Apr. 26	0920	NR	1,090	8.2	17.9	6.0	30	NR	1
May 05	0825	NR	1,250	8.2	20.2	8.0	600	NR	2
May 10	0920	NR	1,370	8.2	18.4	9.0	150	260	2
May 17	0915	NR	1,080	8.2	22.1	7.0	400	270	1
May 24	0925	NR	1,130	8.5	21.7	11.0	9,000	240	9
June 07	0930	NR	973	8.1	23.7	7.0	600	240	2
June 14	0920	NR	976	8.3	21.9	7.0	200	230	1
June 21	0925	NR	1,030	8.0	25.2	5.0	100	247	3
June 28	0920	NR	946	8.5	24.4	9.0	1,300	230	NR
July 05	0930	NR	1,030	8.1	25.6	6.0	1,000	220	6
July 12	0845	NR	1,010	8.4	27.3	10.0	1,000	229	5
July 19	0915	NR	930	8.3	25.5	5.0	4,000	210	4
July 26	0920	NR	985	8.1	27.5	6.0	100	230	4
Aug. 02	0845	NR	1,100	7.8	26.4	5.0	1,800	220	3
Aug. 09	0850	NR	1,040	8.7	25.2	10.0	4,000	250	3
Aug. 16	0825	NR	1,010	8.2	23.8	6.0	1,300	230	3
Aug. 23	0935	NR	1,060	8.5	26.2	9.0	100	230	7
Aug. 30	0940	NR	1,080	8.2	24.8	8.0	100	220	6
Sept. 20	0940	NR	1,210	8.2	23.5	6.0	1,720	221	NR
Oct. 04	0905	NR	1,440	7.7	17.4	7.0	NR	NR	NR
Nov. 01	0920	NR	NR	NR	NR	NR	NR	NR	NR
Dec. 06	0920	NR	2,080	8.4	11.1	10.0	NR	NR	NR

NR - None Reported

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

2001 Date	Chloride mg/L	Solids Dissolved Total	Sulfate ion (SO4) Dissolved	Ammonia	Turbidity NTU
Jan. 04	240	1186	382	1.180	8.0
Jan. 09	234	1240	369	0.610	NR
Jan. 25	240	884	310	1.410	9.0
Feb. 08	167	1006	304	0.270	NR
Feb. 15	153	794	247	0.040	103.0
Feb. 22	142	786	196	0.090	51.0
Feb. 26	155	794	214	0.150	NR
Mar. 01	122	736	175	0.140	67.0
Mar. 08	94	656	159	0.170	64.0
Mar. 15	101	634	182	0.090	46.0
Mar. 22	95	618	170	0.050	51.0
Mar. 29	101	514	193	0.590	42.0
Apr. 05	103	620	198	0.020	28.0
Apr. 12	105	654	203	0.090	34.0
Apr. 19	105	764	203	0.090	34.0
Apr. 26	108	764	198	0.170	56.0
May 05	125	590	240	0.030	41.0
May 10	129	612	247	0.270	34.0
May 17	106	684	210	0.210	74.0
May 24	117	690	237	0.130	170.0
June 07	93	698	182	0.160	63.0
June 14	87	752	185	0.020	40.0
June 21	93	588	185	0.030	55.0
June 28	83	680	175	0.080	28.0
July 05	99	480	195	0.030	25.0
July 12	99	640	193	0.080	44.0
July 19	65	612	137	0.050	26.0
July 26	90	528	184	0.060	44.0
Aug. 02	102	582	202	0.140	65.0
Aug. 09	99	566	200	0.040	500.0
Aug. 16	80	632	189	0.030	38.0
Aug. 23	106	578	203	0.020	36.0
Aug. 30	107	670	208	0.030	75.0
Sept. 20	116	662	233	NR	500.0
Oct. 04	NR	NR	NR	NR	NR
Nov. 01	NR	NR	NR	NR	NR
Dec. 06	NR	NR	NR	NR	NR

NR - None Reported

RIO GRANDE AT ALAMO GRADE CONTROL STRUCTURE

LOCATION: Rio Grande at Alamo Control Structure, 9.7 kilometers upstream of Fort Hancock Port of Entry. Water in this area is influenced by return inflows coming into the river from agriculture and municipalities.
RECORDS : Samples collected by the International Boundary and Water Commission and analyzed by the El Paso Water Utilities laboratory in El Paso, Texas. Period of record: 1997 - Present.
REMARKS : Additional water quality parameters including heavy metals, nutrients, pesticides, and other biological indices determined by the El Paso Water Utilities laboratory in El Paso, Texas.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Hardness Total mg/l	Oxygen Demand Bio-Chemical (BOD) mg/L
Jan. 04	1005	3.68	2,480	6.6	5.1	10.7	NR	NR	3
Jan. 09	1000	3.40	2,500	7.7	9.2	10.2	NR	NR	NR
Jan. 16	1020	NR	NR	NR	NR	NR	NR	NR	NR
Feb. 08	1015	NR	1,300	7.8	12.3	6.7	NR	250	8
Mar. 08	1030	0.57	1,180	8.3	9.3	9.1	79,000	NR	NR
Mar. 28	1015	0.02	2,280	8.5	15.7	9.4	NR	NR	NR
Apr. 12	1010	4.35	1,130	8.0	12.1	9.5	40	NR	NR
May 03	1020	NR	2,450	8.2	16.9	7.6	NR	NR	NR
May 22	1025	0.14	2,740	8.1	19.1	4.0	NR	NR	NR
June 07	1015	0.03	2,140	7.9	20.5	7.3	2,350	NR	NR
Aug. 21	1000	0.32	1,680	8.2	25.8	3.7	NR	NR	NR
Oct. 04	1025	0.03	1,800	8.1	18.1	5.8	314	NR	NR
Nov. 01	1035	1.02	2,710	8.1	15.5	7.9	NR	NR	2
Dec. 06	1020	3.73	2,100	8.1	7.7	9.8	NR	NR	3

NR - None Reported

QUALITY OF WATER - 2001

RIO GRANDE AT ALAMO GRADE CONTROL STRUCTURE

2001 Date	Chloride ion Dissolved mg/L	Solids Dissolved Total mg/L	Sulfate ion (SO4) Dissolved mg/L	Ammonia mg/L	Turbidity NTU
Jan. 04	NR	NR	NR	NR	NR
Jan. 09	NR	NR	NR	NR	NR
Jan. 16	344	1500	441	0.100	NR
Feb. 08	198	966	255	3.480	NR
Mar. 08	NR	NR	NR	NR	NR
Mar. 28	381	1380	416	0.060	NR
Apr. 12	NR	NR	NR	NR	NR
May 03	NR	NR	NR	NR	NR
May 22	NR	NR	NR	NR	NR
June 07	NR	NR	NR	NR	NR
Aug. 21	NR	NR	NR	NR	NR
Oct. 04	NR	NR	NR	NR	NR
Dec. 06	NR	NR	NR	NR	NR

NR - None Reported

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

LOCATION: Gaging station at river kilometer 1,555; 10.5 river kilometers upstream from the Rio Conchos.
RECORDS : Chemical analyses, February 1933 through 1981; specific conductance, 1931 and 1935 through current year.
REMARKS : Sampling by the International Boundary and Water Commission; a portion of data results and analyses were performed by the USGS and funded through the National Stream Quality and Accounting Network(NASQAN). 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 Natural Resource Conservation Commission, November 1977 through current year, available upon request.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

January	March	May	July	September	November
3 3,280	5 3,270	2 3,030	9 1,600	5 3,800	5 3,300
22 3,320	19 3,600		19 958	17 4,010	15 3,500
February	**April**	**June**	**August**	**October**	**December**
5 3,510	4 4,100	4 3,170	2 1,630	2 3,420	4 3,350
20 3,010	17 3,900	18 4,140	16 3,330	16 3,360	

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

LOCATION: Gaging station at river kilometer 1,555, 10.5 river kilometers upstream from the Rio Conchos.
RECORDS: Chemical analyses, February 1933 through 1981; specific conductance, 1931 and 1935 through current year.
REMARKS: Sampling by the International Boundary and Water Commission and Texas Natural Resource Conservation Commission. Sampling and determinations for specific conductance prior to 1978 by the International Boundary and Water Commission. Analyses by a contract laboratory.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Total Suspended Solids mg/l	Volatile Suspended Solids mg/L
Jan. 23	0800	6.00	3,260	6.7	7.6	9.2	27	74	9
Mar. 20	0800	3.46	3,380	7.2	15.0	7.4	127	133	14
Apr. 03	0800	2.40	4,390	8.0	19.8	6.8	443	224	24
May 23	0800	2.25	3,690	7.2	22.0	7.2	193	412	58
June 19	0800	0.23	3,560	7.1	26.0	6.5	100	72	16
Aug. 22	0830	2.30	2,900	7.5	25.5	7.7	140	858	80
Oct. 23	0815	2.97	3,210	7.2	17.0	7.9	400	261	22

2001 Date	Chloride mg/L	Solids Dissolved Total mg/l	Sulfate ion (SO4) Dissolved mg/l	Alkalinity mg/l	Total Organic Carbon mg/l
Jan. 23	535	1,860	547	228	3.0
Mar. 20	740	2,074	626	210	4.7
Apr. 03	NR	2,478	685	NR	5.6
May 23	620	2,170	772	177	3.3
June 19	560	2,326	732	168	4.3
Aug. 22	283	1,200	322	124	4.8
Oct. 23	520	1,730	461	202	5.9

NR - None Reported

WATER BULLETIN 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

RIO CONCHOS NEAR PRESIDIO, TEXAS AND OJINAGA, CHIHUAHUA

LOCATION: At gaging station 2.5 kilometers from the confluence with the Rio Grande, located at river kilometer 1,547.
RECORDS : Chemical analyses, February 1935 through 1981; suspended silt, 1956 through 1979, specifice conductance, 1935 through current year.
REMARKS : Sampling and determinations for specific conductance by the International Boundary and Water Commission. Conductivity data available upon request.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

January		March		May		July		September		November	
11	1,770	12	3,180	8	2,490	18	2,890				
31	1,720	22	3,140	21	2,410						
February		**April**		**June**		**August**		**October**		**December**	
17	1,750	9	2,910	14	2,620	9	2,800				
27	3,020	23	2,460	25	2,910	15	2,750				

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 kilometers downstream from Alamito Creek and 18.7 river kilometers downstream from the Rio Conchos.
RECORDS : Specific conductance, 1956 through current year.
REMARKS : Sampling by the International Boundary and Water Commission and Texas Natural Resource Conservation Commission. Analyses by a contract laboratory. Analyses November 1977 through current year, available upon request.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Total Suspended Solids mg/l	Volatile Suspended Solids mg/L
Jan. 23	0900	23.7	2,090	7.5	8.6	9.1	1,080	273	16
Mar. 20	0900	4.96	3,150	7.7	16.0	7.6	800	102	18
Apr. 03	0910	3.30	3,900	7.7	21.1	6.6	740	NR	NR
May 23	0920	0.11	3,550	7.4	22.0	7.2	275	310	46
June 19	0840	2.17	2,740	7.1	26.0	6.3	400	NR	NR
July 30	0910	10.8	1,770	8.0	28.0	6.0	8,000	NR	NR
Aug. 22	0915	7.36	2,430	7.2	25.5	7.5	825	438	48
Nov. 14	0850	NR	NR	NR	NR	NR	NR	214	21
Dec. 03	0845	5.60	3,270	7.8	10.0	11.8	NR	214	NR

2001 Date	Chloride mg/L	Solids Dissolved Total mg/l	Sulfate ion (SO4) Dissolved mg/l	Ammonia mg/l	Total Organic Carbon mg/l
Jan. 23	190	1420	579	<0.100	3.1
Mar. 20	570	2460	230	0.200	4.2
Apr. 03	NR	NR	NR	NR	NR
May 23	500	2360	892	0.100	3.3
June 19	255	1930	851	0.100	3.2
July 30	NR	NR	NR	NR	NR
Aug. 22	172	992	475	0.300	4.7
Nov. 14	570	2080	605	0.100	3.7
Dec. 03	568	2140	586	NR	NR

NR - None Reported

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

January		March		May		July		September		November	
8	2,190	6	3,110	3	2,920	10	1,390	6	2,890	7	3,350
24	2,070	21	3,480	22	3,250	17	3,060	18	3,420	20	3,250
				24	3,170						
February		**April**		**June**		**August**		**October**		**December**	
6	2,170	3	3,780	6	3,410	6	2,470	3	3,420	5	3,340
22	2,910	18	3,110	20	2,720	21	1,840	22	3,490		

RIO GRANDE AT RIO GRANDE VILLAGE IN BIG BEND NATIONAL PARK

LOCATION: This station is located within the National Park and is directly across at the town of Boquillas in Coahuila, Mexico. The Maderas del Carmen protected area is also located in this area.
RECORDS : Period of record: 1999 - Present.
REMARKS : Samples collected by the National Park Service. Analyses determined by a contract laboratory.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Total Suspended Solids mg/l	Volatile Suspended Solids mg/L
Jan. 17	1000	23.40	2,110	8.1	11.2	10.8	180	67	6
Mar. 28	1110	2.92	2,710	7.8	22.8	8.5	60	700	56
May 16	1020	4.36	1,760	7.4	25.6	6.2	455	133	28
June 26	1510	6.15	2,420	7.8	NR	8.2	<1	34	4
Aug. 15	0920	8.78	2,750	7.7	26.4	7.9	260	60	5
Oct. 24	1010	1.82	2,430	7.6	24.4	6.1	NR	NR	NR
Nov. 06	0945	3.94	2,740	7.7	22.1	9.0	NR	67	6

NR - None Reported

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

RIO GRANDE AT RIO GRANDE VILLAGE IN BIG BEND NATIONAL PARK

2001 Date	Chloride mg/L	Solids Dissolved Total mg/l	Sulfate ion (SO4) Dissolved mg/l	Ammonia mg/l	Total Organic Carbon mg/l
Jan. 17	210	1430	570	<0.100	3.0
Mar. 28	350	1810	633	0.100	2.0
May 16	48	204	122	0.300	5.9
June 26	270	1670	775	<0.100	4.3
Aug. 15	104	1160	524	<0.020	2.7
Oct. 24	310	1550	543	<0.020	1.6
Nov. 06	390	1700	586	<0.020	1.2

NR - None Reported

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 1995; suspended silt, 1969 through current year; specific conductance, 1969 through 1981, 1983, 1985 through current year.
REMARKS : A portion of the data results and analyses were performed by the U. S. Geological Survey and funded through National Stream Quality and Accounting Network(NASQAN); sampling and determinations for suspended silt and specific conductance by the International Boundary and Water Commission. Additional water quality parameters including heavy metals, nutrients, and biological indices, determined and published by the USGS.

2001 Date	Time Std.	Stream flow, Momen-tary * CMS	Specific Conduct-ance Micro-siemens	pH Units	Water Temper-ature Deg C	Hard-ness, Total (as CaCO3) mg/L	Hard-ness, Noncar-bonate (as CaCO3) mg/L	Calcium ion (Ca), Dis-solved mg/L	Magne-sium ion (Mg), Dis-solved mg/L	Sodium ion (Na), Dis-solved mg/L	Sodium Adsorp-tion Ratio (SAR)	Potassium ion (K) Dissolved mg/L
Jan. 30	1400	27.1	1,780	8.1	14.5	378	208	110	24	227	5	8.2
Apr. 03	1200	8.86	1,560	8.0	23.5	350	196	94	27	180	4	6.2
May 01	1130	8.86	2,130	8.0	22.5	447	295	122	34	270	6	8.3
June 12	1100	5.72	1,180	8.2	28.0	287	151	73	25	126	3	6.0
July 10	1030	4.13	849	8.1	26.5	250	108	62	22	76	2	4.9
Aug. 07	1100	9.35	680	8.1	28.0	184	44	57	10	65	2	4.6
Sept. 11	1130	6.09	1,350	8.1	25.5	336	194	101	19	140	3	6.6
Dec. 18	1115	9.19	1,570	7.9	13.0	340	160	91	27	186	4	5.9

2001 Date	Alka-linity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dis-solved mg/L	Chloride ion (Cl), Dis-solved mg/L	Silica (SiO2), Dis-solved mg/L	Oxygen, Dis-solved (DO) mg/L	Coli-form, Fecal Colonies/ 100 mL	Tur-bidity NTU	Solids Dis-solved (Calcu-lated) mg/L	Solids Dis-solved (Residue @ 180 Deg C) mg/L	Sus-pended Sedi-ment mg/L
Jan. 30	170	451	171	20.9	10.2	NR	NR	1,120	1,200	391
Apr. 03	154	340	193	18.2	7.3	NR	42	958	1,010	71
May 01	144	506	281	19.7	7.8	NR	62	1,340	1,430	107
June 12	137	287	107	20.6	7.1	NR	NR	732	754	41
July 10	143	189	56	20.1	6.9	NR	NR	523	548	55
Aug. 07	140	140	31	17.1	6.7	NR	NR	418	436	817
Sept. 11	144	335	123	20.1	7.4	NR	NR	836	864	138
Dec. 18	178	314	223	18.5	9.9	NR	NR	982	1,020	88

* Flow provided by the US Geological Survey
NR- None Reported

SUSPENDED SILT - 2001

2001 Date	Time Std.	Stream-flow, Momen-tary CMS	Gravimetric Percent	2001 Date	Time Std.	Stream-flow, Momen-tary CMS	Gravimetric Percent	2001 Date	Time Std.	Stream-flow, Momen-tary CMS	Gravi-metric Percent
Jan. 08	11:00	27.4	0.0114	June 04	10:00	7.16	0.0038	Oct. 15	09:45	6.23	0.0069
Jan. 22	11:15	29.2	0.0252	June 18	10:15	6.09	0.0025	Nov. 06	10:30	7.18	0.0076
Feb. 20	11:15	21.7	0.0226	July 02	10:00	6.68	0.0052	Nov. 19	11:30	9.15	0.0088
Mar. 05	10:45	14.6	0.0092	July 16	10:30	11.2	0.0067	Dec. 03	10:45	10.3	0.0063
Mar. 19	11:00	12.1	0.0079	Aug. 06	10:15	13.3	0.1800	Dec. 17	10:45	9.46	0.0085
Apr. 02	11:00	10.2	0.0136	Aug. 20	10:30	12.0	0.0370				
Apr. 16	09:30	8.98	0.0060	Sep. 04	11:45	12.6	0.0519				
May 07	09:30	9.49	0.0061	Sep. 17	10:15	6.97	0.0079				
May 21	10:45	12.8	0.0100	Oct. 03	10:30	6.43	0.0076				

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 - 2001

January		March		May		July		September		November	
8	1,730	5	1,680	7	1,650	2	910	4	808	6	1,150
22	1,740	19	1,690	21	1,630	16	1,130	17	1,040	19	1,110
31	1,730										
February		**April**		**June**		**August**		**October**		**December**	
5	1,780	2	1,650	4	1,150	6	647	2	1,340	3	1,480
20	1,730	16	1,450	18	1,180	20	691	14	895	17	1,490

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 1995; suspended silt, November 1954 through 1976; specific conductance daily, 1969 through September 1985 and biweekly through current year.
REMARKS : A portion of the data results and analyses were performed by U.S. Geological Survey and funded through the National Stream Quality and Accounting Network(NASQAN); sampling and determinations for specific conductance by the International Boundary and Water Commission. Additional water quality parameters including heavy metals, nutrients, pesticides and other biological indicies determined by the U.S. Geological Survey.

