

# Water Resources Data for New Mexico

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NM-78-1

## WATER YEAR 1978

Prepared in cooperation with the State of New Mexico  
and with other agencies

# CALENDAR FOR WATER YEAR 1978

1977

## OCTOBER

S	M	T	W	T	F	S
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

## NOVEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

## D E C E M B E R

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

1 9 7 8

## J A N U A R Y

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

## F E B R U A R Y

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

## M A C H

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

A P R I L

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

## M A Y

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

## J U N E

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

## J U L Y

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

## AUGUST

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

S E P T E M B E R

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. W. Menard, Director

For additional information on the  
water program in New Mexico write to  
District Chief, Water Resources Division  
U.S. Geological Survey  
P.O. Box 26659  
Albuquerque, New Mexico 87125

1979

## PREFACE

This report was prepared by personnel of the New Mexico district of the Water Resources Division of the U.S. Geological Survey under the supervision of W. E. Hale, District Chief, and A. Clebsch, Jr., Regional Hydrologist, Central Region. It was done in cooperation with the State of New Mexico and with other agencies.

This report is one of a series issued by State. General direction for the series is by D. M. Hackett, Acting Chief Hydrologist, U.S. Geological Survey, and Philip Cohen, Assistant Chief Hydrologist for Scientific Publications and Data Management.



<b>BIBLIOGRAPHIC DATA SHEET</b>	<b>1. Report No.</b> USGS/WRD/HD-79/038	<b>2.</b>	<b>3. Recipient's Accession No.</b>
<b>4. Title and Subtitle</b> Water Resources Data for New Mexico, Water Year 1978			<b>5. Report Date</b> September 1979
<b>7. Author(s)</b>			<b>6.</b>
<b>9. Performing Organization Name and Address</b> U. S. Geological Survey, Water Resources Division Western Bank Building, 505 Marquette Street, NW Albuquerque, New Mexico 87125			<b>8. Performing Organization Rept. No.</b> USGS-WDR-NM-78-1
<b>12. Sponsoring Organization Name and Address</b> U. S. Geological Survey, Water Resources Division Western Bank Building, 505 Marquette Street, NW Albuquerque, New Mexico 87125			<b>10. Project/Task/Work Unit No.</b>
			<b>11. Contract/Grant No.</b>
			<b>13. Type of Report &amp; Period Covered</b> Annual- Oct. 1, 1977 to Sept. 30, 1978
			<b>14.</b>
<b>15. Supplementary Notes</b> Prepared in cooperation with the State of New Mexico and with other agencies.			
<b>16. Abstracts</b> Water resources data for the 1978 water year for New Mexico consist of records of discharge and water quality of streams; stage, contents and water quality of lakes and reservoirs; and water levels and water quality in wells and springs. This report contains discharge records for 229 gaging stations; stage and contents for 24 lakes and reservoirs; water quality for 89 gaging stations, 15 partial-record stations, 2 reservoir, 3 springs and 99 wells; and water levels for 96 observation wells. Also included are 144 crest-stage partial-record stations and 2 low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U. S. Geological Survey and cooperating State and Federal agencies in New Mexico.			
<b>17. Key Words and Document Analysis. 17a. Descriptors</b> *New Mexico, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rates, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses.			
<b>17b. Identifiers/Open-Ended Terms</b>			
<b>17c. COSATI Field/Group</b>			
<b>18. Availability Statement</b> No restrictions on distribution This report may be purchased from: National Technical Information Service Springfield, VA 22161		<b>19. Security Class (This Report)</b> UNCLASSIFIED	<b>21. No. of Pages</b> 688
		<b>20. Security Class (This Page)</b> UNCLASSIFIED	<b>22. Price</b> -

## CONTENTS

	Page
Preface.....	III
List of gaging stations, in downstream order, for which record are published.....	VI
Introduction.....	1
Cooperation.....	1
Hydrologic conditions.....	2
Definition of terms.....	2
Downstream order and station numbers.....	9
Numbering system for wells, springs, and miscellaneous sites.....	9
Special networks and programs.....	10
Explanation of stage and water-discharge records.....	11
Collection and computation of data.....	11
Accuracy of field data and computed results.....	13
Other data available.....	13
Explanation of water-quality records.....	13
Collection and examination of data.....	13
Water analysis.....	13
Water temperatures.....	13
Sediment.....	14
Biological data.....	14
Parameter codes.....	14
Explanation of ground-water level records.....	14
Collection of data.....	14
Publications on techniques of water-resources investigations.....	15
Gaging station records.....	20
Discharge at partial-record stations and miscellaneous sites.....	558
Low-flow partial-record stations.....	558
Crest-stage partial-record stations.....	559
Miscellaneous sites.....	574
Analyses of samples collected at water-quality partial-record stations.....	576
Analyses of samples collected at miscellaneous sites.....	590
Radiochemical analyses of atmospheric precipitation.....	612
Ground-water records.....	614
Ground-water levels.....	614
Quality of ground water.....	639
Index.....	673

## ILLUSTRATIONS

Figure 1. System for numbering wells, springs, and miscellaneous sites.....	9
2. Map of New Mexico showing location of hydrologic units.....	17
3. Map of New Mexico showing location of surface-water gaging stations.....	18
4. Map of New Mexico showing location of water-quality gaging stations.....	19
5. Map of New Mexico showing location of partial-record stations.....	557
6. Map of New Mexico showing location of observation wells.....	613

## TABLES

Calendar for 1978.....	inside front cover
Table of revised terminology for water-quality parameters.....	667
Factors for converting English units to International units (SI).....	inside back cover

[Letter after station name designates type of data: (b) biological, (c) chemical, (d) discharge, (e) elevation, stage or contents, (m) microbiological, (s) sediment, (t) water temperature]

LOWER MISSISSIPPI RIVER BASIN

Page

Mississippi River:	
ARKANSAS RIVER BASIN	
Arkansas River:	
Dry Cimarron River:	
Penabete Creek:	
Bennett Spring near Capulin (d).....	20
Cimarron River near Kenton, OK (d).....	21
Canadian River near Hebron (cd).....	22
Chicorica Creek:	
Lake Maloya near Raton (e).....	25
Lake Alice near Raton (e).....	25
Chicorica Creek near Yankee (cd).....	26
Uña de Gato Creek below Throttle Dam (cd).....	28
Chicorica Creek near Hebron (c).....	31
Eagle Tail ditch near Maxwell (d).....	33
Vermejo River near Dawson (cds).....	34
Moreno Creek (head of Cimarron River) at Eagle Nest (d).....	37
Eagle Nest Lake:	
Cieneguilla Creek near Eagle Nest (d).....	38
Sixmile Creek near Eagle Nest (d).....	39
Eagle Nest Lake near Eagle Nest (e).....	40
Cimarron River below Eagle Nest Dam (cd).....	41
Cimarron River near Cimarron (d).....	43
Ponil Creek near Cimarron (d).....	44
Rayado Creek at Sauble Ranch, near Cimarron (d).....	45
Cimarron River at Springer (d).....	46
Canadian River near Taylor Springs (d).....	47
Mora River at La Cueva (d).....	48
Mora River near Golondrinas (d).....	49
Coyote Creek near Golondrinas (d).....	50
Mora River near Shoemaker (d).....	51
Canadian River near Sanchez (cdms).....	52
Conchas Lake:	
Conchas River at Variadero (d).....	57
Bell Ranch Canal below Conchas Dam (d).....	58
Conchas Canal below Conchas Dam (d).....	58
Conchas Lake at Conchas Dam (e).....	59
Ute Reservoir:	
Ute Creek near Logan (d).....	60
Ute Reservoir near Logan (bcem).....	61
Canadian River at Logan (d).....	71
Revuelto Creek near Logan (cds).....	72
Canadian River above New Mexico-Texas State line (bcms).....	75

WESTERN GULF OF MEXICO BASINS

RIO GRANDE BASIN	
Rio Grande near Lobatos, CO (bcdmst).....	80
Rio Grande at Colorado-New Mexico State line (d).....	91
Costilla Creek above Costilla Dam (d).....	92
Costilla Reservoir:	
Casias Creek near Costilla (d).....	93
Santistevan Creek near Costilla (d).....	94
Costilla Reservoir near Costilla (e).....	95
Costilla Creek below Costilla Dam (d).....	96
Costilla Creek near Amalia (d).....	97
Costilla Creek near Costilla (d).....	98
Costilla Creek below diversion dam, at Costilla (d).....	99
Costilla Creek at Garcia, CO (d).....	100
Principal diversions from Costilla Creek (d).....	101
Rio Grande near Cerro (d).....	102
Red River near Questa (d).....	103
Cabresto Creek near Questa (d).....	104
Red River below Fish Hatchery, near Questa (cds).....	105
Red River at mouth, near Questa (d).....	108
Rio Hondo near Valdez (d).....	109
Arroyo Hondo at Arroyo Hondo (d).....	110
Rio Grande near Arroyo Hondo (d).....	111
Rio Pueblo de Taos near Taos (d).....	112
Rio Lucero near Arroyo Seco (d).....	113
Rio Fernando de Taos near Taos (d).....	114

## WESTERN GULF OF MEXICO BASINS--Continued

Page

## RIO GRANDE BASIN--Continued

## Rio Grande--Continued

Rio Pueblo de Taos near Ranchito (d).....	115
Rio Grande del Rancho near Talpa (d).....	116
Rio Chiquito near Talpa (d).....	117
Rio Pueblo de Taos below Los Cordovas (d).....	118
Rio Grande below Taos Junction Bridge, near Taos (cd).....	119
Embudo Creek at Dixon (cd).....	122
Rio Grande at Embudo (d).....	124
Rio Grande above San Juan Pueblo (d).....	125
Rio Chama near La Puente (d).....	126
Willow Creek:	
Azotea Creek:	
Azotea tunnel at outlet, near Chama (d).....	127
Willow Creek above Heron Reservoir, near Los Ojos (d).....	128
Heron Reservoir:	
Horse Lake Creek above Heron Reservoir, near Los Ojos (d).....	129
Heron Reservoir near Los Ojos (e).....	130
Willow Creek below Heron Dam (d).....	131
El Vado Reservoir near Tierra Amarilla (e).....	132
Rio Chama below El Vado Dam (d).....	133
Rio Chama above Abiquiu Reservoir (ds).....	134
Abiquiu Reservoir near Abiquiu (e).....	136
Rio Chama below Abiquiu Dam (ds).....	137
Rio Ojo Caliente at La Madera (d).....	139
Rio Chama near Chamita (ds).....	140
Diversions from Rio Chama (d).....	142
Santa Cruz River at Cundiyo (d).....	144
Rio Nambe (head of Pojoaque River):	
Nambe Falls Reservoir near Nambe (e).....	145
Rio Nambe at Nambe Falls, near Nambe (d).....	146
Pojoaque River at San Ildefonso Pueblo (d).....	147
Rio Grande at Otowi Bridge, near San Ildefonso (bcdmst).....	148
Rito de los Frijoles in Bandelier National Monument (ds).....	161
Cochiti Lake:	
Santa Fe River:	
McClure Reservoir near Santa Fe (e).....	163
Santa Fe River near Santa Fe (d).....	164
Nichols Reservoir near Santa Fe (e).....	165
Santa Fe River above Cochiti Lake (d).....	166
Cochiti Lake near Cochiti Pueblo (e).....	167
Rio Grande below Cochiti Dam (cdst).....	168
Galisteo Reservoir near Cerrillos (e).....	173
Galisteo Creek below Galisteo Dam (ds).....	174
Rio Grande at San Felipe (bcdms).....	177
Jemez River near Jemez (d).....	183
Jemez Canyon Reservoir near Bernalillo (e).....	184
Jemez River below Jemez Canyon Dam (cd).....	185
North Floodway Channel near Alameda (d).....	188
Rio Grande at Albuquerque (cdst).....	189
Tijeras Arroyo near Albuquerque (d).....	196
Tijeras Arroyo below south diversion, near Albuquerque (d).....	197
Rio Grande at Isleta (cms).....	198
Rio Grande conveyance channel near Bernardo (d).....	202
Rio Grande floodway near Bernardo (cdst).....	203
Bernardo interior drain near Bernardo (d).....	210
Rio Puerco above Arroyo Chico, near Guadalupe (d).....	211
Arroyo Chico:	
Torrior Arroyo:	
Papers Wash near Star Lake Trading Post (cds).....	212
Arroyo Chico near Guadalupe (cds).....	214
Bluewater Creek (head of Rio San Jose):	
Bluewater Lake near Bluewater (e).....	217
San Mateo Creek near San Mateo (d).....	218
Rio San Jose at Grants (d).....	220
Grants Canyon at Grants (d).....	221
Rio San Jose near Grants (d).....	222
Rio Paguete below Jackpile Mine near Laguna (d).....	223
Rio San Jose at Correo (d).....	224
Rio Puerco near Bernardo (cdst).....	225
Rio Salado near San Acacia (cds).....	230
Socorro main canal north at San Acacia (d).....	232
Rio Grande conveyance channel at San Acacia (cdmst).....	233
Rio Grande floodway at San Acacia (cdst).....	240
Rio Grande conveyance channel at San Marcial (bcdmst).....	245
Rio Grande floodway at San Marcial (bcdmst).....	252
Milligan Gulch near San Marcial (d).....	266
Elephant Butte Reservoir at Elephant Butte (e).....	267

## WESTERN GULF OF MEXICO BASINS--Continued

Page

## RIO GRANDE BASIN--Continued

Rio Grande below Elephant Butte Dam (cd).....	268
Caballo Reservoir near Arrey (e).....	272
Rio Grande below Caballo Dam (d).....	273
Rio Grande at Leasburg Dam (cm).....	274
Rio Grande at Vinton Bridge, near Anthony, TX (cms).....	275
Rio Grande at El Paso, TX (cdmst).....	277
Rio Grande below Old Fort Quitman, TX (bcdmst).....	284

## Pecos River:

Rio Mora near Terrero (cdms).....	289
Pecos River near Pecos (d).....	293
Pecos River near Anton Chico (d).....	294
Gallinas Creek near Montezuma (d).....	295
Gallinas River near Colonias (d).....	296
Pecos River above Cañon de Uta, near Colonias (d).....	297
Pecos River above Los Esteros Reservoir (d).....	298

## Los Esteros Reservoir:

Los Esteros Creek above Los Esteros Reservoir (d).....	299
Los Esteros Creek tributary above Los Esteros Reservoir (d).....	300
Pecos River at Santa Rosa (cdst).....	301
Pecos River near Puerto de Luna (cdms).....	305
Lake Sumner near Fort Sumner (e).....	310
Pecos River below Sumner Dam (ds).....	312
Fort Sumner main canal near Fort Sumner (d).....	315
Pecos River near Acme (cd).....	316

## Rio Ruidoso (head of Rio Hondo):

F. Herrera ditch S. at Hollywood (d).....	318
Rio Ruidoso at Hollywood (d).....	319
Eagle Creek below South Fork, near Alto (d).....	320
Eagle Creek near Alto (d).....	321
Rio Hondo at Diamond A Ranch, near Roswell (d).....	322
Two Rivers Reservoir near Roswell (e).....	323
Rio Hondo below Diamond A Dam, near Roswell (d).....	324
Rocky Arroyo above Two Rivers Reservoir (d).....	325
Rocky Arroyo below Rocky Dam, near Roswell (d).....	326
Pecos River near Hagerman (d).....	327
Rio Felix at old highway bridge, near Hagerman (d).....	328
Pecos River near Lake Arthur (d).....	329
Pecos River near Artesia (cdmst).....	330
Rio Penasco at Dayton (d).....	339
Pecos River (Kaiser Channel) near Lakewood (cd).....	340

## Lake McMillan:

Fourmile Draw near Lakewood (d).....	342
Lake McMillan near Lakewood (ce).....	343
Pecos River below McMillan Dam (cd).....	346
Pecos River above Seven Rivers, near Lakewood (d).....	348
South Seven Rivers near Lakewood (d).....	349
Pecos River below Major Johnson Springs, near Carlsbad (cd).....	350
Rocky Arroyo at highway bridge, near Carlsbad (d).....	352
Pecos River at damsite 3, near Carlsbad (d).....	353

## Lake Avalon:

Carlsbad main canal at head, near Carlsbad (d).....	354
Lake Avalon near Carlsbad (e).....	355
Pecos River below Avalon Dam (d).....	357
Pecos River at Carlsbad (ct).....	358
Dark Canyon Draw at Carlsbad (d).....	361
Pecos River below Dark Canyon Draw, at Carlsbad (cd).....	362
Black River above Malaga (d).....	364
Pecos River near Malaga (cdt).....	365
Pecos River at Pierce Canyon Crossing, near Malaga (cdt).....	370
Pecos River at Red Bluff (bcdmst).....	375
Delaware River near Red Bluff (d).....	383
Red Bluff Reservoir near Orla, TX (e).....	384
Pecos River near Orla, TX (cdt).....	385

## MIMBRES RIVER BASIN

Mimbres River at Mimbres (bcdms).....	388
---------------------------------------	-----

## TULAROSA VALLEY

Rio Tularosa near Bent (bcdms).....	393
-------------------------------------	-----

COLORADO RIVER BASIN

Page

<u>SAN JUAN RIVER BASIN</u>	
San Juan River near Carracas, CO (d).....	400
Navajo Reservoir:	
Piedra River near Arboles, CO (d).....	401
Los Pinos River at La Boca, CO (d).....	402
Spring Creek at La Boca, CO (d).....	403
Navajo Reservoir near Archuleta (e).....	404
San Juan River near Archuleta (cd).....	405
Cañon Largo Wash near Blanco (cdms).....	408
San Juan River at Hammond Bridge near Bloomfield (bcdms).....	412
Gallegos Canyon Wash near Farmington (cdms).....	419
San Juan River above Animas River, at Farmington (c).....	421
Animas River near Cedar Hill (d).....	423
Animas River at Farmington (cdst).....	424
San Juan River at Farmington (cdt).....	430
La Plata River at Colorado-New Mexico State line (d).....	436
La Plata River near Farmington (bcdms).....	437
San Juan River near Fruitland (bcdms).....	444
Shumway Arroyo near Fruitland (cds).....	452
Shumway Arroyo near Waterflow (bcdms).....	454
Chaco Wash (head of Chaco River):	
Chaco Wash near Star Lake Trading Post (cdms).....	460
Chaco Wash at Chaco Canyon National Monument (cds).....	465
Gallo Wash at Chaco Canyon National Monument (d).....	475
Ah-shi-sle-pah Wash near Kimbeto (cds).....	476
De-na-zin Wash near Bisti Trading Post (cds).....	483
Hunter Wash at Bisti Trading Post (cds).....	487
Teec-ni-di-tso Wash near Burnham (cdst).....	490
Brimhall Wash:	
Burnham Wash near Burnham (cdst).....	492
Chaco River near Burnham (cdst).....	496
Chaco River near Waterflow (cdms).....	500
San Juan River at Shiprock (bcdmst).....	509
San Juan River at Four Corners, CO (bcdms).....	523
San Juan River near Bluff, UT (d).....	529

LITTLE COLORADO RIVER BASIN

<u>Zuni River:</u>	
Rio Nutria near Ramah (cd).....	530
Zuni River above Black Rock Reservoir (d).....	532
Puerco River at Gallup (d).....	533

GILA RIVER BASIN

Gila River near Gila (d).....	534
Mogollon Creek near Cliff (cdms).....	536
Mangas Creek below Mangas Springs (c).....	540
Gila River near Redrock (cds).....	541
Gila River below Blue Creek, near Virden (d).....	546
San Francisco River near Reserve (d).....	547
Tularosa River above Aragon (d).....	549
San Francisco River near Alma (d).....	551
San Francisco River near Glenwood (cds).....	553



## INTRODUCTION

Water-resources data for the current year for New Mexico consist of records of discharge and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. This report contains discharge records for 229 gaging stations; stage and contents for 24 lakes and reservoirs; water quality for 89 gaging stations, 15 partial-record stations, 2 reservoirs, 3 springs, and 99 wells; and water levels for 96 observation wells. Also included are 144 crest-stage partial-record stations and 2 low-flow partial-record stations. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in New Mexico.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a state-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released in separate reports. Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a state-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, the 1976 report is identified as "U.S. Geological Survey Water-Data Report NM-76-1." Water-data reports, on a water-year basis, are for sale by the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161.

## COOPERATION

The U.S. Geological Survey and organizations of the State of New Mexico have had cooperative agreements for the systematic collection of streamflow records since 1930, and for water-quality records since 1940. Organizations that assisted in collecting data through cooperative agreement with the survey are:

Office of State Engineer of New Mexico, S. E. Reynolds, State Engineer.

New Mexico Interstate Stream Commission, S. E. Reynolds, Secretary.

Pecos River Commission, H. M. Babcock, Federal representative and Chairman;  
J. L. Cathey, Commissioner for New Mexico;  
R. B. McGowen, Jr., Commissioner for Texas.

New Mexico State Highway Department, F. L. O'Chesky, Jr., Chief Administrator.

Costilla Creek Compact Commission, S. E. Reynolds, Commissioner for New Mexico;  
C. J. Kuiper, Commissioner for Colorado.

Albuquerque Metropolitan Arroyo Flood Control Authority, J. D. Smith, succeeded by R. E. Leonard, Executive Engineer.

Financial assistance for the collection of water resources data published in this report was furnished by the Corps of Engineers, U.S. Army, for 29 gaging stations; by the Bureau of Reclamation, U.S. Department of the Interior, for 17 gaging stations; by the Bureau of Indian Affairs, U.S. Department of Interior, for 9 gaging stations; by the National Park Service, U.S. Department of Interior, for 1 gaging station; by the Federal Highway Administration, U.S. Department of Transportation, for research study on small drainage areas; and by the U.S. Environmental Protection Agency for several water-quality stations.

Assistance in the form of funds or services was also furnished by the New Mexico Environmental Improvement Agency, the New Mexico Institute of Mining and Technology, the city of Ruidoso, and the Carlsbad Irrigation District.

Some records have been collected and computed by contractors in accordance with U.S. Geological Survey specifications and under Geological Survey quality control.

Organizations that furnished data are recognized in the station description.



## HYDROLOGIC CONDITIONS

As is common in New Mexico, streamflow varied considerably during the current year. This holds true with respect to both time and geographic location. The variations are related to differences in precipitation, temperature, topography, and geology. The yearly mean discharge for 1978 and the relation to the median of yearly mean discharge for the base period 1941-70 for five index stations is given below.

Station	Discharge ft <sup>3</sup> /s	Percent of median
Rayado Creek at Sauble Ranch	8.02	73
Rio Grande below Taos Junction Bridge	268	43
Pecos River near Pecos	27.8	50
Delaware River near Red Bluff	28.9	275
Gila River near Gila	156	161

Runoff was deficient (in the lowest 25 percent of record for base period) for the first 6 months for most stations on the upper Rio Grande. High flow during the first part of March in Gila River caused excessive runoff for March and above median runoff for the year. High flows in June and September caused excessive runoff from Delaware River for those months and the year.

No major floods occurred during the water year.

Storage in Navajo Reservoir increased significantly during the year but storage in Conchas Lake, Ute Reservoir, Elephant Butte Reservoir, and Lake Sumner decreased significantly during the year.

The increased runoff in most streams as compared with 1977 resulted in improved chemical quality of the surface waters. This was particularly true in the lower Pecos River basin where the discharge weighted average of dissolved solids content was lower than for several preceeding years. The greatest decrease occurred at station on Pecos River at the Pierce Canyon Crossing where the dissolved solids decreased 77 percent from previous year.

Ground-water levels continued to decline in those areas where there was extensive pumping for irrigation. However, net declines were significantly less than for 1977.

## DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting English units to International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or 325,851 gallons or 1,233.49 cubic meters.

Adenosine triphosphate (ATP) is the primary energy donor in cellular life process. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C  $\pm$  1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C  $\pm$  0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as the number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C  $\pm$  1.0°C on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as the number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter ( $\text{g}/\text{m}^3$ ), and periphyton and benthic organisms in grams per square meter ( $\text{g}/\text{m}^2$ ).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by the flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre feet, 646,317 gallons, or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT<sup>3</sup>/S, ft<sup>3</sup>/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Discharge weighted average (See weighted average).

Dissolved refers to that material in a representative water sample which passes through a 0.45  $\mu$ m membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$d = -\sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where  $n_i$  is the number of individuals per taxon,  $n$  is the total number of individuals, and  $s$  is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO<sub>3</sub>).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (UG/G,  $\mu\text{g/g}$ ) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L,  $\mu\text{g/L}$ ) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L,  $\text{mg/L}$ ) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in  $\text{mg/L}$ , and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters ( $\text{m}^2$ ), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle-size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (Pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay.....	0.00024 - 0.004	Sedimentation.
Silt.....	.004 - .062	Sedimentation.
Sand.....	.062 - 2.0	Sedimentation or sieve.
Gravel.....	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass or volume.

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Pesticides are chemical compounds used to control the growth of undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats of floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [ $\text{mg C}/(\text{m}^2 \cdot \text{time})$  for periphyton and macrophytes and  $\text{mg C}/(\text{m}^3 \cdot \text{time})$  for phytoplankton] are the units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [ $\text{mg O}_2/(\text{m}^2 \cdot \text{time})$  for periphyton and macrophytes and  $\text{mg O}_2/(\text{m}^3 \cdot \text{time})$  for phytoplankton] are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Recoverable from bottom material the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is the quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigated farmland.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Solution is the homogeneous mixture of solutes and water. The solutes usually comprise a very small fraction of the total weight of the mixture. For this reason, the terms "solution" and "water" are used interchangeably.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrates refers to any naturally occurring emerged or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45  $\mu$ m membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45  $\mu$ m membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom.....Animal  
Phylum.....Arthropoda  
Class.....Insecta  
Order.....Ephemeroptera  
Family.....Ephemeridae  
Genus.....Hexagenia  
Species.....Hexagenia limbata

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

#### DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indentation on a list of stations in the front of the report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 08313000, which appears just to the left of the station name, includes the 2-digit part number "08" plus the 6-digit downstream order number "313000." In this report, the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. Records in this report are in Part 07 (Lower Mississippi River basin), Part 08 (Western Gulf of Mexico basin), and Part 09 (Colorado River basin).

#### NUMBERING SYSTEM FOR WELLS, SPRINGS, AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells, springs, and miscellaneous sites where only random water-quality samples are taken.

The well, spring and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well, spring, or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 1 below.

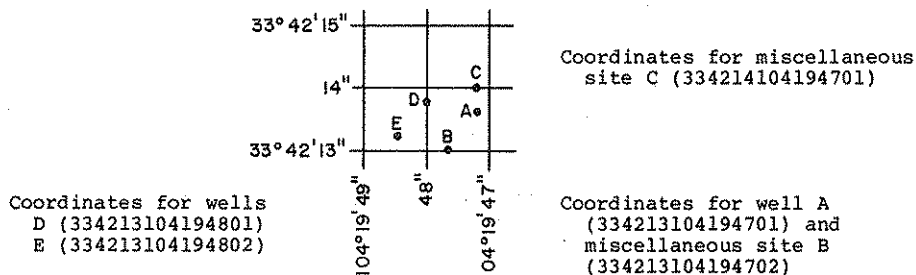


Figure 1.--System for numbering wells, springs, and miscellaneous sites



To provide an additional means of identification and a cross reference to records in older reports, most wells and springs have been assigned a local identifier based on the system of public land surveys. In areas covered by such surveys the local identifier consists of a series of numbers, and letters separated by periods, giving the township, range, section, and tract within a section, in that order. The letters N or S locate the township north or south of the New Mexico base line. The letters E or W locate the range east or west of the New Mexico principal meridian. A zero in a tract number indicates that the well or spring is centrally positioned or has not been located accurately enough to be placed within a tract or quarter section. Three digits in a tract number can locate a well or spring to the nearest 10-acre tract while six digits will locate a site to the nearest 0.16-acre tract. This numbering system is illustrated in WDR NM-75-1 and WSP 1855. In the Navajo Reservation, where public land surveys have not been made, the local identifier is based on a system of letters and numbers. In the example, NR032.0156x0736, the first two letters indicate that the well is in the Navajo Reservation. The three digit number to the left of the decimal indicates one of a series of special quadrangle maps on which the well is located. The two numbers to the right of the decimal separated by the letter x are the coordinates of the well in hundredths of a mile from the northeast corner of the area on the map. The first coordinate indicates the distance west; the second the distance south. The above well is located on map No. 032, 1.56 miles west and 7.36 miles south of the northeast corner.

#### SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin. Included in this program are stations 08377900, Rio Mora near Terrero; and 09430600, Mogollon Creek near Cliff.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality. Included in this network are stations 07227140, Canadian River above New Mexico-Texas State line; 08251500, Rio Grande near Lobatos; 08313000, Rio Grande at Otowi Bridge, near San Ildefonso; 08358300, Rio Grande conveyance channel at San Marcial; 08358400, Rio Grande floodway at San Marcial; 0836400 Rio Grande at El Paso, TX; 08370500 Rio Grande below Old Fort Quitman, TX; 08407500, Pecos River near Red Bluff; 08481500, Rio Tularosa near Bent; and 09368000, San Juan River at Shiprock.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity. Included in this program are the hydrologic bench-mark stations and station 08407500, Pecos River near Red Bluff.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States. Included in this program are stations 08313000, Rio Grande at Otowi Bridge, near San Ildefonso; 08358300, Rio Grande conveyance channel at San Marcial; 08358400, Rio Grande floodway at San Marcial; 09368000, San Juan River at Shiprock; and 09431500, Gila River near Red Rock.

Surveillance network stations are surface-water stations selected for water-quality examinations for water-quality control purposes. These stations are usually located at key regulatory streamflow gaging stations or near the statelines. Data for major inorganic constituents, nutrients, dissolved oxygen, and bacteria are collected at all these stations. Data for trace elements, radiochemicals, and pesticides are collected at some of these stations. Included in this network are stations 07221500, Canadian River near Sanchez; 08313000, Rio Grande at Otowi Bridge, near San Ildefonso; 08311900, Rio Grande at San Felipe; 08331000, Rio Grande at Isleta; 08354800, Rio Grande conveyance channel at San Acacia; 08354900, Rio Grande floodway at San Acacia; 08358300, Rio Grande conveyance channel at San Marcial; 08358400, Rio Grande floodway at San Marcial; 08363840, Rio Grande at Vinton Bridge near Anthony; 08379500, Pecos River near Anton Chico; 08383500, Pecos River near Puerto de Luna; 08396500, Pecos River near Artesia; and 09368000, San Juan River at Shiprock.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

## EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

## Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water-Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some northern stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise, daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulation of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights or elevations are included for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the current year is shown on the inside of the front cover to facilitate finding the day of the week for any date.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 5.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging stations is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of records or for stations where changes in water development during the period of record cause the figure to have little significance. Under "EXTREMES" are given, first, the extremes for the period of record; second, information available outside the period of record; and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation of diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source or indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a table showing daily contents or stage. For some reservoirs a monthly summary table of stage and contents is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given, or if daily stage is published.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

### Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good" within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft<sup>3</sup>/s; to tenths between 1.0 and 10 ft<sup>3</sup>/s; to whole numbers between 10 and 1,000 ft<sup>3</sup>/s; and to three significant figures above 1,000 ft<sup>3</sup>/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

### Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records and rating tables is on file in the district office. Also most gaging station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

## EXPLANATION OF WATER-QUALITY RECORDS

### Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives periods of record for the various types of water-quality data (chemical, specific conductance, biological determination, water temperatures, sediment discharge), period of record, extremes of pertinent data, and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

### Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

### Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

### Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

### Biological data

Generally three types of biological data appear in this report; microbiological data on coliform and streptococci bacteria, phytoplankton data and periphyton data. Methods for the collection and analysis of aquatic biological and aquatic microbiological samples are described by Slack and others (1973). (See reference 5-A4).

### Parameter Codes

During the water year 1978, revisions were made in the terminology used to define 143 of the water-quality parameter codes that have been used by the Geological Survey in its publication of water-quality data and in its WATSTORE data system. These revisions were made to achieve consistency in terminology. They do not represent a change in the way the codes have been used in the past or in the association of specific code numbers with identified analytical procedures.

Use of the new terminology began with data for the 1978 water year, and therefore, it first appears in this publication. Definitions on which the terminology is based are included in the "Definitions" section of this report, and a table showing both old and new terminology is printed at the end of this report.

The five-digit codes shown in parentheses in the column headings of the tables in this report are parameter codes which uniquely identify the data. These are standard codes used to identify the data stored in the files of the National Water Data Storage and Retrieval System which was implemented and is managed by the Water Resources Division (WRD) of the U.S. Geological Survey. These codes are identical to those used by the U.S. Environmental Protection Agency (EPA) in all cases where EPA has assigned a parameter code.

## EXPLANATION OF GROUND-WATER LEVEL RECORDS

### Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figure 1.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above mean sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

## PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office. Prices are effective October 1978 but are subject to change.

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

- 1-D1. *Water temperature-influential factors, field measurement, and data presentation*, by H. H. Stevens Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages. \$1.60.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W.Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages. \$0.85.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages. \$1.90.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages. \$1.75.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages. \$1.00.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages. \$0.35.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages. \$0.40.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages. \$1.00.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages. \$0.35.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages. \$1.00.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages. \$1.40.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages. \$1.25.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages. \$1.20.
- 3-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A12. 1968. 31 pages. \$0.35. Not currently available.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages. \$0.70.
- 3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages. \$2.50.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages. \$2.50.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages. \$2.50.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages. \$2.10.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4 Chapter A1. 1968. 39 pages. \$1.60.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages. \$1.20.
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages. \$0.65.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages. \$0.75.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages. \$0.65.
- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages. \$1.10.
- 5-A1. *Methods for collection and analysis of water samples for dissolved minerals and gases*, by Eugene Brown, M. W. Skougstad, and M. J. Fishman: USGS--TWRI Book 5, Chapter A1. 1970. 160 pages. \$2.40.

## PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS.--Continued

- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages. \$0.80.
- 5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages. \$0.90.
- 5-A4.\* *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlike, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages. \$20.00.
- 5-A5.\* *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages. \$16.00.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages. \$2.10.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages. \$2.30.
- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages. \$0.70.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages. \$1.10.

\*These publications are available ONLY from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. They are in looseleaf format and are subscription items. Additional supplements will be issued to subscribers at no extra cost. Checks should be made payable to Superintendent of Documents. Requester should emphasize to Superintendent of Documents that this is a subscription item.





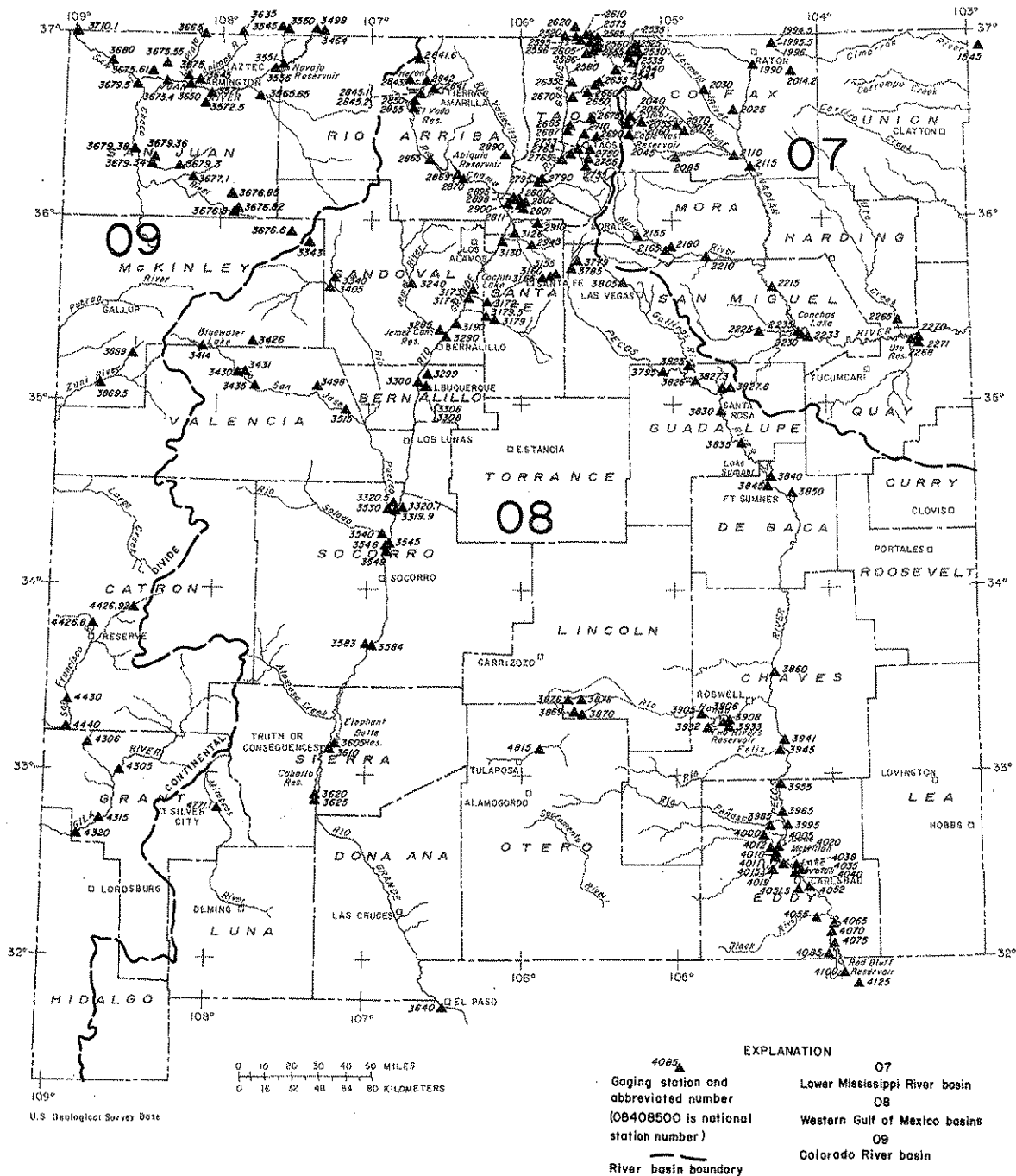


Figure 3.-- Map of New Mexico showing location of surface-water gaging stations.



## HYDROLOGIC-DATA STATION RECORDS

## LOWER MISSISSIPPI RIVER BASIN

## ARKANSAS RIVER BASIN

07153410 BENNETT SPRING NEAR CAPULIN, NM

LOCATION.--Lat 36°46'04", long 103°55'01", in NW¼ sec. 12, T.29 N., R.28 E., Union County, Hydrologic Unit 11040001, on right bank about 100 ft (30 m) below the source and 4.7 mi (7.6 km) northeast of Capulin.

PERIOD OF RECORD.--July 1977 to current year.

GAGE.--Water-stage recorder and Farshall flume. Altitude of gage is 6,638 ft (2,023 m), from topographic map.

REMARKS.--Records fair. No diversion above station.

EXTREMES FOR CURRENT PERIOD.--July to September 1977: Maximum discharge during period, 3.2 ft<sup>3</sup>/s (0.091 m<sup>3</sup>/s) Sept. 3, gage height, 1.36 ft (0.415 m), includes storm runoff between source and gage; minimum, 0.10 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) July 13, 25, 30, result of regulation.

Water year 1978: Maximum discharge, 0.67 ft<sup>3</sup>/s (0.019 m<sup>3</sup>/s) June 1, gage height, 0.47 ft (0.143 m); minimum, 0.12 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) May 22, result of regulation.

## DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD JULY TO SEPTEMBER 1977

DAY	JUL	AUG	SEP	DAY	JUL	AUG	SEP	DAY	JUL	AUG	SEP	DAY	JUL	AUG	SEP
1	---	.18	.19	9	---	.18	.27	16	.16	.18	.25	24	.18	.18	.27
2	---	.18	.19	10	---	.19	.27	17	.18	.18	.24	25	.23	.19	.26
3	---	.18	.96					18	.16	.18	.23				
4	---	.18	.32	11	---	.17	.26	19	.16	.18	.23	26	.19	.18	.26
5	---	.18	.23	12	.16	.17	.26	20	.18	.18	.23	27	.18	.19	.27
				13	.15	.18	.26					28	.18	.19	.27
6	---	.19	.25	14	.16	.18	.26	21	.18	.18	.23	29	.19	.19	.26
7	---	.18	.26	15	.16	.18	.25	22	.18	.18	.22	30	.18	.19	.27
8	---	.19	.27					23	.18	.19	.24	31	.18	.19	---
								AUG		SEP					
								TOTAL		5.66		8.23			
								MEAN		.18		.27			
								MAX		.19		.96			
								MIN		.17		.19			
								AC-FT		.11		.16			

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.32	.26	.26	.28	.30	.25	.28	.30	.30	.28	.25
2	.29	.32	.26	.26	.28	.31	.25	.28	.29	.30	.28	.24
3	.29	.32	.26	.26	.28	.31	.25	.29	.29	.30	.30	.24
4	.29	.32	.26	.26	.28	.32	.24	.29	.28	.29	.26	.24
5	.29	.32	.26	.26	.28	.32	.23	.29	.30	.29	.26	.25
6	.29	.32	.26	.26	.28	.32	.23	.29	.30	.29	.26	.26
7	.29	.32	.26	.26	.28	.32	.23	.30	.30	.29	.26	.26
8	.29	.32	.25	.26	.28	.32	.24	.30	.30	.29	.26	.26
9	.31	.32	.25	.26	.28	.33	.24	.30	.30	.30	.26	.26
10	.31	.32	.25	.26	.28	.32	.24	.31	.30	.30	.25	.25
11	.31	.32	.25	.26	.28	.32	.24	.31	.30	.29	.25	.26
12	.31	.32	.25	.26	.28	.32	.24	.32	.30	.31	.25	.27
13	.31	.32	.25	.26	.28	.31	.24	.32	.29	.32	.25	.26
14	.31	.32	.25	.26	.29	.31	.24	.31	.29	.31	.25	.26
15	.31	.32	.25	.26	.29	.31	.24	.31	.30	.31	.24	.26
16	.32	.30	.25	.26	.29	.31	.25	.30	.30	.31	.25	.26
17	.32	.30	.25	.26	.29	.31	.25	.29	.30	.31	.25	.28
18	.32	.30	.26	.26	.29	.31	.25	.30	.30	.30	.25	.28
19	.32	.29	.25	.26	.29	.31	.25	.29	.29	.31	.25	.28
20	.32	.29	.25	.26	.29	.31	.25	.30	.29	.30	.25	.28
21	.32	.30	.25	.26	.29	.31	.25	.29	.30	.30	.23	.28
22	.32	.30	.25	.26	.29	.29	.26	.24	.31	.29	.23	.26
23	.32	.29	.25	.26	.31	.29	.26	.29	.32	.30	.23	.27
24	.32	.29	.25	.26	.31	.29	.26	.29	.33	.29	.23	.26
25	.32	.29	.25	.26	.31	.29	.27	.30	.33	.29	.23	.27
26	.32	.29	.25	.27	.30	.28	.27	.28	.33	.29	.25	.27
27	.32	.29	.25	.27	.30	.28	.27	.28	.33	.30	.25	.25
28	.32	.28	.25	.27	.31	.28	.27	.27	.31	.29	.24	.25
29	.32	.28	.25	.27	---	.28	.28	.27	.31	.28	.24	.25
30	.32	.28	.25	.28	---	.27	.28	.29	.30	.28	.24	.26
31	.32	---	.25	.27	---	.26	---	.30	---	.28	.24	---
TOTAL	9.61	9.17	7.83	8.13	8.09	9.41	7.52	9.08	9.09	9.21	7.77	7.82
MEAN	.31	.31	.25	.26	.29	.30	.25	.29	.30	.30	.25	.26
MAX	.32	.32	.26	.28	.31	.33	.28	.32	.33	.32	.30	.28
MIN	.29	.28	.25	.26	.28	.26	.23	.24	.28	.28	.23	.24
AC-FT	19	18	16	16	16	19	15	18	18	18	15	16

WTR YR 1978 TOTAL 102.73 MEAN .28 MAX .33 MIN .23 AC-FT 204

LOCATION.--Lat 36°55'36", long 102°57'31", in SE¼ sec.4, T.5 N., R.1 E., Cimarron County, Hydrologic Unit 11040001, near right bank on downstream side of pier of county road bridge, 1.5 mi (2.4 km) upstream from North Carrijo Creek, 1.7 mi (2.7 km) northeast of Kenton, 2.2 mi (3.5 km) downstream from Carrizozo Creek, and at mile 594.0 (955.7 km).

PERIOD OF RECORD.--April 1904 to July 1905 (gage heights only), October 1950 to current year.

REVISED RECORDS.--WSP 1711: 1956 (M).

GAGE.—Water-stage recorder. Datum of gage is 4,262.08 ft (1,299.082 m) National Geodetic Vertical Datum of 1929 (levels by State Highway Department). April 1904 to July 1905, nonrecording gage at site 0.9 mi (1.4 km) upstream at different datum. Oct. 1, 1950 to Sept. 19, 1967, water-stage recorder at same site and at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair except those for winter period, which are poor. Extensive diversions for irrigation above station.

AVERAGE DISCHARGE.--28 years (water years 1951-78), 23.5 ft<sup>3</sup>/s (0.666 m<sup>3</sup>/s), 17,030 acre-ft/yr (21.0 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,400 ft<sup>3</sup>/s (1,230 m<sup>3</sup>/s) Oct. 17, 1965, gage height, 22.32 ft (6.803 m), present datum, from rating curve extended above 7,000 ft<sup>3</sup>/s (198 m<sup>3</sup>/s) on basis of contracted-opening measurement of peak flow; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft<sup>3</sup>/s (57 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s). (m <sup>3</sup> /s)	Gage height (ft). (m)	Date	Time	Discharge (ft <sup>3</sup> /s). (m <sup>3</sup> /s)	Gage height (ft). (m)
June 5	0030	*31,400 889	20.74 6.322	June 8	1000	3,380 95.7	12.45 3.795
No flow at times.							

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	.94	1.9	1.3	2.5	3.0	.12	2.7	3.8	.00	.39	.00
2	.30	1.4	2.3	.87	2.4	2.8	.06	1.2	3.6	.00	.00	.00
3	.30	2.5	2.5	1.6	2.3	2.0	.34	5.7	2.4	.00	.00	.00
4	.48	1.3	2.3	2.2	2.2	3.0	.02	6.2	808	.00	.13	.00
5	.48	1.5	2.1	2.2	2.1	3.5	.00	15	4080	.00	.00	.00
6	.48	.81	2.3	2.6	2.1	2.8	.00	29	1390	.00	.00	.00
7	.39	1.9	2.2	1.1	2.5	2.2	.00	14	126	.00	.00	.00
8	.30	3.6	2.0	.99	3.0	2.2	.00	8.0	1590	.00	.00	.00
9	.30	4.0	1.4	1.5	2.6	3.0	.01	5.2	428	.00	.00	.00
10	.30	3.6	1.9	.89	2.3	2.8	.03	4.1	180	.00	.00	.00
11	.22	2.4	2.5	1.8	4.0	3.0	.30	4.6	81	.00	.00	.00
12	.22	1.9	2.1	2.0	4.3	3.0	.15	2.8	34	.00	.00	.00
13	.30	1.8	2.0	1.6	4.0	3.0	.08	1.8	27	.00	.00	.00
14	.34	2.1	1.8	2.6	4.0	3.2	.03	1.6	12	.00	.00	.00
15	.07	1.9	1.8	2.7	3.3	3.2	.11	1.2	3.8	.00	.00	.00
16	.00	1.7	1.8	1.3	3.7	3.0	.26	.86	1.2	.00	.00	.00
17	.57	1.4	2.2	2.2	3.1	2.0	.26	.27	.65	.00	.00	.00
18	.79	2.3	1.5	1.8	3.0	1.5	.23	.06	.22	.00	.00	.00
19	.46	2.9	.88	2.1	3.5	1.0	.17	.00	.10	.00	.00	.00
20	.83	2.7	.40	2.1	3.4	1.0	.08	47	.08	.00	.00	.00
21	.60	1.9	.64	2.3	3.3	.91	.07	79	.03	.00	.00	.00
22	.03	1.7	1.7	2.5	3.2	.91	.02	11	.00	.00	.00	.00
23	.00	1.9	1.7	2.3	3.2	.71	.03	3.8	.00	.00	.00	.00
24	.00	1.8	1.8	2.5	3.0	1.5	.03	2.9	.00	.00	.00	.00
25	.00	2.1	1.2	2.7	2.2	1.8	.03	.71	.00	.00	.00	.78
26	.00	1.7	1.5	2.2	2.5	1.1	.02	.24	.00	.00	.00	.00
27	.00	1.4	1.7	2.4	3.0	.37	.02	.33	.13	.00	.00	.00
28	.03	1.7	2.0	2.3	3.0	.30	.01	.50	2.0	.00	.00	.00
29	.00	1.7	.77	2.6	---	.23	.01	.27	.05	.00	.00	.00
30	.09	1.9	.84	2.8	---	.14	1.4	.36	.00	6.4	.00	.00
31	.91	---	1.2	2.7	---	.09	---	.10	---	20	.00	---
TOTAL	9.18	60.45	52.93	62.75	83.7	59.26	3.89	250.50	8774.06	26.40	.52	.78
MEAN	.30	2.02	1.71	2.02	2.99	1.91	.13	8.08	292	.85	.017	.026
MAX	.91	4.0	2.5	2.8	4.3	3.5	1.4	79	4080	20	.39	.78
MIN	.00	.81	.40	.87	2.1	.09	.00	.00	.00	.00	.00	.00
AC-FT	18	120	105	124	166	118	7.7	497	17400	52	1.0	1.5
CAL YR 1977	TOTAL	25274.45	MEAN	69.2	MAX	7050	MIN	.00	AC-FT	50130		
WTR YR 1978	TOTAL	9384.42	MEAN	25.7	MAX	4080	MIN	.00	AC-FT	18610		

## 07199000 CANADIAN RIVER NEAR HEBRON, NM

LOCATION.--Lat 36°47'14", long 104°27'42", Colfax County, Hydrologic Unit 11080001, in Maxwell Grant, near right bank at downstream end of bridge pier on U.S. Highways 64 and 85, 3.1 mi (5.0 km) north of Hebron, 5.0 mi (8.0 km) upstream from Chicorica Creek, 8.0 mi (12.9 km) south of Raton, and at mile 888.1 (1,429.0 km).

DRAINAGE AREA.--229 mi<sup>2</sup> (593 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1946 to current year.

REVISED RECORDS.--WSP 1281: 1946, 1947-48(P), 1949. WSP 1921: 1960(M).

GAGE.--Water-stage recorder. Altitude of gage is 6,248 ft (1,904 m), from topographic map. See WSP 1921 for history of changes prior to Aug. 18, 1965.

REMARKS.--Water-discharge records poor. Diversions above station for irrigation of a few hundred acres. Part of all of low flow can be diverted to left bank 1.6 mi (2.6 km) above station for stock water, off-channel storage and irrigation.

AVERAGE DISCHARGE.--32 years, 7.21 ft<sup>3</sup>/s (0.204 m<sup>3</sup>/s), 5,220 acre-ft/yr (6.44 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,400 ft<sup>3</sup>/s (1,770 m<sup>3</sup>/s) June 17, 1965, gage height, 28.2 ft (8.60 m), from floodmarks, present datum, from rating curve extended above 1,300 ft<sup>3</sup>/s (37 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1942 reached a stage of about 28 ft (8.5 m), present datum, at site 150 ft (46 m) upstream, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
July 9	1600	1,660 47.0	5.10 1.554	July 14	2200	1,180 33.4	4.78 1.457
July 10	1800	*a4,950 140	6.75 2.057				

a From rating curve extended above 250 ft<sup>3</sup>/s (7.1 m<sup>3</sup>/s) as explained above.

No flow for many days.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.03	.04	.03	.05	.03	.03	.08	32	.39	.00	.00
2	.01	.04	.06	.03	.05	.03	.03	.14	.30	.01	.00	.00
3	.01	.04	.04	.05	.06	.03	.03	.45	.08	.01	3.0	.00
4	.01	.04	.03	.06	.07	.03	.03	.17	.04	.01	.01	.00
5	.01	.04	.03	.07	.07	.03	.03	.85	.04	.00	.00	.00
6	.06	.04	.03	.06	.07	.04	.04	2.0	.03	.00	.00	.00
7	.02	.08	.04	.06	.07	.06	.04	.25	.03	.00	.00	.00
8	.02	.06	.03	.06	.08	.04	.06	.11	.03	.00	.00	.00
9	.02	.05	.05	.06	.08	.04	.06	.11	.02	44	.00	.00
10	.01	.06	.06	.06	.07	.06	.08	.08	.02	385	.00	.00
11	.01	.06	.06	.07	.07	.08	.08	.06	.01	7.5	.00	.00
12	.02	.04	.06	.07	.07	.06	.06	.06	.01	1.3	.00	.00
13	.02	.06	.06	.07	.06	.04	.08	.06	.01	41	.00	.00
14	.02	.06	.06	.07	.06	.03	.08	.06	.01	95	.00	.00
15	.02	.03	.06	.07	.05	.03	.06	.06	.01	41	.00	.00
16	.02	.02	.06	.07	.04	.04	.06	.06	.01	.01	.00	.00
17	.02	.02	.05	.07	.03	.03	.06	.06	.01	.00	.00	.00
18	.02	.03	.06	.07	.03	.03	.06	.06	.01	.00	.00	.00
19	.02	.03	.06	.06	.04	.03	.06	.06	.02	25	.00	.00
20	.02	.03	.03	.05	.05	.03	.08	6.1	.01	.06	.00	.00
21	.02	.04	.04	.04	.05	.03	.06	.11	.01	.00	.00	.00
22	.02	.06	.05	.04	.06	.03	.06	.08	.01	.00	.00	.00
23	.02	.03	.06	.03	.06	.03	.06	.06	.01	.00	.00	.00
24	.02	.03	.06	.03	.04	.03	.06	.04	.00	.00	2.0	.00
25	.02	.06	.06	.03	.04	.03	.06	.04	.01	.00	10	30
26	.02	.04	.06	.03	.03	.03	.08	.04	.00	.00	.10	5.0
27	.02	.03	.06	.04	.03	.03	.08	.04	.00	.00	.00	.00
28	.02	.03	.06	.05	.03	.04	.04	.04	.77	.00	17	.00
29	.02	.04	.06	.05	---	.04	.04	.04	.21	.00	.30	.00
30	.02	.04	.05	.05	---	.04	.06	.03	11	4.0	.00	.00
31	.02	---	.05	.05	---	.03	---	.50	---	.00	.00	---
TOTAL	.58	1.26	1.58	1.65	1.51	1.15	1.71	11.90	62.72	644.29	32.41	35.00
MEAN	.019	.042	.051	.053	.054	.037	.057	.38	2.09	20.8	1.05	1.17
MAX	.06	.08	.06	.07	.08	.08	.08	6.1	32	385	17	30
MIN	.00	.02	.03	.03	.03	.03	.03	.03	.00	.00	.00	.00
AC-FT	1.2	2.5	3.1	3.3	3.0	2.3	3.4	24	124	1280	64	69

CAL YR 1977 TOTAL 807.14 MEAN 2.21 MAX 357 MIN .00 AC-FT 1600  
WTR YR 1978 TOTAL 795.76 MEAN 2.18 MAX 385 MIN .00 AC-FT 1580

07199000 CANADIAN RIVER NEAR HEBRON, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.---February 1966 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT								
19...	1440	.02	4000	7.7	23.0	1300	1100	300
NOV								
14...	1330	.06	3340	7.8	7.0	1500	1200	330
DEC								
12...	1640	.06	3010	7.8	2.0	1300	1100	300
JAN								
11...	1105	.10	3460	7.6	.5	1600	1300	340
FEB								
09...	0940	.10	3490	7.7	2.0	1500	1200	320
MAR								
08...	1630	.04	3330	7.8	12.0	1500	1200	330
APR								
06...	1250	.04	3340	7.7	4.5	1400	1100	290
MAY								
09...	1010	.10	3480	7.8	15.0	1400	1200	300
31...	1535	.02	3490	7.8	8.0	--	--	--
JUN								
27...	1445	.01	4010	7.9	21.0	1600	1400	310

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT									
19...	140	360	4.3	6.9	240	0	200	1870	25
NOV									
14...	160	360	4.1	6.4	300	0	250	1900	14
DEC									
12...	140	360	4.3	7.6	230	0	190	1700	33
JAN									
11...	190	380	4.1	5.7	390	0	320	2000	25
FEB									
09...	170	350	3.9	5.5	380	0	310	1900	34
MAR									
08...	160	370	4.2	6.8	300	0	250	1800	25
APR									
06...	160	380	4.4	6.2	300	0	250	1800	26
MAY									
09...	160	380	4.4	6.2	290	0	240	1800	26
31...	--	--	--	--	--	--	--	--	--
JUN									
27...	190	500	5.5	9.8	220	0	180	2300	31

## ARKANSAS RIVER BASIN

07199000 CANADIAN RIVER NEAR HEBRON, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C OYS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 19...	.3	9.1	--	2830	.04	--	--	--
NOV 14...	.2	8.6	--	2930	.04	--	--	--
DEC 12...	.2	7.5	--	2660	.02	--	--	--
JAN 11...	.3	10	--	3140	.03	--	--	--
FEB 09...	.2	10	--	2980	.01	--	--	--
MAR 08...	.3	7.8	--	2850	.07	--	--	--
APR 06...	.2	8.8	--	2820	.00	--	--	--
MAY 09...	.3	7.0	3000	2820	.09	.01	60	10
JUN 31...	--	--	--	--	--	--	--	--
JUN 27...	.3	8.1	--	3460	.06	--	--	--

## 07199450 LAKE MALOYA NEAR RATON, NM

LOCATION.--Lat 36°59'02", long 104°22'24", Colfax County, Hydrologic Unit 11080001, in Maxwell Grant, near spillway of dam on Chicorica Creek, 6.5 mi (10.5 km) northeast of Raton, and at mile 21.5 (34.6 km).

DRAINAGE AREA.--20.8 mi<sup>2</sup> (53.9 km<sup>2</sup>).

PERIOD OF RECORD.--May 1975 to current year.

GAGE.--Nonrecording gage. Altitude of gage is National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Reservoir is formed by an earthfill dam, completed in 1907; capacity, 59 acre-ft (72,700 m<sup>3</sup>). Reservoir enlarged in 1916; capacity, 1,130 acre-ft (1.39 hm<sup>3</sup>), spillway elevation, 7,479.0 ft (2,279.60 m). Reservoir enlarged again in 1948; capacity, 4,000 acre-ft (4.93 hm<sup>3</sup>), spillway elevation, 7,511.0 ft (2,289.35 m). Elevation of lowest outlet, 7,439.0 ft (2,267.41 m). No dead storage. Water is for municipal use of city of Raton.

COOPERATION.--Elevations furnished by city of Raton. Capacity table furnished by New Mexico Interstate Stream Commission.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 3,970 acre-ft (4.90 hm<sup>3</sup>) May 31, 1975, elevation, 7,510.79 ft (2,289.289 m); minimum observed, 1,490 acre-ft (1.84 hm<sup>3</sup>) Aug. 31, 1978, elevation, 7,485.56 ft (2,281.599 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 2,120 acre-ft (2.61 hm<sup>3</sup>) Oct. 1, elevation, 7,493.49 ft (2,284.016 m); minimum observed, 1,490 acre-ft (1.84 hm<sup>3</sup>) Aug. 31, elevation, 7,485.56 ft (2,281.599 m).

## 07199550 LAKE ALICE NEAR RATON, NM

LOCATION.--Lat 36°57'15", long 104°23'06", Colfax County, Hydrologic Unit 11080001, in Maxwell Grant, near spillway of dam on Chicorica Creek, 4.4 mi (7.1 km) northeast of Raton, and at mile 19.2 (30.9 km).

DRAINAGE AREA.--29.4 mi<sup>2</sup> (76.1 km<sup>2</sup>).

PERIOD OF RECORD.--May 1975 to current year.

GAGE.--Nonrecording gage. Altitude of gage is National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Reservoir is formed by an earthfill dam, completed in 1892; capacity 100 acre-ft (123,000 m<sup>3</sup>), spillway elevation, 7,078.0 ft (2,157.37 m). Reservoir rehabilitated in 1941; capacity, 71 acre-ft (87,500 m<sup>3</sup>), spillway elevation, 7,089.6 ft (2,160.91 m). Elevation of lowest outlet, 7,064.1 ft (2,153.14 m). No dead storage. Water is for municipal use of city of Raton.

COOPERATION.--Elevations furnished by city of Raton.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 70 acre-ft (86,300 m<sup>3</sup>) May 31, 1975, elevation, 7,089.55 ft (2,160.895 m); minimum observed, 40 acre-ft (49,300 m<sup>3</sup>) May 31, 1978, elevation, 7,083.27 ft (2,158.981 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 56 acre-ft (69,000 m<sup>3</sup>) Jan. 31, elevation 7,086.89 ft (2,160.084 m); minimum observed, 40 acre-ft (49,300 m<sup>3</sup>) May 31, elevation, 7,083.27 ft (2,158.981 m).

## MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
07199450 LAKE MALOYA				07199550 LAKE ALICE		
Sept. 30, 1977.....	7,493.49	2,120	-	7,086.57	55	-
Oct. 31.....	7,491.81	1,980	-140	7,085.46	49	- 6
Nov. 30.....	7,490.61	1,880	-100	7,086.63	55	+ 6
Dec. 31.....	7,489.86	1,810	- 70	7,086.55	55	0
CAL YR 1977	-	-	-480	-	-	+ 7
Jan. 31, 1978.....	7,489.06	1,750	- 60	7,086.89	56	+ 1
Feb. 28.....	7,488.14	1,680	- 70	7,086.10	52	- 4
Mar. 31.....	7,490.15	1,840	+160	7,084.67	46	- 6
Apr. 30.....	7,489.64	1,800	- 40	7,084.93	47	+ 1
May 31.....	7,491.11	1,920	+120	7,083.27	40	- 7
June 30.....	7,489.88	1,820	-100	7,086.02	52	+12
July 31.....	7,487.91	1,660	-160	7,084.91	47	- 5
Aug. 31.....	7,485.56	1,490	-170	7,085.24	48	+ 1
Sept. 30.....	7,485.93	1,510	+ 20	7,085.90	52	+ 4
WTR YR 1978	-	-	-610	-	-	- 3



## 07199600 CHICORICA CREEK NEAR YANKEE, NM

LOCATION.--Lat 36°55'50", long 104°22'24", Colfax County, Hydrologic Unit 11080001, in Maxwell Grant, on right bank 1.0 mi (1.6 km) upstream from East Fork, 1.8 mi (2.9 km) downstream from Lake Alice, 2.8 mi (4.5 km) southwest of Yankee, 4.2 mi (6.8 km) northeast of Raton, 4.1 mi (6.6 km) downstream from Lake Maloya, and at mile 17.4 (28.0 km).

DRAINAGE AREA.--32.5 mi<sup>2</sup> (84.2 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,795 ft (2,070 m), from topographic map.

REMARKS.--Water-discharge records fair except those for winter period, which are poor. Flow regulated by Lake Maloya (station 07199450) and Lake Alice (station 07199550). See tabulation below for monthly diversion from these reservoirs for municipal supply of city of Raton. A ditch on left bank 600 ft (180 m) upstream could divert entire flow of Chicorica Creek during periods of low flow; this ditch was plugged Oct. 11, 1975, and no further diversions have been noted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5.0 ft<sup>3</sup>/s (0.142 m<sup>3</sup>/s) June 6, 1976, gage height, 2.40 ft (0.732 m) from rating curve extended above 0.16 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 9.25 ft (2.819 m); no flow several days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 17, 1965, reached a stage of 9.25 ft (2.819 m), present datum, from floodmarks (discharge, 2,230 ft<sup>3</sup>/s or 63.2 m<sup>3</sup>/s, by slope-area measurement). The flood of May 18, 1955, was computed as 2,230 ft<sup>3</sup>/s (63.2 m<sup>3</sup>/s) by flow-over-dam method at Lake Maloya 4.1 mi (6.6 km) upstream and, according to a local resident, exceeded the flood of June 1965 at the present site.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.6 ft<sup>3</sup>/s (0.045 m<sup>3</sup>/s) June 4, gage height, 1.73 ft (0.527 m), from rating curve extended as explained above; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.03	.06	.05	.06	.07	.03	.01	.15	.06	.00	.00
2	.00	.09	.05	.02	.06	.05	.05	.01	.14	.00	.04	.00
3	.00	.08	.07	.04	.06	.03	.06	.03	.06	.00	.02	.00
4	.00	.08	.07	.06	.06	.04	.05	.01	.23	.00	.00	.00
5	.00	.07	.07	.09	.07	.04	.05	.14	.26	.00	.00	.00
6	.07	.07	.07	.08	.07	.06	.05	.35	.12	.00	.00	.00
7	.06	.10	.08	.06	.07	.10	.05	.27	.08	.00	.00	.00
8	.05	.14	.07	.05	.06	.18	.06	.07	.07	.01	.00	.00
9	.06	.05	.03	.05	.06	.13	.06	.04	.05	.00	.00	.00
10	.05	.07	.05	.05	.06	.09	.07	.03	.04	.09	.00	.00
11	.06	.09	.07	.05	.07	.16	.05	.03	.03	.02	.00	.00
12	.08	.08	.07	.05	.06	.11	.05	.03	.03	.00	.00	.00
13	.08	.07	.05	.06	.06	.08	.05	.03	.03	.00	.00	.00
14	.06	.08	.07	.06	.06	.07	.04	.03	.03	.00	.00	.00
15	.07	.09	.06	.06	.06	.06	.04	.03	.03	.00	.00	.00
16	.07	.08	.05	.05	.05	.08	.04	.03	.02	.00	.00	.00
17	.07	.07	.03	.05	.02	.06	.04	.03	.01	.00	.00	.00
18	.06	.00	.04	.06	.02	.05	.04	.03	.00	.00	.00	.00
19	.06	.10	.02	.05	.02	.04	.03	.03	.00	.00	.00	.00
20	.06	.03	.01	.05	.06	.04	.03	.12	.00	.00	.00	.00
21	.06	.05	.01	.05	.06	.04	.03	.21	.00	.00	.00	.00
22	.06	.09	.02	.05	.06	.04	.02	.06	.00	.00	.00	.00
23	.07	.05	.01	.06	.07	.05	.01	.04	.00	.00	.00	.00
24	.07	.06	.00	.05	.07	.04	.01	.05	.00	.00	.00	.00
25	.07	.08	.01	.05	.07	.04	.01	.05	.00	.00	.01	.00
26	.07	.07	.09	.05	.07	.04	.01	.04	.00	.00	.00	.00
27	.07	.06	.09	.06	.07	.03	.01	.05	.00	.00	.00	.00
28	.08	.07	.09	.06	.07	.04	.01	.06	.00	.00	.00	.00
29	.08	.05	.08	.06	---	.04	.01	.05	.00	.00	.00	.00
30	.08	.08	.09	.06	---	.04	.01	.04	.08	.00	.00	.00
31	.08	---	.09	.06	---	.03	---	.04	---	.00	.00	---
TOTAL	1.75	2.13	1.67	1.70	1.65	1.97	1.07	2.04	1.46	.18	.07	.00
MEAN	.056	.071	.054	.055	.059	.064	.036	.066	.049	.006	.002	.000
MAX	.08	.14	.09	.09	.07	.18	.07	.35	.26	.09	.04	.00
MIN	.00	.00	.00	.02	.02	.03	.01	.01	.00	.00	.00	.00
AC-FT	3.5	4.2	3.3	3.4	3.3	3.9	2.1	4.0	2.9	.4	.1	.00
(†)	119	90	91	83	68	78	89	97	127	126	120	104
CAL YR 1977 TOTAL	18.03											
WTR YR 1978 TOTAL	15.69											
MEAN	.049											
MAX	.41											
MIN	.00											
AC-FT	36											
(†)	1660											
AC-FT	31											
(†)	1190											

† Diversion, in acre-feet, from Lake Maloya and Lake Alice for municipal supply of city of Raton.

07199600 CHICORICA CREEK NEAR YANKEE, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD---August 1975 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT									
19...	1245	.07	390	8.3	17.0	--	180	17	41
NOV									
15...	1105	.13	477	8.2	7.5	--	180	0	45
DEC									
13...	1242	.04	559	8.1	2.0	--	270	73	65
JAN									
11...	1627	.08	546	8.1	1.0	15	200	0	47
FEB									
09...	1345	.05	602	8.3	2.0	--	210	0	51
MAR									
08...	1435	.25	579	8.2	12.5	--	190	0	49
APR									
05...	1632	.04	674	8.0	4.5	--	270	0	57
MAY									
09...	1545	.03	611	8.4	23.0	--	200	0	49

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT									
19...	19	33	1.1	2.5	200	0	160	40	2.5
NOV									
15...	16	53	1.7	2.0	260	0	210	68	4.2
DEC									
13...	26	7.1	.2	2.2	240	0	200	88	4.6
JAN									
11...	19	50	1.6	1.9	240	0	200	95	4.8
FEB									
09...	19	54	1.6	1.4	260	0	210	100	5.6
MAR									
08...	17	61	1.9	1.8	250	0	210	120	5.0
APR									
05...	31	61	1.6	3.3	440	0	360	21	6.5
MAY									
09...	19	66	2.0	2.3	260	5	220	110	5.4

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT								
19...	.2	13	--	250	.03	--	--	--
NOV								
15...	.3	14	--	331	.01	--	--	--
DEC								
13...	.2	13	--	325	.02	--	--	--
JAN								
11...	.2	12	--	349	.07	--	--	--
FEB								
09...	.2	13	--	373	.04	--	--	--
MAR								
08...	.2	11	--	388	.05	--	--	--
APR								
05...	.3	12	--	409	.01	--	--	--
MAY								
09...	.2	12	376	397	.01	.00	20	10

## 07201420 UÑA DE GATO CREEK BELOW THROTTLE DAM NEAR RATON, NM

LOCATION.--Lat 36°48'52", long 104°13'57", in SE¼SW¼ sec.24, T.30 N., R.25 E., Colfax County, Hydrologic Unit 11080001, on right bank 1.0 mi (1.6 km) downstream from Throttle Dam and 13 mi (21 km) southeast of Raton.

DRAINAGE AREA.--49.5 mi<sup>2</sup> (128.2 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1975 to current year.

REVISED RECORDS.--WRD NM-77-1: 1975 (M), 1976 (M).

GAGE.--Water-stage recorder. Altitude of gage is 6,635 ft (2,020 m), from topographic map.

REMARKS.--Water-discharge records good except hose for winter period and those above 5 ft<sup>3</sup>/s (0.14 m<sup>3</sup>/s), which are poor. Flow regulated by Throttle Reservoir, capacity 3,300 acre-ft (4.07 km<sup>3</sup>) 1 mi (1.6 km) upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 526 ft<sup>3</sup>/s (14.9 m<sup>3</sup>/s) Sept. 4, 1977, gage height, 4.24 ft (1.292 m), from rating curve extended above 4.4 ft<sup>3</sup>/s (0.12 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow Jan. 10, 1977, Sept. 4-30, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 183 ft<sup>3</sup>/s (5.18 m<sup>3</sup>/s) June 27, gage height, 3.24 ft (0.988 m), from rating curve extended as explained above; no flow Sept. 4-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.81	.74	.60	.60	.60	.69	4.8	3.9	5.9	4.5	.05	.02
2	.82	.73	.45	.40	.60	.65	4.7	2.9	3.3	4.3	.11	.02
3	.81	.73	.61	.50	.59	.50	4.5	2.5	3.4	4.1	.08	.01
4	.81	.74	.60	.60	.56	.55	4.3	2.7	3.4	4.2	.06	.00
5	.81	.73	.65	.72	.56	.62	3.3	3.0	3.3	4.1	.04	.00
6	.84	.74	.65	.74	.55	.52	3.8	2.8	3.1	4.3	.03	.00
7	.83	.75	.67	.71	.57	.54	3.9	3.2	3.0	4.3	.06	.00
8	.83	.71	.67	.76	.57	.53	4.5	2.0	2.8	4.2	.04	.00
9	.86	.50	.35	.76	.58	.43	4.9	1.9	2.8	5.0	.04	.00
10	.81	.55	.50	.82	.58	.42	5.1	1.8	3.0	6.0	.05	.00
11	.81	.62	.73	.80	.61	.35	4.5	1.7	3.0	3.6	.04	.00
12	.76	.63	.73	.78	.60	.36	2.2	1.6	3.0	3.5	.04	.00
13	.77	.62	.73	.74	.60	.32	2.8	1.6	2.4	3.5	.04	.00
14	.76	.62	.76	.82	.61	.32	4.6	1.6	2.5	1.5	.06	.00
15	.77	.56	.78	.71	.61	.29	4.9	1.8	2.5	.10	.05	.00
16	.78	.50	.70	.80	.57	.29	5.1	2.1	2.4	.09	.02	.00
17	.76	.49	.60	.78	.50	.25	5.6	2.1	2.4	.09	.03	.00
18	.76	.54	.80	.77	.45	.25	5.7	1.9	2.1	.09	.03	.00
19	.77	.54	.76	.63	.50	.22	5.7	2.4	2.0	.08	.03	.00
20	.77	.40	.40	.55	.40	.22	6.2	4.0	1.9	.08	.02	.00
21	.80	.55	.60	.56	.55	.19	6.0	3.7	1.8	.08	.02	.00
22	.80	.53	.82	.64	.60	.20	5.4	3.6	1.9	.07	.03	.00
23	.81	.53	.79	.60	.64	.18	5.5	3.5	3.1	.07	.04	.00
24	.81	.58	.76	.59	.63	.18	6.0	3.6	3.7	.07	.03	.00
25	.80	.58	.78	.50	.63	.16	6.0	3.6	4.0	.06	.03	.00
26	.73	.58	.81	.55	.63	.15	6.1	3.6	4.2	.06	.03	.00
27	.73	.56	.76	.58	.66	.15	6.4	3.7	12	.06	.02	.00
28	.72	.55	.60	.58	.67	.15	5.7	3.6	2.5	.06	.02	.00
29	.73	.45	.73	.55	---	2.0	4.0	3.4	4.3	.06	.43	.00
30	.73	.58	.73	.57	---	5.2	4.1	3.4	4.5	.07	.03	.00
31	.70	---	.74	.54	---	4.8	---	3.3	---	.06	.03	---
TOTAL	24.30	17.93	20.86	20.25	16.22	21.68	146.3	86.5	100.2	58.35	1.63	.05
MEAN	.78	.60	.67	.65	.58	.70	4.88	2.79	3.34	1.88	.053	.002
MAX	.86	.75	.82	.82	.67	5.2	6.4	4.0	12	6.0	.43	.02
MIN	.70	.40	.35	.40	.40	.15	2.2	1.6	1.8	.06	.02	.00
AC-FT	48	36	41	40	32	43	290	172	199	116	3.2	.10

CAL YR 1977 TOTAL 651.15 MEAN 1.78 MAX 190 MIN .01 AC-FT 1290  
WTR YR 1978 TOTAL 514.27 MEAN 1.41 MAX 12 MIN .00 AC-FT 1020

07201420 UNA DE GATO CREEK BELOW THROTTLE DAM NEAR RATON, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1975 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT								
19...	1125	.74	500	8.0	8.0	270	130	62
NOV								
15...	0930	.59	514	7.9	2.0	220	57	54
DEC								
13...	1135	.92	536	8.1	1.5	250	87	61
JAN								
11...	1520	.82	527	8.0	1.0	250	81	57
FEB								
09...	1125	.61	617	8.1	2.0	270	73	65
MAR								
08...	1220	.51	587	8.0	8.5	280	100	67
APR								
04...	1530	4.5	530	7.8	6.5	230	69	49
MAY								
09...	1450	1.8	628	7.7	16.0	270	92	58
31...	1100	3.1	641	7.5	9.0	--	--	--
JUN								
27...	1245	.96	643	7.8	25.0	290	92	63
JUL								
26...	1020	.07	1100	8.1	19.0	480	--	110
AUG								
23...	1040	.04	755	7.8	16.5	330	--	69

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT									
19...	27	34	.9	4.5	170	0	140	130	3.1
NOV									
15...	21	22	.6	4.3	200	0	160	110	3.2
DEC									
13...	24	21	.6	4.1	200	0	160	120	3.5
JAN									
11...	25	22	.6	4.3	200	0	160	110	3.1
FEB									
09...	26	25	.7	4.0	240	0	200	130	3.5
MAR									
08...	28	27	.7	4.2	220	0	180	140	3.4
APR									
04...	27	24	.7	4.4	200	0	160	130	3.6
MAY									
09...	31	29	.8	4.7	220	0	180	140	3.6
31...	--	--	--	--	--	--	--	--	--
JUN									
27...	32	29	.7	5.1	240	0	200	130	3.6
JUL									
26...	50	59	1.2	3.8	--	--	210	390	10
AUG									
23...	38	41	1.0	4.9	--	--	190	200	5.2

07201420 UNA DE GATO CREEK BELOW THROTTLE DAM NEAR RATON, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	FLUORIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT								
19...	.3	6.3	--	351	.05	--	--	--
NOV								
15...	.3	7.3	--	321	.14	--	--	--
DEC								
13...	.4	6.2	--	339	--	--	--	--
JAN								
11...	.4	6.6	--	328	.31	--	--	--
FEB								
09...	.3	7.7	--	381	.32	--	--	--
MAR								
08...	.3	5.7	--	385	.25	--	--	--
APR								
04...	.2	4.1	--	341	.00	--	--	--
MAY								
09...	.3	3.5	381	381	.07	.00	50	2200
31...	--	--	--	--	--	--	--	--
JUN								
27...	.4	6.0	--	389	.41	--	--	--
JUL								
26...	.4	13	--	762	.34	--	--	--
AUG								
23...	.4	5.4	--	478	.21	--	--	--

## 07202000 CHICORICA CREEK NEAR HEBRON, NM

LOCATION.---Lat 36°46'13", long 104°23'45", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.4, T.29 N., R.24 E., Colfax County, Hydrologic Unit 11080001, at highway bridge near east boundary of Maxwell Grant, 300 ft (91 m) downstream from Una de Gato Creek, 4.4 mi (7.1 km) northeast of Hebron, and 9 mi (14.5 km) south of Raton.

DRAINAGE AREA.---381 mi<sup>2</sup> (987 km<sup>2</sup>).

PERIOD OF RECORD.---February 1966 to current year.

REMARKS.---Water discharge measurements were made at the time water-quality samples were collected.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT 19...	1400	1.1	1400	8.0	13.0	550	330	110	67
NOV 14...	1405	.12	3840	7.8	7.0	1400	1300	250	190
DEC 13...	1450	1.8	2740	7.8	2.5	1000	760	200	130
JAN 11...	0940	1.2	2530	7.2	1.0	970	670	490	120
FEB 09...	1015	2.1	2000	7.4	1.0	770	510	150	95
MAR 08...	1545	2.6	2220	7.7	9.5	900	630	180	110
APR 04...	1215	.10	1990	7.3	6.5	830	560	150	110
MAY 09...	1635	.68	3290	7.5	20.0	1200	960	200	170
31...	1700	.01	3060	7.4	--	1200	930	220	160
JUL 26...	1245	.01	2290	7.8	23.0	850	--	160	110
DATE		SODIUM AD- SORP- TION RATIO (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT 19...	77	1.4	4.2	270	0	220	490	14	.4
NOV 14...	400	4.6	6.5	190	0	160	2000	80	.4
DEC 13...	300	4.1	7.9	340	0	280	1300	87	.5
JAN 11...	280	3.9	8.7	360	0	300	1100	50	.4
FEB 09...	190	3.0	5.3	310	0	250	770	32	.4
MAR 08...	240	3.5	7.0	330	0	270	950	88	.4
APR 04...	190	2.9	3.4	330	0	270	880	24	.4
MAY 09...	410	5.2	9.1	290	0	240	1600	49	.4
31...	340	4.3	6.7	340	0	280	1500	50	.4
JUL 26...	230	3.4	8.2	--	--	180	1100	30	.5

07202000 CHICORICA CREEK NEAR HEBRON, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	OIL AND GREASE (MG/L) (00550)
OCT								
19...	9.7	--	906	.04	--	--	--	--
NOV								
14...	9.4	--	3030	.03	--	--	--	--
DEC								
13...	13	--	2210	--	--	--	--	--
JAN								
11...	14	--	1960	4.3	--	--	--	--
FEB								
09...	11	--	1420	3.0	--	--	--	--
MAR								
08...	8.4	--	1770	4.5	--	--	--	--
APR								
04...	6.7	--	1530	.00	--	--	--	--
MAY								
09...	6.2	2790	2600	1.8	.01	180	10	--
31...	7.8	--	2450	.04	--	--	--	0
JUL								
26...	3.3	--	1750	.14	--	--	--	--

## 07202500 EAGLE TAIL DITCH NEAR MAXWELL, NM

LOCATION.--Lat 36°38'55", long 104°33'31", Colfax County, Hydrologic Unit 11080001, in Maxwell Grant, on left bank 25 ft (8 m) upstream from concrete drop structure, 300 ft (91 m) upstream from Crow Creek, and 7.5 mi (12.1 km) north of Maxwell.

PERIOD OF RECORD.--December 1944 to July 1950 (monthly discharge only October 1945 to July 1950), May 1975 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,110 ft (1,860 m), from topographic map. Prior to May 1975, at site about 200 ft upstream at different datum.

REMARKS.--Records fair. Eagle Tail ditch diverts water from Chicorica Creek for use near Maxwell. No diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--7 years (water years 1946-49, 1976-78), 4.99 ft<sup>3</sup>/s (0.141 m<sup>3</sup>/s), 3,620 acre-ft/yr (4.46 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 217 ft<sup>3</sup>/s (6.15 m<sup>3</sup>/s) Aug. 27, 1946, from rating curve extended above 85 ft<sup>3</sup>/s (2.4 m<sup>3</sup>/s); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 127 ft<sup>3</sup>/s (3.60 m<sup>3</sup>/s) July 11, from rating curve extended above 55 ft<sup>3</sup>/s (1.6 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.08	7.5	.00	63
2	.00	.00	.00	.00	.00	.00	.00	.00	9.7	12	.16	1.4
3	.00	.00	.00	.00	.00	.00	.00	.00	11	1.7	.12	.07
4	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.31	44	.00
5	.00	.00	.00	.05	.00	.00	.00	.00	6.3	.02	9.4	.00
6	.00	.00	.00	.04	.05	.00	.00	.00	9.8	.00	.23	.00
7	.00	.00	.00	.04	.10	.00	.00	1.2	2.5	.00	.02	.00
8	.00	.00	.00	.05	.20	.00	.00	2.9	1.4	.00	.00	.00
9	.00	.00	.00	.06	.30	.00	.00	1.1	.74	.00	.00	.00
10	.00	.00	.00	.05	.30	.00	.00	.27	.14	59	.00	.00
11	.00	.00	.00	.05	.20	.00	.00	.05	.00	127	.00	.00
12	.00	.00	.00	.05	.10	.00	.00	.00	.00	20	.00	.00
13	.00	.00	.00	.04	.05	.00	.00	.00	.00	24	.00	.00
14	.00	.00	.08	.03	.02	.00	.00	.00	.00	1.6	.00	.00
15	.00	.00	.14	.01	.00	.00	.00	.00	.00	.31	.00	.00
16	.00	.00	.28	.00	.00	.00	.00	.00	.00	.13	.00	.00
17	.00	.00	.33	.00	.00	.00	.00	.00	.00	.01	.00	.00
18	.00	.00	.06	.00	.00	.00	.00	.00	.00	.01	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.01	.00	.05	.00	.00	.00	.00	.00	.00
24	.00	.00	.07	.00	.00	.87	.00	.00	.00	.00	.00	.00
25	.00	.00	.10	.00	.00	.34	.00	.00	.00	.00	.10	1.4
26	.00	.00	.05	.00	.00	.09	.00	.00	.00	.00	.00	6.5
27	.00	.00	.00	.00	.00	.01	.00	.00	.08	.00	.00	.21
28	.00	.00	.00	.00	.00	.00	.00	.00	22	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	8.7	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	1.2	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	85	---
TOTAL	.00	.00	1.11	.48	1.32	1.36	.00	5.60	75.64	253.59	139.03	72.58
MEAN	.000	.000	.036	.015	.047	.044	.000	.18	2.52	8.18	4.48	2.42
MAX	.00	.00	.33	.06	.30	.87	.00	2.9	22	127	85	63
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	2.2	1.0	2.6	2.7	.00	11	150	503	276	144

CAL YR 1977 TOTAL 802.91 MEAN 2.20 MAX 118 MIN .00 AC-FT 1598  
WTR YR 1978 TOTAL 550.71 MEAN 1.51 MAX 127 MIN .00 AC-FT 1090



## 07203000 VERMEJO RIVER NEAR DAWSON, NM

LOCATION.--Lat 36°40'50", long 104°47'08", Colfax County, Hydrologic Unit 11080001, in Maxwell Grant, on left bank 1.3 mi (2.1 km) north of Dawson, 2.3 mi (3.7 km) upstream from Rail Canyon, and at mile 22.5 (36.2 km).

DRAINAGE AREA.--301 mi<sup>2</sup> (780 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1915 to July 1918, April 1919 to May 1921, January 1927 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: 1947, drainage area. WSP 1281: 1932(M), 1934(M), 1936-38(M), 1941-42(F), 1944-46(M).

GAGE.--Water-stage recorder. Altitude of gage is 6,365 ft (1,940 m), from topographic map. See WSP 1311 or 1731 for history of changes prior to Sept. 24, 1953.

REMARKS.--Water-discharge records poor. Diversions for irrigation of small acreage and mountain meadows above station.

AVERAGE DISCHARGE.--54 years (water years 1916-17, 1920, 1928-78), 17.9 ft<sup>3</sup>/s (0.507 m<sup>3</sup>/s), 12,970 acre-ft/yr (16.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (SINCE 1926).--Maximum discharge, 12,600 ft<sup>3</sup>/s (357 m<sup>3</sup>/s) June 17, 1965, gage height, 15.25 ft (4.648 m), from rating curve extended above 400 ft<sup>3</sup>/s (11 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--A major flood occurred Aug. 2, 1921, when discharge probably exceeded 10,000 ft<sup>3</sup>/s (280 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 800 ft<sup>3</sup>/s (23 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
July 9	1730	*1,970 55.8	7.02 2.140	July 13	2030	1,950 55.2	6.99 2.131
July 10	2030	1,440 40.8	6.25 1.905	July 30	1645	1,470 41.6	6.30 1.920

a From rating curve extended above 95 ft<sup>3</sup>/s (2.69 m<sup>3</sup>/s) as explained above.

Minimum discharge, 0.40 ft<sup>3</sup>/s (0.011 m<sup>3</sup>/s) Sept. 19, 20, but may have been less during periods of ice effect.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	2.4	2.8	3.5	3.2	2.5	2.0	5.6	22	28	53	5.1
2	1.2	2.3	3.3	3.0	3.3	2.5	2.2	8.4	49	22	41	3.7
3	1.4	2.3	3.5	2.8	3.4	2.3	2.7	11	32	20	71	3.2
4	1.5	2.4	4.0	2.9	3.5	2.6	2.5	15	29	18	71	2.9
5	1.5	2.4	4.2	3.0	3.5	2.7	2.3	18	38	17	41	2.7
6	1.6	2.6	4.0	3.4	3.5	2.6	2.3	23	39	16	23	2.1
7	1.9	5.4	3.6	3.3	3.7	2.5	2.2	20	39	14	15	1.4
8	1.8	9.6	3.6	3.3	4.0	2.5	2.3	16	64	13	18	1.2
9	1.8	8.0	3.8	3.4	2.9	2.4	2.4	15	30	219	12	1.1
10	1.8	4.4	3.2	3.4	3.0	2.4	2.4	15	26	200	9.6	1.0
11	1.8	3.6	3.3	3.2	3.1	2.5	2.6	15	24	50	11	.99
12	1.8	3.8	4.4	3.4	2.9	2.5	2.6	25	23	13	9.2	.86
13	1.8	4.7	3.7	3.4	2.4	2.5	2.5	39	18	250	16	.65
14	1.8	4.7	3.9	3.3	2.6	2.5	2.6	53	17	60	9.6	.59
15	1.7	5.0	4.4	3.4	2.3	2.1	2.6	64	15	30	6.9	.59
16	1.6	5.7	4.3	3.4	2.1	2.1	2.9	62	14	15	5.0	.59
17	1.7	4.3	3.2	3.7	2.2	2.2	3.1	55	16	10	3.0	.56
18	1.8	4.3	3.7	3.9	2.1	2.3	3.0	45	18	8.0	1.4	.49
19	1.8	4.4	2.6	3.5	2.8	2.7	3.0	26	18	7.0	1.6	.47
20	1.7	4.0	2.5	3.0	2.3	2.9	3.1	80	17	50	1.8	.46
21	1.6	3.5	2.6	3.4	2.4	2.9	3.2	30	15	10	1.8	.46
22	1.6	3.6	2.8	3.7	2.6	2.9	3.1	29	13	9.0	2.0	.46
23	1.9	3.8	3.1	3.7	2.9	3.1	3.2	23	13	100	2.4	.46
24	2.1	3.6	3.3	3.5	2.9	3.6	3.5	23	14	30	1.9	.49
25	2.3	3.9	2.6	3.0	2.8	3.4	3.5	21	15	16	2.2	7.5
26	2.3	4.7	2.6	3.3	2.8	3.0	3.5	20	14	15	2.1	11
27	2.3	4.4	2.9	3.6	2.7	2.7	3.9	21	15	20	1.9	3.8
28	2.1	4.3	3.1	3.6	2.5	2.5	3.7	22	38	8.4	6.3	2.6
29	2.1	4.1	4.0	3.5	---	2.4	3.8	21	52	7.0	29	2.1
30	2.1	3.8	3.6	3.5	---	2.4	4.3	20	63	158	21	1.7
31	2.4	---	3.7	3.2	---	2.3	---	20	---	69	6.5	---
TOTAL	56.0	126.0	106.3	104.2	80.4	80.5	87.0	861.0	800	1502.4	497.2	61.22
MEAN	1.81	4.20	3.43	3.36	2.87	2.60	2.90	27.8	26.7	48.5	16.0	2.04
MAX	2.4	9.6	4.4	3.9	4.0	3.6	4.3	80	64	250	71	11
MIN	1.2	2.3	2.5	2.8	2.1	2.1	2.0	5.6	13	7.0	1.4	.46
AC-FT	111	250	211	207	159	160	173	1710	1590	2980	986	121

CAL YR 1977 TOTAL 4099.80 MEAN 11.2 MAX 380 MIN .50 AC-FT 8130  
WTR YR 1978 TOTAL 4362.22 MEAN 12.0 MAX 250 MIN .46 AC-FT 8650

07203000 VERMEJO RIVER NEAR DAWSON, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1945 to September 1951, March 1964 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT								
20...	0950	1.7	600	8.1	5.0	230	63	66
NOV								
17...	1245	3.6	585	8.2	2.0	--	--	--
JAN								
12...	1145	4.2	618	8.2	1.0	250	73	70
APR								
06...	0930	2.4	590	8.1	4.5	230	58	64
JUN								
01...	1530	21	416	8.1	8.0	180	55	50
28...	1535	17	515	8.0	20.0	--	--	--
JUL								
26...	1830	11	418	8.3	20.0	--	--	--
AUG								
23...	1435	2.7	509	8.1	16.0	--	--	--
SEP								
20...	1000	.44	528	8.3	13.0	210	--	61

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT									
20...	17	27	.8	2.5	210	0	170	120	6.0
NOV									
17...	--	--	--	--	--	--	--	--	--
JAN									
12...	19	40	1.1	2.3	220	0	180	150	6.7
APR									
06...	17	40	1.1	2.4	210	0	170	130	6.8
JUN									
01...	13	21	.7	1.8	150	0	120	85	4.9
28...	--	--	--	--	--	--	--	--	--
JUL									
26...	--	--	--	--	--	--	--	--	--
AUG									
23...	--	--	--	--	--	--	--	--	--
SEP									
20...	13	36	1.1	2.5	--	--	180	100	6.2

## ARKANSAS RIVER BASIN

07203000 VERMEJO RIVER NEAR DAWSON, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DTS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DTS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 20...	.7	9.3	349	353	.09	.01	20	40
NOV 17...	--	--	--	--	--	--	--	--
JAN 12...	.6	8.8	383	406	.11	.01	20	20
APR 06...	.7	8.2	348	373	.06	.01	30	40
JUN 01...	.8	10	252	261	.01	.01	30	0
JUN 28...	--	--	--	--	--	--	--	--
JUL 26...	--	--	--	--	--	--	--	--
AUG 23...	--	--	--	--	--	--	--	--
SEP 20...	.7	10	327	337	.18	.01	60	10

## INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
OCT 20...	0950	1.7	5.0	11	.05
NOV 17...	1245	3.6	2.0	22	.21
JAN 12...	1145	4.2	1.0	76	.86
APR 06...	0930	2.4	4.5	39	.25
JUN 01...	1530	21	8.0	56	3.2
JUN 28...	1535	17	20.0	31	1.4
JUL 26...	1830	11	20.0	325	9.6
SEP 20...	1000	.44	13.0	8	.01

## 07204000 MORENO CREEK AT EAGLE NEST, NM

LOCATION.--Lat 36°33'14", long 105°16'03", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on right bank 175 ft (53 m) upstream from U.S. Highway 64, 250 ft (76 m) northwest of intersection of U.S. Highway 64 and State Highway 38, about 1,000 ft (300 m) upstream from high-water line of Eagle Nest Lake at Eagle Nest.

DRAINAGE AREA.--73.8 mi<sup>2</sup> (191.1 km<sup>2</sup>).

PERIOD OF RECORD.--April 1928 to October 1955 and June 1964 to current year (no winter records except water year 1932). Monthly discharge only for some periods, published in WSP 1311. Records for December 1930 to March 1931, published in WSP 732, are unreliable and should not be used. Published as "near Therma" 1928-34.

REVISED RECORDS.--WSP 1281: 1931(M), 1932, 1935(M), 1939-41(M), 1946-47(M). WSP 1921: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Concrete control since Oct. 3, 1952. Datum of gage is 8,197.39 ft (2,498.564 m) National Geodetic Vertical Datum of 1929. See WSP 1921 for history of changes prior to Oct. 26, 1955. Oct. 26, 1955, to Nov. 12, 1974, water-stage recorder at site 160 ft (49 m) downstream at datum 1.41 ft (0.430 m) lower.

REMARKS.--Records fair. Diversions for irrigation of about 1,200 acres (4.9 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 240 ft<sup>3</sup>/s (6.80 m<sup>3</sup>/s) Sept. 1, 1946, gage height, 3.10 ft (0.945 m), site and datum then in use; maximum gage height, 3.55 ft (1.082 m) May 12, 1973; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12 ft<sup>3</sup>/s (0.34 m<sup>3</sup>/s) May 12, gage height 1.98 ft (0.604 m), no peak above base of 35 ft<sup>3</sup>/s (0.99 m<sup>3</sup>/s); no flow Aug. 9 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	.24				---	1.7	1.6	1.5	.30	.16	.00
2	.12	.23				---	2.0	1.9	1.6	.26	.04	.00
3	.11	.25				---	1.8	2.5	1.8	.23	.13	.00
4	.11	.23				---	1.7	3.6	1.8	.21	.27	.00
5	.12	.25				---	1.7	3.9	1.9	.18	.44	.00
6	.18	.28				---	1.6	3.6	2.2	.16	.54	.00
7	.18	.50				---	1.7	4.0	2.6	.15	.17	.00
8	.15	.45				---	1.8	5.5	2.8	.14	.04	.00
9	.18	---				---	2.2	5.8	2.5	.13	.00	.00
10	.15	---				---	2.2	5.8	1.9	.12	.00	.00
11	.15	---				---	2.2	8.5	1.4	.13	.00	.00
12	.14	---				---	2.2	11	1.3	.23	.00	.00
13	.14	---				---	2.2	11	1.1	.18	.00	.00
14	.14	---				---	1.8	9.5	.79	.15	.00	.00
15	.15	---				---	1.8	9.5	.47	.13	.00	.00
16	.18	---				---	1.8	9.8	.50	.11	.00	.00
17	.19	---				---	1.8	9.5	.44	.10	.00	.00
18	.19	---				---	1.6	7.5	.41	.08	.00	.00
19	.19	---				---	1.1	6.8	.41	.08	.00	.00
20	.20	---				---	.66	6.3	.37	.14	.00	.00
21	.21	---				---	1.4	6.3	.33	.15	.00	.00
22	.22	---				---	1.2	6.8	.31	.12	.00	.00
23	.24	---				---	.91	6.0	.29	.12	.00	.00
24	.24	---				---	.99	5.8	.27	.10	.00	.00
25	.25	---				---	1.0	5.1	.23	.08	.00	.00
26	.24	---				---	1.1	4.6	.21	.08	.00	.00
27	.25	---				---	1.1	4.6	.26	.07	.00	.00
28	.25	---				1.5	1.5	4.3	.33	.06	.00	.00
29	.24	---				1.5	1.6	2.5	.36	.08	.00	.00
30	.24	---				1.5	1.6	1.3	.34	.99	.00	.00
31	.23	---				1.6	---	1.4	---	.67	.00	---
TOTAL	5.70	---	---	---	---	---	47.96	176.3	30.72	5.73	1.79	.00
MEAN	.18	---	---	---	---	---	1.60	5.69	1.02	.18	.058	.000
MAX	.25	---	---	---	---	---	2.2	11	2.8	.99	.54	.00
MIN	.11	---	---	---	---	---	.66	1.3	.21	.06	.00	.00
AC-FT	11	---	---	---	---	---	95	350	61	11	3.6	.00

## 07204500 CIENEGUILLA CREEK NEAR EAGLE NEST, NM

LOCATION.--Lat 36°29'07", long 105°15'54", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on right bank 0.1 mi (0.2 km) downstream from Schoolhouse Draw, 0.4 mi (0.6 km) upstream from high-water line of Eagle Nest Lake, 0.5 mi (0.8 km) east of U.S. Highway 64, and 4.7 mi (7.6 km) south of Eagle Nest.

DRAINAGE AREA.--56 mi<sup>2</sup> (145 km<sup>2</sup>).

PERIOD OF RECORD.--April 1928 to September 1955 and June 1964 to current year (no winter records except in water years 1932, 1948 and 1951). Monthly discharge only for some periods, published in WSP 1311 and 1731. Records for December 1930 to March 1931, published in WSP 732, are unreliable and should not be used. Published as "near Therma" 1928-34.

REVISED RECORDS.--WSP 957: 1941. WSP 1281: Drainage area. WSP 1311: 1932(M), 1935(M), 1937(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Concrete control since Sept. 25, 1947. Altitude of gage is 8,195 ft (2,498 m), from topographic map. Prior to May 8, 1928, nonrecording gage, and May 8, 1928 to Sept. 1, 1934, water-stage recorder at site 0.2 mi (0.3 km) downstream at different datums.

REMARKS.--Records good except those for August and September, which are fair. Diversions for irrigation of about 1,000 acres (4.0 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 505 ft<sup>3</sup>/s (14.3 m<sup>3</sup>/s) June 16, 1965, gage height, 5.61 ft (1.710 m), from rating curve extended above 110 ft<sup>3</sup>/s (3.1 m<sup>3</sup>/s); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 96 ft<sup>3</sup>/s (2.72 m<sup>3</sup>/s) at 2230 hours May 11, gage height, 4.28 ft (1.305 m), no other peak above base of 70 ft<sup>3</sup>/s (2.0 m<sup>3</sup>/s); minimum determined, 0.12 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) Sept. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.72	1.5				---	23	9.1	8.9	2.3	1.1	.87
2	.80	1.4				---	24	11	8.9	1.7	.85	.69
3	.96	1.5				---	20	18	8.7	1.5	.91	.60
4	.98	1.5				---	18	21	7.7	1.0	1.3	.52
5	.96	1.5				---	18	20	7.3	.80	1.5	.46
6	1.6	1.7				---	16	20	8.4	.65	1.2	.42
7	2.8	4.6				---	16	19	8.5	.53	1.3	.34
8	2.0	3.5				---	18	26	7.9	.49	1.4	.29
9	1.6	---				---	27	29	6.8	.56	1.1	.26
10	1.4	---				---	23	32	5.7	.78	.98	.24
11	1.3	---				---	19	53	4.7	1.1	.87	.21
12	1.3	---				---	22	74	4.5	2.9	.80	.20
13	1.4	---				---	28	69	4.0	2.3	.76	.17
14	1.4	---				---	30	57	3.5	2.0	.78	.17
15	1.4	---				---	28	46	3.1	1.2	.63	.15
16	1.4	---				---	26	40	2.6	.84	.48	.15
17	1.4	---				---	23	36	2.3	.64	.39	.16
18	1.4	---				---	17	32	2.0	.52	.31	.16
19	1.4	---				---	15	28	1.8	.42	.27	.17
20	1.4	---				---	14	26	1.9	.39	.32	.13
21	1.4	---				---	13	27	2.0	.51	.35	.14
22	1.5	---				---	11	23	1.6	.82	.40	.20
23	1.6	---				---	9.8	19	1.4	2.9	.42	.24
24	1.6	---				---	9.4	17	1.3	1.2	.41	.36
25	1.6	---				---	9.7	16	1.1	1.0	.43	.87
26	1.5	---				---	10	15	.93	.89	.48	1.8
27	1.5	---				---	11	14	.93	.80	.46	1.1
28	1.5	---				---	16	11	1.5	.79	.39	.72
29	1.5	---				---	15	9.7	11	2.1	1.1	.53
30	1.6	---				---	16	9.1	11	3.2	1.9	.44
31	1.6	---				---	20	---	9.6	---	1.4	---
TOTAL	44.52	---	---	---	---	---	528.7	840.7	125.26	36.03	24.29	12.76
MEAN	1.44	---	---	---	---	---	17.6	27.1	4.18	1.16	.78	.43
MAX	2.8	---	---	---	---	---	30	74	8.9	2.9	1.5	1.8
MIN	.72	---	---	---	---	---	9.1	9.1	.93	.39	.27	.13
AC-FT	88	---	---	---	---	---	1050	1670	248	71	48	25

## 07205000 SIXMILE CREEK NEAR EAGLE NEST, NM

LOCATION.--Lat 36°31'07", long 105°16'29", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on left upstream wingwall of concrete control, 250 ft (76 m) downstream from concrete box culvert on U.S. Highway 64, and 2.6 mi (4.2 km) southwest of Eagle Nest.

DRAINAGE AREA.--10.5 mi<sup>2</sup> (27.2 km<sup>2</sup>).

PERIOD OF RECORD.--April 1928 to September 1955 (no winter records in water years 1929-31, 1933-55), July 1958 to current year (no winter records subsequent to water year 1975). Prior to October 1930 monthly discharge only, published in WSP 1311. Records for December 1930 to March 1931, published in WSP 732, are unreliable and should not be used. Published as "near Therna" 1928-34.

REVISED RECORDS.--WSP 1311: 1932-33(M), 1935(M), 1943(M). WSP 1681: 1937(M). WSP 1921: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Concrete control Sept. 11, 1931 to May 1933, and since Sept. 13, 1934. Datum of gage is 8,195.16 ft (2,497.885 m) National Geodetic Vertical Datum of 1929. Prior to May 18, 1928, nonrecording gage at site 88 ft (27 m) upstream at datum 0.98 ft (0.299 m) higher. May 18, 1928 to Sept. 11, 1938, water-stage recorder at site 88 ft (27 m) upstream at datum 0.43 ft (0.131 m) higher.

REMARKS.--Records good. Diversions for irrigation of about 300 acres (1.2 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years (water years 1932, 1959-75), 2.51 ft<sup>3</sup>/s (0.071 m<sup>3</sup>/s), 1,820 acre-ft/yr (2.24 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (1930-55 and SINCE 1957).--Maximum discharge, 128 ft<sup>3</sup>/s (3.62 m<sup>3</sup>/s) Aug. 5, 1969, gage height, 2.86 ft (0.871 m), from rating curve extended above 32 ft<sup>3</sup>/s (0.91 m<sup>3</sup>/s); maximum gage height recorded, 3.38 ft (1.030 m) Apr. 2, 1937 (ice jam), site and datum then in use; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) May 12, gage height, 1.07 ft (0.326 m), no peak above base of 15 ft<sup>3</sup>/s (0.42 m<sup>3</sup>/s); minimum determined, 0.05 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.38				---	6.1	5.9	3.0	.69	.70	.56
2	1.2	.35				---	6.2	5.5	3.1	.56	.71	.53
3	1.2	.41				---	5.2	5.4	3.0	.49	.80	.51
4	1.3	.41				---	5.0	5.4	2.9	.49	.91	.50
5	1.3	.41				---	5.2	4.4	3.0	.32	1.1	.47
6	1.7	.38				---	4.7	4.4	2.8	.22	1.2	.47
7	1.7	1.2				---	5.3	4.5	2.9	.21	1.1	.46
8	1.5	1.1				---	6.4	4.8	2.9	.35	1.1	.47
9	1.4	---				---	7.8	4.0	2.6	.60	.96	.51
10	1.3	---				---	7.5	4.7	2.3	.63	.89	.49
11	1.3	---				---	6.5	6.8	2.0	.65	.87	.47
12	1.1	---				---	6.0	9.0	2.1	.98	.81	.46
13	.57	---				---	5.7	7.7	2.1	.38	.80	.47
14	.56	---				---	6.4	6.7	2.0	.22	.74	.47
15	.53	---				---	6.9	5.9	1.8	.15	.71	.48
16	.53	---				---	7.2	5.6	.64	.11	.68	.49
17	.52	---				---	7.1	4.7	.51	.12	.66	.52
18	.48	---				---	6.3	3.9	.47	.16	.44	.50
19	.46	---				---	5.2	3.4	.45	.18	.09	.49
20	.45	---				---	4.5	3.3	.38	.32	.10	.50
21	.44	---				---	3.7	3.3	.35	.47	.08	.52
22	.41	---				---	2.8	2.8	.31	.82	.07	.53
23	.45	---				---	2.4	2.5	.29	.90	.07	.53
24	.44	---				---	1.9	2.1	.27	.78	.26	.59
25	.41	---				---	3.7	1.8	.23	.61	.61	.69
26	.38	---				---	4.0	1.6	.22	.61	.57	.63
27	.37	---				---	4.4	1.3	.28	.63	.49	.56
28	.37	---				3.3	4.5	1.5	.34	.56	.45	.54
29	.38	---				3.1	5.7	3.4	.46	.62	.55	.54
30	.37	---				3.3	5.9	3.2	.68	.70	.67	.55
31	.35	---				4.6	---	3.1	---	.78	.57	---
TOTAL	24.57	---				---	160.2	132.6	44.38	15.31	19.76	15.50
MEAN	.79	---				---	5.34	4.28	1.48	.49	.64	.52
MAX	1.7	---				---	7.8	9.0	3.1	.98	1.2	.69
MIN	.35	---				---	1.9	1.3	.22	.11	.07	.46
AC-FT	49	---				---	318	263	88	30	39	31

## 07205500 EAGLE NEST LAKE NEAR EAGLE NEST, NM

LOCATION.--Lat 36°31'53", long 105°13'44", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, at upstream face of Eagle Nest Dam on Cimarron River, 2.5 mi (4.0 km) southeast of Eagle Nest, 6.7 mi (10.8 km) west of Ute Park, and at mile 48.7 (78.4 km).

DRAINAGE AREA.--167 mi<sup>2</sup> (433 km<sup>2</sup>).

PERIOD OF RECORD.--December 1927 to December 1944 (monthend contents only, published in WSP 1311), May 1950 to September 1965 (monthend contents only), October 1965 to current year. Prior to January 1972 published as Eagle Nest Reservoir.

REVISED RECORDS.--WSP 1281: Drainage area.

GAGE.--Nonrecording gage read several times a month at random intervals. Datum of gage is 8,056.8 ft (2,455.71 m) National Geodetic Vertical Datum of 1929. Prior to October 1964 gage heights were raised by addition of 8,000 ft (2,438.4 m) and called elevations.

REMARKS.--Lake is formed by concrete dam with spillway cut in natural rock, completed June 30, 1918; storage began in June 1917. Capacity, 79,120 acre-ft (97.6 hm<sup>3</sup>) between gage heights 35.0 ft (10.67 m), sill of outlet gate, and 137.0 ft (41.76 m), crest of ungated spillway. Dead storage negligible. Records given herein represent usable contents. Water released is used for irrigation. Lake is recreational area. Diversions for irrigation of about 2,500 acres (10 km<sup>2</sup>) above reservoir.

COOPERATION.--Supplemental gage readings furnished by employee of Springer Land and Cattle Co. and by Cimarron River watermaster.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 78,800 acre-ft (97.2 hm<sup>3</sup>) May 31, 1942, gage height, 136.9 ft (41.73 m); minimum observed, 635 acre-ft (783,000 m<sup>3</sup>) Dec. 14, 1954, gage height, 61.33 ft (18.693 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 12,390 acre-ft (15.3 hm<sup>3</sup>) May 29, gage height, 93.15 ft (28.392 m); minimum observed, 8,150 acre-ft (10.0 km<sup>3</sup>) Sept. 25, gage height, 86.30 ft (26.304 m).

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	9810	---	---	10430	12240	---	---	---
3	9690	---	---	---	---	---	---	---	---	10560	---	---
4	---	---	---	---	---	---	11070	---	---	---	---	8510
5	---	---	---	---	---	---	---	---	12120	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	10860	---	---	---	9750	---
8	---	---	---	---	9940	10460	---	10860	---	---	---	---
9	---	---	9240	---	---	---	---	---	---	---	---	---
10	9630	---	---	---	---	---	10940	---	---	10300	---	---
11	---	---	---	---	---	---	---	---	---	---	---	8370
12	---	---	---	9600	---	---	---	---	11670	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	9570	---
15	---	8990	---	---	---	10530	---	11670	---	---	---	---
16	---	9000	---	---	---	---	---	---	---	---	---	---
17	9450	---	---	---	---	---	---	---	---	10180	---	---
18	9440	---	---	---	---	---	10880	---	---	---	---	8200
19	---	---	---	---	---	---	---	---	11170	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	10750	---	---	---	---	8990	---
22	---	---	---	---	---	---	---	12220	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	9070	---	---	---	---	---	---	---	---	10030	---	---
25	---	---	---	---	---	---	10620	---	---	10020	8780	8150
26	---	---	---	---	---	---	---	---	10600	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	10120	11070	---	---	---	---	8850	---
29	---	9160	---	---	---	---	---	12390	---	---	---	---
30	---	9170	---	---	---	---	10500	---	10600	---	---	8150
31	8760	---	9400	9800	---	11070	---	12300	---	9840	8700	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
(†)	87.40	-	88.50	-	89.70	-	-	-	-	89.25	-	-
(‡)	-990	+410	+230	+400	+320	+950	-570	+1800	-1700	-760	-1140	-550
CAL YR 1977	‡	-5180										
WTR YR 1978	‡	-1600										

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

NOTE.--Monthend contents interpolated or estimated on basis of inflow to and releases from Lake except Oct. 31, Dec. 31, Feb. 28, and July 31.

LOCATION.--Lat 36°31'55", -long 105°13'43", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on left bank 300 ft (91 m) downstream from Eagle Nest Dam, 2.5 mi (4.0 km) southeast of Eagle Nest, 6.7 mi (10.8 km) west of Ute Park, and at mile 48.6 (78.2 km).

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1281: Drainage area.

