

UNITED STATES OF AMERICA  
DEPARTMENT OF STATE

INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

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WATER BULLETIN NUMBER 74

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

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

**2004**

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## FOREWORD

This bulletin presents the seventy-fourth 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 2004.

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 2004 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 15,107,600 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 495,972 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 1954-2004, this flow has averaged 798,170 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 2004

## Along and Adjacent to the International Portion of the Rio Grande

During the year 2004, temperatures were about 0.3 degree Celsius above average on the watershed of the Rio Grande below El Paso, Texas. Evaporation was 93% of average. Precipitation was 145% of average from El Paso to Amistad Dam, 141% of average from Amistad Dam to Falcon Dam, 123% of average from Falcon Dam to Rio Grande City, and 99% 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 50% of average, ranging from 44% of average at Ft. Quitman to 68% at above Rio Conchos; 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 71% of average; and in the reach between Amistad Dam and Falcon Reservoir, where flows mostly originate from releases from Amistad Reservoir, the flow was 49% of average. Most of the flows passing the Rio Grande stations below Falcon Dam originated from releases from Falcon Reservoir, which in 2004 amounted to 712,668 thousand cubic meters, or 26% of the average for the fifty-one years of operation, 1954-2004. The estimated volume of flow passing to the Gulf of Mexico was 1,046,179 thousand cubic meters, which is 131% of the average for this fifty-one year period.

The total annual flow of all measured tributaries below Fort Quitman was 157% of average. The total flow of these tributaries in the United States was 1,395,754 thousand cubic meters, or 194% of average. For Mexico, the measured tributary flow, excluding Rio Alamo and Rio San Juan, was 1,451,636 thousand cubic meters, or 99% of average. The flows of the Rio Alamo and Rio San Juan were 42% and 371% of their respective averages.

Return flow to the Rio Grande at Maverick Power Plant near Eagle Pass was 591,616 thousand cubic meters, or 69% of the thirty-seven year average. Return flow to the Rio Grande through various drains in the Maverick County Irrigation District, excluding storm inflow, amounted to 13,983 thousand cubic meters, or 14% of the thirty-seven year average.

No significant flooding occurred on the Rio Grande in 2004. The highest peak flows recorded on the Rio Grande were, above Falcon Dam, 2,200 cubic meters per second at El Indio, Texas and Villa Guerrero, Coahuila and below Falcon Dam, 278 cubic meters per second below Anzalduas Dam near Reynosa, Tamaulipas (near Mission, Texas).

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 2004 was 5,631,800 thousand cubic meters, or 87% of the average 6,491,600 thousand cubic meters. In the United States, stored water in these reservoirs was 41% of average, while in Mexico it was 112% of average.

In International Amistad Reservoir there was a net increase in storage during the year of 1,751,900 thousand cubic meters. Storage ranged from a high of 3,635,100 thousand cubic meters on December 31 to a low of 1,883,200 thousand cubic meters on January 1 and averaged 2,498,200 thousand cubic meters during the year, or 81% of the average for the period 1969 through 2004. In International Falcon Reservoir, there was a net increase in storage during the year of 748,200 thousand cubic meters. The storage ranged from a high of 2,219,500 thousand cubic meters on December 13 to a low of 1,399,700 thousand cubic meters on January 19-20 and averaged 1,881,600 thousand cubic meters during the year, or 90% of the average for the period 1954 through 2004.

Diversions from the Rio Grande in the United States were 63% of average. Diversions into the American Canal were 55% of average, into the Maverick Canal, 60% of average and in the United States below Falcon Dam, 68% of the average for the period 1958-2004. In Mexico, diversions were 29% of average. Diversions into the Acequia Madre were 55% of average, while diversions through the Anzalduas Canal in Mexico were 28% of the 1952-2004 average.

In 2004, the total reported irrigated area from the Rio Grande and its tributaries below Caballo Dam showed a 23% decrease from the previous year. On the United States side, there was a decrease of about 3% above Falcon Dam and a decrease of about 0.1% below Falcon Dam, for an overall average decrease of 0.9%. On the Mexican side, there was a decrease of about 3% reported above Falcon Dam and a decrease of about 64% below Falcon Dam, for an overall decrease of 23%.

WATER BULLETIN NUMBER 74 -- 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 22 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 2004.

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	Occasional			
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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.22	0.28	15.9	* 19.0	12.9	31.2	* 54.1	16.3	* 13.1	0.48	0.31	* 0.25
2	.23	.28	* 32.9	19.2	12.8	38.2	66.6	16.4	11.4	.48	.31	.25
3	.23	* .27	49.3	19.2	12.9	39.6	67.1	14.8	11.5	.45	.31	.26
4	.23	.27	50.7	19.1	* 12.7	41.1	67.4	* 15.0	11.6	.48	.34	.26
5	.23	.26	45.9	19.1	12.3	34.8	68.3	16.0	11.6	.48	.34	.26
6	* .23	.24	46.4	19.3	12.4	* 34.3	63.7	16.1	11.7	.45	.34	.28
7	.24	.24	46.7	19.3	12.4	43.3	60.9	16.0	12.1	.42	.34	.27
8	.24	.24	* 41.3	19.3	12.5	45.9	61.5	15.9	11.8	* .42	* .34	.27
9	.25	.24	31.4	19.3	12.5	36.0	62.0	15.9	12.9	.42	.34	.28
10	.25	.23	30.9	19.3	12.5	37.7	62.9	15.8	12.3	.40	.34	.28
11	.26	.22	32.0	19.2	12.7	36.8	64.0	15.7	12.5	.42	.34	.28
12	.26	.21	32.3	16.2	12.4	36.5	64.3	18.6	12.6	.42	.34	.28
13	.31	.22	32.6	9.71	12.0	36.5	60.9	46.2	12.7	.40	.31	.28
14	.34	.22	32.9	9.77	12.1	43.3	60.3	62.3	12.7	.40	.28	.26
15	.34	.22	29.2	* 9.77	12.1	55.8	* 61.7	58.9	12.8	.40	.27	.23
16	.34	.22	33.7	9.83	12.1	* 60.6	75.6	29.7	12.9	.40	.28	.22
17	.34	* .22	33.4	9.91	* 12.1	48.4	89.5	23.3	13.0	.40	.28	.21
18	.37	.20	34.6	9.97	12.1	40.8	89.8	22.7	13.1	.40	.28	.21
19	.37	.19	34.8	10.0	11.8	41.1	89.8	* 29.5	13.2	.40	.28	.21
20	.37	.18	35.1	10.1	12.2	41.3	90.1	33.7	13.3	* .37	.31	.22
21	* .37	.19	35.1	10.1	12.2	41.6	79.9	33.4	13.4	.34	.31	.21
22	.34	.19	36.0	10.2	12.3	42.2	57.2	33.4	* 13.5	.34	.31	.20
23	.34	.19	36.5	10.1	12.3	47.6	39.9	24.8	13.4	.34	.28	.20
24	.34	.19	36.8	10.1	12.4	43.3	39.9	16.7	9.18	.34	.31	.23
25	.34	.23	37.1	10.1	12.5	43.3	40.2	16.6	.68	.34	.28	.20
26	.31	7.87	37.7	10.0	13.7	43.3	40.8	16.5	.59	.34	.27	.19
27	.31	21.4	37.9	9.83	12.8	43.6	24.0	16.4	.57	.34	.27	.17
28	.31	.37	38.8	7.67	12.9	43.6	16.1	16.3	.54	.34	.27	.17
29	.31	.34	39.4	12.9	13.1	43.9	16.1	16.2	.54	.34	.26	.18
30	.31		38.8	12.8	13.2	43.9	16.2	16.1	.51	.34	.26	.18
31	.28		24.9		13.3		15.4	16.0		.34		.18
Sum	9.21	35.62	1,121.0	410.36	388.2	1,259.5	1,766.2	721.2	301.71	12.23	9.10	7.17

Current Year 2004

Period 1938-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 18	0.37	1	0.22	0.30	796	28,698	147,406	247
Feb.			27	21.4	20	.18	1.23	3,078	53,693	207,297	232
Mar.			4	50.7	1	15.9	36.2	96,854	92,395	174,074	1,261
April			! 6	19.3	28	7.67	13.7	35,455	104,580	199,454	13,824
May			26	13.7	19	11.8	12.5	33,540	114,896	576,485	632
June			16	60.6	1	31.2	42.0	108,821	128,966	447,576	20,862
July			20	90.1	31	15.4	57.0	152,600	124,343	305,796	51,006
Aug.			14	62.3	3	14.8	23.3	62,312	94,228	178,200	11,761
Sept.			22	13.5	30	.51	10.1	26,068	45,064	159,174	201
Oct.			! 1	.48	! 21	.34	.39	1,057	20,042	154,731	183
Nov.			! 4	.34	! 28	.26	.30	786	15,413	195,408	91.5
Dec.			! 6	.28	! 27	.17	.23	619	21,491	160,055	112
Yearly				90.1		0.17	16.5	521,986	843,809	2,243,367	226,236

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

WATER BULLETIN NUMBER 74 -- 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 44 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 2004.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. In addition to the outflow from Caballo Dam listed below, 1,224 TCM of water were diverted in 2004 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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.07	0.03	0.03	40.1	0.08	39.0	35.8	37.5	37.9	0.10	0.09	0.05
2	.07	.03	.03	35.9	.08	49.0	* 33.9	33.7	32.3	.10	.09	.05
3	.07	.03	.03	* 34.0	.08	51.7	32.4	30.4	* 33.6	.10	.09	.05
4	.07	.03	.03	31.7	.08	43.6	32.0	31.5	36.5	.10	.09	.05
5	.07	.03	.03	23.9	.08	41.7	32.0	30.9	33.8	.10	.09	.05
6	.07	.03	.03	19.5	.08	41.7	* 35.1	* 34.9	32.1	.10	.09	.05
7	.07	.03	.03	19.4	.08	43.4	36.1	* 39.2	* 30.1	.10	.09	.05
8	.07	.03	.03	19.3	.08	45.9	43.0	38.8	28.9	.10	.09	.05
9	.07	.03	.03	* 19.4	.08	47.9	* 54.0	38.7	28.8	.10	.09	.05
10	.07	.03	.03	14.8	.08	46.8	58.4	* 41.8	* 28.6	.10	.09	.05
11	.07	.03	.03	7.70	.08	42.7	58.5	48.9	27.6	.10	.09	.05
12	.07	.03	15.9	7.19	.08	42.7	55.4	54.6	27.6	.10	.09	.05
13	.07	.03	* 28.6	* 6.51	.08	42.3	* 52.9	* 51.4	26.1	.10	.09	.05
14	.07	.03	28.4	4.28	.08	42.7	55.2	37.4	* 23.4	.10	.09	.05
15	.07	.03	37.1	4.19	.08	* 46.6	* 57.1	33.1	21.7	.10	.10	.05
16	.07	.03	* 42.6	4.28	.08	49.2	* 52.7	26.6	21.7	.10	.12	.05
17	.06	.03	43.6	4.39	.08	49.3	49.4	* 24.1	* 19.7	.10	.12	.05
18	.05	.03	44.9	4.50	.08	* 47.5	49.6	31.3	14.0	.10	.12	.05
19	.05	.03	41.6	1.64	.08	46.0	49.8	32.4	13.2	.10	.12	.05
20	.05	.03	* 39.1	.08	.08	45.8	* 46.4	* 30.9	12.0	.10	.12	.05
21	.05	.03	39.1	.08	8.33	47.9	44.2	30.9	* 9.69	.10	.10	.05
22	.05	.03	37.6	.08	* 16.0	* 49.6	43.2	29.2	9.71	.10	.08	.05
23	.04	.03	* 34.9	.08	16.0	49.8	41.3	32.9	9.80	.10	.08	.05
24	.03	.03	36.9	.08	16.0	48.3	44.8	* 39.3	13.1	.10	.08	.05
25	.03	.03	38.6	.08	* 16.0	* 44.4	47.0	43.3	8.21	.10	.08	.05
26	.03	.03	* 32.9	.08	17.6	40.2	43.6	41.6	6.51	.10	.08	.05
27	.03	.03	28.1	.08	18.6	39.4	* 39.2	* 42.4	6.68	.10	.08	.05
28	.03	.03	27.7	.08	* 23.7	42.1	37.6	42.3	* 3.57	.08	.08	.05
29	.03	.03	30.6	.08	* 28.8	* 41.1	37.4	42.3	.16	.05	.07	.05
30	.03	.03	* 35.6	.08	28.9	35.8	* 37.7	40.8	* .10	.07	.05	.05
31	.03	.03	40.1	.08	28.8		37.6	* 38.9		.09		.05
Sum	1.71	0.87	704.23	303.56	220.33	1,344.1	1,373.3	1,152.0	597.13	2.99	2.74	1.55

Current Year 2004

Period 1938-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 1	0.07	! 24	0.03	0.06	148	5,278	146,403	23.7
Feb.			! 1	.03	! 1	.03	.03	75.2	17,677	138,207	14.4
Mar.			18	44.9	! 1	.03	22.7	60,845	111,665	200,839	28,934
April			1	40.1	! 20	.08	10.1	26,228	99,213	261,905	26,228
May			30	28.9	! 1	.08	7.11	19,037	100,925	508,691	92.8
June			3	51.7	30	35.8	44.8	116,130	136,836	436,371	31,193
July			11	58.5	! 4	32.0	44.3	118,653	143,760	309,079	34,748
Aug.			12	54.6	17	24.1	37.2	99,533	128,119	220,412	25,320
Sept.			1	37.9	30	.10	19.9	51,592	67,151	223,812	8,335
Oct.			! 1	.10	29	.05	.10	258	13,153	151,369	19.1
Nov.			! 16	.12	30	.05	.09	237	3,360	101,642	8.8
Dec.			! 1	.05	! 1	.05	.05	134	4,574	180,557	7.5
Yearly				58.5		0.03	15.6	492,870	831,711	2,215,231	254,198

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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-3640.00 RIO GRANDE AT EL PASO, TEXAS

DESCRIPTION: Cableway, bubbler gage, water-stage recorder and data collection platform with GOES high data rate telemetry located on the left bank 60 meters upstream from the Courchesne Bridge at latitude 31 48' 10", longitude 106 32' 25", and river kilometer 2,021; 8.9 river kilometers upstream from the Paso del Norte Bridge between El Paso, Texas and Cd. Juarez, Chihuahua and 2.7 kilometers upstream from the American Dam at El Paso, Texas. The zero of the gage is 1,134.56 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 22 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 2004.

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
Monthly:	Max.	405	June 1905
Yearly:	Max.	78.7	1905
	Min.	0	Occasionally
	Min.	0	Occasionally
	Min.	1.99	1902

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.04	0.04	* 0.30	* 6.53	0.33	10.8	23.8	18.4	17.6	16.5	* 0.38	0.30
2	.04	.01	.56	9.65	.32	* 11.1	* 18.2	21.5	17.9	10.7	.37	.30
3	.09	.03	1.32	8.07	.31	13.0	13.0	22.6	16.7	7.04	.39	* .29
4	.03	* .16	1.75	6.74	.30	17.4	14.8	22.0	13.3	5.51	.38	.33
5	* .09	.04	.60	8.32	.27	26.3	15.3	* 20.8	12.7	* 4.39	.36	.34
6	.06	.01	.62	12.6	.30	17.4	15.9	21.5	* 19.3	3.36	.36	.30
7	.19	.06	.36	10.0	.31	13.7	15.3	13.1	* 18.7	2.71	.36	.31
8	.36	.05	.44	4.16	.31	14.5	15.0	18.7	15.1	2.05	.35	.32
9	* .50	.02	.84	3.21	.29	14.0	13.9	17.2	15.8	1.85	.35	.33
10	.66	.01	1.07	4.17	.30	12.6	12.2	15.4	16.4	1.62	.34	.30
11	.69	.53	1.22	5.97	.30	12.0	13.2	17.7	17.9	1.60	.33	.31
12	.67	.01	1.49	13.7	.28	12.6	17.9	18.3	15.4	1.06	.32	.33
13	1.03	.04	1.11	13.0	.28	11.6	17.3	19.7	15.9	1.36	.35	.35
14	1.21	.07	.95	7.87	* .42	16.8	18.1	36.0	15.7	1.29	1.05	.38
15	1.52	.04	.95	6.17	.82	17.5	18.4	36.0	16.0	1.30	.45	.38
16	.90	.06	5.24	5.23	1.44	15.8	21.4	27.3	* 14.2	1.10	.45	.38
17	.70	.15	11.8	4.51	1.23	* 15.2	23.7	30.0	15.2	1.06	.39	.37
18	.50	.16	15.3	4.16	.29	17.4	25.0	30.4	14.7	.89	.35	.38
19	.60	.13	16.8	3.95	.30	17.2	23.9	18.3	16.4	.80	.30	.39
20	.87	.21	19.4	3.87	.33	17.6	24.5	22.1	13.9	.76	.25	* .38
21	1.57	.14	18.5	* 3.78	.32	15.5	25.4	20.0	15.3	* .69	.26	.41
22	.65	.25	17.8	2.35	.33	14.6	22.1	17.0	12.1	.65	.34	.41
23	.56	.46	18.9	1.17	.32	15.0	18.3	16.8	9.46	.61	.40	.42
24	.70	.58	* 17.9	1.10	.35	18.4	20.2	* 15.5	9.09	.56	.33	.42
25	.53	.40	15.6	.85	.31	18.0	19.0	13.7	8.17	.54	.31	.42
26	* .47	.48	15.1	.59	.28	15.6	23.2	19.5	8.84	.53	.30	.43
27	.36	.57	14.5	.43	.41	15.2	26.3	17.8	26.1	.55	.29	.44
28	.35	.49	9.26	* .44	.23	13.9	24.4	15.1	12.7	.49	.29	.44
29	.32	.35	5.43	.40	1.68	20.2	20.2	14.1	9.62	.43	.29	.43
30	.16		5.74	.34	3.32	24.8	18.7	17.0	12.0	.42	.29	.43
31	.12		5.97		9.43		17.3	17.8		.41		.43
Sum	16.54	5.55	226.82	153.33	25.71	475.7	595.9	631.3	442.18	72.83	10.98	11.45

Current Year 2004

Period 1938-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.095	0.875	21	4.44	! 1	0	0.53	1,429	10,886	150,048	271
Feb.	1.075	.825	11	3.07	! 2	0	.19	480	13,115	122,304	167
Mar.	1.505	.825	21	20.1	1	.10	7.32	19,597	48,820	140,433	2,204
April	1.460	.885	12	18.2	30	.31	5.11	13,248	51,419	171,563	8,414
May	1.290	.865	31	11.7	28	.16	.83	2,221	55,552	439,894	644
June	1.750	1.250	5	34.6	13	9.38	15.9	41,100	69,403	375,353	7,421
July	1.800	1.350	1	34.7	10	11.7	19.2	51,486	78,442	244,070	11,904
Aug.	1.810	1.350	14	41.1	7	11.6	20.4	54,544	72,333	194,405	6,007
Sept.	1.705	1.090	27	35.4	29	3.91	14.7	38,204	49,319	211,481	2,995
Oct.	1.455	.870	1	18.5	!30	.39	2.35	6,293	23,042	163,710	186
Nov.	1.075	.880	14	2.24	19	.19	.37	949	12,447	124,457	282
Dec.	.965	.880	4	.77	4	.25	.37	989	12,246	197,341	254
Yearly	1.810	0.825		41.1		0	7.29	230,540	497,024	1,923,317	70,867

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

WATER BULLETIN NUMBER 74 -- 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 data collection platform with GOES high data rate telemetry 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 17 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 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.54	0.58	0.44	3.11	0.37	10.7	* 20.4	12.8	* 17.3	15.7	* 0.77	0.71
2	.54	.43	* .41	6.16	.36	* 10.4	14.5	15.0	17.1	11.0	.75	.70
3	.58	.43	.47	4.74	.34	11.1	11.6	14.8	16.8	7.02	.77	* .69
4	.55	* .50	.57	3.23	* .34	13.6	13.1	14.7	15.7	* 5.04	.73	.84
5	.55	.47	.56	4.64	.33	20.4	13.3	* 13.9	14.7	4.00	.73	1.02
6	.57	.45	.63	8.50	.33	14.3	13.5	15.3	20.4	2.22	.72	.76
7	.58	.47	.66	* 6.65	.33	12.1	13.2	9.21	19.7	1.85	.70	.72
8	* .56	.49	.70	1.52	.33	12.2	13.0	12.8	15.4	1.57	.69	.75
9	.53	.46	.77	.57	.33	11.4	12.1	12.1	14.3	1.24	.74	.73
10	.58	.42	.82	.94	.33	11.6	10.3	10.6	14.4	.95	.74	.76
11	.57	.46	.90	1.56	.33	11.6	11.0	12.0	15.4	.99	.78	.79
12	.54	.39	1.20	9.59	.33	12.0	14.5	12.3	14.1	.89	.74	.77
13	.57	.39	1.07	8.68	.33	10.9	14.9	13.6	14.2	.51	.88	.77
14	.61	.40	1.10	4.74	.33	13.2	15.6	24.5	13.5	.43	4.03	.77
15	.65	.39	1.11	2.84	.33	13.8	15.7	24.3	14.0	.55	1.24	.76
16	.62	.37	5.38	2.05	.33	13.6	16.1	19.9	13.8	.52	1.36	.76
17	.59	.36	13.7	1.43	.33	13.4	17.6	21.0	14.7	.68	1.05	.78
18	.56	.50	* 16.9	1.20	.33	14.9	18.6	22.0	14.2	.61	.86	.82
19	.59	.53	17.7	1.10	.33	14.8	18.5	14.1	14.4	.51	.74	.80
20	.60	.49	19.1	.93	.33	15.2	18.9	15.9	13.1	.50	.60	.78
21	.64	.47	18.2	* .74	.33	14.0	19.4	14.7	11.8	.49	.68	* .74
22	.61	.46	15.5	.89	.34	13.9	17.8	12.5	11.2	.49	1.01	.71
23	.57	.47	14.8	1.33	.35	13.9	15.1	12.2	8.53	.60	1.10	.72
24	.60	.56	13.7	.97	.33	16.2	16.2	11.3	7.92	.63	.86	.68
25	.60	.49	12.0	.77	.32	16.9	15.8	12.9	8.52	.66	.77	.67
26	* .61	.52	10.9	.57	.32	14.9	17.8	17.6	9.06	* .82	.71	.71
27	.62	.50	9.46	.45	.39	14.5	20.8	16.7	21.1	.94	.72	.79
28	.61	.48	5.72	.44	.30	14.4	19.7	14.9	12.0	.83	.69	.74
29	.61	.48	2.21	.41	1.47	19.2	16.6	13.9	8.24	.76	.70	.74
30	.60		2.41	.41	3.14	21.3	15.3	16.1	13.1	.81	.68	.70
31	.58		2.66		8.82		14.0	16.8		.82		.71
Sum	18.13	13.41	191.75	81.16	22.80	420.4	484.9	470.41	418.67	64.63	27.54	23.39

Current Year 2004

Period 1939-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.955	0.820	24	0.87	12	0.29	0.58	1,566	5,298	51,241	0
Feb.	.935	.820	1	.79	!12	.31	.46	1,159	9,242	62,253	0
Mar.	2.495	.840	20	19.5	1	.35	6.19	16,567	40,445	69,130	0
April	2.185	.840	12	12.4	30	.40	2.71	7,012	35,816	87,408	0
May	2.025	.830	31	10.9	!27	.30	.74	1,970	35,085	85,163	0
June	2.770	1.840	29	26.6	1	9.54	14.0	36,323	46,856	80,984	0
July	2.665	1.735	! 1	25.2	10	9.81	15.6	41,895	54,496	87,171	0
Aug.	2.870	1.790	14	28.6	7	7.86	15.2	40,643	52,770	92,064	0
Sept.	2.830	1.700	27	25.7	29	6.33	14.0	36,173	37,195	77,877	0
Oct.	2.475	.770	1	18.3	21	.22	2.08	5,584	18,088	59,131	0
Nov.	1.695	.790	14	9.45	29	.32	.92	2,379	8,535	37,208	0
Dec.	1.060	.815	4	2.23	2	.33	.75	2,021	7,829	55,112	0
Yearly	2.870	0.770		28.6		0.22	6.11	193,292	351,655	668,068	7,603

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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

DESCRIPTION: Cableway, bubbler gage, water-stage recorder and data collection platform with GOES high data rate telemetry 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 47 current-meter measurements during the year, and a continuous record of gage heights. Computations by shifting control methods. Records available: June 1938 through 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.01	0.01	0.09	* 3.69	0.24	* 1.52	* 4.22	4.12	* 0.24	0.02	0.01	0.02
2	.01	.01	.11	* 3.74	.25	2.16	* 4.37	* 4.09	.29	.02	.01	* .02
3	.01	.01	.14	3.67	.24	2.12	4.39	4.10	.27	.02	.01	.02
4	0	.02	* .12	3.73	.15	* 2.11	4.50	4.13	.23	* .01	.01	.02
5	0	.02	.11	* 3.76	* .14	2.10	4.53	4.19	.20	.01	.01	.02
6	0	.02	.11	* 3.66	.17	2.04	* 4.37	* 4.16	.21	.01	.01	.02
7	0	.02	.12	3.64	.15	* 2.17	4.21	4.15	.24	.01	.01	.02
8	0	.03	.13	3.62	.15	2.16	4.25	4.16	.20	.01	.01	.02
9	0	.03	.15	* 3.62	.13	2.15	* 4.17	* 4.15	.19	.01	.01	.02
10	0	.03	.14	3.82	.13	* 2.14	4.10	4.11	* .19	.01	.01	.02
11	0	.03	.18	3.81	.12	2.09	* 4.05	4.04	.18	.01	.02	.02
12	0	.04	.18	* 3.81	.11	2.03	* 4.11	4.02	.17	.01	.02	.02
13	0	.04	.17	3.68	.11	2.10	4.24	* 4.14	.19	.01	.02	.02
14	0	.04	.18	3.64	.12	* 2.22	4.26	4.64	.18	.01	.03	.02
15	0	.04	.56	3.88	.13	2.22	4.27	4.34	.17	.01	.03	.02
16	0	.05	1.06	* 3.81	.13	2.08	* 4.28	* 3.99	.18	.01	.02	.02
17	0	.05	1.02	3.71	.13	2.02	4.17	3.80	.20	.01	.02	.02
18	0	.05	.92	3.71	.14	* 1.97	4.15	3.88	.21	.01	.02	.02
19	0	.06	.90	* 3.63	.15	1.94	* 4.15	3.74	.22	.01	.02	.02
20	0	.06	.95	3.68	* .16	1.89	4.17	* 3.85	.19	.01	.02	.02
21	.01	.06	.99	3.83	.16	* 1.87	4.17	4.11	* .20	.01	.01	.02
22	.01	.07	* 2.62	2.61	.13	1.92	4.21	4.25	* .20	.01	.02	.02
23	.01	.07	* 3.59	.28	.12	1.94	* 4.22	* 4.18	.17	.01	.01	.02
24	.01	.07	3.60	.26	.11	2.02	4.15	3.90	.11	.02	.01	.02
25	.01	.07	3.55	.25	.11	* 1.93	4.10	.43	.07	.01	.02	.02
26	0	.08	* 3.74	* .26	.10	1.89	* 4.46	.37	.06	.01	.02	.02
27	0	.08	3.76	.25	.09	1.97	4.30	.36	.07	.01	.02	.02
28	0	.08	3.76	.25	.09	* 2.04	4.29	.33	.04	.02	.02	.02
29	0	.08	* 3.82	.26	.09	2.15	4.25	.26	.04	.01	.02	.02
30	.01		3.76	.22	.09	2.99	* 4.18	.26	.03	.01	.02	.02
31	.01		3.67	.11	.11		4.14	.23		.01		.02
Sum	0.10	1.32	44.20	82.78	4.25	61.95	131.43	100.48	5.14	0.36	0.49	0.62

Current Year 2004

Period 1939-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.360	1.330	1	0.02	! 3	0	0	8.6	5,677	98,781	0
Feb.	1.360	1.340	! 28	.09	! 1	.01	.05	114	3,818	60,041	0
Mar.	1.750	1.345	24	4.25	! 1	.09	1.43	3,819	7,719	79,572	99.8
April	1.760	1.410	16	4.66	! 27	.21	2.76	7,152	14,839	91,915	2,752
May	1.435	1.305	2	.27	5	.05	.14	367	19,648	369,945	31.1
June	1.735	1.435	30	4.29	1	.14	2.07	5,352	21,597	308,855	0
July	1.780	1.710	26	5.18	11	3.86	4.24	11,356	23,948	191,605	1,193
Aug.	1.895	1.235	13	8.12	27	0	3.24	8,681	18,753	140,115	46.3
Sept.	1.410	1.305	1	.42	! 29	.03	.17	444	11,232	152,960	66.4
Oct.	1.315	1.280	1	.03	! 4	0	.01	31.1	4,713	104,679	22.2
Nov.	1.355	1.280	14	.06	! 1	.01	.02	42.3	3,928	87,256	0
Dec.	1.325	1.290	24	.04	! 2	.01	.02	53.6	4,428	142,194	0
Yearly	1.895	1.235		8.12		0	1.18	37,421	140,300	1,349,111	12,337

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

WATER BULLETIN NUMBER 70 -- 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' 40", longitude 106 30' 30", about 80 meters downstream from the canal intake at the International Dam at Cd. Juarez, Chihuahua, which is located at river kilometer 2,015 and 3.4 river kilometers downstream from the American Dam at El Paso, Texas.

RECORDS: Flow records provided by Mexican Section. Records available: 1938 through 2000. 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.

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

Average Flow in Cubic Meters per Second

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	4.92	2.33	* 4.51	4.78	4.79	* 5.20	0	0	0
2	0	0	0	4.97	* 2.11	* 4.61	.43	* 5.11	5.18	0	0	0
3	0	0	0	* 4.93	* 2.25	5.09	* 3.68	5.39	5.32	0	0	0
4	0	0	0	4.86	* 2.41	5.02	5.74	* 5.17	* 5.45	0	0	0
5	0	0	0	* 4.88	2.39	* 5.11	* 5.85	5.29	5.24	0	0	0
6	0	0	0	4.65	2.44	4.60	5.81	5.26	* 5.23	0	0	0
7	0	0	0	* 4.67	2.44	* 4.92	* 5.63	* 5.56	5.17	0	0	0
8	0	0	0	4.78	* 2.47	4.66	5.73	5.36	* 5.25	0	0	0
9	0	0	0	4.77	2.40	* 5.04	5.69	* 5.58	5.14	0	0	0
10	0	0	0	* 5.01	* 2.33	4.93	5.87	5.66	5.33	0	0	0
11	0	0	0	5.06	2.17	4.88	5.85	* 5.49	* 5.54	0	0	0
12	0	0	0	* 5.04	* 2.19	* 4.94	5.91	5.69	5.29	0	0	0
13	0	0	0	5.13	2.14	4.90	6.08	5.52	5.37	0	0	0
14	0	0	0	* 5.09	2.17	* 4.90	6.02	* 5.16	* 5.37	0	0	0
15	0	0	0	4.90	* 2.30	4.91	5.63	5.40	* 5.24	0	0	0
16	0	0	0	4.77	2.41	* 5.04	5.58	* 5.11	5.14	0	0	0
17	0	0	* 1.97	* 4.76	* 2.40	4.98	* 5.83	4.97	5.15	0	0	0
18	0	0	2.58	5.00	2.26	5.75	5.92	* 4.92	.74	0	0	0
19	0	0	2.67	* 4.93	* 2.19	* 6.31	* 5.91	5.63	0	0	0	0
20	0	0	* 4.08	4.94	2.12	5.15	5.74	5.60	0	0	0	0
21	0	0	4.95	5.02	2.16	* 5.07	* 5.60	* 5.51	0	0	0	0
22	0	0	* 4.85	5.16	* 2.10	5.18	5.79	5.31	0	0	0	0
23	0	0	4.85	5.10	2.07	* 5.42	* 5.86	* 5.36	0	0	0	0
24	0	0	* 4.77	* 5.09	* 1.95	5.10	* 5.92	5.37	0	0	0	0
25	0	0	4.71	4.98	1.89	5.42	5.48	* 5.65	0	0	0	0
26	0	0	4.73	* 5.01	* 2.07	* 5.37	* 5.53	5.81	0	0	0	0
27	0	0	* 4.67	5.05	2.19	5.26	5.55	5.60	0	0	0	0
28	0	0	4.85	* 5.28	2.23	* 5.96	* 5.59	* 5.47	0	0	0	0
29	0	0	* 5.04	5.31	* 2.38	5.76	5.54	5.46	0	0	0	0
30	0	0	5.29	3.52	2.36	* 5.52	* 5.84	* 5.31	0	0	0	0
31	0	0	* 5.23	* 3.98			* 5.53	5.12	0	0	0	0
Sum	0	0	65.24	147.58	71.30	154.31	169.91	166.63	90.35	0	0	0

Current Year 2000

Period 1938-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	0	0	! 1	0	! 1	0	0	0	39.7	2,504	0
Feb.	0	0	! 1	0	! 1	0	0	0	147	9,264	0
Mar.	1.040	.010	31	5.50	! 17	0	2.10	5,637	2,515	9,807	0
April	1.390	.780	29	5.37	30	2.24	4.92	12,751	10,565	15,274	0
May	1.550	.690	31	5.55	25	1.69	2.30	6,160	10,455	19,869	0
June	2.240	1.330	19	8.99	8	4.31	5.14	13,332	11,186	19,360	0
July	1.830	.190	14	6.68	3	.38	5.48	14,680	11,581	18,714	0
Aug.	1.830	1.260	17	6.23	18	3.47	5.38	14,397	11,166	15,665	0
Sept.	1.730	0	! 1	5.74	! 19	0	3.01	7,806	5,278	15,269	0
Oct.	0	0	! 1	0	! 1	0	0	0	57.9	1,743	0
Nov.	0	0	! 1	0	! 1	0	0	0	0	0	0
Dec.	0	0	! 1	0	! 1	0	0	0	0	0	0
Yearly	2.240	0		8.99		0	2.36	74,763	62,995	103,511	8,207

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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

DESCRIPTION: Cableway, bubbler gage, water-stage recorder and data collection platform with GOES high data rate telemetry 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 24 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.07	1.02	0.59	* 0.57	0.44	0.20	1.38	1.81	3.42	* 6.25	4.00	* 3.54
2	1.04	* 1.10	.56	.50	.34	.31	.92	1.60	* 1.92	5.79	3.28	3.40
3	1.09	1.09	* .54	.60	* .24	* .29	.68	* 2.18	.74	6.33	* 2.17	3.40
4	1.19	1.38	.55	.96	.18	.24	.44	3.34	.77	6.08	1.45	3.45
5	1.17	1.53	.60	1.66	.14	.29	.27	5.29	1.35	12.5	1.56	3.53
6	* 1.10	1.16	.59	1.17	.19	.24	.18	2.88	1.92	* 47.7	2.47	3.51
7	1.10	1.12	.65	1.74	.32	.29	* .13	2.56	1.16	9.71	2.51	3.58
8	1.14	1.08	.67	1.27	.17	.23	.14	2.73	.91	7.57	2.53	3.66
9	1.17	1.05	.70	.65	.15	.36	.18	17.3	.81	7.68	2.55	3.98
10	1.12	1.02	.50	1.89	.17	.23	.17	2.09	.74	6.08	3.03	3.94
11	1.07	.99	.66	1.40	.25	.22	.07	1.20	.67	7.81	3.16	3.96
12	1.01	1.06	1.37	1.08	.15	.22	.04	.91	.69	6.94	3.82	3.72
13	1.07	1.05	1.03	.94	.16	.19	.06	1.45	1.09	* 5.61	3.57	3.92
14	1.19	1.02	.59	.79	.52	.13	.16	32.4	.91	4.46	3.48	4.06
15	1.20	1.25	.55	* .69	8.62	.12	1.17	4.04	* .84	3.34	4.50	3.99
16	1.28	1.37	.48	.80	2.85	* .13	.27	4.60	.66	3.41	6.95	3.98
17	1.19	1.17	.47	1.29	2.79	.10	.18	5.31	.76	3.55	* 8.28	3.42
18	1.73	.93	.44	.48	4.64	.12	.16	* 11.5	.63	4.14	* 6.35	3.28
19	1.18	.88	* .39	.29	3.62	.15	.18	6.60	.71	3.97	5.38	3.18
20	1.14	.97	.30	.26	1.94	.13	.20	6.02	.74	3.81	4.76	3.09
21	* 1.21	.92	.29	.25	1.05	.11	.20	6.29	1.83	3.49	5.26	3.09
22	1.33	.88	.31	.24	.31	.17	.17	6.59	1.96	2.95	5.89	* 3.24
23	1.65	.85	.32	.23	.22	.33	.16	6.02	1.75	2.71	5.41	3.35
24	1.57	.85	.27	.15	.21	.16	.50	4.72	1.98	2.69	5.12	3.38
25	1.40	.79	.32	.11	.59	.12	9.92	2.87	28.1	2.65	4.74	3.36
26	1.39	.71	.36	.03	* .31	.14	1.04	2.07	6.70	2.84	4.31	3.31
27	1.16	.78	.30	.24	.25	.47	* 17.8	1.34	7.29	3.06	4.15	3.29
28	1.15	.68	.28	.36	.34	5.95	20.1	1.16	5.58	3.08	3.98	3.36
29	1.11	.57	.31	.24	.26	1.53	5.75	9.90	6.53	2.79	3.81	3.39
30	1.02		.48	.24	.17	1.00	4.36	4.43	4.65	3.33	3.70	3.39
31	1.03		.51		.17		1.78	4.43		3.58		3.39
Sum	37.27	29.27	15.98	21.12	31.76	14.17	68.76	165.63	87.81	195.90	122.17	109.14

Current Year 2004

Period 1938-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.345	1.255	18	1.97	! 12	0.98	1.20	3,220	11,304	96,674	0
Feb.	1.325	1.180	5	1.78	29	.52	1.01	2,529	8,738	68,720	0
Mar.	1.360	1.095	12	2.68	! 21	.24	.52	1,381	7,960	72,889	0
April	1.820	.945	10	14.7	! 25	0	.70	1,825	10,029	94,942	0
May	2.475	1.025	15	65.0	27	.04	1.02	2,744	15,030	381,665	0
June	1.985	1.030	28	30.8	! 17	.08	.47	1,224	13,493	295,595	0
July	3.190	1.055	28	121	12	.02	2.22	5,941	19,582	173,266	4.7
Aug.	3.220	1.180	14	115	12	.63	5.34	14,310	18,184	158,563	20.6
Sept.	3.195	1.285	25	103	2	.56	2.93	7,587	20,593	181,266	0
Oct.	3.590	1.375	6	141	18	1.68	6.32	16,926	21,037	114,377	0
Nov.	1.950	1.415	16	10.4	4	1.37	4.07	10,555	14,521	106,523	0
Dec.	1.700	1.550	13	4.62	17	2.70	3.52	9,430	14,652	152,593	0
Yearly	3.590	0.945		141		0	2.46	77,672	175,123	1,569,390	2,050

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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

DESCRIPTION: Cableway, bubbler gage, DCP with GOES high data rate telemetry, and water stage digital 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 1,672.05 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 871.16 meters above mean sea level, U.S.C. & G.S. datum.  
RECORDS: Based on 24 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: November 19, 1975 through 2004.  
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. From June 1979 to June 25, 2003 the zero of the gage was 871.11 meters above mean sea level, U. S. C. & G. S. datum. On June 25, 2003, a flash flood destroyed the station. A new station at the same site was constructed on November 13, 2003.  
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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.33	0.58	0.34	0.02	0.01	0	0.07	6.61	5.76	21.9	2.77	5.66
2	.32	* .50	.33	.02	.01	0	.04	5.55	4.56	15.2	* 4.30	5.26
3	.32	.48	.32	.01	* .01	16.5	.03	3.05	4.34	4.70	2.65	4.86
4	.31	.47	.32	1.14	.01	.89	.02	* 2.98	2.73	2.71	1.46	4.47
5	.31	.46	.32	2.73	.01	.03	0	2.35	1.55	3.13	1.07	4.13
6	* .33	.45	.30	* 4.38	.01	.02	0	.76	.86	* 4.79	.52	* 3.76
7	.33	.47	.30	5.01	.02	.01	0	.42	.58	7.19	.34	3.44
8	.34	.50	.29	.21	.02	.01	0	1.13	* .40	16.5	.33	3.26
9	.35	.67	.28	.34	.02	0	0	6.88	.35	25.5	.32	3.07
10	.36	.81	.28	.26	.02	0	3.75	12.3	.86	17.0	.37	2.95
11	.37	.63	.28	.22	.02	0	.22	2.83	.50	15.7	.37	2.89
12	.38	.55	10.7	.32	.02	0	.10	.27	.33	15.8	.37	2.83
13	.39	.51	19.3	.28	.02	0	.04	1.45	.20	17.0	.37	2.82
14	* .40	.50	10.6	.37	.02	0	.26	15.9	.09	18.1	2.32	2.75
15	.44	.51	1.70	1.12	1.26	0	.07	15.1	.08	17.7	83.2	* 2.63
16	1.18	.50	.98	.61	.31	0	.08	8.16	.06	11.8	182	2.61
17	13.8	* .51	.90	.44	* .06	0	.05	12.0	.05	8.68	208	2.69
18	8.89	.48	.48	.46	.03	0	* .03	* 12.6	.04	7.55	170	2.84
19	3.25	.45	.33	.35	.02	.01	* .03	12.0	.25	6.67	64.3	2.90
20	2.20	.45	.27	* .25	.01	.09	.02	8.99	.25	* 5.84	16.6	2.63
21	1.71	.54	.31	.27	0	.19	.01	7.18	.37	4.21	9.74	2.48
22	1.55	.52	.62	.35	.04	.11	.01	12.8	8.10	2.93	9.43	2.50
23	2.26	.43	.24	.32	.11	.15	.04	9.69	7.48	3.16	8.47	2.59
24	1.71	.49	* .18	.28	.05	.06	1.46	6.19	5.15	2.34	6.97	2.55
25	1.28	.39	.37	.26	.03	.03	6.60	5.64	2.36	2.05	5.87	2.53
26	.52	.38	.20	.25	.02	.02	13.5	5.27	6.47	2.62	5.70	2.68
27	.56	.37	.12	.23	.02	.01	18.6	4.28	12.6	2.38	5.77	2.76
28	.87	.36	.09	.22	.01	.21	14.8	2.18	15.7	1.42	5.42	2.80
29	.86	.35	.05	.13	.01	.38	14.4	4.59	21.9	1.01	* 4.71	2.84
30	.68		.03	.01	0	.13	11.2	2.52	* 22.5	.82	4.26	2.87
31	.69		.03		0		8.01	.41		.92		2.92
Sum	47.29	14.31	50.86	20.86	2.20	18.85	93.44	192.08	126.47	267.32	808.00	97.97

Current Year 2004 | Period 1975-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	1.810	1.345	18	17.6	3	0.30	1.53	4,086	18,939	183,420	0
Feb.	1.390	1.330	! 9	.92	29	.34	.49	1,236	13,961	122,892	0
Mar.	1.890	1.230	13	21.1	31	.02	1.64	4,394	11,692	101,919	0
April	1.965	1.240	5	8.32	! 3	.01	.70	1,802	11,736	91,771	10.5
May	2.255	1.225	15	29.7	! 20	0	.07	190	13,897	169,009	0
June	3.530	1.220	3	307	! 1	0	.63	1,629	16,940	186,724	174
July	2.980	1.225	27	188	! 5	0	3.01	8,073	22,137	148,433	97.6
Aug.	3.455	1.570	14	284	! 12	.20	6.20	16,596	22,723	88,466	491
Sept.	2.545	1.380	30	38.8	! 18	.03	4.22	10,927	26,652	166,806	386
Oct.	2.345	1.635	9	27.8	! 30	.74	8.62	23,096	28,897	125,676	0
Nov.	3.285	1.550	15	258	! 6	.31	26.9	69,811	23,421	132,602	0
Dec.	1.840	1.765	1	6.06	21	2.34	3.16	8,465	20,334	187,408	0
Yearly	3.530	1.220		307		0	4.75	150,305	231,329	1,191,590	18,685

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

WATER BULLETIN NUMBER 74 -- 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), DCP with GOES high data rate telemetry, 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 29 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 2004.

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

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

		Average Flow in Cubic Meters per Second**					
Daily:	Max.	388	June 13 & 14,	1905	Min.	0	Frequently
Monthly:	Max.	287	June	1905	Min.	0	Frequently
Yearly:	Max.	55.8		1907	Min.	0.04	1964

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.24	0.52	* 0.13	0.23	0.03	* 0.12	0.86	7.68	4.16	8.74	2.79	5.38
2	.15	* .54	.12	.21	.07	.12	.49	* 5.66	* 2.87	9.64	* 3.07	* 5.00
3	.03	.44	.11	.13	* .24	.41	.13	3.41	4.29	10.2	3.28	4.84
4	.02	.36	.09	.76	.38	7.00	.06	2.18	3.50	* 11.2	2.96	4.69
5	.04	.32	.07	* .22	.22	1.68	.02	1.13	3.19	11.9	2.55	4.91
6	* .10	.32	.06	1.92	.03	2.62	* .02	1.02	2.37	12.0	2.08	4.75
7	.06	.39	.05	2.43	.02	1.07	.01	.75	1.65	3.67	1.73	4.38
8	.27	.47	.05	3.78	.13	2.67	.24	.64	1.19	3.09	1.31	4.09
9	.05	.42	.04	4.07	.24	.57	.34	* 9.26	.95	3.52	1.03	3.80
10	.16	.44	.03	1.58	.31	.30	.07	5.77	.73	4.60	.98	3.80
11	.05	.49	.03	1.07	.02	.05	.59	1.87	.65	5.93	1.01	3.58
12	.03	.35	6.22	.98	.01	.01	.19	2.20	.63	7.18	1.13	3.55
13	.03	.43	7.15	.66	.01	.23	.33	1.22	.63	8.19	.97	3.70
14	* .13	.50	3.54	.74	.01	* .21	.37	.80	.61	7.90	.93	3.67
15	.06	.50	5.18	.79	.06	.03	.23	19.0	.69	7.42	* 12.4	3.89
16	3.30	.55	3.14	.61	7.53	0	.45	* 14.8	.60	7.53	32.4	3.83
17	1.65	* .42	.98	.61	* .47	0	.32	5.52	.45	8.20	44.6	3.77
18	1.14	.36	.59	.76	.09	0	.14	4.94	.34	* 8.55	* 33.3	3.70
19	2.35	.32	.54	* .58	.04	.11	* .04	5.23	10.7	6.17	19.8	3.60
20	1.12	.27	.42	.36	.03	.61	.01	6.04	15.6	4.67	14.0	* 3.81
21	.57	.33	7.25	.38	.03	.68	.01	6.82	5.24	4.04	15.8	3.79
22	.56	.22	14.8	.41	.06	.42	.01	20.2	* 19.5	3.33	22.0	3.71
23	.46	.23	2.35	.11	.03	* 1.75	1.01	24.3	23.6	2.98	31.2	3.64
24	.36	.36	.74	.05	.09	.98	2.05	12.3	12.4	3.01	36.4	3.65
25	.36	.37	* .60	.04	.04	.92	10.2	9.40	7.35	2.94	23.2	3.54
26	.50	.42	.34	.04	.01	1.10	15.0	8.45	10.6	3.66	7.59	3.50
27	.46	.33	.24	.04	.01	.88	6.03	4.77	8.77	11.3	6.43	2.97
28	.39	.29	.48	.06	0	.27	25.7	4.47	* 7.71	3.30	5.98	3.04
29	.40	.20	.40	.05	0	.27	8.91	3.42	7.77	3.04	5.87	3.13
30	.49	.26	.14	0	* 10.3	5.96	2.52	8.15	2.67	5.65	3.32	3.32
31	.52	.24	.02	.02	.02	6.90	3.85	3.85	2.86	2.86	3.49	3.49
Sum	16.05	11.16	56.24	23.81	10.23	35.38	86.69	199.62	166.89	193.43	342.44	120.52

Current Year 2004

Period 1938-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Average	Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day		Low	Total	Average	Maximum	Minimum
Jan.	0.925	0.115	16	10.0	4	0.01	0.52	1,387	11,964	183,420	0
Feb.	.295	.200	16	.61	29	.15	.38	964	9,155	122,892	0
Mar.	1.340	.125	! 12	21.6	! 10	.03	1.81	4,859	7,123	101,919	0
April	.765	.070	6	5.82	! 29	.01	.79	2,057	6,372	91,771	0
May	1.240	.060	16	18.7	! 13	0	.33	884	11,208	169,009	0
June	1.295	.065	30	19.9	! 11	0	1.18	3,057	12,870	186,724	0
July	1.830	.065	28	40.1	! 7	0	2.80	7,490	17,006	148,433	0
Aug.	1.645	.300	23	25.8	14	.02	6.44	17,247	17,954	88,466	0
Sept.	1.925	.160	24	34.3	19	.30	5.56	14,419	20,187	166,806	0
Oct.	1.300	.495	27	20.0	30	2.55	6.24	16,712	20,931	125,676	0
Nov.	2.575	.410	17	47.2	10	.83	11.4	29,587	12,740	132,602	0
Dec.	.645	.470	1	5.58	27	2.79	3.89	10,413	12,477	187,408	0
Yearly	2.575	0.060		47.2		0	3.45	109,076	159,987	1,191,590	1,174

\* Discharge measurement(s) made on this day ! And other days  
\*\* Period June 1900-March 1914; September 1919-March 1920; and 1924-2004

WATER BULLETIN NUMBER 74 -- 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 110 discharge measurements during the year. Records available: 1896 through 1913; 1924 through 2004. 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.	0.29	November 2001	
Yearly:	Max.	83.6	1991	Min.	2.38	1995	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.54	1.38	* 0.61	* 2.52	0.71	* 0.39	2.15	2.66	1.67	27.2	4.02	5.20
2	* .48	1.38	.61	2.35	.75	.37	1.65	2.38	* 6.52	21.0	3.50	* 5.46
3	.48	* 1.38	* .61	2.15	1.11	.44	1.22	* 2.41	3.07	14.8	2.98	5.20
4	.46	1.31	* .61	2.86	1.85	* 17.2	.87	1.85	2.16	* 8.53	* 2.46	4.78
5	.46	1.25	* .66	2.04	1.90	12.5	* .59	* 1.34	1.62	17.0	2.35	4.70
6	* .44	1.19	.69	2.01	* 1.37	2.68	.58	1.23	* 1.53	* 13.0	2.23	4.70
7	.44	1.11	.69	1.68	.79	* 1.62	* .74	1.23	2.51	* 28.2	2.12	4.78
8	.40	1.04	.81	1.73	.61	* 20.9	.55	1.22	* 1.44	12.7	2.00	4.54
9	.38	.98	* .71	1.30	.67	1.98	* .48	* 1.31	1.02	10.6	1.89	3.85
10	.38	* .91	.69	1.33	* .68	1.26	.58	* 5.76	* 1.08	8.51	1.77	4.55
11	.42	.90	* .79	1.40	.68	* 1.23	19.7	3.33	1.02	6.42	1.66	3.26
12	* .44	* .88	* 55.2	1.95	* .57	.99	* 6.24	* 1.80	.84	4.33	1.54	3.87
13	.44	.86	47.1	3.35	* .51	.77	1.43	* 1.29	.71	3.99	1.43	3.54
14	.48	.84	8.18	2.48	* .41	.56	* 1.01	1.17	.67	3.66	1.31	3.54
15	* .54	.81	* 3.81	1.98	.41	* .52	* .51	151	.60	3.32	82.4	3.37
16	35.2	* .79	* 2.09	1.47	36.2	.70	.64	144 *	.68	2.99	289	3.21
17	37.5	1.03	* 1.23	1.31	12.0	* 1.42	.67	* 96.4	* .68	2.65	324	3.29
18	14.4	* 1.26	* .81	1.22	* 4.44	.63	.58	* 85.0	.49	2.32	92.1	3.37
19	* 5.25	1.01	.75	* .69	* 1.47	.66	.55	16.7	52.0	1.98	* 27.7	2.96
20	3.50	* .75	.75	.64	.78	* 32.5	.50	* 10.3	156	1.65	20.8	3.04
21	* 2.56	.75	40.6	.60	* .72	13.2	* .45	4.70	* 18.4	* 1.31	17.9	3.12
22	2.24	.76	253	* .55	.65	1.46	.46	126	149	1.54	13.2	2.55
23	* 2.13	* .76	192 *	* .49	.58	* .79	* 9.92	* 23.1	198	1.77	16.0	2.46
24	2.03	.73	* 33.0	* .49	* .53	.55	4.63	* 8.93	136 *	2.00	14.8	2.63
25	1.55	.71	* 18.4	.49	.47	* 7.23	40.9	* 5.36	71.2	2.23	11.5	2.63
26	1.73	* .68	* 13.1	.48	* .44	2.36	* 91.7	5.95	103	2.46	8.04	2.71
27	* 1.64	.66	7.64	* .48	.38	1.47	93.0	* 9.85	138 *	46.9	7.58	2.71
28	1.37	.64	5.58	.48	* .40	1.12	125	* 3.93	* 59.8	* 16.6	6.66	2.71
29	1.29	.61	* 4.62	* 1.05	.48	* 25.0	* 19.4	3.79	24.8	5.57	5.99	2.46
30	* 1.21	* 3.98	* 3.98	1.49	.46	* 37.3	* 5.77	* 3.18	* 33.5	5.05	5.33	2.20
31	1.21	* 2.89	* 2.89	.39	.39		3.32	* 1.62		4.53		2.20
Sum	121.59	27.36	702.21	43.06	73.41	189.80	435.79	728.79	1,168.01	284.81	974.26	109.59

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume- Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	1.940	0.160	16	95.0	9	0.38	3.92	10,505	36,654	263,658	937
Feb.	.215	.145	! 1	1.38	29	.61	.94	2,364	34,058	210,479	975
Mar.	4.050	.050	22	370	! 1	.47	22.7	60,671	44,296	248,201	870
April	.500	.070	4	5.69	29	.46	1.44	3,720	38,662	110,860	1,158
May	1.880	.085	16	90.1	14	.32	2.37	6,343	49,711	211,231	1,047
June	2.030	.090	30	103	! 2	.34	6.33	16,399	62,036	361,843	5,321
July	2.775	.105	28	180	15	.43	14.1	37,652	70,702	297,613	6,230
Aug.	2.880	.205	16	193	15	1.15	23.5	62,967	117,192	708,584	7,205
Sept.	3.080	.110	24	219	! 18	.46	38.9	100,916	162,093	1,285,546	3,982
Oct.	2.110	.170	27	110	27	1.31	9.19	24,608	105,324	809,127	1,255
Nov.	3.915	.170	17	347	14	1.31	32.5	84,176	40,136	169,500	758
Dec.	.460	.235	2	6.06	31	2.14	3.54	9,469	25,754	81,372	1,014
Yearly	4.050	0.050		370		0.32	13.3	419,790	786,618	2,636,721	75,095

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-3740.00 ALAMITO CREEK NEAR PRESIDIO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder (graphical and digital), and DCP with GOES high data rate telemetry located on the left bank 91.4 meters upstream from the highway bridge on Farm-to-Market Road 170 at latitude 29 31' 25", longitude 104 17' 15", about 610 meters upstream from the confluence with the Rio Grande, and about 9.7 kilometers south-east of Presidio, Texas. This stream enters the Rio Grande near the lower end of the Presidio Valley at river kilometer 1,529, 13.8 river kilometers downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua. Measurements of high flows are made from the highway bridge. The zero of the gage is 771.785 meters above mean sea level U. S. C. & G. S. datum.

RECORDS: Based on 35 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 2004.

REMARKS: This station was relocated to its current site from the downstream side of the highway bridge on Farm-to-Market Road 170 on August 26, 2003. 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. Backwater from the Rio Grande begins to affect the station record when the flow at the station on the Rio Grande below Rio Conchos reaches about 991 CMS.

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

Average Flow in Cubic Meters per Second

Daily:	Max.	351	Sept. 21, 1974	Min.	0	Occasional
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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.03	0.04	0.03	0.06	0.02	0.02	0.29	0.30	6.09	0.52	* 0.08	0.15
2	.03	.04	.03	.06	.02	.02	.15	.14	* .05	.24	* .07	.12
3	.03	.04	.03	.07	.02	* .03	.10	.09	.04	.20	.07	.10
4	.03	* .04	* .03	.08	.02	6.97	.07	.06	.05	.19	.06	.09
5	.03	.04	.02	* 1.60	* .02	.98	.04	* .04	.05	9.93	.06	.07
6	* .03	.04	.02	.08	.02	2.46	* .03	.04	.08	* 2.79	.06	* .06
7	.03	.04	.02	* .04	.02	5.63	.03	.04	.06	.72	.06	.06
8	.04	.04	.02	.03	.02	* 43.9	.03	.04	.07	.28	.06	.06
9	.04	.04	.02	.03	.02	.47	.03	.79	.07	1.65	.06	.06
10	.04	.04	.02	.03	.02	.03	.03	.10	.08	.24	.06	.06
11	.04	.03	.02	.03	.02	.03	.02	.04	.08	.12	.06	.06
12	.05	.03	10.9	.03	.02	.03	.02	.03	.09	.09	.06	.06
13	.05	.03	.15	.03	.02	.03	.02	.03	.09	.08	.06	.06
14	.06	.03	3.17	.03	.02	* .03	.02	.63	.10	* .07	.07	.06
15	.07	.03	1.03	.02	.02	.02	.02	.33	.10	.08	* .08	.06
16	3.28	.03	.10	.02	.02	.02	.02	.06	.11	.09	* 25.9	.06
17	2.39	* .03	.05	.02	* .02	.02	.02	.05	.12	.11	* 4.10	.06
18	.20	* .03	.04	.02	.02	.01	.02	* 1.47	.13	.13	* 1.40	.06
19	.13	.03	.04	.02	.01	.01	.02	.08	.15	.15	1.06	.06
20	.09	.03	.04	.02	.01	24.1	.02	.06	.15	.17	1.19	.06
21	.06	.03	.04	.02	.21	.08	* .02	.11	25.5	.20	1.26	.06
22	* .04	.02	.03	* .02	.03	18.6	.02	35.9	* 49.3	.24	1.21	* .06
23	.04	.03	* .03	.02	.02	* 6.79	.02	1.46	1.63	.27	1.05	.06
24	.04	.02	.04	.02	* .02	.67	2.13	* .39	.28	.32	.77	.05
25	.04	.02	.04	.02	.02	.18	16.9	.10	17.4	.37	.59	.06
26	.03	.02	.04	.02	.02	.09	11.6	.09	59.5	* .39	.48	.06
27	.03	.02	.04	.02	.02	.04	.47	.09	1.47	* 44.1	.37	.06
28	.03	.03	.04	.02	.02	.02	89.8	.09	* 3.32	.05	.32	.06
29	.04	.03	.04	.02	.02	* .25	* 1.70	.08	2.19	.04	.27	.06
30	.04	.03	.05	.02	.02	11.2	3.73	.08	1.16	.04	.19	.06
31	.04	.03	.05	.02	.02		1.18	.84		.06		.05
Sum	7.12	0.92	16.22	2.52	0.80	122.73	128.57	43.65	169.51	63.93	41.13	2.07

Current Year 2004

Period 1932-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Average	Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day		Low	Total	Average	Maximum	Minimum
Jan.	1.800	1.435	16	15.6	! 1	0.03	0.23	615	153	615	26.8
Feb.	1.545	1.535	! 1	.04	! 21	.02	.03	79.5	188	3,853	24.2
Mar.	2.185	1.460	14	87.4	! 13	0	.52	1,401	178	1,401	26.8
April	1.905	1.545	5	12.6	! 22	.01	.08	218	270	4,550	25.9
May	1.740	1.520	21	1.73	! 17	.01	.03	69.1	843	10,530	15.6
June	2.715	1.215	8	300	! 2	.01	4.09	10,604	2,166	15,607	25.9
July	2.780	1.345	28	255	25	0	4.15	11,108	3,282	22,813	11.7
Aug.	2.310	1.575	22	35.9	! 5	.03	1.41	3,771	3,294	20,167	26.8
Sept.	2.790	1.365	21	234	25	0	5.65	14,646	5,066	73,244	9.5
Oct.	2.910	1.645	27	224	! 28	.03	2.06	5,524	2,006	23,731	0
Nov.	2.405	1.620	16	89.8	15	.03	1.37	3,554	245	3,554	18.1
Dec.	2.065	2.000	1	.16	! 13	.05	.07	179	154	503	26.8
Yearly	2.910	1.215		300		0	1.64	51,769	17,845	86,682	376

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

WATER BULLETIN NUMBER 74 -- 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), DCP with GOES high data rate telemetry, 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 Alami to 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 33 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1955 through 2004. 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 Alami to 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 Alami to Creek.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. 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.	0.15	June 21, 2003
Monthly:	Max.	544	Sept. 1991	Min.	0.50	Apr. 2003
Yearly:	Max.	98.1	1991	Min.	5.53	2003

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.80	2.20	0.57	2.09	1.33	0.78	6.27	9.64	9.22	30.8	* 6.09	12.5
2	.88	2.10	.53	1.74	1.21	.90	4.20	* 8.69	8.49	17.6	5.86	* 12.6
3	.88	1.81	* .50	1.63	1.37	* .86	2.99	6.90	6.22	18.0	6.14	12.4
4	.79	* 1.44	.48	2.03	2.27	13.2	2.46	5.55	5.43	* 19.0	6.63	11.5
5	.89	1.09	.48	* 2.72	* 2.44	10.5	2.14	4.21	5.11	40.1	6.26	11.3
6	.99	1.04	.54	2.21	2.22	3.39	2.06	3.45	* 4.83	27.1	6.02	10.9
7	* .96	.93	.55	1.89	1.75	1.17	2.18	3.73	* 5.13	31.8	5.78	10.2
8	1.00	1.12	.50	3.13	1.49	* 55.2	* 1.80	2.91	3.81	16.9	5.58	9.79
9	1.06	1.23	.53	3.50	1.48	5.31	1.47	13.6	2.98	14.7	5.30	9.05
10	.89	1.09	.53	2.39	1.58	2.73	1.99	10.0	2.46	12.7	5.01	9.28
11	1.01	1.08	.62	1.83	1.51	2.19	12.7	6.63	1.88	12.7	4.83	8.37
12	1.12	1.07	60.7	2.19	1.35	2.02	8.30	5.19	1.52	12.4	4.81	8.46
13	1.19	.96	75.7	3.18	1.26	2.01	2.59	4.35	1.34	12.0	4.95	8.36
14	1.26	1.02	13.2	3.00	1.19	* 1.92	2.72	2.41	1.06	11.4	5.03	8.16
15	1.59	1.10	11.1	2.73	1.17	1.72	2.36	98.7	.85	10.8	55.5	7.98
16	31.5	1.19	6.12	2.36	32.3	2.10	3.13	147 *	.70	10.8	230 *	7.69
17	30.3	1.14	3.56	2.07	8.98	3.30	3.50	99.0	.54	10.5	241	7.65
18	10.6	1.21	2.45	2.15	5.10	2.45	2.15	93.0	.35	* 10.8	160	7.52
19	6.67	* 1.32	2.06	* 2.09	2.33	2.41	1.52	24.9	16.5	10.2	45.9	7.37
20	* 4.51	.95	1.89	1.80	* 1.73	29.3	1.22	21.0	118	8.67	30.1	* 7.40
21	3.36	.89	25.0	1.63	1.75	18.7	* 1.06	16.4	27.6	7.37	24.5	7.59
22	3.00	.87	170 *	1.52	1.44	11.8	.87	162	142 *	6.42	24.8	7.14
23	2.86	.82	199 *	1.43	1.49	9.80	4.22	67.9	135	5.92	* 31.6	6.99
24	2.75	.81	* 42.3	1.27	1.40	3.52	6.08	29.1	116	5.77	33.8	6.90
25	2.42	.81	14.8	1.21	1.26	6.57	41.4	20.2	50.1	5.63	27.8	6.90
26	2.41	.71	9.00	1.20	.77	4.94	101	16.6	186	* 5.24	15.8	6.86
27	2.39	.69	6.62	1.15	.78	3.23	86.7	14.4	131 *	* 91.2	14.5	6.74
28	2.20	.67	5.26	1.21	.66	2.82	370	8.36	76.6	21.7	13.9	6.73
29	2.26	.63	* 4.43	1.18	.60	9.74	* 31.4	7.08	17.0	7.98	13.6	6.74
30	2.18		3.27	1.80	.57	28.5	14.5	6.71	20.4	6.23	13.0	6.64
31	2.17		2.61		.65		11.3	6.42		5.88		6.57
Sum	126.89	31.99	664.90	60.33	85.43	243.08	736.28	926.03	1,098.12	508.31	1,054.09	264.28

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	2.520	0.950	16	103	4	0.73	4.09	10,963	51,598	277,577	9,935
Feb.	1.030	.890	1	2.25	29	.61	1.10	2,764	44,626	223,569	2,764
Mar.	3.635	.815	23	271	3	.28	21.4	57,447	53,213	275,997	3,745
April	1.370	.975	5	7.19	27	1.12	2.01	5,213	47,277	199,909	1,296
May	2.190	.905	16	80.8	30	.54	2.76	7,381	59,194	243,287	2,826
June	3.255	.920	8	276	8	.23	8.10	21,002	76,780	383,789	5,647
July	4.250	.930	28	829	23	.65	23.8	63,615	91,524	325,218	13,821
Aug.	3.635	1.150	22	247	14	1.95	29.9	80,009	145,323	866,134	15,800
Sept.	3.805	.965	26	281	19	.20	36.6	94,878	272,314	1,410,221	5,648
Oct.	3.530	1.385	27	217	26	4.96	16.4	43,918	136,838	871,689	7,398
Nov.	3.905	1.360	16	258	12	4.64	35.1	91,073	56,423	197,536	3,906
Dec.	1.540	1.425	2	12.9	30	6.51	8.53	22,834	42,630	229,318	2,659
Yearly	4.250	0.815		829		0.20	15.8	501,097	1,077,740	3,092,559	174,514

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-3745.00 TERLINGUA CREEK NEAR TERLINGUA, TEXAS

DESCRIPTION: Cableway, bubbler gage, DCP with GOES high data rate telemetry, water-stage recorder (graphical and digital) 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 30 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 2004.