2001 Date	Time Std.	Stream flow, Momentary * CMS	Specific Conductance Micro-siemens	pH Units	Water Temperature 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	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio (SAR)	Potassium (K) Dissolved mg/L
Jan. 31	1340	5.24	3,280	8.3	12.0	636	481	142	67	408	7	7.1
Apr. 04	1200	4.19	3,520	8.0	23.5	664	531	142	74	475	8	7.9
May 02	1100	3.17	3,330	8.1	24.0	617	507	127	72	434	8	7.4
June 13	1030	2.21	2,750	7.9	29.0	498	402	101	59	354	7	7.3
July 11	1030	1.81	2,520	8.0	28.5	457	361	92	54	331	7	6.1
Aug. 08	1030	1.59	2,430	8.1	29.0	434	342	86	53	319	7	6.0
Sept. 12	1100	2.66	2,230	8.2	27.0	410	297	86	47	279	6	5.7
Dec. 19	1045	4.97	2,540	NR	12.0	520	350	117	54	309	6	5.8

2001 Date	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2), Dissolved mg/L	Oxygen, Dissolved (DO) mg/L	Coliform, Fecal Colonies/ 100 mL	Turbidity NTU	Solids Dissolved (Calculated) mg/L	Solids Dissolved (Residue @ 180 Deg C) mg/L	Suspended Sediment mg/L
Jan. 31	155	419	685	11.3	10.1	NR	1.0	1,840	1,970	4
Apr. 04	133	461	785	9.1	7.3	NR	1.4	2,040	2,120	4
May 02	110	429	752	7.8	8.0	NR	0.5	1,900	2,110	3
June 13	96	343	606	11.1	6.8	NR	NR	1,540	1,620	2
July 11	96	316	556	11.1	6.7	NR	NR	1,430	1,470	3
Aug. 08	92	316	544	14.8	6.6	NR	NR	1,400	1,410	2
Sept. 12	115	289	464	12.5	7.6	NR	NR	1,250	1,310	2
Dec. 19	170	336	524	12.8	9.9	NR	1.4	1,470	1,550	3

* Flow provided by the US Geological Survey
NR - None Reported

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

January		March		May		July		September		November	
7	2,750	5	3,330	7	2,410	2	2,540	4	2,200	5	2,380
22	2,960	19	3,390	21	3,020	16	2,530	5	2,180	19	1,700
								17	2,260		
February		**April**		**June**		**August**		**October**		**December**	
5	3,170	2	3,490	4	2,790	6	2,370	1	2,330	3	2,030
20	3,260	16	3,380	18	2,690	20	2,180	15	2,380	17	2,430

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; weekly or 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 1985 available from the USGS. A portion of the data results and analyses were performed by the USGS and funded through the National Stream Quality and Accounting Network (NASQAN).

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

January		March		May		July		September		November	
8	396	5	421	7	326	2	360	4	380	5	267
22	371	19	366	21	373	16	375	17	378	19	366
February		**April**		**June**		**August**		**October**		**December**	
5	408	2	481	4	384	6	368	3	381	3	396
16	350	16	405	18	317	21	367	15	384	17	394

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 : A portion of the data results and analyses were performed by the Unites States Geological Survey and funded through the National Stream Quality and Accounting Network(NASQAN). Sampling and determinations for specific conductance by the International Boundary Water Commission.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature 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. 29	1600	2.21	1,040	8.3	13.0	254	147	69	20
Apr. 05	1030	92.6	1,090	7.7	14.0	284	160	80	20
May 03	1100	100	1 130	7.5	15.5	267	140	73	20
June 14	1000	68.8	1,100	7.5	20.0	266	137	72	21
Aug. 09	1050	112	1,080	7.7	25.0	257	136	68	21
Sept. 13	1000	19.3	1,020	7.9	26.5	232	131	58	21
Dec. 20	1020	1.73	938	NR	14.5	220	120	56	20

2001 Date	Sodium ion (Na), Dissolved mg/L	Sediment Suspended mg/L	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. 29	109	4	4.9	106	196	129	13	607
Apr. 05	112	4	4.4	125	207	133	14	649
May 03	114	5	4.7	127	206	137	13	648
June 14	112	2	5.1	129	202	133	14	638
Aug. 09	114	2	4.6	121	195	135	14	627
Sept. 13	108	1	4.5	103	194	131	14	594
Dec. 20	99	3	4.1	106	185	121	14	566

NR- None Reported

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1						1,090		1,070		1,000		
2	897	954	1,050	1,090	1,080		1,060				991	
3	934							1,060		1,020		985
4				1,090	1,100	1,090			984			
5	935	1,080	1,080				1,070		1,010	1,020	1,010	984
6				1,050		1,070	1,070	1,060				
7		1,160	1,110		1,060				1,040		1,030	999
8	925					1,100		1,070				
9		982	1,140	1,090	1,090		1,080			1,010	1,010	
10	968							1,060	1,010	1,020		991
11				1,120	1,060	1,030	1,070					
12	994	1,080	1,080						988	1,010		987
13				1,080		1,050	1,060	1,050				
14		1,070	1,090		1,070				986		999	980
15						1,070		1,060		994	991	
16	997	1,170	1,050	1,090	1,080		1,050				997	
17								1,050	983	998		974
18	974			1,090	1,090	991	1,070					
19	921		1,070						981	1,010	997	959
20		1,090		1,090		1,060	1,060	986				
21		1,110	1,080		1,080				980		987	971
22	942					1,080		958		1,020		
23		1,120	1,050	1,100	1,080		1,060				982	
24	966							998	990	1,030		
25				1,080	1,100	1,070	1,080					
26	987	1,090	1,090						991	1,030	1,000	969
27				1,080		1,090	1,070	1,030				
28	939	1,100	1,090						997		994	973
29					1,060	1,090		988		1,020		
30	958		1,100	1,080	1,090		1,070				953	
31								1,030		1,010		967

RIO GRANDE DOWNSTREAM OF DEL RIO, TEXAS NEAR MOODY RANCH

LOCATION: Rio Grande 2.7 kilometers downstream of Del Rio, Texas near Moody Ranch. Monitoring station is located at river kilometer 903.25 and 20.4 kilometers downstream from Amistad Reservoir.
RECORDS : Period of record: 1988 - current year.
REMARKS : Sampling by the International Boundary and Water Commission. Analyses by a contract laboratory.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Total Suspended Solids mg/l	Volatile Suspended Solids mg/L
Jan. 24	1100	12.9	1,020	8.1	12.3	10.1	NR	<1	<1
Feb. 21	1315	16.0	1,050	7.7	15.3	11.7	3,200	4	2
Mar. 15	1215	NR	NR	NR	NR	NR	NR	3	1
Apr. 18	1230	48.3	901	7.9	16.1	11.0	740	2	<1
May 15	1200	88.3	1,060	7.8	19.7	11.6	206	2	<1
June 21	1215	62.3	1,050	7.8	21.1	8.3	52	3	<1
July 25	1200	23.5	2,000	7.8	24.3	8.4	36	6	1
Aug. 15	1225	30.0	1,040	8.0	26.6	8.1	86	4	<1
Sept. 26	1220	0.65	960	8.0	24.4	7.9	133	NR	NR
Nov. 14	1315	25.5	964	7.4	20.2	7.9	886	8	2

2001 Date	Chloride mg/L	Solids Dissolved Total mg/l	Sulfate ion (SO4) Dissolved mg/l	Ammonia mg/l	Total Organic Carbon mg/l
Jan. 24	110	587	162	0.100	1.5
Feb. 21	130	647	168	0.300	1.2
Mar. 15	125	584	193	0.080	2.0
Apr. 18	115	624	154	0.100	<1.0
May 15	120	583	122	<0.100	2.0
June 21	120	644	160	0.100	1.8
July 25	122	581	188	<0.020	2.2
Aug. 15	118	566	165	<0.020	4.4
Sept. 26	NR	NR	NR	NR	NR
Nov. 14	114	630	160	<0.020	1.2

NR - None Reported

WATER BULLETIN 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	922	990	939	1,040	1,030	1,050	1,040	967	954	904	941	921
2	930	1,050	970	1,050	1,050	1,050	1,050	979	998	925	945	939
3	923	1,020	960	1,050	1,060	1,020	1,050	975	950	894	942	927
4	925	1,040	927	1,010	1,070	1,050	1,040	977	946	894	942	925
5		1,070	963	1,040	1,020	1,050	1,050	977	943	902	941	922
6	930	1,050	1,050	1,060	1,060	1,090	1,050	980	943	898	941	919
7	927	1,070	1,030	1,070	1,060	1,060	1,050	980	944	899	944	922
8	926	1,080	1,050	1,050	1,070	1,060	1,060	979	948	906	953	921
9	921	1,070	1,060	1,060	1,060	1,050	1,040	976	945	901	941	915
10	922	1,040	1,080	1,060	1,060	1,060	1,050	980	946	892	1,030	927
11	928	1,040	1,070	1,070	1,020	1,050	1,050	978	944	889	952	924
12	923	1,050	1,090	1,060	974	1,040	1,050	977	947	888	951	922
13	924	1,060	1,030	1,050	1,020	1,050	1,050	977	946	886	942	919
14	920	1,070	1,050	1,060	995	1,050	1,050	979	946	889	941	924
15	919	1,080	1,070	1,040	997	1,050	1,050	979	946	904	941	924
16	921	1,070	1,090	1,040	1,020	1,050	1,050	981	940	913	942	922
17	926	1,060	1,080	1,030	1,030	1,050	1,050	977	944	896	944	926
18	926	1,070	1,090	1,010	1,020	1,060	1,050	977	414	891	942	923
19	922	1,070	1,000	1,060	1,060	1,050	1,060	975	943	890	945	919
20	924	1,060	907	1,060	1,010	1,060	1,060	981	962	888	948	927
21	924	1,070	996	1,060	1,070	1,030	1,050	978	948	897	949	921
22	922	1,050	1,030	1,010	1,020	1,040	1,040	979	948	896	946	921
23	921	1,070	1,060	1,060	1,020	1,050	1,050	978	944	906	943	924
24	924	1,070	1,020	1,060	1,020	1,050	1,050	978	950	915	941	919
25	924	935	1,070	1,060	1,030	1,050	1,050	979	944	904	953	929
26	923	1,060	1,040	1,050	1,040	1,060	1,050	978	947	684	944	919
27	922	1,030	1,060	1,060	1,010	1,050	1,050	980	945	900	946	927
28	925	1,060	1,040	1,070	1,020	1,050	1,060	977	945	912	941	919
29	923		1,020	1,060	1,060	1,060	1,050	986	945	899	941	921
30	921		941	1,000	1,030	1,050	1,050	979	948	900	973	923
31	921		1,050		1,060		1,060	984		672		920

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 - 2001

January		March		May		July		September		November	
3	907	7	1,030	2	1,080	5	1,070	6	913	7	991
16	930	21	1,030	16	1,090	18	1,040	21	954	24	944
February		**April**		**June**		**August**		**October**		**December**	
7	916	4	1,020	6	1,060	1	1,080	4	977	5	964
21	1,030	18	1,050	20	1,080	15	1,070	17	978	19	868

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 United States Geological Survey. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, available from U. S. Geological Survey through September 1986. A portion of the data results and analyses were performed by the USGS and funded through the National Stream Quality and Accounting Network (NASQAN).

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Total Suspended Solids mg/l	Volatile Suspended Solids mg/L
Jan. 28	1315	NR	883	8.1	16.2	9.9	30	22	3
Apr. 01	1410	NR	990	7.9	21.2	9.6	7	40	3
May 22	0745	NR	NR	7.3	26.1	8.0	40	42	5
Aug. 26	1022	NR	1,020	8.8	28.5	8.3	406	115	8
Dec. 19	0845	22.1	950	8.0	15.5	9.3	NR	NR	NR

2001 Date	Chloride mg/L	Solids Dissolved Total mg/l	Sulfate ion (SO4) Dissolved mg/l	Alkalinity Total mg/l	Total Organic Carbon mg/l
Jan. 28	125	630	198	123	2.0
Apr. 01	128	616	209	138	2.0
May 22	127	706	199	128	NR
Aug. 26	132	674	195	139	2.0
Dec. 19	113	583	186	130	NR

NR - None Reported

SUSPENDED SILT - 2001

Month	Monthly Weight Megagrams Water	Silt	Number of Samples	Gravimetric Percentages Composite	Maximum Sample*	Minimum Sample*	Silt Volume Thousand Cubic Meters** Total
Jan.	74,114,000	1,180	31	0.0016	0.0043	0.0013	1.1
Feb.	82,659,000	1,240	28	0.0015	0.0018	0.0017	1.2
Mar.	93,537,000	3,180	31	0.0034	0.0028	0.0039	3.0
April	173,405,000	14,040	30	0.0081	0.0164	0.0065	13.1
May	191,350,000	5,360	31	0.0028	0.0091	0.0048	5.0
June	159,728,000	3,990	30	0.0025	0.0047	0.0049	3.7
July	99,550,000	2,790	31	0.0028	0.0101	0.0092	2.6
Aug.	285,388,000	42,240	31	0.0148	0.1025	0.0086	39.6
Sept.	217,607,000	98,140	30	0.0451	0.0941	0.0052	91.9
Oct.	50,993,000	1,070	31	0.0021	0.0038	0.0074	1.0
Nov.	62,234,000	4,290	30	0.0069	0.0265	0.0047	4.0
Dec.	63,824,000	1,980	31	0.0031	0.0074	0.0018	1.8
Year	1,554,389,000	311,831	365				168.0

* Represents the gravimetric percentages at the maximum flow and minimum flow of the month
** Volume calculated at 1.068 megagrams per cubic meter

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

RIO GRANDE AT LAREDO, TEXAS AND NUEVO LAREDO, TAMAULIPAS

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	890	890	991	1,030		1,100	1,050	1,030	482	937	1,030	956
2	786	886	1,020	966	1,050	1,080	1,040	1,060	846	880	1,020	985
3	817	889	1,020	970	1,060	1,050	1,070	988	988	942	1,030	957
4	837	886	1,020	977	1,000	1,080	1,060	1,040	941	886	1,030	952
5	815	825	1,060	1,040	1,090	1,080	976	1,060	958	992	1,040	949
6	839	838	1,020	1,010	989	1,080	998	1,030	805	1,000	996	872
7	840	910	994	1,040	1,010	1,060	1,020	1,030	830	990	1,020	931
8	832	900	1,040	1,020	1,020	1,050	1,030	1,020	930	989	1,040	968
9	833	909	981	1,010	903	989	1,020	973	988	939	1,040	901
10	856	895	1,050	1,040	1,030	1,040	946	1,050	641	931	1,050	928
11	789	901	952	1,010	1,040	1,080	1,050	934	462	951	983	923
12	838	912	950	1,040	1,060	1,090	1,060	1,020	310	964	1,040	1,020
13	875	952	1,020	1,040	1,030	1,060	1,060	1,030	349	977	1,030	968
14	875	996	1,020	1,040	1,080	1,080	1,060	996	387	966	980	978
15	853	996	1,030	1,080	1,060	1,090	1,060	1,040	536	966	969	1,030
16	886	1,010	1,050	1,080	1,000	1,030	964	1,020	510	978	878	927
17	876	1,030	1,070	1,010	1,010	1,080	1,020	1,060	652	980	962	887
18	902	1,040	1,070	1,100	1,070	1,060	1,010	1,060	710	1,040	995	960
19	855	993	1,070	1,100	1,090	1,100	1,020	1,060	819	1,010	1,000	945
20	867	1,030	1,070	1,090	1,080	1,100	1,070	935	786	1,020	1,080	934
21	847	1,060	1,070	1,050	1,080	1,100	1,050	1,020	887	1,030	932	926
22	867	1,050	1,070	1,070	1,080	1,060	1,040	1,010	861	1,020	859	927
23	821	1,070	1,070	1,080	1,080	1,100	1,040	1,030	866	1,025	732	949
24	917	1,070	1,070	1,070	1,090	1,100	1,070	1,050	969	1,020	704	964
25	889	1,060		1,070	1,100	1,090	1,070	1,030	936	1,020	752	954
26	939	1,060	1,050	1,070	1,090	1,100	1,030	1,050	961	1,020	810	951
27	951	1,050	1,030	1,080	1,080	1,110	1,080	1,040	957	1,010	838	939
28	961	1,060	1,020	1,090	1,070	1,110	1,070	1,050	981	1,020	907	941
29	950		1,030	1,080	1,080	1,100	1,060	1,040	992	1,020	928	949
30	931		1,040	1,070	1,080		1,070	1,030	994	1,020	935	947
31	907		1,050		1,080		1,060	807		1,020		954

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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

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 and determinations for specific conductance by the U.S. Geological Survey at Falcon Dam Power Plant tailrace: biochemical analyses, collected and analyzed by the USGS. A portion of the data results and analyses were performed by the USGS and funded through the National Stream Quality and Accounting Network (NASQAN).