AVERAGE DISCHARGE.--28 years, 13.6 ft<sup>3</sup>/s (0.385 m<sup>3</sup>/s), 9,850 acre-ft/yr (12.1 hm<sup>3</sup>/yr).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 51 ft<sup>3</sup>/s (1.44 m<sup>3</sup>/s) Aug. 13, gage height, 1.28 ft (0.390 m); no flow Nov. 12 to Mar. 20.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	.43	.00	.00	.00	.00	36	37	34	8.6	15	21
2	6.2	.33	.00	.00	.00	.00	36	15	33	8.4	12	21
3	6.2	.33	.00	.00	.00	.00	36	.40	33	8.5	8.6	21
4	6.0	.29	.00	.00	.00	.00	35	.40	37	12	8.6	21
5	5.7	.25	.00	.00	.00	.00	38	.40	43	21	8.6	21
6	5.7	.26	.00	.00	.00	.00	45	.30	42	15	8.6	21
7	5.5	.37	.00	.00	.00	.00	45	.30	41	13	8.6	21
8	10	.33	.00	.00	.00	.00	44	.25	44	14	8.6	21
9	12	.29	.00	.00	.00	.00	41	.32	44	18	8.6	21
10	12	.32	.00	.00	.00	.00	33	.30	43	23	9.0	14
11	17	.03	.00	.00	.00	.00	30	.24	42	23	9.0	12
12	21	.00	.00	.00	.00	.00	26	.24	42	23	7.5	13
13	21	.00	.00	.00	.00	.00	26	.25	42	23	24	13
14	21	.00	.00	.00	.00	.00	26	.23	42	19	50	13
15	21	.00	.00	.00	.00	.00	26	.24	38	12	50	10
16	21	.00	.00	.00	.00	.00	26	.22	33	12	50	6.4
17	22	.00	.00	.00	.00	.00	26	.21	33	11	50	5.7
18	22	.00	.00	.00	.00	.00	30	.24	29	11	50	4.2
19	22	.00	.00	.00	.00	.00	33	.21	26	9.4	50	4.1
20	25	.00	.00	.00	.00	.00	31	.22	25	7.9	13	4.0
21	28	.00	.00	.00	.00	4.9	31	3.3	24	7.9	.25	3.7
22	28	.00	.00	.00	.00	6.1	31	5.7	24	8.3	.63	3.6
23	28	.00	.00	.00	.00	6.0	39	5.7	23	14	.63	3.2
24	27	.00	.00	.00	.00	8.4	49	5.8	23	20	.52	3.3
25	25	.00	.00	.00	.00	10	40	5.6	32	20	4.9	1.3
26	29	.00	.00	.00	.00	10	31	5.4	38	20	8.0	1.1
27	30	.00	.00	.00	.00	9.8	31	5.5	32	20	9.8	1.6
28	30	.00	.00	.00	.00	9.5	31	8.0	23	20	12	1.2
29	27	.00	.00	.00	---	16	31	11	9.4	17	17	1.1
30	22	.00	.00	.00	---	37	34	12	8.7	15	21	2.1
31	8.4	---	.00	.00	---	36	---	23	---	14	21	---
TOTAL	570.7	3.23	.00	.00	.00	153.70	1017	147.97	983.1	469.0	545.43	310.6
MEAN	18.4	.11	.0000	.0000	.0000	4.96	33.9	4.77	32.8	15.1	17.6	10.4
MAX	30	.43	.00	.00	.00	37	49	37	44	23	50	21
MIN	5.5	.00	.00	.00	.00	.00	26	.21	8.7	7.9	.25	1.1
AC=FT	1130	6.4	.00	.00	.00	305	2020	293	1950	930	1080	616
CAL YR 1977	TOTAL	5120.28	MEAN 14.0	MAX 68	MIN .00	AC=FT	10160					
WTR YR 1978	TOTAL	4200.73	MEAN 11.5	MAX 50	MIN .00	AC=FT	8330					



## ARKANSAS RIVER BASIN

07206000 CIMARRON RIVER BELOW EAGLE NEST DAM, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD,--August 1975 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)		
OCT 18...	1425	22	340	8.0	9.5	150	0	45		
APR 07...	1000	46	363	7.6	6.5	150	0	45		
MAY 08...	1645	.15	373	7.7	8.0	160	4	46		
JUN 26...	1540	38	336	7.8	19.0	160	4	46		
JUL 25...	1445	20	401	7.8	16.0	160	--	47		
AUG 25...	1130	7.2	364	7.3	16.5	150	--	45		
SEP 21...	1100	3.4	371	7.8	13.0	160	--	50		
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 18...	10	16	.6	2.7	200	0	160	22	5.0	
APR 07...	10	16	.6	2.4	200	0	160	23	5.6	
MAY 08...	11	16	.6	3.4	190	0	160	27	5.1	
JUN 26...	11	16	.6	2.4	190	0	160	24	5.3	
JUL 25...	10	16	.6	2.7	--	--	160	26	11	
AUG 25...	9.7	15	.5	2.6	--	--	160	21	5.4	
SEP 21...	9.6	16	.5	2.7	--	--	160	21	5.5	
DATE		FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	
OCT 18...	.6	1.2	--	202	.14	--	--	--		
APR 07...	.5	4.4	197	206	.00	.02	40	40		
MAY 08...	.5	6.1	--	210	.28	--	--	--		
JUN 26...	.5	8.3	--	208	.24	--	--	--		
JUL 25...	.5	10	--	219	.28	--	--	--		
AUG 25...	.5	1.2	--	196	.01	--	--	--		
SEP 21...	.6	12	220	213	.77	.12	50	20		

## 07207000 CIMARRON RIVER NEAR CIMARRON, NM

LOCATION.--Lat 36°31'11", long 104°58'42", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on right bank 1,200 ft (370 m) downstream from Turkey Creek Canyon, 3.6 mi (5.8 km) west of Cimarron, and at mile 31.6 (50.8 km).

DRAINAGE AREA.--294 mi<sup>2</sup> (761 km<sup>2</sup>).

PERIOD OF RECORD.--May 1950 to current year. Published as Cimarron Creek near Cimarron, October 1952 to September 1965.

REVISED RECORDS.--WSP 1281: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Nov. 6, 1963. Datum of gage is 6,599.58 ft (2,011.552 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Eagle Nest Lake (station 07205500). Diversions above station for irrigation of about 3,500 acres (14 km<sup>2</sup>), part of which is below station. Philmont ditch (formerly known as Cimarroncito ditch) diverts from left bank 1.5 mi (2.3 km) above station, flumes under river 0.9 mi (1.4 km) above and bypasses station for off-channel storage and irrigation below; see tabulation below for monthly diversions. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--28 years, 20.2 ft<sup>3</sup>/s (0.572 m<sup>3</sup>/s), 14,630 acre-ft/yr (18.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft<sup>3</sup>/s (439 m<sup>3</sup>/s) June 17, 1965, gage height, 12.42 ft (3.786 m), from flood-mark, from rating curve extended above 800 ft<sup>3</sup>/s (23 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 4.88 ft (1.487 m) and 12.42 ft (3.786 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 183 ft<sup>3</sup>/s (5.18 m<sup>3</sup>/s) June 28, gage height, 2.49 ft (0.759 m); minimum, 0.03 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	13	3.9	3.5	3.0	3.1	37	34	43	15	18	17
2	4.0	9.3	3.5	3.0	3.2	3.3	38	37	45	14	17	17
3	8.3	7.7	4.3	3.2	3.5	2.5	38	20	45	13	14	15
4	8.0	6.2	4.3	3.5	3.5	3.0	38	21	46	12	15	15
5	8.3	6.3	4.2	4.0	3.5	3.5	37	19	50	17	13	15
6	9.5	5.9	4.1	3.8	3.6	3.4	44	20	49	20	12	14
7	10	12	4.3	3.5	3.4	3.4	46	18	48	15	11	14
8	9.3	11	4.2	3.2	3.3	2.9	47	18	54	16	11	15
9	13	9.2	3.1	3.2	3.5	2.9	49	19	54	15	10	15
10	14	7.5	4.0	3.0	4.0	2.9	41	22	51	21	11	16
11	15	7.1	4.7	3.0	3.8	3.2	39	29	49	23	11	12
12	19	6.7	4.0	3.0	3.1	3.1	35	39	50	23	10	13
13	21	6.3	4.0	3.0	3.0	2.9	35	45	51	24	9.0	13
14	22	6.0	3.6	3.0	2.8	2.8	35	47	50	23	32	13
15	22	5.8	4.0	3.0	3.0	2.5	36	52	48	17	37	12
16	22	5.7	3.8	3.0	2.8	2.6	36	55	41	15	38	9.4
17	22	4.4	3.3	3.0	2.5	3.0	36	54	40	13	39	7.4
18	23	4.2	4.0	3.5	2.5	2.9	36	50	39	12	40	6.7
19	23	4.0	4.0	3.2	2.8	2.8	41	43	34	12	42	5.8
20	23	3.9	3.0	3.0	2.8	2.9	39	38	32	11	35	5.4
21	28	3.1	3.2	3.2	3.0	2.9	38	35	27	11	11	5.3
22	29	3.4	3.5	3.2	3.5	3.7	38	37	24	15	7.4	5.2
23	29	3.4	4.0	3.0	3.8	5.4	38	36	24	17	5.7	4.9
24	29	3.4	4.5	3.2	4.0	6.5	46	36	23	21	4.7	4.9
25	27	3.1	4.5	3.0	3.7	8.1	44	36	24	22	3.4	5.5
26	28	3.1	4.5	3.2	3.5	9.3	30	34	31	22	.53	5.6
27	31	3.1	4.2	3.5	3.3	10	29	32	32	22	1.7	4.1
28	31	3.4	4.0	3.5	3.1	12	28	30	29	22	5.7	3.6
29	31	3.4	4.2	3.5	---	12	29	30	21	21	8.1	3.1
30	26	3.2	4.5	3.2	---	23	29	29	18	19	13	2.8
31	24	---	4.0	3.0	---	33	---	29	---	19	19	---
TOTAL	609.78	174.8	123.4	100.1	91.5	185.5	1132	1044	1172	542	505.23	295.7
MEAN	19.7	5.83	3.98	3.23	3.27	5.98	37.7	33.7	39.1	17.5	16.3	9.86
MAX	31	13	4.7	4.0	4.0	33	49	55	54	24	42	17
MIN	.38	3.1	3.0	3.0	2.5	2.5	28	18	18	11	.53	2.8
AC-FT	1210	347	245	199	181	368	2250	2070	2320	1080	1000	587
(†)	0	0	0	0	0	0	77	22	275	0	60	105

CAL YR 1977 TOTAL 5696.93 MEAN 15.6 MAX 60 MIN .38 AC-FT 11300 † 769  
WTR YR 1978 TOTAL 5976.01 MEAN 16.4 MAX 55 MIN .38 AC-FT 11850 † 539

† Diversion, in acre-feet, by Philmont ditch; data furnished by Cimarron River Watermaster.

## 07207500 PONIL CREEK NEAR CIMARRON, NM

LOCATION.--Lat 36°34'25", long 104°56'46", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on left bank 1.6 mi (2.6 km) downstream from confluence of North and South Ponil Creeks, and 4.7 mi (7.6 km) northwest of Cimarron.

DRAINAGE AREA.--171 mi<sup>2</sup> (443 km<sup>2</sup>).

PERIOD OF RECORD.--November 1915 to June 1919, August 1919 to July 1925, September 1925, September 1927 to July 1929, May 1950 to current year. Prior to May 1950 monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 1281: Drainage area. WSP 1731: 1920.

GAGE.--Water-stage recorder. Altitude of gage is 6,630 ft (2,021 m), from topographic map. Prior to May 8, 1922, at site 0.1 mi (0.2 km) downstream at different datum. May 8, 1922 to Aug. 8, 1929, at site 0.4 mi (0.6 km) upstream at different datum.

REMARKS.--Records fair except those for winter period, which are poor. Diversions for irrigation of about 250 acres (1.0 km<sup>2</sup>) above station. Diversions 1,000 ft (300 m) below station for irrigation of about 300 acres (1.2 km<sup>2</sup>). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--39 years (water years 1916-25, 1928, 1951-78), 10.8 ft<sup>3</sup>/s (0.306 m<sup>3</sup>/s), 7,820 acre-ft/yr (9.64 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,630 ft<sup>3</sup>/s (159 m<sup>3</sup>/s) June 17, 1965, gage height, 11.13 ft (3.392 m), from rating curve extended above 110 ft<sup>3</sup>/s (3.1 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 4.55 ft (1.387 m), 5.80 ft (1.768 m), 7.15 ft (2.179 m), and 11.13 ft (3.392 m); no flow many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Discharge for flood of Aug. 8, 1929, which destroyed gage, was estimated as 5,200 ft<sup>3</sup>/s (150 m<sup>3</sup>/s) by State Engineer.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 89 ft<sup>3</sup>/s (2.52 m<sup>3</sup>/s) July 23, gage height, 2.18 ft (0.664 m), no peak above base of 200 ft<sup>3</sup>/s (5.7 m<sup>3</sup>/s); no flow Sept. 9-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	.90	1.6	.58	.90	1.3	5.0	4.6	9.0	1.8	.77	.26
2	.34	.97	1.6	.45	1.0	1.6	6.1	6.7	9.9	1.3	4.5	.15
3	.41	.84	1.6	1.3	.90	1.5	5.7	5.5	9.6	.84	7.1	.06
4	.44	.84	1.5	1.1	.90	1.7	5.6	11	8.7	.57	4.4	.05
5	.43	.86	1.4	.96	.90	1.9	6.0	9.8	8.2	.33	2.6	.03
6	.76	.87	1.3	1.2	1.0	1.8	5.7	10	8.3	.20	1.4	.03
7	.89	3.8	1.3	.99	.90	1.9	5.6	8.6	8.8	.12	1.1	.02
8	.55	2.9	1.3	.73	.92	1.7	6.2	9.5	9.3	.08	1.0	.01
9	.56	1.8	1.2	.90	.90	1.7	7.2	11	7.6	.09	.74	.00
10	.54	1.4	1.2	.81	1.2	1.8	7.0	18	6.2	1.2	.55	.00
11	.54	1.2	1.8	1.0	1.0	1.9	6.5	40	5.2	.39	.43	.00
12	.60	1.6	1.6	.88	.99	1.8	6.5	58	4.7	.21	.41	.00
13	.70	1.6	1.4	.73	.88	1.7	6.5	61	4.5	.28	.57	.00
14	.70	1.5	1.7	1.0	.94	1.7	6.6	60	3.9	.19	.37	.00
15	.70	1.6	1.5	1.3	1.0	1.6	6.6	59	3.3	.15	.16	.00
16	.73	1.6	1.0	.81	1.1	1.4	6.7	58	2.7	.10	.12	.00
17	.73	1.5	1.2	.90	1.0	1.6	6.6	53	2.3	.11	.08	.00
18	.70	1.6	1.4	1.1	1.0	1.6	5.9	46	2.1	.06	.04	.00
19	.71	1.7	1.2	.65	1.2	1.8	6.1	38	2.0	.04	.05	.00
20	.73	1.6	1.1	.50	1.4	2.0	6.0	33	1.8	6.8	.13	.00
21	.73	1.3	1.0	1.0	1.6	2.1	5.5	30	1.7	2.0	.07	.00
22	.73	1.5	1.2	1.0	1.8	2.4	5.0	26	1.3	1.5	.06	.00
23	.87	1.6	1.1	1.2	1.6	3.1	4.8	22	.99	15	.06	.00
24	.90	1.5	.79	1.8	1.5	3.2	4.5	20	.76	2.8	.09	.00
25	.87	1.6	.65	1.0	1.2	2.9	4.4	17	.59	1.4	.17	.08
26	.86	1.5	.83	1.4	1.3	2.7	4.3	16	.39	1.2	.49	.30
27	.84	1.5	1.0	1.6	1.3	2.8	4.2	15	.42	1.3	.13	.05
28	.85	1.7	1.1	1.6	1.3	3.3	4.2	13	1.3	.74	.08	.04
29	.85	1.5	1.3	1.6	---	3.5	4.1	12	2.0	.52	1.2	.03
30	.85	1.6	.99	1.3	---	3.3	4.0	10	2.8	.46	.42	.03
31	.86	---	1.0	.91	---	3.6	---	9.1	---	.60	.30	---
TOTAL	21.31	45.98	38.86	32.30	31.63	66.9	169.1	790.8	130.35	42.38	29.59	1.14
MEAN	.69	1.53	1.25	1.04	1.13	2.16	5.64	25.5	4.35	1.37	.95	.038
MAX	.90	3.8	1.8	1.8	1.8	3.6	7.2	61	9.9	15	7.1	.30
MIN	.34	.84	.65	.45	.88	1.3	4.0	4.6	.39	.04	.04	.00
AC-FT	42	91	77	64	63	133	335	1570	259	84	59	2.3
CAL YR 1977	TOTAL	1551.11	MEAN	4.25	MAX	132	MIN	.01	AC-FT	3080		
WTR YR 1978	TOTAL	1400.34	MEAN	3.84	MAX	61	MIN	.00	AC-FT	2780		

## 07208500 RAYADO CREEK AT SAUBLE RANCH, NEAR CIMARRON, NM

LOCATION.--Lat 36°22'20", long 104°58'10", Colfax County, Hydrologic Unit 11060002, in Maxwell Grant, on right bank at Sauble Ranch (Carson-Maxwell Base Camp of Philmont Scout Ranch), 2.5 mi (4.0 km) upstream from State Highway 21, 4.0 mi (6.4 km) downstream from Bonito Creek, and 9.8 mi (15.8 km) southwest of Cimarron.

DRAINAGE AREA.--65 mi<sup>2</sup> (168 km<sup>2</sup>).

PERIOD OF RECORD.--January 1909 to February 1910, June to August 1910, May 1911 to May 1913, July 1913 to February 1915, October 1915 to September 1918, March 1919 to September 1920, June 1923 to September 1924, March to May 1927, August 1927 to current year. Monthly discharge only for some periods, published in WSP 1311. Records for April and May 1910, published in WSP 287, are unreliable and should not be used. Published as Rayado River "at," "near," or "above" Abreu's Ranch near Cimarron prior to October 1925 and as Rayado River at Sauble Ranch, near Cimarron, October 1925 to September 1952.

REVISED RECORDS.--WSP 1281: 1914, 1934-35(M), 1937(M), 1941(P), 1942(M), 1944(M), drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Concrete control since Oct. 13, 1976. Altitude of gage is 6,720 ft (2,048 m), from topographic map. See WSP 1921 for history of changes prior to Oct. 1, 1954. Oct. 1, 1954 to June 16, 1965, at site 270 ft (82 m) downstream at datum 2.79 ft (0.850 m) lower.

REMARKS.--Records good except those for winter period, which are fair. No diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--59 years (water years 1912, 1914, 1916-20, 1924, 1928-78), 13.7 ft<sup>3</sup>/s (0.388 m<sup>3</sup>/s), 9,930 acre-ft/yr (12.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (1909-12, and SINCE 1913).--Maximum discharge, 9,000 ft<sup>3</sup>/s (250 m<sup>3</sup>/s) June 17, 1965, gage height, 11.5 ft (3.51 m), from floodmarks, from rating curve extended above 70 ft<sup>3</sup>/s (2.0 m<sup>3</sup>/s) on basis of field estimate of peak flow; minimum, 0.03 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Dec. 3, 1950, but may have been less during periods of ice effect.

EXTREMES OUTSIDE PERIOD OF RECORD.--The major flood of June 10, 1913, destroyed the gage (stage and discharge not determined). Another major flood probably occurred Sept. 29 or 30, 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 111 ft<sup>3</sup>/s (3.14 m<sup>3</sup>/s) at 0200 hours May 12, gage height, 3.46 ft (1.055 m), no other peak above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s); minimum, 0.17 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) Dec. 2, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.8	1.4	2.2	2.7	3.9	17	19	20	8.3	3.7	4.5
2	2.5	2.3	2.3	1.7	2.4	3.9	16	20	20	7.3	3.8	4.0
3	2.6	3.0	4.7	2.9	2.9	2.8	16	21	19	6.5	3.9	3.6
4	2.6	2.8	4.1	2.7	2.9	4.1	16	23	17	6.0	5.0	3.4
5	2.6	2.8	3.1	2.7	2.8	4.8	17	21	17	5.5	4.8	2.9
6	3.3	2.8	2.0	2.7	2.8	4.4	16	20	17	5.2	3.9	2.6
7	5.2	7.5	3.2	2.6	2.7	4.2	17	17	18	5.0	3.8	2.7
8	3.7	6.0	3.6	2.7	2.8	3.6	19	20	16	5.0	3.8	2.6
9	3.3	3.2	1.2	2.6	2.7	4.3	21	23	14	4.9	3.4	2.8
10	2.9	4.5	3.9	2.8	3.0	4.5	21	32	13	6.3	3.4	2.6
11	2.8	4.6	3.6	2.3	2.9	4.8	20	47	12	8.7	4.5	2.4
12	2.8	5.2	2.9	2.7	2.9	4.4	20	79	11	6.9	3.7	2.2
13	2.8	4.0	2.3	2.5	2.6	3.9	20	79	11	6.9	4.4	2.2
14	2.8	4.5	3.4	2.8	3.0	4.2	20	79	9.9	5.9	3.6	2.2
15	2.8	4.3	3.1	3.1	2.7	3.4	20	87	9.3	5.1	2.9	2.1
16	2.7	4.1	2.6	3.0	2.8	3.3	21	93	8.7	4.8	2.5	2.2
17	2.6	4.1	1.4	2.3	3.0	4.0	21	85	8.2	4.4	2.3	2.2
18	2.6	4.2	4.0	2.9	2.8	4.6	19	74	8.1	4.1	2.2	2.2
19	2.6	3.9	3.5	2.8	3.0	5.8	19	62	7.8	3.9	2.3	2.1
20	2.6	3.7	1.8	3.2	3.2	6.4	18	56	7.4	4.5	2.8	2.1
21	2.6	2.6	2.7	3.1	3.0	7.3	17	52	7.2	4.6	2.8	2.2
22	2.7	3.3	3.1	3.1	3.3	8.5	16	44	6.7	4.7	4.2	2.2
23	3.5	3.4	3.2	3.4	3.0	8.9	16	42	6.3	6.8	3.1	2.2
24	3.4	3.2	2.8	3.2	2.6	7.6	16	40	6.0	5.1	3.9	2.7
25	3.1	4.0	2.4	3.0	3.0	7.4	15	37	5.8	4.4	3.9	4.4
26	2.8	3.7	3.2	4.2	3.3	7.8	16	34	5.6	4.1	3.7	7.8
27	2.8	3.8	3.0	2.9	3.4	9.0	18	31	8.9	4.2	3.0	4.8
28	2.7	4.0	3.0	2.8	3.3	11	18	28	11	3.7	2.9	3.9
29	2.6	2.3	2.7	2.8	---	9.5	18	25	8.7	3.4	5.9	3.4
30	2.7	3.4	2.4	2.8	---	11	18	23	11	3.5	10	3.1
31	2.7	---	2.4	2.8	---	13	---	21	---	4.0	6.5	---
TOTAL	89.9	114.0	89.0	87.3	81.5	186.3	542	1334	341.6	163.7	120.6	90.3
MEAN	2.90	3.80	2.87	2.82	2.91	6.01	18.1	43.0	11.4	5.28	3.89	3.01
MAX	5.2	7.5	4.7	4.2	3.4	13	21	93	20	8.7	10	7.8
MIN	2.5	2.3	1.2	1.7	2.4	2.8	15	17	5.6	3.4	2.2	2.1
AC-FT	178	226	177	173	162	370	1080	2650	678	325	239	179

CAL YR 1977 TOTAL 1915.80 MEAN 5.25 MAX 20 MIN 1.60 AC-FT 3800  
WTR YR 1978 TOTAL 3240.20 MEAN 8.88 MAX 93 MIN 1.2 AC-FT 6430

## ARKANSAS RIVER BASIN

07211000 CIMARRON RIVER AT SPRINGER, NM

LOCATION.—Lat 36°21'37", long 104°35'53", Colfax County, Hydrologic Unit 11080002, in Maxwell Grant, on left bank at Springer, 400 ft (120 m) downstream from bridge on State Highway 199, 0.3 mi (0.5 km) upstream from Salado Creek, and at mile 8.2 (13.2 km).

DRAINAGE AREA.—1,032 mi<sup>2</sup> (2,673 km<sup>2</sup>).

PERIOD OF RECORD.--August 1907 to December 1909, January 1921 to February 1922, October 1924 to January 1926, September 1926 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as Cimarron Creek at Springer, October 1952 to September 1965.

REVISED RECORDS.--WSP 827: 1934-36(M). WSP 1281: 1942, 1945-46(M).

GAGE.--Water-stage recorder. Concrete control since Nov. 5, 1954. Altitude of gage is 5,770 ft (1,759 m), from topographic map. See WSP 1311 or 1731 for history of changes prior to July 17, 1942.

REMARKS.--Records good except those for July and September, which are fair. Flow partly regulated by Eagle Nest Lake (station 07205500). Diversions for irrigation of about 23,000 acres (93 km<sup>2</sup>) above station and a few hundred acres between station and mouth. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--54 years (water years 1921, 1925, 1927-78), 16.4 ft<sup>3</sup>/s (0.464 m<sup>3</sup>/s), 11,880 acre-ft/yr (14.6 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (SINCE 1930).—Maximum discharge, 29,500 ft<sup>3</sup>/s (835 m<sup>3</sup>/s) June 18, 1965, gage height, 19.96 ft (6.084 m), from floodmarks, from rating curve extended above 1,800 ft<sup>3</sup>/s (51 m<sup>3</sup>/s) on basis of contracted-opening measurement of peak flow; no flow at times in 1954, 1956–57, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, about 22 ft (6.7 m) Sept. 29, 1904 (backwater from debris on railroad bridge). Another major flood occurred June 11, 1913. Maximum discharge of these floods probably exceeded 10,000 ft<sup>3</sup>/s (280 m<sup>3</sup>/s), but probably were less than the 1965 flood.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45 ft<sup>3</sup>/s (1.27 m<sup>3</sup>/s) May 6, gage height, 3.87 ft (1.180 m), no peak above base of 280 ft<sup>3</sup>/s (7.9 m<sup>3</sup>/s); no flow Aug. 16-23, Sept. 7, 10-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	1.3	1.4	1.7	3.4	1.8	1.7	3.3	4.9	2.2	.15	.39
2	.18	1.4	1.5	1.7	3.4	1.7	1.5	11	5.9	2.4	.73	.23
3	.26	1.6	1.5	1.9	3.3	1.9	1.5	17	4.2	1.9	.28	.05
4	.37	1.7	1.5	2.0	3.4	2.1	1.4	15	3.7	1.1	.29	.04
5	.29	1.6	1.4	2.5	3.0	2.2	1.4	26	3.1	.68	.23	.04
6	.37	1.6	1.5	2.3	3.1	2.1	1.3	41	3.4	.60	.18	.01
7	.55	2.7	1.5	2.3	3.1	2.4	1.3	28	4.5	.55	.14	.00
8	.46	3.3	1.5	2.2	3.1	2.3	1.2	14	5.1	.50	.13	.01
9	.53	2.7	1.3	2.2	2.9	2.2	1.3	9.7	5.5	.50	.11	.03
10	.49	2.5	1.4	1.9	2.9	2.1	1.4	6.6	5.0	.45	.11	.00
11	.48	2.0	1.6	2.2	2.6	2.3	2.3	5.0	4.7	.40	.08	.00
12	.58	1.8	1.6	2.1	2.5	2.2	2.8	4.5	4.0	.40	.07	.00
13	.76	1.7	1.6	2.1	2.5	2.2	3.1	3.9	4.1	.35	.06	.00
14	.80	1.5	1.5	2.1	2.5	1.9	3.0	3.5	3.9	.35	.05	.00
15	.78	1.5	1.6	2.4	2.5	1.7	2.5	3.3	2.9	.35	.03	.00
16	.95	1.5	1.5	2.4	2.3	1.8	2.3	2.9	2.3	.30	.00	.00
17	.99	1.4	1.2	2.3	2.1	1.9	2.5	2.5	1.9	.30	.00	.00
18	.98	1.4	1.6	2.6	2.3	1.8	2.9	2.2	2.1	.30	.00	.00
19	1.1	1.4	1.6	2.1	2.3	1.8	3.1	2.2	3.3	.30	.00	.00
20	1.1	1.4	1.5	2.4	2.3	1.8	4.1	2.3	3.2	.33	.00	.00
21	1.2	1.3	1.3	2.4	2.1	1.7	4.7	2.4	3.1	.30	.00	.00
22	1.2	1.3	1.7	2.6	2.0	1.7	3.4	2.3	3.5	.29	.00	.00
23	1.7	1.4	1.7	2.7	2.0	1.7	2.7	2.0	3.0	.27	.00	.00
24	.95	1.4	1.9	2.9	1.9	1.9	2.4	2.0	1.9	.24	.01	.00
25	1.6	1.5	1.5	3.1	1.9	2.1	2.2	1.7	1.5	.25	.09	.00
26	.96	1.5	1.6	2.8	2.1	2.0	2.2	1.5	1.1	.27	.14	.00
27	1.3	1.4	1.7	2.9	1.8	1.9	2.3	1.5	1.9	.23	.15	.00
28	1.4	1.4	1.7	2.9	1.7	2.0	2.2	1.5	2.4	.18	.30	.00
29	1.5	1.4	1.9	3.1	---	2.2	3.1	1.6	2.1	.16	.90	.00
30	1.5	1.4	1.9	3.1	---	2.2	4.6	1.5	2.2	.29	.66	.00
31	1.3	---	1.8	3.4	---	1.9	---	2.9	---	.17	.46	---
TOTAL	26.88	50.0	48.5	75.3	71.0	61.5	72.4	224.8	100.4	16.91	5.35	.80
MEAN	.87	1.67	1.56	2.43	2.54	1.98	2.41	7.25	3.35	.55	.17	.027
MAX	1.7	3.3	1.9	3.4	3.4	2.4	4.7	41	5.9	2.4	.90	.39
MIN	.18	1.3	1.2	1.7	1.7	1.7	1.2	1.5	1.1	.16	.00	.00
AC-FT	53	99	96	149	141	122	144	446	199	34	11	1.6
CAL YR 1977	TOTAL	1377.01		MEAN 3.77	MAX 141	MIN .06	AC-FT 2730					
WTR YR 1978	TOTAL	753.84		MEAN 2.07	MAX 41	MIN .00	AC-FT 1500					

## 07211500 CANADIAN RIVER NEAR TAYLOR SPRINGS, NM

LOCATION.--Lat 36°17'49", long 104°29'36", in NW¼SE¼ sec. 21, T.24 N., R.23 E., Colfax County, Hydrologic Unit 11080003, on left bank at head of gorge, 2.0 mi (3.2 km) south of Taylor Springs, 2.3 mi (3.7 km) downstream from Cimarron River, 2.4 mi (3.9 km) upstream from Chico Creek, 7.1 mi (11.4 km) southeast of Springer, and at mile 847.9 (1,364.3 km).

DRAINAGE AREA.--2,850 mi<sup>2</sup> (7,380 km<sup>2</sup>).

PERIOD OF RECORD.--January 1940 to September 1958, annual maximum, water years 1959-63, June 1964 to current year. Water-year estimate for 1940, published in WSP 1311.

REVISED RECORDS.--WSP 1177: Drainage area. WSP 1281: 1941-42(P), 1945-47(H), 1948-50(P).

GAGE.--Water-stage recorder. Altitude of gage is 5,635 ft (1,718 m), from topographic map. Prior to June 10, 1964, water-stage recorder at site 1.7 mi (2.7 km) downstream at different datum; operated as crest-stage gage at that site and datum during water years 1959-64.

REMARKS.--Records poor. Diversions for irrigation of about 30,000 acres (120 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--33 years (water years 1940-58, 1965-78), 82.1 ft<sup>3</sup>/s (2.325 m<sup>3</sup>/s), 59,480 acre-ft/yr (73.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 162,000 ft<sup>3</sup>/s (4,590 m<sup>3</sup>/s) June 18, 1965, gage height, 47.4 ft (14.448 m), from flood-marks, from rating curve extended above 7,000 ft<sup>3</sup>/s (200 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow at times some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood prior to 1965 occurred Sept. 29, 1904, discharge published as 91,100 ft<sup>3</sup>/s (2,580 m<sup>3</sup>/s) in WSP 842,847.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,000 ft<sup>3</sup>/s (142 m<sup>3</sup>/s) at 1745 hours June 27, gage height 6.24 ft (1.902 m), no other peak above base of 3,000 ft<sup>3</sup>/s (85 m<sup>3</sup>/s); minimum, 0.09 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) about Dec. 5, Sept. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	1.6	2.0	3.0	9.0	3.7	2.8	4.2	563	25	20	47
2	4.0	1.8	1.8	3.0	8.5	3.7	2.3	9.0	246	5.6	40	12
3	3.5	2.0	1.6	3.0	8.0	3.4	2.0	33	77	3.8	150	3.5
4	3.0	2.4	1.6	3.5	7.8	5.2	1.9	46	31	2.8	100	1.8
5	1.1	3.0	1.5	4.0	7.5	6.2	1.7	107	21	2.1	50	1.1
6	1.1	4.0	2.0	3.5	7.0	4.9	1.6	247	16	1.6	20	.71
7	1.1	5.0	2.5	3.5	6.2	6.2	1.5	185	12	1.4	10	.52
8	.83	5.0	2.2	3.0	5.9	5.7	1.5	76	30	1.2	5.0	.40
9	.80	4.5	1.9	3.5	5.4	4.9	1.6	41	40	1.2	3.0	.36
10	1.0	4.0	2.2	3.5	5.4	4.7	1.8	26	20	36	2.0	.32
11	1.2	3.5	2.5	4.0	4.7	4.9	1.9	17	12	384	1.0	.27
12	1.4	3.0	2.0	4.5	4.9	4.9	2.2	14	8.4	54	1.0	.22
13	1.4	2.5	2.5	4.5	4.2	4.9	2.4	11	6.2	95	.80	.22
14	1.4	2.0	2.5	4.5	4.0	4.9	2.6	8.4	5.7	200	.80	.21
15	1.4	2.0	2.5	4.5	4.0	4.0	2.6	7.6	5.2	43	.70	.22
16	1.4	2.5	2.5	4.5	3.5	3.5	2.2	7.0	4.2	61	.50	.24
17	1.4	2.0	2.5	4.5	3.5	3.4	1.9	4.9	3.4	18	.43	.21
18	1.4	2.0	2.0	4.5	3.5	3.4	1.7	4.2	2.9	6.5	.40	.16
19	1.5	1.5	2.5	4.5	3.5	3.2	2.3	3.7	3.0	20	.33	.13
20	1.3	2.0	2.0	4.0	4.0	3.0	2.8	4.2	3.4	50	.39	.17
21	1.4	2.5	1.5	4.0	4.5	2.9	3.5	5.7	3.3	15	.36	.22
22	1.2	2.4	1.0	5.0	4.5	2.8	3.7	4.2	3.3	30	.32	.24
23	1.4	2.3	2.0	5.0	4.5	2.4	3.0	3.5	3.3	10	.33	.22
24	1.4	2.2	3.0	5.0	4.7	2.8	2.8	4.5	3.0	5.0	.32	.27
25	1.3	2.2	4.0	3.0	4.5	2.9	2.2	3.5	2.3	10	.35	.40
26	1.3	2.1	3.5	4.0	4.5	3.0	2.0	2.8	1.9	15	.33	52
27	1.4	2.0	3.0	5.0	4.2	2.9	2.3	2.4	807	10	.30	19
28	1.4	2.1	3.0	5.5	3.7	2.9	2.0	2.3	436	5.0	.27	4.2
29	1.4	2.2	3.0	5.5	---	3.5	1.9	2.2	36	3.0	251	1.6
30	1.4	2.1	3.0	6.0	---	3.5	2.8	2.0	26	10	145	.89
31	1.4	---	3.0	6.0	---	3.2	---	41	---	50	7.0	---
TOTAL	50.23	78.4	72.8	131.5	145.6	121.5	67.5	930.3	2432.5	1175.2	811.93	148.80
MEAN	1.62	2.61	2.35	4.24	5.20	3.92	2.25	30.0	81.1	37.9	26.2	4.96
MAX	5.0	5.0	4.0	6.0	9.0	6.2	3.7	247	807	384	251	52
MIN	.80	1.5	1.0	3.0	3.5	2.4	1.5	2.0	1.9	1.2	.27	.13
AC-FT	100	156	144	261	289	241	134	1850	4820	2330	1610	295

CAL YR 1977 TOTAL 7893.07 MEAN 21.6 MAX 875 MIN .01 AC-FT 15660  
WTR YR 1978 TOTAL 6166.26 MEAN 16.9 MAX 807 MIN .13 AC-FT 12230

## 07215500 MORA RIVER AT LA CUEVA, NM

LOCATION.--Lat 35°56'27", long 105°14'59", Mora County, Hydrologic Unit 11080004, in Mora Grant, on left bank 45 ft (14 m) upstream from bridge on State Highway 3 at La Cueva, 0.3 mi (0.5 km) downstream from La Cueva damsite, and at mile 86.8 (139.7 km).

DRAINAGE AREA.--173 mi<sup>2</sup> (448 km<sup>2</sup>).

PERIOD OF RECORD.--August 1903 to April 1905 (gage heights and discharge measurements only), May to December 1905, May 1906 to July 1911, April 1931 to current year. Monthly discharge only for some periods, published in WSP 1311. Records for February to April 1905, published in WSP 173, are unreliable and should not be used.

REVISED RECORDS.--WSP 857: 1937. WSP 1281: 1931(M), 1932. WSP 1511: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Altitude of gage is 7,000 ft (2,134 m), from topographic map. Prior to Apr. 15, 1931, nonrecording gage, and Apr. 15, 1931 to Apr. 18, 1962, water-stage recorder near present site at different datums. Apr. 19, 1962 to Mar. 13, 1974, water-stage recorder at site 700 ft (210 m) downstream at different datum.

REMARKS.--Records good except those for May, which are fair, and those for winter period, which are poor. Diversions above station for irrigation of about 7,000 acres (28 km<sup>2</sup>), part of which is below station. See tabulation below for monthly and yearly diversion of La Cueva Canal, which bypasses gage on left bank. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--51 years (water years 1907-10, 1932-78), 26.8 ft<sup>3</sup>/s (0.759 m<sup>3</sup>/s), 19,420 acre-ft/yr (23.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (SINCE 1930).--Maximum discharge, 1,530 ft<sup>3</sup>/s (43.3 m<sup>3</sup>/s) Sept. 23, 1941 gage height, 7.58 ft (2.310 m), site and datum then in use, from rating curve extended above 400 ft<sup>3</sup>/s (11 m<sup>3</sup>/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 29, 1904, may have exceeded 20,000 ft<sup>3</sup>/s (570 m<sup>3</sup>/s); another major flood occurred June 11, 1913, but is believed less than that of 1904.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft<sup>3</sup>/s (8.5 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
July 10	1900	506 14.3	4.52 1.378	July 23	0030	*a1,020 28.9	6.58 2.006

a From rating curve extended above 340 ft<sup>3</sup>/s (9.6 m<sup>3</sup>/s).

Minimum discharge, 0.11 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) Dec. 2, result of freezeup.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	5.9	.99	.60	.47	1.4	6.8	4.6	13	51	14	13
2	11	6.0	.83	.60	.47	1.4	7.1	5.8	17	46	14	10
3	11	6.5	.72	.75	.67	1.5	7.0	5.0	25	42	13	16
4	11	6.4	.85	.83	.47	1.6	6.2	6.5	30	34	16	12
5	9.6	6.1	.87	.75	.47	1.7	4.4	7.3	45	27	18	11
6	11	6.6	.95	.83	.48	1.5	3.6	18	60	25	17	10
7	5.1	22	1.0	.75	.49	1.6	2.8	15	64	24	16	10
8	.67	10	.89	.53	.52	1.5	2.6	7.3	57	22	16	11
9	.97	2.0	.91	.53	.53	1.4	2.6	3.5	62	30	16	9.7
10	1.2	1.4	.97	.47	.59	1.4	2.4	2.7	50	113	20	8.3
11	1.4	1.8	1.0	.48	.55	1.4	2.4	2.5	60	86	20	10
12	1.2	2.0	.96	.47	.47	1.5	2.3	2.6	60	40	17	13
13	1.2	2.1	.95	.47	1.0	1.7	2.5	2.5	62	36	17	7.8
14	.99	2.6	.98	.53	2.6	1.3	2.5	2.6	59	35	17	7.2
15	1.0	2.9	1.2	.47	2.4	3.1	2.5	9.9	50	31	17	7.5
16	1.1	3.7	1.0	.47	2.4	7.8	2.5	9.5	41	20	15	8.0
17	1.1	4.3	.75	.47	2.2	8.1	2.4	10	27	18	13	9.8
18	1.2	9.5	.60	.47	2.0	7.4	2.1	9.5	17	16	8.2	10
19	1.4	10	.53	.45	2.2	7.1	2.1	4.1	22	16	14	11
20	1.5	10	.45	.53	2.0	7.4	2.4	4.5	21	23	12	11
21	1.5	7.3	.75	.60	1.8	7.2	2.4	9.0	24	29	14	13
22	1.3	1.3	1.1	.75	1.5	7.2	2.4	9.5	22	26	14	10
23	1.8	1.7	.81	.67	1.5	7.3	2.4	7.1	24	107	12	4.4
24	2.4	1.8	.48	.53	1.4	7.7	2.5	7.4	24	37	9.9	2.8
25	2.8	2.0	.60	.53	1.2	7.6	2.6	5.7	21	34	15	3.9
26	3.9	2.1	.60	.60	1.2	7.2	2.6	4.9	19	26	17	2.8
27	4.4	3.7	.75	.67	1.2	6.9	2.6	5.8	25	19	14	2.8
28	4.8	4.1	.67	.53	1.3	7.5	2.3	4.8	30	17	14	1.0
29	5.4	5.1	.67	.53	---	8.7	3.0	5.3	63	16	14	.71
30	5.3	3.7	.62	.47	---	8.0	4.4	6.2	62	16	14	.45
31	5.2	---	.60	.50	---	7.3	---	8.0	---	16	15	---
TOTAL	123.43	154.6	25.05	17.83	34.08	144.4	96.4	207.1	1156	1078	463.1	248.16
MEAN	3.98	5.15	.81	.58	1.22	4.66	3.21	6.68	38.5	34.8	14.9	8.27
MAX	11	22	1.2	.83	2.6	8.7	7.1	18	64	113	20	16
MIN	.67	1.3	.45	.45	.47	1.3	2.1	2.5	13	16	8.2	.45
AC-FT	245	307	50	35	68	286	191	411	2290	2140	919	492
(†)	295	382	535	563	422	196	164	594	664	709	406	53

CAL YR 1977 TOTAL 2568.25 MEAN 7.04 MAX 35 MIN .45 AC-FT 5090 † 3620  
WTR YR 1978 TOTAL 3748.15 MEAN 10.3 MAX 113 MIN .45 AC-FT 7430 † 4980

† Diversion, in acre-feet, by La Cueva Canal.

## 07216500 MORA RIVER NEAR GOLONDRINAS, NM

LOCATION.--Lat 35°53'27", long 105°09'47", Mora County, Hydrologic Unit 11080004, in Mora Grant, on right bank 0.7 mi (1.1 km) upstream from bridge on State Highway 160, 1.2 mi (1.9 km) east of Golondrin, 1.9 mi (3.1 km) upstream from Coyote Creek, 4.7 mi (7.6 km) downstream from Rito Ceboilla, and at mile 75.8 (122.0 km).

DRAINAGE AREA.--267 mi<sup>2</sup> (692 km<sup>2</sup>).

PERIOD OF RECORD.--March 1915 to May 1921, October 1921 to March 1922, May, August, September 1922, July 1923 to July 1924, December 1924 to current year. Monthly discharge only 1915-30, published in WSP 1311.

REVISED RECORDS.--WSP 1281: 1951(M). WSP 1311: 1935(M), 1937-38(M), 1940-42(M), 1949(M). WSP 1511: Drainage area. WSP 1731: 1958(M).

GAGE.--Water-stage recorder. Altitude of gage is 6,750 ft (2,057 m), from topographic map. Mar. 10, 1915 to June 4, 1921, water-stage recorder at site 2.8 mi (4.5 km) upstream at different datum. July 6, 1921 to Jan. 5, 1929, nonrecording gage or water-stage recorder at site 0.7 mi (1.1 km) downstream at datum about 14 ft (4.3 m) lower and Jan. 6, 1929 to Apr. 1, 1972, water-stage recorder at site 0.7 mi (1.1 km) downstream at datum about 15 ft (4.6 m) lower.

REMARKS.--Records good. Diversions for irrigation of about 12,000 acres (49 km<sup>2</sup>) above station. Off-channel lakes make it possible to divert and store water during non-irrigation season. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--61 years (water years 1916-20, 1922, 1924-78), 33.1 ft<sup>3</sup>/s (0.937 m<sup>3</sup>/s), 23,980 acre-ft/yr (29.6 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft<sup>3</sup>/s (396 m<sup>3</sup>/s) Aug. 22, 1952, gage height, 14.4 ft (4.39 m), site and datum then in use, from rating curve extended above 660 ft<sup>3</sup>/s (19 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Sept. 29, 1904, and June 11, 1913, probably exceeded 25,000 ft<sup>3</sup>/s (710 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft<sup>3</sup>/s (11 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
July 11	0215	438 12.4	2.85 .869	July 23	0400	*635 18.0	3.27 .997

Minimum discharge, 0.70 ft<sup>3</sup>/s (0.020 m<sup>3</sup>/s) Apr. 18.

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	2.0	3.3	2.7	2.8	2.7	2.7	1.9	12	50	18	13
2	5.7	1.9	3.2	2.6	2.8	2.8	2.5	2.8	15	48	18	9.3
3	8.2	2.6	3.2	3.1	2.7	3.5	2.0	4.4	27	43	18	9.3
4	9.7	2.7	3.2	3.5	2.7	3.1	1.7	11	28	32	20	15
5	8.9	2.8	2.9	3.1	2.7	3.3	1.7	16	50	24	21	10
6	8.9	2.6	3.0	3.0	2.7	2.7	1.6	23	75	22	20	9.2
7	9.7	25	3.0	2.9	2.5	3.1	1.5	17	84	21	29	9.2
8	3.8	24	3.0	2.9	2.5	2.8	1.5	7.1	64	22	19	9.0
9	2.7	9.0	3.0	3.1	2.4	2.6	1.8	3.1	67	26	18	9.3
10	2.1	6.1	3.3	3.1	2.7	2.4	1.5	2.5	52	55	18	5.7
11	2.4	5.0	3.2	3.4	2.5	2.4	1.4	2.1	59	143	20	5.3
12	2.6	4.7	3.2	3.0	2.5	2.5	1.4	2.4	59	37	16	6.7
13	3.3	4.5	3.4	3.3	2.4	3.0	1.4	1.8	61	34	17	6.7
14	3.6	4.0	3.1	3.0	3.1	2.8	1.4	1.8	53	20	15	5.6
15	4.1	2.9	3.2	3.5	4.0	2.8	1.3	2.9	37	33	16	4.7
16	5.1	2.1	2.9	3.4	3.4	5.1	1.3	6.0	29	19	14	4.4
17	4.0	2.0	2.9	3.2	3.0	7.1	1.4	6.0	17	14	13	4.9
18	4.9	2.0	3.4	2.8	2.5	4.5	1.4	6.2	9.5	11	7.3	3.6
19	5.7	2.5	3.2	2.9	3.0	3.3	1.3	5.4	9.9	10	11	3.3
20	5.6	4.3	2.5	3.2	3.2	3.3	1.3	3.3	13	16	11	3.9
21	5.7	7.8	2.8	3.0	3.2	1.5	1.3	2.3	18	23	12	3.7
22	5.5	6.2	2.8	3.2	3.2	1.6	1.3	4.0	16	22	12	5.1
23	5.2	4.0	3.2	3.4	3.0	2.2	1.4	3.7	16	213	12	2.9
24	4.9	3.9	2.8	3.4	3.0	3.7	1.4	2.8	17	44	8.0	2.2
25	5.1	3.9	2.7	2.9	2.7	3.6	1.4	3.2	14	32	11	4.9
26	4.7	3.9	2.7	3.6	2.8	5.3	1.6	3.3	12	27	16	5.4
27	5.2	5.0	2.5	5.7	2.6	3.8	1.5	3.5	16	20	14	4.5
28	5.3	4.1	2.4	3.4	2.5	5.0	1.4	4.0	32	17	13	4.0
29	5.8	5.3	2.6	2.8	---	7.1	1.4	3.9	73	19	13	3.0
30	5.8	3.5	2.8	3.0	---	3.4	1.4	5.2	95	25	12	2.6
31	2.9	---	2.8	3.0	---	3.0	---	7.7	---	21	11	---
TOTAL	163.7	160.3	92.2	99.1	79.1	106.0	46.2	170.3	1130.4	1151	473.3	186.4
MEAN	5.28	5.34	2.97	3.20	2.83	3.42	1.54	5.49	37.7	37.1	15.3	6.21
MAX	9.7	25	3.4	5.7	4.0	7.1	2.7	23	95	213	29	15
MIN	2.1	1.9	2.4	2.6	2.4	1.5	1.3	1.8	9.5	10	7.3	2.2
AC-FT	325	318	183	197	157	210	92	338	2240	2280	939	370

CAL YR 1977 TOTAL 2632.6 MEAN 7.21 MAX 43 MIN 1.1 AC-FT 5220  
WTR YR 1978 TOTAL 3858.0 MEAN 10.6 MAX 213 MIN 1.3 AC-FT 7650



## 07218000 COYOTE CREEK NEAR GOLONDRINAS, NM

LOCATION.--Lat 35°55'00", long 105°09'49", Mora County, Hydrologic Unit 11080004, in Mora Grant, on left bank 0.5 mi (0.8 km) downstream from Coyote Creek damsite, 2.3 mi (3.7 km) northeast of Golondrin, and at mile 2.7 (4.3 km).

DRAINAGE AREA.--215 mi<sup>2</sup> (557 km<sup>2</sup>).

PERIOD OF RECORD.--April 1928 to September 1930 (monthly discharge only, published in WSP 1311), October 1930 to current year.

REVISED RECORDS.--WSP 1281: 1939-40(M), 1941-42, 1945-47. WSP 1511: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,785 ft (2,068 m), from topographic map. Prior to Apr. 26, 1938, at site 0.4 mi (0.6 km) downstream at different datum (nonrecording gage prior to Apr. 20, 1929). Apr. 26, 1938 to Sept. 25, 1946, at site 139 ft (42 m) downstream at same datum.

REMARKS.--Records fair. Diversions (including off-channel storage) for irrigation of about 4,000 acres (16 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--50 years, 11.2 ft<sup>3</sup>/s (0.317 m<sup>3</sup>/s), 8,110 acre-ft/yr (10.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,050 ft<sup>3</sup>/s (115 m<sup>3</sup>/s) Aug. 17, 1961, gage height, 9.60 ft (2.926 m), from rating curve extended above 250 ft<sup>3</sup>/s (7.1 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 5.54 ft (1.689 m), 7.74 ft (2.359 m), and 9.60 ft (2.926 m); maximum gage height, 10.1 ft (3.08 m) Aug. 30, 1936 (site and datum then in use); no flow Aug. 4, 1945, Apr. 10, May 9, 10, 1956, Feb. 20, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 176 ft<sup>3</sup>/s (4.98 m<sup>3</sup>/s) July 23, gage height, 3.20 ft (0.975 m), no peak above base of 180 ft<sup>3</sup>/s (5.1 m<sup>3</sup>/s); no flow Feb. 20, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	.27	5.4	2.6	2.5	2.6	.40	1.1	.11	.86	.92	1.9
2	.72	.25	4.4	2.5	2.5	2.5	.38	6.0	.26	.68	1.1	1.7
3	.78	.28	5.3	2.9	2.7	2.8	.37	7.5	.29	.59	1.8	1.5
4	.75	.28	5.7	2.7	2.6	2.7	.36	7.1	.40	.51	3.4	1.2
5	.84	.36	4.8	2.7	2.5	2.7	.31	6.2	12	.59	3.6	.30
6	1.0	.48	4.1	2.7	2.6	2.5	.26	6.2	5.1	.59	3.7	.19
7	1.5	3.5	2.7	2.4	2.6	2.5	.21	5.4	4.9	.59	3.5	.14
8	2.2	6.1	2.5	2.4	2.7	2.6	.22	4.7	4.5	.68	3.5	.16
9	2.3	4.5	2.4	2.4	2.4	2.6	.24	4.4	3.9	.68	3.3	.13
10	2.1	3.8	2.9	2.4	2.7	2.6	.23	4.3	3.6	1.4	3.3	.16
11	2.0	3.5	2.8	2.2	2.7	2.6	.20	27	3.4	9.5	2.8	.23
12	2.0	3.4	2.2	2.4	3.1	2.6	.18	25	3.3	.23	2.6	.27
13	1.7	2.8	2.0	2.4	3.2	2.8	.22	14	2.1	.17	2.3	.28
14	1.8	2.0	2.2	2.4	3.5	2.9	.22	9.0	.32	.12	2.5	.29
15	1.8	2.0	2.2	2.6	3.4	3.1	.25	4.0	.26	.12	1.8	.28
16	2.4	2.7	2.0	2.5	3.6	3.2	.30	2.1	.24	.17	.29	.28
17	2.4	3.5	2.2	2.5	3.6	3.1	.30	2.1	.30	.23	.30	.39
18	1.3	4.3	2.5	2.4	3.0	3.1	.25	1.9	.30	.29	.32	.52
19	.98	4.8	2.2	2.3	4.3	3.0	.26	2.3	.29	.36	.39	.57
20	.93	4.9	1.9	2.5	3.4	3.1	.30	1.6	.27	.51	.51	.65
21	.96	5.1	2.2	2.5	3.8	2.2	.28	1.1	.32	4.3	.46	.73
22	1.1	5.2	2.5	2.5	3.2	.24	.25	1.4	.23	9.8	.47	.86
23	1.2	5.0	2.3	2.5	2.5	.23	.32	.58	.23	48	.54	.77
24	1.2	5.1	2.3	2.4	2.2	.23	.34	.34	.23	6.0	.61	2.0
25	1.1	5.1	2.4	2.4	2.2	.23	.36	.20	.29	2.5	.91	2.8
26	1.2	5.3	2.5	2.5	2.3	.29	.55	.15	.36	.74	1.0	2.4
27	1.2	5.4	2.5	2.6	2.6	.36	.60	.10	.59	.66	.51	2.1
28	1.2	5.8	2.6	2.6	2.5	.71	.40	.14	.86	.55	.42	2.0
29	.41	6.0	2.6	2.6	---	.75	.46	.13	1.2	.59	10	2.1
30	.32	5.8	2.6	2.6	---	.45	.49	.10	1.3	.85	3.2	2.1
31	.37	---	2.6	2.6	---	.43	---	.07	---	.88	2.2	---
TOTAL	40.40	107.52	89.5	77.7	80.9	61.72	9.51	146.21	51.45	93.74	62.25	29.00
MEAN	1.30	3.58	2.89	2.51	2.89	1.99	.32	4.72	1.72	3.02	2.01	.97
MAX	2.4	6.1	5.7	2.9	4.3	3.2	.60	27	12	48	10	2.8
MIN	.32	.25	1.9	2.2	2.2	.23	.18	.07	.11	.12	.29	.13
AC-FT	80	213	178	154	160	122	19	290	102	186	123	58

CAL YR 1977 TOTAL 1039.92 MEAN 2.85 MAX 63 MIN .17 AC-FT 2060  
WTR YR 1978 TOTAL 849.90 MEAN 2.33 MAX 48 MIN .07 AC-FT 1690

## 07221000 MORA RIVER NEAR SHOEMAKER, NM

LOCATION.--Lat 35°48'01", long 104°46'58", Mora County, Hydrologic Unit 11080004, in Mora Grant, on left bank 5.5 mi (8.8 km) east of Shoemaker, 12.3 mi (19.8 km) upstream from Pedros Creek, and at mile 39.4 (63.4 km).

DRAINAGE AREA.--1,104 mi<sup>2</sup> (2,859 km<sup>2</sup>), of which 71 mi<sup>2</sup> (184 km<sup>2</sup>) is probably noncontributing.

PERIOD OF RECORD.--October 1914 to July 1915, October 1915 to August 1918, May 1919 to July 1924, September to November 1924, March to July 1925, June 1927 to current year. Prior to October 1930 monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1281: 1931(M), 1933-34(M), 1937(M), 1938(P), 1939-40(M), 1941-42(P). WSP 1731: 1921, 1928, 1951(M). WDR NM-75-1: 1974.

GAGE.--Water-stage recorder. Altitude of gage is 6,145 ft (1,873 m), from topographic map. Prior to Oct. 10, 1934, at site 2,000 ft (610 m) upstream at different datum.

REMARKS.--Records good. Diversions for irrigation of about 26,000 acres (110 km<sup>2</sup>) above station. Off-channel lakes make it possible to divert and store water during non-irrigation season. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--60 years (water years 1915-18, 1920-24, 1928-78), 56.3 ft<sup>3</sup>/s (1.594 m<sup>3</sup>/s), 40,790 acre-ft/yr (50.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft<sup>3</sup>/s (430 m<sup>3</sup>/s) June 3, 1948, gage height, 12.79 ft (3.898 m), from rating curve extended above 2,800 ft<sup>3</sup>/s (79 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 10.09 ft (3.075 m) and 12.79 ft (3.898 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Sept. 29, 1904, and June 11, 1913, probably exceeded 30,000 ft<sup>3</sup>/s (850 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,260 ft<sup>3</sup>/s (35.7 m<sup>3</sup>/s) at 2230 hours June 27, gage height 4.55 ft (1.387 m), no other peak above base of 800 ft<sup>3</sup>/s (23 m<sup>3</sup>/s); minimum, 0.57 ft<sup>3</sup>/s (0.016 m<sup>3</sup>/s) May 31, June 1.

REVISIONS.--Revised daily discharges, in cubic feet per second, for September 1977 are given below. These figures supersede those published in the report for 1977.

Sept. 9.....8.0	Sept. 14.....6.3	Sept. 19.....5.2	Sept. 23.....4.7	Sept. 27.....3.2
10.....6.3	15.....5.6	20.....5.9	24.....4.4	28.....4.2
11.....5.2	16.....4.9	21.....5.9	25.....3.5	29.....3.7
12.....5.9	17.....4.9	22.....5.2	26.....2.7	30.....2.5
13.....7.6	18.....4.9			

Month	Total	Mean	Max	Min	Ac-Ft
September 1977	269.2	8.97	68	2.5	534
Water Year 1977	3,299.10	9.04	208	.93	6,540

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	3.5	3.4	7.4	6.9	3.0	2.1	2.2	.66	45	4.3	1.5
2	2.1	3.7	3.1	6.9	7.2	2.8	1.9	5.3	1.0	28	4.2	1.4
3	2.1	4.2	3.0	7.3	6.5	2.8	1.9	5.1	2.2	21	4.8	1.8
4	1.9	3.9	3.0	7.6	6.9	2.8	2.0	4.4	3.0	13	11	3.0
5	1.7	3.7	2.7	7.2	6.5	2.5	2.0	3.4	2.9	9.0	7.2	2.4
6	2.1	3.5	3.5	7.9	5.0	2.5	1.7	2.2	53	6.0	5.6	1.7
7	2.3	5.6	4.7	7.0	4.4	3.0	2.0	2.3	22	4.4	4.6	1.3
8	1.7	6.3	4.0	7.5	3.8	2.8	2.1	2.7	26	3.8	2.8	1.2
9	1.9	17	3.9	7.3	2.1	2.4	2.1	2.8	9.8	3.5	4.7	.92
10	1.9	8.5	4.6	6.6	2.2	2.3	2.0	2.5	10	3.3	4.1	1.2
11	2.1	6.4	4.8	8.0	2.2	2.7	2.2	1.7	11	23	2.9	1.6
12	2.5	5.7	4.1	7.0	2.2	2.8	2.1	1.4	10	37	2.6	1.4
13	2.5	5.4	4.7	7.0	2.2	2.5	2.0	2.3	12	9.4	2.1	1.5
14	2.3	4.9	5.2	7.0	2.2	2.4	2.0	2.4	9.7	4.5	5.4	1.1
15	2.3	4.4	5.1	8.8	2.1	2.3	2.1	2.7	7.8	3.9	3.9	1.0
16	2.3	5.6	5.5	7.2	2.0	2.7	1.9	2.7	5.8	4.5	3.0	1.3
17	2.1	4.8	5.5	6.3	2.0	3.0	1.8	2.4	3.9	4.9	2.2	1.4
18	2.1	5.0	4.4	8.1	2.1	2.5	1.6	2.0	3.6	3.8	1.6	1.3
19	2.3	3.9	5.0	8.3	2.2	2.3	1.7	2.3	3.4	4.0	2.2	1.1
20	2.5	4.8	5.0	7.1	2.2	2.5	2.2	1.5	2.7	3.3	1.3	.93
21	2.5	5.2	4.1	8.0	2.5	2.6	2.3	1.4	3.0	3.8	2.3	.86
22	3.0	4.3	3.2	8.0	3.0	2.5	2.0	2.1	2.9	5.2	2.2	1.0
23	3.7	3.8	6.1	7.6	2.4	2.2	2.1	2.2	2.6	99	2.1	1.5
24	3.7	3.5	7.2	7.0	3.1	2.9	1.8	1.4	2.3	86	2.9	1.8
25	3.7	3.7	7.8	6.6	2.6	2.4	2.0	1.2	2.2	31	2.9	4.2
26	3.5	3.5	7.3	6.3	2.6	2.2	1.9	1.7	1.9	15	2.9	2.8
27	3.2	3.3	5.9	8.8	2.3	2.1	1.7	1.2	135	23	2.7	1.9
28	3.5	3.6	6.1	7.1	2.5	2.6	1.6	.96	308	10	2.5	1.5
29	3.5	3.7	7.0	8.0	---	3.4	1.5	.83	82	6.1	1.9	1.3
30	3.7	3.5	8.0	7.4	---	2.7	1.3	.73	71	4.8	1.8	1.3
31	3.5	---	8.1	8.5	---	2.2	---	.62	---	4.5	2.5	---
TOTAL	80.5	148.9	156.0	230.8	93.9	80.4	57.6	68.64	811.36	523.7	150.4	47.21
MEAN	2.60	4.96	5.03	7.45	3.35	2.59	1.92	2.21	27.0	16.9	4.85	1.57
MAX	3.7	17	8.1	8.8	7.2	3.4	2.3	5.3	308	99	48	4.2
MIN	1.7	3.3	2.7	6.3	2.0	2.1	1.3	.62	.66	3.3	1.3	.86
AC-FT	160	295	309	458	186	159	114	136	1610	1040	298	94

CAL YR 1977 TOTAL 2733.80 MEAN 7.49 MAX 208 MIN .93 AC-FT 5420  
WTR YR 1978 TOTAL 2449.41 MEAN 6.71 MAX 308 MIN .62 AC-FT 4860

LOCATION.--Lat 35°39'08", long 104°22'39", in SW¼ sec. 34, T.17 N., R.24 E., San Miguel County, Hydrologic Unit 11080003 on right bank 1,000 ft (300 m) downstream from bridge on State Highway 65, 0.9 mi (1.4 km) upstream from Lagartija Creek, 3.2 mi (5.1 km) northeast of Sanchez, 10 mi (16 km) downstream from Mora River, 25 mi (40 km) southwest of Mosquero, and at mile 777.0 (1,250.2 km).

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,250 ft<sup>3</sup>/s (92.0 m<sup>3</sup>/s) June 28, gage height, 7.86 ft (2.396 m), no peak above base of 3,500 ft<sup>3</sup>/s (99 m<sup>3</sup>/s); no flow Sept. 21-24.

[illegible]

07221500 CANADIAN RIVER NEAR SANCHEZ, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1975 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT										
25...	1300	2.4	940	8.2	26.0	16.0	4	--	9.6	11
NOV										
22...	0930	4.0	750	8.1	11.0	4.0	6	--	13.7	22
DEC										
13...	1230	2.1	690	8.2	12.0	6.5	9	--	10.9	0
JAN										
31...	1330	17	1120	8.6	4.0	2.5	--	4.8	12.8	19
FEB										
21...	1230	10	1700	8.6	10.5	5.5	--	2.1	14.6	18
MAR										
28...	1200	5.5	2000	8.4	18.5	13.0	--	4.0	11.2	13
MAY										
23...	1200	7.0	2280	8.3	30.5	25.0	--	2.0	8.2	48
JUN										
20...	1200	5.7	1290	8.5	30.5	25.5	--	29	7.7	16
JUL										
18...	1145	50	900	8.3	35.5	26.0	--	55	8.0	18
AUG										
21...	1315	.68	770	8.2	34.0	28.0	--	19	8.4	26
SEP										
25...	1200	.54	1120	8.0	21.0	18.0	--	4.5	9.8	25

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CACO3) (00410)
OCT										
25...	350	160	80	37	81	1.9	4.4	230	0	190
NOV										
22...	270	82	64	27	53	1.4	3.4	230	0	190
DEC										
13...	280	93	55	35	55	1.4	3.3	230	0	190
JAN										
31...	450	260	98	49	89	1.8	3.3	220	1	180
FEB										
21...	650	480	140	74	140	2.4	4.0	210	0	170
MAR										
28...	700	540	150	79	150	2.5	4.0	190	1	160
MAY										
23...	870	720	210	84	270	4.0	7.1	180	0	150
JUN										
20...	450	310	96	52	110	2.2	5.6	180	0	150
JUL										
18...	350	--	86	33	79	1.8	5.5	--	--	92
AUG										
21...	280	--	68	26	59	1.5	5.1	--	--	140
SEP										
25...	400	--	100	37	95	2.1	5.1	--	--	90

## ARKANSAS RIVER BASIN

07221500 CANADIAN RIVER NEAR SANCHEZ, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 25...	280	24	.5	7.3	632	628	.02	.01	.00	.32
NOV 22...	150	19	.5	6.1	425	437	.01	.01	.03	.21
DEC 13...	180	20	.6	5.2	463	468	.04	.03	.10	.58
JAN 31...	400	26	.5	9.7	811	785	.04	.07	.00	.10
FEB 21...	670	40	.5	8.2	1300	1180	.01	.02	.02	.12
MAR 28...	720	45	.5	5.6	1380	1250	.02	.02	.01	.87
MAY 23...	1200	48	.5	5.2	2100	1910	.01	.05	.01	.62
JUN 20...	470	29	.6	6.6	934	859	.01	.02	.00	.44
JUL 18...	390	14	.6	7.1	692	672	.24	.30	.01	.67
AUG 21...	220	18	.4	8.1	518	489	.01	.01	.02	.43
SEP 25...	470	28	.3	3.3	820	793	.11	.14	.05	.43

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)
OCT 25...	.34	.02	.01	110	30	--	--	8.4	1.0
NOV 22...	.25	.03	.00	90	20	--	--	4.5	.9
DEC 13...	.72	.00	.01	90	20	20	2.4	4.5	.7
JAN 31...	.14	.02	.00	80	30	--	--	2.2	.6
FEB 21...	.15	.01	.00	90	10	--	--	2.9	.7
MAR 28...	.90	.01	.00	110	50	20	3.2	3.1	.4
MAY 23...	.64	.02	.02	150	20	--	--	5.3	.9
JUN 20...	.45	.04	.01	120	0	10	3.8	4.0	1.0
JUL 18...	.92	.04	.01	80	10	--	--	3.7	1.8
AUG 21...	.46	.04	.01	90	<10	--	--	6.1	1.0
SEP 25...	.59	.05	.00	90	20	20	5.5	4.9	.8

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
DEC 13...	1230	1	1	--	--	90	0	0	0	0
MAR 28...	1200	1	1	--	--	110	5	1	10	0
JUN 20...	1200	2	2	--	--	120	1	0	0	0
SEP 25...	1200	0	0	100	100	90	1	2	0	0

07221500 CANADIAN RIVER NEAR SANCHEZ, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
DEC 13...	0	0	3	0	200	20	3	1	40
MAR 28...	0	0	3	2	170	50	--	--	120
JUN 20...	0	0	6	2	780	0	18	2	210
SEP 25...	0	1	6	2	870	20	13	2	90

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
DEC 13...	20	.0	.0	1	1	--	--	20	10
MAR 28...	20	.0	.0	1	0	--	--	10	10
JUN 20...	10	.0	.0	1	1	--	--	20	10
SEP 25...	20	.2	.0	0	0	0	0	20	20

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 25...	1300	2	8
NOV 22...	0930	1	3
DEC 13...	1230	2	9
JAN 31...	1330	1	9
FEB 21...	1230	0	120
MAR 28...	1200	9	3
MAY 23...	1200	19	2
JUN 20...	1200	50	32
JUL 18...	1145	35	16
AUG 21...	1315	8	210
SEP 25...	1200	1700	1300

## ARKANSAS RIVER BASIN

07221500 CANADIAN RIVER NEAR SANCHEZ, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 25...	1300	2.4	16.0	10	.06	71
NOV 22...	0930	4.0	4.0	8	.09	95
DEC 13...	1230	2.1	6.5	7	.04	91
JAN 31...	1330	17	2.5	25	1.1	75
FEB 21...	1230	10	5.5	9	.24	94
MAR 28...	1200	5.5	13.0	19	.28	98
MAY 23...	1200	7.0	25.0	10	.19	84
JUN 20...	1200	5.7	25.5	206	3.2	21
JUL 18...	1145	50	26.0	63	8.5	99
AUG 21...	1315	.68	28.0	22	.04	92
SEP 25...	1200	.54	18.0	39	.06	99

LOCATION.—Lat 35°24'10", long 104°26'33", in NE<sub>1</sub>NE<sub>1</sub> sec.36, T.14 N., R.23 E., San Miguel County, Hydrologic Unit 11080005, on left bank 1.5 mi (2.4 km) northeast of Variadero, 14 mi (23 km) west of Conchas Dam, and at mile 15.0 (24.1 km).

GAGE.--Water-stage recorder. Altitude of gage is 4,390 ft (1,340 m), from topographic map. Prior to Mar. 30, 1942, at site 1.5 mi (2.4 km) upstream at different datum. Mar. 30, 1942 to May 18, 1950, at present site at datum 0.5 ft (0.15 m) higher.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,000 ft<sup>3</sup>/s (1,250 m<sup>3</sup>/s) Sept. 1, 1942, gage height, 19.96 ft (6.084 m), present datum, from rating curve extended above 760 ft<sup>3</sup>/s (22 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 10.5 ft (3.20 m) and 19.96 ft (6.084 m), present datum; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.06	.32	.12	.32	.14	.19	.00	.00	7.2	.06	.01
2	.12	.06	.25	.12	.32	.14	.14	.68	.00	2.1	.12	.00
3	.12	.06	.22	.12	.25	.16	.10	1.7	.00	1.2	.12	.00
4	.12	.07	.22	.12	.22	.22	.08	.74	.00	.60	100	.00
5	.12	.08	.16	.12	.19	.28	.08	.37	.00	.42	16	.00
6	.12	.08	.12	.12	.14	.25	.07	.32	.06	.28	3.2	.00
7	.19	.16	.12	.10	.14	.48	.06	.25	.37	.19	1.2	.00
8	.16	23	.12	.08	.14	.28	.06	.19	.42	.14	.60	.00
9	.12	14	.12	.08	.14	.22	.04	.14	.48	.08	.37	.00
10	.08	6.7	.12	.07	.14	.19	.03	.10	.14	.06	.32	.00
11	.08	3.4	.12	.08	.14	.16	.01	.08	.12	.04	.16	.00
12	.08	2.0	.12	.10	.12	.19	.00	.07	.19	.03	.10	.00
13	.08	1.2	.12	.12	.10	.16	.00	.04	50	.02	.07	.00
14	.07	.99	.12	.12	.12	.16	.00	.03	132	.00	.04	.00
15	.06	.82	.12	.14	.25	.14	.00	.01	27	.00	.01	.00
16	.06	.60	.12	.14	.28	.14	.00	.00	2.3	.00	.00	.00
17	.04	.48	.10	.14	.28	.12	.00	.00	.54	.00	.00	.00
18	.04	.37	.12	.14	.28	.12	.00	.00	.14	.00	.00	.00
19	.04	.28	.12	.14	.28	.12	.00	.00	.08	.00	.00	.00
20	.04	.19	.12	.14	.25	.12	.00	.00	.04	.00	.00	.00
21	.04	.19	.10	.16	.22	.14	.00	.00	.03	.00	.00	.00
22	.04	.16	.12	.16	.22	.14	.00	.00	.01	21	.19	.00
23	.04	.16	.12	.19	.19	.14	.00	.00	.01	11	.06	.00
24	.04	.16	.12	.22	.16	.14	.00	.00	.00	8.1	.03	.00
25	.04	.19	.12	.28	.19	.14	.00	.00	.00	4.1	13	.00
26	.06	.19	.10	.28	.19	.16	.00	.00	.00	1.6	9.2	.00
27	.04	.22	.12	.25	.19	.19	.00	.00	195	.67	.60	.00
28	.04	.22	.12	.22	.14	.19	.00	.00	114	.32	.19	.00
29	.06	.22	.14	.19	---	.25	.00	.00	12	.22	.12	.00
30	.06	.25	.14	.19	---	.25	.00	.00	23	.16	.06	.00
31	.06	---	.14	.25	---	.22	---	.00	---	.10	.03	---
TOTAL	2.40	56.56	4.29	4.70	5.60	5.75	.86	4.72	557.93	59.63	145.85	.01
MEAN	.077	1.89	.14	.15	.20	.19	.029	.15	18.6	1.92	4.70	.000
MAX	.19	23	.32	.28	.32	.48	.19	1.7	195	21	100	.01
MIN	.04	.06	.10	.07	.10	.12	.00	.00	.00	.00	.00	.00
AC-FT	4.8	112	8.5	9.3	11	11	1.7	9.4	1110	118	289	.02
CAL YR 1977 TOTAL	7697.80			21.1	2910			15270				
WTR YR 1978 TOTAL	848.30			2.32	195			1680				



## ARKANSAS RIVER BASIN

## 07223000 BELL RANCH CANAL BELOW CONCHAS DAM, NM

LOCATION.--Lat 35°24'10", long 104°11'07", San Miguel County, Hydrologic Unit 11080006, in Pablo Montoya Grant, on left bank 1,270 ft (390 m) downstream from Conchas Dam, and 23.5 mi (37.8 km) north of Newkirk.

PERIOD OF RECORD.--October 1942 to current year. Prior to October 1965, published as "near Conchas Dam."

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 4,150 ft (1,265 m), from headgate elevations.

REMARKS.--Records good. Canal diverts from Conchas Lake (station 07223500) for irrigation of about 700 acres (3 km<sup>2</sup>) on Bell Ranch. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 21 ft<sup>3</sup>/s (0.595 m<sup>3</sup>/s) July 10-13, Sept. 7-10, 1948, June 27, Aug. 7, 1951; no flow many days each year.

## MONTHLY DIVERSION, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Maximum	Minimum	Mean	Diversion in acre-feet
October.....	9.6	0	7.68	472
November.....	.76	.15	.25	15
December.....	2.4	.04	.48	29
CAL YR 1977.....	10	0	4.05	2,930
January.....	10	0	6.63	408
February.....	.10	.09	.10	5.5
March.....	2.0	.09	.22	13
April.....	11	.45	8.97	533
May.....	8.8	.01	1.82	112
June.....	10	0	3.79	226
July.....	0	0	0	0
August.....	8.4	0	1.62	100
September.....	8.7	0	3.02	180
WTR YR 1978.....	11	0	2.89	2,090

## 07223300 CONCHAS CANAL BELOW CONCHAS DAM, NM

LOCATION.--Lat 35°22'51", long 104°10'58", San Miguel County, Hydrologic Unit 11080006, in Pablo Montoya Grant, in Conchas Canal operations building below Conchas Dam, and 21.5 mi (34.6 km) north of Newkirk. Water-quality sampling site 1.0 mi (1.6 km) downstream.

PERIOD OF RECORD.--September 1945 to June 1949, April 1954 to June 1955, September 1961 to current year.

GAGE.--Flowmeters in each of two 90 in (2.286 m) diameter steel diversion conduits. Prior to Nov. 19, 1948, water-stage recorder at site 0.2 mi (0.3 km) downstream. Nov. 19, 1948 to Dec. 31, 1973, water-stage recorder at site 1.0 mi (1.6 km) downstream.

REMARKS.--Water is diverted from Conchas Lake for irrigation of about 35,000 acres (140 km<sup>2</sup>) on Tucumcari Project (1966 conditions).

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 751 ft<sup>3</sup>/s (21.3 m<sup>3</sup>/s) Aug. 31, 1961; no flow many days each year.

## MONTHLY DIVERSION, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Mean	Diversion in acre-feet
October.....	51.0	3,130
November.....	0	0
December.....	0	0
CAL YR 1977.....	52.9	38,310
January.....	0	0
February.....	0	0
March.....	0	0
April.....	153	9,090
May.....	64.2	3,950
June.....	45.6	2,710
July.....	234	14,400
August.....	204	12,530
September.....	147	8,750
WTR YR 1978.....	75.4	54,560

## 07223500 CONCHAS LAKE AT CONCHAS DAM, NM

LOCATION.--Lat 35°24'10", long 104°11'25", San Miguel County, Hydrologic Unit 11080003, in Pablo Montoya Grant, stilling well within concrete portion of Conchas Dam on Canadian River, 24 mi (39 km) north of Newkirk, and at mile 746.0 (1,200.3 km).

DRAINAGE AREA.--7,409 mi<sup>2</sup> (19,189 km<sup>2</sup>), of which 433 mi<sup>2</sup> (1,121 km<sup>2</sup>), is probably noncontributing.

PERIOD OF RECORD.--December 1938 to September 1965 (monthend contents only), October 1965 to current year. Prior to October 1965, published as Conchas Reservoir near Conchas Dam.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Lake is formed by dam consisting of concrete main section and earthfill wings, completed Sept. 15, 1939; storage began Dec. 29, 1938. Capacity, 330,100 acre-ft (407 hm<sup>3</sup>) between elevations 4,060.0 ft (1,237.49 m) and 4,201.0 ft (1,280.46 m), crest of 300 ft (91.4 m) ungated service spillway. Inactive storage, 70,490 acre-ft (86.9 hm<sup>3</sup>) at elevation 4,155.0 ft (1,266.44 m). Lake usually not drawn below elevation, 4,157.35 ft (1,267.160 m), sill of irrigation outlet, capacity, 77,790 acre-ft (95.9 hm<sup>3</sup>), except for minor sluicing and operation of small powerplant; during 1954-55, 1964 and 1976 there was some pumping into Conchas Canal. Capacity of 198,800 acre-ft (245 hm<sup>3</sup>) between elevations 4,201.0 ft (1,280.46 m), crest of 300 ft (91.4 m) ungated service spillway, and 4,218.0 ft (1,285.65 m), crest of 3,000 ft (914 m) ungated emergency spillway, acts as detention storage in the control of floods. Figures given herein represent total contents. Lake is used for irrigation, flood control, and recreation. Diversions above station for irrigation of about 57,000 acres (230 km<sup>2</sup>). Direct diversions through Conchas Dam to Bell Ranch Canal and Conchas Canal (stations 07223000, 07223300) irrigate about 36,000 acres (150 km<sup>2</sup>) near Tucumcari, and on Bell Ranch.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 479,600 acre-ft (591 hm<sup>3</sup>) Apr. 24, 1942, elevation, 4,208.41 ft (1,282.723 m); minimum after initial filling, 78,080 acre-ft (96.3 hm<sup>3</sup>) Sept. 18, 1976, elevation, 4,157.44 ft (1,267.188 m); minimum elevation, 4,155.80 ft (1,266.688 m) Sept. 24, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 118,800 acre-ft (146 hm<sup>3</sup>) July 1, 3; maximum elevation, 4,168.53 ft (1,270.568 m) July 3; minimum contents, 82,630 acre-ft (102 hm<sup>3</sup>) Sept. 30, elevation, 4,158.84 ft (1,267.614 m).

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Corps of Engineers in 1970)

4,155	70,490	4,165	104,600
4,160	86,520	4,170	125,100

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115800	110400	109200	107900	107600	107500	107000	94970	90480	118800	104500	93100
2	115400	110300	109200	107900	107600	107500	106900	95180	90730	118700	104200	92740
3	115000	110300	109200	107900	107600	107500	106800	94930	90830	118600	103800	92350
4	114500	110300	109100	107900	107600	107500	106800	94790	91120	118100	103500	92030
5	114100	110200	109100	107800	107600	107500	106800	94750	91570	117500	103400	91640
6	113900	110100	109000	107800	107600	107500	106600	94750	92560	117100	103400	91290
7	113500	110200	109000	107800	107600	107600	106500	94640	92850	116600	103200	90830
8	113200	110100	108900	107700	107600	107600	106400	94640	92960	116100	103100	90480
9	112900	110100	108900	107700	107600	107600	106300	94790	92960	115500	102800	90100
10	112500	110100	108800	107600	107600	107500	106200	94930	92960	115000	102600	89750
11	112300	110000	108800	107600	107600	107500	105800	94930	92880	114300	102100	89160
12	112000	110000	108700	107500	107600	107500	105000	94930	92850	113700	101600	88680
13	111900	109900	108700	107500	107600	107500	104500	94930	92960	113100	101200	88120
14	111800	109900	108700	107500	107600	107500	103900	94930	93100	112700	100600	87640
15	111700	109900	108600	107500	107600	107400	103500	94930	93100	112300	100100	87130
16	111600	109900	108600	107500	107600	107400	102900	94900	92990	111900	99600	86690
17	111500	109900	108500	107400	107600	107300	102400	94790	92880	111500	99000	86210
18	111500	109900	108400	107500	107600	107300	101700	94720	92880	110900	98410	85710
19	111400	109800	108400	107400	107600	107300	101200	94640	92780	110400	97970	85230
20	111300	109700	108400	107400	107600	107300	100500	94610	92740	110400	97490	84760
21	111300	109600	108400	107400	107600	107300	99820	94570	92640	109900	97080	84300
22	111200	109500	108300	107400	107600	107200	99260	94280	92530	109600	96680	83830
23	111100	109500	108200	107400	107600	107200	98740	93850	92420	109100	96170	83430
24	111100	109400	108200	107500	107600	107100	98220	93350	92320	108700	95800	83230
25	111000	109400	108100	107500	107600	107100	97780	92850	92210	108300	95480	83030
26	110900	109300	108100	107500	107600	107100	97270	92390	91820	107800	95330	82930
27	110800	109300	108100	107500	107600	107100	96790	92000	100100	107300	94900	82830
28	110700	109300	108000	107500	107500	107100	96310	91680	115100	106900	94430	82760
29	110700	109300	108000	107500	---	107100	95910	91470	117700	106300	94250	82700
30	110600	109300	108000	107500	---	107100	95480	91080	118300	105700	93890	82630
31	110500	---	108000	107500	---	107100	---	90760	---	105200	93490	---
MAX	115800	110400	109200	107900	107600	107600	107000	95180	118300	118800	104500	93100
MIN	110500	109300	108000	107400	107500	107100	95480	90760	90480	105200	93490	82630
(†)	4166.50	4166.18	4165.85	4165.74	4165.74	4165.62	4162.55	4161.23	4168.40	4165.14	4162.00	4158.84
(‡)	-5700	-1200	-1300	-500	0	-400	-11620	-4720	+27540	-13100	-11710	-10860
CAL YR 1977	MAX	129400	MIN	80140	‡	+25170						
WTR YR 1978	MAX	118800	MIN	82630	‡	-33570						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

## ARKANSAS RIVER BASIN

07226500. UTE CREEK NEAR LOGAN, NM

LOCATION.--Lat 35°26'18", long 103°31'31", in NW¼SE¼ sec.15, T.14 N., R.32 E., Harding County, Hydrologic Unit 11080007, on right bank 1.9 mi (3.1 km) downstream from Alamosa Creek, 4.5 mi (7.2 km) upstream from State Road 155, 4.7 mi (7.6 km) upstream from high-water line of Ute Reservoir, 8.2 mi (13.2 km) northwest of Logan, and at mile 10.0 (16.1 km).

DRAINAGE AREA.--2,060 mi<sup>2</sup> (5,335 km<sup>2</sup>), of which 617 mi<sup>2</sup> (1,598 km<sup>2</sup>) is probably noncontributing.

PERIOD OF RECORD.--January 1912 to May 1914 (gage heights and discharge measurements only), January 1942 to current year. Records of discharge for August 1904 to June 1906, April 1909 to December 1911, published in WSP 307, are unreliable and should not be used.

REVISED RECORDS.--WSP 1281: 1942-48, 1950, 1951(P). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Altitude of gage is 3,815 ft (1,163 m), from topographic map. See WSP 2121 for history of changes prior to Oct. 1, 1964.

REMARKS.--Records poor. Diversions for irrigation of a few hundred acres above station. Several observations of water temperatures were made during the year.

AVERAGE DISCHARGE.--36 years, 24.2 ft<sup>3</sup>/s (0.685 m<sup>3</sup>/s), 17,530 acre-ft/yr (21.6 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft<sup>3</sup>/s (694 m<sup>3</sup>/s) May 28, 1946, July 12, 1951, gage height, 8.4 ft (2.56 m), site and datum then in use, from rating curve extended above 7,700 ft<sup>3</sup>/s (220 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 5.2 ft (1.58 m) and 7.2 ft (2.19 m); maximum gage height, 8.76 ft (2.670 m) July 17, 1972; no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1, 1914, reached a stage of 22.95 ft (6.995 m) site and datum then in use. Another major flood reached a stage of 16.0 ft (4.88 m), 1942 datum, sometime in 1941, from information furnished by Bureau of Reclamation, discharge, about 70,000 ft<sup>3</sup>/s (2,000 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,280 ft<sup>3</sup>/s (36.2 m<sup>3</sup>/s) June 6, gage height, 3.23 ft (0.985 m), no peak above base of 3,700 ft<sup>3</sup>/s (100 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	14	4.1	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	38	22	.01	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	42	10	.17	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	4.4	1.0	.01	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	31	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	330	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	24	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	12	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	2.9	.00	2.4	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	13	.00	2.3	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.99	.00	.06	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	54	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	24	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	138	4.0	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	54	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	13	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	6.0	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	170	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	120	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	25	.01	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.9	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.90	.00	.46	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	40	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	11	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	55	.00	.02	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	102	.00	.00
TOTAL	.00	.00	.00	.00	.00	.00	.00	41.90	779.32	551.36	9.08	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	1.35	26.0	17.8	.29	.000
MAX	.00	.00	.00	.00	.00	.00	.00	40	330	170	4.1	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	83	1550	1090	18	.00
CAL YR 1977 TOTAL	10345.18			MEAN 28.3	MAX 2700	MIN .00	AC-FT 20520					
WTR YR 1978 TOTAL	1381.66			MEAN 3.79	MAX 330	MIN .00	AC-FT 2740					

## 07226800 UTE RESERVOIR NEAR LOGAN, NM

LOCATION.--Lat 35°20'35", long 103°26'37", in NW¼ sec.21, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080006, on face of Ute Dam on Canadian River, 2.5 mi (4.0 km) southwest of Logan, 3.5 mi (5.6 km) downstream from Ute Creek, and at mile 673.1 (1,083.0 km).  
DRAINAGE AREA.--1,140 mi<sup>2</sup> (28,853 km<sup>2</sup>), of which 1,110 mi<sup>2</sup> (2,875 km<sup>2</sup>) is probably noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1963 to September 1965 (monthend contents only), October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Interstate Stream Commission). Prior to Feb. 25, 1974, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam 121 ft (37 m) high above streambed, 2,050 ft (620 m) long; an earth-dike section on north (left) bank of Canadian River is 2,860 ft (870 m) long and has a maximum height of 27 ft (8 m); a concrete spillway section 840 ft (260 m) long is constructed between main embankment and the dike. Construction completed in May 1963; storage began Dec. 13, 1962. Capacity, 90,470 acre-ft (112 hm<sup>3</sup>) at elevation 3,760.0 ft (1,146.05 m), crest of 840 ft (260 m) ungated service spillway. Top of dam is at elevation 3,801.0 ft (1,158.54 m). Maximum design capacity of 285,700 acre-ft (352 hm<sup>3</sup>) at elevation 3,791.0 ft (1,155.50 m), 31.0 ft (9.4 m) above crest of spillway, allows 195,200 acre-ft (241 hm<sup>3</sup>) of capacity for protection of the structure. Dead storage, 12,620 acre-ft (15.6 hm<sup>3</sup>) at elevation 3,725.0 ft (1,135.38 m), sill of outlet gate; inactive pool of 37,530 acre-ft (46.3 hm<sup>3</sup>) below elevation 3,741.6 ft (1,140.44 m) is maintained for fish and wildlife. Figures given herein represent total contents. Reservoir is planned to furnish water for municipal and industrial uses and for recreational purposes; some incidental flood control. Diversions above station for irrigation of about 90,000 acres (360 km<sup>2</sup>).

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 119,900 acre-ft (148 hm<sup>3</sup>) June 17, 1969, elevation, 3,762.4 ft (1,146.78 m); minimum since reservoir first filled in September 1965, 68,680 acre-ft (84.7 hm<sup>3</sup>) Apr. 12, 1977, elevation, 3,753.59 ft (1,144.094 m); minimum elevation observed, 3,752.8 ft (1,143.85 m) May 29, 1966, contents, 82,360 acre-ft (102 hm<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 79,610 acre-ft (98.2 hm<sup>3</sup>) Oct. 1, elevation, 3,756.97 ft (1,145.124 m); minimum, 71,500 acre-ft (88.2 hm<sup>3</sup>) June 25, elevation, 3,754.49 ft (1,144.369 m).  
REVISIONS.--Revised figures of contents for the period January to September 1977, superseding those published in the report for 1977 are given herein.

EXTREMES FOR 1977 WATER YEAR.--Maximum contents, 91,430 acre-ft (113 hm<sup>3</sup>) Oct. 3, elevation, 3,755.35 ft (1,144.631 m); maximum elevation, 3,759.58 ft (1,145.920 m) Aug. 25, contents, 88,880 acre-ft (110 hm<sup>3</sup>); minimum contents, 68,680 acre-ft (84.7 hm<sup>3</sup>) Apr. 12, elevation, 3,753.59 ft (1,144.094 m).

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Geological Survey and New Mexico Interstate Stream Commission in 1975)

3,752	63,840	3,758	83,150
3,754	69,960	3,760	90,470
3,756	76,380		

CONTENTS, IN ACRE-FEET, PERIOD JANUARY TO SEPTEMBER 1977  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				71000	70750	70590	69240	74390	82800	81900	80970	84920
2				71000	70750	70590	69180	74390	82750	82140	81110	85640
3				71160	70750	70530	69090	74420	82700	82140	82460	85500
4				70900	70750	70490	69060	74260	82650	82080	82080	85060
5				70940	70750	70490	69090	74230	82550	82010	81490	84710
6				70970	70720	70460	69060	74160	82490	81940	81140	84140
7				70970	70720	70430	69020	74100	82460	81900	81010	83540
8				70900	70720	70400	68990	74000	82390	81760	80870	82910
9				70900	70650	70370	68990	73970	82250	82460	80800	82110
10				70900	70650	70340	68900	73870	82110	83330	81070	81450
11				70900	70620	70270	68840	74190	81970	83290	81870	80900
12				71000	70620	70240	68810	75170	81940	82870	82320	80730
13				70900	70590	70210	68960	75490	81800	82180	81970	80970
14				70900	70620	70180	69590	79950	81730	81520	82350	81040
15				70870	70560	70120	69710	82630	81660	81250	82460	81010
16				70870	70590	70090	69900	83360	81620	81180	81940	80940
17				70900	70560	70050	69930	83400	81450	81040	81690	80870
18				70900	70490	70020	70400	83470	81310	80900	82600	80730
19				70870	70460	69990	72680	83430	81450	80800	83500	80730
20				70870	70460	69930	73550	83450	81550	80670	83610	80600
21				70900	70530	69900	74030	83450	81620	80530	84710	80320
22				70900	70590	69870	74190	83400	81620	80460	87650	80290
23				70870	70590	69830	74290	83350	81830	80390	88800	80120
24				70810	70590	69800	74260	83300	81870	80290	88840	80090
25				70840	70590	69740	74320	83200	82080	80220	88690	80090
26				70870	70590	69710	74320	83150	82390	80390	88060	79910
27				70840	70590	69550	74320	83100	82390	81550	87350	79850
28				70780	70590	69460	74290	83050	82250	82530	86620	79810
29				70750	---	69340	74320	83000	82180	82210	86470	79740
30				70780	---	69310	74360	82950	82010	81590	86040	79580
31				70750	---	69270	---	82850	---	81070	85460	---
MAX				71160	70750	70590	74360	83470	82800	83330	88840	85640
MIN				70750	70460	69270	68810	73870	81310	80220	80800	79580
(+)				3754.25	3754.20	3753.78	3755.38	-	3757.67	3757.40	3758.65	3756.96
(-)				-250	-160	-1320	+5090	+8490	-840	-940	+4390	-5880

WTR YR 1977 MAX 91350 MIN 68810 ‡ a+5390

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

a Computed on basis of revised capacity table put into use Jan. 1, 1977.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79540	77770	76540	75330	75000	74800	74160	72270	71630	78400	77000	75230
2	79440	77700	76540	75300	75000	74800	74070	72520	71660	78370	76870	75170
3	79410	77630	76510	75300	75000	74800	74000	72560	71760	78330	76710	75130
4	79310	77630	76470	75300	75000	74700	74000	72560	71850	78200	76640	75100
5	79210	77600	76380	75200	75000	74700	73870	72590	73030	78130	76610	75040
6	79270	77500	76410	75200	75000	74740	73840	72620	75200	78160	76540	74940
7	79170	77500	76470	75200	75000	74680	73780	72620	75950	78130	76610	74840
8	79070	77400	76310	75200	75000	74650	73780	72560	76540	78000	76870	74740
9	79070	77330	76310	75200	75000	74650	73680	72490	76670	77900	76900	74710
10	78940	77330	76240	75200	75100	74610	73580	72520	76770	77860	76870	74680
11	78840	77300	76240	75100	75070	74610	73610	72430	76570	77770	76840	74550
12	78770	77270	76210	75130	74970	74580	73480	72270	76470	77630	76710	74420
13	78700	77240	76180	75100	75000	74480	73450	72270	76470	77700	76610	74320
14	78600	77200	76180	75100	75000	74450	73450	72240	76540	77830	76510	74260
15	78570	77170	76380	75070	75000	74420	73390	72170	76710	77770	76310	74190
16	78570	77140	76080	75040	74900	74420	73390	72050	76670	77700	76280	74100
17	78470	77100	76050	75000	74900	74420	73230	71980	76610	77700	76150	74030
18	78470	77070	76050	75000	74900	74420	73030	71920	76440	77530	75950	73870
19	78400	77140	75920	75000	74900	74320	73000	71850	76610	77430	75850	73710
20	78330	76870	75890	75000	74900	74320	72940	71820	76280	77530	75790	73650
21	78300	76870	75950	75000	74900	74320	72940	71820	76280	77530	75720	73480
22	78270	76810	75890	75000	74900	74290	72810	71790	76210	77600	75620	73480
23	78270	76770	75890	75000	74900	74190	72780	71730	76150	77600	75560	73520
24	78230	76740	75750	75000	74800	74190	72750	71690	76110	77630	75530	73480
25	78200	76710	75720	75000	74800	74190	72680	71570	75980	77570	75490	73550
26	78130	76670	75720	75000	74800	74230	72620	71570	75790	77400	75490	73550
27	78060	76640	75660	75000	74800	74230	72590	71950	75790	77300	75400	73520
28	78030	76610	75660	75000	74800	74160	72560	71950	77470	77240	75270	73520
29	78100	76610	75460	75000	---	74230	72460	71950	78200	77170	75300	73590
30	77960	76540	75430	75000	---	74260	72430	71950	78300	77040	75330	73590
31	77930	---	75360	75000	---	74190	---	71820	---	77070	75270	---
MAX	79540	77770	76540	75330	75100	74800	74160	72620	78300	78400	77000	75230
MIN	77930	76540	75360	75000	74800	74160	72430	71570	71630	77040	75270	73390
(†)	3756.47	3756.05	3755.69	-	-	3755.33	3754.78	3754.59	3756.58	3756.21	3755.66	3755.08
(‡)	-1650	-1390	-1180	-360	-200	-610	-1760	-610	+6480	-1230	-1800	-1880

CAL YR 1977 MAX 88840 MIN 68810 ‡ +4360  
WTR YR 1978 MAX 79540 MIN 71570 ‡ -6190

† Elevation, in feet, at end of month.  
‡ Change in contents, in acre-feet.

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1963 to current year.

REMARKS.--Samples for chemical analyses are collected semi-annually at surface, and/or bottom levels of selected sites.

NOTE: Samples for chemical analyses are collected semi-annually at surface, and/or bottom levels of selected sites. Site locations are as follows: Site A, 0.4 mi (0.6 km) upstream from Ute Dam; Site B, 0.6 mi (1.0 km) upstream from Ute Dam; Site C, 1.9 mi (3.1 km) upstream from Ute Dam; Site D, on the Ute Creek arm, 5.7 mi (9.2 km) upstream from Ute Dam; Site E, 3.8 mi (6.1 km) upstream from Ute Dam at confluence of Ute Creek and Canadian River arms; Site F, on the Canadian River arm, 9.1 mi (14.6 km) upstream from Ute Dam; Site G, on the Ute Creek arm, 6.9 mi (11.1 km) upstream from Ute Dam; Site H, on the Canadian River arm, 12.8 mi (20.6 km) upstream from Ute Dam; Site I, on the Canadian River arm, 5.0 mi (8.0 km) upstream from Ute Dam.

07226510 UTE RESERVOIR AT SITE F (LAT 35 20 21 LONG 103 33 07)

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)
APR										
26...	1010	20	25	900	8.3	20.0	13.0	8.2	180	0
26...	1012	15	25	--	--	20.0	13.0	9.1	--	--
26...	1014	10	25	--	--	20.0	13.0	9.8	--	--
26...	1016	5.0	25	--	--	20.0	13.0	9.5	--	--
AUG										
22...	1100	18	23	880	8.3	32.0	21.0	7.1	150	--
22...	1102	15	23	--	--	32.0	21.0	7.4	--	--
22...	1104	10	23	--	--	32.0	21.0	7.5	--	--
22...	1106	5.0	23	--	--	32.0	21.0	7.5	--	--

[illegible][illegible]



07226800 UTE RESERVOIR NEAR LOGAN, NM--Continued

07226515 UTE RESERVOIR AT SITE I--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
APR									
26...	38	.9	4.3	553	545	.13	.00	240	20
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
AUG									
22...	37	.9	4.5	548	577	.11	.01	230	<10
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
APR					
26...	1100	32	37	0	39
AUG					
22...	1015	33	38	0	0

07226520 UTE RESERVOIR AT SITE G (LAT 35 23 35 LONG 103 30 00)

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)
APR										
26...	1140	4.0	5.0	910	8.4	23.0	15.0	9.2	180	0
AUG										
22...	1145	4.0	5.0	992	8.4	32.0	22.5	7.6	160	--
DATE		CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, AD- DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)
APR										
26...	36	23	140	4.5	6.6	270	8	230	180	
AUG										
22...	32	20	140	4.8	6.5	--	--	220	180	



## ARKANSAS RIVER BASIN

07226800 UTE RESERVOIR NEAR LOGAN, NM--Continued

07226520 UTE RESERVOIR AT SITE G--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITROGEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOSPHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
APR 26...	40	1.0	4.5	585	573	.09	.00	250	20
AUG 22...	44	1.0	5.0	578	560	.10	.01	240	<10

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)
APR 26...	1140	4.0	5.0	0	16
AUG 22...	1145	4.0	5.0	46	150

07226560 UTE RESERVOIR AT SITE B (LAT 35 20 32 LONG 103 27 16)

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
APR 26...	0830	5.0	50	890	8.4	22.5	12.5	7.7	8.9	7
26...	0834	10	50	--	--	22.5	12.0	--	8.8	--
26...	0838	15	50	--	--	22.5	12.0	--	9.0	--
26...	0842	20	50	--	--	22.5	12.0	--	8.9	--
26...	0846	25	50	--	--	22.5	12.0	--	8.1	--
26...	0850	30	50	--	--	22.5	12.0	--	7.7	--
26...	0854	35	50	--	--	22.5	12.0	--	7.4	--
26...	0858	40	50	--	--	22.5	12.0	--	7.2	--
26...	0900	45	50	890	8.3	22.5	12.0	8.5	7.1	18
AUG 22...	0850	5.0	53	910	8.3	31.5	22.0	2.0	7.0	14
22...	0853	10	53	--	--	31.5	22.0	--	6.6	--
22...	0856	15	53	--	--	31.5	22.0	--	6.2	--
22...	0859	20	53	--	--	31.5	21.5	--	5.7	--
22...	0902	25	53	--	--	31.5	21.5	--	5.4	--
22...	0905	30	53	--	--	31.5	21.5	--	5.2	--
22...	0908	35	53	--	--	31.5	21.5	--	5.0	--
22...	0911	40	53	--	--	31.5	21.0	--	4.9	--
22...	0914	45	53	--	--	31.5	21.0	--	4.7	--
22...	0920	48	53	880	8.5	31.5	21.0	1.5	4.1	18

07226800 UTE RESERVOIR NEAR LOGAN, NM--Continued

07226560 UTE RESERVOIR AT SITE B--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)
APR										
26...	170	0	34	20	140	4.7	6.3	260	5	220
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	170	0	34	21	140	4.7	6.3	260	0	210
AUG										
22...	170	--	33	20	140	4.7	6.6	--	--	210
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	160	--	33	20	140	4.7	6.5	--	--	210

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 DIS- TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
APR										
26...	180	38	.9	4.5	550	558	--	.13	.13	.05
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	190	40	.9	4.5	548	566	11	.17	.15	.05
AUG										
22...	180	45	.9	4.4	565	556	--	.01	.02	.03
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	170	42	.9	4.5	565	543	--	.01	.01	.07

## ARKANSAS RIVER BASIN

07226800 UTE RESERVOIR NEAR LOGAN, NM--Continued

07226560 UTE RESERVOIR AT SITE B--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)
APR										
26...	.39	.57	.01	.00	240	20	0	4.8	3.3	.7
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
26...	.33	.55	.02	.01	230	10	0	5.0	3.6	.8
AUG										
22...	.43	.47	.02	.01	240	<10	<1	5.1	4.8	.5
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
22...	.43	.51	.02	.01	240	<10	--	--	6.1	.5

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
APR										
26...	0830	3	2	--	--	240	1	1	0	0
26...	0900	2	2	--	--	230	1	1	0	0
AUG										
22...	0850	4	3	400	300	240	4	6	0	0

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
APR									
26...	1	0	3	2	160	20	8	10	10
26...	0	0	2	2	210	10	8	10	10
AUG									
22...	0	<1	10	1	10	<10	47	20	10

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
APR									
26...	0	.0	.0	0	0	--	--	10	0
26...	0	.0	.0	0	1	--	--	0	0
AUG									
22...	<1	.2	.0	0	1	0	0	40	<3

07226800 UTE RESERVOIR NEAR LOGAN, NM--Continued

07226560 UTE RESERVOIR AT SITE B--Continued

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	SOLIDS, RESIDUE AT 105 NEG. C. SUS- PENDE (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED AS U-NAT (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L) AS U-NAT (80040)	GROSS BETA, DIS- SOLVED AS CS-137 (03515)
------	------	---	--	---	---	---	---

APR 26...	0900	45	50	11	21	<.4	11
AUG 22...	0920	48	53	--	15	<.4	10

DATE	GROSS BETA, SUSP. TOTAL (PCI/L) AS CS-137 (03516)	GROSS BETA, DIS- SOLVED (PCI/L) AS SR/ YT-90 (80050)	GROSS BETA, SUSP. TOTAL (PCI/L) AS SR/ YT-90 (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L) AS U (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
------	--	---	---	--	---	--

APR 26...	2.0	9.9	2.1	.16	12	--
AUG 22...	.9	9.4	1.0	.13	--	11

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR- DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI- AZINON, TOTAL (UG/L) (39570)	DI- ELDRIN, TOTAL (UG/L) (39380)	ENDO- SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)
------	------	------------------------------------	---------------------------------------	---	------------------------------------	------------------------------------	------------------------------------	--	--	--	---------------------------------------

APR 26...	0900	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00
AUG 22...	0920	.0	.00	.0	.00	.00	.00	--	.00	--	.00

DATE	ETHION, TOTAL (UG/L) (39398)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA- THION, TOTAL (UG/L) (39530)	METHYL PARA- THION, TOTAL (UG/L) (39600)	METHYL TRI- THION, TOTAL (UG/L) (39790)	PARA- THION, TOTAL (UG/L) (39540)	TOX- APHENE, TOTAL (UG/L) (39400)	TOTAL TRI- THION (UG/L) (39786)
------	---------------------------------------	--	--	---------------------------------------	---	---	--	---	---	---

APR 26...	.00	.00	.00	.00	.00	.00	.00	.00	0	.00
AUG 22...	--	.00	.00	.00	--	--	--	--	0	--

DATE	TIME	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L) (39250)
APR 26...	0900	.01	.01	.00	.00

## ARKANSAS RIVER BASIN

07226800 UTE RESERVOIR NEAR LOGAN, NM--Continued

07226560 UTE RESERVOIR AT SITE B--Continued

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT) (00003)	RESER- VOIR DEPTH (FEET) (72025)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
APR					
26...	0830	5.0	50	0	8
26...	0900	45	50	0	12
AUG					
22...	0850	5.0	53	0	4
22...	0920	48	53	1	3

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE	APR 26, 78
TIME	0830
TOTAL CELLS/ML	790
DIVERSITY: DIVISION	0.0
..CLASS	0.0
...ORDER	0.8
...FAMILY	0.8
....GENUS	0.8

ORGANISM	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCALES		
...CHROCOCCAEAE		
....ANACYSTIS	210#	27
...HORMOGONALES		
...NOSTOCACEAE		
....APHANIZOMENON	570#	73

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%  
 \* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 07227000 CANADIAN RIVER AT LOGAN, NM

LOCATION.--Lat 35°21'25", long 103°25'03", in NE1/4 sec.15, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080006, on left bank 1,100 ft (340 m) upstream from bridge on U.S. Highway 54, 0.7 mi (1.1 km) south of Logan, 1.4 mi (2.3 km) upstream from Chicago, Rock Island & Pacific Railroad Co. bridge, 2.0 mi (3.2 km) downstream from Ute Dam, 4.3 mi (6.9 km) upstream from Revuelto Creek, and at mile 672.0 (1,081.2 km).

DRAINAGE AREA.--11,141 mi<sup>2</sup> (28,855 km<sup>2</sup>), of which 1,110 mi<sup>2</sup> (2,875 km<sup>2</sup>) is probably noncontributing.

PERIOD OF RECORD.--June 1904 to November 1905 (gage heights and discharge measurements only), December 1908 to September 1909, February 1910, April to July 1910, August 1910 to September 1911 (gage heights and discharge measurements only), October 1911 to May 1914, January to May 1924, September 1924 to July 1925, January 1927 to April 1934, August 1934 to current year. Monthly discharge only for some periods, published in WSP 1311. Records for December 1909, January 1910, and May to July 1934, published in WSP 267, 287, and 762 are unreliable and should not be used. Published as South Canadian River June to September 1904.

REVISED RECORDS.--WSP 1087: 1935-36. WSP 1117: Drainage area. WSP 1281: 1912, 1932(M), 1934, 1945-47, 1949-50. WSP 1311: 1931(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 3,668.1 ft (1,118.04 m) National Geodetic Vertical Datum of 1929. See WSP 1311 or 1731 for history of changes prior to Oct. 1, 1934.

REMARKS.--Records fair. Flow regulated by Conchas Lake, 45 mi (72 km) upstream (station 07223500) and Ute Reservoir, 2 mi (3 km) upstream (station 07226800). Diversions for irrigation of about 90,000 acres (360 km<sup>2</sup>) above station. Several observations of water temperature were during the year.

AVERAGE DISCHARGE.--15 years (water years 1909, 1912-13, 1927-38), 392 ft<sup>3</sup>/s (11.10 m<sup>3</sup>/s), 284,000 acre-ft/yr (350 hm<sup>3</sup>/yr), prior to completion of Conchas Dam; 24 years (water years 1939-62), 257 ft<sup>3</sup>/s (7.278 m<sup>3</sup>/s), 186,200 acre-ft/yr (230 hm<sup>3</sup>/yr), prior to completion of Ute Dam; 16 years (water years 1963-78), 30.6 ft<sup>3</sup>/s (0.867 m<sup>3</sup>/s), 22,170 acre-ft/yr (27.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (SINCE 1925).--Maximum discharge, 219,000 ft<sup>3</sup>/s (6,200 m<sup>3</sup>/s) Sept. 22, 1941, gage height, 29.3 ft (3.93 m) from floodmarks, from rating curve extended above 75,000 ft<sup>3</sup>/s (2,100 m<sup>3</sup>/s); no flow at times prior to completion of Ute Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 278,000 ft<sup>3</sup>/s (7,870 m<sup>3</sup>/s) Sept. 30, 1904, gage height, about 36.5 ft (11.13 m), site and datum used in 1909, from rating curve extended above 14,000 ft<sup>3</sup>/s (400 m<sup>3</sup>/s), from Ninth Biennial Report of State Engineer.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 163 ft<sup>3</sup>/s (4.62 m<sup>3</sup>/s) Oct. 12, gage height, 3.20 ft (0.975 m); minimum, 0.70 ft<sup>3</sup>/s (0.020 m<sup>3</sup>/s) Dec. 10, 22, result of freezeup.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1.6	2.2	2.0	2.2	2.6	2.2	2.2	2.4	1.8	1.6	1.8
2	2.0	1.8	2.2	2.2	2.2	2.6	2.0	6.4	3.2	2.0	1.8	1.8
3	2.0	1.8	2.2	2.2	2.4	2.6	2.0	4.6	2.6	1.8	1.8	1.8
4	2.0	1.8	2.2	2.2	2.4	2.6	2.0	3.5	7.6	1.8	2.0	2.0
5	2.2	1.6	2.0	2.2	2.4	2.4	2.2	3.5	4.2	1.8	2.0	2.0
6	2.4	1.8	2.0	2.2	2.4	2.4	2.2	3.2	2.9	1.8	2.0	1.8
7	2.4	2.2	2.0	2.2	2.4	2.4	2.4	2.6	2.4	1.8	3.7	1.8
8	2.2	2.2	1.8	2.2	2.6	9.2	2.4	2.9	2.4	1.8	2.0	1.8
9	2.2	2.0	1.8	2.2	2.6	13	2.6	2.4	2.0	1.8	1.8	1.8
10	2.2	2.0	1.8	3.5	2.6	13	2.9	2.4	1.6	2.0	2.2	2.0
11	2.2	2.0	1.8	2.4	2.6	13	2.6	2.4	1.6	2.0	1.6	2.0
12	1.9	2.0	1.8	2.4	2.6	13	2.4	2.2	1.6	2.2	1.4	2.0
13	6.8	2.0	1.8	2.4	2.4	3.9	2.4	2.2	1.6	4.4	1.4	2.0
14	3.5	2.0	1.8	2.2	2.4	2.9	2.4	2.2	1.6	2.6	1.3	2.0
15	2.9	2.0	1.8	2.4	2.4	2.4	2.4	2.2	1.6	2.0	1.3	2.0
16	2.6	2.0	1.8	2.2	2.4	2.4	2.6	2.0	1.6	1.8	1.4	2.0
17	2.6	2.0	1.8	2.4	2.4	2.4	2.2	2.2	1.6	1.8	1.3	1.8
18	2.4	2.0	1.8	2.0	2.4	2.4	2.2	2.0	1.6	1.8	1.4	1.8
19	2.4	1.8	1.8	2.4	2.4	2.2	2.2	2.0	1.6	1.8	1.4	1.8
20	2.4	1.6	1.8	2.4	2.4	2.4	2.2	2.2	1.6	1.8	1.6	2.0
21	2.2	1.6	1.8	2.4	2.4	2.4	2.4	2.4	1.8	1.8	1.6	2.0
22	2.2	1.8	1.8	2.2	2.4	2.2	2.2	2.2	1.8	2.0	1.6	2.0
23	2.2	1.8	2.0	2.2	2.4	2.2	2.2	2.0	1.6	2.0	1.6	2.0
24	2.0	1.8	2.0	2.2	2.4	2.6	2.2	2.2	1.6	2.0	1.6	2.0
25	1.8	2.0	2.0	2.2	2.4	2.9	2.4	2.4	1.6	2.0	1.6	2.4
26	1.8	2.0	2.2	2.2	2.4	2.9	2.4	4.7	1.6	1.8	2.0	2.2
27	1.8	2.0	2.2	2.0	2.4	2.4	2.6	4.2	3.1	1.8	1.8	1.8
28	1.8	2.2	2.2	2.0	2.4	2.6	2.4	2.2	2.8	1.8	1.8	1.6
29	1.8	2.2	2.2	2.2	---	2.9	2.0	2.0	2.0	1.8	1.8	1.4
30	1.6	2.2	2.2	2.2	---	2.4	2.2	2.0	1.8	1.8	2.2	1.4
31	1.6	---	2.0	2.2	---	2.2	---	2.0	---	1.8	1.8	---
TOTAL	89.2	57.8	60.8	70.3	67.8	127.5	69.5	83.6	67.0	61.2	54.4	56.8
MEAN	2.88	1.93	1.96	2.27	2.42	4.11	2.32	2.70	2.23	1.97	1.75	1.89
MAX	19	2.2	2.2	3.5	2.6	13	2.9	6.4	7.6	4.4	3.7	2.4
MIN	1.6	1.6	1.8	2.0	2.2	2.2	2.0	2.0	1.6	1.8	1.3	1.4
AC-FT	177	115	121	139	134	253	138	166	133	121	108	113

CAL YR 1977 TOTAL 12060.1 MEAN 33.0 MAX 315 MIN 1.6 AC-FT 23920  
WTR YR 1978 TOTAL 865.9 MEAN 2.37 MAX 19 MIN 1.3 AC-FT 1720

## ARKANSAS RIVER BASIN

07227100 REVUELTO CREEK NEAR LOGAN, NM

LOCATION.--Lat 35°20'28", long 103°23'40", in SW 1/4 sec. 24, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080008, on right bank 0.3 mi (0.5 km) upstream from bridge on State Highway 39, 1.9 mi (3.1 km) southeast of Logan, and at mile 2.3 (3.7 km).