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.	5.97	2004	Min.	0.10	1994

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.08	0.08	0.08	* 0.07	0.07	0.06	* 0.04	4.81	1.14	2.41	0.60	* 0.16
2	.08	.08	* .07	.04	.07	* .06	.03	1.28	1.04	1.87	.44	.16
3	.08	* .08	.07	3.15	.07	2.09	.04	* .24	.39	1.63	* .34	.16
4	.08	.06	.07	23.2	* .07	.04	.04	.19	.22	26.8	.29	.15
5	* .08	.06	.06	29.4	.07	.32	.98	.26	.16	* 43.4	.25	.16
6	.08	.06	.05	33.9	.07	.20	3.91	.32	.14	15.7	.23	.15
7	.08	.06	.05	11.1	.07	.06	.17	.38	.12	6.94	.21	.15
8	.08	.07	.05	1.96	.07	.07	3.26	.70	.11	10.2	.21	.15
9	.08	.08	.04	.80	2.87	.07	.51	11.1	* .10	12.2	.21	.15
10	.08	.08	.05	.63	.92	.06	.35	2.39	.09	4.80	.20	.15
11	.08	.08	.06	.97	.44	.04	.22	.92	.09	2.87	.20	.15
12	.08	* .07	8.10	.46	.50	.04	.14	.60	.09	1.97	.20	.15
13	.08	.06	12.0	* .13	.77	.04	.03	7.09	.09	1.34	.20	.14
14	.08	.07	3.16	.08	.98	.04	.12	2.14	.09	1.09	.21	.15
15	.08	.08	5.23	.07	1.27	* .05	* .06	1.68	* .09	.68	.70	.15
16	.19	.08	2.54	.07	4.35	.05	.04	1.56	.19	.52	51.1	.14
17	8.81	.08	1.24	.07	2.26	.63	.04	* 1.46	.31	.41	17.7	.15
18	1.08	.08	.39	.07	* .51	.04	.04	1.05	.44	.31	4.21	.15
19	.40	.08	.21	.07	.07	17.5	.04	6.93	2.38	* .24	1.85	.15
20	.18	.08	.16	.07	.06	7.77	.04	2.77	* 66.8	.26	.98	.15
21	* .10	.09	1.77	* .07	.06	3.06	.04	2.52	40.5	.30	.61	* .14
22	.08	.09	* .48	.07	.06	.39	7.12	107	126	.34	.47	.13
23	.08	.11	.06	.07	.06	.16	1.36	11.5	63.6	.38	.37	.13
24	.08	.10	.05	.07	.06	.91	4.17	3.14	26.5	.43	* .28	.13
25	.08	.11	.05	.07	.06	.98	216	.82	79.3	.47	.24	.13
26	.08	.11	.06	.07	.06	.19	25.4	* .35	458	.52	.22	.12
27	.08	.11	.06	.07	.06	.04	2.47	86.1	87.9	4.09	.19	.12
28	.08	.10	.06	.07	.06	.04	60.0	98.1	8.54	* 20.0	.18	.12
29	.08	.06	.06	.07	.06	.04	20.5	5.57	* 4.29	4.45	.17	.12
30	.08	.07	.07	.07	.06	.04	4.41	* .41	3.33	1.79	.16	.11
31	.08	.07	.07	.07	.06	.04	2.04	29.7	.96	.96	.16	.12
Sum	12.76	2.35	36.47	107.01	16.22	35.08	353.61	393.08	972.04	169.37	83.22	4.39

Current Year 2004

Period 1932-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	1.560	0.810	17	27.6	! 1	0.08	0.41	1,102	234	1,102	26.8
Feb.	.910	.790	28	.54	13	.04	.08	203	271	5,431	25.1
Mar.	1.700	.795	13	30.5	9	.04	1.18	3,151	321	3,151	26.8
April	2.175	.975	5	108	2	.04	3.57	9,246	1,591	23,016	25.9
May	1.765	.970	9	19.9	! 20	.06	.52	1,401	3,840	32,095	100
June	2.020	.950	19	68.3	! 4	.04	1.17	3,031	7,991	67,640	73.4
July	3.405	.915	25	747	! 2	.03	11.4	30,552	9,016	35,429	141
Aug.	3.825	.840	27	962	4	.19	12.7	33,962	8,623	79,182	80.4
Sept.	3.275	.670	26	764	! 10	.09	32.4	83,984	10,907	84,339	62.2
Oct.	2.380	.830	4	311	19	.23	5.46	14,634	4,816	46,834	62.7
Nov.	1.975	.825	16	108	! 29	.16	2.77	7,190	623	7,190	80.1
Dec.	.895	.740	! 1	.17	30	.11	.14	379	336	3,800	92.4
Yearly	3.825	0.670		962		0.03	5.97	188,835	48,569	188,835	3,032

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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

DESCRIPTION: Cableway, gravity well, DCP with GOES high data rate telemetry, water-stage recorder (graphical and digital), 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 30 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: April 1936 through 2004.

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

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.

Daily:	Max.	1,850	Average Flow in Cubic Meters per Second**	Min.	0.09	June 11, 1996
Monthly:	Max.	470	Oct. 1, 1978	Min.	1.21	May 1996
Yearly:	Max.	97.0	Sept. 1991	Min.	6.74	2001

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.42	2.58	0.74	* 6.23	1.02	0.69	* 32.6	18.4	* 15.4	30.7	14.0	* 16.5
2	1.41	2.52	* .68	5.72	1.05	* .64	11.0	15.0	14.0	35.0	10.4	15.5
3	1.44	* 2.53	.71	5.74	1.12	1.77	5.82	* 12.7	9.89	25.5	* 9.50	14.8
4	1.44	2.54	.79	34.5	* 1.14	1.65	4.49	10.1	9.26	24.4	9.22	14.5
5	* 1.43	2.38	.76	23.9	1.11	.69	3.46	8.44	7.89	* 80.3	9.43	13.8
6	1.37	2.22	.77	26.1	1.08	17.3	3.97	6.94	8.65	54.9	9.24	13.2
7	1.30	2.04	.74	11.2	1.12	7.23	1.92	5.55	6.38	35.7	8.93	12.6
8	1.28	1.94	.69	6.51	1.44	5.16	1.67	5.02	5.90	36.5	8.56	12.3
9	1.31	1.86	.69	4.76	3.27	49.7	2.48	26.9	4.91	37.7	8.16	12.0
10	1.30	1.78	.69	6.45	2.15	9.83	1.02	18.2	4.37	22.4	7.73	11.4
11	1.16	1.78	.72	6.90	4.56	4.60	.83	14.0	4.06	18.3	7.23	10.9
12	1.08	* 1.78	5.82	6.48	3.22	2.61	.68	10.5	3.76	17.1	6.75	10.8
13	1.04	1.65	77.1	4.88	1.34	1.62	9.66	10.6	3.48	16.5	6.39	10.2
14	1.10	1.59	64.3	3.85	1.05	1.23	17.3	8.08	* 3.17	16.8	6.26	10.2
15	1.15	1.57	74.6	4.34	.94	* .99	3.42	5.48	* 2.77	15.9	6.52	10.1
16	1.19	1.50	19.0	4.44	6.48	.85	1.92	78.5	2.38	14.7	135	10.0
17	76.5	1.44	9.94	3.90	17.3	.75	1.37	124 *	1.75	14.3	247 *	9.75
18	54.7	1.33	6.89	3.64	* 10.7	1.00	1.01	97.2	1.36	14.2	239	9.65
19	19.7	1.27	4.94	3.38	7.94	11.4	.80	92.4	3.91	* 13.9	166	9.58
20	10.5	1.20	4.46	3.12	4.99	10.8	* .70	28.6	89.4	13.8	55.0	9.60
21	* 7.69	1.15	14.7	* 2.88	7.45	42.6	1.40	19.0	108 *	13.4	46.3	* 9.50
22	5.32	1.13	* 54.5	2.53	2.83	25.1	4.06	149	120	12.4	41.3	9.56
23	4.28	1.08	122 *	2.10	1.80	12.8	2.55	181	228 *	11.4	39.3	9.09
24	3.61	1.05	170 *	1.75	1.56	13.2	3.13	68.5	113	11.1	40.8	8.71
25	3.42	.99	31.4	1.56	1.38	7.58	159	28.8	83.8	10.8	41.1	8.66
26	3.19	.92	13.3	1.42	1.38	4.38	254	19.0	272	10.6	37.1	8.63
27	2.90	.89	9.57	1.29	1.39	5.81	122	39.6	651	10.5	26.0	8.58
28	2.74	.84	7.88	1.21	1.19	6.05	209	29.6	345	* 97.2	21.9	8.61
29	2.78	.77	6.83	1.25	1.03	37.3	277	14.4	66.6	30.5	19.7	8.50
30	2.69		6.28	1.13	.87	6.04	* 65.6	11.2	32.9	20.1	17.8	8.45
31	2.63		6.20		.76		21.1	9.90		17.5		8.34
Sum	223.07	46.32	717.69	193.16	94.66	291.37	1,224.96	1,166.61	2,222.99	784.1	1,301.62	334.01

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	2.640	0.920	17	159	13	1.02	7.20	19,273	52,894	306,158	10,167
Feb.	1.040	.905	1	2.62	29	.74	1.60	4,002	44,190	239,000	4,002
Mar.	3.770	.850	24	195	2	.33	23.2	62,008	50,984	261,098	3,713
April	2.200	.920	4	65.3	30	1.08	6.44	16,689	45,039	183,591	805
May	1.730	.885	17	36.4	31	.72	3.05	8,179	60,976	228,534	3,230
June	3.770	.860	9	217	5	.51	9.71	25,174	85,731	442,109	3,899
July	5.210	.870	26	506	21	.54	39.5	105,837	122,892	785,117	15,373
Aug.	4.300	1.125	22	313	15	4.55	37.6	100,795	150,838	818,986	20,615
Sept.	6.415	.980	27	753	19	.92	74.1	192,066	105,895	1,217,635	5,619
Oct.	3.480	1.380	! 5	158	! 26	10.5	25.3	67,746	158,533	927,275	4,125
Nov.	4.445	1.235	17	251	15	6.12	43.4	112,460	59,265	183,566	5,632
Dec.	1.500	1.280	1	17.2	31	8.15	10.8	28,858	44,079	220,460	4,434
Yearly	6.415	0.850		753		0.33	23.5	743,087	981,316	3,058,852	212,557

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- 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, DCP with GOES high data rate telemetry, 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 46 current-meter measurements during the year, 38 by the United States Section and 8 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 2004.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.50	12.4	* 7.34	16.8	10.7	* 6.99	49.0	139	36.9	200 *	* 43.4	32.1
2	9.53	* 11.6	7.09	15.4	9.77	7.13	23.3	* 50.7	33.3	72.2	37.0	29.7
3	9.47	11.2	7.37	14.3	* 8.25	7.14	* 18.5	38.1	25.7	58.3	27.5	27.7
4	9.57	11.1	7.84	24.3	7.82	6.88	27.2	33.9	24.0	* 69.1	23.8	26.2
5	* 9.46	11.1	7.35	52.0	7.81	7.00	35.8	28.5	23.0	68.0	21.7	24.8
6	9.32	10.6	7.08	56.8	7.74	7.13	18.9	24.8	20.1	52.8	20.1	* 24.1
7	9.31	10.4	7.03	* 60.8	7.81	7.53	12.8	22.0	* 19.5	86.3	19.4	23.7
8	9.46	10.3	6.94	47.7	7.79	7.56	18.9	20.0	19.9	76.5	19.0	22.8
9	9.65	10.2	6.88	46.6	7.83	11.8	12.4	24.6	23.7	61.9	18.7	22.1
10	9.83	10.1	6.88	29.4	8.83	15.1	12.8	17.2	16.1	66.5	18.1	21.6
11	10.0	10.0	7.32	21.6	31.1	18.9	10.4	37.5	14.3	61.2	17.4	21.2
12	10.1	9.97	* 10.0	18.0	17.0	36.6	9.24	43.7	13.6	40.2	* 16.7	20.9
13	10.5	9.88	22.5	15.7	30.9	107	8.91	35.6	13.0	34.5	16.0	20.3
14	10.8	9.71	12.8	15.8	18.9	18.9	9.26	26.9	12.4	31.4	15.6	19.4
15	11.4	9.62	* 33.8	15.9	13.1	13.7	8.90	28.9	11.7	29.3	* 16.4	19.2
16	11.4	9.72	76.5	14.8	11.7	12.7	14.9	* 42.9	11.2	27.8	46.2	18.7
17	11.3	* 9.75	* 74.3	13.7	* 10.5	12.2	20.3	28.2	10.8	26.7	78.8	18.7
18	10.9	9.59	41.6	12.6	9.72	16.2	14.7	69.6	10.4	* 25.3	166	18.5
19	12.3	9.47	27.2	* 12.6	9.22	22.9	* 12.7	140 *	10.3	23.9	220 *	18.4
20	* 59.5	9.24	21.7	12.6	16.8	12.4	9.60	133	* 10.2	23.3	255	* 18.0
21	45.2	8.90	18.5	12.1	17.7	* 12.7	9.07	119	10.1	22.9	208	17.7
22	33.2	8.78	16.6	11.6	14.8	10.1	9.18	71.0	60.3	22.9	91.6	17.5
23	26.9	8.67	14.8	11.3	13.3	21.3	9.42	55.7	110 *	22.7	69.6	* 17.3
24	23.5	9.62	36.0	10.5	12.1	45.7	* 16.7	106	107	22.0	59.4	17.0
25	20.9	8.60	105	10.0	12.9	25.1	80.9	168 *	167	22.2	54.7	16.9
26	18.7	8.12	143 *	12.9	10.8	19.6	715 *	96.5	201	63.5	53.0	16.9
27	17.1	8.26	* 70.7	9.82	9.67	18.7	172	* 58.4	203 *	23.6	52.6	16.6
28	15.8	8.02	36.5	8.95	8.80	41.5	216	67.9	203	22.8	49.7	16.5
29	15.0	7.85	26.9	15.0	8.04	32.4	156 *	86.4	345 *	21.7	41.6	16.5
30	* 14.3		21.9	* 9.53	7.78	17.8	191 *	47.2	456	78.3	35.2	16.4
31	13.3		19.0		7.38		226	34.3		78.1		16.4
Sum	497.20	282.77	908.42	629.10	376.56	600.66	2,149.78	1,895.5	2,222.5	1,535.9	1,812.2	633.8

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.885	0.490	20	62.0	! 6	9.20	16.0	42,958	71,608	259,502	27,740
Feb.	.525	.480	1	12.9	29	7.64	9.75	24,431	63,428	289,215	22,677
Mar.	1.545	.470	26	153	10	6.52	29.3	78,487	71,423	277,246	21,622
April	1.130	.495	5	98.3	30	8.51	21.0	54,354	66,757	192,692	16,484
May	.945	.470	11	67.4	31	7.16	12.1	32,535	86,642	289,647	16,069
June	1.750	.465	13	189	4	6.52	20.0	51,897	115,003	477,792	19,498
July	6.395	.495	26	1,780	16	8.44	69.3	185,741	127,554	435,732	22,016
Aug.	1.920	.585	1	238	11	16.0	61.1	163,771	176,471	929,405	23,366
Sept.	3.120	.515	30	516	21	9.89	74.1	192,024	218,656	1,147,133	22,748
Oct.	3.040	.625	1	496	29	21.3	49.5	132,702	202,373	1,112,382	19,780
Nov.	2.035	.575	20	259	! 14	15.3	60.4	156,574	91,559	441,434	29,091
Dec.	.710	.590	1	33.4	! 30	16.2	20.4	54,760	64,773	217,549	24,491
Yearly	6.395	0.465		1,780		6.52	37.0	1,170,234	1,356,247	3,465,652	405,582

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4474.10 PECOS RIVER NEAR LANGTRY, TEXAS

DESCRIPTION: Cableway, concrete control weir, bubbler gage, DCP with GOES high data rate telemetry, water-stage recorder (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 35 current-meter measurements during the year, 27 by the United States Section and 8 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 2004. 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.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.98	4.65	* 4.45	6.50	8.74	6.33	6.80	11.0	7.94	7.85	* 27.7	20.8
2	5.05	* 4.65	4.33	6.32	9.05	6.16	* 7.10	10.4	7.64	7.48	24.7	20.6
3	5.07	4.63	4.36	6.34	* 7.96	5.87	7.30	* 9.98	7.63	7.22	20.6	20.3
4	5.07	4.61	4.49	6.40	7.40	5.83	8.17	9.21	7.28	* 27.5	19.4	19.5
5	* 4.79	4.62	4.29	* 6.38	7.20	5.71	8.27	8.61	6.94	36.1	18.7	19.1
6	4.71	4.59	3.68	7.51	7.09	5.53	7.74	8.31	* 7.27	95.8	18.0	* 18.6
7	4.59	4.58	3.26	7.37	7.24	* 5.39	7.36	7.90	* 7.46	29.5	17.2	18.3
8	4.56	4.56	3.70	7.55	7.21	5.30	7.09	7.77	6.68	17.5	16.7	18.1
9	4.56	4.53	4.98	7.36	7.10	5.29	6.91	55.9	6.52	18.7	16.0	17.7
10	4.59	4.55	4.00	7.20	6.95	5.24	6.70	30.4	6.46	18.4	15.5	17.3
11	4.51	4.53	15.4	10.4	13.3	5.20	6.47	12.7	6.44	18.1	15.2	17.0
12	4.45	4.50	108 *	8.91	16.0	5.11	6.20	10.2	6.35	17.3	* 14.6	16.7
13	4.55	4.48	30.0	7.65	12.0	6.39	6.14	9.27	6.25	16.2	14.0	16.3
14	4.79	4.46	15.6	7.38	10.3	5.86	6.01	8.89	6.14	15.6	13.9	15.9
15	5.71	4.47	* 14.1	7.17	9.42	5.42	5.78	8.19	6.09	15.2	* 14.0	15.6
16	5.54	4.45	12.9	7.11	8.81	5.14	5.58	* 7.98	6.08	14.9	76.9	15.2
17	5.24	* 4.31	11.5	7.11	* 8.71	5.10	5.44	7.70	6.00	14.7	* 87.8	15.0
18	5.01	4.17	11.1	7.11	8.64	5.12	5.25	7.54	5.91	* 14.7	38.5	14.5
19	4.90	4.13	10.8	* 7.01	8.42	4.96	* 5.08	7.97	5.83	14.8	31.5	14.1
20	* 4.84	4.14	10.1	6.84	8.15	4.84	4.90	7.74	5.85	15.2	28.8	* 13.6
21	4.84	4.09	9.50	6.71	8.11	* 4.72	4.74	7.62	* 5.80	15.8	27.5	13.5
22	4.83	4.03	9.11	6.57	8.04	4.56	4.64	7.60	5.69	16.7	26.5	13.4
23	4.80	4.20	8.56	6.31	7.90	73.8	4.48	7.49	5.92	17.6	25.9	* 13.4
24	4.78	4.35	8.51	6.17	7.63	29.6	4.95	7.42	12.3	16.8	25.1	13.2
25	4.78	4.43	8.20	5.97	7.44	11.2	10.5	7.45	6.79	16.6	24.5	13.1
26	4.78	4.62	7.80	16.0	7.29	7.95	380 *	7.72	10.5	89.7	23.9	13.1
27	4.72	4.68	7.56	8.42	7.24	7.06	52.9	* 7.93	9.53	62.2	23.5	13.1
28	4.72	4.51	7.40	7.38	7.14	6.92	24.7	7.99	8.95	25.1	22.4	13.1
29	4.72	4.49	7.20	8.55	6.95	6.83	17.2	7.67	8.50	22.6	21.8	13.1
30	* 4.69		6.88	* 7.51	6.84	6.39	14.1	8.05	8.13	21.6	21.1	13.1
31	4.66		6.70		6.51		12.2	7.97		20.9		13.1
Sum	149.83	129.01	368.46	225.21	260.78	268.82	660.70	332.57	214.87	748.35	771.9	489.4

Current Year 2004

Period 1967-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.615	0.570	15	5.93	12	4.40	4.83	12,945	14,533	36,067	8,714
Feb.	.580	.555	26	4.84	22	3.98	4.45	11,146	13,356	31,348	7,452
Mar.	1.860	.520	12	216	11	3.01	11.9	31,835	13,996	31,835	8,331
April	.995	.625	26	40.4	!25	5.82	7.51	19,458	14,837	64,098	7,956
May	.855	.625	12	22.5	31	6.36	8.41	22,531	18,040	56,812	5,182
June	2.215	.570	23	293	22	4.43	8.96	23,226	16,515	56,469	5,200
July	5.820	.565	26	1,420	24	4.37	21.3	57,084	18,553	94,844	4,767
Aug.	1.530	.645	9	156	25	7.31	10.7	28,734	20,090	199,892	4,747
Sept.	.825	.570	26	20.9	!22	5.65	7.16	18,565	45,202	992,293	4,479
Oct.	2.695	.635	4	404	3	7.16	24.1	64,657	26,898	140,507	6,198
Nov.	1.695	.755	16	188	!13	13.8	25.7	66,692	18,920	73,681	6,979
Dec.	.830	.740	1	20.9	!28	12.9	15.8	42,284	16,125	46,697	8,187
Yearly	5.820	0.520		1,420		3.01	12.6	399,157	237,065	1,341,805	103,647

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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4474.20 DEADMANS 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 Deadmans Canyon in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, DCP with GOES high data rate telemetry, water-stage recorder (graphic and digital), 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 2004.

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 2004

Annual Summary

Month and Day					Maximum Gage and Discharge					
					Month	Day	Meters	CMS	Thousand Cubic Meters	
Aug.	9	5.96	Oct.	4	0.06	Aug.	9	0.800	34.9	530
	10	0.18		5	10.7	Sep.	27	0.965	57.1	755
				6	13.8	Oct.	6	0.950	54.7	2,127
Sep.	26	2.91		7	0.06	Nov.	16	0.650	22.2	965
	27	5.08								
	28	0.75	Nov.	16	10.4					
				17	0.77					
					Yearly		0.965	57.1	4,377	

WATER BULLETIN NUMBER 74 -- 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, DCP with GOES high data rate telemetry, 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 33 current-meter measurements during the year, 25 by the United States Section and 8 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 2004. 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.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.16	7.34	* 6.16	8.74	21.8	11.1	12.1	8.52	18.0	14.2	* 28.1	22.8
2	9.18	* 7.18	5.95	8.98	21.7	11.1	* 11.2	* 8.09	53.0	13.3	26.3	22.5
3	9.15	6.90	5.84	8.89	* 21.0	11.0	10.8	7.81	26.4	12.5	24.8	22.3
4	9.09	7.11	6.13	8.89	19.3	11.0	10.5	7.78	15.9	* 12.0	23.7	22.1
5	* 8.81	7.12	5.88	8.92	17.9	10.9	10.1	7.85	11.8	64.1	22.5	21.9
6	8.60	7.05	5.47	31.5	16.5	* 10.8	9.99	8.01	10.9	63.6	21.6	* 22.1
7	8.56	6.93	5.27	16.2	15.3	* 10.9	9.95	8.12	* 10.1	39.5	20.8	21.7
8	8.57	6.91	5.15	* 13.7	14.1	10.8	9.81	8.09	9.29	21.9	20.1	21.6
9	8.46	7.18	5.13	12.9	14.0	10.8	* 9.67	11.9	9.07	27.8	19.4	21.4
10	8.38	7.32	4.99	12.3	14.1	10.6	9.54	23.7	8.92	20.4	18.8	21.3
11	8.26	7.36	5.48	14.0	14.3	10.6	9.36	13.9	8.82	19.5	18.1	21.1
12	8.16	7.27	8.86	14.5	21.1	11.1	9.14	11.3	8.70	18.8	17.5	21.0
13	8.10	* 7.27	19.1	14.5	16.7	12.0	9.32	10.7	8.56	18.5	17.2	20.7
14	8.53	7.42	15.1	14.0	15.8	10.8	9.21	10.0	8.47	18.5	16.9	20.6
15	9.21	7.44	* 13.3	13.7	15.0	10.2	8.95	9.42	8.42	18.4	* 17.8	20.5
16	8.78	7.53	12.7	13.6	14.0	10.0	8.69	* 9.08	8.36	18.4	354	20.5
17	8.40	* 7.42	11.8	13.4	* 13.0	10.0	8.52	8.97	* 8.24	18.5	1,030 *	* 20.5
18	8.06	7.15	10.9	13.3	12.6	9.90	8.39	9.34	8.12	* 18.6	318	20.4
19	7.99	7.02	* 10.0	* 13.5	12.4	9.50	* 8.17	9.52	8.11	18.6	67.6	20.3
20	* 7.81	6.98	9.67	13.4	12.2	9.20	8.22	* 9.20	* 8.04	18.5	42.0	* 20.2
21	7.61	6.78	9.50	13.3	* 12.2	* 9.05	8.27	8.93	7.67	18.5	34.0	20.2
22	7.57	6.70	9.73	13.2	12.1	9.00	8.33	9.02	7.42	18.9	30.3	19.9
23	* 7.57	6.84	9.02	13.3	12.1	10.1	8.42	9.08	97.5	19.5	28.4	19.7
24	7.80	7.11	8.95	13.2	12.0	9.23	8.52	9.03	21.6	19.1	27.0	19.5
25	7.67	6.74	8.78	13.1	11.9	9.08	8.69	8.97	13.6	74.5	26.0	19.4
26	7.29	6.50	8.58	33.9	11.9	9.04	8.87	8.82	12.6	36.9	25.3	19.2
27	7.15	6.41	8.33	25.0	12.2	8.81	10.1	8.76	53.6	210	24.6	19.1
28	7.25	6.38	8.19	21.7	11.6	37.6	9.18	8.98	31.7	96.9	24.1	18.9
29	7.45	6.50	7.99	28.7	11.6	15.2	8.94	9.21	18.5	44.7	23.6	18.8
30	7.40		7.81	23.9	11.6	14.0	8.91	8.80	15.5	33.1	23.1	18.7
31	7.30		8.14		11.3		8.87	8.87		29.7		18.5
Sum	253.32	203.86	267.90	468.22	453.3	343.41	288.73	299.77	536.91	1,077.4	2,391.6	637.4

Current Year 2004

Period 1960-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.660	0.625	15	9.51	26	7.03	8.17	21,887	19,883	35,576	5,732
Feb.	.640	.615	16	7.63	!27	6.24	7.03	17,614	18,278	52,636	4,933
Mar.	.865	.600	13	23.8	!10	4.92	8.64	23,147	17,982	41,204	5,163
April	.990	.670	26	55.7	!3	8.48	15.6	40,454	18,189	47,831	5,575
May	.870	.700	12	27.5	31	11.1	14.6	39,165	19,845	49,101	5,572
June	1.340	.665	28	182	28	8.32	11.4	29,671	21,625	67,011	5,253
July	.745	.665	1	12.8	19	8.00	9.31	24,946	25,914	230,071	4,976
Aug.	.905	.650	10	31.7	!3	7.63	9.67	25,900	44,668	504,380	4,878
Sept.	1.555	.650	23	342	23	7.23	17.9	46,389	47,591	621,065	6,167
Oct.	1.530	.775	27	335	4	11.7	34.8	93,087	38,808	272,093	6,172
Nov.	2.735	.820	16	1,560	14	16.7	79.7	206,634	27,761	206,634	5,590
Dec.	.860	.825	1	23.0	31	18.4	20.6	55,071	21,517	55,071	5,794
Yearly	2.735	0.600		1,560		4.92	19.7	623,965	322,061	872,184	89,420

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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4494.40 BIG SATAN CREEK NEAR COMSTOCK, TEXAS

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

DESCRIPTION: Cableway, control weir, bubbler gage, DCP with GOES high data rate telemetry, water stage recorders (graphic and digital), 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 2004.

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 2004

Annual Summary

Month and Day				Maximum Gage and Discharge			
				Month	Day	Meters	CMS
Jun.	28	84.4					
Oct.	5	3.80					
	6	1.79					
	7	0.05					
Nov.	16	9.22					
	17	0.89					
	18	0.01					
Yearly					3.100	1,030	8,653

08-4494.80 ROUGH CANYON NEAR DEL RIO, TEXAS

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

DESCRIPTION: Cableway, control weir, bubbler gage, DCP with GOES high data rate telemetry, water-stage recorders (graphic and digital), 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 2004.

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 2004

Annual Summary

Month and Day				Maximum Gage and Discharge			
				Month	Day	Meters	CMS
Jun.	28	1.26					
Oct.	5	7.68					
	6	1.79					
	7	0.12					
Nov.	16	6.07					
	17	0.82					
Yearly					0.770	27.6	1,533

WATER BULLETIN NUMBER 74 -- 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 re-located upstream due to completion of Amistad Dam, a gaging station was established at the north fork of San Pedro Creek in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, DCP with GOES high data rate telemetry, water-stage recorders (graphic and digital), 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 2004.

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 2004

Annual Summary

Month and Day				Month	Maximum Gage and Discharge			Thousand Cubic Meters
					Day	Meters	CMS	
Oct.	5	0.81		Oct.	5	0.535	6.00	70.0
Nov.	16	3.22		Nov.	16	0.615	9.57	304
	17	0.30						
				Yearly		0.615	9.57	374

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

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

DESCRIPTION: Cableway, control weir, bubbler gage, DCP with GOES high data rate telemetry, water-stage recorders (graphic and digital), 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 2004.

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 2004

Annual Summary

Month and Day				Month	Maximum Gage and Discharge			Thousand Cubic Meters
					Day	Meters	CMS	
Nov.	16	4.41	Nov.	28	0.39			
	17	2.52		29	0.38			
	18	0.66		30	0.35			
	19	0.51						
	20	0.47	Dec.	1	0.33			
	21	0.45		2	0.26			
	22	0.42		3	0.18			
	23	0.38		4	0.10			
	24	0.34		5	0.04			
	25	0.36		6	0.02			
	26	0.38						
	27	0.40						
				Yearly		0.635	15.1	1,153

WATER BULLETIN NUMBER 74 -- 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 re-located upstream due to completion of Amistad Dam, a gaging station was established at Evans Creek in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, DCP with GOES high data rate telemetry, water-stage recorder (graphic and digital), 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 2004.

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 2004				Annual Summary				
Month and Day				Month	Maximum Gage and Discharge			Thousand Cubic Meters
Oct. 5	3.80			Oct.	5	0.780	63.1	328
Nov. 17	0.07			Nov.	17	0.355	0.50	6.0
				Yearly		0.780	63.1	334

WATER BULLETIN NUMBER 74 -- 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 2004.  
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 2004 --- ANNUAL AND PERIOD SUMMARY												
Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.90	0.94	0.94	0.99	1.07	1.07	1.20	1.25	1.30	1.33	1.36	1.82
2	.90	.94	.94	.99	1.07	1.08	1.20	1.25	1.30	1.36	1.36	1.82
3	.90	.94	.94	.99	1.04	1.09	1.20	1.25	1.28	1.36	1.36	1.79
4	.90	.94	.94	.99	1.04	1.09	1.20	1.25	1.28	1.36	1.36	1.79
5	.90	.94	.94	.99	1.04	1.09	1.20	1.25	1.26	1.36	1.38	1.82
6	.90	.94	.94	.99	1.04	1.09	1.20	1.25	1.25	1.36	1.40	1.82
7	.90	.94	.94	.99	1.04	1.09	1.22	1.25	1.25	1.36	1.42	1.82
8	.94	.94	.94	.99	1.04	1.09	1.22	1.25	1.25	1.36	1.44	1.82
9	.94	.94	.94	.99	1.04	1.12	1.22	1.25	1.25	1.36	1.47	1.82
10	.94	.94	.94	.99	1.04	1.12	1.22	1.25	1.25	1.36	1.49	1.82
11	.94	.94	.94	.99	1.04	1.12	1.22	1.25	1.25	1.36	1.51	1.85
12	.94	.94	.94	.99	1.04	1.12	1.22	1.25	1.25	1.36	1.53	1.85
13	.94	.94	.96	1.02	1.04	1.12	1.22	1.25	1.25	1.36	1.55	1.85
14	.94	.94	.99	1.02	1.04	1.12	1.22	1.25	1.25	1.36	1.55	1.85
15	.94	.94	.99	1.02	1.04	1.12	1.21	1.25	1.25	1.36	1.58	1.85
16	.94	.94	.99	1.02	1.04	1.12	1.21	1.25	1.25	1.36	1.58	1.85
17	.94	.94	.99	1.04	1.04	1.12	1.21	1.25	1.25	1.36	1.58	1.85
18	.94	.94	.99	1.04	1.04	1.12	1.22	1.25	1.25	1.36	1.58	1.85
19	.94	.94	.99	1.04	1.07	1.12	1.22	1.25	1.25	1.36	1.58	1.87
20	.94	.94	.99	1.04	1.07	1.12	1.22	1.28	1.25	1.36	1.61	1.88
21	.94	.94	.99	1.04	1.07	1.12	1.24	1.28	1.25	1.36	1.61	1.88
22	.94	.94	1.02	1.04	1.08	1.12	1.24	1.28	1.25	1.36	1.61	1.87
23	.94	.94	1.02	1.07	1.08	1.12	1.22	1.28	1.28	1.36	1.64	1.85
24	.94	.94	1.00	1.09	1.08	1.17	1.22	1.28	1.28	1.36	1.64	1.84
25	.94	.94	.99	1.09	1.09	1.17	1.22	1.28	1.28	1.36	1.64	1.82
26	.94	.94	.99	1.09	1.09	1.17	1.22	1.28	1.28	1.36	1.64	1.82
27	.94	.94	.99	1.09	1.09	1.17	1.22	1.28	1.30	1.36	1.70	1.82
28	.94	.94	.99	1.09	1.09	1.17	1.22	1.30	1.30	1.36	1.79	1.82
29	.94	.94	.99	1.09	1.09	1.20	1.25	1.30	1.33	1.36	1.82	1.82
30	.94	.94	.99	1.09	1.09	1.20	1.25	1.30	1.34	1.36	1.82	1.82
31	.94	.94	.99	1.09	1.07	1.12	1.25	1.30	1.30	1.36	1.82	1.82
Sum	28.86	27.26	30.13	30.90	32.84	33.74	37.80	39.19	38.06	42.13	46.60	56.87
Current Year 2004						Period 1924-2004						
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters						
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum		
Jan.	0.285	0.270	! 7	0.94	! 1	0.90	0.93	2,494	3,291	5,155	449	
Feb.	.280	.280	! 1	.94	! 1	.94	.94	2,355	2,991	4,603	460	
Mar.	.295	.280	!22	1.02	! 1	.94	.97	2,603	3,269	5,046	648	
April	.310	.290	!24	1.09	! 1	.99	1.03	2,670	3,096	4,512	776	
May	.310	.300	!25	1.09	! 3	1.04	1.06	2,837	3,083	4,604	874	
June	.330	.305	!29	1.20	! 1	1.07	1.12	2,915	2,930	4,411	738	
July	.340	.330	!29	1.25	! 1	1.20	1.22	3,266	3,011	4,553	658	
Aug.	.350	.340	!28	1.30	! 1	1.25	1.26	3,386	3,065	4,460	666	
Sept.	.360	.340	! 30	1.34	! 6	1.25	1.27	3,288	3,041	4,199	731	
Oct.	.360	.355	! 2	1.36	! 1	1.33	1.36	3,640	3,309	4,750	1,024	
Nov.	.440	.360	!29	1.82	! 1	1.36	1.55	4,026	3,253	4,701	1,189	
Dec.	.450	.435	!20	1.88	! 3	1.79	1.83	4,914	3,413	5,019	1,329	
Yearly	0.450	0.270		1.88		0.90	1.21	38,394	37,752	53,373	11,201	

! And other days

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 2004.

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

Month	Current Year 2004							Period 1969-2004			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum	
Jan.	0.090	0.085	! 1	0.05	! 1	0.05	0.05	134	143	199	107
Feb.	.090	.090	! 1	.05	! 1	.05	.05	125	130	228	96.8
Mar.	.090	.090	! 1	.05	! 1	.05	.05	134	143	258	107
April	.090	.085	! 1	.05	! 1	.05	.05	130	139	171	95.0
May	.090	.085	! 1	.05	! 1	.05	.05	134	139	176	80.4
June	.090	.085	! 1	.05	! 1	.05	.05	130	134	181	77.8
July	.085	.085	! 1	.05	! 1	.05	.05	134	138	187	55.3
Aug.	.095	.085	! 1	.05	! 1	.05	.05	134	140	187	53.6
Sept.	.095	.085	! 1	.05	! 19	.04	.05	119	135	181	36.3
Oct.	.085	.085	! 1	.04	! 1	.04	.04	107	139	187	26.8
Nov.	.085	.085	! 17	.05	! 1	.04	.04	116	134	181	20.7
Dec.	.090	.085	! 1	.05	! 1	.05	.05	134	137	187	0
Yearly	0.095	0.085		0.05		0.04	0.05	1,531	1,651	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 upstream 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 2004.

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

Month	Current Year 2004							Period 1969-2004			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum	
Jan.	0.035	0.030	! 1	0.02	! 1	0.02	0.02	53.6	162	321	26.8
Feb.	.035	.035	! 1	.02	! 1	.02	.02	50.1	145	290	24.1
Mar.	.035	.035	! 1	.02	! 1	.02	.02	53.6	154	297	26.8
April	.045	.035	! 22	.03	! 1	.02	.02	59.6	145	278	25.9
May	.045	.040	! 1	.03	! 20	.02	.03	70.0	146	268	26.8
June	.045	.040	! 1	.02	! 1	.02	.02	51.8	137	259	25.9
July	.045	.035	! 1	.02	! 1	.02	.02	53.6	138	285	26.8
Aug.	.040	.030	! 1	.02	! 1	.02	.02	53.6	136	295	26.8
Sept.	.045	.040	! 4	.03	! 1	.02	.03	75.2	136	289	25.9
Oct.	.050	.045	! 1	.03	! 1	.03	.03	80.4	150	299	26.8
Nov.	.060	.050	! 17	.04	! 1	.03	.03	89.9	150	311	25.9
Dec.	.065	.055	! 1	.04	! 19	.03	.04	95.9	158	321	26.8
Yearly	0.065	0.030		0.04		0.02	0.02	787	1,757	3,345	315

@ Mean daily ! And other days

WATER BULLETIN NUMBER 74 -- 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 25'31", 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 23 current-meter measurements during the year, 12 by the Mexican Section and 11 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 2004. 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 2004 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. 23, 1974	Min. 1.32	August 13, 1998			
Monthly:	Max. 609	Sept. 1974	Min. 1.72	October 1971			
Yearly:	Max. 140	1974	Min. 16.2	1972			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	13.3	13.3	13.0	13.0	13.3	13.3	13.3	13.0	13.5	13.0	13.8	13.8
2	13.3	13.3	13.0	13.3	13.3	13.3	13.0	13.0	12.7	13.3	13.3	13.8
3	13.3	12.7	13.3	13.3	13.3	13.3	13.0	13.3	12.7	13.3	13.0	13.8
4	13.3	13.4	13.3	13.3	13.3	13.3	13.0	13.3	12.7	13.3	12.1	13.8
5	13.8	13.3	13.3	13.3	13.3	13.3	13.0	13.3	12.7	16.0	12.1	13.8
6	13.3	13.3	13.3	13.3	13.3	13.3	13.0	13.3	12.7	14.1	12.1	13.8
7	13.3	13.3	13.3	13.3	13.3	13.3	13.0	13.3	12.7	13.8	12.1	13.0
8	13.3	13.3	13.3	13.3	13.3	13.3	13.0	13.3	12.7	14.5	10.4	13.0
9	13.3	13.3	13.3	13.3	13.3	13.3	13.0	13.3	12.7	13.8	7.96	13.0
10	13.3	13.3	* 13.3	13.3	13.3	13.3	13.0	13.3	12.7	13.8	* 12.7	13.3
11	13.3	* 13.3	13.3	13.3	13.3	13.3	13.0	13.3	12.7	13.8	13.3	13.3
12	13.3	13.3	13.8	13.3	* 13.3	13.3	13.0	13.3	12.7	13.3	12.7	13.3
13	13.3	13.3	13.3	13.3	13.3	13.3	13.0	13.3	12.7	13.3	11.6	13.0
14	13.3	13.3	13.3	13.3	13.3	13.3	13.0	13.3	12.7	13.3	11.6	13.0
15	13.3	13.3	13.3	13.3	13.3	13.3	13.0	13.3	* 12.7	13.3	11.6	19.6
16	13.3	13.3	13.3	13.6	13.3	13.3	13.3	13.3	13.3	13.3	13.2	* 26.2
17	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	* 13.0	13.3	13.0	25.7
18	13.3	13.3	13.3	13.3	13.3	13.3	13.3	* 13.3	13.0	13.5	13.8	26.5
19	13.3	13.3	13.3	13.3	13.3	13.3	13.3	* 13.3	13.0	13.0	13.8	25.3
20	13.7	* 13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.0	* 13.0	13.8	28.8
21	* 13.7	13.3	13.3	13.3	13.5	13.3	* 13.3	13.3	13.0	13.0	13.8	28.3
22	13.3	13.3	13.0	* 13.3	13.3	27.1	13.0	13.3	13.0	13.0	13.5	* 28.6
23	* 13.3	13.3	13.0	13.3	13.3	13.6	13.0	13.3	13.3	13.0	* 13.5	28.8
24	13.3	13.0	13.0	13.3	13.3	13.3	13.0	13.3	13.5	13.0	* 13.5	28.4
25	13.3	12.7	13.0	13.3	13.3	* 13.3	13.0	13.3	13.3	13.3	13.5	28.0
26	13.3	13.0	12.7	13.3	* 13.3	13.8	13.0	13.3	13.8	13.3	13.5	28.9
27	13.3	13.0	13.0	13.3	13.8	13.3	13.3	13.3	13.3	13.3	13.5	28.6
28	13.3	13.0	13.0	* 13.7	13.3	13.8	13.0	13.3	13.3	13.3	13.8	28.2
29	13.3	13.0	13.0	13.3	13.3	13.8	13.0	13.0	13.5	13.8	13.8	27.7
30	13.3		13.0	13.3	13.3	13.3	13.0	13.0	13.5	13.8	13.5	28.6
31	13.3		* 13.0	13.3	13.3	13.3	13.0	14.3	13.5	13.8		28.8
Sum	413.6	383.1	408.9	399.4	413.0	414.6	405.4	412.1	390.1	418.6	383.86	652.7

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme Cubic Meters per Second				Volume- Thousand Cubic Meters			
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.265	0.225	20	17.4	27	12.7	35,735	103,665	258,803	6,560
Feb.	.260	.225	23	16.7	2	12.7	33,100	135,312	576,288	15,378
Mar.	.250	.220	4	15.5	26	12.1	35,329	167,151	530,496	8,969
April	.265	.220	28	17.4	! 2	12.1	34,508	189,356	511,229	34,007
May	.275	.220	27	18.6	! 12	12.1	35,683	262,205	665,712	29,773
June	.775	.220	22	134	12	12.1	35,821	191,824	495,331	20,251
July	.240	.225	27	14.4	7	12.7	35,027	158,510	452,036	28,595
Aug.	.300	.225	31	21.0	29	12.7	35,605	174,599	816,834	19,229
Sept.	.260	.220	30	16.4	11	12.1	33,705	198,688	1,578,960	14,565
Oct.	.355	.230	5	30.0	! 1	13.0	36,167	180,485	1,002,326	4,606
Nov.	.260	.080	3	16.7	9	1.45	33,166	107,019	619,574	5,599
Dec.	.360	.100	15	71.3	16	2.29	56,393	94,830	266,786	5,994
Yearly	0.775	0.080		134		1.45	440,239	1,963,644	4,398,694	440,239

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- 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 2004.  
 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 2004 --- 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	0.01	0.01	0.01	0.01	0.01	0.01	0.02
2	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
3	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
4	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
5	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
6	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
7	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
8	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
9	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
10	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
11	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
12	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
13	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
14	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
15	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
16	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
17	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
18	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
19	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
20	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
21	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
22	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
23	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
24	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
25	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
26	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
27	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
28	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
29	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
30	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
31	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.02
Sum	0.31	0.29	0.31	0.30	0.31	0.30	0.31	0.31	0.30	0.31	0.44	0.62
Current Year 2004						Period 1969-2004						
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters					
	High	Low	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum		
Jan.	0.050	0.035	! 1	0.01	! 1	0.01	0.01	26.8	70.9	162	0	
Feb.	.050	.035	! 1	.01	! 1	.01	.01	25.1	64.5	152	0	
Mar.	.035	.035	! 1	.01	! 1	.01	.01	26.8	63.8	150	0	
April	.040	.035	! 1	.01	! 1	.01	.01	25.9	60.3	130	0	
May	.035	.030	! 1	.01	! 1	.01	.01	26.8	62.9	139	0	
June	.030	.030	! 1	.01	! 1	.01	.01	25.9	54.6	149	0	
July	.030	.030	! 1	.01	! 1	.01	.01	26.8	54.7	131	0	
Aug.	.035	.030	! 1	.01	! 1	.01	.01	26.8	55.6	150	0	
Sept.	.045	.040	! 1	.01	! 1	.01	.01	25.9	59.5	204	0	
Oct.	.045	.045	! 1	.01	! 1	.01	.01	26.8	70.0	402	0	
Nov.	.090	.045	! 17	.02	! 1	.01	.01	38.0	67.1	249	0	
Dec.	.090	.090	! 1	.02	! 1	.02	.02	53.6	67.0	162	0	
Yearly	0.090	0.030		0.02		0.01	0.01	355	751	1,680	13.0	

! And other days

WATER BULLETIN NUMBER 74 -- 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 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.66	0.71	0.73	0.77	0.77	0.77	0.80	0.83	0.87	1.12	1.16	1.31
2	.66	.72	.74	.77	.77	.77	.80	.83	.88	1.12	1.16	1.31
3	.65	.72	.74	.77	.77	.77	.81	.84	.89	1.12	1.16	1.31
4	.64	.72	.74	.77	.77	.77	.81	.84	.90	1.12	1.16	1.31
5	.63	.71	.73	.77	.77	.77	.81	.84	.91	1.12	1.16	1.31
6	.63	.70	.73	.77	.77	.77	.82	.84	.92	1.12	1.16	1.31
7	.62	.70	.72	.77	.77	.77	.82	.84	.93	1.12	1.16	1.31
8	.61	.69	.72	.77	.77	.77	.82	.84	.94	1.12	1.16	1.31
9	.62	.68	.71	.76	.77	.77	.81	.84	.94	1.12	1.16	1.32
10	.64	.67	.71	.76	.77	.77	.81	.84	.94	1.12	1.16	1.32
11	.66	.67	.72	.76	.77	.77	.81	.84	.94	1.12	1.17	1.33
12	.67	.66	.73	.75	.77	.77	.81	.84	.94	1.12	1.17	1.33
13	.68	.65	.74	.75	.77	.77	.80	.85	.94	1.12	1.18	1.34
14	.70	.64	.74	.75	.77	.77	.80	.85	.94	1.12	1.19	1.34
15	.70	.63	.75	.74	.77	.77	.80	.86	.94	1.12	1.20	1.35
16	.69	.63	.76	.74	.77	.77	.80	.86	.97	1.12	1.20	1.35
17	.69	.62	.77	.74	.77	.77	.80	.87	.99	1.12	1.21	1.35
18	.68	.61	.77	.75	.77	.77	.80	.87	1.02	1.12	1.22	1.35
19	.68	.62	.77	.75	.77	.77	.80	.87	1.04	1.12	1.22	1.35
20	.67	.64	.77	.75	.77	.77	.80	.87	1.07	1.12	1.23	1.35
21	.67	.65	.77	.75	.77	.77	.80	.87	1.09	1.13	1.24	1.35
22	.67	.67	.77	.76	.77	.77	.80	.87	1.12	1.13	1.25	1.35
23	.68	.68	.77	.76	.77	.77	.81	.87	1.12	1.14	1.25	1.35
24	.68	.70	.77	.76	.77	.77	.81	.87	1.12	1.14	1.26	1.35
25	.69	.71	.77	.76	.77	.78	.81	.87	1.12	1.15	1.27	1.35
26	.69	.71	.77	.77	.77	.78	.81	.87	1.12	1.15	1.27	1.35
27	.70	.72	.77	.77	.77	.78	.82	.87	1.12	1.16	1.28	1.35
28	.70	.72	.77	.77	.77	.79	.82	.87	1.12	1.16	1.29	1.35
29	.70	.73	.77	.77	.77	.79	.82	.87	1.12	1.16	1.30	1.35
30	.71		.77	.77	.77	.79	.83	.87	1.12	1.16	1.30	1.35
31	.71		.77	.77	.77		.83	.87		1.16		1.35
Sum	20.78	19.68	23.26	22.80	23.87	23.19	25.09	26.53	30.08	35.04	36.30	41.41
Current Year 2004						Period 1969-2004						
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum		
Jan.	0.330	0.300	!30	0.71	0.61	0.67	1,795	3,481	5,822	431		
Feb.	.340	.300	29	.73	.61	.68	1,700	3,169	5,189	470		
Mar.	.350	.330	!17	.77	.71	.75	2,010	3,441	5,642	649		
April	.350	.340	!1	.77	.74	.76	1,970	3,218	5,359	785		
May	.350	.340	!1	.77	.75	.77	2,062	3,196	5,600	792		
June	.355	.350	!28	.79	.77	.77	2,004	2,961	5,021	715		
July	.370	.360	30	.83	.80	.81	2,168	2,972	5,387	631		
Aug.	.380	.365	18	.87	.83	.86	2,292	2,941	5,330	625		
Sept.	.450	.380	!22	1.12	.87	1.00	2,599	3,037	5,448	600		
Oct.	.460	.450	!27	1.16	1.12	1.13	3,027	3,361	6,428	684		
Nov.	.495	.460	!30	1.30	1.16	1.21	3,136	3,387	5,979	685		
Dec.	.510	.500	!15	1.35	1.31	1.34	3,578	3,535	5,808	749		
Yearly	0.510	0.300		1.35	0.61	0.90	28,341	38,699	63,943	9,381		

! And other days

WATER BULLETIN NUMBER 74 -- 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 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.04	0.05	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.05
2	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
3	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
4	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
5	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
6	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
7	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
8	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
9	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
10	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
11	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
12	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
13	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
14	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
15	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
16	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
17	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
18	.04	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05
19	.04	.04	.04	.05	.05	.04	.04	.04	.05	.05	.05	.05
20	.04	.04	.04	.05	.04	.04	.04	.04	.05	.05	.05	.05
21	.04	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
22	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
23	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
24	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
25	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
26	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
27	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
28	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
29	.05	.04	.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
30	.05		.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
31	.05		.05	.05	.04	.04	.04	.04	.05	.05	.05	.05
Sum	1.34	1.34	1.35	1.50	1.43	1.20	1.24	1.24	1.32	1.55	1.50	1.55

Current Year 2004

Period 1969-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum	
Jan.	0.090	0.080	!22	0.05	!1	0.04	0.04	116	165	241	80.4
Feb.	.095	.080	!1	.05	!19	.04	.05	116	150	213	72.6
Mar.	.085	.080	!21	.05	!1	.04	.04	117	162	227	80.1
April	.085	.085	!1	.05	!1	.05	.05	130	157	220	66.5
May	.085	.085	!1	.05	!20	.04	.05	124	161	229	64.8
June	.085	.080	!1	.04	!1	.04	.04	104	151	223	51.8
July	.080	.080	!1	.04	!1	.04	.04	107	153	213	54.0
Aug.	.080	.080	!1	.04	!1	.04	.04	107	154	241	53.6
Sept.	.085	.080	!19	.05	!1	.04	.04	114	153	233	52.1
Oct.	.090	.085	!1	.05	!1	.05	.05	134	160	241	53.6
Nov.	.090	.085	!1	.05	!1	.05	.05	130	157	233	51.8
Dec.	.085	.085	!1	.05	!1	.05	.05	134	164	241	76.9
Yearly	0.095	0.080		0.05		0.04	0.05	1,433	1,887	2,650	813

@ Mean daily

! And other days

WATER BULLETIN NUMBER 74 -- 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 upstream from its confluence with the Rio Grande, and about 13.7 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 918, 5.6 river kilometers downstream from Amistad Dam and 15.1 kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 1961 through 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.19	0.20	0.19	0.21	0.19	0.20	0.22	0.21	0.21	0.20	0.20	0.19
2	.19	.20	.19	.21	.19	.20	.22	.21	.21	.20	.20	.19
3	.19	.20	.19	.21	.19	.20	.22	.21	.21	.20	.20	.19
4	.19	.20	.19	.21	.19	.20	.22	.21	.21	.20	.20	.19
5	.19	.20	.19	.21	.19	.20	.22	.21	.20	.20	.20	.19
6	.19	.20	.19	.21	.19	.20	.22	.21	.20	.20	.20	.19
7	.19	.20	.19	.21	.19	.20	.22	.21	.20	.20	.20	.19
8	.19	.20	.19	.21	.19	.20	.22	.21	.20	.20	.20	.19
9	.19	.20	.19	.21	.19	.20	.22	.21	.20	.20	.20	.19
10	.19	.20	.19	.21	.19	.20	.22	.21	.20	.20	.20	.19
11	.19	.20	.19	.21	.19	.21	.22	.21	.20	.20	.20	.19
12	.19	.20	.20	.21	.19	.21	.22	.21	.20	.20	.20	.19
13	.19	.20	.20	.21	.19	.21	.22	.21	.20	.20	.20	.19
14	.19	.20	.20	.21	.19	.21	.22	.21	.20	.20	.20	.19
15	.19	.20	.20	.20	.19	.21	.22	.21	.20	.20	.20	.19
16	.19	.20	.20	.20	.19	.21	.22	.21	.20	.20	.20	.19
17	.19	.20	.20	.20	.19	.21	.22	.21	.20	.20	.20	.19
18	.19	.20	.20	.20	.19	.21	.22	.21	.20	.20	.19	.19
19	.19	.19	.20	.20	.19	.21	.22	.21	.20	.20	.19	.19
20	.19	.19	.20	.20	.19	.21	.22	.21	.20	.20	.19	.19
21	.19	.19	.20	.20	.20	.21	.22	.21	.20	.20	.19	.19
22	.20	.19	.20	.20	.20	.21	.21	.21	.20	.20	.19	.19
23	.20	.19	.20	.20	.20	.21	.21	.21	.20	.20	.19	.19
24	.20	.19	.20	.20	.20	.21	.21	.21	.20	.20	.19	.19
25	.20	.19	.20	.20	.20	.21	.21	.21	.20	.20	.19	.19
26	.20	.19	.20	.20	.20	.21	.21	.21	.20	.20	.19	.19
27	.20	.19	.20	.20	.20	.21	.21	.21	.20	.20	.19	.19
28	.20	.19	.20	.20	.20	.21	.21	.21	.20	.20	.19	.19
29	.20	.19	.20	.19	.20	.22	.21	.21	.20	.20	.19	.19
30	.20		.21	.19	.20	.22	.21	.21	.20	.20	.19	.19
31	.20		.21		.20		.21	.21		.20		.19
Sum	5.99	5.69	6.11	6.12	6.01	6.22	6.72	6.51	6.04	6.20	5.87	5.89

Current Year 2004

Period 1961-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum	
Jan.	0.225	0.215	!22	0.20	!1	0.19	0.19	518	443	651	8.4
Feb.	.225	.220	!1	.20	!19	.19	.20	492	406	624	6.7
Mar.	.230	.220	!30	.21	!1	.19	.20	528	441	725	11.5
April	.235	.225	!1	.21	!29	.19	.20	529	455	937	7.8
May	.225	.220	!20	.20	!1	.19	.19	519	484	1,092	13.4
June	.240	.230	!29	.22	!1	.20	.21	537	436	664	7.8
July	.240	.235	!1	.22	!22	.21	.22	581	429	657	8.0
Aug.	.235	.230	!1	.21	!1	.21	.21	562	447	653	8.3
Sept.	.230	.225	!1	.21	!5	.20	.20	522	457	648	8.1
Oct.	.225	.225	!1	.20	!1	.20	.20	536	479	671	8.0
Nov.	.225	.220	!1	.20	!18	.19	.20	507	444	638	7.8
Dec.	.220	.220	!1	.19	!1	.19	.19	509	449	664	8.0
Yearly	0.240	0.215		0.22		0.19	0.20	6,340	5,370	7,674	268

@ Mean daily ! And other days

WATER BULLETIN NUMBER 74 -- 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 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.26	0.26	0.26	0.28	0.27	0.26	0.27	0.27	0.27	0.28	0.28	0.46
2	.26	.26	.26	.28	.27	.26	.27	.27	.27	.28	.28	.46
3	.26	.26	.26	.28	.27	.26	.27	.27	.27	.28	.29	.45
4	.26	.26	.26	.27	.27	.26	.27	.27	.27	.28	.29	.44
5	.26	.26	.26	.27	.27	.26	.27	.27	.27	.28	.30	.44
6	.26	.26	.26	.27	.27	.26	.27	.27	.27	.28	.30	.44
7	.26	.26	.26	.27	.27	.26	.27	.27	.27	.28	.31	.43
8	.26	.26	.26	.27	.27	.26	.27	.26	.27	.28	.31	.42
9	.26	.26	.26	.27	.26	.26	.27	.26	.27	.28	.32	.42
10	.26	.26	.26	.27	.26	.26	.27	.26	.27	.28	.32	.42
11	.26	.26	.26	.27	.26	.26	.26	.26	.27	.28	.33	.41
12	.26	.26	.26	.27	.26	.26	.26	.26	.28	.28	.33	.40
13	.26	.26	.27	.27	.26	.26	.26	.26	.28	.28	.34	.40
14	.26	.26	.27	.27	.26	.26	.26	.26	.28	.28	.34	.40
15	.26	.26	.27	.27	.26	.26	.26	.26	.28	.28	.34	.39
16	.26	.26	.27	.27	.26	.26	.27	.26	.28	.28	.35	.39
17	.26	.26	.28	.27	.26	.26	.27	.26	.28	.28	.35	.38
18	.26	.26	.28	.27	.26	.26	.27	.26	.28	.28	.36	.38
19	.26	.26	.28	.26	.26	.26	.27	.26	.28	.28	.37	.37
20	.26	.26	.28	.26	.26	.26	.28	.26	.28	.28	.38	.37
21	.26	.26	.28	.26	.26	.26	.28	.26	.28	.28	.38	.36
22	.26	.26	.29	.26	.26	.26	.28	.26	.28	.28	.39	.36
23	.26	.26	.29	.26	.26	.26	.28	.26	.28	.28	.40	.36
24	.26	.26	.29	.26	.26	.26	.28	.26	.28	.28	.41	.35
25	.26	.26	.29	.27	.26	.26	.28	.26	.28	.28	.42	.35
26	.26	.26	.29	.27	.26	.26	.28	.26	.28	.28	.43	.35
27	.26	.26	.29	.27	.26	.26	.28	.26	.28	.28	.44	.35
28	.26	.26	.28	.27	.26	.26	.28	.26	.28	.28	.44	.34
29	.26	.26	.28	.27	.26	.26	.28	.27	.28	.28	.45	.34
30	.26	.26	.28	.27	.26	.26	.28	.27	.28	.28	.46	.34
31	.26	.26	.28	.27	.26	.26	.28	.27	.28	.28	.46	.34
Sum	8.06	7.54	8.46	8.07	8.14	7.80	8.44	8.16	8.29	8.68	10.71	12.11

Current Year 2004

Period 1961-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume- Thousand Cubic Meters			
	High	Low	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum
Jan.	0.100	0.090	! 1	0.26	! 1	0.26	696	691	1,152	5.4
Feb.	.095	.090	! 1	.26	! 1	.26	651	620	1,136	5.0
Mar.	.130	.095	! 22	.29	! 1	.26	731	682	1,179	7.0
April	.115	.105	! 1	.28	! 19	.26	697	681	1,217	10.4
May	.110	.100	! 1	.27	! 9	.26	703	735	1,624	10.7
June	.100	.095	! 1	.26	! 1	.26	674	712	1,719	7.4
July	.120	.100	! 20	.28	! 11	.26	729	733	1,693	9.8
Aug.	.110	.100	! 1	.27	! 8	.26	705	746	1,524	7.6
Sept.	.115	.110	! 12	.28	! 1	.27	716	759	1,434	13.3
Oct.	.115	.110	! 1	.28	! 1	.28	750	820	1,752	13.4
Nov.	.225	.115	30	.46	! 1	.28	925	764	1,650	12.7
Dec.	.225	.160	! 1	.46	! 28	.34	1,046	724	1,464	10.7
Yearly	0.225	0.090		0.46		0.26	9,023	8,667	16,058	74.3

@ Mean daily

! And other days

WATER BULLETIN NUMBER 74 -- 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 2004.