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature 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. 22	1730	45.3	1,000	7.4	14.0	251	139	67	20
Mar. 20	0830	50.4	1,040	8.4	18.0	253	140	68	20
April 18	0910	110	1,050	8.2	24.0	264	154	70	21
May 30	1610	113	950	7.9	28.0	245	142	63	21
Sept. 06	1000	23.0	1,140	7.4	28.0	254	149	64	23
Sept. 21	1130	22.0	820	7.3	27.0	194	104	52	15
Dec. 18	1115	28.0	870	8.3	17.5	210	100	59	16

2001 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	Solids Dissolved @180 Deg. mg/L	Solids Dissolved (Calculated) mg/L
Jan. 22	105	3	4.7	113	200	126	634	601
Mar. 20	104	3	4.5	114	202	121	650	597
April 18	115	3	5.2	111	214	129	650	631
May 30	112	3	5.0	105	205	126	652	605
Sept. 06	122	3	5.6	106	216	150	692	660
Sept. 21	84	3	5.0	91	151	99	486	473
Dec. 18	88	3	4.9	113	161	105	548	514

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,030					972		1,120		914		
2		1,040	1,030	1,070	1,050		1,110				909	
3	985							1,110	1,140	898		905
4					1,050	1,060	1,100					
5	1,020	1,040	1,040	1,060				1,120	892	907	904	
6				1,070		1,060	1,110	1,120				
7		1,050	1,040		1,030				1,100		905	901
8	1,030					1,060		1,130		893		
9		1,030	1,040	1,070	1,040		1,100				902	
10	1,020							1,130		902		881
11		1,050		1,060	1,050	1,050	1,110					
12	1,010		1,040						1,070	891	902	889
13				1,070		1,060	1,090	1,130				
14		1,040			1,050				1,080		909	889
15	1,020					1,080		1,130		889		
16		1,030	1,030	1,060	1,040		1,090				897	
17	1,030							1,130	755	908		888
18				1,060	1,060	1,090	1,100					
19	1,010	1,040	1,040						687	903	897	888
20				1,050		1,080	1,100	1,130				
21		1,040	1,040						784		885	894
22	1,020				1,050	1,080		1,130		899		
23		1,030	1,050	1,060	1,070		1,100				891	
24	992							1,120	867	895		NS
25				1,060	1,040	1,090	1,100					
26	1,020	1,030	1,050						907	895	896	895
27				1,050		1,080		1,370				
28		1,030	1,050		1,060		1,110		894		903	883
29	1,040					1,080		1,140		900		
30			1,060	1,060	1,050		1,110				899	
31	1,040							1,140		897		881

RIO GRANDE BELOW RIO ALAMO NEAR FRONTON, TEXAS

LOCATION: Monitoring station is located at river kilometer 422.27 and 42.1 kilometers upstream from Rio Grande City, Texas.
RECORDS : Period of record: 1988 - current year.
REMARKS : Sampling by the International Boundary and Water Commission. Analyses by a contract laboratory.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Total Suspended Solids mg/l	Volatile Suspended Solids mg/L
Jan. 03	1000	0.02	1,090	8.0	10.5	10.6	1	NR	NR
Feb. 08	1005	9.91	990	8.5	18.9	7.9	55	2	2
Mar. 14	0950	50.0	950	7.4	21.0	6.9	75	4	<1
Apr. 05	0930	55.3	1,080	7.4	22.4	8.3	182	NR	NR
May 08	0930	35.4	1,070	8.1	24.5	6.5	25	20	6
June 12	0945	91.3	850	7.4	28.2	6.1	65	23	5
July 10	0930	1.42	1,140	6.9	27.6	6.0	45	NR	NR
Aug. 07	0935	67.0	1,050	7.1	26.5	6.8	75	7	<6
Sept. 12	0935	125	816	7.8	23.5	6.9	45	388	42
Nov. 29	0925	17.0	943	7.2	13.7	6.6	40	4	<1
Dec. 11	1015	12.0	990	7.3	15.5	7.1	30	7	2

2001 Date	Chloride mg/L	Solids Dissolved Total mg/l	Sulfate ion (SO4) Dissolved mg/l	Ammonia mg/l	Total Organic Carbon mg/l
Jan. 03	NR	NR	NR	NR	NR
Feb. 08	140	641	195	0.200	5.5
Mar. 14	130	651	200	0.100	3.4
Apr. 05	NR	NR	NR	NR	NR
May 08	123	584	161	0.100	3.3
June 12	132	601	180	<0.100	2.0
July 10	NR	NR	NR	NR	NR
Aug. 07	146	669	213	<0.020	3.6
Sept. 12	34	194	61	0.020	5.1
Nov. 29	104	554	141	<0.010	2.9
Dec. 11	105	574	272	0.100	1.8

NR - None Reported

QUALITY OF WATER - 2001

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 - 2001

January	March	May	July	September	November
				5 1,130	
February	April	June	August	October	December

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 a contract laboratory; specific conductance determinations by the International Boundary and Water Commission.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature Deg C	Solids Suspended Total mg/L	Solids Suspended Volatile mg/L	Calcium ion (Ca) Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 17	0935	56.0	850	7.1	14.1	NR	NR	71	22
Feb. 21	0835	26.9	1,070	7.2	21.9	NR	NR	67	21
Mar. 20	0840	51.8	1,100	8.2	17.6	NR	NR	76	23
Apr. 10	0900	98.0	910	8.9	24.1	NR	NR	70	22
May 15	0855	50.0	1,070	8.1	24.5	NR	NR	67	21
June 19	0830	15.9	1,040	7.6	29.4	NR	NR	66	21
July 17	0840	76.3	1,030	7.5	28.6	NR	NR	62	23
Aug. 14	0850	88.5	1,090	8.0	28.4	NR	NR	65	23
Sept. 18	0940	5.20	1,120	8.2	27.5	NR	NR	63	13
Oct. 24	0835	47.0	1,030	7.6	24.4	12	2	61	18
Nov. 29	0805	17.0	988	7.3	15.6	43	2	66	18
Dec. 11	0855	12.0	1,050	7.2	17.2	5	2	65	19

2001 Date	Sodium ion (Na), Dissolved mg/L	Oxygen Dissolved mg/L	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. 17	103	NR	4.9	NR	200	130	4.1	NR
Feb. 21	120	NR	4.2	NR	220	140	1.4	NR
Mar. 20	97	NR	9.1	NR	210	130	2.7	NR
Apr. 10	94	NR	7.7	NR	220	130	3.2	NR
May 15	100	NR	7.4	NR	202	123	<5.5	NR
June 19	114	NR	7.6	NR	200	148	5.4	NR
July 17	112	NR	8.5	NR	219	142	5.4	NR
Aug. 14	108	NR	9.0	NR	226	156	5.0	NR
Sept. 18	118	NR	7.1	119	138	128	5.1	NR
Oct. 24	100	6.9	6.6	100	149	110	12.5	540
Nov. 29	120	6.8	10.0	133	152	116	14.2	562
Dec. 11	130	8.1	7.6	142	280	141	6.3	626

NR - None Reported

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,130					1,020		1,130		1,060		
2		1,060	1,130	1,090	1,100		1,100				912	
3	1,130							1,150	1,100	1,010		1,030
4				1,110	1,090	1,140	1,090					
5	1,140	1,160	1,100						1,200	1,010	914	1,040
6				1,110			1,130	1,140				
7		1,170	1,140		1,070	1,070			1,170		915	1,150
8	1,120					1,060		1,130		1,020		
9		1,140	1,130	1,080	1,090		1,110				942	
10	1,140							1,150	1,120	992		1,060
11				1,110	1,060	1,080	1,110					
12	1,150	1,180	1,110						742	975	931	1,070
13				1,120		1,070	1,110	1,150				
14		1,160	1,070		1,130				752		932	1,060
15	1,090					1,070		1,150		969		
16		1,120	1,080	1,110	1,070		1,120				926	
17	1,090							1,150	951	950		1,020
18				1,100	1,060	1,040	1,110					
19	1,090	1,190	1,070						1,020	931	963	994
20				1,090		1,080	1,120	1,150				
21		1,150	1,070		1,090				1,200		497	988
22	1,150					1,170		1,150		936		
23		1,110	1,080	1,090	1,040		1,120				928	
24	1,130							1,150	826	938		947
25		1,140		1,080	1,090	1,160	1,120					
26	1,120		1,230						972	926	945	1,000
27		1,090		1,080		1,150	1,120	1,140				
28			1,240		1,060				995			991
29	1,150					1,140		1,130		927		
30			1,100	1,080	1,050							
31	1,110						1,130			935		959

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

LOCATION: Puertecitos Drain, is located at a point about 2,600 meters from the confluence with the Rio Grande, which is located at river kilometer 353; and, 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 - 2001

2001 Date	Puertecitos Drain	Los Indios Drain	2001 Date	Puertecitos Drain	Los Indios Drain	2001 Date	Puertecitos Drain	Los Indios Drain	2001 Date	Puertecitos Drain	Los Indios Drain

No samples for Los Indios Drain for 2001.
No samples for Puertecitos Drain for 2001.

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 a contract laboratory; specific conductance determinations by the International Boundary and Water Commission.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Suspended Solids Total mg/L	Suspended Solids Volatile mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 23	1100	42.1	1,090	7.9	12.7	NR	NR	74	23
Mar. 20	1055	38.2	1,080	8.0	18.3	NR	NR	75	24
May 29	1155	120	1,090	8.3	28.1	NR	NR	67	23
July 17	1016	52.2	1,140	8.4	30.0	NR	NR	67	26
Sept. 26	0925	25.9	910	8.4	26.4	NR	NR	60	18
Oct. 16	1140	19.5	1,050	8.3	25.1	10	3	64	20
Dec. 18	1300	4.62	1,240	8.3	17.4	4	2	75	22

2001 Date	Sodium ion (Na), Dissolved mg/L	Oxygen Dissolved mg/L	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. 23	101	11.3	4.6	NR	NR	NR	NR	NR
Mar. 20	96	9.5	9.0	NR	200	130	2.3	NR
May 29	95	7.8	7.1	NR	216	132	<5.5	NR
July 17	102	6.9	8.0	NR	218	142	5.4	NR
Sept. 26	90	7.3	8.5	NR	154	103	5.3	NR
Oct. 16	130	9.0	7.1	107	312	150	9.5	614
Dec. 18	140	9.1	8.0	138	210	158	11.4	726

NR - None Reported

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 - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,020	1,050	1,060	1,150	1,050	1,100	1,150	1,350	1,130	920	1,060	980
2	1,030	1,050	1,070	1,140	1,040	1,100	1,120	1,280	1,160	920	1,040	970
3	1,030	1,050	1,070	1,150	1,050	1,100	1,140	1,330	1,200	900	1,050	980
4	1,020	1,060	1,060	1,140	1,050	1,100	1,140	1,340	1,180	910	1,040	980
5	1,030	1,010	1,070	1,140	1,050	1,100	1,160	1,300	1,270	920	1,080	990
6	1,030	1,040	1,050	1,140	1,060	1,090	1,140	1,360	1,190	900	1,040	980
7	1,030	1,050	1,070	1,140	1,060	1,100	1,150	1,350	1,150	910	1,090	950
8	1,040	1,040	1,060	1,150	1,060	1,090	1,160	1,300	1,190	900	1,060	980
9	1,030	1,040	1,020	1,140	1,040	1,110	1,160	1,260	1,230	920	1,070	970
10	1,030	1,040	1,060	1,160	1,040	1,100	1,150	1,310	1,240	900	1,040	900
11	1,020	1,050	1,070	1,140	1,050	1,110	1,150	1,270	1,230	920	1,050	970
12	1,030	1,050	1,060	1,150	1,040	1,110	1,120	1,260	1,260	890	1,080	970
13	1,030	1,050	1,050	1,140	1,040	1,120	1,140	1,280	1,170	920	1,060	980
14	1,060	1,050	1,060	1,160	1,050	1,090	1,150	1,250	1,220	920	1,060	970
15	1,050	1,050	1,060	1,140	1,060	1,100	1,150	1,300	1,230	920	1,050	980
16	1,030	1,040	1,060	1,140	1,070	1,100	1,120	1,280	1,240	920	1,070	970
17	1,030	1,040	1,060	1,150	1,040	1,110	1,130	1,250	1,150	920	1,040	980
18	1,030	1,050	1,060	1,150	1,050	1,100	1,120	1,300	1,230	890	1,040	970
19	1,030	1,040	1,050	1,150	1,050	1,090	1,160	1,300	1,240	890	1,080	960
20	1,030	1,040	1,060	1,140	1,040	1,110	1,150	1,250	1,200	900	1,070	970
21	1,030	1,050	1,060	1,150	1,060	1,100	1,120	1,320	1,210	930	1,040	970
22	1,030	1,030	1,060	1,140	1,040	1,080	1,140	1,240	1,150	940	1,060	970
23	1,030	1,030	1,060	1,140	1,060	1,090	1,130	1,310	1,160	910	1,090	970
24	1,060	1,050	1,040	1,160	1,040	1,100	1,150	1,320	1,240	900	1,080	970
25	1,060	1,040	1,060	1,130	1,040	1,110	1,130	1,280	1,190	940	1,040	970
26	1,020	1,040	1,060	1,140	1,030	1,110	1,110	1,340	1,220	910	1,050	980
27	1,030	1,040	1,060	1,160	1,050	1,110	1,110	1,240	1,110	920	1,080	980
28	1,030	1,040	1,060	1,140	1,050	1,110	1,130	1,190	1,240	920	960	970
29	1,030		1,070	1,150	1,050	1,100	1,140	1,320	1,240	930	1,120	870
30	1,030		1,060	1,150	1,050	1,100	1,110	1,230	1,140	900	1,110	960
31	1,020		1,070		1,060		1,110	1,310		920		980

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

08-4675.00 RIO GRANDE AT PENITAS, TEXAS AND REYNOSA, TAMUALIPAS

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 - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,210					1,040		1,140		1,140	900	
2		1,030	1,080	1,060			1,120				890	
3	1,150							1,370	1,280	1,000	880	
4				1,070		1,060	1,060					
5	1,070	1,010	1,070						950	1,160	860	1,030
6			1,160	1,050		1,050	1,100	1,380				
7		1,040			1,090				1,100		880	1,020
8	1,050					1,060		1,410	1,210	1,080		
9		1,000	1,140	1,050	1,070		1,200				880	
10	1,020							1,400	1,200	1,050		1,130
11				1,060	1,090	1,050	1,130					
12	1,030	1,170	1,000							1,040	920	1,170
13						1,070	1,140					
14		1,320	1,070		1,080						870	1,250
15	1,040					1,070		1,360		1,030		
16		1,220	1,050	1,060	1,080		1,140				820	
17								1,440	420	1,100		1,330
18				1,070	1,070	1,100	1,110					
19	1,030	1,120	1,040						470	1,010	880	1,330
20				1,020		790	1,150	1,370				
21		1,190	1,050		1,030				500		860	1,310
22	1,030					770		1,420		960		
23		1,180	1,050	1,050	1,040		1,160					
24	1,000							1,430	1,050	940		1,020
25				1,050	1,000	1,130	1,150					
26	1,030	1,090	1,030						1,240	930	830	850
27				1,060		1,270	1,130	1,380				
28		1,080	1,040		1,050						560	1,000
29	1,030					1,170		1,380		940		
30			1,050	1,150	1,040		1,130				940	
31	1,030							1,340		930		1,110

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 a contract laboratory. Determinations for specific conductance by International Boundary and Water Commission.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	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. 23	1325	1.00	8,780	7.9	14.0	NR	NR	280	154
Feb. 20	1000	1.00	8,090	8.0	19.1	NR	NR	NR	NR
Mar. 20	0935	1.00	8,250	7.7	15.8	NR	NR	70	22
Apr. 25	1045	1.00	3,610	7.7	22.9	NR	NR	NR	NR
May 29	0955	1.00	6,970	7.9	21.1	NR	NR	231	112
June 21	0935	1.00	1,650	7.3	27.7	NR	NR	77	16
July 17	0842	1.00	8,860	7.8	28.8	NR	NR	279	157
Aug. 14	0830	1.00	10,080	7.9	27.6	NR	NR	345	228
Sept. 26	0745	1.00	1,290	8.4	24.8	NR	NR	79	22

Date	Sodium ion (Na), Dissolved mg/L	Oxygen Dissolved mg/L	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. 23	1,490	17.1	9.4	NR	NR	NR	NR	NR
Feb. 20	NR	7.9	NR	NR	2,200	1,600	NR	NR
Mar. 20	1,840	8.9	<50	NR	2 200	1,600	9	NR
Apr. 25	NR	6.7	NR	NR	884	540	NR	NR
May 29	859	4.6	16.4	NR	1,620	986	7	NR
June 21	183	3.3	11.4	NR	275	234	6	NR
July 17	1,710	3.3	19.7	NR	2,420	1,610	9	NR
Aug. 14	2,140	3.7	15.2	NR	3,390	2,300	6	NR
Sept. 26	171	7.0	9.8	NR	250	177	8	NR

NR - None Reported

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1		8,000	8,350	8,000		8,450		5,430		3,620	4,500	
2		7,090	6,650		4,170		4,640	4,980		3,580		
3	6,700			8,570	4,670		1,450	4,290	2,640	3,630		3,310
4	6,920			8,850	4,630	3,590	4,350		1,880	5,000		3,160
5	5,990		6,890	8,340		5,260			1,880	5,660		3,610
6		3,890	8,070				3,790	6,080	1,610		2,520	
7		3,610			5,020	7,910	4,040	9,340	2,020		2,260	4,740
8	5,290	3,210	8,230		5,450	9,520		9,530	910	2,840	2,160	
9	6,480	4,680	8,300	4,060	5,950		6,780	4,940		3,690		
10	6,700			4,350	6,390		7,470	4,420		3,910	1,950	5,030
11	6,070			4,100	5,970	5,650	7,960		1,700	4,040	3,170	4,920
12		6,540	7,380			8,140	6,360		410	4,890	6,280	4,550
13		5,930	8,090			8,270	7,280	9,320	580	7,640	7,180	4,640
14		4,810	9,200		7,280	8,560		11,950	550		7,050	5,060
15	3,510	6,500	9,540		7,320	6,030		12,010			3,190	
16	6,120	4,960	8,970	4,030			8,730	8,080		7,630	4,340	5,640
17	7,310			4,290	7,560		9,110	3,890	840	8,310		4,660
18				3,390	7,730	1,190	8,540		1,570	8,430		5,960
19		4,560	4,850	3,900			9,060		1,140	5,500	2,940	6,190
20		6,690	6,320	3,850		1,130	7,560	9,830	1,380			3,780
21		8,200			3,490			13,630	1,870		2 490	2,600
22	5,190	7,850	7,870		8,600					7,480	3,740	
23	6,700	8,180	7,820	5,520	8,400		2,680	5,540		7,200	3,310	1,970
24	8,280			4,180	7,620		4,470	4,980	3,900	7,200		1,750
25	7,150			3,420	6,870	3,120	7,780		3,680	6,230		
26	3,290	8,150	5,200	3,620		3,400	8,780		1,530	5,400	2,000	3,800
27		8,770	4,950	4,050		4,060	9,110	14,470	1,360		1,970	
28		7,910	3,880		6,090	5,720		12,890	2,230		2,210	4,660
29	4,030		5,760		6,170	4,940		7,340		8,120	2,260	
30	7,090		9,020	3,560	8,970		2,000	1,760		8,460	2,720	
31	7,160				8,380		4,820	3,450		5,660		3,320