DRAINAGE AREA.--786 mi<sup>2</sup> (2,036 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,665 ft (1,117 m), from topographic map.

REMARKS.--Water-discharge records poor. Low flows supplemented by surface and ground water return from irrigation in vicinity of Tucumcari.

AVERAGE DISCHARGE.--19 years, 46.9 ft<sup>3</sup>/s (1.328 m<sup>3</sup>/s), 33,980 acre-ft/yr (41.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,700 ft<sup>3</sup>/s (756 m<sup>3</sup>/s) July 9, 1960, gage height, 14.3 ft (4.36 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD (1941-47).--Maximum discharge determined, about 13,400 ft<sup>3</sup>/s (379 m<sup>3</sup>/s) Sept. 18, 1946, gage height, 9.04 ft (2.755 m), at site 500 ft (150 m) downstream at different datum, from unpublished records collected by Bureau of Reclamation. A peak of 26,100 ft<sup>3</sup>/s (739 m<sup>3</sup>/s), date unknown, gage height, 12.9 ft (3.93 m), was measured by slope-area method in May 1957.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft<sup>3</sup>/s (99 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
June 4	2330	*3,760 106	5.89 1.795	July 13	2215	3,590 102	5.78 1.762

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.06	.10	.04	.00	.00	3.3	35	.00	.00
2	.00	.00	.09	.04	.10	.15	.00	136	75	18	.00	.00
3	.00	.00	.20	.02	.10	.10	.00	154	45	8.4	.00	.00
4	.00	.00	.15	.08	.13	.10	.00	47	554	5.6	.00	.00
5	.00	.00	.08	.00	.07	.22	.00	20	1970	3.3	.00	.00
6	.08	.00	.07	.00	.00	.00	.00	14	704	404	.00	.00
7	.19	.40	.02	.00	.00	.05	.00	5.0	164	400	.39	.00
8	.00	.21	.00	.00	.18	.05	.00	1.3	190	63	.00	.00
9	.00	.00	.00	.10	.15	.08	.00	.42	72	14	23	.00
10	.00	.05	.17	.10	.19	.06	8.2	.05	33	2.0	5.3	.00
11	.00	.08	.06	.12	.06	.00	17	.04	18	.78	.22	.00
12	.00	.08	.04	.14	.24	.02	.60	.00	10	.60	.00	.00
13	.00	.08	.00	.17	.10	.00	.00	.00	12	312	.00	.00
14	.00	.08	.00	.19	.10	.00	.00	.00	22	957	.00	.00
15	.00	.08	.00	.16	.10	.01	.00	.00	4.1	218	.00	.00
16	.00	.08	.00	.15	.20	.00	.00	.00	.54	20	.00	.00
17	.00	.08	.00	.15	.15	.02	.00	.00	.07	.48	.00	.00
18	.00	.05	.00	.15	.10	.01	.00	.00	.00	.00	.00	.00
19	.00	.03	.00	.15	.20	.00	.00	.00	.00	.00	.00	.00
20	.00	.01	.01	.10	.30	.00	.00	.00	.00	234	.00	.00
21	.00	.00	.05	.10	.56	.02	.00	.01	.00	1.3	.00	.00
22	.33	.00	.02	.09	5.1	.00	.00	.00	.00	9.8	.00	.00
23	.22	.00	.00	.08	6.2	.00	.00	.00	.00	4.4	.00	.00
24	.08	.00	.00	.14	.93	.20	.00	.00	.00	.11	.00	.00
25	.08	.00	.09	.05	.34	.33	.00	168	.00	.35	.00	1.9
26	.04	.05	.00	.05	.34	.00	.00	464	.00	.00	.00	41
27	.00	.08	.00	.05	.05	.00	.00	359	28	.00	.00	6.9
28	.06	.12	.06	.05	.00	.16	.00	53	177	.00	.00	1.4
29	.05	.08	.08	.05	---	.36	.00	20	126	.00	.00	.43
30	.00	.04	.02	.05	---	.00	.00	11	47	.00	.00	.00
31	.00	---	.00	.05	---	.00	---	4.8	---	.00	.00	---
TOTAL	1.13	1.68	1.21	2.64	16.09	1.98	25.80	1457.62	4255.01	2712.12	28.91	51.63
MEAN	.036	.056	.039	.085	.57	.064	.86	47.0	142	87.5	.93	1.72
MAX	.33	.40	.20	.19	6.2	.36	.17	464	1970	957	23	41
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC=FT	2.2	3.3	2.4	5.2	32	3.9	51	2890	8440	5380	57	102
CAL YR 1977 TOTAL	10473.83			MEAN 28.7	MAX 2950	MIN .00	AC=FT 20770					
WTR YR 1978 TOTAL	8555.82			MEAN 23.4	MAX 1970	MIN .00	AC=FT 16970					

07227100 REVUELTO CREEK NEAR LOGAN, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1959 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
NOV 22...	1330	.50	6500	8.5	23.5	11.0	420	32	70
DEC 14...	1330	.10	6000	8.4	15.5	11.0	360	4	62
FEB 01...	1430	.10	6000	8.6	4.0	8.5	320	0	56
22...	1300	.46	5250	8.6	13.0	14.0	350	5	61
MAR 29...	1300	.33	5720	8.4	25.5	27.0	320	0	52
JUL 18...	1530	.01	810	8.6	42.0	37.0	50	--	14

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
NOV 22...	59	1300	28	5.8	470	0	390	320	1800
DEC 14...	51	1200	27	5.9	440	0	360	310	1600
FEB 01...	44	1000	24	5.1	420	1	350	260	1400
22...	48	990	23	4.9	420	0	340	270	1400
MAR 29...	46	1100	27	5.9	450	5	380	290	1500
JUL 18...	3.7	170	10	2.4	--	--	190	130	72



## ARKANSAS RIVER BASIN

07227100 REVUELTO CREEK NEAR LOGAN, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV								
22...	1.1	10	--	3800	.01	--	--	--
DEC								
14...	1.1	9.3	3450	3460	.02	.01	650	40
FEB								
01...	.9	8.6	--	2980	.12	--	--	--
22...	1.0	8.8	--	2990	.08	--	--	--
MAR								
29...	1.0	8.8	3270	3230	.06	.00	680	20
JUL								
18...	.7	14	488	521	.85	.16	330	40

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV						
22...	1330	.50	11.0	9	.01	--
DEC						
07...	1315	.10	10.0	57	.02	--
14...	1330	.10	11.0	67	.02	--
FEB						
01...	1430	.10	8.5	30	.01	--
22...	1300	.46	14.0	83	.10	84
MAR						
29...	1300	.33	27.0	23	.02	--
JUL						
18...	1530	.01	37.0	802	.02	65

07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM  
(National stream-quality accounting network station)

LOCATION.--Lat 35°23'35", long 103°02'30", in SW¼ sec.32, T.14 N., R.37 E., Quay County, Hydrologic Unit 11080006, 0.1 mi (0.2 km) upstream from New Mexico-Texas State line, 5.5 mi (8.8 km) downstream from Rana Canyon, and 14.7 mi (23.7 km) north of Glenrio.

DRAINAGE AREA.--12,616 mi<sup>2</sup> (32,675 km<sup>2</sup>).

PERIOD OF RECORD.--July 1969 to June 1973, November 1974 to current year.

REMARKS.--Water-discharge measurements were made at the time water-quality samples were collected.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT 26...	1015	5.9	8000	8.1	22.5	13.0	3	--	10.6	63
NOV 23...	1000	5.8	8000	8.2	11.5	6.5	2	--	14.8	37
DEC 14...	1000	7.6	8000	8.3	10.0	4.0	2	--	12.8	62
FEB 01...	1100	12	9200	8.9	.5	3.0	6	--	12.5	170
22...	1000	12	9680	8.7	8.0	3.5	4	--	11.8	240
MAR 29...	1000	10	8560	8.0	17.5	16.0	2	--	11.9	66
APR 27...	0945	2.2	7100	8.3	26.0	21.0	3	--	8.4	85
MAY 24...	1000	1.6	6490	8.1	29.5	24.0	--	45	8.3	73
JUN 21...	1000	3.8	6900	8.5	30.0	25.0	--	37	8.3	58
JUL 19...	1000	16	2100	8.6	33.0	25.0	--	260	7.7	28
SEP 26...	0945	38	1200	8.4	20.0	18.0	--	7400	14.5	83

DATE	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)
OCT 26...	580	360	110	74	1400	25	8.6	270	0	220
NOV 23...	650	390	130	78	1500	26	9.0	310	0	250
DEC 14...	680	430	140	80	1600	27	10	300	0	250
FEB 01...	740	470	150	88	1900	30	11	320	1	260
22...	770	500	160	89	1900	30	11	330	0	270
MAR 29...	670	440	130	84	1600	27	8.8	280	0	230
APR 27...	600	350	110	79	1400	25	10	300	0	250
MAY 24...	590	--	110	77	1200	21	10	--	--	240
JUN 21...	580	--	110	75	1300	23	10	--	--	200
JUL 19...	200	--	54	16	430	13	4.7	--	--	230
SEP 26...	83	0	22	6.7	200	9.6	4.1	--	--	130

## ARKANSAS RIVER BASIN

07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 26...	400	2000	.6	11	4170	4140	.16	.17	.03	.20
NOV 23...	400	2300	.6	13	4520	4590	.40	.43	.04	.24
DEC 14...	460	2500	.6	12	4940	4950	.47	.46	.11	.41
FEB 01...	440	2900	.6	11	5410	5660	.38	.38	.00	.19
MAR 22...	470	2900	.6	10	5750	5710	.29	.30	.03	.31
APR 29...	45	2700	.6	7.3	4840	4710	.03	.04	.01	2.3
MAY 27...	390	2000	.7	8.8	4200	4150	.04	.01	.01	.32
JUN 24...	350	1800	.6	8.8	3590	3700	.02	.05	.01	--
JUL 21...	360	2100	.6	11	4030	4100	.03	.04	.01	.29
SEP 19...	85	550	.6	11	1310	1300	.54	.57	.00	.70
SEP 26...	58	290	.5	7.5	720	670	.81	.73	.05	13

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT 26...	.39	.00	.01	350	30	--	--	1.9	1.1
NOV 23...	.68	.03	.01	360	10	--	1.6	2.9	.6
DEC 14...	.99	.00	.03	350	30	120	--	1.9	--
FEB 01...	.57	.01	.00	340	60	--	1.7	1.6	.6
MAR 22...	.63	.01	.00	380	20	--	2.4	1.5	.6
APR 29...	2.3	.00	.00	350	10	120	--	2.7	.9
MAY 27...	.37	.01	.00	330	30	--	--	1.5	.6
JUN 24...	--	.03	.02	340	50	--	2.2	2.0	.7
JUL 21...	.33	.03	.00	380	20	50	--	1.9	.6
SEP 19...	1.2	.20	.02	280	90	--	5.2	4.1	1.0
SEP 26...	14	17	.02	410	40	0	2.7	.7	64

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
DEC 14...	1000	1	1	200	200	350	1	1	10	20
MAR 29...	1000	1	1	200	200	350	1	1	10	10
JUN 21...	1000	2	2	400	300	380	0	0	0	10
SEP 26...	0945	41	7	5000	200	410	1	1	230	0

07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
DEC 14...	0	0	4	0	310	30	5	2	170
MAR 29...	0	0	2	1	180	10	10	4	120
JUN 21...	0	0	14	2	450	20	17	3	90
SEP 26...	140	3	400	4	150000	40	--	1	6000

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
DEC 14...	120	.0	.0	1	1	0	0	40	20
MAR 29...	120	.0	.0	0	0	0	0	10	10
JUN 21...	50	.0	.0	1	0	0	0	40	20
SEP 26...	0	.6	.0	2	1	1	0	700	10

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 26...	1015	41	59
NOV 23...	1000	4	6
DEC 14...	1000	0	5
FEB 01...	1100	0	320
FEB 22...	1000	0	18
MAR 29...	1000	14	18
APR 27...	0945	34	22
MAY 24...	1000	340	56
JUN 21...	1000	460	24
JUL 19...	1000	64	220
SEP 26...	0945	4700	--

07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	OCT 26,77 1015	MAR 29,78 1000	MAY 24,78 1000	JUN 21,78 1000	JUL 19,78 1000
TOTAL CELLS/ML	1500	2400	630	4600	530
DIVERSITY: DIVISION	1.1	1.3	1.0	0.8	1.4
..CLASS	1.1	1.3	1.0	0.8	1.4
...ORDER	1.2	1.9	2.0	1.5	1.5
...FAMILY	2.3	2.1	2.0	2.1	1.7
....GENUS	2.3	2.3	2.6	2.7	2.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
...SCHROEDERIA	--	-	--	-	--	-	69	2	--	-
...MICRACINIACEAE										
...GOLENKINIA	--	-	--	-	--	-	23	1	--	-
...OOCYSTACEAE										
...ANKISTRODESMUS	--	-	--	-	--	-	390	9	44	8
...CHODATELLA	--	-	--	-	45	7	--	-	22	4
...DICTYOSPHAERIUM	--	-	740#	32	--	-	440	10	--	-
...KIRCHNERIELLA	36	2	--	-	--	-	--	-	22	4
...OOCYSTIS	--	-	--	-	160#	25	93	2	--	-
...SELENASTRUM	--	-	--	-	22	4	--	-	--	-
...TETRAEDRON	--	-	--	-	--	-	--	-	22	4
...TREUBARIA	--	-	--	-	22	4	--	-	--	-
...SCENEDESMACEAE										
...ACTINASTRUM	--	-	--	-	--	-	790#	17	--	-
...CRUCIGENIA	--	-	--	-	--	-	280	6	--	-
...SCENEDESMUS	72	5	--	-	--	-	140	3	--	-
...TETRASPORALES										
...PALMELLACEAE										
...SPHAEROCYSTIS	--	-	--	-	130#	21	--	-	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	--	-	--	-	67	11	1100#	25	--	-
...ZYGNEATALES										
...DESMIDIACEAE										
...CLOSTERIUM	--	-	--	-	--	-	--	-	22	4
CHRYSTOPHYTA										
..BACILLARIOPHYCEAE										
...PENNALES										
...NAVICULACEAE										
...ENTOMONEIS	--	-	29	1	--	-	--	-	--	-
...CENTRALES										
...COSCINODISCACEAE										
...CYCLOTELLA	36	2	--	-	--	-	--	-	--	-
...PENNALES										
...CYMBELLACEAE										
...AMPHORA	--	-	--	-	--	-	--	-	44	8
...DIATOMACEAE										
...OPEPHORA	390#	26	--	-	--	-	--	-	--	-
...NAVICULACEAE										
...CALONEIS	--	-	14	1	--	-	--	-	--	-
...DIPLONEIS	--	-	14	1	--	-	--	-	--	-
...NAVICULA	170	11	43	2	--	-	--	-	44	8
...NITZSCHIA										
...NITZSCHIA	--	-	14	1	--	-	--	-	--	-
...NITZSCHIA	480#	32	140	6	--	-	--	-	--	-
...SURIPELLACEAE										
...SURIPELLA	--	-	14	1	160#	25	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
...AGMENELLUM			560#	24	--	-	--	-	--	-
...ANACYSTIS	310#	21	100	4	22	4	1200#	27	--	-
...HORMOGONALES										
...OSCILLATORIACEAE										
...OSCILLATORIA	--	-	690#	29	--	-	--	-	310#	58

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	LENGTH OF EXPO- SURE (DAYS) (00022)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
OCT 26...	1015	29	.157	.079	.009	.000	Polyethylene strip
NOV 23...	1000	28	23.5	23.0	.570	.000	"
DEC 14...	1000	21	1.26	.945	.000	.000	"
APR 27...	0945	30	9.84	8.82	1.21	.120	"
JUN 21...	1000	24	4.80	2.44	.140	.000	"
JUL 19...	1000	28	1.57	1.02	.000	.000	"

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 26...	1015	5.9	13.0	9	.14	47
NOV 23...	1000	5.8	6.5	5	.08	57
DEC 14...	1000	7.6	4.0	40	.82	38
FEB 01...	1100	12	3.0	40	1.3	61
22...	1000	12	3.5	22	.71	60
MAR 29...	1000	10	16.0	46	1.2	28
APR 27...	0945	2.2	21.0	26	.15	74
MAY 24...	1000	1.6	24.0	93	.40	98
JUN 21...	1000	3.8	25.0	46	.47	96
JUL 19...	1000	16	25.0	330	14	96
SEP 26...	0945	38	18.0	24500	2510	100

## RIO GRANDE BASIN

08251500 RIO GRANDE NEAR LOBATOS, CO

LOCATION.--Lat 37°04'42", long 105°45'22", in sec.22,T.33 N., R.11 E., Conejos County, Hydrologic Unit 13010002, on right bank at highway bridge, 6 mi (10 km) north of Colorado-New Mexico State line, 7 mi (11 km) downstream from Culebra Creek, 10 mi (16 km) east of Lobatos, 14 mi (23 km) east of Antonito and at mile 1,722.1 (2,770.9 km).

DRAINAGE AREA.--7,700 mi<sup>2</sup> (19,900 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in northern part of San Luis Valley, CO.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1899 to current year. Monthly discharge only for some periods, published in WSP 1312. Published as "at Cenicero" 1899-1901, and as "near Cenicero" 1902-04.

REVISED RECORDS.--WSP 210: Drainage area. WSP 1312: 1919 (monthly runoff).

GAGE.--Water-stage recorder. Datum of gage is 7,427.63 ft (2,263.942 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 8, 1910, nonrecording gages at same site and datum.

REMARKS.--Water-discharge records good except those for winter period, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

AVERAGE DISCHARGE.--31 years (water years 1900-30), 846 ft<sup>3</sup>/s (23.96 m<sup>3</sup>/s), 612,900 acre-ft/yr (756 km<sup>3</sup>/yr), includes period of extensive development for irrigation; 48 years (water years 1931-78), 402 ft<sup>3</sup>/s (11.38 m<sup>3</sup>/s), 291,200 acre-ft/yr (359 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 13,200 ft<sup>3</sup>/s (374 m<sup>3</sup>/s) June 8, 1905, gage height, 9.1 ft (2.77 m), from rating curve extended above 8,000 ft<sup>3</sup>/s (230 m<sup>3</sup>/s); no flow at times in 1950-51, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1828, that of June 8, 1905.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 979 ft<sup>3</sup>/s (27.7 m<sup>3</sup>/s) July 1, gage height, 3.11 ft (0.948 m); minimum daily, 14 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) Oct. 11, 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	25	70	130	180	294	102	206	629	925	206	55
2	22	25	70	120	175	278	100	202	736	856	202	55
3	17	38	85	130	175	266	95	195	744	636	198	58
4	16	67	90	140	185	266	92	160	784	508	198	60
5	16	92	85	135	190	266	100	178	784	435	195	62
6	22	100	75	140	195	262	80	238	657	395	192	67
7	23	110	80	135	200	262	60	258	544	330	192	85
8	20	112	80	135	195	258	55	238	484	282	184	65
9	17	80	80	150	200	254	50	206	466	258	181	62
10	16	75	85	160	215	246	43	202	460	315	184	62
11	14	90	85	150	220	242	41	192	538	420	170	60
12	20	105	80	150	220	258	46	230	532	472	164	58
13	19	88	80	130	215	262	50	274	390	538	164	58
14	16	82	80	155	205	258	44	345	290	508	145	62
15	16	85	80	160	200	246	40	365	375	460	136	62
16	16	88	70	155	205	226	36	445	538	445	125	60
17	15	88	70	160	195	220	62	622	636	425	120	58
18	14	85	75	165	200	206	85	643	587	400	102	58
19	14	80	70	160	180	206	105	514	502	395	92	50
20	18	70	60	175	180	192	100	440	472	390	82	50
21	15	75	65	180	195	188	110	544	520	395	73	44
22	15	80	85	170	205	192	85	657	502	365	69	44
23	16	80	90	150	200	195	78	580	460	345	62	50
24	16	80	90	130	209	206	112	608	460	325	60	67
25	17	82	90	120	220	216	102	720	460	325	58	71
26	17	80	100	180	238	216	100	720	496	306	56	73
27	18	80	115	175	278	181	167	594	538	290	56	76
28	19	80	130	170	282	142	242	608	490	254	60	80
29	21	85	135	175	---	115	250	622	520	238	62	88
30	23	78	140	180	---	108	220	568	699	223	60	95
31	24	---	140	180	---	108	---	520	---	212	56	---
TOTAL	558	2385	2730	4745	5757	6835	2852	12894	16293	12671	3904	1895
MEAN	18.0	79.5	88.1	153	206	220	95.1	416	543	409	126	63.2
MAX	26	112	140	180	282	294	250	720	784	925	206	95
MIN	14	25	60	120	175	108	36	160	290	212	56	44
AC-FT	1110	4730	5410	9410	11420	13560	5660	25580	32320	25130	7740	3760
CAL YR 1977 TOTAL	30867.9			84.6	405	4.1	AC-FT	61230				
WTR YR 1978 TOTAL	73519.0			201	925	14	AC-FT	145800				

08251500 RIO GRANDE NEAR LOBATOS, CO --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1975 to current year.

WATER TEMPERATURE: October 1975 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1975.

REMARKS.--Replaces station 08249200 Rio Grande above Culebra Creek, near Lobatos, Colo. which was discontinued July 1969. This station operated by the Colorado District.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,140 micromhos Sept. 18, 1977; minimum daily, 138 micromhos June 14, 1978.

WATER TEMPERATURES: Maximum, 30.0°C July 17, 1977; minimum, freezing point on many days during winter period.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 733 micromhos Nov. 4; minimum daily, 138 micromhos June 14.

WATER TEMPERATURES: Maximum, 27.5°C July 29; minimum, freezing point many days during winter period.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	
OCT 26...	1200	16	640	8.6	9.0	9	--	11.5	170	17	48	11	
NOV 29...	1100	78	435	8.4	2.0	5	--	13.6	140	9	42	8.4	
DEC 28...	1200	212	--	--	.0	--	--	--	92	2	28	5.3	
FEB 01...	1200	190	256	7.1	.0	7	--	12.7	81	1	25	4.5	
28...	1200	258	293	7.9	3.0	15	--	12.3	81	10	25	4.6	
APR 04...	1230	100	428	8.5	13.0	7	--	12.7	150	27	47	8.8	
MAY 11...	1200	176	374	8.2	18.5	8	--	11.0	120	17	34	7.4	
JUN 13...	1230	800	255	8.1	19.0	--	8.0	--	65	0	20	3.7	
JUL 06...	1100	380	230	8.5	20.5	--	6.0	7.6	85	21	24	6.0	
AUG 17...	1330	115	250	8.4	21.5	--	4.2	8.4	75	0	23	4.2	
SEP 20...	1157	51	310	8.7	13.5	--	4.2	1.0	83	0	26	4.5	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L) (70301)
OCT 26...	69	2.3	8.7	170	5	150	140	16	1.2	25	419	408	
NOV 29...	42	1.5	6.7	160	0	130	83	12	.7	31	298	305	
DEC 28...	20	.9	4.1	110	0	90	39	5.1	.5	35	182	191	
FEB 01...	16	.8	3.5	97	0	80	33	4.0	.2	31	154	165	
28...	16	.8	3.2	87	0	71	39	4.3	.3	27	157	162	
APR 04...	40	1.4	5.4	140	7	130	95	12	.8	25	293	310	
MAY 11...	30	1.2	5.1	120	0	98	78	8.6	.4	23	250	246	
JUN 13...	14	.8	3.1	--	--	65	28	3.5	.2	16	139	128	
JUL 06...	19	.9	3.6	--	--	64	48	4.7	.2	18	174	162	
AUG 17...	17	.9	3.9	--	--	81	22	3.7	.3	26	152	149	
SEP 20...	22	1.0	4.4	--	--	100	30	5.3	.4	26	185	179	



08251500 RIO GRANDE NEAR LOBATOS, CO---Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)
OCT 26...	--	.01	.00	--	--	.08	--	--	4.2	--	--
NOV 29...	--	.06	.00	--	--	.21	60	20	--	3.8	.5
DEC 28...	--	.06	--	--	.46	.09	--	--	2.8	--	--
FEB 01...	--	.23	.02	.14	.39	.13	10	20	--	2.6	.4
28...	--	.18	.02	.18	.38	.14	--	--	2.9	--	--
APR 04...	--	.01	.01	1.1	1.1	.13	--	--	4.7	--	--
MAY 11...	30	.01	.01	.77	.79	.16	10	60	--	6.0	1.0
JUN 13...	--	.02	.01	.66	.69	.12	--	--	6.6	--	--
JUL 06...	--	.00	.01	.54	.55	.12	--	--	5.0	--	--
AUG 17...	--	.05	.00	.35	.40	.08	50	20	--	3.5	.3
SEP 20...	--	.04	.01	.36	.41	.09	--	--	12	--	--

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
NOV 29...	1100	5	5	500	700	0	0	0	0
FEB 01...	1200	4	3	200	100	0	0	10	0
MAY 11...	1200	3	3	200	100	0	1	0	0
AUG 17...	1330	5	4	200	20	5	2	0	0

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
NOV 29...	0	0	2	1	340	60	3	3	60
FEB 01...	1	1	8	0	560	10	2	1	170
MAY 11...	2	2	7	0	1000	10	15	5	250
AUG 17...	1	<1	5	1	400	50	20	0	90

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71900)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 29...	20	.0	.0	0	0	0	0	10	6
FEB 01...	20	.0	.0	0	0	1	0	20	0
MAY 11...	60	.0	.0	0	0	1	0	20	10
AUG 17...	20	.0	.0	0	0	0	0	10	<3

## 08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED (UG/L) U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L) AS (80040)	GROSS BETA, DIS- SOLVED (PCI/L) AS (03515)	GROSS BETA, SUSP. TOTAL (PCI/L) AS (03516)	GROSS BETA, DIS- SOLVED (PCI/L) AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L) AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
MAY 11...	1200	30	<3.6	1.0	5.6	1.6	4.8	1.6	.08	1.9

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	2,4-D, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39730)	2,4-D, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39731)	2,4,5-T TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39740)	2,4,5-T TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39741)	SILVEX, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39760)	SILVEX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39761)
NOV 29...	1200	ND	ND	ND	ND	ND	ND
FEB 01...	1300	ND	--	ND	--	ND	--

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 26...	1200	8	4
NOV 29...	1100	<1	K4
DEC 28...	1200	K2	K28
FEB 01...	1200	<1	K22
FEB 28...	1200	<1	K100
APR 04...	1230	<1	K3
MAY 11...	1200	K26	K14
JUN 13...	1230	--	<1
JUL 06...	1100	K12	K2
AUG 17...	1330	<1	--
SEP 20...	1157	K16	K16

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

IDENTIFICATION OF PHYTOPLANKTON									
DATE TIME	NOV 29, 77 1100		FEB 28, 78 1200		MAY 11, 78 1200		JUN 13, 78 1230		
TOTAL CELLS/ML	2300		9000		4800		8400		
DIVERSITY: DIVISION	1.5		1.1		1.2		0.8		
..CLASS	1.5		1.1		1.3		0.8		
..ORDER	2.1		1.7		2.1		1.1		
...FAMILY	2.9		3.1		3.1		2.8		
....GENUS	2.9		3.2		3.4		3.1		
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	
CHLOROPHYTA (GREEN ALGAE)									
..CHLOROPHYCEAE									
...CHLOROCOCCALES									
...CHARACIACEAE									
...SCHROEDERIA	21	1	--	--	--	--	--	--	
...HYDRODICTYACEAE									
...PEDIASTRUM	--	--	--	--	--	--	--	--	
...MICRACTINIACEAE									
...MICRACTINIUM	--	--	--	--	--	--	89	1	
...UOCYSTACEAE									
...ANKISTRODESMUS	21	1	--	--	120	2	--	--	
...CHLORELLA	--	--	--	--	30	1	--	--	
...DICTYOSPHAERIUM	--	--	--	--	--	--	--	--	
...KIRCHNERIELLA	--	--	--	--	--	--	--	--	
...SELENASTRUM	--	--	--	--	--	--	--	--	
...SCENEDESMACEAE									
...CRUCIGENIA	--	--	--	--	--	--	450	5	
...SCENEDESMUS	--	--	--	--	120	2	360	4	
...TETRASTRUM	--	--	210	2	--	--	--	--	
...VOLVOCALES									
...CHLAMYDOMONADACEAE									
...CHLAMYDOMONAS	190	8	920	10	180	4	180	2	
...LOBOMONAS	--	--	--	--	--	--	--	--	
...ZYGNEMALES									
...DESMIDIACEAE									
...CLOSTERIUM	--	--	--	--	--	--	--	--	
CHRYSTOPHYTA									
..BACILLARIOPHYCEAE									
...CENTRALES									
...COSCINODISCEACEAE									
...CYCLOTELLA	340	15	430	5	1300#	27	360	4	
...MELUSIRA	--	--	640	7	60	1	--	--	
...PENNALES									
...ACHNANTHACEAE									
...ACHNANTHES	--	--	--	--	--	--	45	1	
...COCCONEIS	*	0	71	1	60	1	670	8	
...RHOICOSPHEA	--	--	--	--	--	--	45	1	
...CYMBELLACEAE									
...AMPHORA	--	--	--	--	--	--	45	1	
...CYMBELLA	21	1	71	1	--	--	89	1	
...EPISTEMIA	--	--	*	0	60	1	130	2	
...RHOPALODIA	--	--	*	0	--	--	--	--	
...DIATOMACEAE									
...DIATOMA	64	3	850	9	300	6	--	--	
...OPEPHORA	--	--	--	--	*	0	--	--	
...FRAGILARIACEAE									
...FRAGILARIA	--	--	--	--	540	11	3300#	39	
...HANNAEA	--	--	--	--	--	--	45	1	
...SYNEDRA	85	4	350	4	120	2	--	--	
...GOMPHONEMACEAE									
...GOMPHONEMA	64	3	430	5	30	1	540	6	
...NAVICULACEAE									
...CALONEIS	21	1	140	2	30	1	--	--	
...NAVICULA	42	2	1300	15	180	4	940	11	
...PINNULARIA	--	--	--	--	--	--	130	2	
...NITZSCHACEAE									
...DENTICULA	--	--	--	--	30	1	--	--	
...NITZSCHIA	950#	41	2300#	26	690	14	670	8	
...SURIPELLACEAE									
...CYMATOPLEURA	--	--	--	--	--	--	--	--	
...SURIPELLA	--	--	71	1	30	1	--	--	
CHRYSTOPHYCEAE									
..CHRYSONOMADALES									
...OCHROMONADACEAE									
...OCHROMONAS	--	--	--	--	60	1	--	--	
CRYPTOPHYTA (CRYPTOMONADS)									
..CRYPTOPHYCEAE									
...CRYPTOMONIDALES									
...CRYPTOCHRYSIDACEAE									
...CHROMONAS	42	2	--	--	60	1	--	--	
...CRYPTOMONODACEAE									
...CRYPTOMONAS	42	2	--	--	--	--	--	--	

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	NOV 29,77 1100		FEB 28,78 1200		MAY 11,78 1200		JUN 13,78 1230	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROCOCCALES								
...CHROCOCCACEAE								
....ANACYSTIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	210	9	1100	12	740#	16	360	4
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	210	9	71	1	30	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

IDENTIFICATION OF PHYTOPLANKTON						
DATE TIME	JUL 6,78 1100	AUG 17,78 1330	SEP 20,78 1157			
TOTAL CELLS/ML	3100	46000	3100			
DIVERSITY: DIVISION	1.0	0.5	1.3			
..CLASS	1.0	0.5	1.3			
..ORDER	1.6	0.6	1.5			
...FAMILY	2.3	0.7	2.4			
....GENUS	2.4	0.7	2.7			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...CHAMACIACEAE						
...SCHROEDERIA	--	-	* 0	--	-	
...HYDRODICTYACEAE						
...PEDIASTRUM	700#	23	--	-	530#	17
...MICRACITINIAEAE						
...MICRACITINUM	--	-	370	1	--	-
...UOCYSTACEAE						
...ANKISTRODESMUS	--	-	* 0	--	-	86 3
...CHLOKELLA	--	-	* 0	--	-	
...DICTYOSPHAERIUM	--	-	* 0	--	-	
...KIRCHNERIELLA	--	-	620	1	230	7
...SELENASTRUM	--	-	--	-	* 0	
...SCENEDESMACEAE						
...CRUCIGENIA	--	-	* 0	--	-	58 2
...SCENEDESMUS	290	9	1600	4	1000#	33
...TETRASTRUM	--	-	--	-	58	2
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
...CHLAMYDOMONAS	* 0	--	-	--	-	
...LOBOMONAS	--	-	--	-	* 0	
...ZYGNEATALES						
...DESMIDIACEAE						
...CLOSTERIUM	--	-	* 0	--	-	43 1
CHRYSTOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINOIDISCACEAE						
...CYCLOTETRA	1500#	49	680	1	190	6
...MELOSIRA	--	-	--	-	--	-
..PENNALES						
...ACHNANTHACEAE						
...ACHNANTHES	--	-	--	-	--	-
...COCCONEIS	120	4	--	-	--	-
...RHOICOSPHEA	--	-	--	-	--	-
...CYMBELLACEAE						
...AMPHORA	--	-	--	-	--	-
...CYMBELLA	* 0	--	-	--	-	
...EPITHEMIA	--	-	--	-	29	1
...RHOPALODIA	--	-	--	-	--	-
...DIATOMACEAE						
...DIATOMA	88	3	--	-	--	-
...OPEPHORA	--	-	--	-	--	-
...FRAGILARIACEAE						
...FRAGILARIA	--	-	--	-	--	-
...HANNAEA	--	-	--	-	--	-
...SYNEDRA	29	1	--	-	--	-
...GOMPHONEMACEAE						
...GOMPHONEMA	100	3	--	-	--	-
...NAVICULACEAE						
...CALONEIS	--	-	--	-	--	-
...NAVICULA	44	1	* 0	--	-	43 1
...PINNULARIA	* 0	--	-	--	-	
...NITZSCHIAEAE						
...DENTICULA	--	-	--	-	--	-
...NITZSCHIA	100	3	--	-	* 0	
...SURIPELLACEAE						
...CYMATOPLEURA	* 0	--	-	--	-	
...SURIPELLA	--	-	--	-	--	-
..CHRYSTOPHYCEAE						
...CHRYSONOMADACEAE						
...OCHROMONAS	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADACEAE						
...CHROOMONAS	--	-	--	-	--	-
...CRYPTOMONODACEAE						
...CRYPTOMONAS	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	JUL 6,78 1100		AUG 17,78 1330		SEP 20,78 1157	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCCOCCALES						
....CHROCCOCCAEAE						
....ANACYSTIS	59	2	41000#	90	760#	24
..HORMOGONALES						
...OSCILLATORIAEAE						
....OSCILLATORIA	--	-	340	1	--	-
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
....TRACHELOMONAS	--	-	*	0	29	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
APR 04...	1230	13.0	10.2	2.00	.380	Polyethylene strip
JUL 06...	1100	3.23	1.42	.430	.000	"
SEP 20...	1157	.551	.315	.570	.000	"

## INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
OCT 26...	1205	16	--	28	1.2
NOV 29...	1220	76	--	13	2.7
DEC 28...	1200	125	.0	18	6.1
FEB 01...	1300	320	--	22	19
28...	1150	258	--	34	24
APR 04...	1305	88	--	34	8.1
MAY 11...	1220	184	--	34	17
JUN 13...	1300	390	--	38	40
JUL 06...	1115	664	--	40	72
AUG 17...	1225	120	--	24	7.8
SEP 20...	1030	50	--	19	2.6

## RIO GRANDE BASIN

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), RECORDER MAXIMUM, MINIMUM, AND MEAN, WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	544	519	530	692	627	661	514	435	474	289	276	281
2	533	499	512	697	608	651	514	432	462	305	287	294
3	504	473	488	683	642	660	448	398	434	306	278	291
4	497	476	491	733	685	708	467	402	436	286	272	280
5	543	495	519	684	504	599	464	409	435	278	264	272
6	578	550	562	494	426	454	465	400	430	280	265	273
7	593	572	582	456	424	440	447	352	423	281	265	273
8	592	522	562	426	398	409	449	339	399	287	264	276
9	529	496	508	552	432	517	471	344	434	283	264	274
10	510	487	499	546	514	525	446	340	406	278	259	267
11	497	475	488	531	476	500	445	347	393	269	253	262
12	505	488	497	522	462	492	445	335	410	268	255	261
13	524	508	516	470	443	459	443	352	415	277	256	267
14	543	508	525	491	458	476	447	414	430	284	270	276
15	534	505	519	488	468	476	429	401	416	279	264	271
16	522	493	510	472	452	461	433	380	413	279	254	265
17	535	510	520	462	448	455	477	435	450	273	256	264
18	546	518	536	454	438	445	478	424	448	271	253	263
19	554	533	544	463	432	444	453	428	437	273	256	265
20	570	545	559	467	435	453	480	441	461	276	256	266
21	582	560	572	493	460	472	493	437	475	266	251	257
22	651	579	612	481	446	461	501	412	461	265	250	258
23	664	625	647	451	426	438	409	338	370	264	250	258
24	650	600	633	448	423	436	347	292	322	283	262	269
25	657	620	638	459	432	442	343	296	319	292	270	279
26	650	632	641	450	429	438	338	298	320	279	264	272
27	649	606	632	446	424	435	326	291	309	275	256	268
28	658	617	636	448	433	440	300	283	290	279	261	272
29	686	649	668	480	429	448	285	270	279	278	256	267
30	694	682	688	506	471	487	292	270	279	269	251	261
31	690	672	684	---	---	---	278	262	271	267	253	260
MONTH	694	473	565	733	398	493	514	262	397	306	250	270
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	268	248	257	251	242	246	451	443	446	317	307	311
2	275	251	262	275	244	257	461	446	454	318	304	313
3	278	253	265	275	262	268	495	465	479	349	319	333
4	290	255	269	284	267	276	520	428	512	407	354	383
5	279	254	265	284	277	281	520	494	509	430	400	415
6	274	251	262	293	283	289	495	483	490	422	399	412
7	278	249	259	295	281	287	524	502	512	431	398	415
8	266	253	260	291	285	287	573	525	547	491	435	465
9	288	261	270	289	279	286	597	576	589	502	466	482
10	281	244	260	293	283	287	610	590	600	502	480	488
11	265	243	256	297	288	293	640	611	629	487	466	476
12	265	249	258	293	287	290	664	643	652	468	396	436
13	266	245	256	295	284	288	668	655	662	388	350	374
14	264	252	258	288	279	284	656	622	635	355	322	340
15	267	256	263	289	280	285	632	609	624	322	311	318
16	277	259	265	292	263	281	658	624	644	318	294	308
17	277	263	268	308	273	287	695	649	675	300	283	288
18	287	259	270	317	299	306	674	640	512	---	---	---
19	274	258	266	318	306	313	456	404	427	---	---	---
20	268	255	261	322	304	313	450	384	403	---	---	---
21	257	244	251	324	311	316	409	380	393	---	---	---
22	252	240	246	315	305	311	387	371	377	---	---	---
23	255	232	243	311	303	307	447	374	407	---	---	---
24	255	227	240	311	300	307	446	389	418	---	---	---
25	252	232	240	312	300	305	397	382	389	---	---	---
26	253	231	241	304	293	300	406	389	398	---	---	---
27	247	230	239	319	296	307	396	356	381	---	---	---
28	250	237	244	352	318	333	353	329	342	---	---	---
29	---	---	---	394	354	373	324	301	309	---	---	---
30	---	---	---	435	398	415	322	304	313	---	---	---
31	---	---	---	450	437	443	---	---	---	---	---	---
MONTH	290	227	257	450	242	304	695	301	491	502	283	386

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	259	226	239	198	183	190	291	279	285
2	---	---	---	278	262	273	185	181	183	295	288	292
3	---	---	---	276	270	272	182	178	179	304	291	297
4	---	---	---	272	259	268	179	175	177	296	276	286
5	---	---	---	264	247	255	176	172	174	278	258	268
6	---	---	---	267	249	261	183	175	179	259	247	254
7	---	---	---	260	253	255	185	176	180	254	242	248
8	---	---	---	271	241	261	197	185	190	263	244	257
9	---	---	---	239	206	220	200	196	199	265	257	260
10	---	---	---	206	174	193	198	193	196	262	257	259
11	---	---	---	172	151	160	207	196	200	258	252	255
12	---	---	---	151	141	145	212	204	208	264	256	260
13	246	158	189	148	142	145	212	200	205	269	257	262
14	157	138	147	156	149	151	214	200	204	265	256	260
15	156	142	151	157	154	156	217	210	215	274	263	268
16	165	152	155	162	155	157	224	215	220	265	255	259
17	195	161	176	162	158	161	226	210	219	261	253	256
18	188	164	178	159	154	157	228	221	225	268	259	263
19	189	168	178	157	154	155	243	231	238	279	266	273
20	175	166	170	155	151	153	256	245	250	288	256	271
21	191	175	185	157	153	155	273	258	264	270	241	258
22	193	179	187	162	145	155	283	272	277	271	256	263
23	189	176	183	155	149	153	292	283	287	270	257	264
24	184	171	179	157	151	155	303	293	299	288	259	269
25	187	168	177	157	154	156	314	298	306	292	256	274
26	208	188	201	166	156	162	319	308	313	254	239	244
27	226	203	212	168	162	165	332	312	320	242	236	239
28	251	226	239	182	168	175	334	313	320	242	236	239
29	253	237	248	181	179	180	320	292	305	238	231	235
30	238	227	233	190	178	182	299	279	287	233	221	228
31	---	---	---	200	191	197	288	278	283	---	---	---
MONTH	253	138	188	278	141	189	334	172	235	304	221	262
YEAR	733	138	340									

WATER TEMPERATURE (DEG.° C), RECORDER MAXIMUM, MINIMUM, AND MEAN, WATER YEAR OCTOBER 1977 to SEPTEMBER 1978												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.0	4.0	9.5	10.0	.5	3.0	1.5	.0	.5	.0	.0	.0
2	16.0	4.0	9.5	10.0	.5	4.0	1.0	.0	.5	.0	.0	.0
3	17.0	6.5	11.5	11.0	.5	5.0	2.0	.0	.5	.0	.0	.0
4	19.0	9.0	13.0	11.5	1.5	6.0	3.5	.0	1.0	.0	.0	.0
5	18.0	9.5	13.0	11.5	3.5	7.0	3.5	.0	1.0	.0	.0	.0
6	11.5	9.5	10.5	11.5	4.0	7.5	1.5	.0	.5	.0	.0	.0
7	14.5	7.5	10.5	8.5	4.5	7.0	1.5	.0	.5	.0	.0	.0
8	18.0	3.0	10.0	3.5	.0	2.0	3.0	.0	.5	.0	.0	.0
9	14.0	5.0	9.0	1.5	.0	.5	1.0	.0	.0	.0	.0	.0
10	14.0	4.0	8.0	1.0	.0	.5	3.0	.0	.5	.0	.0	.0
11	14.0	1.5	7.0	1.0	.0	.5	3.5	.0	.5	.0	.0	.0
12	15.0	1.0	7.5	4.5	.0	1.5	2.0	.0	.5	.0	.0	.0
13	16.0	1.5	8.0	8.0	.0	3.0	.5	.0	.0	.0	.0	.0
14	17.0	2.5	9.5	10.0	.5	4.5	1.0	.0	.0	.0	.0	.0
15	16.0	3.0	9.0	10.0	1.5	5.0	.5	.0	.0	.0	.0	.0
16	17.5	3.0	10.0	8.5	1.0	4.0	.5	.0	.0	.0	.0	.0
17	17.0	3.5	10.0	8.5	1.0	4.5	1.0	.0	.0	.0	.0	.0
18	17.0	4.0	10.0	7.5	1.0	4.0	.5	.0	.0	.0	.0	.0
19	15.5	3.5	9.5	4.5	1.0	2.5	.5	.0	.0	.0	.0	.0
20	13.0	3.0	8.0	3.0	.0	1.0	1.5	.0	.0	.0	.0	.0
21	13.5	5.5	9.5	2.5	.0	1.0	.5	.0	.0	.0	.0	.0
22	14.5	4.0	9.0	3.0	.0	1.0	.5	.0	.0	.0	.0	.0
23	16.0	3.5	9.0	4.0	.5	1.5	.5	.0	.0	.0	.0	.0
24	16.0	3.5	8.5	3.0	.5	1.0	.5	.0	.0	.0	.0	.0
25	15.5	2.5	8.5	6.0	.5	2.0	1.0	.0	.0	.0	.0	.0
26	15.0	2.0	8.5	7.0	.5	3.0	.5	.0	.0	.0	.0	.0
27	15.5	3.5	9.0	5.0	1.0	3.0	.0	.0	.0	.0	.0	.0
28	14.0	3.0	8.5	8.0	1.0	3.5	.0	.0	.0	.0	.0	.0
29	11.5	4.0	8.0	5.0	.0	2.0	.0	.0	.0	.0	.0	.0
30	12.5	4.5	7.5	4.5	.0	1.0	.0	.0	.0	.0	.0	.0
31	8.0	1.0	4.0	---	---	---	.0	.0	.0	.0	.0	.0
MONTH	19.0	1.0	9.0	11.5	.0	3.0	3.5	.0	.0	.0	.0	.0



## 08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

WATER TEMPERATURE (DEG.° C), RECORDER MAXIMUM, MINIMUM, AND MEAN, WATER YEAR OCTOBER 1977 to SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	.0	.0	.0	3.5	1.0	2.0	12.0	5.0	9.0	14.5	7.5	10.5
2	.0	.0	.0	6.5	.5	3.5	13.0	3.0	7.5	7.5	3.5	5.5
3	.0	.0	.0	5.5	.0	2.0	17.0	3.5	9.0	16.5	5.0	10.0
4	.0	.0	.0	6.5	.0	2.5	16.0	3.5	9.5	14.5	9.0	11.0
5	.0	.0	.0	9.0	2.0	5.0	13.5	3.0	7.0	11.5	5.5	8.0
6	.0	.0	.0	7.5	1.5	4.5	14.0	2.5	8.0	9.5	5.0	7.5
7	.0	.0	.0	10.0	2.5	6.0	13.0	3.5	8.0	13.0	3.5	8.0
8	.0	.0	.0	11.0	3.0	6.5	13.0	2.0	8.0	18.0	6.5	11.5
9	.0	.0	.0	11.0	3.0	6.5	15.5	2.5	9.0	22.0	9.0	15.0
10	.0	.0	.0	7.0	3.0	5.0	15.0	.5	6.5	21.5	11.0	15.5
11	.0	.0	.0	9.5	2.0	5.5	18.0	.5	8.5	19.5	11.0	14.5
12	.0	.0	.0	6.0	2.0	4.0	15.5	3.5	9.5	18.0	9.5	13.0
13	.0	.0	.0	8.0	1.5	4.0	14.5	5.0	9.0	19.5	9.0	14.0
14	.0	.0	.0	8.0	1.5	4.0	13.5	3.5	8.0	20.5	11.0	15.5
15	.0	.0	.0	6.0	.0	2.0	14.5	3.5	9.0	21.0	13.0	17.0
16	.0	.0	.0	8.0	.0	3.0	14.0	2.5	8.0	19.5	12.5	15.5
17	.0	.0	.0	11.0	.5	5.5	10.5	1.0	6.0	15.0	11.5	13.0
18	.0	.0	.0	12.5	3.0	7.5	17.0	.5	6.5	---	---	---
19	.0	.0	.0	12.0	4.5	8.0	16.5	1.0	8.0	---	---	---
20	.0	.0	.0	13.5	5.0	8.5	17.5	4.5	10.5	---	---	---
21	.0	.0	.0	15.0	4.0	9.0	13.5	4.0	8.5	---	---	---
22	.0	.0	.0	11.5	6.0	8.0	18.0	2.0	8.5	---	---	---
23	1.0	.0	.0	9.5	5.0	7.0	19.5	2.0	9.5	---	---	---
24	4.5	.0	1.5	9.5	4.5	7.0	22.0	5.5	13.0	---	---	---
25	6.5	.0	2.0	13.0	2.5	7.5	17.0	8.5	12.0	---	---	---
26	5.0	1.0	2.5	14.0	4.0	9.0	16.0	7.5	12.0	---	---	---
27	4.0	1.5	2.0	16.0	5.0	10.0	16.5	9.5	12.5	---	---	---
28	4.5	.0	2.0	12.0	5.5	8.0	17.0	7.5	12.5	---	---	---
29	---	---	---	17.5	3.5	9.5	16.5	9.5	13.0	---	---	---
30	---	---	---	17.5	6.0	11.0	17.0	10.0	12.5	---	---	---
31	---	---	---	18.0	7.0	11.5	---	---	---	---	---	---
MONTH	6.5	.0	.5	18.0	.0	6.0	22.0	.5	9.5	22.0	3.5	12.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	23.0	18.0	20.5	24.0	17.0	20.0	24.0	12.0	17.5
2	---	---	---	21.5	17.0	19.5	24.0	16.5	19.5	24.5	13.0	18.5
3	---	---	---	21.0	16.5	19.0	23.5	15.5	18.5	25.5	13.5	19.0
4	---	---	---	21.5	16.0	19.0	24.0	15.5	19.5	26.5	15.0	20.0
5	---	---	---	22.0	15.0	18.5	25.0	17.5	21.0	27.0	16.0	21.0
6	---	---	---	22.5	17.5	20.0	27.0	18.0	21.5	26.5	15.0	20.0
7	---	---	---	21.5	17.5	19.5	23.0	15.5	19.0	20.5	13.5	16.5
8	---	---	---	25.0	19.0	21.5	24.0	16.0	20.0	22.5	11.0	16.5
9	---	---	---	23.0	19.0	21.0	26.0	16.5	20.5	24.0	12.5	18.0
10	---	---	---	23.5	19.5	21.5	25.5	16.0	20.0	21.0	14.0	17.5
11	---	---	---	24.5	19.5	22.0	26.0	16.5	22.0	19.5	12.0	15.0
12	---	---	---	26.0	19.5	23.0	25.5	18.0	21.5	19.0	10.5	14.0
13	23.5	17.5	19.5	26.0	20.0	23.0	24.0	18.0	21.0	18.0	10.0	13.5
14	20.0	14.5	17.5	24.5	20.0	22.0	23.5	16.5	19.5	19.0	9.0	14.0
15	20.0	14.0	17.0	23.0	19.0	21.5	24.0	14.0	18.5	21.0	11.0	15.5
16	20.5	14.0	17.5	24.0	19.0	21.5	23.0	14.0	18.5	21.5	11.0	16.0
17	20.0	15.0	17.5	26.5	19.0	22.5	23.0	15.0	18.5	18.0	13.0	15.0
18	21.0	14.5	17.5	26.5	20.5	23.5	22.5	14.0	17.5	16.0	10.5	13.0
19	21.5	15.5	18.5	23.5	20.5	21.5	21.0	12.5	16.0	15.5	8.5	12.0
20	20.5	15.5	18.0	24.0	18.5	21.0	24.0	12.5	17.5	16.0	10.0	12.5
21	22.0	16.0	18.5	25.5	19.0	22.0	25.0	15.0	19.5	16.0	6.5	11.0
22	22.0	16.5	19.0	23.5	19.0	21.0	23.0	15.5	18.5	19.5	9.0	13.5
23	21.5	16.5	19.0	24.0	18.0	20.5	22.0	14.0	18.0	21.0	11.0	15.5
24	21.0	16.0	18.5	25.0	18.0	21.0	23.5	13.5	18.0	15.5	11.5	14.0
25	20.5	17.0	18.0	24.5	19.0	21.5	25.5	15.0	19.0	17.5	11.0	13.5
26	20.0	15.0	17.5	25.5	18.5	21.5	24.5	14.0	19.0	22.5	12.0	16.5
27	21.0	17.5	18.5	27.0	18.5	22.0	24.0	12.5	17.5	21.0	11.5	16.0
28	21.0	16.0	18.0	26.5	19.5	22.5	23.5	12.0	17.0	22.5	12.0	16.5
29	21.5	16.5	18.5	27.5	19.5	22.5	19.5	13.0	15.5	22.5	11.5	16.5
30	22.5	17.5	20.0	27.0	19.0	22.0	22.5	10.5	15.5	21.0	12.0	15.5
31	---	---	---	25.5	18.0	21.5	20.5	12.5	16.0	---	---	---
MONTH	23.5	14.0	18.5	27.5	15.0	21.5	27.0	10.5	19.0	27.0	6.5	16.0
YEAR	27.5	.0	9.0									

## 08252000 RIO GRANDE AT COLORADO-NEW MEXICO STATE LINE

LOCATION.--Lat 37° 00' 03", long 105°43'19", Costilla County, Hydrologic Unit 13010002, in Sangre de Cristo Grant, on left bank 0.6 mi (1.0 km) upstream from Colorado-New Mexico State line, 1.7 mi (2.7 km) upstream from Costilla Creek, 5.5 mi (8.8 km) west of Jaroso, and at mile 1,713.3 (2,756.7 km).

DRAINAGE AREA.--7,890 mi<sup>2</sup> (20,440 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in northern part of San Luis Valley, CO.

PERIOD OF RECORD.--October 1953 to current year.

REVISED RECORDS.--WSP 1732: 1954(M).

GAGE.--Water-stage recorder. Altitude of gage is 7,390 ft (2,252 m), from topographic map.

REMARKS.--Records good except those for winter period, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Several observations of water temperature were made during the year.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

AVERAGE DISCHARGE.--25 years, 320 ft<sup>3</sup>/s (9.062 m<sup>3</sup>/s), 231,800 acre-ft/yr (286 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 4,150 ft<sup>3</sup>/s (118 m<sup>3</sup>/s) May 29, 1958, gage height, 7.07 ft (2.155 m); no flow at times in 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 8, 1905, which reached a daily discharge of 13,100 ft<sup>3</sup>/s (371 m<sup>3</sup>/s) at station near Lobatos, 5.8 mi (9.3 km) upstream, was probably the greatest since at least 1828, based on information from area residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 938 ft<sup>3</sup>/s (26.6 m<sup>3</sup>/s) July 1, gage height, 3.76 ft (1.146 m); minimum daily, 14 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) Oct. 4, 5, 11, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	28	70	135	180	320	110	213	603	885	216	48
2	22	29	65	125	180	305	110	216	702	870	216	48
3	16	34	80	125	175	280	106	201	716	658	213	50
4	14	54	95	135	180	280	101	166	752	519	210	52
5	14	84	90	140	190	277	103	166	756	442	213	54
6	16	97	75	135	195	280	95	222	653	418	198	55
7	21	108	80	135	200	280	68	264	543	359	216	68
8	21	112	80	135	200	271	59	249	490	317	186	63
9	19	90	75	145	200	261	55	216	462	274	178	59
10	15	80	90	155	210	258	50	201	442	333	175	57
11	14	85	85	155	220	258	46	189	494	404	169	54
12	15	100	85	150	220	255	44	222	494	476	157	54
13	19	95	80	135	215	261	48	280	391	523	163	54
14	17	85	80	150	210	255	47	336	292	523	143	55
15	16	79	84	155	205	249	44	372	327	470	132	57
16	16	84	70	160	205	237	38	425	480	452	125	57
17	15	82	70	160	200	231	42	583	591	435	115	55
18	14	80	74	160	200	219	88	644	591	404	103	52
19	15	74	75	160	185	216	106	567	515	401	95	48
20	17	70	64	170	190	207	112	462	484	391	84	47
21	16	68	60	180	210	198	110	519	508	401	78	47
22	15	75	80	175	230	198	115	662	508	378	70	44
23	15	80	90	155	220	204	82	607	476	356	63	46
24	15	82	90	135	240	219	118	599	473	340	57	59
25	16	82	90	125	260	231	112	694	476	330	57	70
26	17	92	95	175	271	237	101	725	494	324	55	72
27	17	90	110	175	302	210	143	623	559	305	50	70
28	19	86	125	175	311	169	228	603	515	274	52	72
29	22	92	135	175	---	141	277	623	531	249	54	82
30	24	88	140	180	---	122	237	587	671	240	54	90
31	24	---	145	180	---	115	---	523	---	225	52	---
TOTAL	540	2387	2727	4750	6004	7244	2995	12959	15989	12976	3949	1739
MEAN	17.4	79.6	88.0	153	214	234	99.8	418	533	419	127	58.0
MAX	24	112	145	180	311	320	277	725	756	885	216	90
MIN	14	28	60	125	175	115	38	166	292	225	50	44
AC-FT	1070	4730	5410	9420	11910	14370	5940	25700	31710	25740	7830	3450
CAL YR 1977 TOTAL	31111.3			MEAN 85.2	MAX 415	MIN 4.2	AC-FT 61710					
WTR YR 1978 TOTAL	74259.0			MEAN 203	MAX 885	MIN 14	AC-FT 147300					

## 08252500 COSTILLA CREEK ABOVE COSTILLA DAM, NM

LOCATION.--lat 36°53'52", long 105°15'16", Taos County, Hydrologic Unit 13020101, in Sangre de Cristo Grant, on left bank 1,900 ft (580 m) upstream from normal high-water line of Costilla Reservoir, 2.1 mi (3.4 km) northeast of Costilla Dam, 16 mi (26 km) southeast of Costilla, and at mile 36.9 (59.4 km).

DRAINAGE AREA.--25.1 mi<sup>2</sup> (65.0 km<sup>2</sup>).

PERIOD OF RECORD.--April 1937 to current year (no winter records). Monthly discharge only for some periods, published in WSP 1312 and 1732. Prior to October 1951, published as "above reservoir, near Costilla."

REVISED RECORDS.--WSP 878: 1937. WSP 1923: 1937-50, drainage area.

GAGE.--Water-stage recorder. Concrete control since Sept. 17, 1965. Altitude of gage is 9,429 ft (2,874 m). See WSP 1923 for history of changes prior to Sept. 17, 1965.

REMARKS.--Records good. Natural flow may be augmented by transbasin diversions or irrigation returns from about 1,300 acres (5.3 km<sup>2</sup>) irrigated from Casias Creek (station 08253000). Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,870 ft<sup>3</sup>/s (110 m<sup>3</sup>/s) July 22, 1954, gage height, 6.3 ft (1.92 m), from floodmarks, present site and datum, on basis of slope-area measurement of peak flow; minimum not determined.

The flood in 1954 destroyed the gaging station and is highest since about 1909, from information by local range rider. A portion of this flow may have originated in Casias Creek basin (see REMARKS).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 54 ft<sup>3</sup>/s (1.53 m<sup>3</sup>/s) at 1930 hours May 13, gage height, 2.77 ft (0.844 m), no other peak above base of 40 ft<sup>3</sup>/s (1.1 m<sup>3</sup>/s); minimum not determined.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0						---	9.3	24	6.5	2.6	1.9
2	2.0						---	7.0	26	5.6	2.4	1.9
3	2.1						---	9.5	26	5.1	2.9	1.8
4	2.2						---	7.9	26	4.5	3.4	1.9
5	---						---	7.0	24	4.3	2.6	1.6
6	---						---	6.7	26	4.1	2.4	1.6
7	---						---	8.0	23	3.8	2.8	1.4
8	---						---	7.4	23	4.1	2.4	1.6
9	---						---	9.3	18	6.0	2.3	1.7
10	---						---	15	19	5.8	2.2	1.7
11	---						---	27	19	4.7	2.3	1.4
12	---						---	28	18	4.3	2.4	1.3
13	---						---	29	18	4.9	2.4	1.4
14	---						---	29	17	3.8	2.0	1.4
15	---						---	30	17	3.5	1.8	1.4
16	---						---	31	17	3.2	1.6	1.3
17	---						---	29	16	3.0	1.4	2.0
18	---						---	24	14	2.9	1.4	1.7
19	---						---	23	13	2.8	2.0	1.6
20	---						---	7.2	23	3.2	2.1	1.6
21	---						---	6.8	25	11	3.2	1.4
22	---						---	6.6	27	9.9	3.0	1.7
23	---						---	6.5	26	9.3	2.9	1.7
24	---						---	7.4	25	8.1	3.3	1.7
25	---						---	8.1	24	7.4	3.1	3.1
26	---						---	9.0	23	7.0	3.1	2.7
27	---						---	11	22	7.2	2.9	1.9
28	---						---	9.6	21	8.5	2.8	1.8
29	---						---	10	21	8.7	4.2	1.7
30	---						---	9.9	21	9.3	3.7	1.7
31	---						---	22	---	2.9	1.9	---
TOTAL	---						---	617.1	482.4	121.2	69.9	51.6
MEAN	---						---	19.9	16.1	3.91	2.25	1.72
MAX	---						---	31	26	6.5	3.4	3.1
MIN	---						---	6.7	7.0	2.8	1.4	1.3
AC=FT	---						---	1220	957	240	139	102

## 08253000 CASIAS CREEK NEAR COSTILLA, NM

LOCATION.--Lat 36°53'48", long 105°15'35", Taos County, Hydrologic Unit 13020101, in Sangre de Cristo Grant, on left bank 200 ft (61 m) downstream from road crossing, 900 ft (270 m) upstream from normal high-water line of Costilla Reservoir, 1.8 mi (2.9 km) northeast of Costilla Dam, and 16 mi (26 km) southeast of Costilla.

DRAINAGE AREA.--16.6 mi<sup>2</sup> (43.0 km<sup>2</sup>).

PERIOD OF RECORD.--April 1937 to current year (no winter records). Monthly discharge only for some periods, published in WSP 1312 and 1732. Records for Nov. 1-7, 1947, and Nov. 1-16, 1948, published in WSP 1118 and 1148, are unreliable and should not be used.

REVISED RECORDS.--WSP 1282: 1948-51. WSP 1923: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 9,404 ft (2,866 m), from topographic map. Prior to July 18, 1940, water-stage recorder and wooden control 100 ft (30 m) downstream at datum 1.56 ft (0.475 m) lower.

REMARKS.--Records good. Diversion 3.5 mi (5.6 km) upstream for irrigation of about 1,300 acres (5.3 km<sup>2</sup>), part of which is in Costilla Creek basin. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 181 ft<sup>3</sup>/s (5.13 m<sup>3</sup>/s) July 20, 1971, gage height, 2.07 ft (0.631 m), from rating curve extended above 85 ft<sup>3</sup>/s (2.4 m<sup>3</sup>/s); minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 35 ft<sup>3</sup>/s (1.0 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 11	1730	*63 1.78	1.31 .399	June 16	0830	41 1.16	1.12 .341

Minimum not determined.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	4.5					---	6.1	9.3	29	20	9.8	4.7	
2	4.5					---	6.3	8.0	32	19	9.3	4.5	
3	4.5					---	5.8	9.8	32	18	10	4.5	
4	4.5					---	5.4	9.3	34	18	10	4.2	
5	---					---	4.5	8.8	35	17	9.3	4.0	
6	---					---	4.7	8.4	37	16	8.8	4.2	
7	---					---	5.8	8.0	36	16	8.8	4.2	
8	---					---	6.1	8.8	35	16	8.4	4.2	
9	---					---	5.8	11	34	16	8.0	4.2	
10	---					---	5.8	19	35	15	8.0	4.2	
11	---					---	6.5	29	37	15	8.0	4.2	
12	---					---	6.1	18	37	15	7.7	4.2	
13	---					---	6.5	15	37	16	6.9	4.2	
14	---					---	6.5	16	38	15	6.1	4.0	
15	---					---	6.5	18	39	14	5.8	4.0	
16	---					---	7.3	20	40	13	5.4	4.0	
17	---					---	6.9	21	38	12	5.0	4.7	
18	---					---	8.0	23	36	12	5.0	4.5	
19	---					---	8.0	20	34	11	5.4	4.2	
20	---					---	6.5	20	33	12	5.8	4.2	
21	---					---	6.5	24	32	12	5.4	4.2	
22	---					---	6.5	23	31	13	5.8	4.2	
23	---					---	6.9	22	30	13	5.4	4.2	
24	---					---	6.5	23	28	13	6.9	4.2	
25	---					---	6.9	23	27	12	6.5	5.8	
26	---					---	7.7	23	26	11	5.8	5.0	
27	---					---	8.4	24	24	11	5.4	4.2	
28	---					---	8.4	24	23	11	5.4	4.2	
29	---					---	8.4	24	23	12	5.4	4.0	
30	---					---	8.0	8.8	25	23	11	5.0	4.0
31	---					---	8.7	---	26	---	10	4.7	---
TOTAL	---	---	---	---	---	---	200.1	561.4	975	435	213.2	129.1	
MEAN	---	---	---	---	---	---	6.67	18.1	32.5	14.0	6.88	4.30	
MAX	---	---	---	---	---	---	8.8	29	40	20	10	5.8	
MIN	---	---	---	---	---	---	4.5	8.0	23	10	4.7	4.0	
AC=FT	---	---	---	---	---	---	397	1110	1930	863	423	256	

## 08253500 SANTISTEVAN CREEK NEAR COSTILLA, NM

LOCATION.--Lat 36°53'03", long 105°16'50", Taos County, Hydrologic Unit 13020101, in Sangre de Cristo Grant, on left bank 200 ft (61 m) upstream from road crossing, 1,300 ft (400 m) upstream from normal high-water line of Costilla Reservoir, 0.6 mi (1.0 km) north of Costilla Dam, and 16 mi (26 km) southeast of Costilla.

DRAINAGE AREA.--2.15 mi<sup>2</sup> (5.57 km<sup>2</sup>).

PERIOD OF RECORD.--April 1937 to current year (no winter records). Monthly discharge only for some periods, published in WSP 1312 and 1732.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 9,487 ft (2,892 m), from topographic map. Prior to June 27, 1940, water-stage recorder and wooden control at datum 0.99 ft (0.302 m) lower.

REMARKS.--Records fair except those for April, which are poor. No diversions above or below station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18 ft<sup>3</sup>/s (0.51 m<sup>3</sup>/s) Aug. 11, 1941, July 12, 1957; maximum gage height, 1.73 ft (0.527 m) Aug. 11, 1941; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.7 ft<sup>3</sup>/s (0.16 m<sup>3</sup>/s) June 18, gage height, 0.73 ft (0.223 m), no peak above base of 6 ft<sup>3</sup>/s (0.2 m<sup>3</sup>/s); minimum not determined.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.71					---	.71	1.2	4.3	3.9	2.2	1.3
2	.71					---	.71	1.2	4.4	3.7	2.2	1.3
3	.71					---	.71	1.3	4.5	3.5	2.1	1.3
4	.71					---	.82	1.3	4.6	3.4	2.1	1.2
5	---					---	.77	1.2	4.8	3.4	2.1	1.1
6	---					---	.77	1.2	4.9	3.3	1.9	1.1
7	---					---	.88	1.2	4.9	3.2	1.9	1.1
8	---					---	.99	1.4	5.0	3.2	1.9	1.1
9	---					---	1.0	1.5	5.0	3.3	2.3	1.1
10	---					---	.99	1.6	5.1	3.3	1.9	1.1
11	---					---	.99	1.7	5.2	3.2	1.9	1.0
12	---					---	1.0	1.9	5.3	3.1	1.9	.99
13	---					---	1.1	2.0	5.3	3.0	1.8	.99
14	---					---	1.2	2.2	5.3	2.9	1.7	.99
15	---					---	1.2	2.6	5.4	2.8	1.6	.99
16	---					---	1.2	2.9	5.6	2.7	1.6	.93
17	---					---	1.1	3.0	5.6	2.6	1.6	1.0
18	---					---	1.0	2.8	5.6	2.6	1.6	.99
19	---					---	1.1	2.9	5.4	2.6	1.6	.99
20	---					---	1.1	2.9	5.3	2.8	1.6	.99
21	---					---	1.1	3.1	5.2	2.6	1.6	.93
22	---					---	1.1	3.2	5.1	2.7	1.6	.93
23	---					---	1.1	3.3	4.9	2.5	1.7	.93
24	---					---	1.1	3.4	4.7	2.9	1.8	.93
25	---					---	1.1	3.4	4.6	2.6	1.6	1.2
26	---					---	1.2	3.5	4.4	2.4	1.5	.99
27	---					---	1.2	3.6	4.3	2.3	1.4	.93
28	---					---	1.2	3.7	4.3	2.4	1.4	.93
29	---					---	1.2	3.8	4.5	2.5	1.4	.88
30	---					---	.61	1.3	3.9	4.2	2.5	1.4
31	---					---	.71	---	4.0	---	2.3	---
TOTAL	---	---	---	---	---	---	30.94	76.9	147.7	90.2	54.2	31.09
MEAN	---	---	---	---	---	---	1.03	2.48	4.92	2.91	1.75	1.04
MAX	---	---	---	---	---	---	1.3	4.0	5.6	3.9	2.3	1.3
MIN	---	---	---	---	---	---	.71	1.2	4.2	2.3	1.3	.88
AC=FT	---	---	---	---	---	---	61	153	293	179	108	62

## 08253900 COSTILLA RESERVOIR NEAR COSTILLA, NM

LOCATION.--Lat 36°52'32", long 105°16'45", Taos County, Hydrologic Unit 13020101, in Sangre de Cristo Grant, on face of Costilla Dam on Costilla Creek, 16 mi (26 km) southeast of Costilla, and at mile 34.8 (56.0 km).

DRAINAGE AREA.--54.6 mi<sup>2</sup> (141.4 km<sup>2</sup>).

PERIOD OF RECORD.--May 1922 to September 1965 (monthend contents only), October 1965 to current year. Records prior to October 1960 published in WSP 1732. Prior to October 1966, published as Costilla Lake near Costilla.

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Inclined staff gage painted on base of railroad rail on left side of control tower of Dam. Altitude of gage is -107 ft (-33 m), from topographic map.

REMARKS.--Reservoir is formed by earthfill dam faced with rock. Storage began in 1920. Capacity 15,740 acre-ft (19.4 hm<sup>3</sup>) between gage heights 9,405.0 ft (2,866.64 m), sill of outlet, and 9,513.0 ft (2,899.56 m), crest of ungated spillway cut in natural rock. No dead storage. By order of New Mexico State Engineer storage is limited to 14,540 acre-ft (17.9 hm<sup>3</sup>) maximum, and 10,880 acre-ft (13.4 hm<sup>3</sup>) for not to exceed 60 days. Diversions for irrigation of about 1,300 acres (5.26 km<sup>2</sup>) above Reservoir. Reservoir is used for irrigation.

COOPERATION.--Gage readings were collected in cooperation with New Mexico Interstate Stream Commission.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 15,130 acre-ft (18.7 hm<sup>3</sup>) June 13, 1938, June 20-23, 1941, gage height, 9,511.5 ft (2,899.11 m); no storage October 1925 to February 1926, September 1956, Aug. 22 to Sept. 24, 1972, July 29 to Sept. 7, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 6,510 acre-ft (8.03 hm<sup>3</sup>) June 11-12, gage height, 9,485.2 ft (2,891.09 m); minimum observed, 261 acre-ft (322,000 m<sup>3</sup>) Sept. 22, gage height, 9,429.6 ft (2,874.14 m).

Capacity table (gage height, in feet, and contents, in acre-ft)  
(Based on original survey, furnished by New Mexico Interstate Stream Commission)

9,429	247	9,460	1,760
9,430	270	9,470	3,260
9,440	556	9,480	5,270
9,450	959	9,490	7,790

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	6140	---	3700	586
2	---	---	---	---	---	---	---	---	6190	---	3500	---
3	---	---	---	---	---	---	---	---	---	5390	3350	702
4	516	---	---	---	---	---	---	---	6310	5340	3170	676
5	---	---	---	---	---	---	---	---	6360	5340	---	646
6	---	---	---	---	---	---	---	---	6410	5320	3170	607
7	---	---	---	---	---	---	---	---	6440	5290	3020	562
8	---	---	---	---	---	---	---	---	6460	---	2830	510
9	---	---	---	---	---	---	---	---	6490	5320	2640	---
10	---	---	---	---	---	---	---	4010	---	5270	2500	519
11	---	---	---	---	---	---	---	---	6510	5160	2370	494
12	---	---	---	---	---	---	---	---	6510	5030	---	462
13	---	---	---	---	---	---	---	---	6460	4940	---	429
14	---	---	---	---	---	---	---	---	6410	4810	2270	384
15	---	---	---	---	---	---	---	---	6360	---	2160	367
16	---	---	---	---	---	---	---	4580	6290	4810	2060	---
17	---	---	---	---	---	---	---	---	---	4740	1890	384
18	---	---	---	---	---	---	---	---	6290	4620	1750	362
19	---	---	---	---	---	---	3260	---	6240	4490	---	335
20	---	---	---	---	---	---	---	---	6170	4390	1770	314
21	---	---	---	---	---	---	---	5050	6020	4310	1670	287
22	---	---	1580	---	---	---	---	5160	5900	---	1570	261
23	---	---	---	---	---	---	---	5270	5780	4310	1460	---
24	---	---	---	---	---	---	---	5360	---	4230	1340	---
25	---	---	---	---	---	---	---	5480	5780	4130	1250	---
26	---	---	---	---	---	---	---	5570	5710	4070	---	---
27	---	---	---	---	---	---	---	---	5640	4010	1260	---
28	---	---	---	---	2150	---	---	---	5550	3910	1150	---
29	---	---	---	---	---	---	---	5880	5450	---	1060	338
30	---	1400	---	---	---	2630	3600	5970	5410	3910	979	350
31	1000	---	1600	1850	---	2650	---	6070	---	3830	799	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
(†)	---	---	---	---	---	---	---	9483.4	9480.6	9473.1	9446.5	---
(‡)	+544	+400	+200	+250	+300	+500	+950	+2470	-660	-1580	-3031	-449
CAL YR 1977	†	-300										
WTR YR 1978	†	-106										

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

NOTE.--Contents interpolated at end of month except May 31, June 30, July 31 and Aug. 31.

## 08254000. COSTILLA CREEK BELOW COSTILLA DAM, NM

LOCATION.--Lat 36°32'26", long 105°16'47", Taos County, Hydrologic Unit 13020101, in Sangre de Cristo Grant, on left bank 125 ft (38 m) downstream from Costilla Dam, 16 mi (26 km) southeast of Costilla, and at mile 34.7 (55.8 km).

DRAINAGE AREA.--54.6 mi<sup>2</sup> (141.4 km<sup>2</sup>).

PERIOD OF RECORD.--April 1937 to current year (no winter records 1937-44, 1947-49). Monthly discharge only for some periods, published in WSP 1312. Prior to October 1951, published as "below reservoir, near Costilla."

REVISED RECORDS.--WSP 1923: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 9,290 ft (2,832 m), from topographic map.

REMARKS.--Records good except those below 1.0 ft<sup>3</sup>/s (0.03 m<sup>3</sup>/s), which are poor. Flow regulated by Costilla Reservoir (station 08253900). Diversions for irrigation of about 1,300 acres (5.3 km<sup>2</sup>) above Reservoir. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--32 years (water years 1945-47, 1950-78), 16.2 ft<sup>3</sup>/s (0.459 m<sup>3</sup>/s), 11,740 acre-ft/yr (14.5 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 286 ft<sup>3</sup>/s (8.10 m<sup>3</sup>/s) May 9, 10, 1942, gage height, 2.65 ft (0.808 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 133 ft<sup>3</sup>/s (3.77 m<sup>3</sup>/s) Aug. 6-7, gage height, 2.02 ft (0.616 m); minimum not determined.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.03	.04	.05	.04	.04	.03	.05	29	29	107	30
2	.01	.03	.04	.05	.04	.04	.03	.05	34	29	96	7.7
3	.01	.03	.04	.05	.04	.04	.03	.05	34	29	96	13
4	.02	.03	.04	.05	.04	.04	.03	.06	35	29	48	25
5	.02	.03	.04	.05	.04	.04	.03	.06	43	29	10	25
6	.02	.03	.04	.05	.04	.04	.03	.06	43	29	34	26
7	.02	.03	.04	.05	.04	.04	.03	.06	45	20	133	31
8	.02	.03	.04	.05	.04	.04	.03	.06	47	13	119	16
9	.02	.03	.04	.05	.04	.04	.03	.06	47	24	103	6.9
10	.02	.03	.04	.05	.04	.04	.03	.07	47	86	87	11
11	.02	.03	.04	.05	.04	.04	.03	.07	52	86	39	22
12	.02	.03	.04	.05	.04	.04	.03	.07	77	86	9.0	21
13	.02	.03	.04	.05	.04	.04	.03	.05	82	78	24	20
14	.02	.03	.04	.05	.04	.04	.03	.05	82	39	77	20
15	.02	.03	.04	.05	.04	.04	.03	.05	82	20	75	10
16	.03	.04	.05	.05	.04	.03	.03	.05	64	32	74	4.7
17	.03	.04	.05	.05	.04	.03	.03	.05	51	84	74	9.2
18	.03	.04	.05	.05	.04	.03	.03	.05	61	84	32	19
19	.03	.04	.05	.05	.04	.03	.03	.07	107	84	6.1	19
20	.03	.04	.05	.05	.04	.03	.03	.07	120	84	22	18
21	.03	.04	.05	.05	.04	.03	.03	.08	115	42	68	18
22	.03	.04	.05	.05	.04	.03	.03	.08	107	17	68	8.2
23	.03	.04	.05	.05	.04	.03	.04	.05	65	23	67	3.3
24	.03	.04	.05	.05	.04	.03	.04	.05	39	60	59	3.3
25	.03	.04	.05	.05	.04	.03	.04	.05	46	57	23	3.3
26	.03	.04	.05	.05	.04	.03	.04	.05	71	54	9.0	3.3
27	.03	.04	.05	.05	.04	.03	.05	.05	74	54	23	3.3
28	.03	.04	.05	.05	.04	.03	.05	.05	86	30	70	3.3
29	.03	.04	.05	.05	---	.03	.05	.05	81	12	67	2.2
30	.03	.04	.05	.05	---	.03	.05	.05	47	32	66	.16
31	.03	---	.05	.05	---	.03	---	8.0	---	114	63	---
TOTAL	.75	1.05	1.40	1.55	1.12	1.08	1.02	9.72	1913	1489	1848.1	402.86
MEAN	.024	.035	.045	.050	.040	.035	.034	.31	63.8	48.0	59.6	13.4
MAX	.03	.04	.05	.05	.04	.04	.05	8.0	120	114	133	31
MIN	.01	.03	.04	.05	.04	.03	.03	.05	29	12	6.1	.16
AC-FT	1.5	2.1	2.8	3.1	2.2	2.1	2.0	19	3790	2950	3670	799
CAL YR 1977 TOTAL	3252.18											
WTR YR 1978 TOTAL	5670.65											
MEAN	8.91											
MAX	78											
MIN	.01											
AC-FT	6450											
AC-FT	11250											

NOTE.--No gage-height record Oct. 14 to May 10.

## 08254500 COSTILLA CREEK NEAR AMALIA, NM

LOCATION.--Lat 36°52'33", long 105°23'22", Taos County, Hydrologic Unit 13020101, in Sangre de Cristo Grant, on right bank 0.5 mi (0.8 km) upstream from second bridge upstream from Amalia, 2.4 mi (3.9 km) downstream from Latir Creek, 5.8 mi (9.3 km) southeast of Amalia, 10.5 mi (16.9 km) southeast of Costilla, and at mile 25.4 (40.9 km).

DRAINAGE AREA.--152 mi<sup>2</sup> (394 km<sup>2</sup>).

PERIOD OF RECORD.--May 1949 to September 1959 and April 1961 to current year (no winter records). Monthly discharge only for some periods, published in WSP 1732.

REVISED RECORDS.--WSP 1732: 1956(M). WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Sept. 27, 1965. Altitude of gage is 8,521 ft (2,597 m), from topographic map. May 1949 to May 2, 1956, at site 40 ft (12 m) upstream at datum 0.81 ft (0.247 m) lower. May 3, 1956 to Sept. 27, 1965, at site 10 ft (3 m) downstream at datum 1.81 ft (0.552 m) lower.

REMARKS.--Records good except those for May and June, which are fair. Flow regulated by Costilla Reservoir (station 08253900) about 10 mi (16 km) upstream. Diversions for irrigation of about 1,300 acres (5.3 km<sup>2</sup>) above Costilla Reservoir. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 689 ft<sup>3</sup>/s (19.5 m<sup>3</sup>/s) Apr. 25, 1958, gage height, 3.70 ft (1.128 m), site and datum then in use; maximum gage height, 3.11 ft (0.948 m) July 27, 1966; minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 126 ft<sup>3</sup>/s (3.57 m<sup>3</sup>/s) June 20, gage height, 2.26 ft (0.689 m); minimum not determined.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9					---	29	26	68	48	100	44
2	4.6					---	24	25	75	44	94	13
3	4.9					---	25	29	71	42	92	12
4	4.9					---	26	33	69	39	67	28
5	4.9					---	24	27	77	38	21	28
6	---					---	21	26	77	36	23	28
7	---					---	26	23	79	32	110	35
8	---					---	31	26	82	19	106	27
9	---					---	32	32	79	21	98	11
10	---					---	24	49	78	83	84	10
11	---					---	20	66	77	87	57	23
12	---					---	24	64	91	84	19	24
13	---					---	26	63	95	83	19	23
14	---					---	26	66	95	61	73	23
15	---					---	27	72	95	35	74	19
16	---					---	27	77	88	34	73	8.1
17	---					---	25	77	75	82	71	9.0
18	---					---	20	71	75	83	48	21
19	---					---	21	67	112	83	13	21
20	---					---	20	66	121	84	14	21
21	---					---	19	67	114	62	65	21
22	---					---	18	68	110	30	67	16
23	---					---	17	64	88	30	67	8.1
24	---					---	19	64	55	64	65	7.8
25	---					---	20	59	50	64	38	10
26	---					---	21	56	75	62	16	10
27	---					---	24	54	78	60	15	8.4
28	---					---	23	51	89	47	65	7.8
29	---					---	23	48	91	22	67	7.8
30	---					---	25	45	73	23	67	6.0
31	---					29	---	44	---	101	64	---
TOTAL	---	---	---	---	---	---	707	1605	2502	1683	1852	531.0
MEAN	---	---	---	---	---	---	23.6	51.8	83.4	54.3	59.7	17.7
MAX	---	---	---	---	---	---	32	77	121	101	110	44
MIN	---	---	---	---	---	---	17	23	50	19	13	6.0
AC=FT	---	---	---	---	---	---	1400	3180	4960	3340	3670	1050



LOCATION.—Lat 36°58'01", long 105°30'23", Taos County, Hydrologic Unit 13020101, in Sangre de Cristo Grant, on right bank 70 ft (21 m) downstream from bridge on State Highway 196, 0.5 mi (0.8 km) upstream from diversion dam, 1.6 mi (2.6 km) southeast of Costilla, and at mile 15.9 (25.6 km).

PERIOD OF RECORD.--March 1936 to current year (no winter records 1936-43). Monthly discharge for March 1943 and water-year estimate for 1943, published in WSP 1312.

GAGE.—Water-stage recorder. Concrete control since Oct. 13, 1952. Altitude of gage is 7,900 ft (2,408 m), from topographic map. Prior to June 18, 1944, at site 200 ft (61 m) downstream at different datum. June 18, 1944 to Sept. 30, 1964, at site 0.4 mi (0.6 km) upstream at different datum.

AVERAGE DISCHARGE.--37 years (water years 1942-78), 40.3 ft<sup>3</sup>/s (1.141 m<sup>3</sup>/s), 29,200 acre-ft/yr (36.0 hm<sup>3</sup>/yr).

EXTREMES OUTSIDE PERIOD OF RECORD.--A major flood occurred in 1886, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 126 ft<sup>3</sup>/s (3.57 m<sup>3</sup>/s) Aug. 8, gage height, 2.87 ft (0.875 m), no peak above base of 175 ft<sup>3</sup>/s (5.0 m<sup>3</sup>/s); maximum gage height, 3.09 ft (0.942 m) Feb. 22 (backwater from ice); minimum discharge recorded, 1.9 ft<sup>3</sup>/s (0.054 m<sup>3</sup>/s) Jan. 13, result of freezeup.

[illegible]

## 08260500 COSTILLA CREEK BELOW DIVERSION DAM, AT COSTILLA, NM

LOCATION.--Lat 36°58'03", long 105°31'00", Taos County, Hydrologic Unit 13020101, in Sangre de Cristo Grant, on right bank 650 ft (200 m) downstream from diversion dam, 1.1 mi (1.8 km) southeast of Costilla, and at mile 15.3 (24.6 km).

DRAINAGE AREA.--197 mi<sup>2</sup> (510 km<sup>2</sup>).

PERIOD OF RECORD.--April 1952 to current year (no winter records).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 7,861 ft (2,396 m), from topographic map.

REMARKS.--Records poor. Flow partly regulated by Costilla Reservoir (station 08253900) 20 mi (32 km) upstream, and by canal headgates or sluice gates at diversion dam. Diversions above station for irrigation of about 5,000 acres (20 km<sup>2</sup>), 3,000 acres (12 km<sup>2</sup>) of which are below station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 525 ft<sup>3</sup>/s (14.9 m<sup>3</sup>/s) July 22, 1954, gage height, 4.03 ft (1.228 m); maximum gage height, 5.05 ft (1.539 m) July 24, 1957 (backwater from debris); no flow Oct. 14, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--A major flood occurred in 1886, from information by local residents. Flood of May 11, 1942, probably exceeded 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s), based on records for upstream station (station 08255500).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35 ft<sup>3</sup>/s (0.99 m<sup>3</sup>/s) May 16, gage height, 2.87 ft (0.875 m); maximum gage height, 3.02 ft (0.920 m) May 12; minimum discharge not determined.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4					---	3.7	.11	10	5.4	.07	.07
2	3.8					---	1.1	.12	20	3.8	.06	.05
3	4.5					---	1.1	.12	26	4.9	.07	.04
4	4.1					---	.71	.09	22	3.2	.06	.05
5	4.3					---	.78	.03	17	3.4	.05	.06
6	---					---	.63	.04	12	1.7	.04	.06
7	---					---	.81	.12	9.8	1.2	.06	.06
8	---					---	2.7	.25	11	3.2	3.9	.07
9	---					---	6.2	.24	11	2.9	3.3	.09
10	---					---	1.1	2.6	11	1.1	.10	.10
11	---					---	.62	12	10	2.6	3.3	.09
12	---					---	.83	13	12	1.2	2.0	.09
13	---					---	.51	13	15	.05	.06	.12
14	---					---	.50	14	17	4.0	.07	.12
15	---					---	.47	21	17	3.0	.08	.14
16	---					---	.46	27	18	.06	.08	.17
17	---					---	.46	22	12	.06	.07	.22
18	---					---	.53	15	11	.06	3.8	.22
19	---					---	1.3	11	13	.05	1.7	.18
20	---					---	.87	12	16	.05	.07	.02
21	---					---	.17	15	16	.04	.06	.02
22	---					---	.06	17	13	.03	.10	.03
23	---					---	.08	14	8.7	.03	.10	.04
24	---					---	.10	14	5.1	.03	.10	.06
25	---					---	.10	17	5.1	.03	.10	2.4
26	---					---	.42	15	8.7	.03	.07	4.6
27	---					---	2.2	15	10	.03	.07	4.0
28	---					---	1.7	8.2	12	3.4	.05	3.4
29	---					---	.12	9.7	13	1.7	.05	4.7
30	---					---	.12	9.0	11	.06	.07	6.8
31	---					.71	---	8.2	---	.06	.07	---
TOTAL	---	---	---	---	---	---	30.45	305.82	393.4	47.37	19.78	28.07
MEAN	---	---	---	---	---	---	1.02	9.87	13.1	1.53	.64	.94
MAX	---	---	---	---	---	---	6.2	27	26	5.4	3.9	6.8
MIN	---	---	---	---	---	---	.06	.03	5.1	.03	.04	.02
AC-FT	---	---	---	---	---	---	60	607	780	94	39	56

08261000 COSTILLA CREEK AT GARCIA, CO

LOCATION.--Lat 36°59'21", long 105°31'54", Taos County, Hydrologic Unit 13020101, in Sangre de Cristo Grant, on left bank 0.4 mi (0.6 km) downstream from old State Highway 3, 0.5 mi (0.8 km) upstream from New Mexico-Colorado State line, 0.9 mi (1.4 km) south of Garcia, and at mile 13.3 (21.4 km).

DRAINAGE AREA.--200 mi<sup>2</sup> (520 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--June 1944 to current year (no winter records).

GAGE.--Water-stage recorder. Concrete control since Oct. 9, 1956. Altitude of gage is 7,758 ft (2,365 m), from topographic map. Prior to Apr. 20, 1950, at site 0.4 mi (0.6 km) downstream at different datum.

REMARKS.--Records fair. Flow partly regulated by Costilla Reservoir (station 08253900) 22 mi (35 km) upstream. Diversions above station for irrigation of about 5,500 acres (22 km<sup>2</sup>), 2,000 acres (8.1 km<sup>2</sup>) of which are below station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 460 ft<sup>3</sup>/s (13.0 m<sup>3</sup>/s) July 24, 1957, gage height, 4.76 ft (1.451 m); no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A major flood occurred in 1886, from information by local residents. Flood of May 11, 1942, probably reached a discharge of 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) May 16, gage height, 2.91 ft (0.887 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0						.27	.07	3.5	3.7	.00	.00
2	2.0						.00	.31	10	1.9	.00	.00
3	.98						.00	.26	14	1.8	.94	.00
4	.78						.00	.00	12	1.1	.00	.00
5	.53						.00	.00	9.7	.66	.00	.00
6	---						.00	.00	6.8	.30	.00	.00
7	---						.00	.00	5.5	.00	.00	.00
8	---						.00	.00	6.5	.14	.00	.00
9	---						.50	.00	7.3	.25	.00	.00
10	---						.00	.00	7.3	.00	.00	.00
11	---						.00	1.3	6.8	.12	.04	.00
12	---						.00	5.8	7.8	.04	.00	.00
13	---						.00	4.5	10	.00	.00	.00
14	---						.00	3.9	11	.17	.00	.00
15	---						.00	6.0	11	.30	.00	.00
16	---						.00	13	12	.00	.00	.00
17	---						.00	15	7.6	.00	.00	.00
18	---						.00	13	7.1	.00	.00	.00
19	---						.00	9.1	9.7	.00	.00	.00
20	---						.00	10	12	.00	.00	.00
21	---						.00	12	12	.00	.00	.00
22	---						.00	12	10	.00	.00	.00
23	---						.00	8.1	6.8	.00	.00	.00
24	---						.00	7.6	3.2	.00	.00	.00
25	---						.00	8.1	2.7	.00	.00	.00
26	---						.00	7.6	3.7	.00	.00	.00
27	---						.00	8.1	5.5	.00	.00	.00
28	---						.00	5.3	7.1	.03	.00	.00
29	---						.01	5.5	9.1	.00	.00	.00
30	---						.00	5.1	8.4	.00	.00	.01
31	---						---	4.3	---	.00	.00	---
TOTAL	---	---	---	---	---	---	.78	165.94	246.1	10.51	.98	.01
MEAN	---	---	---	---	---	---	.026	5.35	8.20	.34	.032	.000
MAX	---	---	---	---	---	---	.50	15	14	3.7	.94	.01
MIN	---	---	---	---	---	---	.00	.00	2.7	.00	.00	.00
AC=FT	---	---	---	---	---	---	1.5	329	488	21	1.9	.02

## PRINCIPAL DIVERSIONS FROM COSTILLA CREEK, NEW MEXICO-COLORADO

Records of discharge are collected at 8 gaging stations on 3 diversions from Costilla Creek. Water diverted is used for irrigation in the Sangre de Cristo Grant in New Mexico and Colorado below the gaging station on Costilla Creek near Costilla, NM (station 08255500). Records collected during irrigation season only. Several observations of water temperature were made at each site during the year.

- 08256000 ACEQUIA MADRE AT COSTILLA, NM.--Lat 36°58'03", long 105°30'57", Taos County, Hydrologic Unit 13020101, 275 ft (84 m) downstream from diversion dam, and 1.2 mi (1.9 km) southeast of the intersection of State Highways 3 and 196 at Costilla. PERIOD OF RECORD, May 1944 to current year. GAGE, water-stage recorder and Parshall flume. Altitude of gage is 7,870 ft (2,399 m), from topographic map. Acequia diverts from right bank of Costilla Creek.  
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 50 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s) June 25, 1944, July 31, 1945; no flow at times.  
EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 17 ft<sup>3</sup>/s (0.48 m<sup>3</sup>/s) June 7, 28, Aug. 8; no flow Apr. 6-13, 25.
- 08256500 MESA DITCH NEAR GARCIA, CO.--Lat 36°59'50", long 105°30'49", Costilla County, Hydrologic Unit 13020101, 429 ft (130 m) north of milepost No. 136 + 54 on New Mexico-Colorado State line, and 1.4 mi (2.3 km) east of Garcia. PERIOD OF RECORD, June 1944 to September 1965, May 1969 to current year. GAGE, water-stage recorder and Parshall flume. Altitude of gage is 7,780 ft (2,371 m), from topographic map. Prior to June 1971, recording gage and June 1971 to April 1977, nonrecording gage near present site at different datums. Ditch diverts from right bank of Acequia Madre for irrigation in Colorado.  
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 21 ft<sup>3</sup>/s (0.59 m<sup>3</sup>/s) June 25, 1944, Aug. 3, 7, 1945; no flow at times.  
EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 0.49 ft<sup>3</sup>/s (0.014 m<sup>3</sup>/s) Sept. 27; no flow most of time.
- 08257500 CORDILLERA DITCH AT GARCIA, CO.--Lat 36°59'41", long 105°31'39", Taos County, Hydrologic Unit 13020101, 570 ft (170 m) south of New Mexico-Colorado State line, and 0.9 mi (1.4 km) southeast of Garcia. PERIOD OF RECORD, June 1944 to current year. GAGE, water-stage recorder and Parshall flume. Altitude of gage is 7,750 ft (2,362 m), from topographic map. Ditch diverts from left bank of Acequia Madre for irrigation in Colorado.  
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) June 13, 15, July 11, 1961; no flow at times.  
EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1.1 ft<sup>3</sup>/s (0.031 m<sup>3</sup>/s) June 7, 8, July 6; no flow many days.
- 08258000 CERRO CANAL AT COSTILLA, NM.--Lat 36°57'56", long 105°31'07", Taos County, Hydrologic Unit 13020101, 1,400 ft (430 m) downstream from diversion dam, and 1.2 mi (1.9 km) southeast of the intersection of State Highways 3 and 196 at Costilla. PERIOD OF RECORD, April 1944 to current year. GAGE, water-stage recorder and Parshall flume. Altitude of gage is 7,870 ft (2,399 m), from topographic map. Canal diverts from left bank of Costilla Creek.  
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 135 ft<sup>3</sup>/s (3.82 m<sup>3</sup>/s) Aug. 5, 6, 1970; no flow at times.  
EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 97 ft<sup>3</sup>/s (2.75 m<sup>3</sup>/s) Aug. 8; no flow Sept. 26-30.
- 08258600 CERRO CANAL BELOW ASSOCIATION DITCH AT COSTILLA, NM.--Lat 36°57'41", long 105°32'05", Taos County, Hydrologic Unit 13020101, 220 ft (67 m) downstream from Association ditch, and 1.2 mi (1.9 km) south of the intersection of State Highways 3 and 196 at Costilla. PERIOD OF RECORD, May 1972 to current year. GAGE, water-stage recorder and Parshall flume. Altitude of gage is 7,820 ft (2,384 m), from topographic map.  
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 81 ft<sup>3</sup>/s (2.29 m<sup>3</sup>/s) July 18, 19, 1973; no flow at times.  
EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 31 ft<sup>3</sup>/s (0.88 m<sup>3</sup>/s) Aug. 29; no flow Sept. 27-30.
- 08259500 NEW MEXICO BRANCH CERRO CANAL NEAR JAROSO, CO.--Lat 36°59'37", long 105°34'28", Taos County, Hydrologic Unit 13020101, 45 ft (14 m) downstream from headgate, and 2.7 mi (4.3 km) east of Jaroso. PERIOD OF RECORD, June 1944 to current year. GAGE, water-stage recorder and Parshall flume. Altitude of gage is 7,680 ft (2,341 m), from topographic map. Canal diverts from left bank of Cerro Canal for irrigation in New Mexico.  
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 29 ft<sup>3</sup>/s (0.82 m<sup>3</sup>/s) July 21, 1948; no flow at times.  
EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 7.2 ft<sup>3</sup>/s (0.20 m<sup>3</sup>/s) July 19; no flow many days.
- 08259600 CERRO CANAL AT STATE LINE NEAR JAROSO, CO.--Lat 36°59'41", long 105°34'36", Taos County, Hydrologic Unit 13020101, 780 ft (240 m) downstream from headgate, and 2.8 mi (4.5 km) east of Jaroso. PERIOD OF RECORD, April 1973 to current year. GAGE, water-stage recorder and Parshall flume. Altitude of gage is 7,680 ft (2,341 m), from topographic map. Flow measured is delivered to Colorado.  
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 68 ft<sup>3</sup>/s (1.93 m<sup>3</sup>/s) July 18, 19, 1973; no flow at times.  
EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 31 ft<sup>3</sup>/s (0.88 m<sup>3</sup>/s) Aug. 29; no flow Sept. 27-30.
- 08262000 EASTDALE NO. 1 INTAKE CANAL NEAR JAROSO, CO.--Lat 37°02'25", long 105°36'18" (corrected), Costilla County, Hydrologic Unit 13020101, 750 ft (230 m) downstream from headgate, and 2.8 mi (4.5 km) north of Jaroso. PERIOD OF RECORD, June 1944 to current year. GAGE, water-stage recorder and Parshall flume. Altitude of gage is 7,585 ft (2,312 m), from topographic map. Canal diverts from right bank of Costilla Creek to Eastdale Reservoir No. 1 for irrigation in Colorado.  
EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 112 ft<sup>3</sup>/s (3.17 m<sup>3</sup>/s) May 16, 1958; no flow for long periods.  
EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 25 ft<sup>3</sup>/s (0.71 m<sup>3</sup>/s) Apr. 9, 13; no flow for long periods.

## MONTHLY DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	08256000 Acequia Madre	08256500 Mesa ditch	08257500 Cordillera ditch	08258000 Cerro Canal at Costilla	08258600 Cerro Canal below Association ditch	08259500 New Mexico branch Cerro Canal	08259600 Cerro Canal at State line nr Jaroso	08262000 Eastdale No. 1 intake canal
October .....	-	-	-	-	-	-	-	0
November .....	-	-	-	-	-	-	-	5.9
December .....	-	-	-	-	-	-	-	-
January .....	-	-	-	-	-	-	-	-
February .....	-	-	-	-	-	-	-	-
March .....	-	-	-	-	-	-	-	129
April .....	112	0	0.5	1,370	1,190	18	1,090	1,070
May .....	751	0	11	2,240	889	98	732	44
June .....	811	0	12	3,430	1,140	143	952	0.5
July .....	700	.2	12	2,600	1,000	84	906	9.3
August .....	603	0	16	3,170	1,220	94	1,110	0
September .....	303	3.2	3.1	788	564	1.2	560	0

08263500 RIO GRANDE NEAR CERRO, NM

LOCATION.--Lat 36°44'24", long 105°40'59", in NW¼NE¼ sec. 20, T.29 N., R.12 E., Taos County, Hydrologic Unit 13020101, on left bank 4 mi (6 km) southwest of Cerro, 5.5 mi (8.8 km) northwest of Questa, 7.4 mi (11.9 km) upstream from Red River, and at mile 1,693.1 (2,724.2 km).

DRAINAGE AREA.--8,440 mi<sup>2</sup> (21,860 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

PERIOD OF RECORD.--May 1948 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 7,110 ft (2,167 m), from topographic map.

REMARKS.--Records good. Diversions above station for irrigation of about 620,000 acres (2,500 km<sup>2</sup>) in Colorado and 7,000 acres (28 km<sup>2</sup>) in New Mexico. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--30 years, 370 ft<sup>3</sup>/s (10.48 m<sup>3</sup>/s), 268,100 acre-ft/yr (331 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,740 ft<sup>3</sup>/s (276 m<sup>3</sup>/s) June 22, 1949, gage height, 15.78 ft (4.810 m); minimum, about 40 ft<sup>3</sup>/s (1.13 m<sup>3</sup>/s) Sept. 10, 11, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 800 ft<sup>3</sup>/s (24.9 m<sup>3</sup>/s) July 2, no peak above base of 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s); minimum, about 49 ft<sup>3</sup>/s (1.39 m<sup>3</sup>/s) Dec. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	58	100	173	219	331	140	253	583	760	248	90
2	60	59	96	169	218	340	136	250	724	870	248	89
3	62	62	118	157	211	313	135	238	781	740	238	87
4	60	63	120	169	211	306	129	222	789	583	238	88
5	58	82	135	178	221	306	125	200	816	478	240	90
6	56	119	117	173	227	306	130	221	770	436	237	91
7	56	133	101	178	234	309	117	282	641	391	234	91
8	56	148	124	172	240	301	99	287	568	338	234	102
9	56	143	112	170	234	294	91	265	519	301	211	95
10	57	108	107	186	238	287	87	237	496	304	213	93
11	55	104	132	197	250	282	82	230	498	346	205	92
12	54	133	115	186	256	287	76	219	557	458	192	89
13	53	153	119	186	258	290	74	268	496	498	191	89
14	56	135	107	164	251	292	80	308	376	557	190	90
15	57	125	119	191	240	284	79	376	311	502	172	92
16	56	124	130	196	237	272	74	396	419	478	164	93
17	55	125	82	191	240	260	71	512	566	454	156	95
18	55	124	108	197	230	253	72	672	648	425	147	95
19	55	123	101	202	240	242	120	665	572	412	135	94
20	54	116	119	198	222	238	139	531	510	410	130	93
21	53	95	82	213	224	229	138	514	508	406	125	93
22	55	115	94	219	242	226	139	662	540	410	120	93
23	54	125	124	198	258	227	135	694	510	376	115	93
24	53	121	131	185	253	235	115	622	484	360	110	93
25	53	118	129	165	270	245	151	694	480	344	110	97
26	54	128	128	157	279	255	139	797	472	347	105	108
27	54	128	135	216	304	253	134	719	540	328	105	109
28	55	126	148	211	328	219	198	634	544	311	100	108
29	56	124	166	205	---	182	285	662	555	282	95	109
30	56	129	173	208	---	155	274	658	599	272	98	116
31	58	---	180	219	---	142	---	592	---	260	93	---
TOTAL	1735	3446	3752	5829	6835	8161	3764	13880	16872	13437	5199	2857
MEAN	56.0	115	121	188	244	263	125	448	562	433	168	95.2
MAX	63	153	180	219	328	340	285	797	816	870	248	116
MIN	53	58	82	157	211	142	71	200	311	260	93	87
AC-FT	3440	6840	7440	11560	13560	16190	7470	27530	33470	26650	10310	5670

CAL YR 1977 TOTAL 45348 MEAN 124 MAX 482 MIN 40 AC-FT 89950  
WTR YR 1978 TOTAL 85767 MEAN 235 MAX 870 MIN 53 AC-FT 170100

NOTE.--No gage-height record July 1-3.

## 08265000 RED RIVER NEAR QUESTA, NM

LOCATION.--Lat 36°42'12", long 105°34'04", in NE¼SE¼ sec.32, T.29 N., R.13 E. (projected), Taos County, Hydrologic Unit 13020101, in Carson National Forest, on left bank 1.3 mi (2.1 km) upstream from Cabresto Creek, 1.5 mi (2.4 km) east of Questa, and at mile 9.0 (14.5 km).

DRAINAGE AREA.--113 mi<sup>2</sup> (293 km<sup>2</sup>).

PERIOD OF RECORD.--April to October 1910 and January to September 1911 (gage heights and discharge measurements only), October 1912 to March 1924, May 1924 to September 1925, January to March 1926, September 1926 to current year. Monthly discharge only for some periods, published to WSP 1312. Published as Rio Colorado above Questa 1910-11, 1926-30, and as Rio Colorado near Questa 1912-25, 1930-48.

REVISED RECORDS.--WSP 808: 1935. WSP 1392: 1913, 1932, 1941, 1947-48. WSP 1712: Drainage area.

GAGE.--Water-stage recorder. Wood or concrete control since Mar. 20, 1936. Datum of gage is 7,451.92 ft (2,271.345 m) National Geodetic Vertical Datum of 1929. See WSP 1923 for history of changes prior to Oct. 4, 1938.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of a few hundred acres above station. Figures of discharge do not include flow in South ditch which diverts from left bank 1,500 ft (460 m) upstream and bypasses gage for irrigation and stock water below. Several observations of water temperature were made during the year.

Since January 1966 surface and ground water diversions by Molybdenum Corp. of America (Molycorp) refinery 5.5 mi (8.8 km) upstream bypass gage in tailings pipelines on left bank and discharge into settling pond 3 mi (5 km) downstream. Effluent from this pond enters Red River as surface water and is included in discharge at Red River at mouth near Questa (station 08267000). See tabulation below for bypass flow of water.

AVERAGE DISCHARGE.--52 years (water years 1913-25, 1927-65), 55.9 ft<sup>3</sup>/s (1.583 m<sup>3</sup>/s), 40,500 acre-ft/yr (49.9 hm<sup>3</sup>/yr), prior to extensive upstream diversions by Molycorp; 13 years (water years 1966-78), 29.4 ft<sup>3</sup>/s (0.833 m<sup>3</sup>/s), 21,300 acre-ft/yr (26.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (SINCE 1929).--Maximum discharge, 886 ft<sup>3</sup>/s (25.1 m<sup>3</sup>/s) May 25, 1942, from rating curve extended above 450 ft<sup>3</sup>/s (13 m<sup>3</sup>/s); maximum gage height, 4.47 ft (1.362 m) June 14, 1973; minimum discharge, 1.5 ft<sup>3</sup>/s (0.042 m<sup>3</sup>/s) Nov. 23, 1957. The maximum discharge of May 25, 1942, may have been equalled or exceeded by the peak of June 15, 1921.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 114 ft<sup>3</sup>/s (3.23 m<sup>3</sup>/s) May 16, gage height, 3.13 ft (0.954 m), no peak above base of 160 ft<sup>3</sup>/s (4.5 m<sup>3</sup>/s); minimum, 3.4 ft<sup>3</sup>/s (0.096 m<sup>3</sup>/s) Mar. 16, but may have been less during periods of ice effect.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	12	7.0	9.5	9.9	11	17	39	95	55	22	12
2	13	11	7.0	8.0	10	10	16	37	101	51	20	11
3	13	11	9.0	8.0	9.5	10	16	35	101	49	20	10
4	12	11	11	8.5	10	9.7	18	37	103	46	22	9.6
5	12	10	10	9.0	9.5	9.8	20	33	105	44	22	8.9
6	22	11	9.5	8.5	9.5	9.6	19	32	107	41	22	9.4
7	23	16	10	8.0	9.2	9.9	21	28	101	38	21	9.2
8	19	12	10	8.0	9.3	9.7	25	29	97	37	21	8.4
9	18	10	10	8.5	9.0	9.3	29	34	96	35	21	8.0
10	17	8.0	10	9.0	10	8.8	27	41	99	33	22	7.3
11	16	11	10	9.3	9.6	8.5	25	51	103	32	18	6.8
12	15	13	9.5	9.0	9.5	8.0	28	60	101	31	17	7.2
13	14	13	9.0	9.0	9.0	9.0	28	68	103	30	16	7.2
14	14	13	9.0	9.0	9.0	9.1	31	77	103	35	15	8.4
15	14	11	9.5	10	8.5	7.3	32	92	103	35	14	7.7
16	13	11	9.0	9.5	9.0	8.0	34	105	101	30	14	7.7
17	13	12	7.0	9.5	8.0	9.0	35	103	97	28	13	9.0
18	13	12	8.0	9.5	7.5	9.2	28	95	90	29	13	9.6
19	13	11	8.5	9.5	9.0	9.3	29	87	86	26	13	8.3
20	11	10	8.0	9.5	11	9.3	27	90	84	29	14	7.8
21	11	11	7.0	9.5	10	9.7	27	90	81	30	14	7.6
22	11	11	7.5	9.5	9.0	10	27	97	78	26	17	7.5
23	11	10	8.0	9.5	9.5	10	26	100	74	32	16	8.2
24	12	9.0	8.0	9.5	10	11	28	102	70	31	14	9.0
25	12	9.5	8.0	7.0	11	9.7	30	105	67	26	15	11
26	11	10	7.5	8.0	11	9.5	34	100	67	25	13	12
27	11	9.3	8.0	9.0	9.9	10	39	97	64	24	13	10
28	13	9.4	8.0	9.5	9.2	10	39	92	62	23	13	8.8
29	13	9.2	8.5	10	---	11	38	87	61	23	14	8.4
30	13	9.5	9.0	10	---	11	40	86	59	26	16	8.4
31	12	---	9.5	10	---	12	---	92	---	26	13	---
TOTAL	428	326.9	270.0	280.3	265.6	298.4	833	2221	2659	1026	518	264.4
MEAN	13.8	10.9	8.71	9.04	9.49	9.63	27.8	71.6	88.6	33.1	16.7	8.81
MAX	23	16	11	10	11	12	40	105	107	55	22	12
MIN	11	8.0	7.0	7.0	7.5	7.3	16	28	59	23	13	6.8
AC-FT	849	648	536	556	527	592	1650	4410	5270	2040	1030	524
(†)	602	656	565	343	310	433	574	551	576	541	593	583

CAL YR 1977 TOTAL 5144.2 MEAN 14.1 MAX 49 MIN 3.0 AC-FT 10200 † 6840  
WTR YR 1978 TOTAL 9390.6 MEAN 25.7 MAX 107 MIN 6.8 AC-FT 18630 † 6330

† Bypass flow of water, in acre-feet, through tailings pipelines; records furnished by Molycorp.

## 08266000 CABRESTO CREEK NEAR QUESTA, NM

LOCATION.--Lat 36°43'50", long 105°33'12", in SE¼SE¼ sec.21, T.29 N., R.13 E., Taos County, Hydrologic Unit 13020101, in Carson National Forest, on right bank 900 ft (270 m) downstream from Llano ditch heading, 2.6 mi (4.2 km) downstream from Lake Fork, 3 mi (5 km) northeast of Questa, and at mile 3.5 (5.6 km).

DRAINAGE AREA.--36.7 mi<sup>2</sup> (95.1 km<sup>2</sup>).

PERIOD OF RECORD.--September 1943 to current year.

REVISED RECORDS.--WSP 1712: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 7,845 ft (2,391 m), from river-profile map.

REMARKS.--Records good. Llano ditch (station 08265500), the only diversion above station, diverts from right bank 900 ft (270 m) above gage for irrigation of about 800 acres (3.2 km<sup>2</sup>) below. See tabulation below for monthly diversion of Llano ditch (records of daily discharge available in District files). Flow regulated by Cabresto Reservoir (capacity, 732 acre-feet or 903,000 m<sup>3</sup>, after reconstruction in 1928) on Lake Fork 1 mi (2 km) above mouth. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--35 years, 9.23 ft<sup>3</sup>/s (0.261 m<sup>3</sup>/s), 6,690 acre-ft/yr (8.25 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 176 ft<sup>3</sup>/s (4.98 m<sup>3</sup>/s) June 8, 1957, gage height, 4.44 ft (1.353 m); minimum, 0.44 ft<sup>3</sup>/s (0.012 m<sup>3</sup>/s) Dec. 2, 1950, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of May 25, 1942, may have exceeded the maximum of record.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34 ft<sup>3</sup>/s (0.96 m<sup>3</sup>/s) May 22, gage height, 2.03 ft (0.619 m); minimum, 0.48 ft<sup>3</sup>/s (0.014 m<sup>3</sup>/s) Nov. 10, Mar. 16, result of freezeup.