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 2004 --- 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	0.02
2	0	0	0	0	0	0	0	0	0	0	0	*.02
3	0	0	0	0	0	0	0	0	0	0	0	.02
4	0	0	0	0	0	0	0	0	0	0	0	.02
5	0	0	0	0	0	0	0	0	0	0	.01	.02
6	0	0	0	0	0	0	0	0	0	0	.01	.02
7	0	0	0	0	0	0	0	0	0	0	.01	.02
8	0	0	0	0	0	0	0	0	0	0	.01	.02
9	0	0	0	0	0	0	0	0	0	0	.01	.02
10	0	0	0	0	0	0	0	0	0	0	.01	.02
11	0	0	0	0	0	0	0	0	0	0	.01	.02
12	0	0	0	0	0	0	0	0	0	0	.01	.02
13	0	0	0	0	0	0	0	0	0	0	.01	.02
14	0	0	0	0	0	0	0	0	0	0	.01	.02
15	0	0	0	0	0	0	0	0	0	0	.01	.02
16	0	0	0	0	0	0	0	0	0	0	.01	.02
17	0	0	0	0	0	0	0	0	0	0	.01	.02
18	0	0	0	0	0	0	0	0	0	0	.01	.02
19	0	0	0	0	0	0	0	0	0	0	.01	.02
20	0	0	0	0	0	0	0	0	0	0	.01	.02
21	0	0	0	0	0	0	0	0	0	0	.01	.02
22	0	0	0	0	0	0	0	0	0	0	.01	.02
23	0	0	0	0	0	0	0	0	0	0	.02	.02
24	0	0	0	0	0	0	0	0	0	0	.02	.02
25	0	0	0	0	0	0	0	0	0	0	.02	.02
26	0	0	0	0	0	0	0	0	0	0	.02	.02
27	0	0	0	0	0	0	0	0	0	0	.02	.02
28	0	0	0	0	0	0	0	0	0	0	.02	.02
29	0	0	0	0	0	0	0	0	0	0	.02	.02
30	0	0	0	0	0	0	0	0	0	0	.02	.02
31	0	0	0	0	0	0	0	0	0	0	.02	.02
Sum	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0.00	0.34	0.62

Current Year 2004

Period 1961-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 1	0	! 1	0	0	0	116	363	0
Feb.			! 1	0	! 1	0	0	0	108	396	0
Mar.			! 1	0	! 1	0	0	0	113	386	0
April			! 1	0	! 1	0	0	0	104	313	0
May			! 1	0	! 1	0	0	0	105	412	0
June			! 1	0	! 1	0	0	0	90.0	264	0
July			! 1	0	! 1	0	0	0	90.0	481	0
Aug.			! 1	0	! 1	0	0	0	87.7	369	0
Sept.			! 1	0	! 1	0	0	0	87.1	296	0
Oct.			! 1	0	! 1	0	0	0	98.0	412	0
Nov.			! 1	.02	! 23	0	.01	29.4	100	396	0
Dec.			! 1	.02	! 1	.02	.02	53.6	106	349	0
Yearly				0.02		0	0	83.0	1,205	3,567	0

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

WATER BULLETIN NUMBER 74 -- 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 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.08	0.07	* 0.07	0.08	0.07	0.08	* 0.09	0.07	0.12	0.09	* 0.10	0.14
2	.08	.07	.07	.08	.07	.08	.09	.07	* .12	.09	.10	* .14
3	.08	* .07	.07	.08	.07	.08	.09	.07	.12	.09	.10	.14
4	.08	.07	.07	.08	.07	.08	.09	* .07	.12	* .09	.10	.14
5	* .08	.07	.07	* .08	.07	.08	.09	.07	.12	.09	.11	.14
6	.08	.07	.07	.08	* .07	.08	.09	.07	.12	.09	.11	.14
7	.08	.07	.07	.08	.07	.08	.09	.08	.12	.09	.11	.14
8	.08	.07	.07	.08	.07	* .08	.09	.08	.11	.09	.11	.14
9	.08	.07	.07	.08	.07	.08	.09	.08	.11	.09	.11	.14
10	.08	.07	.07	.08	.07	.08	.08	.08	.11	.09	.11	.14
11	.08	.07	.07	.08	.07	.08	.08	.08	.11	.09	.11	.14
12	.08	.07	.07	.08	.07	.08	.08	.08	.11	.09	.11	.14
13	.08	.07	.07	.08	.07	.08	.08	.09	.11	.09	.12	.14
14	.08	.07	.07	.08	.07	.08	.08	.09	.11	.09	.12	.14
15	.08	.07	.07	.08	.07	.08	.08	.09	.11	.09	.12	.14
16	.08	.07	.07	.08	.07	.08	.08	.09	.11	.09	.12	.14
17	.08	.07	.07	.08	.07	.08	.08	.09	.11	.09	.12	.14
18	.08	.07	.07	.08	.07	.08	.08	.09	.11	.09	.12	.14
19	.08	.07	.08	.08	.07	.08	.08	.10	.10	.10	.12	.13
20	.07	.07	.08	.08	.07	.08	.08	.10	.10	.10	.12	.13
21	.07	.07	.08	.07	.07	.08	.08	.10	.10	.10	.13	.13
22	.07	.07	.08	.07	.07	.08	.08	.10	.10	.10	.13	.13
23	.07	.07	.08	.07	.08	.09	.08	.10	.10	.10	.13	.13
24	.07	.07	.08	.07	.08	.09	.08	.10	.10	.10	.13	.13
25	.07	.07	.08	.07	.08	.09	.08	.11	.10	.10	.13	.13
26	.07	.07	.08	.07	.08	.09	.08	.11	.10	.10	.13	.13
27	.07	.07	.08	.07	.08	.09	.07	.11	.10	.10	.13	.13
28	.07	.07	.08	.07	.08	.09	.07	.11	.10	.10	.13	.13
29	.07	.07	.08	.07	.08	.09	.07	.11	.09	.10	.14	.13
30	.07	.07	.08	.07	.08	.09	.07	.11	.09	.10	.14	.13
31	.07	.07	.08	.07	.08	.09	.07	.12	.09	.10	.14	.13
Sum	2.36	2.03	2.30	2.30	2.26	2.48	2.52	2.82	3.23	2.92	3.56	4.21

Current Year 2004

Period 1961-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 1	0.08	! 20	0.07	0.08	204	307	649	0
Feb.			! 1	.07	! 1	.07	.07	175	288	628	0
Mar.			! 1	.08	! 19	.07	.07	199	311	650	0
April			! 1	.08	! 21	.07	.08	199	304	604	0
May			! 23	.08	! 1	.07	.07	195	326	633	.7
June			! 23	.09	! 1	.08	.08	214	300	580	0
July			! 1	.09	! 27	.07	.08	218	308	692	0
Aug.			31	.12	! 1	.07	.09	244	312	622	0
Sept.			! 1	.12	! 29	.09	.11	279	301	591	0
Oct.			! 19	.10	! 1	.09	.09	252	310	640	0
Nov.			! 29	.14	! 1	.10	.12	308	296	636	0
Dec.			! 1	.14	! 19	.13	.14	364	304	596	0
Yearly				0.14		0.07	0.09	2,851	3,667	6,978	0.7

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

WATER BULLETIN NUMBER 74 -- 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 2004.

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 2004 --- 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	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08
2	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08
3	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08
4	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08
5	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08
6	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08
7	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08
8	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08
9	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08
10	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.07
11	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.07
12	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.07
13	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.07
14	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.07
15	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.07
16	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.07
17	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.08	.07
18	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.08	.07
19	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.08	.07
20	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.08	.07
21	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.07
22	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.07
23	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.07
24	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.07
25	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.07
26	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.07
27	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.07
28	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.06
29	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.06
30	.06	.06	.06	.06	.06	.07	.07	.07	.07	.07	.08	.06
31	.06	.06	.06	.06	.06	.06	.07	.07	.07	.07	.08	.06
Sum	1.86	1.74	1.86	1.80	1.86	1.91	2.17	2.17	2.10	2.17	2.24	2.22

Current Year 2004

Period 1961-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume- Thousand Cubic Meters					
	High	Low	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum	
Jan.	0.105	0.105	! 1	0.06	! 1	0.06	0.06	161	197	348	18.7
Feb.	.105	.105	! 1	.06	! 1	.06	.06	150	180	317	17.1
Mar.	.105	.105	! 1	.06	! 1	.06	.06	161	198	403	17.5
April	.105	.105	! 1	.06	! 1	.06	.06	156	204	373	13.0
May	.105	.100	! 1	.06	! 1	.06	.06	161	200	323	7.3
June	.110	.100	!20	.07	! 1	.06	.06	165	191	313	5.2
July	.110	.110	! 1	.07	! 1	.07	.07	187	184	312	0
Aug.	.110	.110	! 1	.07	! 1	.07	.07	187	190	398	0
Sept.	.115	.110	! 1	.07	! 1	.07	.07	181	198	337	16.2
Oct.	.115	.115	! 1	.07	! 1	.07	.07	187	211	348	14.9
Nov.	.120	.115	!17	.08	! 1	.07	.07	194	200	382	17.5
Dec.	.120	.105	! 1	.08	!28	.06	.07	192	203	382	18.7
Yearly	0.120	0.100		0.08		0.06	0.07	2,082	2,356	4,026	308

@ Mean daily ! And other days

WATER BULLETIN NUMBER 74 -- 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 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.13	0.13	* 0.14	0.14	0.15	0.15	* 0.18	0.18	0.19	0.19	* 0.19	0.25
2	.13	.13	.14	.14	.15	.15	.18	.18	* .19	.19	.19	* .25
3	.13	* .13	.14	.14	.15	* .15	.18	.18	.19	.19	.19	.25
4	.13	.13	.14	.14	.15	.15	.18	* .18	.19	* .19	.20	.25
5	* .13	.13	.14	* .14	.15	.15	.18	.18	.19	.19	.20	.25
6	.13	.13	.14	.14	* .15	.15	.18	.18	.19	.19	.20	.25
7	.13	.13	.14	.14	.15	.15	.18	.18	.19	.19	.20	.25
8	.13	.13	.14	.14	.15	.16	.18	.18	.19	.19	.20	.25
9	.13	.13	.14	.14	.15	.16	.18	.18	.19	.19	.21	.25
10	.13	.13	.14	.14	.15	.16	.18	.18	.19	.19	.21	.25
11	.13	.13	.14	.14	.15	.16	.18	.18	.19	.19	.21	.24
12	.13	.13	.14	.14	.15	.16	.18	.18	.19	.19	.21	.24
13	.13	.13	.14	.14	.15	.16	.18	.18	.19	.19	.21	.24
14	.13	.13	.14	.14	.15	.16	.18	.18	.19	.19	.22	.24
15	.13	.13	.14	.14	.15	.16	.18	.18	.19	.19	.22	.24
16	.13	.13	.14	.14	.15	.16	.18	.18	.19	.19	.22	.24
17	.13	.14	.14	.14	.15	.17	.18	.18	.19	.19	.22	.24
18	.13	.14	.14	.14	.15	.17	.18	.18	.19	.19	.22	.24
19	.13	.14	.14	.14	.15	.17	.18	.19	.19	.19	.22	.24
20	.13	.14	.14	.14	.15	.17	.18	.19	.19	.19	.23	.24
21	.13	.14	.14	.15	.15	.17	.18	.19	.19	.19	.23	.24
22	.13	.14	.14	.15	.15	.17	.18	.19	.19	.19	.23	.24
23	.13	.14	.14	.15	.15	.17	.18	.19	.19	.19	.23	.24
24	.13	.14	.14	.15	.15	.17	.18	.19	.19	.19	.23	.24
25	.13	.14	.14	.15	.15	.17	.18	.19	.19	.19	.24	.24
26	.13	.14	.14	.15	.15	.17	.18	.19	.19	.19	.24	.24
27	.13	.14	.14	.15	.15	.18	.18	.19	.19	.19	.24	.23
28	.13	.14	.14	.15	.15	.18	.18	.19	.19	.19	.24	.23
29	.13	.14	.14	.15	.15	.18	.18	.19	.19	.19	.24	.23
30	.13	.14	.14	.15	.15	.18	.18	.19	.19	.19	.25	.23
31	.13	.14	.14	.15	.15	.18	.18	.19	.19	.19	.25	.23
Sum	4.03	3.90	4.34	4.30	4.65	4.91	5.58	5.71	5.70	5.89	6.54	7.49

Current Year 2004

Period 1961-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 1	0.13	! 1	0.13	0.13	348	427	697	0
Feb.			! 17	.14	! 1	.13	.13	337	386	749	0
Mar.			! 1	.14	! 1	.14	.14	375	420	907	0
April			! 21	.15	! 1	.14	.14	372	394	780	0
May			! 1	.15	! 1	.15	.15	402	403	750	0
June			! 27	.18	! 1	.15	.16	424	377	675	0
July			! 1	.18	! 1	.18	.18	482	384	671	0
Aug.			! 19	.19	! 1	.18	.18	493	388	668	0
Sept.			! 1	.19	! 1	.19	.19	492	390	661	0
Oct.			! 1	.19	! 1	.19	.19	509	427	777	0
Nov.			! 30	.25	! 1	.19	.22	565	410	768	0
Dec.			! 1	.25	! 27	.23	.24	647	421	734	0
Yearly				0.25		0.13	0.17	5,446	4,827	8,063	0

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

WATER BULLETIN NUMBER 74 -- 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 2004. 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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.35	0.28	* 0.33	0.30	0.31	0.29	* 0.35	0.31	0.34	0.38	* 0.43	0.44
2	.35	.27	.33	.30	.31	.29	.35	.31	* .34	.38	.43	* .44
3	.35	* .27	.33	.30	.31	* .29	.35	.31	.34	.38	.43	.44
4	.35	.27	.33	.30	.31	.29	.35	* .31	.34	* .38	.43	.44
5	* .35	.27	.33	* .30	.31	.29	.35	.31	.34	.38	.43	.44
6	.35	.28	.33	.30	* .31	.30	.35	.31	.34	.38	.43	.44
7	.34	.28	.33	.30	.31	.30	.35	.31	.34	.39	.43	.44
8	.34	.28	.33	.30	.31	.30	.34	.31	.35	.39	.43	.45
9	.34	.28	.33	.30	.31	.30	.34	.32	.35	.39	.43	.45
10	.33	.29	.32	.30	.31	.31	.34	.32	.35	.39	.43	.45
11	.33	.29	.32	.30	.30	.31	.34	.32	.35	.40	.43	.45
12	.33	.29	.32	.30	.30	.31	.34	.32	.35	.40	.43	.45
13	.33	.29	.32	.30	.30	.31	.34	.32	.35	.40	.43	.45
14	.32	.29	.32	.30	.30	.31	.34	.32	.35	.40	.43	.45
15	.32	.30	.32	.30	.30	.32	.34	.32	.35	.40	.43	.45
16	.32	.30	.32	.30	.30	.32	.34	.32	.35	.41	.44	.45
17	.31	.30	.32	.30	.30	.32	.34	.32	.35	.41	.44	.45
18	.31	.30	.32	.30	.30	.32	.33	.32	.36	.41	.44	.45
19	.31	.31	.31	.30	.30	.32	.33	.33	.37	.40	.44	.46
20	.31	.31	.31	.30	.29	.33	.32	.33	.37	.40	.44	.46
21	.31	.31	.31	.31	.30	.33	.32	.33	.37	.41	.44	.46
22	.31	.31	.31	.31	.30	.33	.32	.33	.37	.41	.44	.46
23	.30	.31	.31	.31	.30	.33	.32	.33	.37	.41	.44	.46
24	.30	.32	.31	.31	.30	.34	.32	.33	.37	.41	.44	.46
25	.30	.32	.31	.31	.30	.34	.32	.33	.37	.41	.44	.46
26	.29	.32	.31	.31	.30	.34	.32	.33	.37	.42	.44	.46
27	.29	.32	.31	.31	.30	.34	.32	.33	.37	.42	.44	.46
28	.29	.33	.30	.31	.30	.34	.32	.33	.37	.42	.44	.46
29	.29	.33	.30	.31	.30	.35	.32	.34	.38	.42	.44	.47
30	.28	.33	.30	.31	.29	.35	.32	.34	.38	.43	.44	.47
31	.28	.33	.30	.31	.29	.35	.32	.34	.38	.43	.44	.47
Sum	9.88	8.62	9.84	9.10	9.37	9.52	10.34	10.00	10.70	12.47	13.05	14.04

Current Year 2004

Period 1965-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 1	0.35	! 30	0.28	0.32	854	964	1,532	163
Feb.			! 28	.33	! 2	.27	.30	745	887	1,512	121
Mar.			! 1	.33	! 28	.30	.32	850	928	1,563	85.6
April			! 21	.31	! 1	.30	.30	786	855	1,388	59.2
May			! 1	.31	! 20	.29	.30	810	861	1,430	81.7
June			! 29	.35	! 1	.29	.32	823	810	1,322	18.1
July			! 1	.35	31	.31	.33	893	789	1,884	9.3
Aug.			! 29	.34	! 1	.31	.32	864	784	1,531	8.0
Sept.			! 29	.38	! 1	.34	.36	924	789	1,287	16.2
Oct.			! 30	.43	! 1	.38	.40	1,077	900	1,400	19.1
Nov.			! 16	.44	! 1	.43	.44	1,128	892	1,378	31.1
Dec.			! 29	.47	! 1	.44	.45	1,213	938	1,441	78.6
Yearly				0.47		0.27	0.35	10,967	10,397	15,992	856

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

WATER BULLETIN NUMBER 74 -- 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 DCP with GOES high data rate telemetry 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 34 current-meter measurements during the year, 25 by the United States Section and 9 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 2004. 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.

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.	18.4	2004

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	17.9	17.1	16.5	16.0	17.3	17.7	19.2	20.1	21.2	19.1	18.0	19.9
2	17.6	17.3	16.6	16.2	16.8	17.7	* 19.0	19.0	* 17.8	18.9	* 17.1	20.0
3	17.3	16.8	16.6	16.1	17.0	17.8	18.3	17.5	17.2	18.6	17.8	20.1
4	17.3	* 16.9	16.8	16.5	* 16.9	17.8	18.2	* 17.5	16.9	18.6	17.6	20.1
5	17.6	16.5	* 16.5	16.0	17.2	17.7	18.0	17.3	16.9	37.2	17.8	20.3
6	17.0	16.5	15.8	16.0	17.5	17.5	17.6	17.1	16.8	* 21.9	18.0	20.3
7	16.9	16.2	15.7	15.9	17.5	17.4	17.2	17.2	16.5	20.2	18.2	* 19.1
8	* 17.0	16.3	15.9	* 16.0	17.0	* 17.4	17.3	17.5	16.3	20.0	17.0	19.2
9	16.9	16.3	16.2	16.1	16.9	17.4	* 17.4	17.6	16.2	20.8	13.5	19.5
10	16.7	16.5	16.1	16.3	17.0	17.5	17.4	17.6	16.5	19.9	17.8	19.1
11	16.5	16.5	17.1	16.4	16.9	17.7	17.3	17.6	16.3	19.9	18.3	19.3
12	16.6	16.5	18.3	16.2	17.0	17.6	17.6	17.6	16.2	19.9	18.1	19.0
13	16.4	* 16.8	17.6	16.1	17.8	17.9	17.7	17.7	16.3	19.8	16.8	19.2
14	16.6	16.9	16.9	16.1	18.3	17.7	17.7	17.6	16.8	19.4	17.6	18.7
15	16.8	16.5	16.7	16.2	18.6	17.5	18.0	17.5	16.8	19.1	18.5	19.5
16	16.9	16.6	* 16.7	16.4	18.5	17.4	18.3	17.5	* 16.9	18.9	22.7	33.4
17	16.7	16.9	16.4	16.5	17.9	17.4	18.3	17.5	* 16.6	18.9	21.9	* 31.3
18	16.5	16.5	16.3	16.3	* 17.6	17.4	19.8	* 17.5	16.6	18.9	21.3	32.8
19	16.8	16.7	* 16.2	16.3	17.4	17.4	18.2	17.6	16.6	* 18.2	20.9	32.2
20	17.1	* 16.4	16.1	* 16.2	17.4	17.3	* 17.6	* 17.6	16.6	17.7	20.7	32.6
21	17.1	15.9	16.4	16.2	* 17.6	17.5	17.4	17.6	16.7	17.8	20.5	* 33.6
22	* 17.0	15.9	16.2	16.3	17.3	32.5	17.3	17.6	17.0	17.9	20.1	33.9
23	* 17.0	16.4	15.9	16.3	17.4	20.0	17.4	17.6	17.9	17.8	* 19.9	34.3
24	16.9	16.3	15.8	16.6	17.5	* 19.1	17.6	17.7	18.5	17.8	19.6	33.9
25	16.7	15.7	15.8	16.2	17.5	19.5	17.6	17.6	17.9	18.7	19.7	33.1
26	16.8	16.1	16.1	16.2	17.4	19.6	17.7	17.5	20.3	18.1	* 19.8	33.6
27	16.6	16.2	16.0	16.2	17.8	19.3	18.1	17.3	20.8	17.8	19.7	33.9
28	16.6	16.4	15.7	16.9	18.3	20.0	17.6	17.5	19.6	18.0	19.9	33.4
29	17.0	16.6	15.8	17.8	17.9	19.6	17.5	17.5	19.6	17.9	20.0	34.1
30	17.1		16.0	17.0	18.1	19.5	17.5	17.3	19.6	17.9	19.5	34.0
31	17.2		16.2		17.8		18.3	17.8		18.1		34.1
Sum	525.1	478.2	506.9	489.5	543.1	557.8	554.1	547.1	525.9	603.7	568.3	827.5

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.515	0.500	5	18.8	11	16.0	16.9	45,369	109,785	272,866	17,882
Feb.	.515	.495	23	18.3	!21	15.6	16.5	41,316	139,780	552,852	22,983
Mar.	.525	.490	11	20.4	30	15.1	16.4	43,796	171,689	489,370	21,337
April	.535	.495	29	21.0	8	15.4	16.3	42,293	195,776	566,611	41,748
May	.520	.500	28	20.2	4	16.3	17.5	46,924	269,044	669,284	38,149
June	.840	.500	22	103	8	16.9	18.6	48,194	195,740	512,957	28,546
July	.540	.490	18	23.1	22	16.4	17.9	47,874	162,601	452,566	38,823
Aug.	.530	.485	31	22.8	6	16.7	17.6	47,269	181,882	827,137	35,556
Sept.	.565	.480	1	29.1	!12	15.9	17.5	45,438	206,491	1,637,441	45,438
Oct.	.665	.495	5	51.8	20	17.4	19.5	52,160	188,494	1,005,540	14,281
Nov.	.575	.420	16	30.3	9	8.02	18.9	49,101	115,203	650,690	16,830
Dec.	.710	.455	16	61.6	15	12.0	26.7	71,496	101,361	282,187	17,168
Yearly	0.840	0.420		103		8.02	18.4	581,230	2,037,846	4,617,893	581,230

\* Discharge measurement(s) made on this day ! And other days \*\* Period 1968-2004  
 # Values for January 1968 are Rio Grande near Del Rio less Arroyo de las Vacas flow

WATER BULLETIN NUMBER 74 -- 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 41 current-meter measurements during the year, 37 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 2004.

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.

Daily:	Max.	678	Average Flow in Cubic Meters per Second	Min.	0	Frequently
Monthly:	Max.	29.8	June 17, 1998	Min.	0.01	Occasionally
Yearly:	Max.	2.77	June 1961	Min.	0.08	1952

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.29	0.28	0.34	0.40	0.97	0.28	0.32	0.25	0.26	* 0.30	0.40	0.47
2	.26	.28	.36	.41	.60	.28	.32	.26	.17	.28	.34	.49
3	.28	.23	.32	.45	.56	.26	.30	.26	.14	.28	.30	.56
4	.24	.28	.45	.65	.54	.26	.23	.21	.14	.26	.30	.56
5	.21	.26	.33	.54	.55	.27	* .26	.19	.14	* 78.9	.30	.59
6	.23	* .26	.35	.91	.50	.19	.27	.18	* .14	5.08	.30	* .67
7	.23	.26	.32	.52	.48	.22	.21	.18	.14	1.47	.30	.60
8	.23	.26	.26	.50	.45	.25	.17	1.13	.14	1.01	.29	.59
9	.29	.26	.30	.45	.45	.27	.16	.42	.14	.74	.29	.58
10	.30	.28	.28	.43	.49	.31	.15	.32	.14	.60	.31	.56
11	.35	.30	1.25	.50	.50	* .29	.18	.28	.13	.53	* .30	.56
12	.35	* .30	4.44	.46	.48	.23	.20	* .24	.12	.49	.30	.56
13	.35	.37	2.48	.41	.43	.20	.16	.23	.12	.47	.31	.52
14	.43	.40	.72	.40	.40	.16	.14	.21	.12	* .45	.63	.50
15	.47	.31	.60	.38	.44	.15	.13	.22	.12	.44	2.30	.50
16	.45	.34	.53	.38	.44	.14	.14	.22	.12	.42	10.6	.50
17	.40	.26	.50	.39	.38	.12	.14	.22	.12	.40	3.03	.51
18	.40	.28	* .50	.39	.38	.11	.15	.23	.11	.40	1.18	.50
19	.40	* .27	.48	.38	.32	.12	.16	.23	.12	.38	.85	.50
20	.36	.27	.48	.38	* .32	.11	.15	.22	.13	.38	.72	.50
21	.25	.26	.77	.38	* .32	.10	.14	.19	.15	.38	.68	.50
22	* .24	.31	.64	* .39	.32	.10	* .14	.18	.16	.39	.73	.46
23	.38	.33	.54	.42	.30	3.38	.14	.19	.12	.40	.67	.42
24	.40	.39	.48	14.4	.30	* .55	.12	.19	.13	.35	.58	.42
25	.42	.35	.46	1.27	.32	2.09	.11	.23	.13	3.10	.55	.42
26	.30	.36	* .46	.78	.30	1.70	.36	.24	6.85	.50	.53	.42
27	.24	.37	.45	.56	.30	.36	2.94	.19	2.96	.40	.52	.42
28	.24	.40	.45	.78	.40	.30	.47	.19	1.92	.35	.50	.40
29	.26	.39	.45	.90	.32	.34	.33	.17	.48	.32	* .50	.40
30	.25	.44	.59	.32	.32	.34	.30	* .14	.35	.32	.46	* .41
31	.26	.42	.42	.30	.30	.34	.24	.15	.35	.32	.46	* .41
Sum	9.76	8.91	20.85	29.80	13.18	13.48	9.23	7.76	16.01	100.14	29.07	15.49

Current Year 2004

Period 1938-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	0.245	0.140	14	0.73	5	0.19	0.31	843	510	1,420	38.9
Feb.	.220	.150	24	.56	! 2	.23	.31	770	605	7,339	40.6
Mar.	.910	.155	12	23.2	8	.25	.67	1,801	737	3,214	72.6
April	1.505	.180	24	86.5	22	.35	.99	2,575	1,509	20,483	93.3
May	.370	.150	11	2.02	26	.23	.43	1,139	1,533	11,194	111
June	.880	.100	25	21.0	!21	.09	.45	1,165	2,549	77,118	53.6
July	.865	.110	27	19.9	!24	.11	.30	797	1,541	20,240	31.0
Aug.	.595	.115	8	6.85	!30	.12	.25	670	1,912	31,967	51.8
Sept.	1.065	.110	26	36.4	!17	.11	.53	1,383	2,886	61,139	45.8
Oct.	2.650	.160	5	269	4	.26	3.23	8,652	2,165	25,218	27.6
Nov.	.965	.170	16	27.7	6	.29	.97	2,512	542	3,521	25.9
Dec.	.225	.190	6	.77	!29	.40	.50	1,338	483	1,372	26.8
Yearly	2.650	0.100		269		0.09	0.75	23,645	16,972	86,384	2,554

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

WATER BULLETIN NUMBER 74 -- 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 51 current-meter measurements at each station respectively, during the year, and continuous records of gage heights at Val Verde Canal. Flows at San Felipe Creek at Moore Park are pro-rated between current-meter measurements. 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 2004.

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.	5.23	November 23,	2004	Min.	0.83	July 29,	1964
Monthly:	Max.	4.46	November	2004	Min.	0.97	August	1964
Yearly:	Max.	4.22		1977	Min.	1.43		1963

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.98	3.11	3.44	3.24	2.93	3.13	3.46	3.44	3.16	3.85	3.85	4.52
2	3.06	3.08	* 3.39	3.17	2.88	3.11	3.45	3.49	3.17	3.73	* 3.83	4.45
3	3.15	* 3.06	3.27	3.22	2.80	* 3.07	3.39	3.77	3.17	3.68	3.82	4.34
4	3.24	3.15	3.17	3.31	* 2.93	3.03	3.38	* 4.00	3.23	3.63	3.84	4.24
5	3.30	3.24	3.06	3.36	2.97	2.98	3.36	4.25	3.30	* 3.54	3.86	4.21
6	* 3.34	3.30	2.98	3.42	3.05	3.01	* 3.41	4.19	3.34	3.55	3.88	4.12
7	3.44	3.44	2.89	3.51	3.12	2.95	3.47	4.18	3.35	3.57	3.94	* 4.04
8	3.57	3.60	* 2.82	* 3.52	3.26	3.07	3.49	4.19	3.40	3.54	* 3.96	4.04
9	3.61	* 3.62	* 2.85	3.65	3.32	* 3.12	3.53	3.80	* 3.47	3.53	* 3.95	4.00
10	3.71	* 3.67	2.89	3.64	3.48	3.13	3.45	3.49	3.39	3.55	4.06	3.96
11	3.82	3.58	2.94	3.70	* 3.51	2.86	3.48	* 3.49	3.30	3.56	4.13	3.91
12	3.94	3.59	2.90	3.76	3.45	2.78	3.43	* 3.48	3.27	3.53	4.24	3.89
13	* 4.02	3.38	2.90	* 3.87	3.37	2.74	* 3.55	3.46	3.24	* 3.53	4.29	3.96
14	3.90	3.47	2.96	3.97	3.30	2.83	3.53	3.45	* 3.29	3.56	4.41	* 4.00
15	3.83	3.33	3.05	3.83	3.26	2.89	3.75	3.48	3.49	3.80	4.50	4.12
16	3.76	3.29	* 3.15	3.77	3.23	* 3.05	3.65	* 3.46	3.57	3.84	* 4.59	4.18
17	3.73	3.22	3.11	3.69	3.23	3.00	3.53	* 3.43	3.55	3.92	4.71	4.21
18	3.66	* 3.09	3.11	3.61	* 3.46	2.95	3.52	3.48	3.48	3.96	4.76	4.18
19	3.67	3.16	3.15	3.56	3.47	3.03	3.44	3.51	3.44	* 3.89	4.89	4.17
20	3.55	3.22	3.12	* 3.57	3.41	3.08	* 3.37	3.49	3.49	3.81	4.94	4.15
21	3.52	3.09	3.22	3.91	3.52	* 3.14	3.42	3.45	* 3.45	3.87	5.02	* 4.14
22	* 3.44	3.14	3.06	3.88	3.59	3.16	3.46	3.36	3.69	3.83	5.13	4.21
23	3.37	3.24	* 3.07	3.86	3.55	3.14	3.51	3.35	4.06	3.82	* 5.23	3.97
24	3.34	3.17	3.08	3.51	3.39	3.27	3.50	* 3.39	3.91	3.87	5.12	3.91
25	3.33	* 3.17	3.12	3.30	* 3.18	3.20	3.65	3.36	3.99	3.91	5.05	3.96
26	3.25	3.30	3.08	* 3.31	3.38	3.19	3.21	3.50	4.10	* 3.89	4.93	4.02
27	3.17	3.22	3.10	* 3.33	3.27	3.19	3.25	3.49	4.00	3.88	4.90	4.09
28	3.17	3.27	3.14	3.39	3.11	3.25	* 3.37	3.41	* 4.09	3.86	4.77	* 4.17
29	* 3.11	3.38	3.14	3.26	3.11	* 3.48	3.36	3.45	4.02	3.85	4.73	4.14
30	3.08	* 3.16	3.05	3.17	3.17	3.47	3.37	3.48	3.97	3.86	4.59	4.12
31	3.40	3.19	3.19	3.18	3.18	3.18	3.38	* 3.36	3.82	3.82	4.09	4.09
Sum	107.46	95.58	95.51	106.17	100.88	92.30	107.12	111.13	106.38	116.03	133.92	127.51

Current Year 2004

Period 1961-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			13	4.02	1	2.98	3.47	9,285	8,736	11,558	2,805
Feb.			10	3.67	3	3.06	3.30	8,258	7,760	10,129	2,614
Mar.			1	3.44	8	2.82	3.08	8,252	8,469	11,137	2,917
April			14	3.97	30	3.05	3.54	9,173	8,236	10,610	2,826
May			22	3.59	3	2.80	3.25	8,716	8,541	11,471	3,506
June			29	3.48	13	2.74	3.08	7,975	8,251	11,162	3,060
July			15	3.75	26	3.21	3.46	9,255	8,505	11,523	2,731
Aug.			5	4.25	23	3.35	3.58	9,602	8,382	11,751	2,608
Sept.			26	4.10	1	3.16	3.55	9,191	8,222	11,038	3,152
Oct.			18	3.96	9	3.53	3.74	10,025	8,714	11,408	3,094
Nov.			23	5.23	3	3.82	4.46	11,571	8,515	11,571	2,941
Dec.			1	4.52	12	3.89	4.11	11,017	8,814	11,633	2,948
Yearly				5.23		2.74	3.55	112,320	101,145	133,083	45,119

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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4530.00 SAN FELIPE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Bubbler gage, water-stage recorders (graphic and digital), and DCP with GOES high data rate telemetry 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 36 current-meter measurements during the year, 25 by the United States Section and 11 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: September 1931 through 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.59	2.48	2.53	3.12	3.65	2.68	2.82	2.96	3.19	3.65	3.73	4.45
2	3.30	2.82	* 2.62	3.57	3.04	2.57	2.96	2.91	3.12	3.63	* 3.76	4.34
3	3.33	* 2.73	2.72	3.72	2.97	* 2.56	2.89	* 2.65	3.15	3.57	3.65	4.25
4	3.33	2.67	2.75	4.04	* 2.76	2.60	2.79	2.46	3.14	3.41	3.73	4.15
5	3.40	2.70	2.69	3.57	2.82	2.59	2.77	2.31	3.11	* 5.58	3.81	4.05
6	* 3.21	2.88	2.66	3.77	2.95	2.59	* 2.67	2.29	3.66	4.05	3.90	4.03
7	3.04	2.97	2.68	3.70	2.94	2.59	2.46	2.37	3.18	3.59	3.96	* 3.85
8	3.18	2.95	2.65	* 3.72	2.96	2.46	* 2.47	2.37	3.00	3.76	4.01	3.85
9	3.30	2.90	2.48	3.65	2.99	2.42	2.34	2.83	* 2.88	3.81	3.98	* 3.87
10	3.15	2.99	2.60	3.62	2.91	* 2.34	2.45	3.28	2.86	3.91	4.05	3.86
11	3.11	3.01	2.98	3.62	3.36	2.48	2.56	3.10	2.82	4.01	4.13	3.89
12	3.35	* 3.09	3.95	3.49	3.07	2.59	2.44	3.11	2.82	4.19	4.20	3.89
13	3.70	2.93	3.08	3.42	3.21	2.67	2.33	3.07	2.78	4.32	4.31	3.79
14	3.90	2.83	2.75	3.21	3.18	2.53	2.18	3.01	2.66	4.51	4.61	3.74
15	* 3.68	2.78	2.61	3.04	3.29	2.50	1.98	2.93	2.50	4.50	6.34	3.60
16	3.53	2.75	* 2.77	2.83	3.35	* 2.26	* 1.95	2.85	2.40	4.15	9.75	3.55
17	3.10	2.75	2.78	2.81	* 3.34	2.36	2.06	* 2.76	2.29	3.69	6.77	3.53
18	3.49	* 2.66	2.63	2.78	* 3.22	2.44	2.10	2.66	2.42	3.34	5.33	3.58
19	3.46	2.61	2.51	2.69	3.01	2.34	2.09	2.64	2.46	* 3.31	5.22	3.60
20	3.66	2.68	2.51	* 2.60	3.01	2.37	* 2.10	2.53	2.40	3.38	5.27	3.65
21	3.63	2.70	2.57	2.32	2.86	2.33	2.08	2.55	* 2.35	3.37	5.35	* 3.64
22	* 3.44	2.75	2.62	2.31	2.75	2.33	2.16	2.64	2.38	3.44	5.43	3.60
23	3.37	2.70	2.64	2.41	2.69	2.93	2.17	2.65	2.29	3.52	* 5.46	3.85
24	3.41	2.76	2.56	3.51	2.70	2.61	2.33	2.63	2.54	3.54	5.35	3.97
25	3.20	2.68	* 2.62	3.18	2.82	8.14	2.36	2.63	2.54	4.28	* 5.24	3.96
26	3.01	2.63	2.64	3.12	2.76	4.35	3.17	* 2.59	3.14	3.79	5.12	3.94
27	2.90	2.62	2.71	3.04	* 2.88	3.08	4.50	2.50	3.51	3.62	4.98	3.90
28	2.83	2.66	2.86	4.88	2.97	2.91	3.08	2.75	3.42	3.66	4.86	3.90
29	2.72	2.62	3.00	* 3.33	2.92	2.94	3.07	2.81	3.39	3.68	4.62	3.92
30	2.67	3.03	3.10	3.10	2.85	2.81	3.01	2.74	* 3.36	3.68	4.57	3.90
31	2.62	3.11	3.11	2.71	2.71	2.96	2.96	3.05	3.74	3.74	3.74	3.92
Sum	101.61	80.30	85.31	98.17	92.94	84.37	79.30	84.63	85.76	118.68	145.49	120.02

Current Year 2004

Period 1932-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	1.475	1.360	15	4.03	31	2.41	3.28	8,779	6,942	10,985	1,152
Feb.	1.465	1.355	12	3.34	1	2.33	2.77	6,938	5,862	10,642	601
Mar.	2.080	1.355	12	11.5	9	2.12	2.75	7,371	5,650	10,304	850
April	2.380	1.350	28	17.2	21	2.13	3.27	8,482	5,834	12,836	698
May	1.870	1.350	1	8.15	4	2.38	3.00	8,030	6,540	21,697	912
June	3.555	1.345	25	55.9	16	2.00	2.81	7,290	6,627	59,059	370
July	2.225	1.330	27	14.2	15	1.59	2.56	6,852	5,714	27,232	352
Aug.	1.625	1.340	31	5.08	5	2.08	2.73	7,312	5,789	47,764	432
Sept.	1.795	1.370	6	7.13	17	2.15	2.86	7,410	6,606	35,373	1,076
Oct.	2.415	1.450	5	18.0	19	3.09	3.83	10,254	6,954	17,551	1,233
Nov.	2.320	1.425	16	18.4	3	3.37	4.85	12,570	6,183	12,570	649
Dec.	1.535	1.445	1	4.69	16	3.28	3.87	10,370	6,388	10,660	612
Yearly	3.555	1.330		55.9		1.59	3.21	101,658	75,089	125,323	22,441

\* Discharge measurement(s) made on this day

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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

DESCRIPTION: Foot bridge for making current-meter measurements, water-stage recorder (graphic and digital), and DCP with GOES high data rate telemetry, 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 96 current-meter measurements during the year and a continuous record of gage heights. 25 measurements were made by the U.S. Section, and 71 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 2004.

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 2004, 4,809 hectares of land were irrigated between this station and the power plant, and 9,522 hectares were irrigated from the extension, making a total of 14,331 hectares. A total of 605,599 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			Occasional ly	
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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	19.4	19.9	18.4	19.5	21.0	* 18.9	19.5	17.9	18.8	19.9	21.8	* 23.6
2	19.5	19.7	* 18.3	20.0	20.8	18.0	19.3	* 18.0	20.3	20.0	* 21.7	* 23.3
3	19.5	* 19.4	18.6	20.8	* 20.6	17.0	19.3	* 19.1	* 19.2	20.3	21.3	24.0
4	19.3	* 20.1	19.0	21.9	* 22.1	* 16.9	19.3	18.3	18.6	* 20.5	21.7	24.8
5	* 19.1	20.1	19.8	23.4	21.2	17.1	19.3	17.4	18.3	* 24.4	22.0	25.3
6	19.0	* 19.3	19.1	* 22.0	20.2	17.3	* 19.3	* 16.8	18.2	26.1	22.0	26.7
7	18.8	19.2	19.2	21.2	* 19.5	17.4	19.0	17.0	* 18.7	30.8	22.1	* 27.0
8	18.9	19.2	* 19.4	20.3	19.3	17.6	18.7	17.4	* 19.4	28.1	* 22.2	25.5
9	* 18.8	19.5	19.1	20.1	18.8	* 18.0	* 18.5	18.1	19.3	25.6	20.4	24.9
10	18.9	19.6	18.9	20.1	* 18.7	18.0	18.5	19.8	19.2	23.9	18.4	24.3
11	19.2	19.7	18.8	20.1	19.1	18.1	* 18.3	19.4	19.3	* 22.1	20.7	23.8
12	* 19.8	19.5	23.9	* 19.9	18.8	18.3	* 18.5	* 19.3	19.0	21.5	* 21.0	23.4
13	20.0	19.4	26.6	19.6	* 18.5	18.5	19.9	19.0	18.9	* 21.3	20.4	* 23.0
14	20.1	19.8	21.9	19.5	18.8	* 18.7	19.5	19.1	18.8	21.2	20.1	22.7
15	21.1	19.6	19.4	* 19.5	* 19.1	18.6	18.9	19.5	18.6	* 20.8	24.7	22.7
16	20.8	* 19.5	* 18.9	19.5	18.7	* 18.4	18.8	19.7	18.4	21.1	* 27.0	26.3
17	20.7	19.7	18.9	19.8	19.2	18.1	18.2	* 19.6	* 18.5	21.1	* 32.3	* 32.3
18	20.0	* 19.1	19.1	19.6	18.7	18.1	16.5	19.0	18.7	21.6	* 33.9	33.6
19	* 19.7	19.0	19.2	* 20.5	18.5	17.9	* 16.6	18.7	19.0	22.2	* 32.2	34.7
20	19.6	* 19.1	19.6	* 23.2	* 18.4	17.8	* 17.7	18.2	19.1	* 22.1	28.0	34.9
21	* 19.7	18.8	20.2	23.0	18.4	17.8	17.0	17.9	* 19.0	* 20.6	* 26.3	* 35.2
22	* 19.6	18.7	* 20.9	22.4	18.6	18.0	* 16.1	17.6	18.9	20.4	* 25.7	* 35.3
23	19.5	19.1	* 20.2	21.8	18.5	15.0	15.9	* 17.4	18.9	20.4	* 25.4	35.2
24	19.2	19.7	* 20.0	24.8	18.5	* 18.5	15.2	17.7	* 19.0	20.2	24.4	35.6
25	4.98	18.9	20.0	28.7	* 18.5	* 18.1	17.0	18.0	19.1	21.5	24.3	35.8
26	0	18.5	* 20.0	22.5	18.6	17.5	16.9	18.2	19.1	22.5	24.2	35.3
27	0	18.5	19.9	20.7	* 18.4	17.6	* 18.0	* 18.4	18.8	20.8	24.0	35.1
28	0	18.4	20.0	* 19.8	* 18.6	18.9	17.4	18.4	20.1	20.5	23.6	35.5
29	2.47	18.6	* 20.0	* 22.0	18.8	* 20.5	18.9	17.4	* 21.5	* 20.4	* 24.4	35.5
30	20.6		20.1	21.6	18.8	19.7	18.7	* 19.4	* 20.3	20.5	24.2	35.3
31	20.0		19.6		18.9		18.7	19.0		20.8		35.4
Sum	518.25	559.6	617.0	637.8	594.6	540.3	563.4	570.7	573.0	683.2	720.4	916.0

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	2.115	0	15	21.5	!25	0	16.7	44,777	83,327	120,225	25,730
Feb.	1.985	1.845	4	20.5	!27	18.3	19.3	48,349	82,448	113,996	20,233
Mar.	2.340	1.760	13	28.8	2	18.1	19.9	53,309	93,710	122,230	34,141
April	2.345	1.755	!24	33.4	29	19.0	21.3	55,106	95,321	123,587	50,229
May	1.970	1.670	4	22.5	16	17.8	19.2	51,373	101,184	126,490	49,910
June	2.065	1.100	28	21.5	23	10.3	18.0	46,682	95,652	116,310	38,497
July	2.140	1.570	13	20.2	24	12.9	18.2	48,678	94,967	120,518	44,129
Aug.	2.180	1.835	10	20.0	29	15.8	18.4	49,308	95,354	119,784	45,279
Sept.	2.270	1.890	28	23.1	27	17.5	19.1	49,507	89,276	117,876	35,450
Oct.	2.480	1.980	7	31.5	!1	19.6	22.0	59,028	88,530	121,971	27,426
Nov.	2.670	1.870	17	34.7	10	17.7	24.0	62,243	82,028	115,209	27,737
Dec.	2.755	2.075	25	37.4	14	22.5	29.5	79,142	82,253	120,494	29,007
Yearly	2.755	0		37.4		0	20.5	647,502	1,084,050	1,337,047	565,712

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4550.00 PINTO CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Solid ledge rock and concrete control, bubbler gage, DCP with GOES high data rate telemetry, and water-stage recorder (graphic and digital), 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 35 current-meter measurements during the year, 24 by the United States Section and 11 by the Mexican Section of the Commission, and a continuous record of gage heights. Records available: September 1955 through 2004 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	Frequently	1980

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.34	0.45	0.27	0.49	0.95	* 0.31	0.61	0.38	0.64	0.30	1.08	2.64
2	.37	.44	* .28	.72	.96	.28	.56	.34	.70	.37	* 1.01	2.65
3	.37	* .39	.28	.67	.86	.25	.57	* .30	.62	.42	.95	2.64
4	.37	.33	.38	1.25	* .81	.22	.61	.27	.55	.29	.99	2.64
5	.32	.34	.53	1.17	.80	.28	.53	.25	.54	* 5.60	1.00	2.65
6	* .30	.33	.36	* 1.52	.81	.23	* .50	.23	.63	3.78	.99	* 2.70
7	.30	.30	.28	1.19	.83	.18	.52	.24	.79	1.22	1.01	2.62
8	.32	.29	.24	1.10	.84	.19	* .50	.27	* .60	.97	1.01	* 2.48
9	.33	.30	.24	.95	.81	.28	.48	.81	.49	.96	.99	2.39
10	.33	.33	.22	.91	.81	* .28	.46	.93	.49	.87	1.01	2.30
11	.33	.33	.29	.94	.91	.36	.50	.57	.50	.66	.97	2.20
12	.32	* .32	1.20	.89	.84	.35	.49	.48	.51	.54	.94	2.12
13	.31	.31	1.13	.85	.82	.35	.52	.44	.48	.62	.95	2.03
14	.33	.31	1.01	.81	.79	.32	.51	.40	.48	.66	1.07	1.93
15	* .41	.29	1.96	.80	.75	.44	.47	.38	.48	.70	1.79	1.87
16	.37	.29	* 1.62	.80	.72	.58	.43	.37	.41	.75	* 3.55	* 1.81
17	.35	.28	.99	.81	.71	* .56	.41	.35	.46	.80	56.6	1.78
18	.28	.26	.75	.81	.70	.53	.38	.35	.49	.84	5.40	1.75
19	.28	* .25	.66	.81	.69	.48	.35	* .34	.49	* .86	3.35	1.72
20	.30	.24	.60	.82	* .67	.44	* .34	.34	.55	.85	2.96	1.69
21	.32	.22	.56	.84	.66	.43	.32	.33	* .49	.88	2.81	1.67
22	.35	.22	.52	* .84	.67	.55	.31	.35	.46	.85	2.73	1.64
23	* .36	.29	.50	.84	.66	.52	.31	.42	.64	.81	2.75	1.59
24	.39	.41	.51	.97	.65	.49	.36	.43	.46	.81	2.85	1.57
25	.38	.33	* .53	.89	.20	.49	.32	.38	.46	.84	* 2.80	1.55
26	.36	.28	.53	.86	* .28	.56	.56	* .36	.49	1.15	2.78	1.54
27	.42	.27	.53	.81	* .33	.44	.53	.32	.52	.99	2.75	1.50
28	.42	.28	.54	.78	.49	.55	.50	.41	.62	.97	2.72	1.48
29	.45	.32	.54	* .89	.54	.92	.47	.41	.52	.96	2.71	1.46
30	.46		.51	1.03	.43	.77	.43	.42	* .36	.97	2.64	1.43
31	.45		.49		.35		.41	.51		.98		1.40
Sum	10.99	9.00	19.05	27.06	21.34	12.63	14.26	12.38	15.92	32.27	115.16	61.44

Current Year 2004

Period 1929-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.375	0.290	30	0.47	19	0.25	0.35	950	732	2,784	0
Feb.	.375	.305	! 1	.47	21	.21	.31	778	762	7,106	0
Mar.	.890	.300	15	5.50	! 10	.21	.61	1,646	709	3,085	0
April	.600	.345	6	2.25	1	.47	.90	2,338	1,412	33,464	0
May	.455	.295	! 1	1.01	25	.17	.69	1,844	1,978	36,248	0
June	.515	.295	29	1.23	7	.16	.42	1,091	4,111	69,981	0
July	.445	.335	26	.80	! 21	.28	.46	1,232	385	37,030	0
Aug.	.505	.315	! 9	1.16	! 5	.21	.40	1,070	2,158	60,070	0
Sept.	.495	.310	6	1.03	16	.16	.53	1,375	2,177	60,397	0
Oct.	1.655	.395	5	36.3	4	.26	1.04	2,788	1,530	15,227	0
Nov.	2.310	.405	17	146	! 3	.93	3.84	9,950	766	9,950	0
Dec.	.565	.530	6	2.73	31	1.39	1.98	5,308	795	5,308	0
Yearly	2.310	0.290		146		0.16	0.96	30,370	17,515	94,053	1,178

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

WATER BULLETIN NUMBER 74 -- 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 37 current meter measurements, 33 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 2004.

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.

Daily:	Max.	1,040	Average Flow in Cubic Meters per Second	Min.	0	Occasionally
Monthly:	Max.	67.5	July 18, 1975	Min.	0.07	July 1996
Yearly:	Max.	17.6	Oct. 1932	Min.	0.68	1956
			1976			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.77	4.86	3.79	11.6	13.7	9.46	6.91	8.23	8.80	9.39	11.9	11.8
2	2.77	4.97	* 3.75	13.8	13.6	8.05	6.70	8.23	8.80	9.94	11.9	11.5
3	2.77	* 4.65	3.81	12.3	13.5	7.67	6.70	8.23	8.80	10.2	11.5	11.5
4	2.77	3.76	3.96	42.9	13.3	7.54	6.70	8.23	8.80	9.84	11.8	11.4
5	2.77	3.39	4.04	20.7	13.1	7.27	6.61	6.89	8.80	19.4	11.5	11.2
6	* 2.56	3.21	3.89	* 24.7	13.1	7.13	6.61	6.17	9.14	17.0	11.4	11.4
7	2.56	3.21	3.83	17.4	13.1	6.49	8.29	6.27	* 8.91	15.8	11.2	11.2
8	2.56	3.21	3.68	16.6	12.8	* 6.27	8.80	6.72	8.80	15.1	11.0	11.2
9	2.26	3.21	* 3.68	16.2	12.7	6.16	9.00	10.4	8.80	14.8	* 10.8	10.9
10	2.20	* 3.21	3.56	16.0	12.6	6.05	9.09	* 8.48	8.80	14.0	10.6	* 10.6
11	2.16	3.21	3.63	15.8	16.2	6.05	8.92	7.95	8.80	13.7	10.5	10.5
12	2.16	* 3.21	7.71	15.3	13.7	5.95	8.80	* 8.16	8.80	13.2	10.6	10.4
13	* 2.16	3.21	10.9	15.3	13.2	6.11	* 8.80	8.23	8.80	13.2	10.6	10.3
14	3.27	3.21	13.9	14.9	13.1	5.95	8.66	7.91	* 8.80	12.7	10.8	* 10.0
15	4.97	3.21	12.5	14.9	12.8	5.84	8.51	7.40	8.80	12.5	13.5	10.0
16	5.18	2.99	* 11.4	14.7	12.7	5.84	8.23	7.13	8.80	12.5	* 18.1	10.0
17	5.40	* 2.88	10.9	14.6	12.5	5.84	8.23	* 7.13	8.80	12.4	15.7	10.0
18	5.40	2.88	10.6	14.6	* 12.5	5.73	7.95	7.13	8.96	12.2	15.3	8.95
19	5.40	2.91	10.3	14.6	12.5	5.62	7.95	7.13	8.80	* 12.2	15.3	9.09
20	* 5.40	3.21	10.2	14.6	12.5	5.62	7.81	7.13	8.80	12.2	14.8	9.30
21	5.40	3.50	10.0	14.6	* 12.4	5.40	7.54	7.13	8.80	12.1	14.4	9.39
22	5.40	3.93	9.85	14.2	12.2	5.51	7.13	7.26	8.80	11.9	14.1	9.24
23	5.40	4.29	10.3	14.1	12.2	7.12	7.13	7.75	9.09	11.9	* 13.7	9.25
24	5.40	4.19	11.1	14.9	12.1	6.57	7.02	8.23	9.27	11.9	13.2	8.86
25	5.40	3.89	12.0	15.0	* 11.9	7.84	6.70	8.23	9.09	11.9	13.4	8.80
26	5.40	3.89	12.2	14.1	11.5	9.52	7.39	8.23	9.86	* 11.9	12.8	8.80
27	5.08	3.89	12.2	13.9	11.5	7.26	8.50	8.23	10.1	11.9	12.5	8.80
28	4.75	3.89	12.2	13.8	11.5	7.29	8.80	8.62	* 9.70	11.9	12.5	8.80
29	4.75	3.89	12.0	13.8	11.2	7.57	8.37	8.69	9.39	11.8	* 12.2	8.80
30	4.64	* 11.9	13.7	13.7	11.2	7.13	7.95	8.51	9.39	11.5	11.9	8.80
31	4.54	11.8	11.8	11.8	11.2	11.2	7.95	* 8.51	9.39	11.5	11.5	8.66
Sum	123.65	103.96	265.58	483.6	392.1	201.85	243.75	242.54	270.10	392.47	379.5	309.44

Current Year 2004

Period 1932-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	0.160	0.085	!17	5.40	!9	2.16	3.99	10,683	9,974	44,937	2,300
Feb.	.155	.100	23	5.18	!17	2.77	3.58	8,982	7,860	31,769	1,279
Mar.	.520	.115	14	31.3	!10	3.44	8.57	22,946	7,264	33,352	797
April	1.120	.270	4	111	2	11.2	16.1	41,783	8,236	49,678	698
May	.425	.265	11	22.7	31	11.0	12.6	33,877	13,401	148,269	395
June	.495	.160	25	28.9	21	5.40	6.73	17,440	14,612	133,550	282
July	.240	.190	27	9.52	!5	6.61	7.86	21,060	16,646	167,938	179
Aug.	.370	.175	9	18.3	6	6.05	7.82	20,955	14,549	112,553	392
Sept.	.275	.230	26	11.5	!1	8.80	9.00	23,337	20,161	116,770	843
Oct.	.515	.240	5	30.8	!1	9.39	12.7	33,909	25,706	180,878	1,011
Nov.	.455	.255	16	25.3	!11	10.3	12.7	32,789	17,605	84,231	990
Dec.	.280	.225	1	11.8	!31	8.51	9.98	26,736	12,523	55,901	1,389
Yearly	1.120	0.085		111		2.16	9.31	294,497	168,537	557,477	21,508

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

WATER BULLETIN NUMBER 74 -- 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 26 current-meter measurements during the year, 14 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 2004. 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 24, 1998	Min.	0.08	April 1983
Monthly:	Max.	602	Sept. 1974	Min.	0.80	June 1969
Yearly:	Max.	124	1974	Min.	8.09	1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.49	6.91	5.53	12.8	15.1	11.3	8.93	10.0	11.1	13.4	13.4	14.7
2	3.49	7.23	5.38	14.1	14.7	9.72	9.18	10.0	12.8	13.5	13.1	14.7
3	3.64	6.92	5.38	15.9	14.7	9.44	8.57	9.72	11.9	14.4	12.8	14.2
4	3.64	5.53	5.98	48.2	14.5	9.18	8.42	9.72	11.3	14.0	12.8	13.8
5	3.49	5.15	6.10	23.6	14.4	8.93	8.42	8.67	11.2	75.1	12.8	13.8
6	3.24	4.92	5.68	28.6	14.4	8.93	8.42	7.68	11.3	59.0	12.5	13.8
7	3.24	4.92	5.50	19.9	14.1	8.17	9.89	7.44	10.9	25.3	12.3	13.6
8	3.24	4.87	5.38	18.0	14.1	* 7.44	* 10.8	7.44	10.8	20.4	12.0	13.4
9	3.24	4.98	* 4.81	17.8	14.0	7.44	11.0	10.6	10.5	19.1	12.2	* 13.4
10	3.24	* 4.95	4.70	18.2	13.8	7.29	11.0	12.4	10.5	17.9	12.0	13.4
11	3.00	4.81	4.81	17.3	17.2	7.20	10.8	10.8	10.5	17.0	11.6	13.4
12	2.91	4.70	13.6	16.8	15.7	6.96	10.8	10.5	10.5	15.9	11.6	13.4
13	* 2.77	4.53	20.5	16.3	15.1	7.10	10.7	10.8	10.5	15.4	12.1	13.1
14	3.24	4.53	19.2	15.9	14.7	7.10	10.3	10.5	10.5	15.3	12.5	12.8
15	5.68	4.53	22.3	15.7	14.4	6.96	* 10.2	10.0	10.5	15.1	18.6	12.8
16	6.28	4.45	* 21.4	15.7	14.4	* 6.96	10.1	* 10.0	* 10.6	15.1	23.4	12.8
17	6.40	* 4.06	18.6	15.7	14.1	6.96	9.89	* 9.44	10.6	15.1	147	15.2
18	6.40	* 3.74	17.0	15.7	14.1	6.82	9.61	9.44	10.8	15.1	35.8	15.0
19	6.28	3.74	16.4	15.7	14.1	6.51	9.44	9.44	11.1	14.7	19.8	14.5
20	6.28	3.97	16.4	* 15.7	* 13.8	6.51	9.44	9.44	11.1	* 14.7	18.0	14.4
21	6.40	4.26	16.0	15.7	13.6	6.51	9.18	9.44	11.1	14.7	17.1	* 15.7
22	* 6.59	4.81	15.6	15.6	13.4	* 6.51	8.27	9.44	11.1	14.4	16.8	15.4
23	6.72	5.46	15.6	15.4	13.4	19.6	8.67	10.0	11.9	14.4	16.4	15.3
24	6.91	6.06	16.7	16.1	13.4	12.7	8.67	10.8	11.6	14.4	16.1	15.4
25	22.3	5.83	* 17.9	17.8	12.8	9.78	8.67	10.8	11.6	14.4	* 16.1	15.2
26	32.4	5.68	18.2	15.7	12.5	32.1	9.44	* 10.5	12.2	14.1	15.7	15.1
27	32.4	5.68	18.2	15.1	* 12.4	14.4	10.8	10.5	17.4	14.1	15.4	15.6
28	32.4	5.44	18.2	14.9	12.5	11.3	15.4	10.5	17.1	13.4	15.3	15.2
29	29.4	5.68	18.2	* 14.9	12.5	10.3	10.5	11.1	14.7	13.4	15.1	15.2
30	11.7	17.7	17.7	15.2	12.2	9.61	10.0	11.9	* 13.4	13.1	* 14.7	15.2
31	7.04	17.5	17.5	12.0	12.0	12.0	10.0	11.1	13.1	13.1	13.1	15.0
Sum	277.45	148.34	414.45	534.0	432.1	289.73	305.51	310.11	351.1	579.0	595.0	444.5

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	0.460	0.100	!25	32.4	13	2.77	8.95	23,972	52,909	216,588	5,954
Feb.	.180	.120	!2	7.23	!17	3.74	5.12	12,817	82,069	495,046	7,139
Mar.	.445	.130	15	30.7	11	4.26	13.4	35,808	101,616	486,605	2,805
April	.995	.305	4	144	2	12.5	17.8	46,138	127,748	502,502	6,204
May	.420	.295	11	20.4	31	11.9	13.9	37,333	196,170	608,342	8,109
June	.735	.185	26	65.0	21	6.28	9.66	25,033	132,950	489,197	2,061
July	.435	.225	28	21.5	!3	8.27	9.86	26,396	109,907	384,578	2,864
Aug.	.370	.210	10	16.8	!6	7.44	10.0	26,794	133,500	876,848	6,347
Sept.	.480	.270	27	25.2	!7	10.5	11.7	30,335	155,405	1,559,261	14,929
Oct.	1.265	.315	5	201	!29	13.1	18.7	50,026	158,881	1,025,395	13,827
Nov.	1.240	.285	17	207	11	11.3	19.8	51,408	71,289	615,686	10,933
Dec.	.395	.310	21	18.5	!14	12.8	14.3	38,405	50,309	223,396	9,234
Yearly	1.265	0.100		207		2.77	12.8	404,465	1,372,753	3,909,913	256,561

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

WATER BULLETIN NUMBER 74 -- 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 44 current-meter measurement during the year, 4 by the United States Section, and 40 by the Mexican Section, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1962 through 2004.

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.

Daily:	Max.	1,260	Average Flow in Cubic Meters per Second	Min.	0	Frequently
Monthly:	Max.	209	July 18, 1975	Min.	0	Frequently
Yearly:	Max.	23.7	July 1976	Min.	0.07	1996
			July 1976			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.90	1.80	* 1.35	7.83	22.1	5.25	3.69	7.47	3.49	6.04	5.92	5.68
2	2.07	* 1.69	1.25	6.15	19.1	4.97	3.43	6.15	* 4.08	5.75	6.33	5.56
3	2.13	1.69	1.18	6.90	17.4	4.73	3.24	5.44	4.36	5.75	6.45	5.44
4	2.19	1.59	1.23	117	* 14.0	4.70	1.74	5.34	4.18	5.75	3.21	5.39
5	2.43	1.66	1.96	223 *	14.6	4.88	2.75	5.15	4.00	* 32.0	3.11	5.39
6	2.31	1.82	1.35	130 *	13.5	4.61	2.62	5.15	4.03	25.3	3.90	5.58
7	2.07	1.77	1.16	88.2	12.7	* 4.01	2.56	4.52	* 3.88	15.9	4.21	* 6.33
8	2.13	1.54	* 1.14	63.7	11.9	3.69	2.53	4.01	3.58	11.2	4.75	6.41
9	2.13	* 1.48	1.18	52.6	11.0	3.69	2.56	* 9.98	3.40	9.30	* 5.09	6.41
10	2.13	1.45	1.14	45.9	9.87	3.82	2.56	6.63	4.66	8.00	5.20	6.41
11	2.13	1.78	1.08	39.1	16.3	3.85	2.56	5.04	6.40	7.40	5.44	6.41
12	* 2.19	1.66	2.66	32.7	13.8	3.85	2.56	4.26	8.59	7.00	5.75	6.31
13	2.19	* 1.45	8.42	27.1	13.8	3.85	* 2.62	3.88	* 7.22	6.85	5.65	* 6.16
14	2.25	1.40	5.43	24.6	15.7	4.01	2.56	3.98	5.98	6.67	5.56	5.37
15	2.82	1.54	* 8.28	23.1	15.5	3.93	2.56	4.35	5.98	6.16	11.9	4.75
16	3.17	* 1.35	4.97	21.4	15.3	3.77	2.49	* 4.52	5.76	6.16	* 19.6	4.78
17	3.10	1.27	4.26	19.5	14.6	3.54	2.43	4.52	4.57	6.16	35.8	4.86
18	3.36	1.27	3.85	18.0	* 13.6	3.54	2.31	4.52	4.47	6.16	14.2	4.86
19	3.09	1.27	3.39	16.6	12.7	3.54	2.19	4.61	4.47	* 6.16	10.5	4.93
20	* 1.96	1.27	3.31	* 15.0	11.4	3.46	2.09	4.35	4.36	6.16	9.30	4.98
21	1.90	1.27	3.17	14.0	* 10.4	* 3.46	2.01	4.18	4.21	6.04	8.57	* 4.98
22	1.93	1.27	* 4.31	13.4	9.74	3.77	1.90	4.13	3.95	6.04	7.87	5.01
23	2.13	* 1.27	4.93	13.0	9.08	3.69	2.01	* 4.86	3.87	6.04	* 7.19	5.20
24	2.41	1.52	10.0	14.0	8.44	4.09	2.13	4.43	3.83	6.04	6.88	5.09
25	2.49	2.38	16.2	16.6	7.71	4.43	2.29	3.98	3.69	6.04	5.68	4.98
26	* 2.62	2.39	16.1	19.5	7.24	4.79	2.43	3.93	3.58	* 6.04	* 5.56	4.84
27	2.62	1.45	14.6	* 18.1	6.86	4.18	2.58	3.54	* 5.06	6.04	5.68	4.70
28	2.19	1.18	13.0	17.7	6.58	3.57	2.89	3.43	7.10	6.04	5.80	* 4.64
29	1.90	1.14	11.7	22.8	6.15	* 4.09	4.09	3.39	6.40	6.04	* 5.80	4.64
30	1.90		* 10.0	23.4	5.88	4.14	7.24	3.39	5.40	6.04	5.80	4.64
31	1.85		8.19		5.54		8.39	3.43		5.92		4.64
Sum	71.69	44.62	170.79	1,150.88	372.49	121.90	90.01	146.56	144.55	256.19	236.70	165.37

Current Year 2004

Period 1962-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume- Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	1.175	1.020	! 18	3.85	31	1.80	2.31	6,194	4,237	20,066	0
Feb.	1.110	.050	26	2.89	29	1.12	1.54	3,855	2,963	12,251	0
Mar.	1.810	.940	15	22.3	11	1.06	5.51	14,756	2,884	18,325	0
April	4.490	1.285	5	320	2	5.84	38.4	99,436	6,750	99,436	0
May	1.850	1.260	! 1	24.0	31	5.34	12.0	32,183	4,939	36,113	0
June	1.275	1.150	1	5.64	! 20	3.46	4.06	10,532	7,919	127,224	0
July	1.400	1.015	31	8.44	4	1.74	2.90	7,777	28,732	560,796	0
Aug.	1.630	1.140	9	15.3	29	3.31	4.73	12,663	12,174	109,801	0
Sept.	1.425	1.400	12	9.08	9	3.31	4.82	12,489	17,112	65,176	0
Oct.	2.500	1.225	5	69.5	! 2	5.75	8.26	22,135	16,471	83,799	0
Nov.	2.280	1.090	17	54.1	! 4	2.92	7.89	20,451	9,883	103,632	0
Dec.	1.250	1.170	! 7	6.41	28	4.53	5.33	14,288	6,164	25,993	0
Yearly	4.490	0.050		320		1.06	8.12	256,759	120,228	748,140	2,288

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

WATER BULLETIN NUMBER 74 -- 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 81 current-meter measurements made during the year. 28 measurements were made by U. S. Section of the Commission and 53 measurements were made by MCWCID No. 1. Records available: 1949 through 2004.