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 a contract laboratory; determinations for specific conductance by the International Boundary and Water Commission.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature Deg C	Hardness, Total (as CaCO3) mg/L	Oxygen, Dissolved mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 23	1350	41.9	1,100	8.4	14.0	NR	12.1	72	24
Mar. 20	0950	37.7	1,090	8.2	19.6	NR	9.9	74	24
May 29	1020	92.3	1,090	8.2	28.3	NR	8.2	67	23
July 17	0910	56.8	1,170	8.4	30.3	NR	7.0	65	27
Aug. 14	0900	55.9	1,180	8.4	29.5	NR	7.4	64	24
Sept. 26	0815	6.88	522	8.3	27.2	NR	7.5	42	8
Dec. 18	1020	13.6	1,170	8.3	18.9	NR	9.1	79	23

2001 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. 23	103	NR	4.8	NR	NR	NR	NR	NR
Mar. 20	97	NR	9.0	NR	210	130	1.4	NR
May 29	96	NR	7.1	NR	214	131	4.3	NR
July 17	111	NR	8.4	NR	229	150	5.6	NR
Aug. 14	124	NR	8.9	NR	232	158	5.8	NR
Sept. 26	49	NR	7.5	NR	74	46	4.4	NR
Dec. 18	150	NR	8.6	NR	200	154	18.7	711

NR - None Reported

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,210	1,020	1,080	1,040	1,210	1,070	1,710	1,150	1,270	1,250	950	840
2	1,130	1,010	1,090	1,060	1,280	1,150	1,690	1,140	1,340	900	1,060	740
3	1,240	1,040	1,100	1,060	1,240	1,160	1,570	1,110	1,390	970	1,010	510
4	1,300	1,070	1,070	1,080	1,310	1,130	1,550	1,100	1,370	890	1,040	720
5	1,330	1,030	1,070	1,070	1,140	1,120	1,500	1,120	1,090	750	970	860
6	1,210	1,050	1,070	1,060	1,320	1,120	1,540	1,120	1,120	770	990	960
7	1,140	1,050	1,050	1,070	1,300	1,140	1,520	1,140	1,130	710	1,010	990
8	1,050	1,050	1,060	1,080	1,280	1,180	1,480	1,150	1,110	860	980	940
9	1,050	1,040	1,070	1,090	1,210	1,180	1,510	1,160	1,130	830	940	940
10	1,050	1,050	1,130	1,190	1,200	1,160	1,550	1,160	1,040	820	1,020	1,000
11	1,020	1,020	1,050	1,090	1,060	1,160	1,590	1,170	1,000	790	1,060	1,010
12	1,020	1,060	1,130	1,080	1,070	1,170	1,570	1,150	1,200	1,080	1,060	1,050
13	1,030	1,030	1,130	1,070	1,100	1,070	1,520	1,150	600	1,350	1,090	1,060
14	1,020	1,080	1,120	1,020	1,060	1,070	1,120	1,150	690	1,090	900	1,030
15	1,000	1,180	1,060	1,080	1,100	1,110	1,130	1,160	540	1,070	960	1,090
16	990	1,210	1,020	1,060	1,100	1,030	1,120	1,150	500	920	950	1,050
17	1,000	1,220	1,090	940	1,090	1,050	1,140	1,160	520	960	1,000	1,110
18	1,000	1,240	1,080	1,010	1,120	1,060	1,110	1,160	460	1,090	940	1,110
19	970	1,250	1,060	1,080	1,080	1,080	1,140	1,150	450	1,150	940	1,180
20	990	1,310	1,060	1,070	1,070	1,210	1,120	1,150	490	1,110	770	1,220
21	950	1,370	1,040	1,060	1,060	1,220	1,120	1,150	470	1,120	980	1,230
22	990	1,350	1,050	1,050	1,050	1,130	1,120	1,160	440	1,060	880	1,270
23	990	1,280	1,070	1,070	1,050	1,100	1,110	1,150	430	1,020	940	1,330
24	1,010	1,200	1,070	1,060	1,060	940	1,110	1,150	440	950	970	1,320
25	1,010	1,160	1,060	1,080	1,030	940	1,100	1,380	390	980	970	1,280
26	1,010	1,210	1,030	1,050	980	830	1,100	1,350	500	1,020	980	1,290
27	1,030	1,190	1,060	1,060	1,060	800	1,120	1,380	530	930	1,000	1,060
28	1,030	1,140	1,040	1,050	1,060	1,020	1,120	1,300	580	990	1,040	1,140
29	1,010		1,040	1,100	1,050	1,170	1,100	1,320	900	950	1,080	1,030
30	1,000		1,050	1,090	1,030	1,100	1,140	1,390	1,120	930	1,020	1,040
31	1,020		1,080		1,060		1,120	1,330		920		1,020

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 - 2001

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,370	1,090	1,330	1,070	1,160	1,070	1,060	1,380	1,290	1,130	980	1,180
2	1,430	1,070	1,390	1,100	1,150	1,110	1,300	1,380	1,240	760	1,000	1,210
3	1,370	1,080	1,310	1,080	1,150	1,080	1,350	1,370	1,310	1,320	1,030	1,140
4	1,270	1,100	1,340	1,090	1,180	1,080	1,320	1,360	1,250	1,530	990	1,150
5	1,210	1,170	1,320	1,100	1,260	1,070	1,230	1,340	1,320	1,870	1,010	1,130
6	1,310	1,190	1,360	1,100	1,260	1,070	1,250	1,390	1,400	1,330	1,020	1,070
7	1,380	1,190	1,390	1,100	1,240	1,070	1,260	1,370	1,380	1,860	1,010	1,080
8	1,350	1,220	1,340	1,080	1,220	1,060	1,290	1,420	1,380	1,370	1,040	1,040
9	1,250	1,230	1,290	1,070	1,250	1,060	1,270	1,430	1,340	1,780	1,060	1,080
10	1,140	1,220	1,290	1,090	1,230	1,050	1,240	1,450	1,340	1,140	1,050	1,160
11	1,130	1,230	1,220	1,080	1,210	1,090	1,220	1,440	1,290	1,100	1,070	1,260
12	1,090	1,230	1,230	1,080	1,190	1,070	1,220	1,450	1,300	1,880	980	1,230
13	1,090	1,190	1,230	1,090	1,180	1,080	1,290	1,440	1,280	1,350	1,040	1,210
14	1,100	1,180	1,240	1,070	1,170	1,080	1,280	1,380	1,350	1,270	1,030	1,230
15	1,080	1,160	1,260	1,070	1,140	1,110	1,250	1,430	1,050	1,230	1,050	1,320
16	1,060	1,250	1,170	1,070	1,140	1,020	1,220	1,430	780	1,310	1,070	1,380
17	1,040	1,240	1,170	1,070	1,150	1,040	1,210	1,440	810	1,280	1,020	1,400
18	1,040	1,300	1,180	1,070	1,140	1,140	1,190	1,430	860	1,270	1,000	1,400
19	1,040	1,370	1,140	1,080	1,110	1,130	1,220	1,410	860	1,120	1,080	1,370
20	1,040	1,410	1,140	1,080	1,110	1,210	1,220	1,420	850	1,230	1,050	1,320
21	1,070	1,390	1,110	1,080	1,110	1,260	1,270	1,400	870	1,270	1,040	1,330
22	1,080	1,390	1,120	1,080	1,090	1,250	1,230	1,420	910	1,290	1,070	1,360
23	1,050	1,390	1,110	1,070	1,070	1,320	1,210	1,460	1,350	1,220	1,110	1,260
24	1,040	1,420	1,110	1,080	1,060	1,360	1,190	1,440	820	1,200	1,110	1,520
25	1,030	1,480	1,110	1,090	1,080	1,330	1,200	1,420	670	1,090	1,050	1,530
26	1,070	1,500	1,100	1,110	1,090	1,310	1,200	1,390	800	1,030	1,040	1,500
27	1,070	1,460	1,090	1,100	1,070	1,250	1,220	1,410	810	1,040	1,090	1,460
28	1,090	1,310	1,090	1,100	1,070	1,160	1,200	1,390	960	1,000	1,170	1,370
29	1,060		1,100	1,130	1,060	1,010	1,200	1,440	1,030	980	1,080	1,410
30	1,060		1,090	1,140	1,060	950	1,180	1,410	1,050	980	1,080	1,480
31	1,060		1,090		1,050		1,170	1,380		960		1,210

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2001

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 by the International Boundary and Water Commission and Texas Natural Resource Commission. Sampling and determinations for specific conductance prior to 1978 by the International Boundary and Water Commission. Analyses by a contract laboratory.

2001 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal Colonies/ 100/ml	Total Suspended Solids mg/l	Volatile Suspended Solids mg/L
Jan. 4	1315	0.34	1,470	8.2	12.3	13.5	20	NR	NR
Feb. 21	1335	0.71	1,320	8.5	22.5	12.8	11	4	1
Mar. 21	1210	1.19	1,530	7.8	21.6	9.8	25	36	3
Apr. 11	1215	0.30	1,260	6.9	27.9	3.7	2,270	NR	NR
May 23	1100	1.20	1,350	7.9	26.3	6.9	200	20	7
June 20	1215	16.8	1,100	7.4	30.9	5.1	NR	7	2
July 23	1020	1.42	1,270	8.5	31.6	11.0	>1	NR	NR
Aug. 15	0945	3.51	1,180	8.1	30.3	5.1	60	6	2
Sept. 27	1215	8.86	1,090	8.2	26.9	6.3	495	15	4
Nov. 27	1220	14.6	1,050	7.0	23.2	7.9	NR	8	8
Dec. 19	1205	7.73	1,090	8.2	19.4	8.7	NR	5	2

2001 Date	Chloride mg/L	Solids Dissolved Total mg/l	Sulfate ion (SO4) Dissolved mg/l	Alkalinity mg/l	Total Organic Carbon mg/l
Jan. 04	NR	NR	NR	NR	NR
Feb. 21	190	796	216	138	2.9
Mar. 21	215	932	247	160	5.3
Apr. 11	NR	NR	NR	NR	NR
May 23	195	684	253	138	3.3
June 20	137	651	195	113	3.6
July 23	NR	NR	NR	NR	NR
Aug. 15	159	715	215	121	4.2
Sept. 27	138	646	209	122	4.9
Nov. 27	125	574	159	138	3.8
Dec. 19	144	630	156	133	3.7

NR - None Reported

WATER BULLETIN NUMBER 71 -- 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.

	Las Cruces, New Mexico		American Dam		Fort Hancock Bridge		Guayuco Arroyo		Bill Shannon Ranch	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	10	15	2	11	5	10	7	8	3	10
Feb.	5	10	3	9	5	8	1	6	7	9
Mar.	6	5	7	8	0	6	6	6	3	6
April	0	5	0	5	0	7	0	4	3	6
May	18	11	0	8	0	11	0	11	0	17
June	3	20	8	16	14	22	5	15	0	41
July	18	29	20	35	31	33	13	34	78	51
Aug.	34	58	0	39	0	39	24	41	20	59
Sept.	17	31	17	29	0	33	8	29	10	54
Oct.	2	25	0	19	9	24	0	21	0	29
Nov.	2	14	5	9	1	10	0	6	0	10
Dec.	3	21	3	13	1	12	6	10	0	11
Yearly	118	244	65	201	66	215	70	191	124	303

	Adobes Ranch		H. T. Fletcher Ranch		Kerr Mitchell Ranch		Shafter		Presidio (IB&WC Gage)	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	4	8	18	16	0	12	0	7	12	8
Feb.	7	6	13	10	10	10	29	12	8	8
Mar.	0	4	0	7	4	5	6	7	12	4
April	11	5	8	13	0	15	25	17	3	7
May	3	15	5	27	17	32	8	26	14	14
June	3	32	51	48	9	50	0	55	6	33
July	28	48	67	75	79	53	28	62	50	41
Aug.	5	45	55	79	0	56	6	57	18	34
Sept.	0	50	31	60	0	51	28	63	6	36
Oct.	0	17	0	34	0	32	0	30	2	20
Nov.	3	6	27	11	0	9	0	10	5	8
Dec.	0	7	7	13	0	11	0	10	1	9
Yearly	64	243	282	393	119	336	130	356	137	222

	Redford		Study Butte		Terlingua Creek Station		Johnson Ranch		Owens Ranch	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	2	7	0	9	13	8	4	8	23	15
Feb.	5	5	0	7	0	5	4	5	8	19
Mar.	3	4	0	5	5	3	3	3	19	22
April	0	6	0	10	3	8	0	10	32	44
May	28	15	0	25	14	18	8	22	13	55
June	10	26	0	29	0	26	3	28	4	48
July	11	38	21	40	24	33	0	29	0	32
Aug.	40	33	29	40	24	31	5	24	84	55
Sept.	0	41	15	31	28	31	3	33	5	60
Oct.	0	19	0	25	0	20	4	19	20	50
Nov.	6	8	5	8	21	6	17	6	51	27
Dec.	0	7	0	6	0	6	0	7	8	17
Yearly	105	209	70	235	132	195	51	194	267	444

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

	Lewis James Ranch		Rio Grande near Dryden		Ross Foster Ranch		Pecos River near Langtry Station		Prosser Ranch No. 3	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	9	12	16	12	10	8	28	9	20	12
Feb.	9	16	8	13	0	13	25	19	32	25
Mar.	7	10	22	7	31	7	42	17	30	19
April	7	27	2	15	0	16	13	23	10	30
May	12	40	28	25	5	27	27	35	23	55
June	25	41	16	32	6	33	0	45	0	48
July	8	30	8	23	3	14	11	44	13	42
Aug.	52	48	24	43	0	29	0	31	43	43
Sept.	0	69	8	48	8	33	48	52	31	65
Oct.	17	38	7	25	15	25	5	40	20	46
Nov.	63	19	38	15	23	16	64	22	117	28
Dec.	0	13	1	11	10	11	10	13	13	15
Yearly	209	363	178	269	111	232	273	350	352	428

	Devils River at Cauthorn Ranch		Prosser Ranch No. 1		Dead Man's Canyon near Comstock		Prosser Ranch No. 2		Walker Ranch	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	37	13	15	11	28	10	10	10	15	11
Feb.	24	22	17	20	23	19	15	23	22	20
Mar.	35	24	13	14	21	13	13	14	14	18
April	15	25	15	25	20	25	8	25	18	23
May	34	50	34	53	50	47	20	51	41	57
June	40	59	0	39	0	45	0	44	0	50
July	14	25	6	47	14	48	10	41	6	39
Aug.	38	33	0	38	0	36	13	44	0	28
Sept.	14	46	33	57	39	48	20	58	33	54
Oct.	43	50	0	39	4	43	0	38	0	36
Nov.	73	26	51	23	57	18	84	21	64	21
Dec.	6	16	5	11	0	13	8	12	8	13
Yearly	373	389	189	377	256	365	201	381	221	370

	Harlow Ranch		Ed Crane Ranch		H. K. Fawcett Ranch		Brotherton Ranch		A. A. Baker Ranch	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	23	10	35	20	26	16	33	16	28	12
Feb.	31	20	43	27	47	21	42	25	59	21
Mar.	9	15	33	21	25	22	32	19	8	18
April	29	25	25	37	20	37	36	24	55	30
May	38	47	90	66	29	60	33	46	34	49
June	0	48	6	49	2	37	0	45	0	43
July	8	32	26	45	14	41	0	38	0	43
Aug.	5	34	0	36	4	56	16	40	8	44
Sept.	38	51	55	64	67	72	14	59	66	66
Oct.	0	41	5	47	39	53	6	42	3	41
Nov.	58	22	95	30	123	27	39	18	70	21
Dec.	0	13	3	20	3	16	0	12	0	14
Yearly	239	358	416	462	399	458	251	384	331	402

	Zuberbueler Ranch		Comstock		Martin King Ranch		Goldwire Ranch		H. T. Miers Ranch Headquarters	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	31	15	26	14	23	13	36	14		14
Feb.	51	29	39	21	26	20	37	19		26
Mar.	33	22	27	17	29	15	43	24	15	24
April	56	26	29	32	10	22	37	38	41	42
May	35	57	20	47	20	45	118	60	81	62
June	3	48	1	48	5	43	0	54	0	62
July	4	51	7	37	24	37	3	50	10	41
Aug.	0	34	7	44	3	38	9	61	10	55
Sept.	11	59	15	56	39	61	105	54	87	59
Oct.	9	35	16	41	7	48	10	48	43	59
Nov.	50	24	56	18	35	17	142	31	142	26
Dec.	5	18	1	15	6	14	10	17	14	18
Yearly	288	418	244	390	227	373	550	470		488

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

	H. T. Miers Ranch No. 2		Gillis Ranch Headquarters		Pafford Crossing		Tuffy Whitehead Ranch		Hutto Ranch No. 2	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	41	13	43	18	30	13	25	10	29	14
Feb.	18	22	14	27	31	19	30	21	14	24
Mar.	47	28	49	27	56	19	28	22	23	21
April	47	37	39	44	47	32	25	33	7	43
May	55	63	47	69	65	46	30	45	35	51
June	12	55	18	65	0	51	1	44	0	59
July	23	41	17	59	8	47	6	40	26	47
Aug.	10	57	76	67	11	54	16	39	26	57
Sept.	96	67	49	58	99	64	19	64	62	75
Oct.	19	51	7	58	5	48	14	38	15	47
Nov.	130	26	119	36	121	26	56	22	63	25
Dec.	2	19	0	21	11	17	0	12	2	16
Yearly	500	479	478	549	484	436	250	390	302	479