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	2.2	2.1	3.0	3.6	3.7	11	10	16	11	8.3	4.4
2	7.6	2.0	2.9	2.4	3.6	3.5	9.9	9.4	15	10	7.9	4.3
3	7.3	2.1	3.1	2.6	3.2	3.5	9.2	9.9	13	11	7.7	4.2
4	7.0	2.2	3.2	3.3	3.5	3.3	9.6	10	13	13	7.7	4.1
5	6.7	2.3	3.1	3.3	3.3	3.3	10	8.9	12	12	7.5	3.9
6	7.5	2.4	3.0	3.3	3.3	3.3	9.4	8.7	13	11	7.4	3.9
7	7.7	3.2	3.3	3.2	3.3	3.3	10	8.3	13	11	7.3	3.8
8	7.1	2.8	3.2	3.1	3.3	3.2	12	9.8	14	10	7.3	3.7
9	6.9	1.6	3.1	3.4	2.9	3.3	13	11	13	9.7	7.0	3.6
10	6.4	1.4	3.2	3.4	3.4	3.4	11	12	11	9.5	7.1	3.6
11	6.0	2.0	3.3	3.2	3.3	3.5	11	14	11	10	6.6	3.4
12	5.7	2.3	3.3	3.1	3.2	3.5	12	18	11	10	6.4	3.4
13	5.4	2.8	3.3	3.1	3.1	3.4	13	20	11	11	6.2	3.4
14	5.0	3.1	3.4	3.2	3.1	3.4	13	24	11	10	6.0	3.3
15	4.8	3.3	3.5	3.6	2.7	3.0	14	26	12	9.9	5.8	3.1
16	4.6	3.2	3.2	3.4	3.1	2.6	16	27	11	11	5.7	3.0
17	4.5	3.3	1.9	3.3	2.8	3.3	16	28	11	13	5.4	3.5
18	4.4	3.3	3.7	3.4	2.4	3.7	14	26	10	12	5.2	3.5
19	4.4	3.2	3.3	3.4	3.1	4.0	15	25	10	12	5.3	3.3
20	4.4	3.1	2.0	3.5	3.2	4.2	14	26	9.9	12	5.1	3.3
21	4.4	2.9	1.8	3.4	3.1	4.4	13	29	9.7	12	4.8	3.4
22	4.4	3.0	2.3	3.5	3.1	5.3	11	31	10	11	4.9	3.4
23	4.3	3.0	3.3	3.3	3.3	5.3	11	30	10	11	4.8	3.4
24	4.4	2.7	3.0	3.3	3.3	5.0	11	29	10	10	4.8	3.3
25	4.3	3.1	3.1	2.5	3.4	4.8	10	27	10	10	5.1	3.5
26	4.6	3.1	2.9	3.0	3.4	5.1	11	23	10	9.6	4.9	3.8
27	2.7	3.1	3.0	3.5	3.3	5.9	11	23	10	9.4	4.6	3.6
28	2.4	3.2	3.1	3.6	3.1	6.8	12	22	11	9.0	4.5	3.5
29	2.3	2.9	3.0	3.6	---	6.2	11	21	11	9.0	4.8	3.4
30	2.3	3.0	3.0	3.6	---	6.3	11	20	11	9.2	5.0	3.3
31	2.2	---	3.0	3.6	---	8.5	---	19	---	8.9	4.6	---
TOTAL	159.6	81.8	92.6	101.1	89.4	132.0	355.1	606.0	343.6	328.2	185.7	107.3
MEAN	5.15	2.73	2.99	3.26	3.19	4.26	11.8	19.5	11.5	10.6	5.99	3.58
MAX	7.9	3.3	3.7	3.6	3.6	8.5	16	31	16	13	8.3	4.4
MIN	2.2	1.4	1.8	2.4	2.4	2.6	9.2	8.3	9.7	8.9	4.5	3.0
AC-FT	317	162	184	201	177	262	704	1200	682	651	368	213
(†)	0	-	-	-	-	0	135	574	654	255	0	0

CAL YR 1977 TOTAL 1896.5 MEAN 5.20 MAX 12 MIN 1.4 AC-FT 3760  
WTR YR 1978 TOTAL 2582.4 MEAN 7.08 MAX 31 MIN 1.4 AC-FT 5120

† Diversion, in acre-feet, by Llano ditch.

08266820 RED RIVER BELOW FISH HATCHERY NEAR QUESTA, NM

LOCATION.--Lat 36°40'54", long 105°39'21", in NW¼NW¼ sec.10, T.28 N., R.12 E., Taos County, Hydrologic Unit 13020101, on right bank 0.3 mi (0.5 km) downstream from State Fish Hatchery, 3.5 mi (5.6 km) upstream from mouth, and 3.7 mi (6.0 km) southwest of Questa.

DRAINAGE AREA.--185 mi<sup>2</sup> (479 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1969 to July 1978 (discharge measurements only), August and September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 7,075 ft (2,156 m), from topographic map.

REMARKS.--Water-discharge records good. Diversions for irrigation of about 3,000 acres (12 km<sup>2</sup>) above station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period August and September, 49 ft<sup>3</sup>/s (1.39 m<sup>3</sup>/s) Aug. 18, gage height, 2.06 ft (0.628 m), no peak above base of 165 ft<sup>3</sup>/s (4.7 m<sup>3</sup>/s); minimum, 26 ft<sup>3</sup>/s (0.74 m<sup>3</sup>/s) Sept. 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											---	34
2											---	33
3											---	33
4											---	32
5											---	32
6										(58)	---	33
7											---	33
8											---	33
9									(122)		42	32
10											45	32
11								(67)			42	32
12							(48)				40	32
13											40	31
14											41	32
15						(30)					40	32
16					(33)						37	32
17											40	33
18											39	33
19											37	32
20											38	30
21											38	29
22		(31)									38	29
23											39	29
24				(34)							36	29
25											36	30
26	(27)										36	30
27			(33)								35	29
28											35	28
29											36	28
30											37	28
31											36	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	935
MEAN	---	---	---	---	---	---	---	---	---	---	---	31.2
MAX	---	---	---	---	---	---	---	---	---	---	---	34
MIN	---	---	---	---	---	---	---	---	---	---	---	28
AC-FT	---	---	---	---	---	---	---	---	---	---	---	1850

NOTE.--For period October to August results of discharge measurements are shown in parentheses.



## 08266820 RED RIVER BELOW FISH HATCHERY, NEAR QUESTA, NM

PERIOD OF RECORD.--Water year 1978.

REMARKS.--Replaces station 08266800 Red River at Fish Hatchery, near Questa, NM. Samples collected at this location (08266820) since July 1974 but published under 08266800 until 1978 water year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)
OCT								
26...	1635	27	330	7.9	8.0	5.0	120	33
NOV								
22...	1515	31	401	7.8	7.5	15	160	83
DEC								
27...	1700	33	336	8.2	6.5	13	130	45
JAN								
24...	1635	34	341	7.6	8.0	2.5	120	37
FEB								
16...	0930	33	283	7.9	7.0	7.0	83	3
MAR								
15...	1600	30	322	8.1	6.0	10	130	45
APR								
12...	1515	48	298	8.1	6.5	4.0	120	50
MAY								
11...	1610	67	274	7.6	14.5	24	120	56
JUN								
09...	1230	122	218	6.9	8.0	.60	91	35
JUL								
06...	1500	58	275	7.4	13.0	1.4	110	--
AUG								
30...	1105	34	325	8.1	17.0	4.5	120	--
SEP								
26...	1400	29	337	7.4	17.0	.60	120	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LILITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
OCT									
26...	34	7.4	.0	.8	2.1	100	0	82	66
NOV									
22...	52	8.5	20	.7	3.0	100	0	82	110
DEC									
27...	37	8.1	21	.8	2.5	99	0	81	69
JAN									
24...	35	7.6	22	.9	2.3	100	0	82	65
FEB									
16...	24	5.6	20	1.0	2.1	98	0	80	34
MAR									
15...	38	7.5	21	.8	2.2	98	0	80	71
APR									
12...	35	7.2	12	.5	1.7	82	0	67	71
MAY									
11...	34	8.2	15	.6	1.7	77	0	63	65
JUN									
09...	28	5.1	7.8	.4	1.3	--	0	56	40
JUL									
06...	33	6.4	12	.5	1.6	--	--	73	55
AUG									
30...	38	6.7	19	.7	2.1	--	--	79	66
SEP									
26...	--	6.7	21	8.0	2.2	--	--	82	69

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978								
DATE	CHLORIDE, DIS-SOLVED (MG/L) (00940)	FLUORIDE, DIS-SOLVED (MG/L) (00950)	SILICA, DIS-SOLVED (MG/L) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L) (00631)	PHOSPHORUS, ORTHOPHOSPHATE, DIS-SOLVED (MG/L) (00671)	IRON, DIS-SOLVED (UG/L) (01046)
OCT 26...	6.3	1.0	23	208	210	.27	.00	50
NOV 22...	6.7	1.1	23	262	275	.22	.05	--
DEC 27...	7.5	1.1	25	224	222	.37	.02	--
JAN 24...	7.7	1.1	25	218	217	.53	.04	--
FEB 16...	7.4	1.0	28	166	172	.32	.04	--
MAR 15...	7.2	1.0	18	206	216	.33	.01	--
APR 12...	4.5	.7	15	189	188	.12	.01	--
MAY 11...	4.4	.7	--	173	185	.21	.01	--
JUN 09...	2.8	.6	13	133	132	.01	.01	--
JUL 06...	4.5	.8	16	177	173	.13	.00	--
AUG 30...	6.4	1.0	21	207	207	.44	.03	--
SEP 26...	7.2	1.0	21	207	--	.44	.30	--

TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	MOLYBDENUM, TOTAL RECOVERABLE (UG/L) AS MO) (01062)
NOV 22...	1515	140
DEC 27...	1700	110
JAN 24...	1635	120
FEB 16...	0930	26
MAR 15...	1600	91
APR 12...	1515	100
MAY 11...	1610	30
JUN 09...	1230	24
JUL 06...	1500	50
AUG 30...	1105	88

INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT 26...	1635	27	8.0	47	3.4
NOV 22...	1515	31	7.5	57	4.8
DEC 27...	1700	33	6.5	75	6.7
JAN 24...	1635	34	8.0	84	7.7
MAR 15...	1600	30	6.0	20	1.6
APR 12...	1515	48	6.5	24	3.1
MAY 11...	1610	67	14.5	69	12
JUN 09...	1230	122	8.0	43	14
JUL 06...	1500	58	13.0	17	2.7
AUG 02...	1415	41	14.0	102	11
30...	1155	35	17.0	24	2.3
SEP 26...	1400	29	17.0	5	.39

08267000 RED RIVER AT MOUTH, NEAR QUESTA, NM

LOCATION.--Lat 36°38'53", long 105°41'34", in SW 1/4 sec. 20, T. 28 N., R. 12 E., Taos County, Hydrologic Unit 13020101, in Carson National Forest, on left bank 250 ft (76 m) upstream from Rio Grande, and 6.5 mi (10.5 km) southwest of Questa.

DRAINAGE AREA.--190 mi<sup>2</sup> (492 km<sup>2</sup>).

PERIOD OF RECORD.--October 1950 to September 1978 (discontinued). Monthly discharge only for October and November 1950, published in WSP 1732.

GAGE.--Water-stage recorder. Altitude of gage is 6,600 ft (2,012 m), from topographic map.

REMARKS.--Records good. Diversions for irrigation of about 3,000 acres (12 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--28 years, 75.0 ft<sup>3</sup>/s (2.124 m<sup>3</sup>/s), 54,340 acre-ft/yr (67.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 730 ft<sup>3</sup>/s (20.7 m<sup>3</sup>/s) Aug. 12, 1964, gage height, 6.05 ft (1.844 m); minimum, 29 ft<sup>3</sup>/s (0.82 m<sup>3</sup>/s) Feb. 13, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 152 ft<sup>3</sup>/s (4.30 m<sup>3</sup>/s) May 24, gage height, 3.06 ft (0.933 m), no peak above base of 175 ft<sup>3</sup>/s (5.0 m<sup>3</sup>/s); minimum, 35 ft<sup>3</sup>/s (0.99 m<sup>3</sup>/s) Mar. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	44	41	43	43	46	45	70	131	91	56	45
2	41	44	41	40	41	45	46	67	136	87	53	44
3	41	41	44	39	41	45	47	66	139	86	52	44
4	41	40	47	41	42	44	49	69	139	77	54	44
5	41	43	46	44	43	44	50	66	138	75	55	44
6	48	44	44	43	43	44	50	67	140	69	54	43
7	53	50	45	42	42	44	52	67	136	67	53	43
8	49	48	45	39	42	43	53	67	135	66	53	42
9	47	44	42	41	39	41	54	71	133	66	53	42
10	46	41	44	44	41	41	54	73	133	64	56	42
11	44	44	44	43	41	41	52	82	136	63	53	41
12	42	46	44	42	41	41	54	91	133	62	51	40
13	44	45	42	41	41	41	54	102	131	62	50	40
14	44	46	41	40	41	41	55	112	137	70	50	41
15	43	46	43	44	41	39	58	122	140	75	49	42
16	42	46	44	45	43	37	59	134	142	67	46	41
17	41	46	38	44	40	39	61	145	139	66	48	43
18	41	45	39	44	39	41	57	138	131	63	48	43
19	41	44	41	44	39	41	58	131	130	61	46	41
20	41	44	38	44	41	40	56	131	122	63	47	41
21	41	45	37	44	41	40	56	130	114	69	49	39
22	42	45	37	42	41	41	56	138	112	66	47	39
23	41	46	38	41	42	41	55	144	110	69	48	39
24	41	45	39	44	42	41	56	145	108	68	47	39
25	41	44	39	39	42	40	58	145	106	64	48	40
26	41	43	38	40	44	40	61	137	105	59	46	41
27	41	42	40	43	44	41	66	135	102	56	46	39
28	42	44	41	43	43	41	69	133	98	56	46	39
29	42	44	41	43	---	41	69	128	94	55	46	39
30	43	44	42	44	---	41	70	124	96	56	46	39
31	43	---	43	44	---	41	---	129	---	58	45	---
TOTAL	1329	1333	1288	1314	1163	1286	1680	3359	3746	2076	1541	1239
MEAN	42.9	44.4	41.5	42.4	41.5	41.5	56.0	108	125	67.0	49.7	41.3
MAX	53	50	47	45	44	46	70	145	142	91	56	45
MIN	41	40	37	39	39	37	45	66	94	55	45	39
AC-FT	2640	2640	2550	2610	2310	2550	3330	6660	7430	4120	3060	2460

CAL YR 1977 TOTAL 17593 MEAN 48.2 MAX 83 MIN 37 AC-FT 34900  
WTR YR 1978 TOTAL 21354 MEAN 58.5 MAX 145 MIN 37 AC-FT 42360

LOCATION.--Lat 36°32'30", long 105°33'21", Taos County, Hydrologic Unit 13020101, in Carson National Forest, on right bank 500 ft (150 m) upstream from first diversion, 1.6 mi (2.6 km) east of Valdez, 3.8 mi (6.1 km) downstream from South Fork, and at mile 9.2 (14.8 km).

EXTREMES FOR CURRENT YEAR.---Peak discharges above base of 80 ft<sup>3</sup>/s (2.3 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	(ft)	(m)			(ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	(ft)	(m)
Dec. 22	1915	ice jam		*3.04	.927	May 25	0030	115	3.26	2.69	.820
May 17	0615	119	3.37	2.67	.814	June 5	0145	*129	3.65	2.81	.856

Minimum discharge, 3.1 ft<sup>3</sup>/s (0.088 m<sup>3</sup>/s) Feb. 22, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	13	10	9.6	8.9	9.4	28	40	107	47	23	15
2	16	12	8.5	8.0	8.5	9.3	24	38	116	46	23	14
3	16	13	11	8.0	7.5	8.4	22	37	113	44	25	14
4	16	13	11	10	8.0	9.0	23	34	118	42	24	14
5	15	13	11	9.5	8.8	8.7	24	33	123	42	23	13
6	18	13	12	9.6	8.7	8.5	22	32	116	41	22	13
7	19	14	11	9.6	8.6	8.4	25	30	110	39	21	13
8	17	13	11	7.5	8.7	8.8	30	29	107	39	20	13
9	16	12	11	8.5	7.5	9.4	34	30	102	37	21	13
10	16	10	11	9.5	8.7	10	31	34	103	36	22	12
11	16	13	10	9.5	8.6	9.6	27	41	106	34	20	12
12	16	13	10	9.5	8.5	9.2	28	49	105	34	19	12
13	15	13	10	8.5	8.5	8.9	29	59	105	32	18	12
14	15	12	10	8.0	8.3	8.6	32	69	108	34	18	12
15	15	13	10	9.7	8.4	8.5	33	92	107	31	18	12
16	15	12	10	9.7	8.3	8.0	34	108	107	29	17	12
17	16	12	8.0	9.6	8.0	10	34	112	100	30	17	13
18	16	12	10	9.5	6.5	9.9	32	97	95	29	17	13
19	15	12	9.0	9.5	7.5	11	30	86	90	28	17	12
20	15	12	8.0	9.5	6.6	11	28	85	84	28	17	12
21	15	12	5.5	9.2	6.8	12	29	88	79	27	17	12
22	14	12	7.0	9.0	7.0	13	30	90	73	26	17	12
23	14	12	8.0	8.0	10	12	30	98	69	28	17	12
24	14	11	10	9.0	10	12	31	105	67	27	17	13
25	14	11	8.0	8.5	9.7	11	33	108	66	26	17	13
26	14	12	8.5	8.0	9.2	12	38	105	61	25	16	13
27	14	12	10	11	8.9	14	45	103	57	25	16	12
28	13	12	9.9	9.2	8.5	15	44	98	54	24	16	12
29	13	11	10	9.0	---	15	43	91	54	23	16	11
30	13	11	9.8	8.9	---	16	43	94	51	24	17	11
31	13	---	9.7	9.0	---	22	77	99	---	23	16	---
TOTAL	470	366	298.9	281.6	233.2	338.6	936	2214	2753	1000	584	377
MEAN	15.2	12.2	9.64	9.08	8.33	10.9	31.2	71.4	91.8	32.3	18.8	12.6
MAX	19	14	12	11	10	22	45	112	123	47	25	15
MIN	13	10	5.5	7.5	6.5	8.0	22	29	51	23	16	11
AC=FT	932	726	593	559	463	672	1860	4390	5460	1980	1160	748
CAL YR 1977	TOTAL	5860.2	MEAN	16.1	MAX	44	MIN	5.5	AC=FT	11620		
WTR YR 1978	TOTAL	9852.3	MEAN	27.0	MAX	123	MIN	5.5	AC=FT	19540		

LOCATION.--Lat 36°31'56", long 105°41'06", Taos County, Hydrologic Unit 13020101, in Arroyo Hondo Grant, on left bank 0.9 mi (1.4 km) downstream from Arroyo Hondo, and at mile 1.4 (2.3 km).

PERIOD OF RECORD.--April 1910 to June 1912 (discharge measurements and fragmentary gage-height record), July 1912 to December 1928 (fragmentary), and January 1932 to current year. Monthly discharge only for some periods, published in WSP 1312. Statement in WSP 328 that there was no flow in January and much of February 1912 is erroneous. Published as Rio Hondo near Arroyo Hondo prior to 1928, and as Rio Hondo at Arroyo Hondo 1928-65.

GAGE.--Water-stage recorder. Altitude of gage is 6,670 ft (2,033 m), from topographic map. See WSP 1923 for history of changes prior to Sept. 11, 1963. Sept. 11, 1963 to Apr. 2, 1969, at site 25 ft (8 m) downstream on right bank at same datum.

AVERAGE DISCHARGE.--62 years (water years 1913-28, 1933-78), 26.3 ft<sup>3</sup>/s (0.745 m<sup>3</sup>/s), 19,050 acre-ft/yr (23.5 hm<sup>3</sup>/yr).

Maximum gage height observed, 5.45 ft (1.661 m), site and datum then in use, Aug. 23, 1935; discharge uncertain, but probably exceeded 1,200 ft<sup>3</sup>/s (34 m<sup>3</sup>/s). A minimum daily discharge of 3 ft<sup>3</sup>/s (0.08 m<sup>3</sup>/s) occurred Oct. 19, 1912. Discharge not determined for the major floods of Oct. 6, 1911, Sept. 1, 1932 and July 22, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 79 ft<sup>3</sup>/s (2.24 m<sup>3</sup>/s) at 1345 hours Dec. 23, gage height, 3.35 ft (1.021 m), result of unusual regulation, no other peak above base of 75 ft<sup>3</sup>/s (2.1 m<sup>3</sup>/s); minimum, 4.2 ft<sup>3</sup>/s (0.12 m<sup>3</sup>/s) Apr. 21.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	6.7	16	18	17	22	22	8.5	44	12	9.5	7.7
2	7.1	7.1	18	15	16	20	20	14	48	12	9.9	7.7
3	8.1	6.8	19	15	14	19	16	18	48	16	12	7.3
4	9.7	7.2	19	18	16	20	15	20	49	13	10	7.1
5	8.0	7.4	18	17	16	19	16	23	57	10	9.9	7.1
6	10	7.3	18	16	16	19	15	20	57	9.7	9.4	7.1
7	8.3	13	19	16	16	18	14	18	51	9.1	9.5	7.0
8	7.9	14	18	13	16	18	18	20	44	9.0	9.2	7.0
9	7.8	15	18	17	14	17	18	21	37	8.5	8.9	7.0
10	7.4	19	18	18	17	16	14	20	39	8.5	8.8	7.0
11	7.3	24	19	18	16	16	9.5	24	40	8.7	8.6	6.9
12	7.3	24	19	17	16	15	9.1	28	39	11	8.5	6.9
13	6.8	25	19	15	15	15	9.8	28	43	9.5	8.4	7.1
14	6.8	25	19	14	15	15	9.8	19	37	9.4	8.2	7.1
15	7.2	25	19	18	15	14	9.7	27	37	9.4	8.1	6.6
16	7.2	23	19	18	15	13	9.7	34	35	9.1	8.0	6.6
17	6.6	22	15	18	15	14	7.8	43	33	9.5	7.9	7.8
18	6.6	21	22	17	12	14	6.3	41	33	9.2	8.0	6.9
19	6.7	20	18	17	14	14	6.1	28	31	9.1	8.5	6.7
20	6.8	20	12	17	13	14	5.5	30	31	10	8.6	6.6
21	6.5	20	9.2	16	15	15	5.7	35	30	10	8.4	6.8
22	6.6	19	13	15	16	16	5.4	40	28	9.4	7.9	7.0
23	6.6	18	22	13	16	15	5.5	47	27	9.4	8.1	7.1
24	6.7	18	20	16	17	15	5.5	48	24	9.3	8.4	8.1
25	6.2	18	17	9.5	17	14	5.4	47	22	8.9	8.4	8.0
26	6.3	18	16	13	18	14	5.3	45	22	9.1	8.2	7.5
27	6.6	19	19	20	17	14	5.7	43	19	8.9	7.8	7.3
28	7.1	20	18	18	17	14	6.8	41	14	9.0	7.6	7.0
29	6.7	19	19	18	---	13	7.4	37	13	9.1	7.8	7.0
30	7.0	19	19	17	---	14	6.9	45	13	9.7	7.9	7.0
31	6.8	---	18	17	---	16	---	42	---	9.9	7.8	---
TOTAL	223.8	520.5	552.2	504.5	437	492	310.9	954.5	1045	305.4	268.2	214.0
MEAN	7.22	17.4	17.8	16.3	15.6	15.9	10.4	30.8	34.8	9.85	8.65	7.13
MAX	10	25	22	20	18	22	22	48	57	16	12	8.1
MIN	6.2	6.7	9.2	9.5	12	13	5.3	8.5	13	8.5	7.6	6.6
AC=FT	444	1030	1100	1000	867	976	617	1890	2070	606	532	424
WAL YR 1977	TOTAL	3786.9	MEAN	10.4	MAX	25	MIN	4.0	AC=FT	7510		
CTR YR 1978	TOTAL	5828.0	MEAN	16.0	MAX	57	MIN	5.3	AC=FT	11560		

## 08268700 RIO GRANDE NEAR ARROYO HONDO, NM

LOCATION.--Lat 36°32'04", long 105°42'34", in NW¼ sec.31, T.27 N., R.12 E., Taos County, Hydrologic Unit 13020101, on right bank 350 ft (110 m) downstream from Arroyo Hondo, 400 ft (120 m) downstream from bridge on county road, 2.2 mi (3.5 km) west of Arroyo Hondo, 11.6 mi (18.7 km) northwest of Taos, and at mile 1,677.4 (2,698.9 km).

DRAINAGE AREA.--8,760 mi<sup>2</sup> (22,690 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

PERIOD OF RECORD.--February 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,470 ft (1,972 m), from topographic map.

REMARKS.--Records good. Diversions above station for irrigation of about 620,000 acres (2,500 km<sup>2</sup>) in Colorado and 15,000 acres (61 km<sup>2</sup>) in New Mexico. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years, 533 ft<sup>3</sup>/s (15.09 m<sup>3</sup>/s), 386,200 acre-ft/yr (476 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,400 ft<sup>3</sup>/s (125 m<sup>3</sup>/s) June 22, 1965, gage height, 5.81 ft (1.771 m); maximum gage height, 5.82 ft (1.774 m) May 23, 1973; minimum discharge, 136 ft<sup>3</sup>/s (3.85 m<sup>3</sup>/s) Aug. 2, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,060 ft<sup>3</sup>/s (30.0 m<sup>3</sup>/s) June 6, gage height, 2.95 ft (0.899 m), no peak above base of 1,400 ft<sup>3</sup>/s (40 m<sup>3</sup>/s); minimum, 148 ft<sup>3</sup>/s (4.19 m<sup>3</sup>/s) part of each day Oct. 20-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	156	218	279	332	455	254	386	769	882	362	190
2	157	157	202	270	321	455	253	376	911	1030	357	189
3	156	157	197	265	318	442	246	377	989	914	352	187
4	157	156	225	267	321	413	242	366	984	734	351	186
5	153	169	233	277	328	413	241	349	1030	622	349	188
6	161	208	234	276	332	413	238	351	1010	562	349	189
7	167	243	225	276	340	413	234	393	880	531	339	189
8	159	254	204	276	347	413	219	425	792	475	353	195
9	161	248	230	273	336	397	208	411	734	439	329	200
10	161	227	219	287	336	393	202	378	712	408	325	192
11	156	208	214	299	358	387	193	383	699	464	317	189
12	152	228	231	295	366	385	190	381	754	553	309	186
13	152	260	215	293	362	384	187	424	737	600	298	185
14	154	262	217	279	351	391	191	472	627	668	301	185
15	157	243	210	296	351	384	195	550	546	637	286	188
16	154	236	225	304	351	373	193	598	601	601	270	189
17	151	239	219	304	343	363	190	695	746	579	264	195
18	152	237	181	307	332	359	180	853	835	548	256	193
19	151	231	214	314	340	345	213	859	781	523	244	187
20	151	226	203	307	328	344	241	743	708	528	234	180
21	149	217	185	318	336	337	253	703	683	528	227	177
22	152	210	176	321	336	330	245	828	713	532	219	178
23	153	216	214	314	366	332	251	917	691	510	212	176
24	149	238	232	300	362	336	223	843	651	488	204	182
25	149	228	230	286	374	343	248	896	646	468	200	186
26	151	225	224	231	385	351	258	991	639	459	196	200
27	152	232	229	328	409	357	251	942	677	447	192	200
28	153	233	247	321	434	333	289	841	703	431	187	199
29	153	227	261	310	---	294	377	857	695	403	189	199
30	155	232	273	318	---	267	413	865	711	386	197	204
31	156	---	281	325	---	252	---	801	---	380	194	---
TOTAL	4792	6603	6868	9116	9795	11454	7118	19254	22654	17330	8462	5683
MEAN	155	220	222	294	350	369	237	621	755	559	273	189
MAX	167	262	281	328	434	455	413	991	1030	1030	362	204
MIN	149	156	176	231	318	252	180	349	546	380	187	176
AC-FT	9500	13100	13620	18080	19430	22720	14120	38190	44930	34370	16780	11270
CAL YR 1977 TOTAL	84718			MEAN 232	MAX 572	MIN 149	AC-FT 168000					
WTR YR 1978 TOTAL	129129			MEAN 354	MAX 1030	MIN 149	AC-FT 256100					



## 08271000 RIO LUCERO NEAR ARROYO SECO, NM

LOCATION.--Lat 36°30'30", long 105°31'49", Taos County, Hydrologic Unit 13020101, in Tract C Taos Pueblo Grant, on right bank 200 ft (61 m) upstream from diversion dam for Tenorio and Indian ditches, 2.2 mi (3.5 km) east of Arroyo Seco, 7.4 mi (11.9 km) northeast of Taos, and at mile 8.1 (13.0 km).

DRAINAGE AREA.--16.6 mi<sup>2</sup> (43.0 km<sup>2</sup>).

PERIOD OF RECORD.--April to December 1910 (discharge measurements and occasional gage heights), January 1911 to September 1915, March to December 1916 (fragmentary), October 1933 to December 1951, annual maximum, water years 1952-62, October 1962 (monthly discharge only), November 1962 to current year. Monthly discharge only for some periods, published in WSP 1312. Fragmentary records for October 1915 to February 1916, published in WSP 438, are unreliable and should not be used. Published as "near Taos," 1910-16.

REVISED RECORDS.--WSP 1512: 1912, 1916, 1949. WSP 1732: Drainage area. WDR NM-75-1: 1973. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Concrete control since Nov. 21, 1962. Datum of gage is 8,051.44 ft (2,454.070 m) National Geodetic Vertical Datum of 1929. See WSP 1923 for history of changes prior to Nov. 21, 1962.

REMARKS.--Records good except those for winter period, which are fair. No diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--39 years (water years 1911-15, 1934-51, 1963-78), 21.3 ft<sup>3</sup>/s (0.603 m<sup>3</sup>/s), 15,430 acre-ft/yr (19.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 300 ft<sup>3</sup>/s (8.50 m<sup>3</sup>/s) May 13, 1941, gage height, 3.12 ft (0.951 m), datum then in use; minimum discharge, about 1.4 ft<sup>3</sup>/s (0.04 m<sup>3</sup>/s) Nov. 2, 1951, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 70 ft<sup>3</sup>/s (2.0 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Feb. 3	1000	ice jam	*1.64 .500	May 24	2115	80 2.27	1.61 .491
May 16	2130	*86 2.44	1.63 .497				

Minimum discharge, 2.9 ft<sup>3</sup>/s (0.082 m<sup>3</sup>/s) Mar. 16, but may have been less during periods of ice effect.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	7.6	7.0	6.0	5.1	5.6	28	26	72	37	14	9.2
2	10	7.5	6.0	5.0	5.1	5.6	23	23	74	35	14	9.0
3	9.9	7.7	7.0	5.5	4.0	5.5	20	21	71	34	14	8.9
4	9.7	7.4	7.0	6.6	5.2	5.5	21	19	73	32	14	8.7
5	9.6	7.7	7.2	6.6	5.3	5.3	24	17	74	30	13	8.0
6	13	7.9	7.7	6.2	5.3	5.3	21	16	69	28	13	8.0
7	13	9.2	7.8	6.2	5.3	5.4	21	15	64	27	13	7.9
8	12	7.6	7.2	5.0	5.1	5.8	31	14	60	26	13	7.7
9	12	6.1	7.2	6.0	4.0	6.4	33	15	61	25	13	7.7
10	12	7.7	7.7	6.6	5.0	6.6	29	18	68	23	13	7.5
11	11	9.0	7.7	6.6	5.0	6.2	24	25	69	23	12	7.2
12	11	8.9	7.7	6.6	5.0	5.9	24	35	68	22	12	7.2
13	11	8.3	7.7	6.2	4.9	5.6	26	42	67	21	12	7.2
14	10	8.1	7.7	5.0	4.9	5.3	29	52	70	21	11	7.1
15	10	8.3	7.7	6.0	4.8	5.0	30	68	73	20	11	7.0
16	10	8.1	7.7	6.2	4.8	4.0	32	79	75	19	11	6.9
17	9.7	8.1	5.8	6.2	4.5	5.0	31	79	70	18	10	8.4
18	9.6	8.0	8.0	6.2	4.0	6.3	27	68	68	18	10	7.5
19	9.4	7.8	7.5	6.0	4.5	7.8	23	59	68	18	11	7.1
20	9.3	7.6	5.0	5.9	4.0	8.7	22	59	64	20	11	6.6
21	9.2	7.8	4.0	5.4	4.5	11	23	60	61	18	10	6.6
22	9.2	7.7	4.5	5.0	4.9	11	24	67	59	17	11	6.6
23	9.1	7.5	6.0	4.5	5.0	10	23	73	55	17	11	6.6
24	8.9	7.7	7.0	5.0	5.3	9.0	24	75	53	17	11	7.5
25	8.5	7.5	5.5	4.5	5.7	8.3	27	75	51	17	11	7.8
26	8.4	7.4	6.0	6.1	5.8	9.2	31	72	49	16	10	7.3
27	8.1	7.3	6.0	5.6	5.6	11	37	69	46	15	9.7	6.9
28	8.1	7.5	6.0	5.4	5.5	13	34	67	43	15	9.6	6.6
29	8.1	7.0	6.0	5.4	---	13	30	63	43	15	9.6	6.6
30	8.3	6.9	6.0	5.4	---	14	29	66	40	15	9.7	6.2
31	8.0	---	6.0	5.5	---	21	---	71	---	14	9.3	---
TOTAL	306.1	232.9	207.3	178.4	138.1	247.3	804	1508	1878	673	356.9	223.5
MEAN	9.87	7.76	6.69	5.75	4.93	7.98	26.8	48.6	62.6	21.7	11.5	7.45
MAX	13	9.2	8.0	6.6	5.8	21	37	79	75	37	14	9.2
MIN	8.0	6.1	4.0	4.5	4.0	4.0	20	14	40	14	9.3	6.2
AC-FT	607	462	411	354	274	491	1590	2990	3730	1330	708	443

CAL YR 1977	TOTAL	3857.2	MEAN	10.6	MAX	24	MIN	3.5	AC-FT	7650
WTR YR 1978	TOTAL	6753.5	MEAN	18.5	MAX	79	MIN	4.0	AC-FT	13400



08275000 RIO FERNANDO DE TAOS NEAR TAOS, NM

LOCATION.--Lat 36°22'32", long 105°32'55", in W2NW4 sec.27, T.25 N., R.13 E., Taos County, Hydrologic Unit 13020101, in Carson National Forest, on right bank 175 ft (53 m) upstream from Acequia Madre del Norte del Canon, 2.5 mi (4.0 km) southeast of Taos, and at mile 5.0 (8.0 km).

DRAINAGE AREA.--71.7 mi<sup>2</sup> (185.7 km<sup>2</sup>).

PERIOD OF RECORD.--April to September 1910 (gage heights and discharge measurements only), October 1910 to June 1911 (discharge measurements only), October 1912 to September 1917, October 1927 to December 1928, October to November 1962 (monthly discharge only), December 1962 to current year.

REVISED RECORDS.--WSP 1512; 1914-15. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Dec. 13, 1962. Altitude of gage is 7,140 ft (2,176 m), from topographic map. See WSP 1923 for history of changes prior to Dec. 13, 1962.

REMARKS.--Records good except those for period of no gage-height record May 10 to June 2, which are poor, and those for June, which are fair. A few very small diversions above station for irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--22 years (water years 1913-17, 1928, 1963-78), 5.87 ft<sup>3</sup>/s (0.166 m<sup>3</sup>/s), 4,250 acre-ft/yr (5.24 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (SINCE 1962).--Maximum discharge, 219 ft<sup>3</sup>/s (6.20 m<sup>3</sup>/s) May 13, 1973, gage height, 2.38 ft (0.725 m); minimum, 0.02 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) part or all of each day Jan. 14-18, 1967, Sept. 15-19, 1972, Sept. 2, 4, 5, 8-13, 16, 19, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood of undetermined magnitude occurred July 21, 1921.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34 ft<sup>3</sup>/s (0.96 m<sup>3</sup>/s) about May 16, gage height, 1.21 ft (0.369 m), no other peak above base of 25 ft<sup>3</sup>/s (0.7 m<sup>3</sup>/s); minimum, 0.02 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) part of each day Sept. 2, 4, 5, 8-13, 16, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.12	.58	.61	.75	1.1	1.9	12	8.8	8.0	1.3	.27	.03
2	.13	.57	.81	.74	1.1	2.0	11	10	8.0	1.1	.20	.03
3	.14	.59	1.0	.85	.99	2.1	11	11	8.1	1.0	.32	.03
4	.14	.62	1.0	1.1	1.1	2.3	10	13	7.3	.90	.55	.03
5	.14	.69	1.0	1.1	1.2	2.5	11	11	6.9	.85	.45	.03
6	.48	.75	.83	1.0	1.2	2.4	10	12	6.9	.81	.95	.03
7	.38	1.1	.95	1.0	1.2	2.5	11	11	6.9	.71	.74	.03
8	.31	1.2	1.2	.91	1.1	2.5	12	11	6.4	.62	.56	.03
9	.28	.54	.95	1.1	.91	2.8	13	14	5.8	.60	.49	.03
10	.28	.49	.95	1.3	1.0	2.8	12	17	5.2	.53	.49	.03
11	.31	.68	1.1	1.0	1.0	2.6	11	20	4.7	.57	.40	.03
12	.31	.75	1.0	.91	1.1	2.5	11	22	4.4	.64	.33	.03
13	.33	.79	1.1	.86	1.1	2.4	11	23	4.3	.62	.30	.03
14	.32	.80	1.0	.95	1.2	2.3	12	23	3.9	.54	.27	.03
15	.32	.82	1.2	1.3	1.1	2.3	12	24	3.4	.59	.19	.03
16	.38	.82	1.2	1.1	1.2	1.9	12	25	3.2	.51	.12	.03
17	.38	.87	.72	1.0	.96	2.4	13	24	3.0	.44	.09	.03
18	.44	.91	1.4	.94	.89	2.9	12	21	2.7	.35	.08	.03
19	.44	.97	1.3	.91	1.0	3.4	12	18	2.5	.27	.08	.03
20	.44	.98	.73	.91	1.1	3.6	11	15	2.2	.36	.10	.03
21	.50	.81	.70	.91	1.1	5.2	10	13	2.0	.41	.08	.04
22	.50	.89	1.1	.90	1.2	10	9.3	13	1.8	.34	.08	.03
23	.57	.90	1.2	.89	1.3	12	8.9	13	1.7	.29	.07	.03
24	.44	.81	1.1	.85	1.4	8.3	8.4	13	1.6	.28	.06	.03
25	.45	.89	1.0	.70	1.5	7.4	8.4	12	1.5	.38	.07	.04
26	.46	1.0	.99	.80	1.7	6.8	8.4	11	1.4	.45	.04	.04
27	.49	1.1	1.2	1.0	1.7	7.8	8.8	10	1.3	.49	.04	.03
28	.50	1.1	1.0	1.1	1.7	8.5	8.9	9.0	1.2	.36	.04	.04
29	.50	.95	.83	1.1	---	6.9	8.8	8.0	1.6	.29	.05	.04
30	.50	.96	.81	1.1	---	8.2	8.8	8.0	1.7	.36	.05	.03
31	.54	---	.75	1.1	---	9.3	---	8.0	---	.37	.04	---
TOTAL	11.52	24.93	30.73	30.18	33.15	140.5	318.7	451.8	119.6	17.33	7.60	.95
MEAN	.37	.83	.99	.97	1.18	4.53	10.6	14.6	3.99	.56	.25	.032
MAX	.57	1.2	1.4	1.3	1.7	12	13	25	8.1	1.3	.95	.04
MIN	.12	.49	.61	.70	.89	1.9	8.4	8.0	1.2	.27	.04	.03
AC-FT	23	49	61	60	66	279	632	896	237	34	15	1.9
CAL YR 1977 TOTAL	588.77			MEAN 1.61	MAX 7.7	MIN .12	AC-FT 1170					
WTR YR 1978 TOTAL	1186.99			MEAN 3.25	MAX 25	MIN .03	AC-FT 2350					

NOTE.--No gage-height record May 10 to June 2.

## 08275300 RIO PUEBLO DE TAOS NEAR RANCHITO, NM

LOCATION.--Lat 36°23'38", long 105°37'23", Taos County, Hydrologic Unit 13020101, in Gijosa Grant, on left bank 1,100 ft (340 m) downstream from Rio Fernando de Taos, 1.6 mi (2.6 km) southwest of Ranchito, and at mile 7.9 (12.7 km).

DRAINAGE AREA.--199 mi<sup>2</sup> (515 km<sup>2</sup>).

PERIOD OF RECORD.--March 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,747 ft (2,056 m), from topographic map.

REMARKS.--Records good except those for December, which are fair. Diversions for irrigation of about 9,000 acres (36 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--21 years, 25.9 ft<sup>3</sup>/s (0.733 m<sup>3</sup>/s), 18,760 acre-ft/yr (23.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 702 ft<sup>3</sup>/s (19.9 m<sup>3</sup>/s) May 21, 1973, gage height, 4.24 ft (1.292 m); maximum gage height, 4.45 ft (1.356 m) Jan. 22, 1975 (backwater from ice); minimum discharge, 0.21 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s) Aug. 24, 1972, result of regulation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 157 ft<sup>3</sup>/s (4.45 m<sup>3</sup>/s) at 1115 hours May 17, gage height, 3.04 ft (0.927 m), no other peak above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s); minimum, 1.4 ft<sup>3</sup>/s (0.040 m<sup>3</sup>/s) Sept. 11, 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	4.7	12	15	17	18	56	47	62	24	5.4	3.5
2	5.1	5.5	12	14	16	19	53	49	68	20	6.7	2.7
3	5.3	5.3	14	15	16	23	48	53	68	17	9.4	2.3
4	5.2	5.7	13	15	16	26	47	48	62	16	8.3	2.4
5	5.3	5.5	13	16	16	25	49	50	64	14	5.3	2.3
6	9.3	4.2	11	15	19	22	47	56	65	11	5.2	1.9
7	9.1	12	12	15	19	19	48	50	64	9.1	5.3	1.9
8	7.1	9.1	15	14	17	16	53	44	58	8.3	5.5	1.9
9	6.5	7.1	14	15	16	16	53	43	53	8.0	5.3	2.0
10	6.4	7.0	14	16	18	16	51	47	45	7.3	4.3	1.9
11	6.7	7.0	14	16	16	17	44	73	45	6.1	4.7	1.6
12	6.5	8.2	14	15	17	16	41	99	44	5.8	4.4	1.6
13	6.6	11	13	14	16	16	40	129	45	4.8	4.0	1.6
14	6.8	11	12	15	16	15	47	130	43	3.7	3.8	1.7
15	7.3	10	13	15	16	14	48	126	42	3.6	3.7	1.8
16	7.0	11	14	17	16	13	50	141	40	4.6	3.1	1.7
17	6.9	15	12	16	16	14	49	136	37	6.1	2.8	2.0
18	6.8	13	14	17	14	15	44	122	34	5.7	2.7	2.1
19	6.4	12	13	16	13	17	39	106	32	3.9	2.8	1.9
20	6.1	15	11	17	13	16	35	99	27	6.0	3.2	1.7
21	6.2	15	10	17	13	19	33	93	24	7.2	3.5	1.7
22	6.1	15	12	16	13	25	34	92	20	6.3	3.7	1.9
23	5.7	14	14	15	13	34	32	89	16	6.8	3.3	2.0
24	5.5	15	13	15	13	31	31	88	14	6.6	3.7	2.6
25	5.5	16	12	10	13	28	32	82	15	7.8	5.1	3.4
26	5.4	15	12	12	14	25	34	73	13	8.9	4.4	3.4
27	5.8	15	14	15	14	29	41	64	11	7.7	4.1	2.9
28	7.1	16	14	16	14	34	47	60	14	6.9	3.8	2.7
29	7.2	15	15	16	---	32	43	59	18	6.5	4.0	2.5
30	8.0	14	15	17	---	31	45	60	33	6.7	3.9	2.5
31	6.6	---	15	17	---	42	---	60	---	5.7	3.8	---
TOTAL	200.5	329.3	406	474	430	683	1314	2468	1176	262.1	139.2	66.1
MEAN	6.47	11.0	13.1	15.3	15.4	22.0	43.8	79.6	39.2	8.45	4.49	2.20
MAX	9.3	16	15	17	19	42	56	141	68	24	9.4	3.5
MIN	5.0	4.2	10	10	13	13	31	43	11	3.6	2.7	1.6
AC-FT	398	653	805	940	853	1350	2610	4900	2330	520	276	131

CAL YR 1977 TOTAL 3570.0 MEAN 9.78 MAX 33 MIN 1.7 AC-FT 7080  
WTR YR 1978 TOTAL 7948.2 MEAN 21.8 MAX 141 MIN 1.6 AC-FT 15770

## 08275500 RIO GRANDE DEL RANCHO NEAR TALPA, NM

LOCATION.--Lat 36°17'52", long 105°34'55", Taos County, Hydrologic Unit 13020101, in Carson National Forest, Rancho del Rio Grande Grant, on left bank 1.4 mi (2.3 km) downstream from Rito de la Olla (locally known as Pot Creek), 3.2 mi (5.1 km) south of Talpa, 4.3 mi (6.9 km) upstream from Rio Chiquito, and at mile 6.9 (11.1 km).

DRAINAGE AREA.--83 mi<sup>2</sup> (210 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1952 to current year. Prior to October 1955, published as Rio Grande del Rancho near Ranchos de Taos, and October 1955 to September 1960 as Rio Grande de Ranchos near Talpa.

GAGE.--Water-stage recorder. Altitude of gage is 7,238 ft (2,206 m), from topographic map. Prior to Nov. 11, 1952, nonrecording gage at site 1,035 ft (320 m) downstream at lower datum. Nov. 11, 1952 to Nov. 5, 1968, water-stage recorder at site 1,000 ft (300 m) downstream at lower datum.

REMARKS.--Records good prior to June 20 and poor thereafter. Minor diversions for irrigation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--26 years, 18.9 ft<sup>3</sup>/s (0.535 m<sup>3</sup>/s), 13,690 acre-ft/yr (16.9 km<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 497 ft<sup>3</sup>/s (14.1 m<sup>3</sup>/s) May 21, 1973, gage height, 3.87 ft (1.180 m); maximum gage height, 4.01 ft (1.222 m) Sept. 10, 1964, site and datum then in use; minimum discharge, 0.2 ft<sup>3</sup>/s (0.01 m<sup>3</sup>/s) Jan. 5, 1955, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 60 ft<sup>3</sup>/s (1.7 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)	Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)
May 17	0445	*206	5.83	2.49	.759	about Aug. 9	-	64	1.81	1.67	.509

Minimum discharge, 0.33 ft<sup>3</sup>/s (0.009 m<sup>3</sup>/s) about Sept. 15, result of regulation.

DISCHARGE\* IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	3.5	2.6	3.1	4.0	5.1	14	34	86	21	5.9	3.5
2	3.2	3.0	2.7	2.4	3.0	4.9	15	33	91	17	5.0	3.3
3	3.2	3.0	3.2	2.4	2.8	5.8	14	34	91	14	7.0	3.2
4	3.2	3.1	3.3	3.9	3.9	5.9	14	33	87	12	7.5	3.2
5	3.2	3.2	3.3	3.8	4.1	6.2	16	31	85	10	6.5	2.8
6	4.7	3.3	3.2	3.8	4.2	6.1	15	29	83	9.9	6.0	2.7
7	5.3	5.6	3.5	3.5	3.8	6.0	16	26	75	9.4	6.5	2.7
8	4.7	4.9	3.7	2.9	3.8	5.3	19	25	64	9.0	5.5	2.7
9	4.4	4.0	3.4	4.1	3.3	5.6	21	27	57	9.0	12	2.6
10	4.1	2.7	3.3	4.5	4.1	6.0	20	31	54	8.6	7.0	2.5
11	3.7	3.5	3.9	3.7	4.1	6.0	18	47	53	9.6	5.5	2.2
12	3.7	4.3	3.7	3.5	3.7	6.2	18	76	51	8.9	5.0	2.2
13	3.6	4.2	3.6	3.0	3.2	6.1	19	97	49	8.7	4.8	2.2
14	3.5	4.2	3.6	3.2	3.4	6.0	21	116	44	8.5	4.6	2.2
15	3.4	4.2	3.8	4.4	3.8	4.7	22	150	41	9.0	4.4	2.1
16	3.4	4.2	3.5	4.0	3.4	3.4	24	185	38	8.2	4.1	2.1
17	3.4	4.2	2.4	3.8	2.7	3.9	26	202	36	8.0	3.8	2.5
18	3.4	4.2	4.0	3.5	2.4	4.8	23	183	32	7.4	3.5	2.7
19	3.4	4.1	3.3	3.5	2.9	5.3	22	161	30	7.0	3.3	2.3
20	3.3	4.1	2.0	3.9	3.3	5.3	21	152	27	8.0	3.6	2.3
21	3.4	4.0	2.1	3.8	3.3	5.6	21	152	25	8.2	3.4	2.4
22	3.4	4.0	3.1	3.4	3.9	6.3	22	154	23	7.6	3.5	2.6
23	3.6	3.9	4.2	3.1	4.2	7.0	21	159	21	7.4	3.7	2.6
24	3.7	3.6	3.1	3.1	4.1	6.6	21	161	20	8.2	3.4	3.5
25	3.7	3.8	2.7	2.5	4.1	6.6	24	156	19	8.4	4.0	4.5
26	3.5	3.8	2.9	3.1	4.5	6.5	25	137	18	8.0	3.7	4.7
27	3.5	3.8	3.9	4.2	4.4	7.0	30	120	17	7.6	3.4	4.0
28	3.5	3.9	3.2	4.0	4.2	7.9	34	106	19	7.2	3.2	3.6
29	3.5	3.5	3.0	4.4	---	8.2	33	93	22	6.7	3.2	3.3
30	3.5	3.4	3.0	4.3	---	8.4	34	86	25	6.4	3.9	3.2
31	3.5	---	3.0	4.4	---	9.5	---	83	---	6.5	3.7	---
TOTAL	112.9	115.2	100.2	111.2	102.6	188.2	643	3079	1383	285.4	150.6	86.4
MEAN	3.64	3.84	3.23	3.59	3.66	6.07	21.4	99.3	46.1	9.21	4.86	2.88
MAX	5.3	5.6	4.2	4.5	4.5	9.5	34	202	91	21	12	4.7
MIN	3.2	2.7	2.0	2.4	2.4	3.4	14	25	17	6.4	3.2	2.1
AC=FT	224	228	199	221	204	373	1280	6110	2740	566	299	171

CAL YR 1977 TOTAL 2460.1 MEAN 6.74 MAX 27 MIN 2.0 AC=FT 4880  
WTR YR 1978 TOTAL 6357.7 MEAN 17.4 MAX 202 MIN 2.0 AC=FT 12610

## 08275600 RIO CHIQUITO NEAR TALPA, NM

LOCATION.--Lat 36°19'55", long 105°34'42", Taos County, Hydrologic Unit 13020101, in Carson National Forest, Rancho del Rio Grande Grant, on right bank 1 mi (2 km) southeast of Talpa, and at mile 2.1 (3.4 km).

DRAINAGE AREA.--37.0 mi<sup>2</sup> (95.8 km<sup>2</sup>).

PERIOD OF RECORD.--March 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 7,223 ft (2,202 m), from topographic map.

REMARKS.--Records good. No diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--21 years, 7.56 ft<sup>3</sup>/s (0.214 m<sup>3</sup>/s), 5,480 acre-ft/yr (6.76 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 303 ft<sup>3</sup>/s (8.58 m<sup>3</sup>/s) July 22, 1976, gage height, 2.75 ft (0.838 m); maximum gage height, 3.50 ft (1.067 m) May 20, 1973 (backwater from debris); minimum discharge, 0.16 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) Jan. 31, 1972, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 67 ft<sup>3</sup>/s (1.90 m<sup>3</sup>/s) at 0645 hours May 16, gage height, 2.14 ft (0.652 m), no other peak above base of 25 ft<sup>3</sup>/s (0.7 m<sup>3</sup>/s); minimum, 0.42 ft<sup>3</sup>/s (0.012 m<sup>3</sup>/s) Dec. 20, Mar. 16, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.6	1.1	1.6	1.7	1.9	6.7	12	19	5.3	2.6	1.7
2	1.1	1.4	1.4	1.4	1.6	1.9	6.6	12	19	4.7	2.4	1.6
3	1.2	1.5	1.6	1.4	1.4	2.0	6.4	12	18	4.4	3.4	1.5
4	1.2	1.6	1.6	1.8	1.7	1.8	6.6	12	16	4.1	3.5	1.6
5	1.2	1.6	1.6	1.7	1.8	1.8	7.4	10	15	3.9	3.0	1.4
6	2.4	1.7	1.5	1.7	1.8	2.0	6.7	10	15	3.7	2.9	1.3
7	3.0	2.4	1.6	1.7	1.7	1.8	7.5	9.3	14	3.6	3.1	1.3
8	2.1	2.2	1.7	1.4	1.7	1.7	8.5	8.9	13	3.5	2.6	1.3
9	1.9	1.6	1.6	1.7	1.5	1.8	9.7	9.6	12	3.5	2.7	1.2
10	1.8	1.3	1.5	1.8	1.8	2.0	9.7	12	11	3.6	3.1	1.2
11	1.6	1.9	1.7	1.6	1.8	2.0	8.5	22	10	4.0	2.6	1.1
12	1.6	2.0	1.7	1.6	1.8	2.0	9.0	38	9.5	3.8	2.5	1.1
13	1.6	1.9	1.7	1.4	1.7	1.8	9.4	49	9.2	3.5	2.4	1.1
14	1.5	1.9	1.6	1.5	1.7	1.8	10	51	8.6	3.3	2.2	1.1
15	1.5	1.9	1.8	1.7	1.7	1.4	11	58	8.0	3.4	2.0	1.0
16	1.5	1.9	1.6	1.6	1.7	1.2	12	61	7.6	3.1	1.8	1.0
17	1.5	1.9	1.0	1.6	1.4	1.7	12	58	7.2	3.0	1.7	1.2
18	1.5	1.9	1.9	1.6	1.2	2.1	11	53	6.9	2.8	1.5	1.3
19	1.5	1.8	1.6	1.6	1.6	2.3	11	45	6.6	2.6	1.6	1.1
20	1.5	1.8	.86	1.6	1.7	2.3	9.9	41	6.3	3.0	1.7	1.1
21	1.4	1.7	.99	1.6	2.0	2.6	9.7	40	6.0	3.1	1.6	1.2
22	1.4	1.8	1.8	1.6	2.1	3.0	9.6	39	5.7	2.8	1.7	1.3
23	1.5	1.7	2.0	1.4	2.1	3.2	9.1	38	5.4	2.8	1.8	1.3
24	1.6	1.6	1.6	1.4	1.8	3.1	9.1	36	5.2	3.0	1.6	1.7
25	1.6	1.7	1.6	1.0	1.8	3.1	9.5	33	5.0	3.1	1.9	2.1
26	1.5	1.7	1.6	1.5	1.9	3.2	10	30	4.8	3.0	1.7	2.2
27	1.5	1.7	1.7	1.9	1.8	3.4	12	29	4.7	2.9	1.5	1.9
28	1.5	1.7	1.6	1.8	1.8	3.8	12	27	5.2	2.7	1.4	1.7
29	1.5	1.6	1.6	1.7	---	3.7	12	24	6.0	2.7	1.4	1.6
30	1.6	1.7	1.6	1.7	---	3.8	12	21	6.5	2.8	1.8	1.6
31	1.6	---	1.6	1.8	---	4.8	---	20	---	3.1	1.7	---
TOTAL	49.0	52.7	48.35	49.4	48.3	75.0	284.6	920.8	286.4	104.8	67.4	41.8
MEAN	1.58	1.76	1.56	1.59	1.73	2.42	9.49	29.7	9.55	3.38	2.17	1.39
MAX	3.0	2.4	2.0	1.9	2.1	4.8	12	61	19	5.3	3.5	2.2
MIN	1.1	1.3	.86	1.0	1.2	1.2	6.4	8.9	4.7	2.6	1.4	1.0
AC-FT	97	105	96	98	96	149	565	1830	568	208	134	83
CAL YR 1977 TOTAL	937.55			MEAN 2.57	MAX 8.1	MIN .80	AC-FT 1860					
WTR YR 1978 TOTAL	2028.55			MEAN 5.56	MAX 61	MIN .86	AC-FT 4020					

## RIO GRANDE BASIN

08276300 RIO PUEBLO DE TAOS BELOW LOS CORDOVAS, NM

LOCATION.—Lat 36°22'39", long 105°40'05", Taos County, Hydrologic Unit 13020101, in Gijosa Grant, on left bank 1.9 mi (3.1 km) southwest of Los Cordovas, 2.5 mi (4.0 km) downstream from Rio Grande del Rancho, and at mile 5.1 (8.2 km).

DRAINAGE AREA.--380 mi<sup>2</sup> (984 km<sup>2</sup>).

PERIOD OF RECORD.--March 1957 to current year.

REVISED RECORDS.-----WSP 1732: 1957(M), WSP 1923: 1957(P), 1958.

GAGE.--Water-stage recorder. Concrete control since July 16, 1963. Altitude of gage is 6,652 ft (2,028 m), from topographic map.

REMARKS.--Records good except those for December and January, which are fair. Diversions for irrigation of about 12,000 acres (49 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--21 years, 44.9 ft<sup>3</sup>/s (1.272 m<sup>3</sup>/s), 32,530 acre-ft/yr (40.1 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft<sup>3</sup>/s (67.4 m<sup>3</sup>/s) Aug. 24, 1957, gage height, 5.80 ft (1.768 m), from rating curve extended above 900 ft<sup>3</sup>/s (25 m<sup>3</sup>/s); minimum, 1.9 ft<sup>3</sup>/s (0.054 m<sup>3</sup>/s) July 31, Aug. 1, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 330 ft<sup>3</sup>/s (9.35 m<sup>3</sup>/s) at 1330 hours May 16, gage height, 3.18 ft (0.969 m), no other peak above base of 230 ft<sup>3</sup>/s (6.5 m<sup>3</sup>/s); minimum, 3.5 ft<sup>3</sup>/s (0.099 m<sup>3</sup>/s) Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	11	17	21	25	28	61	46	97	32	7.9	6.5
2	10	12	17	19	24	28	61	51	107	26	9.1	5.7
3	11	11	18	18	22	32	58	58	115	22	11	4.8
4	11	11	19	20	24	36	57	52	102	22	12	4.8
5	11	12	19	21	25	35	60	58	104	19	8.8	4.9
6	22	11	18	20	28	31	59	64	107	15	8.3	5.0
7	17	20	18	21	28	29	59	55	104	14	8.5	5.0
8	14	18	19	18	26	26	66	48	90	14	9.1	5.1
9	12	15	18	19	23	25	66	46	79	14	9.1	5.2
10	12	14	18	23	26	26	62	48	66	12	8.3	5.3
11	12	15	18	23	25	27	54	72	59	12	7.7	4.8
12	12	16	18	22	25	26	48	110	58	11	7.7	4.5
13	12	17	18	20	24	25	47	166	57	9.7	7.6	4.6
14	12	17	18	18	25	24	53	206	55	8.4	7.1	4.6
15	12	16	18	23	25	23	52	253	52	8.1	6.7	5.2
16	11	16	18	23	25	21	54	302	47	7.8	5.8	5.3
17	11	15	16	23	24	24	54	303	43	9.8	5.3	5.9
18	11	16	18	23	23	24	48	269	40	9.8	5.2	5.9
19	11	19	18	23	23	25	44	232	38	7.3	5.4	5.7
20	11	18	15	22	22	26	38	205	34	13	6.0	5.4
21	11	18	14	22	22	27	36	203	29	12	6.1	5.7
22	11	19	16	21	22	31	36	198	25	10	6.3	6.0
23	11	19	19	20	23	38	32	194	23	10	6.1	6.5
24	11	19	21	20	23	37	32	196	20	9.9	6.2	8.1
25	11	20	18	15	23	35	33	184	20	11	7.9	11
26	11	19	17	22	24	33	36	153	18	13	7.1	9.0
27	10	19	20	25	24	35	42	131	16	13	6.3	7.3
28	11	20	21	24	25	41	47	126	19	11	6.3	7.1
29	12	19	22	24	---	40	44	114	26	10	6.5	7.2
30	12	18	22	25	---	38	46	107	41	10	6.7	7.2
31	12	---	21	25	---	46	---	98	---	9.0	6.8	---
TOTAL	367.9	490	567	663	678	942	1485	4348	1691	405.8	228.9	179.3
MEAN	11.9	16.3	18.3	21.4	24.2	30.4	49.5	140	56.4	13.1	7.38	5.98
MAX	22	20	22	25	28	46	66	303	115	32	12	11
MIN	9.9	11	14	15	22	21	32	46	16	7.3	5.2	4.5
AC-FT	730	972	1120	1320	1340	1870	2950	8620	3350	805	454	356
CAL YR 1977	TOTAL	6429.5	MEAN	17.6	MAX	47	MIN	3.5	AC-FT	12750		
WTR YR 1978	TOTAL	12045.9	MEAN	33.0	MAX	303	MIN	4.5	AC-FT	23890		

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192	190	274	327	370	496	337	460	910	902	379	217
2	190	193	247	316	367	506	344	459	1050	1070	374	215
3	189	193	237	307	364	499	331	470	1160	997	372	211
4	192	193	273	308	364	470	326	450	1140	803	372	210
5	188	198	280	322	371	472	327	439	1190	678	366	212
6	216	230	280	323	376	463	326	440	1190	596	367	213
7	211	287	268	319	380	461	326	466	1060	568	357	212
8	197	300	246	318	388	458	322	504	938	508	371	214
9	195	293	284	314	384	447	307	489	860	469	353	227
10	197	278	259	328	379	438	300	460	814	425	343	216
11	191	254	256	340	394	433	283	479	785	473	341	214
12	188	263	281	339	408	430	269	523	831	544	333	210
13	187	296	262	333	405	427	262	614	835	615	319	207
14	188	308	264	320	395	433	270	703	727	673	322	208
15	192	287	253	331	393	424	279	809	626	668	310	211
16	189	280	270	347	394	415	277	913	646	616	293	212
17	186	279	260	347	389	405	276	1000	795	608	289	220
18	186	280	224	347	374	401	262	1150	887	577	280	220
19	186	279	261	354	380	389	267	1140	856	541	271	212
20	184	275	236	352	382	385	300	1020	774	556	262	206
21	184	269	230	352	367	380	315	955	730	548	253	202
22	185	255	215	360	368	375	307	1040	748	577	248	202
23	188	264	246	359	408	383	311	1170	736	534	239	202
24	185	290	279	353	411	387	291	1110	690	510	231	213
25	184	275	276	328	406	391	297	1130	680	490	227	211
26	184	272	268	261	423	398	321	1200	676	478	224	229
27	185	277	272	365	444	406	320	1160	687	533	218	227
28	188	278	292	366	469	401	345	1030	744	453	212	225
29	188	276	304	355	---	364	417	1010	735	428	212	225
30	191	277	318	358	---	331	487	1020	756	405	221	230
31	192	---	323	368	---	322	---	962	---	400	222	---
TOTAL	5898	7889	8238	10417	10953	12990	9402	24775	25256	18243	9181	6433
MEAN	190	263	266	336	391	419	313	799	842	588	296	214
MAX	216	308	323	368	469	506	487	1200	1190	1070	379	230
MIN	184	190	215	261	364	322	262	439	626	400	212	202
AC=FT	11700	15650	16340	20660	21730	25770	18650	49140	50100	36180	18210	12760
CAL YR 1977	TOTAL	97986	MEAN 268	MAX 410	617	MIN 171	AC=FT	194400				
WTR YR 1978	TOTAL	149675	MEAN 410	MAX 1200	184	MIN 184	AC=FT	296900				

## RIO GRANDE BASIN

08276500 RIO GRANDE BELOW TAOS JUNCTION BRIDGE, NEAR TAOS, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1975 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)
OCT									
26...	1210	193	300	8.3	12.0	8	--	100	0
NOV									
25...	1215	294	339	8.4	8.0	3	--	120	1
JAN									
25...	1145	296	263	7.5	1.5	--	2.5	90	0
MAR									
27...	1350	420	271	8.8	13.0	--	33	94	0
APR									
25...	1130	27	291	8.4	7.0	--	3.3	110	12
MAY									
25...	1410	1140	193	8.6	14.0	--	35	74	4
JUN									
27...	1300	700	231	8.1	9.5	--	25	83	10
JUL									
25...	1155	496	203	8.1	20.5	--	1.1	70	--
AUG									
29...	1015	221	284	7.8	17.0	--	1.7	96	--
SEP									
25...	1320	216	281	8.5	17.0	--	7.8	93	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
OCT									
26...	28	7.3	24	1.0	3.3	130	0	110	37
NOV									
25...	35	7.8	26	1.0	3.6	140	2	120	50
JAN									
25...	27	5.6	18	.8	3.0	110	0	90	32
MAR									
27...	28	5.9	18	.8	3.1	120	0	98	34
APR									
25...	32	7.5	20	.8	3.2	120	0	98	38
MAY									
25...	22	4.6	11	.6	2.7	85	0	70	24
JUN									
27...	25	5.1	20	1.0	3.0	90	0	74	36
JUL									
25...	21	4.2	13	.7	2.7	--	--	72	22
AUG									
29...	28	6.3	22	1.0	3.1	--	--	100	32
SEP									
25...	28	5.6	21	.9	3.2	--	--	98	30

08276500 RIO GRANDE BELOW TAOS JUNCTION BRIDGE, NEAR TAOS, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOSPHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT 26...	6.7	.9	29	194	201	.22	.00	50	50
NOV 25...	7.7	.8	28	212	231	.14	.03	--	--
JAN 25...	5.2	.6	29	167	176	.22	.02	--	--
MAR 27...	5.5	.5	20	168	174	.01	.01	--	--
APR 25...	6.2	.7	23	179	190	.04	.01	--	--
MAY 25...	3.2	.0	.2	120	110	--	--	30	30
JUN 27...	8.1	.4	20	163	163	.13	.01	--	--
JUL 25...	3.6	.4	21	129	131	.10	.03	--	--
AUG 29...	6.6	.7	26	182	185	.07	.01	--	--
SEP 25...	6.7	.8	28	183	182	.29	.03	80	10

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO) (01062)
OCT 26...	1210	50	50	20
NOV 25...	1215	--	--	14
JAN 25...	1145	--	--	9
MAR 27...	1350	--	--	10
APR 25...	1130	--	--	17
MAY 25...	1410	30	30	7
JUN 27...	1300	--	--	9
JUL 25...	1155	--	--	8
AUG 29...	1015	--	--	20
SEP 25...	1320	80	10	19



## RIO GRANDE BASIN

08279000 EMBUDO CREEK AT DIXON, NM

LOCATION.--Lat 36°12'39", long 105°54'47", in NE¼Sec.19, T.23 N., R.10 E., Rio Arriba County, Hydrologic Unit 13020101, on right bank 750 ft (230 m) upstream from U.S. Highway 64, 0.5 mi (0.8 km) upstream from mouth, 0.5 mi (0.8 km) east of Embudo Post Office, and 1.7 mi (2.7 km) northwest of Dixon.

DRAINAGE AREA.--305 mi<sup>2</sup> (790 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to February 1926, October 1926 to September 1955, annual maximum, water years 1956-62; September 1962 to current year. Monthly discharge only for some periods, published in WSP 1312. Figures of daily discharge for July 6-25, 1932, published in WSP 733, and maximum discharges for water years 1931-33, 1935, 1937-38, 1941, are unreliable and should not be used.

REVISED RECORDS.--WSP 1512: 1931-32, 1941, 1947(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 5,858.60 ft (1,785.701 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 30, 1938, at site about 1 mi (2 km) upstream at different datums. Nov. 30, 1938 to Aug. 1, 1941, at site about 0.9 mi (1.4 km) upstream at datum about 59.9 ft (18.26 m) higher. Aug. 2, 1941 to Sept. 1, 1971, at site 750 ft (230 m) downstream at datum 9.10 ft (2.774 m) lower. April 1956 to Sept. 21, 1962, crest-stage gage.

REMARKS.--Water-discharge records good prior to June 1 and fair thereafter. Diversions above station for irrigation of about 6,500 acres (26 km<sup>2</sup>), a small part of which is below gage.

AVERAGE DISCHARGE.—47 years (water years 1924-25, 1927-55, 1963-78), 74.9 ft<sup>3</sup>/s (2.121 m<sup>3</sup>/s), 54,270 acre-ft/yr (66.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (SINCE 1941).---Maximum discharge, 4,200 ft<sup>3</sup>/s (119 m<sup>3</sup>/s) Aug. 29, 1977, gage height, 7.10 ft (2.164 m), from rating curve extended above 1,600 ft<sup>3</sup>/s (45 m<sup>3</sup>/s); maximum gage height, 7.6 ft (2.32 m) Aug. 4, 1967; minimum discharge, 0.06 ft<sup>3</sup>/s (0.002 m<sup>3</sup>/s) June 26, 27, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 358 ft<sup>3</sup>/s (10.1 m<sup>3</sup>/s) May 17, gage height, 3.41 ft (1.039 m), no peak above base of 800 ft<sup>3</sup>/s (23 m<sup>3</sup>/s); maximum gage height, 3.47 ft (1.058 m) Aug. 9; minimum discharge, 4.0 ft<sup>3</sup>/s (0.11 m<sup>3</sup>/s) Aug. 28, Sept. 2, 4, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	16	21	23	24	27	47	75	185	70	9.2	4.4
2	13	17	22	18	20	30	47	80	211	56	8.9	4.3
3	13	19	30	20	19	30	43	88	212	53	9.2	4.2
4	13	20	34	24	21	28	42	104	206	44	11	4.4
5	12	20	30	23	22	30	47	100	205	40	11	4.5
6	15	21	25	22	24	31	43	104	219	31	9.2	4.8
7	21	38	25	22	22	29	47	102	227	23	9.2	4.5
8	19	38	29	17	22	28	50	101	204	17	9.2	4.7
9	18	31	24	18	18	27	50	102	182	15	22	4.6
10	17	28	22	26	22	29	49	115	160	15	16	4.6
11	17	32	25	24	23	29	47	168	150	20	12	4.5
12	18	34	24	22	23	29	43	247	145	19	12	4.5
13	17	34	24	19	22	28	42	276	138	17	11	4.7
14	17	35	24	17	20	28	49	274	130	16	7.7	4.9
15	16	34	27	24	23	23	52	301	125	17	6.2	4.8
16	17	34	28	24	22	20	52	327	120	17	5.7	4.6
17	15	33	16	22	22	25	56	337	105	16	5.5	4.8
18	15	34	27	23	20	28	51	307	97	15	5.2	4.8
19	15	34	27	22	20	33	45	275	88	13	5.5	4.8
20	14	34	14	22	20	34	42	287	79	12	5.7	4.9
21	13	32	13	22	21	35	40	304	66	13	5.5	5.1
22	13	33	18	22	21	39	40	306	55	12	5.2	5.1
23	14	33	26	18	22	40	36	289	45	12	5.0	5.0
24	14	31	32	22	22	37	35	292	40	12	4.8	5.1
25	14	32	22	14	23	34	38	278	35	13	4.6	5.6
26	15	31	19	20	24	30	44	269	30	12	4.4	10
27	15	30	25	25	24	32	54	255	28	11	4.4	7.7
28	15	31	26	20	24	35	63	235	31	11	4.6	5.7
29	15	29	26	21	---	36	67	211	70	11	4.4	6.0
30	17	27	25	23	---	33	73	193	110	11	4.6	5.9
31	17	---	24	23	---	37	---	177	---	10	4.6	---
TOTAL	477	895	754	662	610	954	1434	6569	3698	654	243.5	153.5
MEAN	15.4	29.8	24.3	21.4	21.8	30.8	47.8	212	123	21.1	7.85	5.12
MAX	21	38	34	26	24	40	73	337	227	70	22	10
MIN	12	16	13	14	18	20	35	75	28	10	4.4	4.2
AC-FT	946	1780	1500	1310	1210	1890	2840	13030	7330	1300	483	304
CAL YR 1977	TOTAL	9516.9	MEAN	26.1	MAX	230	MIN	8.5	AC-FT	18880		
WTR YR 1978	TOTAL	17104.0	MEAN	46.9	MAX	337	MIN	4.2	AC-FT	33930		

08279000 EMBUDO CREEK AT DIXON, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1970 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
NOV								
25...	1335	31	406	8.0	8.0	210	25	72
JAN								
26...	1210	11	440	7.6	7.0	190	0	62
FEB								
23...	1425	13	393	7.8	8.0	200	20	68
MAR								
27...	1205	35	350	8.3	13.0	170	26	58
JUN								
27...	1000	30	409	8.2	11.0	200	6	68
AUG								
29...	1200	4.5	429	7.8	17.0	200	--	66
SEP								
25...	1135	5.0	443	7.8	17.0	210	--	70

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
NOV									
25...	8.3	9.1	.3	1.4	230	0	190	24	5.3
JAN									
26...	8.1	12	.4	1.6	230	0	190	26	7.2
FEB									
23...	7.5	9.7	.3	1.3	220	0	180	24	6.2
MAR									
27...	7.0	7.7	.3	1.4	180	0	150	24	5.6
JUN									
27...	8.0	9.9	.3	1.6	240	0	200	21	5.5
AUG									
29...	7.4	15	.5	1.8	--	--	150	26	8.6
SEP									
25...	7.8	15	.5	1.9	--	--	200	24	9.1

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV								
25...	.4	16	--	250	.08	--	--	--
JAN								
26...	.4	16	--	248	.29	--	--	--
FEB								
23...	.3	14	--	240	.18	--	--	--
MAR								
27...	.2	12	--	205	.05	--	--	--
JUN								
27...	.4	15	241	249	.18	.00	30	20
AUG								
29...	.5	16	--	231	.24	--	--	--
SEP								
25...	.5	17	252	265	.37	.01	80	10



## 08281100 RIO GRANDE ABOVE SAN JUAN PUEBLO, NM

LOCATION.--Lat 36°03'58", long 106°04'34", in NE¼SE¼ sec.10, T.21 N., R.8 E., Rio Arriba County, Hydrologic Unit 13020101, in San Juan Pueblo Grant, on left bank 0.8 mi (1.3 km) upstream from bridge on State Highway 74, 1.0 mi (1.6 km) northwest of San Juan Pueblo, 1.8 mi (2.9 km) upstream from Rio Chama, 5.1 mi (8.2 km) north of Espanola, and at mile 1,630.1 (2,622.8 km).

DRAINAGE AREA.--10,550 mi<sup>2</sup> (27,320 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,630 ft (1,716 m), from topographic map.

REMARKS.--Records good. Diversions above station for irrigation of about 620,000 acres (2,500 km<sup>2</sup>) in Colorado and 42,000 acres (170 km<sup>2</sup>) in New Mexico. Several observations of water temperature were made during the year. San Juan lateral and San Juan Pueblo ditch, both on left bank, and Guique ditch, on right bank, bypass gage for irrigation of several hundred acres below station. See tabulation below for monthly diversion, as furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--15 years, 645 ft<sup>3</sup>/s (18.27 m<sup>3</sup>/s), 467,300 acre-ft/yr (576 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,310 ft<sup>3</sup>/s (179 m<sup>3</sup>/s) May 22, 1973, gage height, 5.86 ft (1.786 m); minimum, 92 ft<sup>3</sup>/s (2.61 m<sup>3</sup>/s) Aug. 10-11, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--For years of outstanding floods see records for Rio Grande at Embudo (station 08279500).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,470 ft<sup>3</sup>/s (41.6 m<sup>3</sup>/s) May 23, gage height, 2.64 ft (0.805 m), no peak above base of 2,000 ft<sup>3</sup>/s (57 m<sup>3</sup>/s); minimum, 155 ft<sup>3</sup>/s (4.39 m<sup>3</sup>/s) Oct. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189	178	266	342	394	509	394	411	1010	948	345	192
2	186	179	253	330	390	528	429	453	1140	1120	342	185
3	180	184	256	320	378	532	394	478	1310	1100	330	188
4	176	182	268	327	377	496	366	504	1310	885	335	184
5	175	180	279	335	392	493	356	504	1350	728	335	177
6	179	189	282	336	399	489	366	517	1400	597	330	189
7	218	272	276	339	402	486	361	510	1350	544	340	199
8	209	301	278	328	407	481	361	530	1170	502	325	194
9	195	287	262	328	405	469	350	524	1060	455	330	199
10	186	269	267	339	405	461	340	510	957	419	331	198
11	188	259	269	356	412	451	335	565	903	421	321	188
12	184	255	275	361	423	448	315	688	930	478	309	186
13	179	278	284	348	427	440	305	792	966	572	300	192
14	180	294	278	341	427	440	325	912	867	600	283	191
15	186	284	283	340	427	432	320	1040	736	656	272	184
16	187	274	288	365	426	415	320	1190	664	600	256	174
17	184	268	279	363	423	405	320	1270	784	591	246	185
18	175	281	277	363	411	399	305	1400	921	554	237	189
19	176	280	265	367	402	396	277	1380	948	534	229	181
20	175	279	266	370	413	391	295	1270	824	523	226	173
21	172	272	241	366	405	389	295	1250	744	545	220	169
22	174	263	237	377	409	402	300	1260	712	537	219	173
23	175	266	241	377	426	417	295	1420	712	580	210	181
24	176	272	294	377	442	427	291	1430	664	504	201	192
25	172	279	291	339	434	424	268	1350	656	472	201	208
26	167	276	284	290	447	421	300	1420	656	441	207	216
27	175	279	286	319	459	429	282	1420	624	435	200	220
28	177	284	299	388	475	441	272	1250	704	478	197	216
29	174	278	318	380	---	423	320	1140	792	411	189	216
30	176	271	332	376	---	378	388	1140	849	383	197	208
31	177	---	338	389	---	366	---	1080	---	374	197	---
TOTAL	5622	7713	8612	10876	11637	13678	9845	29608	27713	17987	8260	5747
MEAN	181	257	278	351	416	441	328	955	924	580	266	192
MAX	218	301	338	389	475	532	429	1430	1400	1120	345	220
MIN	167	178	237	290	377	366	268	411	624	374	189	169
AC-FT	11150	15300	17080	21570	23080	27130	19530	58730	54970	35680	16380	11400
(†)	44	-	-	-	-	-	9	23	40	36	28	11
(††)	103	-	-	-	-	-	100	328	346	434	337	172
(‡)	382	105	-	-	-	-	-	165	208	195	223	95
CAL YR 1977 TOTAL	99995			MEAN 274	MAX 673	MIN 95	AC-FT 198300					
WTR YR 1978 TOTAL	157298			MEAN 431	MAX 1430	MIN 167	AC-FT 312000					

† Estimated diversion, in acre-feet, by San Juan lateral.

†† Diversion, in acre-feet, by San Juan Pueblo ditch.

‡ Diversion, in acre-feet, by Guique ditch.

a Partial month.

## 08284100 RIO CHAMA NEAR LA PUENTE, NM

LOCATION.--Lat 36°39'45", long 106°37'57", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, on right bank 0.7 mi (1.1 km) downstream from Rito de Tierra Amarilla, 3.1 mi (5.0 km) southwest of La Puente, 6.7 mi (10.8 km) upstream from flow line of El Vado Reservoir, and at mile 91.4 (147.1 km).

DRAINAGE AREA.--480 mi<sup>2</sup> (1,200 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1955 to current year.

GAGE.--Water-stage recorder. Concrete control since Nov. 9, 1965. Altitude of gage is 7,083 ft (2,159 m), from river-profile map.

REMARKS.--Records good except those for winter period, which are poor, and those for period March 15 to May 10, which are fair. Diversions for irrigation of about 10,300 acres (42 km<sup>2</sup>) above station (1962 determination). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--23 years, 297 ft<sup>3</sup>/s (8.411 m<sup>3</sup>/s), 215,200 acre-ft/yr (265 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,540 ft<sup>3</sup>/s (270 m<sup>3</sup>/s) May 19, 1973, gage height, 6.12 ft (1.865 m); minimum, 4.0 ft<sup>3</sup>/s (0.11 m<sup>3</sup>/s) Sept. 19, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of about 9,000 ft<sup>3</sup>/s (250 m<sup>3</sup>/s) occurred Apr. 16, 1937, based on flow of Rio Chama at Los Ojos (Park View) with allowance for tributary inflow. A peak on May 21 or 22, 1926, may have exceeded 10,000 ft<sup>3</sup>/s (280 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,570 ft<sup>3</sup>/s (129 m<sup>3</sup>/s) at 0030 hours May 17, gage height, 5.23 ft (1.594 m), no other peak above base of 2,000 ft<sup>3</sup>/s (57 m<sup>3</sup>/s); minimum, 6.2 ft<sup>3</sup>/s (0.18 m<sup>3</sup>/s) Dec. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	29	31	35	46	61	619	1100	1700	265	29	19
2	30	27	31	30	40	70	518	976	1610	217	27	20
3	28	29	46	35	30	72	428	833	1420	181	25	16
4	27	31	43	40	37	69	415	804	1320	154	28	15
5	28	31	43	37	37	77	459	721	1210	133	31	14
6	33	35	34	34	50	79	374	667	1150	112	30	29
7	58	60	38	30	52	76	470	592	1000	105	30	17
8	72	71	42	28	50	75	587	553	901	97	30	12
9	72	52	34	30	33	81	604	657	799	87	30	11
10	60	35	35	38	45	84	568	845	821	80	33	9.7
11	54	40	38	35	48	81	469	965	821	86	38	9.4
12	51	45	35	28	44	78	524	1210	749	83	37	7.5
13	48	45	38	26	45	74	652	1520	712	70	31	8.0
14	46	43	37	25	40	70	693	2070	711	64	30	8.6
15	44	47	39	33	46	58	650	2630	688	59	28	8.5
16	43	45	35	34	47	57	695	3150	661	57	25	8.2
17	41	42	25	34	46	65	763	3150	565	56	23	13
18	39	41	30	34	44	78	598	2430	482	48	22	15
19	37	45	25	28	40	100	605	2430	444	43	20	15
20	35	43	20	30	42	123	665	2530	429	42	21	13
21	37	32	22	30	40	147	790	2560	379	46	19	14
22	37	36	20	29	42	182	796	2560	350	42	20	16
23	37	39	25	29	42	196	760	2630	325	35	21	17
24	35	38	30	27	45	198	888	2500	295	40	23	20
25	33	42	28	20	49	196	1120	2350	275	37	23	25
26	30	43	28	20	51	220	1310	2160	249	34	19	27
27	27	45	28	30	53	249	1520	2050	222	30	17	25
28	27	49	30	25	54	271	1380	1920	220	27	16	22
29	28	39	30	25	---	258	1370	1800	270	25	16	21
30	30	36	35	35	---	351	1390	1820	348	25	17	19
31	31	---	40	48	---	468	---	1800	---	27	17	---
TOTAL	1232	1235	1015	962	1238	4264	22680	53983	21126	2407	776	474.9
MEAN	39.7	41.2	32.7	31.0	44.2	138	756	1741	704	77.6	25.0	15.8
MAX	72	71	46	48	54	468	1520	3150	1700	265	38	29
MIN	27	27	20	20	30	57	374	553	220	25	16	7.5
AC-FT	2440	2450	2010	1910	2460	8460	44990	107100	41900	4770	1540	942

CAL YR 1977 TOTAL 22818.2 MEAN 62.5 MAX 666 MIN 5.1 AC-FT 45260  
WTR YR 1978 TOTAL 111392.9 MEAN 305 MAX 3150 MIN 7.5 AC-FT 220900

## 08284160 AZOTEA TUNNEL AT OUTLET, NEAR CHAMA, NM

LOCATION.--Lat 36°51'12", long 106°40'18", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, on left bank at south portal, 0.2 mi (0.3 km) upstream from Azotea Creek, and 6.2 mi (10.0 km) southwest of Chama.

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 7,519.87 ft (2,292.056 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Records represent regulated diversions from Rio Blanco, Little Navajo River, and Navajo River in San Juan River Basin.

COOPERATION.--Records furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--8 years, 116 ft<sup>3</sup>/s (3.285 m<sup>3</sup>/s), 84,040 acre-ft/yr (104 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,170 ft<sup>3</sup>/s (33.1 m<sup>3</sup>/s) May 17, 1978, gage height, 7.85 ft (2.393 m); no flow many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft<sup>3</sup>/s (33.1 m<sup>3</sup>/s) May 17, gage height, 7.85 ft (2.393 m); minimum daily, 0.23 ft<sup>3</sup>/s (0.007 m<sup>3</sup>/s) many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	.84	.99	1.5	.99	1.3	421	276	869	407	12	.23
2	5.9	.84	.99	1.5	.99	1.3	243	216	881	342	8.2	.23
3	5.7	.84	.99	1.5	.99	1.3	190	173	902	302	4.9	.23
4	3.2	.84	.99	1.5	.99	1.3	182	163	918	255	3.9	.23
5	2.1	.84	.99	1.5	.99	1.3	193	132	844	223	1.1	.23
6	18	.84	.99	1.5	.99	1.3	169	112	786	192	.23	.23
7	174	.69	.99	1.5	.99	1.3	254	87	653	163	.23	.23
8	67	.56	.99	1.5	.99	1.3	347	87	708	152	.23	.23
9	41	.44	.99	1.5	.99	1.3	335	117	756	160	.23	.23
10	30	1.8	.99	1.5	.99	1.3	246	162	905	161	.23	.23
11	21	1.2	.99	1.5	.99	1.3	236	190	928	155	.23	.23
12	14	1.2	.99	1.5	.99	1.3	372	280	870	148	1.3	.23
13	12	1.2	.99	1.5	.99	1.3	401	444	923	118	1.9	.23
14	9.0	1.2	.99	1.5	.99	1.3	347	590	993	99	.33	.23
15	6.0	1.2	.99	1.5	.99	1.3	296	742	979	90	.23	.23
16	6.9	1.2	.99	1.5	.99	1.3	317	792	977	88	.23	.23
17	7.3	1.2	.99	1.5	.99	1.3	311	917	818	79	.23	.23
18	3.0	1.2	.99	1.5	.99	1.3	217	606	748	66	.23	.23
19	1.8	1.2	.99	1.5	.99	1.3	273	624	737	58	.23	.23
20	.69	1.2	.99	1.5	.99	3.0	315	720	730	54	.23	.23
21	.69	1.2	.99	1.5	.99	30	354	736	651	64	.23	.23
22	.69	1.2	.99	1.5	.99	47	335	677	670	42	.23	.23
23	.69	1.2	.99	1.5	.99	34	304	829	648	22	.23	.23
24	.69	1.2	.99	1.5	.99	27	383	793	630	19	.23	.23
25	.69	1.2	.99	1.5	.99	22	461	788	613	13	.23	.23
26	.69	1.2	.99	1.5	.99	30	495	719	525	12	.23	13
27	.69	1.2	.99	1.5	.99	54	534	698	442	10	.23	.69
28	.69	1.2	.99	1.5	.99	92	434	650	394	3.0	.23	.23
29	.69	1.2	.99	1.5	---	120	406	654	510	8.3	.23	.23
30	.69	1.2	.99	1.5	---	193	385	719	518	8.7	.23	.23
31	.69	---	.99	1.5	---	315	---	828	---	16	.23	---
TOTAL	441.88	32.53	30.69	46.5	27.72	991.7	9756	15521	22526	3530.0	38.92	20.13
MEAN	14.3	1.08	.99	1.50	.99	32.0	325	501	751	114	1.26	.67
MAX	174	1.8	.99	1.5	.99	315	534	917	993	407	12	13
MIN	.69	.44	.99	1.5	.99	1.3	169	87	394	3.0	.23	.23
AC-FT	876	65	61	92	55	1970	19350	30790	44680	7000	77	40
CAL YR 1977	TOTAL	9777.66	MEAN	26.8	MAX	326	MIN	.14	AC-FT	19390		
WTR YR 1978	TOTAL	52963.07	MEAN	145	MAX	993	MIN	.23	AC-FT	105100		

## 08284200 WILLOW CREEK ABOVE HERON RESERVOIR, NEAR LOS OJOS, NM

LOCATION.--Lat 36°44'33", long 106°37'34", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, on right bank 200 ft (61 m) downstream from bridge, 0.2 mi (0.3 km) downstream from Iron Spring Creek, 3.3 mi (5.3 km) west of Los Ojos, and at mile 9.7 (15.6 km).

DRAINAGE AREA.--112 mi<sup>2</sup> (290 km<sup>2</sup>).

PERIOD OF RECORD.--October and November 1962 (monthly discharge only), December 1962 to current year. Published as "near Park View" prior to 1976.

GAGE.--Water-stage recorder. Concrete control since June 6, 1963. Datum of gage is 7,196.29 ft (2,193.429 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Apr. 1, 1971, at site 900 ft (270 m) downstream at lower datum.

REMARKS.--Records represent inflow to Heron Reservoir and since Nov. 17, 1970, include San Juan River water imported through Azotea tunnel (station 08284160).

COOPERATION.--Records furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--8 years (water years 1963-70), 10.5 ft<sup>3</sup>/s (0.297 m<sup>3</sup>/s), 7,610 acre-ft/yr (9.38 hm<sup>3</sup>/yr), prior to completion of Azotea tunnel; 8 years (water years 1971-78), 125 ft<sup>3</sup>/s (3.540 m<sup>3</sup>/s), 90,560 acre-ft/yr (112 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,600 ft<sup>3</sup>/s (45.3 m<sup>3</sup>/s) Aug. 11, 1967, gage height, 3.88 ft (1.182 m), site and datum then in use, prior to completion of Azotea tunnel; no flow at times most years prior to 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s) June 14, 16, gage height, 4.85 ft (1.478 m); minimum daily, 0.02 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	.29	.26	.42	.49	1.6	555	268	823	424	12	.28
2	5.8	.26	.29	.32	.49	1.6	333	235	862	363	8.2	.19
3	7.0	.26	.42	.34	.49	1.6	247	182	878	316	5.4	.11
4	5.0	.26	.49	.38	.49	1.6	222	176	905	271	3.6	.08
5	3.7	.26	.40	.42	.49	1.6	255	141	830	239	2.8	.05
6	3.2	.32	.30	.45	.49	2.5	192	127	783	198	1.5	.04
7	167	1.9	.63	.40	.49	4.2	255	108	662	162	1.1	.06
8	90	3.1	.45	.34	.49	6.2	348	103	678	153	.96	.05
9	51	1.2	.34	.32	.49	9.0	344	141	726	158	1.1	.02
10	38	.49	.30	.38	.49	8.4	265	219	885	162	1.5	.03
11	27	1.5	.32	.45	.49	7.4	218	196	927	157	1.5	.04
12	16	.84	.32	.42	.49	6.6	347	251	852	150	1.4	.14
13	13	.29	.38	.40	.49	6.6	404	392	900	120	2.4	.52
14	9.5	.19	.36	.29	.49	6.2	352	580	1020	103	1.7	.56
15	7.4	.12	.42	.34	.49	4.8	294	699	982	93	1.1	.56
16	4.6	.11	.45	.38	1.0	3.6	302	740	1010	93	.59	.52
17	7.0	.09	.21	.42	1.0	4.9	316	905	860	82	.30	.88
18	4.3	.11	.42	.45	1.0	10	214	625	762	70	.23	1.2
19	1.8	.42	.42	.45	1.0	28	251	609	728	60	.36	1.6
20	1.2	.45	.21	.45	1.0	61	288	658	750	55	.59	1.8
21	.88	.42	.11	.45	1.0	132	323	735	660	65	.63	1.7
22	.67	.45	.19	.42	1.0	152	314	635	685	45	.45	1.7
23	.56	.38	.32	.42	1.0	178	279	797	664	24	.56	1.8
24	.49	.42	.56	.45	1.0	188	331	780	645	19	.76	1.9
25	.40	.45	.36	.38	1.0	184	418	785	638	13	.42	2.1
26	.38	.52	.27	.36	1.6	212	450	703	554	10	.38	7.6
27	.36	.56	.29	.42	1.6	240	515	699	460	9.0	.30	5.6
28	.34	.59	.34	.40	1.6	214	426	650	384	4.6	.19	3.2
29	.32	.42	.42	.40	---	267	379	580	430	2.2	.12	2.6
30	.38	.32	.52	.42	---	348	364	685	550	7.0	.12	2.4
31	.42	---	.52	.45	---	437	---	752	---	10	.18	---
TOTAL	476.30	16.99	11.29	12.39	22.15	2729.4	9801	15156	22493	3637.8	52.44	39.33
MEAN	15.4	.57	.36	.40	.79	88.0	327	489	750	117	1.69	1.31
MAX	167	3.1	.63	.45	1.6	437	555	905	1020	424	12	7.6
MIN	.32	.09	.11	.29	.49	1.6	192	103	384	2.2	.12	.02
AC-FT	945	34	22	25	44	5410	19440	30060	44610	7220	104	78

CAL YR 1977 TOTAL 10100.27 MEAN 27.7 MAX 357 MIN .03 AC-FT 20030  
WTR YR 1978 TOTAL 54448.09 MEAN 149 MAX 1020 MIN .02 AC-FT 108000

## 08284300 HORSE LAKE CREEK ABOVE HERON RESERVOIR, NEAR LOS OJOS, NM

LOCATION.--Lat 36°42'24", long 106°44'42", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, on right bank 3.7 mi (6.0 km) northwest of Heron Dam, 7.8 mi (12.6 km) downstream from Horse Lake, and 9.9 mi (15.9 km) west of Los Ojos.

DRAINAGE AREA.--45 mi<sup>2</sup> (120 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October and November 1962 (monthly discharge only), December 1962 to current year. No winter records subsequent to 1973. Published as "near Park View" prior to 1976.

GAGE.--Water-stage recorder. Concrete control since June 10, 1963. Datum of gage is 7,188.85 ft (2,191.161 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to July 1, 1971, at site 1,100 ft (340 m) upstream at higher datums.

REMARKS.--Diversions above station for irrigation of meadows and for off-channel stock tanks.

COOPERATION.--Records furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--11 years (water years 1963-73), 1.10 ft<sup>3</sup>/s (0.031 m<sup>3</sup>/s), 797 acre-ft/yr (983,000 m<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,960 ft<sup>3</sup>/s (112 m<sup>3</sup>/s) July 30, 1968, gage height, 4.9 ft (1.49 m), site and datum then in use, from rating curve extended above 37 ft<sup>3</sup>/s (1.05 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 3.20 ft (0.975 m) and 4.9 ft (1.49 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 74 ft<sup>3</sup>/s (2.10 m<sup>3</sup>/s) May 8, gage height, 2.27 ft (0.692 m), no peak above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00						15	.00	.00	.00	.00	.00
2	.00						10	.06	.00	.00	.00	.00
3	.00						5.0	.42	.00	.00	.00	.00
4	.00						1.3	.24	.00	.00	.00	.00
5	.00						1.1	.93	.00	.00	.00	.00
6	.00						.68	3.6	.00	.00	.00	.00
7	.00						.48	7.3	.00	.00	.00	.00
8	.00						.30	19	.00	.00	.00	.00
9	.00						.30	4.6	.00	.00	.00	.00
10	.00						.24	1.9	.00	.00	.00	.00
11	.00						.11	.92	.00	.00	.00	.00
12	.00						.05	.39	.00	.00	.00	.00
13	.00						.03	.20	.00	.00	.00	.00
14	.00						.02	.09	.00	.00	.00	.00
15	.00						.02	.05	.00	.00	.00	.00
16	.00						.01	.04	.00	.00	.00	.00
17	.00						.01	.03	.00	.00	.00	.00
18	.00						.01	.02	.00	.00	.00	.00
19	.00						.01	.02	.00	.00	.00	.00
20	.00						.00	.02	.00	.00	.00	.00
21	.00						.00	.03	.00	.00	.00	.00
22	.00						.00	.04	.00	.00	.00	.00
23	.00						.00	.02	.00	.00	.00	.00
24	.00						.00	.00	.00	.00	.00	.00
25	.00						.00	.00	.00	.00	.00	.00
26	.00						.00	.00	.00	.00	.00	.00
27	.00						.00	.00	.00	.00	.00	.00
28	.00						.00	.00	.00	.00	.00	.00
29	.00						.00	.00	.00	.00	.00	.00
30	.00						.00	.00	.00	.00	.00	.00
31	.00						---	.00	---	.00	.00	---
TOTAL	.00	---	---	---	---	---	34.67	39.92	.00	.00	.00	.00
MEAN	.000	---	---	---	---	---	1.16	1.29	.000	.000	.000	.000
MAX	.00	---	---	---	---	---	15	19	.00	.00	.00	.00
MIN	.00	---	---	---	---	---	.00	.00	.00	.00	.00	.00
AC=FT	.00	---	---	---	---	---	69	79	.00	.00	.00	.00



## 08284510 HERON RESERVOIR NEAR LOS OJOS, NM

LOCATION.--Lat 36°39'56", long 106°42'13", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, at Heron Dam on Willow Creek, 0.2 mi (0.3 km) upstream from Rio Chama, 5.1 mi (8.2 km) northeast of El Vado Dam, and 8.7 mi (14.0 km) southwest of Los Ojos.

DRAINAGE AREA.--193 mi<sup>2</sup> (500 km<sup>2</sup>).

PERIOD OF RECORD.--October 1970 to current year. Published as "near Park View" prior to 1976.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Mar. 24, 1971, nonrecording gage.

REMARKS.--Reservoir is formed by earthfill dam; storage began Oct. 21, 1970. Total capacity 401,300 acre-ft (495 hm<sup>3</sup>) at elevation 7,186.1 ft (2,190.32 m), low point on crest of uncontrolled spillway, including 1,340 acre-ft (1.65 hm<sup>3</sup>) of dead storage at elevation 7,003.0 ft (2,134.51 m), invert of gate sill of outlet tunnel. Reservoir is used for storage of transmountain water from San Juan River basin and for recreation. Figures given herein represent total storage.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 252,800 acre-ft (312 hm<sup>3</sup>) Sept. 12, 1975, elevation, 7,157.59 ft (2,181.633 m); no storage prior to Oct. 21, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 191,600 acre-ft (236 hm<sup>3</sup>) July 18-26; maximum elevation, 7,142.97 ft (2,177.177 m) July 21-22; minimum contents, 113,600 acre-ft (140 hm<sup>3</sup>) Dec. 20-29, Jan. 3-4, elevation, 7,118.93 ft (2,169.850 m).

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Bureau of Reclamation in 1971)

7,110	91,930	7,140	180,400
7,120	116,500	7,150	219,800
7,130	146,000		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133600	127700	127000	113700	114200	114700	116600	131500	161800	187000	191300	189100
2	133600	127700	127000	113700	114200	114900	117000	132100	163500	187700	191200	189100
3	133500	127700	127000	113600	114200	115200	117200	132400	165200	188200	191100	189000
4	132900	127700	126900	113600	114200	115300	117100	132700	167000	188600	191000	189000
5	132000	127600	126900	113700	114200	115400	117300	133200	167700	188900	190900	188900
6	131200	127700	126900	113700	114200	115500	117700	133600	170200	189300	190800	188800
7	131100	127900	126900	113700	114200	115600	118200	133900	171500	189500	190700	188800
8	131200	127800	126100	113700	114300	115600	118900	134100	172800	189800	190600	188700
9	131200	127800	124700	113700	114300	115700	119600	134200	174200	190100	190600	188600
10	131200	127800	123400	113700	114300	115800	120100	134400	175900	190400	190600	188500
11	131200	127800	122100	113700	114400	115800	120300	134700	177700	190600	190600	188500
12	131100	127800	120700	113700	114400	115700	120800	135000	179400	190900	190600	188300
13	131000	127700	120200	113700	114400	115600	121600	135800	181200	191100	190500	188300
14	131000	127700	119500	113700	114400	115500	122400	136900	183100	191200	190400	188200
15	131000	127500	118200	113800	114400	115200	122900	138300	185000	191300	190200	188100
16	131000	127300	116800	113900	114500	115100	123500	139800	186700	191400	190100	188000
17	130800	127300	115500	114000	114500	115000	124000	141600	187500	191500	190100	188100
18	130600	127300	114200	114000	114500	115200	124200	142700	188000	191600	190000	188000
19	130500	127300	113700	114000	114500	115300	124500	143900	188500	191600	189800	187900
20	130100	127200	113600	114000	114500	115500	125000	145300	188400	191600	189800	187900
21	129300	127200	113600	114000	114500	115900	125600	146800	188000	191600	189700	187700
22	128400	127200	113600	114000	114500	115800	126200	148000	187500	191600	189600	187300
23	128100	127200	113600	114000	114500	115500	126800	149400	187100	191600	189600	186500
24	128100	127200	113600	114000	114500	115400	127500	150900	186500	191600	189600	185800
25	128100	127200	113600	114000	114500	115500	128300	152300	185900	191600	189500	185500
26	128000	127100	113600	114000	114500	115600	129000	153700	185200	191600	189500	185500
27	127900	127100	113600	114000	114500	115500	129300	155000	184300	191500	189400	185400
28	127800	127100	113600	114000	114500	115100	129300	156200	184200	191500	189300	185300
29	127800	127100	113600	114000	---	114800	130100	157300	185200	191500	189300	185200
30	127800	127100	113700	114000	---	114900	131000	158700	186200	191400	189200	185100
31	127700	---	113700	114100	---	115700	---	160100	---	191400	189200	---
MAX	133600	127900	127000	114100	114500	115900	131000	160100	188500	191600	191300	189100
MIN	127700	127100	113600	113600	114200	114700	116600	131500	161800	187000	189200	185100
(†)	7124.00	7123.77	7118.95	7119.12	7119.27	7119.70	7125.10	7134.29	7141.55	7142.90	7142.33	7141.26
(‡)	-5900	-600	-13400	+400	+400	+1200	+15300	+29100	+26100	+5200	-2200	-4100
CAL YR 1977	MAX	165700	MIN	113600	‡	-46200						
WTR YR 1978	MAX	191600	MIN	113600	‡	+51500						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

## 08284520 WILLOW CREEK BELOW HERON DAM, NM

LOCATION.--Lat 36°39'56", long 106°42'13", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, in outlet conduits of Heron Dam, 0.2 mi (0.3 km) upstream from Rio Chama, 5.1 mi (8.2 km) northeast of El Vado Dam, and 8.7 mi (14.0 km) southwest of Los Ojos.

DRAINAGE AREA.--193 mi<sup>2</sup> (500 km<sup>2</sup>).

PERIOD OF RECORD.--January 1971 to current year.

GAGE.--Totalizing flowmeters in each of two outlet conduits in Heron Dam.

REMARKS.--Flow regulated by Heron Reservoir (station 08284510) since Oct. 21, 1970. Outlet conduits are 14-in (0.356 m) and 120-in (3.048 m) in diameter.

COOPERATION.--Records furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--7 years, 97.0 ft<sup>3</sup>/s (2.747 m<sup>3</sup>/s), 70,280 acre-ft/yr (86.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,220 ft<sup>3</sup>/s (62.9 m<sup>3</sup>/s) Dec. 12, 1973; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,100 ft<sup>3</sup>/s (31.2 m<sup>3</sup>/s) Dec. 15-21; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	181	9.3	.00	.00	29	7.2
2	.00	.00	.00	.00	.00	.00	181	20	.00	.00	34	7.2
3	.00	.00	.00	.00	.00	.00	181	20	.00	.00	20	7.2
4	316	.00	.00	.00	.00	.00	264	10	.00	.00	8.6	7.2
5	443	.00	.00	.00	.00	.00	133	.00	.00	.00	6.7	11
6	477	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.9	5.1
7	201	.00	.00	.00	.00	.00	6.4	.00	.00	.00	3.8	.00
8	5.1	.00	397	.00	.00	.00	12	46	.00	.00	.00	.00
9	5.1	.00	657	.00	.00	.00	12	99	.00	.00	.00	.00
10	5.1	.00	657	.00	.00	24	28	99	.00	7.3	.00	.00
11	2.2	.00	657	.00	.00	43	136	99	.00	15	1.5	.00
12	34	.00	657	.00	.00	43	82	50	.00	21	5.7	2.7
13	26	.00	249	.00	.00	74	.00	.00	.00	21	9.0	7.2
14	.00	.00	383	.00	.00	97	12	.00	.00	15	10	7.2
15	.00	102	653	.00	.00	97	20	.00	.00	15	4.2	7.2
16	.00	64	657	.00	.00	77	20	.00	143	15	.00	7.2
17	53	.00	657	.00	.00	26	33	.00	444	16	2.7	7.2
18	93	.00	636	.00	.00	.00	123	.00	467	16	6.5	7.3
19	48	.00	249	.00	.00	.00	97	.00	537	6.7	6.5	7.3
20	178	.00	15	.00	.00	.00	19	.00	712	3.8	6.5	7.3
21	402	.00	.00	.00	.00	50	.00	.00	836	3.4	2.7	7.3
22	412	.00	.00	.00	.00	354	.00	68	860	.00	.00	233
23	154	.00	.00	.00	.00	490	.00	78	861	.00	.00	408
24	.00	.00	.00	.00	.00	303	.00	.00	861	.00	.00	409
25	.00	.00	.00	.00	.00	229	76	.00	861	.00	.00	162
26	39	.00	.00	.00	.00	229	50	.00	862	.00	.00	6.0
27	23	.00	.00	.00	.00	375	422	.00	863	.00	.00	32
28	.00	.00	.00	.00	.00	500	403	.00	324	1.9	4.1	26
29	.00	.00	.00	.00	---	510	.00	.00	.00	5.2	8.9	5.1
30	.00	.00	.00	.00	---	351	.00	.00	.00	5.2	7.2	.00
31	.00	---	.00	.00	---	141	---	.00	---	14	7.2	---
TOTAL	2916.50	166.00	6524.00	.00	.00	4013.00	2491.40	598.30	8631.00	181.50	191.70	1393.90
MEAN	94.1	5.53	210	.000	.000	129	83.0	19.3	288	5.85	6.18	46.5
MAX	477	102	657	.00	.00	510	422	99	863	21	34	409
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	5780	329	12940	.00	.00	7960	4940	1190	17120	360	380	2760
CAL YR 1977 TOTAL	30197.80			MEAN 82.7	MAX 821	MIN .00	AC=FT 59900					
WTR YR 1978 TOTAL	27107.30			MEAN 74.3	MAX 863	MIN .00	AC=FT 53770					

## 08285000 EL VADO RESERVOIR NEAR TIERRA AMARILLA, NM

LOCATION.--Lat 36°35'39", long 106°44'00", Rio Arriba County, Hydrologic Unit 13020102, Tierra Amarilla Grant, at outlet tower of dam on Rio Chama, at village of El Vado, 12.4 mi (20.0 km) southwest of Tierra Amarilla, and at mile 77.7 (125.0 km).

DRAINAGE AREA.--873 mi<sup>2</sup> (2,261 km<sup>2</sup>), of which about 100 mi<sup>2</sup> (260 km<sup>2</sup>) probably is noncontributing.

PERIOD OF RECORD.--January 1935 to September 1965 (monthend contents only), October 1965 to current year. Prior to October 1967, contents at about 0730 hrs.

GAGE.--Water-stage recorder. Prior to October 1967, nonrecording gage only below gage height 6,879.3 ft (2,096.81 m). Datum of gage is 8.21 ft (2.502 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by rockfill dam, steel faced. Storage began in January 1935. Capacity 196,500 acre-ft (242 hm<sup>3</sup>) between gage heights 6,759.0 ft (2,060.14 m) and 6,902.0 ft (2,103.73 m), top of spillway gate. Dead storage, 1,060 acre-ft (1.31 hm<sup>3</sup>) below 6,775.0 ft (2,065.02 m), sill of outlet works. Figures given herein represent total contents. Reservoir is used to impound water for irrigation by Middle Rio Grande Conservancy District and, since December 1972, for storage of contract water from San Juan-Chama Project. Rehabilitation of outlet works, completed in December 1966, increased valve-controlled release from about 1,750 ft<sup>3</sup>/s (50 m<sup>3</sup>/s) to about 6,000 ft<sup>3</sup>/s (170 m<sup>3</sup>/s).

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 204,900 acre-ft (253 hm<sup>3</sup>), of which 7,400 acre-ft (9.12 hm<sup>3</sup>) was uncontrolled storage, June 4, 5, 1948, gage height, 6,904.2 ft (2,104.40 m); no storage at times prior to December 1966.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 84,580 acre-ft (104 hm<sup>3</sup>) June 10, gage height 6,858.8 ft (2,090.56 m); minimum, 19,670 acre-ft (24.3 hm<sup>3</sup>) Nov. 15, gage height, 6,809.9 ft (2,075.66 m).

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on survey by Bureau of Reclamation in 1966)

6,808	18,090
6,810	19,730
6,820	29,110
6,840	53,770
6,860	86,770

CONTENTS, IN ACRE-Feet, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22600	19710	19700	26440	27550	28840	47290	83640	83970	84430	66610	38240
2	21630	19710	19720	26440	27570	29020	48680	83530	84290	84310	64760	36240
3	20700	19710	19750	26450	27590	29340	50060	83390	84340	84200	62810	34540
4	20340	19710	19800	26490	27620	29510	51080	83570	84520	84160	60810	33530
5	20270	19720	19840	26530	27650	29740	51920	83600	84500	84100	58920	33100
6	20260	19770	19860	26570	27700	29880	52620	83550	84340	84080	56980	33100
7	20200	19860	19870	26600	27750	30040	53520	83350	84200	84100	55640	33110
8	20270	19820	19920	26600	27820	30190	54830	83640	84250	84160	54640	33050
9	20340	19730	19880	26630	27850	30370	56200	83620	84360	84180	53640	33040
10	20380	19700	19840	26670	27910	30580	57340	83180	84580	84180	53270	33020
11	20370	19700	19790	26710	27970	30840	58380	83370	84540	84180	53260	32580
12	20310	19730	19720	26740	28000	31100	59740	83700	84360	83850	53240	31500
13	20260	19750	19750	26770	28040	31370	61300	83860	84290	82960	53200	30460
14	20240	19730	20460	26780	28050	31700	62750	84160	84250	81870	53140	29430
15	20230	19670	21800	26920	28120	32000	64020	83880	84230	80500	53120	28550
16	20200	19690	23130	26950	28160	32260	65560	83970	84180	79180	52290	27750
17	20170	19720	24410	27000	28200	32450	67270	84080	83950	77800	50320	26950
18	20170	19710	25780	27040	28230	32590	68520	84100	83920	76340	48300	26180
19	20180	19690	26180	27080	28250	32780	69770	84520	84160	74630	46270	25380
20	20090	19690	26150	27120	28280	33110	71110	84560	84360	72550	45420	24470
21	19940	19680	26150	27150	28300	33540	72600	84200	84340	71010	45400	23600
22	19820	19680	26160	27200	28330	34540	73850	84180	84270	69970	45390	23330
23	19760	19700	26190	27230	28380	35800	74970	84450	84160	68930	45380	23300
24	19750	19720	26230	27240	28420	36870	76420	84140	84030	67910	45380	23290
25	19740	19750	26240	27280	28460	37800	78310	84270	84100	67400	45380	23260
26	19750	19760	26260	27290	28510	38710	80140	84450	84270	67370	45350	23260
27	19760	19770	26290	27340	28570	39980	82220	84400	84360	67330	45310	23300
28	19730	19750	26320	27370	28650	41480	83370	84310	84200	67320	44400	23340
29	19720	19710	26360	27390	---	42980	83490	84430	84360	67300	42430	23340
30	19710	19720	26400	27410	---	44400	83460	84410	84470	67270	40790	23310
31	19720	---	26430	27520	---	45570	---	84030	---	67250	39820	---
MAX	22600	19860	26430	27520	28650	45570	83490	84560	84580	84430	66610	38240
MIN	19710	19670	19700	26440	27550	28840	47290	83180	83920	67250	39820	23260
(†)	6810.0	6810.0	6817.3	6818.4	6819.6	6834.0	6858.2	6858.5	6858.8	6848.8	6829.5	6814.1
(‡)	-3840	0	+6710	+1090	+1130	+16920	+37890	+570	+440	-17220	-27430	-16510
CAL YR 1977	MAX	126800	MIN	19670	‡	-83170						
WTR YR 1978	MAX	84580	MIN	19670	‡	-250						

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

LOCATION:--Lat 36°34'48", long 106°43'24", Rio Arriba County, Hydrologic Unit 13020102, in Tierra Amarilla Grant, on left bank 1.5 mi (2.4 km) downstream from El Vado Dam, 2.8 mi (4.5 km) upstream from Rio Nutrias, 13 mi (21 km) southwest of Tierra Amarilla, and at mile 76.2 (122.6 km).