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	Occasional ly	
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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.8	18.7	19.2	* 18.2	20.6	15.5	* 18.0	16.5	17.0	19.4	20.6	* 22.3
2	18.9	18.5	18.9	18.6	21.1	* 14.9	18.1	16.2	* 19.0	19.3	20.9	* 22.7
3	18.8	18.1	19.1	19.5	19.4	* 11.2	18.1	* 16.2	19.4	19.5	19.7	22.7
4	18.7	18.0	19.3	19.6	* 18.6	10.8	18.1	16.1	18.4	* 18.8	19.8	22.7
5	18.3	17.2	* 20.3	* 22.8	18.2	11.9	17.7	* 15.7	18.2	21.6	20.0	22.7
6	17.1	* 16.5	19.4	* 21.0	* 18.4	12.4	* 17.4	15.2	17.7	19.9	20.0	23.1
7	16.6	17.6	19.1	20.6	18.5	11.6	16.7	14.4	18.0	* 24.7	20.1	23.6
8	* 17.1	18.2	19.2	20.6	18.7	11.5	16.1	15.3	17.1	24.6	* 20.0	22.7
9	18.0	* 18.0	19.3	19.5	18.4	* 12.2	16.3	15.7	17.0	22.9	18.1	22.4
10	18.7	18.0	18.9	19.2	* 17.3	12.1	17.0	17.1	16.9	22.4	15.0	* 22.3
11	18.5	* 18.2	18.4	19.4	18.6	11.5	17.0	17.1	17.4	* 21.4	16.2	22.5
12	18.3	18.0	22.6	19.4	19.5	13.0	* 16.8	16.6	17.5	21.3	17.5	22.5
13	* 18.2	18.1	27.1	19.1	18.7	13.8	16.3	* 16.3	17.5	21.6	18.1	* 22.3
14	18.4	18.5	24.9	18.8	* 18.9	* 13.3	16.7	16.2	16.9	21.4	17.6	22.0
15	19.3	18.5	22.2	* 18.3	18.9	13.2	* 16.3	17.2	16.1	* 21.2	20.2	21.5
16	19.8	18.0	20.0	18.2	18.6	12.6	15.2	16.5	* 16.4	21.0	* 25.2	* 22.8
17	19.5	* 18.4	* 19.7	18.5	19.1	* 11.4	14.3	16.3	16.3	21.1	29.0	30.3
18	19.1	17.7	19.6	18.6	* 18.3	11.2	15.3	16.0	16.7	20.8	32.4	33.4
19	18.5	* 16.3	19.5	18.6	18.1	11.6	* 14.3	* 15.7	17.3	* 21.1	* 32.2	34.2
20	18.5	17.1	19.5	18.9	17.9	13.0	13.4	* 14.5	* 17.1	21.1	28.4	34.5
21	18.6	17.3	19.5	18.4	17.5	13.9	13.1	14.8	16.8	20.9	25.5	33.1
22	18.9	17.0	20.1	* 18.0	18.1	* 13.8	13.3	15.6	15.9	20.9	* 24.6	33.4
23	* 18.4	17.6	* 17.0	* 18.2	18.2	10.9	12.1	* 16.0	16.2	20.2	* 24.5	34.4
24	18.3	18.4	19.1	19.0	17.9	13.4	10.6	* 16.0	16.7	20.0	23.3	35.2
25	9.70	19.0	18.7	27.1	* 17.4	15.1	12.0	15.8	17.6	* 20.3	23.5	35.8
26	0	18.2	19.1	* 22.3	16.5	13.9	13.6	15.5	17.4	22.1	23.3	35.5
27	0	18.2	19.0	19.8	* 15.0	13.9	15.5	15.9	18.3	20.5	23.1	35.2
28	0	17.8	19.2	19.0	* 14.6	14.7	* 15.5	16.5	* 18.4	20.3	23.1	34.8
29	0	18.2	19.3	20.5	16.7	* 16.7	* 15.5	15.5	20.7	* 20.2	* 23.1	35.0
30	8.10		19.0	* 22.9	16.4	17.7	15.5	* 15.3	* 19.6	20.2	23.1	35.0
31	12.3		* 18.2		15.9		15.5	16.1		20.2		34.8
Sum	473.40	519.3	614.4	592.6	560.0	392.7	481.3	493.8	525.5	650.9	668.1	875.4

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 16	19.8	! 26	0	15.3	40,902	69,899	116,090	6,108
Feb.			25	19.0	19	16.3	17.9	44,868	69,957	108,078	6,008
Mar.			13	27.1	23	17.0	19.8	53,084	73,499	109,909	7,047
April			25	27.1	22	18.0	19.8	51,201	72,865	115,145	5,305
May			2	21.1	28	14.6	18.1	48,384	80,926	113,668	17,131
June			30	17.7	4	10.8	13.1	33,929	71,849	102,070	8,162
July			! 2	18.1	24	10.6	15.5	41,584	69,223	96,639	6,830
Aug.			15	17.2	8	14.4	15.9	42,664	69,771	97,044	22,766
Sept.			29	20.7	22	15.9	17.5	45,403	72,527	111,197	16,949
Oct.			7	24.7	4	18.8	21.0	56,238	73,524	109,382	13,750
Nov.			18	32.4	10	15.0	22.3	57,724	68,191	106,644	3,951
Dec.			25	35.8	15	21.5	28.2	75,635	68,608	112,566	3,217
Yearly				35.8		0	18.7	591,616	860,839	1,158,234	207,661

\* Discharge measurement(s) made on this day

@ Mean daily

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 2004. 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 Commission on Environmental Quality. 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:

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

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.09	0.27	0.17	0.15	0.26	0.22	2.14	0.55	0.25	0.29	0.51	0.49
2	.27	.28	.26	.15	.26	.20	2.17	.54	.25	.29	.50	.45
3	.31	.27	.29	.16	.25	.20	2.15	.48	.26	.31	.46	.40
4	.31	.26	.22	.18	.21	.29	2.15	.41	.23	.34	.50	.40
5	.31	.27	.25	.19	.21	.43	2.15	.35	.27	.38	.48	.50
6	.32	.27	.24	.20	.20	.50	.66	.35	.24	.43	.48	.47
7	.32	.29	.24	.22	.20	.57	.45	.39	.22	.52	.44	.51
8	.32	.30	.23	.23	.22	.50	.47	.38	.21	.88	.41	.50
9	.33	.31	.20	.22	.20	.48	.46	.39	.22	.85	.40	.50
10	.33	.30	.20	.23	.20	.52	.41	.40	.25	.81	.42	.44
11	.32	.31	.20	.25	.21	.43	.39	.42	.29	.78	.43	.42
12	.32	.30	.21	.26	.21	.42	.42	.55	.26	.73	.41	.37
13	.31	.31	.23	.26	.21	.42	.52	.59	.25	.71	.43	.37
14	.31	.31	.25	.25	.22	.42	.56	.57	.25	.70	.45	.50
15	.31	.31	.27	.24	.24	.41	.56	.56	.30	.69	.53	.45
16	.30	.31	.28	.25	.25	.43	.55	.58	.32	.64	.60	.56
17	.29	.30	.28	.24	.24	.46	.53	.66	.25	.61	.67	.61
18	.29	.30	.28	.25	.23	.50	.50	.63	.24	.61	.69	.61
19	.28	.29	.27	.25	.22	.54	.48	.59	.26	.57	.72	.58
20	.28	.29	.26	.24	.21	.40	.49	.69	.31	.53	.73	.54
21	.29	.28	.25	.24	.20	.40	.54	.91	.27	.52	.73	.59
22	.29	.28	.30	.24	.20	.41	.55	.88	.25	.52	.72	.60
23	.31	.29	.35	.26	.20	.40	.53	.78	.26	.55	.71	.63
24	.33	.30	.28	.27	.20	.41	.52	.66	.27	.52	.69	.61
25	.32	.31	.20	.29	.20	.47	.53	.54	.28	.51	.67	.58
26	.31	.32	.19	.29	.27	.50	.54	.47	.27	.59	.65	.55
27	.30	.33	.19	.29	.28	.46	.56	.44	.30	.55	.63	.52
28	.30	.33	.19	.29	.23	.57	.55	.42	.30	.53	.60	.55
29	.31	.33	.19	.30	.25	.60	.52	.44	.30	.53	.57	.61
30	.31		.23	.31	.24	.55	.50	.52	.29	.53	.60	.52
31	.31		.23		.21		.63	.55		.54		.49
Sum	9.30	8.62	7.43	7.20	6.93	13.11	24.18	16.69	7.92	17.56	16.83	15.92

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 9	0.33	1	0.09	0.30	804	3,165	9,424	804
Feb.			! 27	.33	4	.26	.30	745	3,009	7,556	745
Mar.			23	.35	1	.17	.24	642	3,962	7,940	642
April			30	.31	! 1	.15	.24	622	4,219	9,615	622
May			27	.28	! 6	.20	.22	599	4,043	10,087	599
June			29	.60	! 2	.20	.44	1,133	3,996	11,334	640
July			2	2.17	11	.39	.78	2,089	4,170	10,060	405
Aug.			21	.91	! 5	.35	.54	1,442	4,242	11,423	486
Sept.			16	.32	8	.21	.26	684	3,654	9,472	356
Oct.			8	.88	! 1	.29	.57	1,517	3,714	8,097	1,337
Nov.			! 20	.73	9	.40	.56	1,454	3,438	10,726	898
Dec.			23	.63	! 12	.37	.51	1,375	3,095	7,122	860
Yearly				2.17		0.09	0.41	13,106	44,707	112,857	12,834

@ Mean daily

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- 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' 47", longitude 100 30' 23", 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 59 discharge measurements during the year, 47 by the Mexican Section, and 12 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 2004. 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.

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.	27.4	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	27.9	28.3	* 25.9	* 42.2	65.3	34.5	* 32.7	39.6	36.2	51.2	38.3	* 43.8
2	27.8	* 27.2	25.5	44.6	62.5	30.9	* 31.9	38.9	* 39.6	47.7	38.4	43.0
3	27.6	27.2	25.5	49.8	* 57.3	* 26.8	31.9	37.1	* 36.4	44.3	38.4	43.5
4	27.4	26.5	26.2	185	53.9	24.2	31.6	35.6	36.3	* 40.9	38.5	43.5
5	27.2	25.1	* 27.5	606	49.5	26.2	31.2	* 34.5	36.2	367 *	38.5	44.2
6	27.0	* 23.8	27.8	304 *	* 49.5	26.2	30.9	32.7	36.1	173	38.6	45.0
7	26.8	23.9	26.2	184	48.5	* 25.5	29.9	30.2	36.0	109	38.6	45.0
8	* 26.6	24.9	* 25.5	135	48.2	24.2	30.5	30.2	35.8	83.4	* 38.7	43.2
9	26.5	* 24.9	24.9	120	46.6	24.9	31.6	* 32.3	35.7	67.4	39.4	43.8
10	26.3	24.9	24.6	105	* 44.7	24.9	31.6	39.6	35.6	59.9	40.0	42.7
11	26.1	24.9	23.3	102	50.9	24.6	32.0	39.6	35.5	55.5	40.7	42.7
12	* 25.9	25.1	30.0	* 86.1	58.2	25.5	* 32.0	36.3	* 35.4	* 41.5	41.3	42.7
13	26.2	24.6	49.7	70.7	51.4	25.5	31.6	34.8	* 35.3	41.4	42.0	* 42.2
14	26.5	24.2	50.7	* 68.2	53.1	* 26.8	31.6	34.5	35.1	41.3	42.6	41.6
15	26.8	24.9	* 55.2	* 68.9	52.3	25.5	30.9	34.5	34.9	41.2	* 43.3	40.7
16	27.0	* 24.5	44.7	* 65.1	51.8	24.6	29.9	* 34.9	34.7	41.1	76.1	41.1
17	27.3	24.2	42.7	60.8	* 50.6	23.3	28.2	34.5	34.6	41.0	164	47.4
18	27.6	23.9	40.4	58.3	49.0	22.3	28.9	34.0	34.4	* 40.9	159	54.7
19	* 27.9	22.3	38.6	* 56.5	46.9	22.3	* 27.5	34.2	34.2	40.8	94.1	55.1
20	28.9	22.3	37.8	55.1	45.0	22.9	26.8	33.0	* 34.0	40.7	71.5	* 54.4
21	29.8	23.6	37.4	53.7	43.2	23.6	26.2	32.3	34.6	40.6	60.8	54.7
22	30.8	23.6	* 38.1	52.1	41.9	24.5	25.8	33.0	35.3	40.5	* 55.6	56.4
23	31.8	* 24.2	38.9	50.7	41.6	23.9	24.9	* 34.0	35.9	40.4	53.4	57.0
24	32.8	26.2	39.6	50.6	* 40.7	36.6	24.9	35.2	36.6	40.3	51.4	58.1
25	33.7	28.2	46.6	60.2	39.6	33.7	24.6	35.2	37.2	* 40.2	49.8	59.0
26	* 34.7	27.2	50.3	* 62.0	38.6	39.6	30.2	34.5	37.9	40.2	49.0	58.5
27	33.6	26.2	49.8	60.4	36.2	49.0	33.0	33.7	* 38.5	40.2	47.9	* 58.1
28	32.6	25.5	48.2	57.0	34.9	34.5	33.0	33.7	61.4	40.2	46.6	58.1
29	31.5	25.5	* 49.0	61.3	36.6	35.5	38.9	34.8	58.0	40.2	* 46.6	58.1
30	30.4	46.6	70.0	36.6	35.2	35.2	38.9	33.7	54.6	40.2	45.8	59.0
31	29.3	43.8	43.8	35.2	35.2	35.2	39.6	35.2	40.2	40.2	40.2	59.3
Sum	892.3	727.8	1,161.0	3,045.3	1,460.3	847.7	953.2	1,076.3	1,142.0	1,912.4	1,668.9	1,536.6

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	1.020	0.970	26	34.7	12	25.9	77,095	134,460	352,875	32,306	
Feb.	1.005	.950	25	28.9	19	21.6	62,882	156,641	552,787	43,917	
Mar.	1.270	.960	15	71.4	11	22.9	100,310	181,433	563,328	25,779	
April	4.845	1.090	5	1,120	1	41.1	263,114	207,391	570,326	29,641	
May	1.245	1.045	1	66.9	28	34.5	126,170	282,446	726,365	44,643	
June	1.215	.935	27	61.5	! 3	19.7	73,241	222,507	594,778	23,750	
July	1.085	.965	29	40.4	25	23.8	82,356	215,216	961,969	32,194	
Aug.	1.090	1.010	! 10	41.1	7	29.5	92,992	219,738	916,834	70,131	
Sept.	1.255	1.040	28	68.7	1	34.0	98,669	249,236	1,611,965	63,668	
Oct.	3.270	1.110	5	584	! 25	40.2	165,231	255,953	1,099,958	59,953	
Nov.	2.180	1.105	17	270	1	38.3	144,193	156,132	704,160	56,497	
Dec.	1.205	1.085	! 25	59.8	! 15	40.4	132,762	135,232	356,400	32,314	
Yearly	4.845	0.935		1,120		19.7	44.9	1,419,015	2,416,385	4,629,385	870,435

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- 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 61 discharge measurements during the year, 57 by the Mexican Section and 4 by the U. S. Section, and a continuous record of gage heights. Records available: October 1932 through 2004.

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. 1,600 CMS on April 5, 2004 with a stage of 227.88 meters above mean sea level. Min. frequently no flow.

		Average Flow in Cubic Meters per Second					
Daily:	Max.	883	Apr. 5, 2004	Min.	0	Occasionally	
Monthly:	Max.	67.6	Apr. 2004	Min.	0.01	Sept. 1965	
Yearly:	Max.	10.0	2004	Min.	0.07	1956	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.23	1.25	* 1.11	3.96	13.3	* 7.95	5.63	3.86	5.04	5.81	5.57	5.57
2	1.23	* 1.24	1.09	4.82	12.5	7.95	* 5.46	3.86	5.65	5.81	5.36	5.57
3	1.23	1.24	1.11	4.63	* 11.9	7.80	5.34	3.86	* 5.57	5.81	5.22	5.46
4	1.23	1.24	1.11	191	11.6	7.80	5.34	3.86	5.51	* 5.81	5.22	5.34
5	1.23	1.25	1.11	883	11.3	7.66	5.34	3.86	5.38	9.17	5.22	5.34
6	1.23	1.25	1.11	227	11.2	* 7.52	5.34	3.86	5.30	8.23	5.22	5.34
7	1.23	1.25	1.11	115	11.1	* 7.31	5.34	3.86	5.22	7.04	5.22	5.34
8	1.23	1.25	* 1.06	96.9	10.7	7.10	5.34	4.13	5.22	6.69	* 4.94	5.22
9	1.23	* 1.25	1.06	78.8	10.5	7.10	5.34	* 5.01	5.34	6.51	4.84	5.11
10	1.23	1.26	1.05	60.8	* 10.7	6.90	5.34	5.03	5.45	6.31	4.78	5.11
11	1.23	1.28	1.04	42.7	13.3	6.83	5.34	5.30	5.50	6.18	4.73	5.11
12	* 1.23	1.29	4.07	24.6	12.6	6.70	* 4.90	5.11	5.57	6.06	4.67	5.11
13	1.30	* 1.31	5.56	22.6	11.0	6.44	4.46	5.00	* 5.57	6.06	4.67	* 5.11
14	1.38	1.32	2.96	* 21.0	* 10.4	* 6.44	4.46	5.00	5.57	5.97	4.99	4.76
15	1.45	1.34	5.06	20.0	10.2	6.44	4.46	4.89	5.57	5.81	* 7.49	4.67
16	1.53	* 1.35	4.61	* 19.0	10.1	6.31	4.46	* 4.78	5.57	5.81	7.88	4.67
17	1.60	1.36	3.61	18.0	* 9.96	6.18	4.46	4.67	5.45	5.81	7.52	4.67
18	1.68	1.37	3.36	16.8	9.82	6.06	4.46	4.56	5.38	* 5.75	6.46	4.67
19	* 1.75	1.38	3.23	* 16.3	9.68	6.00	* 4.36	5.06	5.59	5.69	6.06	4.67
20	1.69	1.40	3.22	16.1	9.54	5.81	4.26	5.17	* 5.40	5.69	5.81	* 4.51
21	1.63	1.41	3.22	15.8	9.41	* 5.81	4.26	5.02	5.34	5.64	5.81	4.46
22	1.57	1.42	* 3.22	15.3	9.27	5.81	3.96	5.40	5.34	5.57	* 5.81	4.46
23	1.52	* 1.43	3.22	14.9	9.13	5.63	3.58	* 6.20	5.46	5.57	5.81	4.40
24	1.46	1.39	3.31	14.5	* 8.99	5.66	3.67	5.71	5.40	5.57	5.57	4.35
25	1.40	1.36	3.40	14.1	8.84	5.51	3.48	5.37	5.34	* 5.57	5.57	4.35
26	* 1.34	1.32	3.40	* 13.7	8.69	5.51	5.80	5.17	5.34	5.57	* 5.57	4.35
27	1.33	1.29	3.49	13.3	8.54	5.45	3.88	5.06	* 5.56	5.57	5.57	* 4.30
28	1.31	1.25	3.49	13.5	8.54	6.28	3.63	5.00	7.43	5.57	5.57	4.25
29	1.30	1.22	* 3.99	16.2	8.39	7.11	3.67	5.00	6.39	5.45	* 5.57	4.25
30	1.28	4.05	14.0	8.24	5.94	3.76	4.89	5.94	5.45	5.45	5.57	4.19
31	1.27	3.95	5.57	8.17	8.17	3.86	4.73	4.73	5.34	5.34	5.34	4.15
Sum	42.55	37.97	86.38	2,028.31	317.61	197.01	142.98	148.28	166.39	186.89	168.29	148.86

Current Year 2004

Period 1932-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	0.385	0.310	20	1.87	13	1.06	1.37	3,676	3,876	23,350	53.6
Feb.	.350	.320	24	1.46	! 2	1.16	1.31	3,281	3,052	17,803	48.4
Mar.	.800	.290	13	11.9	10	.89	2.79	7,463	2,642	14,070	114
April	8.920	.515	5	1,600	1	3.96	67.6	175,246	5,121	175,246	100
May	.835	.685	1	13.3	31	8.15	10.2	27,442	4,549	31,418	190
June	.805	.585	28	12.1	! 25	5.45	6.57	17,022	3,534	31,888	74.3
July	.785	.470	26	11.3	25	3.14	4.61	12,353	3,152	32,694	64.8
Aug.	.680	.510	9	7.95	! 1	3.86	4.78	12,811	4,399	37,135	0
Sept.	.700	.550	28	8.54	1	4.67	5.55	14,376	5,920	60,665	21.6
Oct.	.820	.580	5	12.6	31	5.34	6.03	16,147	6,208	49,084	53.6
Nov.	.735	.550	15	9.62	! 11	4.67	5.61	14,540	4,777	31,743	53.6
Dec.	.590	.525	! 1	5.57	31	4.15	4.80	12,862	4,232	27,140	82.9
Yearly	8.920	0.290		1,600		0.89	10.0	317,219	51,462	317,219	2,163

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

WATER BULLETIN NUMBER 74 -- 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 2004. 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 Commission on Environmental Quality. 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:

Daily:	Max.	9.91	July 5, 1968	Average Flow in Cubic Meters per Second**	Min.	0	Occasionally
Monthly:	Max.	7.00	July 1968		Min.	0	Occasionally
Yearly:	Max.	5.10	July 1971		Min.	0.03	2004

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0.12	0	1.30	0.01	0.01	0	0.07	0.01
2	0	0	0	0	.11	0	.57	.02	.01	0	.07	.01
3	0	0	0	0	.07	0	.13	.02	.06	0	.05	.01
4	0	0	0	0	.05	0	.08	.01	.05	0	.03	.01
5	0	0	0	0	.05	0	.06	.01	.03	0	.02	.01
6	0	0	0	.01	.03	0	.06	.01	.03	.01	.02	.01
7	0	0	0	.01	.02	.03	.05	.01	.03	.01	.02	.01
8	0	0	0	.01	.01	.10	.05	.01	.03	.01	.02	.01
9	0	0	0	.01	.01	.18	.05	.01	.04	.02	.02	.01
10	0	0	0	.01	0	.20	.04	.01	.04	.01	.02	.01
11	0	0	0	.01	0	.18	.04	.01	.04	.01	.02	.01
12	0	0	0	.01	0	.17	.04	.01	.07	.01	.02	.01
13	0	0	0	.01	0	.18	.03	.01	.07	.01	.03	.02
14	.01	0	0	.01	0	.19	.03	.01	.05	.01	.03	.01
15	.01	0	0	.01	0	.17	.03	.01	.04	.01	.04	.01
16	.01	0	0	.01	.01	.13	.03	.01	.03	.01	.05	.01
17	.01	0	0	.01	.01	.15	.03	.01	.03	.01	.05	.01
18	0	0	0	.01	.01	.12	.02	.01	.03	.01	.05	.02
19	0	0	0	.01	.01	.09	.02	.01	.03	.01	.05	.02
20	0	0	0	.02	0	.07	.02	.01	.03	.01	.04	.02
21	0	0	0	.02	0	.05	.02	.08	.03	.01	.04	.02
22	0	0	0	.02	0	.07	.01	.21	.03	.01	.03	.02
23	.01	0	0	.02	0	.08	.01	.06	.03	.01	.03	.02
24	.01	0	0	.03	0	.07	.01	.04	.03	.01	.03	.02
25	.01	0	0	.04	0	.06	.01	.03	.02	.01	.03	.02
26	.01	0	0	.06	0	.05	.01	.01	.02	.01	.03	.01
27	.01	0	0	.08	0	.04	.01	.01	.03	.01	.03	.01
28	.01	0	.01	.10	0	.04	.02	.01	.03	.01	.03	.01
29	.01	0	0	.09	0	.05	.03	.01	.02	.01	.02	.01
30	.01	0	.01	.09	0	.06	.02	.01	.02	.01	.02	.01
31	.01	0	.01	0	0	0	.02	.01	.01	.01	.01	.01
Sum	0.13	0	0.03	0.71	0.51	2.53	2.85	0.70	1.01	0.27	1.01	0.40

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			! 14	0.01	! 1	0	0	11.2	4,584	15,700	8.6
Feb.			! 1	0	! 1	0	0	0	3,824	13,204	0
Mar.			! 28	.01	! 1	0	0	2.6	5,001	14,401	2.6
April			28	.10	! 1	0	.02	61.3	5,425	18,066	61.3
May			! 1	.12	! 10	0	.02	44.1	5,071	17,672	0
June			10	.20	! 1	0	.08	219	5,266	17,742	22.5
July			1	1.30	! 22	.01	.09	246	5,156	18,723	31.1
Aug.			22	.21	! 1	.01	.02	60.5	4,843	14,290	60.5
Sept.			! 12	.07	! 1	.01	.03	87.3	4,072	11,301	51.8
Oct.			9	.02	! 1	0	.01	23.3	3,811	10,138	23.3
Nov.			! 1	.07	! 5	.02	.03	87.3	3,908	13,309	6.0
Dec.			! 13	.02	! 1	.01	.01	34.6	4,096	15,785	34.6
Yearly				1.30		0	0.03	877	55,057	161,048	877

@ Mean daily

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

08-4587.00 RIO GRANDE NEAR EL INDI0, TEXAS  
AND VILLA GUERRERO, COAHUILA

DESCRIPTION: Cableway, bubbler gage, concrete control weir, DCP with GOES high data rate telemetry 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 23 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 2004 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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.7	30.0	24.8	50.8	89.9	43.2	43.6	40.8	* 38.6	54.5	51.6	57.5
2	30.8	28.7	24.8	49.6	85.4	* 41.1	38.8	39.8	40.5	54.0	49.5	54.7
3	31.8	28.1	* 23.7	76.9	81.6	37.9	37.9	38.3	41.9	54.8	* 48.3	* 53.9
4	32.5	* 28.2	22.9	150	78.0	33.7	36.9	* 37.2	41.4	56.6	47.7	53.5
5	32.5	27.1	22.9	1,350	* 72.7	34.8	35.8	36.4	39.4	265	45.9	54.8
6	31.8	24.3	25.0	552 *	72.2	34.5	35.2	35.4	39.9	233	46.8	55.9
7	* 30.0	22.5	22.8	299	69.9	34.6	* 34.6	33.8	42.1	129	48.0	57.0
8	28.4	23.7	21.4	200	68.9	34.3	33.9	32.2	39.2	95.3	48.8	57.2
9	28.5	24.5	20.9	152	67.6	33.2	34.5	34.5	37.7	82.3	48.8	56.4
10	29.2	24.9	20.1	129	65.2	32.6	35.0	43.1	37.5	76.9	47.0	57.8
11	29.6	25.1	19.4	124	95.3	32.5	35.1	44.4	40.3	73.9	45.5	58.0
12	28.8	24.4	38.2	122	87.4	32.0	35.3	40.4	40.9	72.5	46.9	58.0
13	28.0	23.8	72.5	110	72.2	33.6	35.7	38.0	41.8	* 71.1	47.6	57.2
14	28.7	23.1	62.9	103	70.0	33.7	34.6	37.1	* 40.6	69.8	52.5	57.2
15	30.0	24.6	88.5	98.6	69.9	33.9	33.9	36.7	* 39.5	68.0	64.6	* 56.6
16	31.9	25.1	60.7	95.0	68.3	32.3	33.0	36.9	39.1	65.4	90.9	56.0
17	33.8	24.4	49.9	92.9	66.6	* 31.3	31.6	36.1	39.7	64.5	132	58.5
18	31.9	* 24.1	45.3	90.2	65.5	30.3	30.8	* 34.9	40.1	63.8	248 *	65.9
19	31.0	21.9	42.3	88.5	64.0	29.6	30.9	35.1	41.3	62.8	133	67.7
20	30.2	20.2	41.7	86.5	* 62.3	29.8	29.6	35.2	42.8	61.7	104	67.2
21	* 28.4	21.3	42.3	* 85.4	60.0	31.1	* 29.5	42.8	42.4	60.6	90.9	66.0
22	28.6	23.0	42.8	84.0	57.5	34.9	29.4	37.4	41.7	59.8	84.3	65.4
23	29.2	24.0	44.6	83.7	56.4	33.1	29.1	37.0	41.6	59.7	80.5	65.3
24	29.0	27.8	44.1	122	54.7	38.8	29.9	38.3	43.9	58.2	77.1	65.4
25	29.2	29.1	49.7	90.2	53.2	43.7	28.5	38.0	45.1	56.9	73.6	64.9
26	25.9	27.6	* 56.9	94.8	51.5	39.1	34.5	36.5	45.4	56.7	70.7	64.6
27	31.0	25.9	57.6	91.6	49.5	59.3	40.8	35.8	47.1	57.1	68.0	63.4
28	30.1	25.4	56.8	83.4	47.3	43.5	35.8	35.2	60.4	54.9	64.9	62.7
29	29.0	25.1	58.9	95.5	46.5	45.6	40.1	36.8	65.1	52.9	62.3	61.8
30	28.1		58.9	93.9	46.9	61.2	40.4	34.2	59.2	51.2	60.3	61.2
31	29.3		53.9		44.9		40.6	34.9		50.1		60.6
Sum	927.9	727.9	1,317.2	4,944.5	2,041.3	1,109.2	1,075.3	1,153.2	1,296.2	2,393.0	2,180.0	1,862.3

Month	Current Year 2004							Period 1968-2004			
	Extreme Gage Meters		Extreme-Cubic Meters per Second			Average	Total	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day			Low	Average	Maximum	Minimum
Jan.	1.870	1.795	17	34.4	26	22.7	29.9	80,171	143,332	344,184	44,366
Feb.	1.890	1.785	23	33.5	20	19.7	25.1	62,891	165,369	548,741	57,378
Mar.	2.370	1.780	15	131	11	19.0	42.5	113,806	188,760	567,475	46,184
April	5.185	1.945	5	2,200	2	49.0	165	427,205	221,156	584,928	46,115
May	2.330	1.940	11	131	31	43.7	65.8	176,368	299,339	740,332	62,566
June	2.190	1.840	30	91.0	! 19	28.9	37.0	95,835	237,465	681,150	36,768
July	1.990	1.825	26	52.9	25	27.4	34.7	92,906	225,544	972,830	45,920
Aug.	2.030	1.850	21	59.5	8	31.6	37.2	99,636	231,191	1,016,428	77,147
Sept.	2.055	1.890	28	74.6	10	36.9	43.2	111,992	262,785	1,598,663	72,300
Oct.	2.810	1.925	5	549	31	49.3	77.2	206,755	269,099	1,064,503	54,458
Nov.	2.510	1.930	18	292	11	44.5	72.7	188,352	168,636	681,981	54,285
Dec.	2.040	1.935	18	69.5	! 3	52.6	60.1	160,903	142,480	341,125	46,189
Yearly	5.185	1.780		2,200		19.0	57.5	1,816,820	2,555,156	4,731,321	1,105,710

\* Discharge measurement(s) made on this day ! And other days \*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- 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), DCP with GOES high data rate telemetry 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 25 current-meter measurements during the year made from the bridge and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through 1913 (gage height records only) January through March 1914; May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June, November, and December 1922; 1923 through March 2, 1989 at a station 1.3 kilometers downstream of present site; March 3, 1989 through May 1990 at a station 0.5 kilometer upstream of present site; and June 1990 through 2004 at the present site.

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

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	26.2	24.6	26.7	58.3	98.9	41.7	66.3	37.0	33.8	46.4	44.7	46.2
2	26.0	25.3	25.1	* 53.4	91.2	* 40.1	* 58.5	33.4	* 45.9	41.0	* 45.4	* 45.9
3	26.2	* 25.3	* 24.7	50.9	83.9	38.3	43.1	31.8	38.2	38.5	42.8	44.6
4	26.3	25.0	24.7	95.0	* 78.0	37.1	38.1	* 30.7	38.0	37.1	41.8	44.3
5	27.4	24.8	24.7	280	71.7	33.8	36.0	29.5	36.7	* 46.8	42.4	44.5
6	* 27.7	24.6	24.9	1,030 *	66.9	29.8	34.2	29.1	45.4	280	40.2	44.8
7	27.2	24.2	25.1	756	64.2	31.5	32.9	28.4	124	259	38.9	45.2
8	26.9	23.0	26.3	367	62.6	31.5	30.9	27.7	45.5	139	39.1	45.5
9	26.0	22.6	25.5	237	60.3	32.1	27.7	26.7	38.6	82.1	39.0	45.7
10	25.4	23.7	24.9	181	59.0	50.0	27.0	29.4	35.2	62.0	38.8	43.7
11	25.2	24.6	24.9	150	57.0	33.9	27.3	32.6	35.2	52.6	37.9	43.1
12	25.5	25.0	27.9	137	131	31.3	28.0	36.4	36.3	50.0	35.4	42.6
13	25.7	25.3	44.0	131	103	29.8	28.2	35.1	40.4	47.6	33.9	42.1
14	25.6	25.2	142	112	83.6	29.0	29.1	31.7	39.4	44.3	36.9	41.0
15	25.8	24.6	106	99.7	70.3	28.9	29.9	29.8	40.9	43.8	39.7	* 39.7
16	27.2	24.2	93.3	93.1	65.8	* 29.0	26.8	29.5	40.2	43.2	43.4	39.2
17	29.3	24.6	* 79.5	87.9	61.4	28.6	26.2	27.3	39.6	43.2	* 75.1	37.8
18	30.5	24.8	54.1	83.5	59.8	27.1	25.7	28.1	39.9	41.7	115	38.8
19	31.1	* 24.7	49.2	79.7	* 57.8	26.1	24.7	* 29.6	* 40.0	* 42.3	208	44.9
20	29.5	24.6	46.0	77.2	55.7	25.6	24.2	30.7	39.5	42.2	116	50.1
21	30.1	24.3	44.3	73.8	54.2	25.5	* 25.4	32.4	39.4	42.3	82.2	50.0
22	* 30.4	23.7	43.0	71.4	52.5	25.8	25.6	45.2	37.5	42.1	71.4	50.0
23	29.0	24.1	43.2	* 69.4	50.7	32.6	25.1	54.7	35.4	42.3	59.2	48.9
24	29.1	48.4	43.2	137	49.7	31.5	25.2	29.0	33.4	42.7	55.2	50.5
25	28.1	33.1	43.3	158	48.4	34.3	25.0	26.4	33.9	42.8	51.7	51.3
26	26.9	29.6	44.3	111	47.0	49.6	25.7	26.5	35.0	42.9	50.2	51.4
27	26.0	27.0	51.7	128	45.4	40.2	25.3	26.2	35.7	43.2	49.7	52.2
28	24.8	26.3	55.6	99.0	44.8	47.4	34.8	26.1	35.5	44.6	49.1	51.8
29	27.1	25.7	57.0	91.7	43.1	52.0	34.1	36.2	38.2	45.5	48.2	51.3
30	26.3		83.2	105	41.6	69.2	34.0	28.7	52.8	45.9	47.4	51.5
31	25.4		74.3		42.4		41.5	30.4		44.3		51.5
Sum	843.9	752.9	1,502.6	5,204.0	2,001.9	1,063.3	986.5	976.3	1,249.5	1,961.4	1,718.7	1,430.1

Current Year 2004

Period 1968-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.715	0.605	19	32.5	28	23.6	27.2	72,913	147,179	352,918	44,185
Feb.	1.105	.590	24	84.7	9	22.0	26.0	65,051	171,331	555,809	48,383
Mar.	1.725	.585	14	208	3	24.2	48.5	129,825	194,320	609,638	45,757
April	6.145	.785	6	1,170	3	50.2	173	449,626	225,522	640,138	43,304
May	1.605	.765	12	186	30	41.0	64.6	172,964	320,636	817,599	110,911
June	1.550	.600	30	175	21	25.2	35.4	91,869	268,518	857,878	36,616
July	1.225	.615	1	115	21	23.6	31.8	85,234	233,494	1,034,298	39,804
Aug.	1.085	.625	22	83.0	28	25.6	31.5	84,352	238,326	979,770	67,452
Sept.	1.805	.690	7	220	1	30.3	41.7	107,957	276,490	1,500,845	77,026
Oct.	2.955	.755	4	466	4	36.4	63.3	169,465	302,558	1,180,391	50,993
Nov.	1.955	.700	19	248	13	33.0	57.3	148,496	171,522	723,165	53,153
Dec.	.890	.745	27	53.2	17	37.2	46.1	123,561	144,620	379,380	48,064
Yearly	6.145	0.585		1,170		22.0	53.8	1,701,313	2,694,516	4,799,562	1,209,723

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1968-2004

WATER BULLETIN NUMBER 74 -- 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 at mean sea level, U.S.C. and G.S. datum.

RECORDS: Based on 4 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: September 9, 1953 through 2004. 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. Extreme flow data for the Rio Salado at Cd. Guerrero prior to September 8, 1953 may be found in previous bulletins.

Daily:	Max.	1,780	Average Flow in Cubic Meters per Second**	Min.	0	Frequently
Monthly:	Max.	384	Sept. 16, 1971	Min.	0	Frequently
Yearly:	Max.	93.9	Sept. 1971	Min.	1.08	1994

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.90	1.82	1.59	1.90	11.0	2.00	51.6	0.89	2.59	2.44	1.82	1.80
2	1.90	1.80	1.75	2.21	8.90	2.00	54.1	.54	6.96	2.63	1.80	1.81
3	1.90	1.77	1.62	2.93	7.55	2.00	23.7	.47	2.94	2.81	1.77	1.82
4	1.89	1.76	1.47	1.94	8.18	1.97	7.65	1.20	15.5	3.15	1.75	1.82
5	1.87	1.75	1.37	7.46	9.43	1.96	3.86	1.37	27.1	26.8	1.69	1.82
6	1.87	1.76	1.36	* 43.3	9.32	1.96	2.15	1.10	19.0	27.7	1.69	1.82
7	1.87	1.77	1.26	31.6	8.42	1.95	1.86	.86	11.0	11.4	1.65	1.82
8	1.87	1.77	1.22	17.0	8.40	1.95	1.80	.58	10.3	6.29	1.62	1.82
9	1.87	1.77	1.15	12.1	7.75	1.95	1.76	.43	12.2	5.03	* 1.62	1.80
10	1.87	1.78	1.12	9.85	6.80	1.95	1.62	.35	38.4	4.25	1.59	1.78
11	1.87	1.80	1.12	9.40	6.32	1.94	1.40	.29	43.6	3.81	1.75	1.77
12	1.86	1.78	1.12	8.96	6.25	1.94	1.36	.24	20.3	3.17	1.65	1.77
13	1.85	1.77	1.15	7.91	5.90	1.93	1.23	.21	11.9	2.77	1.65	1.76
14	1.86	1.76	1.40	8.98	5.47	3.92	1.03	.18	8.79	2.58	1.75	1.77
15	* 1.87	1.75	1.77	9.68	4.84	3.56	.90	.14	7.04	2.27	1.76	1.79
16	1.87	1.76	2.94	9.31	4.44	2.55	.78	.13	6.08	2.04	1.80	1.78
17	1.86	1.76	3.31	8.98	4.38	1.99	.62	.09	5.29	1.99	1.94	1.77
18	1.85	1.75	2.24	8.35	4.12	1.96	.50	.06	4.53	1.99	1.86	1.80
19	1.86	1.76	1.88	7.91	3.75	1.93	.50	.13	4.25	1.99	1.93	1.80
20	1.86	1.72	1.80	7.30	3.68	1.88	.46	.17	4.00	1.99	1.94	1.79
21	1.86	1.62	1.76	6.69	2.69	1.86	.41	.12	3.56	1.97	1.92	1.77
22	1.90	1.59	1.75	6.40	3.69	8.87	.40	.05	3.31	1.95	1.91	1.75
23	1.92	1.50	1.75	6.00	3.44	24.8	.39	0	3.31	1.92	1.92	1.76
24	1.92	1.50	1.75	6.48	3.25	29.4	4.17	0	3.75	1.91	1.90	1.76
25	1.88	1.40	1.75	5.90	3.19	22.1	18.2	0	3.63	* 1.90	1.87	1.79
26	1.86	1.37	1.72	5.64	2.94	20.2	3.07	0	3.31	1.89	1.85	1.80
27	1.84	1.37	1.58	6.08	2.69	18.3	1.87	0	3.38	1.87	1.83	1.80
28	1.82	1.37	1.46	6.18	2.50	18.6	1.80	0	3.56	1.86	1.82	1.81
29	1.84	1.37	1.55	6.25	2.50	32.3	1.45	0	3.63	1.84	1.81	1.81
30	1.83	1.74	1.74	6.60	2.44	48.1	1.18	.03	3.06	1.82	1.81	1.80
31	1.85		1.77		2.19		1.22	.03		1.82		1.80
Sum	57.94	48.45	51.22	279.29	166.42	267.82	193.04	9.66	296.27	137.85	53.67	55.56

Current Year 2004

Period 1953-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume- Thousand Cubic Meters				
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum
Jan.	89.270	89.230	!22	1.92	!27	1.87	5,006	9,400	73,777	0
Feb.	89.230	89.170	1	1.82	!25	1.67	4,186	7,494	82,495	0
Mar.	89.380	89.150	16	4.00	!7	1.12	4,425	5,185	36,628	0
April	90.440	89.240	6	50.5	!1	1.85	24,131	12,672	250,373	0
May	89.810	89.300	1	19.9	31	2.00	14,379	27,321	447,500	0
June	90.410	89.240	30	49.0	21	1.85	23,140	29,612	304,451	0
July	90.580	89.070	2	57.5	24	.35	16,679	27,739	544,635	0
Aug.	89.190	89.000	4	1.62	!22	0	835	20,743	259,070	0
Sept.	90.370	89.000	11	47.0	1	0	9,888	83,289	996,183	2,373
Oct.	90.050	89.225	5	31.0	30	1.81	11,910	54,181	679,329	136
Nov.	89.300	89.180	16	2.00	10	1.50	4,637	25,209	416,863	0
Dec.	89.230	89.200	!2	1.82	!22	1.75	4,800	15,178	217,244	0
Yearly	90.580	89.000		57.5	0	4.42	139,726	318,023	2,961,050	34,122

\* Discharge measurement(s) made on this day

! And other days

\*\* Period September 1953-2004

WATER BULLETIN NUMBER 74 -- 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 bubbler gage and water stage recorder (graphic and digital), DCP with GOES high data rate telemetry 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, measurements of flow at the cableway during spillway gate operations, and DCP with GOES high data rate telemetry. During 2004 there were 7 current-meter measurements made at the cableway by the United States Section. Records available: 1958 through 2004. 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.	22.5	2004					

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	25.6	25.4	12.0	10.5	5.51	7.39	8.51	50.1	45.5	13.5	36.9	19.5
2	23.1	19.5	10.0	10.0	5.51	10.5	8.51	* 50.8	25.9	13.5	36.4	17.5
3	23.2	18.5	9.52	9.52	5.51	10.5	8.51	43.5	11.5	13.5	36.3	20.5
4	25.5	18.5	9.52	9.52	5.51	10.5	8.51	35.5	11.5	13.5	36.3	25.0
5	25.6	19.4	9.52	6.68	5.51	10.5	8.51	30.3	12.5	13.5	36.3	26.5
6	25.8	20.3	9.52	5.51	5.51	10.5	8.51	30.3	16.4	10.5	46.3	26.5
7	26.4	15.5	9.52	5.51	5.51	9.52	8.51	40.3	19.9	10.5	46.2	24.0
8	29.0	15.6	13.4	5.51	5.51	8.51	8.51	50.4	23.0	10.5	46.4	19.0
9	37.7	17.0	25.3	5.51	5.51	8.51	8.51	54.3	23.0	10.5	36.5	16.5
10	33.9	12.3	31.8	6.51	5.51	8.51	8.51	46.2	15.5	12.0	38.7	19.0
11	36.5	8.50	40.3	7.51	5.51	8.51	8.51	30.5	10.5	13.5	33.9	25.0
12	35.5	12.4	22.9	7.51	5.51	8.51	16.7	30.4	14.5	15.5	31.5	27.5
13	35.6	11.7	12.5	8.01	5.51	8.51	25.4	35.8	18.5	13.5	30.5	* 29.9
14	35.5	7.50	15.4	7.51	5.51	9.52	25.6	40.2	18.5	11.5	34.7	34.8
15	30.5	7.50	14.8	6.51	5.51	9.60	25.4	45.7	17.0	10.5	39.6	33.3
16	29.9	7.50	10.5	6.51	5.51	9.94	25.4	45.4	* 15.5	10.5	35.0	38.1
17	26.6	7.50	10.5	6.51	5.51	13.8	32.0	41.8	15.5	11.5	30.6	51.7
18	29.7	7.50	10.5	6.51	13.0	8.51	41.6	47.4	15.9	12.5	26.2	47.3
19	28.6	7.50	10.5	5.51	13.1	18.1	36.1	53.1	14.0	12.5	* 18.5	53.5
20	35.4	8.50	10.5	5.51	5.51	25.3	30.4	30.4	12.5	32.8	29.5	39.9
21	33.6	16.7	10.5	5.51	5.51	25.4	35.3	32.9	11.5	37.7	24.5	66.0
22	18.9	18.1	10.5	5.51	5.51	18.0	36.8	50.2	10.5	* 25.5	21.0	78.0
23	22.8	20.6	10.5	5.51	5.51	8.51	38.5	48.3	10.5	37.1	22.5	82.4
24	22.9	20.5	10.5	5.51	5.51	8.51	40.4	45.3	10.5	48.6	21.5	107
25	20.4	18.4	9.26	5.51	5.51	8.51	40.5	60.5	10.5	46.0	20.5	98.8
26	22.9	10.5	10.5	5.51	5.51	8.51	40.5	* 57.9	10.5	41.6	20.5	82.3
27	22.9	9.00	10.5	5.51	5.51	8.51	50.6	45.1	10.5	41.2	20.5	83.5
28	19.4	11.5	10.0	5.51	5.51	8.51	43.4	58.0	11.9	33.9	26.5	101
29	* 15.6	13.5	9.52	5.51	5.51	8.51	35.7	65.8	13.5	33.5	24.5	95.3
30	21.2		10.0	5.51	5.51	8.51	35.8	48.9	13.5	37.0	20.0	97.3
31	27.9		10.5	5.51	5.51		53.1	30.5		39.7		121
Sum	848.1	406.90	410.78	197.47	185.89	326.72	802.81	1,375.8	470.5	687.6	928.3	1,607.6

Current Year 2004								Period 1954-2004			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Average	Total	Volume-Thousand Cubic Meters			
	High	Low	Day	@ High	@ Low			Average	Maximum	Minimum	
Jan.			9	37.7	29	15.6	27.4	73,276	235,047	664,934	12,802
Feb.			1	25.4	! 14	7.50	14.0	35,156	164,039	453,153	13,796
Mar.			11	40.3	25	9.26	13.3	35,491	158,303	487,987	27,900
April			1	10.5	! 6	5.51	6.58	17,061	387,426	861,235	14,541
May			19	13.1	! 1	5.51	6.00	16,061	430,961	882,527	16,061
June			21	25.4	! 1	7.39	10.9	28,229	289,935	830,101	24,322
July			31	53.1	! 1	8.51	25.9	69,363	187,252	482,117	15,837
Aug.			29	65.8	! 5	30.3	44.4	118,869	242,628	1,823,919	74,233
Sept.			1	45.5	! 11	10.5	15.7	40,651	170,013	1,333,232	1,761
Oct.			24	48.6	! 6	10.5	22.2	59,409	224,967	2,463,696	2,383
Nov.			8	46.4	19	18.5	30.9	80,205	120,792	1,391,291	1,727
Dec.			31	121	9	16.5	51.9	138,897	110,138	573,923	10,807
Yearly				121		5.51	22.5	712,668	2,721,501	6,188,898	712,668

\* Discharge measurement(s) made on this day @ Mean daily ! And other days  
\*\* Period 1954-2004

WATER BULLETIN NUMBER 74 -- 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, 35 current meter measurements during the year, and a continuous record of gage heights. High flow computations by shifting control methods. Records available: July 1923 through 2004.

REMARKS: Reservoirs and irrigation diversions modify the flow of this spring-fed stream at this station. Las Blancas Dam, located upstream from the station, was completed in 2001. This Dam diverts water to Marte Gomez Reservoir in the Rio San Juan Basin for additional conservation storage. 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 occur frequently.

		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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.00	0.30	* 0.20	0.30	0.55	1.30	1.03	1.15	2.73	1.40	1.44	1.29
2	1.00	* .30	.20	.30	.32	1.38	1.30	1.23	2.43	1.30	1.36	1.25
3	1.00	.30	* .20	.35	1.30	1.35	1.30	1.24	4.07	1.30	1.21	1.29
4	1.00	.30	.20	5.92	1.38	1.28	1.30	1.23	3.70	1.29	1.30	1.30
5	1.00	.30	* .20	* 4.70	1.40	1.38	1.30	1.16	4.35	6.50	1.30	1.30
6	.94	* .30	.20	0	1.40	1.38	1.29	1.19	3.21	13.6	1.33	1.30
7	.32	* .30	.20	0	1.40	1.38	1.26	1.23	14.2	22.9	1.33	1.30
8	* .33	.30	* .20	0	1.40	1.38	1.26	1.18	7.39	10.7	1.30	1.24
9	.92	* .30	.20	0	1.40	1.35	1.28	1.20	5.04	8.01	1.30	1.26
10	.90	.30	* .20	0	1.40	1.38	1.25	1.22	11.3	6.42	1.23	1.30
11	.90	* .30	.28	0	1.40	1.40	1.25	1.18	10.2	6.17	1.31	1.31
12	* .90	.30	* .30	0	1.40	1.40	1.29	1.20	9.25	4.52	1.33	1.45
13	.90	.30	.30	0	1.40	1.38	1.30	1.22	6.65	4.24	1.30	1.30
14	* .90	.30	.42	0	1.40	1.38	1.29	1.22	4.66	4.33	1.30	1.30
15	.90	.30	.62	0	1.40	1.38	.87	1.22	4.07	3.31	1.30	1.30
16	.90	* .30	.39	.07	1.42	1.35	1.24	1.26	1.98	3.62	1.36	1.30
17	.90	.30	* .35	.92	1.38	1.35	1.24	1.25	3.23	1.58	1.33	1.30
18	.90	* .30	* .35	1.32	1.40	1.35	1.23	1.14	2.67	3.31	1.30	1.30
19	* .90	.30	* .35	1.08	1.38	1.35	1.23	1.21	2.20	1.83	1.30	1.30
20	.90	* .30	.35	* 1.02	1.30	1.30	1.14	1.25	1.44	1.59	1.30	1.44
21	* .90	.30	.35	.95	1.30	1.36	1.23	1.25	1.34	1.96	1.30	1.41
22	.90	.30	* .31	1.12	1.25	1.65	1.11	1.24	1.27	3.98	1.30	1.30
23	.90	.30	.30	.83	1.26	1.55	1.24	1.23	1.25	2.28	1.33	1.30
24	.90	* .30	* .30	.15	1.35	1.42	1.20	1.18	1.05	1.49	1.35	1.30
25	.90	.30	.26	.10	* 1.30	1.57	1.20	1.16	1.26	* 2.82	1.40	1.30
26	* .88	.30	* .25	.15	1.30	2.17	1.07	1.20	1.29	3.53	1.46	1.30
27	.42	* .30	.25	.12	1.30	1.38	1.16	1.20	1.30	2.81	1.38	1.30
28	* .30	.30	.21	0	1.30	1.35	1.18	1.13	1.26	2.67	1.37	1.30
29	.30	.30	* 2.60	0	1.30	1.33	1.18	1.09	1.23	1.96	1.44	1.30
30	* .30	.30	.76	0	1.31	1.42	1.19	1.24	1.30	1.98	1.39	1.30
31	.35	.38	.38	0	1.30	1.30	1.02	1.26	1.26	2.79	1.30	1.30
Sum	24.46	8.70	11.68	19.40	40.10	42.40	37.43	37.36	117.32	136.19	39.95	40.54

Current Year 2004

Period 1924-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume- Thousand Cubic Meters			
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum
Jan.	57.640	57.420	! 1	1.00	! 28	0.79	2,113	1,996	43,079	0
Feb.	57.420	57.420	! 1	.30	! 1	.30	752	2,461	65,959	0
Mar.	57.650	57.400	29	3.13	29	.38	1,009	2,003	24,456	0
April	58.130	57.400	! 4	19.1	! 5	.65	1,676	5,253	44,665	0
May	57.550	57.400	17	1.50	1	1.29	3,465	9,005	168,990	0
June	57.760	57.510	25	6.00	4	1.10	3,663	10,299	102,675	0
July	57.545	57.440	1	1.45	15	.40	3,234	6,293	76,780	0
Aug.	57.540	57.465	2	1.40	29	.65	3,228	16,942	253,778	0
Sept.	58.020	57.500	7	14.8	28	1.00	10,136	37,635	535,810	167
Oct.	58.430	57.520	6	36.0	17	1.20	11,767	17,016	238,962	0
Nov.	57.580	57.490	! 1	1.80	3	.90	3,452	3,560	31,041	0
Dec.	57.600	57.500	20	2.00	8	1.00	3,503	2,517	19,714	0
Yearly	58.430	57.400		36.0	0	1.52	47,998	114,980	747,096	6,479

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

WATER BULLETIN NUMBER 74 -- 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' 38", longitude 98 50' 17", 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 at Rio Grande City gaging station, 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 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.20	1.10	0	0.60	198	112	116	8.55	0	* 82.6	0	0
2	7.15	* 1.01	0	.60	191	110	116	* 6.83	0	76.6	0	0
3	7.00	1.05	0	.60	184 *	108	102	7.05	0	66.5	0	0
4	7.00	1.05	0	.82	181 *	112	86.9	7.05	0	58.2	0	0
5	7.00	1.04	0	* 1.22	173	114	* 79.3	7.20	0	56.6	0	0
6	6.60	* 1.04	0	1.72	168	114	73.9	7.20	0	* 64.4	0	0
7	* 4.70	* .94	0	* 22.5	170	91.2	* 68.7	7.20	0	59.7	0	0
8	* 4.20	.79	0	38.9	181	67.5	59.1	7.20	0	* 56.2	0	0
9	4.20	* .75	0	50.2	176	60.9	* 50.8	* 2.25	0	51.4	0	0
10	4.20	.52	0	51.6	171	58.2	45.1	.60	0	46.1	0	0
11	5.40	* .41	0	50.8	167	49.9	41.6	.60	.30	* 40.9	0	0
12	* 5.80	.34	0	* 40.1	167 *	37.1	* 38.2	.15	14.3	34.9	0	0
13	3.70	* .41	0	30.1	166	32.8	32.8	0	* 43.2	* 30.3	0	0
14	* 2.62	.34	0	* 21.0	164	25.1	* 37.0	0	* 79.0	27.3	0	0
15	3.18	.45	0	17.6	171	25.9	34.3	0	108	* 24.9	0	0
16	* 2.10	* .45	0	* 36.6	181	22.0	* 32.0	0	143	23.6	0	0
17	1.88	.60	0	* 59.2	180 *	28.8	30.5	0	164 *	23.6	0	0
18	2.10	* .64	0	* 76.4	174	41.2	26.0	0	182	17.6	0	0
19	* 2.10	.60	0	* 91.0	166	42.1	* 24.4	0	194 *	11.3	0	0
20	2.10	* .41	0	104 *	158	* 36.2	25.4	0	203 *	14.1	0	0
21	* .52	.30	0	113 *	151 *	30.2	* 23.3	0	209	* 14.2	0	0
22	0	.30	0	120 *	144	21.4	22.0	0	208	9.75	0	0
23	0	* .30	0	123	137	26.9	* 18.3	0	193 *	8.85	0	0
24	.52	.30	0	134	132 *	66.7	17.5	0	150	5.55	0	0
25	2.10	.30	.02	159	126	115	15.8	0	125	3.45	0	0
26	* 2.02	.30	.90	173 *	123 *	120	* 12.9	0	113	* 2.70	0	0
27	1.58	.30	.90	190 *	119	103	11.4	0	* 99.4	2.25	0	0
28	* 1.28	.30	.90	205 *	119	91.4	* 10.3	0	98.2	1.65	0	0
29	1.20	.16	.90	207 *	117	91.2	9.60	0	* 97.4	1.20	0	0
30	* 1.20		.68	204 *	116	104	9.60	0	89.7	.66	0	0
31	1.20		.60		116 *		9.60	0		0	0	0
Sum	101.85	16.50	4.90	2,323.56	4,887	2,058.7	1,280.30	61.88	2,513.50	917.06	0	0

Current Year 2004

Period 1954-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	39.605	39.400	! 1	7.20	! 21	0	3.29	8,800	8,315	118,256	0
Feb.	39.440	39.400	1	1.20	29	0	.57	1,426	4,833	79,341	0
Mar.	39.430	39.400	! 25	.90	! 1	0	.16	423	2,482	30,236	0
April	42.210	39.410	29	209	! 5	.30	77.5	200,756	6,137	200,756	0
May	42.140	41.150	2	202	31	112	158	422,237	11,445	422,237	0
June	41.340	39.690	26	129	16	17.0	68.6	177,872	17,567	412,734	0
July	41.280	39.560	1	123	! 28	9.60	41.3	110,618	25,034	421,148	0
Aug.	39.560	39.400	1	9.60	! 12	0	2.00	5,346	16,918	337,857	0
Sept.	42.240	39.400	22	212	! 10	0	83.8	217,166	106,428	2,316,989	0
Oct.	40.830	39.400	1	83.8	31	0	29.6	79,234	91,327	1,111,977	0
Nov.	39.400	39.080	! 1	0	! 4	0	0	0	25,017	283,859	0
Dec.	39.400	39.040	! 1	0	! 1	0	0	0	14,497	190,901	0
Yearly	42.240	39.040		212		0	38.7	1,223,878	330,000	3,566,125	648

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

WATER BULLETIN NUMBER 74 -- 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, Rancherías Drain, and Los Fresnos Drain; and between the Rio Grande City Station and Anzalduas Dam through Puertecitos, Los Indios, Huizache, and Morillo Drains. Only the portion of 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: Drain water determination based on staff gage readings during the year by the Mexican Section and the weir discharge tables. 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 2004. Records prior to 1976 include Rio San Juan flow.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.08	0.85	0.40	0.20	0.20	0.40	0	0	0	0	0	0
2	.08	.65	.40	.20	0	.30	0	0	0	0	0	0
3	.08	.60	.30	.20	.10	.30	0	0	0	0	0	0
4	.08	.60	.30	.20	.10	.20	0	0	0	0	0	0
5	.08	.50	.30	.20	.10	.20	0	0	0	0	0	0
6	.08	.50	.20	0	.10	.20	0	0	0	0	0	0
7	.08	.40	.20	0	.10	.20	0	0	0	0	0	0
8	.08	.20	.20	0	.10	.20	0	0	0	0	0	0
9	.50	.20	.20	0	.10	.10	0	0	0	0	0	0
10	.50	.20	.20	0	.10	.10	0	0	0	0	0	0
11	.60	.10	.20	0	.10	.10	0	0	0	0	0	0
12	.65	.10	.20	0	.10	.10	0	0	0	0	0	0
13	.70	*.10	.20	0	.10	.10	0	0	0	0	0	0
14	.70	.10	.20	0	.20	.10	0	0	0	0	0	0
15	.65	.10	.20	0	.20	.10	0	0	0	0	0	0
16	.65	.10	.20	.10	.20	.10	0	0	0	0	0	0
17	.65	.10	.50	.10	.20	.10	0	0	0	0	0	0
18	.65	.10	.40	.10	.10	.10	0	0	0	0	0	0
19	.85	.09	.20	.10	.10	.10	0	0	0	0	0	0
20	.90	.09	.20	.10	.10	.10	0	0	0	0	0	0
21	1.00	.09	.20	.10	.20	.10	0	0	0	0	0	0
22	1.30	.09	.20	.10	.20	0	0	0	0	0	0	0
23	1.50	.09	.20	.10	.30	0	0	0	0	0	0	0
24	1.20	.08	.20	.10	.30	0	0	0	0	0	0	0
25	.95	1.20	.20	.10	.30	0	0	0	0	0	0	0
26	.95	.95	.20	.10	.20	0	0	0	0	0	0	0
27	.54	.80	.20	.20	.40	0	0	0	0	0	0	0
28	.52	.60	.20	.50	.40	0	0	0	0	0	0	.50
29	.52	.50	.30	.30	.40	0	0	0	0	0	0	.40
30	*.80		.30	.20	.40	0	0	0	0	0	0	0
31	.90		.30		.30	0	0	0	0	0	0	0
Sum	18.82	10.08	7.70	3.30	5.80	3.30	0	0	0	0	0	0.90

Current Year 2004

Period 1954-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			23	1.50	! 1	0.08	0.61	1,626	331	1,626	0
Feb.			25	1.20	24	.08	.35	871	409	1,157	0
Mar.			17	.50	! 7	.20	.25	665	306	952	0
April			28	.50	! 6	0	.11	285	407	1,338	0
May			! 27	.40	2	0	.19	501	768	1,807	9.0
June			1	.40	! 22	0	.11	285	650	1,551	0
July			! 1	0	! 1	0	0	0	424	3,573	0
Aug.			! 1	0	! 1	0	0	0	304	3,902	0
Sept.			! 1	0	! 1	0	0	0	327	2,416	0
Oct.			! 1	0	! 1	0	0	0	207	983	0
Nov.			! 1	0	! 1	0	0	0	170	794	0
Dec.			28	.50	! 1	0	.03	77.8	157	610	0
Yearly				1.50		0	0.14	4,311	4,460	13,656	224

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

WATER BULLETIN NUMBER 74 -- 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 Commission on Environmental Quality, 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 2004, 1,666 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 2004 in this river reach was 10,127 TCM, or 1.3% 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 "Diversion 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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.27	0.26	0.45	0.47	0.28	0.56	0.31	0.27	0.37	0.43	0.36	0.30
2	.27	.31	.44	.41	.20	.61	.31	.27	.37	.34	.32	.25
3	.27	.34	.39	.41	.21	.72	.26	.28	.37	.35	.32	.19
4	.26	.42	.42	.27	.30	.70	.29	.33	.34	.27	.30	.20
5	.26	.47	.48	.27	.28	.56	.34	.33	.27	.27	.31	.17
6	.26	.30	.38	.24	.27	.56	.33	.30	.27	.27	.32	.17
7	.26	.32	.27	.24	.21	.56	.33	.27	.27	.30	.27	.27
8	.37	.29	.37	.31	.21	.56	.33	.29	.28	.28	.31	.34
9	.38	.29	.49	.38	.21	.56	.34	.30	.27	.24	.28	.24
10	.43	.29	.49	.37	.22	.47	.36	.40	.27	.25	.29	.20
11	.43	.32	.48	.24	.21	.48	.33	.33	.27	.33	.35	.21
12	.41	.28	.41	.40	.21	.39	.33	.39	.29	.32	.35	.17
13	.33	.28	.32	.41	.22	.39	.34	.36	.29	.34	.27	.24
14	.33	.24	.25	.39	.21	.59	.33	.36	.35	.34	.23	.25
15	.33	.25	.25	.44	.21	.63	.35	.38	.35	.32	.20	.19
16	.33	.28	.33	.45	.22	.67	.36	.39	.29	.38	.20	.29
17	.33	.32	.32	.43	.23	.58	.36	.35	.29	.35	.20	.28
18	.30	.32	.37	.49	.22	.56	.35	.38	.29	.36	.20	.20
19	.25	.35	.31	.48	.23	.55	.34	.38	.92	.37	.22	.16
20	.24	.34	.35	.51	.25	.41	.35	.45	.92	.40	.22	.18
21	.25	.35	.30	.49	.28	.54	.41	.39	.96	.39	.23	.19
22	.26	.45	.35	.52	.22	.52	.44	.39	.95	.39	.25	.16
23	.26	.48	.36	.55	.34	.39	.39	.49	.96	.40	.25	.16
24	.25	.48	.43	.53	.34	.43	.37	.47	.98	.28	.25	.18
25	.24	.48	.48	0	.23	.43	.34	.42	.95	.35	.23	.17
26	.24	.33	.51	0	.24	.43	.40	.43	.12	.36	.29	0
27	.24	.50	.36	0	.31	.03	.44	.44	.12	.39	.27	0
28	.40	.50	0	0	.32	.03	.42	.41	.12	.34	0	0
29	.41	0	0	0	.27	0	.41	0	.16	.40	0	0
30	.27	0	0	0	0	0	.36	0	.20	.36	0	0
31	.26	0	0	0	0	0	.31	0	0	0	0	0
Sum	9.39	9.84	10.36	9.70	7.15	13.91	10.93	10.25	12.86	10.17	7.29	5.36

Current Year 2004

Period 1960-2004

Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	2004	1960-2004	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.	41	24	!10	0.43	!20	0.24	0.30	811	917	1,828	196
Feb.	9	26	!27	.50	29	0	.34	850	1,116	2,198	275
Mar.	54	16	26	.51	!28	0	.33	895	1,482	2,558	549
April	88	35	!23	.55	!25	0	.32	838	1,594	4,088	440
May	49	61	!23	.34	!30	0	.23	618	1,271	3,237	260
June	46	64	3	.72	!29	0	.46	1,202	1,110	3,217	258
July	17	37	!22	.44	3	.26	.35	944	939	1,897	343
Aug.	62	54	23	.49	29	0	.33	886	904	1,798	343
Sept.	120	116	24	.98	!26	.12	.43	1,111	749	1,745	220
Oct.	76	53	1	.43	31	0	.33	879	1,047	2,109	448
Nov.	30	30	1	.36	!28	0	.24	630	757	1,793	260
Dec.	12	22	8	.34	!26	0	.17	463	709	1,490	179
Yearly	604	538		0.98		0	0.32	10,127	12,595	20,497	6,154

@ Mean daily

! And other days

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

WATER BULLETIN NUMBER 74 -- 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 DCP with GOES high data rate telemetry, 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 26 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: January 1955 through 2004. 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.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	44.7	29.9	12.2	* 12.3	196	119 *	120 *	58.4	* 50.2	103 *	* 50.3	* 27.2
2	43.4	* 27.0	* 12.4	12.9	194	118	124	* 62.1	50.3	98.4	53.4	23.2
3	41.4	21.0	11.0	12.8	187 *	118	113	60.8	46.6	88.3	47.4	21.5
4	39.4	20.1	10.2	12.1	181	122	103	54.4	60.8	81.9	41.9	22.6
5	* 37.1	18.7	9.23	55.7	172	123	93.7	46.0	46.5	81.3	41.4	26.9
6	36.2	20.3	9.22	27.8	167	123	86.1	35.4	18.5	101	41.9	30.5
7	33.7	21.8	9.22	30.7	165	107	84.2	31.3	16.7	98.6	51.0	31.4
8	32.9	18.3	9.14	50.1	179	84.9	76.4	33.5	24.2	99.7	52.2	29.8
9	37.1	16.6	10.6	61.7	175	69.9	67.4	48.8	31.6	82.9	52.0	26.6
10	43.5	17.6	22.6	62.9	173	70.4	60.7	54.7	29.6	72.5	44.5	23.0
11	42.4	16.1	31.9	60.7	169	58.7	56.0	58.6	35.5	66.3	44.1	23.4
12	44.5	10.5	44.1	55.3	174	49.3	52.4	38.7	36.6	60.5	43.5	27.2
13	43.7	11.8	26.1	46.5	176	40.0	49.1	31.7	62.7	56.2	33.4	33.6
14	43.2	16.1	14.9	40.7	175	33.3	62.1	33.1	* 97.3	53.9	35.5	34.1
15	40.3	11.0	20.6	37.7	180	28.5	* 63.2	35.7	141	49.1	37.1	37.7
16	35.6	9.91	* 19.8	49.2	191	27.1	61.5	43.4	180	41.3	* 47.1	36.5
17	32.2	* 9.81	11.8	69.5	190	42.1	61.1	* 45.2	200	37.6	43.4	* 40.9
18	29.7	9.80	10.9	87.9	184	53.5	61.0	44.3	217	34.1	34.3	56.8
19	33.7	9.91	* 10.2	102	181	48.7	66.6	45.2	226	33.3	32.2	54.2
20	* 32.0	9.11	10.2	113	184 *	43.0	65.4	54.4	234	32.4	26.6	58.4
21	38.7	9.23	9.84	121	171	51.8	57.8	46.2	240	* 38.0	28.5	50.2
22	36.6	14.8	9.85	128 *	163	49.1	57.0	29.5	239	61.1	33.3	70.4
23	25.3	17.5	11.2	132	153	* 45.4	57.6	41.9	215	49.7	26.5	83.0
24	24.8	20.8	12.0	138	143	71.2	57.3	53.5	187	49.2	30.9	91.5
25	26.5	20.3	12.4	165	133	115	56.5	46.3	154	66.5	29.9	111
26	23.0	20.9	12.5	178	128	129	55.3	56.0	129	65.3	27.0	100
27	24.4	13.5	12.3	196	126	116	54.7	64.7	116	60.0	27.6	87.4
28	24.3	10.4	12.7	208	124	105	59.7	51.3	114	57.4	27.6	91.3
29	20.2	11.1	12.0	205	122	102	57.0	54.8	117	50.6	30.9	102
30	17.3		12.1	199 *	121	113	50.5	72.0	111	42.5	32.1	99.9
31	20.6		11.9	121	121		47.7	62.6		47.9		106
Sum	1,048.4	463.87	445.10	2,671.5	5,098	2,376.9	2,138.0	1,494.5	3,427.1	1,960.5	1,147.5	1,658.2

Current Year 2004

Period 1954-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	8.100	7.790	10	49.9	31	14.7	33.8	90,582	246,766	628,819	20,625
Feb.	7.985	7.640	1	32.3	20	8.65	16.0	40,078	187,335	464,530	31,488
Mar.	8.080	7.670	12	46.0	8	8.95	14.4	38,457	163,619	470,016	17,787
April	9.115	7.720	28	211	! 1	11.9	89.1	230,818	371,704	878,161	20,156
May	9.115	8.645	2	200	31	118	164	440,467	444,368	850,281	45,271
June	8.755	7.935	26	135	16	25.8	79.2	205,364	327,174	811,943	97,028
July	8.690	8.075	! 1	127	13	45.8	69.0	184,723	212,989	707,768	27,479
Aug.	8.355	7.955	30	73.4	22	26.7	48.2	129,125	261,281	1,853,522	30,778
Sept.	9.270	7.800	22	242	7	15.3	114	296,101	316,063	3,346,077	52,327
Oct.	8.540	7.960	7	109	21	30.8	63.2	169,387	327,457	3,758,177	37,009
Nov.	8.215	7.915	2	56.5	21	22.9	38.3	99,144	152,474	1,778,975	28,132
Dec.	8.655	7.875	31	118	3	21.0	53.5	143,268	132,697	665,515	39,434
Yearly	9.270	7.640		242		8.65	65.4	2,067,514	3,143,927	8,165,042	1,364,475

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1954-2004

WATER BULLETIN NUMBER 74 -- 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, Rancherias Drain, and Los Fresnos Drain; and between the Rio Grande City Station and Anzalduas Dam through Puertecitos, Los Indios, Huiache, 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 2004.