	Lowry Ranch No. 2		Amistad Reservoir near Comstock		Evans Creek near Comstock		Sellers Ranch		J. G. Brite Ranch	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	31	13	24	10	10	9	36	10	27	11
Feb.	12	20	17	19	18	18	8	18	13	19
Mar.	31	24	25	14	0	15	23	17	27	21
April	40	36	9	29	0	22	31	29	23	33
May	43	55	25	37	0	37	78	45	44	51
June	1	55	2	40	0	37	2	58	3	54
July	19	46	5	28	11	40	15	34	27	38
Aug.	50	60	16	33	3	41	14	43	11	45
Sept.	83	61	10	46	8	51	107	55	65	68
Oct.	12	45	8	38	0	41	5	46	16	46
Nov.	7	25	43	18	48	21	81	23	50	21
Dec.	1	17	0	10	0	13	0	14	0	15
Yearly	330	457	184	322	98	345	400	392	306	422

	Devils Lake		Big Satan Creek Station		Rough Canyon near Del Rio		Stewart Ranch		Gillis Ranch	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	27	15	31	15	41	13	29	12	23	13
Feb.	16	21	29	22	23	21	12	21	32	24
Mar.	34	20	57	28	13	26	34	20	33	28
April	48	38	48	37	36	31	25	37	67	36
May	55	54	78	51	56	60	52	50	66	59
June	3	59	14	52	2	57	0	55	0	53
July	17	37	5	51	13	45	19	46	5	50
Aug.	27	45	11	65	63	56	83	47	9	44
Sept.	75	59	51	53	93	66	101	65	81	69
Oct.	14	46	43	53	18	57	11	48	8	42
Nov.	47	22	93	28	104	34	102	25	84	30
Dec.	0	19	10	19	0	20	1	15	0	19
Yearly	363	435	470	474	462	486	469	441	408	467

	Buoy No. 11		North Fork San Pedro		Amistad Dam		Long Ranch		Middle Fork San Pedro	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	24	11	48	13	37	14	29	14	29	12
Feb.	8	20	20	21	13	22	15	23	12	21
Mar.	17	19	10	23	30	24	27	24	8	23
April	9	32	8	37	16	38	0	37	5	33
May	51	50	41	55	48	56	51	56	0	51
June	0	47	3	61	1	55	0	57	0	54
July	10	34	33	55	39	42	24	45	11	46
Aug.	11	39	57	58	46	51	29	42	18	49
Sept.	13	49	90	64	58	83	83	58	27	58
Oct.	11	40	11	50	16	44	13	43	6	53
Nov.	45	19	112	28	29	25	46	23	69	26
Dec.	0	12	3	18	7	17	7	17	0	18
Yearly	199	372	436	483	340	471	324	439	185	444

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

	Cliff Lowry Ranch No. 1		Hutto Ranch No. 1		Lewis Ranch		Laughlin Air Force Base		Wardlaw Standart Ranch	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	12	13	28	13	27	16	20	15	54	21
Feb.	13	24	13	22	23	28	18	27	17	31
Mar.	31	25	25	21	37	26	36	22	40	33
April	38	39	11	41	15	45	3	50	0	42
May	47	63	51	55	61	62	24	57	20	60
June	2	57	3	60	13	70	T	71	41	80
July	16	46	35	51	10	42	41	60	15	37
Aug.	41	53	60	54	17	64	41	51	31	46
Sept.	71	75	71	70	32	66	106	64	68	56
Oct.	17	50	9	48	22	64	29	61	21	56
Nov.	98	27	62	23	65	31	33	28	65	35
Dec.	1	17	0	15	22	20	5	17	49	23
Yearly	387	489	368	473	344	534	356	523	421	520

	Maverick County Canal Headgate		Pinto Creek Station		Las Moras Creek		Eagle Pass		Trees Farm	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	8	13	51	14	51	19	33	20	21	17
Feb.	8	25	18	19	18	24	13	25	15	22
Mar.	31	18	33	20	18	18	34	21	26	15
April	0	38	5	39	3	34	3	43		44
May	0	57	46	58	27	53	44	82	47	70
June	0	61	0	62	T	70	7	75	14	60
July	0	41	39	39	36	36	73	48	39	37
Aug.	19	38	0	49	116	44	11	55	4	40
Sept.	121	63	122	68	150	83	179	80	122	66
Oct.	0	51	15	50	13	52	2	54	1	59
Nov.	48	25	127	29	34	25	28	26	53	22
Dec.	0	18	41	17	29	19	15	21	11	18
Yearly	235	448	497	464	495	477	442	550		470

	El Indio		Van Dalsem Farm		Keisling Farm		Apache Ranch		Corralitos Ranch	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	34	21	33	18	31	19	21	21	13	21
Feb.	T	25	1	23	3	23	6	22	50	25
Mar.	32	18	38	16	35	18	38	16	20	18
April	3	44	5	47	1	44	22	46	50	29
May	39	78	19	72	27	69	45	64	25	58
June	45	60	14	56	14	65	40	56	38	55
July	36	33	36	36	25	34	33	47	13	38
Aug.	0	47	0	43	0	40	50	47	79	54
Sept.	92	76	142	77	87	69	126	72	104	77
Oct.	3	56	3	59	1	53	0	63	46	52
Nov.	22	22	23	21	25	21	60	25	117	27
Dec.	17	19	38	20	37	22	29	23	40	20
Yearly	323	499	352	488	286	477	470	502	595	474

	Huisache Ranch		Zapata		Falcon Dam		Roma (Int'l. Bridge)		Garciasville	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	12	22	12	23	14	22	10	22	2	23
Feb.	51	26	49	25	19	25	29	26	41	27
Mar.	18	20	13	18	9	16	19	16	15	15
April	50	32	22	36	16	34	16	34	9	29
May	20	59	24	65	20	61	51	50	12	66
June	35	58	11	57	60	63	75	58	73	74
July	15	36	6	37	13	32	20	32	20	30
Aug.	38	44	13	49	14	57	55	46	77	42
Sept.	152	91	119	96	150	102	161	105	78	84
Oct.	41	54	30	49	8	50	10	48	11	43
Nov.	137	26	104	27	70	29	40	23	55	25
Dec.	35	22	36	24	38	21	35	15	37	20
Yearly	604	490	439	506	431	512	521	475	430	478

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

	Los Ebanos		La Joya		Penitas (Edinburg Pumping Plant)		HCWCID #6 Goodwin Pump No. 3		HCWCID #6 Goodwin Pump No. 4B	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	2	24	1	24	4	30	19	30	13	29
Feb.	32	23	34	24	43	26	76	30	38	27
Mar.	18	15	13	13	26	18	38	22	1	18
April	6	30	7	22	3	29	19	36	25	30
May	9	50	17	48	81	60	89	60	51	55
June	115	59	93	60	66	71	64	68	51	66
July	46	30	61	26	50	35	114	40	64	31
Aug.	0	39	0	30	61	55	139	51	152	46
Sept.	200	75	138	72	45	85	153	83	39	87
Oct.	83	49	81	47	14	63	38	68	38	66
Nov.	64	22	130	22	56	23	38	25	102	25
Dec.	45	23	28	26	35	25	31	30	25	29
Yearly	620	439	603	414	484	520	818	543	599	509

	United Irrigation District		Edinburg City Water Plant		Anzalduas Dam		Mercedes (IBWC) LRGFCP Office		Mercedes Pump	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	5	29	20	36	10	27	3	14	4	35
Feb.	38	28	39	30	38	33	25	18	48	19
Mar.	13	27	11	23	16	24	7	49	12	40
April	0	32	119	37	3	37	1	28	47	34
May	63	76	8	59	7	59	3	54	1	79
June	76	67	59	62	42	59	71	49	120	70
July	25	35	69	38	68	37	12	27	31	46
Aug.	23	49	42	57	41	51	59	51	58	59
Sept.	155	76	132	93	125	91	102	108	166	83
Oct.	10	58	35	54	T	52	2	63	0	57
Nov.	57	22	91	25	87	24	52	31	61	27
Dec.	25	24	59	32	41	21	9	26	18	45
Yearly	490	523	684	546	478	515	346	518	566	594

	La Feria Pumping Plant		La Feria Materials Yard		San Benito Pump		CCWCID #11 Bayview Dist. Off.		Brownsville Irrig. and Drainage Dist.	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	0	41	0	40	0	35	0	41	0	24
Feb.	32	42	25	47	98	29	60	38	32	27
Mar.	0	29	0	30	5	25	0	21	0	38
April	24	51	28	45	108	37	0	44	30	34
May	9	73	13	69	0	69	0	61	34	43
June	53	77	55	85	71	64	69	59	48	77
July	38	49	32	53	0	40	26	39	0	3
Aug.	41	77	38	67	46	62	94	65	39	79
Sept.	216	150	212	128	96	109	0	131	25	87
Oct.	13	96	16	79	0	71	76	70	43	96
Nov.	64	51	64	38	70	33	0	39	57	43
Dec.	15	39	18	40	0	33	0	34	94	23
Yearly	505	775	501	721	494	607	325	642	402	574

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

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, 26, and Supplement 40A.

	Cd. Juarez, Chihuahua		Jimenez, Chihuahua		Bachiniva, Chihuahua		La Boquilla, Chihuahua		El Vergel, Chihuahua	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	3	10	15	7	3	12	1	7	15	31
Feb.	0	11	0	4	14	5	0	5	6	16
Mar.	11	9	7	3	2	7	3	3	0	13
April	0	7	23	4	15	6	3	6	2	12
May	0	8	11	13	4	7	3	14	5	22
June	25	18	12	41	19	39	5	35	24	94
July	23	39	66	78	123	131	61	71	188	178
Aug.	36	42	66	63	85	117	43	72	66	173
Sept.	27	34	5	56	54	68	2	70	5	116
Oct.	0	25	4	26	2	28	0	21	18	46
Nov.	23	13	28	7	1	9	21	8	13	17
Dec.	3	15	7	6	3	12	5	8	6	29
Yearly	151	231	244	308	325	441	147	320	348	747

	Escalon, Chihuahua		Camargo, Chihuahua		Las Virgenes, Chihuahua		Delicias, Chihuahua		Km. 135, Chihuahua	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	3	10	1	9	5	7	7	9	2	6
Feb.	2	5	0	7	1	3	0	4	0	5
Mar.	15	4	6	5	2	2	5	3	3	2
April	10	11	5	5	2	6	1	8	0	7
May	8	19	28	13	19	8	17	9	0	10
June	3	46	5	37	2	31	9	33	0	29
July	48	63	63	73	75	64	51	60	25	56
Aug.	51	72	70	67	44	65	44	62	66	67
Sept.	5	71	7	64	5	57	2	56	1	69
Oct.	2	29	0	25	2	21	0	22	0	22
Nov.	17	8	20	10	9	6	6	7	6	8
Dec.	9	10	0	10	0	9	0	9	0	8
Yearly	173	348	205	325	166	279	142	282	103	289

	Las Burras, Chihuahua		Presa Chihuahua, Chihuahua		Cd. Guerrero, Chihuahua		Cuauhtemoc, Chihuahua		Presa Luis L. Leon, Chihuahua	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	7	7	6	7	11	16	3	9	5	6
Feb.	2	4	1	5		10	7	4	4	4
Mar.	0	3	2	6	4	6	4	4	7	3
April	6	7	15	8	0	5	22	6	36	7
May	3	10	9	18	2	8	13	10	7	14
June	0	31	9	46	37	40	52	41	11	32
July	59	67	54	98	141	125	196	117	62	61
Aug.	49	63	45	110	60	127	60	109	61	71
Sept.	7	55	9	81	50	79	34	73	1	47
Oct.	2	19		26	T	30	2	30	3	23
Nov.	16	6		8		12	9	8	7	9
Dec.	0	9		10	1	19	1	11	1	10
Yearly	151	281		423		477	403	422	205	287

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WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

	Presa Abraham Gonzalez, Chihuahua		La Trasquila, Chihuahua		Ojinaga (IB&WC), Chihuahua		Ojinaga (M.S. of Mexico), Chihuahua		La Chuparrosa, Coahuila	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	23	15	25	9	12	9	15	8	10	8
Feb.	27	11	2	7	7	8	9	7	10	15
Mar.	5	7	10	4	12	4	10	5	12	13
April	2	7	8	7	14	9	15	8	11	26
May	9	12	14	8	8	14	7	15	51	35
June	38	51	21	29	13	33	6	31	0	35
July	198	120	159	82	59	40	50	39	10	30
Aug.	130	126	66	67	9	40	18	39	5	39
Sept.	106	80	52	72	2	39	8	39	26	49
Oct.	11	27	2	25	0	24	19	25	13	34
Nov.	0	14	5	8	5	10	5	10	35	17
Dec.	0	19	16	11	2	9	0	10	0	9
Yearly	549	489	380	329	143	239	162	236	183	310

	La Amistad, Coahuila		Cd. Acuna, Coahuila		Jimenez, Coahuila		Piedras Negras, Coahuila		Allende, Coahuila	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	34	16	30	14	20	17	30	19	19	13
Feb.	19	24	12	24	12	24	4	22	1	22
Mar.	27	30	25	22	21	22	35	19	37	18
April	17	34	2	44	2	44	9	48	10	40
May	42	57	17	61	13	58	43	87	62	65
June	0	55	5	57	8	70	42	69	14	53
July	20	41	24	43	29	41	43	54	9	43
Aug.	50	32	10	46	64	48	17	55	4	63
Sept.	67	64	99	78	69	71	216	80	34	77
Oct.	19	46	10	59	7	59	40	63	16	46
Nov.	30	27	26	22	111	30	46	24	20	21
Dec.	9	18	8	16	34	18	16	18	21	16
Yearly	334	444	268	486	390	502	541	558	247	477

	Villa Hidalgo, Coahuila		Villaldama, Nuevo Leon		Presa Carranza, Coahuila		Nuevo Laredo (Sur), Tamaulipas		Lampazos, Nuevo Leon	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	23	19	12	30	17	17	23	17	3	17
Feb.	0	21	33	15	0	16	24	25	13	17
Mar.	63	19	22	8	37	14	15	13	16	14
April	7	44	18	38	0	30	1	41	12	28
May	23	72	7	51	4	51	3	90	5	46
June	60	60	29	67	61	47	22	46	33	53
July	5	31	19	48	4	26	13	41	8	41
Aug.	27	52	15	61	78	47	90	44	4	36
Sept.	61	75	248	137	266	79	44	55	110	112
Oct.	0	53	10	34		43	0	64	0	51
Nov.	56	25	57	21		15	70	33	18	25
Dec.	39	19	4	16		15	56	23	22	18
Yearly	364	490	474	526		400	361	492	244	458

	Nueva Cd. Guerrero, Tamaulipas		Sabinas Hidalgo, Nuevo Leon		Garza Ayala, Nuevo Leon		La Escondida, Nuevo Leon		Mina, Nuevo Leon	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	25	23	12	21	18	21	35	39	11	13
Feb.	22	25	48	19	32	16	24	27	25	11
Mar.	13	14	31	19	23	18	29	26	21	6
April	14	37	24	33	27	37	43	57	3	21
May	2	63	17	68	5	51	57	49	2	20
June	27	59	36	83	57	62	71	70	4	34
July	27	35	6	73	4	65	37	45	21	26
Aug.	24	50	44	56	68	62	44	92	30	38
Sept.	174	99	262	146	244	103	235	117	60	80
Oct.	0	47	17	62	6	58	0	51	14	26
Nov.	126	30	60	23	20	32	63	28	25	15
Dec.	1	20	9	16	25	26	16	33	7	12
Yearly	455	502	566	619	529	551	654	634	223	302

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

	Icamole, Nuevo Leon		Rinconada, Nuevo Leon		Santa Catarina, Nuevo Leon		Rodrigo Gomez Res., Nuevo Leon		El Canada, Nuevo Leon	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	4	10	9	11	7	17	20	24	25	14
Feb.	29	8	19	8	14	11	40	24	17	16
Mar.	1	5	28	7	14	9	35	27	28	23
April	T	10	3	15	16	21	37	49	19	26
May	9	19	6	18	3	27	57	75	2	62
June	T	22	0	25	84	47	115	137	3	61
July	1	13	0	14	17	38	179	98	6	24
Aug.	19	19	42	30	26	64	93	155	48	56
Sept.	39	48	51	54	280	121	435	249	226	118
Oct.	6	21	10	21	32	43	156	125	53	69
Nov.	12	14	2	9	18	13	81	33	51	22
Dec.	5	12	5	10	3	14	0	22	T	10
Yearly	125	201	175	222	514	425	1,248	1,018	478	501

	Cd. Mier, Tamaulipas		Los Ramones, Nuevo Leon		Ejido Marin, Nuevo Leon		Dr. Gonzales, Nuevo Leon		Tepehuaje, Nuevo Leon	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	14	28	9	23	32	29		39	20	36
Feb.	24	29	8	18	21	16	31	15	23	18
Mar.	15	14	38	20	18	20	26	20	47	23
April	11	36		37	18	29		38	28	48
May	0	67		69	20	53		64	117	85
June	88	65	17	82	31	65	2	73	43	75
July	11	31	0	46	19	44	4	36	7	46
Aug.	23	64	19	77	85	68	140	74	144	77
Sept.	182	108		138	157	100	235	92	265	124
Oct.	18	52	9	61	19	36	9	38	16	58
Nov.	144	30	57	19	45	18	38	27	32	18
Dec.	17	22	7	16	2	26	33	44	1	20
Yearly	547	546		606	467	504		560	743	628

	Cienega de Flores, Nuevo Leon		Higueras, Nuevo Leon		Monterrey, Nuevo Leon		Villa Allende, Nuevo Leon		Montemorelos, Nuevo Leon	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	25	28	21	20	42	17	47	31	1	25
Feb.	17	22	16	15	20	17	5	31	32	24
Mar.	35	26	26	19	21	20	69	33	46	30
April	11	35	14	31	32	31	78	68	58	57
May	10	62	53	53	30	47	15	97	59	85
June	137	80	75	68	31	71	100	136	75	98
July	14	54	3	54	82	56	26	84	62	59
Aug.	100	102	85	83	94	78	26	129	74	103
Sept.	133	134	286	126	311	153	565	234	438	177
Oct.	7	59	25	48	92	78	42	129	90	95
Nov.	49	27	35	20	81	29	131	40	38	38
Dec.	T	26	4	19	7	18	24	29	11	24
Yearly	538	655	643	556	843	615	1,128	1,041	984	815