PERIOD OF RECORD.--October 1913 to November 1915, April to November 1916, March, April 1920, September 1920 to August 1924, October 1935 to current year. Monthly discharge only for some periods, published in WSP 1312. Published as "Chama River" prior to 1935, as "near Tierra Amarilla" 1913-14, 1935-47, as "near El Vado" 1915-16, and as "at El Vado" 1920-24.

GAGE.--Water-stage recorder. Datum of gage is 6,696.12 ft (2,040.977 m) National Geodetic Vertical Datum of 1929. Prior to October 1935, at site 1.5 mi (2.4 km) upstream at different datum. October 1935 to September 1938 at site 1.1 mi (1.8 km) upstream at datum 30.34 ft (9.248 m) higher.

AVERAGE DISCHARGE.—5 years (water years 1914-15, 1921-23) 448 ft<sup>3</sup>/s (12.69 m<sup>3</sup>/s), 324,600 acre-ft/yr (400 hm<sup>3</sup>/yr), prior to completion of El Vado Dam; 35 years (water years 1936-70), 373 ft<sup>3</sup>/s (10.56 m<sup>3</sup>/s), 270,200 acre-ft/yr (333 hm<sup>3</sup>/yr), prior to release of transmontain water; 8 years (water years 1971-78), 346 ft<sup>3</sup>/s (9.799 m<sup>3</sup>/s), 250,700 acre-ft/yr (309 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 9,000 ft<sup>3</sup>/s (255 m<sup>3</sup>/s) May 22, 1920, gage height, 12 ft (3.7 m), site and datum then in use, from rating curve extended above 3,500 ft<sup>3</sup>/s (9 m<sup>3</sup>/s); no flow Mar. 25, 26, 31, 1955. Maximum discharge since construction of El Vado Dam in 1935, 6,010 ft<sup>3</sup>/s (170 m<sup>3</sup>/s) May 17, 1941, gage height, 6.89 ft (2.10 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 4 or 5, 1911, was greater than floods in September 1904 and May 1920, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,380 ft<sup>3</sup>/s (95.7 m<sup>3</sup>/s) May 16, gage height, 5.70 ft (1.737 m); minimum, 14 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) Sept. 7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	491	26	26	24	25	28	29	1050	1680	224	362	776
2	491	26	22	24	25	28	29	1130	1390	228	992	1020
3	486	26	22	23	25	33	29	916	1310	184	1010	861
4	480	26	20	23	25	29	157	739	1180	130	1010	497
5	491	26	22	23	25	31	196	741	1140	116	1000	239
6	497	26	24	23	25	29	28	717	1150	78	989	24
7	298	52	24	23	25	28	29	708	1020	54	711	26
8	37	86	333	23	25	28	27	472	803	51	507	29
9	35	86	686	23	25	28	27	793	675	52	515	15
10	34	58	686	23	25	26	27	1170	658	73	242	15
11	54	37	686	23	25	27	72	928	778	111	30	194
12	109	37	686	23	25	26	77	1090	768	255	43	509
13	103	37	325	23	25	26	27	1440	721	505	49	509
14	56	54	30	23	25	26	27	1970	674	612	46	509
15	52	139	29	23	25	26	27	2970	638	738	36	461
16	52	114	26	23	25	26	26	3340	737	735	382	403
17	93	30	22	23	25	27	26	3240	1040	725	998	395
18	133	38	22	23	25	29	92	2310	894	718	1020	395
19	97	42	45	24	25	29	103	2140	786	894	1020	395
20	199	43	45	25	25	29	29	2480	970	1060	502	452
21	474	40	18	25	25	29	114	2740	1180	806	24	433
22	474	30	16	25	25	76	188	2610	1190	535	20	337
23	244	24	18	25	25	122	188	2710	1180	533	20	420
24	45	24	18	25	25	76	188	2730	1160	540	20	417
25	34	29	18	25	25	29	254	2360	1040	298	20	240
26	55	34	18	25	25	29	506	2050	979	40	20	31
27	65	33	20	25	25	29	1030	2060	983	38	20	34
28	34	51	24	25	25	26	1270	1900	622	35	437	29
29	31	53	24	25	---	27	1380	1650	193	36	1030	29
30	31	29	24	25	---	29	1510	1760	223	37	861	30
31	30	---	24	25	---	29	---	1920	---	42	497	---
TOTAL	5807	1356	4003	740	700	1060	7712	54834	27762	10483	14433	9724
MEAN	187	45.2	129	23.9	25.0	34.2	257	1769	925	338	466	324
MAX	497	139	686	25	25	122	1510	3340	1680	1060	1030	1020
MIN	30	24	16	23	25	26	26	472	193	35	20	15
AC=FT	11520	2690	7940	1470	1390	2100	15300	108800	55070	20790	28630	19290
CAL YR 1977	TOTAL	93926	MEAN 257	MAX 1420	MIN 16	AC=FT 186300						
WTR YR 1978	TOTAL	138614	MEAN 380	MAX 3340	MIN 15	AC=FT 274900						

## 08286500 RIO CHAMA ABOVE ABIQUIU RESERVOIR, NM

LOCATION.--Lat 36°19'06", long 106°35'50", Rio Arriba County, Hydrologic Unit 13020102, on left bank 40 ft (12 m) downstream from site of former bridge, 7.7 mi (12.4 km) downstream from Rio Gallina, 9 mi (14 km) northwest of Youngsville, 15.6 mi (25.1 km) upstream from Abiquiu Dam, 30.3 mi (48.8 km) downstream from El Vado Dam, and at mile 47.4 (76.3 km).

DRAINAGE AREA.--1,600 mi<sup>2</sup> (4,144 km<sup>2</sup>), of which about 100 mi<sup>2</sup> (260 km<sup>2</sup>) is probably noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,275 ft (1,913 m), from topographic map.

REMARKS.--Water-discharge records good. Flow regulated by El Vado Reservoir (station 08285000). Since May 1971 flow affected by release of transmountain water from Heron Reservoir (station 08284510). Diversions for irrigation of about 15,000 acres (61 km<sup>2</sup>) above station.

AVERAGE DISCHARGE.--9 years (water years 1962-70), 358 ft<sup>3</sup>/s (10.14 m<sup>3</sup>/s), 259,400 acre-ft/yr (320 hm<sup>3</sup>/yr), prior to release of transmountain water; 8 years (water years 1971-78), 369 ft<sup>3</sup>/s (10.45 m<sup>3</sup>/s), 267,300 acre-ft/yr (330 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,550 ft<sup>3</sup>/s (185 m<sup>3</sup>/s) May 20, 1973, gage height, 8.70 ft (2.652 m); minimum 7.5 ft<sup>3</sup>/s (0.21 m<sup>3</sup>/s) Oct. 17, 18, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Major floods probably occurred on Sept. 29, 1904, Oct. 4 or 5, 1911, and May 22, 1920.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,300 ft<sup>3</sup>/s (93.5 m<sup>3</sup>/s) May 17, gage height, 6.41 ft (1.954 m); minimum, about 11 ft<sup>3</sup>/s (0.31 m<sup>3</sup>/s) Jan. 8, 13, Feb. 4, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	472	37	41	29	35	70	144	1340	1970	274	49	624
2	468	33	48	24	29	228	144	963	1600	269	835	1000
3	468	33	30	23	27	232	120	1330	1560	261	976	1000
4	472	33	29	32	28	194	98	702	1390	169	988	533
5	468	33	29	30	29	158	324	909	1320	155	982	468
6	488	35	24	29	33	179	142	796	1300	125	976	90
7	476	99	28	28	32	233	105	853	1260	82	846	48
8	102	121	34	23	32	137	95	750	988	64	508	40
9	51	99	640	32	28	144	90	619	780	60	500	47
10	46	83	669	32	34	132	96	1310	700	60	456	30
11	44	56	679	31	32	74	83	1160	750	81	84	26
12	62	41	679	30	32	77	135	981	870	121	47	391
13	128	40	593	27	30	58	97	1470	810	432	54	508
14	81	39	72	26	31	47	83	1700	780	522	58	508
15	58	58	41	30	29	42	78	2750	676	713	53	492
16	55	182	40	32	30	39	73	3210	671	713	44	405
17	54	71	32	32	32	37	74	3280	1090	713	856	412
18	109	37	32	32	29	71	74	2790	976	713	988	405
19	129	46	30	29	32	110	166	2120	858	763	988	405
20	77	49	25	34	28	96	86	2770	892	1050	836	415
21	389	48	45	31	30	120	61	2750	1230	959	93	500
22	464	45	39	29	28	133	195	3020	1250	537	46	317
23	433	37	35	25	29	230	210	2750	1250	533	36	419
24	78	28	34	24	30	208	210	3000	1240	529	38	429
25	53	30	31	24	30	116	223	2710	1140	499	34	422
26	43	33	34	24	32	84	369	2270	1020	109	32	131
27	65	38	31	35	32	90	843	2270	1020	62	30	49
28	62	40	33	30	33	101	1320	2180	942	71	28	47
29	44	58	34	30	---	90	1270	1950	256	48	976	39
30	40	53	33	30	---	87	1550	1860	277	47	995	38
31	39	---	33	36	---	112	---	2100	---	46	512	---
TOTAL	6018	1635	4177	903	856	3729	8558	58663	30866	10780	13944	10238
MEAN	194	54.5	135	29.1	30.6	120	285	1892	1029	348	450	341
MAX	488	182	679	36	35	233	1550	3280	1970	1050	995	1000
MIN	39	28	24	23	27	37	61	619	256	46	28	26
AC-FT	11940	3240	8290	1790	1700	7400	16970	116400	61220	21380	27660	20310
CAL YR 1977	TOTAL	98552	MEAN 270	MAX 1450	MIN 20	AC-FT 195500						
WTR YR 1978	TOTAL	150367	MEAN 412	MAX 3280	MIN 23	AC-FT 298300						

08286500 RIO CHAMA ABOVE ABIQUIU RESERVOIR, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD RECORD.--Water years 1963 to current year.

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT										
13...	1155	135	485	9.0	143	52	--	--	--	--
26...	1125	46	560	8.0	34	4.2	--	--	--	--
NOV										
04...	1400	34	668	10.0	18	1.7	--	--	--	--
30...	1120	56	470	1.5	64	9.7	--	--	--	--
JAN										
09...	1655	52	718	2.0	64	9.0	--	--	--	--
30...	1350	58	724	2.0	39	6.1	--	--	--	--
FEB										
23...	1445	32	845	1.0	107	9.2	--	--	--	--
MAR										
20...	1320	113	920	5.5	14300	4360	48	59	90	100
APR										
18...	1145	77	574	9.0	467	97	--	--	--	--
MAY										
16...	1430	3300	327	--	2340	20800	--	--	--	--
JUN										
15...	1250	688	--	14.0	36	67	--	--	--	--
JUL										
11...	1330	98	426	19.0	30	7.9	--	--	--	--
AUG										
07...	1300	960	219	16.0	138	358	--	--	--	--
SEP										
06...	1130	70	326	11.0	40	7.6	--	--	--	--

## 08286900 ABIQUIU RESERVOIR NEAR ABIQUIU, NM

LOCATION.--Lat 36°14'24", long 106°25'44", Rio Arriba County, Hydrologic Unit 13020102, in Piedra Lumbre Grant, in operations building at Abiquiu Dam on Rio Chama, 6.6 mi (10.6 km) northwest of Abiquiu, and at mile 32.1 (51.6 km).

DRAINAGE AREA.--2,146 mi<sup>2</sup> (5,558 km<sup>2</sup>), of which about 100 mi<sup>2</sup> (260 km<sup>2</sup>) is probably noncontributing.

PERIOD OF RECORD.--February 1963 to September 1965 (monthend contents only), October 1965 to current year. October 1969 to December 1975, contents at 0800 hours.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam, completed Feb. 5, 1963. Capacity, 1,215,000 acre-ft (1.50 km<sup>3</sup>) between elevations 6,060 ft (1,847 m), invert of outlet tunnel, and 6,350 ft (1,935 m), crest of spillway, based on capacity table effective Jan. 1, 1976. No dead storage. Reservoir is used for flood control and, since March 1976, for recreation. A desilting pool of about 2,000 acre-ft (2.5 hm<sup>3</sup>) was maintained from May 1968 to 1974, when it was increased to 4,000 acre-ft (4.9 hm<sup>3</sup>) and continued until December 1975. A recreation pool of about 25,000 acre-ft (31 hm<sup>3</sup>) has been maintained since March 1976.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 205,300 acre-ft (253 hm<sup>3</sup>) June 22, 1973, elevation, 6,219.93 ft (1,895.835 m); no storage at times prior to May 1968 and Jan. 11 to Mar. 25, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 57,180 acre-ft (70.5 hm<sup>3</sup>) June 1, elevation, 6,172.91 ft (1,881.503 m); minimum, 17,040 acre-ft (21.0 hm<sup>3</sup>) Aug. 28, elevation 6,141.98 ft (1,872.076 m).

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Corps of Engineers in 1976)

6,140	15,520	6,170	51,510
6,150	24,140	6,180	72,610
6,160	35,590		

CONTENTS, IN ACRE-Feet, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22700	19330	19230	19060	19100	19120	19380	19870	57180	31860	21800	17460
2	22660	19200	19190	19030	19070	19310	19290	18840	57030	31180	21540	17620
3	22690	19250	19230	19030	19090	19370	19120	18720	56810	30640	20880	17500
4	22700	19270	19270	19080	19100	19140	19030	18370	56190	29890	20330	17440
5	22710	19290	19280	19030	19120	19070	19150	18470	55610	29180	19960	17670
6	22780	19290	19190	18970	19090	19060	19060	18410	55220	28540	19570	17410
7	22890	19330	19190	18980	19040	18960	19150	18560	55550	27990	19160	17390
8	22790	19170	19100	18990	19050	19020	19190	18760	54320	27530	18670	17360
9	22770	19100	19390	19920	19040	19060	19220	19140	52890	27020	18330	17370
10	22710	19120	19330	19070	19040	19030	19040	21520	52160	26520	17980	17330
11	22690	19200	19290	19090	19120	18930	18890	21880	51470	26150	17640	17280
12	22730	19220	19260	19070	19080	19010	19010	20710	50670	25620	17680	17350
13	22820	19220	19180	19030	19060	19040	18990	20930	49320	25170	17660	17260
14	22750	19220	18940	19030	19020	18980	18860	21660	48200	24720	17640	17250
15	22690	19250	19010	19100	19010	18960	18800	24960	47100	24710	17610	17340
16	22710	19360	18970	19070	19060	18990	18840	30450	45690	24670	17500	17240
17	22700	19280	18980	19050	19060	19050	18800	33350	44640	24660	17980	17210
18	22720	19250	19060	19060	19060	19140	18640	36030	43380	24710	17530	17140
19	22660	19250	19060	19050	19060	19220	18750	36880	41960	24750	17370	17200
20	22600	19210	19030	19100	19060	19160	18790	39130	40590	24850	17460	17210
21	22670	19210	19120	19100	19060	19090	18700	41500	39840	24840	17080	17240
22	22640	19210	19160	19090	19060	19110	18750	44400	39200	24710	17140	17180
23	22600	19220	19200	19060	19070	19270	18800	46660	38540	24760	17120	17220
24	21750	19230	19220	19060	19080	19280	18770	49480	37820	24710	17090	17160
25	20800	19250	19190	19070	19080	19200	18680	51770	36930	24810	17080	17220
26	19860	19270	19160	19100	19100	19160	18490	52720	35850	24630	17080	17180
27	19330	19270	19180	19100	19080	19130	18930	53970	34780	24570	17060	17170
28	19300	19260	19160	19060	19060	19160	19120	55160	34200	24200	17370	17180
29	19260	19280	19140	19020	---	19130	19200	55460	33280	23640	18410	17160
30	19260	19290	19090	19040	---	19120	19800	55790	32710	23950	18740	17140
31	19290	---	19090	19100	---	19240	---	56570	---	22460	17440	---
MAX	22890	19360	19390	19920	19120	19370	19800	56570	57180	31860	21800	17670
MIN	19260	19100	18940	18970	19010	18930	18490	18370	32710	22460	17060	17140
(†)	6144.73	6144.72	6144.49	6144.50	6144.46	6144.67	6145.32	6172.61	6157.78	6148.27	6142.48	6142.10
(‡)	-3490	0	-200	+10	-40	+180	+560	+36770	-23860	-10250	-5020	-300
CAL YR 1977	MAX	26990	MIN	18940	‡	-5990						
WTR YR 1978	MAX	57180	MIN	17060	‡	-5640						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.





08287000 RIO CHAMA BELOW ABIQUIU DAM, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (000061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (000095)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)
OCT							
13...	1430	94	505	16.5	40	10	--
NOV							
30...	1350	70	571	7.5	14	2.6	--
JAN							
09...	1440	23	595	3.0	28	1.7	--
31...	1100	19	592	3.5	23	1.2	--
FEB							
23...	1705	35	606	1.5	30	2.8	--
MAR							
21...	1130	155	740	4.5	20	8.4	--
JUN							
15...	1520	1220	208	15.0	32	105	--
AUG							
07...	1515	1130	281	18.0	184	561	85
SEP							
06...	1430	165	337	20.0	107	48	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)
OCT						
13...	--	--	--	--	--	--
NOV						
30...	--	--	--	--	--	--
JAN						
09...	--	--	--	--	--	--
31...	--	--	--	--	--	--
FEB						
23...	--	--	--	--	--	--
MAR						
21...	--	--	--	--	--	--
JUN						
15...	--	--	--	--	--	--
AUG						
07...	91	93	96	98	99	100
SEP						
06...	--	--	--	--	--	--

## 08289000 RIO OJO CALIENTE AT LA MADERA, NM

LOCATION.--Lat 36°20'59", long 106°02'37", in NW¼NE¼ sec.1, T.24 N., R.8 E., Rio Arriba County, Hydrologic Unit 13020102, on left bank 400 ft (120 m) upstream from bridge on State Highway 96, 2.4 mi (3.9 km) south of La Madera, 2.6 mi (4.2 km) downstream from confluence of Rio Vallecitos and Rio Tusas, 3.1 mi (5.0 km) north of Ojo Caliente, and at mile 19.9 (32.0 km).

DRAINAGE AREA.--419 mi<sup>2</sup> (1,085 km<sup>2</sup>).

PERIOD OF RECORD.--April 1932 to current year.

REVISED RECORDS.--WSP 1712: 1959.

GAGE.--Water-stage recorder. Datum of gage is 6,358.84 ft (1,938.174 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 23, 1934, at site about 2.6 mi (4.2 km) upstream at different datum. Apr. 23, 1934 to Apr. 21, 1936, at datum 12.58 ft (3.834 m) lower and Apr. 22, 1936 to Oct. 26, 1956, at datum 13.84 ft (4.218 m) lower, both at site 1,400 ft (430 m) downstream.

REMARKS.--Records fair except those for May 25 to Aug. 10, which are poor. Diversions above station for irrigation of about 3,500 acres (14 km<sup>2</sup>), 1962 determination. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--46 years, 64.9 ft<sup>3</sup>/s (1.838 m<sup>3</sup>/s), 47,020 acre-ft/yr (58.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,140 ft<sup>3</sup>/s (88.9 m<sup>3</sup>/s) Apr. 21, 1958, gage height, 6.42 ft (1.957 m), from rating curve extended above 1,300 ft<sup>3</sup>/s (37 m<sup>3</sup>/s); maximum gage height, 7.25 ft (2.210 m), from floodmarks, June 19, 1966; minimum discharge 0.2 ft<sup>3</sup>/s (0.006 m<sup>3</sup>/s) Aug. 17, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Apr. 21, 1958, may have been exceeded by a flood in May 1920, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft<sup>3</sup>/s (17 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 16	0130	990 28.0	*5.75 1.753	Aug. 4	1430	*1,030 29.2	5.60 1.707
May 20	2115	845 23.9	5.54 1.689				

Minimum discharge, 3.5 ft<sup>3</sup>/s (0.099 m<sup>3</sup>/s) July 5, 6, 7, Aug. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	8.2	12	15	17	31	109	205	121	15	4.4	4.3
2	7.1	8.3	13	13	16	41	88	175	112	13	4.5	4.2
3	7.4	7.7	14	13	15	35	80	175	100	10	6.0	4.0
4	7.0	8.6	15	15	15	33	80	259	85	8.3	55	4.3
5	6.9	9.7	16	15	16	47	89	179	68	6.4	6.0	4.0
6	7.4	9.6	13	14	17	42	75	158	67	4.0	5.0	4.0
7	7.3	15	12	15	16	37	84	129	67	4.2	5.0	3.9
8	7.2	15	15	13	18	33	102	134	59	4.3	5.5	3.9
9	7.6	12	13	14	15	36	133	162	60	4.8	6.0	4.2
10	7.0	9.6	12	16	19	38	136	264	60	6.0	7.0	4.0
11	6.8	9.7	14	18	20	34	113	355	56	7.1	6.0	3.9
12	6.2	11	14	14	19	33	136	389	49	9.3	6.0	4.0
13	6.2	11	13	14	17	31	164	434	44	8.5	6.0	4.0
14	6.0	11	12	13	18	32	178	534	36	8.1	4.6	4.2
15	5.7	12	14	14	17	26	193	652	27	7.7	4.1	4.3
16	5.7	12	17	16	19	25	225	629	23	7.8	4.5	4.1
17	5.7	12	10	17	19	28	222	514	19	7.4	4.2	4.6
18	5.8	12	13	15	15	31	155	307	14	6.7	4.1	4.9
19	5.6	13	15	16	18	36	157	291	11	6.2	3.8	4.9
20	5.8	13	10	15	17	38	187	408	12	6.5	4.4	4.4
21	7.2	13	10	14	17	47	215	493	12	5.5	4.4	4.6
22	6.6	13	12	13	17	56	201	394	10	4.1	4.2	4.7
23	6.6	13	14	14	19	64	178	352	9.5	4.9	4.5	4.6
24	6.6	13	16	16	19	56	209	296	10	5.5	5.1	5.0
25	6.6	13	14	13	19	53	294	264	10	4.6	7.2	5.3
26	6.6	14	13	14	20	53	359	221	9.1	4.3	4.5	5.5
27	6.8	14	15	16	22	58	427	197	8.1	4.6	4.0	4.9
28	7.0	15	15	16	22	66	356	164	8.5	4.6	3.9	4.9
29	6.8	13	16	15	---	61	324	144	14	4.4	3.9	5.1
30	7.0	13	16	16	---	70	302	139	18	8.7	3.9	4.9
31	7.3	---	16	17	---	83	---	135	---	4.4	4.2	---
TOTAL	206.1	354.4	424	459	498	1354	5571	9152	1199.2	206.9	201.9	133.6
MEAN	6.65	11.8	13.7	14.8	17.8	43.7	186	295	40.0	6.67	6.51	4.45
MAX	7.6	15	17	18	22	83	427	652	121	15	55	5.5
MIN	5.6	7.7	10	13	15	25	75	129	8.1	4.0	3.8	3.9
AC-FT	409	703	841	910	988	2690	11050	18150	2380	410	400	265

CAL YR 1977 TOTAL 4953.9 MEAN 13.6 MAX 132 MIN 2.2 AC-FT 9830  
WTR YR 1978 TOTAL 19760.1 MEAN 54.1 MAX 652 MIN 3.8 AC-FT 39190

## 08290000 RIO CHAMA NEAR CHAMITA, NM

LOCATION.--Lat 36°04'26", long 106°06'40", in NE¼NE¼ sec.8, T.21 N., R.8 E., Rio Arriba County, Hydrologic Unit 13020102, in San Juan Pueblo Grant, at downstream end of pier nearest left bank of bridge on U.S. Highway 285, 0.5 mi (0.8 km) west of Chamita, 2.5 mi (4.0 km) northwest of San Juan Pueblo, and at mile 2.8 (4.5 km).

DRAINAGE AREA.--3,144 mi<sup>2</sup> (8,143 km<sup>2</sup>), of which about 100 mi<sup>2</sup> (260 km<sup>2</sup>) is probably noncontributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1912 to current year. Monthly discharge only for some periods, published WSP 1312. Published as Chama River near Chamita prior to 1928, and Chama River at Chamita 1929-30.

REVISED RECORDS.--WSP 1512: 1913-15, 1934, 1936. WSP 1632: 1929(M). WSP 1732: 1931(M). WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Jan. 1, 1964. Datum of gage is 5,653.61 ft (1,723.220 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 4, 1933, at railroad bridge 2.3 mi (3.7 km) downstream at different datums. Oct. 4, 1933 to Mar. 1, 1942, at site 50 ft (15 m) downstream at datum 0.22 ft (0.067 m) higher. Mar. 2, 1942 to Dec. 31, 1963, at site 200 ft (60 m) downstream, present datum.

REMARKS.--Water-discharge records good. Diversions above station for irrigation of about 27,600 acres (112 km<sup>2</sup>). Chamita ditch, on left bank, and Hernandez ditch, on right bank, bypass gage for irrigation of several hundred acres below station; see tabulation below for monthly diversion during irrigation season. Flow regulated by El Vado Reservoir (station 08285000) and Abiquiu Reservoir (station 08286900), 74.9 mi (120.5 km) and 29.3 mi (47.1 km) upstream respectively. Since May 1971 flow affected by release of transmountain water from Heron Reservoir (station 08284510) 83.0 mi (133.5 km) upstream. National Weather Service gage height telemeter at station.

AVERAGE DISCHARGE.--58 years (water years 1913-70), 541 ft<sup>3</sup>/s (15.32 m<sup>3</sup>/s), 392,000 acre-ft/yr (483 hm<sup>3</sup>/yr), prior to release of transmountain water; 8 years (water years 1971-78), 426 ft<sup>3</sup>/s (12.06 m<sup>3</sup>/s), 308,600 acre-ft/yr (381 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft<sup>3</sup>/s (425 m<sup>3</sup>/s) May 22, 1920, from rating curve extended above 2,300 ft<sup>3</sup>/s (65 m<sup>3</sup>/s); maximum gage height, 10.45 ft (3.185 m) Aug. 22, 1961; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--The floods of Sept. 29, 1904, and Oct. 4 or 5, 1911, probably exceeded 15,000 ft<sup>3</sup>/s (420 m<sup>3</sup>/s). Another major flood occurred in 1884, from newspaper accounts.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,150 ft<sup>3</sup>/s (89.2 m<sup>3</sup>/s) Aug. 4, gage height, 6.25 ft (1.905 m); maximum gage height, 6.65 ft (2.027 m) Aug. 4 (backwater from debris); minimum discharge, 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) Dec. 21 (result of freezeup).

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	465	47	68	76	56	84	241	1630	1700	608	236	552
2	467	37	78	72	69	115	300	1830	1680	580	474	789
3	439	62	57	61	75	232	313	1830	1680	480	1190	1120
4	434	56	50	61	54	311	300	1510	1660	450	1390	784
5	435	42	55	52	54	318	272	1180	1660	427	1010	340
6	449	51	66	96	61	230	445	1320	1550	332	1030	308
7	521	121	53	75	81	236	167	1040	1030	325	1060	100
8	241	277	51	53	93	223	206	1050	1610	235	836	35
9	114	191	182	58	71	187	266	678	1630	252	578	33
10	65	142	671	51	68	175	286	712	1190	245	663	29
11	62	90	701	47	68	184	325	1460	996	275	508	32
12	54	65	716	57	68	173	202	2130	1130	314	111	33
13	44	64	719	67	70	134	292	2090	1380	413	53	368
14	68	71	507	62	74	110	429	2190	1280	645	37	429
15	106	70	97	60	71	108	382	2110	1170	640	40	399
16	54	63	76	63	66	82	395	2130	1160	665	28	374
17	41	163	71	89	65	72	397	2080	1510	637	81	338
18	46	122	69	80	62	60	335	1940	1520	621	1140	365
19	81	71	51	64	62	66	288	1930	1510	609	1110	318
20	138	63	54	68	62	118	286	2000	1500	825	968	315
21	102	63	50	55	63	176	320	2390	1500	1060	575	344
22	438	59	56	57	63	196	360	2140	1490	660	89	401
23	455	56	59	64	63	178	344	2020	1500	431	60	254
24	465	47	65	68	63	241	392	1930	1510	436	63	389
25	473	45	69	55	63	246	510	1900	1500	499	48	404
26	464	44	68	57	64	177	667	1850	1490	271	29	315
27	452	44	70	60	65	167	1070	1790	1480	130	29	113
28	137	59	66	71	71	177	1470	1780	1430	62	27	54
29	97	63	78	75	---	172	1650	1780	873	215	20	42
30	74	56	92	77	---	190	1630	1740	614	239	800	38
31	58	---	88	71	---	186	---	1710	---	242	1150	---
TOTAL	7539	2404	5153	2022	1865	5324	14540	53870	41933	13823	15433	9415
MEAN	243	80.1	166	65.2	66.6	172	485	1738	1398	446	498	314
MAX	521	277	719	96	93	318	1650	2390	1700	1060	1390	1120
MIN	41	37	50	47	54	60	167	678	614	62	20	29
AC-FT	14950	4770	10220	4010	3700	10560	28840	106900	83170	27420	30610	18670
(†)	224	-	-	-	-	-	491	570	947	770	654	534
(‡)	401	-	-	-	-	-	659	757	942	783	878	573
CAL YR 1977 TOTAL	104148		MEAN 285	MAX 1440	MIN 17	AC-FT 206600	† Diversion, in acre-feet, by Chamita ditch.					
WTR YR 1978 TOTAL	173321		MEAN 475	MAX 2390	MIN 20	AC-FT 343800	‡ Diversion, in acre-feet, by Hernandez ditch.					

08290000 RIO CHAMA NEAR CHAMITA, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT								
14...	1505	77	580	16.0	56	12	--	--
26...	1340	461	505	12.5	113	141	--	--
NOV								
30...	1550	64	653	4.0	228	39	--	--
JAN								
05...	1620	57	593	2.0	196	30	--	--
31...	1310	68	592	5.0	90	17	--	--
FEB								
23...	1130	73	625	3.5	101	20	--	--
MAR								
23...	1130	174	647	6.5	331	156	--	--
APR								
18...	1550	321	519	14.0	117	101	--	--
MAY								
19...	1400	1920	300	6.0	422	2190	36	39
JUN								
14...	1330	1350	224	19.0	94	343	--	--
JUL								
12...	1400	273	391	19.5	2570	1890	61	75
AUG								
08...	1100	1000	285	18.0	255	688	--	--
22...	1000	81	376	17.0	129	28	--	--
25...	1030	55	477	21.0	188	28	72	97
SEP								
07...	1115	93	384	17.0	43	11	--	--
28...	1200	48	472	18.0	43	5.6	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)
OCT							
14...	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--
NOV							
30...	--	--	--	--	--	--	--
JAN							
05...	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--
FEB							
23...	--	--	--	--	--	--	--
MAR							
23...	--	--	--	--	--	--	--
APR							
18...	--	--	--	--	--	--	--
MAY							
19...	44	--	--	--	60	83	100
JUN							
14...	--	--	--	--	--	--	--
JUL							
12...	95	99	100	--	--	--	--
AUG							
08...	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--
25...	97	97	99	100	--	--	--
SEP							
07...	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--

## DIVERSIONS FROM RIO CHAMA

During the irrigation season records of discharge are collected on all 17 ditches and 2 pumps which divert from Rio Chama below El Vado Dam. All sites are located in Hydrologic Unit 13020102. All measuring devices consist of totalizing type flowmeters. All ditches are also equipped with Parshall flumes. In most cases meters on ditches are located below the most downstream wasteway and above any irrigated land. Flows tabulated represent water that is delivered to each ditch or portion thereof and may include waste water from another ditch. No attempt is made to credit for water returned to Rio Chama or delivered to another ditch.

- 08286300 MONASTERY PUMP NEAR ALIRE, NM.--Lat 36°22'45", long 106°40'55", in SE¼SW¼, sec.24, T.25 N., R.2 E., Rio Arriba County, in Santa Fe National Forest, totalizing flowmeter on discharge pipe of pump on left bank of Rio Chama, at Christ of the Desert Monastery, 8.8 mi (14.2 km) southwest of Alire, and 24 mi (39 km) northwest of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287020 ABEYTA TRUJILLO DITCH NEAR ABIQUIU, NM.--Lat 36°14'03", long 106°23'22", Rio Arriba County, in Carson National Forest, totalizing flowmeter and Parshall flume on left bank 0.9 mi (1.4 km) downstream from heading located on left bank of Rio Chama, and 4.5 mi (7.2 km) northeast of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287040 WINFIELD MORTON PUMP NEAR ABIQUIU, NM.--Lat 36°12'40", long 106°20'48", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter on discharge pipe of pump on left bank of Jose Pablo Gonzales ditch 700 ft (210 m) downstream from ditch heading located on left bank of Rio Chama, and 1.4 mi (2.3 km) west of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287060 JOSE PABLO GONZALES DITCH NEAR ABIQUIU, NM.--Lat 36°12'25", long 106°20'35", Rio Arriba County, in Town of Abiquiú Grant, totalizing flowmeter and Parshall flume on left bank, 0.5 mi (0.8 km) downstream from Winfield Morton pump, 0.6 mi (1.0 km) downstream from heading located on left bank of Rio Chama, and 1.2 mi (1.9 km) west of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287150 GONZALES DITCH AT ABIQUIU, NM.--Lat 36°12'46", long 106°19'16", Rio Arriba County, in Town of Abiquiú Grant, totalizing flowmeter and Parshall flume on right bank, 0.2 mi (0.3 km) downstream from heading located on right bank of Rio Chama, and 0.4 mi (0.6 km) northwest of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287200 LA PUENTE DITCH NEAR ABIQUIU, NM.--Lat 36°12'52", long 106°16'27", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter and Parshall flume on left bank, 100 ft (30 m) downstream from culvert on U.S. Highway 84, 0.4 mi (0.6 km) downstream from heading located on right bank of Rio Chama, and 2.5 mi (4.0 km) east of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287250 QUINTANA DITCH NEAR ABIQUIU, NM.--Lat 36°12'55", long 106°16'26", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter and Parshall flume on right bank, 100 ft (30 m) upstream from culvert on U.S. Highway 84, 0.2 mi (0.3 km) downstream from heading located on right bank of Rio Chama, and 2.6 mi (4.2 km) east of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287270 VALENTINE MARTINEZ DITCH NEAR ABIQUIU, NM.--Lat 36°12'55", long 106°16'12", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter and Parshall flume on right bank on north side of U.S. Highway 84, 0.2 mi (0.3 km) downstream from heading located on left bank of Quintana ditch (station 08287250), and 2.8 mi (4.5 km) east of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287300 MARIANO DITCH NEAR ABIQUIU, NM.--Lat 36°13'05", long 106°16'09", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter and Parshall flume on left bank 0.5 mi (0.8 km) downstream from heading located on left bank of Rio Chama, and 2.9 mi (4.7 km) east of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287400 FERRAN DITCH NEAR ABIQUIU, NM.--Lat 36°12'57", long 106°14'34", Rio Arriba County, in Carson National Forest, totalizing flowmeter and Parshall flume on left bank just downstream from siphon, 40 ft (12 m) upstream from forest boundary, 0.2 mi (0.3 km) downstream from culvert on State Highway 96, 0.4 mi (0.6 km) downstream from tail of Mariano ditch (station 08287300), 0.9 mi (1.4 km) downstream from heading located on left bank of Rio Chama, and 4.4 mi (7.1 km) east of Abiquiú. PERIOD OF RECORD, April 1972 to current year.
- 08287600 TIERRA AZUL DITCH NEAR MEDANALES, NM.--Lat 36°12'06", long 106°14'11", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter and Parshall flume on right bank 1.1 mi (1.8 km) downstream from heading located on right bank of Rio Chama, and 3.5 mi (5.6 km) northwest of Medanales. PERIOD OF RECORD, April 1972 to current year.
- 08288050 JOSE V. MARTINEZ DITCH NEAR MEDANALES, NM.--Lat 36°11'44", long 106°13'39", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter and Parshall flume on left bank 0.1 mi (0.2 km) downstream from heading located on left bank of Rio Chama, and 2.9 mi (4.7 km) northwest of Medanales. PERIOD OF RECORD, April 1972 to current year.
- 08288100 MANZANARES AND MONTOYA DITCH NEAR MEDANALES, NM.--Lat 36°11'13", long 106°12'35", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter and Parshall flume on right bank, 0.2 mi (0.3 km) downstream from heading located on right bank of Rio Chama, and 1.7 mi (2.7 km) northeast of Medanales. PERIOD OF RECORD, April 1972 to current year.
- 08288150 RIO DE CHAMA DITCH NEAR MEDANALES, NM.--Lat 36°11'13", long 106°12'02", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter, water-stage recorder, and Parshall flume on left bank, 0.5 mi (0.8 km) downstream from tail of Jose V. Martinez ditch (station 08288050), 0.7 mi (1.1 km) downstream from heading located on left bank of Rio Chama, and 1.3 mi (2.1 km) northwest of Medanales. PERIOD OF RECORD, April 1972 to current year.

## DIVERSIONS FROM RIO CHAMA -- Continued

- 08288200 MARTINEZ AND DURANES DITCH (UPPER) NEAR MEDANALES, NM.--Lat 36°10'55", long 106°11'59", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter and Parshall flume on right bank, 300 ft (91 m) downstream from tail of Manzanares and Montoya ditch (station 08288100), 0.7 mi (1.1 km) downstream from heading located on right bank of Rio Chama, and 1.1 mi (1.8 km) northwest of Medanales. PERIOD OF RECORD, April 1972 to current year.
- 08288250 MARTINEZ AND DURANES DITCH (LOWER) NEAR MEDANALES, NM.--Lat 36°09'26", long 106°10'24", Rio Arriba County, in Juan Jose Lobato Grant, totalizing flowmeter and Parshall flume on right bank, 0.9 mi (1.4 km) downstream from culvert on State Highway 233, 1.4 mi (2.3 km) south of Medanales, 2.5 mi (4.0 km) downstream from "upper" gage (station 08288200), and 3.2 mi (5.1 km) downstream from heading located on right bank of Rio Chama. PERIOD OF RECORD, April 1972 to current year.
- 08288300 CHILI DITCH NEAR HERNANDEZ, NM.--Lat 36°07'00", long 106°09'11", in SW¼SW¼ sec.24, T.22 N., R.7 E., Rio Arriba County, totalizing flowmeter and Parshall flume on left bank, 0.4 mi (0.6 km) downstream from heading located on right bank of Rio Chama, 0.5 mi (0.8 km) upstream from siphon under Rio del Oso, and 4.1 mi (6.6 km) northwest of Hernandez. PERIOD OF RECORD, April 1972 to current year.
- 08289500 CHAMITA DITCH NEAR CHAMITA, NM.--Lat 36°04'57", long 106°06'54", in SW¼NE¼ sec.5, T.21 N., R.8 E., in Rio Arriba County, in San Juan Pueblo Grant, totalizing flowmeter, water-stage recorder, and Parshall flume on left bank, 30 ft (9 m) upstream from flume over Arroyo de la Penita, 0.7 mi (1.1 km) downstream from heading located on left bank of Rio Chama, and 1.0 mi (1.6 km) northwest of Chamita. PERIOD OF RECORD, March 1936 to April 1941, February 1963 to current year (records furnished by Bureau of Reclamation August 1966 to December 1972).
- 08289800 HERNANDEZ DITCH AT HERNANDEZ, NM.--Lat 36°04'52", long 106°07'16", Rio Arriba County, in Bartolome Sanchez Grant, totalizing flowmeter, water-stage recorder, and Parshall flume on right bank, 0.7 mi (1.1 km) downstream from heading located on right bank of Rio Chama, 1.1 mi (1.8 km) north of Hernandez, and 1.3 mi (2.1 km) northwest of Chamita. PERIOD OF RECORD, March 1963 to current year (records furnished by Bureau of Reclamation July 1965 to December 1971).
- 08290100 SALAZAR DITCH AT HERNANDEZ, NM.--Lat 36°03'44", long 106°06'31", in SE¼SE¼ sec.8, T.21 N., R.8 E., Rio Arriba County, in San Juan Pueblo Grant, totalizing flowmeter and Parshall flume on right bank, 0.1 mi (0.2 km) downstream from heading located on right bank of Rio Chama, and 0.6 mi (1.0 km) east of Hernandez. PERIOD OF RECORD, April 1972 to current year.

## DIVERSIONS FROM RIO CHAMA, IN ACRE-FEET, IRRIGATION SEASON 1978

Diversion	APR	MAY	JUN	JUL	AUG	SEP	OCT
08286300 Monastery pump	0	.1	1.9	3.9	.4	0	0
08287020 Abeyta Trujillo ditch	384	296	84	284	321	115	73
08287040 Winfield Morton pump	0	75	61	48	45	46	0
08287060 Jose Pablo Gonzales ditch	952	764	787	773	445	412	114
08287150 Gonzales ditch	a70	a100	a70	a70	a50	a30	a5.0
08287200 La Puente ditch	98	113	170	188	153	67	1.3
08287250 Quintana ditch	0	78	52	47	60	39	14
08287270 Valentine Martinez ditch	14	7.4	13	0	3.7	8.7	0
08287300 Mariano ditch	29	109	216	41	152	113	1.5
08287400 Ferran ditch	85	266	244	61	7.9	0	0
08287600 Tierra Azul ditch	446	321	666	645	245	83	0
08288050 Jose V. Martinez ditch	229	107	285	b	398	73	b
08288100 Manzanares and Montoya ditch	3.2	1.0	7.4	2.4	6.5	1.5	0
08288150 Rio de Chama ditch	270	674	699	375	307	290	400
08288200 Martinez and Duranes ditch (upper)	489	636	813	785	635	552	11
08288250 Martinez and Duranes ditch (lower)	351	a400	525	494	338	91	2.6
08288300 Chili ditch	b	119	b	125	80	62	27
08289500 Chamita ditch	491	570	947	770	654	534	285
08289800 Hernandez ditch	659	757	942	783	878	573	582
08290100 Salazar ditch	402	349	639	489	517	360	68

a Estimated.

b No record.

## RIO GRANDE BASIN

08291000 SANTA CRUZ RIVER AT CUNDIYO, NM

LOCATION.--Lat 35°57'53", long 105°54'14", in SE¼NW¼ sec.17, T.20 N., R.10 E., Santa Fe County, Hydrologic Unit 13020101, on left bank 135 ft (41 m) downstream from bridge on State Highway 4, 200 ft (61 m) downstream from confluence of Rio Medio and Rio Frijoles, 0.6 mi (1.0 km) northwest of Cundiyo, 1.8 mi (2.9 km) upstream from Santa Cruz Dam, and at mile 11.9 (19.1 km).

DRAINAGE AREA.--86 mi<sup>2</sup> (220 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1953, published as Rio Santa Cruz at Cundiyo.

REVISED RECORDS.--WSP 1392: 1931(M), 1932-33, 1934-39(M), 1942, 1943(M).

GAGE.---Water-stage recorder. Concrete control since Jan. 3, 1954. Altitude of gage is 6,460 ft (1,969 m), from topographic map. Sept. 1, 1930 to Aug. 12, 1932, water-stage recorder at site about 1 mi (2 km) downstream at different datum. Aug. 13, 1932 to Oct. 29, 1934, water-stage recorder at site 35 ft (11 m) upstream at datum 0.42 ft (0.128 m) higher. Oct. 30, 1934 to Jan. 2, 1954, water-stage recorder at present site at datum 0.64 ft (0.195 m) lower.

REMARKS.—Remarks good except those for winter period, which are fair. Diversions for irrigation of about 1,000 acres (4.05 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.—48 years, 28.2 ft<sup>3</sup>/s (0.799 m<sup>3</sup>/s), 20,430 acre-ft/yr (25.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,420 ft<sup>3</sup>/s (68.5 m<sup>3</sup>/s) Sept. 24, 1931, gage height, 7.8 ft (2.38 m), site and datum then in use, from rating curve extended above 170 ft<sup>3</sup>/s (4.81 m<sup>3</sup>/s); minimum, 0.19 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) Mar. 13, 1954, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)		Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)		Gage height (ft) (m)	
May 20	2145	*126	3.57	2.51	0.765	Aug. 2	2000	108	3.06	2.44	0.744

Minimum discharge, 2.5 ft<sup>3</sup>/s (0.071 m<sup>3</sup>/s) Nov. 9, 10, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	8.2	7.5	6.8	7.7	9.3	43	50	93	35	15	9.0
2	8.8	6.7	8.3	6.5	7.9	9.2	35	51	96	32	17	7.8
3	8.5	9.1	10	6.0	8.0	9.1	37	49	97	28	15	7.9
4	8.5	8.4	9.7	7.0	8.5	8.8	41	45	99	27	14	8.8
5	8.5	8.1	8.2	7.8	8.9	9.4	44	44	108	25	14	8.8
6	10	8.3	6.9	9.2	7.9	10	36	41	107	23	12	7.7
7	11	12	9.5	7.4	7.9	11	41	37	98	22	12	7.5
8	10	8.2	8.0	8.0	7.8	11	50	36	92	22	13	7.7
9	9.0	4.6	7.0	8.0	8.1	12	52	40	89	25	14	7.3
10	8.9	7.3	9.6	8.3	8.0	13	46	55	86	22	16	7.3
11	8.8	12	9.5	7.6	8.0	13	39	72	86	23	13	7.3
12	9.1	11	9.0	7.3	8.0	12	40	78	85	20	11	7.8
13	9.3	10	7.9	7.3	8.2	12	44	80	82	18	10	7.1
14	9.3	9.9	9.6	8.0	7.5	11	48	86	79	18	10	6.6
15	8.5	9.4	9.1	8.2	8.6	9.1	47	97	76	18	9.4	6.0
16	9.2	9.3	6.4	7.4	7.4	10	49	108	74	17	8.9	6.2
17	9.4	9.3	9.0	7.7	9.0	12	50	113	70	16	8.4	7.1
18	9.3	9.4	9.2	7.7	8.5	13	45	111	64	16	7.1	7.2
19	9.0	9.4	7.2	7.7	8.0	15	41	102	61	15	7.5	6.6
20	8.6	9.3	7.0	7.8	9.0	17	40	109	58	16	7.6	6.6
21	8.7	8.7	5.0	7.6	10	19	40	115	53	21	7.9	7.2
22	8.2	8.7	6.0	7.3	10	23	39	110	49	16	12	8.2
23	8.8	8.6	7.0	8.7	9.1	22	39	115	46	18	12	8.1
24	8.8	8.6	8.5	7.9	9.0	19	41	117	42	20	9.7	12
25	8.7	8.7	11	6.0	8.6	17	44	115	39	17	12	15
26	8.4	8.7	10	7.0	8.6	17	49	113	37	15	11	18
27	8.4	8.8	7.8	8.4	8.4	21	57	109	35	16	8.9	13
28	8.3	8.8	7.6	9.6	8.3	24	56	101	36	18	8.0	11
29	8.3	6.5	7.6	9.7	---	23	53	95	49	16	9.2	10
30	8.9	8.7	7.5	8.7	---	26	53	92	43	19	9.6	9.6
31	8.9	---	7.3	7.9	---	35	---	92	---	19	8.8	---
TOTAL	277.2	264.7	253.9	240.5	234.9	472.9	1339	2578	2129	633	344.0	260.4
MEAN	8.94	8.82	8.19	7.76	8.39	15.3	44.6	83.2	71.0	20.4	11.1	8.68
MAX	11	12	11	9.7	10	35	57	117	108	35	17	18
MIN	8.2	4.6	5.0	6.0	7.4	8.8	35	36	35	15	7.1	6.0
AC=FT	550	525	504	477	466	938	2660	5110	4220	1260	682	511

CAL YR 1977	TOTAL	5086.3	MEAN	13.9	MAX	41	MIN	4.6	AC-FT	10090
WTR YR 1978	TOTAL	9027.5	MEAN	24.7	MAX	117	MIN	4.6	AC-FT	17910

## 08294200 NAMBE FALLS RESERVOIR NEAR NAMBE, NM

LOCATION.--Lat 35°50'46", long 105°54'17", in NE¼SW¼ sec.29, T.19 N., R.10 E., Santa Fe County, Hydrologic Unit 13020101, in Nambe Indian Reservation, 300 ft (91 m) upstream from Nambe Falls, 2.6 mi (4.2 km) upstream from confluence of Rio Nambe and Rio En Medio, 4.4 mi (7.1 km) southeast of Nambe Pueblo, and 5.4 mi (8.7 km) southeast of Nambe.

DRAINAGE AREA.--34.1 mi<sup>2</sup> (88.3 km<sup>2</sup>).

PERIOD OF RECORD.--February 1976 to current year.

REVISED RECORDS.--WDR NM-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to July 22, 1976, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by a concrete arch and earthfill dam, storage began Feb. 23, 1976. Total capacity, 2,020 acre-ft (2.49 hm<sup>3</sup>) at elevation 6,826.6 ft (2,080.75 m), crest of ogee weir spillway, including 237 acre-ft (292,000 m<sup>3</sup>) of storage in a permanent pool between elevation 6,760.9 ft (2,060.72 m), invert of outlet conduits, and 6,780.0 ft (2,066.54 m). Dead storage 121 acre-ft (149,000 m<sup>3</sup>) below elevation 6,760.9 ft (2,060.72 m). Outlet conduits are one 6 in (0.152 m) and two 12 in (0.305 m) diameter pipes. Reservoir is used for storage of irrigation water and for recreation. Figures given herein represent total storage.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,030 acre-ft (2.50 hm<sup>3</sup>) June 6-22, 1978; maximum elevation, 6,826.80 ft (2,080.809 m) June 10, 1978; no storage prior to Feb. 23, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,030 acre-ft (2.50 hm<sup>3</sup>) June 6-22; maximum elevation, 6,826.80 ft (2,080.809 m) June 10; minimum contents, 480 acre-ft (592,000 m<sup>3</sup>) Nov. 6, elevation, 6,786.26 ft (2,068.452 m).

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Bureau of Reclamation in 1976)

6,780	358	6,810	1,200
6,790	565	6,820	1,660
6,800	838	6,830	2,230

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	612	531	542	657	758	854	1050	1060	1850	1980	1400	954
2	609	521	548	660	762	860	1060	1060	1890	1970	1400	948
3	606	509	554	663	764	864	1080	1070	1940	1950	1390	943
4	603	500	560	667	767	868	1100	1080	1970	1920	1380	937
5	600	489	564	670	770	873	1120	1080	2000	1900	1370	930
6	602	480	568	673	774	877	1140	1090	2030	1870	1360	923
7	609	484	573	676	777	881	1160	1090	2030	1850	1350	915
8	615	491	576	679	780	886	1180	1090	2030	1820	1340	907
9	620	494	581	683	784	890	1190	1090	2030	1800	1330	898
10	622	501	585	686	788	895	1200	1090	2030	1780	1310	890
11	619	507	589	689	792	900	1210	1090	2030	1760	1280	880
12	615	514	593	692	795	904	1220	1090	2030	1730	1250	872
13	611	520	596	694	798	908	1220	1100	2030	1690	1220	865
14	607	527	600	698	802	912	1210	1130	2030	1660	1180	862
15	603	532	605	701	806	915	1200	1170	2030	1660	1150	860
16	599	533	607	705	809	918	1190	1210	2030	1650	1120	857
17	595	529	609	708	812	923	1220	1240	2030	1640	1100	856
18	591	525	614	712	815	927	1240	1260	2030	1620	1080	854
19	587	521	618	716	818	932	1230	1280	2030	1610	1060	851
20	582	517	618	719	821	938	1210	1320	2030	1580	1040	848
21	578	515	619	722	824	944	1190	1370	2030	1560	1020	846
22	575	511	622	726	827	952	1170	1420	2030	1540	1010	843
23	572	510	627	729	830	959	1150	1470	2020	1520	1010	841
24	568	515	631	732	833	966	1140	1520	2020	1510	1000	842
25	563	519	635	736	838	972	1120	1570	2020	1500	1000	848
26	558	525	638	739	841	977	1110	1610	2020	1460	993	850
27	554	531	641	743	844	985	1100	1650	2020	1440	985	851
28	550	536	644	746	846	995	1090	1700	2000	1410	976	850
29	546	539	649	749	---	1000	1080	1730	2010	1380	970	849
30	543	544	652	753	---	1010	1070	1770	2000	1390	963	849
31	539	---	655	757	---	1030	---	1810	---	1400	958	---
MAX	622	544	655	757	846	1030	1240	1810	2030	1980	1400	954
MIN	539	480	542	657	758	854	1050	1060	1850	1380	958	841
(†)	6788.88	6789.09	6793.57	6797.29	6800.23	6805.62	6806.85	6822.75	6826.16	6814.44	6803.62	6800.32
(‡)	-76	+5	+111	+102	+89	+184	+40	+740	+190	-600	-442	-109
CAL YR 1977	MAX 1180	MIN 370	† + 43									
WTR YR 1978	MAX 2030	MIN 480	† +234									

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.



## RIO GRANDE BASIN

## 08294300 RIO NAMBE AT NAMBE FALLS, NEAR NAMBE, NM

LOCATION.--Lat 35°50'46", long 105°54'29", in NW¼ sec.29, T.19 N., R.10 E., Santa Fe County, Hydrologic Unit 13020101, in Nambé Indian Reservation, on left bank 800 ft (240 m) downstream from Nambé Falls, 1,100 ft (335 m) downstream from Nambé Falls Dam, 2.4 mi (3.9 km) upstream from confluence of Rio Nambé and Rio En Medio, 4.2 mi (6.8 km) southeast of Nambé Pueblo and 5.2 mi (8.4 km) south-east of Nambé.

DRAINAGE AREA.--34.2 mi<sup>2</sup> (88.6 km<sup>2</sup>).

PERIOD OF RECORD.--March 1963 to current year.

REVISED RECORDS.--WDR NM-77-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 6,513.68 ft (1,985.370 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Flow regulated by Nambé Falls Reservoir (station 08294200) since Feb. 22, 1976. Outlet conduits are one 6 in (0.152 m) and two 12 in (0.305 m) diameter pipes. No diversions above station.

COOPERATION.--Records furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--12 years (water years 1964-75), 10.7 ft<sup>3</sup>/s (0.303 m<sup>3</sup>/s), 7,750 acre-ft/yr (9.56 km<sup>3</sup>/yr), prior to completion of Nambé Falls Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,090 ft<sup>3</sup>/s (30.9 m<sup>3</sup>/s) Aug. 8, 1967, gage height, about 6.0 ft (1.83 m), from floodmarks, from rating curve extended above 44 ft<sup>3</sup>/s (1.25 m<sup>3</sup>/s) on basis of field estimate of peak flow; minimum daily, 0.30 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Aug. 21, 22, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 72 ft<sup>3</sup>/s (2.04 m<sup>3</sup>/s) June 8, gage height, 1.21 ft (0.369 m); minimum daily, 0.80 ft<sup>3</sup>/s (0.023 m<sup>3</sup>/s) Dec. 20-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	8.1	1.3	1.2	1.3	1.3	1.3	24	17	22	6.5	8.6
2	5.9	9.9	1.3	1.2	1.3	1.3	1.3	18	17	22	8.8	8.6
3	5.9	9.9	1.2	1.2	1.3	1.3	1.3	13	17	23	12	8.3
4	5.9	9.5	1.2	1.2	1.3	1.3	1.3	13	22	26	12	8.3
5	5.9	9.5	1.2	1.2	1.3	1.3	1.3	13	30	26	12	8.6
6	4.1	9.2	1.0	1.2	1.3	1.3	1.3	13	20	24	12	8.6
7	1.5	4.8	1.0	1.2	1.3	1.3	1.3	13	41	24	13	8.6
8	1.5	1.3	1.0	1.2	1.3	1.3	6.4	13	26	24	13	8.6
9	1.5	1.3	1.0	1.2	1.3	1.3	8.3	13	28	24	13	8.3
10	3.3	1.3	1.0	1.2	1.3	1.3	8.6	19	30	24	14	8.3
11	5.9	1.3	1.0	1.3	1.3	1.3	8.9	24	30	21	19	8.3
12	5.9	1.3	1.0	1.3	1.3	1.3	8.9	24	30	26	24	8.3
13	5.9	1.3	1.0	1.3	1.3	1.3	14	17	38	26	24	7.2
14	5.9	1.3	1.0	1.3	1.3	1.3	19	16	38	26	24	5.3
15	5.9	1.3	1.0	1.3	1.3	1.3	22	16	38	5.9	24	5.3
16	5.9	4.0	1.0	1.5	1.3	1.4	19	17	38	16	20	5.3
17	5.9	5.6	1.0	1.5	1.3	1.4	1.3	22	35	16	15	5.3
18	5.6	5.6	1.0	1.5	1.3	1.4	1.3	22	32	16	15	5.3
19	5.6	5.6	1.0	1.5	1.3	1.4	19	22	30	17	16	5.3
20	5.6	5.6	.80	1.5	1.3	1.4	24	17	28	24	14	5.3
21	5.6	4.8	.80	1.5	1.3	1.4	24	13	26	24	12	5.3
22	5.6	5.9	.80	1.5	1.3	1.4	24	12	28	23	11	5.3
23	5.6	3.9	.80	1.5	1.3	1.4	24	14	25	17	8.9	5.3
24	5.6	1.2	.80	1.5	1.3	1.4	24	14	22	17	8.6	5.3
25	5.6	1.2	.80	1.3	1.3	1.4	24	17	19	19	8.6	5.3
26	5.6	1.2	.80	1.3	1.3	1.4	24	16	17	24	8.6	5.3
27	5.6	1.2	.80	1.3	1.3	1.4	24	17	20	24	8.7	5.6
28	5.6	1.2	.80	1.3	1.3	1.4	24	17	22	24	8.6	5.6
29	5.6	1.2	.80	1.3	---	1.5	24	17	22	22	8.6	5.6
30	5.6	1.3	.80	1.3	---	1.5	24	17	22	15	8.6	5.6
31	5.6	---	.80	1.5	---	1.5	---	17	---	6.8	8.6	---
TOTAL	161.1	120.8	29.80	41.3	36.4	42.2	409.8	520	808	648.7	412.1	199.9
MEAN	5.20	4.03	.96	1.33	1.30	1.36	13.7	16.8	26.9	20.9	13.3	6.66
MAX	5.9	9.9	1.3	1.5	1.3	1.5	24	24	41	26	24	8.6
MIN	1.5	1.2	.80	1.2	1.3	1.3	1.3	12	17	5.9	6.5	5.3
AC-FT	320	240	59	82	72	84	813	1030	1600	1290	817	397
CAL YR 1977	TOTAL	2081.30	MEAN	5.70	MAX	24	MIN	.30	AC-FT	4130		
WTR YR 1978	TOTAL	3430.10	MEAN	9.40	MAX	41	MIN	.80	AC-FT	6800		

## 08312600 POJOAQUE RIVER AT SAN ILDEFONSO PUEBLO, NM

LOCATION.--Lat 35°53'51", long 106°06'24", Santa Fe County, Hydrologic Unit 13020101, in San Ildefonso Pueblo Grant, on right bank 0.7 mi (1.1 km) northeast of San Ildefonso Pueblo, and 1.0 mi (1.6 km) upstream from mouth.

DRAINAGE AREA.--184 mi<sup>2</sup> (477 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--May 1972 to current year (operated as a miscellaneous measurement site and high-flow station only).

GAGE.--Water-stage recorder. Altitude of gage is 5,560 ft (1,695 m), from topographic map.

REMARKS.--Records poor. Diversions for irrigation of about 4,900 acres (19.8 km<sup>2</sup>), 1973 determination, above station. Flow regulated by Nambé Falls Reservoir (station 08294200) since 1975. Mean daily discharge computed only when flow exceeds about 40 ft<sup>3</sup>/s (1.13 m<sup>3</sup>/s). Several observations of water temperature were made during the year. See table below for results of discharge measurements made during year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,100 ft<sup>3</sup>/s (173 m<sup>3</sup>/s) Aug. 19, 1972, gage height, 6.80 ft (2.073 m), from floodmarks, from rating curve extended above 110 ft<sup>3</sup>/s (3.1 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 5.12 ft (1.561 m) and 6.80 ft (2.073 m); no flow many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft<sup>3</sup>/s (14 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
July 14	2030	750 21.2	4.45 1.356	July 30	1830	*41,000 28.3	4.61 1.405

a From rating curve extended above 110 ft<sup>3</sup>/s (3.1 m<sup>3</sup>/s) as explained above.  
No flow many days.

## DISCHARGE MEASUREMENTS, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
Oct. 4	0	Feb. 1	1.7	Apr. 19	.09	July 11	0
Nov. 4	e .25	21	1.8	May 22	.27	31	2.2
Dec. 6	e .11	Mar. 24	.19	June 1	.05	Aug. 9	0
Jan. 6	e1.0	Apr. 5	.10	16	.69	Sept. 8	0

e Estimated.

NOTE.--Mean daily discharge exceeded 40 ft<sup>3</sup>/s (1.13 m<sup>3</sup>/s) on the following days:

Date	Discharge (ft <sup>3</sup> /s)
July 30	60

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM  
(National stream-quality accounting network, surveillance network,  
and radiochemical network station)

LOCATION.--Lat 35°52'29", long 106°08'30", in SW¼SW¼ sec.18, T.19 N., R.8 E., Santa Fe County, Hydrologic Unit 13020101, in San Ildefonso Pueblo Grant, near right bank on downstream end of pier of former railway bridge, 400 ft (120 m) downstream from bridge on State Highway 4, 1.8 mi (2.9 km) southwest of San Ildefonso Pueblo, 2.5 mi (4.0 km) downstream from Pojoaque River, 6.8 mi (10.9 km) west of Pojoaque, and at mile 1,614.2 (2,597.2 km).

DRAINAGE AREA.--14,300 mi<sup>2</sup> (37,040 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1895 to December 1905, June 1909 to current year. Monthly discharge only for some periods, published in WSP 1312. In early reports this record was published as "at Water Tank," as "at Rio Grande," and as "near Buckman."

REVISED RECORDS.--WSP 828: Drainage area. WSP 1512: 1895-99, 1904-6, 1911-12, 1914, 1931(M), 1935. WSP 1712: 1904(M).

GAGE.--Water-stage recorder. Datum of gage is 5,488.48 ft (1,672.889 m) National Geodetic Vertical Datum of 1929. See WSP 1312, 1732, or 1923 for history of changes prior to June 1, 1910.

REMARKS.--Water-discharge records good. Considerable regulation by Heron Reservoir (station 08284510), El Vado Reservoir (station 08285000) and Abiquiu Reservoir (station 08286900) on Rio Chama, which can contribute a major portion of the total flow. Flow affected by release of transmountain water from Heron Reservoir since May 1971. Diversions above station for irrigation of about 620,000 acres (2,500 km<sup>2</sup>) in Colorado and 75,000 acres (300 km<sup>2</sup>) in New Mexico. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,400 ft<sup>3</sup>/s (691 m<sup>3</sup>/s) May 23, 1920; maximum gage height, 14.5 ft (4.42 m) Sept. 29, 1904, present site and datum; minimum daily discharge, 60 ft<sup>3</sup>/s (1.70 m<sup>3</sup>/s) July 4, 5, 1902.

EXTREMES OUTSIDE PERIOD OF RECORD.--The 1920 flood is greatest since at least 1884 and probably since 1741; information from W. H. Yeo's file on floods.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,020 ft<sup>3</sup>/s (114 m<sup>3</sup>/s) May 21, gage height, 6.82 ft (2.079 m), no peak above base of 5,200 ft<sup>3</sup>/s (150 m<sup>3</sup>/s); minimum, 240 ft<sup>3</sup>/s (6.80 m<sup>3</sup>/s) Sept. 11, 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	730	286	374	453	481	613	649	2170	2740	1600	620	939
2	719	268	375	437	482	679	779	2430	2820	1740	750	852
3	690	282	370	421	492	808	770	2570	2950	1700	1510	1230
4	685	293	354	420	462	893	719	2380	2980	1470	1930	1080
5	677	273	370	418	475	952	632	1760	3210	1290	1680	578
6	705	283	377	446	488	778	901	2050	3120	1080	1590	534
7	793	438	371	460	513	806	585	1630	2800	976	1560	396
8	625	677	359	409	535	730	552	1790	2670	811	1350	271
9	452	600	360	405	512	696	637	1410	2790	757	979	260
10	374	514	989	414	493	695	676	1380	2320	724	1060	262
11	316	458	1070	432	501	707	743	1930	2030	717	935	250
12	276	394	1090	442	517	658	561	3030	2100	810	522	248
13	265	404	1070	444	511	608	570	3060	2460	973	406	451
14	285	436	949	435	519	574	774	3200	2270	1310	369	627
15	339	439	491	422	513	598	743	3270	2060	1380	355	600
16	315	410	396	455	505	557	725	3400	1940	1360	332	598
17	274	478	388	466	502	534	750	3530	2300	1320	344	546
18	271	488	397	484	491	519	729	3520	2470	1260	1070	585
19	300	422	350	454	470	511	635	3490	2530	1220	1360	528
20	363	400	363	470	478	554	610	3400	2370	1330	1220	502
21	332	400	326	453	474	632	685	3780	2350	1700	978	515
22	588	386	329	458	476	663	727	3560	2290	1380	414	628
23	680	378	326	470	475	671	715	3580	2250	1120	313	452
24	699	369	390	474	506	725	742	3510	2250	1020	301	592
25	693	385	394	432	501	758	837	3350	2220	1060	307	668
26	678	375	382	417	518	679	1040	3360	2250	835	295	585
27	689	370	388	388	535	642	1460	3340	2220	650	274	402
28	479	378	398	479	561	670	1860	3130	2310	570	263	319
29	357	385	418	483	---	665	2270	2960	1880	643	268	296
30	326	369	448	474	---	622	2230	2930	1630	931	678	280
31	295	---	465	491	---	597	---	2840	---	680	1110	---
TOTAL	15270	12038	15127	13806	13986	20794	26306	87740	72580	34417	25143	16074
MEAN	493	401	488	445	500	671	877	2830	2419	1110	811	536
MAX	793	677	1090	491	561	952	2270	3780	3210	1740	1930	1230
MIN	265	268	326	388	462	511	552	1380	1630	570	263	248
AC-FT	30290	23880	30000	27380	27740	41240	52180	174000	144000	68270	49870	31880
CAL YR 1977 TOTAL	218599			MEAN 599	MAX 1650	MIN 195	AC-FT 433600					
WTR YR 1978 TOTAL	353281			MEAN 968	MAX 3780	MIN 248	AC-FT 700700					

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1946 to current year.

WATER TEMPERATURES: October 1948 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1947 to current year.

INSTRUMENTATION.--Continuous water-temperature recorder since April, 1954.

REMARKS.--Daily mean temperature is computed by averaging the maximum and minimum temperatures for each day.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,310 micromhos Aug. 5, 1963; minimum daily, 165 micromhos June 13, 1952.

WATER TEMPERATURES: Maximum, 31.0°C Aug. 4, 5, 1954; minimum, 0.0°C on many days during winter months each year.

SEDIMENT CONCENTRATIONS: Maximum daily, 43,500 mg/L Aug. 21, 1955; minimum daily, 11 mg/L July 27, 1963, and Feb. 7, 1974.

SEDIMENT LOADS: Maximum daily, 366,000 tons (332,000 tonnes) Aug. 23, 1961; minimum daily, 3 tons (2.7 tonnes) July 27, 1963.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 530 micromhos Apr. 6; minimum daily, 213 micromhos May 30-31, June 1-2, 5.

WATER TEMPERATURES: Maximum, 28.0°C July 28; minimum, 0.0°C Dec. 17, 18.

SEDIMENT CONCENTRATIONS: Maximum daily, 6,000 mg/L Nov. 8; minimum daily, 76 mg/L Sept. 8.

SEDIMENT LOADS: Maximum daily, 27,000 tons (24,500 tonnes) May 19; minimum daily, 56 tons (51 tonnes) Sept. 8.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BIO- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT										
05...	1100	677	424	8.1	25.0	16.5	50	--	8.8	30
NOV										
02...	1200	266	460	8.0	19.5	8.0	20	--	10.2	13
DEC										
07...	1230	382	410	8.2	10.0	3.5	20	--	--	220
JAN										
05...	1248	393	355	8.1	11.5	4.0	10	--	10.8	27
FEB										
16...	1100	465	350	8.1	1.0	3.0	17	--	10.2	58
MAR										
15...	1130	600	360	8.4	8.0	6.0	25	--	11.7	8
APR										
05...	1113	615	479	8.3	17.5	12.0	40	--	9.8	20
MAY										
03...	1130	2610	415	8.3	11.5	8.5	120	--	9.9	29
JUN										
07...	1120	3100	220	8.3	29.0	15.0	55	--	8.6	26
JUL										
11...	1212	688	300	8.3	33.0	23.0	--	37	8.0	11
AUG										
05...	0715	1680	349	7.7	--	17.5	--	--	--	--
09...	1240	980	285	8.2	29.5	21.0	--	100	7.8	29
SEP										
20...	1130	508	330	8.4	19.0	15.0	--	31	9.4	21

## RIO GRANDE BASIN

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)
OCT										
05...	170	62	51	10	22	.7	3.1	130	0	110
NOV										
02...	160	9	48	9.0	30	1.0	3.3	180	0	150
DEC										
07...	160	23	49	9.7	33	1.1	3.8	170	0	140
JAN										
05...	130	19	41	7.6	24	.9	3.2	140	0	110
FEB										
16...	130	13	39	7.4	23	.9	3.0	140	0	110
MAR										
15...	130	18	39	8.5	30	1.1	3.2	140	0	110
APR										
05...	170	43	50	10	32	1.1	3.1	150	0	120
MAY										
03...	140	39	41	8.5	19	.7	2.3	120	0	98
JUN										
07...	83	12	26	4.4	9.4	.4	1.9	87	0	71
JUL										
11...	110	--	34	6.4	18	.7	2.8	--	--	95
AUG										
05...	--	--	--	--	--	--	--	--	--	--
09...	100	--	32	5.7	15	.6	2.3	--	--	92
SEP										
20...	140	--	42	7.4	19	.7	2.5	--	--	110

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DEG. C DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT										
05...	110	5.3	.4	17	289	283	111	.00	.03	.02
NOV										
02...	58	9.6	.7	24	282	271	40	.03	.01	.01
DEC										
07...	68	9.2	.7	25	272	283	48	.11	.11	.04
JAN										
05...	46	8.3	.6	26	236	227	71	.22	.22	.03
FEB										
16...	51	7.6	.6	27	217	229	72	.19	.21	.01
MAR										
15...	69	8.9	.6	23	250	252	143	.09	.14	.09
APR										
05...	100	8.8	.5	17	294	295	110	.02	.00	.01
MAY										
03...	90	5.6	.2	15	249	241	325	.12	.11	.03
JUN										
07...	28	3.2	.2	15	140	132	105	.05	.08	.05
JUL										
11...	48	5.4	.4	19	189	191	69	.01	.04	.12
AUG										
05...	--	--	--	--	--	--	--	--	--	--
09...	43	3.9	.2	18	178	175	119	.05	.12	.09
SEP										
20...	61	5.1	.4	19	223	223	58	.01	.01	.01

08313900 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT										
05...	.00	.00	.12	.01	40	60	--	--	3.4	2.4
NOV										
02...	.35	.39	.02	.00	60	10	--	2.4	2.7	1.2
DEC										
07...	.61	.76	.11	.05	70	20	4	--	2.0	--
JAN										
05...	.97	1.2	.06	.00	60	10	--	2.8	2.4	1.1
FEB										
16...	.01	.21	.08	.04	50	520	--	2.9	1.5	2.0
MAR										
15...	.45	.63	.11	.03	50	10	120	--	2.5	1.6
APR										
05...	.32	.35	.11	.01	50	20	--	4.9	3.3	2.2
MAY										
03...	.81	.96	.22	.01	30	20	--	7.2	4.1	3.1
JUN										
07...	.51	.61	.12	.00	30	30	5	--	3.6	2.2
JUL										
11...	.24	.37	.10	.03	40	70	--	5.3	3.5	2.1
AUG										
05...	--	--	--	--	--	--	--	--	--	--
09...	.50	.64	.10	.03	40	40	--	6.0	2.8	2.3
SEP										
20...	.38	.40	.06	.00	130	30	10	--	3.3	1.0

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
OCT										
05...	1100	--	--	--	--	40	--	--	--	--
NOV										
02...	1200	--	--	--	--	60	--	--	--	--
DEC										
07...	1230	3	3	200	100	70	0	0	0	4
JAN										
05...	1248	--	--	--	--	60	--	--	--	--
MAR										
15...	1130	4	4	100	100	50	2	3	0	0
APR										
05...	1113	--	--	--	--	50	--	--	--	--
MAY										
03...	1130	--	--	--	--	30	--	--	--	--
JUN										
07...	1120	2	2	200	200	30	0	3	10	0
JUL										
11...	1212	--	--	--	--	40	--	--	--	--
AUG										
09...	1240	--	--	--	--	40	--	--	--	--
SEP										
20...	1130	3	3	0	0	130	1	0	0	0

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
OCT 05...	--	--	--	--	--	60	--	--	--	--
NOV 02...	--	--	--	--	--	10	--	--	--	--
DEC 07...	0	0	6	2	1200	20	7	0	40	4
JAN 05...	--	--	--	--	--	10	--	--	--	--
MAR 15...	2	1	10	3	1800	10	26	13	120	120
APR 05...	--	--	--	--	--	20	--	--	--	--
MAY 03...	--	--	--	--	--	20	--	--	--	--
JUN 07...	0	0	4	2	3000	30	5	5	190	5
JUL 11...	--	--	--	--	--	70	--	--	--	--
AUG 09...	--	--	--	--	--	40	--	--	--	--
SEP 20...	0	0	5	1	1800	30	4	0	80	10

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 05...	--	--	14	--	--	--	--	--	--
NOV 02...	--	--	20	--	--	--	--	--	--
DEC 07...	.0	.0	14	0	0	0	0	10	10
JAN 05...	--	--	10	--	--	--	--	--	--
MAR 15...	.0	.0	10	0	0	0	0	30	0
APR 05...	--	--	9	--	--	--	--	--	--
MAY 03...	--	--	7	--	--	--	--	--	--
JUN 07...	.0	.0	7	0	0	0	0	90	10
JUL 11...	--	--	6	--	--	--	--	--	--
AUG 09...	--	--	9	--	--	--	--	--	--
SEP 20...	.0	.0	8	0	0	0	0	20	0

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CR) (01029)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)
AUG 09...	1240	2	0	1	3	5	.0

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDE (MG/L) (00530)	GROSS ALPHA, OIS- SOLVED (UG/L) U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L) U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L) AS (03515)	GROSS BETA, SUSP. TOTAL (PCI/L) AS (03516)	GROSS BETA, DIS- SOLVED (PCI/L) AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L) AS SR/ YT-90) (80060)	RADIUM 226, OIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L) AS U) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
OCT 05...	1100	111	<4.7	12	4.9	3.7	4.1	3.3	.11	1.8	--
NOV 02...	1200	40	4.5	1.4	4.4	2.1	3.5	1.8	.15	3.4	--
APR 05...	1113	110	10	9.4	4.3	5.3	3.9	4.7	.08	--	4.3

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L) (39516)	PCB, IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL (UG/L) (39350)	CHLOR- DANE, IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)
AUG 09...	1240	.0	0	.00	.0	.0	0	.00	.0	.00
DATE	TIME	ODE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39388)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39410)
AUG 09...		.1	.00	.0	.00	.0	.00	.00	.0	.00
DATE	TIME	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR, EPOXIDE TOTAL (UG/L) (39420)	HEPTA- CHLOR, EPOXIDE TOTAL (UG/KG) (39423)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39340)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39480)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39481)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)
AUG 09...		.0	.00	.0	.00	.0	.00	.0	0	0

## Results of Analysis of Water and Bed Materials for Selected Chlorinated Hydrocarbon Isomers

Date	Time	o-p'-DDE	o-p'-DDD	o-p'-DDT	cis- chlordane	trans- chlordane	$\alpha$ - BHC	Hexachloro- benzene
Aug 09	1240 (w) (s)	0 0	0 0	0 0	0 0	0 0	0 0	0 0

NOTE: Reporting units are ug/L for water samples (w) and ug/kg for bed material sediment samples (s).  
The lowest detectable limit is 0.01 ug/L for water samples and 0.1 ug/kg for sediment samples.



## RIO GRANDE BASIN

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-HF (COLS./ 100 ML) (31625)	STREP- TOCOC FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 05...	1100	2700	260
NOV 02...	1200	83	59
DEC 07...	1230	140	60
JAN 05...	1248	30	57
FEB 16...	1100	19	18
MAR 15...	1130	120	39
APR 05...	1113	210	360
MAY 03...	1130	480	1100
JUN 07...	1120	2000	430
JUL 11...	1212	1900	130
AUG 09...	1240	3300	680
SEP 20...	1130	520	210

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	LENGTH OF EXPO- SURE (DAYS) (00022)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- FLUOROM (MG/M2) (70958)	SAMPLING METHOD
FEB 16...	1100	42	11.2	7.95	9.88	2.63	Polyethylene strip
MAR 15...	1130	27	1.34	.866	.260	.000	"
MAY 03...	1130	28	.079	.000	.000	.000	"

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	NOV 2,77 1200	MAR 15,78 1130	MAY 3,78 1130	JUN 7,78 1120
TOTAL CELLS/ML	2400	3300	770	2800
DIVERSITY: DIVISION	0.1	0.8	1.2	0.8
..CLASS	0.1	0.8	1.2	0.8
..ORDER	1.0	1.2	1.2	0.8
..FAMILY	2.5	2.9	3.2	2.5
....GENUS	2.7	3.2	3.5	2.9
ORGANISM	CELLS PER- /ML CENT	CELLS PER- /ML CENT	CELLS PER- /ML CENT	CELLS PER- /ML CENT
CHLOROPHYTA (GREEN ALGAE)				
..CHLOROPHYCEAE				
..CHLOROCOCCALES				
..CHARACIACEAE				
....SCHROEDERIA	--	--	--	--
....MICRACETINACEAE				
....MICRACETINUM	--	300 9	95 12	--
....OOCYSTACEAE				
....ANKISTRODESMUS	--	--	14 2	--
....DICTYOSPHAERIUM	--	--	--	--
....KIRCHNERIELLA	--	--	--	--
....OOCYSTIS	--	--	--	--
....TETRAEDRON	--	--	--	--
..SCENEDESMACEAE				
....CRUCIGENIA	--	--	--	--
....SCENEDESMUS	40 2	100 3	110 14	270 10
....TETRASTRUM	--	--	--	--
..VOLVOCALES				
..CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS	--	120 4	--	--
CHRYSTOPHYTA				
..BACILLARIOPHYCEAE				
..CENTRALES				
..COSCINODISCACEAE				
....CYCLOTELLA	660# 28	100 3	--	--
....MELOSIRA	80 3	--	--	--
..PENNALES				
....ACHNANTHACEAE				
....ACHNANTHES	--	17 1	--	--
....COCCONEIS	20 1	34 1	27 4	67 2
....RHOICOSPHEA	--	34 1	14 2	45 2
....CYMBELLACEAE				
....CYMBELLA	40 2	* 0	--	22 1
....EPITHEMIA	20 1	--	27 4	67 2
..DIATOMACEAE				
....DIATOMA	540# 23	170 5	110 14	270 10
..FRAGILARIACEAE				
....ASTERIONELLA	--	68 2	14 2	--
....FRAGILARIA	200 8	680# 21	--	1200# 42
....HANNAEA	--	--	--	22 1
....SYNEDRA	--	84 3	54 7	--
..GOMPHONEMACEAE				
....GOMPHONEMA	20 1	68 2	27 4	200 7
..MERIDIONACEAE				
....MERIDION	20 1	--	14 2	--
..NAVICULACEAE				
....CALONEIS	--	34 1	14 2	45 2
....NAVICULA	500# 21	950# 29	160# 21	270 10
....NEIDIUM	--	--	--	45 2
....PINNULARIA	--	--	14 2	67 2
..NITZSCHACEAE				
....NITZSCHIA	240 10	420 13	14 2	90 3
..SURIPELLACEAE				
....CYMATOPLEURA	--	--	--	--
....SURIPELLA	--	* 0	14 2	--
..TABELLARIACEAE				
....TABELLARIA	--	--	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)				
..CYANOPHYCEAE				
..CHROCOCCOCCAEAE				
....ANACYSTIS	--	--	54 7	--
..HORMOGONALES				
....NOSTOCACEAE				
....ANABAENA	--	--	--	160 6
....APHANIZOMENON	--	84 3	--	--
..OSCILLATORIACEAE				
....OSCILLATORIA	--	--	--	--
EUGLENOPHYTA (EUGLENOIDS)				
..EUGLENOPHYCEAE				
..EUGLENALES				
....EUGLENA	--	17 1	--	--
....TRACHELOMONAS	--	* 0	--	--

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued  
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

IDENTIFICATION OF PHYTOPLANKTON						
DATE	JUL 11, 78		AUG 9, 78		SEP 20, 78	
TIME	1212		1240		1130	
TOTAL CELLS/ML	14000		24000		7000	
DIVERSITY: DIVISION	1.2		1.2		0.8	
..CLASS	1.2		1.2		0.8	
..ORDER	1.6		1.6		1.3	
...FAMILY	2.8		2.3		1.9	
....GENUS	3.2		2.9		2.3	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	70	1	--	--	--	--
....MICRACTINIACEAE	--	--	--	--	--	--
....MICRACTINIUM	--	--	--	--	--	--
....OOCYSTACEAE						
....ANKISTRODESMUS	560	4	760	3	320	5
....DICTYOSPHAERIUM	140	1	--	--	--	--
....KIRCHNERIELLA	630	5	3400	14	700	10
....OOCYSTIS	--	--	610	3	270	4
....TETRAEDRON	--	--	300	1	--	--
...SCENEDESMACEAE						
....CRUCIGENIA	280	2	--	--	--	--
....SCENEDESMUS	4100#	30	4900#	20	320	5
....TETRASTRUM	280	2	1800	8	220	3
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
...CHLAMYDOMONAS	210	2	--	--	--	--
CHRYSTOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	1500	11	8500#	36	4200#	60
....MELOSIRA	--	--	--	--	--	--
...PENNALES						
....ACHNANTHACEAE						
....ACHNANTHES	--	--	--	--	--	--
....COCCONEIS	420	3	150	1	110	2
....RHOICOSPHEA	--	--	--	--	54	1
....CYMBELLACEAE						
....CYMBELLA	70	1	150	1	54	1
....EPITHEMIA	70	1	--	--	110	2
....DIATOMACEAE						
....DIATOMA	140	1	--	--	160	2
...FRAGILARIACEAE						
....ASTERIONELLA	--	--	--	--	--	--
....FRAGILARIA	3400#	24	910	4	--	--
....HANNAEA	--	--	--	--	--	--
....SYNEDRA	--	--	610	3	--	--
...GOMPHONEMACEAE						
....GOMPHONEMA	210	2	460	2	--	--
...MERIDIONACEAE						
....MERIDION	--	--	--	--	--	--
...NAVICULACEAE						
....CALONEIS	--	--	--	--	--	--
....NAVICULA	490	4	150	1	380	5
....NEIDIUM	--	--	--	--	--	--
....PINNULARIA	--	--	--	--	--	--
...NITZSCHACEAE						
....NITZSCHIA	210	2	300	1	110	2
...SURIPELLACEAE						
....CYMATOPEURA	70	1	--	--	--	--
....SURIPELLA	--	--	--	--	--	--
...TABELLARIACEAE						
....TABELLARIA	560	4	--	--	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCOCCOCCALES						
...CHROCOCCOCCAEAE						
....ANACYSTIS	420	3	--	--	--	--
...HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	--	--	--	--	--
....APHANIZOMENON	--	--	--	--	--	--
...OSCILLATORIACEAE						
....OSCILLATORIA	--	--	910	4	--	--
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	--	--	--	--	--
....TRACHELOMONAS	--	--	--	--	--	--

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## 08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	
OCT											
05...	1100	677	16.5	456	834	--	--	--	56	97	
NOV											
02...	1200	266	8.0	176	126	--	--	--	--	--	
08...	0845	672	6.0	6420	11600	16	20	23	32	40	
DEC											
07...	1230	382	3.5	990	1020	--	--	--	13	23	
JAN											
05...	1248	393	4.0	623	661	--	--	--	16	38	
FEB											
16...	1100	465	3.0	367	461	--	--	--	19	35	
MAR											
15...	1130	600	6.0	297	481	--	--	--	26	48	
APR											
05...	1113	615	12.0	258	428	--	--	--	44	61	
MAY											
03...	1430	2610	8.5	1310	9230	16	19	21	36	67	
12...	1655	3100	16.0	2810	23500	--	--	--	28	55	
21...	0800	3980	10.5	3090	33200	--	--	--	26	51	
JUN											
07...	1120	3100	15.0	856	7160	14	16	19	35	73	
20...	0815	2400	16.0	1130	7320	--	--	--	11	20	
29...	1520	1860	21.0	853	4280	--	--	--	39	52	
JUL											
11...	1212	688	23.0	85	158	--	--	--	--	--	
AUG											
03...	0635	1490	20.0	4190	16900	10	12	17	53	88	
09...	1240	980	21.0	275	728	--	--	--	--	--	
SEP											
20...	1130	508	15.0	140	192	--	--	--	--	--	
DATE		SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)	SED. SUSP. FALL DIAM. % FINER THAN 2.00 MM (70347)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)
OCT											
05...	100	--	--	--	--	--	--	--	--	--	--
NOV											
02...	--	--	--	--	--	25	46	78	99	100	--
08...	50	76	97	100	--	--	--	--	--	--	--
DEC											
07...	45	89	100	--	--	--	--	--	--	--	--
JAN											
05...	97	100	--	--	--	--	--	--	--	--	--
FEB											
16...	71	97	100	--	--	--	--	--	--	--	--
MAR											
15...	97	100	--	--	--	--	--	--	--	--	--
APR											
05...	96	100	--	--	--	--	--	--	--	--	--
MAY											
03...	94	100	--	--	--	--	--	--	--	--	--
12...	90	100	--	--	--	--	--	--	--	--	--
21...	89	100	--	--	--	--	--	--	--	--	--
JUN											
07...	99	100	--	--	--	--	--	--	--	--	--
20...	66	100	--	--	--	--	--	--	--	--	--
29...	76	96	--	--	--	--	--	--	--	96	98
JUL											
11...	--	--	--	--	--	76	85	90	96	100	--
AUG											
03...	96	98	100	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	71	--	--	--	--	--
SEP											
20...	--	--	--	--	--	37	--	--	--	--	--

## RIO GRANDE BASIN

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	482	434	427	397	361	348	434	447	213	242	295	358
2	474	428	430	278	365	341	427	398	213	243	295	367
3	489	429	443	373	393	391	467	415	214	256	289	356
4	474	446	430	373	360	409	496	391	214	261	290	346
5	449	434	416	366	360	428	489	333	213	263	324	364
6	445	443	425	375	366	398	530	373	223	275	290	357
7	437	414	429	400	377	408	488	369	220	295	284	345
8	437	454	421	374	380	397	394	382	250	297	278	388
9	441	485	435	378	372	404	425	372	224	316	308	401
10	424	493	498	375	363	420	435	360	228	307	297	394
11	416	468	493	374	368	417	447	317	238	313	314	404
12	417	446	504	366	368	416	442	359	236	305	322	398
13	422	436	496	382	370	395	400	351	234	313	347	408
14	436	418	496	371	365	384	434	341	233	280	350	353
15	454	436	429	371	382	420	436	328	237	268	363	358
16	430	440	431	368	370	382	410	300	242	266	355	357
17	410	500	425	376	367	369	395	267	235	274	374	370
18	414	458	428	383	363	349	382	265	244	279	410	368
19	420	454	426	379	368	346	424	263	234	275	339	372
20	442	444	408	386	371	357	407	256	235	268	348	380
21	420	450	407	371	388	406	395	231	235	271	328	384
22	493	429	397	362	377	408	388	238	234	262	330	379
23	470	427	484	382	378	414	435	240	232	264	372	382
24	474	417	455	378	368	411	427	228	230	253	391	381
25	473	416	400	371	360	463	432	231	223	262	410	376
26	474	420	422	365	350	444	419	230	227	261	393	377
27	468	430	439	395	354	410	456	222	230	285	403	383
28	437	418	417	377	349	403	463	219	222	283	402	404
29	440	426	395	382	---	397	497	220	232	290	405	407
30	429	420	399	388	---	404	471	213	243	284	402	413
31	429	---	397	391	---	439	---	213	---	298	345	---
MEAN	446	440	436	374	368	399	438	302	230	278	344	378

WTR YR 1978	MEAN	369	MAX	530	MIN	213	WATER YEAR OCTOBER 1977 to SEPTEMBER 1978					
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	16.5	14.0	15.0	12.0	11.0	11.5	5.0	3.0	4.0	3.5	3.0	3.0
2	15.0	13.0	14.0	11.5	9.0	10.0	4.5	3.0	4.0	4.0	3.0	3.5
3	15.0	13.5	14.0	11.5	8.5	10.0	5.0	3.0	4.0	4.0	3.0	3.5
4	15.0	14.5	15.0	11.5	8.5	10.0	4.5	3.0	4.0	4.0	3.5	4.0
5	15.5	14.5	15.0	11.5	8.0	10.0	5.5	3.5	4.5	4.5	3.5	4.0
6	15.0	14.5	15.0	9.5	7.0	8.0	4.5	3.0	4.0	4.0	3.5	4.0
7	15.0	14.0	14.5	9.0	7.0	8.0	4.5	2.5	3.5	4.0	3.5	4.0
8	14.5	12.0	13.0	7.5	5.5	6.5	4.5	3.0	4.0	2.0	1.5	2.0
9	14.0	11.0	12.5	6.5	4.0	5.0	5.5	3.0	4.0	2.0	1.5	2.0
10	14.0	11.5	13.0	6.5	4.0	5.0	3.0	1.5	2.0	2.0	1.5	2.0
11	13.0	9.0	11.0	7.5	4.5	6.0	4.5	3.0	4.0	2.5	2.0	2.0
12	13.0	7.5	10.0	8.0	5.0	6.5	4.0	.5	2.0	3.0	1.5	2.0
13	13.0	7.5	10.0	7.5	4.5	6.0	4.5	.5	2.5	2.5	1.5	2.0
14	13.5	7.5	10.5	7.5	4.5	6.0	4.5	1.0	3.0	1.5	1.5	1.5
15	13.0	8.0	10.5	8.0	5.0	6.5	4.5	.5	2.5	1.5	1.5	1.5
16	15.5	9.5	12.5	8.0	5.0	6.5	4.0	.5	2.0	2.5	1.5	2.0
17	16.0	9.5	13.0	7.5	5.0	6.0	2.0	.0	1.0	2.0	1.5	2.0
18	16.5	9.5	13.0	7.5	5.0	6.0	6.0	.0	3.0	2.5	1.5	2.0
19	15.5	9.5	12.5	7.0	6.0	6.5	5.5	2.5	4.0	2.0	1.5	2.0
20	14.5	9.5	12.0	7.0	6.0	6.5	3.5	.5	2.0	2.0	1.5	2.0
21	16.0	10.5	13.0	6.5	4.5	5.5	1.5	.5	1.0	2.5	1.5	2.0
22	13.0	10.0	11.5	6.5	4.5	5.5	2.0	.5	1.0	4.0	1.5	3.0
23	12.5	10.0	11.0	6.5	5.5	6.0	3.5	.5	2.0	3.0	2.5	3.0
24	12.5	9.5	11.0	6.0	4.5	5.0	5.0	2.5	4.0	3.0	2.5	3.0
25	13.0	9.5	11.0	6.5	4.0	5.0	4.0	1.0	2.5	4.0	2.5	3.0
26	13.0	10.0	11.5	6.5	4.5	5.5	3.0	.5	2.0	4.0	2.5	3.0
27	13.0	10.5	12.0	5.5	5.0	5.0	4.0	1.5	3.0	5.0	2.5	4.0
28	13.0	11.5	12.0	6.0	5.0	5.5	4.5	3.5	4.0	3.5	2.5	3.0
29	13.0	11.5	12.0	5.5	4.0	5.0	6.0	4.0	5.0	3.5	2.0	3.0
30	13.5	12.0	13.0	5.5	4.0	5.0	6.0	5.0	5.5	3.5	2.0	3.0
31	13.5	12.0	13.0	---	---	---	6.5	5.5	6.0	3.0	2.0	2.5
MONTH	16.5	7.5	12.5	12.0	4.0	6.5	6.5	.0	3.0	5.0	1.5	2.5

WATER TEMPERATURE (DEG.° C), RECORDER MAXIMUM, MINIMUM, AND MEAN, WATER YEAR OCTOBER 1977 to SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	3.5	2.0	3.0	7.0	6.5	7.0	12.5	12.0	12.0	14.0	11.0	12.5
2	4.5	2.0	3.0	7.0	6.0	6.5	12.5	11.5	12.0	12.0	8.5	10.0
3	3.5	2.0	3.0	7.0	4.0	5.5	12.5	11.5	12.0	13.5	8.0	11.0
4	4.5	2.0	3.0	7.5	3.5	5.5	12.5	11.0	12.0	13.0	9.0	11.0
5	5.0	3.5	4.0	10.0	4.5	7.0	12.5	11.5	12.0	11.0	8.5	10.0
6	5.5	4.0	5.0	11.0	6.0	8.5	12.5	10.0	11.0	8.0	7.0	7.5
7	6.0	4.0	5.0	12.0	7.5	10.0	13.5	11.0	12.0	13.0	6.0	9.5
8	6.0	4.5	5.0	12.5	6.5	9.5	13.5	11.5	12.5	15.0	9.0	12.0
9	5.0	3.5	4.0	13.0	7.0	10.0	13.5	12.0	13.0	16.5	10.5	13.5
10	6.0	4.0	5.0	11.0	8.5	10.0	13.5	11.5	12.5	17.0	12.5	15.0
11	5.0	4.5	5.0	10.0	6.5	8.0	13.5	11.0	12.0	17.0	13.0	15.0
12	5.5	4.0	5.0	9.0	7.0	8.0	14.0	12.5	13.0	16.5	11.5	14.0
13	6.0	4.0	5.0	11.0	6.0	8.5	14.0	13.0	13.5	17.0	11.5	14.0
14	5.0	4.0	4.5	11.5	6.5	9.0	14.0	12.0	13.0	16.0	11.0	13.5
15	5.5	4.0	5.0	9.0	5.5	7.0	14.0	12.0	13.0	17.5	12.5	15.0
16	4.5	4.0	4.0	9.5	5.0	7.0	15.0	12.0	13.5	17.0	12.0	14.5
17	5.0	4.5	5.0	10.5	6.0	8.0	15.0	13.0	14.0	16.0	11.5	14.0
18	5.0	4.0	4.5	10.5	7.0	9.0	14.0	10.5	12.0	15.5	10.0	13.0
19	4.0	4.0	4.0	12.0	9.0	10.5	14.0	11.5	13.0	15.5	10.5	13.0
20	4.5	3.0	4.0	12.5	11.0	12.0	14.5	12.5	13.5	14.0	11.0	12.5
21	5.0	3.0	4.0	13.0	11.5	12.0	15.0	13.0	14.0	---	---	---
22	5.0	3.0	4.0	13.0	11.5	12.0	15.0	13.0	14.0	---	---	---
23	5.5	3.5	4.5	13.0	11.5	12.0	12.0	9.0	10.5	---	---	---
24	5.5	3.5	4.5	13.0	11.0	12.0	12.5	10.5	11.5	---	---	---
25	5.5	3.5	4.5	13.0	11.0	12.0	12.5	10.0	11.0	---	---	---
26	6.5	4.5	5.5	12.0	12.0	12.0	14.5	10.5	12.5	---	---	---
27	7.0	6.0	6.5	12.5	11.5	12.0	14.5	12.5	13.5	---	---	---
28	7.0	6.0	6.5	12.0	12.0	12.0	14.5	10.0	12.0	16.5	11.5	14.0
29	---	---	---	12.5	10.5	11.5	14.5	10.0	12.0	17.5	12.0	15.0
30	---	---	---	12.5	12.0	12.0	15.5	11.5	13.5	18.0	12.5	15.0
31	---	---	---	13.0	12.5	13.0	---	---	---	18.0	13.5	16.0
MONTH	7.0	2.0	4.5	13.0	3.5	9.5	15.5	9.0	12.5	18.0	6.0	13.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	18.5	13.5	16.0	24.5	19.5	22.0	26.0	21.0	23.5	22.0	16.0	19.0
2	18.5	13.5	16.0	23.5	19.0	21.0	24.5	20.0	22.0	21.5	17.0	19.0
3	18.5	13.5	16.0	24.5	19.5	22.0	23.0	20.0	21.5	22.0	17.0	19.5
4	19.0	14.5	17.0	24.5	20.0	22.0	22.0	15.5	19.0	23.0	18.0	20.5
5	18.0	12.0	15.0	24.0	19.5	22.0	24.0	17.0	20.5	25.0	18.5	22.0
6	17.5	14.0	16.0	24.0	19.0	21.5	23.5	19.0	21.0	24.5	18.0	21.0
7	19.0	13.5	16.0	24.0	18.0	21.0	22.0	19.0	20.5	23.0	17.0	20.0
8	20.5	15.0	18.0	24.5	20.5	22.5	22.0	18.0	20.0	24.0	16.0	20.0
9	20.5	15.0	18.0	26.5	20.0	23.0	23.5	18.0	21.0	24.0	16.5	20.0
10	20.5	16.0	18.0	27.0	21.0	24.0	24.0	19.0	21.5	22.5	17.5	20.0
11	19.5	15.5	17.5	26.5	20.5	23.5	24.0	18.5	21.0	23.5	17.0	20.0
12	20.5	15.0	18.0	24.5	20.5	22.5	26.0	19.5	22.5	22.0	15.5	19.0
13	20.0	15.5	18.0	26.5	20.5	23.5	25.5	19.5	22.5	20.5	15.5	18.0
14	21.0	16.0	18.5	26.0	21.5	24.0	26.0	20.0	23.0	20.0	15.0	17.5
15	21.5	16.5	19.0	25.0	21.0	23.0	25.5	18.5	22.0	21.5	16.5	19.0
16	21.5	17.0	19.0	23.5	20.0	22.0	25.0	18.0	21.5	22.0	16.0	19.0
17	21.0	16.0	18.5	25.0	20.5	23.0	25.0	19.0	22.0	20.5	17.0	19.0
18	20.5	15.5	18.0	25.0	21.0	23.0	23.0	19.0	21.0	19.5	15.0	17.0
19	21.5	17.5	19.5	26.0	21.0	23.5	21.0	18.0	19.5	19.5	14.5	17.0
20	21.5	16.0	19.0	24.5	21.0	23.0	23.5	18.5	21.0	18.5	13.5	16.0
21	23.0	18.5	21.0	22.5	20.5	21.5	25.0	20.0	22.5	17.0	12.0	14.5
22	23.0	18.0	20.5	23.0	19.5	21.0	24.5	19.5	22.0	18.0	13.0	15.5
23	23.0	18.0	20.5	23.0	19.0	21.0	25.5	19.5	22.5	16.5	14.5	15.5
24	22.5	18.0	20.0	24.5	19.5	22.0	25.0	19.5	22.0	17.0	16.0	16.5
25	23.5	19.0	21.0	25.5	20.0	23.0	25.5	20.0	23.0	17.0	15.5	16.0
26	23.5	19.0	21.0	25.0	19.5	22.0	26.0	19.0	22.5	21.0	16.0	18.5
27	22.0	20.0	21.0	26.0	19.5	23.0	24.5	18.0	21.0	21.5	16.0	19.0
28	23.0	19.0	21.0	28.0	19.5	24.0	23.5	16.0	20.0	21.5	16.0	19.0
29	22.5	20.0	21.0	27.0	20.5	24.0	23.5	18.0	21.0	21.5	15.5	18.5
30	22.5	19.0	21.0	25.5	19.0	22.0	21.0	15.5	18.0	20.0	15.0	17.5
31	---	---	---	26.0	19.5	22.5	21.5	17.0	19.0	---	---	---
MONTH	23.5	12.0	18.5	28.0	18.0	22.5	26.0	15.5	21.5	25.0	12.0	18.5
YEAR	28.0	.0	12.0									

08313000 RIO GRANDE AT OTOWI BRIDGE, NEAR SAN ILDEFONSO, NM--Continued

## SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1400	2760	330	255	388	392	680	832	451	586	625	1030
2	1160	2250	246	178	450	456	535	631	415	540	755	1380
3	1010	1880	304	231	431	431	450	512	470	624	963	2100
4	877	1620	521	412	394	377	474	538	470	586	1110	2680
5	830	1520	385	284	516	515	515	581	540	693	1110	2850
6	1300	2470	295	225	405	412	520	626	441	581	800	1680
7	2510	5370	2700	3190	760	761	490	609	440	609	893	1940
8	1320	2230	6000	11000	460	446	528	583	457	660	670	1320
9	962	1170	2900	4700	560	544	430	470	390	539	540	1010
10	1080	1090	1000	1390	2840	7580	416	465	730	972	582	1090
11	485	414	683	845	2520	7280	379	442	1020	1380	522	996
12	343	256	590	628	2330	6860	394	470	670	935	429	762
13	285	204	618	674	2190	6330	442	530	396	546	347	570
14	266	205	630	742	1750	4480	485	570	370	518	345	535
15	475	435	575	682	965	1280	372	424	364	504	430	694
16	576	490	778	861	845	903	390	479	397	541	340	511
17	296	219	929	1200	815	854	595	749	373	506	416	600
18	247	181	652	859	860	922	510	666	337	447	320	448
19	263	213	497	566	840	794	341	418	570	723	334	461
20	361	354	413	446	665	652	398	505	760	981	319	477
21	284	255	605	653	525	462	429	525	410	525	374	638
22	1230	2080	526	548	655	582	450	556	349	449	369	661
23	1050	1930	551	562	640	563	441	560	333	427	291	527
24	956	1800	380	379	575	605	470	602	402	549	385	754
25	842	1580	794	825	550	585	458	534	371	502	324	663
26	833	1520	590	597	890	918	420	473	405	566	345	632
27	971	1810	501	500	575	602	680	712	734	1060	290	503
28	643	832	500	510	497	534	575	744	473	716	255	461
29	602	580	456	474	490	553	481	627	---	---	344	618
30	321	283	408	406	600	726	456	584	---	---	368	652
31	311	248	---	---	503	632	723	958	---	---	235	379
TOTAL	---	38249	---	34822	---	49031	---	17975	---	18265	---	29622
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	279	489	2310	13500	1440	10700	658	2840	1300	2180	724	1840
2	644	1350	2340	15400	1090	8300	530	2490	1700	3440	636	1460
3	435	904	1960	13600	1060	8440	510	2340	3860	15700	975	3240
4	344	668	2080	13400	1350	10900	496	1970	3350	18900	782	2280
5	289	493	2140	10200	1990	17200	391	1360	3260	14800	355	554
6	657	1600	1820	10100	1570	13200	364	1060	1850	7940	350	505
7	420	663	1740	7660	1150	8690	368	970	1600	6740	187	200
8	414	617	2020	9760	1330	9590	462	1010	1210	4410	76	56
9	549	944	1690	6430	1580	11900	534	1090	733	1940	161	113
10	481	878	1750	6520	1070	6700	240	469	1410	4040	103	73
11	570	1140	2350	12200	1100	6030	240	465	758	1910	85	57
12	448	679	3040	24900	900	5100	855	1870	516	727	96	64
13	1140	1750	2300	19000	1010	6710	550	1440	482	528	249	350
14	742	1550	2210	19100	981	6010	760	2690	270	269	299	506
15	636	1280	2540	22400	725	4030	715	2660	220	211	304	492
16	670	1310	2620	24100	617	3230	512	1880	189	169	329	531
17	780	1580	2320	22100	935	5810	364	1300	215	200	347	512
18	735	1450	2170	20600	1180	7870	410	1390	1300	4210	449	709
19	690	1180	2870	27000	1170	7990	370	1220	1210	4440	379	540
20	551	907	2080	19100	988	6320	508	1820	1000	3290	610	827
21	594	1100	2510	25600	715	4540	798	3660	835	2200	944	1310
22	1180	2320	2000	19200	623	3850	495	1840	360	402	1100	1870
23	1370	2640	1860	18000	790	4800	735	2220	246	208	560	683
24	908	1820	1620	15400	720	4370	808	2230	289	235	998	1600
25	1830	4140	1570	14200	797	4780	645	1850	169	140	944	1700
26	1580	4440	1640	14900	610	3710	460	1040	158	126	837	1320
27	2770	10900	1630	14700	590	3540	213	374	156	115	612	664
28	2640	13300	1280	10800	570	3560	682	1050	161	114	500	431
29	2660	16300	1300	10400	800	4060	778	1350	142	103	1640	1310
30	2420	14600	1640	13000	3100	13600	1790	6210	804	1780	350	265
31	---	---	1240	9510	---	---	3480	6590	1010	3470	---	---
TOTAL	---	92992	---	482780	---	215530	---	60548	---	104937	---	26062
TOTAL LOAD FOR YEAR:			1170813 TONS.									

## 08313350 RITO DE LOS FRIJOLAS IN BANDELIER NATIONAL MONUMENT, NM

LOCATION.--Lat 35°47'08", long 106°16'50", Sandoval County, Hydrologic Unit 13020201, in Bandelier National Monument, 1,600 ft (490 m) southeast of Ceremonial Cave, 4,000 ft (1,200 m) upstream from Monument headquarters, 6 mi (10 km) south of Los Alamos, 19 mi (31 km) northwest of Santa Fe, and at mile 3.0 (4.8 km).

DRAINAGE AREA.--17.5 mi<sup>2</sup> (45.3 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1963 to September 1969, July 1977 to current year.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 6,140 ft (1,870 m), from topographic map.

REMARKS.--Water-discharge records poor. No diversions above station. The La Mesa forest fire which occurred during mid-June 1977 burned about 40% of the forest cover of this watershed and evidently changed the flow characteristics.

AVERAGE DISCHARGE.--7 years (water years 1964-69, 1978), 1.22 ft<sup>3</sup>/s (0.035 m<sup>3</sup>/s), 884 acre-ft/yr (1.09 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,030 ft<sup>3</sup>/s (85.8 m<sup>3</sup>/s) July 21, 1978, gage height, 6.34 ft (1.932 m), from rating curve extended above 7.6 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 3.88 ft (1.183 m), 5.02 ft (1.530 m), and 6.34 ft (1.932 m); no flow Feb. 6, 1968, result of freezeup.

The maximum discharge prior to the forest fire of June 1977 was 19 ft<sup>3</sup>/s (0.54 m<sup>3</sup>/s) June 18, 1965, gage height, 1.49 ft (0.454 m), from rating curve extended above 7.6 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) on basis of theoretical rating.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4.0 ft<sup>3</sup>/s (0.11 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Oct. 4	1700	44 1.25	2.28 .695	July 21	1345	*b3,030 85.8	6.34 1.932
Nov. 7	1100	4.8 .14	.94 .287	Aug. 9	2030	49 1.39	2.35 .716
Mar. 1	1530	4.5 .13	.63 .192	Aug. 23	1900	9.2 .26	1.15 .351
June 30	al300	296 8.38	3.65 1.113	Aug. 24	1700	12 .34	1.33 .405
July 12	al500	1,800 51.0	5.6 1.71	Sept. 24	0600	35 .99	2.09 .637

a About

b From rating curve extended above 7.6 ft<sup>3</sup>/s (0.22 m<sup>3</sup>/s) as explained above.

Minimum discharge, 0.04 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Jan. 25, result of freezeup.

## DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.81	.60	.75	1.0	2.3	1.2	1.2	1.2	1.0	.64	.58
2	1.1	.81	.70	.70	.81	1.9	1.3	1.3	1.2	.80	.58	.58
3	1.0	.81	.70	.70	.88	1.5	1.4	1.4	1.2	.70	.64	.58
4	3.8	.81	.80	1.2	1.1	1.4	1.4	1.4	1.2	.60	.76	.58
5	1.7	.81	.70	1.2	1.2	1.4	1.4	1.5	1.3	.60	.70	.58
6	1.1	1.1	.60	1.2	1.1	1.4	1.4	1.5	1.4	.60	.58	.58
7	.76	3.3	.60	1.0	1.1	1.2	1.3	1.5	1.5	.76	.58	.58
8	.64	.81	.80	.64	1.1	1.2	1.3	1.5	1.5	.64	.64	.58
9	.70	.76	1.0	.76	1.0	1.2	1.5	1.4	1.4	.76	2.9	.58
10	.78	.76	.80	1.2	1.2	1.3	1.5	1.4	1.1	.64	1.0	.53
11	.81	.64	1.2	1.2	1.1	1.3	1.5	1.4	.88	.53	.80	.53
12	.88	.64	1.1	1.2	1.1	1.2	1.4	1.4	.76	55	.60	.58
13	.76	.58	1.1	.94	1.0	1.2	1.4	1.4	.94	10	.60	.64
14	.76	.64	.94	.81	1.0	1.2	1.4	1.4	.88	2.0	.60	.64
15	.76	.58	.60	1.0	.70	1.2	1.3	1.4	.81	1.0	.60	.64
16	.76	.53	.70	1.1	.94	1.2	1.3	1.5	.76	.80	.55	.58
17	.70	.47	.60	1.1	.64	1.1	1.3	1.5	.70	.70	.55	.58
18	.70	.42	.80	1.1	.58	1.1	1.3	1.6	.70	.60	.55	.58
19	.70	.42	.70	1.0	.76	1.2	1.2	1.6	.70	.60	.55	.58
20	.76	.42	.53	.88	.81	1.3	1.2	1.7	.70	.60	.55	.58
21	.70	.47	.32	.88	1.0	1.3	1.2	1.7	.64	80	.55	.58
22	.81	.47	.88	.37	.94	1.2	1.2	1.8	.58	20	.55	.58
23	.81	.47	1.2	.64	1.0	1.4	1.2	1.8	.47	5.0	1.6	.58
24	.76	.47	1.1	.76	.94	1.3	1.1	1.7	.47	2.0	2.5	2.1
25	.70	.64	1.2	.20	.94	1.2	1.1	1.6	.42	1.0	.88	1.0
26	.81	.64	1.0	.47	.94	1.2	1.1	1.5	.37	.80	.70	.70
27	.70	.64	.80	.76	1.0	1.2	1.0	1.4	.37	.60	.47	.60
28	.76	.64	.70	.88	1.0	1.2	1.0	1.3	.47	.53	.42	.60
29	.70	.64	.80	.81	---	1.2	1.0	1.3	1.4	.53	.42	.60
30	.76	.70	.70	.76	---	1.2	1.0	1.2	10	.53	.64	.60
31	.76	---	.80	.81	---	1.2	---	1.2	---	.58	.64	---
TOTAL	28.54	21.90	25.07	27.02	26.88	40.4	37.9	45.5	36.02	190.50	24.34	19.62
MEAN	.92	.73	.81	.87	.96	1.30	1.26	1.47	1.20	6.15	.79	.65
MAX	3.8	3.3	1.2	1.2	1.2	2.3	1.5	1.8	10	80	2.9	2.1
MIN	.64	.42	.32	.20	.58	1.1	1.0	1.2	.37	.53	.42	.53
AC=FT	57	43	50	54	53	80	75	90	71	378	48	39

WTR YR 1978 TOTAL 523.69 MEAN 1.43 MAX 80 MIN .20 AC=FT 1040



08313350 RITO DE LOS FRIJOLAS IN BANDELIER NATIONAL MONUMENT, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1977 to current year.