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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.30	13.0	* 20.3	18.4	0.29	3.16	1.16	4.70	8.40	0.20	0	0.20
2	.33	* 18.8	21.0	18.5	.34	3.31	1.10	5.00	8.70	.30	0	.20
3	.66	22.1	* 21.4	27.2	.39	2.70	1.03	10.1	* 8.80	.30	.20	.20
4	1.51	* 16.9	* 24.2	29.4	.43	3.09	* .92	* 12.5	8.60	.30	.20	.20
5	1.08	14.2	* 27.6	* 29.8	.88	3.12	1.01	19.3	8.60	0	.10	.20
6	.72	* 14.0	27.6	* 16.3	.60	2.98	.46	20.9	* 8.49	0	.10	.20
7	1.38	* 20.6	27.4	9.04	.47	2.83	0	20.4	9.35	.30	.10	.20
8	* 3.45	20.4	* 26.6	5.18	.84	4.41	0	20.5	* 9.18	.30	.10	.20
9	5.46	* 22.4	25.6	2.59	1.30	12.5	0	* 22.1	8.58	.30	.10	.10
10	6.18	21.5	* 27.3	2.77	.94	14.6	0	22.3	8.67	.30	0	0
11	6.82	* 20.3	27.8	1.30	.54	9.59	0	* 22.6	8.39	.30	0	0
12	* 7.39	22.3	* 28.1	.60	.42	9.32	0	22.7	8.20	.30	.10	0
13	* 8.62	* 23.3	28.6	.20	.61	11.0	0	* 21.6	* 4.50	.30	.10	0
14	* 8.71	24.1	29.5	.10	1.49	* 13.9	0	21.9	1.20	.30	.10	0
15	8.22	22.9	30.4	.10	2.52	16.2	.05	22.1	.80	0	.10	0
16	9.18	* 22.4	29.5	.20	1.75	15.3	.05	* 15.4	.45	0	* .10	.10
17	10.4	21.9	* 24.1	.20	1.51	10.4	0	13.8	.38	0	.10	.10
18	10.6	* 22.0	* 26.2	.20	1.28	5.22	0	* 11.4	1.10	0	0	.20
19	* 11.0	22.1	* 18.2	.30	1.08	* 16.3	0	10.8	2.12	0	.10	.20
20	12.0	* 22.1	17.0	.30	.95	* 26.7	0	* 9.90	2.00	.20	.20	3.20
21	* 13.4	21.7	16.2	.40	1.09	29.3	0	8.80	1.40	.20	.20	* 3.40
22	* 18.8	21.7	* 17.7	.40	1.15	29.2	0	8.50	.70	.10	.20	* 3.80
23	20.8	21.7	16.9	.40	1.30	27.2	0	* 8.50	1.10	0	.20	4.70
24	17.7	* 21.6	* 15.5	2.26	1.62	18.8	0	8.60	.90	0	.20	4.80
25	16.2	* 22.8	14.9	1.50	2.03	12.3	0	8.50	.40	0	.10	4.80
26	* 11.4	19.4	* 17.2	1.50	2.16	8.19	0	8.30	.40	.20	.10	4.60
27	11.7	* 18.3	17.7	1.30	2.29	6.53	0	* 8.30	.30	.20	.10	4.00
28	* 11.5	18.1	17.7	.74	2.37	3.19	0	8.20	.30	.20	.10	* 2.60
29	10.8	18.2	* 18.4	.57	2.79	1.75	0	8.20	.20	.20	.10	3.80
30	* 10.8	19.3	19.3	.32	3.44	1.57	0	* 8.40	.20	.20	.10	4.10
31	11.5	18.7	18.7	3.38	3.38	3.50	3.50	8.20	0	0	.10	4.50
Sum	268.61	590.8	698.6	172.07	42.25	324.66	9.28	422.50	122.41	5.00	3.20	50.60

Current Year 2004

Period 1954-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.			23	20.8	30	0.30	8.66	23,208	3,710	28,216	0
Feb.			14	24.1	13	13.0	20.4	51,045	4,601	51,045	0
Mar.			15	30.4	25	14.9	22.5	60,359	3,646	60,359	0
April			! 5	29.8	! 14	.10	5.74	14,867	4,435	17,521	0
May			30	3.44	1	.29	1.36	3,650	9,087	37,225	0
June			21	29.3	30	1.57	10.8	28,051	8,960	106,021	0
July			31	3.50	! 7	0	.30	802	4,592	60,172	0
Aug.			12	22.7	1	4.70	13.6	36,504	3,273	36,504	0
Sept.			7	9.35	! 29	.20	4.08	10,576	2,955	23,793	0
Oct.			! 2	.30	! 5	0	.16	432	3,181	31,287	0
Nov.			! 3	.20	! 1	0	.11	276	2,084	16,130	0
Dec.			! 24	4.80	! 10	0	1.63	4,372	2,725	41,991	0
Yearly				30.4		0	7.40	234,142	53,249	240,599	0

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

WATER BULLETIN NUMBER 74 -- 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 Commission on Environmental Quality, 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 2004, 65,721 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 24.8% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2004 in this river reach was 149,832 TCM, or 18.50% 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.	4.40	2003

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.95	1.81	7.41	5.02	2.26	11.0	2.13	3.98	8.47	4.14	8.59	8.84
2	3.21	3.84	8.15	3.98	2.26	13.2	3.63	8.62	7.01	2.45	8.14	7.59
3	2.78	3.78	7.97	2.82	2.89	11.5	1.86	8.92	4.34	2.22	8.62	5.10
4	2.17	3.41	6.92	2.67	1.41	11.4	.63	9.05	1.38	5.12	8.25	2.94
5	5.68	3.17	5.83	4.02	2.07	10.3	1.00	9.02	1.08	4.94	5.97	2.67
6	5.25	3.04	5.04	4.66	2.18	7.75	3.00	6.11	.85	5.17	2.88	6.15
7	4.44	2.21	4.12	1.29	1.73	11.3	3.67	4.51	2.70	3.82	2.81	6.07
8	4.02	2.48	8.36	1.19	1.04	10.6	5.88	4.79	3.44	3.63	8.72	4.87
9	3.31	4.46	8.65	1.26	.14	9.53	4.24	10.4	3.35	2.44	9.30	5.70
10	2.19	4.64	9.10	.70	2.62	9.32	2.77	9.85	4.07	2.71	7.17	3.28
11	2.24	3.64	8.58	.99	3.05	7.34	1.46	11.3	2.32	4.51	7.65	1.37
12	5.68	3.81	6.02	1.40	2.84	4.62	5.86	11.4	2.08	4.28	6.58	1.35
13	5.29	2.94	4.72	.72	2.27	3.72	5.72	6.38	5.28	3.87	4.33	7.37
14	5.06	3.33	3.83	.97	2.77	4.96	6.20	4.62	6.32	3.64	4.11	7.65
15	4.73	1.52	5.33	1.60	.14	5.19	6.49	4.71	6.08	3.90	8.30	7.48
16	4.30	2.01	3.81	2.32	.14	10.1	4.97	8.24	5.78	3.29	7.71	7.48
17	2.98	2.59	1.22	1.00	3.01	12.2	2.33	9.62	4.23	3.12	5.86	5.53
18	2.59	4.19	.98	2.28	3.64	12.1	1.83	9.74	2.49	4.62	6.71	5.18
19	4.09	3.54	2.24	4.93	2.50	9.91	8.27	9.55	2.13	5.04	6.21	6.21
20	3.96	3.55	.99	3.72	1.57	6.57	8.36	8.19	3.84	5.02	4.95	7.31
21	4.32	2.70	1.84	4.10	3.28	9.88	7.54	5.02	3.78	7.18	5.09	7.62
22	4.53	2.44	3.10	4.02	2.89	8.49	8.20	4.71	2.07	5.45	8.87	6.84
23	3.48	6.76	3.10	3.70	2.48	4.84	7.79	9.44	2.30	4.23	9.46	3.24
24	1.64	7.01	2.51	2.23	5.93	5.25	7.46	9.78	2.34	3.42	7.79	1.12
25	.76	6.43	3.38	1.53	7.46	3.13	6.68	9.29	1.79	7.20	3.82	0
26	1.98	5.86	3.79	3.41	8.08	.69	9.15	9.80	2.25	8.37	3.27	1.78
27	1.56	4.47	2.48	3.65	7.71	0	8.79	8.31	3.77	9.16	4.64	2.86
28	3.44	3.62	0	3.05	7.09	2.51	9.46	5.58	3.66	9.24	0	4.82
29	3.31	0	0	3.03	6.71	1.50	8.96	4.04	5.39	7.32	0	4.47
30	3.17	0	0	2.98	5.40	1.89	6.17	9.23	5.05	5.94	0	3.79
31	2.00	0	0	7.28	7.28	0	3.70	8.21	0	3.62	0	2.68
Sum	106.11	103.25	129.47	79.24	104.84	220.79	164.20	242.41	109.64	149.06	175.80	149.36

Month	Current Year 2004				Period 1960-2004						
	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second		Volume-Thousand Cubic Meters						
	2004	1960-2004	Day @ High	Day @ Low	Average	Total	Average	Maximum	Minimum		
Jan.	44	27	12	5.68	25	0.76	3.42	9,168	15,515	35,458	2,479
Feb.	7	26	24	7.01	29	0	3.56	8,921	17,194	47,610	4,040
Mar.	39	19	10	9.10	!28	0	4.18	11,186	26,622	51,495	6,760
April	123	34	1	5.02	10	.70	2.64	6,846	30,352	53,085	4,216
May	47	61	26	8.08	!9	.14	3.38	9,058	26,703	55,732	3,919
June	74	67	2	13.2	27	0	7.36	19,076	26,038	73,847	6,181
July	25	36	28	9.46	4	.63	5.30	14,187	26,005	57,262	6,973
Aug.	28	50	12	11.4	1	3.98	7.82	20,944	26,971	44,751	8,469
Sept.	74	96	1	8.47	6	.85	3.65	9,473	17,309	42,873	5,102
Oct.	39	62	28	9.24	3	2.22	4.81	12,879	20,629	46,570	4,358
Nov.	15	25	23	9.46	!28	0	5.86	15,189	18,162	45,171	3,614
Dec.	9	25	1	8.84	25	0	4.82	12,905	14,631	30,837	3,091
Yearly	524	528		13.2		0	4.74	149,832	266,131	424,806	138,743

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

WATER BULLETIN NUMBER 74 -- 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' 52", 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 105 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 2004.

REMARKS: Diversions to 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 the canal intake.

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.	1.48	2002	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.54	10.3	0	0	42.1	* 14.6	0	0	8.80	* 36.8	* 5.00	0
2	10.0	4.40	0	0	42.1	* 15.3	0	0	0	36.8	5.00	0
3	4.96	* 11.4	0	9.80	* 42.7	* 15.5	0	0	0	36.8	0	0
4	0	* 8.60	0	14.3	* 51.7	* 16.5	0	0	0	* 38.3	0	0
5	0	8.80	0	* 24.1	59.3	16.7	0	3.00	0	16.2	0	0
6	0	0	0	* 30.2	* 71.6	16.7	0	10.0	* 6.90	0	10.0	0
7	0	0	7.60	* 17.3	* 81.1	* 13.8	0	10.0	* 10.3	0	0	0
8	0	10.1	6.40	15.4	81.1	* 12.7	4.40	0	* 10.8	0	0	0
9	0	4.50	0	15.4	56.3	* 8.70	14.6	0	* 5.30	0	0	0
10	0	0	0	15.4	* 26.9	10.0	15.4	0	* 7.20	0	* 10.5	0
11	0	0	0	15.3	* 25.6	* 5.10	14.4	* 4.20	10.6	0	5.20	0
12	0	0	0	* 15.0	* 20.7	0	0	* 8.60	10.5	0	0	0
13	0	0	6.00	* 14.0	* 15.8	0	0	0	* 11.3	0	0	0
14	0	0	0	* 12.6	* 13.8	0	0	0	* 11.5	0	0	0
15	0	* 11.6	* 8.90	* 16.2	* 10.4	0	0	0	9.80	0	0	0
16	* 7.44	* 6.90	0	* 18.3	10.3	0	0	5.30	10.2	0	0	0
17	2.32	0	0	15.4	* 10.1	0	0	0	10.6	0	0	0
18	0	* 8.20	* 11.1	15.5	* 10.6	0	0	5.50	13.4	0	2.30	0
19	0	* 9.60	0	* 17.9	* 10.8	0	0	* 12.0	* 33.4	0	* 7.10	0
20	3.50	0	0	* 15.2	* 9.30	0	4.70	2.90	* 34.4	0	8.60	0
21	* 4.92	0	0	* 28.3	* 9.70	0	5.00	0	* 37.6	0	0	0
22	* 5.15	6.70	0	* 40.4	9.70	* 6.60	0	0	* 36.4	0	0	* 14.8
23	* 8.89	* 7.50	0	* 39.0	9.70	7.30	0	0	* 36.7	0	0	* 34.4
24	0	0	* 8.50	40.7	* 12.1	0	0	0	* 36.3	0	3.40	* 43.7
25	0	0	0	40.7	15.8	0	5.70	0	36.3	0	7.50	* 56.3
26	* 4.77	0	0	* 42.3	* 16.4	0	2.90	0	36.3	0	0	* 70.8
27	0	10.8	0	* 41.5	* 18.4	0	0	* 5.70	* 37.3	0	0	* 46.3
28	0	* 14.9	0	* 40.0	* 15.2	0	0	10.4	* 37.6	0	0	* 43.4
29	0	0	* 7.00	* 41.7	15.5	0	0	0	* 38.0	0	0	* 43.1
30	0	0	3.00	* 41.5	15.5	0	0	0	* 35.8	0	0	* 64.3
31	0	0	0	0	* 15.8	0	0	4.80	0	0	0	* 67.9
Sum	55.49	134.30	58.50	693.40	846.10	159.50	67.10	82.40	573.30	164.9	64.60	485.0

Current Year 2004

Period 1-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum	
Jan.			2	10.0	! 4	0	1.79	4,794	116,604	439,093	0
Feb.			28	14.9	! 6	0	4.63	11,604	91,555	310,245	0
Mar.			18	11.1	! 1	0	1.89	5,054	41,993	182,376	1,166
April			26	42.3	! 1	0	23.1	59,910	183,583	557,401	2,950
May			! 7	81.1	20	9.30	27.3	73,103	238,674	531,533	467
June			! 5	16.7	! 12	0	5.32	13,781	105,364	333,959	0
July			10	15.4	! 1	0	2.16	5,797	46,630	200,370	392
Aug.			19	12.0	! 1	0	2.66	7,119	85,283	333,642	698
Sept.			29	38.0	! 2	0	19.1	49,533	56,736	204,486	131
Oct.			4	38.3	! 6	0	5.32	14,247	54,270	258,526	0
Nov.			10	10.5	! 3	0	2.15	5,581	15,783	103,226	0
Dec.			26	70.8	! 1	0	15.6	41,904	26,138	205,654	0
Yearly				81.1	0		9.25	292,427	1,062,613	1,903,119	46,820

@ Mean daily ! And other days

WATER BULLETIN NUMBER 74 -- 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 275 discharge measurements during the year, 243 by the Mexican Section and 32 by the United States Section of the Commission, and a continuous record of gage heights. Records available: 1952 through 2004.

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. 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
Monthly:	Max.	1,070	Oct. 1958
Yearly:	Max.	182	1958
	Min.	0	Occasionally
	Min.	0.16	March 1957
	Min.	4.49	1957

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28.5	26.0	* 26.1	* 20.5	153	* 91.7	105 *	45.9	* 50.0	* 57.7	* 33.3	* 20.0
2	21.3	* 30.9	* 25.0	* 15.7	156	* 83.0	112 *	* 51.9	* 48.0	56.2	* 30.8	* 19.3
3	23.1	30.8	* 20.6	15.3	147 *	* 88.7	115	* 52.1	* 50.6	53.1	* 30.9	* 17.2
4	30.5	* 30.9	* 20.8	18.8	136 *	* 94.7	108	* 50.8	52.7	* 41.3	* 32.1	17.8
5	* 27.0	28.8	20.6	* 42.9	120	100	* 94.5	* 41.2	60.1	* 42.8	* 30.4	17.8
6	* 27.0	* 26.4	22.6	* 47.5	* 95.5	106	* 79.0	37.2	* 43.7	* 65.2	33.7	* 23.1
7	25.2	26.6	23.5	* 24.9	* 73.9	105 *	* 74.7	38.6	* 20.9	* 79.1	39.8	* 22.6
8	* 28.7	22.0	* 24.5	26.5	76.2	* 87.0	* 68.4	45.1	* 13.1	* 88.5	* 35.2	* 22.6
9	* 29.9	* 30.1	* 24.4	34.8	110	* 72.4	* 53.7	* 46.0	* 18.7	83.8	* 34.2	* 20.2
10	36.3	* 32.5	* 31.4	46.1	152 *	* 67.7	49.8	* 39.2	* 25.3	71.4	35.1	* 16.8
11	39.4	* 32.5	* 32.7	47.9	142 *	* 67.3	45.8	* 41.6	21.1	* 62.3	* 34.6	17.1
12	* 37.0	* 23.1	32.9	* 43.7	144 *	* 60.9	* 46.7	* 39.3	23.6	* 53.8	* 28.2	21.5
13	* 41.4	* 26.2	35.3	* 36.6	150 *	57.5	* 42.7	* 39.4	* 21.4	* 53.6	34.7	* 24.6
14	* 39.6	23.9	41.8	29.9	173 *	* 52.3	* 39.7	32.6	* 34.4	* 50.6	31.5	* 24.5
15	* 35.0	* 22.8	* 36.3	* 23.7	171	* 44.9	* 49.2	46.8	* 62.4	* 45.6	* 33.0	* 27.5
16	* 32.2	* 24.8	* 40.2	* 20.9	169	* 35.5	* 54.5	* 48.9	105	44.5	* 30.5	* 27.2
17	37.8	* 20.2	* 40.1	34.7	182 *	34.0	54.7	* 44.8	145 *	36.8	* 33.1	* 22.1
18	31.2	* 20.2	* 29.8	47.8	169 *	* 37.0	54.8	* 44.6	172 *	* 32.2	* 32.2	36.0
19	* 29.6	* 19.6	27.4	* 67.5	160 *	* 46.3	* 53.9	* 45.5	175 *	* 25.7	* 22.3	36.3
20	* 32.0	* 19.4	28.1	61.4	161 *	52.8	* 49.6	* 30.9	183 *	* 22.3	19.3	* 36.3
21	* 35.8	19.3	26.3	* 74.6	159 *	* 61.2	* 42.9	44.3	188 *	* 20.7	20.7	* 36.3
22	36.6	20.5	* 23.0	* 67.3	142	* 64.9	* 42.7	41.4	195 *	* 30.2	* 25.8	* 32.8
23	* 37.6	* 26.3	* 18.4	* 70.8	132	* 68.6	* 41.2	* 40.6	191 *	* 43.9	* 18.6	* 27.8
24	34.2	* 31.2	* 16.6	61.9	125 *	* 68.1	42.4	* 38.2	150 *	36.3	* 19.8	27.8
25	36.2	* 31.2	* 20.6	114	111 *	* 87.5	42.4	* 40.5	120	* 34.8	* 17.9	34.2
26	* 29.2	* 27.9	20.8	137 *	104	122	* 45.8	* 37.4	98.1	* 42.5	* 19.0	37.9
27	* 29.5	* 18.7	23.1	136 *	104 *	137	* 44.2	* 44.7	* 82.0	* 39.5	21.7	* 38.5
28	* 30.4	19.4	24.3	150 *	104 *	117 *	* 44.6	* 46.6	* 68.3	* 36.9	22.2	* 35.7
29	* 24.4	23.9	* 18.5	171 *	103	100 *	* 42.2	47.6	* 63.7	* 35.9	* 20.8	* 36.5
30	* 19.9		* 22.5	158 *	102	* 95.0	* 39.1	* 52.2	* 62.1	33.1	19.9	* 24.1
31	23.9		* 22.8		* 98.3		39.6	* 59.5		31.0		* 26.2
Sum	970.4	736.1	821.0	1,880.7	4,124.9	2,306.0	1,818.8	1,355.4	2,544.2	1,451.3	841.3	828.3

Current Year 2004

Period 1952-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	24.620	23.860	13	42.2	30	17.4	31.3	83,843	105,695	401,561	1,340
Feb.	24.410	23.850	10	34.9	27	17.1	25.4	63,599	85,006	341,107	1,024
Mar.	24.700	23.800	14	45.6	!24	15.3	26.5	70,934	95,578	348,805	418
April	26.770	23.760	29	183	16	13.9	62.7	162,492	141,806	507,514	3,898
May	26.840	25.430	17	197	8	73.1	133	356,391	187,120	591,520	43,410
June	26.530	24.290	27	143	17	30.8	76.9	199,238	208,427	838,797	1,828
July	26.120	24.460	3	118	30	36.7	58.7	157,144	152,858	687,079	2,461
Aug.	25.220	24.240	31	65.0	!19	29.1	43.7	117,107	149,393	1,489,882	1,163
Sept.	27.210	23.670	22	278	8	11.1	84.8	219,819	224,513	2,297,808	4,831
Oct.	26.090	23.900	8	116	21	18.7	46.8	125,392	251,258	2,868,998	2,138
Nov.	24.550	23.870	7	40.0	!23	17.8	28.0	72,688	123,721	1,773,274	1,770
Dec.	24.650	23.830	25	43.7	!9	16.4	26.7	71,565	93,189	666,198	1,855
Yearly	27.210	23.670		278		11.1	53.8	1,700,212	1,818,564	5,724,004	141,538

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

RIO GRANDE FLOODWAY DISCHARGES  
LOWER RIO GRANDE VALLEY

On the United States Side

Part of the excess water from floods entering the Lower Rio Grande Valley is diverted from the river through the United States floodway system with the inlet located at Anzalduas Dam near Mission, Texas.

Floodwater entering the system is measured first at the Banker Floodway Station at Anzalduas Dam near Mission and again 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 2004, 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 1.2 river kilometers upstream from Retamal Diversion Dam and 59.7 river 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 2004, no flood flow was diverted through Retamal Floodway or Anzalduas Canal.

WATER BULLETIN NUMBER 74 -- 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 Commission on Environmental Quality, 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 2004, 45,105 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 17.0% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2004 in this river reach was 198,275 TCM, or 24.5% 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	Occasional	
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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.70	3.74	5.69	5.80	1.78	17.1	1.81	0.52	6.45	5.93	4.43	4.92
2	4.52	4.17	8.06	4.31	1.61	15.4	.35	5.18	3.64	2.65	8.87	5.16
3	1.81	6.96	7.75	4.95	4.15	18.8	.14	6.94	.87	1.95	9.47	4.48
4	5.23	6.85	9.29	3.70	5.13	19.1	.14	10.4	0	5.10	9.37	4.45
5	7.62	7.64	10.6	2.63	5.98	17.6	1.52	9.98	0	4.42	10.6	4.39
6	8.22	8.17	9.48	2.94	6.47	16.5	7.13	7.74	.06	3.10	9.77	4.72
7	8.78	6.28	9.12	1.53	6.25	16.7	10.1	7.65	.71	2.68	8.50	4.66
8	9.86	2.81	8.85	.82	5.54	11.2	10.9	7.41	.63	2.40	9.84	4.32
9	9.10	7.83	9.52	.72	4.92	9.53	11.8	9.23	3.41	.61	8.85	4.21
10	8.58	11.9	9.80	.82	5.39	8.59	11.1	8.94	4.99	.31	8.58	4.58
11	5.97	12.1	10.9	1.61	7.02	6.48	10.1	8.83	5.28	3.90	9.36	1.11
12	8.14	8.91	9.86	3.70	6.95	5.82	12.8	9.28	3.68	6.37	6.90	2.39
13	7.43	6.21	5.00	3.97	7.88	5.55	14.3	8.75	4.44	6.34	5.27	4.69
14	8.24	5.52	6.24	2.38	8.34	8.16	13.0	5.17	5.73	6.58	4.49	5.04
15	8.29	1.85	8.69	2.23	7.52	8.97	11.7	4.61	6.23	4.76	7.58	5.28
16	7.35	5.51	6.74	3.47	5.35	8.76	11.4	7.15	8.01	4.31	5.44	6.11
17	6.68	5.44	5.14	2.67	6.83	6.68	10.7	8.53	8.45	4.23	4.22	6.00
18	2.55	5.41	1.80	1.71	8.94	10.3	8.17	6.12	4.87	6.12	7.23	4.75
19	5.01	6.43	2.08	5.10	10.8	14.3	9.46	5.28	2.02	6.94	6.35	5.99
20	7.47	3.68	.24	6.00	11.9	11.5	9.43	7.39	1.17	6.11	4.38	5.52
21	8.40	5.07	1.15	5.60	13.9	14.2	9.51	7.68	1.07	3.55	2.59	6.54
22	5.40	2.66	4.41	5.27	13.2	13.6	10.3	9.77	1.56	3.98	6.73	6.29
23	5.01	3.29	3.68	4.16	13.2	7.37	11.4	9.58	.49	7.29	7.64	5.56
24	1.65	3.72	1.75	3.49	16.2	3.13	9.01	10.7	.87	8.04	5.74	2.04
25	1.67	3.58	.83	0	17.9	2.54	7.43	11.3	.43	9.53	2.26	2.40
26	1.78	4.53	3.23	1.16	17.7	.54	11.3	11.5	.12	9.75	2.10	4.47
27	2.31	3.74	3.43	2.55	16.2	0	12.4	11.7	1.39	9.97	4.66	5.54
28	1.30	3.36	1.21	4.31	18.3	1.11	11.7	9.45	3.58	10.2	2.25	4.51
29	4.77	2.49	0	4.68	18.5	1.57	9.95	7.48	7.14	9.18	1.16	3.86
30	7.02	0	0	4.24	10.6	2.37	10.0	8.32	7.66	9.07	0	3.53
31	7.14	0	0	9.05	9.05	0	4.94	8.84	0	8.90	0	2.20
Sum	178.00	159.85	164.54	96.52	293.50	283.47	273.99	251.42	94.95	174.27	184.63	139.71
Current Year 2004										Period 1960-2004		
Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters					
	2004	1960-2004	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum	
Jan.	31	30	8	9.86	1	0.70	5.74	15,379	16,564	43,121	892	
Feb.	14	30	11	12.1	15	1.85	5.51	13,811	14,433	35,196	2,522	
Mar.	48	22	11	10.9	!29	0	5.31	14,216	22,213	44,562	6,924	
April	111	37	20	6.00	25	0	3.22	8,339	26,272	48,447	3,758	
May	24	68	29	18.5	2	1.61	9.50	25,358	28,050	53,225	1,008	
June	116	68	4	19.1	27	0	9.50	24,492	31,667	59,901	5,184	
July	18	38	13	14.3	!3	.14	8.84	23,673	27,745	49,928	8,137	
Aug.	34	59	27	11.7	1	.52	8.11	21,723	21,892	33,973	9,192	
Sept.	155	110	17	8.45	!4	0	3.17	8,204	13,833	34,885	3,964	
Oct.	21	64	28	10.2	10	.31	5.62	15,057	17,483	38,509	2,540	
Nov.	0	29	5	10.6	30	0	6.15	15,952	14,556	41,712	1,252	
Dec.	10	28	21	6.54	11	1.11	4.51	12,071	12,280	24,623	2,284	
Yearly	582	583		19.1		0	6.27	198,275	246,988	398,520	149,260	

@ Mean daily

! And other days

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

WATER BULLETIN NUMBER 74 -- 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 Commission on Environmental Quality, 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 2004, 123,435 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 46.6% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2004 in this river reach was 371,727 TCM, or 45.9% 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:

Daily:	Max.	82.4	Average Flow in Cubic Meters per Second	Min.	0	Occasionally
Monthly:	Max.	63.0	June 5, 1990	Min.	1.52	March 1957
Yearly:	Max.	27.6	May 1995	Min.	10.4	1968
			1989			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.83	8.40	6.68	9.31	13.8	32.4	2.06	14.4	20.5	6.75	9.80	2.74
2	10.6	10.7	7.90	7.48	8.52	35.5	2.98	19.5	18.5	5.04	13.4	6.15
3	7.75	16.2	8.91	3.05	11.8	35.4	1.91	20.6	17.7	3.41	14.5	5.41
4	8.80	17.5	5.89	2.95	15.3	35.4	1.86	20.4	10.9	.17	14.3	4.53
5	8.89	15.0	4.88	2.57	21.1	46.2	1.93	22.3	13.4	1.20	14.7	3.62
6	11.0	15.5	3.81	8.25	22.7	31.9	5.52	21.2	6.20	2.06	13.4	5.42
7	10.3	7.67	3.71	8.52	23.7	26.8	8.43	15.8	5.74	3.16	12.7	9.21
8	8.86	6.62	5.05	1.32	18.2	20.1	11.0	14.2	4.92	3.71	18.0	9.35
9	8.78	10.8	7.24	1.34	9.03	16.5	12.5	21.0	2.86	2.44	19.2	9.37
10	11.9	12.3	7.95	1.39	11.4	16.3	13.7	21.0	1.64	1.51	15.0	8.19
11	12.1	15.3	12.4	.53	12.1	16.4	13.8	19.2	3.50	2.94	15.0	3.76
12	15.6	10.4	14.5	0	16.0	16.8	16.1	18.2	2.03	5.12	9.88	3.79
13	16.3	8.13	15.3	1.46	12.8	2.37	15.0	19.3	7.99	5.05	10.4	6.45
14	16.1	3.71	17.2	2.06	10.6	7.06	13.5	18.1	9.37	5.05	11.1	6.50
15	18.3	3.71	18.8	2.06	8.45	10.9	12.6	18.8	7.15	9.38	15.5	7.82
16	20.0	7.96	16.0	4.08	8.30	16.2	17.7	23.1	7.51	7.04	14.7	9.01
17	11.4	7.22	15.8	2.77	21.9	18.6	25.7	20.2	5.87	6.89	13.9	10.3
18	8.76	7.14	21.7	1.86	25.4	19.0	21.5	18.2	1.85	7.97	8.66	7.53
19	14.2	7.39	15.7	7.64	25.3	19.0	22.8	18.8	1.31	9.37	11.9	12.4
20	15.7	7.14	8.13	9.76	26.5	18.6	21.7	18.4	3.68	6.51	6.99	17.4
21	14.3	5.09	2.42	11.9	27.5	16.5	22.0	15.7	1.82	7.53	5.27	20.9
22	17.5	4.88	3.07	10.5	26.9	23.6	14.8	20.0	.97	11.4	7.10	21.2
23	18.0	3.99	5.60	4.54	26.6	13.7	12.8	15.4	1.39	9.68	8.31	18.2
24	16.9	12.9	3.66	2.58	29.7	14.7	16.7	21.6	.56	11.4	5.23	8.95
25	20.3	14.6	3.52	1.20	34.7	15.9	15.9	21.3	0	8.74	2.65	4.02
26	20.9	14.7	2.73	0	38.2	7.86	17.5	19.9	0	11.5	3.33	12.7
27	15.2	10.5	2.21	1.23	38.7	7.40	22.2	20.4	.78	15.0	2.71	11.2
28	21.2	1.23	0	6.99	39.9	0	21.1	17.1	5.42	14.0	0	11.5
29	19.5	0	0	11.2	38.3	0	18.0	18.0	6.53	12.3	0	11.7
30	17.2	0	0	11.9	28.9	0	19.5	16.6	3.59	9.96	0	12.0
31	9.34	0	0	26.4	26.4	0	13.6	21.9	0	9.41	0	9.90
Sum	429.51	266.68	240.76	140.44	678.70	541.09	436.39	590.6	173.68	215.69	297.63	291.22

Month	Average Rainfall ** Millimeters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters					
	2004	1960-2004	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum	
Jan.	33	35	28	21.2	1	3.83	13.9	37,110	46,141	119,807	6,010
Feb.	13	36	4	17.5	29	0	9.20	23,041	27,416	75,228	5,929
Mar.	60	28	18	21.7	!28	0	7.77	20,802	34,841	84,858	9,551
April	75	42	!21	11.9	!12	0	4.68	12,134	60,975	125,384	4,333
May	28	71	28	39.9	16	8.30	21.9	58,640	94,648	168,687	8,409
June	157	73	5	46.2	!28	0	18.0	46,750	80,281	162,181	13,724
July	24	46	17	25.7	4	1.86	14.1	37,704	58,580	114,350	13,947
Aug.	36	68	16	23.1	8	14.2	19.1	51,028	45,410	88,370	15,710
Sept.	148	133	1	20.5	!25	0	5.79	15,006	28,682	68,815	5,314
Oct.	61	76	27	15.0	4	.17	6.96	18,636	28,892	71,743	4,886
Nov.	9	38	9	19.2	!28	0	9.92	25,715	23,904	66,002	4,252
Dec.	20	33	22	21.2	1	2.74	9.39	25,161	22,821	55,789	5,297
Yearly	664	679		46.2		0	11.8	371,727	552,591	868,544	328,940

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

WATER BULLETIN NUMBER 74 -- 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 DCP with GOES high data rate telemetry, 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 58 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 2004.

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 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.

Daily:	Max.	702	Average Flow in Cubic Meters per Second**	Min.	0	Occasional
Monthly:	Max.	405	Sept. 29, 1967	Min.	1.12	Dec. 1956
Yearly:	Max.	107	Oct. 1971	Min.	5.66	1956
			1976			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	16.0	11.5	10.8	* 10.3	131	* 43.6	124 *	25.2	* 14.0	* 62.2	* 17.7	* 11.7
2	20.7	9.78	* 9.48	10.4	141	39.0	123	* 29.6	19.4	64.0	15.9	11.6
3	11.8	* 9.67	8.19	15.7	145 *	32.8	125	25.9	22.0	63.3	9.92	10.9
4	7.97	7.27	9.72	15.0	139	30.1	125	25.6	34.7	60.0	9.88	11.1
5	* 11.4	9.20	7.40	* 24.9	126	30.2	119	22.7	42.2	* 50.3	9.36	10.6
6	9.48	7.10	6.69	43.5	105 *	32.9	103 *	16.3	51.8	46.4	9.42	* 10.1
7	8.39	10.5	7.41	48.3	87.4	* 42.3	82.2	15.7	* 46.7	64.5	12.6	10.4
8	10.4	16.3	* 8.60	* 45.2	75.6	49.9	67.1	16.0	23.2	78.2	* 15.6	9.85
9	10.6	12.4	9.18	42.5	78.6	57.3	55.2	* 18.0	18.3	83.4	11.3	8.51
10	10.1	* 9.67	7.60	45.7	* 92.7	55.2	36.0	15.7	15.8	86.3	10.8	9.93
11	11.5	9.37	8.99	50.9	116	48.5	25.7	11.2	22.7	77.2	12.7	11.6
12	* 18.0	10.2	8.32	53.7	123	46.3	* 19.2	15.7	14.5	* 60.5	12.2	15.1
13	15.2	12.4	7.27	* 50.1	118	43.4	10.9	20.8	* 15.9	48.7	15.0	19.0
14	15.2	14.5	10.1	44.6	127	* 45.7	8.02	16.9	10.4	43.8	16.9	* 15.7
15	13.1	19.1	* 23.8	41.8	138	38.9	12.6	17.5	19.7	41.1	* 19.5	13.7
16	8.60	18.6	21.3	35.2	144	25.0	17.1	* 16.7	45.0	37.2	15.1	12.0
17	12.9	14.7	20.1	26.1	147 *	15.2	18.3	9.66	71.7	33.2	14.4	12.0
18	20.4	* 12.8	13.2	31.3	141	12.5	15.1	11.2	103	* 26.8	18.0	12.7
19	18.8	10.4	16.3	* 44.3	132	12.6	* 18.0	11.6	135	18.8	21.4	17.4
20	* 7.53	8.51	16.7	52.2	123	15.1	17.1	11.8	150	14.4	12.5	15.0
21	8.29	11.0	26.3	70.1	119	* 18.6	17.4	11.2	159 *	16.0	13.0	* 10.5
22	7.55	12.4	30.4	68.7	117	34.0	21.0	18.0	167	14.9	* 12.7	8.79
23	8.23	12.0	* 23.4	61.2	110	56.0	22.2	* 19.8	172	12.5	11.9	8.80
24	10.9	12.6	19.8	66.7	* 98.6	57.7	20.5	16.0	177	24.9	11.1	13.4
25	14.1	8.90	18.1	70.0	83.0	63.1	17.0	8.21	177	* 20.2	10.0	22.1
26	* 14.9	7.36	19.3	* 94.5	64.2	83.3	* 17.3	8.28	166	13.0	13.7	22.3
27	9.59	7.62	22.4	122	51.6	111	12.7	8.48	142 *	17.9	14.7	* 19.1
28	8.49	13.3	20.0	127	45.7	132 *	10.3	12.5	107	20.0	17.9	12.4
29	10.4	10.9	18.2	126	42.6	138	13.7	17.4	83.1	18.6	15.6	12.1
30	11.5		* 8.46	129 *	43.4	130	14.5	* 19.4	70.4	21.6	13.6	11.4
31	13.1		6.74		44.1		16.5	17.4		23.0		14.4
Sum	375.12	330.05	444.25	1,666.9	3,249.5	1,540.2	1,304.62	510.43	2,296.5	1,262.9	414.38	404.18

Current Year 2004

Period 1954-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Low	Average	Total	Average	Maximum	Minimum	
Jan.	10.930	10.610	2	25.6	20	6.27	12.1	32,410	48,645	393,481	3,601
Feb.	10.815	10.590	16	20.1	6	5.88	11.4	28,516	49,024	447,576	4,168
Mar.	11.015	10.600	22	33.1	31	5.07	14.3	38,383	43,322	444,640	3,164
April	13.725	10.665	30	130	1	6.71	55.6	144,020	55,130	430,013	9,689
May	14.270	11.060	17	148	29	42.0	105	280,757	83,759	472,420	7,830
June	13.755	10.730	29	140	18	11.4	51.3	133,073	88,574	647,984	19,815
July	13.410	10.630	! 3	126	14	6.89	42.1	112,719	73,818	552,457	5,790
Aug.	10.955	10.620	2	33.8	17	7.25	16.5	44,101	75,335	1,020,220	3,827
Sept.	14.985	10.650	! 24	179	14	8.95	76.6	198,418	129,077	787,894	9,513
Oct.	12.680	10.690	10	88.2	23	9.62	40.7	109,115	158,212	1,086,522	4,737
Nov.	10.870	10.660	19	23.0	10	8.15	13.8	35,802	76,839	816,665	6,699
Dec.	10.935	10.630	26	26.5	23	7.11	13.0	34,921	62,878	591,018	2,992
Yearly	14.985	10.590		179		5.07	37.7	1,192,235	944,613	3,383,956	179,397

\* Discharge measurement(s) made on this day

! And other days

\*\* Period 1954-2004

WATER BULLETIN NUMBER 74 -- 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 Commission on Environmental Quality, 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 2004, 27,792 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 10.5% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2004 in this river reach was 78,038 TCM, or 9.6% 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	Occasional	
Monthly:	Max.	15.3	June 1965	Min.	0.52	Feb. 1966	
Yearly:	Max.	6.32	1965	Min.	2.47	2004	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.			
1	1.10	1.11	1.04	0.85	0.94	6.61	1.12	1.60	9.85	1.64	2.34	1.43			
2	1.19	3.06	.60	1.24	.75	4.46	1.13	5.00	9.50	1.46	2.22	.77			
3	.90	3.13	1.31	.93	1.00	4.55	1.54	11.5	10.8	.82	3.32	.62			
4	.70	2.99	1.41	.99	1.35	7.11	1.46	10.5	3.30	1.18	3.34	.68			
5	.97	1.55	2.02	1.24	1.96	8.08	1.41	10.7	2.34	1.43	2.77	.76			
6	.78	2.31	1.59	1.29	1.55	6.90	2.18	10.7	1.04	1.04	.80	1.76			
7	.94	1.96	1.68	.85	1.73	4.05	3.63	6.61	1.05	.81	1.80	1.16			
8	.86	1.70	.31	.99	1.60	1.27	3.58	3.45	1.90	1.71	1.30	1.40			
9	1.16	1.99	.82	.99	1.74	1.37	2.10	3.97	1.11	2.46	1.56	.90			
10	1.07	1.68	.98	1.02	1.13	1.08	1.71	3.20	2.39	1.35	1.60	1.27			
11	1.55	1.11	1.87	.97	.91	1.92	1.42	5.62	1.36	2.35	1.53	1.36			
12	1.71	1.01	2.81	.56	.85	.72	1.94	7.16	1.92	1.73	1.61	1.50			
13	5.40	1.06	2.69	1.23	.85	2.30	1.41	7.55	1.62	1.61	1.41	1.89			
14	10.6	.60	1.42	1.39	.85	2.24	2.80	4.29	1.58	2.99	.96	2.22			
15	8.93	.98	1.29	1.66	.85	2.54	2.98	2.07	1.59	1.31	1.05	2.00			
16	8.19	3.48	1.38	1.62	.85	3.21	3.51	2.28	1.44	1.80	1.74	2.42			
17	6.41	5.44	1.29	1.52	.81	3.27	2.50	2.93	2.62	1.48	1.86	1.69			
18	5.67	5.07	1.56	.87	.84	2.72	2.23	1.60	2.13	1.36	1.53	1.11			
19	4.76	3.46	.92	.66	1.71	1.78	7.80	2.22	1.54	2.00	3.14	1.57			
20	2.18	1.20	.97	.74	1.48	1.66	7.72	3.24	1.25	2.05	2.80	2.06			
21	.91	.95	1.00	2.50	1.97	1.85	8.08	3.55	1.17	3.59	2.28	2.00			
22	1.33	1.21	3.62	2.54	1.85	1.79	7.60	1.41	1.08	6.01	1.13	2.35			
23	1.23	1.25	6.04	1.70	3.27	4.81	9.33	2.55	1.02	5.24	1.62	2.03			
24	1.17	2.35	6.45	1.03	1.66	7.14	9.52	7.81	3.35	4.46	1.43	1.45			
25	1.12	2.02	3.30	.63	2.60	5.02	5.26	6.31	2.65	4.32	1.42	1.79			
26	4.45	2.15	1.24	.84	2.37	1.36	4.32	1.94	1.52	4.75	1.37	1.98			
27	7.62	1.56	1.45	.64	2.26	.82	4.06	2.39	2.82	4.12	.70	1.65			
28	4.71	1.20	0	1.19	2.68	1.38	4.45	2.32	1.99	4.05	0	1.41			
29	2.82	0	0	1.22	5.88	1.29	3.31	1.56	.99	3.02	0	1.96			
30	3.44	0	0	.83	1.35	1.04	2.89	5.21	1.93	2.13	0	1.55			
31	1.71	0	0		1.55		3.37	8.96		1.42		2.24			
Sum	95.58	57.58	51.06	34.73	51.19	94.34	116.36	150.20	78.85	75.69	48.63	48.98			
-----															
Current Year 2004								Period 1960-2004							
-----															
Month															
-----															
Average Rainfall**		Extreme-Cubic Meters per Second		Volume-Thousand Cubic Meters											
Millimeters															
2004		1960-2004		@ High		@ Low		Average		Total		Average		Maximum	Minimum
				Day		Day									
Jan.	22	38	14	10.6	4	0.70	3.08	8,258	12,031	30,303	1,871				
Feb.	21	34	17	5.44	29	0	1.99	4,975	8,815	25,442	1,268				
Mar.	46	25	24	6.45	128	0	1.65	4,412	8,994	18,745	1,777				
April	82	46	22	2.54	12	.56	1.16	3,001	13,734	34,233	2,823				
May	58	70	29	5.88	2	.75	1.65	4,423	18,763	59,789	1,956				
June	103	70	5	8.08	12	.72	3.14	8,151	19,458	39,816	4,612				
July	3	42	24	9.52	1	1.12	3.75	10,054	15,064	29,633	4,548				
Aug.	33	72	3	11.5	22	1.41	4.85	12,977	11,873	21,680	4,021				
Sept.	107	136	3	10.8	29	.99	2.63	6,813	7,660	14,796	1,081				
Oct.	40	81	22	6.01	7	.81	2.44	6,540	6,838	14,503	1,962				
Nov.	31	41	4	3.34	128	0	1.62	4,202	5,615	11,127	2,215				
Dec.	21	36	16	2.42	3	.62	1.58	4,232	5,983	11,785	2,484				
Yearly	567	691		11.5		0	2.47	78,038	134,828	199,208	78,038				

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

WATER BULLETIN NUMBER 74 -- 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 DCP with GOES high data rate telemetry 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 58 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1934 through 2004.

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.

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.

Daily:	Max.	459	Average Flow in Cubic Meters per Second**	Min.	0	Frequently
Monthly:	Max.	408	Oct. 19 & 20, 1971	Min.	0.10	Aug. 1957
Yearly:	Max.	103	Oct. 1971	Min.	1.19	1956
			1976			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.74	10.3	* 9.97	* 6.53	120	* 39.3	117 *	13.2	* 7.27	* 60.6	19.4	* 12.8
2	12.3	8.95	9.53	7.09	126	37.0	107	* 20.6	5.34	55.7	15.6	11.0
3	16.9	* 7.21	8.62	8.77	135 *	30.9	104	17.5	8.53	53.5	13.1	12.4
4	12.6	6.63	6.76	10.1	136	20.7	108	13.4	16.0	55.4	* 8.70	11.1
5	* 9.11	6.45	7.28	* 15.7	130	15.9	108	12.6	29.6	* 53.2	7.92	10.9
6	9.53	7.25	7.49	17.3	117 *	15.9	106 *	12.6	38.4	47.3	8.93	* 10.3
7	9.23	6.31	6.68	31.7	102	* 22.1	95.9	7.94	* 49.2	49.7	9.83	9.08
8	7.97	6.80	* 6.96	* 38.2	90.2	35.3	78.0	10.6	41.4	65.9	* 11.2	8.70
9	8.60	11.3	8.09	30.8	88.5	45.6	61.7	12.5	25.8	76.9	13.7	8.67
10	9.09	* 10.9	7.40	27.5	* 77.8	51.0	48.9	* 12.7	18.9	83.3	11.4	8.43
11	9.56	9.09	5.65	36.5	86.7	48.1	33.9	10.3	14.2	87.2	9.92	7.81
12	9.70	8.37	5.29	45.4	102	43.3	* 25.9	5.28	16.5	* 78.4	10.5	8.98
13	* 11.1	8.69	5.62	* 48.2	110	43.9	19.5	6.58	* 13.6	61.5	10.8	11.4
14	6.48	11.4	5.83	44.1	113	* 43.8	13.3	12.4	13.5	51.2	12.2	* 14.3
15	5.38	12.7	10.3	36.8	119	39.9	11.2	14.9	10.4	44.9	* 16.0	12.5
16	5.31	15.1	* 17.4	31.6	129	33.9	13.3	* 16.0	18.1	39.9	17.5	10.9
17	4.96	11.1	16.4	25.8	136 *	20.3	18.1	13.9	44.2	35.2	13.8	9.43
18	5.24	8.15	15.1	21.0	139	10.6	20.0	9.65	72.4	* 31.2	12.3	9.87
19	9.43	* 6.28	11.9	* 24.6	137	7.25	* 16.2	9.33	99.8	26.3	12.9	10.1
20	* 12.1	7.01	13.5	37.7	130	7.26	10.1	9.49	125 *	19.5	14.7	13.1
21	8.05	6.72	14.1	49.7	121	* 12.5	9.48	8.44	139	14.1	10.5	* 12.7
22	7.56	7.51	19.6	63.6	116	13.9	8.60	7.89	148	11.5	* 10.2	8.72
23	8.05	9.00	* 18.4	61.3	113	26.4	12.9	* 12.1	154	10.9	9.99	6.41
24	7.69	8.75	14.0	56.7	107 *	41.0	13.8	13.4	158	9.39	9.67	6.13
25	9.69	8.85	12.3	59.8	95.9	45.3	12.4	8.20	160	* 17.7	8.90	10.6
26	* 12.0	6.13	14.5	* 64.8	78.0	58.9	* 12.5	5.48	159	17.4	7.38	17.4
27	10.5	5.66	15.7	86.2	58.1	78.6	12.1	5.02	151 *	11.3	9.69	* 19.0
28	6.76	5.42	18.0	98.5	47.1	* 98.3	9.41	5.36	134	13.0	12.4	16.6
29	5.54	8.46	* 17.4	106 *	36.2	114	6.96	5.08	108	15.4	15.0	11.3
30	6.99	15.7	112	32.3	120	8.74	* 15.0	78.3	16.5	15.0	9.15	9.15
31	8.70	9.00	37.7	37.7	37.7	10.0	11.6	18.4	18.4	18.4	8.45	8.45
Sum	273.86	246.49	354.47	1,303.99	3,166.5	1,220.91	1,232.89	343.04	2,057.44	1,232.39	359.13	338.23

Current Year 2004

Period 1954-2004

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.880	0.880	3	18.1	17	4.56	8.83	23,662	37,812	407,379	349
Feb.	1.720	.930	16	16.1	28	5.20	8.50	21,297	41,778	446,279	1,303
Mar.	2.000	.890	22	21.5	12	5.15	11.4	30,626	35,824	445,080	2,532
April	5.365	.930	30	116	2	5.61	43.5	112,665	38,589	397,086	1,079
May	5.970	2.480	18	140	30	31.6	102	273,586	63,672	438,873	2,807
June	5.305	1.020	30	120	20	6.37	40.7	105,487	68,028	600,151	2,996
July	5.240	1.005	1	120	29	6.61	39.8	106,522	61,493	539,704	1,383
Aug.	1.750	.875	2	22.8	12	3.97	11.1	29,639	62,161	1,001,626	269
Sept.	6.550	.860	25	161	2	3.98	68.6	177,763	114,707	784,150	1,171
Oct.	4.360	1.235	11	88.1	24	8.14	39.8	106,478	146,504	1,094,351	933
Nov.	1.980	1.155	1	20.7	26	7.17	12.0	31,029	71,415	650,763	1,587
Dec.	1.840	1.005	27	20.0	24	5.64	10.9	29,223	59,186	591,508	646
Yearly	6.550	0.860		161		3.97	33.1	1,047,977	801,169	3,263,087	37,722

\* Discharge measurement(s) made on this day

\*\* Period 1954-2004

WATER BULLETIN NUMBER 74 -- 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 Commission on Environmental Quality, 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 2004, 1,180 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 0.4% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 2004 in this river reach was 1,798 TCM, or 0.2% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of flow meters. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

Daily:	Max.	2.78	Average Flow in Cubic Meters per Second	Min.	0	Frequently
Monthly:	Max.	0.66	June 1, 1996	Min.	0	Occasionally
Yearly:	Max.	0.20	June 1965	Min.	0.02	1976

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0.07	0	0	0	0.07	0	0	0.18	0.18	0.18	0
2	0	.22	.06	0	0	.14	0	.16	.18	.18	.18	.09
3	0	.19	.06	0	0	.14	0	.16	.14	.14	.18	.09
4	0	.24	.06	0	.06	.29	0	.16	0	0	.09	0
5	0	.15	.06	0	.06	.38	0	.24	0	0	.09	0
6	0	.21	0	0	.12	.23	0	.15	.09	.09	0	.12
7	0	.21	0	0	.08	.17	0	.22	.09	.09	0	.12
8	0	.21	0	0	0	0	0	.14	.15	.15	.09	.12
9	0	.29	.02	0	0	0	0	.14	.15	.15	.09	.12
10	.07	.19	.03	0	0	0	0	.14	.06	.06	.16	.19
11	0	.19	0	0	0	0	0	.02	0	0	.07	.19
12	.07	.19	0	0	0	0	0	.12	0	0	0	.26
13	.07	.19	.12	0	0	0	0	.12	.01	.01	0	.24
14	.05	0	.12	0	0	0	0	.12	.01	.01	0	.10
15	.05	0	.12	0	0	0	0	0	.01	.01	0	.10
16	.05	0	0	0	0	.14	0	0	.01	.01	0	.10
17	0	0	.02	0	.01	.14	0	0	.01	.01	0	0
18	0	0	.03	0	.01	.15	0	0	0	0	0	0
19	.04	0	.02	0	.01	.07	.17	0	0	0	0	0
20	.08	0	0	.06	.01	.07	.23	0	0	0	0	0
21	.16	0	0	.18	0	.07	.23	0	0	0	0	0
22	.20	0	.08	.21	0	.07	.23	0	0	0	0	0
23	.20	0	.08	.21	0	.07	.23	.06	0	0	0	0
24	.20	0	.14	0	0	0	.27	.06	0	0	0	0
25	0	0	.06	0	.03	0	.09	.22	0	0	0	0
26	.22	0	0	0	.03	0	.22	.22	0	0	0	0
27	.30	0	0	0	.03	0	.22	.22	0	0	.07	0
28	.30	0	0	0	0	0	.25	.16	0	0	0	0
29	.30	0	0	0	0	0	.29	0	0	0	0	0
30	.30	0	0	0	0	0	.32	0	0	0	0	0
31	.17	0	0	0	0	0	.23	0	0	0	0	0
Sum	2.83	2.55	1.08	0.66	0.45	2.20	2.98	2.83	1.09	1.09	1.20	1.84

Current Year 2004

Period 1960-2004

Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	2004	1960-2004	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.	44	41	! 27	0.30	! 1	0	0.09	245	377	1,573	0
Feb.	23	32	9	.29	! 14	0	.09	220	286	1,113	0
Mar.	71	24	24	.14	! 1	0	.03	93.3	197	782	0
April	75	46	! 22	.21	! 1	0	.02	57.0	358	1,187	0
May	108	65	6	.12	! 1	0	.01	38.9	522	1,673	0
June	96	66	5	.38	! 8	0	.07	190	570	1,718	0
July	7	41	30	.32	! 1	0	.10	257	245	960	0
Aug.	53	72	5	.24	! 1	0	.09	245	127	391	0
Sept.	99	143	! 1	.18	! 4	0	.04	94.2	60.9	262	0
Oct.	44	87	! 1	.18	! 4	0	.04	94.2	70.3	224	0
Nov.	60	48	! 1	.18	! 6	0	.04	104	79.5	311	0
Dec.	32	36	12	.26	! 1	0	.06	159	106	613	0
Yearly	712	701		0.38		0	0.06	1,798	2,999	6,212	670

@ Mean daily

! And other days

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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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 Commission on Environmental Quality, 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 2004, 264,900 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 809,849 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				Occasional
Daily:	Max. 159	June 1, 1960	Min. 0		Mar. 1957	
Monthly:	Max. 123	June 1960	Min. 2.89		2003	
Yearly:	Max. 59.8	1989	Min. 24.5			

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.85	15.4	21.3	21.5	19.1	67.7	7.43	20.8	45.8	19.1	25.7	18.2
2	19.8	22.3	25.2	17.4	13.3	69.3	8.40	38.7	39.2	12.1	33.1	20.0
3	13.5	30.6	26.4	12.2	20.1	71.1	5.71	48.4	34.2	8.89	36.4	15.9
4	17.2	31.4	24.0	10.6	23.6	74.0	4.38	50.8	15.9	11.8	35.7	12.8
5	23.4	28.0	23.9	10.7	31.5	83.1	6.20	52.6	17.1	12.3	34.4	11.6
6	25.5	29.5	20.3	17.4	33.3	63.8	18.2	46.2	8.51	11.7	27.2	18.3
7	24.7	18.7	18.9	12.4	33.7	59.6	26.2	35.1	10.6	10.9	26.1	21.5
8	24.0	14.1	22.9	4.63	26.6	43.7	31.7	30.3	11.3	11.9	38.3	20.4
9	22.7	25.7	26.7	4.69	16.0	37.5	31.0	45.0	11.2	8.34	39.3	20.5
10	24.2	31.0	28.4	4.30	20.8	35.8	29.6	43.5	13.4	6.19	32.8	17.7
11	22.3	32.7	34.2	4.34	23.3	32.6	27.1	45.3	12.7	14.0	34.0	8.00
12	31.6	24.6	33.6	6.06	26.9	28.4	37.0	46.6	10.0	17.8	25.3	9.46
13	34.8	18.8	28.2	7.79	24.0	14.3	36.8	42.5	19.6	17.2	21.7	20.9
14	40.4	13.4	29.1	7.19	22.8	23.0	35.8	32.7	23.4	18.6	20.9	21.8
15	40.6	8.31	34.5	7.99	17.2	28.2	34.1	30.6	21.4	19.7	32.6	22.9
16	40.2	19.2	28.3	11.9	14.9	39.1	37.9	41.2	23.0	16.8	29.8	25.4
17	27.8	21.0	23.8	8.39	32.8	41.5	41.6	41.6	21.5	16.1	26.0	23.8
18	19.9	22.1	26.4	7.21	39.1	44.8	34.1	36.0	11.6	20.4	24.3	18.8
19	28.4	21.2	21.3	18.8	40.6	45.6	48.8	36.2	7.92	23.7	27.8	26.3
20	29.6	15.9	10.7	20.8	41.7	38.8	47.8	37.7	10.9	20.1	19.3	32.5
21	28.3	14.2	6.71	24.8	46.9	43.0	47.8	32.3	8.80	22.2	15.5	37.3
22	29.2	11.6	14.6	23.1	45.1	48.1	41.6	36.3	6.63	27.2	24.1	36.8
23	28.2	15.8	18.9	14.9	45.9	31.2	41.9	37.5	6.16	26.8	27.3	29.2
24	21.8	26.5	14.9	9.86	53.8	30.7	43.3	50.4	8.10	27.6	20.4	13.7
25	24.1	27.1	11.6	3.36	62.9	27.0	35.7	48.8	5.82	30.1	10.4	8.38
26	29.6	27.6	11.5	5.41	66.6	10.9	42.9	43.8	4.01	34.7	10.4	20.9
27	27.2	20.8	9.93	8.07	65.2	8.25	48.1	43.5	8.88	38.6	13.1	21.3
28	31.4	9.91	1.21	15.5	68.3	5.03	47.4	35.0	14.8	37.8	2.25	22.2
29	31.1	2.49	0	20.1	69.7	4.36	40.9	31.1	20.2	32.2	1.16	22.0
30	31.4	0	0	20.0	46.3	5.30	39.2	39.4	18.4	27.5	0	20.9
31	20.6	0	0	44.3	44.3	26.2	26.2	47.9	23.4	23.4	0	17.0
Sum	821.35	599.91	597.45	361.39	1,136.3	1,155.74	1,004.82	1,247.8	471.03	625.72	715.31	636.44