	El Cuchillo, Nuevo Leon		Las Enramadas, Nuevo Leon		Cerralvo, Nuevo Leon		General Bravo, Nuevo Leon		Vallecillo, Nuevo Leon	
Month	2001	Average	2001	Average	2001	Average	2001	Average	2001	Average
Jan.	12	18	4	24	24	21	15	21	18	20
Feb.	28	15	27	17	16	16	33	16	50	19
Mar.	18	13	45	20	49	23	38	15	20	16
April	11	34	17	43	19	43	32	37	5	42
May	34	61	72	74	63	85	26	71	12	50
June	90	68	80	82	186	88	35	68	23	72
July	7	44	5	53	9	49	7	50	14	36
Aug.	83	70	106	87	31	84	24	65	3	53
Sept.	231	111	201	154	220	129	228	107	125	102
Oct.	0	55	13	64	0	58	0	48	2	52
Nov.	53	15	18	19	55	19	75	23	16	20
Dec.	7	14	4	20	14	15	0	19	12	16
Yearly	574	518	592	657	686	630	513	540	300	498

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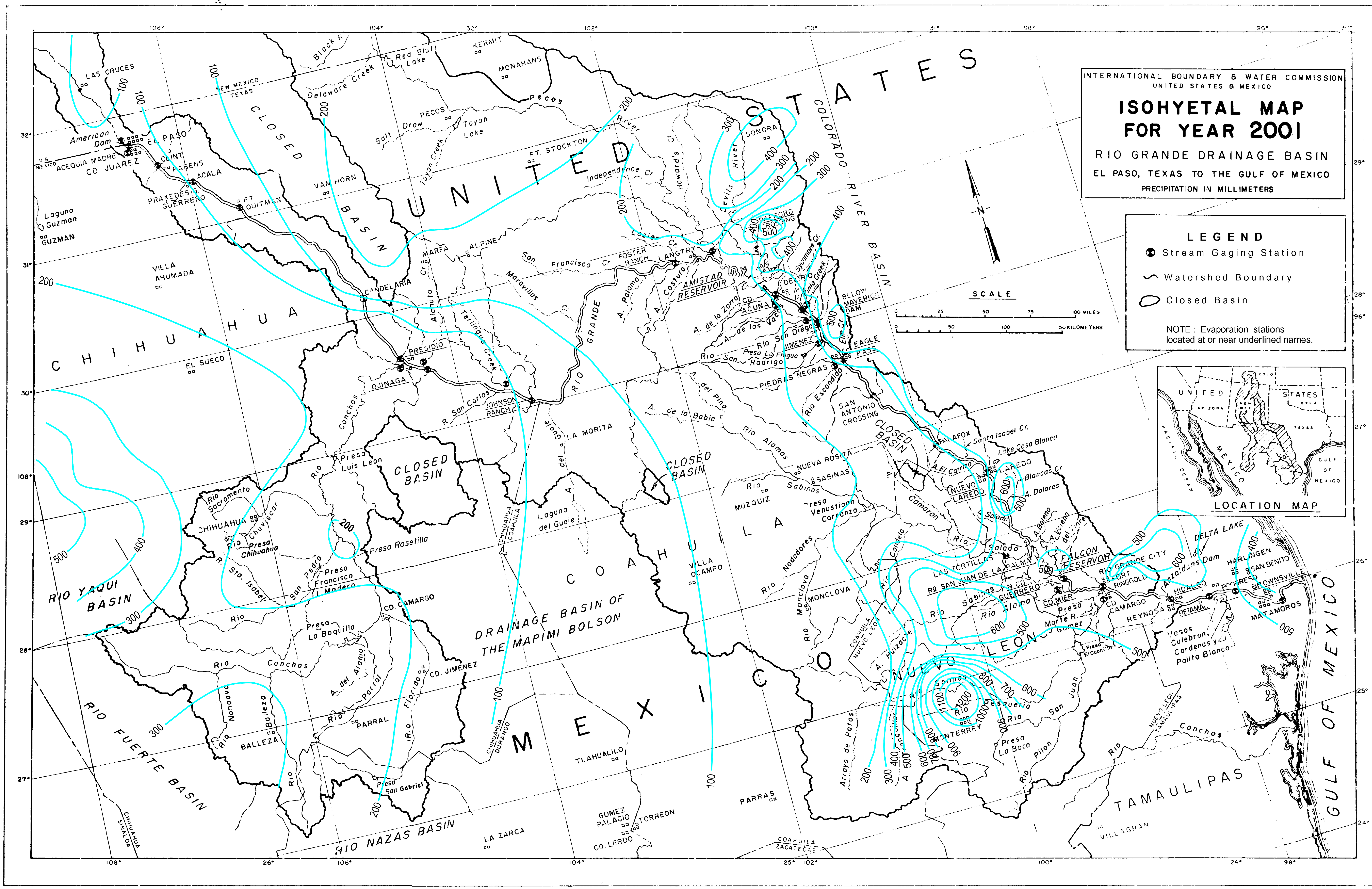
WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

	Hacienda Mamulique, Nuevo Leon		Madero(Los Aldamas) Nuevo Leon		Retamal, Tamaulipas					
Month	2001	Average	2001	Average	2001	Average				
Jan.		23	25	28	4	27				
Feb.		11	28	19	53	28				
Mar.		17	48	20	16	21				
April		40	5	35	0	35				
May		44	23	66	5	61				
June	0	67	72	72	31	62				
July	0	58	13	49	30	38				
Aug.	0	68	21	80	40	63				
Sept.	61	105	171	112	100	87				
Oct.	4	42	0	39	1	62				
Nov.	35	28	83	20	92	29				
Dec.	9	22	2	20	119	31				
Yearly		525	491	560	491	544				


INTERNATIONAL BOUNDARY & WATER COMMISSION
UNITED STATES & MEXICO
ISOHYETAL MAP
FOR YEAR 2001
RIO GRANDE DRAINAGE BASIN
EL PASO, TEXAS TO THE GULF OF MEXICO
PRECIPITATION IN MILLIMETERS
LEGEND
Stream Gaging Station
Watershed Boundary
Closed Basin
NOTE : Evaporation stations
located at or near underlined names.
SCALE
0 25 50 75 100 MILES
0 50 100 150 KILOMETERS
N
LOCATION MAP
UNITED STATES
MEXICO
GULF OF MEXICO
CHIHUAHUA
COAHUILA
NUEVO LEON
TAMAULIPAS
RIO YAQUI BASIN
RIO FUERTE BASIN
RIO NAZAS BASIN
DRAINAGE BASIN OF THE MAPIMI BOLSON
CLOSED BASIN
COLORADO RIVER BASIN
LAS CRUCES
EL PASO
CD. JUAREZ
American Dam
ACEQUIA MADRE
CLINT
FABENS
ACALA
FT. QUITMAN
VAN HORN
PECOS
MONAHANS
KERMIT
FT. STOCKTON
ALPINE
MARFA
CANDELARIA
PRESIDIO
OJINAGA
JOHNSON RANCH
LANGTRY
FOSTER RANCH
AMISTAD RESERVOIR
CD. ACUÑA
SONORA
EAGLE PASS
PIEDRAS NEGRAS
LAREDO
NUEVO LAREDO
FALCON RESERVOIR
RIO GRANDE CITY
CD. MIER
CD. CAMARGO
REYNOSA
HIDALGO
RETAMAL
PROGRESO
HARLINGEN
SAN BENITO
BROWNSVILLE
MATAMOROS
DELTA LAKE
MONTERREY
MONCLOVA
CHIHUAHUA
PARRAL
BALLEZA
CD. JIMENEZ
TORREON
GOMEZ PALACIO
CD. LERDO
PARRAS
LA ZARCA
TLAHUALILO
VILLAGRAN
GUZMAN
VILLA AHUMADA
EL SUECO
VILLA OCAMPO
MUZQUIZ
NUEVA ROSITA
SABINAS
Rio Grande
Rio Conchos
Pecos River
Devils River
100
200
300
400
500
600
700
800
900
1000
1100
1200

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

AVERAGE RAINFALL ON SUBDIVISIONS OF THE RIO GRANDE WATERSHED
With Averages for the 130 Years 1871 - 2001, 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.

	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)	
Month	2001	Period Average	2001	Period Average	2001	Period Average	2001	Period Average
Jan.	5	12	12	10	7	9	11	12
Feb.	3	9	18	7	4	7	4	10
Mar.	8	8	5	6	5	5	9	10
April	0	7	9	9	1	10	3	19
May	1	11	12	16	18	20	16	37
June	6	20	10	32	5	30	7	42
July	12	54	54	70	20	47	14	45
Aug.	23	47	32	60	26	48	13	51
Sept.	13	36	11	49	8	40	5	53
Oct.	0	23	2	26	1	22	7	31
Nov.	7	11	11	10	10	9	27	15
Dec.	4	15	4	13	0	10	1	13
Yearly	82	253	180	308	105	257	117	338

	Pecos River below Sheffield (8,780 Square Km)		# Foster Ranch to Amistad Dam (7,249 Square Km)		Devils River (11,150 Square Km)		+ Amistad Dam to Eagle Pass (4,209 Square Km)	
Month	2001	Period Average	2001	Period Average	2001	Period Average	2001	Period Average
Jan.	21	17	15	18	31	17	21	18
Feb.	18	22	11	22	24	20	9	23
Mar.	22	19	22	24	36	27	22	25
April	9	44	10	41	32	43	1	42
May	17	47	31	69	44	66	12	71
June	11	60	5	61	22	66	13	64
July	13	45	7	45	19	46	4	46
Aug.	54	50	6	46	25	54	14	48
Sept.	19	62	18	73	37	72	58	75
Oct.	18	46	13	50	18	55	8	51
Nov.	82	24	32	26	60	37	34	26
Dec.	5	19	3	21	5	24	14	22
Yearly	289	455	173	496	353	527	210	511

	! 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)	
Month	2001	Period Average	2001	Period Average	2001	Period Average	2001	Period Average
Jan.	24	19	13	20	14	23	5	32
Feb.	5	20	45	22	29	22	40	29
Mar.	37	23	15	21	15	23	11	26
April	13	42	34	36	13	31	29	35
May	43	77	23	79	43	60	19	70
June	26	62	31	51	56	55	81	64
July	29	37	11	50	31	45	35	43
Aug.	25	56	39	48	27	52	43	58
Sept.	102	75	123	77	144	90	126	109
Oct.	3	48	33	44	7	49	25	64
Nov.	41	25	107	38	58	21	61	34
Dec.	29	24	38	22	39	18	28	31
Yearly	377	508	512	508	476	489	503	595

* 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 the current year. 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	LATITUDE	LONGITUDE	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.
Anzalduas Dam	S	26` 08'	98` 20'	39	1972	Lower Rio Grande Valley	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
Brownsville Irrigation and Drainage District	S	25` 52'	97` 27'	!	1992	Lower Rio Grande Valley	Joe Barrera
Buoy No. 11	C	29` 30'	101` 10'	**	#Dec. 1969	Foster Ranch - Amistad Dam	I. B. & W. C.
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.
Comstock	R	29` 41'	101` 10'	466	#May 1939	Foster Ranch - Amistad Dam	I. B. & W. C.
Corralitos Ranch	C	27` 07'	99` 25'	105	1953	Laredo - Falcon Dam	I. B. & W. C.
Dead Man's Canyon near Comstock	C	29` 47'	101` 19'	399	Sept. 1967	Pecos River 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 Water 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
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.
Fort Hancock Bridge	S	31` 16'	105` 51'	1,067	#April 1940	El Paso - Fort Quitman	I. B. & W. C.
Garciasville	R	26` 20'	98` 41'	61	#April 1957	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	C	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.
HCWCID No. 6 Goodwin Pump No. 3	S	26` 16'	98` 24'	53	1953	Lower Rio Grande Valley	HCWCID No. 6
HCWCID No. 6 Goodwin Pump No. 4B	S	26` 18'	98` 22'	64	1953	Lower Rio Grande Valley	HCWCID No. 6
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.
Huisache 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.
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.
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. K. Mitchell
La Feria Materials Yard	V	26` 10'	97` 50'	18	# 1960	Lower Rio Grande Valley	CCWCID #3
La Feria Pumping Plant	S	26` 03'	97` 50'	18	# 1952	Lower Rio Grande Valley	CCWCID #3
La Joya	C	26` 15'	98` 29'	46	#April 1957	Lower Rio Grande Valley	I. B. & W. C.
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.
Laughlin Air Force Base	S	29` 21'	100` 47'	329	Dec. 1958	Amistad Dam - Eagle Pass	U. S. A. F.

S Standard R Recording C Cumulative V Visual ** Reservoir surface
Some months or years missing

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Lewis Ranch	S	29` 32'	100` 40'	427	#1964	Amistad Dam - Eagle Pass	B.C. Lewis Jr.
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
Mercedes LRGFCP Office	S	26` 07'	97` 56'	22	1994	Lower Rio Grande Valley	I. B. & W. C.
Mercedes Pump	S	26` 04'	97` 54'	!	1938	Lower Rio Grande Valley	I. B. & W. C.
Middle Fork San Pedro	C	29` 29'	100` 52'	357	#June 1969	Devils River	I. B. & W. C.
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)	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 Pump	S	26` 03'	97` 45'	15	Oct. 1933	Lower Rio Grande Valley	CCWCID No. 2
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 Cochos - Johnson Ranch	Raymond Wylic
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 Irrig. District
Van Dalsem Farm	C	28` 27'	100` 19'	213	#1959	Eagle Pass - Laredo	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	S	26` 54'	99` 16'	116	1992	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

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

IN MEXICO

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Allende, Coahuila	S	28` 21'	100` 51'	357	1947	Eagle Pass-Laredo	C. N. A.
Bachiniva, Chihuahua	S	28` 46'	107` 15'	1,905	1952	Rio Conchos	Meteor. Service of Mexico
Camargo, Chihuahua	S	27` 42'	105` 10'	1,204	# 1956	Rio Conchos	Meteor. Service of Mexico
Cd. Acuna, Coahuila	S	29` 20'	100` 57'	274	1951	Amistad Dam-Eagle Pass	C. I. L. A.
Cd. Guerrero, Chihuahua	S	28` 33'	107` 29'	2,000	1903	Rio Conchos	Meteor. Service of Mexico
Cd. Juarez, Chihuahua	S	31` 45'	106` 27'	1,131	1903	El Paso-Ft Quitman	I. B. & W. C.
Cd. Mier, Tamaulipas	S	26` 26'	99` 09'	80	# 1955	Falcon Dam-Rio Grande C.	I. B. & W. C.
Cerralvo, Nuevo Leon	R	26` 05'	99` 37'	345	# 1938	Rio San Juan	S. A. R. H.
Cienega de Flores, Nuevo Leon	R	25` 57'	100` 10'	540	# 1938	Rio San Juan	S.A.R.H.
Cuahtemoc, Chihuahua	S	28` 24'	106` 24'	2,210	1923	Rio Conchos	Meteor. Service of Mexico
Delicias, Chihuahua	S	28` 11'	105` 28'	1,130	#Aug. 1933	Rio Conchos	C. N. A.
Dr. Gonzalez, N. L.	S	25` 48'	99` 52'	318	1992	Rio San Juan	C. N. A.
Ejido Marin, Nuevo Leon	S	25` 50'	100` 00'	!	# 1979	Rio San Juan	S. A. R. H.
El Canada, Nuevo Leon	S	25` 48'	100` 16'	!	#Jan. 1958	Rio San Juan	C. N. A.
El Cuchillo, Nuevo Leon	R	25` 43'	99` 16'	180	#June 1938	Rio San Juan	S. A. R. H.
El Vergel, Chihuahua	S	26` 28'	106` 30'	2,240	1957	Rio Conchos	Meteor. Service of Mexico
Escalon, Chihuahua	S	26` 45'	104` 20'	1,267	1957	Rio Conchos	C. N. A.
Garza Ayala, Nuevo Leon	S	26` 29'	100` 03'	!	# 1968	Rio San Juan	S. A. R. H.
General Bravo, Nuevo Leon	S	25` 48'	99` 11'	180	# 1906	Rio San Juan	S. A. R. H.
Hacienda Mamulique, N. L.	S	26` 07'	100` 14'	!	# 1973	Rio San Juan	S. A. R. H.
Higueras, Nuevo Leon	S	25` 58'	100` 01'	500	# 1906	Rio San Juan	Meteor. Service of Mexico
Icamole, Nuevo Leon	S	25` 55'	100` 43'	1,494	# 1958	Rio San Juan	C. N. A.
Jimenez, Chihuahua	S	27` 08'	104` 56'	1,377	# 1951	Rio Conchos	Meteor. Service of Mexico
Jimenez, Coahuila	S	29` 04'	100` 40'	248	1951	Amistad Dam-Eagle Pass	C. I. L. A.
Kilometro 135, Chih.	S	28` 22'	105` 37'	1,200	1962	Rio Conchos	C. N. A.
La Amistad, Coahuila	S	29` 27'	101` 05'	316	#Feb. 1977	Amistad Dam-Eagle Pass	I. B. & W. C.
La Boquilla, Chihuahua	S	27` 33'	105` 38'	1,240	#June 1910	Rio Conchos	C. N. A.
La Chupparosa, Coahuila	R	29` 30'	101` 15'	350	# 1970	Foster Ranch-Amistad Dam	I. B. & W. C.
La Escondida, Nuevo Leon	S	26` 16'	99` 46'	300	# 1979	Rio San Juan	S. A. R. H.
La Trasquila,Chihuahua	S	29` 08'	107` 08'	!	1962	Rio Conchos	C. N. A.
Lampazos, Nuevo Leon	S	27` 02'	100` 30'	341	# 1903	Rio Salado	S. A. R. H.
Las Burras, Chihuahua	S	29` 31'	105` 25'	1,096	# 1949	Rio Conchos	C. N. A.
Las Enramadas, Nuevo Leon	S	25` 48'	99` 16'	222	# 1926	Rio San Juan	C. N. A.
Las Virgenes, Chihuahua	S	28` 09'	105` 38'	1,220	# 1943	Rio Conchos	C. N. A.
Los Ramones, Nuevo Leon	R	25` 42'	99` 38'	80	#Sept. 1939	Rio San Juan	S. A. R. H.
Madero (Los Aldamas), NL	S	26` 02'	99` 12'	!	# 1970	Rio San Juan	C. N. A.
Mina, Nuevo Leon	S	26` 00'	100` 31'	500	# 1958	Rio San Juan	C. N. A.
Montemorelos, Nuevo Leon	S	25` 12'	99` 50'	433	# 1904	Rio San Juan	C. N. A.
Monterrey, Nuevo Leon	S	25` 40'	100` 18'	530	# 1896	Rio San Juan	C. N. A.
Nueva Cd. Guerrero,Tamps.	S	26` 35'	99` 15'	106	# 1954	Laredo - Falcon Dam	I. B. & W. C.
Nuevo Laredo, Tamps.	S	27` 30'	99` 30'	126	# 1950	Laredo - Falcon Dam	S. M. N.
Ojinaga (M.S. of Mexico), Chihuahua	S	29` 34'	104` 24'	1,150	# 1906	Rio San Juan	C. N. A.
Ojinaga, Chihuahua	S	29` 34'	104` 25'	788	#April 1954	Rio Conchos	I. B. & W. C.
Piedras Negras, Coahuila	S	28` 43'	100` 31'	249	1951	Eagle Pass-Laredo	Meteor. Service of Mexico
Presa Abraham Gonzales, Chihuahua	R	28` 29'	107` 28'	2,142	1970	Rio Conchos	C. N. A.
Presa Carranza, Coah.	S	27` 31'	100` 37'	240	1927	Rio Salado	C. N. A.
Presa Chihuahua, Chih.	S	28` 34'	105` 10'	1,595	1961	Rio Conchos	C. N. A.
Presa Luis L. Leon, Chih.	S	28` 57'	105` 17'	!	1964	Rio Conchos	S. A. R. H.
Retamal, Tamaulipas	S	26` 02'	98` 02'	82	#Oct. 1949	Lower Rio Grande Valley	I. B. & W. C.
Rinconada, N.L.	S	25` 41'	100` 42'	1,460	# 1944	Rio San Juan	C. N. A.
Rodrigo Gomez Res. N. L.	S	25` 25'	100` 07'	445	# 1923	Rio San Juan	C. N. A.
Sabinas, Hidalgo, N. L.	S	26` 30'	100` 10'	314	#May 1958	Rio Salado	I. B. & W. C.
Santa Catarina, N. L.	R	25` 40'	100` 28'	880	# 1937	Rio San Juan	C. N. A.
Tepehuaje, N. L.	S	25` 30'	99` 46'	!	# 1979	Rio San Juan	S. A. R. H.
Vallecillo, Nuevo Leon	S	26` 40'	99` 59'	274	# 1958	Rio Salado	S. A. R. H.
Villa Aldama, NL	S	26` 30'	100` 25'	1,540	#Apr. 1979	Rio Salado	Meteor. Service of Mexico
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.