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)
OCT												
04...	0855	1.0	179	10.5	466	1.3	--	--	--	--	--	--
04...	1345	1.0	208	--	25100	68	--	--	--	--	--	--
04...	1510	1.3	152	14.0	924	3.2	--	--	--	--	--	--
04...	1530	1.3	141	13.5	1360	4.8	--	--	--	--	--	--
04...	1545	2.4	250	--	46300	300	--	--	--	--	--	--
04...	1715	18	174	11.5	17300	841	--	--	--	--	--	--
04...	1830	6.8	152	--	6660	122	--	--	--	--	--	--
04...	2020	3.1	148	11.5	2750	23	--	--	--	--	--	--
05...	1540	1.8	177	14.5	298	1.4	--	--	--	--	--	--
10...	1400	.68	166	11.0	1670	3.1	--	--	--	--	--	--
31...	1100	.76	155	6.0	279	.57	--	--	--	--	--	--
FEB												
08...	1405	1.2	145	3.0	102	.33	--	--	--	--	--	--
APR												
28...	0850	1.1	138	7.0	34	.10	--	--	--	--	--	--
MAY												
10...	1520	1.4	132	17.0	29	.11	--	--	--	--	--	--
JUN												
14...	1130	--	7760	--	2330	--	--	--	--	--	--	--
15...	1000	.94	140	15.0	168	.43	--	--	--	--	--	--
26...	0900	.53	143	15.0	11	.02	--	--	--	--	--	--
30...	1400	--	252	--	29100	--	14	21	60	--	97	100
JUL												
14...	1000	E2.0	184	16.5	80	.43	--	--	--	--	--	--
20...	1100	E.60	176	18.5	44	.07	--	--	--	--	--	--
26...	0900	E.80	200	14.0	220	.48	--	--	--	--	--	--
AUG												
07...	0830	.58	182	14.0	296	.46	--	--	--	38	--	--
15...	1330	E.60	179	21.0	925	1.5	--	--	--	19	--	--
22...	0930	E.55	173	15.0	172	.26	--	--	--	62	--	--
SEP												
05...	1045	.70	162	18.0	1130	2.1	--	--	--	12	--	--

## 08315500 MCCLURE RESERVOIR NEAR SANTA FE, NM

LOCATION.--Lat 35°41'18", long 105°50'06", in NE¼SW¼ sec.24, T.17 N., R.10 E., Santa Fe County, Hydrologic Unit 13020201, in Santa Fe National Forest, on outlet tower at McClure Dam on Santa Fe River, 2.1 mi (3.4 km) upstream from Nichols Reservoir, 5.8 mi (9.3 km) east of Santa Fe, and at mile 34.0 (54.7 km).

DRAINAGE AREA.--17.4 mi<sup>2</sup> (45.1 km<sup>2</sup>).

PERIOD OF RECORD.--September 1929, July to October 1930, April 1931 to June 1946, September 1947 to current year. Prior to October 1947, published in WSP 1312. Prior to October 1965, monthend contents only.

GAGE.--Water-stage recorder. Altitude of gage is 7,788 ft (2,374 m), from topographic map. Prior to Oct. 1, 1947, nonrecording gages at same site and various datums all referred to the Public Service Co. of New Mexico assumed datum, 165.9 ft (50.57 m) lower.

REMARKS.--Reservoir is formed by earthfill dam, completed in 1926, capacity, 561 acre-ft (692,000 m<sup>3</sup>), raised 3 ft (0.9 m) in 1935, capacity, 650 acre-ft (801,000 m<sup>3</sup>), and raised 36.5 ft (11.13 m) more in 1947, capacity, 2,615 acre-ft (3.22 hm<sup>3</sup>) at gage height 96.6 ft (29.44 m), crest of concrete spillway. Between October 1947 and May 1953 varying amounts of sandbag bulkheads were placed on crest of spillway to increase capacity. Between May 1953 and December 1971 spillway was equipped with radial gates that opened automatically thereby increasing capacity to over 3,000 acre-ft (3.70 hm<sup>3</sup>). Radial gates were removed during 1972, capacity, 2,615 acre-ft (3.22 hm<sup>3</sup>). No dead storage. Water is for municipal use of city of Santa Fe.

COOPERATION.--Supplementary stage readings and capacity table furnished by Public Service Co. of New Mexico.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,140 acre-ft (3.87 hm<sup>3</sup>) June 25, 1960, gage height, 103.7 ft (31.61 m); no contents Jan. 25 to May 8, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,640 acre-ft (3.26 hm<sup>3</sup>) June 5-15, gage height, 96.9 ft (29.54 m); minimum, 1,480 acre-ft (1.82 hm<sup>3</sup>) Sept. 30, gage height, 78.7 ft (23.99 m).

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on survey by Public Service Co. of New Mexico in 1947)

78	1,440	90	2,160
80	1,550	95	2,500
85	1,840	100	2,860

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2350	1990	2000	2000	1960	1950	1980	2200	2560	2610	2250	1830
2	2340	1980	2000	1990	1960	1950	1990	2210	2590	2610	2240	1830
3	2330	1970	2010	1990	1950	1950	2000	2210	2610	2600	2230	1810
4	2320	1970	2010	1990	1950	1950	2010	2220	2630	2590	2210	1800
5	2310	1970	2010	1990	1950	1940	2020	2220	2640	2590	2190	1780
6	2300	1970	2010	1990	1950	1940	2030	2230	2640	2580	2180	1770
7	2280	1970	2010	1990	1950	1940	2040	2240	2640	2560	2170	1760
8	2270	1980	2010	1990	1950	1940	2060	2240	2640	2560	2160	1740
9	2250	1990	2010	1980	1950	1940	2070	2250	2640	2550	2150	1730
10	2250	1990	2020	1980	1950	1940	2080	2260	2640	2540	2130	1720
11	2230	1990	2020	1980	1950	1930	2080	2270	2640	2540	2120	1700
12	2220	1990	2020	1980	1950	1930	2090	2290	2640	2530	2110	1690
13	2210	1990	2020	1980	1950	1930	2100	2300	2640	2520	2100	1680
14	2190	1990	2020	1980	1950	1930	2100	2320	2640	2500	2080	1670
15	2190	1990	2020	1980	1950	1930	2100	2350	2640	2490	2070	1650
16	2170	1990	2020	1970	1950	1930	2110	2380	2630	2470	2050	1640
17	2160	1990	2020	1970	1950	1930	2120	2420	2630	2450	2030	1630
18	2150	1990	2020	1970	1950	1930	2130	2440	2630	2440	2020	1620
19	2140	2000	2020	1970	1950	1930	2130	2450	2630	2420	2000	1600
20	2130	2000	2020	1970	1950	1930	2140	2460	2630	2410	1990	1590
21	2120	2000	2020	1970	1950	1930	2140	2460	2630	2400	1980	1570
22	2100	2000	2020	1970	1950	1930	2150	2470	2630	2380	1970	1570
23	2090	2000	2010	1970	1950	1940	2150	2470	2620	2380	1950	1560
24	2080	2000	2010	1960	1950	1940	2150	2480	2620	2360	1940	1550
25	2070	2000	2010	1960	1950	1940	2150	2490	2620	2350	1920	1540
26	2060	2000	2010	1960	1950	1940	2160	2500	2620	2330	1910	1520
27	2040	2000	2000	1960	1950	1950	2170	2500	2620	2320	1890	1510
28	2040	2000	2000	1960	1950	1950	2180	2500	2620	2310	1880	1500
29	2020	2000	2000	1960	---	1950	2190	2500	2620	2290	1870	1490
30	2010	2000	2000	1960	---	1960	2200	2500	2610	2280	1860	1480
31	2000	---	2000	1960	---	1970	---	2530	---	2270	1850	---
MAX	2350	2000	2020	2000	1960	1970	2200	2530	2640	2610	2250	1830
MIN	2000	1970	2000	1960	1950	1930	1980	2200	2560	2270	1850	1480
(†)	87.5	87.6	-	-	-	-	-	95.4	96.6	91.6	85.1	78.7
(‡)	-360	0	0	-40	-10	+20	+230	+330	+80	-340	-420	-370
CAL YR 1977	MAX	2560	MIN	1970	‡	-250						
WTR YR 1978	MAX	2640	MIN	1480	‡	-880						

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

NOTE.--Monthend contents estimated Dec. 31, Jan. 31, Feb. 28, Mar. 31 and Apr. 30. No gage-height record Dec. 3 to Apr. 3.

## 08316000 SANTA FE RIVER NEAR SANTA FE, NM

LOCATION.--Lat 35°41'12", long 105°50'35", in NE¼SE¼ sec.23, T.17 N., R.10.E., Santa Fe County, Hydrologic Unit 13020201, in Santa Fe National Forest, on left bank 0.4 mi (0.6 km) downstream from McClure Dam, 5.3 mi (8.5 km) east of Santa Fe, and at mile 33.6 (54.1 km).

DRAINAGE AREA.--18.2 mi<sup>2</sup> (47.1 km<sup>2</sup>).

PERIOD OF RECORD.--June 1910, January 1913 to current year. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1953, published as Santa Fe Creek near Santa Fe.

REVISED RECORDS.--WSP 1512: 1933, 1936-37(M), 1942, drainage area. WSP 1732: 1923, 1925. WDR NM-75-1: 1927.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 7,718 ft (2,352 m), from topographic map. See WSP 1312 for history of changes prior to Oct. 1, 1947.

REMARKS.--Records good. Flow regulated by McClure Reservoir (station 08315500), completed in 1926, raised in 1935 and again in 1947. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--65 years, 7.83 ft<sup>3</sup>/s (0.222 m<sup>3</sup>/s), 5,670 acre-ft/yr (6.99 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,500 ft<sup>3</sup>/s (42.5 m<sup>3</sup>/s) Aug. 14, 1921, gage height, 5.17 ft (1.576 m), site and datum then in use, from rating curve extended above 150 ft<sup>3</sup>/s (4.2 m<sup>3</sup>/s); minimum, 0.08 ft<sup>3</sup>/s (0.002 m<sup>3</sup>/s) July 31, Aug. 1, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Peaks which probably exceeded 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s) occurred Aug. 19, 1872, and Sept. 29 or 30, 1904. Without regulation the flood of Sept. 23, 1929, might have exceeded 1,500 ft<sup>3</sup>/s (42 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28 ft<sup>3</sup>/s (0.79 m<sup>3</sup>/s) May 27, gage height, 2.31 ft (0.704 m); minimum, 0.73 ft<sup>3</sup>/s (0.021 m<sup>3</sup>/s) Nov. 30 to Dec. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	6.6	.73	1.4	1.4	1.6	6.7	7.3	10	7.1	8.9	7.3
2	5.9	6.5	.73	1.4	1.4	1.6	6.7	7.3	10	7.0	8.8	7.7
3	6.0	4.3	.73	1.4	1.4	4.1	6.7	7.3	10	7.0	8.8	7.7
4	6.0	.88	.73	1.4	1.4	6.4	6.7	7.3	16	6.9	8.8	7.6
5	5.9	.88	.73	1.4	1.4	6.4	6.7	7.3	20	6.8	8.8	7.6
6	5.9	.89	.73	1.4	1.5	6.4	6.7	7.3	21	6.7	8.8	7.6
7	6.4	.94	.73	1.4	1.4	6.4	6.7	7.3	19	6.7	8.8	7.6
8	7.1	.88	.73	1.4	1.4	6.4	6.7	7.3	17	6.7	8.7	7.5
9	7.1	.88	.73	1.4	1.4	6.4	6.8	7.3	16	6.7	8.6	7.4
10	7.1	.88	.73	1.4	1.4	6.4	6.9	7.3	16	6.7	8.5	7.3
11	7.1	.88	.73	1.4	1.4	6.4	6.9	7.3	16	6.7	8.5	7.3
12	7.1	.88	.73	1.4	1.4	6.3	7.0	7.3	15	6.7	8.5	7.3
13	7.0	.88	.73	1.4	1.4	6.1	7.0	7.4	15	8.6	8.5	7.3
14	7.0	.83	.73	1.4	1.4	6.1	7.0	7.4	14	9.9	8.5	7.3
15	7.0	.80	.73	1.4	1.4	6.1	7.0	7.6	13	9.9	8.5	7.1
16	7.0	.80	.73	1.4	1.4	6.1	7.0	9.4	12	9.9	8.4	7.0
17	7.0	.80	.73	1.4	1.4	6.1	7.0	11	11	9.8	8.3	7.0
18	7.0	.80	.73	1.4	1.4	6.1	7.0	14	9.9	9.8	8.3	7.0
19	7.0	.80	.73	1.4	1.4	6.1	7.0	25	9.4	9.8	8.3	6.7
20	7.0	.80	1.0	1.4	1.4	6.1	7.0	26	8.4	9.7	8.2	6.9
21	6.8	.80	1.4	1.4	1.4	6.1	7.0	26	7.7	9.6	8.2	6.7
22	6.8	.80	1.4	1.4	1.4	6.1	7.0	25	6.9	9.6	8.2	6.7
23	6.8	.80	1.4	1.4	1.4	6.1	7.0	25	6.2	9.5	8.2	6.7
24	6.8	.80	1.4	1.4	1.4	6.1	7.0	25	5.7	9.5	8.2	6.7
25	6.8	.80	1.4	1.4	1.4	6.1	7.0	25	5.2	9.5	8.0	6.7
26	6.8	.80	1.4	1.4	1.4	6.1	7.0	26	4.6	9.5	8.1	6.7
27	6.8	.80	1.4	1.4	1.5	6.1	7.0	26	4.6	9.5	8.0	6.5
28	6.8	.80	1.4	1.4	1.5	6.2	7.0	26	4.7	9.0	7.9	6.4
29	6.8	.80	1.4	1.4	---	6.3	7.2	25	8.7	9.1	7.9	6.4
30	6.8	.80	1.4	1.4	---	6.5	7.3	17	8.8	9.1	7.9	6.4
31	6.7	---	1.4	1.4	---	6.7	---	10	---	9.0	7.9	---
TOTAL	208.2	39.90	30.27	43.4	39.5	182.0	207.7	451.4	341.8	262.0	260.0	212.1
MEAN	6.72	1.33	.98	1.40	1.41	5.87	6.92	14.6	11.4	8.45	8.39	7.07
MAX	7.1	6.6	1.4	1.4	1.5	6.7	7.3	26	21	9.9	8.9	7.7
MIN	5.9	.80	.73	1.4	1.4	1.6	6.7	7.3	4.6	6.7	7.9	6.4
AC=FT	413	79	60	86	78	361	412	895	678	520	516	421

CAL YR 1977 TOTAL 1106.82 MEAN 3.03 MAX 7.1 MIN .73 AC=FT 2200  
WTR YR 1978 TOTAL 2278.27 MEAN 6.24 MAX 26 MIN .73 AC=FT 4520

## 08316500 NICHOLS RESERVOIR NEAR SANTA FE, NM

LOCATION.--Lat 35°41'24", long 105°52'46", in SE<sub>2</sub>NE<sub>4</sub> sec.21, T.17 N., R.10 E., Santa Fe County, Hydrologic Unit 13020203, in Santa Fe National Forest, on outlet tower at Nichols Dam on Santa Fe River, 0.6 mi (1.0 km) east of Twomile Reservoir, 3.3 mi (5.3 km) east of Santa Fe, and at mile 31.0 (49.9 km).

DRAINAGE AREA.--22.8 mi<sup>2</sup> (59.1 km<sup>2</sup>).

PERIOD OF RECORD.--March 1943 to September 1965 (monthend contents only), October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 7,313.2 ft (2,229.06 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam. No contents prior to Mar. 16, 1943. Capacity, 685 acre-ft (845,000 m<sup>3</sup>) between gage heights 121.2 ft (36.94 m), bottom of lower operational gate and 167.0 ft (50.90 m), crest of spillway. Dead storage, 14 acre-ft (17,300 m<sup>3</sup>). Water is for municipal use of city of Santa Fe.

COOPERATION.--Supplementary stage readings and survey to compute capacity table furnished by Public Service Co. of New Mexico.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 836 acre-ft (1.03 hm<sup>3</sup>) June 8, 1952, gage height, 171.8 ft (52.36 m); minimum, 16 acre-ft (19,700 m<sup>3</sup>) Feb. 11 to Mar. 10, 1944, Feb. 1-19, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 431 acre-ft (531,000 m<sup>3</sup>) June 17-18, gage height, 157.4 ft (47.98 m); minimum, about 87 acre-ft (107,000 m<sup>3</sup>) Mar. 3, gage height about 134.8 ft (41.09 m).

Capacity table (gage height, in feet, and contents, in acre-feet)  
(Based on survey by Public Service Co. of New Mexico in 1943)

134	81	145	202
135	89	150	279
140	139	160	491

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124	153	170	115	115	92	158	164	294	329	260	412
2	124	164	168	115	115	89	160	164	292	325	260	407
3	122	164	167	115	114	87	163	165	300	321	265	405
4	119	160	167	115	114	91	165	168	308	317	270	400
5	117	158	163	115	114	99	167	173	335	312	271	398
6	116	157	160	115	113	107	168	177	356	308	271	396
7	115	159	158	115	113	115	168	180	371	304	279	391
8	116	162	155	115	113	120	168	180	389	292	279	386
9	117	164	152	115	112	126	168	179	394	283	296	382
10	117	167	149	115	112	130	168	178	400	276	312	377
11	118	168	147	114	112	133	169	178	405	268	319	373
12	119	169	144	114	112	135	169	178	407	257	327	369
13	119	170	140	114	111	137	168	177	417	251	333	365
14	122	172	138	114	111	137	168	175	424	253	340	362
15	126	173	134	114	111	137	168	174	426	253	346	356
16	129	174	131	114	112	137	168	174	428	253	350	350
17	132	175	127	114	112	137	168	174	431	251	354	346
18	132	177	124	114	113	137	168	177	428	250	356	340
19	132	178	120	114	114	137	168	179	428	245	360	335
20	132	179	117	114	114	137	168	179	421	242	365	331
21	132	180	117	114	115	137	168	184	410	240	373	327
22	133	180	117	114	114	137	167	192	396	240	375	325
23	136	182	116	114	111	138	167	194	382	242	382	323
24	138	183	116	114	108	138	165	197	371	243	389	325
25	139	183	116	114	104	139	164	198	360	248	394	331
26	139	182	116	114	101	140	164	199	348	251	398	336
27	139	179	116	115	98	140	164	223	336	253	400	342
28	139	175	116	115	95	143	164	254	327	256	405	346
29	142	174	115	115	---	145	164	279	327	259	410	350
30	144	173	115	115	---	149	164	296	329	263	412	354
31	145	---	115	115	---	153	---	294	---	262	412	---
MAX	145	183	170	115	115	153	169	296	431	329	412	412
MIN	115	153	115	114	95	87	158	164	292	240	260	323
(†)	140.5	142.7	-	-	-	141.1	142.0	150.8	152.6	148.9	156.6	153.9
(‡)	+18	+28	-58	0	-20	+58	+11	+130	+35	-67	+150	-58
CAL YR 1977	MAX 265	MIN 115	‡ -122									
WTR YR 1978	MAX 431	MIN 87	‡ +227									

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

NOTE.--Monthend contents estimated Dec. 31, Jan. 31, Feb. 28. No gage-height record Dec. 21 to Mar. 9.

## 08317200 SANTA FE RIVER ABOVE COCHITI LAKE, NM

LOCATION.—Lat 35°32'49", long 106°13'41", in NW¼ sec.8, T.15 N., R.7 E., Santa Fe County, Hydrologic Unit 13020201, in Mesita de Juana Lopez Grant, on right bank at foot of La Bajada Hill, 5.0 mi (8.0 km) upstream from Cochiti Dam, 6.3 mi (10.1 km) east of Peña Blanca, and at mile 8.2 (13.2 km).

DRAINAGE AREA.—231 mi<sup>2</sup> (598 km<sup>2</sup>).

PERIOD OF RECORD.—March 1970 to current year.

GAGE.—Water-stage recorder. Altitude of gage is 5,505 ft (1,678 m), from topographic map.

REMARKS.—Records good. Surface and ground-water diversions and returns for municipal supply of city of Santa Fe in upper part of basin. Diversions for irrigation of about 400 acres (1.6 km<sup>2</sup>) above station. Several observations of water temperature were made during the year. See tabulation below for the results of discharge measurements made during year at point adjacent to gage of an unnamed ditch on right bank which diverts water 0.4 mi (0.6 km) upstream and bypasses gage; ditch flow not included in record.

AVERAGE DISCHARGE.—8 years, 7.87 ft<sup>3</sup>/s (0.223 m<sup>3</sup>/s), 5,700 acre-ft/yr (7.03 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge, 11,400 ft<sup>3</sup>/s (323 m<sup>3</sup>/s) July 26, 1971, gage height, 9.58 ft (2.920 m), from rating curve extended above 160 ft<sup>3</sup>/s (4.5 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 5.69 ft (1.734 m) and 9.58 ft (2.920 m); no flow July 16-18, 1971.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 418 ft<sup>3</sup>/s (11.8 m<sup>3</sup>/s) at 1445 hours Oct. 6, gage height, 2.96 ft (0.902 m), no other peak above base of 300 ft<sup>3</sup>/s (8.5 m<sup>3</sup>/s); minimum, 0.60 ft<sup>3</sup>/s (0.017 m<sup>3</sup>/s) June 24, result of regulation.

DISCHARGE MEASUREMENTS, IN CUBIC FEET PER SECOND, OF DITCH, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978							
Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
Oct. 27	e .02	Feb. 13	0	June 2	1.0	Aug. 29	.25
Nov. 21	0	Mar. 15	0	June 9	.68	Sept. 25	.96
Dec. 19	0	Apr. 11	.97	July 6	0		
Jan. 16	0	May 11	1.4	July 31	.75		

e Estimated.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	6.5	7.6	9.3	10	11	7.4	4.2	3.3	3.9	2.7	4.4
2	5.0	7.2	7.3	8.9	9.9	12	8.5	11	16	3.4	3.9	4.1
3	4.3	7.1	7.4	9.5	9.8	12	8.1	18	5.1	2.5	23	5.6
4	4.4	7.1	7.7	9.4	9.5	12	6.8	13	4.9	2.3	8.0	7.9
5	4.2	6.8	7.6	9.2	9.6	12	7.1	10	3.5	2.2	11	4.7
6	52	7.0	8.0	8.7	10	11	7.0	10	3.3	2.1	5.2	2.9
7	8.5	25	8.1	9.7	10	10	6.7	9.5	2.3	1.6	3.6	4.5
8	6.6	12	8.0	9.8	11	10	6.2	8.9	2.5	1.4	3.7	3.7
9	5.4	9.4	6.9	9.6	10	9.9	6.6	7.5	1.5	1.9	3.1	2.9
10	5.1	8.8	8.1	9.6	9.8	9.9	6.8	6.9	1.9	1.6	4.5	3.0
11	4.8	8.7	8.1	9.5	9.2	9.9	7.1	6.0	2.5	2.3	3.3	3.1
12	6.2	8.4	8.2	9.2	9.2	9.9	6.2	5.2	1.9	1.7	2.6	1.9
13	6.9	8.3	8.8	8.9	9.2	10	6.3	4.4	4.1	2.4	2.7	2.7
14	6.0	8.5	8.7	8.9	9.5	9.8	6.3	4.6	3.4	2.1	2.1	3.3
15	6.6	8.1	8.9	9.9	9.4	10	5.8	5.0	3.4	1.8	1.8	3.0
16	6.5	7.8	8.0	9.9	10	10	5.3	4.7	2.4	2.4	1.7	3.5
17	4.8	8.1	7.6	10	9.5	9.8	5.4	5.1	2.2	2.1	2.6	3.9
18	5.1	8.4	8.7	10	9.6	9.7	5.6	5.5	2.3	1.8	2.1	3.5
19	5.0	8.4	8.3	10	9.7	9.0	5.3	4.2	2.3	1.8	3.0	2.4
20	5.2	8.2	7.2	9.9	9.2	9.4	5.2	6.2	2.4	2.0	4.3	2.4
21	5.9	7.8	6.9	9.8	9.5	9.5	4.7	9.5	1.7	2.0	4.3	3.5
22	6.1	7.4	8.0	9.7	9.5	9.2	4.5	6.4	1.9	2.5	3.0	3.4
23	7.3	7.2	9.3	10	9.2	9.6	4.8	5.4	1.8	2.8	2.3	3.4
24	6.2	7.3	8.9	10	9.6	9.3	4.2	5.4	1.5	2.9	4.3	4.2
25	6.9	7.1	8.0	9.1	9.5	9.5	3.6	5.3	2.3	2.3	3.0	5.9
26	6.4	7.4	7.5	9.6	9.7	9.6	3.7	4.7	2.2	1.9	2.4	5.4
27	6.2	7.5	8.6	10	9.6	8.6	3.9	4.5	2.2	2.3	3.6	5.1
28	6.2	7.7	9.0	9.6	10	8.8	3.6	3.9	3.0	2.6	3.0	4.8
29	6.5	8.0	9.6	9.6	---	10	3.8	3.5	6.1	2.1	4.2	4.6
30	7.0	8.2	9.6	9.9	---	9.3	4.0	4.1	5.3	4.0	5.7	4.0
31	7.4	---	9.3	10	---	8.2	---	3.2	---	3.5	5.7	---
TOTAL	229.3	255.4	253.9	297.2	270.7	308.9	170.5	205.8	99.2	72.2	136.4	117.5
MEAN	7.40	8.51	8.19	9.59	9.67	9.96	5.68	6.64	3.31	2.33	4.40	3.92
MAX	52	25	9.6	10	11	12	8.5	18	16	4.0	23	7.9
MIN	4.2	6.5	6.9	8.7	9.2	8.2	3.6	3.2	1.5	1.4	1.7	1.9
AC-FT	455	507	504	589	537	613	338	408	197	143	271	233
CAL YR 1977	TOTAL	2659.98	MEAN 7.29	MAX 165	MIN .47	AC-FT 5280						
WTR YR 1978	TOTAL	2417.00	MEAN 6.62	MAX 52	MIN 1.4	AC-FT 4790						

## 08317300 COCHITI LAKE NEAR COCHITI PUEBLO, NM

LOCATION.--Lat 35°37'01", long 106°18'58", in NW¼SW¼ sec.16, T.16 N., R.6 E., Sandoval County, Hydrologic Unit 13020201, in Pueblo de Cochiti Grant, in control tower at Cochiti Dam, 1.7 mi (2.7 km) northeast of Cochiti Pueblo, and at mile 1,588.1 (2,555.3 km).

DRAINAGE AREA.--14,900 mi<sup>2</sup> (38,600 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>), in closed basin in San Luis Valley, CO.

PERIOD OF RECORD.--November 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Apr. 15, 1975, at site 1.3 mi (2.1 km) upstream at same datum.

REMARKS.--Lake is formed by an earthfill dam on Rio Grande and Santa Fe River. Storage began on Nov. 12, 1973. Capacity 498,100 acre-ft (614 hm<sup>3</sup>) between elevations 5,190.0 ft (1,581.91 m) and 5,450.0 ft (1,661.16 m), crest of service spillway. Dead storage 2,220 acre-ft (2.74 hm<sup>3</sup>) below elevation 5,255.0 ft (1,601.72 m), invert of outlet structure. Lake was created primarily for flood and sediment control. A 50,000 acre-ft (62 hm<sup>3</sup>) permanent pool is authorized for recreational purposes.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 60,950 acre-ft (75.2 hm<sup>3</sup>) Jan. 9, 1976, elevation, 5,331.60 ft (1,625.072 m); no storage prior to Nov. 12, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 59,800 acre-ft (73.7 hm<sup>3</sup>) Aug. 11, elevation, 5,330.78 ft (1,624.822 m); minimum, 46,860 acre-ft (57.8 hm<sup>3</sup>) July 1, elevation, 5,320.72 ft (1,621.755 m).

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Corps of Engineers in 1972)

5,320	46,010
5,330	58,730
5,340	73,410

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47500	47490	47510	47500	47540	47500	47420	47470	47740	47660	55460	59370
2	47510	47530	47530	47470	47510	47490	47490	48230	47720	48510	55950	59540
3	47530	47510	47510	47490	47550	47620	47410	48500	47650	49030	56720	59770
4	47540	47550	47510	47510	47540	47690	47420	48560	47490	49280	57740	59630
5	47540	47500	47560	47500	47540	47550	47420	48230	47980	49650	57920	58920
6	47530	47560	47550	47530	47560	47330	47630	48520	48210	50020	58310	59250
7	47630	47710	47600	47600	47570	47380	47510	48090	47670	50560	58690	59550
8	47390	47990	47540	47470	47570	47560	47550	48480	47030	51110	59060	59510
9	47380	47840	47380	47440	47570	47570	47670	48180	47450	51740	59200	59420
10	47430	47490	47680	47510	47500	47590	47670	48520	47440	52310	59650	59420
11	47430	47410	47570	47590	47470	47570	47660	48760	47470	52680	59800	59220
12	47530	47480	47440	47570	47470	47500	47540	48440	47320	53060	59450	59180
13	47550	47590	47530	47210	47470	47470	47450	48290	47500	53400	59410	59450
14	47570	47570	47630	47000	47490	47440	47610	48560	47560	53920	59410	59660
15	47620	47620	47490	47530	47510	47500	47610	48480	47490	54030	59280	59520
16	47650	47500	47490	47610	47530	47510	47660	48720	47450	54010	59270	59490
17	47430	47540	47510	47490	47450	47510	47720	48540	47540	54160	59220	59480
18	47420	47530	47470	47570	47440	47570	47630	48530	47550	54270	59400	59560
19	47530	47440	47410	47510	47430	47510	47490	48350	47590	54070	59280	59480
20	47630	47510	47470	47490	47430	47570	47490	47990	47430	53850	59240	59330
21	47470	47610	47420	47490	47480	47560	47630	48100	47260	54050	59400	59270
22	47450	47540	47550	47440	47510	47560	47690	47910	47120	53890	59480	59330
23	47560	47490	47650	47500	47530	47480	47620	48060	47300	53700	59360	59290
24	47550	47530	47710	47590	47540	47410	47510	48110	47290	53550	59310	59360
25	47500	47550	47600	47550	47550	47430	47670	47990	47140	53850	59280	59630
26	47440	47560	47630	47530	47550	47310	47750	48040	47210	53590	59250	59790
27	47600	47550	47570	47510	47560	47310	47680	47900	47310	53400	59250	59700
28	47590	47530	47550	47610	47560	47490	47630	47950	47310	53530	59320	59280
29	47500	47540	47530	47660	---	47550	48320	47960	46950	53900	59330	59040
30	47480	47530	47590	47600	---	47470	47830	47990	47060	54790	58890	59100
31	47420	---	47610	47530	---	47490	---	47790	---	55270	59410	---
MAX	47650	47990	47710	47660	47570	47690	48320	48760	48210	55270	59800	59790
MIN	47380	47410	47380	47000	47430	47310	47410	47470	46950	47660	55460	58920
(†)	5321.19	5321.28	5321.35	5321.28	5321.31	5321.25	5321.53	5321.50	5320.89	5327.43	5330.50	5330.27
(‡)	-110	+110	+80	-80	+30	-70	+340	-40	-730	+8210	+4140	-310
CAL YR 1977	MAX	49190	MIN	47060	‡	+50						
WTR YR 1978	MAX	59800	MIN	46950	‡	+11,570						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

## 08317400 RIO GRANDE BELOW COCHITI DAM, NM

LOCATION.—Lat 35°37'05", long 106°19'24", in SW¼ sec.17, T.16 N., R.6 E., Sandoval County, Hydrologic Unit 13020201, in Pueblo de Cochiti Grant, on right bank 320 ft (98 m) upstream from bridge on State Highway 22, 700 ft (210 m) downstream from Cochiti Dam, 1.4 mi (2.3 km) northeast of Cochiti Pueblo, and at mile 1,587.6 (2,554.4 km).

DRAINAGE AREA.—14,900 mi<sup>2</sup> (38,590 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.—October 1970 to current year.

GAGE.—Water-stage recorder. Datum of gage is 5,226.08 ft (1,592.909 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Nov. 14, 1973, at site 2.4 mi (3.9 km) downstream at altitude 5,210 ft (1,588 m), from topographic map. Nov. 14, 1973 to Jan. 8, 1976, at site 320 ft (98 m) downstream at datum 1.79 ft (0.546 m) lower.

REMARKS.—Water-discharge records good. Discharge includes flow of Santa Fe River which is intercepted by Cochiti Dam and released through the combined outlet works. Flow regulated by Cochiti Dam since Nov. 12, 1973. Diversions above station for irrigation of about 620,000 acres (2,500 km<sup>2</sup>) in Colorado and about 81,000 acres (330 km<sup>2</sup>) in New Mexico. Cochiti eastside main canal, on left bank, and Sili main canal, on right bank, head at Cochiti Dam and bypass gage for irrigation of about 6,000 acres (24 km<sup>2</sup>) below station; see tabulation below for monthly and yearly diversion, as furnished by Middle Rio Grande Conservancy District prior to Dec. 31.

EXTREMES FOR PERIOD OF RECORD.—Maximum discharge 10,300 ft<sup>3</sup>/s (292 m<sup>3</sup>/s) July 26, 1971, gage height, 7.90 ft (2.408 m), site and datum then in use, from rating curve extended above 2,600 ft<sup>3</sup>/s (74 m<sup>3</sup>/s); minimum, 0.51 ft<sup>3</sup>/s (0.014 m<sup>3</sup>/s) Aug. 3-5, 1977, Aug. 27-28, 1978, result of regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.—The flood of May 15, 1941, reached a discharge of 23,400 ft<sup>3</sup>/s (663 m<sup>3</sup>/s) at a nearby site upstream from mouth of Santa Fe River. The flood of May 23, 1920, probably exceeded 23,400 ft<sup>3</sup>/s (663 m<sup>3</sup>/s), and is likely the highest since 1905.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 3,720 ft<sup>3</sup>/s (105 m<sup>3</sup>/s) May 21, gage height, 5.08 ft (1.548 m); minimum, 0.51 ft<sup>3</sup>/s (0.014 m<sup>3</sup>/s) Aug. 27-28, result of regulation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	444	208	367	490	489	573	462	2030	2500	1080	295	699
2	417	225	367	437	481	604	534	1790	2580	1090	198	482
3	423	236	367	408	466	643	591	2120	2770	1240	675	785
4	423	249	334	408	466	751	528	2160	2810	1190	1140	901
5	423	265	348	408	466	878	430	1580	2660	947	1320	700
6	423	240	360	416	474	860	474	1740	2790	714	1050	144
7	489	310	348	451	495	646	528	1540	2940	546	1020	31
8	528	454	367	474	512	584	280	1280	2620	373	893	65
9	236	640	394	408	516	590	322	1310	2340	243	639	39
10	84	638	658	380	522	621	459	919	2160	217	520	50
11	60	480	1060	394	505	636	482	1320	1740	228	598	95
12	35	337	1060	444	505	617	459	2790	1850	411	492	29
13	47	322	993	630	502	547	338	2810	2140	473	171	28
14	51	392	901	553	503	499	408	2790	2050	626	115	292
15	81	398	630	198	506	494	545	3010	1860	1020	99	442
16	118	430	360	423	514	499	430	2960	1720	998	86	387
17	134	380	374	505	528	452	433	3210	1980	884	80	313
18	57	474	387	466	492	456	545	3210	2210	871	463	297
19	26	444	334	497	474	464	459	3300	2360	998	985	380
20	83	328	315	482	466	460	334	3400	2290	1110	904	334
21	208	322	274	474	457	538	309	3470	2250	1350	621	328
22	254	401	224	466	444	598	401	3380	2140	1280	230	328
23	383	374	280	436	467	589	505	3210	2020	979	98	334
24	437	334	394	436	487	540	474	3260	2140	888	60	341
25	463	354	387	469	500	593	408	3190	2140	698	50	367
26	450	348	354	410	505	606	604	3070	2050	796	48	354
27	364	354	387	382	524	455	1090	3120	2020	604	23	357
28	303	360	401	417	542	434	1380	2910	2140	308	8.7	360
29	160	367	416	468	---	510	1500	2770	2090	189	77	237
30	115	367	416	518	---	469	2070	2660	1480	175	549	96
31	213	---	437	521	---	424	---	2660	---	293	488	---
TOTAL	7932	11031	14294	13869	13808	17630	17782	78969	66840	22819	13995.7	9595
MEAN	256	368	461	447	493	569	593	2547	2228	736	451	320
MAX	528	640	1060	630	542	878	2070	3470	2940	1350	1320	901
MIN	26	208	224	198	444	424	280	919	1480	175	8.7	28
AC=FT	15730	21880	28350	27510	27390	34970	35270	156600	132600	45260	27760	19030
(†)	7490	0	0	0	0	1360	6600	7360	7000	6840	6750	6090
(‡)	4540	0	0	0	0	3410	4040	4250	3890	3850	3550	3760

CAL YR 1977 TOTAL 162922.11 MEAN 446 MAX 1310 MIN .51 AC=FT 323200 † 61000 ‡ 32650  
WTR YR 1978 TOTAL 288564.70 MEAN 791 MAX 3470 MIN 8.7 AC=FT 572400 † 49490 ‡ 31280

† Diversion, in acre-feet, by Cochiti eastside main canal at head.

‡ Diversion, in acre-feet, by Sili main canal at head.

08317400 RIO GRANDE BELOW COCHITI DAM, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to current year.

WATER TEMPERATURES: July 1971 to current year.

SUSPENDED SEDIMENT DISCHARGE: July 1974 to current year.

INSTRUMENTATION.--Continuous water-temperature recorder and automatic pumping sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 698 micromhos July 19, 1978; minimum daily, 130 micromhos July 30, 1978.

WATER TEMPERATURES: Maximum, 35.5°C Aug. 4, 1977; minimum, 0.0°C on several days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 343 mg/L June 16, 1975; minimum daily, 1 mg/L Jan. 7-8, Feb. 10, Mar. 28, 1977.

SEDIMENT LOADS: Maximum daily, 3,540 tons (3,210 tonnes) June 16, 1975; minimum daily, 0.02 tons (0.02 tonnes) Aug. 4, 1977.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 698 micromhos July 19; minimum daily, 130 micromhos July 30.

WATER TEMPERATURES: Maximum, 26.5°C Aug. 28; minimum, 3.0°C on several days during January.

SEDIMENT CONCENTRATIONS: Maximum daily, 72 mg/L July 27; minimum daily, 2 mg/L on several days in January and February.

SEDIMENT LOADS: Maximum daily, 608 tons (552 tonnes) May 24; minimum daily, 0.42 tons (0.38 tonnes) Aug. 28.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	465	460	505	486	449	421	---	425	252	277	310	340
2	461	504	499	488	451	422	---	436	244	269	302	342
3	450	495	490	475	438	420	---	596	241	262	301	340
4	450	487	481	473	439	415	388	591	241	257	302	---
5	462	482	484	547	434	396	411	593	234	257	300	---
6	460	478	460	551	442	399	406	577	230	261	300	---
7	450	473	525	561	438	400	401	549	438	254	304	---
8	480	466	527	550	452	397	400	550	383	250	293	---
9	485	---	515	527	439	394	398	564	362	254	632	---
10	475	468	520	510	437	394	400	548	364	243	629	---
11	470	527	507	519	433	396	398	526	396	258	547	---
12	460	519	512	524	428	391	503	512	375	405	494	---
13	460	516	506	511	425	392	491	500	333	391	530	---
14	459	529	501	497	428	390	482	490	326	604	493	---
15	---	515	498	483	422	433	475	456	336	148	476	---
16	449	515	493	510	475	432	477	444	334	367	418	---
17	452	511	491	492	469	---	482	444	312	360	407	---
18	---	---	485	488	468	---	465	430	316	366	432	---
19	---	---	486	489	451	---	462	394	328	698	440	330
20	---	---	487	500	439	---	470	374	323	139	422	484
21	---	---	488	481	434	---	466	362	307	344	377	466
22	---	---	484	462	441	---	458	353	297	347	400	475
23	---	---	482	474	432	---	456	331	300	346	394	450
24	---	---	483	491	428	---	454	315	300	334	382	445
25	---	---	488	462	422	---	456	311	284	133	373	437
26	---	---	488	443	421	---	448	301	280	339	386	444
27	---	---	478	445	422	---	444	284	282	344	399	445
28	---	---	480	451	422	---	436	271	277	324	384	435
29	---	---	504	444	---	---	433	269	267	317	383	382
30	---	---	483	449	---	---	433	268	265	130	350	---
31	---	---	483	457	---	---	---	255	---	320	343	---
MEAN	462	497	494	492	439	406	444	430	308	310	403	415
WTR YR 1978	MEAN	421	MAX	698	MIN	130						



08317400 RIO GRANDE BELOW COCHITI DAM, NM--Continued

WATER TEMPERATURE (DEG.° C), RECORDER MAXIMUM, MINIMUM, AND MEAN, WATER YEAR OCTOBER 1977 to SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	19.0	18.5	18.5	13.5	13.0	13.5	8.0	7.5	8.0	4.0	4.0	4.0
2	18.5	18.0	18.5	13.5	12.5	13.0	8.0	7.5	7.5	4.0	3.5	4.0
3	19.0	18.0	18.5	13.5	12.5	13.0	8.0	7.5	7.5	4.0	3.5	3.5
4	18.5	18.0	18.0	13.5	12.5	13.0	8.0	7.5	7.5	3.5	3.5	3.5
5	18.5	17.5	18.0	13.0	12.5	13.0	7.5	7.5	7.5	4.0	3.5	4.0
6	18.5	18.0	18.0	13.0	12.0	12.5	7.5	7.0	7.5	4.0	3.5	4.0
7	18.5	18.0	18.0	12.5	12.0	12.5	7.5	7.0	7.0	4.0	3.5	4.0
8	18.5	17.5	18.0	12.5	12.0	12.0	7.0	6.5	7.0	4.0	3.5	3.5
9	18.5	17.0	18.0	12.0	11.5	12.0	7.0	6.5	7.0	3.5	3.0	3.5
10	18.0	16.5	17.5	12.0	11.5	11.5	7.0	6.5	6.5	4.0	3.5	3.5
11	18.0	16.0	17.0	11.5	11.0	11.5	6.5	6.5	6.5	4.0	4.0	4.0
12	18.0	15.5	16.5	11.0	10.5	11.0	6.5	6.5	6.5	4.0	3.5	4.0
13	17.5	15.5	16.5	10.5	10.0	10.5	6.5	6.0	6.0	4.0	3.5	3.5
14	17.5	15.5	16.0	10.5	10.0	10.0	6.0	6.0	6.0	4.0	3.5	3.5
15	17.0	15.5	16.0	10.5	10.0	10.0	6.0	5.0	5.5	3.5	3.5	3.5
16	17.0	15.5	16.0	10.5	9.5	10.0	5.5	5.0	5.0	4.0	3.5	4.0
17	16.5	15.0	16.0	10.0	9.5	9.5	5.5	4.5	5.0	4.0	3.5	3.5
18	16.5	15.0	15.5	10.0	9.5	9.5	5.5	5.0	5.0	4.0	3.5	4.0
19	16.5	14.0	15.0	9.5	8.0	9.0	5.5	5.0	5.0	4.0	3.5	3.5
20	16.0	14.0	15.0	9.5	8.5	9.5	5.0	4.5	4.5	4.0	3.5	3.5
21	16.0	15.0	15.5	9.5	9.0	9.5	5.0	4.5	4.5	4.0	3.5	4.0
22	16.0	15.0	15.5	9.5	9.0	9.0	4.5	4.0	4.5	3.5	3.5	3.5
23	15.5	15.0	15.0	9.5	9.0	9.0	4.5	4.0	4.5	3.5	3.0	3.5
24	15.5	15.0	15.0	9.0	9.0	9.0	4.5	4.5	4.5	3.5	3.5	3.5
25	15.0	14.5	15.0	9.0	8.5	9.0	4.5	4.0	4.5	3.5	3.0	3.0
26	15.0	14.5	14.5	9.0	8.5	9.0	4.5	4.0	4.5	3.5	3.0	3.0
27	14.5	14.0	14.5	9.0	8.5	8.5	4.5	4.0	4.0	3.5	3.0	3.5
28	14.5	13.5	14.0	9.0	8.5	8.5	4.0	4.0	4.0	3.5	3.0	3.5
29	14.5	13.0	13.5	8.5	8.0	8.5	4.0	4.0	4.0	3.5	3.5	3.5
30	14.0	13.0	13.5	8.5	8.0	8.0	4.0	3.5	4.0	4.0	3.5	3.5
31	13.5	13.0	13.0	---	---	---	4.0	3.5	4.0	3.5	3.5	3.5
MONTH	19.0	13.0	16.0	13.5	8.0	10.5	8.0	3.5	5.5	4.0	3.0	3.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.0	3.5	3.5	5.5	5.0	5.0	10.0	8.5	9.0	14.0	13.0	13.5
2	4.0	3.5	3.5	5.5	5.0	5.0	10.0	8.5	9.5	13.5	13.0	13.5
3	4.0	3.5	3.5	5.0	4.5	5.0	10.5	9.0	9.5	13.5	12.5	13.0
4	4.0	3.5	3.5	6.5	5.0	5.0	10.5	9.5	10.0	13.5	12.5	13.0
5	4.0	3.5	3.5	6.5	5.5	6.0	10.5	9.5	10.0	13.0	12.5	12.5
6	4.0	4.0	4.0	6.0	5.0	5.5	10.5	9.5	10.0	12.5	11.5	12.0
7	4.5	4.0	4.0	7.0	6.0	6.5	11.5	9.5	10.5	12.0	11.5	11.5
8	4.5	4.0	4.0	6.5	6.0	6.5	10.5	8.5	10.0	11.5	11.0	11.5
9	4.0	3.5	4.0	6.5	6.0	6.5	11.0	9.0	10.5	11.5	11.0	11.5
10	4.5	4.0	4.0	7.5	6.0	7.0	11.0	10.5	11.0	12.0	10.5	11.5
11	4.5	4.0	4.5	7.5	6.0	6.5	11.5	11.0	11.0	12.5	11.0	12.0
12	4.5	4.0	4.0	7.0	6.0	6.5	11.5	11.0	11.0	13.5	12.0	12.5
13	4.5	4.0	4.0	7.5	6.0	7.0	11.5	10.5	11.0	13.0	12.5	13.0
14	4.0	4.0	4.0	7.5	6.5	7.0	12.0	11.0	11.5	13.5	13.0	13.5
15	4.5	4.0	4.0	7.5	7.0	7.0	12.0	11.5	11.5	14.0	13.5	13.5
16	4.0	4.0	4.0	7.5	7.0	7.5	12.5	10.5	11.5	14.5	13.5	14.0
17	4.5	4.0	4.0	7.5	7.0	7.5	13.0	11.0	12.0	15.0	14.0	14.5
18	4.5	4.0	4.0	8.0	7.0	7.5	12.5	11.5	12.0	15.0	14.0	14.5
19	4.5	4.0	4.0	8.0	7.0	7.5	12.5	11.5	12.0	15.0	14.0	14.5
20	4.5	4.0	4.0	7.5	7.0	7.5	12.5	11.5	12.0	14.5	14.0	14.0
21	4.5	4.0	4.0	8.0	7.0	7.5	12.5	11.5	12.0	14.5	13.0	14.0
22	5.0	4.0	4.5	8.5	7.0	7.5	12.5	11.5	12.0	14.5	13.5	13.5
23	5.0	4.0	4.5	8.5	8.0	8.0	13.0	12.0	12.5	14.5	12.5	14.0
24	5.0	4.5	4.5	9.0	8.0	8.5	13.0	11.5	12.5	14.5	13.5	14.0
25	5.5	4.5	5.0	9.5	8.0	9.0	12.5	11.5	12.0	15.0	14.5	14.5
26	5.0	4.5	5.0	9.0	8.5	8.5	13.0	12.0	12.5	15.5	14.5	15.0
27	5.5	4.5	5.0	8.5	8.0	8.5	13.0	12.5	13.0	15.5	14.5	15.0
28	5.5	5.0	5.0	10.0	8.0	9.0	14.0	13.0	13.5	16.0	15.0	15.0
29	---	---	---	9.5	8.5	9.5	13.5	13.0	13.5	15.5	14.5	15.0
30	---	---	---	10.0	8.5	9.0	14.0	13.0	13.5	15.0	14.5	15.0
31	---	---	---	9.5	8.5	9.0	---	---	---	16.0	15.0	15.5
MONTH	5.5	3.5	4.0	10.0	4.5	7.0	14.0	8.5	11.5	16.0	10.5	13.5





## 08317900 GALISTEO RESERVOIR NEAR CERRILLOS, NM

LOCATION.--Lat 35°27'44", long 106°12'30", in NW¼ sec.9, T.14 N., R.7 E., Santa Fe County, Hydrologic Unit 13020201, in Mesita de Juana Lopez Grant, at Galisteo Dam on Galisteo Creek, 5.0 mi (8.0 km) northwest of Cerrillos, and at mile 11.8 (19.0 km).

DRAINAGE AREA.--596 mi<sup>2</sup> (1,544 km<sup>2</sup>).

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder above elevation 5,500.3 ft (1,676.49 m), nonrecording below. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by an earthfill dam, completed Oct. 11, 1970. Capacity 88,990 acre-ft (110 hm<sup>3</sup>) between elevations 5,496.0 ft (1,675.18 m), sill of ungated outlet conduit, and 5,608.0 ft (1,709.32 m), crest of uncontrolled spillway. No dead storage. Reservoir is used for flood control.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,510 acre-ft (3.09 hm<sup>3</sup>) July 26, 1971, elevation, 5,517.00 ft (1,681.582 m); no storage most of time.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 153 acre-ft (189,000 m<sup>3</sup>) Aug. 4, elevation, 5,506.8 ft (1,678.47 m); no storage most of time.

Capacity table (elevation, in feet, and contents, in acre-feet)  
(Based on survey by Corps of Engineers in 1972)

5,500	0	5,503	21	5,506	109
5,501	2	5,504	41	5,508	244
5,502	9	5,505	69		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	41	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	3	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	---	0	0	0	0	0	0	0
30	0	0	0	0	---	0	0	0	0	0	0	0
31	0	---	0	0	---	0	---	0	---	0	0	---
MAX	3.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	41	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(†)	-	-	-	-	-	-	-	-	-	-	-	-
(‡)	0	0	0	0	0	0	0	0	0	0	0	0

CAL YR 1977 MAX 240 MIN .00 † 0  
WTR YR 1978 MAX 41 MIN .00 † 0

† Elevation, in feet, at end of month.  
‡ Change in contents, in acre-feet.

## RIO GRANDE BASIN

08317950 GALISTEO CREEK BELOW GALISTEO DAM, NM

LOCATION.--Lat 35°27'56", long 106°12'57", in SE¼SE¼ sec.5, T.14 N., R.7 E., Santa Fe County, Hydrologic Unit 13020201, in Mesita de Juana Lopez Grant, on right bank 0.6 mi (1.0 km) downstream from Galisteo Dam, 5.5 mi (8.8 km) northwest of Cerrillos, and at mile 11.2 (18.0 km).

DRAINAGE AREA.--597 mi<sup>2</sup> (1,546 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,450 ft (1,661 m), from topographic map.

REMARKS.--Water-discharge records poor. Flow regulated by Galisteo Reservoir 0.6 mi (1.0 km) upstream. Diversions for irrigation of about 50 acres (20 km<sup>2</sup>) above station.

AVERAGE DISCHARGE.--8 years, 6.87 ft<sup>3</sup>/s (0.195 m<sup>3</sup>/s), 4,980 acre-ft/yr (6.14 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,000 ft<sup>3</sup>/s (56.6 m<sup>3</sup>/s) July 27, 1971, gage height, 7.00 ft (2.134 m); maximum gage height, 7.33 ft (2.234 m) July 20, 1971; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 864 ft<sup>3</sup>/s (24.5 m<sup>3</sup>/s) Aug. 4, gage height, 6.11 ft (1.862 m); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.16	.46	1.2	.64	.20	.00	.00	.00	.00	.00
2	.00	.00	.33	.44	.80	.60	.40	6.0	.00	.00	.00	.00
3	.00	.00	.34	.44	.68	.79	.09	5.2	.00	.00	3.0	20
4	.00	.00	.17	.50	.56	3.6	.01	1.9	.00	.00	115	10
5	.00	.00	.12	.34	.51	2.2	.00	.02	.00	.00	120	.00
6	43	.00	.09	.30	.90	2.3	.00	1.5	.00	.00	.10	.00
7	34	10	.34	.34	.59	1.8	.00	1.5	.00	.00	.00	.00
8	.34	5.0	.25	.30	.97	.35	.00	.00	.00	.00	.00	.00
9	.00	1.9	.24	.48	.66	.00	.00	.00	.00	.00	15	.00
10	.00	1.4	.37	.50	.41	.00	.00	.00	.00	.00	8.5	.00
11	.00	1.7	.45	1.1	.00	.00	.36	.00	.00	4.0	70	.00
12	.00	1.3	.36	.56	.46	.00	.31	.00	.00	.00	.15	.00
13	.00	.93	.50	.38	.58	.31	.00	.00	.00	.00	.00	.00
14	.00	.74	.52	.57	.77	.27	.00	.00	.00	.00	.00	.00
15	.00	.57	.50	1.4	1.4	.12	.00	.00	.00	.00	.00	.00
16	.00	.50	.23	2.0	1.5	.11	.00	.00	.00	.00	.00	.00
17	.00	.48	.47	1.8	1.2	.12	.00	.00	.00	.00	.00	.00
18	.00	.44	.62	2.1	.90	.08	.00	.00	.00	.00	.00	.00
19	.00	.44	.40	1.7	.80	.13	.00	.00	.00	.00	.00	.00
20	.00	.15	.02	.98	.50	.13	.00	.59	.00	.00	.00	.00
21	.00	.20	.00	1.3	.86	.10	.00	.76	.00	.00	.00	.00
22	.00	.30	.73	1.1	.63	.10	.00	.00	.00	.00	.00	.00
23	.00	.21	1.2	1.5	.39	.59	.00	.00	.00	.00	.00	.00
24	.00	.21	.70	1.4	.33	.24	.00	.00	.00	.00	.00	.00
25	.00	.33	.25	1.4	.25	.10	.00	.00	.00	.00	.00	.00
26	.00	.30	.51	1.3	.05	.00	.00	.00	.00	.00	.00	.00
27	.00	.24	.63	1.3	.00	.05	.00	.00	.00	.00	.00	.00
28	.00	.30	.44	1.4	.00	.41	.00	.00	.00	.00	.00	.00
29	.00	.25	.45	1.2	---	1.1	.00	.00	60	.00	10	.00
30	.00	.41	.45	.98	---	.27	.00	.00	.00	.00	.00	.00
31	.00	---	.45	1.1	---	.11	---	.00	---	.00	.00	---
TOTAL	77.34	28.30	12.29	30.67	17.60	16.62	1.37	17.47	60.00	4.00	341.75	30.00
MEAN	2.49	.94	.40	.99	.63	.54	.046	.56	2.00	.13	11.0	1.00
MAX	43	10	1.2	2.1	1.5	3.6	.40	6.0	60	4.0	120	20
MIN	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	153	56	24	61	35	33	2.7	35	119	7.9	678	60
CAL YR 1977	TOTAL	1510.13	MEAN	4.14	MAX	509	MIN	.00	AC-FT	3000		
WTR YR 1978	TOTAL	637.41	MEAN	1.75	MAX	120	MIN	.00	AC-FT	1260		

08317950 GALISTEO CREEK BELOW GALISTEO DAM, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971 to September 1978 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1971 to September 1978 (discontinued).

WATER TEMPERATURES: July 1971 to September 1978 (discontinued).

SUSPENDED SEDIMENT DISCHARGE: July 1971 to September 1978 (discontinued).

INSTRUMENTATION.--Automatic pumping sediment sampler.

REMARKS.--Samples are collected when flow is observed on this ephemeral stream. The extremes for specific conductance and water temperatures were not reported because the number of missing days of record exceeded 20 percent of flow of year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily, 73,100 mg/L July 17, 1972; minimum daily, no flow on many days each year.

SEDIMENT LOADS: Maximum daily 203,000 tons (184,000 tonnes) Aug. 24, 1976; minimum daily, 0 tons (0 tonnes) on many days each year.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily, 35,000 mg/L Aug. 5, 11; minimum daily, no flow on many days.

SEDIMENT LOADS: Maximum daily, 11,300 tons (10,300 tonnes) Aug. 5; minimum daily, 0 tons (0 tonnes) on many days.

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT							
06...	2100	271	--	96000	70200	39	47
NOV							
22...	1055	.09	6.0	354	.09	63	77
DEC							
19...	1440	.51	4.0	108	.15	--	--
AUG							
11...	1215	36	23.0	26200	2550	51	68
11...	1600	18	24.0	22300	1080	--	--
		SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70332)
OCT							
06...	67	91	98	100	--	--	--
NOV							
22...	89	--	--	--	96	99	100
DEC							
19...	--	--	--	--	91	97	100
AUG							
11...	91	98	100	--	--	--	--
11...	--	--	--	--	99	--	--

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

TOTAL LOAD FOR YEAR: 37681.75 TONS.

08319000 RIO GRANDE AT SAN FELIPE, NM  
(Surveillance network station)

LOCATION.--Lat 35°26'39", long 106°26'23", in SW¼ sec.17, T.14 N., R.5 E., Sandoval County, Hydrologic Unit 13020201, in San Felipe Grant, on right bank 200 ft (61 m) downstream from Tonque Arroyo, 1,700 ft (520 m) upstream from steel highway bridge, 0.8 mi (1.3 km) upstream from San Felipe Pueblo, 11 mi (18 km) northeast of Bernalillo, and at mile 1,572.7 (2,530.5 km).

DRAINAGE AREA.--16,100 mi<sup>2</sup> (41,670 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1925 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1312: 1926-30, WSP 1392: 1937(M), WSP 1512: 1931-32, 1933(M), 1934-36, 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 5,115.73 ft (1,559.275 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 27, 1957, at site 1,800 ft (550 m) downstream at datum 5.35 ft (1.63 m) lower, except period May 16, 1945 to Sept. 30, 1946 when it was 5.94 ft (1.81 m) lower than present datum.

REMARKS.--Water-discharge records good, except those for period of no gage height record, October 30 to November 30, which are poor. Flow completely regulated since November 1973 by Cochiti Dam (station 08317300) 17 mi (27 km) upstream. Prior to November 1973 some regulation of flow by El Vado Reservoir (station 08285000) and Abiquiu Reservoir (station 08286900). Since May 1971 flow affected by release of transmountain water from Heron Reservoir (station 08284510). Diversions for irrigation of about 705,000 acres (2,900 km<sup>2</sup>) above station, some of which is irrigated below by Cochiti eastside main canal and San Felipe eastside acequia, which bypass station.

AVERAGE DISCHARGE.--48 years (water years 1926-73), 1,374 ft<sup>3</sup>/s (38.91 m<sup>3</sup>/s), 995,500 acre-ft/yr (1.23 km<sup>3</sup>/yr) prior to closure of Cochiti Dam.

5 years (water years 1974-78), 987 ft<sup>3</sup>/s (27.95 m<sup>3</sup>/s), 715,100 acre-ft/yr (0.88 km<sup>3</sup>/yr) since closure of Cochiti Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,300 ft<sup>3</sup>/s (773 m<sup>3</sup>/s) June 26, 1937, gage height, 11.13 ft (3.392 m) site and datum then in use, from rating curve extended above 15,000 ft<sup>3</sup>/s (425 m<sup>3</sup>/s); minimum, 32 ft<sup>3</sup>/s (0.906 m<sup>3</sup>/s) July 7, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Other major floods occurred in 1874, 1884, and 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,640 ft<sup>3</sup>/s (103 m<sup>3</sup>/s) May 21, gage height, 5.70 ft (1.737 m); minimum daily, 67 ft<sup>3</sup>/s (1.90 m<sup>3</sup>/s) Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	700	350	433	572	600	679	660	2110	2600	1270	452	709
2	649	360	426	540	594	750	694	2010	2560	1240	312	613
3	644	375	426	484	564	788	819	2080	2720	1330	483	790
4	639	390	393	484	563	877	737	2240	2770	1300	1170	993
5	645	400	370	475	564	993	695	1850	2700	1100	1510	940
6	640	350	413	476	573	1060	609	1800	2670	886	1270	426
7	713	430	401	495	593	854	817	1850	2860	732	1220	198
8	718	550	429	560	629	765	523	1490	2680	508	1150	186
9	543	720	388	499	614	759	482	1630	2410	378	928	191
10	221	710	537	449	638	766	635	1310	2310	301	763	131
11	202	570	947	451	616	794	682	1330	2010	321	812	215
12	157	450	1070	504	615	792	680	2370	1910	419	822	168
13	158	420	988	572	613	732	539	2820	2270	739	383	124
14	154	460	947	800	612	656	530	2640	2150	656	334	213
15	182	470	749	265	609	647	697	2960	2060	1180	325	567
16	226	490	423	416	621	647	675	2850	1820	1270	320	496
17	271	480	409	626	641	636	548	3110	1940	1170	315	477
18	203	550	450	543	614	581	710	3100	2180	1110	407	393
19	149	520	405	583	579	640	697	3180	2220	1210	1050	475
20	162	480	367	588	576	592	573	3290	2230	1400	1030	470
21	249	410	347	576	570	682	482	3330	2130	1480	916	447
22	387	476	271	573	551	733	594	3350	2120	1760	396	440
23	494	505	293	546	560	770	659	3180	1980	1090	224	442
24	603	419	397	534	599	774	756	3200	2050	1070	166	455
25	628	445	490	565	612	785	590	3180	2070	873	137	494
26	640	433	382	549	616	879	792	3040	2060	859	125	478
27	583	430	449	456	626	748	1060	3060	1910	858	117	466
28	454	441	454	495	646	674	1570	2950	2070	568	67	463
29	350	439	475	551	---	740	1470	2790	2160	356	107	425
30	300	433	481	607	---	731	1950	2680	1720	350	465	207
31	390	---	481	642	---	619	---	2680	---	345	699	---
TOTAL	13054	13956	15491	16476	16808	23143	22925	79460	67340	28129	18475	13092
MEAN	421	465	500	531	600	747	764	2563	2245	907	596	436
MAX	718	720	1070	800	646	1060	1950	3350	2860	1760	1510	993
MIN	149	350	271	265	551	581	482	1310	1720	301	67	124
AC-FT	25890	27680	30730	32680	33340	45900	45470	157600	133600	55790	36650	25970
(†)	4080	0	0	0	0	115	4000	4200	3910	3920	4050	3740
CAL YR 1977 TOTAL	200861	MEAN 550	MAX 1650	MIN 101	AC-FT 398400							
WTR YR 1978 TOTAL	328349	MEAN 900	MAX 3350	MIN 67	AC-FT 651300							

(†) MONTHLY DIVERSION, IN ACRE-FT, OF COCHITI EASTSIDE CANAL; RECORD OF THIS FLOW IS FURNISHED BY MIDDLE RIO GRANDE CONSERVANCY DISTRICT.



08319000 RIO GRANDE AT SAN FELIPE, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT										
04...	1500	640	437	8.1	26.0	19.5	9	--	8.7	11
NOV										
01...	1300	480	510	8.1	15.5	12.0	6	--	9.6	10
DEC										
06...	0945	424	460	8.0	12.0	5.0	6	--	10.8	29
JAN										
04...	1027	470	460	8.0	9.5	4.0	2	--	11.1	16
FEB										
15...	1110	604	422	7.8	.0	4.5	--	1.8	12.4	34
MAR										
14...	1125	668	360	8.2	10.5	8.0	--	5.5	11.0	4
APR										
04...	0950	740	410	8.0	15.0	9.5	--	3.0	10.2	8
MAY										
02...	1400	1990	425	8.1	5.5	11.5	--	22	9.6	3
JUN										
06...	1025	2560	240	8.3	24.0	17.0	--	45	8.4	13
JUL										
10...	1123	315	300	8.1	27.5	23.0	--	8.7	7.6	9
AUG										
08...	0945	1220	318	8.1	23.0	20.5	--	24	7.8	22
SEP										
19...	0948	468	350	8.2	19.0	16.5	--	5.2	9.0	24

DATE	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)
OCT										
04...	180	55	56	9.2	27	.9	3.9	150	0	120
NOV										
01...	180	54	58	9.7	29	.9	3.5	160	0	130
DEC										
06...	180	37	54	10	30	1.0	3.7	170	0	140
JAN										
04...	180	47	55	10	30	1.0	3.6	160	0	130
FEB										
15...	160	21	49	9.3	28	1.0	3.1	170	0	140
MAR										
14...	140	20	43	8.7	26	.9	3.2	150	0	120
APR										
04...	150	22	44	8.6	26	.9	3.6	150	0	120
MAY										
02...	160	49	50	9.4	28	1.0	3.3	140	0	110
JUN										
06...	94	19	29	5.2	11	.5	2.0	91	0	75
JUL										
10...	120	--	36	6.4	15	.6	2.6	--	--	95
AUG										
08...	110	--	33	5.9	16	.7	2.8	--	--	96
SEP										
19...	130	--	42	6.7	19	.7	2.8	--	--	110

08319000 RIO GRANDE AT SAN FELIPE, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
OCT 04...	110	5.9	.5	14	301	301	23	.01	.01
NOV 01...	110	6.8	.5	17	311	314	18	.01	.01
DEC 06...	96	8.9	.6	18	294	305	2	.00	.01
JAN 04...	96	8.1	.5	18	301	300	18	.01	.01
FEB 15...	67	8.8	.7	22	264	272	13	.01	.02
MAR 14...	57	8.3	.6	22	247	243	31	.02	.04
APR 04...	74	9.7	.5	22	248	263	15	.01	.02
MAY 02...	87	7.9	.4	17	256	272	76	.02	.04
JUN 06...	35	3.1	.2	15	147	146	37	.08	.11
JUL 10...	47	4.3	.3	18	182	187	21	.02	.03
AUG 08...	44	4.4	.2	17	184	181	42	.03	.03
SEP 19...	56	5.3	.4	16	214	214	29	.00	.02

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTH- DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT 04...	.01	5.0	5.0	.06	.00	40	10	4.6	.9
NOV 01...	.01	.17	.19	.02	.00	50	20	3.0	.7
DEC 06...	.02	.79	.81	.02	.01	60	10	2.1	.4
JAN 04...	.03	.15	.19	.04	.00	70	30	3.4	.6
FEB 15...	.00	.02	.03	.04	.02	50	20	2.7	.6
MAR 14...	.03	.14	.19	.05	.02	50	10	1.8	.5
APR 04...	.01	.06	.08	.06	.01	50	20	2.1	1.1
MAY 02...	.01	.63	.66	.07	.02	40	50	3.1	1.3
JUN 06...	.03	.59	.70	.08	.01	30	0	3.8	1.2
JUL 10...	.07	.14	.23	.06	.02	40	30	3.9	1.2
AUG 08...	.03	.28	.34	.05	.03	40	110	3.2	1.0
SEP 19...	.00	.31	.31	.03	.00	130	20	3.7	.9

08319000 RIO GRANDE AT SAN FELIPE, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)
DEC 06...	0945	2	60	0	10	6	10	2	.0
MAR 14...	1125	3	90	1	0	2	10	2	.0
JUN 06...	1025	3	30	3	5	9	0	9	.0
SEP 19...	0948	2	130	2	0	2	20	11	.0

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01029)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)
AUG 08...	0945	4	0	3	70	8	.0

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39516)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)
AUG 08...	0945	.0	0	.00	.0	.0	0	.00	.0	.00
DATE	TIME	ODE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39388)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA- CHLOR, TOTAL (UG/L) (39410)
AUG 08...		.5	.00	.0	.00	.1	.00	.00	.1	.00
DATE	TIME	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR EPOXIDE TOT. IN BOT. IN MAYL. (UG/L) (39420)	HEPTA- CHLOR EPOXIDE TOT. IN BOT. IN MAYL. (UG/KG) (39423)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39340)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39480)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39481)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)
AUG 08...		.0	.00	.0	.00	.0	.00	.0	0	0

Results of Analysis of Water and Bed Materials for Selected Chlorinated Hydrocarbon Isomers

Date	Time	o-p'-DDE	o-p'-DDD	o-p'-DDT	cis- chlordane	trans- chlordane	α - BHC	Hexachloro- benzene
Aug 08	0945 (w) (s)	0 0	0 0	0 0	0 0	0 0	0* 0	0 0

\* trace amounts of α-BHC were determined on both columns (approximately 0.003)

NOTE: Reporting units are ug/L for water samples (w) and ug/kg for bed material sediment samples (s). The lowest detectable limit is 0.01 ug/L for water samples and 0.1 ug/kg for sediment samples.

08319000 RIO GRANDE AT SAN FELIPE, NM--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE	JAN 4, 78
TIME	1027
TOTAL CELLS/ML	530
DIVERSITY: DIVISION	0.8
..CLASS	0.8
...ORDER	1.7
...FAMILY	2.3
....GENUS	2.5
ORGANISM	CELLS PER- /ML CENT
CHLOROPHYTA (GREEN ALGAE)	
..CHLOROPHYCEAE	
...CHLOROCOCCALES	
....OOCYSTACEAE	
....ANKISTRODESMUS	23 4
...SCENEDESMACEAE	
....SCENEDESMUS	11 2
...VOLVOCALES	
...CHLAMYDOMONADACEAE	
....CHLAMYDOMONAS	11 2
CHRYSOPHYTA	
..BACILLARIOPHYCEAE	
...CENTRALES	
...COSCINODISCACEAE	
....CYCLOTELLA	11 2
....STEPHANODISCUS	300# 55
...PENNALES	
...ACHNANTHACEAE	
....COCCONEIS	6 1
...CYMBELLACEAE	
....CYMBELLA	6 1
....EPITHEMIA	11 2
...DIATOMACEAE	
....DIATOMA	80 15
...FRAGILARIACEAE	
....FRAGILARIA	17 3
...GOMPHONEMACEAE	
....GOMPHONEMA	17 3
...NAVICULACEAE	
....NAVICULA	6 1
....PINNULARIA	6 1
...NITZSCHIACEAE	
....NITZSCHIA	6 1
CRYPTOPHYTA (CRYPTOMONADS)	
..CRYPTOPHYCEAE	
...CRYPTOMONIDALES	
...CRYPTOCHRYSIDACEAE	
....CHROOMONAS	11 2
EUGLENOPHYTA (EUGLENOIDS)	
..EUGLENOPHYCEAE	
...EUGLENALES	
...EUGLENACEAE	
....TRACHELOMONAS	11 2
PYRRHOPHYTA (FIRE ALGAE)	
..DINOPHYCEAE	
...PERIDINIALES	
...PERIDINIAEAE	
....PERIDINIUM	6 1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## RIO GRANDE BASIN

08319000 RIO GRANDE AT SAN FELIPE, NM--Continued

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT			
04...	1500	38	170
NOV			
01...	1300	20	41
DEC			
06...	0945	6	14
JAN			
04...	1027	2	44
FEB			
15...	1110	1	4
MAR			
14...	1125	3	18
APR			
04...	0950	5	53
MAY			
02...	1400	42	290
JUN			
06...	1025	39	130
JUL			
10...	1123	90	190
AUG			
08...	0945	190	120
SEP			
19...	0948	80	330

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
04...	1500	640	19.5	153	264	77
NOV						
01...	1300	480	12.0	37	48	43
DEC						
06...	0945	424	5.0	43	49	19
JAN						
04...	1027	470	4.0	13	16	62
FEB						
15...	1110	604	4.5	36	59	16
MAR						
14...	1125	668	8.0	52	94	27
APR						
04...	0950	740	9.5	71	142	27
MAY						
02...	1400	1990	11.5	361	1940	26
JUN						
06...	1025	2560	17.0	192	1330	32
JUL						
10...	1123	315	23.0	51	43	74
AUG						
08...	0945	1220	20.5	93	306	68
SEP						
19...	0948	468	16.5	35	44	64

## 08324000 JEMEZ RIVER NEAR JEMEZ, NM

LOCATION.--Lat 35°39'42", long 106°44'34", Sandoval County, Hydrologic Unit 13020202, in Cañon de San Diego Grant, on left bank 0.7 mi (1.1 km) downstream from Rio Guadalupe, 3.5 mi (5.6 km) north of Jemez, and at mile 29.5 (47.5 km).

DRAINAGE AREA.--470 mi<sup>2</sup> (1,220 km<sup>2</sup>).

PERIOD OF RECORD.--June 1936 to May 1941, August 1949 to October 1950, May 1951 to September 1952 (irrigation seasons only), March 1953 to current year. Monthly discharge only for some periods, published in WSP 1732. Published as Jemez Creek near Jemez, 1936-41.

REVISED RECORDS.--WSP 1712: Drainage area. WSP 1923, 1957-58.

GAGE.--Water-stage recorder. Concrete control since Dec. 6, 1965. Datum of gage is 5,622.3 ft (1,713.68 m) National Geodetic Vertical Datum of 1929. June 22, 1936 to Mar. 11, 1937, at site 60 ft (20 m) upstream at datum 0.50 ft (0.152 m) higher. Mar. 12, 1937, to July 8, 1938, at present site at datum 0.7 ft (0.21 m) higher. July 9, 1938, to May 6, 1941, at site 60 ft (20 m) upstream at datum 0.70 ft (0.213 m) higher.

REMARKS.--Records good except those for winter months, and June, which are fair. Diversions for irrigation of about 300 acres (1.2 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--30 years (water years 1937-40, 1950, 1954-78), 66.5 ft<sup>3</sup>/s (1.883 m<sup>3</sup>/s), 48,180 acre-ft/yr (59.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,900 ft<sup>3</sup>/s (167 m<sup>3</sup>/s) Apr. 21, 1958, from rating curve extended above 2,200 ft<sup>3</sup>/s (62 m<sup>3</sup>/s) on basis of contracted-opening measurement; maximum gage height, 8.6 ft (2.62 m), May 6, 1941, present datum; minimum, 4.2 ft<sup>3</sup>/s (0.12 m<sup>3</sup>/s) Jan. 5, 1972, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1890 occurred between May 6 and 15, 1941, after gage was destroyed (discharge probably exceeded 6,000 ft<sup>3</sup>/s or 170 m<sup>3</sup>/s), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 516 ft<sup>3</sup>/s (14.6 m<sup>3</sup>/s) at 0330 hours Apr. 1, gage height, 5.38 ft (1.640 m), no peak above base of 1,000 ft<sup>3</sup>/s (28.3 m<sup>3</sup>/s); minimum, 11 ft<sup>3</sup>/s (0.31 m<sup>3</sup>/s) Jan. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	23	19	23	31	51	384	187	101	30	20	20
2	16	22	19	20	28	58	280	211	102	18	20	19
3	19	22	23	19	28	72	263	189	97	17	22	19
4	18	21	24	24	30	50	247	230	85	17	29	18
5	17	21	24	25	29	47	241	245	76	17	32	17
6	17	22	19	23	34	44	206	222	75	19	25	16
7	19	45	20	23	33	41	223	184	99	19	23	16
8	22	41	22	18	36	38	241	205	77	19	23	15
9	20	26	18	21	27	42	226	232	71	19	23	15
10	20	22	18	25	30	50	206	237	66	19	25	15
11	20	26	19	25	30	49	181	230	62	19	27	15
12	20	26	18	24	29	45	195	227	70	20	25	15
13	20	25	17	23	27	39	210	233	54	19	21	15
14	19	25	17	21	26	36	208	263	52	23	20	16
15	19	25	20	20	25	30	193	289	50	20	20	16
16	19	25	21	24	25	29	202	306	46	19	21	14
17	19	24	14	25	24	30	207	294	46	18	22	16
18	15	24	20	25	23	36	188	238	46	18	23	17
19	16	25	22	26	29	44	183	217	43	16	22	16
20	18	23	14	27	29	53	180	203	43	17	22	16
21	18	22	13	27	27	66	183	236	42	18	21	16
22	19	21	18	26	27	80	181	227	41	17	23	17
23	20	23	21	23	28	100	165	206	40	19	22	17
24	20	23	22	23	29	125	166	193	39	23	27	19
25	20	25	20	22	31	127	178	178	38	24	23	24
26	20	24	18	26	32	166	186	159	37	21	22	24
27	19	24	22	27	32	216	218	147	36	20	20	22
28	18	24	22	27	32	243	230	131	35	19	18	18
29	21	22	23	27	---	207	218	121	65	18	20	18
30	23	21	23	28	---	269	210	110	70	19	19	18
31	23	---	24	33	---	340	---	100	---	19	20	---
TOTAL	593	742	614	750	811	2823	6399	6450	1804	600	700	519
MEAN	19.1	24.7	19.8	24.2	29.0	91.1	213	208	60.1	19.4	22.6	17.3
MAX	23	45	24	33	36	340	384	306	102	30	32	24
MIN	15	21	13	18	23	29	165	100	35	16	18	14
AC-FT	1180	1470	1220	1490	1610	5600	12690	12790	3580	1190	1390	1030
CAL YR 1977	TOTAL	10749.8	MEAN 29.5	MAX 147	MIN 9.8	AC-FT 21320						
WTR YR 1978	TOTAL	22805.0	MEAN 62.5	MAX 384	MIN 13	AC-FT 45230						

## RIO GRANDE BASIN

## 08328500 JEMEZ CANYON RESERVOIR NEAR BERNALILLO, NM

LOCATION.--Lat 35°23'40", long 106°32'50", in SW¼SW¼ sec.32, T.14 N., R.4 E., Sandoval County, Hydrologic Unit 13020202, at corner of outlet works control tower of Jemez Canyon Dam on Jemez River, 2.8 mi (4.5 km) upstream from mouth, and 6 mi (10 km) north of Bernalillo.

DRAINAGE AREA.--1,034 mi<sup>2</sup> (2,678 km<sup>2</sup>).

PERIOD OF RECORD.--October 1953 to September 1965 (monthend contents only), October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam, completed October 19, 1953. Capacity, 176,200 acre-ft (217 hm<sup>3</sup>), from capacity table adapted June 1, 1975, between elevations 5,125.0 ft (1,562.10 m) sill of outlet gates and 5,252.3 ft (1,600.90 m) operating deck of spillway. Maximum controlled capacity, 106,100 acre-ft (130 hm<sup>3</sup>) at elevation 5,232.0 ft or 1,594.71 m (floor of spillway which is located about 0.8 mi or 1.3 km south of dam). Capacity by original survey was 189,100 acre-ft (233 hm<sup>3</sup>). Original plan for reservoir operation was to desilt all flow above 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) by storage for one day before releasing to Rio Grande, and for possible detention during flood stage on Rio Grande.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 71,220 acre-ft (87.8 hm<sup>3</sup>) June 8, 1958, elevation, 5,213.36 ft (1,589.032 m); no storage most of time.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,220 acre-ft (1.50 hm<sup>3</sup>) Apr. 1 elevation, 5,156.99 ft (1,571.851 m); no contents most of year.

Capacity tables, (elevation, in feet, and contents, in acre-feet).

5,137	1	5,150	179
5,138	2	5,155	811
5,140	6	5,160	1,980
5,142	13	5,165	3,700
5,146	30	5,170	6,180

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0	0	0	978	410	150	0	0	0
2	0	0	0	0	0	0	1220	661	126	0	0	0
3	0	0	0	0	0	0	1100	631	103	0	0	0
4	0	0	0	0	0	0	691	399	54	0	0	0
5	0	0	0	0	0	0	510	345	21	0	0	0
6	0	0	0	0	0	0	496	524	34	0	0	0
7	0	0	0	0	0	0	469	625	52	0	0	0
8	0	0	0	0	0	0	472	482	76	0	0	0
9	0	0	0	0	0	0	508	387	45	0	0	0
10	0	0	0	0	0	0	491	421	8	0	0	0
11	0	0	0	0	0	0	436	440	23	0	0	0
12	0	0	0	0	0	0	364	441	23	0	0	0
13	0	0	0	0	0	0	348	455	300	0	0	0
14	0	0	0	0	0	0	386	494	0	0	0	0
15	0	0	0	0	0	0	364	527	0	0	0	0
16	0	0	0	0	0	0	333	475	0	0	0	0
17	0	0	0	0	0	0	329	411	0	0	0	0
18	0	0	0	0	0	0	333	308	0	0	0	0
19	0	0	0	0	0	0	255	191	0	0	0	0
20	0	0	0	0	0	0	373	61	0	0	0	0
21	0	0	0	0	0	0	387	17	0	0	0	0
22	0	0	0	0	0	0	400	88	0	0	0	0
23	0	0	0	0	0	0	406	132	0	0	0	0
24	0	0	0	0	0	0	383	145	0	0	0	0
25	0	0	0	0	0	0	375	208	0	0	0	0
26	0	0	0	0	0	0	380	259	0	0	0	0
27	0	0	0	0	0	22	387	280	0	0	0	0
28	0	0	0	0	0	67	410	278	0	0	0	0
29	0	0	0	0	---	126	433	258	29	0	0	0
30	0	0	0	0	---	271	426	220	0	0	0	0
31	0	---	0	0	---	544	---	187	---	0	0	---
MAX	.00	.00	.00	.00	.00	544	1220	661	300	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	255	17	.00	.00	.00	.00
(†)	-	-	-	-	-	5153.40	5152.52	5150.11	-	-	-	-
(‡)	0	0	0	0	0	+544	-118	-239	-187	0	0	0
CAL YR 1977	MAX	669	MIN	.00	(†)	0						
WTR YR 1978	MAX	1220	MIN	.00	(†)	0						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

LOCATION.--Lat 35°23'24", long 106°32'03", in NE¼ sec.5, T.13 N., R.4 E., Sandoval County, Hydrologic Unit 13020202, on right bank 0.8 mi (1.3 km) downstream from Jemez Canyon Dam, 2.0 mi (3.2 km) upstream from mouth, and 6 mi (9.6 km) north of Bernalillo.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is 5,095.60 ft (1,553.139 m) National Geodetic Vertical Datum of 1929, from Corps of Engineers bench mark. Prior to Apr. 24, 1951, at site 0.8 mi (1.3 km) upstream at datum 24.51 ft (7.471 m) higher. Apr. 24, 1951, to June 25, 1958, at site 37 ft (11 m) upstream at datum 4.40 ft (1.341 m) above present datum. Supplementary water-stage recorder at gages on Jemez Canyon Dam at datum 5,125.00 ft (1,562.100 m) above mean sea level (Corps of Engineers bench mark) used at times since January 1953.

AVERAGE DISCHARGE.--36 years (water years 1937, 1944-78), 52.8 ft<sup>3</sup>/s (1.495 m<sup>3</sup>/s), 38,250 acre-ft/yr (47.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,300 ft<sup>3</sup>/s (462 m<sup>3</sup>/s) Aug. 29, 1943, gage height, 5.62 ft (1.713 m), site and datum then in use, from rating curve extended above 3,000 ft<sup>3</sup>/s (85.0 m<sup>3</sup>/s); no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood in 1900 was probably less than 16,000 ft<sup>3</sup>/s (453 m<sup>3</sup>/s), but highest observed outside period of record.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 626 ft<sup>3</sup>/s (17.7 m<sup>3</sup>/s) Apr. 3, gage height, 8.59 ft (2.618 m); no flow for many days.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	3.5	14	14	32	35	337	163	85	240	.00	.00
2	.00	2.9	18	18	31	45	407	179	75	20	.00	.00
3	.00	3.5	19	14	40	51	510	254	70	5.0	.00	.00
4	.00	3.3	22	18	36	52	503	276	60	.00	.00	.00
5	.00	3.3	22	13	44	41	254	215	58	.00	.00	.00
6	.00	3.4	15	11	51	41	187	125	39	.00	.00	.00
7	.00	14	15	14	42	38	190	127	39	.00	33	.00
8	.00	35	12	10	46	37	195	177	41	.00	193	.00
9	.00	20	12	8.0	36	36	200	224	41	.00	100	.00
10	.00	21	12	16	31	44	212	183	38	.00	25	.00
11	.00	19	12	17	33	47	212	185	12	.00	10	.00
12	.00	18	13	18	23	50	207	188	10	.00	.00	.00
13	.00	18	10	18	23	45	185	190	59	.00	.00	.00
14	.00	16	12	29	17	36	160	192	170	.00	.00	.00
15	.00	12	13	35	24	32	181	235	128	.00	.00	.00
16	.00	13	15	41	17	34	174	282	164	.00	.00	.00
17	.00	17	3.8	36	16	31	162	278	50	.00	.00	.00
18	.00	17	17	29	12	31	153	263	20	.00	.00	.00
19	.00	21	14	23	6.4	30	136	240	3.0	.00	.00	.00
20	.00	19	14	34	5.9	31	139	230	.00	.00	.00	.00
21	.00	16	14	31	6.1	39	137	206	.00	.00	.00	.00
22	.00	14	14	29	6.9	52	137	176	.00	.00	.00	.00
23	.00	15	14	17	9.0	67	136	159	.00	.00	.00	.00
24	.00	15	22	18	14	82	136	198	.00	.00	.00	.00
25	.90	17	23	20	17	106	134	126	.00	.00	.00	.00
26	2.2	18	18	22	18	120	133	107	.00	.00	.00	.00
27	3.0	21	16	20	25	154	155	107	.00	.00	.00	.00
28	1.3	26	22	20	34	193	165	106	.00	.00	.00	.00
29	1.2	19	21	22	---	192	165	106	92	.00	.00	.00
30	1.9	19	21	20	---	200	161	98	307	.00	.00	.00
31	.23	---	21	29	---	259	---	84	---	.00	.00	---
TOTAL	10.73	459.9	490.8	664.0	696.3	2251	6163	5639	1561.00	265.00	361.00	.00
MEAN	.35	15.3	15.8	21.4	24.9	72.6	205	182	52.0	8.55	11.6	.000
MAX	3.0	35	23	41	51	259	510	282	307	240	193	.00
MIN	.00	2.9	3.8	8.0	5.9	30	133	84	.00	.00	.00	.00
AC=FT	21	912	974	1320	1380	4460	12220	11180	3100	526	716	.00
CAL YR 1977	TOTAL	7573.36	MEAN	20.7	MAX	162	MIN	.00	AC=FT	15020		
WTR YR 1978	TOTAL	18561.73	MEAN	50.9	MAX	510	MIN	.00	AC=FT	36820		



08329000 JEMEZ RIVER BELOW JEMEZ CANYON DAM, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)		
DEC										
12...	1210	11	174	8.0	3.5	270	4	87		
19...	1650	24	2100	8.2	3.0	--	--	--		
27...	1200	20	1650	8.0	1.0	--	--	--		
JAN										
09...	1210	4.9	1750	8.1	2.0	250	0	80		
23...	1200	19	2020	8.2	5.0	--	--	--		
30...	1020	18	1820	8.2	2.5	--	--	--		
FEB										
06...	1210	53	1770	8.3	6.5	260	43	86		
13...	1150	19	1900	8.3	4.5	--	--	--		
21...	1005	2.0	1720	8.4	1.0	--	--	--		
28...	1145	33	1500	8.1	10.0	--	--	--		
MAR										
06...	1530	33	1660	8.4	13.0	240	25	78		
13...	1000	50	1400	8.0	3.5	--	--	--		
20...	1615	34	1240	8.3	11.0	--	--	--		
28...	1430	185	904	8.2	15.5	--	--	--		
APR										
04...	1245	504	599	7.9	12.5	150	56	50		
10...	1140	216	587	8.0	10.5	--	--	--		
17...	1535	165	480	8.2	13.5	--	--	--		
MAY										
01...	1620	160	407	8.0	14.0	110	8	37		
08...	1245	122	738	8.3	10.5	--	--	--		
15...	1245	263	423	8.3	18.0	--	--	--		
22...	1530	146	479	8.0	27.0	--	--	--		
30...	1335	102	504	8.3	21.0	--	--	--		
JUN										
05...	1800	65	865	8.1	24.0	170	0	58		
12...	1355	9.8	903	8.4	27.5	180	0	61		
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
DEC										
12...	12	270	7.2	16	320	0	260	270	260	--
19...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
JAN										
09...	11	290	8.1	14	310	0	250	270	270	--
23...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
FEB										
06...	12	270	7.2	16	270	0	220	300	260	--
13...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
MAR										
06...	11	260	7.3	19	260	1	220	280	230	--
13...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
APR										
04...	5.1	65	2.3	7.3	110	0	90	130	47	--
10...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	3.4	41	1.7	4.9	120	0	98	45	38	--
08...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
JUN										
05...	5.7	120	4.0	8.4	210	0	170	130	100	--
12...	6.6	120	3.9	8.8	230	5	200	95	110	--

08329000 JEMEZ RIVER BELOW JEMEZ CANYON DAM, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
DEC								
12...	1.7	39	--	1110	.09	--	--	--
19...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
JAN								
09...	1.6	38	--	1130	.17	--	--	--
23...	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--
FEB								
06...	1.4	34	--	1110	.11	--	--	--
13...	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--
MAR								
06...	1.5	36	--	1050	.22	--	--	--
13...	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--
APR								
04...	.5	20	--	380	.12	--	--	--
10...	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--
MAY								
01...	.5	19	242	248	.02	.02	260	10
08...	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--
JUN								
05...	.7	23	--	550	.12	--	--	--
12...	1.0	29	--	550	.11	--	--	--

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
MAY				
01...	1620	11	260	10

## 08329900 NORTH FLOODWAY CHANNEL NEAR ALAMEDA, NM

LOCATION.--Lat 35°11'58", long 106°35'53", Bernalillo County, Hydrologic Unit 13020203, in Elena Gallegos Grant, on left bank 0.5 mi (0.8 km) upstream from Edith Blvd., 1.1 mi (1.8 km) upstream from mouth, and 1.2 mi (1.9 km) northeast of Alameda.

PERIOD OF RECORD.--July 1968 to current year (no winter records).

GAGE.--Water-stage recorder and concrete lined channel. Altitude of gage is 5,015 ft (1,529 m), from Corps of Engineers plan and profile map.

REMARKS.--Records good. Floodway channel intercepts flow of numerous arroyos in northeast Albuquerque and discharges into the Rio Grande at a point 1.6 mi (2.6 km) north of Alameda.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft<sup>3</sup>/s (142 m<sup>3</sup>/s) July 26, 1971, gage height, 6.30 ft (1.920 m) from rating curve extended above 2,900 ft<sup>3</sup>/s (82 m<sup>3</sup>/s); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,490 ft<sup>3</sup>/s (98.8 m<sup>3</sup>/s) Oct. 6, gage height, 4.98 ft (1.518 m); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00			---	.00	.00	.00	.00	.00	.00
2	.00	.00	.00			---	.00	159	.00	.00	.00	.00
3	.00	.00	.00			---	.00	57	.00	.00	67	.00
4	.00	.00	.00			---	.00	52	.00	.00	84	.00
5	.00	.00	.00			---	.00	47	.00	.00	.00	.00
6	372	.00	---			---	.00	87	.00	.00	.00	.00
7	.00	.00	---			.00	.00	25	.00	.00	.00	.00
8	.00	.00	---			.00	.00	.00	.00	.00	11	.00
9	.00	.00	---			.00	.00	.00	.00	.00	111	.00
10	.00	.00	---			.00	.00	.00	.00	8.5	104	.00
11	.00	.00	---			.00	.00	.00	.00	15	5.0	.00
12	.00	.00	---			.00	.00	.00	.00	9.0	.00	.00
13	.00	.00	---			.00	.00	.00	.00	7.2	.00	.00
14	.00	.00	---			.00	.00	.00	.00	29	.00	.00
15	.00	.00	---			.00	.00	.00	.00	9.0	.00	.00
16	.00	.00	---			.00	.00	.00	.00	9.0	.00	.00
17	.00	.00	---			.00	.00	.00	.00	15	.00	85
18	.00	.00	---			.00	.00	.00	.00	19	.00	.00
19	.00	.00	---			.00	.00	.00	.00	19	100	.00
20	.00	.00	---			.00	.00	65	.00	84	120	.00
21	.00	.00	---			.00	.00	10	.00	45	5.0	.00
22	.00	.00	---			.00	.00	.00	.00	88	80	.00
23	.00	.00	---			.00	.00	.00	.00	30	10	.00
24	.00	.00	---			.00	.00	.00	.00	.00	5.0	32
25	.00	.00	---			.00	.00	.00	.00	.00	5.0	16
26	.00	.00	---			.00	.00	.00	.00	.00	.00	14
27	.00	.00	---			.00	.00	.00	.00	.00	.00	3.5
28	.00	.00	---			.00	.00	.00	5.9	.00	.00	.00
29	.00	.00	---			.00	.00	.00	188	7.8	.00	.00
30	.00	.00	---			.00	.00	.00	3.4	12	.00	.00
31	.00	---	---			.00	---	.00	---	.00	.00	---
TOTAL	372.00	.00	---	---	---	---	.00	502.00	197.30	406.50	707.00	150.50
MEAN	12.0	.000	---	---	---	---	.000	16.2	6.58	13.1	22.8	5.02
MAX	372	.00	---	---	---	---	.00	159	188	88	120	85
MIN	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.00
AC-FT	738	.00	---	---	---	---	.00	996	391	806	1400	299

## 08330000 RIO GRANDE AT ALBUQUERQUE, NM

LOCATION.--Lat 35°05'21", long 106°40'48", Bernalillo County, Hydrologic Unit 13020203, in Atrisco Grant, at downstream side of Old Town Bridge on U.S. Highway 66 at Albuquerque, and at mile 1,540.0 (2,477.9 km).

DRAINAGE AREA.--17,440 mi<sup>2</sup> (45,170 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1312: 1946(M).

GAGE.--Water-stage recorder. Datum of gages is 4,946.16 ft (1,507.590 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 18, 1947, at various sites at datum about 2.00 ft (0.610 m) higher; Sept. 18, 1947, to Apr. 12, 1959, at site 550 ft (170 m) to the left of present site; Apr. 13, 1959, to June 29, 1960, at site 150 ft (46 m) to right of present site. Supplemental water-stage recorders at sites 75 ft (23 m) and 150 ft (46 m) to right of present site used at various times since 1964.

REMARKS.--Water-discharge records good. Flow completely regulated since November 1973 by Cochiti Dam (station 08317300) 50 mi (80 km) upstream. Possible regulation by operation of reservoirs on Rio Chama and by flood-and-silt-detention reservoirs on Galisteo Creek and Jemez River (stations 08285000, 08286900, 08317900, 08328500). Since May 1971 flow affected by release of transmountain water from Heron Reservoir (station 08284510). Diversions above station for irrigation of about 718,000 acres (2,900 km<sup>2</sup>), several hundred of which are below station. National Weather Service gage height telemeter at station.

COOPERATION.--Records for Albuquerque Riverside drain and Arenal, Armijo, and Atrisco canals furnished by Middle Rio Grande Conservancy District.

AVERAGE DISCHARGE.--32 years (water years 1942-73), 1,068 ft<sup>3</sup>/s (30.25 m<sup>3</sup>/s), 773,800 acre-ft/yr (0.95 km<sup>3</sup>/yr) prior to closure of Cochiti Dam.  
5 years (calendar years 1974-78), 839 ft<sup>3</sup>/s (23.76 m<sup>3</sup>/s), 607,900 acre-ft/yr (0.75 km<sup>3</sup>/yr) since closure of Cochiti Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft<sup>3</sup>/s (708 m<sup>3</sup>/s) Apr. 24, 1942, from rating curve extended above 13,900 ft<sup>3</sup>/s (394 m<sup>3</sup>/s); maximum gage height, 7.82 ft (2.384 m) Aug. 10, 1967; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,580 ft<sup>3</sup>/s (130 m<sup>3</sup>/s) May 24, gage height, 6.83 ft (2.082 m); minimum daily, no flow, Oct. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	143	400	522	621	635	298	2100	2470	1380	60	35
2	3.6	105	418	592	558	647	457	2010	2220	937	65	199
3	16	94	442	569	568	835	523	1920	2560	937	63	222
4	22	142	467	488	548	754	869	2370	2720	985	87	348
5	26	178	478	488	546	855	829	2130	2820	896	963	414
6	79	222	460	493	616	960	605	1810	2540	716	1230	364
7	120	320	445	510	616	983	474	2270	3020	400	859	104
8	60	346	405	520	685	802	678	1700	3190	200	746	61
9	25	454	389	558	655	727	436	1790	2560	150	647	25
10	20	640	391	519	624	738	400	1390	2410	112	542	23
11	16	707	664	506	651	769	519	819	2120	79	309	22
12	15	586	1050	464	646	812	498	1390	1580	68	352	38
13	25	460	1020	484	614	796	406	3020	1910	70	345	20
14	18	389	1020	677	630	671	238	2340	2110	128	140	15
15	12	503	959	734	624	590	194	2790	2080	145	105	28
16	13	487	720	329	622	573	335	2800	1440	525	100	25
17	30	559	431	485	646	542	317	3050	1250	615	75	16
18	18	524	420	654	655	489	224	3140	1550	473	58	19
19	.34	585	412	517	608	428	358	3460	1730	465	58	16
20	.00	613	363	634	570	467	343	3830	1840	599	230	15
21	.12	466	335	595	565	316	246	3900	1610	972	465	14
22	4.0	431	344	560	539	397	190	4280	1620	1300	451	20
23	43	481	296	547	498	454	237	3840	1400	1510	213	20
24	62	467	312	511	491	474	325	4320	1340	857	115	23
25	68	378	392	491	508	469	374	3940	1540	591	90	30
26	73	372	465	521	522	502	209	3440	1510	391	71	30
27	77	357	417	526	512	561	340	3470	1350	389	64	32
28	77	286	466	445	577	455	1010	3020	1540	314	45	30
29	79	346	491	473	---	419	1170	2700	2710	143	37	29
30	77	382	518	515	---	479	1520	2380	2420	65	22	20
31	104	---	514	631	---	358	---	2400	---	49	19	---
TOTAL	1191.86	12023	15904	16558	16515	18957	14622	83819	61160	16461	8626	2257
MEAN	38.4	401	513	534	590	612	487	2704	2039	531	278	75.2
MAX	120	707	1050	734	685	983	1520	4320	3190	1510	1230	414
MIN	.00	94	296	329	491	316	190	819	1250	49	19	14
AC-FT	2360	23850	31550	32840	32760	37600	29000	166300	121300	32650	17110	4480
(†)	19760	1280	1190	383	363	4900	16830	19100	18450	15880	14460	17360
CAL YR 1977 TOTAL	125203.25			MEAN 343	MAX 1640	MIN .00	AC-FT 248300	(†) 127300				
WTR YR 1978 TOTAL	268093.86			MEAN 735	MAX 4320	MIN .00	AC-FT 531800	(†) 130000				

(†) COMBINED FLOW, IN ACRE-FT, OF ALBUQUERQUE RIVERSIDE DRAIN, AND ARENAL, ARMIJO, AND ATRISCO CANALS. THIS FLOW WHICH BYPASSES RIVER GAGE, CAN BE ADDED TO RIVER RECORDS TO GET ENTIRE SURFACE FLOW IN VALLEY CROSS-SECTION.

08330000 RIO GRANDE AT ALBUQUERQUE, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to current year.

WATER TEMPERATURES: October 1969 to current year.

SUSPENDED SEDIMENT DISCHARGES: May 1969 to September 1969 (partial-record station), October 1969 to current year.

REMARKS.--Additional sediment total discharge determination were made bi-weekly when needed.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,840 micromhos Oct. 12, 1974; minimum daily 133 micromhos July 21, 1971.

WATER TEMPERATURES: Maximum, 34.0°C July 12, 1970; minimum, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 45,500 mg/L July 21, 1971; minimum daily, no flow on many days in 1971, 1972, and 1977.

SEDIMENT LOADS: Maximum daily, 275,000 tons (249,000 tonnes) July 27, 1971; minimum daily; 0 tons (0 tonnes) on many days in 1971, 1972, and 1977.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 760 micromhos Nov. 9; minimum daily, 253 micromhos June 29.

WATER TEMPERATURES: Maximum, 30.0°C July 28; minimum, 0.0°C on Dec. 21.

SEDIMENT CONCENTRATIONS: Maximum daily, 7,880 mg/L Aug. 6; minimum daily, no flow on Oct. 20.

SEDIMENT LOADS: Maximum daily, 36,100 tons (32,700 tonnes) May 22; minimum daily, 0 tons (0 tonnes) on Oct. 20.

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)
OCT										
03...	1515	16	--	68	2.9	--	--	--	--	--
07...	1000	138	16.0	345	129	53	64	78	--	--
09...	1800	25	19.0	1880	127	71	84	97	100	--
NOV										
07...	1551	346	14.0	861	804	46	60	77	--	--
28...	1001	325	7.0	317	278	45	56	68	--	--
DEC										
19...	1314	404	6.0	340	371	43	54	64	74	80
JAN										
03...	1111	508	3.0	371	509	43	50	67	--	--
16...	1400	303	9.5	265	217	37	40	51	60	69
30...	1400	488	8.5	357	470	44	52	65	--	--
FEB										
13...	1330	604	9.0	396	646	32	39	49	66	72
27...	1551	498	12.0	657	883	16	19	29	43	46
MAR										
06...	1100	918	8.0	964	2390	36	47	66	--	--
20...	1337	496	12.0	388	520	27	32	36	61	72
27...	1441	561	17.0	1010	1530	46	55	76	89	92
APR										
10...	0930	326	9.5	408	359	55	63	74	--	--
24...	0924	329	12.5	696	618	15	17	20	24	26
28...	1100	1020	10.0	1650	4540	20	24	45	92	95
MAY										
01...	0800	2200	7.0	2300	13700	19	22	33	88	95
08...	1500	1420	16.5	926	3550	32	34	39	59	69
17...	1000	3240	16.0	2150	18800	14	15	19	36	56
22...	1100	4260	18.0	4030	46400	9	10	13	24	33
25...	1000	4460	16.0	2150	25900	9	10	12	28	46
29...	0700	2830	14.0	1210	9250	--	--	--	33	47
30...	0940	2520	19.0	943	6420	19	21	25	44	56
JUN										
05...	1100	2810	19.0	1080	8190	11	12	16	32	42
12...	2000	1560	22.0	292	1230	--	--	--	--	--
14...	1000	2150	19.0	1200	6970	57	69	83	--	--
25...	1000	1480	22.0	451	1800	--	--	--	--	--
26...	0930	1350	20.0	637	2320	--	--	--	31	45
JUL										
03...	0600	927	19.0	311	778	46	58	68	--	--
14...	1000	142	24.0	411	158	61	74	80	--	--

## 08330000 RIO GRANDE AT ALBUQUERQUE, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SED. SUSP. FALL DIAM. % FINER THAN (70344)	SED. SUSP. FALL DIAM. % FINER THAN (70345)	SED. SUSP. FALL DIAM. % FINER THAN (70346)	SED. SUSP. FALL DIAM. % FINER THAN (70347)	SED. SUSP. FALL DIAM. % FINER THAN (70331)	SED. SUSP. FALL DIAM. % FINER THAN (70332)	SED. SUSP. FALL DIAM. % FINER THAN (70333)	SED. SUSP. FALL DIAM. % FINER THAN (70334)	SED. SUSP. FALL DIAM. % FINER THAN (70336)
OCT									
03...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	93	96	100	--	--
09...	--	--	--	--	--	--	--	--	--
NOV									
07...	--	--	--	--	84	87	93	100	--
28...	--	--	--	--	77	81	94	100	--
DEC									
19...	97	100	--	--	--	--	--	--	--
JAN									
03...	--	--	--	--	80	85	97	100	--
16...	97	100	--	--	--	--	--	--	--
30...	--	--	--	--	83	87	96	100	--
FEB									
13...	97	100	--	--	--	--	--	--	--
27...	58	93	100	--	--	--	--	--	--
MAR									
06...	--	--	--	--	97	98	100	--	--
20...	91	100	--	--	--	--	--	--	--
27...	99	100	--	--	--	--	--	--	--
APR									
10...	--	--	--	--	85	88	98	100	--
24...	56	94	96	--	--	--	--	--	96
28...	100	--	--	--	--	--	--	--	--
MAY									
01...	100	--	--	--	--	--	--	--	--
08...	87	100	--	--	--	--	--	--	--
17...	92	100	--	--	--	--	--	--	--
22...	53	83	98	100	--	--	--	--	--
25...	90	100	--	--	--	--	--	--	--
29...	93	100	--	--	--	--	--	--	--
30...	89	100	--	--	--	--	--	--	--
JUN									
05...	76	100	--	--	--	--	--	--	--
12...	--	--	--	--	75	88	97	100	--
14...	--	--	--	--	91	95	99	100	--
25...	--	--	--	--	75	92	97	100	--
26...	79	95	100	--	--	--	--	--	--
JUL									
03...	--	--	--	--	87	97	100	--	--
14...	--	--	--	--	96	98	100	--	--

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN (70337)	SED. SUSP. FALL DIAM. % FINER THAN (70338)	SED. SUSP. FALL DIAM. % FINER THAN (70340)
------	------	--	--	---	--	--	--	--

JUL								
24...	1400	1040	25.0	2530	7100	40	48	85
AUG								
07...	1111	817	22.5	786	1730	36	52	70
22...	1001	559	21.0	476	718	42	53	75
SEP								
05...	1144	460	22.0	3250	4040	66	80	97

DATE	SED. SUSP. FALL DIAM. % FINER THAN (70342)	SED. SUSP. FALL DIAM. % FINER THAN (70343)	SED. SUSP. FALL DIAM. % FINER THAN (70344)	SED. SUSP. FALL DIAM. % FINER THAN (70345)	SED. SUSP. FALL DIAM. % FINER THAN (70331)	SED. SUSP. FALL DIAM. % FINER THAN (70332)	SED. SUSP. FALL DIAM. % FINER THAN (70333)	SED. SUSP. FALL DIAM. % FINER THAN (70334)
------	--	--	--	--	--	--	--	--

JUL								
24...	94	96	100	--	--	--	--	--
AUG								
07...	84	88	99	100	--	--	--	--
22...	--	--	--	--	88	92	98	100
SEP								
05...	--	--	--	--	99	100	--	--

## RIO GRANDE BASIN

08330000 RIO GRANDE AT ALBUQUERQUE, NM--Continued

PARTICLE SIZE OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)
OCT								
03...	1515	16	68	2.9	0	0	31	80
NOV								
07...	1551	346	861	804	1	1	28	79
28...	1001	325	317	278	1	6	53	92
DEC								
19...	1314	404	340	371	1	1	36	88
JAN								
03...	1111	508	371	509	14	19	53	79
16...	1400	303	265	217	16	19	54	90
30...	1400	488	357	470	6	8	39	93
FEB								
13...	1330	604	396	646	7	15	61	95
27...	1551	498	657	883	5	7	32	90
MAR								
20...	1337	496	388	520	2	7	39	87
27...	1441	561	1010	1530	1	5	44	87
APR								
10...	0930	326	408	359	1	2	27	81
24...	0924	329	696	618	0	4	35	79
MAY								
08...	1500	1420	926	3550	1	3	36	84
22...	1100	4260	4030	46400	1	3	36	90
30...	0940	2520	943	6420	0	4	45	90
JUN								
05...	1100	2810	1080	8190	0	1	28	86
26...	0930	1350	637	2320	1	5	35	58
JUL								
24...	1400	1040	2530	7100	1	3	49	88
AUG								
07...	1111	817	786	1730	2	7	58	89
22...	1001	559	476	718	1	4	39	81
SEP								
05...	1144	460	3250	4040	6	9	36	76

DATE	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. FALL DIAM. % FINER THAN 2.00 MM (80163)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT								
03...	97	100	--	--	--	--	--	--
NOV								
07...	98	100	--	--	--	--	--	--
28...	98	100	--	--	--	--	--	--
DEC								
19...	98	100	--	--	--	--	--	--
JAN								
03...	97	100	--	--	--	--	--	--
16...	98	100	--	--	--	--	--	--
30...	99	100	--	--	--	--	--	--
FEB								
13...	100	--	--	--	--	--	--	--
27...	100	--	--	--	--	--	--	--
MAR								
20...	98	100	--	--	--	--	--	--
27...	99	100	--	--	--	--	--	--
APR								
10...	--	--	92	95	97	98	100	--
24...	94	100	--	--	--	--	--	--
MAY								
08...	98	100	--	--	--	--	--	--
22...	100	--	--	--	--	--	--	--
30...	99	100	--	--	--	--	--	--
JUN								
05...	98	100	--	--	--	--	--	--
26...	--	--	64	67	72	82	96	100
JUL								
24...	95	100	--	--	--	--	--	--
AUG								
07...	--	--	97	99	100	--	--	--
22...	--	--	94	98	100	--	--	--
SEP								
05...	93	100	--	--	--	--	--	--

## RIO GRANDE BASIN

08330000 RIO GRANDE AT ALBUQUERQUE, NM--Continued

TOTAL SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (000061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT DISCH, SUSP. + BED MA- TERIAL (T/DAY) (80156)	STREAM WIDTH (FT) (00004)	STREAM DEPTH, MEAN (FT) (00064)	STREAM VELOC- ITY, MEAN (FPS) (00055)
OCT									
07...	1000	138	16.0	345	129	139	30	3.3	1.4
NOV									
07...	1551	346	14.0	861	804	1000	130	1.5	1.8
28...	1001	325	7.0	317	278	281	156	1.3	1.6
JAN									
03...	1111	508	3.0	371	509	530	238	1.3	1.6
16...	1400	303	9.5	265	217	454	142	1.1	1.9
30...	1400	488	8.5	357	470	553	220	1.3	1.7
FEB									
13...	1330	604	9.0	396	646	1000	223	1.4	1.9
27...	1551	498	12.0	657	883	1280	237	1.3	1.6
MAR									
06...	1100	918	8.0	964	2390	2680	265	1.6	2.2
20...	1337	496	12.0	388	520	564	292	1.1	1.6
27...	1441	561	17.0	1010	1530	1610	295	1.1	1.7
APR									
10...	0930	326	9.5	408	359	442	151	1.2	1.9
24...	0924	329	12.5	696	618	677	164	1.1	1.8
MAY									
01...	0800	2200	7.0	2300	13700	16100	310	2.3	3.1
08...	1500	1420	16.5	926	3550	4190	264	2.3	2.3
22...	1100	4260	18.0	4030	46400	64600	320	3.0	4.4
30...	0940	2520	19.0	943	6420	8530	270	3.2	2.9
JUN									
05...	1100	2810	19.0	1080	8190	10400	279	3.3	3.1
12...	2000	1560	22.0	292	1230	2000	275	2.2	2.6
26...	0930	1350	20.0	637	2320	2920	253	2.2	2.4
JUL									
24...	1400	1040	25.0	2530	7100	8010	301	1.7	2.0
AUG									
07...	1111	817	22.5	786	1730	1810	301	1.4	1.9
22...	1001	559	21.0	476	718	887	277	1.1	1.8
SEP									
05...	1144	460	22.0	3250	4040	4160	228	1.2	1.7

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	519	540	505	585	568	479	486	442	279	393	592	442
2	509	545	500	530	505	480	506	415	278	328	384	385
3	512	550	502	548	536	529	491	500	276	298	383	362
4	539	550	502	518	506	555	542	653	274	290	405	367
5	516	550	500	544	506	557	524	588	270	291	332	377
6	514	550	554	548	504	494	506	505	269	296	403	360
7	517	502	544	544	537	476	484	475	263	309	348	400
8	533	530	547	537	531	484	463	463	262	332	318	431
9	521	760	552	525	508	486	482	512	264	379	321	439
10	502	510	554	524	526	478	480	453	262	393	284	437
11	546	500	539	532	522	478	486	456	267	406	364	444
12	561	500	510	552	499	488	467	451	268	417	347	460
13	528	520	511	554	511	488	477	435	266	415	351	458
14	552	520	505	524	502	495	481	413	323	393	388	453
15	548	515	501	503	501	492	476	408	454	388	417	457
16	537	515	508	544	516	466	455	385	280	336	421	441
17	518	510	550	620	527	458	470	381	282	313	435	443
18	512	---	533	538	486	458	478	366	274	318	423	431
19	530	---	564	554	486	475	461	359	262	329	432	442
20	---	---	547	546	481	433	453	343	260	---	287	429
21	---	520	552	552	487	492	472	345	263	309	335	434
22	---	520	537	565	473	479	485	343	263	---	332	417
23	500	510	539	530	491	480	482	343	266	---	322	431
24	500	502	526	507	486	492	479	321	263	337	407	421
25	490	510	566	530	494	507	464	312	263	---	421	412
26	480	505	541	495	478	521	464	301	297	339	424	402
27	498	510	540	485	490	511	465	293	263	---	435	405
28	500	518	540	507	488	509	484	285	272	341	439	406
29	500	520	546	503	---	534	452	290	253	---	441	411
30	502	502	568	508	---	501	451	289	307	---	441	406
31	520	---	590	495	---	497	---	283	---	---	448	---
MEAN	518	529	535	534	505	493	479	400	278	346	390	420
WTR YR 1978	MEAN	453		MAX	760		MIN	253				



08330000 RIO GRANDE AT ALBUQUERQUE, NM--Continued

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	9.0	4.0	3.0	1.0	5.0	10.0	7.0	16.0	21.0	24.0	19.0
2	15.0	9.0	3.0	1.0	3.0	7.0	9.0	6.0	17.0	21.0	25.0	20.0
3	15.0	9.0	3.0	3.0	4.0	3.0	6.0	7.0	18.0	20.0	24.0	18.0
4	15.0	10.0	4.0	5.0	4.0	5.0	9.0	12.0	18.0	19.0	24.0	17.0
5	15.0	10.0	5.0	4.0	5.0	8.0	8.0	10.0	19.0	21.0	23.0	20.0
6	14.0	10.0	5.0	5.0	4.0	4.0	8.0	10.0	17.0	22.0	24.0	19.0
7	16.0	7.0	4.0	4.0	5.0	7.0	8.0	9.0	17.0	21.0	22.5	19.0
8	15.0	6.0	6.0	5.0	4.0	7.0	9.0	10.0	18.0	23.0	23.0	18.0
9	19.0	2.0	3.0	1.0	5.0	8.0	14.0	11.0	18.0	23.0	20.0	19.0
10	13.0	2.0	2.0	4.0	6.0	7.0	8.0	15.0	18.0	21.0	20.0	20.0
11	13.0	2.0	3.0	3.0	4.0	8.0	8.0	15.0	22.0	23.0	21.0	16.0
12	13.0	3.0	2.0	4.0	4.0	7.0	10.0	16.0	17.0	22.0	21.0	18.0
13	10.0	3.0	3.0	1.0	3.0	3.0	9.0	16.0	19.0	23.0	22.0	18.0
14	10.0	2.0	3.0	4.0	3.0	7.0	9.0	17.0	19.0	24.0	20.0	17.0
15	12.0	3.0	2.0	3.0	1.0	4.0	9.0	14.0	20.0	24.0	20.0	17.0
16	18.0	2.0	2.0	1.0	1.0	6.0	14.0	16.0	20.0	23.0	19.0	17.0
17	10.0	3.0	1.0	2.0	3.0	8.0	6.0	16.0	19.0	22.0	20.0	16.0
18	8.0	---	2.0	4.0	3.0	9.0	6.0	14.0	20.0	24.0	21.0	15.0
19	10.0	---	2.0	3.0	4.0	9.0	8.0	15.0	20.0	24.0	20.0	16.0
20	---	---	1.0	1.0	1.0	12.0	8.0	14.0	20.0	---	19.0	15.0
21	---	2.0	.0	2.0	3.0	9.0	9.0	15.0	22.0	27.5	17.0	14.0
22	---	2.0	5.0	3.0	5.0	8.0	8.0	18.0	22.0	---	21.0	15.0
23	9.0	4.0	2.0	1.0	6.0	7.0	9.0	16.0	23.0	---	20.0	14.0
24	8.0	3.0	3.0	1.0	6.0	9.0	12.5	16.0	23.0	25.0	19.0	15.0
25	14.0	4.0	2.0	1.0	7.0	8.0	8.0	16.0	22.0	---	20.0	14.0
26	9.0	4.0	2.0	2.0	7.0	11.0	9.0	16.0	20.0	28.5	20.0	15.0
27	9.0	3.0	8.0	3.0	4.0	17.0	9.0	17.0	24.0	---	19.0	18.0
28	10.0	6.0	2.0	3.0	5.0	7.0	10.0	17.0	22.0	30.0	18.0	18.0
29	10.0	4.0	4.0	4.0	---	9.0	10.0	14.0	20.0	---	21.0	17.0
30	10.0	5.0	3.0	2.0	---	5.0	10.0	17.0	21.0	---	20.0	18.0
31	8.0	---	3.0	1.0	---	9.0	---	17.0	---	---	18.0	---
MEAN	12.5	5.0	3.0	2.5	4.0	7.5	9.0	14.0	19.5	23.0	21.0	17.0
WTR YR 1978	MEAN	11.5	MAX	30.0	MIN	.0						

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	77	1.8	53	20	292	315	367	517	440	738	379	650
2	127	1.2	38	11	265	299	405	647	398	600	427	746
3	75	3.2	71	18	302	360	362	556	351	538	752	1700
4	90	5.3	321	123	349	440	292	385	311	460	787	1600
5	77	5.4	275	132	330	426	267	352	285	420	933	2150
6	99	21	725	435	298	370	261	347	297	494	711	1840
7	450	146	1310	1130	317	381	266	366	346	575	632	1680
8	2250	364	1680	1570	311	340	277	389	372	688	431	933
9	2090	141	2400	2940	313	329	337	508	400	707	328	644
10	885	48	1480	2560	248	262	300	420	354	596	339	675
11	115	5.0	1160	2210	1350	2980	364	497	390	686	336	698
12	97	3.9	752	1190	1830	5190	298	373	356	621	355	778
13	159	11	506	628	1180	3250	275	359	320	530	335	720
14	130	6.3	420	441	938	2580	297	543	274	466	458	830
15	107	3.5	532	723	1110	2870	235	466	272	458	155	247
16	126	4.4	424	558	650	1260	384	341	274	460	205	317
17	151	12	434	655	341	397	423	554	290	506	216	316
18	67	3.3	406	574	491	557	472	833	303	536	188	248
19	31	.03	409	646	420	458	314	438	259	425	153	177
20	0	.00	445	737	204	200	386	661	237	365	275	347
21	27	.03	376	473	106	96	338	543	232	354	189	161
22	45	.49	344	400	123	114	326	493	235	342	260	279
23	85	9.9	386	501	100	80	280	414	229	308	390	478
24	69	12	406	512	150	126	235	324	227	301	530	678
25	83	15	309	315	258	273	255	338	250	343	640	810
26	69	14	353	355	320	402	215	302	298	420	690	1210
27	77	16	370	357	214	241	228	324	415	574	988	1500
28	56	12	505	390	245	308	252	303	325	506	867	1070
29	53	11	369	345	343	455	268	342	---	---	824	932
30	44	9.1	320	330	408	571	338	470	---	---	660	854
31	54	17	---	---	401	557	478	814	---	---	420	406
TOTAL	---	902.85	---	21279	---	26487	---	14219	---	14017	---	25674

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

TOTAL LOAD FOR YEAR: 774448.85 TONS.