Current Year 2004							Period 1958-2004				
Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	2004	1958-2004	Day	@ High	Day	@ Low	Average	Total	Average	Maximum	Minimum
Jan.	36	34	15	40.6	1	7.85	26.5	70,965	88,844	224,987	11,984
Feb.	15	33	11	32.7	29	2.49	20.7	51,832	67,306	155,700	14,537
Mar.	53	22	15	34.5	129	0	19.3	51,620	91,795	193,098	19,538
April	92	37	21	24.8	25	3.36	12.0	31,224	132,667	258,994	15,713
May	52	63	29	69.7	2	13.3	36.7	98,176	149,742	306,530	19,823
June	99	68	5	83.1	29	4.36	38.5	99,856	161,325	319,179	28,140
July	16	39	19	48.8	4	4.38	32.4	86,816	129,748	242,015	38,857
Aug.	41	59	5	52.6	1	20.8	40.3	107,810	107,507	182,408	44,662
Sept.	117	114	1	45.8	26	4.01	15.7	40,697	70,392	168,349	15,676
Oct.	47	73	27	38.6	10	6.19	20.2	54,062	74,453	162,305	16,023
Nov.	24	33	9	39.3	30	0	23.8	61,803	62,251	163,201	15,633
Dec.	17	28	21	37.3	11	8.00	20.5	54,988	57,594	113,823	17,311
Yearly	609	603		83.1		0	25.6	809,849	1,193,624	1,879,991	772,103

@ Mean daily

! And other days

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

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
2004	869	643	559	646	371	414	533	878	575	673	928	1,022	8,111
Average	1,841	1,703	1,692	1,613	1,656	1,681	1,785	1,795	1,663	1,668	1,654	1,672	20,423

Period average 1995-2004

CD. ACUNA SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande at approximately river kilometer 899. The outfall from this plant is measured by means of a flowmeter. The records are furnished by the Mexican Section of the Commission.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
2004	483	370	391	334	351	601	683	646	568	733	751	721	6,632
Average	385	347	373	343	346	412	461	465	436	336	342	411	4,657

Period average 2000-2004

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
2004	361	351	400	425	415	360	415	463	440	440	446	392	4,908
Average	297	268	295	288	306	291	307	316	320	327	314	325	3,654

Period average 1995-2004

PIEDRAS NEGRAS SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande at approximately river kilometer 794.3. The outfall from this plant is measured by means of a flowmeter. The records are furnished by the Mexican Section of the Commission.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
2004	959	899	965	922	965	933	964	945	935	963	1,047	1,001	11,498
Average	927	829	979	943	982	928	977	970	923	973	950	949	11,330

Period average 2000-2004

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
2004	1,767	1,732	1,914	1,903	1,914	1,829	1,862	1,885	1,981	1,923	1,826	1,815	22,351
Average	1,520	1,428	1,608	1,630	1,748	1,694	1,758	1,773	1,734	1,709	1,549	1,584	19,735

Period average 1995-2004

OUTFALLS FROM SEWERS INTO THE RIO GRANDE

In Thousand Cubic Meters

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
2004	2,986	2,931	3,182	3,034	3,103	2,975	3,061	3,045	3,112	2,991	2,956	2,927	36,303
Average	2,936	2,763	3,107	2,981	3,179	3,086	3,167	3,092	3,105	3,070	3,005	2,998	36,489

Period average 2002-2004

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
2004	55.1	54.1	74.4	77.3	94.2	101.0	60.6	59.2	56.8	56.6	42.7	34.9	767
Average	38.1	33.6	39.0	39.0	45.7	36.9	36.0	37.2	39.8	38.5	32.8	32.2	449

Period average 1998-2004

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
2004	95.8	129.0	83.9	103.0	109.0	89.8	88.8	85.5	98.9	101.0	94.6	99.3	1,179
Average	89.1	87.5	84.8	86.8	95.0	86.2	88.5	89.7	97.8	106.0	93.2	87.4	1,092

Period average 1998-2004

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
2004	633	590	666	670	730	682	664	669	668	669	616	641	7,898
Average	613	571	636	630	664	628	631	656	671	715	629	615	7,658

Period average 1995-2004

WATER BULLETIN NUMBER 74 -- 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 "Diversion 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

Month	EL PASO (Pop. 583,949)				DEL RIO (Pop. 33,865)			
	2004	Period 1995 - 2004			2004	Period 1995 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	0	74.1	741	0	816	922	1,122	793
Feb.	0	443	1,160	0	782	916	1,130	710
Mar.	0	4,315	6,678	0	812	1,118	1,398	812
April	0	6,457	9,017	0	789	1,279	1,756	789
May	941	7,758	10,647	941	936	1,440	1,844	936
June	9,614	9,034	10,817	6,415	1,124	1,492	2,030	1,124
July	10,742	9,105	10,742	5,657	1,198	1,731	2,277	1,105
Aug.	10,115	9,530	10,692	6,521	1,152	1,576	2,015	667
Sept.	9,114	8,556	9,910	6,348	955	1,283	1,647	955
Oct.	712	2,390	7,070	0	810	1,107	1,461	810
Nov.	0	0	0	0	727	900	1,289	727
Dec.	0	0	0	0	773	892	1,163	773
Yearly	41,238	57,662	71,153	31,551	10,874	14,656	17,027	10,874

Month	EAGLE PASS (Pop. 22,413)				LAREDO (Pop. 176,576)			
	2004	Period 1995 - 2004			2004	Period 1995 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	500	463	500	417	3,309	3,010	3,570	2,576
Feb.	492	452	504	368	3,219	2,846	3,258	2,387
Mar.	539	534	609	432	3,281	3,312	4,156	2,762
April	451	612	705	436	3,430	3,667	4,848	2,501
May	625	702	857	542	4,079	4,339	4,990	3,232
June	747	737	938	537	4,570	4,473	5,716	3,344
July	751	791	989	650	4,525	4,742	6,552	3,718
Aug.	811	844	973	654	4,774	4,705	5,807	3,224
Sept.	617	641	821	465	3,560	3,659	5,069	2,907
Oct.	549	571	632	520	3,889	3,416	3,903	2,957
Nov.	521	494	575	428	3,442	3,001	3,442	2,546
Dec.	518	483	584	418	3,273	2,992	3,587	2,427
Yearly	7,121	7,324	8,267	6,482	45,351	44,162	48,754	38,393

Month	LAREDO POWER STATION				RIO BRAVO (Pop. 5,553)			
	2004	Period 1995 - 2004			2004	Period 1995 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	111	74.4	111	40.0	100	88.8	103	64.0
Feb.	80.5	79.3	115	30.3	82.6	77.5	97.5	60.7
Mar.	46.0	83.6	137	40.0	86.4	95.3	132	63.6
April	66.0	115	216	54.0	103	109	132	69.3
May	122	162	213	122	126	135	202	89.6
June	185	184	208	156	178	134	178	84.0
July	242	228	286	180	145	140	167	123
Aug.	273	233	343	146	144	133	163	98.0
Sept.	198	177	239	110	104	111	153	80.2
Oct.	203	139	203	89.0	107	98.8	112	81.9
Nov.	95.3	79.9	107	16.1	99.9	87.0	107	63.6
Dec.	76.5	79.6	146	45.1	105	92.6	146	45.9
Yearly	1,698	1,635	1,884	1,274	1,381	1,302	1,529	1,068

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

In the United States

Month	SAN YGNACIO (Pop. 853)				ZAPATA (Pop. 13,567)			
	2004	Period 1995 - 2004			2004	Period 1995 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	20.0	16.0	20.0	13.3	204	158	204	130
Feb.	20.4	15.8	20.4	13.1	165	149	165	125
Mar.	25.5	20.0	25.5	14.7	187	187	215	158
April	25.8	22.8	28.4	18.5	184	190	244	122
May	27.0	25.3	31.7	18.5	221	209	258	169
June	33.8	25.8	34.7	19.6	242	215	289	171
July	34.6	27.1	34.6	22.9	261	218	299	151
Aug.	34.2	26.8	34.2	19.3	243	234	296	174
Sept.	27.6	20.3	27.6	13.9	197	187	266	142
Oct.	29.6	20.2	29.6	15.7	250	173	250	144
Nov.	25.4	17.6	25.4	12.8	169	163	204	113
Dec.	28.3	18.0	28.3	12.7	185	155	185	115
Yearly	332	256	332	212	2,508	2,238	2,508	2,009

Month	FALCON VILLAGE (Pop. 85)				ROMA (Pop. 9,613)			
	2004	Period 1995 - 2004			2004	Period 1995 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	3.9	7.2	10.0	3.9	182	202	227	182
Feb.	4.8	7.0	9.6	4.2	171	192	209	165
Mar.	5.7	8.6	11.7	4.9	183	219	248	183
April	4.5	9.1	12.9	4.5	177	223	278	158
May	4.4	10.0	13.3	4.4	187	262	331	187
June	7.2	10.3	13.3	7.2	199	248	309	199
July	6.6	10.9	14.7	6.6	215	255	312	205
Aug.	7.0	11.2	14.7	7.0	222	259	316	215
Sept.	4.0	8.9	14.1	4.0	199	218	278	150
Oct.	4.5	8.2	10.4	4.5	201	246	540	196
Nov.	4.3	7.0	10.2	4.3	185	215	416	177
Dec.	4.0	6.5	9.9	4.0	184	196	218	182
Yearly	60.9	105	140	60.9	2,305	2,735	3,188	2,305

Month	RIO GRANDE CITY (Pop. 14,000)				BROWNSVILLE (Pop. 150,000)			
	2004	Period 1995 - 2004			2004	Period 1995 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	354	282	354	209	2,157	2,004	2,461	1,759
Feb.	275	229	284	168	2,182	1,894	2,271	1,605
Mar.	283	263	407	112	2,261	2,161	2,569	1,920
April	283	306	440	175	2,488	2,263	2,744	1,630
May	250	329	444	197	2,697	2,555	3,377	1,916
June	424	334	438	222	2,958	2,559	3,777	2,017
July	425	345	450	259	3,758	2,741	3,758	1,945
Aug.	380	321	451	263	4,048	2,624	4,048	2,127
Sept.	314	290	394	174	3,403	2,201	3,403	1,781
Oct.	366	267	366	125	3,713	2,149	3,713	1,733
Nov.	225	249	349	171	2,923	2,016	2,923	1,661
Dec.	60.4	234	324	60.4	2,420	2,006	2,420	1,727
Yearly	3,639	3,449	3,989	2,668	35,008	27,173	35,008	23,013

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

In Mexico

Month	CD. ACUNA, COAHUILA (Pop. 110,487)				RIO ESCONDIDO POWER PLANT			
	2004	Period 1995 - 2004			2004	Period 1995 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	1,168	615	1,168	305	3,045	2,018	3,045	1,331
Feb.	1,072	559	1,072	277	2,384	1,925	2,427	1,300
Mar.	1,114	627	1,174	308	2,260	2,117	2,739	1,280
April	1,030	603	1,099	298	1,504	2,129	3,039	1,504
May	1,309	664	1,309	310	2,655	2,319	3,050	1,624
June	1,440	677	1,440	291	2,660	2,341	3,200	1,903
July	1,566	744	1,566	312	2,481	2,534	3,940	1,934
Aug.	1,606	780	1,606	312	2,931	2,557	3,278	1,759
Sept.	1,243	708	1,399	303	2,380	2,238	2,957	1,539
Oct.	1,003	675	1,326	311	1,683	2,079	2,504	1,501
Nov.	899	644	1,299	302	1,618	1,958	2,373	1,618
Dec.	923	641	1,156	311	2,247	1,911	2,630	1,190
Yearly	14,373	7,937	14,893	3,640	27,848	26,126	32,213	21,929

Month	PIEDRAS NEGRAS, COAHUILA (Pop. 128,130)				NUEVO LAREDO, TAMAULIPAS (Pop. 310,915)			
	2004	Period 1995 - 2004			2004	Period 1995 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	1,355	1,228	1,522	855	3,857	3,856	4,787	2,218
Feb.	1,256	1,130	1,270	801	3,655	3,574	4,678	1,776
Mar.	1,369	1,292	1,507	840	3,975	3,930	4,925	1,937
April	1,417	1,372	1,680	738	3,939	3,967	4,650	2,797
May	1,574	1,468	1,825	911	4,333	4,440	5,358	3,934
June	1,750	1,534	1,840	1,029	4,417	4,358	5,011	3,857
July	1,805	1,597	1,838	1,097	4,582	4,547	4,963	3,954
Aug.	1,867	1,629	1,876	1,045	4,705	4,630	5,270	3,900
Sept.	1,639	1,452	1,692	906	4,374	4,443	4,843	4,020
Oct.	1,639	1,412	1,643	929	4,481	4,383	4,870	4,210
Nov.	1,374	1,241	1,450	840	4,137	4,157	4,706	3,859
Dec.	1,403	1,246	1,465	818	4,037	4,167	4,864	3,711
Yearly	18,448	16,601	18,699	10,860	50,492	50,452	56,762	42,309

Month	NUEVA CD. GUERRERO, TAMAULIPAS (Pop. 4,366)				CD. MIER, TAMAULIPAS (Pop. 6,788)			
	2004	Period 1995 - 2004			2004	Period 1995 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	25.2	57.0	73.1	25.2	65.3	62.6	80.4	44.8
Feb.	23.0	52.4	65.5	23.0	67.3	52.4	67.3	43.0
Mar.	26.5	54.7	72.6	26.5	48.8	55.8	67.4	47.9
April	29.8	53.1	71.9	29.8	47.2	59.6	75.2	47.2
May	29.7	62.0	85.8	29.7	75.6	65.8	80.4	37.4
June	35.4	56.6	72.6	35.4	73.4	69.9	77.8	51.8
July	35.2	58.2	72.4	35.0	69.9	72.3	80.4	56.2
Aug.	39.9	57.6	64.7	36.6	77.2	66.8	77.2	53.6
Sept.	36.3	55.9	69.9	28.7	76.1	65.0	77.8	47.1
Oct.	30.9	54.3	68.6	30.0	71.0	62.3	72.6	53.6
Nov.	31.4	51.5	65.4	26.0	57.2	59.2	73.5	49.3
Dec.	34.4	53.6	73.9	25.2	76.0	63.7	77.5	53.6
Yearly	377	667	813	378	805	755	805	683

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

In Mexico

Month	CD. MIGUEL ALEMAN, TAMAULIPAS (Pop. 25,704)				CAMARGO, TAMAULIPAS (Pop. 16,787)			
	2004	Period 1995 - 2004			2004	Period 2000 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	226	219	245	139	0	22.5	58.8	0
Feb.	217	211	238	176	0	18.2	57.9	0
Mar.	271	240	271	206	0	22.5	58.7	0
April	269	237	269	181	0	37.8	70.0	0
May	257	266	294	251	0	43.9	80.4	0
June	335	271	335	252	0	41.5	80.4	0
July	323	279	323	263	0	40.8	77.8	0
Aug.	316	273	316	253	0	46.1	80.4	0
Sept.	276	245	276	215	0	42.0	72.9	0
Oct.	280	250	320	181	0	24.5	61.3	0
Nov.	260	236	338	181	0	34.6	62.2	0
Dec.	266	229	274	170	0	31.6	58.8	0
Yearly	3,296	2,956	3,296	2,741	0	406	772	0

Month	CD. DIAZ ORDAZ, TAMAULIPAS (Pop. 16,246)				REYNOSA, TAMAULIPAS (Pop. 420,463)			
	2004	Period 1996 - 2004			2004	Period 1996 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	41.1	118	187	41.1	4,631	4,113	4,692	3,370
Feb.	45.0	104	139	38.4	4,776	4,041	6,566	2,998
Mar.	47.3	125	182	43.4	5,148	4,292	5,148	3,413
April	43.2	115	146	43.2	4,957	4,524	5,469	3,162
May	48.8	126	163	48.8	5,797	5,275	6,229	3,110
June	53.2	123	155	53.2	5,411	5,172	5,988	3,266
July	58.2	127	161	51.1	5,904	5,531	6,143	3,845
Aug.	57.8	134	199	53.8	5,908	5,655	6,126	4,501
Sept.	50.5	111	164	43.2	5,592	5,167	5,694	4,069
Oct.	54.2	110	154	43.2	6,097	5,015	6,097	4,018
Nov.	47.8	103	149	43.2	5,557	4,670	5,557	3,741
Dec.	46.4	102	149	43.0	5,357	4,503	5,357	3,491
Yearly	594	1,398	1,826	570	65,135	57,958	65,135	43,936

Month	CONTROL- VALLE HERMOSO, TAMAULIPAS (Pop. 58,873)				MATAMOROS, TAMAULIPAS (Pop. 418,141)			
	2004	Period 1998 - 2004			2004	Period 1996 - 2004		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	609	392	609	250	4,324	4,612	6,016	3,002
Feb.	576	377	576	219	3,893	4,343	5,402	3,006
Mar.	586	354	586	69.1	4,136	4,578	5,954	3,000
April	580	396	580	252	3,689	4,354	5,725	2,903
May	594	384	594	284	3,708	4,688	5,867	3,708
June	573	405	588	274	4,017	4,448	5,177	1,940
July	614	416	614	187	4,467	4,881	5,481	2,853
Aug.	599	426	618	264	4,961	4,890	5,472	3,194
Sept.	621	438	621	334	4,080	4,943	8,353	3,046
Oct.	627	449	629	327	3,877	4,384	5,866	2,980
Nov.	571	447	591	333	4,147	4,537	5,648	2,573
Dec.	530	419	617	314	3,995	4,653	6,003	2,589
Yearly	7,080	4,903	7,080	3,154	49,294	55,311	66,560	49,294

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

Month	RIO GRANDE (Capacity 63.0)		CONTINENTAL (Capacity 28.0)		SANTA MARIA (Capacity 55.6)		TERRACE (Capacity 21.2)		MOUNTAIN HOME (Capacity 22.9)	
	2004	Average 1927-2004	2004	Average 1928-2004	2004	Average 1928-2004	2004	Average 1925-2004	2004	Average 1924-2004
Jan.	12.1	17.6	3.5	5.8	6.1	10.0	0	5.6	3.3	4.4
Feb.	13.7	18.9	4.1	6.4	6.3	10.4	0.5	6.1	3.5	4.8
Mar.	17.8	20.9	5.2	7.0	6.6	10.9	4.1	6.9	4.0	5.2
April	17.8	22.4	7.3	7.9	4.7	11.7	8.2	7.5	4.7	5.8
May	9.2	25.4	7.5	9.4	4.5	14.2	8.4	8.4	7.3	7.9
June	5.7	28.0	2.9	9.5	4.2	16.6	7.6	9.8	6.7	8.5
July	5.9	18.6	1.2	6.9	5.9	13.8	4.7	7.7	3.7	6.1
Aug.	6.5	12.1	1.2	4.7	6.3	9.7	3.4	5.3	1.5	3.9
Sept.	7.1	10.6	1.3	4.2	6.4	8.3	2.4	4.3	1.2	3.4
Oct.	7.8	11.0	1.3	4.2	5.9	8.5	2.4	4.2	1.5	3.4
Nov.	13.0	13.3	2.2	4.5	6.4	9.1	4.2	4.7	1.8	3.8
Dec.	16.0	16.1	3.0	5.5	6.7	9.6	5.3	5.1	2.0	4.1
Avg.	11.1	17.9	3.4	6.3	5.8	11.1	4.3	6.3	3.4	5.1
Max.	17.8	67.6	7.5	32.9	6.7	51.9	8.4	21.8	7.3	20.2
Min.	5.7	0	1.2	0	4.2	0	0	0	1.2	0

Month	SANCHEZ (Capacity 127.3)		PLATORO (Capacity 73.5)		COSTILLA (Capacity 19.4)		HERON (Capacity 495.0)		EL VADO (Capacity 229.8)	
	2004	Average 1927-2004	2004	Average 1952-2004	2004	Average 1922-2004	2004	Average 1971-2004	2004	Average 1935-2004
Jan.	15.7	20.7	10.0	20.2	5.7	5.9	137.1	333.2	38.7	74.1
Feb.	15.8	20.7	10.1	20.0	6.1	6.4	120.3	328.5	44.7	72.3
Mar.	18.0	21.4	10.6	20.3	7.1	7.0	116.5	317.4	77.1	79.1
April	19.4	22.7	10.6	20.3	8.8	8.4	104.7	312.4	125.6	117.2
May	20.5	25.5	15.0	23.5	12.8	10.5	126.7	349.8	137.2	156.5
June	15.5	27.2	20.8	31.2	10.0	10.0	150.4	378.0	124.2	148.3
July	12.3	22.8	16.8	28.3	7.8	6.9	147.2	377.9	88.4	127.2
Aug.	8.6	19.1	13.7	25.2	5.5	4.6	144.0	375.0	59.0	103.8
Sept.	7.3	18.6	11.7	24.6	2.8	3.9	139.1	369.6	46.1	89.6
Oct.	7.9	19.5	10.1	23.6	3.5	4.4	139.6	367.6	45.8	83.4
Nov.	8.6	20.0	10.8	20.7	4.1	4.9	138.6	362.9	45.0	75.7
Dec.	9.3	20.4	11.3	20.8	4.6	5.4	136.9	342.1	31.9	74.7
Avg.	13.2	21.6	12.6	23.2	6.6	6.5	133.4	351.2	72.0	100.2
Max.	20.5	78.6	20.8	68.2	12.8	20.2	150.4	495.0	137.2	251.0
Min.	7.3	0	10.0	0	2.8	0	104.7	0	31.9	0

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

Month	ABIQUIU (Capacity 1,481.4)		COCHITI (Capacity 619.6)		JEMEZ CANYON (Capacity 123.9)		BLUEWATER (Capacity 47.5)		ELEPHANT BUTTE (Capacity 2,495.8)	
	2004	Average 1965-2004	2004	Average 1973-2004	2004	Average 1965-2004	2004	Average 1927-2004	2004	Average 1915-2004
Jan.	104.8	117.3	59.5	70.6	0	11.7	5.0	10.1	301.0	1,180.0
Feb.	118.3	116.9	61.9	67.3	0	11.9	4.9	10.9	335.6	1,184.8
Mar.	132.3	115.9	63.1	67.2	0	12.7	5.1	15.4	276.1	1,145.2
April	156.3	125.9	64.1	73.9	0	16.5	6.1	19.2	344.7	1,134.1
May	166.5	166.5	63.3	96.1	0	17.5	5.6	17.2	398.3	1,222.2
June	159.0	156.7	64.0	98.7	0	14.6	5.2	14.6	304.0	1,244.6
July	161.3	144.1	61.6	78.5	0	13.4	4.9	12.7	177.9	1,175.7
Aug.	156.2	139.7	61.3	71.8	0	12.8	4.7	11.5	137.9	1,111.9
Sept.	141.6	133.1	61.0	71.2	0	12.1	4.4	10.9	118.9	1,083.8
Oct.	140.9	128.6	61.7	73.8	0	11.3	4.3	10.4	134.4	1,085.9
Nov.	140.5	122.0	60.9	74.0	0	11.3	4.1	10.2	172.3	1,113.2
Dec.	138.4	120.9	61.1	73.7	0	11.5	4.1	10.1	238.4	1,146.2
Avg.	143.0	132.3	62.0	76.4	0	13.1	4.9	12.8	245.0	1,152.3
Max.	166.5	493.8	64.1	471.2	0	88.8	6.1	58.1	398.3	2,840.5
Min.	104.8	0	59.5	4.4	0	0	4.1	0	118.9	4.1

Month	CABALLO (Capacity 402.9)		STORRIE (Capacity 28.7)		SANTA ROSA (Capacity 542.6)		LAKE SUMNER (Capacity 116.8)		BRANTLEY (Capacity 69.4)	
	2004	Average 1938-2004	2004	Average 1939-2004	2004	Average 1980-2004	2004	Average 1937-2004	2004	Average 1988-2004
Jan.	16.3	115.3	0.2	11.2	6.4	66.1	17.3	65.8	10.3	28.2
Feb.	20.2	146.2	0	11.2	2.3	65.0	24.4	70.0	13.2	31.2
Mar.	60.5	124.1	0	11.9	4.1	64.8	3.3	59.7	28.7	38.0
April	69.2	125.5	0.4	12.6	43.1	67.8	9.1	52.7	46.9	30.8
May	75.0	133.5	10.6	13.2	56.2	71.1	5.9	52.4	31.3	31.5
June	59.6	121.0	11.8	12.0	57.8	70.0	3.4	47.1	19.9	33.4
July	81.5	100.2	10.1	11.9	60.6	64.3	3.7	45.2	14.3	25.9
Aug.	44.1	70.3	8.5	12.2	70.3	65.6	4.3	47.8	12.7	26.4
Sept.	20.3	54.1	8.5	12.0	26.2	62.5	6.0	49.2	22.8	26.4
Oct.	23.5	63.4	7.8	11.3	36.5	64.5	19.0	50.9	52.1	24.1
Nov.	26.7	76.3	7.1	11.3	37.0	66.3	24.2	54.9	37.3	23.8
Dec.	28.9	93.9	7.8	11.3	37.3	67.2	29.1	60.5	45.0	25.4
Avg.	43.8	102.0	6.1	11.8	36.5	66.3	12.5	54.7	27.9	28.8
Max.	81.5	427.5	11.8	32.3	70.3	143.5	29.1	192.8	52.1	57.4
Min.	16.3	0	0	0	2.3	0	3.3	0.1	10.3	1.1

Month	RED BLUFF (Capacity 357.3)		DELTA LAKE (Capacity 30.8)		TOTAL IN U. S. RESERVOIRS (Capacity 7,452.4)	
	2004	Average 1936-2004	2004	Average 1939-2004	2004	Average Estimated
Jan.	69.1	118.2	4.9	18.6	827.0	2,310.6
Feb.	69.6	120.6	4.3	18.0	879.8	2,348.3
Mar.	70.7	117.9	5.1	17.3	916.0	2,286.4
April	114.9	105.6	4.6	17.6	1,171.2	2,318.4
May	103.3	104.8	5.1	18.0	1,270.2	2,575.2
June	82.7	105.5	4.9	18.1	1,120.3	2,603.5
July	84.1	96.4	4.8	18.1	958.7	2,402.6
Aug.	81.8	91.5	4.4	17.1	835.9	2,241.9
Sept.	92.6	95.3	4.9	18.4	732.6	2,166.3
Oct.	110.8	104.2	4.4	18.1	821.2	2,176.4
Nov.	142.3	109.2	4.5	18.3	891.6	2,210.5
Dec.	144.9	114.6	4.8	17.8	966.8	2,256.7
Avg.	97.2	107.0	4.7	18.0	949.3	2,324.7
Max.	144.9	404.0	5.1	27.9	1,270.2	
Min.	69.1	12.3	4.3	0	732.6	

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

In Mexico

Month	SAN GABRIEL (Capacity 255.4)		PICO DEL AGUILA (Capacity 50.0)		LA BOQUILLA (Capacity 2,903.4)		FRANCISCO I. MADERO (Capacity 348.0)		CHIHUAHUA (Capacity 25.8)	
	2004	Average 1980-2004	2004	Average 1993-2004	2004	Average 1914-2004	2004	Average 1948-2004	2004	Average 1961-2004
Jan.	101.2	141.9	33.2	21.1	734.4	1,755.7	242.8	252.7	9.0	9.4
Feb.	100.6	136.7	33.7	21.1	731.5	1,708.9	243.9	248.3	8.8	9.1
Mar.	100.6	127.8	33.7	18.3	691.7	1,632.7	228.0	231.6	8.8	8.6
April	101.1	117.1	29.6	14.6	644.4	1,535.6	199.6	196.3	8.4	8.1
May	100.1	102.3	19.0	12.7	575.2	1,439.4	168.5	163.9	8.0	7.4
June	97.7	95.8	12.7	12.6	501.8	1,354.8	133.1	140.7	7.6	7.0
July	71.1	107.8	22.9	15.1	494.1	1,394.6	152.2	161.4	8.7	7.5
Aug.	93.5	127.5	25.0	18.4	646.6	1,617.7	216.7	206.2	11.2	9.2
Sept.	26.5	138.3	28.0	19.0	698.6	1,819.0	214.0	244.3	12.1	11.1
Oct.	118.2	141.6	31.4	21.4	783.2	1,826.8	232.1	251.2	12.0	11.3
Nov.	120.4	140.7	32.0	22.0	1,065.9	1,798.2	338.3	254.3	12.7	10.4
Dec.	124.0	142.0	32.7	22.2	1,160.8	1,789.1	345.7	254.1	12.5	10.0
Avg.	96.3	126.6	27.8	18.2	727.4	1,639.4	226.2	217.1	10.0	9.1
Max.	124.0	282.6	33.7	48.3	1,160.8	3,402.1	345.7	452.2	12.7	32.7
Min.	26.5	19.8	12.7	6.3	494.1	20.8	133.1	1.7	7.6	0.2

Month	LUIS L. LEON (Capacity 336.7)		CENTENARIO and SAN MIGUEL (Capacity 45.8)		LA FRAGUA (Capacity 45.5)		VENUSTIANO CARRANZA (Capacity 1,384.2)		LAGUNA DE SALINILLAS (Capacity 19.0)	
	2004	Average 1968-2004	2004	Average 1934-2004	2004	Average 1991-2004	2004	Average 1930-2004	2004	Average 1931-2004
Jan.	208.3	430.6	40.0	19.9	45.5	35.1	499.3	574.9	5.5	9.8
Feb.	214.3	427.6	39.5	19.9	45.5	35.2	503.7	553.1	4.5	11.1
Mar.	227.9	408.5	40.0	17.2	45.6	32.6	540.7	516.8	4.0	10.0
April	219.4	382.1	40.4	15.4	45.9	31.5	710.6	506.1	2.8	11.2
May	203.3	354.8	40.3	15.6	45.9	30.3	762.4	484.0	8.6	11.2
June	196.6	334.4	39.1	13.9	45.8	29.1	776.8	462.7	12.5	10.5
July	223.5	347.3	44.7	13.3	47.8	29.3	766.7	474.3	10.5	10.1
Aug.	255.3	346.1	45.2	13.9	45.7	29.8	822.8	482.5	9.4	10.1
Sept.	273.2	398.9	44.6	15.8	46.2	31.6	915.6	540.9	15.2	10.6
Oct.	293.8	418.3	44.3	18.1	45.9	35.0	990.6	583.3	14.4	9.8
Nov.	336.9	427.5	44.1	18.7	45.8	35.5	1,030.4	594.1	13.4	9.5
Dec.	357.5	439.5	41.9	19.3	45.7	35.5	1,042.6	591.2	8.3	9.4
Avg.	250.8	393.0	42.0	16.8	45.9	32.5	780.2	530.3	9.1	10.3
Max.	357.5	928.9	45.2	45.2	47.8	47.8	1,042.6	1,435.0	15.2	39.0
Min.	196.6	4.7	39.1	0	45.5	8.6	499.3	1.2	2.8	0

Month	RODRIGO GOMEZ (Capacity 39.5)		EL CUCHILLO (Capacity 1,123.1)		MARTE R. GOMEZ (Capacity 995.0)		LAS BLANCAS (Capacity 83.8)		TOTAL IN MEXICAN RESERVOIRS (Capacity 7,655.2)	
	2004	Average 1963-2004	2004	Average 1994-2004	2004	Average 1943-2004	2004	Average 2001-2004	2004	Average Estimated
Jan.	35.9	32.1	1,648.7	482.4	1,046.0	677.8	67.7	44.7	4,717.5	4,488.1
Feb.	38.6	31.6	1,653.5	462.7	1,007.1	639.0	70.2	42.1	4,695.4	4,346.5
Mar.	36.4	30.4	1,656.6	455.9	1,037.1	613.1	73.0	41.7	4,724.1	4,145.2
April	35.3	29.5	1,569.8	438.9	1,148.9	558.6	78.3	44.7	4,834.5	3,889.6
May	34.0	28.7	1,194.6	394.9	1,125.3	500.6	76.5	42.8	4,361.7	3,588.6
June	30.3	28.1	1,116.4	386.2	980.5	502.9	71.6	39.0	4,022.5	3,417.6
July	28.5	27.9	1,098.9	380.1	845.8	500.4	66.1	38.0	3,881.5	3,507.1
Aug.	27.2	27.9	1,076.0	400.4	811.0	534.7	62.7	39.4	4,148.3	3,863.8
Sept.	33.9	31.7	1,236.4	525.4	1,054.8	678.0	82.4	63.8	4,681.5	4,528.5
Oct.	32.3	33.7	1,310.5	609.9	1,015.9	720.5	82.9	61.1	5,007.5	4,742.2
Nov.	28.1	33.6	1,318.6	609.9	1,008.8	733.7	82.9	57.0	5,478.3	4,745.1
Dec.	29.1	32.9	1,311.8	608.1	1,042.6	732.2	81.8	54.6	5,637.0	4,740.2
Avg.	32.5	30.7	1,349.3	479.6	1,010.3	616.0	74.7	47.4	4,682.5	4,166.9
Max.	38.6	45.4	1,656.6	1,745.2	1,148.9	1,308.0	82.9	82.9	5,637.0	
Min.	27.2	0	1,076.0	140.5	811.0	22.0	62.7	21.2	3,881.5	

WATER BULLETIN NUMBER 74 -- 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		Between Indicated Elevations	
		Reservoir Capacity- Thousand Cubic Meters	Reservoir Area Hectares	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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,883.2	1,930.4	1,962.8	2,092.9	2,176.7	2,231.3	2,309.3	2,467.3	2,622.5	2,842.5	3,171.4	3,557.8
2	1,884.7	1,932.0	1,963.6	2,094.5	2,178.4	2,231.3	2,312.9	2,474.9	2,628.5	2,854.0	3,175.9	3,562.7
3	1,887.8	1,932.0	1,964.4	2,096.2	2,178.4	2,232.2	2,315.6	2,477.7	2,632.4	2,860.3	3,175.9	3,566.3
4	1,889.3	1,935.1	1,968.3	2,102.0	2,180.1	2,233.0	2,317.4	2,479.6	2,635.4	2,888.6	3,178.1	3,570.0
5	1,889.3	1,935.9	1,969.9	2,104.5	2,181.0	2,232.2	2,319.1	2,481.5	2,637.3	2,934.4	3,180.4	3,576.1
6	1,889.3	1,936.7	1,969.9	2,112.1	2,182.7	2,232.2	2,321.8	2,483.3	2,642.3	2,961.2	3,184.9	3,582.2
7	1,889.3	1,936.7	1,970.7	2,118.0	2,184.4	2,231.3	2,322.7	2,485.2	2,643.3	2,973.1	3,188.3	3,584.6
8	1,891.6	1,938.3	1,971.5	2,122.2	2,185.3	2,233.0	2,323.6	2,487.1	2,643.3	2,997.9	3,190.5	3,590.8
9	1,892.4	1,940.6	1,972.3	2,125.6	2,187.0	2,233.0	2,324.5	2,499.5	2,645.3	3,004.5	3,193.9	3,594.4
10	1,893.2	1,941.4	1,972.3	2,129.8	2,188.7	2,233.9	2,325.5	2,506.1	2,647.3	3,011.0	3,198.4	3,598.1
11	1,893.2	1,943.0	1,981.1	2,131.5	2,190.5	2,234.8	2,326.4	2,508.0	2,648.3	3,014.2	3,200.7	3,601.8
12	1,894.7	1,943.0	1,994.7	2,132.3	2,195.6	2,239.2	2,326.4	2,511.8	2,649.2	3,017.5	3,201.8	3,607.9
13	1,896.3	1,943.8	2,002.8	2,133.2	2,200.0	2,249.7	2,327.3	2,513.8	2,649.2	3,022.9	3,204.1	3,610.4
14	1,900.1	1,944.9	2,007.6	2,134.0	2,203.4	2,253.3	2,327.3	2,514.7	2,650.2	3,026.2	3,210.9	3,612.9
15	1,902.4	1,944.9	2,010.8	2,136.6	2,204.3	2,254.1	2,327.3	2,515.7	2,651.2	3,030.6	3,217.7	3,614.1
16	1,905.5	1,946.2	2,017.3	2,138.3	2,206.0	2,255.9	2,327.3	2,517.6	2,652.2	3,033.9	3,280.4	3,616.5
17	1,906.3	1,947.7	2,023.8	2,139.1	2,206.9	2,256.8	2,329.1	2,520.4	2,653.2	3,038.3	3,377.7	3,618.8
18	1,907.1	1,948.5	2,030.3	2,141.7	2,208.6	2,257.7	2,330.0	2,523.3	2,653.2	3,041.5	3,417.7	3,620.3
19	1,907.8	1,950.1	2,035.2	2,143.4	2,209.5	2,258.6	2,330.9	2,531.0	2,653.2	3,045.9	3,441.3	3,621.5
20	1,909.4	1,951.7	2,039.2	2,145.9	2,210.4	2,259.4	2,330.9	2,540.6	2,654.2	3,049.2	3,465.1	3,622.7
21	1,912.5	1,952.5	2,044.1	2,147.6	2,213.0	2,261.2	2,330.9	2,549.3	2,653.2	3,052.5	3,486.6	3,626.4
22	1,915.6	1,954.8	2,046.6	2,149.3	2,214.7	2,263.8	2,330.9	2,554.1	2,655.2	3,059.1	3,502.2	3,627.7
23	1,917.2	1,956.4	2,048.2	2,151.9	2,216.4	2,271.8	2,330.9	2,557.0	2,676.2	3,062.4	3,511.8	3,626.4
24	1,920.3	1,957.2	2,050.7	2,153.6	2,219.1	2,275.4	2,330.9	2,560.9	2,687.2	3,066.8	3,517.8	3,626.4
25	1,922.6	1,958.0	2,055.6	2,156.1	2,220.8	2,281.6	2,332.7	2,571.6	2,699.2	3,084.4	3,525.1	3,626.4
26	1,923.4	1,958.8	2,065.5	2,157.8	2,221.7	2,282.5	2,362.6	2,582.3	2,732.5	3,098.8	3,533.5	3,626.4
27	1,924.2	1,958.0	2,077.1	2,161.2	2,226.9	2,284.3	2,396.5	2,589.2	2,755.9	3,125.5	3,538.3	3,627.7
28	1,925.0	1,959.6	2,082.0	2,167.3	2,227.8	2,299.4	2,414.1	2,593.1	2,776.4	3,137.8	3,544.4	3,630.2
29	1,927.3	1,962.0	2,086.2	2,169.8	2,228.7	2,303.9	2,428.0	2,598.0	2,795.9	3,144.5	3,554.1	3,631.4
30	1,928.1		2,087.8	2,173.3	2,230.4	2,306.6	2,437.3	2,602.9	2,817.6	3,151.2	3,555.3	3,633.9
31	1,929.7		2,090.3		2,231.3		2,452.3	2,615.6		3,161.3		3,635.1

Month	2004							Period 1969-2004			
	MOMENTARY MAXIMUM			MOMENTARY MINIMUM				Average Storage	Mean Monthly Storage		
	Elevation	Storage	Day	Elevation	Storage	Day	Average		Maximum	Minimum	
Jan.	330.970	1,929.7	31	330.670	1,883.2	1	1,905.1	3,196.4	4,971.4	891.3	
Feb.	331.175	1,962.0	29	330.980	1,930.4	1	1,946.2	3,188.5	4,952.1	971.6	
Mar.	331.965	2,090.3	31	331.180	1,962.8	1	2,018.1	3,154.9	4,954.1	1,062.9	
April	332.455	2,173.3	30	331.980	2,092.9	1	2,135.4	3,096.9	4,910.5	1,187.6	
May	332.790	2,231.3	31	332.475	2,176.7	1	2,203.5	2,986.2	4,723.6	1,072.2	
June	333.215	2,306.6	30	332.790	2,231.3	!	2,255.8	2,920.8	4,696.8	1,004.0	
July	334.010	2,452.3	31	333.230	2,309.3	1	2,342.7	2,907.7	4,745.6	980.0	
Aug.	334.860	2,615.6	31	334.090	2,467.3	1	2,529.5	2,973.9	4,861.4	1,044.5	
Sept.	335.860	2,817.6	30	334.895	2,622.5	1	2,671.4	3,054.1	5,078.5	1,042.3	
Oct.	337.450	3,161.3	31	335.980	2,842.5	1	3,025.5	3,203.7	5,515.1	1,086.6	
Nov.	339.140	3,555.3	30	337.495	3,171.4	1	3,337.5	3,242.3	5,231.7	1,118.7	
Dec.	339.465	3,635.1	31	339.150	3,557.8	1	3,608.0	3,261.1	4,970.7	1,171.0	
Yearly	339.465	3,635.1		330.670	1,883.2		2,498.2	3,098.9	4,873.4	1,130.2	

\* When necessary, the Commission may set temporary conservation levels

! And other days

WATER BULLETIN NUMBER 74 -- 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		Between Indicated Elevations	
		Reservoir Capacity- Thousand Cubic Meters	Reservoir Area Hectares	Storage Volume- Thousand Cubic Meters	Type of Storage
53.340	Original River Bed at Dam Axis	0	0		
61.965	Lowest Outlet (Mexican Penstock)	67	10	67	Dead
91.805	Top of Conservation Storage *	3,273,418	35,281	3,273,351	Silt & Conservation
93.480	Top of Spillway Gates	3,897,007	39,678	623,589	Ordinary Flood
95.770	Maximum Water Surface	4,890,208	46,322	993,201	Surcharge

STORAGE IN MILLION CUBIC METERS AT 24:00 HOURS 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,414.4	1,409.5	1,429.2	1,512.9	1,881.4	2,000.2	2,052.3	2,036.9	1,965.2	2,072.9	2,157.2	2,197.7
2	1,412.5	1,407.5	1,429.2	1,516.0	1,889.7	2,001.4	2,062.6	2,034.4	1,973.9	2,078.1	2,157.2	2,200.4
3	1,413.4	1,407.5	1,428.2	1,520.1	1,894.5	2,001.4	2,066.5	2,031.8	1,982.6	2,082.0	2,150.5	2,204.5
4	1,414.4	1,409.5	1,433.2	1,528.4	1,899.3	2,000.2	2,069.0	2,029.3	1,987.6	2,087.2	2,150.5	2,204.5
5	1,415.4	1,409.5	1,434.2	1,538.8	1,901.7	1,998.9	2,070.3	2,026.7	1,992.6	2,095.0	2,149.2	2,205.9
6	1,411.5	1,409.5	1,435.2	1,574.4	1,907.8	1,996.4	2,070.3	2,025.5	1,998.9	2,104.2	2,146.5	2,208.6
7	1,411.5	1,407.5	1,436.2	1,640.7	1,917.4	1,996.4	2,070.3	2,021.6	2,016.6	2,127.9	2,143.9	2,208.6
8	1,411.5	1,410.5	1,435.2	1,688.8	1,924.7	1,996.4	2,070.3	2,021.6	2,026.7	2,139.9	2,142.5	2,211.3
9	1,409.5	1,411.5	1,435.2	1,706.5	1,929.6	1,997.7	2,070.3	2,019.1	2,030.5	2,145.2	2,141.2	2,212.7
10	1,407.5	1,413.4	1,432.2	1,722.2	1,934.5	1,998.9	2,070.3	2,017.8	2,034.4	2,149.2	2,141.2	2,214.0
11	1,407.5	1,414.4	1,430.2	1,733.4	1,938.2	1,998.9	2,071.6	2,017.8	2,040.7	2,151.9	2,141.2	2,214.0
12	1,405.6	1,414.4	1,429.2	1,740.1	1,944.3	2,000.2	2,070.3	2,016.6	2,044.6	2,153.2	2,141.2	2,215.4
13	1,407.5	1,415.4	1,434.2	1,742.4	1,954.1	2,002.7	2,070.3	2,014.0	2,045.9	2,155.9	2,143.9	2,219.5
14	1,402.6	1,415.4	1,439.1	1,751.4	1,960.3	2,001.4	2,067.7	2,009.0	2,047.1	2,157.2	2,145.2	2,214.0
15	1,401.7	1,416.4	1,457.1	1,756.0	1,964.0	2,002.7	2,067.7	2,007.7	2,048.4	2,158.6	2,143.9	2,214.0
16	1,401.7	1,417.4	1,463.1	1,761.6	1,967.7	2,002.7	2,066.5	2,004.0	2,049.7	2,159.9	2,149.2	2,216.8
17	1,401.7	1,418.4	1,469.2	1,767.3	1,970.2	2,001.4	2,063.9	2,001.4	2,052.3	2,159.9	2,151.9	2,212.7
18	1,400.7	1,418.4	1,475.2	1,771.9	1,973.9	2,001.4	2,061.3	1,995.2	2,053.6	2,162.6	2,155.9	2,209.9
19	1,399.7	1,419.3	1,477.3	1,776.4	1,973.9	1,998.9	2,057.4	1,991.4	2,057.4	2,165.3	2,167.9	2,208.6
20	1,399.7	1,421.3	1,481.3	1,783.3	1,977.7	1,997.7	2,056.1	1,988.9	2,060.0	2,165.3	2,177.4	2,207.2
21	1,401.7	1,421.3	1,483.3	1,785.6	1,978.9	1,996.4	2,052.3	1,986.4	2,060.0	2,165.3	2,181.4	2,207.2
22	1,405.6	1,421.3	1,487.4	1,789.0	1,981.4	2,000.2	2,054.9	1,980.1	2,061.3	2,165.3	2,186.8	2,207.2
23	1,405.6	1,422.3	1,487.4	1,797.1	1,986.4	2,009.0	2,052.3	1,976.4	2,062.6	2,165.3	2,192.3	2,200.4
24	1,405.6	1,423.3	1,489.4	1,810.9	1,987.6	2,011.5	2,051.0	1,973.9	2,065.2	2,163.9	2,192.3	2,195.0
25	1,406.6	1,424.3	1,490.4	1,822.5	1,988.9	2,019.1	2,051.0	1,969.0	2,065.2	2,161.2	2,192.3	2,186.8
26	1,407.5	1,424.3	1,490.4	1,835.3	1,988.9	2,021.6	2,049.7	1,965.2	2,066.5	2,159.9	2,195.0	2,184.1
27	1,406.6	1,422.3	1,493.5	1,840.0	1,993.9	2,024.2	2,044.6	1,960.3	2,070.3	2,157.2	2,195.0	2,181.4
28	1,406.6	1,424.3	1,497.6	1,849.4	1,995.2	2,024.2	2,042.0	1,960.3	2,071.6	2,154.5	2,195.0	2,178.7
29	1,409.5	1,427.2	1,505.8	1,852.9	1,997.7	2,028.0	2,043.3	1,962.8	2,071.6	2,157.2	2,196.3	2,173.3
30	1,409.5		1,506.8	1,862.3	2,000.2	2,039.5	2,042.0	1,962.8	2,072.9	2,155.9	2,197.7	2,170.6
31	1,409.5		1,509.9		2,000.2		2,039.5	1,964.0		2,155.9		2,162.6

Month	2004						Period 1954-2004			
	MOMENTARY MAXIMUM			MOMENTARY MINIMUM			Average Storage	Mean Monthly Storage		
	Elevation	Storage	Day	Elevation	Storage	Day		Average	Maximum	Minimum
Jan.	84.930	1,415.4	5	84.850	1,399.7	! 19	1,407.2	2,273.8	3,787.8	269.8
Feb.	84.990	1,427.2	29	84.890	1,407.6	! 2	1,416.5	2,177.3	3,712.2	192.7
Mar.	85.400	1,509.9	31	84.995	1,428.2	3	1,462.1	2,173.2	3,689.1	279.6
April	87.000	1,862.3	30	85.415	1,512.9	1	1,725.9	2,077.0	3,644.4	336.5
May	87.565	2,000.2	! 30	87.080	1,881.4	1	1,955.0	1,909.5	3,540.0	291.7
June	87.720	2,039.5	30	87.550	1,996.4	! 6	2,005.7	1,836.1	3,440.3	293.2
July	87.845	2,071.6	11	87.720	2,039.5	31	2,059.6	1,894.9	3,321.4	258.9
Aug.	87.710	2,036.9	1	87.405	1,960.3	! 27	1,999.1	1,866.5	3,418.5	256.6
Sept.	87.850	2,072.9	30	87.425	1,965.2	1	2,039.2	1,968.8	3,541.4	316.0
Oct.	88.200	2,165.3	! 20	87.850	2,072.9	1	2,143.0	2,203.5	4,009.2	351.4
Nov.	88.320	2,197.7	30	88.110	2,141.2	! 9	2,164.1	2,293.0	3,854.0	403.6
Dec.	88.400	2,219.5	13	88.190	2,162.6	31	2,201.5	2,330.9	3,860.4	421.8
Yearly	88.400	2,219.5		84.850	1,399.7		1,881.6	2,083.7	3,410.6	424.2

\* When necessary, the Commission may set temporary conservation levels

! And other days

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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, U.S. Section; 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, U.S. Section. Additional water quality parameters determined by the Haskell R. Street Wastewater Treatment Plant.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	Total Hardness mg/L	Oxygen Dissolved (DO) mg/L	Coliform Fecal CFU/100 mL	Oxygen Demand Biochemical (BOD) mg/L
Jan. 20	0900	0.20	5,230	8.3	9.9	618	10.2	700	4.2
Feb. 17	0905	0.30	5,340	8.5	8.5	636	12.1	230	3.4
Mar. 16	0835	NR	5,110	8.6	15.6	545	9.56	70	6
Apr. 20	0805	1.10	1,670	9.0	13.6	298	9.54	50	1.6
May 18	0805	NR	4,185	7.7	18.2	645	15.07	650	3.1
June 15	0820	16.3	1,339	9.2	22.6	297	7.52	220	NR
July 20	0835	23.4	1,159	9.3	27.0	249	5.95	670	2.3
Aug. 17	0815	24.0	1,035	9.2	22.9	261	6.7	940	5.6
Sept. 21	0915	11.5	1,422	9.3	22.0	278	7.4	45	<3
Oct. 19	0910	40.0	3,180	9.3	15.2	428	8	200	NR
Dec. 15	1015	10.0	4,600	8.6	9.2	782	13.1	820	3.8

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Ammonias Nitrogen (mg/L)	Turbidity (NTU)
Jan. 20	NR	2,890	NR	0.61	8.55
Feb. 17	756	3,000	864	0.4	8.33
Mar. 16	800	2,890	860	0.53	13.9
Apr. 20	181	948	262	0.3	107
May 18	838	3,080	982	0.55	25.8
June 15	130	730	198	0.25	178
July 20	50	620	90.7	0.02	1
Aug. 17	87.4	602	152	<0.02	207
Sept. 21	142	782	210	0.04	16.5
Oct. 19	858	1,770	456	0.5	38
Dec. 15	473	1,970	677	0.22	77.6

NR - None Reported



WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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 TCEQ 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, U.S. Section 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.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	Total Hardness mg/L	Oxygen Dissolved (DO) mg/L	Coliform Fecal CFU/100 mL	Oxygen Demand Bi- Chemical (BOD) mg/L
Jan. 20	0945	NR	3,660	8.9	8.1	397	10.8	30	NR
Feb. 17	0940	NR	3,780	9.4	8.3	416	18.7	10	2.5
Mar. 16	0945	NR	3,840	8.8	17.4	360	11.27	130	4.3
June 15	0930	0.03	1,132	9.1	21.6	NR	8.3	250	<2
July 20	0925	NR	744	9.1	27.7	224	7.06	120	2.8
Aug. 17	0855	NR	1,040	9.1	23.1	248	6.3	1010	6.5
Sept. 21	0955	NR	1,357	9.3	23.0	264	6.9	<5	3.5

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Ammonia as Nitrogen (mg/L)	Turbidity (NTU)
Jan. 20	NR	1,970	592	NR	NR
Feb. 17	NR	2,030	622	<0.02	3.6
Mar. 16	NR	1,950	550	0.57	10.5
June 15	143	736	202	0.12	6.03
July 20	45.2	536	83.4	0.02	32.3
Aug. 17	88.2	612	154	<0.02	174
Sept. 21	129	762	201	0.15	21.4

NR - None Reported

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 the Texas Commission on Environmental Quality Segment 2308.

RECORDS : Chemical and biochemical analyses 1976 through current year.

REMARKS : Samples collected by the International Boundary and Water Commission, U.S. Section and analyzed by El Paso Water Utilities laboratory in El Paso, Texas.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	Total Hardness mg/L	Oxygen Dissolved (DO) mg/L	Coliform Fecal CFU/100 mL	Oxygen Demand Bi- Chemical (BOD) mg/L
Jan. 20	1000	NR	3,650	9.3	8.6	417	10.2	10	3
Feb. 17	0950	NR	3,720	9.4	10.2	413	14.0	<10	1.8
Mar. 16	0925	NR	3,510	8.7	17.1	398	9.1	NR	5
June 15	0855	0.03	1,101	8.9	20.7	<2	8.2	110	NR
June 30	0840	NR	NR	NR	NR	NR	NR	NR	NR
Aug. 17	0940	NR	940	9.0	23.0	239	6.0	1240	8.1
Sept. 21	1025	NR	1,377	9.4	24.7	265	9.1	<5	3.6

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Ammonia as Nitrogen (mg/L)	Turbidity (NTU)
Jan. 20	NR	2,020	585	NR	10
Feb. 17	NR	2,040	611	NR	11
Mar. 16	NR	2,160	612	0.59	21
June 15	149	800	219	0.04	23
June 30	86	532	143	0.07	NR
Aug. 17	77	532	134	0.03	186
Sept. 21	133	764	207	0.12	21

NR - None Reported

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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 Commission on Environmental Quality.

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

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	Total Hardness mg/L	Oxygen Dissolved (DO) mg/L	Coliform Fecal CFU/100 mL	Oxygen Demand Bio-Chemical (BOD) mg/L
Jan. 20	1020	NR	1,230	8.5	14.2	269	12.2	60	3.0
Feb. 17	1045	NR	2,380	8.2	14.9	257	11.5	40	4.0
Mar. 16	1015	NR	2,260	9.0	20.5	234	10.3	30	5.2
June 15	1000	0.03	1,296	9.2	24.4	NR	7.7	10	<2
July 20	1005	NR	508	9.4	29.4	235	6.5	60	3.0
Aug. 17	1015	NR	847	8.8	22.9	343	5.2	NR	9.9
Sept. 21	1100	NR	1,249	9.6	24.7	266	9.0	7,100	5.0
Dec. 15	1015	0.08	2,640	9.3	13.9	275	11.9	40	NR

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Ammonia as Nitrogen (mg/L)	Turbidity (NTU)
Jan. 20	NR	1,340	344	NR	7
Feb. 17	NR	1,260	296	0.14	5
Mar. 16	NR	1,200	264	0.97	13
June 15	126	668	192	0.05	193
July 20	46	548	82	0.02	103
Aug. 17	68	474	125	0.06	696
Sept. 21	122	706	189	0.06	32
Dec. 15	353	2600	385	0.03	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, U.S. Section 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.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	Total Hardness mg/L	Oxygen Dissolved (DO) mg/L	Coliform Fecal CFU/100 mL	Oxygen Demand Bio-Chemical (BOD) mg/L
Jan. 20	0910	0.17	2,072	7.9	9.0	NR	10.47	NR	NR
Feb. 18	0937	NR	2,643	7.7	8.6	434	2.82	3,680	8.6
Mar. 23	1100	0	6,840	8.8	14.6	NR	9.6	NR	NR
Apr. 20	1005	0	3,938	7.5	16.2	683	2.6	NR	NR
May 10	0900	NR	NR	NR	NR	NR	NR	NR	NR
Aug. 10	NR	NR	NR	NR	NR	NR	NR	NR	NR
Oct. 12	NR	NR	1940	8.9	15.2	NR	7.19	NR	NR
Nov. 29	NR	1.18	2640	8.2	9.5	NR	11.6	NR	NR

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Ammonia as Nitrogen (mg/L)	Turbidity (NTU)
Jan. 20	421	1,660	430	10.2	NR
Feb. 18	NR	1,670	344	17.8	43.8
Mar. 23	1,440	4,400	1,190	3.5	NR
Apr. 20	810	2,700	703	8.1	16.5
May 10	1,310	4,180	1,020	2.02	NR
Aug. 10	244	1,080	307	0.21	NR
Oct. 12	283	1,210	320	0.73	NR
Nov. 29	412	1,740	462	0.32	NR

NR - None Reported

WATER BULLETIN 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

08-3712.00 RIO GRANDE AT CANDELARIA, TEXAS

LOCATION: Gaging station at river kilometer 1,672, about 4.0 kilometers north of Candelaria, Texas.  
 RECORDS : Specific conductance -- 2004.  
 REMARKS : Determinations for specific conductance by the International Boundary and Water Commission, U.S. Section.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

January 6 3,350 14 4,020	March 1 4,210	May 17 458	July 19 518	September 8 1,530 30 908	November 29 2,670
February 2 3,920 17 4,290	April 4 896 20 3,400	June	August 4 928 18 618	October 6 2,230 20 2,030	December 6 308 15 3,490

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, U.S. Section; 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, U.S. Section. Results of biochemical analyses by the International Boundary and Water Commission, U.S. Section and the Texas Commission on Environmental Quality, November 1977 through current year, available upon request.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

January 6 4,030 14 4,120	March 1 4,150 25 3,900	May 3 3,650 17 1,580	July 6 2,780 19 568	September 2 1,330 22 613 28 823	November 2 2,720 15 2,270
February 2 3,050 17 3,570	April 4 2,400 19 2,060	June 1 3,210 14 2,010 29 645	August 2 824 9 698 16 843	October 4 892 18 2,650	December 2 2,960 20 3,230

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	Oxygen Dissol ved (DO) mg/L	Coli form Fecal CFU/100 mL	Total Suspended Solids mg/L	Volatile Suspended Solids mg/L
Jan. 27	0845	0.42	2,980	7.1	7.7	6.7	193	126	103
Feb. 18	0830	0.33	3,550	7.1	10.4	9.1	47	38	14
Mar. 30	0815	0.52	2,910	7.3	19.3	7.8	47	73	7
Apr. 14	0825	0.45	1,660	7.7	16.2	7.8	NR	278	34
May 19	0800	0.05	2,840	7.2	24.4	8.1	73	103	7
June 22	0840	0.29	1,447	7.6	27.1	6.1	107	191	87
July 20	0830	NR	NR	NR	NR	NR	NR	164	20
Aug. 24	0830	9.54	1,765	7.1	27.0	7.2	27	864	104
Sep. 21	NR	9.46	505	8.2	25.9	6.0	NR	4,280	480
Dec. 14	NR	3.28	3,660	7.7	9.0	NR	NR	77	7

NR - None Reported

2004 Date	Chloride mg/L	Dissol ved Solids Total mg/L	Sulfate mg/L	Alkalinity mg/L	Total Organic Carbon mg/L	Ammonia as Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Jan. 27	88	527	170	158	6.7	0.20	<0.02	0.21	NR
Feb. 18	620	2,279	790	214	4.6	<0.20	<0.02	0.21	NR
Mar. 30	237	1,461	552	172	8.3	0.10	0.25	0.09	0.04
Apr. 14	242	1,100	302	170	8.0	<0.05	0.27	0.23	<0.06
May 19	130	1,326	120	143	5.1	0.30	0.42	0.55	0.39
June 22	76	929	580	80	6.5	0.41	0.42	0.14	<0.04
July 20	18	514	107	172	7.0	0.21	0.08	0.36	<0.06
Aug. 24	96	502	208	150	6.9	<0.10	8.20	0.63	<0.03
Sep. 21	38	460	92	600	9.0	0.05	0.46	2.89	<0.06
Dec. 14	697	2320	609	316	8.0	3.33	2.77	1.23	1.04

NR - None Reported

WATER BULLETIN 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

08-3730.00 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, specific conductance, 1935 through 2004.

REMARKS : Sampling and determinations for specific conductance by the International Boundary and Water Commission, U. S. Section.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

January	March	May	July	September	November
February	April	June	August	October	December

No samples collected for 2004

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 Alamo 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, U.S. Section and the Texas Commission on Environmental Quality. Analyses by a contract laboratory. Analyses November 1977 through current year, available upon request.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Coliform Fecal CFU/100 mL	Total Suspended Solids mg/L	Volatile Suspended Solids mg/L
Jan. 27	1015	2.70	2,140	7.2	11.4	6.1	800	119	101
Feb. 18	1000	0.92	3,330	7.3	12.5	9.8	25	60	52
Mar. 30	0940	5.11	2,690	7.2	19.6	7.7	760	45	5
Apr. 14	0930	1.90	3,150	7.7	19.2	7.6	NR	140	20
May 19	0935	2.55	2,640	7.3	25.6	7.6	2,333	147	8
June 22	1025	2.79	1,048	6.9	26.5	5.9	850	342	154
July 20	1000	1.25	2,640	7.7	27.8	6.1	NR	103	8
Aug. 24	1000	39.1	1,140	7.1	27.0	6.9	138	740	94
Sep. 21	NR	22.7	505	8.2	25.9	6.0	NR	2,650	227
Dec. 14	NR	9.54	3,300	7.6	11.3	NR	NR	32	4

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Alkalinity mg/L	Total Organic Carbon mg/L	Ammonia Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho-Phosphorus mg/L
Jan. 27	129	496	330	210	4.5	0.2	<0.02	0.21	NR
Feb. 18	450	2,543	863	256	4.3	<0.02	<0.02	0.09	NR
Mar. 30	271	1,956	847	248	7.7	0.1	0.34	0.07	<0.04
Apr. 14	327	2,320	962	240	4	<0.05	0.46	0.09	<0.06
May 19	160	1,267	112	176	4.8	0.2	0.55	0.66	0.4
June 22	60	647	309	139	6.1	0.92	0.61	0.13	<0.04
July 20	240	1900	833	214	3.0	<0.05	0.07	0.12	<0.06
Aug. 24	91	711	342	270	6.5	0.1	8.8	0.4	<0.03
Sep. 21	30	616	253	690	5.0	<0.05	0.47	1.64	<0.06
Dec. 14	483	2270	815	275	5.0	1.34	1.55	0.49	0.36

NR - None Reported

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

7 January 20 3,150 1,940	3 March 29 3,310 2,420	5 May 20 3,470 1,850	8 July 21 2,820 2,310	7 September 1,960	1 November 16 2,360 452 23 1,210
4 February 19 2,780 3,180	5 April 19 1,950 2,940	3 June 8 747 819 15 2,480	2 August 16 774 984	4 October 18 1,310 1,020 27 792	27 December 792

WATER BULLETIN 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

RIO GRANDE AT RIO GRANDE VILLAGE IN BIG BEND NATIONAL PARK

LOCATION: This station is located within the National Park and is directly across from the town of Boquillas, 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.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	Oxygen Di ssol ved (DO) mg/L	E. Coli MPN/100 mL	Total Suspended Solids mg/L	Volatile Suspended Solids mg/L
Jan. 27	0930	4.73	1,313	7.7	15.1	8.9	721.5	206	159
Feb. 25	0930	2.32	1,950	7.8	19.5	8.7	26	35	6
Mar. 31	0950	5.75	990	7.9	19.8	8.6	23	164	125
June 29	0930	43.9	790	7.9	24.0	2.4	60.7	3,336	332
Aug. 31	1000	6.48	820	7.8	26.5	6.8	106	1,207	97
Dec. 21	1000	9.17	2,820	8.9	13.3	7.9	25.9	32	13

NR - None Reported

2004 Date	Chloride mg/L	Di ssol ved Solids Total mg/L	Sul fate mg/L	Al kal i ni ty mg/L	Total Organi c Carbon mg/L	Ammoni a as Ni trogen mg/L	Ni tri te + Ni trate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Jan. 27	50	545	209	137	3.6	<0.02	<0.02	0.41	0.12
Feb. 25	215	1,310	582	185	3	0.1	<0.02	0.06	0.03
Mar. 31	86	980	390	164	7	0.1	0.29	0.19	<0.04
June 29	7	200	30	160	6	0.94	0.29	18.3	0.15
Aug. 31	46	578	356	319	5.1	<0.1	NR	1.03	<0.03
Dec. 21	432	1,882	818	161	6.7	0.1	<0.04	0.21	NR

NR - None Reported

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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, U.S. Section. Additional water quality parameters including heavy metals, nutrients, and biological indices, determined and published by the USGS.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Alkalinity (Filtered as CaCO3) mg/L	Suspended Sediment mg/L	Nitrite as Nitrogen mg/L
Jan. 28	1120	10.0	1,160	8.2	11.4	8.2	119	1,187	0.014
Feb. 24	1100	9.60	1,010	8.2	18.4	9.3	140	39	0.004
Mar. 17	1300	67.1	934	7.7	20.9	6.8	95.8	14,181	0.004
Apr. 14	1130	15.6	772	8.4	18.7	8.2	139	1,145	0.003
July 14	1200	9.23	878	8.2	NR	NR	168	277	0.003
Aug. 4	1100	35.7	783	7.8	28.1	6.1	110	5,416	0.002
Aug. 31	1130	32.3	697	8	26.3	6.4	107	12,972	0.002
Dec. 15	1140	16.8	1,920	8.3	12.7	9.5	159	42	0.005

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Turbidity NTU	Calcium mg/L	Ammonia as Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho-Phosphorus mg/L
Jan. 28	77.3	834	356.2	2,619	138	0.037	1.214	0.709	0.003
Feb. 24	84.3	671	239	19.5	83.3	<0.010	0.627	0.029	<0.006
Mar. 17	59.5	645	280.4	10,480	92.9	0.006	0.813	9.125	<0.006
Apr. 14	54.5	512	163	988	68.7	0.019	1.011	0.729	0.009
July 14	53.7	558	184.7	218	77.7	<0.010	1.03	0.189	<0.006
Aug. 4	19.8	550	243.2	3,600	103	0.007	1.234	1.765	0.007
Aug. 31	27.9	453	179.5	8,500	59.4	<0.010	0.862	3.438	0.01
Dec. 15	236.6	1,324	488.4	NR	154.9	0.012	0.775	0.026	<0.006

NR - None Reported

2004 Date	Magnesium mg/L	Sodium mg/L	Potassium mg/L	Fluoride mg/L	Silica mg/L
Jan. 28	17.9	103	4.8	0.9	14.6
Feb. 24	23.4	94.2	4.8	1.2	20.5
Mar. 17	10.7	110	5.1	0.6	11.1
Apr. 14	9.2	82.3	4	0.9	17.5
July 14	15.8	81.1	5.4	1.1	20.6
Aug. 4	10.1	49.9	4.7	0.7	13.7
Aug. 31	3.7	81.3	3.8	0.9	15.2
Dec. 15	30.5	250.4	7.6	1.1	22

NR - None Reported

SUSPENDED SILT - 2004

2004 Date	Time Std.	Streamflow Momentary CMS	Gravimetric Percent	2004 Date	Time Std.	Streamflow Momentary CMS	Gravimetric Percent	2004 Date	Time Std.	Streamflow Momentary CMS	Gravimetric Percent
Jan. 05	1145	9.54	0.0034	June 01	1015	7.14	0.0193	Oct. 04	1030	65.1	0.2484
Feb. 02	1100	11.6	0.0235	June 21	0945	10.6	0.0652	Oct. 18	1030	25.3	0.0440
Feb. 17	1100	10.0	0.0071	July 02	1045	23.8	0.9622	Nov. 01	1100	37.8	0.4701
Mar. 02	1115	7.5	0.0041	July 19	1030	10.5	0.0264	Nov. 15	1200	15.6	0.0131
Mar. 15	1130	11.9	0.0112	July 30	1230	197	1.2336	Dec. 06	1100	23.9	0.0164
Apr. 07	1130	56.6	0.6474	Aug. 02	1145	48.7	0.5843	Dec. 20	1045	18.3	0.0075
Apr. 19	1045	12.4	0.3319	Aug. 16	1000	29.4	0.3531				
May 06	1030	8.35	0.0183	Sep. 07	1015	19.0	0.0091				
May 17	0945	10.5	0.0322	Sep. 20	1100	10.2	0.0107				

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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 - 2004

January		March		May		July		September		November	
5	1,230	1	986	3	1,110	1	608	7	592	1	876
20	1,220	15	564	17	788	19	907	18	1,460	15	1,290
							862				
February		April		June		August		October		December	
2	895	7	967	1	1,600	2	602	4	756	6	1,660
17	998	19	966	21	757	16	773	18	1,460	20	1,800

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, U.S. Section. Additional water quality parameters including heavy metals, nutrients, pesticides and other biological indices determined by the U.S. Geological Survey.