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

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

EVAPORATION IN THE RIO GRANDE BASIN IN THE UNITED STATES

In Millimeters

Tabulated below are records of evaporation observed at seven 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.

3. An evaporometer, 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.

	Presidio		Johnson Ranch		Martin King Ranch		Long Ranch	
Month	2001	Average 1949-2001	2001	Average 1949-2001	2001	Average 1956-2001	2001	Average 1971-2001
Jan.	39	80	105	96	151	92	89	58
Feb.	92	111	176	138	171	106	144	73
Mar.	138	176	276	223	147	171	141	113
April	211	219	430	282	192	212	181	150
May	273	261	604	343	353	239	217	163
June	325	278	633	352	371	279	349	203
July	270	266	695	359	411	320	274	230
Aug.	311	245	568	320	334	310	292	214
Sept.	211	198	409	254	274	228	132	159
Oct.	159	154	303	197	277	186	153	123
Nov.	146	105	179	123	141	117	159	76
Dec.	57	77	118	92	118	91	38	58
Total	2,232	2,170	4,496	2,779	2,940	2,351	2,169	1,620

	Amistad Dam		Falcon Dam		Brownsville			
Month	2001	Average 1963-2001	2001	Average 1956-2001	2001	Average 1958-2001		
Jan.	68	96	98	103	73	78		
Feb.	80	121	143	132	87	90		
Mar.	134	201	182	208	95	120		
April	214	251	272	254	177	148		
May	348	280	389	297	159	147		
June	432	325	469	339	152	157		
July	460	374	493	390	155	184		
Aug.	401	348	445	354	158	173		
Sept.	252	253	249	249	113	135		
Oct.	278	196	217	190	104	120		
Nov.	174	131	162	133	77	96		
Dec.	108	94	101	100	77	83		
Total	2,949	2,670	3,220	2,749	1,427	1,531		

WATER BULLETIN NUMBER 71-- INTERNATIONAL BOUNDARY AND WATER COMMISSION

EVAPORATION IN THE RIO GRANDE BASIN IN MEXICO

In Millimeters

Tabulated below are records of evaporation observed at eight stations operated and maintained by the Mexican Section of the Commission. Seven stations are along the Rio Grande from Cd. Acuna, Coahuila to Cd. Mier, 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.

	Ojinaga, Chihuahua		La Amistad, Coahuila		Cd. Acuna, Coahuila		Jimenez, Coahuila	
Month	2001	Average 1954-2001	2001	Average 1977-2001	2001	Average 1951-2001	2001	Average 1951-2001
Jan.	75	87	81	89	51	81	42	90
Feb.	73	123	83	115	64	108	55	116
Mar.	88	198	138	181	106	180	79	178
April	99	245	189	229	142	210	114	202
May	122	310	280	255	246	236	197	231
June	280	327	369	290	309	276	249	269
July	290	316	422	340	312	313	259	305
Aug.	278	272	360	316	274	285	233	280
Sept.	231	212	246	234	185	205	130	203
Oct.	225	167	192	170	143	147	107	148
Nov.	164	106	108	108	73	91	57	97
Dec.	79	80	82	84	64	72	45	80
Total	2,004	2,443	2,550	2,411	1,969	2,204	1,567	2,199

	Villa Hidalgo, Coahuila		Nuevo Laredo, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas		Cd. Mier, Tamaulipas	
Month	2001	Average 1951-2001	2001	Average 1964-2001	2001	Average 1954-2001	2001	Average 1955-2001
Jan.	58	89	74	98	79	86	88	93
Feb.	87	117	108	123	122	110	125	122
Mar.	116	176	128	195	158	181	153	196
April	187	225	213	250	219	219	268	236
May	286	259	313	278	278	255	337	269
June	325	300	358	326	300	292	370	309
July	348	342	401	368	357	336	385	353
Aug.	315	309	377	338	347	306	388	317
Sept.	192	223	215	246	166	220	208	234
Oct.	172	170	200	190	165	165	191	181
Nov.	92	110	136	126	113	114	77	118
Dec.	72	84	86	94	87	86	55	90
Total	2,250	2,404	2,609	2,632	2,391	2,370	2,645	2,518

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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				Falcon Dam, Texas			
	Mean 2001	Average 1963-2001	2001 Max.	2001 Min.	Mean 2001	Average 1950-2001	2001 Max.	2001 Min.
Jan.	11	11	22	-2	15	13	31	-1
Feb.	12	13	27	1	21	16	37	4
Mar.	14	17	30	3	21	20	36	6
April	22	22	35	10	28	24	38	12
May	26	26	40	15	30	27	43	18
June	31	28	41	21	33	29	43	21
July	32	30	41	18	33	30	42	18
Aug.	31	30	42	20	33	30	42	22
Sept.	26	26	39	11	28	27	39	15
Oct.	22	22	36	7	26	23	36	8
Nov.	19	16	30	-2	22	18	33	2
Dec.	13	12	24	0	13	14	29	2
Yearly	22	21	42	-2	25	23	43	-1

In Mexico

Month	Ojinaga, Chihuahua				La Amistad, Coahuila				Cd. Acuna, Coahuila			
	Mean 2001	Average 1954-2001	2001 Max.	2001 Min.	Mean 2001	Average 1977-2001	2001 Max.	2001 Min.	Mean 2001	Average 1951-2001	2001 Max.	2001 Min.
Jan.	9	10	22	-4	10	11	20	-1	9	10	22	-2
Feb.	16	13	30	-1	13	13	24	1	13	12	25	2
Mar.	21	17	35	5	15	17	28	4	15	17	30	4
April	27	21	38	14	23	22	35	12	23	22	35	11
May	30	26	46	16	26	26	42	14	27	26	39	13
June	36	30	45	22	31	29	40	21	30	29	40	20
July	35	30	43	27	31	31	40	19	31	30	40	20
Aug.	34	29	42	22	30	31	40	20	30	30	41	19
Sept.	29	27	40	12	26	27	40	12	26	27	39	11
Oct.	23	21	35	11	21	22	35	8	21	21	36	7
Nov.	18	15	35	-5	17	16	29	-1	17	15	30	-2
Dec.	11	11	28	-4	12	12	23	0	11	11	24	-2
Yearly	24	21	46	-5	21	21	42	-1	21	21	41	-2

Month	Jimenez, Coahuila				Villa Hidalgo, Coahuila				Nuevo Laredo, Tamaulipas			
	Mean 2001	Average 1951-2001	2001 Max.	2001 Min.	Mean 2001	Average 1951-2001	2001 Max.	2001 Min.	Mean 2001	Average 1964-2001	2001 Max.	2001 Min.
Jan.	10	12	24	0	12	12	28	-3	12	13	27	0
Feb.	15	14	28	0	17	14	34	2	16	16	33	3
Mar.	16	18	32	2	17	19	32	3	16	20	31	4
April	24	22	37	10	26	23	38	12	24	24	36	10
May	28	26	43	13	29	27	43	18	27	27	40	15
June	32	29	44	21	32	30	43	23	31	30	42	20
July	33	30	43	19	33	31	42	21	31	31	41	20
Aug.	33	30	46	21	33	30	42	22	31	31	41	20
Sept.	28	27	41	10	28	27	41	11	26	28	39	13
Oct.	22	22	37	6	24	22	38	4	22	24	35	4
Nov.	18	16	34	0	19	17	33	0	18	18	30	2
Dec.	12	12	26	0	13	13	37	0	12	14	26	-3
Yearly	23	22	46	0	24	22	43	-3	22	23	42	-3

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

TEMPERATURE, HUMIDITY, AND WIND

Temperature - In Degrees Celsius

In Mexico

Month	Nueva Cd. Guerrero, Tamaulipas				Cd. Mier, Tamaulipas				El Retamal, Tamaulipas			
	Mean 2001	Average 1958-2001	2001 Max.	2001 Min.	Mean 2001	Average 1955-2001	2001 Max.	2001 Min.	Mean 2001	Average 1951-2001	2001 Max.	2001 Min.
Jan.	14	14	31	-1	14	14	32	-2	16	16	31	1
Feb.	19	16	37	5	19	16	38	5	20	17	33	6
Mar.	19	20	33	7	19	21	34	4	21	21	37	7
April	27	24	38	12	27	25	40	13	26	24	37	14
May	29	27	42	18	29	28	44	18	29	27	40	17
June	31	30	42	20	32	30	44	22	32	29	44	22
July	31	31	41	21	33	31	43	22	32	30	41	23
Aug.	32	31	42	21	33	31	43	23	33	30	42	24
Sept.	28	28	39	17	29	29	40	16	29	29	40	12
Oct.	25	24	37	9	25	24	40	5	27	25	41	10
Nov.	19	19	33	1	21	19	37	2	23	21	35	3
Dec.	15	15	30	2	16	15	30	-1	19	16	33	2
Yearly	24	23	42	-1	25	24	44	-2	26	24	44	1

Mean Wind Speed - Kilometers Per Hour

In the United States

Month	Martin Ranch, King Texas		Amistad Dam, Texas		Falcon Dam, Texas	
	2001	Average 1956-2001	2001	Average 1963-2001	2001	Average 1950-2001
Jan.	6.2	5.9	4.4	4.6	4.9	5.2
Feb.	7.7	7.0	4.8	5.2	5.8	6.0
Mar.	8.1	9.0	6.1	6.2	5.6	6.8
April	10.7	9.6	7.9	6.4	8.1	7.5
May	11.3	10.3	8.6	6.4	8.6	7.8
June	10.7	11.1	8.7	6.6	8.5	8.0
July	13.1	10.5	8.6	6.2	9.6	8.3
Aug.	9.8	9.5	7.5	5.5	9.5	7.3
Sept.	8.9	7.8	5.9	5.0	5.2	5.5
Oct.	11.0	7.5	7.0	4.8	5.6	4.9
Nov.	7.9	6.3	5.9	4.5	5.6	5.2
Dec.	5.6	5.5	4.8	4.4	4.6	4.8
Yearly	9.3	8.3	6.7	5.5	6.8	6.4

Mean Relative Humidity - Percent

In the United States

Month	Amistad Dam, Texas		Falcon Dam, Texas	
	2001	Average 1963-2001	2001	Average 1950-2001
Jan.	77	60	84	68
Feb.	75	58	84	66
Mar.	77	54	80	63
April	71	56	82	63
May	66	62	79	67
June	66	62	77	65
July	66	58	78	62
Aug.	72	59	80	63
Sept.	74	63	86	67
Oct.	70	63	81	67
Nov.	79	62	87	68
Dec.	77	61	85	68
Yearly	73	60	82	66

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries - 2001

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 diversions 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 2001 are shown, except that in some reaches the figures shown represent acreages which were subject to irrigation in 2001 but for which data on the portion actually irrigated is not known. On the Mexican side, part of the data may have been gathered prior to 2001. 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			
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	30,589	0	30,589
Above American Dam	75,812	0	75,812	30,589	0	30,589
American Dam to Acala Station (Discontinued)	1,740	1,409	3,149	17,344	14,203	31,547
Above Acala Gaging Station (Discontinued)	77,552	1,409	78,961	47,933	14,203	62,136
Acala Station to Fort Quitman Station	1,717	2,056	3,773	5,761	0	5,761
Above Fort Quitman Gaging Station	79,269	3,465	82,734	53,694	14,203	67,897
Fort Quitman Station to Above Presidio Station	4,263	3,652	7,915	1,671	97	1,768
Above Presidio Station above Rio Conchos	83,532	7,117	90,649	55,365	14,300	69,665
Rio San Pedro above Francisco I. Madero Dam	0	10,778	10,778	0	0	0
Rio Conchos above Boquilla Dam	0	10,282	10,282	0	0	0
Boquilla Dam to Luis L. Leon Dam	0	38,490	38,490	0	31,603	31,603
Luis L. Leon Dam to mouth of river	0	8,837	8,837	0	5,362	5,362
Rio Conchos - Total	0	68,387	68,387	0	36,965	36,965
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	543	2,720	3,263
Presidio Station above Rio Conchos to Presidio Station below Rio Conchos - Total	4,776	68,622	73,398	543	39,685	40,228
Above Presidio Station below Rio Conchos	88,308	75,739	164,047	55,908	53,985	109,893
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	266	1,070	1,336
Presidio Station below Rio Conchos to Johnson Ranch Station - Total	5,602	5,848	11,450	266	1,070	1,336
Above Johnson Ranch Gaging Station	93,910	81,587	175,497	56,174	55,055	111,229
Johnson Ranch Station to Foster Ranch Station	16,607	17,016	33,623	127	0	127
Above Foster Ranch Gaging Station	110,517	98,603	209,120	56,301	55,055	111,356
Pecos River above Girvin(In the State of Texas)	76,566	0	76,566	2,766	0	2,766
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	2,766	0	2,766
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
Foster Ranch Station to Amistad Dam excluding above tributaries	1,033	6,164	7,197	0	0	0
Foster Ranch Station to Amistad Dam- Total	103,631	6,164	109,795	2,766	0	2,766
Above Amistad Dam	214,148	104,767	318,915	59,067	55,055	114,122
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	59,067	55,055	114,122
Below Amistad Dam Station to Del Rio Station	155	259	414	96	0	96
Above Del Rio Gaging Station	214,316	105,036	319,352	59,163	55,055	114,218
Arroyo Las Vacas above Gaging Station	0	906	906	0	53	53
San Felipe Creek above Gaging Station	119	0	119	660	0	660

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries - 2001

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	3,790	3,790	
Gaging Station to mouth of river	0	16	16	0	0	0	
Rio San Diego - Total	0	2,225	2,225	0	3,790	3,790	
Del Rio Station to Jimenez Station - excluding above tributaries	1,733	285	2,018	a) 19,514	0	19,514	
Del Rio Station to Jimenez Station - Total	2,497	3,416	5,913	19,514	3,843	23,357	
Above the Jimenez Gaging Station	216,813	108,452	325,265	79,438	58,898	138,336	
Rio San Rodrigo - Total	0	2,717	2,717	0	696	696	
Jimenez Station to Piedras Negras Station- excluding Rio San Rodrigo	1,375	378	1,753	0	0	0	
Jimenez Station to Piedras Negras Station-Total	1,375	3,095	4,470	89	696	785	
Above Piedras Negras Gaging Station	218,188	111,547	329,735	79,527	59,594	139,121	
Rio Escondido above Gaging Station	0	3,779	3,779	0	417	417	
Rio Escondido - Total	0	3,810	3,810	0	0	0	
Piedras Negras Station to El Indio Station - excluding Rio Escondido	614	533	1,147	0	0	0	
Piedras Negras Station to El Indio Station - Total	614	4,343	4,957	0	417	417	
Above El Indio Gaging Station	218,802	115,890	334,692	79,527	60,011	139,538	
El Indio Gaging Station to Laredo Gaging Station	3,201	5,481	8,682	3,517	0	3,517	
Above Laredo Gaging Station	222,003	121,371	343,374	83,044	60,011	143,055	
Rio Salado above Venustiano Carranza Dam	0	41,002	41,002	0	60	60	
Rio Salado-Venustiano Carranza Dam to Las Tortillas Gaging Station	0	18,969	18,969	0	1,416	1,416	
Rio Salado-Las Tortillas Gaging Station to River Road Crossing	0	435	435	0	505	505	
Rio Salado- Total	0	60,406	60,406	0	1,981	1,981	
Laredo Station to Falcon Dam - excluding Rio Salado	5,289	3,437	8,726	b) 5,594	0	5,594	
Laredo Station to Falcon Dam - Total	5,289	63,843	69,132	5,594	1,981	7,575	
Amistad Dam to Falcon Dam - excluding above tributaries	12,380	10,383	22,763	28,810	0	28,810	
Above Falcon Dam	227,292	185,214	412,506	88,638	61,992	150,630	
Rio Alamo above Gaging Station	0	4,339	4,339	0	0	0	
Rio San Juan above Marte Gomez Dam	0	33,010	33,010	0	0	0	
Rio San Juan - Marte Gomez Dam to Camargo Gaging Station	0	505	505	0	52,559	52,559	
Rio San Juan - Total	0	33,538	33,538	0	52,559	52,559	
Falcon Dam to Rio Grande City Station - excluding above tributaries	575	637	1,212	1,671	0	1,671	
Falcon Dam to Rio Grande City Station - Total	575	38,514	39,089	1,671	52,559	54,230	
Above Rio Grande City Gaging Station	227,867	223,728	451,595	90,309	114,551	204,860	
Rio Grande City Station to Anzalduas Dam	2,466	2,067	4,533	65,109	0	65,109	
Anzalduas Canal				0	0	0	
Above Anzalduas Dam	230,333	225,795	456,128	155,418	114,551	269,969	
Anzalduas Dam to Progreso Station(Discontinued)	34	423	457	45,733	211	45,944	
Above Progreso Gaging Station	230,367	226,218	456,585	201,151	114,762	315,913	
Progreso Station to San Benito Station	18	23	41	125,420	61	125,481	
Above San Benito Gaging Station	230,385	226,241	456,626	326,571	114,823	441,394	
San Benito Station to Brownsville Station	36	39	75	28,252	5	28,257	
Above Brownsville Gaging Station	230,421	226,280	456,701	354,823	114,828	469,651	
Brownsville Station to Gulf of Mexico				1,525	0	1,525	
Falcon Dam to Gulf of Mexico - excluding Rio Alamo and Rio San Juan				267,710	277	267,987	
Amistad Dam to Gulf of Mexico excluding above tributaries				296,520	277	296,797	
Above Gulf of Mexico				356,348	114,828	471,176	

a) Includes 15,583 hectares irrigated from the Maverick Canal below Mile 13 gaging station.
b) Includes 45 hectares irrigated from small reservoirs.