## 08330600 TIJERAS ARROYO NEAR ALBUQUERQUE, NM

LOCATION.--Lat 35°00'04", long 106°39'18", in SW¼SW¼ sec. 17, T.9 N., R.3 E., Bernalillo County, Hydrologic Unit 13020203, on right bank 875 ft (267 m) downstream from highway bridge on Broadway Boulevard SE, 1,760 ft (536 m) upstream from South Diversion Channel, 0.5 mi (0.8 km) downstream from highway bridge on Interstate Highway 25, and 3 mi (5 km) south of Albuquerque.

DRAINAGE AREA.--133 mi<sup>2</sup> (344 km<sup>2</sup>).

PERIOD OF RECORD.--October 1951 to September 1968, (annual maximum only), August 1974 to current year.

GAGE.--Water-stage recorder and concrete lined channel. Altitude of gage is 4,961 ft (1,512 m), from Corps of Engineers plan and profile map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,530 ft<sup>3</sup>/s (71.6 m<sup>3</sup>/s) June 24, 1967, (gage height not determined); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 780 ft<sup>3</sup>/s (22.1 m<sup>3</sup>/s) Oct. 6, gage height, 2.80 ft (0.853 m); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00				---	.00	.00	.00	.00	.00	.00
2	.00	.00				---	.00	.00	.00	.00	.00	.00
3	.00	.00				---	.00	1.1	.00	.00	.00	.00
4	.00	.00				---	.00	1.5	.00	.00	.00	.00
5	.00	.00				---	.00	.00	.00	.00	.00	.00
6	85	.00				---	.00	5.2	.00	.00	.00	.00
7	12	.00				---	.00	.00	.00	.00	7.0	.00
8	.00	.00				---	.00	.00	.00	.00	5.0	.00
9	.00	.00				---	.00	.00	.00	.00	6.5	.00
10	.00	.00				---	.00	.00	.00	.00	10	.00
11	.00	.00				---	.00	.00	.00	.00	.00	.00
12	.00	.00				---	.00	.00	.00	.00	.00	.00
13	.00	.00				---	.00	.00	.00	.00	.00	.00
14	.00	.00				---	.00	.00	.00	.00	.00	.00
15	.00	.00				---	.00	.00	.00	.00	.00	.00
16	.00	.00				---	.00	.00	.00	.00	.00	1.0
17	.00	.00				---	.00	.00	.00	.00	.00	9.0
18	.00	.00				---	.00	.00	.00	.00	.00	.00
19	.00	.00				---	.00	.00	.00	.00	1.0	.00
20	.00	.00				---	.00	2.9	.00	.00	6.4	.00
21	.00	.00				---	.00	.00	.00	.00	.00	.00
22	.00	.00				---	.00	.00	.00	50	7.6	.00
23	.00	.00				---	.00	.00	.00	1.0	.00	.00
24	.00	.00				.00	.00	.00	.00	.00	.00	3.0
25	.00	.00				.00	.00	.00	.00	.00	.00	1.0
26	.00	.00				.00	.00	.00	.00	.00	.00	.00
27	.00	.00				.00	.00	.00	.00	.00	.00	.00
28	.00	.00				.00	.00	.00	.00	.00	.00	.00
29	.00	.00				.00	.00	.00	.00	.00	.00	.00
30	.00	.00				.00	.00	.00	.00	.00	.00	.00
31	.00	---				.00	---	.00	---	.00	.00	---
TOTAL	97.00	.00	---	---	---	---	.00	10.70	.00	51.00	43.50	14.00
MEAN	3.13	.000	---	---	---	---	.000	.35	.000	1.65	1.40	.47
MAX	85	.00	---	---	---	---	.00	5.2	.00	50	10	9.0
MIN	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.00
AC-FT	192	.00	---	---	---	---	.00	21	.00	101	86	28

## 08330800 TIJERAS ARROYO BELOW SOUTH DIVERSION CHANNEL INLET NEAR ALBUQUERQUE, NM

LOCATION.--Lat 35°00'09", long 106°39'41", in SW¼SE¼ sec. 18, T.9 N., R.3 E., Bernalillo County, Hydrologic Unit 13020203, on left bank 260 ft (79 m) upstream from highway bridge on State Highway 47, 500 ft (152 m) downstream from South Diversion Channel inlet, 1.0 mi (1.6 km) downstream from highway bridge on Interstate Highway 27 and 2.5 mi (4.0 km) south of Albuquerque.

PERIOD OF RECORD.--July 1974 to current year.

GAGE.--Water-stage recorder and concrete lined channel. Altitude of gage is 4,933 ft (1,504 m), from Corps of Engineers plan and profile map.

REMARKS.--Records poor. South Diversion Channel intercepts flow of numerous arroyos in northeast and southeast Albuquerque and discharges into Tijeras Arroyo at a point 0.8 mi (1.3 km) upstream from the Rio Grande.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,450 ft<sup>3</sup>/s (41.1 m<sup>3</sup>/s) Aug. 19, 1976, gage height, (not determined); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 660 ft<sup>3</sup>/s (18.7 m<sup>3</sup>/s) July 22, gage height, 2.50 ft (0.762 m); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00				---	.00	1.0	.00	.00	.00	.00
2	.00	.00				---	.00	12	.00	.00	.00	.00
3	.00	.00				---	.00	1.5	.00	.00	.00	.00
4	.00	.00				---	.00	1.5	.00	.00	5.2	.00
5	.00	.00				---	.00	.00	3.8	.00	5.0	.00
6	84	.00				---	.00	5.5	.00	.00	.00	.00
7	8.1	.00				---	.00	.00	.00	.00	8.8	.00
8	.00	.00				---	.00	.00	.00	.00	6.0	.00
9	.00	.00				---	3.7	.00	.00	.00	12	.00
10	.00	.00				---	.00	.00	.00	.00	30	.00
11	.00	.00				---	.00	.00	.00	.00	.00	.00
12	.00	.00				---	.00	.00	2.3	.00	.00	.00
13	.00	.00				---	.00	.00	1.8	.00	.00	.00
14	.00	.00				---	.00	.00	.00	.00	.00	.00
15	.00	.00				---	.00	.00	.00	.00	.00	.00
16	.00	.00				---	.00	.00	.00	.00	.00	1.7
17	.00	.00				---	.00	.00	.00	.00	.00	9.6
18	.00	.00				---	.00	.00	.00	.00	.00	9.0
19	.00	.00				---	.00	.00	.00	.00	5.5	.00
20	.00	.00				---	.00	3.0	.00	1.5	6.2	.00
21	.00	.00				---	.00	.00	.00	13	.00	.00
22	.00	.00				---	.00	.00	.00	50	8.0	11
23	.00	.00				---	.00	.00	.00	2.0	4.0	8.5
24	.00	.00				.00	.00	.00	.00	.00	.00	5.0
25	.00	.00				.00	.00	.00	.00	.00	.00	3.0
26	.00	.00				.00	.00	.00	.00	.00	.00	1.0
27	.00	.00				.00	.00	.00	.00	.00	.00	.00
28	.00	.00				.00	.00	.00	.00	.00	.00	.00
29	.00	.00				.00	.00	.00	3.1	.00	.00	.00
30	.00	.00				.00	.00	.00	.00	.00	.00	3.8
31	.00	---				.00	---	.00	---	.00	.00	---
TOTAL	92.10	.00	---	---	---	---	3.70	24.50	11.00	66.30	90.70	52.60
MEAN	2.97	.000	---	---	---	---	.12	.79	.37	2.14	2.93	1.75
MAX	84	.00	---	---	---	---	3.7	12	3.8	50	30	11
MIN	.00	.00	---	---	---	---	.00	.00	.00	.00	.00	.00
AC-FT	183	.00	---	---	---	---	7.3	49	22	132	180	104

08331000 RIO GRANDE AT ISLETA, NM  
(Surveillance station)

LOCATION.--Lat 34°54'21", long 106°41'04", in NE1/4 sec.24, T. 08 N., R. 02 E., Valencia County, Hydrologic Unit 13020203, 50 feet (15 m) upstream from diversion dam, 50 feet (15 m) downstream from bridge on State Highway 147, at Isleta.

DRAINAGE AREA.--18,100 mi<sup>2</sup> (46,900 km<sup>2</sup>) (estimated).

PERIOD OF RECORD.--Water years 1972 to current year.

REMARKS.--Samples are collected on the Peralta main canal or the Belen Highline canal when the river is completely diverted. Water-discharge measurements were made at the time water-quality samples were collected.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT										
18...	1400	221	570	7.8	24.5	18.0	30	--	8.1	7
NOV										
23...	1432	508	720	7.8	14.0	13.0	190	--	8.3	27
DEC										
14...	1441	1160	530	7.8	13.0	7.0	340	--	--	37
JAN										
16...	1632	418	610	7.9	8.5	8.0	--	90	--	43
FEB										
13...	1551	511	529	7.9	6.0	6.0	120	17	13.0	9
MAR										
24...	1423	655	464	7.8	20.0	14.5	--	170	8.0	21
APR										
21...	1521	419	550	7.4	25.5	19.5	--	80	6.9	90
MAY										
19...	1234	3570	398	7.8	23.5	16.0	--	210	7.9	45
JUN										
15...	1615	2440	510	7.8	33.0	21.0	--	140	6.8	42
JUL										
21...	1441	902	350	7.7	30.5	26.5	--	110	5.7	31
AUG										
18...	1331	125	540	7.6	29.0	22.5	--	25	5.5	9
SEP										
14...	1614	152	500	7.8	27.0	23.0	--	9.2	7.2	15

DATE	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)
OCT										
18...	210	60	65	11	42	1.3	5.7	180	0	150
NOV										
23...	210	53	67	10	46	1.4	5.9	190	0	160
DEC										
14...	200	58	63	9.7	37	1.1	4.7	170	0	140
JAN										
16...	200	50	61	11	45	1.4	5.4	180	0	150
FEB										
13...	170	31	53	9.3	42	1.4	4.5	170	0	140
MAR										
24...	150	23	47	8.9	40	1.4	4.8	160	0	130
APR										
21...	180	31	56	9.3	42	1.4	5.7	180	0	150
MAY										
19...	140	46	44	8.4	26	.9	3.6	120	0	98
JUN										
15...	130	34	42	6.6	40	1.5	3.9	120	0	98
JUL										
21...	120	--	39	6.4	24	.9	3.8	--	--	110
AUG										
18...	180	--	58	8.9	47	1.5	7.8	--	--	150
SEP										
14...	180	--	56	8.9	40	1.3	8.3	--	--	150

08331000 RIO GRANDE AT ISLETA, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 DIS- TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT										
18...	120	21	.6	25	384	384	62	.68	.59	.38
NOV										
23...	130	24	.6	26	383	407	316	.38	.34	1.2
DEC										
14...	110	17	.6	21	346	349	428	.49	.25	.47
JAN										
16...	110	22	.7	26	363	376	189	.80	.61	.01
FEB										
13...	92	22	.7	24	336	336	262	.59	.52	.64
MAR										
24...	86	25	.6	57	306	352	348	.53	.48	.38
APR										
21...	96	27	.6	2.5	353	333	159	.50	.50	1.5
MAY										
19...	82	9.5	.3	16	241	250	492	.23	.22	.11
JUN										
15...	79	28	.4	18	280	280	246	.46	.39	.12
JUL										
21...	56	9.5	.4	23	219	228	260	.63	.63	.13
AUG										
18...	93	27	.7	30	371	362	43	.87	.94	1.0
SEP										
14...	94	21	.6	29	352	348	55	.60	.61	.19

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT										
18...	.52	1.6	.65	.54	120	20	--	--	2.5	1.4
NOV										
23...	.30	1.9	1.1	.66	130	10	--	--	2.5	2.1
DEC										
14...	1.1	2.1	.80	.29	100	210	60	8.8	2.3	5.0
JAN										
16...	1.3	2.1	1.2	.96	140	20	--	--	2.5	2.4
FEB										
13...	.26	1.5	.80	.64	110	10	--	--	2.1	2.5
MAR										
24...	.72	1.6	.71	.44	120	10	40	6.2	2.5	2.6
APR										
21...	4.5	6.5	1.7	1.0	140	40	--	--	3.4	1.7
MAY										
19...	.85	1.2	.53	.09	90	0	--	--	4.4	4.1
JUN										
15...	.86	1.4	.43	.18	130	10	5	8.5	3.8	4.1
JUL										
21...	.74	1.5	.62	.34	70	30	--	--	4.2	4.3
AUG										
18...	.30	2.2	1.5	.2	280	10	--	5.5	3.8	--
SEP										
14...	.26	1.1	.57	.59	120	20	40	12	4.0	.8

## RIO GRANDE BASIN

08331000 RIO GRANDE AT ISLETA, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
DEC 14...	1441	10	5	--	--	100	0	2	20	0
MAR 24...	1423	7	4	--	--	120	1	--	10	10
JUN 15...	1615	8	6	--	--	130	1	1	5	0
SEP 14...	1614	9	4	100	100	120	1	1	10	0

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
DEC 14...	5	0	23	1	20000	210	21	18	500
MAR 24...	3	--	--	14	4300	10	--	--	240
JUN 15...	5	0	21	2	5500	10	19	3	260
SEP 14...	0	0	5	3	980	20	9	4	160

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
DEC 14...	60	.1	.0	0	1	--	--	100	10
MAR 24...	40	.0	.1	0	0	--	--	30	0
JUN 15...	5	.0	.0	1	0	--	--	40	5
SEP 14...	40	.2	.2	0	0	0	0	0	0

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR- DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI- ELDRIN TOTAL (UG/L) (39380)
AUG 18...	1331	.0	.00	.0	.00	.00	.00	.00

DATE	ENDO- SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	TOX- APHENE, TOTAL (UG/L) (39400)
AUG 18...	.00	.00	.00	.00	.00	.00	0

## 08331000 RIO GRANDE AT ISLETA, NM--Continued

## Results of Analysis of Water and Bed Materials for Selected Chlorinated Hydrocarbon Isomers

Date	Time	o-p'-DDE	o-p'-DDD	o-p'-DDT	cis-chlordane	trans-chlordane	$\alpha$ - BHC	Hexachlorobenzene
Aug 18	1331 (w)	0	0	0	0	0	0	0

NOTE: Reporting units are ug/L for water samples (w).

The lowest detectable limit is 0.01 ug/L for water samples and 0.1 ug/kg for sediment samples.

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 18...	1400	1200	1500
NOV 23...	1432	4	270
DEC 14...	1441	100	320
JAN 16...	1632	3	5900
FEB 13...	1551	3	40
MAR 24...	1423	560	650
APR 21...	1521	54000	1300
MAY 19...	1234	340	420
JUN 15...	1615	140	140
JUL 21...	1441	4900	1600
AUG 18...	1331	2000	800
SEP 14...	1614	450	580

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 18...	1400	221	18.0	82	49	73
NOV 23...	1432	508	13.0	396	543	75
DEC 14...	1441	1160	7.0	1360	4260	47
JAN 16...	1632	418	8.0	233	263	81
FEB 13...	1551	511	6.0	381	526	56
MAR 24...	1423	655	14.5	343	607	96
APR 21...	1521	419	19.5	176	199	72
MAY 19...	1234	3570	16.0	1800	17400	31
JUN 15...	1615	2440	21.0	787	5180	45
JUL 21...	1441	902	26.5	505	1230	51
AUG 18...	1331	125	22.5	66	22	78
SEP 14...	1614	152	23.0	56	23	97



## RIO GRANDE BASIN

## 08331990 RIO GRANDE CONVEYANCE CHANNEL NEAR BERNARDO, NM

LOCATION.---Lat 34°24'52", long 106°48'11", Socorro County, Hydrologic Unit 13020203, in Sevilleta or Balen Grant, 0.2 mi (0.3 km) south of U.S. Highway 60, 1.8 mi (2.9 km) east of Bernardo, about 3 mi (5 km) upstream from floodway, and 4 mi (6 km) upstream from Río Puerco.

PERIOD OF RECORD.--June 1936 to September 1937, October 1964 to current year. July 1943 to September 1964, included in composite flow of "Rio Grande near Bernardo". October 1960 to September 1964, monthly acre-feet published in WSP 1923 (daily records available in district files). Beginning October 1952, flow in conveyance channel represents controlled diversion from Rio Grande. Prior to October 1952, records called "San Francisco Riverside drain near Bernardo", are not equivalent.

GAGE.--Water-stage recorder with concrete control. Datum of gage is 4,720.00 ft (1,438.656 m) National Geodetic Vertical Datum of 1929. Prior to October 1964, 0.2 mi (0.3 km) upstream at various datums.

REMARKS.--Records good. Conveyance channel is 1 of 4 channels (stations 08332010, 08332030, and 08332050) carrying flow in valley cross section. Original design and plan was for conveyance channel to carry flows up to about 2,000 ft<sup>3</sup>/s (57 m<sup>3</sup>/s). For combined monthly flow in acre-ft of this channel, floodway, Bernardo interior drain and Lower San Juan Riverside drain, see tabulation below daily table for station 08332010. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,220 ft<sup>3</sup>/s (62.9 m<sup>3</sup>/s) Apr. 22, 1958; no flow many days most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	5.6	5.6	6.0	7.8	7.9	4.6	15	15	3.1	.00
2	.00	.00	6.1	5.9	5.9	7.7	6.6	10	16	14.	2.9	.00
3	.00	.00	6.5	5.9	6.0	7.7	6.7	14	16	8.7	2.7	.00
4	.00	.50	6.2	5.9	6.5	7.7	8.5	11	18	6.9	2.6	.07
5	.00	.62	5.5	6.0	6.4	7.8	16	18	19	6.3	2.5	.00
6	.00	.69	5.0	6.3	6.5	8.4	13	16	20	5.8	2.3	.00
7	.00	.80	5.5	6.2	6.5	8.3	7.3	11	22	6.9	2.3	1.3
8	.00	.81	5.4	6.1	6.4	8.5	7.0	12	19	5.7	2.6	2.3
9	.00	.80	5.0	6.0	6.3	8.4	6.5	9.8	18	6.6	2.5	4.7
10	.00	.67	4.9	6.0	6.5	8.3	6.3	10	16	5.8	2.4	5.8
11	.00	.80	4.9	6.2	6.6	8.3	5.8	11	15	5.1	2.5	5.6
12	.00	.80	5.5	6.0	6.5	8.1	5.5	9.0	14	4.9	3.2	7.5
13	.00	.80	5.5	6.0	6.5	7.8	6.6	8.4	12	4.8	3.3	10
14	.00	.80	6.2	6.0	7.2	7.8	5.3	24	11	4.6	3.5	12
15	.00	.45	6.4	6.0	7.1	7.6	5.2	13	15	4.4	4.0	11
16	.00	.95	6.8	6.0	7.1	7.8	4.9	19	15	3.8	3.1	12
17	.00	1.4	6.5	6.3	7.1	9.1	4.8	14	12	3.4	2.9	13
18	.00	1.4	6.3	6.0	7.1	7.1	4.9	19	8.7	3.2	2.5	14
19	.00	1.1	6.0	6.0	7.1	7.1	5.3	16	10	3.3	2.2	16
20	.00	1.2	5.9	6.0	7.1	7.1	5.4	17	17	3.8	2.4	14
21	.00	1.6	6.3	6.0	7.1	7.2	5.2	22	13	5.9	3.3	11
22	.00	2.2	6.9	6.0	7.1	6.8	5.4	22	13	3.8	2.4	12
23	.00	3.0	6.4	6.0	7.1	6.5	5.3	23	11	4.5	2.4	15
24	.00	3.0	5.9	6.0	7.7	6.4	5.5	17	10	3.9	2.4	22
25	.00	3.0	5.9	6.0	7.7	6.2	6.2	15	9.0	4.4	2.9	29
26	.00	3.0	5.9	6.0	7.7	6.5	8.5	13	8.9	4.2	3.7	31
27	.00	3.0	6.0	6.0	7.7	7.7	5.5	12	8.8	4.3	3.1	32
28	.00	3.8	6.2	6.0	7.9	9.1	5.0	13	8.3	4.1	2.2	21
29	.00	4.1	6.0	6.0	---	7.1	4.8	14	9.3	3.8	.95	25
30	.00	4.9	5.9	5.9	---	7.0	4.2	13	15	3.7	.00	28
31	.00	---	6.0	6.2	---	6.9	---	13	---	3.4	.15	---
TOTAL	.00	46.19	183.1	186.5	192.4	235.8	195.1	443.8	415.0	169.0	79.00	355.27
MEAN	.000	1.54	5.91	6.02	6.87	7.61	6.50	14.3	13.8	5.45	2.55	11.8
MAX	.00	4.9	6.9	6.3	7.9	9.1	16	24	22	15	4.0	32
MIN	.00	.00	4.9	5.6	5.9	6.2	4.2	4.6	8.3	3.2	.00	.00
AC=FT	.00	92	363	370	382	468	387	880	823	335	157	705
CAL YR 1977	TOTAL	694.54	MEAN 1.90	MAX 10	MIN	.00	AC=FT 1380					
WTR YR 1978	TOTAL	2501.16	MEAN 6.85	MAX 32	MIN	.00	AC=FT 4960					

## 08332010 RIO GRANDE FLOODWAY NEAR BERNARDO, NM

LOCATION.--Lat 34°25'01", long 106°48'00", Socorro County, Hydrologic Unit 13020203, in Belen or Sevilleta Grant, on downstream side of bridge on U.S. Highway 60, 5 mi (8 km) downstream from heading of conveyance channel, 2 mi (3 km) east of Bernardo, and at mile 1,487.2 (2,392.9 km).

DRAINAGE AREA.--19,230 mi<sup>2</sup> (49,810 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1936 to January 1939, October 1941 to current year. Monthly discharge only October 1942 to June 1943 published in WSP 1312, and October 1960 to September 1964, published in WSP 1923 (daily records available in district files). Published as "Rio Grande near Bernardo" prior to October 1964. Prior to October 1952, flow of Bernardo interior drain was included only when it carried river overflow, the entire flow has been included from October 1952 to September 1964. Flow in the conveyance channel, formerly San Francisco Riverside drain, has been included in record prior to October 1964.

GAGE.--Water-stage recorder. Datum of gage is 4,722.55 ft (1,439.433 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records poor. Since November 1973 flow completely regulated by Cochiti Dam (station 08317300) 100 mi (161 km) upstream. Floodway is 1 of 4 channels (stations 08331990, 08332030, and 08332050) carrying flow in valley cross section. For combined monthly flow in acre-ft of floodway, conveyance channel, Bernardo interior drain and Lower San Juan Riverside drain see tabulation below. Diversions for irrigation of about 740,000 acres (3,000 km<sup>2</sup>) above station.

AVERAGE DISCHARGE.--19 years (water years 1937-38, 1942-58), 1,125 ft<sup>3</sup>/s (31.86 m<sup>3</sup>/s), 815,100 acre-ft/yr (1,000 hm<sup>3</sup>/yr). Includes flow of floodway, conveyance channel, and Bernardo interior drain.  
15 years (water years 1959-73) 898 ft<sup>3</sup>/s (25.43 m<sup>3</sup>/s), 605,600 acre-ft/yr (747 hm<sup>3</sup>/yr), includes flow of floodway, conveyance channel, Bernardo interior drain, and lower San Juan Riverside drain. Prior to closure of Cochiti Dam.

EXTREMES FOR PERIOD OF RECORD (1936-39 AND SINCE 1941).--Maximum discharge, 21,000 ft<sup>3</sup>/s (595 m<sup>3</sup>/s) Apr. 25, 1942, gage height, 6.90 ft (2.103 m); no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,700 ft<sup>3</sup>/s (133 m<sup>3</sup>/s) May 14, gage height, 5.41 ft (1.649 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	72	409	526	609	512	114	288	1990	1680	.00	.00
2	.00	70	416	505	648	516	78	1960	2190	1230	.00	.00
3	.00	63	434	525	587	516	203	2250	1880	640	.00	.00
4	.00	62	428	571	542	580	252	2190	2010	352	.00	.00
5	.00	64	439	463	514	682	195	2980	2050	404	.00	.00
6	.00	67	435	420	491	660	396	2330	2160	324	.00	.00
7	.00	87	405	418	467	642	239	1950	2250	192	.00	.00
8	.00	111	390	407	481	709	46	2110	2590	95	.00	.00
9	.00	166	405	397	484	651	42	1350	2410	56	.00	.00
10	.00	224	406	439	567	424	96	1710	1700	31	.00	.00
11	.03	313	419	467	495	354	16	1710	1490	7.6	1.4	.00
12	.05	473	439	440	508	358	9.8	1340	1190	.00	5.0	.00
13	.00	567	798	419	521	434	17	1320	844	.00	.00	.00
14	.00	517	1120	400	514	425	19	3360	910	.00	.00	.00
15	.00	393	990	454	547	367	15	2440	1140	.00	.51	.00
16	.00	349	958	673	541	258	5.3	3360	1180	.00	.00	.00
17	.00	418	770	449	518	246	1.1	2710	803	.00	.00	.00
18	.00	408	404	302	527	232	.88	3040	555	.00	.00	.00
19	.00	457	359	493	538	236	4.5	2960	739	.00	.00	.00
20	.00	416	360	507	554	190	.58	3400	966	.00	1.7	.00
21	.00	441	352	468	504	143	.00	4020	1110	.00	.00	.00
22	.00	445	309	511	499	137	.00	3850	1060	.00	.00	.00
23	.00	355	305	481	496	144	.00	3790	1010	.00	.00	.00
24	.00	336	277	474	477	204	.00	3260	886	40	.00	.00
25	.00	396	242	511	440	259	.00	3150	780	60	.00	.00
26	.00	414	304	479	454	223	.00	3250	881	24	.00	.00
27	.00	384	425	468	472	358	.00	2690	882	4.7	.00	.00
28	.00	407	394	513	484	329	.00	2680	857	.00	.00	.00
29	.00	397	423	458	---	276	.00	2900	679	.00	.00	.00
30	.00	399	478	437	---	152	5.2	2600	2290	.00	.00	.00
31	.00	---	494	511	---	94	---	2330	---	.00	.00	---
TOTAL	.08	9271	14787	14586	14479	11311	1755.36	79278	41482	5140.30	8.61	.00
MEAN	.003	309	477	471	517	365	58.5	2557	1383	166	.28	.000
MAX	.05	567	1120	673	648	709	396	4020	2590	1680	5.0	.00
MIN	.00	62	242	302	440	94	.00	288	555	.00	.00	.00
AC-FT	.2	18390	29330	28930	28720	22440	3480	157200	82280	10200	17	.00
(†)	12150	23160	34680	34010	33460	35820	15740	170400	93910	20860	10040	7980
CAL YR 1977 TOTAL	60517.82	MEAN 166	MAX 1120	MIN .00	AC-FT 120000	(†) MEAN 311	AC-FT 224900					
WTR YR 1978 TOTAL	192098.35	MEAN 526	MAX 4020	MIN .00	AC-FT 381000	(†) MEAN 680	AC-FT 492300					

(†) COMBINED FLOW, IN ACRE-FT AND MEAN, IN FT<sup>3</sup>/S, OF FLOODWAY, CONVEYANCE CHANNEL, BERNARDO INTERIOR DRAIN, AND LOWER SAN JUAN RIVERSIDE DRAIN.

08332010 RIO GRANDE FLOODWAY NEAR BERNARDO, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1956 to current year.

WATER TEMPERATURES: October 1964 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1964 to current year.

REMARKS.--Additional sediment total discharge determinations were made bi-weekly when needed. Records prior to 1965 water year were published as 08332000 Rio Grande near Bernardo, N. Mex., a composite of 08331990 Rio Grande Conveyance Channel near Bernardo, 08332010 Rio Grande Floodway near Bernardo, and 08332050 Bernardo Interior Drain at Bernardo.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1964 to 1978): Maximum daily, 1,410 micromhos July 23, 1976; minimum daily, 271 micromhos June 17, 1973.

WATER TEMPERATURES (1964 to 1978): Maximum, 34.5°C Aug. 9, 1975; minimum, 0.0°C Feb. 23, 1971, Feb. 3, 1972, Nov. 27, 1976, and Dec. 21, 1977.

SEDIMENT CONCENTRATIONS (1964 to 1978): Maximum daily, not determined; minimum daily, no flow on many days each year.

SEDIMENT LOADS (1964 to 1978): Maximum daily, 356,000 tons (323,000 tonnes) Aug. 11, 1967; minimum daily, 0 tons (0 tonnes) on many days each year.

EXPREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 926 micromhos Nov. 4; minimum daily, 362 micromhos June 6.

WATER TEMPERATURES: Maximum, 30.0°C June 21, July 7, 13; minimum, 0.0°C Dec. 21.

SEDIMENT CONCENTRATIONS: Maximum daily, 2,120 mg/L July 26; minimum daily, no flow on many days.

SEDIMENT LOADS: Maximum daily, 14,900 tons (13,500 tonnes) May 21; minimum daily, 0 tons (0 tonnes) on many days.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (000061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (000095)	PH (UNITS) (000400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (000900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (000902)	CALCIUM DIS- SOLVED (MG/L AS CA) (000915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (000925)
JAN									
05...	1400	460	644	7.9	9.0	220	56	70	11
19...	1100	539	642	8.1	4.0	220	60	70	12
30...	1345	428	651	8.0	9.0	--	--	--	--
FEB									
22...	1400	483	639	8.4	9.0	230	61	72	11
MAR									
08...	1515	721	536	8.5	16.0	180	36	55	9.3
23...	1015	133	594	8.1	13.5	210	49	64	11
APR									
07...	1115	267	576	8.9	16.0	170	42	54	9.4
MAY									
03...	1200	2250	489	7.8	14.0	170	34	53	8.1
04...	1330	1950	518	8.3	16.0	170	42	51	9.2
19...	1230	2800	444	7.8	19.0	--	--	--	--
31...	1400	2300	365	7.7	23.0	--	--	--	--
JUN									
15...	1345	1110	391	7.7	26.0	130	24	40	7.5
29...	1315	1130	415	7.9	20.0	140	28	45	7.5

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (000930)	SODIUM AD- SORP- TION RATIO (000931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (000935)	BICAR- BONATE (MG/L HCO3) (000440)	CAR- BONATE (MG/L AS CO3) (000445)	ALKA- LITY (MG/L AS CAC03) (000410)	SULFATE DIS- SOLVED (MG/L AS SO4) (000945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (000940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (000950)
JAN									
05...	56	1.6	5.3	200	0	160	130	32	.6
19...	58	1.7	5.5	200	0	160	140	29	.6
30...	--	--	--	--	--	--	--	--	--
FEB									
22...	57	1.7	5.7	200	0	160	100	33	.7
MAR									
08...	44	1.4	5.2	170	0	140	93	20	.6
23...	53	1.6	5.6	190	0	160	110	26	.6
APR									
07...	56	1.9	.5	160	0	130	120	30	.6
MAY									
03...	37	1.3	4.9	160	0	130	92	18	.5
04...	44	1.5	5.1	150	0	120	120	22	.5
19...	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--
JUN									
15...	28	1.1	3.9	130	0	110	67	10	.4
29...	30	1.1	3.6	140	0	110	73	15	.4

08332010 RIO GRANDE FLOODWAY NEAR BERNARDO, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
JAN								
05...	26	--	438	1.3	--	.74	150	20
19...	26	--	448	1.3	--	.83	160	20
30...	--	--	--	--	--	--	--	--
FEB								
22...	25	--	409	.91	--	.51	150	10
MAR								
08...	22	--	340	1.1	--	.53	130	20
23...	25	--	397	1.3	--	.72	140	20
APR								
07...	19	--	370	.10	--	.34	160	10
MAY								
03...	20	318	316	.61	.29	.25	100	10
04...	16	--	343	.07	--	.15	110	20
19...	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--
JUN								
15...	20	--	244	.62	--	.22	80	20
29...	19	--	267	.78	--	.29	80	10

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
OCT								
12...	1900	.05	18.0	660	.09	72	82	92
NOV								
11...	0700	280	4.0	1340	1010	76	89	98
29...	1230	420	8.0	369	418	65	78	87
DEC								
13...	1245	870	7.5	1070	2510	50	61	76
14...	0700	1250	3.5	1100	3710	60	77	90
JAN								
05...	1400	460	9.0	378	469	59	71	86
19...	1100	539	4.0	602	876	49	58	74
30...	1345	428	9.0	344	398	60	71	83
FEB								
22...	1400	483	9.0	324	423	43	65	86
MAR								
08...	1515	721	16.0	594	1160	61	73	93
23...	1015	133	13.5	254	91	64	78	94
APR								
07...	1115	267	16.0	545	393	67	80	96
MAY								
04...	1330	1950	16.0	876	4610	50	65	87
19...	1230	2800	19.0	1290	9750	36	44	61
21...	1030	4070	17.0	1400	15400	39	49	71
31...	1400	2300	23.0	1010	6270	28	34	47
JUN								
15...	1345	1110	26.0	920	2760	49	63	74
29...	1315	1130	20.0	829	2530	27	31	44

08332010 RIO GRANDE FLOODWAY NEAR BERNARDO, NM--Continued

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)
OCT								
12...	--	--	--	--	98	99	99	100
NOV								
11...	--	--	--	--	99	100	--	--
29...	--	--	--	--	92	95	100	--
DEC								
13...	--	--	--	--	84	90	99	100
14...	--	--	--	--	99	100	--	--
JAN								
05...	--	--	--	--	92	98	100	--
19...	83	88	96	100	--	--	--	--
30...	--	--	--	--	87	95	100	--
FEB								
22...	--	--	--	--	97	99	100	--
MAR								
08...	--	--	--	--	99	100	--	--
23...	--	--	--	--	96	98	100	--
APR								
07...	--	--	--	--	99	100	--	--
MAY								
04...	--	--	--	--	99	100	--	--
19...	75	92	100	--	--	--	--	--
21...	--	--	--	--	95	99	100	--
31...	67	88	99	100	--	--	--	--
JUN								
15...	--	--	--	--	87	98	100	--
29...	73	91	100	--	--	--	--	--

## PARTICLE SIZE OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)
NOV							
29...	1230	420	369	418	9	13	63
DEC							
13...	1245	870	1070	2510	0	1	51
JAN							
05...	1400	460	378	469	2	16	72
19...	1100	539	602	876	1	1	27
30...	1345	428	344	398	2	2	15
FEB							
22...	1400	483	324	423	2	3	38
MAR							
08...	1515	721	594	1160	1	33	99
23...	1015	133	254	91	2	39	89
APR							
07...	1115	267	545	393	1	2	34
MAY							
03...	1200	2250	--	--	7	43	83
04...	1330	1950	876	4610	15	74	97
19...	1230	2800	1290	9750	6	54	97
31...	1400	2300	1010	6270	1	25	91
JUN							
15...	1345	1110	920	2760	4	47	95
29...	1315	1130	829	2530	1	4	51

08332010 RIO GRANDE FLOODWAY NEAR BERNARDO, NM--Continued

## PARTICLE SIZE OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BED MAT. FALL DIAM. % FINER THAN (80161)	BED MAT. FALL DIAM. % FINER THAN (80162)	BED MAT. FALL DIAM. % FINER THAN (80163)	BED MAT. SIEVE DIAM. % FINER THAN (80168)	BED MAT. SIEVE DIAM. % FINER THAN (80169)	BED MAT. SIEVE DIAM. % FINER THAN (80170)	BED MAT. SIEVE DIAM. % FINER THAN (80171)
NOV							
29...	96	100	--	--	--	--	--
DEC							
13...	97	100	--	--	--	--	--
JAN							
05...	99	100	--	--	--	--	--
19...	96	100	--	--	--	--	--
30...	80	99	100	--	--	--	--
FEB							
22...	93	100	--	--	--	--	--
MAR							
08...	100	--	--	--	--	--	--
23...	99	100	--	--	--	--	--
APR							
07...	88	--	--	97	99	99	100
MAY							
03...	96	99	100	--	--	--	--
04...	100	--	--	--	--	--	--
19...	100	--	--	--	--	--	--
31...	100	--	--	--	--	--	--
JUN							
15...	99	100	--	--	--	--	--
29...	94	100	--	--	--	--	--

## TOTAL SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT DISCH, SUSP. + BED MA- TERIAL (T/DAY) (80156)	STREAM WIDTH (FT) (00004)	STREAM DEPTH, MEAN (FT) (00064)	STREAM VELOC- ITY, MEAN (FPS) (00055)
NOV									
29...	1230	420	8.0	369	418	505	130	1.6	2.0
DEC									
13...	1245	870	7.5	1070	2510	4440	235	1.6	2.4
JAN									
05...	1400	460	9.0	378	469	556	120	1.9	2.0
19...	1100	539	4.0	602	876	1070	150	1.7	2.1
30...	1345	428	9.0	344	398	525	115	1.7	2.2
FEB									
22...	1400	483	9.0	324	423	575	170	1.4	2.0
MAR									
08...	1515	721	16.0	594	1160	1350	200	1.8	2.1
23...	1015	133	13.5	254	91	124	75	1.1	1.6
APR									
07...	1115	267	16.0	545	393	403	115	1.2	1.9
MAY									
04...	1330	1950	16.0	876	4610	5570	350	2.0	2.8
19...	1230	2800	19.0	1290	9750	13200	500	1.8	3.2
31...	1400	2300	23.0	1010	6270	9170	500	1.5	3.1
JUN									
15...	1345	1110	26.0	920	2760	3530	350	1.5	2.1
29...	1315	1130	20.0	829	2530	5130	315	1.7	2.1

08332010 RIO GRANDE FLOODWAY NEAR BERNARDO, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	650	692	594	551	640	607	381	461	---	---
2	---	910	656	702	593	546	622	517	373	604	---	---
3	---	914	669	678	585	553	630	526	378	513	---	---
4	---	926	658	648	586	529	577	624	372	498	---	---
5	---	870	664	658	607	560	626	685	370	488	---	---
6	---	865	659	658	592	567	572	633	362	482	---	---
7	---	820	666	672	594	571	600	603	386	539	---	---
8	---	769	663	668	576	520	735	552	364	588	---	---
9	---	717	664	668	593	524	774	580	366	672	---	---
10	---	700	659	660	582	553	631	587	374	609	---	---
11	---	750	657	649	617	564	635	583	380	838	---	---
12	810	650	654	642	593	585	706	586	393	830	531	---
13	---	620	666	656	588	556	761	625	413	638	---	---
14	---	620	592	681	572	560	699	510	409	---	---	---
15	---	645	588	701	585	560	747	510	445	---	786	---
16	---	670	620	660	569	559	748	494	495	---	---	---
17	---	645	620	640	584	574	856	507	450	---	---	---
18	---	650	657	690	592	595	832	474	437	---	---	---
19	---	640	670	630	599	587	777	451	414	---	---	---
20	---	650	658	626	610	584	---	454	380	---	---	---
21	---	650	678	655	583	581	---	445	386	---	---	---
22	---	620	680	648	588	610	---	434	376	---	---	---
23	---	650	681	650	595	621	---	440	391	---	---	---
24	---	650	684	648	584	614	---	419	399	---	---	---
25	---	630	702	648	594	580	---	412	419	---	---	---
26	---	625	684	630	554	579	---	400	400	408	---	---
27	---	645	686	652	590	569	---	422	409	---	---	---
28	---	630	689	632	557	560	---	397	412	---	---	---
29	---	640	666	637	---	548	---	385	424	---	---	---
30	---	620	668	650	---	582	---	380	372	---	---	---
31	---	---	672	656	---	606	---	393	---	---	---	---
MEAN	810	703	661	658	588	569	693	504	398	583	659	---
WTR YR 1978	MEAN	593	MAX	926	MIN	362						

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1.0	10.0	7.0	10.0	18.0	15.0	23.0	28.0	---	---
2	---	17.0	1.5	9.5	4.0	9.0	18.0	11.0	23.5	26.0	---	---
3	---	17.0	3.5	8.0	6.5	9.0	10.0	17.0	23.5	29.0	---	---
4	---	7.0	8.5	4.0	5.0	7.0	11.0	17.0	23.5	23.0	---	---
5	---	13.0	6.0	4.0	8.0	11.0	10.0	17.0	24.0	28.0	---	---
6	---	13.5	3.5	5.0	8.0	7.0	9.0	11.0	23.0	21.0	---	---
7	---	9.0	4.0	5.5	7.0	9.0	10.0	13.0	26.0	30.0	---	---
8	---	7.0	4.0	7.5	8.0	16.0	17.0	18.0	26.0	28.0	---	---
9	---	3.0	3.0	3.0	6.5	8.0	19.0	21.0	25.0	28.5	---	---
10	---	4.0	9.0	5.0	6.0	9.0	9.0	20.0	24.0	27.0	---	---
11	---	4.0	10.0	5.0	10.0	13.0	8.0	22.0	26.0	27.0	---	---
12	18.0	8.0	2.5	5.0	7.0	11.0	10.0	23.0	27.0	29.0	24.0	---
13	---	13.5	3.0	4.5	8.0	7.0	11.0	21.0	24.5	30.0	---	---
14	---	7.0	3.5	4.0	6.0	7.0	11.0	22.5	27.0	---	---	---
15	---	7.0	2.0	7.0	7.0	5.0	24.0	21.0	26.0	---	27.0	---
16	---	6.0	4.0	5.0	4.0	4.0	22.0	20.5	27.0	---	---	---
17	---	4.0	6.0	8.0	4.0	5.0	8.0	20.0	26.0	---	---	---
18	---	6.0	8.0	6.5	9.0	17.0	5.0	20.0	29.0	---	---	---
19	---	10.0	6.5	5.0	9.0	14.0	6.0	19.0	27.0	---	---	---
20	---	12.0	5.0	3.0	9.0	9.0	---	18.0	29.0	---	---	---
21	---	6.5	.0	5.0	6.0	8.0	---	17.0	30.0	---	---	---
22	---	4.0	4.0	9.0	6.0	1.0	---	22.5	29.0	---	---	---
23	---	5.0	4.0	5.5	6.0	10.0	---	21.5	28.0	---	---	---
24	---	17.0	8.0	3.0	4.0	9.0	---	22.0	26.0	---	---	---
25	---	14.5	8.5	3.0	8.0	18.5	---	22.0	27.0	---	---	---
26	---	16.0	8.0	4.5	8.0	13.0	---	22.0	28.0	26.0	---	---
27	---	7.0	8.0	4.0	8.0	10.0	---	22.0	26.0	---	---	---
28	---	6.5	8.0	4.5	10.0	12.0	---	22.5	26.0	---	---	---
29	---	4.5	14.0	8.0	---	10.0	---	24.0	25.0	---	---	---
30	---	4.0	10.5	5.0	---	12.0	---	20.0	27.0	---	---	---
31	---	---	12.0	4.0	---	11.0	---	24.0	---	---	---	---
MEAN	18.0	8.5	6.0	5.5	7.0	9.5	12.5	19.5	26.0	27.0	25.5	---
WTR YR 1978	MEAN	13.0	MAX	30.0	MIN	.0						





## 08332050 BERNARDO INTERIOR DRAIN NEAR BERNARDO, NM

LOCATION.--Lat 34°24'56", long 106°49'15", Socorro County, Hydrologic Unit 13020203, on right bank 110 ft (34 m) upstream from bridge on U.S. Highway 60, and 1.0 mi (1.6 km) east of Bernardo.

PERIOD OF RECORD.--June 1936 to May 1937, October 1943 to current year. Monthly discharge only June 1936 to May 1937, published in WSP 828. October 1943 to September 1960 included in composite records for station 08332000 "Rio Grande near Bernardo". October 1960 to September 1964 monthly acre-ft published in WSP 1923. Daily records available in district files beginning October 1943.

GAGE.--Water-stage recorder. Altitude of gage is 4,714 ft (1,437 m) from topographic map. June 4, 1936 to May 17, 1937, nonrecording gage 300 ft (91 m) downstream and Oct. 1, 1943 to Jan. 12, 1978, water-stage recorder at site 150 ft (46 m) downstream at different datum.

REMARKS.--Records good except those for period of no gage-height record Jan. 13 to Feb. 14, which are poor. This drain is 1 of 4 channels (stations 08331990, 08332010, and 08332030) carrying flow in valley cross section. For combined monthly flow in acre-ft of this drain, conveyance channel, floodway, and Lower San Juan Riverside drain see tabulation below daily table for station 08332010. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 187 ft<sup>3</sup>/s (5.30 m<sup>3</sup>/s) Aug. 7, 1970; no flow at times. Prior to 1952, drain was subject to overflow from floodway.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	36	26	22	23	49	74	91	102	50	57	45
2	55	29	26	22	23	59	58	100	46	42	64	44
3	59	27	25	22	22	66	67	85	48	40	60	46
4	57	26	26	22	22	69	67	41	56	40	55	58
5	53	25	25	22	22	63	78	37	54	38	61	52
6	62	25	25	22	22	59	76	41	39	37	55	60
7	69	25	25	22	22	63	85	39	46	42	80	59
8	77	25	25	22	22	62	76	43	43	40	60	58
9	84	25	25	22	24	62	65	48	44	38	60	52
10	94	26	26	22	24	69	66	48	50	30	73	52
11	89	26	26	22	24	86	95	49	55	32	66	48
12	56	26	26	22	26	86	77	45	44	57	65	40
13	85	26	26	22	26	85	76	38	40	56	63	38
14	86	26	26	21	25	91	80	45	39	59	67	39
15	94	26	26	21	24	86	76	38	28	61	61	41
16	86	26	26	21	25	87	73	34	34	54	62	37
17	90	26	26	22	26	96	79	35	40	63	61	40
18	93	26	25	22	27	102	70	39	38	60	56	41
19	96	26	24	22	28	100	70	44	38	66	51	36
20	93	26	24	22	28	92	71	41	30	66	72	38
21	97	26	24	22	28	89	74	50	38	81	100	40
22	74	26	23	22	28	89	86	54	36	88	121	36
23	81	25	23	22	28	91	73	60	30	78	144	34
24	88	26	22	22	27	94	73	60	33	109	130	38
25	88	26	22	22	27	104	68	54	40	111	85	49
26	78	26	22	22	27	98	80	57	48	92	65	83
27	77	26	22	21	31	94	76	60	37	96	62	98
28	80	26	22	22	47	86	70	61	43	100	58	100
29	75	25	22	22	---	90	83	63	46	99	49	109
30	85	26	22	23	---	96	88	64	55	74	51	107
31	101	---	22	23	---	102	---	68	---	64	57	---
TOTAL	2449	787	755	680	728	2567	2250	1632	1320	1963	2171	1618
MEAN	79.0	26.2	24.4	21.9	26.0	82.8	75.0	52.6	44.0	63.3	70.0	53.9
MAX	101	36	26	23	47	104	95	100	102	111	144	109
MIN	47	25	22	21	22	49	58	34	28	30	49	34
AC-FT	4860	1560	1500	1350	1440	5090	4460	3240	2620	3890	4310	3210
CAL YR 1977	TOTAL	19413	MEAN 53.2	MAX 137	MIN 22	AC-FT 38510						
WTR YR 1978	TOTAL	18920	MEAN 51.8	MAX 144	MIN 21	AC-FT 37530						

## 08334000 RIO PUERCO ABOVE ARROYO CHICO, NEAR GUADALUPE, NM

LOCATION.--Lat 35°38'08", long 107°09'56", in SW¼ sec.21, T.16 N., R.3 W., Sandoval County, Hydrologic Unit 13020204, on right bank 1.6 mi (2.6 km) upstream from Arroyo Chico, 5.5 mi (8.8 km) northeast of village of Guadalupe, and at mile 106.8 (171.8 km).

DRAINAGE AREA.--420 mi<sup>2</sup> (1,090 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--July 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,949 ft (1,813.3 m) National Geodetic Vertical Datum of 1929. Prior to July 14, 1966 at datum 1.01 ft (0.308 m) higher.

REMARKS.--Records poor. Diversions for irrigation of about 3,700 acres (15 km<sup>2</sup>) above station in past years, but present diversion negligible. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--27 years, 12.9 ft<sup>3</sup>/s (0.365 m<sup>3</sup>/s), 9,350 acre-ft/yr (11.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,940 ft<sup>3</sup>/s (197 m<sup>3</sup>/s) July 29, 1967, gage height, 13.53 ft (4.124 m), from rating curve extended above 1,300 ft<sup>3</sup>/s (37 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 7.75 ft (2.362 m) and 10.60 ft (3.231 m); no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 29, 1943, probably exceeded 5,000 ft<sup>3</sup>/s (140 m<sup>3</sup>/s) based on records for stations above and below.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 330 ft<sup>3</sup>/s (9.34 m<sup>3</sup>/s) at 1300 hours Nov. 7, gage height, 3.15 ft (0.960 m), no peak above base of 1,000 ft<sup>3</sup>/s (28.3 m<sup>3</sup>/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.03	.10	.40	22	.00	31	28	.00	1.0	.00
2	.00	.00	.03	.05	.20	140	.00	51	34	.00	.00	.00
3	.00	.00	.02	.05	.20	127	.00	59	33	.00	.00	.00
4	.00	.00	.02	.05	.20	63	.00	43	34	.00	.00	.00
5	.00	.00	.01	.01	.10	53	.00	24	32	.00	3.1	.00
6	.00	.04	.01	.01	.40	42	.00	49	33	.00	.50	.00
7	.00	118	.01	.10	.40	32	.00	34	47	.00	.00	.00
8	.00	27	.01	.05	1.8	47	.00	21	49	.00	.00	.00
9	.00	4.0	.01	.05	3.2	42	.00	17	10	.00	.00	.00
10	.00	2.0	.01	.05	1.6	32	.00	18	5.0	.00	.00	.00
11	.00	.50	.01	.05	6.5	19	.00	19	2.0	.00	.00	.00
12	.00	.50	.01	.01	11	22	.00	27	10	.00	.00	.00
13	.00	.20	.01	.01	8.4	19	.00	38	40	.00	.00	.00
14	.00	.01	.01	.01	7.2	12	.00	49	15	.00	.00	.00
15	.00	.01	.01	.01	5.3	5.0	.00	66	8.4	.00	.00	.00
16	.00	.00	.02	.01	4.6	3.0	.00	84	1.0	.00	.00	.00
17	.00	.00	.02	.01	3.6	2.0	.00	94	.00	.00	.00	.00
18	.00	.00	.01	.01	2.2	1.0	1.0	78	.00	.00	.00	.00
19	.00	.00	.03	.01	1.0	28	2.0	64	.00	.00	.00	.00
20	.00	.00	.06	.05	.20	42	3.6	57	.00	.00	.00	.00
21	.00	.00	.54	.05	.05	43	3.2	59	.00	.00	.00	.00
22	.00	.00	.62	.01	.05	40	3.9	64	.00	.00	26	.00
23	.00	.00	.54	.10	.10	44	9.6	57	.00	.00	5.0	.00
24	.00	.00	.12	.20	1.8	48	10	57	.00	.00	1.0	.00
25	.00	.00	.12	1.6	11	30	16	56	.00	.00	.00	.00
26	.00	.00	.02	1.6	20	10	24	52	.00	.00	.00	.00
27	.00	.00	.02	.40	17	5.0	27	43	.00	.00	.00	.00
28	.00	.00	.02	.40	10	1.0	40	43	.00	.00	.00	.00
29	.00	.00	.03	.10	---	.50	38	38	22	.00	.00	.00
30	.00	.00	.03	.20	---	.50	34	28	1.0	.00	.00	.00
31	.00	---	.02	.20	---	.50	---	25	---	23	.00	---
TOTAL	.00	152.26	2.43	5.56	118.50	975.50	212.30	1445	404.40	23.00	36.60	.00
MEAN	.000	5.08	.078	.18	4.23	31.5	7.08	46.6	13.5	.74	1.18	.000
MAX	.00	118	.62	1.6	20	140	40	94	49	23	26	.00
MIN	.00	.00	.01	.01	.05	.50	.00	17	.00	.00	.00	.00
AC-FT	.00	302	4.8	11	235	1930	421	2870	802	46	73	.00
CAL YR 1977	TOTAL	2117.28	MEAN	5.80	MAX	327	MIN	.00	AC-FT	4200		
WTR YR 1978	TOTAL	3375.55	MEAN	9.25	MAX	140	MIN	.00	AC-FT	6700		

08334300 PAPERS WASH NEAR STAR LAKE TRADING POST, NM

LOCATION.--Lat 35°53'36", long 107°24'58" in SE<sub>4</sub>SE<sub>4</sub>NE<sub>4</sub>, sec.12, T.19 N., R.6 W., McKinley County, Hydrologic Unit 13020205, on right bank 2.2 mi (3.5 km) east of Star Lake Trading Post, and 14.6 mi (23.5 km) southeast of Pueblo Pintado.

DRAINAGE AREA.--20.3 mi<sup>2</sup> (52.5 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 6,630 ft (2,033 m), from topographic map.

REMARKS.--Water-discharge records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24 ft<sup>3</sup>/s (0.68 m<sup>3</sup>/s) Oct. 3, 1977, gage height 3.46 ft (1.055), from rating curve extended above 2.0 ft<sup>3</sup>/s (0.06) by step-backwater analysis; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s), and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Oct. 3	2130	*24 0.68	3.46 1.055	Feb. 8	0200	17 0.48	3.16 0.963
No flow most of time.							

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.43	.00	.00	.00	.00	.00	.00
3	3.1	.00	.00	.00	.00	.39	.00	.00	.00	.00	.00	.00
4	.93	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
5	.06	.00	.00	.00	.00	.17	.00	.17	.00	.00	.00	.00
6	.07	.44	.00	.00	.00	.05	.00	1.8	.00	.00	.00	.00
7	.60	1.7	.00	.00	.00	.00	.00	1.1	.00	.00	.00	.00
8	.04	.75	.00	.00	2.3	.00	.00	.17	.00	.00	.00	.00
9	.00	.10	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00
10	.00	.04	.00	.00	2.1	.00	.00	.00	.00	.00	.00	.00
11	.00	.02	.00	.00	1.5	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.89	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.65	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.39	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.61	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.43	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.43	.00	.00	.00	.00	.00	.00	.16
25	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	4.80	3.05	.00	.00	11.61	1.43	.00	3.24	.00	.00	.00	.16
MEAN	.15	.10	.000	.000	.41	.046	.000	.10	.000	.000	.000	.005
MAX	3.1	1.7	.00	.00	2.3	.43	.00	1.8	.00	.00	.00	.16
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	9.5	6.0	.00	.00	23	2.8	.00	6.4	.00	.00	.00	.3

WTR YR 1978 TOTAL 24.29 MEAN .067 MAX 3.1 MIN .00 AC-FT 48

08334300 PAPERS WASH NEAR STAR LAKE TRADING POST, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--February to September 1978.

REMARKS.--Under the heading SAMPLE SOURCE numerical values are used to indicate method of sampling; 40 indicates single-stage sampler.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SAMPLE SOURCE (72005)
FEB 08...	1310	E4.0	200	8.3	48	40
MAY 06...	1645	E4.0	270	8.0	28	40

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SAMPLE SOURCE (72005)
FEB 08...	1310	5	.0	2	40
MAY 06...	1645	1	.1	3	40

## INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SAMPLE SOURCE (72005)
FEB 08...	1310	E4.0	2600	28	40
MAY 06...	1645	E4.0	3030	33	40

08340500 ARROYO CHICO NEAR GUADALUPE, NM

LOCATION.--Lat 35°35'33", long 107°11'19", in NE¼ sec.30, T.16 N., R.3 W., Sandoval County, Hydrologic Unit 13020205, on left bank  
0.2 mi (0.3 km) upstream from mouth, 4.1 mi (6.6 km) northwest of Guadalupe, and 5.5 mi (8.8 km) southwest of Cabezón.

DRAINAGE AREA.--1,390 mi<sup>2</sup> (3,600 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1943 to current year.

REVISED RECORDS.--WSP 1282: 1944-50.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 5,921 ft (1,804.7 m) National Geodetic Vertical Datum of 1929.  
Prior to June 21, 1968 at site 500 ft (150 m) upstream at datum 2.00 ft (0.610 m) higher.

REMARKS.--Water-discharge records poor. Diversions for irrigation of about 100 acres (40 hm<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--35 years, 21.3 ft<sup>3</sup>/s (0.603 m<sup>3</sup>/s), 15,430 acre-ft/yr (19.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft<sup>3</sup>/s (430 m<sup>3</sup>/s) Sept. 12, 1972, gage height, 17.5 ft (5.33 m) from floodmarks, from rating curve extended above 2,900 ft<sup>3</sup>/s (82 m<sup>3</sup>/s) on basis of slope-measurements at gage heights 11.6 ft (3.536 m) and 14.8 ft (4.511 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 385 ft<sup>3</sup>/s (10.9 m<sup>3</sup>/s) at 0830 hours Nov. 7, gage height, 4.05 ft (1.234 m), no peak above base of 2,500 ft<sup>3</sup>/s (71 m<sup>3</sup>/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.04	.17	1.1	20	.11	.45	.00	.33	.50	.00
2	.00	.00	.07	.11	.65	95	.11	11	.00	.17	.00	.00
3	.00	.00	.05	.05	.70	80	.00	14	.00	.08	.00	.00
4	52	.00	.06	.03	.53	55	.00	5.7	.00	.04	.00	.00
5	3.8	.00	.02	.02	.57	40	.00	6.4	.00	.00	25	.00
6	2.0	.00	.04	.02	.99	30	.00	13	.00	.00	6.0	.00
7	.00	178	.05	.01	1.2	25	.00	48	.00	.00	2.8	.00
8	.00	59	.01	.01	1.6	35	.00	53	.00	.00	1.1	.00
9	.00	10	.02	.01	.99	25	.15	30	.00	.00	.57	.00
10	.00	3.0	.04	.02	1.1	20	.05	3.0	.00	.00	.41	.00
11	.00	1.0	.04	.08	1.7	14	.00	2.0	.00	.00	.27	.00
12	.00	.50	.04	.17	5.0	10	.00	4.0	.00	.00	.21	.00
13	.00	.10	.03	.06	1.0	10	.00	10	.00	.00	.00	.00
14	.00	.08	.03	.05	1.0	6.0	.00	20	.00	.00	.00	.00
15	.00	.06	.03	.07	1.0	2.0	.00	25	.30	.00	.00	.00
16	.00	.05	.04	.09	.90	1.0	.00	30	.07	.00	.00	.00
17	.00	.05	.06	.33	.90	1.0	.00	35	.00	.00	.00	.00
18	.00	.05	.03	.53	.50	.50	.00	25	.00	.00	.00	.00
19	.00	.04	.04	.21	.50	.50	.00	10	.00	.00	.00	.00
20	.00	.02	.06	.19	.50	.30	.00	.02	.00	.06	.00	.00
21	.00	.03	.05	.27	.19	.05	.00	2.2	.00	.00	.00	.00
22	.00	.04	.06	.45	.19	.09	.00	1.1	.00	.00	8.3	.00
23	.00	.04	.08	.41	.11	.05	.00	.75	.00	.00	4.7	.04
24	.00	.04	.06	.27	.09	.00	.00	.53	.00	.00	.50	.06
25	.00	.04	.04	.17	3.9	.00	.00	.37	.00	.00	.40	17
26	.00	.03	.04	.37	30	.00	.00	.17	.00	.00	.20	10
27	.00	.03	.05	.41	12	.00	.34	.00	.00	.00	.10	13
28	.00	.02	.07	.24	15	.07	.41	.00	.00	.00	.02	1.4
29	.00	.04	.08	.30	---	.06	.33	.00	20	.00	.00	.50
30	10	.04	.24	.49	---	.08	.21	.00	1.0	.00	.00	.10
31	5.0	---	.33	1.1	---	.09	---	.00	---	4.8	.00	---
TOTAL	72.80	252.30	1.90	6.71	83.91	470.79	1.71	350.69	30.17	5.48	51.08	42.10
MEAN	2.35	8.41	.061	.22	3.00	15.2	.057	11.3	1.01	.18	1.65	1.40
MAX	52	176	.33	1.1	30	95	.41	53	20	4.8	25	17
MIN	.00	.00	.01	.01	.09	.00	.00	.00	.00	.00	.00	.00
AC-FT	144	500	3.8	13	166	934	3.4	696	60	11	101	84

CAL YR 1977 TOTAL 4140.47 MEAN 11.3 MAX 425 MIN .00 AC-FT 8210  
WTR YR 1978 TOTAL 1369.64 MEAN 3.75 MAX 178 MIN .00 AC-FT 2720

08340500 ARROYO CHICO NEAR GUADALUPE, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1978.

REMARKS.--April 13, 1978 sample published by mistake in 1977 water data report.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CA) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	
APR 13...	0930	.01	3350	8.8	11.5	37	170	0	50	11	750	
DATE		SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)
APR 13...	25	3.9	382	14	340	1300	54	1.1	4.7	2380	49	
DATE		NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED AS P) (00671)	BORON, DIS- SOLVED AS B) (01020)	IRON, DIS- SOLVED AS FE) (01046)	MANGA- NESE, DIS- SOLVED AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
APR 13...	.02	.03	.04	.68	.74	.06	.02	210	30	30	6.9	

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, RECOV- ERABLE (UG/L AS CO) (01037)	
APR 13...	0930	4	2	210	2	0	0	0	1	
DATE	TIME	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
APR 13...	0	7	1	1600	30	11	3	60	30	
DATE	TIME	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
APR 13...	.0	.0	6	4	0	0	.0	40	10	

08340500 ARROYO CHICO NEAR GUADALUPE, NM--Continued

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDE (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED (UG/L) AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L) AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L) AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L) AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L) AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L) AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
APR 13...	0930	49	<27	3.1	7.7	2.9	6.7	2.7	.05	3.3

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
APR 13...	0930	.01	11.5	54	.00	95

## 08341400 BLUEWATER LAKE NEAR BLUEWATER, NM

LOCATION.--Lat 35°17'31", long 108°06'40", in SE¼ sec.9, T.12 N., R.12 W., Valencia County, Hydrologic Unit 13020207, at left end of Bluewater Dam on Bluewater Creek, and 9.5 mi (15.2 km) west of Bluewater.

DRAINAGE AREA.--201 mi<sup>2</sup> (521 km<sup>2</sup>).

PERIOD OF RECORD.--June 1927 to December 1950 (monthend contents only, published in WSP 1732), April 1958 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is 7,345.57 ft (2,238.930 m) National Geodetic Vertical Datum of 1929. July 1958 to January 1961, nonrecording gage at nearby site, same datum. Gage heights have been converted to sea-level elevations.

REMARKS.--Reservoir is formed by concrete arch dam. Storage began in 1927. Capacity, 38,500 acre-ft (47.5 hm<sup>3</sup>) at elevation 7,402.6 ft (2,256.31 m) crest of uncontrolled siphon spillway which is vented to avoid drawdown below crest, and 44,200 acre-ft (54.5 hm<sup>3</sup>) at elevation 7,405.6 ft (2,257.23 m) crest of ungated spillway over dam. Dead storage, 3.4 acre-ft (4,190 m<sup>3</sup>) at elevation 7,345.4 ft (2,238.88 m) sill of lower outlet tube. Lake not usually drawn below conservation pool level elevation, 7,365.36 ft (2,244.962 m), below which ownership is by State Game and Fish Department. Above this level, water is owned and used by Bluewater-Toltec Irrigation Co. Figures given herein represent total contents at 2400 hours.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents determined, 47,100 acre-ft (58.1 hm<sup>3</sup>) Apr. 30, 1941. Contents may have been greater on Apr. 28, 1941 when peak discharge of 800 ft<sup>3</sup>/s (22.7 m<sup>3</sup>/s) occurred at station 8 mi (13 km) downstream; no storage at times prior to 1947.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,390 acre-ft (11.6 hm<sup>3</sup>) Apr. 17, elevation, 7,377.9 ft (2,248.78 m); minimum, 2,020 acre-ft (2.49 hm<sup>3</sup>) Feb. 28, elevation, 7,360.3 ft (2,243.42 m).

## MONTHEND ELEVATION AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30 . . . . .	7361.9	2400	----
Oct. 31 . . . . .	7361.2	2230	-170
Nov. 30 . . . . .	7361.0	2180	-50
Dec. 31 . . . . .	7360.6	2090	-90
CAL YR 1977 . . . . .			-950
Jan. 31 . . . . .	7360.4	2040	-50
Feb. 28 . . . . .	7360.3	2020	-20
Mar. 31 . . . . .	7375.1	7560	+5540
Apr. 30 . . . . .	7377.6	9180	+1620
May 31 . . . . .	7376.1	8180	-1000
June 30 . . . . .	7371.9	5830	-2350
July 31 . . . . .	7365.7	3460	-2370
Aug. 31 . . . . .	7365.0	3240	-220
Sept. 30 . . . . .	7364.2	3010	-230
WTR YR 1978 . . . . .			+610



08342600 SAN MATEO CREEK NEAR SAN MATEO, NM

LOCATION.--Lat 35°20'46", long 107°46'31", in NW¼NE¼ sec.22, T.13 N., R.9 W., McKinley County, Hydrologic Unit 13020207, on right bank, 0.3 mi (0.5 km) southeast of intersections of State Highways 53 and 509, 1.4 mi (2.3 km) upstream from Arroyo del Puerto, 8.2 mi (13.2 km) west of San Mateo and 15 mi (24 km) north of Grants.

DRAINAGE AREA.--75.6 mi<sup>2</sup> (195.8 km<sup>2</sup>).

PERIOD OF RECORD.--May 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,800 ft (2,073 m) from topographic map.

REMARKS.--Records fair except those for July, August, September, and December 1977, and March, May, and August 1978, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 628 ft<sup>3</sup>/s (17.8 m<sup>3</sup>/s) Aug. 12, 1977, gage height, 5.80 ft (1.768 m), from slope-area measurement of peak flow; no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during May to September 1977, 628 ft<sup>3</sup>/s (17.8 m<sup>3</sup>/s) Aug. 12, gage height, 5.80 ft (1.768 m); minimum, 1.3 ft<sup>3</sup>/s (0.04 m<sup>3</sup>/s) June 1.

Water year 1978: Maximum discharge, 161 ft<sup>3</sup>/s (4.56 m<sup>3</sup>/s) Aug. 4, gage height, 4.16 ft (1.268 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	1.7	2.5	2.3	5.0
2								---	2.1	2.4	2.3	3.7
3								---	2.3	1.9	2.3	4.1
4								---	2.2	2.3	2.3	3.0
5								---	2.1	4.8	2.2	5.0
6								---	2.2	2.2	2.2	5.0
7								---	2.2	2.6	2.2	4.5
8								---	2.2	2.9	2.3	4.5
9								---	2.2	2.9	2.3	4.0
10								---	2.2	2.9	2.6	4.0
11								---	2.2	2.6	4.1	4.5
12								---	2.3	3.7	8.0	4.5
13								---	2.2	5.7	2.0	4.0
14								---	2.1	3.9	5.0	3.5
15								---	2.1	8.5	3.2	2.6
16								---	2.1	3.1	4.7	3.4
17								---	2.3	6.2	5.8	3.5
18								---	2.3	4.2	5.0	3.7
19								---	2.3	3.3	4.0	3.8
20								---	2.4	3.0	4.0	3.8
21								---	2.5	3.1	3.5	3.5
22								---	2.4	3.6	3.5	3.0
23								2.1	2.4	3.0	3.8	2.8
24								2.3	2.4	2.8	4.0	2.7
25								2.4	2.3	2.8	4.0	2.5
26								2.3	2.4	2.6	4.0	3.5
27								2.2	2.5	2.6	4.5	4.0
28								2.2	2.5	2.4	4.5	4.6
29								2.1	2.4	2.4	4.0	4.0
30								2.0	2.5	2.4	4.0	3.8
31								1.9	---	2.3	4.5	---
TOTAL	---	---	---	---	---	---	---	---	68.0	101.8	203.1	141.5
MEAN	---	---	---	---	---	---	---	---	2.27	3.28	6.55	4.72
MAX	---	---	---	---	---	---	---	---	2.5	8.5	8.0	3.0
MIN	---	---	---	---	---	---	---	---	1.7	1.9	2.2	2.5
AC-FT	---	---	---	---	---	---	---	---	135	202	403	281

08342600 SAN MATEO CREEK NEAR SAN MATEO, NM -- Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	2.2	6.5	6.9	11	1.0	.11	.00	.00	.00	.06	.10
2	4.0	2.6	4.2	7.0	10	.85	.08	.00	.00	.00	.08	1.4
3	4.2	2.8	4.5	6.6	10	.68	.18	.00	.00	.00	.24	.50
4	4.6	3.1	4.4	7.2	9.8	.65	.00	.00	.00	.00	30	.30
5	4.5	3.2	5.7	7.2	9.6	.59	.11	.00	.00	.00	5.0	.10
6	4.6	3.8	5.6	7.4	9.4	.49	.30	.00	.00	.00	3.0	.35
7	4.7	3.6	5.6	7.1	9.0	.46	.22	.00	.00	.00	2.0	.13
8	4.7	3.9	6.5	7.2	8.7	.20	.17	.00	.00	.00	1.0	.01
9	4.7	4.4	6.2	6.4	9.6	.00	.00	.00	.00	.00	1.0	.00
10	4.8	3.7	6.0	6.8	9.6	.00	.00	.00	.00	.00	.50	.00
11	4.6	3.7	6.5	7.1	9.8	.00	.00	.00	.00	.00	.20	.00
12	4.4	4.2	7.0	6.8	9.2	.00	.00	.00	.00	.00	.00	.00
13	4.5	4.3	8.0	6.0	10	.00	.00	.00	.00	.00	.00	.00
14	4.8	4.8	6.3	5.5	10	.00	.00	.00	.00	.00	.00	.00
15	5.1	5.1	5.7	6.3	11	.00	.00	.00	.00	.00	.00	.00
16	5.2	4.7	5.3	5.9	10	.00	.00	.00	.00	.00	.00	.00
17	5.3	4.6	5.5	6.4	10	.00	.00	.00	.00	.00	.00	.01
18	5.2	3.5	6.0	6.5	12	.23	.00	.00	.00	.00	.00	.00
19	5.0	3.9	6.0	6.4	11	.42	.00	.00	.00	.00	.20	.00
20	4.8	3.8	6.0	7.5	11	.30	.00	.00	.00	.00	.30	.00
21	4.2	4.4	5.5	6.9	11	.29	.00	.00	.00	.00	.40	.00
22	5.5	5.5	5.2	6.6	12	.39	.00	.00	.00	.00	.44	.00
23	5.2	3.9	5.0	6.9	11	.11	.00	.00	.00	.00	.35	.13
24	5.0	3.5	5.0	7.3	3.3	.19	.00	.00	.00	.00	.91	.52
25	4.0	3.9	5.5	8.3	3.0	.03	.00	.00	.00	.00	.45	.43
26	2.7	4.0	6.0	10	2.9	.01	.00	.00	.00	.00	.36	.31
27	1.6	4.2	6.5	9.8	2.7	.00	.00	.00	.00	.00	.32	.33
28	1.2	4.5	6.9	9.7	1.5	.28	.00	.00	.00	.00	.28	.35
29	.89	5.3	6.6	9.9	---	.30	.00	.00	.00	.08	.24	.34
30	.61	6.3	6.7	11	---	.23	.00	.00	.00	.09	.18	.34
31	.35	---	6.8	12	---	.01	---	.00	---	.10	.14	---
TOTAL	124.95	121.4	183.2	232.6	248.1	7.71	1.17	.00	.00	.27	47.65	5.65
MEAN	4.03	4.05	5.91	7.50	8.86	.25	.039	.000	.000	.009	1.54	.19
MAX	5.5	6.3	8.0	12	12	1.0	.30	.00	.00	.10	.30	1.4
MIN	.35	2.2	4.2	5.5	1.5	.00	.00	.00	.00	.00	.00	.00
AC-FT	248	241	363	461	492	15	2.3	.00	.00	.5	95	11

WTR YR 1978 TOTAL 972.70 MEAN 2.66 MAX 30 MIN .00 AC-FT 1930

## 08343000 RIO SAN JOSE AT GRANTS, NM

LOCATION.--Lat 35°09'16", long 107°52'11", in SW¼NW¼ sec.26, T.11 N., R.10 W., Valencia County, Hydrologic Unit 13020207, on right bank at bridge on old State Highway 53 in Grants, 0.2 mi (0.3 km) south of old U.S. Highway 66, and at mile 67.8 (109.1 km).

DRAINAGE AREA.--1,020 mi<sup>2</sup> (2,640 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1912 to February 1914, June 1914, October 1914 to February 1915, May 1915 to June 1921, September 1921 to June 1923, October 1923 to May 1926, September to December 1926, May 1949 to September 1966, June 1968 to current year. Monthly discharge only for some periods published in WSP 1312. Prior to October 1967, published as "Bluewater Creek at Grants".

REVISED RECORDS.--WSP 1512: 1913-14. WSP 1712: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,468.34 ft (1,971.550 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). See WSP 1732 or 1923 for history of changes prior to Jan. 1, 1926.

REMARKS.--No flow during the year. Flow slightly regulated by Bluewater Lake (station 08341400) 24 mi (39 km) upstream. Diversions and groundwater withdrawals for irrigation of about 4,500 acres (18 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--37 years (water years 1913, 1915-20, 1922, 1924-25, 1950-66, 1968-78), 3.25 ft<sup>3</sup>/s (0.092 m<sup>3</sup>/s), 2,350 acre-ft/yr (2.90 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD (1950-66 AND SINCE 1968).--Maximum discharge recorded, 1,760 ft<sup>3</sup>/s (49.8 m<sup>3</sup>/s) Aug. 28, 1952, gage height, 5.35 ft (1.631 m), from rating curve extended above 300 ft<sup>3</sup>/s (8.50 m<sup>3</sup>/s) on basis of velocity-area studies; no flow for long periods.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood observed occurred Sept. 6 or 7, 1909, when Bluewater Dam washed out. A flood in July 1919 probably exceeded the one in 1952.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1977	TOTAL 5.61	MEAN .015	MAX 2.7	MIN .00	AC-FT 11							
WTR YR 1978	TOTAL 0.00	MEAN .000	MAX .00	MIN .00	AC-FT .00							

## 08343100 GRANTS CANYON AT GRANTS, NM

LOCATION.--Lat 35°09'39", long 107°50'15", in NE¼NE¼ sec.25, T.11 N., R.10 W., Valencia County, Hydrologic Unit 13020207, at Roosevelt Avenue, in the town of Grants, 0.2 mi (0.3 km) east of intersection of Roosevelt and First Avenue, and 1.1 mi (1.8 km) upstream from confluence with Rio San Jose (formerly Bluewater Creek).

DRAINAGE AREA.--13.0 mi<sup>2</sup> (33.7 km<sup>2</sup>).

PERIOD OF RECORD.--December 1961 to current year.

GAGE.--Water-stage recorder and culvert control. Altitude of gage is 6,450 ft (1,966 m), from topographic map.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--17 years, 0.166 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s), 120 acre-ft/yr (148,000 m<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,550 ft<sup>3</sup>/s (43.9 m<sup>3</sup>/s) Aug. 26, 1963, gage height, 5.10 ft (1.554 m), from rating curve extended above 220 ft<sup>3</sup>/s (6.23 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 3.17 ft (0.966 m), 5.10 ft (1.554 m), and 5.38 ft (1.640 m); maximum gage height, 5.38 ft (1.640 m) Sept. 8, 1967; no flow for most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 66 ft<sup>3</sup>/s (1.87 m<sup>3</sup>/s) at 1900 hours Mar. 20, gage height, 1.04 ft (0.317 m), no peak above base of 175 ft<sup>3</sup>/s (5.0 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	.00	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.015	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.9	.00	.00	.00	.00	.00	.00
CAL YR 1977	TOTAL 53.05	MEAN .15	MAX 23	MIN .00	AC-FT 105							
WTR YR 1978	TOTAL 0.46	MEAN .001	MAX .46	MIN .00	AC-FT .90							

## RIO GRANDE BASIN

08343500 RIO SAN JOSE NEAR GRANTS, NM

LOCATION.--Lat 35°04'27", long 107°45'01", in SE¼SE¼ sec.23, T.10 N., R.9 W., Valencia County, Hydrologic Unit 13020207, on right bank at west boundary of Acoma Pueblo Grant, 8.5 mi (13.7 km) southeast of Grants, and at mile 57.4 (92.4 km).

DRAINAGE AREA.--2,300 mi<sup>2</sup> (5,960 km<sup>2</sup>), approximately, of which 1,130 mi<sup>2</sup> (2,930 km<sup>2</sup>) does not contribute directly to surface runoff.

PERIOD OF RECORD.--June 1936 to current year. Prior to October 1955, published as "San Jose River near Grants".

REVISED RECORDS.--WSP 898: 1936-39(M). WSP 1512: 1943. WSP 1712: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 6,269.47 ft (1,910.934 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow slightly regulated by Bluewater Lake (station 08341400), 34 mi (55 km) upstream. Diversions and ground-water withdrawal for irrigation of about 5,100 acres (21 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--42 years, 6.50 ft<sup>3</sup>/s (0.184 m<sup>3</sup>/s), 4,710 acre-ft/yr (5.81 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,400 ft<sup>3</sup>/s (39.6 m<sup>3</sup>/s) Sept. 20, 1963, gage height, 4.87 ft (1.484 m), from rating curve extended above 450 ft<sup>3</sup>/s (12.7 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 3.19 ft (0.972 m) and 4.87 ft (1.484 m); minimum, 1.9 ft<sup>3</sup>/s (0.054 m<sup>3</sup>/s) Feb. 21, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood probably occurred Sept. 6 or 7, 1909, following destruction of Bluewater dam. The peak of Sept. 20, 1963 may have been exceeded by those of July 1919, August and September 1929, and August 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 123 ft<sup>3</sup>/s (3.48 m<sup>3</sup>/s) at 1630 hours Aug. 23, gage height, 2.33 ft (0.710 m), no other peak above base of 100 ft<sup>3</sup>/s (2.83 m<sup>3</sup>/s); minimum daily, 4.3 ft<sup>3</sup>/s (0.12 m<sup>3</sup>/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	4.9	9.2	8.4	8.3	7.2	6.6	6.5	5.4	6.6	7.1	7.1
2	5.7	4.9	8.8	8.6	7.7	7.8	6.4	7.6	5.2	6.5	7.3	7.1
3	6.1	5.0	8.8	8.8	7.0	7.3	6.1	8.5	5.1	6.0	7.1	7.1
4	5.7	5.2	8.5	8.6	6.8	7.3	6.2	7.2	4.9	6.0	10	7.0
5	5.3	5.3	8.5	8.8	6.7	6.9	6.4	6.9	5.0	5.9	8.5	6.9
6	5.3	5.4	8.5	9.0	6.9	6.5	6.4	6.6	5.1	5.9	8.2	7.0
7	5.3	6.3	8.2	8.8	7.0	6.5	6.2	7.0	5.2	6.1	8.0	7.1
8	5.3	7.6	8.2	8.3	7.0	6.5	6.2	6.5	5.3	6.5	7.5	6.5
9	5.3	6.9	8.1	8.5	6.4	6.4	6.3	6.7	5.3	6.9	7.5	6.5
10	5.3	6.6	7.6	9.0	6.5	6.4	6.4	6.9	5.3	7.1	7.5	6.5
11	5.3	6.3	7.6	9.0	6.0	6.4	6.4	6.8	5.2	7.4	7.5	5.7
12	5.3	6.3	7.1	8.9	5.7	6.4	6.3	6.9	5.2	7.1	7.5	5.7
13	5.3	6.9	6.9	8.2	5.7	6.3	6.3	6.9	5.4	7.1	7.6	5.7
14	5.3	6.9	6.9	8.3	6.4	6.2	6.5	6.9	5.4	7.1	7.5	5.3
15	5.3	7.0	6.9	8.9	6.3	6.0	6.5	6.9	5.6	7.3	7.4	5.7
16	5.3	7.0	6.4	8.8	6.6	5.9	6.6	6.8	5.8	7.3	7.8	5.7
17	5.3	7.4	7.1	8.7	5.9	6.0	6.6	6.4	6.2	7.2	7.8	5.3
18	5.3	7.6	7.7	9.2	5.9	6.6	6.7	6.1	6.4	7.2	8.0	5.3
19	5.3	7.6	7.3	8.5	5.6	6.6	6.8	6.0	6.4	7.2	8.8	5.3
20	5.3	8.0	7.0	8.3	5.9	6.5	7.0	6.0	6.5	6.8	9.9	5.3
21	5.3	8.1	6.9	8.3	5.9	6.6	6.8	6.4	6.3	6.7	7.9	4.9
22	5.3	8.2	7.3	7.8	5.9	6.7	6.7	6.2	5.7	6.4	8.2	4.9
23	5.0	8.6	7.6	7.9	6.0	6.7	6.9	6.0	6.0	6.1	19	4.9
24	4.9	8.6	8.0	7.5	5.9	6.8	6.9	6.0	6.2	6.0	11	4.6
25	5.0	8.3	8.0	7.0	6.1	6.7	7.0	5.9	6.4	6.1	7.6	4.9
26	5.0	9.0	7.7	7.2	6.3	6.5	7.1	6.0	6.6	6.3	7.2	4.9
27	4.9	9.0	8.0	7.0	6.3	6.1	6.8	6.3	6.7	6.7	7.3	4.6
28	4.8	9.2	8.3	7.4	6.7	6.2	6.7	6.2	6.6	7.0	7.3	4.6
29	5.0	9.6	8.5	7.6	---	6.5	6.9	5.9	6.5	6.7	7.4	4.9
30	5.0	9.3	8.4	7.5	---	6.8	6.7	5.7	6.5	6.8	7.5	4.3
31	5.0	---	8.3	8.0	---	6.7	---	6.0	---	6.9	7.2	---
TOTAL	163.3	217.0	242.3	256.8	179.4	204.0	197.4	202.7	173.4	206.9	256.1	171.3
MEAN	5.27	7.23	7.82	8.28	6.41	6.58	6.58	6.54	5.78	6.67	8.26	5.71
MAX	6.1	9.6	9.2	9.2	8.3	7.8	7.1	8.5	6.7	7.4	19	7.1
MIN	4.8	4.9	6.4	7.0	5.6	5.9	6.1	5.7	4.9	5.9	7.1	4.3
AC-FT	324	430	481	509	356	405	392	402	344	410	508	340

CAL YR 1977 TOTAL 2336.9 MEAN 6.41 MAX 37 MIN 3.7 AC-FT 4640  
WTR YR 1978 TOTAL 2470.6 MEAN 6.77 MAX 19 MIN 4.3 AC-FT 4900

## 08349800 RIO PAGUATE BELOW JACKPILE MINE NEAR LAGUNA, NM

LOCATION.--Lat 35°07'09", long 107°19'58", in SW¼SE¼ sec. 2, T.10 N., R.5 W., Valencia County, Hydrologic Unit 13020207, in Pagate Purchase Grant, near right bank on downstream end of bridge piling of the Atchison, Topeka and Santa Fe Railway Co. bridge, 1.4 mi (2.3 km) downstream from Rio Moquino, 4.2 mi (6.8 km) upstream from Pagate Reservoir, 5.0 mi (8.0 km) south-east of Pagate and 26 mi (42 km) east of Grants.

DRAINAGE AREA.--107 mi<sup>2</sup> (277 km<sup>2</sup>).

PERIOD OF RECORD.--March 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,820 ft (1,774 m), from topographic map.

REMARKS.--Water-discharge records fair. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft<sup>3</sup>/s (65.1 m<sup>3</sup>/s) Aug. 24, 1976, gage height, 8.60 ft (2.621 m), from slope-area measurement of peak flow; minimum, 0.04 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) at times in July and August, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
Aug. 20	2015	*1,300	36.8	6.40	1.951
Aug. 23	1545	318	9.01	3.41	1.039

Minimum discharge, 0.08 ft<sup>3</sup>/s (0.002 m<sup>3</sup>/s) at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.55	.45	.58	1.6	2.8	1.8	.82	.87	.63	.80	.08	.25
2	.56	.48	.64	1.6	2.7	1.7	.75	3.1	.56	.80	.07	.21
3	.56	.51	.61	1.7	3.0	1.7	.65	1.3	.48	.60	.07	.17
4	.58	.52	.55	1.8	2.8	1.6	.61	1.1	.49	.60	.08	.15
5	.54	.53	.50	1.7	2.7	1.8	.58	1.1	.46	.50	.11	.12
6	.52	.60	.52	1.6	2.6	1.8	.67	1.2	.45	.50	.07	.10
7	.52	.75	.52	1.5	2.6	1.7	.63	1.3	.47	.50	.07	.08
8	.48	.56	.51	1.7	2.4	1.6	.59	1.2	.44	.50	.13	.09
9	.49	.62	.58	1.5	2.3	1.5	.62	1.2	.40	.30	.15	.11
10	.46	.59	.66	1.3	2.1	1.6	.56	1.2	.30	.30	.13	.12
11	.44	.57	.68	1.2	2.0	1.5	.50	1.2	.27	.30	.14	.12
12	.52	.61	.66	1.2	1.8	1.5	.60	1.1	.27	.30	.14	.12
13	.54	.62	.67	1.1	1.8	1.6	.75	1.1	.26	.30	.14	.14
14	.52	.62	.73	1.1	2.7	1.5	.78	.98	.22	.30	.13	.16
15	.47	.66	.74	.99	1.7	1.4	.84	.90	.17	.30	.13	.17
16	.38	.67	.63	.87	1.6	1.5	.92	.82	.17	.10	.13	.19
17	.37	.66	.76	1.0	1.6	1.5	.95	.64	.15	.10	.12	.42
18	.36	.65	1.1	1.0	1.7	1.4	1.1	.61	.15	.10	.12	.24
19	.36	.65	1.1	1.1	1.8	1.3	1.1	.72	.14	.10	.15	.20
20	.37	.65	1.1	1.2	2.0	1.2	.93	.77	.13	.08	42	.24
21	.41	.68	1.2	1.3	1.7	1.1	.85	.87	.12	.08	.60	.27
22	.41	.69	1.2	1.4	1.7	1.1	.84	.82	.11	.09	.32	.26
23	.45	.70	1.1	1.5	1.8	1.1	.89	.78	.11	.10	41	.26
24	.45	.68	1.2	1.6	1.7	.93	1.0	.75	.10	.12	9.6	.34
25	.45	.69	1.4	1.7	1.6	.89	1.0	.76	.10	.30	3.0	.45
26	.46	.71	1.6	2.4	1.7	.89	1.0	.77	.09	.13	2.0	.28
27	.51	.57	1.6	2.1	1.7	.88	.96	.78	.12	.09	1.0	.20
28	.50	.51	1.6	1.9	1.8	.88	.94	.65	.13	.09	.50	.23
29	.51	.53	1.5	2.0	---	.90	.93	.63	2.5	.09	.50	.19
30	.49	.58	1.6	2.0	---	.89	.79	.63	.96	.08	.38	.16
31	.48	---	1.6	3.3	---	.82	---	.64	---	.08	.31	---
TOTAL	14.71	18.31	29.44	47.96	58.4	41.58	24.15	30.49	10.95	8.63	103.37	6.04
MEAN	.47	.61	.95	1.55	2.09	1.34	.81	.98	.37	.28	3.33	.20
MAX	.58	.75	1.6	3.3	3.0	1.8	1.1	3.1	2.5	.80	42	.45
MIN	.36	.45	.50	.87	1.6	.82	.50	.61	.09	.08	.07	.08
AC-FT	29	36	58	95	116	82	48	60	22	17	205	12

CAL YR 1977 TOTAL 512.86 MEAN 1.41 MAX 34 MIN .04 AC-FT 1020  
WTR YR 1978 TOTAL 394.03 MEAN 1.08 MAX 42 MIN .07 AC-FT 782



LOCATION.--Lat 34°24'33", long 106°51'09", in SE¼ sec.8, T.2 N., R.1 E., Socorro County, Hydrologic Unit 13020204, on bridge on former U.S. Highway 85 and 0.2 mi (0.3 km) upstream from Interstate Highway 25, 1.2 mi (1.9 km) southwest of Bernardo, 3 mi (4.8 km) upstream from mouth, and 18 mi (29 km) south of Belen.

DRAINAGE AREA.--7,350 mi<sup>2</sup> (19,040 km<sup>2</sup>), approximately, of which at least 1,130 mi<sup>2</sup> (2,930 km<sup>2</sup>) does not contribute directly to surface runoff.

PERIOD OF RECORD.--November 1939 to current year. Fragmentary gage height record and footnotes concerning no flow for the period September 1910 to August 1914, published in WSP 358 and 388, are in error and should not be used.

REVISED RECORDS.--WSP 1512: 1941-42, 1944-45, 1946(P), 1947-49. WSP 1632: 1957. WSP 1732: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 4,722.34 ft (1,439.369 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 24, 1969, at datum 3.10 ft (0.945 m) higher.

REMARKS.--Water-discharge records poor. Diversions for irrigation of about 11,500 acres (47 km<sup>2</sup>) above station (includes 3,700 acres or 15.0 km<sup>2</sup> irrigated wholly or partly from wells).

AVERAGE DISCHARGE.—38 years (water years 1941-78), 47.5 ft<sup>3</sup>/s (1.345 m<sup>3</sup>/s), 34,410 acre-ft/yr (42.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,800 ft<sup>3</sup>/s (532 m<sup>3</sup>/s) Sept. 23, 1941, from rating curve extended above 7,800 ft<sup>3</sup>/s (221 m<sup>3</sup>/s); maximum gage height, 16.9 ft (5.15 m) present datum, Aug. 12, 1955; no flow for extended periods.

EXTREMES OUTSIDE PERIOD OF RECORD.--The greatest flood since about 1880 occurred Sept. 23, 1929, from information by local residents (discharge, about 35,000 ft<sup>3</sup>/s or 991 m<sup>3</sup>/s, estimated on basis of peak at Rio Puerco). Another flood occurred Aug. 12, 1929 (discharge, 30,600 ft<sup>3</sup>/s or 867 m<sup>3</sup>/s, by slope-area method, from reports of State Engineer).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,330 ft<sup>3</sup>/s (37.7 m<sup>3</sup>/s) at 1530 hours Oct. 6, gage height, 9.08 ft (2.768 m), no peak above base of 2,000 ft<sup>3</sup>/s (57 m<sup>3</sup>/s); no flow most of time.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	1.0	186	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	6.3	1.0	50	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	26	1.0	5.0	.00	.00
4	.00	.00	.00	.00	.00	1.0	.00	32	.00	1.0	.00	.00
5	.00	.00	.00	.00	.00	1.0	.00	33	.00	.50	.00	.00
6	182	.00	.00	.00	.00	1.0	.00	23	.00	.00	.00	.00
7	30	.00	.00	.00	.00	10	.00	16	.00	.00	.00	.00
8	10	.00	.00	.00	.00	30	.00	16	.00	.00	.00	.00
9	1.0	.00	.00	.00	.00	10	.00	33	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	1.0	.00	30	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	1.0	.00	15	.00	.00	.00	.00
12	.00	10	.00	.00	.00	1.0	.00	10	1.0	.00	.00	.00
13	.00	10	.00	.00	.00	.50	.00	.00	77	.00	.00	.00
14	.00	60	.00	.00	.00	.50	.00	.00	38	.00	.00	.00
15	.00	50	.00	.00	.00	.50	.00	.00	5.0	.00	.00	.00
16	.00	5.0	.00	.00	.00	.50	.00	.00	.50	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	13	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	31	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	41	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	34	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	28	.00	.00	.00	.00
22	31	.00	.00	.00	.00	.00	.00	26	.00	.00	.00	.00
23	15	.00	.00	.00	.00	.00	.00	25	.00	321	1.0	.00
24	3.0	.00	.00	.00	.00	.00	.00	25	.00	103	1.0	.00
25	.00	.00	.00	.00	.00	.00	.00	24	.00	10	61	.00
26	.00	.00	.00	.00	.00	.00	.00	16	.00	2.0	5.0	.00
27	.00	.00	.00	.00	.00	.00	.00	17	.00	.00	1.0	.00
28	.00	.00	.00	.00	.00	.00	.00	14	.00	.00	.30	.00
29	.00	.00	.00	.00	---	1.0	.00	10	.00	.00	.30	.00
30	.00	.00	.00	.00	---	.50	.00	7.0	102	.00	.30	.00
31	.00	---	.00	.00	---	.00	---	5.0	---	.00	.00	---
TOTAL	272.00	135.00	.00	.00	.00	59.50	.00	556.30	226.50	678.50	69.90	.00
MEAN	8.77	4.50	.0000	.0000	.0000	1.92	.0000	17.9	7.55	21.9	2.25	.0000
MAX	182	60	.00	.00	.00	30	.00	41	102	321	61	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC=FT	540	268	.00	.00	.00	118	.00	1100	449.	1350	139	.00
WAL YR 1977	TOTAL	12528.00	MEAN	34.3	MAX	1290	MIN	.00	AC=FT	24850		
CTR YR 1978	TOTAL	1997.70	MEAN	5.47	MAX	321	MIN	.00	AC=FT	3960		



08353000 RIO PUERCO NEAR BERNARDO, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1956 to current year.

WATER TEMPERATURES: October 1964 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1947 to current year.

REMARKS.--Chemical analyses are run on composite samples collected during the day of period indicated. Samples are collected when flow is observed on this ephemeral stream.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,400 micromhos June 10, 1968; minimum daily, 238 micromhos July 30, 1969.

WATER TEMPERATURES: Maximum, 32.0°C July 29, 1977; minimum, 0.0°C Dec. 30, 1971.

SEDIMENT CONCENTRATIONS: Maximum daily, 267,000 mg/L July 26, 1957; minimum daily, no flow on many days of each year.

SEDIMENT LOADS: Maximum daily, 2,240,000 tons (2,030,000 tonnes) Aug. 7, 1957; minimum daily, 0 tons (0 tonnes) on many days of each year.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,260 micromhos July 23; minimum daily, 600 micromhos Oct. 6.

WATER TEMPERATURES: Maximum, 31.0°C Aug. 28; minimum, 2.0°C Nov. 12.

SEDIMENT CONCENTRATIONS: Maximum daily, 198,000 mg/L July 1; minimum daily, no flow on many days.

SEDIMENT LOADS: Maximum daily, 122,000 tons (111,000 tonnes) July 1; minimum daily, 0 tons (0 tonnes) on many days.

## CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREAM- FLOW (CFS) (00060)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM OIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, OIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS CO3) (00445)
NOV												
12-16	4.8	2130	7.5	520	350	150	36	290	5.5	8.6	210	0
23-29	.01	718	7.9	250	77	75	15	86	2.4	6.1	210	0
MAR												
04...	1.0	3040	7.4	860	630	250	58	420	6.2	11	290	0
29...	1.0	2760	7.7	710	550	200	52	400	6.5	10	200	0
MAY												
02-31	19	2210	7.9	560	420	160	38	320	5.9	8.5	170	0
JUN												
01-12	1.0	2380	8.0	260	110	75	18	170	4.6	6.8	180	0
14...	38	1270	7.6	630	500	180	45	--	--	8.7	170	0
15...	5.0	2270	7.5	490	350	140	33	320	6.3	10	160	0
30...	102	3700	7.3	1100	900	310	67	490	6.6	19	180	0
JUL												
01-02	118	3030	7.4	1300	--	370	81	300	3.7	10	--	--
23...	321	3640	7.3	--	--	380	--	--	--	--	--	--
24...	103	1590	7.6	590	--	190	29	140	2.5	9.6	--	--
25-26	5.0	940	7.5	370	--	120	17	92	2.1	8.1	--	--
AUG												
23...	5.0	3360	7.3	1500	--	470	76	260	2.9	12	--	--
28...	1.0	2200	7.4	1100	--	360	56	140	1.8	16	--	--
WTD. AVG.	--	2700	7.6	771	482	258	49	310	5.1	9.9	173	0
TIME WTD.												
AVG.	19	2120	7.8	524	324	156	34	256	4.9	8.4	183	0
TOT. LOAD (TONS)	--	--	--	--	--	994	147	895	--	30	352	0

08353000 RIO PUERCO NEAR BERNARDO, NM--Continued

## CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV												
12-16	170	860	110	.8	11	--	1570	2.14	20.3	--	--	--
23-29	170	160	37	.6	24	--	507	.69	.01	--	--	--
MAR												
04...	240	1400	81	.6	13	--	2380	3.24	6.43	--	--	--
29...	160	1100	150	.9	10	--	2020	2.75	5.45	--	--	--
MAY												
02-31	140	900	85	.9	11	1610	1610	2.19	82.6	--	270.	20
JUN												
01-12	150	350	98	.8	14	--	821	1.12	2.22	--	--	--
14...	140	350	110	.9	11	--	--	--	--	--	--	--
15...	130	690	240	.8	13	--	1530	2.08	20.7	--	--	--
30...	150	1500	320	.7	13	--	2810	3.82	774	--	--	--
JUL												
01-02	220	1600	34	.6	18	--	2550	--	--	.27	--	--
23...	--	1700	260	.6	15	--	--	--	--	.30	--	--
24...	130	680	38	.7	14	--	1180	--	--	1.0	--	--
25-26	130	380	31	.8	14	--	741	--	--	1.1	--	--
AUG												
23...	140	1700	150	.6	16	--	2770	--	--	.61	--	--
28...	130	1200	50	.7	12	--	1910	--	--	.52	--	--
WTD. AVG.	122	1200	131	.7	13	--	1880	--	--	--	--	--
TIME WTD.												
AVG.	149	760	91	.8	13	--	1400	--	--	--	--	--
TOT. LOAD (TONS)	472	4640	505	2.9	52	--	5430	--	--	--	--	--

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH  (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	
DATE	TIME										
OCT											
06...	1830	182	600	7.7	23.0	200	41	65	8.5	63	
07...	1800	30	1010	7.4	20.5	370	280	130	12	77	
		SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
DATE	TIME										
OCT											
06...	2.0	7.7	190	0	160	93	36	.6	9.3	377	
07...	1.7	6.6	120	0	98	400	24	.5	9.2	718	

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)
NOV										
16...	1700	5.0	10.5	35400	478	87	98	100	--	--
MAR										
08...	1000	28	6.5	69500	5250	76	84	98	100	--
MAY										
03...	1545	28	18.0	97700	7390	79	89	99	100	--
05...	1730	36	17.0	84600	8220	69	80	98	100	--
22...	1400	27	22.0	79400	5790	66	79	96	100	--
31...	1550	6.0	26.0	84900	1380	86	96	100	--	--
JUL										
23...	1700	902	19.0	83600	204000	70	75	93	99	100
24...	1000	78	19.0	69400	14600	57	68	84	99	100
AUG										
28...	1400	.32	31.0	32700	28	93	99	99	100	--

## RIO GRANDE BASIN

08353000 RIO PUERCO NEAR BERNARDO, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---				---		---	2180	3110	---	
2	---	---				---		2340	2310	2990	---	
3	---	---				---		2350	2520	---	---	
4	---	---				3010		2300	---	---	---	
5	---	---				2000		2150	---	---	---	
6	600	---				1940		2330	---	---	---	
7	1010	---				1810		2340	---	---	---	
8	---	---				1880		2450	---	---	---	
9	---	---				1850		2090	---	---	---	
10	---	---				1990		2040	---	---	---	
11	---	---				1990		2070	---	---	---	
12	---	1900				1880		2230	2620	---	---	
13	---	2020				2100		---	---	---	---	
14	---	2120				2300		---	1330	---	---	
15	---	2180				2000		---	2330	---	---	
16	---	2440				2340		---	---	---	---	
17	---	---				---		2890	---	---	---	
18	---	---				---		2290	---	---	---	
19	---	---				---		1960	---	---	---	
20	---	---				---		1820	---	---	---	
21	---	---				---		1840	---	---	---	
22	---	---				---		1950	---	---	---	
23	---	760				---		2190	---	4260	3400	
24	---	---				---		1830	---	1580	---	
25	---	---				2700		2060	---	1110	---	
26	---	---				---		2070	---	980	---	
27	---	---				---		1980	---	---	---	
28	---	---				---		1980	---	---	2510	
29	---	677				---		2040	---	---	---	
30	---	---				---		2000	3770	---	---	
31	---	---				---		2130	---	---	---	
MEAN	805	1730				2130		2140	2440	2340	2960	
WTR YR 1978	MEAN	2130				MAX	4260	MIN	600			

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---				---		---	25.0	29.0	---	
2	---	---				---		8.0	25.0	26.0	---	
3	---	---				---		17.0	25.5	---	---	
4	---	---				11.0		17.0	---	---	---	
5	---	---				10.5		17.0	---	---	---	
6	23.0	---				11.0		10.0	---	---	---	
7	20.5	---				11.0		14.0	---	---	---	
8	---	---				14.0		18.0	---	---	---	
9	---	---				8.5		22.0	---	---	---	
10	---	---				11.5		19.0	---	---	---	
11	---	---				12.0		21.0	---	---	---	
12	---	2.0				11.0		23.0	29.0	---	---	
13	---	7.0				6.0		---	---	---	---	
14	---	10.0				7.0		---	26.0	---	---	
15	---	11.0				4.0		---	24.0	---	---	
16	---	10.5				4.0		---	---	---	---	
17	---	---				---		19.0	---	---	---	
18	---	---				---		20.0	---	---	---	
19	---	---				---		21.0	---	---	---	
20	---	---				---		17.0	---	---	---	
21	---	---				---		18.5	---	---	---	
22	---	---				---		25.0	---	---	---	
23	---	7.0				---		23.0	---	19.0	30.0	
24	---	---				---		20.5	---	23.0	---	
25	---	---				---		22.0	---	24.0	---	
26	---	---				---		22.0	---	24.0	---	
27	---	---				---		20.0	---	---	---	
28	---	---				---		22.0	---	---	31.0	
29	---	8.0				7.5		28.0	---	---	---	
30	---	---				---		18.0	28.0	---	---	
31	---	---				---		25.5	---	---	---	
MEAN	22.0	8.0				9.0		19.5	26.0	24.0	30.5	
WTR YR 1978	MEAN	17.5				MAX	31.0	MIN	2.0			

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)	
	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
2	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
3	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
4	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
5	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
6	8820	9590	0	.00	0	.00	0	.00	0	.00	0	.00	101000	273	0	.00	0	.00	0	.00	0	.00	0	.00
7	6420	520	0	.00	0	.00	0	.00	0	.00	0	.00	86000	2320	0	.00	0	.00	0	.00	0	.00	0	.00
8	3100	84	0	.00	0	.00	0	.00	0	.00	0	.00	74000	5990	0	.00	0	.00	0	.00	0	.00	0	.00
9	2520	6.8	0	.00	0	.00	0	.00	0	.00	0	.00	70800	1910	0	.00	0	.00	0	.00	0	.00	0	.00
10	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	69500	188	0	.00	0	.00	0	.00	0	.00	0	.00
11	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	75000	202	0	.00	0	.00	0	.00	0	.00	0	.00
12	0	.00	73200	1980	0	.00	0	.00	0	.00	0	.00	78000	211	0	.00	0	.00	0	.00	0	.00	0	.00
13	0	.00	76800	2070	0	.00	0	.00	0	.00	0	.00	70700	95	0	.00	0	.00	0	.00	0	.00	0	.00
14	0	.00	62900	10200	0	.00	0	.00	0	.00	0	.00	74500	101	0	.00	0	.00	0	.00	0	.00	0	.00
15	0	.00	51000	6880	0	.00	0	.00	0	.00	0	.00	80500	109	0	.00	0	.00	0	.00	0	.00	0	.00
16	0	.00	38000	513	0	.00	0	.00	0	.00	0	.00	68000	92	0	.00	0	.00	0	.00	0	.00	0	.00
17	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
18	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
19	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
20	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
21	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
22	9750	3020	0	.00																				

## RIO GRANDE BASIN

08354000 RIO SALADO NEAR SAN ACACIA, NM

LOCATION.--Lat 34°17'50", long 106°53'59", in NW 1/4 sec.24, T.1 N., R.1 W., Socorro County, Hydrologic Unit 13020209, at former bridge site 0.3 mi (0.5 km) upstream from bridge on Interstate Highway 25, 3.1 mi (5.0 km) upstream from mouth, 2.9 mi (4.7 km) north of San Acacia, and 15 mi (24 km) north of Socorro.

DRAINAGE AREA, --1,380 mi<sup>2</sup> (3,570 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD,--October 1947 to current year.

REVISED RECORDS.--WSP 1512: 1948-49, 1955. WSP 1632: 1953.

GAGE.--Water-stage recorder. Altitude of gage is 4,765 ft (1,452 m), from topographic map. Prior to Sept. 14, 1966, at site 1.7 mi (2.7 km) downstream at different datum.

REMARKS.--Water-discharge records poor. Diversions for irrigation of about 100 acres (40 ha) above station.