2004	Time	Streamflow Momentary	Specific Conductance	pH	Water Temperature	Oxygen Dissolved (DO)	Alkalinity (Filtered as CaCO3)	Suspended Sediment	Nitrite as Nitrogen
Date	Standard	CMS	Microsiemens/cm	Units	Deg C	mg/L	mg/L	mg/L	mg/L
Jan. 27	1040	4.73	2,740	8.3	11.7	9.7	154	2	0.004
Feb. 23	1300	4.19	3,030	8.1	17.0	9.3	160	1	0.009
Mar. 16	1000	12.9	2,720	8.3	20.3	8.1	159	4	0.006
Apr. 13	1030	7.67	2,560	8.4	16.1	9.1	113	1	<0.008
July 13	1000	6.14	3,160	7.9	26.3	7	134	2	0.005
Aug. 3	1000	10.0	2,180	8.1	29.2	6.6	167	9	<0.008
Aug. 30	1500	8.58	2,440	8.1	28.1	7.5	160	9	0.005
Dec. 14	1030	13.9	2,390	8.5	13.3	10.8	172	7	<0.008

2004	Chloride	Dissolved Solids Total	Sulfate	Turbidity	Calcium	Ammonia as Nitrogen	Nitrite + Nitrate	Total Phosphorus	Ortho-Phosphorus
Date	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L
Jan. 27	594.7	1,658	344.5	2	128	<0.040	0.806	0.003	<0.006
Feb. 23	658.3	1,875	388.6	17.2	132	<0.040	0.616	0.006	<0.006
Mar. 16	569.9	1,663	339	3.2	126	<0.040	0.663	0.006	<0.006
Apr. 13	535.4	1,569	303.8	NR	117	<0.040	0.617	0.005	<0.006
July 13	696	1,931	403.7	2	129	0.025	0.28	0.004	<0.006
Aug. 3	430.9	1,284	273.7	24	109	<0.040	1.194	0.013	<0.006
Aug. 30	485.1	1,430	305.4	2	117	<0.040	0.831	0.007	<0.006
Dec. 14	482.6	1,492	313.5	NR	127.5	<0.040	1.228	0.002	<0.006

NR - None Reported

2004	Magnesium	Sodium	Potassium	Fluoride	Silica
Date	mg/L	mg/L	mg/L	mg/L	mg/L
Jan. 27	61	359	6.2	0.8	13.3
Feb. 23	68.2	392	7.1	0.9	10.9
Mar. 16	55.5	336	5.7	0.7	13.2
Apr. 13	54.7	339	6.4	0.8	13.6
July 13	68.5	435	8	0.9	16.9
Aug. 3	46.7	253	6.7	0.8	20.5
Aug. 30	52.6	292	6.7	0.9	19.6
Dec. 14	50.6	321.2	6.8	0.8	16.9

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

January		March		May		July		September		November	
5	2,350	1	2,980	3	2,670	1	1,978	3	2,270	1	1,640
20	2,500	15	2,220	17	2,130	19	250	21	2,240	15	2,070
February		April		June		August		October		December	
2	2,680	5	2,410	7	2,080	8	2,100	4	2,140	6	3,060
17	2,880	19	2,720	21	1,990	16	2,250	18	2,890	20	2,410

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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; chemical/biochemical data available for 2004.

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, U.S. Section. 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).

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	Oxygen Di ssol ved (DO) mg/L	E. Coli MPN/100/mL	Total Suspended Sol ids mg/L	Vol atile Suspended Sol ids mg/L
Dec. 2	1030	22.5	426	7.9	14.2	10.2	13	1	<1

2004 Date	Chloride mg/L	Di ssol ved Sol ids Total mg/L	Sul fate mg/L	Al kal i ni ty mg/L	Total Organi c Carbon mg/L	Ammoni a as Ni trogen mg/L	Ni tri te + Ni trate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Dec. 2	11	244	9	193	1	0.07	1.22	<0.05	<0.06

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

January	March	May	July	September	November
6 920 20 925	1 394 15 369	3 428 18 394	2 366 19 389	7 366 20 423	1 397 15 364
February	April	June	August	October	December
2 417 17 394	8 345 19 405	2 374 7 410 20 354	16 393	4 428 18 395	6 452 20 466

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 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 Water Commission, U.S. Section.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Mi cro- siemens /cm	pH Units	Water Temper- ature Deg C	Oxygen Di ssol ved (DO) mg/L	Al kal i ni ty (Fi ltered as CaCO3) mg/L	Suspended Sedi ment mg/L	Ni tri te as Ni trogen mg/L
Jan. 26	1330	13.8	826	8.2	13.6	10.1	111	5	<0.008
Mar. 15	1400	13.3	851	8.3	15.4	10.5	122	1	<0.008
Apr. 12	1330	13.0	852	8.2	15.6	9.7	127	3	0.011
July 12	1300	13.0	872	7.8	NR	NR	126	4	<0.008
Aug. 2	1400	13.0	848	8.1	20.8	10.7	128	0	<0.008
Dec. 13	1330	11.9	811	7.8	16.5	9.9	124	4	<0.008

NR - None Reported

2004 Date	Chloride mg/L	Di ssol ved Sol ids Total mg/L	Sul fate mg/L	Turbi di ty NTU	Cal ci um mg/L	Ammoni a as Ni trogen mg/L	Ni tri te + Ni trate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Jan. 26	94.1	506	140.3	2	62.5	<0.040	0.237	0.009	<0.006
Mar. 15	98.6	529	148.5	2	67.7	<0.040	0.277	0.009	<0.006
Apr. 12	97.7	540	144.7	NR	67	<0.040	0.298	0.008	<0.006
July 12	99.1	539	147	2	67.3	<0.040	0.307	0.003	<0.006
Aug. 2	99.2	545	145.1	23.6	63.9	<0.040	0.253	0.005	<0.006
Dec. 13	88.1	509	143	NR	67.18	<0.040	0.182	0.007	<0.006

NR - None Reported

2004 Date	Magnesi um mg/L	Sodi um mg/L	Potassi um mg/L	Fluori de mg/L	Si l i ca mg/L
Jan. 26	17.2	78.6	4	0.6	13.2
Mar. 15	18	81.4	4	0.6	13
Apr. 12	17.8	84.7	4.2	0.6	13.1
July 12	17.3	79.9	4.1	0.6	13.1
Aug. 2	18.3	76.7	3.9	0.6	13.5
Dec. 13	16	75.6	4.3	0.6	14.4



WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

RIO GRANDE DOWNSTREAM FROM DEL RIO, TEXAS NEAR MOODY RANCH

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

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	Oxygen Di ssol ved (DO) mg/L	Fecal Col i form as CaCO3 (CFU/100 mL)	Total Suspended Sol i ds mg/L	Volatile Suspended Sol i ds mg/L
Jan. 28	1015	19.6	721	7.47	11.9	10.24	248	3	2
Feb. 19	1230	18.7	673	8.36	17.3	12.8	429	16	97
Mar. 22	1215	16.2	855	8.1	17.7	11.3	7	26	4
Apr. 27	1200	15.6	857	7.99	22.6	6.94	667	33	4
May 25	1300	18.8	889	7.92	23.3	7.8	687	13	6
June 21	1345	17.5	883	8.2	24.8	9.7	40	6	<1
July 14	1230	19.7	873	8	24.6	7.6	243	16	10
Aug. 11	1255	18.1	799	7.97	25.3	6.78	340	18	4
Oct. 18	1300	13.5	840	8.2	24.2	11.9	NR	5	<1
Nov. 10	1310	21.5	819	8.47	21.3	12	447	10	3

NR - None Reported

2004 Date	Chl ori de mg/L	Di ssol ved Sol i ds Total mg/L	Sul fate mg/L	Al kal i ni ty mg/L	Cal ci um mg/L	Ammoni a as Ni trogen mg/L	Ni tri te + Ni trate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Jan. 28	40	536	59	147	75	<0.02	<0.02	0.13	0.09
Feb. 19	91	517	137	143	72	0.1	0.5	0.1	0.1
Mar. 22	83	508	141	150	79.8	0.22	0.55	0.07	0.1
Apr. 27	78	765	110	147	NR	0.4	0.3	1.1	1.1
May 25	88	490	105	147	75	0.2	0.41	0.81	0.41
June 21	87	540	141	147	NR	0.2	0.43	0.14	0.12
July 14	73	1,164	76	151	77	0.2	NR	0.14	0.12
Aug. 11	70	563	118	150	72	0.2	NR	0.09	0.04
Oct. 18	94	552	150	145	NR	0.17	0.11	0.1	<0.06
Nov. 10	146	688	262	170	76.5	0.2	1.2	0.13	0.09

NR - None Reported

2004 Date	Magnesi um mg/L	Sodi um mg/L	Potassi um mg/L	Total Organi c Carbon mg/L	Si l i ca mg/L
Jan. 28	16	75	4	3.7	13.4
Feb. 19	2	72	5	3.6	2.8
Mar. 22	16.2	67.2	3.64	2	NR
Apr. 27	NR	NR	NR	7	12.8
May 25	15	75	4	2.8	10.7
June 21	NR	NR	NR	2	NR
July 14	16	76	4	3	14
Aug. 11	14	67	4	3.2	10.7
Oct. 18	NR	NR	NR	2	NR
Nov. 10	14	68.6	3.8	3.5	12

NR - None Reported

WATER BULLETIN 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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, U. S. Section.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	536	780	825	832	835	806	797	790	795	805	735	787
2	675	787	823	827	843	812	797	779	787	807	734	797
3	751	767	824	824	843	806	793	777	790	803	734	784
4	730	768	823	826	845	815	797	772	785	809	735	787
5	769	811	826	826	848	807	799	773	783	807	736	783
6	776	809	821	825	833	818	795	770	782	810	736	781
7	782	834	822	827	843	811	798	775	780	815	735	786
8	783	810	821	825	846	807	795	778	781	817	734	784
9	784	813	818	824	843	807	793	779	786	806	734	782
10	786	807	834	826	845	810	797	773	780	804	736	784
11	781	773	821	825	848	810	801	776	784	808	732	781
12	784	817	822	823	836	803	804	763	751	810	728	782
13	786	809	822	826	845	809	801	778	779	814	734	786
14	781	814	822	825	841	812	798	759	786	817	733	788
15	786	730	829	823	842	812	798	765	780	813	740	787
16	786	810	822	826	836	806	799	760	783	816	738	781
17	785	809	822	829	841	810	797	768	784	820	736	828
18	784	726	821	826	844	806	798	779	780	819	734	782
19	783	727	822	832	833	806	796	765	785	816	733	785
20	784	813	825	823	838	807	798	780	783	817	733	782
21	786	817	817	831	843	806	798	756	773	819	730	791
22	785	796	822	827	835	809	792	770	784	813	732	787
23	782	768	818	825	837	813	803	778	779	815	730	783
24	787	773	822	824	841	809	793	780	778	815	729	790
25	786	802	821	827	830	816	799	779	785	810	729	787
26	784	807	826	828	837	808	794	777	651	814	730	783
27	780	808	826	825	834	807	799	764	786	816	733	788
28	784	807	825	824	843	805	801	784	784	805	734	794
29	784	809	820	824	841	803	796	783	785	818	733	788
30	786		827	843	830	807	796	780	787	815	732	786
31	783		826		866		798			792		786

08-4587.00 RIO GRANDE NEAR EL INDI0, 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, U. S. Section.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

January		March		May		July		September		November	
7	777	3	780	5	675	7	713	1	619	4	634
22	764	18	686	20	710	21	730	16	605	17	679
		24	719								
February		April		June		August		October		December	
2	802	6	474	2	652	4	636	7	613	3	646
18	786	21	684	17	742	18	683	13	611	15	659

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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

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

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

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

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Alkalinity (Filtered as CaCO3) mg/L	Suspended Sediment mg/L	Nitrite as Nitrogen mg/L
Jun. 30	NR	NR	762	7.9	NR	7.8	147	NR	NR
Aug. 19	NR	NR	728	8.1	27.7	8.0	132	NR	NR

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Turbidity NTU	Calcium mg/L	Ammonia as Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho-Phosphorus mg/L
Jun. 30	53	351	87	NR	75	0.31	0.68	0.11	0.05
Aug. 19	61	380	113	NR	63	<0.02	6.8	0.1	0.04

NR - None Reported

2004 Date	Magnesium mg/L	Sodium mg/L	Potassium mg/L	Fluoride mg/L	Silica mg/L
Jun. 30	16	55	4	NR	13.1
Aug. 19	13	45	3	NR	13.6

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	780	758	698	665	730	625	688	643	647	568	642	658
2	782	729	855	610	765	636	666	568	585	598	439	711
3	784	762	836	628	715	643	656	646	483	538	561	594
4	780	781	845	660	695	630	720	640	619	454	527	543
5	793	740	839	669	684	665	702	588	468	481	612	522
6	768	684	693	459	698	622	648	581	657	451	581	546
7	788	773	824	202	695	622	702	556	604	309	646	502
8	710	750	820	291	720	676	702	585	561	261	575	494
9	774	786	848	517	738	668	703	711	576	275	536	501
10	807	756	847	592	716	676	722	538	608	450	554	521
11	793	657	853	622	676	684	689	568	662	430	587	522
12	791	829	815	621	671	696	696	490	642	304	611	534
13	790	827	813	651	604	722	698	494	646	342	486	546
14	792	779	909	728	648	745	650	590	697	573	524	590
15	804	792	774	737	680	776	739	548	633	509	590	520
16	788	764	635	724	613	785	705	572	731	532	516	550
17	812	737	718	713	692	771	716	533	607	502	629	551
18	816	823	714	490	683	766	648	518	649	640	508	590
19	803	773	714	737	721	759	699	572	642	600	570	614
20	826	827	670	740	563	747	715	602	627	634	487	625
21	828	775	712	739	687	749	701	602	628	520	479	549
22	847	778	743	744	692	743	703	599	634	513	509	603
23	840	818	758	734	679	762	705	574	567	572	490	535
24	829	709	754	690	674	713	698	551	630	595	606	629
25	826	975	760	678	622	725	702	565	603	610	685	644
26	809	828	759	698	619	718	702	551	630	589	656	662
27	808	828	762	668	653	764	685	565	635	615	547	699
28	803	759	756	733	659	795	665	602	640	597	558	691
29	808	804	734	735	664	789	733	654	633	611	642	701
30	848		696	771	662	689	695	645	630	646	641	673
31	811		687		657		691	634		640		691

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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

SUSPENDED SILT - 2004

Month	Monthly Weight Megagrams		Number of Samples	Gravimetric Percentages			Silt Volume Thousand Cubic Meters**
	Water	Silt		Composite	Maximum Sample*	Minimum Sample*	
Jan.	72,913,000	4,594	31	0.0063	0.0029	0.0018	4.3
Feb.	65,051,000	1,236	29	0.0019	0.0169	0.0031	1.2
Mar.	129,825,000	13,632	31	0.0105	0.0577	0.0125	12.8
Apr.	449,626,000	169,959	30	0.0378	0.1855	0.0135	159
May	172,964,000	6,400	31	0.0037	0.0149	0.0030	6.0
June	91,869,000	459	30	0.0005	0.0121	0.0159	0.4
July	85,234,000	682	31	0.0008	0.0143	0.0111	0.6
Aug.	84,352,000	253	31	0.0003	0.0103	0.0137	0.2
Sept.	107,957,000	6,693	30	0.0062	0.0407	0.0078	6.3
Oct.	169,465,000	50,162	31	0.0296	0.1044	0.0058	47.0
Nov.	148,496,000	15,295	30	0.0103	0.0544	0.0080	14.3
Dec.	123,561,000	2,718	31	0.0022	0.0029	0.0020	2.5
Year	1,701,313,000	272,083	366				255

\* Represents the gravimetric percentages at the maximum flow and minimum flow of the month  
 \*\* Volume calculated at 1.068 megagrams per cubic meter  
 NR - None Reported

08-4592.00 RIO GRANDE AT PIPELINE CROSSING, LAREDO, TEXAS AND NUEVO LAREDO, TAMAULIPAS

LOCATION: Samples collected 13.9 kilometers downstream from Texas/Mexico Railroad bridge, river kilometer 563. Latitude 27°24'01", Longitude 99°29'18".  
 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 U. S. Geological Survey. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, available from U.S. Geological Survey through September 1986.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	Alkalinity (Filtered as CaCO3) mg/L	Suspended Sediment mg/L	Nitrite as Nitrogen mg/L
Jan. 22	1030	25.4	972	7.6	14.5	8.7	145	16	0.043
Mar. 17	1500	74.5	818	7.4	21.5	7.4	117	16	0.058
Apr. 7	1800	555	388	7.2	21.0	7.1	109	658	0.015
July 14	1330	30.6	804	7.4	29.0	6.7	134	69	0.035
July 27	1130	22.2	774	7.5	30.5	5.8	121	35	0.059
Aug. 25	0830	30.6	709	7.6	28.0	6	138	30	0.038
Sept. 13	1230	41.1	801	7.8	30.0	6.7	134	108	0.021
Dec. 1	0900	46.7	699	8.3	15.5	8.7	169	NR	0.022

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Turbidity NTU	Calcium mg/L	Ammonia as Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho-Phosphorus mg/L
Jan. 22	103.4	590	174.7	6.7	83.5	0.295	1.24	0.265	0.186
Mar. 17	84.7	516	148.4	156	70.3	<0.040	1.185	0.394	0.105
Apr. 7	20.1	232	39.4	808	50.7	<0.040	0.803	0.44	<0.018
July 14	83	509	139.2	44.4	68.3	0.174	0.646	0.272	0.192
July 27	82.6	482	133.9	26.8	67.4	0.287	0.679	0.329	0.263
Aug. 25	66.6	435	113	48.9	67.2	0.188	0.949	0.287	0.212
Sept. 13	78.2	515	141.3	48.8	72.2	0.082	0.708	0.221	0.159
Dec. 1	56.9	448	104.1	NR	83.65	0.143	1.46	0.243	0.171

NR - None Reported

2004 Date	Magnesium mg/L	Sodium mg/L	Potassium mg/L	Fluoride mg/L	Silica mg/L
Jan. 22	19.8	89.1	4.4	0.5	2.8
Mar. 17	15.9	76.6	4.7	0.4	9.1
Apr. 7	6.9	17	3.7	0.2	7.5
July 14	16.6	67.4	3.3	0.5	14.4
July 27	16.7	66.5	3.4	0.5	12.8
Aug. 25	15.1	57.3	3.3	0.4	14.6
Sept 13	16.6	66	3.6	0.4	14
Dec. 1	13.4	47.8	2.7	0.3	14.6

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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).

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	Oxygen Di ssol ved (DO) mg/L	Alkalinity (Filtered as CaCO3) mg/L	Suspended Sedi ment mg/L	Ni tri te as Ni trogen mg/L
Jan. 21	1300	NR	639	7.6	15.5	9.4	116	7	<0.008
Mar. 10	1430	NR	673	7.9	19.5	11.1	128	9	<0.008
May 26	1430	NR	721	7.6	27.0	6.4	129	NR	0.004
July 14	1800	NR	717	7.8	29.0	9.1	125	5	0.01
Aug. 24	1400	NR	712	7.6	29.5	8	122	4	0.008
Nov. 30	1400	18.2	741	8.5	19.5	10	126	NR	<0.008

NR - None Reported

2004 Date	Chlori de mg/L	Di ssol ved Sol ids Total mg/L	Sul fate mg/L	Turbi di ty NTU	Cal ci um mg/L	Ammoni a as Ni trogen mg/L	Ni tri te + Ni trate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Jan. 21	58.2	355	87.9	6.5	55.4	<0.040	<0.060	0.037	<0.006
Mar. 10	66.9	412	99.1	3.8	63.9	<0.040	<0.060	0.033	0.003
May 26	73.5	444	109.5	3.9	65.4	0.03	0.043	0.036	0.008
July 14	75.1	434	111	3	58.9	0.079	0.037	0.067	0.025
Aug. 24	77.6	433	114	2.1	59.4	<0.040	0.064	0.036	0.005
Nov. 30	81.7	458	118.8	NR	59.08	<0.040	0.051	0.037	0.004

NR - None Reported

2004 Date	Magnesi um mg/L	Sodi um mg/L	Potassi um mg/L	Fluori de mg/L	Sili ca mg/L
Jan. 21	11	49.2	4.8	0.3	8.5
Mar. 10	12.8	60.2	5.2	0.3	8.9
May 26	13.7	63.1	5.1	0.3	8.5
July 14	13.4	63.1	4.9	0.3	8.4
Aug. 24	14.8	66.8	5.5	0.3	8.4
Nov. 30	14.9	67.7	5.5	0.4	8.5

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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 - 2004

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1			644						704	703	694	701
2	582	606		687		702	702					
3			647		712				703		702	701
4		605				696				697		
5	609		658	693	713		705			706	693	
6		604										716
7	588			701	716	695						
8			791						703	697	694	704
9	588	611		716		701					699	
10			653		716						700	
11		618				698		702	691	686		
12			658	704	708						690	
13	591	617						704	690	691		724
14	594			707	697	710						
15			659						720	694	635	721
16	612	617		709		699		705				
17			679		700				700		701	729
18		622				711		707		693		
19	599		663		700						695	
20		646						706	673	695		720
21	605			716	700	709						
22			662						699	689	721	724
23	604	640		724		711		706				
24			668		698				698		705	711
25		634				706		700		711		
26	602		674	718	704						700	630
27		636						706	700	697		
28		606		718	703	703						
29			681	714					700	724		727
30	602			715		735		703				
31			688		703							726

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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, U.S. Section. Analyses by a contract laboratory.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	E. Coli (MPN/100mL)	Fecal Coli form (CFU/100 mL)	Total Suspended Solids mg/L	Volatile Suspended Solids mg/L
Feb. 18	0930	8.69	725	8.1	16.2	24.1	25	6	4
Mar. 16	0950	10.0	830	8.1	19.8	55.6	60	2	<1
May 18	1000	5.01	764	8.6	27.4	59.2	80	1	<1
June 8	0900	10.0	736	8.5	26.1	35	40	13	8
Aug. 17	1015	45.5	825	8.1	28.8	84.5	120	4	4
Nov. 9	1015	56.0	750	7.9	22.8	157.6	230	30	5
Dec. 7	1005	26.0	760	7.9	19.4	436	285	16	5

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Alkalinity mg/L	Calcium mg/L	Ammonia as Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Feb. 18	88.4	472	112	120	55	<0.02	<0.02	<0.05	NR
Mar. 16	86	426	100	97	55	<0.02	0.1	<0.06	<0.04
May 18	60	491	100	113	55	0.3	0.03	0.66	0.38
June 8	80	332	62	135	55	0.14	0.08	0.07	0.07
Aug. 17	88	444	122	122	56	<0.1	NR	1.18	<0.03
Nov. 9	114	436	163	132	50	0.1	1.8	0.08	<0.04
Dec. 7	76	484	105	122	57.1	<0.02	2.8	<0.06	<0.04

NR - None Reported

2004 Date	Magnesium mg/L	Sodium mg/L	Potassium mg/L	Total Organic Carbon mg/L	Silica mg/L	Oxygen Dissolved mg/L
Feb. 18	1	75	6	6.6	4.7	6.7
Mar. 16	12	80	6	8.6	7.8	7.6
May 18	15	80	6	3.3	5.9	6.5
June 8	15	70	5	4.2	6.9	6.7
Aug. 17	13	66	6	4.9	7.7	6.6
Nov. 9	12	62	5	5.3	9.1	6.5
Dec. 7	13.9	69	5.6	4.8	8.7	6.9

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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 2002.  
 REMARKS: Sampling and determinations by the International Boundary and Water Commission, U.S. Section.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

January	March	May	July	September	November
February	April	June	August	October	December

No samples collected for 2004

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, U.S. Section; chemical analyses by a contract laboratory; specific conductance determinations by the International Boundary and Water Commission, U.S. Section.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	E. Coli (MPN/100mL)	Fecal Coliform (CFU/100 mL)	Total Suspended Solids mg/L	Volatile Suspended Solids mg/L
Jan. 13	0845	35.0	985	6.4	20.6	22.6	30	12	9
Feb. 18	0800	8.69	1,337	8.1	16.7	376.2	375	17	10
Mar. 16	0820	10.0	1,040	7.8	20.7	2419	2,250	14	4
Apr. 21	0805	115	1,120	8.2	22.5	33.2	75	293	31
May 18	0845	168	1,157	8.6	24.8	>2419	2,250	126	28
June 8	0745	95.0	1,039	8.4	27.0	>2419	2,250	34	29
July 20	0845	30.0	858	7.8	29.6	2419	2,250	65	10
Aug. 17	0835	45.5	753	7.8	28.6	1986	2,000	20	6
Nov. 9	0854	56.0	823	7.8	22.5	37.3	70	18	4
Dec. 7	0850	26.0	917	7.6	19.4	1986	1,250	14	5

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Alkalinity mg/L	Calcium mg/L	Ammonia Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho-Phosphorus mg/L
Jan. 13	85	480	83	199	NR	0.2	3.6	0.1	<0.03
Feb. 18	210	809	233	143	81	1.2	<0.02	0.29	NR
Mar. 16	126	458	126	134	63	0.4	0.18	0.1	0.1
Apr. 21	144	765	240	172	NR	0.3	NR	0.2	0.06
May 18	130	773	105	151	75	0.5	0.13	0.72	0.39
June 8	124	597	150	135	70	0.19	0.98	0.22	0.1
July 20	75	408	135	130	65	0.8	NR	0.59	0.2
Aug. 17	88	450	123	120	59	0.4	6.2	0.23	0.49
Nov. 9	134	472	180	134	53	1.3	4.5	0.17	0.08
Dec. 7	106	544	139	120	59.4	1.2	6.4	0.27	0.27

NR - None Reported

2004 Date	Magnesium mg/L	Sodium mg/L	Potassium mg/L	Total Organic Carbon mg/L	Silica mg/L	Oxygen Dissolved mg/L
Jan. 13	NR	NR	NR	5.2	8.2	6.7
Feb. 18	2	175	9	5	5	6.9
Mar. 16	15	120	8	9.2	8.3	6.9
Apr. 21	NR	NR	NR	10.5	10	6.7
May 18	25	130	8	4.4	7.2	7.1
June 8	20	115	8	5.4	5	6.6
July 20	17	85	7	5.6	8.7	6.2
Aug. 17	14	77	6	5.7	7	6.3
Nov. 9	13	74	5	5.2	9.5	6.5
Dec. 7	15.4	90	6.5	5.4	8.8	6.6

NR - None Reported

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1			1,020			994	944		780	942	769	881
2	851	968		1,060				794				
3			1,190			1,000						
4		787	1,060			999					787	
5	842			2,450	1,200			777			775	
6		946										
7	825			1,200			1,020		815	926	774	886
8			1,110			1,028			771	852		
9	792	946		1,240			969					872
10			926						850			
11					1,130							
12	781		847	1,260			996			884		
13		1,070										
14				1,220	1,100				1,061	884		857
15	774		880			977	921					
16		1,290		1,220					972		777	
17	787		989			987		730	982			843
18		1,280			1,100	988				921	831	
19	805			1,230								
20		1,000	1,160		1,070		859	938				
21	775			1,200					985	917		803
22			1,202			902						
23	807	924		1,230			838		965	899		756
24			1,000					750			854	
25		1,070			1,000							
26	863									794		
27		1,110	1,240					736				
28	895								917	789		763
29			1,040			968	809					
30	1,110						818				861	
31			1,080									

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, U.S. Section.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

2004 Date	Puertecitos Drain	Los Indios Drain	2004 Date	Puertecitos Drain	Los Indios Drain	2004 Date	Puertecitos Drain	Los Indios Drain	2004 Date	Puertecitos Drain	Los Indios Drain

No samples collected for Los Indios and Puertecitos Drains for 2004.

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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, U.S. Section; chemical analyses by a contract laboratory; specific conductance determinations by the International Boundary and Water Commission, U.S. Section.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	E. Coli (MPN/100mL)	Fecal Coli form (CFU/100 mL)	Total Suspended Solids mg/L	Volatile Suspended Solids mg/L
Jan. 27	1145	29.1	1,115	7.9	18.0	NR	NR	18	14
Mar. 17	1010	103	1,189	7.9	21.1	NR	NR	20	3
May 26	1250	132	1,069	7.2	27.9	NR	NR	47	<1
July 26	1200	54.0	864	7.8	30.5	NR	NR	654	49
Aug. 16	1220	52.8	908	7.9	29.3	NR	NR	56	6
Sept. 21	1045	231	1,000	7.5	28.4	NR	NR	23	11
Dec. 14	1100	30.6	944	7.9	16.3	NR	NR	19	3

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Alkalinity mg/L	Calcium mg/L	Ammonia as Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Jan. 27	77	656	88	147	90	<0.02	<0.02	0.09	0.06
Mar. 17	130	745	170	151	71	0.1	0.13	<0.06	<0.04
May 26	155	608	256	159	75	0.07	1.26	0.09	0.09
July 26	103	540	174	130	60	<0.1	20	0.16	0.15
Aug. 16	106	563	159	111	62	<0.1	6.4	0.07	<0.03
Sept. 21	130	1,450	224	113	62	<0.02	3.4	0.28	0.05
Dec. 14	107	526	137	122	56.2	<0.02	2.9	<0.06	<0.04

2004 Date	Magnesium mg/L	Sodium mg/L	Potassium mg/L	Total Organic Carbon mg/L	Silica mg/L	Oxygen Dissolved mg/L
Jan. 27	20	145	8	5	11.6	9.2
Mar. 17	21	128	8	8.7	10.2	7.2
May 26	25	120	8	5.5	8.8	6.6
July 26	15	80	6	5.1	9.9	6.4
Aug. 16	17	87	6	5	7.5	12.0
Sept. 21	21.2	108	8.2	7.3	5.1	6.2
Dec. 14	14.7	86	5.1	5	7.7	9.6

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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 - 2004

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,150	1,180	1,320	1,190	1,040	980	880	800	930	850	970	780
2	1,150	1,180	1,310	1,190	1,060	980	890	800	930	850	960	780
3	1,150	1,180	1,320	1,190	1,060	990	890	800	930	850	970	770
4	1,150	1,170	1,320	1,190	1,070	970	890	800	930	830	980	770
5	1,150	1,180	1,280	1,190	1,070	980	900	810	930	840	960	770
6	1,150	1,170	1,310	1,190	1,070	990	890	790	920	840	960	760
7	1,160	1,170	1,310	1,200	1,040	980	890	800	930	840	940	760
8	1,150	1,180	1,320	1,180	1,050	970	890	800	930	840	970	770
9	1,150	1,180	1,320	1,200	1,070	980	890	800	940	830	980	750
10	1,160	1,170	1,320	1,190	1,070	970	890	800	940	850	970	750
11	1,150	1,180	1,320	1,190	1,050	980	890	800	940	840	970	750
12	1,150	1,170	1,310	1,200	1,060	980	890	800	940	840	970	770
13	1,150	1,180	1,310	1,190	1,040	960	880	800	930	850	980	770
14	1,160	1,180	1,320	1,180	1,060	960	890	810	920	840	970	740
15	1,150	1,180	1,290	1,200	1,050	980	890	810	920	850	960	770
16	1,150	1,180	1,330	1,190	1,060	970	880	800	930	830	960	770
17	1,150	1,170	1,320	1,190	1,050	980	890	800	930	840	980	770
18	1,150	1,180	1,320	1,200	1,070	970	890	810	940	840	960	760
19	1,150	1,180	1,320	1,190	1,070	960	890	790	940	840	960	780
20	1,100	1,140	1,320	1,170	1,070	980	890	800	930	850	950	770
21	1,150	1,180	1,310	1,190	1,060	990	890	800	910	850	970	760
22	1,150	1,180	1,320	1,200	1,060	960	890	800	950	850	980	760
23	1,150	1,180	1,340	1,190	1,080	960	890	790	910	840	970	760
24	1,150	1,180	1,320	1,200	1,060	970	890	800	930	840	970	760
25	1,150	1,180	1,320	1,200	1,080	950	890	800	940	830	960	770
26	1,150	1,150	1,320	1,200	1,060	970	880	800	930	850	970	770
27	1,120	1,180	1,320	1,190	1,050	970	900	780	920	850	960	770
28	1,150	1,180	1,310	1,190	1,060	980	890	800	920	860	980	770
29	1,150	1,170	1,320	1,190	1,060	960	890	800	940	840	960	770
30	1,150		1,300	1,180	1,050	960	890	800	920	840	970	760
31	1,140		1,330		1,060		890	810		830		770

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

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

RECORDS : Specific conductance, 1963 through current year.

REMARKS : Sampling and determinations by the International Boundary and Water Commission, U.S. Section.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1			1,130	1,290		1,070			770	800	860	990
2	1,000	1,270		1,220	1,160	1,060	1,050	910				
3			1,350	1,220					790		860	950
4		1,120		1,180		1,060		860		960		
5	950		1,270	1,250	1,160	1,010	1,060				850	
6		1,100						860	1,060	930		1,000
7	960			1,200	1,180	1,030	1,020					
8	970		1,260	1,060					730	940	840	1,010
9		1,200	1,250	1,060		1,020	1,000	950				
10			1,270		1,200				930		830	960
11		1,180				1,070		850		880		
12	930		1,280	1,260	1,160		1,030				840	
13		1,260						810	1,040	910		950
14	941			1,260	1,130	1,050	1,040					
15			970						890	930	870	990
16	900			1,350		1,030	1,070	900				
17			1,110		1,130				1,000		900	950
18		1,290				1,050		870	970			
19	960	1,340	1,180	1,280	1,120		960				830	
20		1,350						930	1,000	1,010		850
21	1,020			1,240	1,140		920					
22			1,300						990	1,040	820	
23	1,030	1,400		1,240		980	940	820				
24			1,410		1,100				970		980	810
25		1,400				1,030		920		850		
26	950		1,490		1,100		930				970	
27		1,220						810	950	860		760
28	1,190			1,220	1,090		940					
29			1,290						940	820	1,000	760
30	1,170			1,220			910	820				
31			1,330		1,090							780

QUALITY OF WATER - 2004

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 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, U.S. Section and chemical analyses by a contract laboratory. Determinations for specific conductance by International Boundary and Water Commission, U.S. Section.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	Calcium mg/L	Magnesium mg/L	Total Suspended Solids mg/L	Volatile Suspended Solids mg/L
Jan. 27	1400	4.90	6,030	7.7	18.1	320	90	218	174
Feb. 17	1015	1.25	7,420	7.9	17.7	285	10	72	51
Mar. 17	1115	1.25	7,750	7.9	22.9	265	100	103	3
Apr. 28	1055	2.00	5,140	7.6	24.5	210	65	108	16
May 26	1045	1.00	5,090	7.0	27.0	200	70	82	82
June 22	1000	0.99	7,450	7.8	27.5	260	100	99	20
July 26	1005	0.99	7,410	7.8	29.3	240	90	42	31
Aug. 16	1025	0.99	756	7.9	28.1	275	101	43	8
Sept. 21	1150	0.58	2,570	7.6	28.5	111	39.2	28	21
Nov. 9	1110	1.00	746	7.9	21.6	150	92	32	6
Dec. 14	1200	0.99	7,470	8.3	14.6	200	82	28	7

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Alkalinity mg/L	Sodium mg/L	Oxygen Dissolved mg/L	Potassium mg/L	Silica mg/L
Jan. 27	687	619	799	284	1,240	7.0	25	32.5
Feb. 17	1,485	5,115	2,004	277	1,365	8.4	20	34.5
Mar. 17	1,780	5,015	1,684	239	1,680	6.5	24	39.5
Apr. 28	940	3,244	930	NR	1,120	5.7	20	29.8
May 26	1,020	3,291	1,156	260	1,200	6.3	17	26.6
June 22	1,400	5,018	854	244	1,800	5.8	17	34.3
July 26	1,416	5,390	1,466	256	1,700	4.6	18	39.7
Aug. 16	1,446	4,964	1,684	183	1,510	6.4	16	26.6
Sept. 21	476	2,100	588	153	428	6.1	13	15.4
Nov. 9	976	5,048	1,115	258	1,452	10.4	12.1	35.6
Dec. 14	1,514	5,056	1,722	232	1,315	10.1	12	34.7

NR - None Reported

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1			7,230	7,430		4,260	6,990		6,230	7,220	7,290	7,180
2		5,830	7,180	4,980		4,020	7,300	7,380	6,470			7,150
3		5,840	7,230	6,240	7,010	4,070		7,600	6,830		7,150	6,970
4		5,640	7,130	7,470	7,050	4,110		7,630			7,270	
5				1,420			7,360	7,730		7,240	6,960	
6	4,780	6,880	6,650		7,250		7,520			7,170		7,080
7	4,950					7,520	4,220	7,530	2,720			7,010
8			7,140			4,610	7,340		2,830	7,170	7,280	7,070
9	4,250	7,180	7,330			4,610	7,500	7,460	4,350	7,380	7,180	7,030
10			7,340		6,200	4,420		7,640	5,300		7,290	7,070
11		7,180	7,330		6,460	5,190		7,640		7,220	7,400	
12	4,100	7,020	7,350	6,940	6,790		7,560	6,960				
13	4,380	6,860	7,130	7,270	6,990		7,260	5,520	6,160	7,100		7,150
14	4,330				6,020	5,850	7,590		6,840	7,100	7,330	7,140
15	4,240					5,930	7,380		7,050	7,240		7,120
16	4,310	7,300		7,490		6,300	7,410	7,230			7,330	7,230
17		7,090	7,430	7,720		6,590		7,400	6,910			7,030
18		7,270			6,400	6,690		7,350		7,250	7,270	
19	4,330	7,340			6,730	6,810		7,500		7,290		
20	4,410	7,410		7,750	7,150		7,540	7,530	2,640	7,360		6,830
21						7,140	7,520		2,540	7,320		7,040
22	4,080		6,630	6,640		6,940	7,510		3,410	7,320	7,210	5,970
23	3,870	7,220	6,980	2,970		6,290	7,600	7,570			7,080	
24			7,270		5,990	3,980		7,640	3,230		7,300	2,570
25		7,380	7,140		5,890	6,230				7,360	7,250	
26		7,480		1,790	5,290		7,430	7,540			7,290	
27	5,910	7,300	7,380		5,500		7,280	7,720	6,260	7,250		3,860
28	6,010			4,950	4,470	3,840	7,500	7,620		7,350		
29	6,080		7,500	5,520		5,460	7,540		6,880	7,340	7,420	6,740
30	5,880		5,000			6,470	7,220	6,790	6,930		7,240	4,020
31			6,570		4,120			5,780				3,700

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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, U.S. Section; chemical analyses by a contract laboratory; determinations for specific conductance by the International Boundary and Water Commission, U.S. Section.

Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Microsiemens/cm	pH Units	Water Temperature Deg C	Oxygen Dissolved mg/L	Silica mg/L	Total Suspended Solids mg/L	Volatile Suspended Solids mg/L
Jan. 27	1440	29.5	1,630	8.0	18.0	11.0	12.5	7	4
Mar. 17	1145	44.1	1,096	8.1	21.9	9.1	8.5	6	2
May 26	1130	102.8	1,181	7.3	27.7	7.9	11.1	300	240
July 26	1130	43.8	918	7.9	30.4	7.5	90	14	10
Aug. 16	1115	41.2	1,040	7.8	29.6	5.6	7.8	16	4
Sept. 21	1220	190.8	1,027	7.4	29.1	7.2	5.7	19	11
Dec. 14	1230	24.4	1,132	8.4	18.1	12.5	10.1	12	3

NR - None Reported

Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Alkalinity mg/L	Calcium mg/L	Ammonia as Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho-Phosphorus mg/L
Jan. 27	136	601	154	147	110	0.1	<0.02	0.07	0.07
Mar. 17	110	633	136	149	65	0.1	0.12	<0.06	<0.03
May 26	154	699	228	151	75	0.08	0.19	0.4	0.08
July 26	99	495	168	143	60	<0.1	NR	0.07	<0.03
Aug. 16	125	573	182	118	65	<0.1	NR	0.06	<0.03
Sept. 21	138	1,690	234	128	62	<0.02	3.7	0.36	0.04
Dec. 14	129	638	160	129	61.8	<0.02	3	<0.06	<0.04

NR - None Reported

Date	Magnesium mg/L	Sodium mg/L	Potassium mg/L	Total Organic Carbon mg/L
Jan. 27	30	260	10	5.5
Mar. 17	20	115	8	9.2
May 26	25	145	8	5.5
July 26	16	90	5	4.9
Aug. 16	19	110	7	9
Sept. 21	21.4	112	8.2	7.9
Dec. 14	16.7	106	5.5	5

NR - None Reported

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,380	1,640	1,720	1,360	1,290	1,210	1,100	920	830	970	920	1,150
2	1,410	1,830	1,410	1,380	1,260		1,130	880	820	940	840	1,090
3	1,190	1,910	1,460	1,320	1,270	1,190	1,110	850	770	970	910	1,130
4	1,140	1,690	1,450	1,350	1,310	1,180	1,100	890	760	970	960	1,080
5	1,100	1,650	1,620	1,410	1,230	1,160	1,100	880	790	1,000	960	1,030
6	1,130	1,670	1,740	1,220	1,230	1,160	1,110	850	880	1,020	940	1,090
7	1,180	1,490	1,570	1,270	1,180	1,160	1,080	870	1,000	1,000	930	1,080
8	1,130	1,450	1,650	1,390	1,190	1,120	1,000	870	840	1,030	990	1,130
9	1,080	1,610	1,670	1,490	1,240	1,170	1,020	890	940	990	930	1,200
10	1,130	810	1,600	1,790	1,230	1,190	1,030	910	980	990	940	1,220
11	1,310	1,710	1,450	1,350	1,220	1,200	1,000	1,050	940	1,030	930	1,150
12	1,340	1,790	1,250	1,690	1,190	1,190	1,000	1,030	920	930	900	1,160
13	1,280	1,620	1,270	1,430	1,130	1,240	1,020	1,010	1,090	980	870	1,080
14	1,290	1,590	1,280	1,320	1,170	1,280	1,030	1,010	970	990	910	1,040
15	1,280	1,600	1,120	1,290	1,230	1,280	1,040	1,070	1,030	1,000	920	1,040
16	1,210	1,760	1,070	1,280	1,200	1,270	1,050	980	920	1,030	930	940
17	1,260	1,900	1,060	1,340	1,170	1,170	1,150	1,030	1,020	940	950	1,010
18	1,300	1,820	1,070	1,350	1,170	1,070	1,030	1,050	970	950	1,000	1,070
19	1,180	1,640	1,070	1,350	1,170	1,070	990	1,050	990	960	1,000	1,050
20	1,310	1,710	1,420	1,280	1,180	1,080	960	1,020	980	970	980	930
21	1,290	2,010	1,370	1,230	1,020	1,100	980	1,000	1,000	990	1,030	960
22	1,450	2,040	1,220	1,230	1,160	1,050	950	1,000	970	1,050	980	1,060
23	1,430	1,720	1,230	1,220	1,120	980	940	1,000	980	1,140	950	940
24	1,660	1,900	1,200	1,220	1,170	1,260	930	980	1,010	1,130	980	890
25	1,550	2,050	1,250	1,230	1,180	1,050	920	980	1,010	1,030	1,040	900
26	1,580	1,910	1,270	1,260	1,190	1,100	950	960	980	1,040	1,050	840
27	1,640	1,800	1,300	1,320	1,200	1,210	960	1,030	980	960	1,170	820
28	1,610	1,640	1,420	1,270	1,200	1,060	920	870	990	970	1,150	810
29	1,550	1,840	1,490	1,270	1,200	1,090	920	840		930	1,070	770
30	1,680		1,480	1,270	1,210	1,110	910	830		970	1,080	820
31	1,620		1,460		1,210		920	810		940		830

QUALITY OF WATER - 2004

RIO GRANDE AT INTERNATIONAL BRIDGE AT US 281 AT HIDALGO, TEXAS

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	E. Coli (MPN/100mL)	Fecal Coliform (CFU/100 mL)	Total Suspended Solids mg/L	Volatile Suspended Solids mg/L
Feb. 17	1110	19.9	1,820	8.0	15.9	28.4	35	32	25
Mar. 17	1250	41.3	1,112	8.0	21.6	517	334	14	2
May 26	1410	100	1,198	7.2	28.4	84.2	54	86	<1
June 22	1055	99.8	1,079	7.7	29.6	163.8	4	49	8
Aug. 16	1310	94.1	1,028	7.8	30.0	36.4	55	8	3
Sept. 21	1335	37.8	1,024	7.4	29.9	NR	NR	31	18
Oct. 26	1140	45.6	1,060	8.0	27.7	172	NR	25	3
Nov. 9	1200	30.3	979	7.8	21.4	NR	NR	20	4
Dec. 14	1330	21.2	1,071	8.1	17.3	NR	NR	8	2

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Alkalinity mg/L	Calcium mg/L	Ammonia as Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Feb. 17	306	1,183	357	155	105	0.1	0.5	0.06	<0.03
Mar. 17	122	597	154	149	70	0.1	0.16	0.07	0.05
May 26	154	691	222	155	75	0.06	0.19	0.1	0.1
June 22	134	685	197	155	60	0.31	0.31	0.13	<0.04
Aug. 16	128	583	183	116	66	<0.1	6.3	<0.05	<0.03
Sept. 21	139	1,800	234	118	64	<0.02	3.5	0.31	0.04
Oct. 26	139	640	187	122	NR	<0.05	0.25	0.07	<0.06
Nov. 9	105	564	144	135	58.4	<0.02	11.2	0.07	<0.04
Dec. 14	166	652	215	133	64.2	<0.02	<0.04	<0.06	<0.04

NR - None Reported

2004 Date	Magnesium mg/L	Sodium mg/L	Potassium mg/L	Total Organic Carbon mg/L	Silica mg/L	Oxygen Dissolved mg/L
Feb. 17	3	252	10	5.6	10.3	9.3
Mar. 17	20	124	8	8.7	8.8	7.5
May 26	25	150	8	5.6	10.9	7.3
June 22	20	105	7	4.9	8.8	6.5
Aug. 16	20	115	7	5.9	8.8	10.0
Sept. 21	21.8	116	8.3	8.6	5.7	6.7
Oct. 26	NR	NR	NR	4	NR	7.7
Nov. 9	16.1	96.4	6	5	10.2	9.7
Dec. 14	16.9	107	5.7	6.3	9.4	9.3

NR - None Reported

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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, U.S. Section.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2004

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,740	1,670	2,010	1,690	1,310	1,230	1,150	990	830	1,020	1,010	1,270
2	1,950	1,800	1,870	1,640	1,300	1,220	1,150	960	850	1,020	1,030	1,250
3	1,550	1,690	1,890	1,670	1,310	1,240	1,140	940	880	1,030	1,000	1,220
4	1,460	1,730	1,800	1,630	1,310	1,240	1,110	920	920	1,020	1,020	1,270
5	1,560	2,050	1,690	1,490	1,340	1,220	1,110	940	860	1,060	980	1,290
6	1,310	1,870	1,640	1,520	1,280	1,220	1,120	950	870	1,100	1,020	1,320
7	1,250	1,780	1,690	1,470	1,310	1,190	1,140	950	950	1,080	1,090	1,330
8	1,270	1,700	1,760	1,480	1,260	1,190	1,160	940	1,020	1,050	1,050	1,270
9	1,290	1,750	1,900	1,330	1,280	1,170	1,050	940	1,230	1,040	1,010	1,210
10	1,290	1,570	1,770	1,500	1,280	1,200	1,070	920	1,280	1,060	1,050	1,220
11	1,250	1,550	1,740	1,600	1,240	1,250	1,090	930	1,210	1,030	1,040	1,240
12	1,190	1,810	1,830	1,740	1,250	1,290	1,100	980	1,130	1,030	1,030	1,340
13	1,300	1,940	1,670	1,760	1,250	1,290	1,100	1,060	1,230	1,070	1,040	1,340
14	1,450	1,780	1,460	1,720	1,240	1,270	1,100	1,080	1,190	1,020	1,040	1,300
15	1,320	1,870	1,360	1,600	1,210	1,290	1,130	1,090	1,030	1,060	990	1,300
16	1,310	1,860	1,280	1,600	1,270	1,340	1,120	1,040	1,070	1,050	1,030	1,250
17	1,360	1,730	1,220	1,440	1,280	1,390	1,120	980	990	1,090	1,040	1,150
18	1,330	1,700	1,170	1,450	1,220	1,340	1,120	1,040	990	1,130	1,040	1,090
19	1,290	1,840	1,160	1,430	1,220	1,300	1,150	1,090	990	1,130	1,060	1,110
20	1,360	1,940	1,240	1,440	1,210	1,160	1,090	1,100	1,030	1,100	1,060	1,140
21	1,390	2,030	1,200	1,380	1,200	1,130	1,050	1,090	1,050	1,130	1,190	1,110
22	1,330	1,850	1,230	1,290	1,200	1,130	1,040	1,120	1,040	1,140	1,200	1,130
23	1,350	1,780	1,580	1,290	1,190	1,040	1,060	1,050	1,030	1,120	1,190	1,020
24	1,490	2,050	1,510	1,270	1,170	1,030	1,050	1,070	1,020	1,170	1,180	1,030
25	1,540	2,050	1,510	1,260	1,200	1,030	1,050	1,030	1,050	1,190	1,190	1,000
26	1,710	1,810	1,500	1,170	1,200	1,240	1,020	1,060	1,020	1,260	1,250	1,110
27	1,610	2,030	1,430	1,380	1,240	1,130	1,020	1,030	1,010	1,160	1,160	1,030
28	1,650	2,070	1,460	1,250	1,220	1,150	1,020	1,060	1,040	1,110	1,200	960
29	1,730	2,050	1,470	1,310	1,240	1,100	1,030	1,090	1,020	1,010	1,190	920
30	1,710		1,480	1,330	1,240	1,060	1,020	890	1,030	1,060	1,270	930
31	1,680		1,520		1,220		1,030	890		1,090		910

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

QUALITY OF WATER - 2004

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, U.S. Section and Texas Commission on Environmental Quality. Sampling and determinations for specific conductance prior to 1978 by the International Boundary and Water Commission, U.S. Section. Analyses by a contract laboratory.

2004 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro- siemens /cm	pH Units	Water Temper- ature Deg C	E. Coli (MPN/100mL)	Fecal Coliform (CFU/100 mL)	Total Suspended Solids mg/L	Volatil e Suspended Solids mg/L
Jan. 29	1245	4.00	1,690	8.3	18.0	200	NR	35	4
Feb. 17	1420	11.7	1,610	8.1	17.5	>2419	1,335	23	16
Mar. 17	1500	16.2	1,740	8.0	23.9	>2419	1,970	50	5
Apr. 21	1315	115	1,120	8.2	22.5	33.3	75	180	16
May 27	0940	58.7	1,202	6.8	27.6	920.8	815	102	22
June 22	1320	14.3	1,460	8.5	30.7	123	30	95	18
July 20	NR	10.1	NR	7.9	32.0	NR	NR	NR	NR
Aug. 17	0935	15.1	1,118	8.0	29.3	196.8	290	57	9
Sept. 22	1020	151	1,058	7.4	28.9	NR	NR	21	12
Oct. 27	NR	NR	1,200	8.3	NR	134	NR	NR	NR
Nov. 9	1430	14.9	1,195	7.9	22.8	NR	NR	43	6
Dec. 15	1025	12.4	1,332	7.8	17.0	NR	NR	12	4

NR - None Reported

2004 Date	Chloride mg/L	Dissolved Solids Total mg/L	Sulfate mg/L	Alkalinity mg/L	Calcium mg/L	Ammonia as Nitrogen mg/L	Nitrite + Nitrate mg/L	Total Phosphorus mg/L	Ortho- Phosphorus mg/L
Jan. 29	232	NR	271	157	NR	0.49	1.16	0.26	0.18
Feb. 17	261	1,185	302	143	103	<0.02	0.7	0.29	0.2
Mar. 17	204	1,010	224	177	100	0.1	0.41	0.29	0.24
Apr. 21	210	912	298	166	NR	0.33	1.14	0.44	0.28
May 27	150	720	186	159	75	0.04	0.31	0.13	0.13
June 22	188	882	260	155	80	0.3	<0.04	0.17	0.12
July 20	156	778	229	NR	NR	NR	NR	0.21	0.11
Aug. 17	137	521	198	137	78	<0.1	7.7	0.21	<0.03
Sept. 22	149	1,900	240	123	66	<0.02	3.7	0.45	0.09
Oct. 27	NR	NR	NR	NR	NR	NR	NR	NR	NR
Nov. 9	150	4,275	200	175	78	<0.02	16	0.33	0.17
Dec. 15	199	794	234	153	78.2	3	3	0.33	0.33

NR - None Reported

2004 Date	Magnesium mg/L	Sodium mg/L	Potassium mg/L	Total Organic Carbon mg/L	Silica mg/L	Oxygen Dissolved mg/L
Jan. 29	NR	NR	NR	4	NR	8.2
Feb. 17	3	215	10	4.9	10.4	9.0
Mar. 17	31	230	11	8.5	12.5	6.4
Apr. 21	NR	NR	NR	5	NR	6.7
May 27	25	150	8	6.3	11.5	6.4
June 22	25	165	8	5.3	11.9	7.6
July 20	NR	NR	6.75	NR	NR	7.4
Aug. 17	22	115	7.5	5.7	9.58	7.4
Sept. 22	21	117	8.4	6.3	6.5	5.2
Oct. 27	NR	NR	NR	NR	NR	9.1
Nov. 9	21.6	126	7.32	5.3	13.3	9.6
Dec. 15	21	132	6.6	5.4	11.7	8.4

NR - None Reported

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

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

Detailed listings of the months and years for which records are available through 1970 may be found under "Index to Precipitation Records" in Water Bulletins 10, 14, 26, and Supplement 40A.