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 2001 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 1992 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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	55.0	61.8	50.4	41.0	42.5	48.2	43.7	44.4	47.7	27.1	29.6	39.0
2	55.6	59.6	50.1	41.4	41.2	47.4	46.8	35.6	47.0	26.9	30.9	38.0
3	57.6	59.8	50.7	46.7	45.0	44.0	47.7	42.9	46.2	27.7	31.2	36.5
4	56.9	60.2	48.4	45.2	89.3	35.5	41.7	42.8	50.7	29.4	31.6	36.0
5	56.3	59.5	45.7	46.0	120	44.7	38.4	48.3	49.6	32.9	31.4	38.5
6	57.4	58.5	43.5	50.1	79.9	44.6	36.5	44.5	44.1	41.4	30.8	37.0
7	59.0	55.3	41.8	47.6	63.3	48.2	35.9	38.6	36.2	33.6	29.9	37.2
8	57.9	55.9	45.0	45.9	57.3	47.6	37.2	37.6	39.8	34.8	31.0	36.7
9	56.0	55.2	42.7	44.1	54.2	43.9	34.3	35.8	57.4	39.8	28.2	37.2
10	58.3	52.9	38.5	41.9	41.9	46.2	33.0	41.2	58.4	36.9	27.2	35.6
11	59.6	52.8	41.7	38.4	42.3	42.2	34.9	44.0	53.7	36.7	27.2	35.4
12	59.0	54.4	44.1	38.5	52.6	39.9	35.5	39.7	38.1	37.2	28.2	35.6
13	61.0	53.9	42.5	31.8	51.6	41.7	40.0	40.5	35.3	33.9	28.3	34.9
14	61.9	55.4	45.3	30.2	51.3	42.1	44.2	31.8	32.7	28.2	32.2	34.2
15	60.5	58.8	41.1	25.2	50.7	42.1	45.6	34.7	31.2	28.5	293	33.7
16	62.4	69.5	39.4	26.0	51.2	40.1	39.5	39.0	32.4	26.8	171	34.5
17	62.2	60.9	41.3	25.8	47.4	38.9	34.2	43.4	29.8	23.7	58.8	32.6
18	64.2	59.8	41.3	26.1	48.1	38.4	33.4	48.3	28.2	26.3	53.0	32.3
19	64.9	57.5	41.3	34.8	51.0	36.0	35.3	41.5	25.9	27.3	65.6	32.6
20	60.7	58.6	39.5	39.6	52.8	34.0	34.9	53.7	27.4	25.7	56.4	32.8
21	61.2	56.8	36.0	33.1	52.3	37.9	39.3	54.6	28.2	29.0	44.2	31.9
22	60.2	57.4	37.5	36.9	45.5	41.1	37.0	80.9	28.7	30.0	46.4	32.3
23	58.1	58.9	40.2	50.9	42.5	40.3	37.1	53.9	32.9	31.1	43.2	32.8
24	58.8	58.0	41.7	50.4	41.2	36.7	33.8	53.4	32.9	31.8	41.2	33.1
25	59.4	55.8	37.0	52.7	31.2	34.5	35.5	37.5	36.8	30.5	39.0	32.6
26	58.4	52.8	35.7	50.3	41.7	36.2	37.5	60.6	30.3	29.4	40.9	31.7
27	58.0	54.1	37.8	43.0	42.1	38.1	35.5	61.3	25.5	29.4	40.8	33.1
28	59.3	52.8	40.4	36.4	51.7	35.8	40.4	59.9	27.3	28.4	40.9	32.9
29	60.6		39.1	36.7	37.4	37.2	41.3	49.2	26.5	27.3	37.5	33.6
30	61.3		38.7	37.0	40.1	38.6	38.9	53.6	28.5	28.7	36.8	34.1
31	59.6		37.8		42.5		40.2	48.2		30.2		34.6
Sum	1,841.3	1,606.9	1,296.2	1,193.7	1,601.8	1,222.1	1,189.2	1,441.4	1,109.4	950.6	1,526.4	1,073.0

Current Year 2001							Period 1977-2001		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
	High	Low	@ High Day	@ High	@ Low Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			19	64.9	1	55.0	59.4	159,088	151,425	368,798	98,358
Feb.			16	69.5	!26	52.8	57.4	138,836	147,925	432,864	90,012
Mar.			3	50.7	26	35.7	41.8	111,992	163,376	322,164	94,167
April			25	52.7	15	25.2	39.8	103,136	172,652	437,055	88,404
May			5	120	25	31.2	51.7	138,396	220,975	472,211	104,422
June			1	48.2	20	34.0	40.7	105,589	245,629	562,118	105,589
July			3	47.7	10	33.0	38.4	102,747	229,895	496,282	102,747
Aug.			22	80.9	14	31.8	46.5	124,537	308,932	1,037,318	120,027
Sept.			10	58.4	27	25.5	37.0	95,852	327,432	1,624,752	88,716
Oct.			6	41.4	17	23.7	30.7	82,132	332,072	1,172,715	82,132
Nov.			15	293	!10	27.2	50.9	131,881	170,046	560,631	88,007
Dec.			1	39.0	26	31.7	34.6	92,707	134,977	321,211	92,707
Yearly				293		23.7	44.0	1,386,893	2,605,336	5,003,493	1,386,893

@ Mean daily ! And other days

WATER BULLETIN NUMBER 71 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 2001 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 1992 survey; and d) rate of evaporation measured at the dam and Nueva Cd. Guerrero.

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 2001 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.6	27.0	46.2	57.4	79.5	58.0	42.2	40.2	189	18.1	12.8	45.1
2	33.6	41.0	27.2	66.2	79.9	56.5	40.5	46.8	118	22.1	26.2	21.5
3	26.1	23.7	46.7	75.8	85.2	50.3	28.7	71.6	102	12.6	22.1	25.9
4	23.9	44.3	35.5	57.3	64.4	72.1	39.4	83.2	78.4	16.5	15.7	17.5
5	21.6	32.7	30.8	64.9	74.9	59.4	42.0	91.0	48.5	63.8	15.1	36.2
6	27.5	33.8	37.8	84.6	85.4	57.4	50.3	86.4	70.9	5.16	7.31	26.8
7	35.9	28.6	32.0	106	71.0	79.8	47.3	85.1	83.5	7.04	25.0	22.9
8	26.4	43.1	44.7	96.5	105	70.1	39.0	113	69.1	5.86	19.4	44.4
9	27.2	67.5	42.0	94.7	82.7	61.2	33.2	121	109	6.08	24.3	27.7
10	46.9	25.5	40.6	95.6	81.3	55.1	70.9	119	280	18.3	10.1	15.4
11	52.7	30.4	38.6	97.7	89.2	66.1	29.7	119	688	23.9	19.6	33.4
12	49.7	34.0	45.3	84.6	84.8	49.9	39.2	128	647	25.2	19.9	39.8
13	88.1	32.7	25.7	85.7	75.8	61.6	29.2	117	254	15.1	3.25	27.4
14	48.0	33.8	43.5	84.6	76.4	68.8	60.3	121	136	18.8	16.2	21.0
15	74.5	42.7	22.2	95.5	77.4	62.9	0	107	78.3	15.3	22.3	26.2
16	69.3	52.0	19.9	83.4	70.3	58.0	26.2	82.3	41.2	22.0	178	34.5
17	56.7	32.7	45.8	93.3	76.1	70.3	32.8	83.2	32.5	10.9	167	23.0
18	33.8	22.6	36.7	73.6	71.0	64.6	38.0	97.1	37.6	5.64	271	16.0
19	32.2	38.7	28.6	56.7	74.3	60.2	31.3	91.2	38.4	23.1	300	20.7
20	7.50	42.3	26.8	68.1	50.5	63.0	35.2	92.8	27.9	17.1	55.4	13.9
21	23.5	38.4	24.9	82.2	79.2	63.2	36.8	89.4	31.5	16.5	50.3	22.9
22	23.4	29.4	29.6	89.8	44.4	65.6	81.3	89.8	35.0	5.82	46.3	28.1
23	32.8	34.2	32.3	98.4	58.3	55.5	32.0	91.9	42.5	23.0	36.5	21.1
24	33.5	61.7	51.7	71.3	66.1	55.6	34.7	81.8	103	15.7	43.1	24.8
25	26.2	30.8	12.6	67.6	57.7	58.7	33.8	83.9	45.9	25.9	15.2	23.5
26	29.0	29.8	25.4	76.0	39.6	50.4	28.3	82.0	37.8	15.3	17.9	20.3
27	14.0	35.8	36.6	83.7	57.8	56.4	32.3	85.4	30.4	12.1	35.3	14.4
28	38.9	37.3	33.7	70.7	60.1	59.8	27.7	78.4	34.2	9.71	34.8	33.4
29	30.6		34.4	77.4	51.9	50.8	0	77.5	22.7	17.3	0	26.6
30	38.2		38.8	79.0	63.7	53.9	22.7	94.2	26.9	27.5	6.92	19.6
31	35.3		37.1		15.2		27.1	141		7.57		12.7
Sum	1,133.60	1,026.5	1,073.7	2,418.3	2,149.1	1,815.2	1,112.1	2,891.2	3,539.2	528.98	1,516.98	786.7

	Current Year 2001						Period 1968-2001		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters		
			@ High		@ Low				
Month	High	Low	Day		Day		Average	Total	Average	Maximum	Minimum
Jan.			13	88.1	20	7.50	36.6	97,943	157,480	311,728	47,600
Feb.			9	67.5	18	22.6	36.7	88,690	188,559	558,835	67,760
Mar.			24	51.7	25	12.6	34.6	92,768	208,737	552,528	65,454
April			7	106	19	56.7	80.6	208,941	251,065	705,205	61,564
May			8	105	31	15.2	69.3	185,682	381,031	948,240	125,635
June			7	79.8	12	49.9	60.5	156,833	339,368	950,659	57,491
July			22	81.3	!15	0	35.9	96,085	293,214	1,302,981	41,298
Aug.			31	141	1	40.2	93.3	249,800	284,604	1,262,218	69,984
Sept.			11	688	29	22.7	118	305,787	392,974	1,779,529	77,734
Oct.			5	63.8	6	5.16	17.1	45,704	345,850	1,684,800	45,704
Nov.			19	300	29	0	50.6	131,067	186,189	664,762	50,154
Dec.			1	45.1	31	12.7	25.4	67,971	153,748	376,047	43,033
Yearly				688		0	54.8	1,727,271	3,182,819	7,690,727	1,419,986

@ Mean daily ! And other days

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 Natural Resource Conservation 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 Watermaster.

In 1998, 273,977 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 1,059,156 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 "Diversions from the Rio Grande-United States Side below Rio Grande City" for the period 1922 through 1957 may be found in previous issues of these Water Bulletins. The area irrigated below Rio Grande City is about 99% of the total area 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.E

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 1998 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1										15.7	6.84	13.5
2										15.2	11.2	17.4
3										15.2	16.1	15.5
4										9.38	16.0	11.8
5										23.2	12.4	7.76
6										18.9	6.62	5.24
7										15.4	2.65	13.6
8										13.0	3.62	16.6
9										9.12	3.47	16.0
10										4.00	5.41	12.0
11										2.92	7.77	9.59
12										5.22	6.89	6.29
13										11.4	3.93	6.57
14										19.6	2.70	9.22
15										11.1	2.72	12.7
16										5.09	5.56	13.4
17										3.63	10.5	16.5
18										3.32	16.1	17.4
19										18.2	15.1	11.7
20										38.2	8.58	14.3
21										45.3	5.38	18.9
22										39.8	4.89	18.3
23										23.9	9.06	18.7
24										12.9	12.6	5.71
25										9.67	14.9	3.10
26										12.9	1.74	1.74
27										13.3	3.06	5.15
28										16.0	5.68	10.5
29										13.7	4.20	11.2
30										10.9	9.46	10.9
31										9.47		8.77
Sum										465.62		360.04
											235.13	

Current Year 1998					Period 1958-1998			
	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters		
Month	High	Low	@ High Day	@ High	@ Low Day	@ Low	Average	Total	Average	Maximum	Minimum
Oct.			21	45.3	11	2.92	15.0	40,230			
Nov.			! 3	16.1	26	1.74	7.84	20,315			
Dec.			21	18.9	26	1.74	11.6	31,107			
Yearly							33.6	1,059,156			

@ Mean daily ! And other days

1994 Bulletin, Page 8. Correct Mean Daily Discharge on June 22, 1994 is 100 CMS.

1999 Bulletin, Page 80. Correct Annual Volume for Piedras Negras Municipal Diversion is 18,699 Thousand Cubic Meters(TCM).

2000 Bulletin, Page 81. Correct Annual Volume and Ten-Year Maximum Annual Volume for Cd. Acuna Municipal Diversion is 5,784 TCM.

INTERNATIONAL BOUNDARY & WATER COMMISSION
UNITED STATES & MEXICO

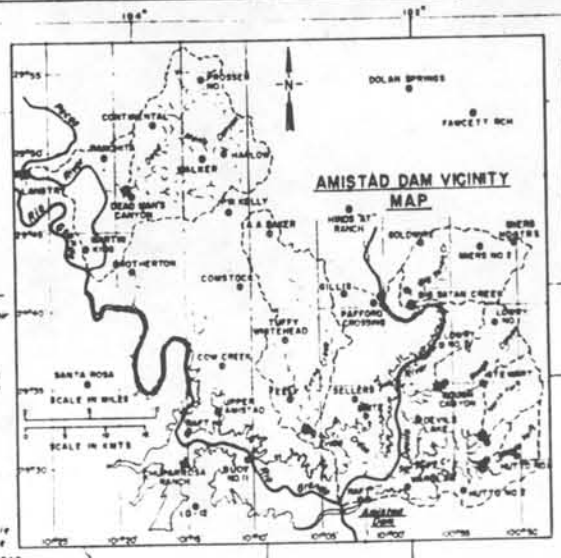
RIO GRANDE DRAINAGE BASIN

SCALE

0 25 50 75 100 125 MILES

0 50 100 150 200 KILOMETERS

AMISTAD DAM VICINITY MAP

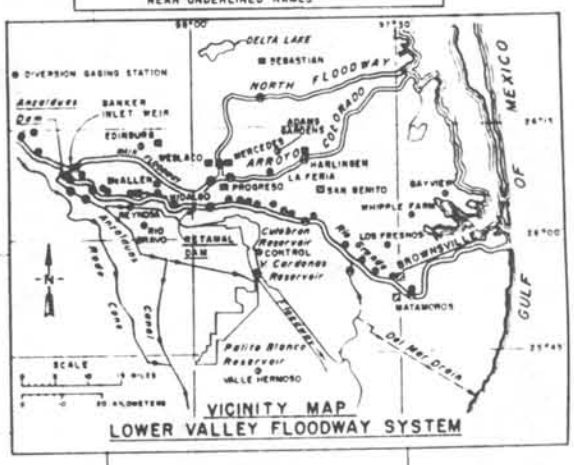


LEGEND

- STREAM GAGING STATION - I.B.W.C.
- OTHER GAGING STATION
- WATERSHED BOUNDARY
- RAINFALL STATION
- GOES. SATELLITE STATION
- RAINFALL STATION WITH RADIO TRANSMITTER

NOTE- EVAPORATION STATIONS LOCATED AT OR NEAR UNDERLINED NAMES

VICINITY MAP LOWER VALLEY FLOODWAY SYSTEM



VICINITY MAP MAVERICK IRRIGATION DISTRICT

LOCATION MAP

SAN LUIS VALLEY CLOSED BASIN
COLORADO
COLORADO RIVER BASIN
UNITED STATES
NEW MEXICO
TEXAS
CHIHUAHUA
COAHUILA
DURANGO
TAMAULIPAS
MEXICO
GULF OF MEXICO
RIO GRANDE BASIN
RIO YAQUI BASIN
RIO FUERTE BASIN
RIO NAZAS BASIN
NUECES RIVER BASIN
CLOSED BASIN
DRAINAGE BASIN OF THE MAPIMI BOLSON