Month	Las Cruces, New Mexico		American Dam		Fort Hancock Bridge		Guayuco Arroyo		Bill Shannon Ranch	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	1	14	9	10	4	9	15	8	49	10
Feb.	1	11	1	9	28	9	29	6	3	9
Mar.	27	6	14	8	13	6	12	5	48	7
April	43	6	30	5	44	7	37	5	14	6
May	0	10	7	8	7	11	0	11	4	16
June	30	19	22	15	57	22	48	15	28	41
July	8	28	28	35	58	33	62	35	22	51
Aug.	68	56	52	39	67	39	25	40	76	58
Sept.	43	30	15	28	81	33	21	29	72	53
Oct.	31	24	10	19	13	24	6	21	9	29
Nov.	32	14	50	9	101	11	60	7	116	12
Dec.	10	20	9	13	4	11	12	10	0	10
Yearly	294	238	247	198	477	215	327	192	441	302

Month	Adobes Ranch		H. T. Fletcher Ranch		Kerr Mitchell Ranch		Shafter		Presidio (IB&WC Gage)	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	27	9	41	16	45	12	30	7	40	8
Feb.	0	6	16	11	3	10	0	12	5	8
Mar.	35	4	55	8	48	6	25	7	54	6
April	0	5	70	14	34	15	8	16	8	7
May	0	14	10	27	7	31	0	24	8	14
June	7	31	48	50	60	49	23	53	45	32
July	31	46	191	77	48	54	41	62	36	40
Aug.	47	44	76	79	42	55	115	57	57	35
Sept.	1	47	221	61	152	52	165	64	38	35
Oct.	5	17	31	35	29	33	50	33	24	20
Nov.	5	6	112	13	85	10	88	11	75	9
Dec.	0	7	9	13	0	11	0	9	0	9
Yearly	158	236	880	404	553	338	545	355	390	223

Month	Redford		Study Butte		Terlingua Creek Station		Johnson Ranch		Owens Ranch	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	29	8	11	9	7	8	10	8	38	15
Feb.	1	5	6	8	4	5	2	5	36	21
Mar.	44	4	42	6	12	3	7	3	93	23
April	8	7	6	9	12	8	0	9	47	42
May	11	15	16	24	16	17	21	21	0	52
June	0	26	8	29	29	26	14	28	92	48
July	42	39	95	47	53	35	36	30	63	33
Aug.	62	35	19	39	51	32	20	24	103	54
Sept.	114	41	54	31	55	31	84	33	34	57
Oct.	17	20	15	27	80	22	44	21	128	57
Nov.	59	9	73	10	46	7	60	7	104	29
Dec.	0	7	0	5	0	6	0	7	20	16
Yearly	387	216	345	244	365	200	298	196	758	447

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Month	Lewis James Ranch		Rio Grande near Dryden		Ross Foster Ranch		Pecos River near Langtry Station		Prosser Ranch No. 3	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	30	12	44	12	28	8	43	10	53	12
Feb.	28	17	13	12	8	12	15	19	38	25
Mar.	95	12	50	8	77	9	145	20	114	22
April	58	28	46	16	15	16	36	23	199	34
May	11	39	6	24	19	27	58	37	48	53
June	86	41	49	31	105	34	107	47	135	51
July	96	33	13	23	13	17	23	42	25	42
Aug.	60	48	65	41	92	30	109	32	155	47
Sept.	46	66	60	47	52	34	76	52	104	67
Oct.	112	42	77	27	108	28	167	47	166	58
Nov.	64	20	38	15	77	17	68	24	107	29
Dec.	0	12	0	10	0	10	3	12	0	14
Yearly	686	370	461	266	594	242	850	365	1,144	454

Month	Devils River at Cauthorn Ranch		Prosser Ranch No. 1		Dead Man's Canyon near Comstock		Prosser Ranch No. 2		Walker Ranch	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.		12	23	11	36	11	36	10	33	11
Feb.		21	13	19	13	18	13	22	10	19
Mar.	141	28	86	17	102	16	84	15	71	19
April	82	28	90	26	76	27	142	27	108	26
May	78	49	0	50	52	47	28	48	0	54
June	55	59	20	40	41	45	84	45	41	49
July	9	28	0	44	33	46	0	39	0	36
Aug.	134	39	127	39	127	38	122	46	173	30
Sept.	175	52	114	57	170	50	88	59	154	56
Oct.	131	58	127	44	168	48	137	46	152	43
Nov.	93	27	76	23	167	23	76	21	85	21
Dec.	3	14	0	11	0	12	0	11	0	12
Yearly		415	676	381	985	381	810	389	827	376

Month	Harlow Ranch		Ed Crane Ranch		H. K. Fawcett Ranch		Brotherton Ranch		A. A. Baker Ranch	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	31	10	40	20	20	15	29	15	32	12
Feb.	4	20	16	26	12	20	18	24	11	20
Mar.	76	17	112	23	79	23	87	21	98	20
April	125	27	136	38	133	39	51	23	120	31
May	0	45	90	66	23	60	35	45	15	49
June	24	46	9	48	40	37	82	47	38	44
July	4	32	15	46	20	45	31	37	14	44
Aug.	109	34		37	78	57	87	40	70	43
Sept.	175	51		62	77	71	137	61	175	67
Oct.	105	45	187	56	190	59	145	47	217	49
Nov.	86	23	101	31	109	28	77	20	75	22
Dec.	0	12	9	19	8	16	9	12	6	13
Yearly	739	362		472	789	470	788	392	871	414

Month	Zuberbueler Ranch		Comstock		Martin King Ranch		Goldwire Ranch		H. T. Miers Ranch Headquarters	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	37	15	23	14	35	13	43	14	28	14
Feb.	14	27	3	20	8	19	15	18	17	25
Mar.	91	25	88	19	97	18	84	25	95	25
April	48	26	118	32	79	22	113	39	111	42
May	26	57	15	47	25	44	29	58	44	59
June	46	48	88	48	57	44	119	56	231	64
July	5	51	13	38	18	36	25	50	65	45
Aug.	147	36	172	45	109	39	71	62	111	55
Sept.	158	61	144	57	87	60	81	54	82	59
Oct.	198	46	211	47	143	53	158	56	137	64
Nov.	71	26	97	19	87	18	127	32	138	28
Dec.	10	17	8	15	7	13	10	16	10	18
Yearly	851	435	980	401	752	379	875	480	1,069	498

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Month	H. T. Miers Ranch No. 2		Gillis Ranch Headquarters		Pafford Crossing		Tuffy Whitehead Ranch		Hutto Ranch No. 2	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	19	13	39	18	37	13	30	10	23	14
Feb.	16	21	25	26	15	19	10	20	22	23
Mar.	75	30	106	29	67	20	92	24	82	22
April	43	35	52	43	68	32	61	33	65	43
May	36	65	63	68	24	45	3	44	35	51
June	124	58	110	65	201	54	72	46	78	58
July	45	43	22	58	31	48	34	41	46	48
Aug.	64	57	86	66	66	55	128	41	26	55
Sept.	68	66	38	57	112	64	76	63	115	76
Oct.	141	56	122	62	173	56	120	43	88	52
Nov.	124	28	152	41	117	27	103	23	121	26
Dec.	9	18	13	20	15	16	7	12	13	15
Yearly	764	490	828	553	926	449	736	400	714	483

Month	Lowry Ranch No. 2		Amistad Reservoir near Comstock		Evans Creek near Comstock		Sellers Ranch		J. G. Britte Ranch	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	24	12	21	10	17	9	41	11	31	11
Feb.	14	19	7	18	1	17	20	18	14	18
Mar.	31	23	78	17	51	16	111	19	91	22
April	44	34	60	28	28	21	58	29	33	32
May	1	52	21	37	0	34	0	44	14	50
June	235	59	57	40	0	34	129	60	83	55
July	46	47	3	30	0	38	42	37	29	40
Aug.	66	58	87	35	61	40	86	43	99	46
Sept.	131	62	86	46	89	51	207	58	150	69
Oct.	59	47	111	44	20	41	49	50	100	49
Nov.	116	26	63	19	67	21	114	25	100	22
Dec.	6	16	10	10	0	12	13	14	6	14
Yearly	773	455	604	334	334	334	870	408	750	428

Month	Devils Lake		Big Satan Creek Station		Rough Canyon near Del Rio		Stewart Ranch		Gillis Ranch	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	30	15	24	14	28	13	19	12	10	12
Feb.	15	20	0	21	23	20	11	20	15	22
Mar.	73	20	70	29	73	26	72	21	76	29
April	48	37	28	35	13	28	34	35	109	37
May	4	53	17	50	50	59	52	51	31	58
June	96	59	177	55	33	58	88	56	135	54
July	45	36	36	52	52	47	52	47	47	52
Aug.	108	46	81	65	87	56	36	45	91	46
Sept.	140	60	120	54	149	68	124	66	169	72
Oct.	123	49	147	59	136	61	172	52	124	46
Nov.	108	23	108	29	141	40	140	26	155	33
Dec.	8	18	14	18	10	19	8	15	3	18
Yearly	798	436	822	481	795	495	808	446	965	479

Month	Buoy No. 11		North Fork San Pedro		Amistad Dam		Long Ranch		Middle Fork San Pedro	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	28	11	31	13	29	14	26	14	30	12
Feb.	9	19	23	20	25	21	196	27	18	20
Mar.	75	21	93	25	61	24	82	25	81	23
April	43	32	24	35	33	37	50	36	16	31
May	22	50	66	55	43	56	43	57	61	51
June	65	46	64	62	62	53	98	56	51	52
July	7	36	58	56	28	44	60	48	30	44
Aug.	188	43	38	56	42	50	53	42	32	47
Sept.	92	51	82	64	177	83	136	61	74	58
Oct.	108	46	155	57	138	47	108	50	107	55
Nov.	76	20	166	31	120	26	118	25	140	27
Dec.	7	11	9	17	10	17	11	16	3	16
Yearly	720	386	809	491	768	472	981	457	643	436

WATER BULLETIN NUMBER 74-- INTERNATIONAL BOUNDARY AND WATER COMMISSION

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Month	Cliff Lowry Ranch No. 1		Hutto Ranch No. 1		Lewis Ranch		Laughlin Air Force Base		Wardlaw Standart Ranch	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	28	13	35	13	29	16	14	15	25	20
Feb.	12	23	20	20	37	28	10	25	50	30
Mar.	85	26	82	22	89	27	8	21	120	35
April	40	38	72	40	59	44	31	49	87	42
May	68	64	13	54	51	62	14	57	39	57
June	186	61	71	61	160	71	74	69	135	82
July	37	47	68	53	11	43	4	58	27	44
Aug.	65	52	60	53	100	63	27	49	178	51
Sept.	71	75	67	69	114	67	38	62	60	56
Oct.	154	55	100	54	103	69	59	61	142	68
Nov.	142	29	123	25	171	34	80	28	123	37
Dec.	8	17	10	14	5	20	9	16	13	21
Yearly	896	500	721	478	929	544	368	510	999	543

Month	Maverick County Canal Headgate		Pinto Creek Station		Las Moras Creek		Eagle Pass		Trees Farm	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	8	13	15	13	38	19	30	20	26	16
Feb.	51	25	43	20	44	24	28	24	25	22
Mar.	165	20	180	24	93	20	123	22	110	16
April	172	39	158	41	117	37	109	44	175	45
May	25	58	33	59	46	52	15	77	23	68
June	33	60	76	63	66	67	116	75	138	63
July	32	40	51	42	38	39	53	52	20	39
Aug.	38	36	86	48	0	44	28	53	56	40
Sept.	51	67	57	68	114	84	74	81	72	68
Oct.	76	58	168	64	130	65	184	60	3	59
Nov.	191	27	122	30	120	27	106	27	80	23
Dec.	0	18	15	16	10	18	4	20	2	17
Yearly	842	461	1,004	488	816	496	870	555	730	476

Month	El Indio		Van Dalsem Farm		Keisling Farm		Apache Ranch		Laredo Water Plant	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	35	21	32	18	29	19	2	20	40	21
Feb.	24	25	36	23	43	24	6	21	4	22
Mar.	128	20	13	15	9	18	54	16	126	16
April	310	47	213	49	126	44	115	47	84	34
May	51	77	102	71	80	67	0	61	0	60
June	93	60	112	57	157	66	85	54	89	54
July	9	37	10	36	11	35	1	47	0	31
Aug.	67	46	112	45	132	42	50	46	72	48
Sept.	97	77	78	78	87	69	44	75	71	74
Oct.	60	58	86	59	54	53	34	64	26	45
Nov.	90	23	98	26	80	23	100	27	5	21
Dec.	0	18	3	18	5	21	0	21	0	24
Yearly	964	509	895	495	813	481	491	499	517	450

Month	Corralitos Ranch		Huisache Ranch		Zapata		Falcon Dam		Roma (Int'l. Bridge)	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	30	21	36	22	46	23	35	22	41	22
Feb.	20	26	19	26	15	25	10	24	11	25
Mar.	53	19	38	20	46	18	83	17	44	16
April	75	30	80	33	75	37	48	33	108	34
May	116	58	114	58	118	64	56	60	39	50
June	87	56	85	59	82	58	58	62	48	57
July	90	40	89	41	86	39	23	33	23	34
Aug.	60	55	55	45	50	50	59	57	80	47
Sept.	95	82	115	98	135	102	155	108	74	107
Oct.	67	56	65	57	55	51	79	52	63	51
Nov.	45	27	43	26	63	28	26	31	28	25
Dec.	10	19	9	21	9	23	10	20	13	15
Yearly	748	489	748	506	780	518	642	519	572	483

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RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Month	Garciasville		Los Ebanos		Penitas (Edinburg Pumping Plant)		HCWCID #6 Goodwin Pump No. 3		HCWCID #6 Goodwin Pump No. 4B	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	45	23	11	23	55	30	51	30	51	29
Feb.	12	26	9	22	1	26	13	29	0	26
Mar.	45	15	28	15	46	19	38	23	39	19
April	107	30	106	30	119	31	153	38	115	31
May	29	64	61	48	42	57	83	59	26	53
June	65	72	112	58	16	69	26	67	192	67
July	24	33	4	30	93	37	38	42	0	31
Aug.	70	43	63	38	12	53	0	50	0	46
Sept.	75	88	77	75	34	83	95	91	0	88
Oct.	71	49	13	55	8	62	0	71	76	69
Nov.	51	28	12	23	7	23	0	27	0	26
Dec.	15	19	19	22	9	24	0	28	0	27
Yearly	609	490	515	439	442	514	497	555	499	512

Month	United Irrigation District		Edinburg City Water Plant		Anzalduas Dam		Mercedes (IBWC) LRGFCP Office		Mercedes Pump	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	48	28	33	35	43	27	31	15	22	32
Feb.	5	26	20	30	18	32	25	16	22	18
Mar.	38	26	59	24	106	26	67	45	87	43
April	152	34	125	38	164	41	74	31	116	37
May	35	72	26	57	35	57	22	48	36	75
June	76	66	142	63	85	60	205	59	264	76
July	13	33	19	37	1	35	6	27	1	43
Aug.	5	47	24	57	67	52	8	44	29	57
Sept.	102	81	118	97	102	102	82	122	180	106
Oct.	16	66	15	58	22	60	28	75	67	66
Nov.	0	21	10	27	4	25	4	38	1	31
Dec.	8	23	23	31	23	20	14	22	10	40
Yearly	498	523	614	554	670	537	566	542	835	624

Month	La Feria Pumping Plant		La Feria Materials Yard		San Benito Pump		CCWCID #11 Bayview Dist. Off.		Brownsville Irrig. and Drainage Dist.	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	64	40	25	39	13	33	77	41	46	23
Feb.	0	40	0	45	0	28	29	37	33	23
Mar.	115	33	72	31	0	24	100	22	74	36
April	8	49	80	45	89	37	84	44	36	29
May	38	70	38	67	0	67	69	60	102	47
June	89	76	217	86	25	63	139	62	79	78
July	64	49	50	52	0	39	0	40	0	8
Aug.	38	75	61	65	25	60	35	64	130	82
Sept.	176	153	134	130	48	109	125	131	56	101
Oct.	33	97	66	82	50	75	0	69	51	100
Nov.	6	49	11	39	0	33	0	40	74	50
Dec.	35	38	36	39	0	32	0	32	20	21
Yearly	666	769	790	720	250	600	658	642	701	598

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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.

Month	Cd. Juarez, Chi huahua		Bachi ni va, Chi huahua		La Trasi quila, Chi huahua		Oj i naga (IB&WC), Chi huahua		Escal on, Chi huahua	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	14	10	31	13	32	10	29	9	8	10
Feb.	3	11	5	5	14	7	8	8	0	5
Mar.	21	9	25	7	31	5	38	5	26	4
April	52	8	33	6	14	7	0	9	28	12
May	11	9	0	7	0	8	11	14	5	19
June	21	18	40	39	22	29	20	33	16	45
July	44	40	75	129	58	81	32	39	40	62
Aug.	32	42	85	116	70	67	35	40	111	73
Sept.	27	34	28	67	59	72	44	39	76	72
Oct.	10	25	78	29	7	24	42	24	27	29
Nov.	54	13	24	9	33	9	87	11	27	8
Dec.	3	15	10	12	3	10	0	8	6	10
Yearly	292	234	434	439	343	329	346	239	370	349

Month	Ji menez, Chi huahua		La Boqui lla, Chi huahua		Camargo, Chi huahua		Las Vi rgenes, Chi huahua		Del i ci as, Chi huahua	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	37	8	19	7	18	9	31	7	17	9
Feb.	7	4	2	5	5	7	12	4	14	4
Mar.	36	4	10	3	35	6	24	3	27	4
April	30	5	24	6	43	6	13	6	21	8
May	10	13	6	14	0	13	0	8	1	10
June	22	40	45	35	55	38	40	31	48	33
July	46	78	43	71	73	74	117	68	100	63
Aug.	112	65	63	72	67	67	116	65	79	63
Sept.	86	56	68	69	112	64	68	56	85	56
Oct.	24	25	45	21	74	25	73	22	65	22
Nov.	34	8	27	8	42	11	101	8	88	8
Dec.	0	6	0	8	0	10	0	8	0	9
Yearly	444	312	352	319	524	330	595	286	545	289

Month	Km. 135, Chi huahua		Presa Lui s L. Leon, Chi huahua		Oj i naga (M S. of Mexi co), Chi huahua		La Chuparro sa, Coahui la		La Ami stad, Coahui la	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	41	7	40	7	34	8	25	8	36	16
Feb.	10	5	4	4	5	7	3	14	17	23
Mar.	45	4	97	6	41	5	79	15	105	32
April	19	7	7	7	6	9	73	27	63	35
May	0	10	0	14	24	15	8	33	37	57
June	24	29	65	33	12	31	52	36	35	54
July	26	55	46	62	27	39	6	32	29	40
Aug.	38	66	55	70	69	39	63	40	106	33
Sept.	33	67	112	47	55	39	106	50	104	65
Oct.	51	23	57	24	42	25	128	39	145	54
Nov.	60	10	118	11	87	11	57	18	101	30
Dec.	0	8	1	9	0	10	6	9	9	17
Yearly	347	291	602	294	402	238	606	321	787	456

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RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

Month	Cd. Acuna, Coahuila		Presa Centenario, Coahuila		Presa Cabeceras, Coahuila		Palestina, Coahuila		Presa San Miguel, Coahuila	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	25	14	35	15	18	12	40	19	37	15
Feb.	17	23	18	22	11	18	27	26	14	23
Mar.	133	24	93	28	135	24	120	24	115	27
April	98	46	148	43	133	47	229	46	167	42
May	11	60	13	65	43	61	40	66	58	67
June	65	58	121	72	93	75	94	66	162	83
July	56	43	72	43	45	63	85	53	25	60
Aug.	63	45	100	57	40	75	40	56	42	72
Sept.	91	78		76		103	129	80	58	91
Oct.	95	64	96	60	138	64	168	59	103	57
Nov.	128	24		23	108	30	140	25	142	33
Dec.	11	16		15	8	14	10	18		15
Yearly	793	495		519		586	1,122	538		585

Month	Jimenez, Coahuila		Emiliano Zapata, Coahuila		Piedras Negras, Coahuila		Villa Hidalgo, Coahuila		Nuevo Laredo (Sur), Tamaulipas	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	31	17	39	21	33	19	47	20	47	18
Feb.	38	24	19	29	15	22	18	21	25	23
Mar.	107	23	130	40	127	21	72	20	90	18
April	170	46	217	48	227	51	120	45	47	39
May	174	59	62	73	14	85	0	71	3	79
June	54	69	92	103	110	70	111	60	133	52
July	57	43	17	53	85	55	14	30	39	41
Aug.	42	47	94	59	44	55	44	52	29	41
Sept.	119	72	78	62	38	80	37	76	161	69
Oct.	82	67	78	50	58	63	28	53	111	70
Nov.	165	32	131	47	99	25	77	26	52	35
Dec.	6	17	7	19	2	18	0	19	1	21
Yearly	1,045	516	964	604	852	564	568	493	738	506

Month	Sabinas, Coahuila		Ocampo, Coahuila		Monclova, Coahuila		Progreso, Coahuila		Presa Carranza, Coahuila	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	27	14	49	12	24	12	15	12	16	17
Feb.	31	17	0	7	12	12	16	17	14	16
Mar.	83	15	36	7	50	8	61	11	115	15
April	133	34	76	18	19	15	70	29	80	31
May	5	69	37	33	0	35	2	48	0	50
June	105	54	98	42	47	36	49	53	133	48
July	41	46	45	38	40	44		32	23	27
Aug.	239	56	66	39	33	57		46	35	47
Sept.	91	80	99	46	58	79		73	83	79
Oct.	78	47	66	27	23	32		47	17	43
Nov.	49	17	28	11	37	15	46	18	53	16
Dec.	1	12		12	1	15	0	12		15
Yearly	883	461		292	344	360		398		404

Month	Candelaria, Coahuila		Anahuac, Nuevo Leon		Espinoza, Nuevo Leon		Garza Ayala, Nuevo Leon		Nueva Cd. Guerrero, Tamaulipas	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	19	15	33	19	17	24	21	21	43	23
Feb.	10	11	9	18	6	10	7	16	17	24
Mar.	46	7	119	14	21	8	86	19	74	15
April	30	28	56	32	65	27	46	36	101	37
May	7	37	1	63	3	45	26	50	86	63
June	155	53	267	55	65	31	37	60	55	58
July	41	51	3	36	59	40	61	70	78	36
Aug.	129	57	59	61	65	36	138	63	46	49
Sept.	132	73	139	82	91	51	228	108	271	104
Oct.	7	36	98	46	8	30	6	56	51	48
Nov.	17	19	53	21	20	14		32	61	31
Dec.	0	10		19	0	12	4	24	17	19
Yearly	586	397		466	420	328		555	900	507

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RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

Month	Cd. Mier, Tamaulipas		Agua Blanca, Nuevo Leon		Monterrey, Nuevo Leon		Villa Allende, Nuevo Leon		Tepehuaje, Nuevo Leon	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	38	28	31	22	10	17		31	12	34
Feb.	18	28	29	12	12	17	19	31	9	17
Mar.	83	15	39	15	102	20	211	36	103	25
April	108	37	42	24	77	31	167	70	408	63
May	96	66	43	49	33	46	19	96	6	78
June	68	64	151	65	52	72	23	134	24	76
July	71	34	84	84	11	56	29	84	33	51
Aug.	18	61	145	89	229	79	254	130	65	75
Sept.	184	110	140	139	438	158	415	240	321	146
Oct.	89	54	10	62	47	78	70	131	67	63
Nov.	46	32	19	21	23	29	10	39	10	18
Dec.	23	22	0	15	2	18	6	28		19
Yearly	842	551	733	597	1,036	621		1,050		665

Month	Casillas, Nuevo Leon		Montemorelos, Nuevo Leon		El Realito, Nuevo Leon		El Canada, Nuevo Leon		Gomez Farias, Coahuila	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	7	23	7	24	4	30	11	13	24	34
Feb.	0	12	12	24	12	12	8	15	20	16
Mar.	90	15	206	33	116	21	79	25	40	9
April	25	28	202	58	130	44	109	30		22
May	0	55	46	83	35	70	13	56		41
June	141	78	32	97	49	71	17	59	132	58
July	114	65	25	60	64	48	23	30	52	54
Aug.	65	76	101	102	179	82	182	60	90	60
Sept.	97	116	210	181	351	116	288	134	87	50
Oct.	7	60	54	96	38	46	24	68	8	26
Nov.	9	17	7	37	2	15	25	22	18	13
Dec.	0	14	4	24	8	26		10	0	18
Yearly	555	559	906	819	988	581		522		401

Month	San Juan de Vaqueria, Coahuila		General Cepeda, Coahuila		Saltillo, Coahuila		Cienega de Flores, Nuevo Leon		Ejido Marin, Nuevo Leon	
	2004	Average	2004	Average	2004	Average	2004	Average	2004	Average
Jan.	28	23	18	13	29	16	11	28	19	27
Feb.	14	11	10	11	18	12	9	21	7	15
Mar.	25	9	14	7	21	9	38	25	53	21
April	30	19	17	12	16	17	57	35	134	32
May	26	39	15	23	12	29	20	61	13	50
June	151	68	92	53	132	51	48	79	18	65
July	151	83	108	77	81	64	27	55	56	50
Aug.	160	92	120	73	90	61	28	101	108	67
Sept.	112	72	116	69	66	62	194	137	106	105
Oct.	27	35	36	30	5	30	65	60	121	43
Nov.	33	11	14	13	18	19	36	26	16	18
Dec.	0	9	1	13	0	15	4	26		25
Yearly	757	471	561	394	488	385	537	654		518

Month	Dr. Gonzales, Nuevo Leon		Retamal, Tamaulipas							
	2004	Average	2004	Average						
Jan.	25	37	22	26						
Feb.	12	14	20	27						
Mar.	48	21	54	21						
April	86	39	189	38						
May	9	59	17	60						
June	57	73	184	64						
July	33	42	33	38						
Aug.	76	73	20	62						
Sept.	148	99	232	90						
Oct.	106	43	26	62						
Nov.	17	27	3	30						
Dec.	6	41	30	31						
Yearly	623	568	830	549						

INTERNATIONAL BOUNDARY & WATER COMMISSION  
 UNITED STATES & MEXICO

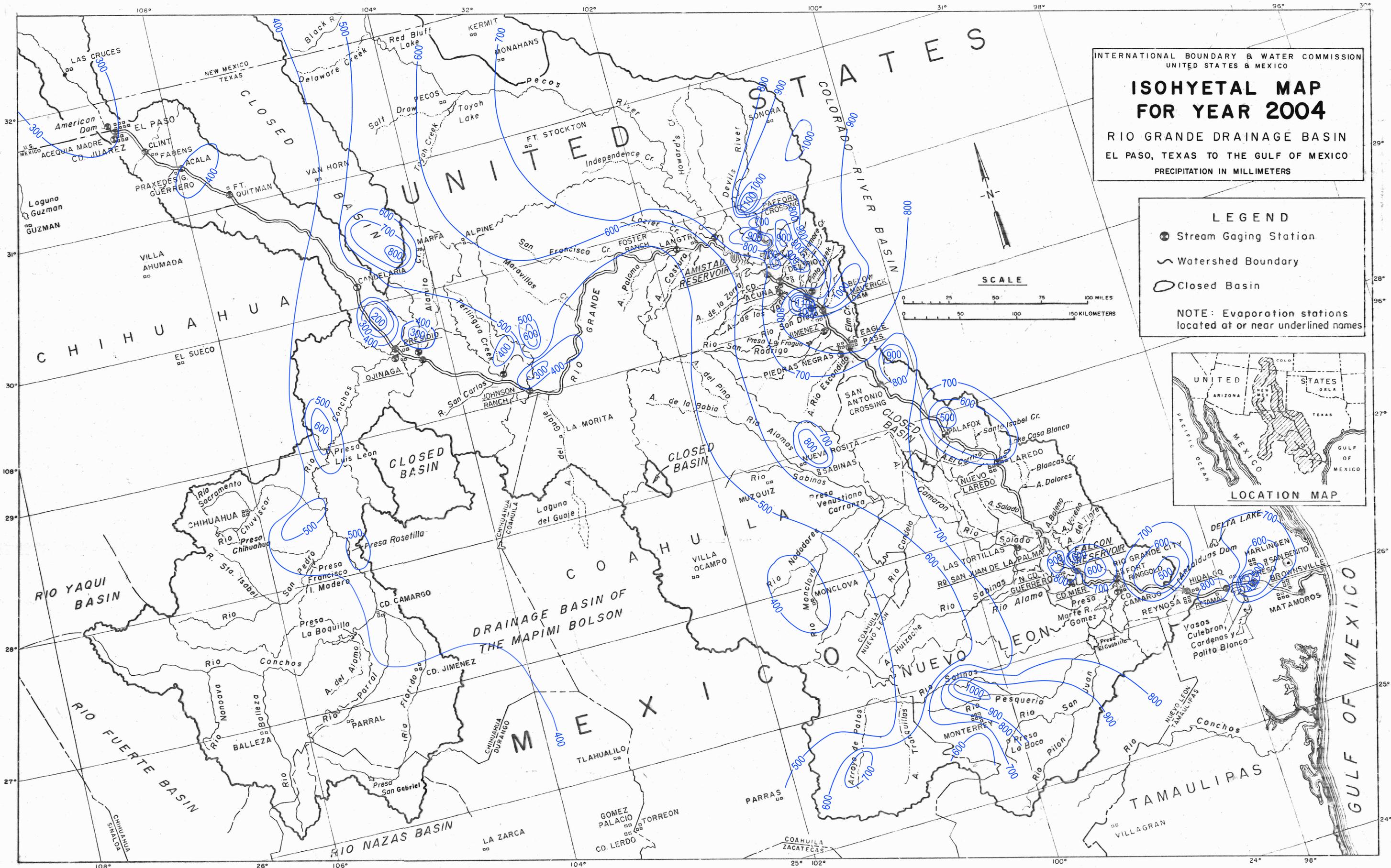
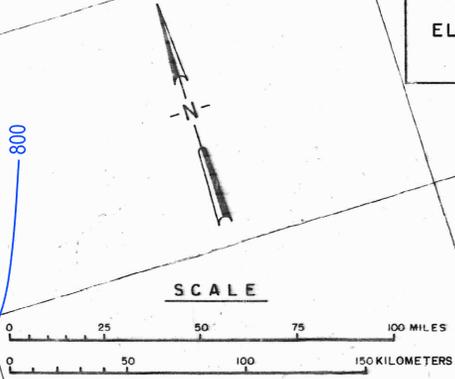
# ISOHYETAL MAP FOR YEAR 2004

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



AVERAGE RAINFALL ON SUBDIVISIONS OF THE RIO GRANDE WATERSHED  
With Averages for the 130 Years 1871 - 2004, Inclusive

In Millimeters

The Precipitation records of all stations on or adjacent to the watershed subdivisions listed below have been used, with proper weighting for area, in calculating the average rainfalls shown here. The drainage area for each subdivision is shown in parentheses. The hundreds of individual records are delineated in the various "Indexes to Precipitation Records" shown in Water Bulletins Nos. 10, 14, 22, 26, and Supplement 40A.

Month	El Paso to Fort Quitman (6,933 Square Km)		Fort Quitman to Above Rio Conchos (7,915 Square Km)		* Above Rio Conchos to Johnson Ranch (9,795 Square Km)		Johnson Ranch to Foster Ranch (33,623 Square Km)	
	2004	Period Average	2004	Period Average	2004	Period Average	2004	Period Average
Jan.	13	11	42	10	22	9	13	12
Feb.	15	10	19	8	3	7	11	10
Mar.	17	8	48	6	36	5	30	10
April	34	7	31	9	8	10	19	19
May	5	11	5	15	14	20	17	36
June	32	20	41	32	19	30	49	42
July	61	54	40	70	47	47	67	45
Aug.	39	47	104	60	51	48	41	50
Sept.	28	36	80	49	81	40	65	53
Oct.	9	23	48	26	33	23	31	32
Nov.	66	11	102	11	60	9	58	15
Dec.	12	15	5	13	0	10	0	13
Yearly	331	253	565	309	374	258	401	337

Month	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)	
	2004	Period Average	2004	Period Average	2004	Period Average	2004	Period Average
Jan.	43	17	28	18	26	17	18	18
Feb.	30	22	7	22	31	20	41	23
Mar.	99	20	81	24	87	27	126	25
April	113	44	51	40	101	43	116	42
May	25	47	13	68	41	65	41	70
June	101	60	71	61	133	66	76	64
July	64	45	16	45	28	46	34	47
Aug.	100	50	80	46	140	54	94	48
Sept.	67	62	84	72	95	72	70	75
Oct.	147	49	127	51	136	56	111	53
Nov.	85	24	68	26	108	37	146	27
Dec.	3	18	4	20	4	24	8	21
Yearly	877	458	630	493	930	527	881	513

Month	! Eagle Pass to Laredo (9,829 Square Km)		** Laredo to Falcon Dam (8,726 Square Km)		## Falcon Dam to Rio Grande City (1,212 Square Km)		United States Side Below Rio Grande City (2,554 Square Km)	
	2004	Period Average	2004	Period Average	2004	Period Average	2004	Period Average
Jan.	14	19	37	20	41	23	39	32
Feb.	21	20	16	22	8	22	12	28
Mar.	44	23	54	21	54	23	57	27
April	118	42	71	36	86	32	91	35
May	29	76	107	78	52	60	43	69
June	113	62	80	52	43	55	106	64
July	9	37	77	51	13	46	26	43
Aug.	77	56	56	49	56	52	40	58
Sept.	61	75	122	79	133	92	111	110
Oct.	53	49	64	46	81	51	33	65
Nov.	94	25	48	38	32	22	13	34
Dec.	2	24	10	22	12	18	17	31
Yearly	635	508	742	514	611	496	588	596

\* 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

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

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	LATI-TUDE	LONGI-TUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
A. A. Baker Ranch	R	29° 44'	101° 08'	524	July 1962	Devils River	I. B. & W. C.
Adobes Ranch	C	29° 46'	104° 34'	777	#	Fort Quitman - Above Rio Conchos	I. B. & W. C.
American Dam	S	31° 47'	106° 32'	1,137	#	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	#	Foster Ranch - Amistad Dam	I. B. & W. C.
Anzalduas Dam	S	26° 08'	98° 20'	39	#	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	#	Langtry - Below Amistad Dam	Perry Calk
Brownsville Irrigation and Drainage District	S	25° 52'	97° 27'	!	#Dec. 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	#	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	#	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	#	Eagle Pass - Laredo	I. B. & W. C.
Ed Crane Ranch	S	29° 50'	101° 05'	497	#	Devils River	E. J. Crane Jr.
Edinburg City Water Plant	S	26° 18'	98° 10'	30	#	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	R	31° 16'	105° 51'	1,067	#April 1940	El Paso - Fort Quitman	I. B. & W. C.
Garciasville	S	26° 20'	98° 41'	61	#April 1957	Lower Rio Grande Valley	I. B. & W. C.
Gillis Headquarters	S	29° 36'	100° 47'	430	#	Amistad Dam - Eagle Pass	Jake Schiller
Gillis Ranch	S	29° 40'	101° 03'	439	#	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	S	26° 16'	98° 24'	53	#	Lower Rio Grande Valley	HCWCID No. 6
Goodwin Pump No. 3	S	26° 18'	98° 22'	64	#	Lower Rio Grande Valley	HCWCID No. 6
HCWCID No. 6	S	26° 18'	98° 22'	64	#	Lower Rio Grande Valley	HCWCID No. 6
Goodwin Pump No. 4B	S	26° 18'	98° 22'	64	#	Lower Rio Grande Valley	HCWCID No. 6
H. K. Fawcett Ranch	C	29° 52'	100° 53'	488	#	Devils River	I. B. & W. C.
H. T. Fletcher Ranch	S	30° 12'	104° 16'	1,554	#	Alamito Creek	Hayes Mitchell Jr.
H. T. Miers Ranch Headquarters	C	29° 44'	100° 50'	536	#	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	#	Devils River	I. B. & W. C.
Hutto Ranch No. 2	R	29° 38'	100° 54'	369	#	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	#	Lower Rio Grande Valley	CCWCID #3
La Feria Pumping Plant	S	26° 03'	97° 50'	18	#	Lower Rio Grande Valley	CCWCID #3
Laredo Water Plant	S	27° 33'	99° 31'	410	#	Eagle Pass - Laredo	Laredo Water Plant
Las Cruces	S	32° 19'	106° 47'	1,187	#	Caballo Dam - El Paso	I. B. & W. C.
Las Moras Creek	S	29° 00'	100° 38'	244	#	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

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

NAME OF STATION	TYPE GAGE	LATI - TUDE	LONGI - TUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Lewis 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 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 Wylie
Stewart Ranch	R	29° 35'	100° 52'	405	#April 1960	Devils River	I. B. & W. C.
Study Butte	S	29° 19'	103° 32'	777	July 1977	Terlingua Creek	Shirley Willard
Terlingua Creek Station	C	29° 12'	103° 36'	675	#Mar. 1952	Terlingua Creek	I. B. & W. C.
Trees Farm	R	28° 38'	100° 25'	219	#Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.
Tuffy Whitehead Ranch	R	29° 37'	101° 07'	433	July 1962	Devils River	I. B. & W. C.
United Irrigation District	S	26° 11'	98° 24'	!	#Aug. 1961	Lower Rio Grande Valley	United 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

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

IN MEXICO

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Agua Blanca, Nuevo Leon	S	25° 32'	100° 31'	2, 290	1958	Rio San Juan	C. N. A.
Allende, Nuevo Leon	S	25° 14'	100° 01'	474	1938	Rio San Juan	C. N. A.
Anahuac, Nuevo Leon	S	27° 15'	100° 08'	200	#June 1933	Rio Salado	C. N. A.
Bachini va, Chi huahua	S	28° 46'	107° 15'	1, 980	1952	Rio Conchos	Meteor. Service of Mexico
Candela, Coahuila	S	26° 50'	100° 39'	620	# 1970	Rio Salado	C. N. A.
Casillas, Nuevo Leon	S	25° 11'	100° 12'	1, 260	# 1958	Rio San Juan	C. N. A.
Cd. Acuna, Coahuila	S	29° 20'	100° 57'	274	1951	Ami stad Dam-Eagle Pass	C. I. L. A.
Cd. Camargo, Chi huahua	S	27° 41'	105° 10'	1, 223	1956	Rio Conchos	Meteor. Service of Mexico
Cd. Delicias, Chi huahua	S	28° 12'	105° 26'	1, 173	1932	Rio Conchos	C. N. A.
Cd. Juarez, Chi huahua	S	31° 44'	106° 24'	990	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.
Cienega de Flores, N. L.	R	25° 57'	100° 10'	380	# 1938	Rio San Juan	S. A. R. H.
Dr. Gonzalez, N. L.	S	25° 51'	99° 55'	370	1992	Rio San Juan	C. N. A.
Ejido Marin, Nuevo Leon	S	25° 51'	100° 01'	490	# 1979	Rio San Juan	S. A. R. H.
El Canada, Nuevo Leon	S	25° 48'	100° 16'	470	#Jan. 1958	Rio San Juan	C. N. A.
El Realito, Nuevo Leon	S	25° 16'	99° 18'	230	# 1970	Rio San Juan	S. A. R. H.
Emiliano, Zapata, Coah.	S	29° 02'	100° 53'	210	1964	Ami stad-Eagle Pass	C. N. A.
Escalon, Chi huahua	S	26° 45'	104° 20'	1, 169	1957	Rio Conchos	C. N. A.
Espinazo, Nuevo Leon	S	26° 15'	101° 06'	825	# 1980	Rio Salado	S. A. R. H.
Garza Ayala, Nuevo Leon	S	26° 29'	100° 03'	218	# 1968	Rio San Juan	S. A. R. H.
General Cepeda, Coahuila	S	25° 22'	101° 28'	1, 400	# 1926	Rio San Juan	S. A. R. H.
Gomez Farias, Coahuila	S	24° 58'	101° 03'	!	# 1979	Rio San Juan	C. N. A.
Jimenez, Chi huahua	S	27° 08'	104° 54'	1, 380	# 1951	Rio Conchos	Meteor. Service of Mexico
Jimenez, Coahuila	S	29° 04'	100° 40'	248	1951	Ami stad Dam-Eagle Pass	C. I. L. A.
Kilometro 135, Chi huahua	S	28° 22'	105° 36'	1, 440	1962	Rio Conchos	C. N. A.
La Chupparosa, Coahuila	R	29° 30'	101° 15'	350	# 1970	Foster Ranch-Ami stad Dam	I. B. & W. C.
La Traslquila, Chi huahua	S	29° 44'	107° 04'	1, 441	1962	Rio Conchos	C. N. A.
Monclova, Coahuila	S	26° 54'	101° 25'	615	1897	Rio Salado	C. N. A.
Montemorelos, Nuevo Leon	S	25° 10'	99° 50'	375	1904	Rio San Juan	C. N. A.
Monterrey, Nuevo Leon	S	25° 40'	100° 16'	495	1896	Rio San Juan	C. N. A.
Nueva Cd. Guerrero, Tamps. CILA	S	26° 35'	99° 15'	106	1954	Laredo-Fal con Dam	I. B. & W. C.
Nuevo Laredo, Tamps. CILA	S	27° 30'	99° 30'	126	1950	Laredo-Fal con Dam	S. M. N.
Ocampo, Coahuila	S	27° 18'	102° 23'	1, 050	1960	Rio Salado	S. A. R. H.
Ojinaga, (M. S. of Mexico) Chi huahua	S	29° 33'	104° 24'	739	1954	Rio Conchos	C. I. L. A.
Ojinaga, Chi huahua	S	29° 35'	104° 25'	780	1906	Rio Conchos	C. N. A.
Palestina, Coahuila	S	29° 09'	100° 59'	330	1931	Ami stad-Eagle Pass	S. A. R. H.
Piedras Negras, Coahuila	S	28° 42'	100° 31'	250	1951	Eagle Pass-Laredo	Meteor. Service of Mexico
Presa Cabeceras, Coahuila	S	29° 02'	101° 04'	348	1964	Eagle Pass-Laredo	S. A. R. H.
Presa Carranza, Coah.	S	27° 31'	100° 37'	240	1927	Rio Salado	C. N. A.
Presa Centenario, Coah.	S	29° 12'	100° 56'	325	1964	Eagle Pass-Laredo	C. N. A.
Presa de La Amistad, Coah. CILA	S	29° 27'	101° 03'	329	1977	Ami stad Dam - Eagle Pass	I. B. & W. C.
Presa El Retamal, Tamaulipas	S	26° 02'	98° 02'	25	1949	Lower Rio Grande Valley	I. B. & W. C.
Presa Fco. I. Madero (Las Virgenes)		28° 10'	105° 37'	1, 300	1943	Lower Rio Grande Valley	C. N. A.
Presa La Boquilla, Chih.		27° 32'	105° 24'	1, 323	1910	Rio Conchos	C. N. A.
Presa Luis L. Leon, Chih. (El Granero)	S	28° 59'	105° 16'	1, 055	1964	Rio Conchos	S. A. R. H.
Presa San Miguel, Coah.	S	29° 02'	100° 57'	!	1964	Ami stad-Eagle Pass	C. N. A.
Progreso, Coahuila	S	27° 25'	101° 00'	360	1943	Rio Salado	S. A. R. H.
Sabinas, Coahuila	S	27° 50'	101° 07'	339	1922	Rio Salado	C. N. A.
Saltillo, Coahuila	S	25° 22'	101° 01'	1, 790	1886	Rio San Juan	C. N. A.
San Juan de Vaqueria, Coah.	S	25° 15'	101° 13'	!	# 1980	Rio San Juan	C. N. A.
Tepehuaje, Nuevo Leon	S	25° 30'	99° 46'	250	1979	Rio San Juan	S. A. R. H.
Villa Hidalgo, Coahuila	S	27° 47'	99° 52'	140	1951	Eagle Pass-Laredo	C. N. A.

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

WATER BULLETIN NUMBER 74 -- 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 evaporimeter, developed by the United States Section of the Commission and calibrated against a 0.61 meter pan described above, was in operation at Presidio, Johnson Ranch, Long Ranch, and at a site 11.3 kilometers east of Brownsville.

Month	Presidio		Johnson Ranch		Martin King Ranch		Long Ranch	
	2004	Average 1949-2004	2004	Average 1949-2004	2004	Average 1956-2004	2004	Average 1971-2004
Jan.	49	79	75	97	90	95	53	60
Feb.	103	110	142	139	108	107	72	75
Mar.	173	176	194	225	143	170	80	112
April	295	221	291	287	165	213	100	150
May	331	266	433	353	179	241	144	166
June	365	282	418	358	251	280	130	202
July	312	267	530	363	259	319	279	226
Aug.	205	246	300	325	271	321	97	212
Sept.	201	199	280	258	172	238	140	153
Oct.	117	153	134	196	143	185	51	118
Nov.	56	104	96	122	80	128	48	75
Dec.	75	77	89	94	49	103	61	58
Total	2,282	2,180	2,982	2,817	1,910	2,400	1,255	1,607

Month	Amistad Dam		Falcon Dam		Brownsville			
	2004	Average 1963-2004	2004	Average 1956-2004	2004	Average 1958-2004		
Jan.	97	98	78	103	96	79		
Feb.	123	122	117	131	84	91		
Mar.	146	202	141	206	155	121		
April	158	251	159	253	128	148		
May	252	282	262	300	132	146		
June	307	328	326	341	182	158		
July	332	370	317	387	191	183		
Aug.	300	348	307	354	262	175		
Sept.	223	252	163	245	120	134		
Oct.	118	193	171	188	107	119		
Nov.	106	130	126	132	163	98		
Dec.	104	97	101	101	129	85		
Total	2,266	2,673	2,268	2,741	1,749	1,537		

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.

Month	Ojinaga, Chihuahua		La Amistad, Coahuila		Cd. Acuna, Coahuila		Jimenez, Coahuila	
	2004	Average 1954-2004	2004	Average 1977-2004	2004	Average 1951-2004	2004	Average 1951-2004
Jan.	59	86	89	90	62	81	51	89
Feb.	57	120	116	116	95	108	71	113
Mar.	124	193	153	182	113	178	80	174
April	193	240	149	226	112	207	80	198
May	219	305	211	256	157	235	117	227
June	244	323	247	291	201	273	155	265
July	273	314	284	334	216	307	172	298
Aug.	254	272	247	315	195	282	165	275
Sept.	202	212	179	232	146	202	116	198
Oct.	145	167	100	166	86	144	60	144
Nov.	88	106	91	107	72	90	59	94
Dec.	63	79	78	86	59	72	45	79
Total	1,921	2,417	1,944	2,401	1,514	2,179	1,171	2,154

Month	Villa Hidalgo, Coahuila		Nuevo Laredo, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas		Cd. Mier, Tamaulipas	
	2004	Average 1951-2004	2004	Average 1964-2004	2004	Average 1954-2004	2004	Average 1955-2004
Jan.	73	88	95	98	100	87	115	93
Feb.	88	116	108	123	111	110	113	120
Mar.	130	175	139	194	129	179	138	192
April	119	223	152	247	144	217	173	232
May	202	258	224	278	201	255	216	266
June	234	298	293	325	286	291	277	305
July	255	337	296	362	294	332	309	348
Aug.	250	307	295	336	307	304	308	314
Sept.	155	219	171	241	285	221	291	232
Oct.	145	167	179	189	279	167	272	181
Nov.	88	108	97	124	177	116	157	119
Dec.	76	84	100	95	103	88	105	89
Total	1,815	2,380	2,149	2,612	2,416	2,367	2,474	2,491

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 2004	Average 1963-2004	2004		Mean 2004	Average 1950-2004	2004	
			Max.	Min.			Max.	Min.
Jan.	14	11	25	0	13	13	30	3
Feb.	14	13	26	-1	14	16	31	3
Mar.	21	18	28	9	20	20	31	11
April	22	22	29	7	21	24	33	11
May	26	26	40	11	24	27	38	9
June	29	29	41	19	28	29	41	10
July	31	30	39	21	28	30	41	15
Aug.	31	30	39	20	29	30	41	20
Sept.	28	27	36	16	26	27	27	19
Oct.	25	22	22	12	27	23	37	11
Nov.	18	16	12	6	21	18	34	6
Dec.	14	12	26	-5	16	14	32	-4
Yearly	23	21	41	-5	22	23	41	-4

In Mexico

Month	Ojinaga, Chihuahua				La Amistad, Coahuila				Cd. Acuna, Coahuila			
	Mean 2004	Average 1954-2004	2004		Mean 2004	Average 1977-2004	2004		Mean 2004	Average 1951-2004	2004	
			Max.	Min.			Max.	Min.			Max.	Min.
Jan.	11	10	23	0	12	11	23	0	11	10	25	-2
Feb.	11	13	26	-1	12	13	25	1	12	12	27	-2
Mar.	20	17	31	4	19	17	27	10	19	17	30	7
April	22	22	39	6	20	22	30	7	21	22	34	7
May	28	26	42	10	24	26	40	11	25	26	42	10
June	32	30	46	15	28	29	40	19	28	29	41	20
July	32	30	47	15	29	30	39	21	29	30	40	20
Aug.	30	30	42	18	29	31	39	19	29	30	38	20
Sept.	26	27	39	14	26	27	36	18	26	27	37	13
Oct.	23	21	37	10	23	22	31	11	24	21	34	11
Nov.	15	15	31	1	15	16	27	5	16	15	28	5
Dec.	11	11	30	-7	11	12	24	-3	11	11	27	-4
Yearly	22	21	47	-7	21	21	40	-3	21	21	42	-4

Month	Jimenez, Coahuila				Villa Hidalgo, Coahuila				Nuevo Laredo, Tamaulipas			
	Mean 2004	Average 1951-2004	2004		Mean 2004	Average 1951-2004	2004		Mean 2004	Average 1964-2004	2004	
			Max.	Min.			Max.	Min.			Max.	Min.
Jan.	12	12	27	-3	14	12	29	-1	15	13	29	3
Feb.	12	14	33	-3	14	14	29	-1	16	16	30	4
Mar.	19	18	31	6	21	19	31	8	23	20	32	12
April	21	22	32	6	22	24	36	6	23	24	34	9
May	26	26	44	8	27	27	42	11	28	28	43	10
June	29	29	43	19	30	30	42	21	31	30	41	23
July	31	30	42	14	31	31	41	21	32	31	41	23
Aug.	31	30	42	18	31	31	41	19	31	31	41	20
Sept.	27	27	39	10	27	27	39	16	28	28	38	18
Oct.	24	22	37	7	27	23	38	9	27	24	37	10
Nov.	15	16	29	0	17	17	31	5	19	18	31	7
Dec.	11	12	27	-3	13	13	31	-2	14	14	31	0
Yearly	22	22	44	-3	23	22	42	-2	24	23	43	0

TEMPERATURE, HUMIDITY, AND WIND

Temperature - In Degrees Celsius

In Mexico

Month	Nueva Cd. Guerrero, Tamaulipas				Cd. Mi er, Tamaulipas				El Retamal, Tamaulipas			
	Mean 2004	Average 1958-2004	2004		Mean 2004	Average 1955-2004	2004		Mean 2004	Average 1951-2004	2004	
			Max.	Min.			Max.	Min.			Max.	Min.
Jan.	15	14	28	2	16	14	28	3	17	16	31	1
Feb.	16	16	29	3	17	16	29	4	17	17	31	5
Mar.	20	20	31	10	15	20	32	10	23	21	31	10
April	22	24	34	10	23	25	35	11	24	25	31	10
May	27	28	37	13	27	28	37	14	25	27	38	9
June	32	30	39	24	32	30	40	23	26	29	30	24
July	31	31	39	22	32	31	40	22	27	30	31	22
Aug.	31	31	40	20	31	31	40	21	25	30	30	21
Sept.	29	28	39	20	30	29	39	20	24	29	27	20
Oct.	27	24	39	15	27	24	39	16	23	25	27	13
Nov.	20	19	33	8	20	19	32	8	16	20	27	6
Dec.	13	15	28	-4	14	15	29	-3	11	16	23	1
Yearly	24	23	40	-4	24	24	40	-3	22	24	38	1

Mean Wind Speed - Kilometers Per Hour

In the United States

Month	Martin King Ranch, Texas		Ami stad Dam, Texas		Fal con Dam, Texas	
	2004	Average 1956-2004	2004	Average 1963-2004	2004	Average 1950-2004
Jan.	7.9	5.9	5.3	4.6	2.0	5.1
Feb.	9.6	7.1	6.5	5.3	2.7	5.9
Mar.	10.5	9.1	6.5	6.3	2.9	6.6
April	10.0	9.6	6.3	6.5	1.3	7.4
May	7.2	10.3	8.3	6.5	3.1	7.7
June	4.6	11.0	7.3	6.6	3.4	7.9
July	5.3	10.4	7.1	6.3	2.1	8.1
Aug.	6.6	9.5	5.5	5.6	2.5	7.2
Sept.	8.4	7.8	5.0	5.0	1.1	5.4
Oct.	5.8	7.5	2.9	4.8	0.7	4.8
Nov.	6.5	6.3	4.0	4.5	1.0	5.1
Dec.	6.7	5.6	4.0	4.5	4.7	4.8
Yearly	7.4	8.3	5.7	5.5	2.3	6.3

Mean Relative Humidity - Percent

In the United States

Month	Ami stad Dam, Texas		Fal con Dam, Texas	
	2004	Average 1963-2004	2004	Average 1950-2004
Jan.	68	61	78	68
Feb.	65	58	73	66
Mar.	70	54	77	64
April	74	57	79	64
May	65	63	75	67
June	58	63	71	66
July	54	59	71	63
Aug.	53	59	67	63
Sept.	60	64	76	68
Oct.	84	64	60	67
Nov.	75	63	62	68
Dec.	67	61	56	68
Yearly	66	61	70	66

WATER BULLETIN NUMBER 74 -- INTERNATIONAL BOUNDARY AND WATER COMMISSION

DRAINAGE BASIN AND IRRIGATED AREAS  
Along the Rio Grande and Tributaries - 2004

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 2004 are shown, except that in some reaches the figures shown represent acreages which were subject to irrigation in 2004 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 2004. 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	28,491	0	28,491
Above American Dam	75,812	0	75,812	28,491	0	28,491
American Dam to Acala Station (Discontinued)	1,740	1,409	3,149	27,816	10,999	38,815
Above Acala Gaging Station (Discontinued)	77,552	1,409	78,961	56,307	10,999	67,306
Acala Station to Fort Quitman Station	1,717	2,056	3,773	3,164	0	3,164
Above Fort Quitman Gaging Station	79,269	3,465	82,734	59,471	10,999	70,470
Fort Quitman Station to Above Presidio Station	4,263	3,652	7,915	1,684	0	1,684
Above Presidio Station above Rio Conchos	83,532	7,117	90,649	61,155	10,999	72,154
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	33,570	33,570
Luis L. Leon Dam to mouth of river	0	8,837	8,837	0	4,583	4,583
Rio Conchos - Total	0	68,387	68,387	0	38,153	38,153
Alami to 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	1,785	0	1,785
Presidio Station above Rio Conchos to Presidio Station below Rio Conchos - Total	4,776	68,622	73,398	1,785	38,153	39,938
Above Presidio Station below Rio Conchos	88,308	75,739	164,047	62,940	49,152	112,092
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	465	0	465
Presidio Station below Rio Conchos to Johnson Ranch Station - Total	5,602	5,848	11,450	465	0	465
Above Johnson Ranch Gaging Station	93,910	81,587	175,497	63,405	49,152	112,557
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	63,532	49,152	112,684
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	66,298	49,152	115,450
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	66,298	49,152	115,450
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	66,394	49,152	115,546
Arroyo Las Vacas above Gaging Station	0	906	906	0	0	0
San Felipe Creek above Gaging Station	119	0	119	871	0	871

DRAINAGE BASIN AND IRRIGATED AREAS  
Along the Rio Grande and Tributaries - 2004

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	87	0	87
Rio San Diego above Gaging Station	0	2,209	2,209	0	2,027	2,027
Gaging Station to mouth of river	0	16	16	0	0	0
Rio San Diego - Total	0	2,225	2,225	0	2,027	2,027
Del Rio Station to Jimenez Station - excluding above tributaries	1,733	285	2,018	a) 19,495	212	19,707
Del Rio Station to Jimenez Station - Total	2,497	3,416	5,913	19,495	2,239	21,734
Above the Jimenez Gaging Station	216,813	108,452	325,265	86,847	51,391	138,238
Rio San Rodrigo - Total	0	2,717	2,717	0	0	0
Jimenez Station to Piedras Negras Station - excluding Rio San Rodrigo	1,375	378	1,753	89	0	89
Jimenez Station to Piedras Negras Station - Total	1,375	3,095	4,470	89	0	89
Above Piedras Negras Gaging Station	218,188	111,547	329,735	86,936	51,391	138,327
Rio Escondido above Gaging Station	0	3,779	3,779	0	0	0
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	333	333
Piedras Negras Station to El Indio Station - Total	614	4,343	4,957	0	333	333
Above El Indio Gaging Station	218,802	115,890	334,692	86,936	51,724	138,660
El Indio Gaging Station to Laredo Gaging Station	3,201	5,481	8,682	3,464	926	4,390
Above Laredo Gaging Station	222,003	121,371	343,374	90,400	52,650	143,050
Rio Salado above Venustiano Carranza Dam	0	41,002	41,002	0	2,304	2,304
Rio Salado-Venustiano Carranza Dam to Las Tortillas Gaging Station	0	18,969	18,969	0	1,380	1,380
Rio Salado-Las Tortillas Gaging Station to River Road Crossing	0	435	435	0	485	485
Rio Salado - Total	0	60,406	60,406	0	4,169	4,169
Laredo Station to Falcon Dam - excluding Rio Salado	5,289	3,437	8,726	b) 5,413	627	6,040
Laredo Station to Falcon Dam - Total	5,289	63,843	69,132	5,413	4,796	10,209
Amistad Dam to Falcon Dam - excluding above tributaries	12,380	10,383	22,763	28,557	2,098	30,655
Above Falcon Dam	227,292	185,214	412,506	95,813	57,446	153,259
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	1,279	1,279
Rio San Juan - Marte Gomez Dam to Camargo Gaging Station	0	505	505	0	41,486	41,486
Rio San Juan - Total	0	33,538	33,538	0	42,765	42,765
Falcon Dam to Rio Grande City Station - excluding above tributaries	575	637	1,212	1,666	0	1,666
Falcon Dam to Rio Grande City Station - Total	575	38,514	39,089	1,666	42,765	44,431
Above Rio Grande City Gaging Station	227,867	223,728	451,595	97,479	100,211	197,690
Rio Grande City Station to Anzalduas Dam	2,466	2,067	5,829	65,721	5,268	70,989
Anzalduas Canal				0	29,780	29,780
Above Anzalduas Dam	230,333	225,795	456,128	163,200	135,259	298,459
Anzalduas Dam to Progreso Station (Discontinued)	34	423	457	45,106	0	45,106
Above Progreso Gaging Station	230,367	226,218	456,585	208,306	135,259	343,565
Progreso Station to San Benito Station	18	23	41	123,435	0	123,435
Above San Benito Gaging Station	230,385	226,241	456,626	331,741	135,259	467,000
San Benito Station to Brownsville Station	36	39	75	27,792	0	27,792
Above Brownsville Gaging Station	230,421	226,280	456,701	359,533	135,259	494,792
Brownsville Station to Gulf of Mexico				1,180	0	1,180
Falcon Dam to Gulf of Mexico - excluding Rio Alamo and Rio San Juan				264,900	35,048	299,948
Amistad Dam to Gulf of Mexico - excluding above tributaries				293,457	37,146	330,603
Above Gulf of Mexico				360,713	135,259	495,972

a) Includes 15,566 hectares irrigated from the Maverick Canal below Mile 13 gaging station.  
b) Includes 45 hectares irrigated from small reservoirs.

WATER BULLETIN NUMBER 74 -- 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 2004 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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	31.3	31.3	30.2	52.0	57.9	37.7	84.7	136	130	187	114	78.3
2	32.0	32.1	30.4	47.7	58.9	33.3	59.3	88.7	154	65.3	101	70.4
3	35.3	29.2	31.2	43.6	44.2	34.9	55.1	92.3	80.9	50.0	72.8	66.1
4	35.9	31.5	37.6	63.2	37.2	37.9	68.1	72.7	58.3	153	60.8	65.2
5	33.4	32.4	41.2	84.6	35.0	35.0	64.9	53.0	54.4	352	52.7	65.6
6	30.2	32.7	37.9	112	41.9	31.5	47.3	50.2	62.3	389	55.8	65.6
7	29.1	32.2	35.3	99.8	42.3	25.3	42.6	51.4	56.8	304	52.0	65.2
8	31.0	31.9	35.9	82.3	42.4	34.8	51.3	52.3	50.2	300	43.1	67.3
9	31.8	34.4	37.2	69.2	43.0	37.5	40.1	137	41.7	242	43.7	61.4
10	32.8	34.0	35.0	58.8	44.1	45.1	40.9	117	39.6	166	52.3	65.0
11	31.0	35.2	54.1	52.2	66.5	42.1	41.3	99.9	43.7	131	53.9	67.1
12	31.0	33.4	157	44.4	66.6	68.9	37.6	78.9	42.1	104	51.3	69.2
13	29.8	34.4	107	39.4	72.7	147	38.6	56.8	34.7	61.0	47.8	67.9
14	33.4	32.1	81.8	38.7	68.8	67.3	35.8	49.2	34.8	58.1	54.1	66.2
15	37.9	31.3	96.9	37.0	50.6	55.0	35.3	45.4	35.2	59.0	64.8	61.6
16	40.5	32.1	135	37.9	45.6	52.5	35.9	57.0	39.4	64.9	561	58.7
17	40.4	33.6	130	38.0	37.9	44.3	44.7	49.5	39.5	69.5	1,240	59.4
18	37.6	32.2	86.8	41.7	41.9	48.0	40.8	85.2	35.8	65.3	558	56.6
19	38.4	31.2	68.0	44.7	39.4	47.5	43.0	146	32.1	68.1	353	55.3
20	81.4	32.1	59.0	45.0	44.9	36.5	36.6	130	32.3	66.4	356	53.8
21	67.1	30.8	56.1	44.9	46.9	41.5	34.6	121	28.2	67.3	292	55.7
22	54.6	33.4	56.5	46.8	45.3	54.5	32.4	85.5	69.3	73.9	171	51.9
23	46.6	34.7	55.2	46.8	48.0	138	32.6	70.2	223	75.1	114	49.3
24	41.4	35.8	76.0	46.4	48.9	105	37.6	106	158	73.1	106	47.9
25	38.0	35.5	133	46.3	50.3	67.4	88.5	159	206	150	106	47.6
26	32.3	34.6	163	73.9	46.0	54.2	847	104	288	226	109	45.4
27	30.1	32.2	96.4	55.9	55.9	61.9	40.9	93.2	337	331	108	45.9
28	28.5	32.9	59.8	57.5	52.8	191	66.8	110	324	184	103	46.2
29	29.5	33.9	51.7	69.1	52.9	82.1	245	109	350	128	92.4	46.8
30	32.4		45.6	57.7	39.9	68.1	188	65.8	381	143	77.2	48.5
31	32.7		45.6		39.6		212	98.4		141		45.8
Sum	1,157.4	953.1	2,166.4	1,677.5	1,508.3	1,825.8	2,769.3	2,770.6	3,462.3	4,548.0	5,266.7	1,816.9
Current Year 2004										Period 1977-2004		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	@ High	Day	@ Low		Total	Average	Maximum	Minimum	
Jan.			20	81.4	28	28.5	37.3	99,999	145,596	368,798	93,044	
Feb.			24	35.8	3	29.2	32.9	82,348	140,714	432,864	79,713	
Mar.			26	163	1	30.2	69.9	187,177	158,758	322,164	81,276	
April			6	112	15	37.0	55.9	144,936	165,465	437,055	77,250	
May			13	72.7	5	35.0	48.7	130,317	210,430	472,211	104,422	
June			28	191	7	25.3	60.9	157,749	234,550	562,118	105,589	
July			26	847	22	32.4	89.3	239,268	230,035	496,282	102,747	
Aug.			25	159	15	45.4	89.4	239,380	293,490	1,037,318	107,940	
Sept.			30	381	21	28.2	115	299,143	310,632	1,624,752	79,376	
Oct.			6	389	3	50.0	147	392,947	330,110	1,172,715	82,132	
Nov.			17	1,240	8	43.1	176	455,043	175,199	560,631	88,007	
Dec.			1	78.3	26	45.4	58.6	156,980	132,666	321,211	85,916	
Yearly				1,240		25.3	81.8	2,585,287	2,527,645	5,003,493	1,386,893	

@ Mean daily

WATER BULLETIN NUMBER 74 -- 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 2004 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 2004 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.9	30.7	40.7	56.6	242	30.8	172	43.0	72.9	32.8	3.94	28.7
2	17.0	3.28	16.0	53.8	117	49.1	149	42.4	139	89.3	37.4	55.6
3	29.9	35.5	4.81	66.2	73.4	33.5	75.0	4.31	125	72.5	51.9	75.0
4	42.3	36.3	74.9	118	73.2	17.8	59.9	58.2	85.1	97.4	49.3	31.1
5	42.5	27.9	28.9	131	48.0	19.1	48.1	24.2	89.6	120	34.3	48.5
6	9.02	26.6	30.1	426	86.9	7.91	32.4	38.6	108	131	30.1	65.1
7	7.52	10.6	29.7	757	128	25.7	15.7	19.8	240	299	28.5	31.7
8	31.7	44.5	10.8	596	102	26.0	47.3	74.3	158	164	46.5	58.3
9	19.5	34.4	33.1	219	73.3	44.5	34.4	45.7	85.5	87.7	36.5	41.1
10	16.9	41.2	8.30	196	76.8	45.7	29.9	52.8	75.9	74.6	52.6	46.2
11	40.5	24.9	22.5	147	60.2	30.3	38.0	53.5	102	60.7	49.8	35.1
12	17.2	17.1	17.3	97.1	88.7	46.3	12.5	34.8	76.0	46.8	44.6	53.4
13	17.9	26.8	77.6	70.4	135	58.8	44.2	25.4	51.6	58.1	67.9	24.9
14	28.5	12.7	79.2	96.4	89.9	17.8	15.5	1.23	49.8	43.0	56.8	43.9
15	23.8	25.4	228	70.2	62.3	46.6	50.9	52.5	49.0	40.8	30.8	41.2
16	34.0	25.0	86.2	81.5	63.2	34.8	34.8	21.2	49.4	41.7	107	76.2
17	32.6	25.2	320	82.0	51.5	23.4	26.4	32.5	66.6	29.1	70.8	27.7
18	24.8	15.1	327	70.5	72.0	32.3	34.6	12.6	45.5	59.6	81.3	24.2
19	23.2	28.8	39.9	70.4	30.4	15.6	16.8	22.9	74.7	60.9	167	28.8
20	40.8	38.9	64.2	98.3	64.4	34.8	40.0	24.4	42.2	49.3	148	32.6
21	60.7	22.8	43.1	44.0	37.2	37.3	15.5	28.9	46.0	55.5	83.5	74.5
22	67.5	24.0	64.6	55.7	52.8	88.4	91.2	3.83	42.6	43.0	92.7	88.8
23	26.0	38.4	17.4	104	80.6	128	29.8	29.4	39.4	54.0	96.7	6.91
24	26.3	41.0	41.8	172	39.9	57.5	48.0	41.9	55.2	48.5	33.1	45.0
25	37.9	38.8	28.9	146	41.4	114	61.1	28.2	27.3	31.8	32.5	6.69
26	31.6	17.3	19.3	160	26.7	54.1	47.7	39.5	42.2	43.7	61.6	54.4
27	28.6	17.2	54.4	70.5	84.0	57.8	11.1	10.9	67.1	27.2	30.8	60.3
28	22.4	17.8	65.3	123	39.5	29.7	37.9	79.8	39.8	21.3	36.5	78.2
29	53.6	55.5	111	58.3	53.2	74.2	72.1	116	31.5	80.2	52.3	41.8
30	26.4		29.1	125	51.9	609	43.7	64.7	47.6	40.1	43.8	73.7
31	33.3		55.2		26.9		47.4	94.8		57.9		37.1
Sum	944.84	803.68	2,069.31	4,561.9	2,272.3	1,890.81	1,482.9	1,222.27	2,224.5	2,161.5	1,758.54	1,436.70
Current Year 2004						Period 1968-2004						
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second			Volume-Thousand Cubic Meters						
	High	Low	Day	@ High	@ Low	Average	Total	Average	Maximum	Minimum		
Jan.			22	67.5	7	7.52	30.5	81,634	150,174	311,728	47,600	
Feb.			29	55.5	2	3.28	27.7	69,438	178,346	558,835	50,610	
Mar.			18	327	3	4.81	66.8	178,788	200,102	552,528	55,251	
April			7	757	21	44.0	152	394,148	246,228	705,205	61,564	
May			1	242	26	26.7	73.3	196,327	370,499	948,240	125,635	
June			30	609	6	7.91	63.0	163,366	322,794	950,659	57,491	
July			1	172	27	11.1	47.8	128,123	283,846	1,302,981	41,298	
Aug.			29	116	14	1.23	39.4	105,604	269,829	1,262,218	69,984	
Sept.			7	240	25	27.3	74.2	192,197	379,956	1,779,529	77,734	
Oct.			7	299	28	21.3	69.7	186,754	352,183	1,684,800	45,704	
Nov.			19	167	1	3.94	58.6	151,938	180,897	664,762	50,154	
Dec.			22	88.8	25	6.69	46.3	124,131	148,247	376,047	43,033	
Yearly				757		1.23	62.4	1,972,448	3,083,101	7,690,727	1,419,986	

@ Mean daily

RIO GRANDE WATER BULLETIN - 2004 - INTERNATIONAL BOUNDARY AND WATER COMMISSION  
CORRECTIONS TO PREVIOUS WATER BULLETIN

08-4611.00 SUPPLEMENTARY DATA - INTERNATIONAL FALCON RESERVOIR DEDUCED INFLOWS

2003 Bulletin, Page 130. Extreme Gage in Meters (High and Low) - columns should be blank.  
Extreme high flow for year is 1,650 cubic meters per second.

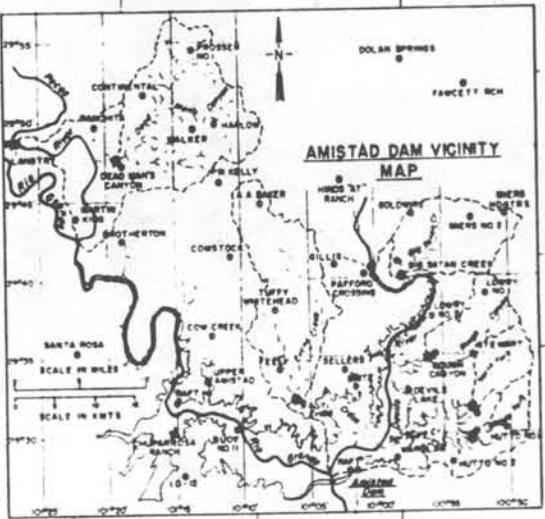
INTERNATIONAL BOUNDARY & WATER COMMISSION  
UNITED STATES & MEXICO

## RIO GRANDE DRAINAGE BASIN

SCALE

0 25 50 75 100 125 MILES

0 50 100 150 200 KILOMETERS



### 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