AVERAGE DISCHARGE.--31 years, 15.4 ft<sup>3</sup>/s (0.436 m<sup>3</sup>/s), 11,160 acre-ft/yr (13.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,200 ft<sup>3</sup>/s (1,030 m<sup>3</sup>/s) July 31, 1965, gage height, 5.54 ft (1.689 m), from flood-marks, present site and datum, from rating curve extended above 900 ft<sup>3</sup>/s (26 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Another flood occurred Aug. 12, 1929 (discharge, 27,400 ft<sup>3</sup>/s or 776 m<sup>3</sup>/s, by slope-area method), from reports of State Engineer.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 368 ft<sup>3</sup>/s (10.4 m<sup>3</sup>/s) at 1545 hours Oct. 6, gage height, 2.56 ft (0.780 m), no peak above base of 3,000 ft<sup>3</sup>/s (85.0 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	82	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.48	.30	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.8	.20	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	105.00	.00	.00	.00	.00	.00	.00	.00	.00	50.80	3.30	.00
MEAN	3.39	.000	.000	.000	.000	.000	.000	.000	.000	1.64	.11	.000
MAX	82	.00	.00	.00	.00	.00	.00	.00	.00	.48	1.0	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC=FT	208	.00	.00	.00	.00	.00	.00	.00	.00	101	6.5	.00
CAL YR 1977	TOTAL	6141.70	MEAN	16.8	MAX	1380	MIN	.00	AC=FT	12180		
WTR YR 1978	TOTAL	159.10	MEAN	.44	MAX	82	MIN	.00	AC=FT	316		

08354000 RIO SALADO NEAR SAN ACACIA, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

REMARKS.--Samples are collected when flow is observed on this ephemeral stream.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)		
OCT										
06...	0930	8.8	1650	7.8	18.0	460	300	140		
JUL										
24...	1215	3.2	1630	7.6	30.0	430	280	130		
AUG										
07...	1240	.31	4160	7.1	28.0	890	--	260		
23...	1015	.34	2790	7.5	24.0	--	--	--		
28...	0930	.24	5230	7.9	23.0	930	750	250		
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE AS HCO3 (00440)	CAR- BONATE AS CO3 (00445)	ALKA- LINEITY AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT										
06...	26	200	4.1	6.6	190	0	160	430	210	
JUL										
24...	26	190	4.0	7.6	190	0	160	470	170	
AUG										
07...	58	580	8.5	12	--	--	240	670	810	
23...	--	--	--	--	--	--	--	--	--	--
28...	75	860	12	16	--	--	180	1100	1000	

DATE	TIME	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT									
06...	.7	13	--	1120	.51	.00	180	20	
JUL									
24...	.7	15	1080	1110	.43	.02	280	50	
AUG									
07...	.7	20	--	2550	.16	.03	410	20	
23...	--	--	--	--	--	--	--	--	--
28...	.6	18	--	3430	--	--	640	40	

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)
OCT											
06...	0930	8.8	18.0	82000	1950	--	--	--	--	--	--
JUL											
24...	1215	3.2	30.0	65500	566	72	88	97	99	99	100
AUG											
07...	1240	.31	28.0	64400	54	--	--	--	--	--	--
23...	1015	.34	24.0	46500	43	74	93	99	100	--	--
28...	0930	.24	23.0	36400	24	--	--	--	--	--	--

## 08354500 SOCORRO MAIN CANAL NORTH AT SAN ACACIA, NM

LOCATION.--Lat 34°15'17", long 106°53'43", in SE¼NW¼ sec.1, T.1 S., R.1 W., Socorro County, Hydrologic Unit 13020203, on right bank at San Acacia, and 0.5 mi (0.8 km) downstream from point of diversion.

PERIOD OF RECORD.--April 1936 to September 1964 (monthly discharge only), October 1964 to current year.

REVISED RECORDS.--WSP 1242: 1951.

GAGE.--Water-stage recorder. Datum of gage is 4,660.16 ft (1,420.417 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 8, 1958, at site 300 ft (90 m) upstream (in old channel) at datum 0.42 ft (0.128 m) lower.

REMARKS.--Records poor. This canal is 1 of 3 channels (stations 08354800, 08354900) carrying flow in valley cross section. For combined monthly flow in acre-ft of this canal, conveyance channel, and floodway, see tabulation below daily table for 08354900. Canal diverts water from right bank of Rio Grande for irrigation of about 8,000 acres (32 km<sup>2</sup>). Alamillo Acequia and 3 other smaller ditches divert water from canal above station for irrigation of about 400 acres (2 km<sup>2</sup>). Discharge records collected at the canal heading from October 1964 to September 1965 indicate that 7,770 acre-ft (9.58 hm<sup>3</sup>) or 9% of the initial canal flow was diverted before reaching the regular gaging station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 271 ft<sup>3</sup>/s (7.67 m<sup>3</sup>/s) June 27, 1978; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	117	8.0	12	4.6	66	209	183	254	242	122	66
2	106	24	7.0	11	70	73	207	224	257	233	124	57
3	97	18	6.8	11	61	82	198	221	246	235	113	94
4	98	17	1.00	9.8	53	92	209	217	254	232	110	80
5	108	16	5.0	9.3	44	98	214	219	252	233	112	84
6	104	26	7.0	8.6	42	108	214	196	252	232	107	90
7	80	52	7.0	8.0	77	120	216	154	250	230	103	86
8	117	43	9.0	6.7	28	122	225	195	252	226	122	68
9	137	30	9.0	6.5	11	124	229	194	252	231	119	68
10	140	11	8.0	6.4	30	124	221	194	242	227	135	61
11	129	8.4	2.0	6.2	9.3	130	220	190	248	188	137	58
12	123	8.4	3.0	6.6	11	134	189	189	238	155	144	48
13	127	8.4	5.0	6.2	60	162	207	196	217	134	145	61
14	132	46	3.0	6.3	65	166	192	208	233	117	128	73
15	137	97	3.0	6.9	74	167	189	202	251	115	129	80
16	139	81	3.5	7.5	93	172	175	196	247	119	119	83
17	146	29	3.5	8.1	38	178	153	190	238	115	88	77
18	133	25	4.0	7.4	16	170	175	190	253	105	83	76
19	136	25	4.0	6.0	15	167	181	200	255	105	97	85
20	137	25	4.5	10	16	173	175	200	258	104	141	90
21	136	25	6.0	5.4	75	187	156	210	258	116	141	62
22	134	25	6.0	5.9	87	212	145	210	259	129	126	61
23	139	26	6.5	26	68	210	154	202	260	165	136	55
24	134	27	6.5	4.7	16	213	148	197	261	153	139	73
25	155	28	7.0	3.3	19	212	142	209	265	129	140	98
26	161	29	7.5	8.7	22	215	139	224	270	151	131	97
27	156	29	9.0	4.3	26	213	141	229	271	151	121	105
28	157	30	9.0	3.0	48	208	148	234	268	143	120	139
29	164	20	9.5	1.8	---	202	151	232	261	147	94	157
30	165	10	10	40	---	207	166	241	260	145	71	148
31	165	---	10	32	---	208	---	256	---	139	68	---
TOTAL	4095	956.2	189.30	295.6	1178.9	4915	5488	6402	7582	5146	3665	2480
MEAN	132	31.9	6.11	9.54	42.1	159	183	207	253	166	118	82.7
MAX	165	117	10	40	93	215	229	256	271	242	145	157
MIN	80	8.4	.00	1.8	4.6	66	139	154	217	104	68	48
AC-FT	8120	1900	375	586	2340	9750	10890	12700	15040	10210	7270	4920
CAL YR 1977	TOTAL	32343.30	MEAN	88.6	MAX	243	MIN	.00	AC-FT	64150		
WTR YR 1978	TOTAL	42393.00	MEAN	116	MAX	271	MIN	.00	AC-FT	84090		

08354800 RIO GRANDE CONVEYANCE CHANNEL AT SAN ACACIA, NM  
(Surveillance network)

LOCATION.--lat 34°14'54", long 106°54'04", in SW¼ sec.1, T.1 S., R.1 W., Socorro County, Hydrologic Unit 13020203, on right bank 75 ft (23 m) upstream from railway crossing, 0.5 mi (0.8 km) south of San Acacia, and 1.2 mi (1.9 km) downstream from San Acacia diversion dam.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to September 1964 included in composite flow of station "08355000 Rio Grande at San Acacia," October 1960 to September 1964 (monthly discharge published in WSP 1923 with records for station 08355000), October 1964 to current year. Daily records 1958-64 are available in files at district office.

GAGE.--Water-stage recorder. Datum of gage is 4,652.5 ft (1,418.08 m) National Geodetic Vertical Datum of 1929, (levels by Bureau of Reclamation).

REMARKS.--Water-discharge records fair. Conveyance channel, constructed in 1958, is 1 of 3 channels (stations 08354500, 08354900) carrying flow in valley cross section. Original design and plan was for conveyance channel to carry all flows up to about 2,000 ft³/s (57 m³/s). For combined monthly flow in acre-ft of this channel, floodway, and Socorro main canal north see tabulation below daily table for station 08354900.

EXTREMES FOR PERIOD OF RECORD: Maximum daily discharge, 1,950 ft³/s (55.2 m³/s) May 12, 13, 1966; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	101	464	552	578	533	137	9.9	1670	1580	4.3	1.7
2	.95	148	481	546	656	540	75	769	1680	1190	4.2	1.7
3	1.2	119	499	550	655	553	83	1780	1560	804	4.5	1.4
4	32	114	481	592	603	716	203	1760	1590	530	4.8	1.3
5	13	114	473	563	577	797	124	1770	1640	500	4.2	1.3
6	114	115	484	527	577	725	296	1750	1640	483	3.5	1.1
7	168	141	470	521	567	721	250	1710	1650	339	3.2	.98
8	68	168	451	516	588	791	119	1690	1700	183	3.2	.94
9	52	291	472	510	600	808	25	1370	1700	71	2.9	.95
10	54	395	469	526	614	632	88	1140	1440	30	2.4	.89
11	71	385	478	573	639	573	41	1130	1270	19	2.2	.75
12	75	472	482	544	617	568	20	756	1230	16	2.4	.72
13	25	561	679	542	621	576	20	512	988	17	2.4	.53
14	15	541	1080	524	621	587	20	1250	872	16	2.4	.45
15	12	468	978	543	617	432	20	1490	1160	17	2.4	.50
16	10	425	990	692	615	325	20	1570	1130	17	2.4	.37
17	7.0	483	875	663	620	290	21	1690	870	17	2.4	.31
18	13	470	625	502	597	274	16	1730	624	17	2.4	.20
19	30	499	522	599	604	229	13	1730	700	17	2.4	.20
20	31	488	510	706	603	257	12	1740	860	16	2.3	.27
21	31	493	503	631	562	161	9.5	1770	873	17	2.2	.21
22	30	558	471	651	545	167	9.5	1750	908	13	2.1	.45
23	29	474	453	621	544	100	9.0	1610	767	12	2.0	.47
24	20	449	439	593	538	161	9.8	1680	767	5.3	2.0	.86
25	20	475	413	581	530	190	9.8	1710	647	4.6	2.1	.93
26	13	507	414	561	540	189	9.3	1700	685	4.2	2.0	.94
27	12	461	463	532	557	253	9.2	1720	730	4.1	2.0	1.1
28	11	477	524	540	524	261	9.4	1730	703	4.2	1.9	1.3
29	19	471	491	518	---	217	9.4	1720	673	4.5	2.0	1.5
30	30	472	525	482	---	176	9.6	1720	1410	4.5	2.0	1.6
31	36	---	534	533	---	109	---	1700	---	4.4	1.9	---
TOTAL	1044.35	11335	17193	17534	16509	12911	1697.7	46156.9	34137	5956.8	83.1	25.92
MEAN	33.7	378	555	566	590	416	56.6	1489	1138	192	2.68	.86
MAX	168	561	1080	706	656	808	296	1780	1700	1580	4.8	1.7
MIN	.95	101	413	482	524	100	9.0	9.9	624	4.1	1.9	.20
AC-FT	2070	22480	34100	34780	32750	25610	3370	91550	67710	11820	165	51
CAL YR 1977	TOTAL	92170.20	MEAN	253	MAX	1330	MIN	.40	AC-FT	182800		
WTR YR 1978	TOTAL	164583.77	MEAN	451	MAX	1780	MIN	.20	AC-FT	326500		



08354800 RIO GRANDE CONVEYANCE CHANNEL AT SAN ACACIA, NM -- Continued

## WATER-QUALITY RECORDS

LOCATION.--Samples collected about 100 ft (30 m) downstream from discharge station.

PERIOD OF RECORD.--Water years 1959 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to current year.

WATER TEMPERATURES: May 1959 to current year.

SUSPENDED SEDIMENT DISCHARGE: January 1959 to current year.

REMARKS.--When there is insufficient flow to sample 08354800 Rio Grande Conveyance Channel at San Acacia, NM or 08354900 Rio Grande Floodway at San Acacia, NM; samples are taken from 08354500 Socorro Main Canal North at San Acacia, NM.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,840 micromhos Oct. 8, 1964; minimum daily, 136 micromhos June 19, 1967.

WATER TEMPERATURES: Maximum, 36.0°C July 13, 1970, Aug. 13, 1978; minimum, 0.0°C on several days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 141,000 mg/L Aug. 10, 1959; minimum daily, no flow on many days during most years.

SEDIMENT LOADS: Maximum daily, 528,000 tons (479,000 tonnes) Aug. 28, 1972; minimum daily, 0 tons (0 tonnes) on many days during most years.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,420 micromhos July 23; minimum daily, 383 micromhos June 8.

WATER TEMPERATURES: Maximum, 36.0°C Aug. 13; minimum, 0.0°C Jan. 21.

SEDIMENT CONCENTRATIONS: Maximum daily, 47,100 mg/L Nov. 10; minimum daily, 55 mg/L Aug. 15.

SEDIMENT LOADS: Maximum daily, 53,800 tons (48,800 tonnes) May 3; minimum daily, 0.10 ton (0.09 tonne) Sept. 21.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)
OCT									
21...	1821	29	740	8.2	13.0	17.5	200	--	7.9
NOV									
23...	1001	485	845	8.1	14.0	8.0	1000	--	9.7
DEC									
14...	1111	1110	720	8.0	9.0	1.0	1600	--	10.6
JAN									
21...	1021	628	830	8.1	2.5	.0	--	400	12.6
FEB									
17...	1616	680	800	8.0	6.0	7.5	--	350	10.7
MAR									
24...	1024	120	640	8.1	18.0	11.5	--	140	9.3
APR									
21...	1121	4.5	930	8.5	23.0	16.0	--	23	10.1
MAY									
18...	1858	1720	508	8.0	21.5	19.5	--	1400	7.5
JUN									
15...	1151	1120	420	8.0	34.0	24.5	--	380	7.3
JUL									
20...	2020	15	880	8.3	25.5	25.0	--	37	6.2
AUG									
14...	1618	122	795	8.3	31.0	27.5	--	100	7.4
SEP									
14...	1214	64	1030	8.1	27.5	21.0	--	26	7.9

08354800 RIO GRANDE CONVEYANCE CHANNEL AT SAN ACACIA, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L) AS N) (00630)	NITRO- GEN, NO2+NO3 DISE- SOLVED (MG/L) AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L) AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L) AS N) (00605)	NITRO- GEN, TOTAL (MG/L) AS N) (00600)	PHOS- PHORUS, ORTHOPHOS- PHORUS, DISE- SOLVED (MG/L) AS P) (00665)	PHOS- PHORUS, ORTHOPHOS- PHORUS, DISE- SOLVED (MG/L) AS P) (00671)
OCT 21...	34	498	.24	.00	.01	.80	1.1	.58	.16
NOV 23...	200	1010	.55	.55	.14	1.5	2.2	1.3	.30
DEC 14...	130	20	.83	.71	.10	3.4	4.3	3.1	.29
JAN 21...	98	1430	.75	.80	.02	.08	.85	1.5	.42
FEB 17...	9	1170	.93	.91	.02	.68	1.6	.93	.02
MAR 24...	21	230	.91	.86	.05	.59	1.6	.77	.54
APR 21...	11	31	.10	.08	.01	.43	.54	.21	.19
MAY 18...	--	2850	--	--	--	--	--	1.6	--
JUN 15...	31	340	.00	.52	.00	1.6	1.6	.81	.22
JUL 20...	21	59	.00	.01	.00	.54	.54	.14	.07
AUG 14...	22	165	.25	.28	.10	.55	.90	.35	.22
SEP 14...	25	32	.15	.17	43.0	.00	1.3	.51	.15

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L) AS AS) (01002)	CADMIUM TOTAL RECOV- ERABLE (UG/L) AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L) AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L) AS CU) (01042)	LEAD, TOTAL RECOV- ERABLE (UG/L) AS PB) (01051)	MERCURY TOTAL RECOV- ERABLE (UG/L) AS HG) (71900)
DEC 14...	1111	7	0	40	88	34	.1
MAR 24...	1024	7	1	20	11	13	.0
JUN 15...	1151	7	1	25	30	23	.0
SEP 14...	1214	9	4	10	11	29	.0

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR- DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI- ELDRIN TOTAL (UG/L) (39380)
AUG 14...	1618	.0	.00	.0	.00	.00	.00	.00
DATE	TIME	ENDO- SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	TOX- APHENE, TOTAL (UG/L) (39400)
AUG 14...		.00	.00	.00	.00	.00	.00	0

## Results of Analysis of Water and Bed Materials for Selected Chlorinated Hydrocarbon Isomers

Date	Time	o-p'-DDE	o-p'-DDD	o-p'-DDT	cis- chlordane	trans- chlordane	α - BHC	Hexachloro- benzene
Aug 14	1618 (w)	0	0	0	0	0	0	0

NOTE: Reporting units are ug/L for water samples (w).  
The lowest detectable limit is 0.01 ug/L for water samples and 0.1 ug/kg for sediment samples.

## RIO GRANDE BASIN

08354800 RIO GRANDE CONVEYANCE CHANNEL AT SAN ACACIA, NM--Continued

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT			
21...	1821	870	7500
NOV			
23...	1001	490	4800
DEC			
14...	1111	920	4400
JAN			
21...	1021	1000	14000
FEB			
17...	1616	340	1000
MAR			
24...	1024	120	1000
APR			
21...	1121	9	64
MAY			
18...	1858	220	610
JUN			
15...	1151	900	780
JUL			
20...	2020	38	95
AUG			
14...	1618	350	580
SEP			
14...	1214	170	1100

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT							
21...	1821	29	17.5	2240	175	9	11
25...	1740	19	19.0	873	45	30	34
NOV							
08...	1710	206	9.0	5080	2830	11	13
23...	1001	485	8.0	9610	12600	9	11
DEC							
14...	1111	1110	1.0	14600	43800	11	13
17...	1500	890	6.0	9700	23300	12	14
JAN							
04...	1655	600	9.0	5350	8670	9	11
21...	1021	628	.0	8560	14500	5	7
MAR							
08...	1640	832	15.0	4430	9950	51	61
MAY							
02...	1715	1310	11.0	7530	26600	28	32
09...	1700	1140	20.0	4480	13800	42	46
15...	1710	1520	24.0	2770	11400	21	25
19...	1858	1700	19.5	5670	26000	28	35
JUN							
03...	1940	1550	23.0	3080	12900	14	17
15...	1151	1120	24.5	2420	7320	21	25
17...	2025	802	25.0	2280	4940	27	33
30...	1815	1660	27.0	5630	25200	31	37
JUL							
02...	1820	1060	26.0	3040	8700	29	37

08354800 RIO GRANDE CONVEYANCE CHANNEL AT SAN ACACIA, NM--Continued

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)	SED. SUSP. FALL DIAM. % FINER THAN 2.00 MM (70347)
OCT							
21...	14	34	56	85	98	100	--
25...	43	81	97	99	100	--	--
NOV							
08...	17	37	72	97	100	--	--
23...	13	32	63	92	98	98	100
DEC							
14...	16	39	74	99	100	--	--
17...	17	37	72	95	99	100	--
JAN							
04...	14	32	70	96	100	--	--
21...	9	19	56	88	100	--	--
MAR							
08...	73	80	84	95	100	--	--
MAY							
02...	45	82	96	100	--	--	--
09...	61	74	89	99	100	--	--
15...	36	63	85	96	100	--	--
19...	42	60	82	95	100	--	--
JUN							
03...	24	41	74	99	100	--	--
15...	32	49	71	96	100	--	--
17...	40	53	72	96	100	--	--
30...	47	71	90	100	--	--	--
JUL							
02...	46	57	74	95	100	--	--

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1160	900	765	766	712	620	733	876	399	605	890	1120
2	1290	995	800	761	718	614	777	617	405	566	1000	1160
3	1260	1080	766	768	722	625	749	580	412	566	962	1130
4	1290	1100	757	740	741	1150	690	655	393	558	958	1150
5	907	1080	755	755	753	870	746	741	392	550	1010	1050
6	1300	1050	749	752	737	748	675	693	385	539	1020	998
7	768	1040	759	762	733	698	694	648	408	563	1020	1080
8	828	1000	760	765	722	590	817	607	383	623	1030	1090
9	826	700	757	764	740	596	822	651	390	679	1040	1080
10	817	1290	751	753	754	600	744	665	406	733	1050	811
11	773	800	750	742	752	641	782	652	409	787	1020	1030
12	807	820	746	744	727	632	860	661	438	794	1040	1090
13	831	760	742	747	744	638	828	543	449	802	1060	1100
14	779	750	659	772	729	597	912	531	478	878	1060	1120
15	794	800	651	720	709	585	918	536	442	993	900	1130
16	794	820	692	720	704	582	918	508	459	864	1090	1120
17	862	750	677	762	732	594	908	504	490	898	1110	1160
18	774	750	746	768	723	608	875	521	494	878	1040	758
19	770	750	770	755	731	620	848	523	477	893	1100	1140
20	750	750	764	720	728	593	885	472	429	932	1080	1120
21	700	720	759	730	735	624	969	483	427	915	1090	1130
22	730	720	782	715	726	623	973	474	426	1010	1060	1120
23	718	740	787	726	764	675	920	480	440	1420	1080	1100
24	820	740	787	732	731	639	946	461	458	1190	1080	1040
25	749	740	824	727	727	635	904	455	459	1030	1130	1050
26	755	730	806	740	730	611	965	442	467	1010	1090	1110
27	787	740	762	752	735	602	924	439	---	1030	1100	1100
28	787	720	799	728	622	622	943	408	455	1000	1140	1110
29	741	840	765	729	---	602	882	411	507	995	1130	711
30	760	832	765	799	---	618	869	401	515	955	1110	718
31	748	---	779	735	---	664	---	422	---	992	1110	---
MEAN	860	850	756	747	728	649	849	550	438	847	1050	1050
WTR YR 1978	MEAN	783	MAX	1420	MIN	383						

## 08354800 RIO GRANDE CONVEYANCE CHANNEL AT SAN ACACIA, NM--Continued

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	13.0	7.0	8.0	11.0	11.0	16.0	16.0	23.0	25.0	23.0	27.0
2	23.0	13.0	8.0	9.5	11.0	13.0	17.0	11.0	22.0	26.0	34.0	22.0
3	18.0	15.0	9.0	9.0	11.0	13.0	20.0	16.0	23.0	25.0	30.0	27.0
4	25.0	15.0	9.0	9.0	11.0	12.0	17.0	17.0	22.0	29.0	25.0	27.0
5	25.0	15.0	10.0	10.0	9.0	10.5	18.5	16.0	21.5	25.0	23.0	29.0
6	20.0	14.0	10.0	8.0	11.0	12.0	18.0	10.0	21.0	25.0	25.0	28.0
7	21.0	10.0	10.0	9.0	11.0	13.0	18.0	15.0	22.0	27.0	22.0	26.0
8	21.0	9.0	8.0	8.0	10.0	15.0	17.0	18.0	24.0	27.0	24.0	30.0
9	20.0	10.0	9.0	7.0	10.0	15.0	16.0	20.0	24.0	28.0	22.0	28.0
10	20.0	7.0	10.0	6.0	12.0	12.0	15.0	21.0	25.0	27.0	30.0	26.0
11	20.0	10.0	9.0	8.0	9.0	12.0	20.0	23.0	25.5	25.0	25.0	23.0
12	18.0	12.0	8.0	8.5	7.0	10.0	21.0	23.0	23.0	26.0	26.0	25.0
13	19.0	12.0	9.0	9.0	9.0	12.0	20.0	23.0	23.0	30.0	36.0	25.0
14	20.0	10.0	1.0	5.0	5.0	12.5	---	22.0	25.0	32.0	25.0	23.0
15	20.0	11.0	9.0	6.0	6.0	---	19.0	24.0	25.0	28.0	22.0	28.0
16	19.0	12.0	5.5	8.0	6.0	14.0	18.5	24.0	26.0	27.0	24.0	26.0
17	20.0	12.0	6.0	8.0	8.0	15.0	17.0	22.0	25.0	28.0	28.0	25.0
18	20.0	11.0	7.0	8.0	9.0	17.0	16.0	22.0	26.0	26.0	24.0	24.0
19	20.0	12.0	6.0	4.0	9.0	18.0	18.0	23.0	27.0	26.0	21.0	23.0
20	18.0	10.0	4.0	4.0	10.5	15.0	21.0	21.0	27.0	25.0	28.0	25.0
21	19.0	10.0	3.0	7.0	11.0	16.0	17.0	25.0	30.0	26.0	30.0	18.0
22	17.0	10.0	5.0	7.0	13.0	15.0	18.0	22.0	27.0	26.0	25.0	18.0
23	20.0	8.0	6.0	7.5	13.0	16.0	20.0	22.0	29.0	23.0	25.0	20.0
24	19.0	9.0	8.0	5.0	14.5	17.0	22.0	22.0	29.0	22.0	24.0	19.0
25	19.0	11.0	7.0	6.0	13.0	17.0	19.0	21.0	28.5	23.0	26.0	19.0
26	17.0	11.0	7.0	8.0	12.0	19.0	22.0	20.0	26.0	30.0	25.0	21.0
27	18.0	10.0	7.0	9.0	13.0	19.0	22.0	22.0	25.0	24.0	25.0	25.0
28	19.0	9.5	7.0	9.5	14.0	17.0	23.0	24.0	19.0	23.0	30.0	25.0
29	15.0	10.0	8.0	10.0	---	20.5	22.0	24.0	22.0	25.0	26.0	27.0
30	19.0	9.0	9.0	10.0	---	18.0	20.0	23.0	27.0	23.0	28.0	23.0
31	17.0	---	10.0	8.0	---	17.0	---	24.0	---	24.0	26.0	---
MEAN	19.5	11.0	7.5	7.5	10.5	15.0	19.0	20.5	25.0	26.0	26.0	24.5
WTR YR 1978	MEAN	17.5	MAX	36.0	MIN	1.0						

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	155	.50	6490	2040	6500	8140	5580	8320	4590	7160	3600	5180
2	370	.95	6220	2490	7370	9570	5020	7400	4680	8290	2960	4320
3	282	.91	4760	1530	6420	8650	5000	7420	4930	8720	3660	5460
4	10000	864	4050	1250	5050	6560	5260	8410	4760	7750	26100	50500
5	12800	449	4140	1270	6800	8680	5880	8940	4630	7210	20300	43700
6	24900	24800	5220	1620	8430	11000	4730	6730	4180	6510	10500	20600
7	20900	13700	4660	1770	6850	8690	4700	6610	4140	6340	5980	11600
8	1080	198	4150	1880	7060	8600	5700	7940	5750	9130	4740	10100
9	1860	261	23800	28200	6960	8870	7250	9980	4770	7730	4210	9180
10	3560	519	47100	50200	6500	8230	6170	8760	3650	6050	3860	6590
11	2980	571	14200	14800	6950	8970	4530	7010	4240	7320	4870	7530
12	1590	322	17100	21800	7000	9110	4500	6610	4130	6880	5200	7970
13	1100	74	14800	22400	8270	15200	4440	6500	4390	7360	3650	5680
14	1400	57	14900	21800	13800	40200	5200	7360	4510	7560	2430	3850
15	1260	41	10700	13500	11400	30100	5730	8400	4550	7580	2070	2410
16	1200	32	7450	8550	10900	29100	5570	10400	3600	5980	1450	1270
17	1820	34	9300	12100	10700	25300	4820	8630	4180	7000	980	767
18	1500	53	10900	13800	10100	17000	5900	8000	4300	6930	1280	947
19	1400	113	10400	14000	7280	10300	6030	9750	3910	6380	800	495
20	1220	102	9690	12800	7380	10200	7340	14000	4270	6950	430	298
21	1560	131	9780	13000	7600	10300	7930	13500	4390	6660	320	139
22	1250	101	9820	14800	7840	9970	7690	13500	3950	5810	303	137
23	748	59	9250	11800	6910	8450	6940	11600	3500	5140	254	69
24	1140	62	8940	10800	6320	7490	6800	10900	3590	5210	298	130
25	1010	55	7460	9570	5510	6140	6980	10900	3720	5320	343	176
26	537	19	7500	10300	5310	5940	5900	8940	3620	5280	326	166
27	579	19	8600	10700	5780	7230	5730	8230	3660	5500	362	247
28	570	17	7840	10100	5710	8080	5400	7870	3880	5490	1420	1000
29	1050	54	6930	8810	4950	6560	5500	7690	---	---	810	475
30	1660	134	6570	8370	4640	6580	5000	6510	---	---	463	220
31	2000	194	---	---	5300	7640	4770	6860	---	---	240	71
TOTAL	---	43037.36	---	356050	---	366850	---	273670	---	189240	---	201277

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM  
(Surveillance network)

LOCATION.--Lat 34°15'23", long 106°53'18", Socorro County, Hydrologic Unit 13020203, in Sevilleta Grant, on right bank 0.2 mi (0.3 km) below San Acacia diversion dam, 0.3 mi (0.5 km) east of San Acacia, 2 mi (3 km) downstream from Rio Salado, and at mile 1,472.6 (2,369.4 km).

DRAINAGE AREA.--26,770 mi<sup>2</sup> (69,330 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1936 to September 1958 (prior to construction of conveyance channel), October 1958 to September 1964 (flow in conveyance channel included), October 1964 to current year. Prior to October 1964 published as "08355000 Rio Grande at San Acacia" and records are not equivalent.

REVISED RECORDS.--WSP 1242: 1951. WSP 1732: 1958(M). WRD 1969: 1967.

GAGE.--Water-stage recorder. Datum of gage is 4,654.50 ft (1,418.692 m) National Geodetic Vertical Datum of 1929. Aug. 19, 1965 to Aug. 15, 1967 at same site at datum 1.89 ft (0.576 m) higher. Prior to Mar. 19, 1953, at several sites 0.1 mi (0.2 km) upstream at different datums. Mar. 19, 1953 to Aug. 19, 1965, at site 0.4 mi (0.6 km) downstream at datum 3.60 ft (1.097 m) higher. Floodway is bypassed by Socorro main canal north and since Oct. 1958, by conveyance channel.

REMARKS.--Water-discharge records poor. Floodway is 1 of 3 channels (stations 08354500, 08354800) carrying flow in valley cross section. For combined monthly flow in acre-ft of floodway, conveyance channel, and Socorro main canal north see tabulation below. Normal plan is for floodway to carry flow when combined capacities of conveyance channel (about 2,000 ft<sup>3</sup>/s or 57 m<sup>3</sup>/s) and Socorro main canal north (about 200 ft<sup>3</sup>/s or 6 m<sup>3</sup>/s) is exceeded, during periods of silt sluicing, and when river silt load is excessive. Diversions above station for irrigation of about 760,000 acres (3,100 km<sup>2</sup>); this includes Socorro main canal north which bypasses station and irrigates about 8,000 acres (32 km<sup>2</sup>).

AVERAGE DISCHARGE.--22 years (water years 1937-58), 1,192 ft<sup>3</sup>/s (33.76 m<sup>3</sup>/s), 863,000 acre-ft/yr (1,060 hm<sup>3</sup>/yr), prior to construction of conveyance channel; does not include Socorro main canal north.

20 years (water years 1959-78), 886 ft<sup>3</sup>/s (25.09 m<sup>3</sup>/s), 641,900 acre-ft/yr (791 hm<sup>3</sup>/yr), combined flow of floodway, conveyance channel and Socorro main canal north.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft<sup>3</sup>/s (776 m<sup>3</sup>/s) Aug. 5, 1936, gage height, 10.75 ft (3.277 m), site and datum then in use; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,750 ft<sup>3</sup>/s (77.9 m<sup>3</sup>/s) May 21, gage height, 8.86 ft (2.701 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	13	.11	.20	3.2	.30	33	41	164	232	4.8	5.4
2	3.9	3.0	.25	.10	1.6	.30	10	649	179	19	4.8	4.1
3	3.6	.75	.20	.11	.10	.20	30	442	73	21	4.4	13
4	9.8	.41	1.2	.11	.05	12	32	188	204	35	6.7	.80
5	9.1	.27	1.5	.10	.05	66	29	818	326	30	6.5	.30
6	100	1.5	.03	.19	.05	78	24	627	389	26	2.0	.10
7	39	3.2	.01	.20	.05	75	20	239	170	20	2.1	.10
8	22	6.3	.01	.20	.05	75	18	276	254	13	22	.10
9	7.1	21	.15	.22	.05	62	17	89	183	12	.88	.20
10	12	3.4	.16	.30	.05	56	24	57	64	10	8.3	.10
11	20	.40	.10	.32	.10	48	19	50	54	6.6	.88	.20
12	15	11	.15	.31	.10	39	15	46	28	2.4	14	.30
13	11	.25	.23	.34	.10	28	11	88	26	1.6	17	.40
14	8.6	.10	.67	.34	.20	23	8.2	1190	38	1.1	4.0	.30
15	7.0	.02	18	.35	.10	22	10	106	31	.85	3.9	.20
16	5.6	.03	.95	.42	.20	16	11	468	32	.62	.30	.20
17	2.2	.03	.82	.56	.20	22	11	358	41	.58	.40	.20
18	3.2	.08	.71	.41	.10	15	12	799	44	.73	.50	.20
19	3.9	.06	.46	.44	.10	18	11	979	45	2.1	1.0	.10
20	2.6	.06	.48	.50	.10	19	11	1210	45	3.3	1.5	.20
21	3.8	.01	.54	.50	.20	15	10	2020	43	1.5	1.9	.20
22	3.7	.09	.44	.50	.20	14	11	1800	27	.94	1.6	.30
23	2.9	.07	.41	.40	.10	14	11	1740	34	24	10	.30
24	.33	.21	.26	.40	.10	28	12	1320	24	289	27	3.8
25	12	.16	.21	.40	.10	20	12	1220	16	335	79	24
26	9.9	.17	.21	.40	.10	24	12	1140	36	252	18	54
27	4.4	.10	.21	.20	.20	16	12	790	31	133	14	68
28	3.0	.11	.33	.20	.20	18	12	853	38	75	7.0	72
29	2.9	.10	.20	.30	---	17	12	719	34	40	8.6	80
30	3.5	.10	.20	1.3	.16	14	14	433	209	26	7.3	72
31	4.7	---	.20	.30	---	11	---	275	---	17	6.7	---
TOTAL	341.43	65.98	118.50	10.62	7.75	867.80	474.2	21030	2882	1631.32	287.06	401.10
MEAN	11.0	2.20	3.82	.34	.28	28.0	15.8	678	96.1	52.6	9.26	13.4
MAX	100	21	67	1.3	3.2	78	33	2020	389	335	79	80
MIN	.33	.01	.01	.10	.05	.20	8.2	41	16	.58	.30	.10
AC-FT	677	131	235	21	15	1720	941	41710	5720	3240	569	796
(†)	10870	24510	34710	35390	35100	37080	15200	146000	88470	25270	8000	5770
CAL YR 1977 TOTAL	13540.73			MEAN 37.1	MAX 3460	MIN .00	AC-FT 26860	(†) MEAN 378	AC-FT 273800			
WTR YR 1978 TOTAL	28117.76			MEAN 77.0	MAX 2020	MIN .01	AC-FT 55770	(†) MEAN 644	AC-FT 466300			

(†) COMBINED FLOW, IN ACRE-FT AND MEAN IN FT<sup>3</sup>/S, OF FLOODWAY, CONVEYANCE CHANNEL, AND SOCORRO MAIN CANAL NORTH.

08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1937-56, 1959 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July to December 1937, March 1939 to September 1956, October 1964 to current year.

WATER TEMPERATURES: October 1947 to August 1956, January 1959 to current year.

SUSPENDED SEDIMENT DISCHARGE: July 1946 to June 1956, January 1959 to current year.

REMARKS.--Additional sediment total discharge determinations were made bi-weekly when needed. When there is insufficient flow to sample 08354800 Rio Grande Conveyance Channel at San Acacia, NM or 08354900 Rio Grande Floodway at San Acacia, NM; samples are taken from 08354500 Socorro Main Canal North at San Acacia, NM.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1937, 1939-56, 1964-78): Maximum daily, 3,700 micromhos July 14, 1940; minimum daily, 236 micromhos May 17, 1942.

WATER TEMPERATURES: Maximum, 34.5°C July 13, 1971; minimum (1947-56, 1959-62, 1964-78), 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 223,000 mg/L Aug. 11 1946; minimum daily, no flow on many days of most years.

SEDIMENT LOADS: Maximum daily, 1,760,000 tons (1,600,000 tonnes) Aug. 12, 1955, minimum daily, 0 tons (0 tonnes) on many days of most years.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,440 micromhos Aug. 25; minimum daily, 385 micromhos May 28.

WATER TEMPERATURES: Maximum, 34.0°C Aug. 2; minimum, 3.0°C Dec. 21.

SEDIMENT CONCENTRATIONS: Maximum daily, 31,500 mg/L Nov. 10; minimum daily, 13 mg/L Feb. 28.

SEDIMENT LOADS: Maximum daily, 22,400 tons (20,300 tonnes) May 21; minimum daily, 0 tons (0 tonnes) on several days in November, December, and February.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
MAY 16...	1515	870	478	8.2	24.0

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
OCT								
11...	1640	10	20.0	1300	35	48	52	64
25...	1725	15	19.0	834	34	34	40	51
NOV								
08...	1655	9.2	9.0	1150	29	53	62	83
13...	1505	20	12.0	11000	5.9	29	33	41
DEC								
13...	1650	47	9.0	6250	793	41	47	61
JAN								
30...	1550	60	10.0	4530	734	12	15	23
MAR								
06...	1545	74	12.0	22800	4560	42	47	58
11...	1645	47	12.0	4230	537	74	88	97
APR								
20...	1730	9.9	21.0	113	3.0	--	--	--
MAY								
02...	1700	783	11.0	6190	13100	28	33	46
05...	1745	760	16.0	5720	11700	43	55	67
09...	1645	22	20.0	1970	117	60	72	89
19...	2002	952	20.0	5980	15400	23	31	38
21...	1330	2330	25.0	4120	25900	36	43	63
JUN								
09...	1955	170	24.0	1080	496	40	48	65
30...	1800	352	27.0	4910	4670	38	43	57
JUL								
03...	1935	37	25.0	1130	113	66	78	90
25...	1045	380	22.0	14800	15200	60	76	93
AUG								
25...	1655	118	26.0	51000	16200	71	86	99
SEP								
03...	1820	70	27.0	7290	14	62	78	98



08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM--Continued

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70333)
OCT							
11...	--	--	--	--	80	96	100
25...	--	--	--	--	78	94	100
NOV							
08...	--	--	--	--	91	98	100
13...	78	97	100	--	--	--	--
DEC							
13...	95	99	100	--	--	--	--
JAN							
30...	79	98	100	--	--	--	--
MAR							
06...	84	97	100	--	--	--	--
11...	100	--	--	--	--	--	--
APR							
20...	--	--	--	--	95	97	100
MAY							
02...	83	99	100	--	--	--	--
05...	89	100	--	--	--	--	--
09...	--	--	--	--	92	95	100
19...	52	75	93	100	--	--	--
21...	92	99	100	--	--	--	--
JUN							
09...	--	--	--	--	91	98	100
30...	90	100	--	--	--	--	--
JUL							
03...	--	--	--	--	94	97	100
25...	--	--	--	--	98	99	100
AUG							
25...	100	--	--	--	--	--	--
SEP							
03...	100	--	--	--	--	--	--

## PARTICLE SIZE OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)
MAY									
16...	1515	870	--	--	1	5	60	95	100
JUL									
25...	1045	380	14800	15200	5	23	91	99	100

## TOTAL SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT DISCH, SUSP. + BED MA- TERIAL (T/DAY) (80156)	STREAM WIDTH (FT) (00004)	STREAM DEPTH, MEAN (FT) (00064)	STREAM VELOC- ITY, MEAN (FPS) (00055)
MAR									
06...	1545	74	12.0	22800	4560	4940	50	.72	2.1
MAY									
02...	1700	783	11.0	6190	13100	15900	125	1.6	3.8
05...	1745	760	16.0	5720	11700	14200	110	1.6	4.4
09...	1645	22	20.0	1970	117	153	24	.44	2.1
JUL									
25...	1045	380	22.0	14800	15200	15900	105	1.1	3.2

08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	784	735	932	872	961	877	691	746	406	618	900	942
2	905	783	894	888	1100	904	725	535	412	567	872	942
3	820	840	902	888	864	918	691	540	423	569	845	1290
4	775	880	742	842	835	1150	642	611	398	555	841	980
5	872	840	909	890	887	871	682	685	398	546	970	848
6	858	830	933	900	867	754	686	648	393	540	1030	828
7	705	800	955	883	968	694	672	627	421	562	1090	801
8	714	800	952	890	961	600	733	571	391	625	811	810
9	711	790	952	876	861	598	734	620	398	665	804	844
10	728	1300	936	915	910	606	693	623	421	745	751	1100
11	738	760	963	902	892	643	708	619	424	781	779	866
12	695	780	986	914	880	638	752	632	460	866	772	880
13	745	760	734	911	895	622	772	500	467	821	811	875
14	746	790	639	872	829	601	831	501	489	846	768	844
15	755	780	854	909	848	592	824	509	466	858	793	811
16	752	800	962	855	842	588	833	481	471	866	830	785
17	763	810	966	860	868	606	841	494	500	886	856	789
18	752	850	918	890	877	616	784	490	514	847	884	1200
19	758	870	922	827	883	624	783	482	491	864	918	803
20	742	920	900	890	870	594	791	447	446	904	916	782
21	705	880	850	892	876	625	829	447	442	876	910	778
22	701	900	875	883	876	619	865	445	455	757	875	765
23	713	925	916	913	890	666	836	445	470	898	812	792
24	755	900	940	915	890	625	813	435	481	1240	812	844
25	650	875	940	918	931	633	839	425	473	765	1440	1420
26	680	905	944	875	895	618	831	416	462	725	900	758
27	710	880	955	910	916	611	830	411	---	803	894	731
28	723	920	880	925	884	633	828	385	484	812	870	740
29	670	945	950	930	---	603	753	388	457	812	887	1130
30	708	937	943	1240	---	621	756	396	515	835	900	1130
31	719	---	957	948	---	667	---	428	---	1010	953	---
MEAN	744	860	906	904	895	678	768	516	449	776	887	904

WTR YR 1978 MEAN 774 MAX 1440 MIN 385

DAY	WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	13.0	7.0	8.0	11.0	11.0	16.0	16.0	23.0	25.0	23.0	27.0
2	23.0	13.0	8.0	9.5	11.0	13.0	17.0	11.0	22.0	26.0	34.0	22.0
3	18.0	15.0	9.0	9.0	11.0	13.0	20.0	16.0	23.0	25.0	30.0	27.0
4	25.0	15.0	9.0	9.0	11.0	12.0	17.0	17.0	22.0	29.0	25.0	27.0
5	25.0	15.0	10.0	10.0	9.0	10.5	18.5	16.0	21.5	25.0	23.0	29.0
6	20.0	14.0	10.0	8.0	11.0	12.0	18.0	10.0	21.0	25.0	25.0	28.0
7	21.0	10.0	10.0	9.0	11.0	---	18.0	15.0	22.0	27.0	22.0	26.0
8	21.0	9.0	10.0	8.0	10.0	15.0	17.0	18.0	24.0	27.0	24.0	30.0
9	20.0	10.0	9.0	7.0	10.0	15.0	16.0	20.0	24.0	28.0	22.0	28.0
10	20.0	7.0	10.0	6.0	12.0	12.0	15.0	21.0	25.0	27.0	30.0	26.0
11	20.0	10.0	9.0	8.0	9.0	12.0	20.0	23.0	25.5	25.0	25.0	23.0
12	18.0	12.0	8.0	8.5	7.0	10.0	12.0	23.0	23.0	26.0	25.0	25.0
13	19.0	12.0	9.0	9.0	9.0	12.0	20.0	23.0	23.0	30.0	26.0	25.0
14	20.0	10.0	9.0	5.5	5.0	12.5	20.0	22.0	25.0	32.0	25.0	23.0
15	20.0	11.0	9.0	6.0	6.0	11.0	19.0	24.0	25.0	28.0	28.0	28.0
16	19.0	12.0	5.5	8.0	6.0	14.0	18.5	24.0	26.0	27.0	24.0	26.0
17	18.0	12.0	6.0	8.0	8.0	15.0	17.0	22.0	25.0	28.0	28.0	25.0
18	20.0	11.0	7.0	8.0	9.0	17.0	16.0	22.0	26.0	26.0	24.0	24.0
19	20.0	12.0	6.0	4.0	9.0	18.0	18.0	23.0	27.0	26.0	21.0	23.0
20	18.0	10.0	4.0	4.0	10.5	15.0	21.0	21.0	27.0	25.0	28.0	25.0
21	19.0	10.0	3.0	7.0	11.0	16.0	17.0	25.0	30.0	26.0	30.0	18.0
22	17.0	10.0	5.0	7.0	13.0	15.0	18.0	22.0	27.0	26.0	25.0	18.0
23	20.0	10.0	6.0	7.5	13.0	16.0	20.0	22.0	29.0	23.0	25.0	20.0
24	19.0	9.0	8.0	5.0	14.5	17.0	22.0	22.0	29.0	22.0	24.0	19.0
25	19.0	11.0	7.0	6.0	13.0	17.0	19.0	21.0	28.5	23.0	26.0	19.0
26	17.0	11.0	7.0	8.0	12.0	19.0	22.0	20.0	26.0	30.0	25.0	21.0
27	18.0	10.0	7.0	9.0	13.0	19.0	22.0	22.0	---	24.0	25.0	25.0
28	19.0	9.5	7.0	9.5	14.0	17.0	23.0	24.0	23.0	23.0	30.0	25.0
29	15.0	10.0	8.0	10.0	---	20.5	22.0	24.0	22.0	25.0	26.0	27.0
30	19.0	9.0	9.0	10.0	---	18.0	20.0	23.0	27.0	23.0	28.0	23.0
31	17.0	---	10.0	8.0	---	17.0	---	24.0	---	24.0	26.0	---
MEAN	19.5	11.0	8.0	7.5	10.5	14.5	18.5	20.5	25.0	26.0	26.0	24.5

WTR YR 1978 MEAN 17.5 MAX 34.0 MIN 3.0

RIO GRANDE BASIN

08354900 RIO GRANDE FLOODWAY AT SAN ACACIA, NM--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)	
	LOADS (T/DAY)		LOADS (T/DAY)		LOADS (T/DAY)		LOADS (T/DAY)		LOADS (T/DAY)		LOADS (T/DAY)	
OCTOBER												
1	1020	13	343	12	146	.04	80	.04	66	.79	22	.02
2	900	9.5	719	5.8	136	.09	68	.02	84	.36	73	.06
3	1130	11	530	1.1	118	.06	69	.02	60	.02	78	.04
4	5940	277	375	.42	600	1.9	75	.02	31	.00	16600	850
5	12100	297	369	.27	660	2.7	50	.01	37	.00	24000	4230
NOVEMBER												
6	14000	8770	785	3.2	57	.00	54	.03	37	.00	20300	4280
7	3380	356	1560	13	50	.00	39	.02	72	.01	6500	1320
8	1460	87	1220	21	43	.00	50	.03	106	.01	3770	763
9	1270	24	13900	1500	40	.02	66	.04	55	.01	3370	564
10	1690	55	31500	289	36	.02	47	.04	63	.01	3160	478
DECEMBER												
11	1680	91	12500	13	28	.01	59	.05	68	.02	3810	494
12	1240	50	8000	238	60	.02	49	.04	57	.02	4480	472
13	1410	42	8000	5.4	2260	337	35	.03	42	.01	3750	283
14	950	22	100	.03	4300	778	60	.06	40	.02	2730	170
15	725	14	80	.00	1050	51	55	.05	63	.02	1930	115
JANUARY												
16	650	9.8	104	.01	325	.83	57	.06	66	.04	1060	46
17	590	3.5	91	.01	255	.56	47	.07	54	.03	985	59
18	600	5.2	97	.02	131	.25	45	.05	47	.01	945	38
19	455	4.8	195	.03	137	.17	65	.08	52	.01	743	36
20	370	2.6	252	.04	93	.12	51	.07	34	.01	445	23
FEBRUARY												
21	325	3.3	220	.01	84	.12	37	.05	22	.01	255	10
22	470	4.7	800	.19	172	.20	43	.06	30	.02	260	9.8
23	490	3.8	177	.03	106	.12	55	.06	26	.01	260	9.8
24	407	.36	92	.05	57	.04	48	.05	34	.01	330	25
25	635	21	67	.03	52	.03	108	.12	37	.01	303	16
MARCH												
26	785	21	75	.03	55	.03	102	.11	22	.01	345	22
27	788	9.4	53	.01	52	.03	64	.03	14	.01	330	14
28	658	5.3	155	.05	80	.07	50	.03	13	.01	1050	51
29	541	4.2	124	.03	83	.04	40	.03	---	---	460	21
30	570	5.4	106	.03	54	.03	37	.02	---	---	395	17
31	513	6.5	---	---	115	.06	82	.07	---	---	254	7.5
TOTAL	---	10229.36	---	2102.79	---	1173.56	---	1.46	---	1.49	---	14424.22
APRIL												
1	1820	162	245	27	1360	602	3470	2850	116	1.5	349	5.1
2	355	9.6	5190	9900	1230	594	1240	64	139	1.8	167	1.8
3	270	22	6140	7330	800	158	1050	60	116	1.4	6150	295
4	438	38	4200	2130	999	573	710	67	290	5.2	684	1.5
5	490	38	5850	12900	1670	1470	593	48	1720	30	518	.42
MAY												
6	492	32	3700	6260	1840	1930	415	29	8300	45	385	.10
7	465	25	2840	1830	840	386	287	15	15600	88	445	.12
8	306	15	2350	1750	1060	769	180	6.3	11700	695	288	.08
9	221	10	2030	488	1110	548	166	5.4	1130	2.7	306	.17
10	324	21	2160	332	720	124	152	4.1	625	14	257	.07
JUNE												
11	279	14	1710	231	535	78	126	2.2	360	.86	350	.19
12	244	9.9	1330	165	1010	76	145	.94	220	8.3	385	.31
13	217	6.4	1990	586	608	43	192	.83	137	6.3	415	.45
14	186	4.1	5910	21400	2770	284	140	.42	150	1.6	383	.31
15	198	5.3	2120	640	1910	160	335	.77	240	2.5	352	.19
JULY												
16	247	7.3	2620	3580	602	52	200	.33	259	.21	345	.19
17	219	6.5	1860	1800	740	82	148	.23	246	.27	417	.23
18	148	4.8	4150	9480	623	74	184	.36	179	.24	290	.16
19	124	3.7	5080	13400	522	63	229	1.3	2600	7.0	285	.08
20	111	3.3	5340	17400	464	56	127	1.1	5790	23	270	.15
AUGUST												
21	124	3.3	4110	22400	400	46	129	.52	3060	16	350	.19
22	114	3.4	4260	20700	357	26	9800	25	1080	4.7	250	.20
23	111	3.3	3900	18300	300	28	4400	285	1030	28	187	.15
24	115	3.7	2920	10400	262	17	22700	17700	1570	114	350	5.9
25	119	3.9	2920	9620	357	15	18200	16500	20000	4270	12300	1420
SEPTEMBER												
26	128	4.1	2940	9050	850	83	1110	755	2460	120	1150	168
27	104	3.4	2680	5720	870	73	490	176	1620	61	430	79
28	108	3.5	3700	8520	510	52	292	59	670	13	289	56
29	143	4.6	2370	4600	770	71	277	30	360	8.4	240	52
30	134	5.1	1970	2300	3320	2450	301	21	420	8.3	205	40
31	---	---	1600	1190	---	---	335	15	471	8.5	---	---
TOTAL	---	476.2	---	224429	---	10983	---	38723.80	---	5586.78	---	2128.06
TOTAL LOAD FOR YEAR: 310259.72 TONS.												

08358300 RIO GRANDE CONVEYANCE CHANNEL AT SAN MARCIAL, NM  
(National stream-quality accounting network, surveillance network, and radiochemical network station)

LOCATION.--Lat 33°41'07", long 106°59'40", Socorro County, Hydrologic Unit 13020203, in Pedro Armendaris Grant No. 34, on right bank 0.4 mi (0.6 km) northwest of Atchison, Topeka and Santa Fe Railway Co. bridge over floodway channel, 1.0 mi (1.6 km) southwest of former site of San Marcial, 3.5 mi (5.6 km) downstream from railroad bridge near Tiffany siding, and 51 mi (82 km) downstream from heading at San Acacia.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to September 1959, October 1969 to current year. Prior to October 1964 monthly discharge only published with record for Rio Grande at San Marcial (station 08358500).

GAGE.--Water-stage recorder. Datum of gage is 4,454.00 ft (1,357.579 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Apr. 29, 1958, at datum 4.19 ft (1.277 m) higher.

REMARKS.--Water-discharge records good. Original design and plan was for conveyance channel to carry all flows up to about 2,000 ft<sup>3</sup>/s (57 m<sup>3</sup>/s). Conveyance channel is 1 of 2 channels (station 08358400) carrying flow in valley cross section. For combined monthly flow in acre-ft of this channel and floodway see tabulation below daily table for station 08358400.

EXTREMES FOR PERIOD OF RECORD (SINCE 1954).--Maximum daily discharge, 2,200 ft<sup>3</sup>/s (62.3 m<sup>3</sup>/s) May 14, 1966; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	32
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	25
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	21
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	18
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	15
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	13
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	11
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.6
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.1
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.6
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.6
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	2.1
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	1.7
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.44	1.7
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.80	1.7
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	2.1
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	1.9
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	1.4
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	1.4
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	1.2
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	1.2
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.44	1.4
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1	1.9
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	36	2.1
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	27	2.3
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	28	2.6
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	34	3.2
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	40	5.1
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	42	10
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	40	12
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	36	.00
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	287.53	217.9
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	9.28	7.26
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	42	32
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	570	432
CAL YR 1977	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	.00	AC-FT	.00		
WTR YR 1978	TOTAL	505.43	MEAN	1.38	MAX	42	MIN	.00	AC-FT	1000		

08358300 RIO GRANDE CONVEYANCE CHANNEL AT SAN MARCIAL, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1954 to current year.

WATER TEMPERATURES: March 1954 to current year.

SUSPENDED SEDIMENT DISCHARGE: March 1954 to current year.

REMARKS.--No flow Oct. 1 to Aug. 13.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,860 micromhos Oct. 25, 1956; minimum daily, 353 micromhos Jan. 8, 1963.

WATER TEMPERATURES: Maximum, 35.0°C on several days during 1955, 1963, and 1971; minimum, 0.0°C on many days during December and January of most years.

SEDIMENT CONCENTRATIONS: Maximum daily, 144,000 mg/L Sept. 19, 1971; minimum daily, no flow on many days during most years.

SEDIMENT LOADS: Maximum daily, 638,000 tons (579,000 tonnes) Aug. 28 1972; minimum daily, 0 tons (0 tonnes) on many days during most years.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,440 micromhos Sept. 13, 14; minimum daily, 633 micromhos Aug. 29.

WATER TEMPERATURES: Maximum, 25.0°C Aug. 17, Sept. 23, 29, 30; minimum, 18.0°C Sept. 24.

SEDIMENT CONCENTRATIONS: Maximum daily, 309 mg/L Aug. 22; minimum daily, no flow on many days.

SEDIMENT LOADS: Maximum daily, 11 tons (10 tonnes) Aug. 24, 27; minimum daily, 0 tons (0 tonnes) on many days.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCTANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	HARD- NESS (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
AUG												
17...	1441	.20	1320	7.8	35.5	25.0	5.3	9.4	17	370	110	24
22...	1420	.44	1140	7.8	--	24.0	7.7	--	--	--	--	--
29...	1745	41	633	8.0	--	23.0	9.1	--	--	--	--	--
SEP												
04...	1210	18	681	8.0	--	23.0	9.0	--	--	--	--	--
10...	1230	6.2	1430	8.0	--	25.0	12	--	--	--	--	--
11...	1640	2.1	1410	8.2	34.0	23.5	6.2	8.9	20	430	130	26
17...	1015	2.1	1410	8.0	--	22.5	28	--	--	--	--	--
24...	1030	2.1	1090	8.0	--	18.0	19	--	--	--	--	--
DATE		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
AUG												
17...	140	3.2	8.9	250	280	96	.6	23	869	.00	.02	
22...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	--	--	--	--	--	--	--	--	--	--	.03	--
10...	--	--	--	--	--	--	--	--	--	--	.02	--
11...	160	3.4	8.8	270	340	120	.6	21	999	.02	.01	
17...	--	--	--	--	--	--	--	--	--	--	.01	--
24...	--	--	--	--	--	--	--	--	--	--	.01	--
DATE		NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
AUG												
17...	.02	1.5	1.5	.11	.06	240	<10	--	7.3	7.3	.9	
22...	.02	.70	.72	.11	--	--	--	--	--	--	--	--
29...	.07	.64	.74	.23	--	--	--	--	--	--	--	--
SEP												
04...	.02	.56	.61	.08	--	--	--	--	--	--	--	--
10...	.01	.53	.56	.11	--	--	--	--	--	--	--	--
11...	.01	12	12	.08	.04	240	20	280	--	11	1.2	
17...	.00	.69	.70	.10	--	--	--	--	--	--	--	--
24...	.01	.50	.52	.08	--	--	--	--	--	--	--	--

08358300 RIO GRANDE CONVEYANCE CHANNEL AT SAN MARCIAL, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
AUG 17...	1441	--	--	--	--	240	--	--	--	--
SEP 11...	1640	6	3	0	100	240	1	0	10	10

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
AUG 17...	--	--	--	--	--	<10	--	--	--	--
SEP 11...	0	0	5	1	550	20	14	4	380	280

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
AUG 17...	--	--	12	--	--	--	--	--	--
SEP 11...	.2	.2	16	0	0	0	0	10	10

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
AUG 17...	1441	360	130
SEP 11...	1640	49	35

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE	AUG 17, 78	SEP 11, 78
TIME	1441	1640
TOTAL CELLS/ML	5400	3400
DIVERSITY: DIVISION	1.5	1.2
..CLASS	1.5	1.2
..ORDER	2.5	2.0
...FAMILY	2.9	2.3
....GENUS	3.2	2.7

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)				
..CHLOROPHYCEAE				
...CHLOROCOCCALES				
...MICRACTINIACEAE				
....GOLENKINIA	--	-	31	1
...OOCYSTACEAE				
....ANKISTRODESMUS	77	1	62	2
....SELENASTRUM	--	-	31	1
...SCENEDESMACEAE				
....SCENEDESMUS	260	5	370	11
...VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CARTERIA	330	6	340	10
....CHLAMYDOMONAS	130	2	340	10
...ZYGNEMATALES				
...DESMIDIACEAE				
....CLOSTERIUM	77	1	--	-
....STAUSTRUM	*	0	--	-
CHRYSOPHYTA				
..BACILLARIOPHYCEAE				
...CENTRALES				
...COSCINODISCACEAE				
...CYCLOTELLA	900#	17	1600#	48
...MELOSIRA	230	4	--	-
...PENNALES				
...CYMBELLACEAE				
...CYMBELLA	*	0	--	-
...FRAGILARIACEAE				
....SYNEDRA	*	0	31	1
...NAVICULACEAE				
....GYROSIGMA	--	-	31	1
...NAVICULA	100	2	120	4
...NEIDIUM	--	-	120	4
...NITZSCHIACEAE				
...NITZSCHIA	540	10	150	5
CRYPTOPHYTA (CRYPTOMONADS)				
..CRYPTOPHYCEAE				
...CRYPTOMONIDALES				
...CRYPTOMONODACEAE				
....CRYPTOMONAS	--	-	92	3
CYANOPHYTA (BLUE-GREEN ALGAE)				
..CYANOPHYCEAE				
...CHROCOCCOCCALES				
...CHROCOCCOCCAEAE				
....ANACYSTIS	750	14	--	-
...HORMOGONALES				
...NOSTOCACEAE				
....ANABAENA	1500#	28	--	-
...OSCILLATORIACEAE				
...OSCILLATORIA	360	7	--	-
EUGLENOPHYTA (EUGLENIDS)				
..EUGLENOPHYCEAE				
...EUGLENALES				
...EUGLENACEAE				
....EUGLENA	*	0	62	2
....TRACHELOMONAS	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08358300 RIO GRANDE CONVEYANCE AT SAN MARCIAL, NM--Continued

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
AUG 17...	1441	.20	25.0	28	.02	63
SEP 12...	1640	2.2	23.5	34	.20	85

## SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											---	1300
2											---	1340
3											---	1350
4											---	1330
5											---	---
6											---	---
7											---	---
8											---	---
9											---	---
10											---	1330
11											---	1380
12											---	1270
13											---	1440
14											---	1440
15											---	1390
16											---	1380
17											1330	1380
18											---	1430
19											---	1370
20											1340	1330
21											1330	1260
22											1300	1330
23											1110	1250
24											1100	1090
25											1380	1350
26											1100	1360
27											1360	1310
28											1210	1230
29											1230	1240
30											1150	1240
31											1290	---
MEAN											1250	1320
WTR YR 1978	MEAN	1300					MIN	1090				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR



## RIO GRANDE BASIN

08358300 RIO GRANDE CONVEYANCE AT SAN MARCIAL, NM--Continued

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											---	22.5
2											---	24.5
3											---	24.0
4											---	24.5
5											---	---
6											---	---
7											---	---
8											---	---
9											---	---
10											---	24.0
11											---	24.0
12											---	24.5
13											---	24.0
14											---	24.0
15											---	24.0
16											---	23.5
17											25.0	24.0
18											---	20.0
19											---	23.0
20											24.5	23.0
21											23.0	22.5
22											22.5	23.0
23											20.0	25.0
24											22.0	24.0
25											22.5	23.0
26											24.5	23.5
27											24.0	23.0
28											22.0	23.0
29											22.0	25.0
30											19.0	25.0
31											22.0	---
MEAN											22.5	23.5
WTR YR 1978	MEAN	23.5		MAX	25.0		MIN	19.0				

08358300 RIO GRANDE CONVEYANCE AT SAN MARCIAL, NM--Continued  
 SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
2	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
3	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
4	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
5	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
6	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
7	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
8	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
9	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
10	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
11	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
12	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
13	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
14	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
15	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
16	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
17	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
18	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
19	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
20	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
21	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
22	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
23	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
24	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
25	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
26	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
27	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
28	0	.00	0	.00	0	.00	0	.00	0	.00	0	.00
29	0	.00	0	.00	0	.00	0	.00	---	---	0	.00
30	0	.00	0	.00	0	.00	0	.00	---	---	0	.00
31	0	.00	---	---	0	.00	0	.00	---	---	0	.00
TOTAL	---	0.00	---	0.00	---	0.00	---	0.00	---	0.00	---	0.00
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	0	.00	0	.00	0	.00	0	.00	0	.00	73	6.3
2	0	.00	0	.00	0	.00	0	.00	0	.00	68	4.6
3	0	.00	0	.00	0	.00	0	.00	0	.00	68	3.9
4	0	.00	0	.00	0	.00	0	.00	0	.00	53	2.6
5	0	.00	0	.00	0	.00	0	.00	0	.00	32	1.3
6	0	.00	0	.00	0	.00	0	.00	0	.00	23	.81
7	0	.00	0	.00	0	.00	0	.00	0	.00	20	.59
8	0	.00	0	.00	0	.00	0	.00	0	.00	18	.47
9	0	.00	0	.00	0	.00	0	.00	0	.00	16	.35
10	0	.00	0	.00	0	.00	0	.00	0	.00	98	1.5
11	0	.00	0	.00	0	.00	0	.00	0	.00	112	.79
12	0	.00	0	.00	0	.00	0	.00	5	.00	135	.77
13	0	.00	0	.00	0	.00	0	.00	16	.00	139	.64
14	0	.00	0	.00	0	.00	0	.00	54	.06	145	.67
15	0	.00	0	.00	0	.00	0	.00	84	.18	147	.67
16	0	.00	0	.00	0	.00	0	.00	45	.06	159	.90
17	0	.00	0	.00	0	.00	0	.00	23	.01	156	.80
18	0	.00	0	.00	0	.00	0	.00	48	.01	205	.77
19	0	.00	0	.00	0	.00	0	.00	69	.02	192	.73
20	0	.00	0	.00	0	.00	0	.00	106	.14	185	.60
21	0	.00	0	.00	0	.00	0	.00	172	.09	163	.53
22	0	.00	0	.00	0	.00	0	.00	309	.37	166	.63
23	0	.00	0	.00	0	.00	0	.00	111	.33	143	.73
24	0	.00	0	.00	0	.00	0	.00	110	11	104	.59
25	0	.00	0	.00	0	.00	0	.00	64	4.7	93	.58
26	0	.00	0	.00	0	.00	0	.00	96	7.3	81	.57
27	0	.00	0	.00	0	.00	0	.00	116	11	80	.69
28	0	.00	0	.00	0	.00	0	.00	71	7.7	62	.85
29	0	.00	0	.00	0	.00	0	.00	49	5.6	72	1.9
30	0	.00	0	.00	0	.00	0	.00	87	9.4	76	2.5
31	---	---	0	.00	---	---	0	.00	89	8.7	---	---
TOTAL	---	0.00	---	0.00	---	0.00	---	0.00	---	66.67	---	39.33
TOTAL LOAD FOR YEAR:		106.00		TONS.								

08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM  
(National stream-quality accounting network, surveillance network, and radiochemical network station)

LOCATION.--Lat 33°40'50", long 106°59'30", Socorro County, Hydrologic Unit 13020203, in Pedro Armendaris Grant No. 33, on pier of the Atchison, Topeka, and Santa Fe Railway Co. bridge, 1.1 mi (1.8 km) downstream from former site of San Marcial, 18.5 mi (29.8 km) southwest of San Antonio, and at mile 1,425.2 (2,293.1 km).

DRAINAGE AREA.--27,700 mi<sup>2</sup> (71,740 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year. Records collected at this site January 1895 to September 1964 represented total flow of the river and were published as Rio Grande at San Marcial (station 08358500). Records of daily discharge for floodway only April 1950 to September 1964 are available in files of district office.

GAGE.--Water-stage recorder. Datum of gage is 4,455.19 ft (1,357.942 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Floodway is 1 of 2 channels (station 08358300) carrying flow in valley cross section. Prior to 1950 all flow was in floodway channel. Normal plan is for floodway to carry flow when capacity of conveyance channel (about 2,000 ft<sup>3</sup>/s or 57 m<sup>3</sup>/s) is exceeded. Combined monthly discharge in acre-ft is given at end of each year table. Diversion for irrigation of about 775,000 acres (3,100 km<sup>2</sup>) above station (includes about 13,800 acre-ft or 17.0 hm<sup>3</sup> diverted from conveyance channel, as based on weekly measurements, data furnished by Bureau of Reclamation).

AVERAGE DISCHARGE.--14 years (water years 1965-78), 296 ft<sup>3</sup>/s (8.383 m<sup>3</sup>/s), 214,500 acre-ft/yr (264 hm<sup>3</sup>/yr).

Total flow of river.--83 years (water years 1895-78), 1,225 ft<sup>3</sup>/s (34.69 m<sup>3</sup>/s), 887,500 acre-ft/yr (1,094 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, since January 1895 about 50,000 ft<sup>3</sup>/s (1,420 m<sup>3</sup>/s) Oct. 11, 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,130 ft<sup>3</sup>/s (88.6 m<sup>3</sup>/s) May 22, gage height, 11.48 ft (3.499 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	170	472	554	616	654	267	75	1880	1880	.27	.00
2	58	225	500	589	678	658	259	207	1880	1580	.00	.00
3	51	174	527	568	722	627	211	1580	1840	1110	.00	.00
4	54	153	525	625	689	716	277	1890	1760	750	.00	.00
5	29	142	493	641	641	855	319	1800	1860	551	.00	.00
6	47	153	497	567	613	832	295	1980	1900	536	.00	.00
7	244	159	486	528	615	749	358	1980	1990	418	.00	.00
8	158	196	469	554	615	764	309	1770	1840	359	.00	.00
9	108	226	481	539	655	857	190	1710	1870	255	.00	.00
10	110	417	482	542	658	694	150	1270	1710	233	.00	.00
11	109	377	506	572	718	596	169	1370	1440	203	.00	.00
12	106	389	504	575	661	537	108	1060	1380	154	.00	.00
13	90	470	576	567	673	528	74	818	1280	102	.00	.00
14	78	507	923	551	670	586	75	999	1020	70	.00	.00
15	74	462	922	557	673	578	102	1900	1200	62	.00	.00
16	88	425	883	558	646	480	107	1600	1300	41	.00	.00
17	88	441	877	762	660	432	117	1830	1170	33	.00	.00
18	87	450	734	510	657	451	108	1850	856	31	.00	.00
19	81	491	560	498	666	341	99	2140	786	37	.00	.00
20	99	508	558	685	672	342	121	2230	918	34	.00	.00
21	92	467	606	620	661	379	90	2360	1050	30	.00	.00
22	102	533	593	636	587	281	75	2910	1060	13	.00	.00
23	97	495	565	612	566	285	66	2760	959	11	.00	.00
24	106	475	544	642	558	222	77	2710	948	21	17	.00
25	101	475	513	610	587	287	103	2530	768	90	2.8	.00
26	97	494	493	570	569	342	68	2530	806	144	.08	.00
27	91	467	545	571	574	383	58	2460	898	99	13	.00
28	71	459	601	563	593	368	50	2250	856	29	2.5	.00
29	66	432	576	595	---	329	37	2330	880	11	.11	.00
30	93	473	585	512	---	314	41	2150	1200	6.1	.00	.00
31	145	---	578	540	---	275	---	1950	---	2.0	.00	---
TOTAL	2893	11305	18174	18013	17893	15742	4380	56999	39305	8895.1	35.76	.00
MEAN	93.3	377	586	581	639	508	146	1839	1310	287	1.15	.000
MAX	244	533	923	762	722	857	358	2910	1990	1880	17	.00
MIN	29	142	469	498	558	222	37	75	768	20	.00	.00
AC-FT	5740	22420	36050	35730	35490	31220	8690	113100	77960	17640	71	.00
(†)	5740	22420	36050	35730	35490	31220	8690	113100	77960	17640	641	432
CAL YR 1977 TOTAL	113110.10			MEAN 310	MAX 2520	MIN .00	AC-FT 224400	(†) MEAN 310	AC-FT 224400			
WTR YR 1978 TOTAL	193634.86			MEAN 531	MAX 2910	MIN .00	AC-FT 384100	(†) MEAN 532	AC-FT 385100			

(†) COMBINED FLOW, IN ACRE-FT AND MEAN, IN FT<sup>3</sup>/S, OF FLOODWAY AND CONVEYANCE CHANNEL.

08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1905-07, 1946 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1905 to April 1907, July 1946 to current year.

WATER TEMPERATURES: January 1949 to current year.

SUSPENDED SEDIMENT DISCHARGE: July 1946 to current year.

REMARKS.--Records of chemical analyses and sediment discharge for years prior to 1946 have been published in Water Bulletins of International Boundary and Water Commission. No flow Oct. 3 to Nov. 2, Nov. 8 to Dec. 17. Additional sediment total load determinations were made bi-weekly when needed.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,730 micromhos Apr. 8, 1953; minimum daily, 293 micromhos June 20, 1967.

WATER TEMPERATURES: Maximum, 36.0°C Aug. 11, 1951; minimum, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 135,000 mg/L July 23, 1977; minimum daily, no flow on many days each year.

SEDIMENT LOADS: Maximum daily, 966,000 tons (876,000 tonnes) Oct. 22, 1957; minimum daily, 0 tons (0 tonnes) many days each year.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,650 micromhos Aug. 26; minimum daily, 410 micromhos June 6.

WATER TEMPERATURES: Maximum, 34.5°C July 18; minimum, 0.5°C Dec. 27.

SEDIMENT CONCENTRATIONS: Maximum daily, 131,000 mg/L Aug. 27; minimum daily, no flow on many days.

SEDIMENT LOADS: Maximum daily, 65,900 tons (59,800 tonnes) Nov. 10; minimum daily, 0 tons (0 tonnes) on many days.

## 08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTANT- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT										
03...	1420	51	1080	--	--	20.0	420	--	--	--
11...	1505	104	913	--	--	19.0	750	--	--	--
17...	1300	88	940	--	--	20.5	340	--	--	--
19...	0915	83	980	8.0	--	10.0	--	--	--	--
19...	1414	83	1020	8.2	26.5	17.5	280	--	8.8	42
NOV										
01...	1010	170	1010	--	--	12.0	500	--	--	--
07...	0950	196	1170	8.4	--	11.0	490	--	--	--
14...	0620	513	802	--	--	7.5	2600	--	--	--
21...	1000	460	856	8.0	--	8.0	850	--	--	--
22...	1331	540	840	8.1	21.5	10.0	1300	--	10.2	83
28...	0610	459	797	8.1	--	7.0	800	--	--	--
DEC										
05...	0610	493	818	8.1	--	5.5	400	--	--	--
12...	1030	502	776	7.9	--	6.0	--	--	--	--
12...	1414	502	850	8.1	18.5	4.0	750	--	12.5	38
13...	0625	545	808	8.1	--	4.5	500	--	--	--
13...	1245	556	648	7.8	--	7.5	--	--	--	--
20...	0620	570	782	8.0	--	3.0	750	--	--	--
27...	0955	545	827	8.3	--	.5	500	--	--	--
JAN										
03...	1500	596	805	7.9	--	8.0	600	--	--	--
03...	1615	570	789	7.9	--	8.0	--	--	--	--
10...	0615	561	779	8.0	--	4.5	540	--	--	--
17...	1341	757	780	8.1	8.0	3.0	900	--	11.1	98
18...	0620	575	763	8.0	--	3.5	550	--	--	--
20...	1330	706	739	8.1	--	4.0	--	--	--	--
24...	1245	645	766	8.1	--	5.0	--	500	--	--
FEB										
01...	1545	589	772	8.1	--	11.0	--	380	--	--
02...	1545	658	733	8.2	--	9.5	--	--	--	--
06...	1030	624	778	8.0	--	7.5	--	400	--	--
13...	0610	680	754	8.2	--	4.0	--	400	--	--
14...	1414	638	747	8.2	4.0	7.0	400	--	10.2	30
22...	0610	575	735	8.2	--	5.0	--	320	--	--
MAR										
01...	1420	659	685	8.2	--	10.0	--	300	--	--
06...	0605	918	859	8.9	--	7.0	--	7600	--	--
07...	1600	723	777	8.4	--	12.0	--	--	--	--
15...	0610	722	741	7.9	--	7.0	--	1600	--	--
20...	1414	350	730	8.1	23.0	16.0	370	--	9.0	35
20...	1630	345	728	8.0	--	13.0	--	380	--	--
21...	1245	420	737	8.2	--	14.0	--	--	--	--
28...	1045	390	720	8.0	--	16.0	--	260	--	--
APR										
03...	1615	232	868	8.0	--	19.0	--	250	--	--
05...	1010	353	763	8.4	--	14.0	--	--	--	--
11...	0605	169	896	8.1	--	10.0	--	170	--	--
17...	1400	89	950	8.3	23.0	19.5	120	--	8.1	42
17...	1615	87	975	8.4	--	19.0	--	--	--	--
17...	1645	112	969	8.1	--	18.0	--	100	--	--
25...	0645	99	1050	8.2	--	14.0	--	85	--	--
MAY										
01...	1530	89	1110	7.9	--	17.0	--	120	--	--
01...	1700	92	1100	8.4	--	17.0	--	--	--	--
08...	1415	1650	638	7.8	--	16.0	--	1200	--	--
15...	1515	2230	550	8.1	30.5	20.5	2200	--	8.0	270
15...	1830	1830	538	7.6	--	19.5	--	620	--	--
17...	1300	1940	490	8.3	--	20.0	--	--	--	--
24...	1240	2780	481	7.4	--	19.5	--	1300	--	--
31...	1320	1940	429	7.8	--	19.0	--	610	--	--
JUN										
02...	1530	1830	439	7.9	--	22.0	--	--	--	--
06...	1000	1880	410	8.0	--	19.0	--	310	--	--
12...	1551	1370	463	8.2	30.0	24.0	--	540	6.9	26
14...	0620	1060	498	7.8	--	18.0	--	17	--	--
19...	1245	906	553	8.2	--	22.0	--	--	--	--
20...	0635	756	517	7.8	--	17.5	--	280	--	--
27...	0620	892	567	7.1	--	19.0	--	120	--	--
29...	1000	977	515	7.1	--	15.0	--	--	--	--
JUL										
03...	0610	1160	661	8.0	--	15.5	--	2200	--	--
10...	1445	239	785	8.4	--	25.0	--	--	--	--
12...	0645	146	794	8.3	--	19.0	--	95	--	--
17...	0645	35	577	8.2	--	19.0	--	20	--	--
18...	1441	33	945	8.3	38.0	34.5	--	33	6.4	21
25...	0645	78	845	8.3	--	20.0	--	40	--	--
27...	1515	102	774	8.4	--	31.0	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)
OCT										
03...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	300	130	90	18	100	2.5	7.2	210	0	170
NOV										
01...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
22...	250	69	77	14	79	2.2	5.8	220	0	180
28...	--	--	--	--	--	--	--	--	--	--
DEC										
05...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	230	59	71	13	78	2.2	5.9	210	0	170
13...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
JAN										
03...	--	--	--	--	--	--	--	--	--	--
03...	240	64	73	13	79	2.2	5.6	210	0	170
10...	--	--	--	--	--	--	--	--	--	--
17...	230	62	69	13	65	1.9	5.5	200	0	160
18...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
FEB										
01...	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
14...	220	59	68	13	74	2.2	5.3	200	0	160
22...	--	--	--	--	--	--	--	--	--	--
MAR										
01...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
20...	220	49	69	12	75	2.2	6.1	210	0	170
20...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
APR										
03...	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
17...	280	80	86	17	100	2.6	6.9	250	0	210
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
15...	190	63	58	10	43	1.4	5.2	150	0	120
15...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
JUN										
02...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--
12...	150	--	45	8.8	39	1.4	4.0	--	--	120
14...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
JUL										
03...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
18...	280	--	85	16	90	2.3	6.3	--	--	190
25...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	SULFATE DIS- SOLVED (MG/L) AS S04	CHLORIDE, DIS- SOLVED (MG/L) AS CL	FLUORIDE, DIS- SOLVED (MG/L) AS F	SILICA, DIS- SOLVED (MG/L) AS SiO2	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUB- PENDED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L) AS N	NITROGEN, NO2+NO3 DIS- SOLVED (MG/L) AS N	NITROGEN, AMMONIA TOTAL (MG/L) AS N
DATE	(00945)	(00940)	(00950)	(00955)	(70300)	(70301)	(00530)	(00630)	(00631)	(00610)
OCT										
03...	--	--	--	--	--	--	--	.14	--	.00
11...	--	--	--	--	--	--	--	.41	--	.01
17...	--	--	--	--	--	--	--	.23	--	.00
19...	--	--	--	--	--	--	--	--	--	--
19...	220	67	.7	28	672	636	450	.12	.23	.04
NOV										
01...	--	--	--	--	--	--	--	.10	--	.00
07...	--	--	--	--	--	--	--	.10	--	.05
14...	--	--	--	--	--	--	--	.58	--	.09
21...	--	--	--	--	--	--	--	.57	--	.04
22...	160	45	.7	28	513	522	--	.60	.56	.11
28...	--	--	--	--	--	--	--	.75	--	.14
DEC										
05...	--	--	--	--	--	--	--	.58	--	.14
12...	--	--	--	--	--	--	--	--	--	--
12...	170	47	.7	27	513	520	--	.73	.63	.14
13...	--	--	--	--	--	--	--	.66	--	.09
13...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	.54	--	.00
27...	--	--	--	--	--	--	--	.43	--	.45
JAN										
03...	--	--	--	--	--	--	--	.83	--	.14
03...	160	52	.6	26	--	520	--	--	1.1	--
10...	--	--	--	--	--	--	--	.78	--	.19
17...	130	40	.7	25	444	452	--	.15	.91	.09
18...	--	--	--	--	--	--	--	.73	--	.03
20...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	.76	--	.01
FEB										
01...	--	--	--	--	--	--	--	.95	--	.06
02...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	.03	--	.01
13...	--	--	--	--	--	--	--	.95	--	.04
14...	140	50	.6	26	465	481	--	1.0	.93	.01
22...	--	--	--	--	--	--	--	.78	--	.00
MAR										
01...	--	--	--	--	--	--	--	.81	--	.02
06...	--	--	--	--	--	--	--	.99	--	.02
07...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	.74	--	.01
20...	150	40	.6	22	464	482	--	.76	.71	.05
20...	--	--	--	--	--	--	--	.74	--	.01
21...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	.58	--	.05
APR										
03...	--	--	--	--	--	--	--	.48	--	.03
05...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	.34	--	.04
17...	190	73	.6	25	616	624	--	.23	.27	.10
17...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	.25	--	.01
25...	--	--	--	--	--	--	--	.14	--	.03
MAY										
01...	--	--	--	--	--	--	--	.09	--	.05
01...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	.54	--	.02
15...	120	20	.5	19	345	352	357	.52	.43	.03
15...	--	--	--	--	--	--	--	.46	--	.01
17...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	.54	--	.01
31...	--	--	--	--	--	--	--	.51	--	.01
JUN										
02...	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	.44	--	.06
12...	88	23	.4	20	311	300	--	.53	.48	.01
14...	--	--	--	--	--	--	--	.53	--	.06
19...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	2.8	--	1.8
27...	--	--	--	--	--	--	--	.55	--	.01
29...	--	--	--	--	--	--	--	--	--	--
JUL										
03...	--	--	--	--	--	--	--	.65	--	<3.0
10...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	.01	--	.16
17...	--	--	--	--	--	--	--	.00	--	.07
18...	200	67	.5	24	611	603	--	.08	.02	.01
25...	--	--	--	--	--	--	--	.01	--	.01
27...	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT										
03...	.91	1.1	.53	--	--	--	--	--	--	--
11...	1.3	1.7	1.1	--	--	--	--	--	--	--
17...	1.4	1.6	.53	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	.83	.99	.51	.14	200	10	--	6.2	2.9	3.5
NOV										
01...	1.3	1.4	.81	--	--	--	--	--	--	--
07...	.92	1.1	.62	--	--	--	--	--	--	--
14...	4.1	4.8	8.5	--	--	--	--	--	--	--
21...	1.7	2.3	1.9	--	--	--	--	--	--	--
22...	2.5	3.2	2.2	.31	180	20	--	22	2.9	13
28...	2.0	2.9	5.8	--	--	--	--	--	--	--
DEC										
05...	1.5	2.2	.92	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	1.5	2.3	1.8	.40	180	30	10	--	3.0	1.6
13...	1.4	2.2	6.1	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
20...	1.8	2.3	1.4	--	--	--	--	--	--	--
27...	1.1	1.9	1.5	--	--	--	--	--	--	--
JAN										
03...	1.3	2.2	2.2	--	--	--	--	--	--	--
03...	--	--	2.1	.58	180	10	--	--	--	--
10...	1.3	2.3	.97	--	--	--	--	--	--	--
17...	.02	.26	2.0	.45	150	20	--	19	2.5	>5.0
18...	1.5	2.2	1.2	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
24...	.99	1.8	.97	--	--	--	--	--	--	--
FEB										
01...	1.0	2.1	1.0	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--
06...	.52	.56	.93	--	--	--	--	--	--	--
13...	.57	1.6	.96	--	--	--	--	--	--	--
14...	.60	1.6	1.5	.46	160	20	10	--	2.3	7.4
22...	1.1	1.9	.85	--	--	--	--	--	--	--
MAR										
01...	.31	1.1	.70	--	--	--	--	--	--	--
06...	.95	2.0	3.8	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
15...	3.0	3.7	1.6	--	--	--	--	--	--	--
20...	.84	1.7	.83	.31	150	10	--	10	2.9	4.4
20...	.84	1.6	.79	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
28...	.86	1.5	.75	--	--	--	--	--	--	--
APR										
03...	.71	1.2	.30	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
11...	.76	1.1	.54	--	--	--	--	--	--	--
17...	.84	1.2	.42	.23	200	10	--	5.2	2.4	4.1
17...	--	--	--	--	--	--	--	--	--	--
17...	.77	1.0	.42	--	--	--	--	--	--	--
25...	.64	.81	.34	--	--	--	--	--	--	--
MAY										
01...	.71	.85	1.2	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--
08...	2.7	3.2	1.7	--	--	--	--	--	--	--
15...	6.6	7.1	2.4	.13	110	30	--	35	4.1	26
15...	1.3	1.8	.95	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
24...	3.0	3.5	1.2	--	--	--	--	--	--	--
31...	1.5	2.0	.99	--	--	--	--	--	--	--
JUN										
02...	--	--	--	--	--	--	--	--	--	--
06...	1.0	1.5	.88	--	--	--	--	--	--	--
12...	1.6	2.1	.94	.18	90	10	0	--	3.8	10
14...	2.4	3.0	.23	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
20...	2.0	6.6	.61	--	--	--	--	--	--	--
27...	.89	1.5	.37	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--
JUL										
03...	1.0	4.7	2.0	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
12...	.51	.68	.31	--	--	--	--	--	--	--
17...	.43	.50	.13	--	--	--	--	--	--	--
18...	.38	.47	.15	.10	180	50	--	8.1	3.2	1.0
25...	.66	.68	.14	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--



## 08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
OCT										
19...	1414	--	--	--	--	200	--	--	--	--
NOV										
22...	1331	--	--	--	--	180	--	--	--	--
DEC										
12...	1414	24	4	600	100	180	--	1	40	0
JAN										
17...	1341	--	--	--	--	150	--	--	--	--
FEB										
14...	1414	7	6	500	0	160	0	2	20	0
MAR										
20...	1414	--	--	--	--	150	--	--	--	--
JUN										
12...	1551	8	6	500	100	90	0	1	15	10
JUL										
18...	1441	--	--	--	--	180	--	--	--	--

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
OCT										
19...	--	--	--	--	--	10	--	--	--	--
NOV										
22...	--	--	--	--	--	20	--	--	--	--
DEC										
12...	--	0	--	0	12000	30	--	3	1000	10
JAN										
17...	--	--	--	--	--	20	--	--	--	--
FEB										
14...	9	0	29	1	21000	20	8	5	600	10
MAR										
20...	--	--	--	--	--	10	--	--	--	--
JUN										
12...	9	0	35	4	21000	10	23	7	800	0
JUL										
18...	--	--	--	--	--	50	--	--	--	--

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT									
19...	--	--	12	--	--	--	--	--	--
NOV									
22...	--	--	7	--	--	--	--	--	--
DEC									
12...	.0	.0	4	1	0	--	0	200	20
JAN									
17...	--	--	4	--	--	--	--	--	--
FEB									
14...	1.2	.0	0	1	0	1	0	140	10
MAR									
20...	--	--	7	--	--	--	--	--	--
JUN									
12...	.1	.0	8	0	0	0	0	110	0
JUL									
18...	--	--	9	--	--	--	--	--	--

08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM--Continued

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
------	------	---	--	--	---	--	---	---

MAY	15...	1515	1.2	190	2	0	2	6	2
-----	-------	------	-----	-----	---	---	---	---	---

DATE	TIME	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS MG) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G AS SE) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)	CARBON, ORGANIC TOT. IN BOTTOM MAT. (G/KG AS C) (00687)
------	------	---	---	---	---	---	---	--

MAY	15...	700	0	83	.0	0	5	.1
-----	-------	-----	---	----	----	---	---	----

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED (UG/L U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, METHOD (PCI/L AS U) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
------	------	---	---	---	--	--	---	---	---	---	--

OCT	19...	1414	450	9.2	24	9.5	15	8.3	14	.15	3.2	--
MAY	15...	1515	357	5.5	13	7.0	7.4	6.0	7.2	.08	--	2.9

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
------	------	---	---

OCT	19...	1414	600	3000
NOV	22...	1331	1200	7200
DEC	12...	1414	600	1800
JAN	17...	1341	800	66000
FEB	14...	1414	620	1600
MAR	20...	1414	110	1400
APR	17...	1400	64	680
MAY	15...	1515	1100	1200
JUN	12...	1551	430	490
JUL	18...	1441	14	57

## 08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	NOV 22,77 1331	FEB 14,78 1414	MAR 20,78 1414	MAY 15,78 1515	JUN 12,78 1551	JUL 18,78 1441						
TOTAL CELLS/ML	8400	1000	80	490	260	3300						
DIVERSITY: DIVISION	0.7	0.0	0.0	0.9	0.5	1.6						
..CLASS	0.7	0.0	0.0	0.9	0.5	1.6						
..ORDER	0.7	0.2	0.0	1.2	0.5	1.8						
...FAMILY	1.0	1.6	0.0	1.7	1.2	2.3						
....GENUS	1.0	1.8	0.0	1.8	1.2	3.0						
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT		
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
....COELASTRACEAE												
.....COELASTRUM	--	-	--	-	--	-	180#	67	--	-		
...MICRACIINIACEAE												
.....MICRACIINIUM	--	-	--	-	--	-	--	-	43	1		
...GOCYSTACEAE												
....ANKISTRODESMS	--	-	--	-	--	-	--	-	57	2		
...DICTYOSPHAERIUM	--	-	--	-	--	-	--	-	230	7		
...SCENEDESMACEAE												
.....ACTINASTRUM	--	-	--	-	--	-	--	-	340	10		
...SCENEDESMUS	--	-	--	-	--	-	59#	22	320	10		
...TETRASTRUM	--	-	--	-	--	-	--	-	57	2		
...VOLVOCALES												
...CHLAMYDOMONADACEAE												
...CARTERIA	--	-	--	-	--	-	--	-	*	0		
...ZYGNEMATALES												
...DESMIDIACEAE												
...CLOSTERIUM	--	-	--	-	--	-	--	-	72	2		
CHRYSTOPHYTA												
..BACILLARIOPHYCEAE												
...CENTRALES												
...COSCINODISCAEAE												
....CYCLOTELLA	--	-	--	-	--	-	27	6	--	-	170	5
....MELOSIRA	*	0	--	-	--	-	--	-	--	-	--	-
...STEPHANODISCUS	--	-	35	3	--	-	14	3	--	-	--	-
..PENNALES												
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	14	3	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	--	-	--	-	41	8	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	--	-	--	-	43	1		
...SYNEDRA	350	4	--	-	--	-	27	6	--	-	--	-
...GOMPHONEMACEAE												
....GOMPHONEMA	--	-	35	3	--	-	--	-	--	-	--	-
...NAVICULACEAE												
....CALONEIS	--	-	--	-	--	-	27	6	--	-	--	-
...GYROSIGMA	--	-	35	3	--	-	--	-	--	-	--	-
...NAVICULA	350	4	530#	52	--	-	--	-	29	11	57	2
...NITZSCHIAEAE												
....NITZSCHIA	350	4	70	7	80#100		--	-	--	-	57	2
...SURIRELLACEAE												
....CYMATOPLEURA	350	4	--	-	--	-	--	-	--	-	--	-
...SURIRELLA	*	0	320#	31	--	-	14	3	--	-	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROCOCCOCCALES												
....CHROCOCCOCCAEAE												
.....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	1400#	42
...ANACYSTIS	--	-	--	-	--	-	--	-	--	-	270	8
...HORMOGONALES												
...OSCILLATORIAEAE												
....OSCILLATORIA	7000#	83	--	-	--	-	330#	67	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
..EUGLENOPHYCEAE												
...EUGLENALES												
....EUGLENACEAE												
.....EUGLENA	--	-	--	-	--	-	--	-	--	-	*	0
...TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-	160	5

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	LENGTH OF EXPO- SURE (DAYS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00022)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
DEC 12...	1414	20	.157	.079	.000	.000	Polyethylene strip
FEB 14...	1414	28	.945	.551	.000	.000	"

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
OCT								
03...	1445	52	20.0	1200	168	99	75	85
19...	0915	83	10.0	619	139	45	54	62
19...	1414	83	17.5	681	153	--	--	--
NOV								
22...	1331	540	10.0	7530	11000	16	19	24
23...	1030	511	8.0	4530	6250	22	25	32
DEC								
12...	1030	502	6.0	2990	4050	20	24	29
12...	1414	502	4.0	3690	5000	--	--	--
JAN								
03...	1615	570	8.0	2310	3560	24	28	37
17...	1331	750	3.0	4860	9840	17	20	26
20...	1330	706	4.0	2240	4270	27	31	38
FEB								
02...	1545	658	9.5	2210	3930	23	26	34
14...	1414	638	7.0	2560	4410	--	--	--
16...	1115	666	1.0	3390	6100	12	15	19
MAR								
07...	1600	723	12.0	7980	15600	50	60	77
20...	1414	350	16.0	1990	1880	--	--	--
APR								
05...	1010	353	14.0	1490	1420	29	33	43
17...	1400	89	19.5	424	102	--	--	--
MAY								
03...	1830	1800	13.0	4820	23400	40	46	61
15...	1515	2230	20.5	5950	35800	32	40	47
17...	1300	1940	20.0	3220	16900	25	29	39
24...	0930	2860	18.0	3580	27600	31	37	52
JUN								
02...	1530	1830	22.0	1730	8550	31	37	50
05...	1730	1970	21.0	1430	7610	26	30	40
13...	1551	1340	24.0	2510	9080	27	31	37
19...	1245	906	22.0	945	2310	47	54	69
29...	1000	977	15.0	555	1460	27	32	46
JUL								
18...	1441	33	34.5	105	9.4	--	--	--
27...	1515	102	31.0	9250	2550	74	90	98

## 08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70333)
OCT							
03...	--	--	--	--	94	99	100
19...	80	92	100	--	--	--	--
19...	--	--	--	--	71	--	--
NOV							
22...	61	96	100	--	--	--	--
23...	72	96	100	--	--	--	--
DEC							
12...	69	96	100	--	--	--	--
12...	--	--	--	--	49	--	--
JAN							
03...	77	97	100	--	--	--	--
17...	58	93	100	--	--	--	--
20...	82	99	100	--	--	--	--
FEB							
02...	74	97	100	--	--	--	--
14...	--	--	--	--	43	--	--
16...	38	77	100	--	--	--	--
MAR							
07...	85	94	100	--	--	--	--
20...	--	--	--	--	48	--	--
APR							
05...	72	97	100	--	--	--	--
17...	--	--	--	--	61	--	--
MAY							
03...	88	99	100	--	--	--	--
15...	62	78	89	100	--	--	--
17...	73	93	100	--	--	--	--
24...	77	95	100	--	--	--	--
JUN							
02...	78	92	100	--	--	--	--
05...	73	95	100	--	--	--	--
13...	56	86	100	--	--	--	--
19...	--	--	--	--	93	99	100
29...	65	80	99	100	--	--	--
JUL							
18...	--	--	--	--	59	--	--
27...	99	99	100	--	--	--	--

PARTICLE SIZE OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)
OCT									
03...	1445	52	1200	168	6	39	97	100	--
19...	0915	83	619	139	4	14	79	100	--
NOV									
23...	1030	511	4530	6250	12	36	92	100	--
DEC									
12...	1030	502	2990	4050	7	41	93	100	--
JAN									
03...	1615	570	2310	3560	1	13	78	100	--
20...	1330	706	2240	4270	4	30	89	100	--
FEB									
02...	1545	658	2210	3930	3	19	90	100	--
16...	1115	666	3390	6100	4	33	95	100	--
MAR									
07...	1600	723	7980	15600	2	26	96	100	--
21...	1245	420	--	--	3	33	92	100	--
APR									
05...	1010	353	1490	1420	0	11	95	100	--
17...	1400	89	424	102	1	10	86	99	100
MAY									
01...	1700	92	--	--	7	51	93	100	--
17...	1300	1940	3220	16900	13	40	94	96	100
JUN									
02...	1530	1830	1730	8550	8	32	92	100	--
19...	1245	906	945	2310	4	21	88	100	--
29...	1000	977	555	1460	2	16	89	100	--
JUL									
10...	1445	239	--	--	1	25	94	100	--
27...	1515	102	9250	2550	1	11	94	100	--

## 08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM--Continued

TOTAL SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SEDI- MENT DISCH, SUSP. + BED MA- TERIAL (T/DAY) (80156)	STREAM WIDTH (FT) (00004)	STREAM DEPTH, MEAN (FT) (00064)	STREAM VELOC- ITY, MEAN (FPS) (00055)
OCT									
03...	1445	52	20.0	1200	168	209	52	.71	1.4
19...	0915	83	10.0	619	139	186	46	.98	1.8
NOV									
23...	1030	511	8.0	4530	6250	7660	84	1.6	3.9
DEC									
12...	1030	502	6.0	2990	4050	5360	96	1.4	3.7
JAN									
03...	1615	570	8.0	2310	3560	4770	96	1.6	3.8
20...	1330	706	4.0	2240	4270	5360	96	2.0	3.8
FEB									
02...	1545	658	9.5	2210	3930	4960	96	1.9	3.6
16...	1115	666	1.0	3390	6100	6920	96	1.7	4.1
MAR									
07...	1600	723	12.0	7980	15600	16600	96	1.9	4.0
APR									
05...	1010	353	14.0	1490	1420	2090	96	1.4	2.6
17...	1400	89	19.5	424	102	242	64	.80	1.8
MAY									
17...	1300	1940	20.0	3220	16900	19800	155	2.5	5.0
24...	0930	2860	18.0	3580	27600	34800	166	3.3	5.2
JUN									
02...	1530	1830	22.0	1730	8550	10700	160	2.3	5.0
13...	1551	1340	24.0	2510	9080	14100	170	1.8	4.4
19...	1245	906	22.0	945	2310	3120	104	2.0	4.3
29...	1000	977	15.0	555	1460	1910	104	2.3	4.0
JUL									
27...	1515	102	31.0	9250	2550	2620	66	.88	1.8

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1170	1010	894	783	776	909	876	708	435	514	---	---
2	1130	1080	805	783	759	698	862	736	459	680	---	---
3	1120	1100	803	809	727	709	904	573	430	526	---	---
4	1150	1240	783	774	730	696	847	607	430	585	---	---
5	1180	1250	773	780	739	829	751	731	473	592	---	---
6	1040	1240	777	772	729	898	875	629	462	894	---	---
7	925	760	784	781	740	802	850	574	478	767	---	---
8	902	790	778	770	734	879	875	672	464	825	---	---
9	925	1000	787	778	720	908	---	577	474	873	---	---
10	915	1620	780	775	732	778	1010	567	467	800	---	---
11	931	790	788	784	740	783	1020	575	471	873	---	---
12	925	800	773	773	729	775	988	567	535	854	---	---
13	967	1080	730	801	707	783	1010	582	425	560	---	---
14	940	750	722	791	725	752	1010	497	532	889	---	---
15	983	800	725	800	737	767	1020	504	529	908	---	---
16	955	760	719	793	712	770	1000	497	532	1100	---	---
17	954	780	788	800	722	729	954	544	524	1070	---	---
18	984	755	784	792	713	760	---	498	530	1050	---	---
19	997	1000	859	813	721	697	---	506	525	1070	---	---
20	982	790	852	762	690	827	---	499	538	898	---	---
21	985	780	857	762	712	755	---	506	514	907	---	---
22	980	740	853	755	693	813	886	439	511	897	---	---
23	935	740	860	762	702	824	887	449	528	---	---	---
24	1020	780	854	752	694	725	870	509	529	---	---	---
25	1010	797	833	770	696	826	971	446	---	---	---	---
26	1050	760	827	761	704	808	1010	439	---	---	1650	---
27	1040	767	831	767	879	749	1030	447	---	816	1610	---
28	1080	769	788	761	894	807	1020	442	---	---	---	---
29	1090	795	799	770	---	872	1020	435	---	---	---	---
30	1090	797	788	775	---	870	1010	426	---	---	---	---
31	1050	---	803	785	---	871	---	449	---	---	---	---
MEAN	1010	904	800	779	734	796	942	536	491	824	1630	---
WTR YR 1978	MEAN	790		MAX	1650	MIN	425					

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

08358400 RIO GRANDE FLOODWAY AT SAN MARCIAL, NM--Continued

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.5	18.0	8.0	8.5	11.0	12.0	14.5	19.0	19.0	24.0	---	---
2	22.0	17.0	7.0	9.0	9.5	12.0	17.5	19.5	22.0	15.0	---	---
3	20.0	18.0	7.5	8.0	9.0	12.5	19.0	13.0	17.0	25.0	---	---
4	20.0	14.5	6.5	5.0	7.5	12.0	19.0	19.0	24.0	23.5	---	---
5	21.0	14.0	8.0	8.0	8.0	12.0	14.0	15.0	21.0	24.0	---	---
6	23.0	14.0	8.0	6.5	8.0	12.0	18.0	20.0	21.0	25.0	---	---
7	19.0	12.0	8.0	7.5	8.5	12.0	19.0	21.0	21.0	24.0	---	---
8	19.5	11.0	7.0	9.0	6.0	12.5	18.5	16.0	20.0	25.5	---	---
9	18.0	7.0	8.0	8.5	6.5	11.0	---	22.0	21.5	24.0	---	---
10	18.0	7.5	4.0	9.0	9.5	12.0	19.5	19.0	24.5	25.0	---	---
11	19.0	8.0	5.0	9.0	9.0	12.0	18.0	19.5	20.0	24.0	---	---
12	18.0	8.0	4.0	8.5	9.0	14.5	19.5	22.5	22.5	24.0	---	---
13	18.0	6.0	5.5	7.5	7.0	12.0	19.0	19.0	20.0	24.5	---	---
14	19.0	8.0	5.0	5.5	7.5	10.0	19.0	22.0	23.0	24.0	---	---
15	18.0	6.5	5.5	7.5	7.0	11.5	19.0	19.5	22.5	25.5	---	---
16	18.0	8.0	4.5	7.0	1.0	12.0	19.0	23.0	23.0	25.0	---	---
17	16.0	8.0	4.5	7.0	7.0	10.0	19.0	20.0	24.0	25.0	---	---
18	11.0	7.0	5.0	5.0	7.5	12.0	---	19.5	23.0	24.0	---	---
19	10.0	7.5	5.0	10.0	7.5	12.0	---	18.5	23.0	26.0	---	---
20	19.0	8.0	5.0	4.0	8.5	14.5	---	22.0	22.0	24.0	---	---
21	15.0	8.0	4.5	4.0	9.5	14.0	---	22.0	20.0	26.0	---	---
22	17.5	10.0	3.5	3.5	8.0	13.5	18.0	24.5	24.5	24.5	---	---
23	13.5	8.0	5.0	4.0	10.0	13.0	17.5	22.0	23.0	---	---	---
24	15.5	7.0	6.0	4.0	8.5	16.5	14.0	18.0	25.0	---	---	---
25	15.0	8.5	5.0	4.0	8.0	12.0	15.5	19.5	24.0	---	---	---
26	15.0	8.0	5.5	6.0	9.0	14.5	14.0	21.0	23.0	---	25.0	---
27	15.0	8.5	6.5	5.0	10.5	12.0	14.0	22.0	23.0	31.0	25.0	---
28	17.0	7.0	6.5	4.5	10.0	16.5	16.0	21.5	24.0	---	---	---
29	16.0	7.5	6.5	9.0	---	16.0	17.0	19.0	15.0	---	---	---
30	16.5	8.0	6.0	7.0	---	16.0	13.5	23.0	20.0	---	---	---
31	15.0	---	6.0	7.5	---	16.5	---	19.5	---	---	---	---
MEAN	17.5	9.5	6.0	6.5	8.0	13.0	17.0	20.0	22.0	24.5	25.0	
WTR YR 1978	MEAN	14.0		MAX	31.0		MIN	1.0				





08358550 MILLIGAN GULCH NEAR SAN MARICAL, NM

LOCATION.--Lat 33°39'37", long 107°05'25", in SE¼NE¼ sec.36, T.7 S., R.3 W., Socorro County, Hydrologic Unit 13020211, on left upstream side of bridge on old Highway 85, and 7.2 mi (11.6 km) southwest of San Marical.

DRAINAGE AREA.--413 mi<sup>2</sup> (1,070 km<sup>2</sup>).

PERIOD OF RECORD.--July 1968 to September 1978 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 4,720 ft (1,439 m), from topographic map. Prior to July 1, 1971, gage located on downstream side of bridge.

REMARKS.--No flow during the water year.

AVERAGE DISCHARGE--10 years, 0.444 ft<sup>3</sup>/s (0.013 m<sup>3</sup>/s), 322 acre-ft/yr (397,000 m<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft<sup>3</sup>/s Sept. 11, 1972, gage height, 9.22 ft (2.810 m), from rating curve extended above 3 ft<sup>3</sup>/s (.08 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1977 TOTAL 7.77 MEAN .021 MAX 4.9 MIN .00 AC-FT 15  
WTR YR 1978 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

## 08360500 ELEPHANT BUTTE RESERVOIR AT ELEPHANT BUTTE, NM

LOCATION.--Lat 33°09'15", long 107°11'28", in NW¼ sec.30, T.13 S., R.3 W., Sierra County, Hydrologic Unit 13020211, at dam on Rio Grande, 1 mi (1.6 km) west of Elephant Butte, 4 mi (6 km) northeast of Truth or Consequences (Hot Springs) and at mile 1,383.2 (2,225.6 km).

DRAINAGE AREA.--29,445 mi<sup>2</sup> (76,260 km<sup>2</sup>), approximately including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

PERIOD OF RECORD.--March 1915 to December 1939 (monthend contents only published in WSP 1312), January 1940 to September 1965 (monthend contents only), October 1965 to current year.

REVISED RECORDS.--WSP 1442: 1954(m). WSP 1632: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 43.4 ft (13.20 m) National Geodetic Vertical Datum of 1929. Oct. 16, 1939, to May 2, 1940, and prior to September 1930, nonrecording gages.

REMARKS.--Reservoir is formed by concrete dam. Storage began Jan. 6, 1915. Dam completed May 13, 1916. Capacity, 2,109,000 acre-ft (2.60 km<sup>3</sup>) survey of 1974 at gage height 4,407.0 ft (1,343.25 m) crest of spillway. Capacity by original survey was 2,638,900 acre-ft (3.25 km<sup>3</sup>). No adjustment made for decrease in capacity due to sedimentation between effective dates of capacity tables. No dead storage. No storage allocated to flood control. Figures given herein represent usable contents and are computed from mean daily gage heights. Water is used for power development and irrigation on Rio Grande Project of Bureau of Reclamation. Lake is major recreational area.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 2,302,800 acre-ft (2,840 hm<sup>3</sup>) June 16-18, 1942, gage height, 4,409.19 ft (1,343.921 m); minimum daily contents after initial filling, 9,900 acre-ft (12.2 hm<sup>3</sup>) Aug. 6, 1954, gage height, 4,258.03 ft (1,297.848 m).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 288,800 acre-ft (356 hm<sup>3</sup>) June 11 gage height, 4,318.35 ft (1,316.233 m); minimum daily contents, 90,800 acre-ft (112 hm<sup>3</sup>) Sept. 16, 17 gage height, 4,290.20 ft (1,307.653 m).

Capacity table (gage height, in feet, and usable contents, in thousands of acre-feet)

4,270	26.02	4,290	89.90	4,310	216.1	4,330	409.4	4,350	679.0
4,275	37.81	4,295	115.0	4,315	258.5	4,335	469.6	4,355	760.2
4,280	51.76	4,300	144.2	4,320	304.2	4,340	534.3	4,360	848.6
4,285	68.82	4,305	177.7	4,325	354.1	4,345	604.0	4,365	944.1

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	123600	127900	149900	182300	216900	246200	229300	197400	283100	261200	183800	94600
2	123600	128200	149300	183300	217400	247400	226500	197600	283800	260800	180900	93500
3	123700	128500	151000	184400	218600	248700	224600	199400	284000	259600	178600	92400
4	123900	128700	151700	185600	219900	249600	222500	202300	284600	258000	175900	91900
5	124100	129000	152700	186700	221000	251000	220500	203300	285100	255700	173000	91800
6	124300	129200	153700	187700	222200	252000	218600	203600	285500	252900	170400	91800
7	124500	129300	154700	188600	223500	254000	216300	204800	286400	251500	167500	91800
8	124800	129600	155700	189500	224700	255200	213700	208200	287500	248500	164600	91800
9	125000	129900	156500	190600	225900	255700	211600	211300	287600	245500	162000	91700
10	125100	130600	157400	191600	226800	255900	209500	214100	288300	243600	159700	91400
11	125200	131300	158400	192700	228100	255700	207100	216400	288800	238900	157100	91300
12	125400	132000	159300	193800	229300	255500	204700	218700	288500	235400	154300	91200
13	125600	132800	160300	194700	230400	255400	202500	220000	288300	231000	151600	91000
14	125800	133900	161600	195700	231900	255200	199800	221000	287800	229300	148700	90900
15	126000	134900	163700	196700	232900	255000	198600	223600	286200	227100	146100	91100
16	126000	136000	165400	198600	234300	254700	197600	226600	284600	224600	142900	90800
17	126200	136800	167200	199300	235400	254200	196200	229300	283500	222300	140500	90800
18	126500	137600	168900	200300	236400	253600	195900	232400	281300	220000	137800	91300
19	126600	138600	170100	201100	237700	253000	196300	235600	279400	217300	135600	91600
20	126700	139500	170800	202500	238800	252300	196600	239300	277600	213900	133900	91700
21	126700	140300	171700	203700	239900	251300	196900	242900	275900	211300	131600	91700
22	126800	141300	172700	204900	241000	249300	196800	246800	274600	208700	129200	91700
23	126900	142200	173500	206000	240100	247200	196800	251300	273100	206300	125600	91800
24	127100	142900	174500	207200	241100	245000	196900	255500	271500	204500	121800	91900
25	127200	143900	175200	208200	242000	243000	196800	260300	269400	201600	118100	92100
26	127400	144900	176200	209300	243000	241000	197000	264600	267400	199400	114200	92100
27	127400	145900	177000	210700	243900	239000	197100	269200	266800	196900	110500	92100
28	127600	147000	178200	211900	245000	237000	197100	273600	264100	194300	106600	92200
29	127600	147600	179300	212900	---	235100	197000	277500	263600	191600	103100	92200
30	127800	148300	180300	214200	---	232900	196900	284400	262100	188600	99400	92200
31	127800	---	181400	215400	---	230900	---	282600	---	185700	95800	---
MAX	127800	148300	181400	215400	245000	255900	229300	284400	288800	261200	183800	94600
MIN	123600	127900	149300	182300	216900	230900	195900	197400	262100	185700	95800	90800
(†)	4297.28	4200.66	4305.50	4309.91	4313.45	4311.79	4307.58	4317.68	4315.40	4306.09	4291.25	4290.50
(‡)	+4200	+20500	+33100	+34000	+29600	-14100	-34000	+85700	-20500	-76400	-89900	-3600

CAL YR 1977 MAX 356000 MIN 119300 (†) -134400  
WTR YR 1978 MAX 288800 MIN 90800 (‡) -31400

(†) Gage height, in feet, at end of month.

(‡) Change in contents, in acre-feet.

## 08361000 RIO GRANDE BELOW ELEPHANT BUTTE DAM, NM

LOCATION.--Lat 33°08'54", long 107°12'22", Sierra County, Hydrologic Unit 13030101, in Pedro Armendaris Grant, on left bank 1.0 mi (1.6 km) downstream from dam, 1.5 mi (2.4 km) upstream from Cuchillo Negro River, and at mile 1,382.2 (2,224.0 km).

DRAINAGE AREA.--29,450 mi<sup>2</sup> (76,280 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1915 to current year. Monthly or annual discharge only for some periods, published in WSP 1732. Figures of daily discharge, published in WSP 458 for October to December 1916, are unreliable.

REVISED RECORDS.--WSP 1562: 1920. WSP 1632: Drainage area. WSP 1732: 1917, 1920. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 4,242.09 ft (1,292.989 m) National Geodetic Vertical Datum of 1929. See WSP 1732 for history of changes prior to Apr. 24, 1942.

REMARKS.--Water-discharge records good except those for September, which are fair. Flow regulated by Elephant Butte Reservoir (station 08360500). Diversion for irrigation of about 800,000 acres (3200 km<sup>2</sup>) above station.

AVERAGE DISCHARGE.--63 years, 973 ft<sup>3</sup>/s (27.56 m<sup>3</sup>/s), 704,900 acre-ft/yr (869 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 8,220 ft<sup>3</sup>/s (233 m<sup>3</sup>/s) May 22, 1942; no flow at times prior to 1929.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,020 ft<sup>3</sup>/s (57.2 m<sup>3</sup>/s) Aug. 27; minimum daily, 0.04 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	9.9	7.3	7.9	8.5	15	1240	13	1260	1780	1280	591
2	7.8	9.7	7.5	7.9	8.5	14	1240	11	1280	1790	1280	564
3	5.6	9.9	7.3	7.9	8.5	14	1250	11	1290	1790	1280	565
4	4.0	10	6.6	7.9	7.9	14	1260	11	1300	1800	1310	260
5	1.8	11	5.3	7.9	7.9	16	1270	1070	1310	1810	1320	24
6	3.6	11	3.9	7.9	7.9	14	1280	1110	1310	1830	1320	22
7	3.3	11	4.0	7.9	7.9	14	1280	1100	1320	1830	1330	22
8	3.4	10	3.0	7.5	8.3	15	1280	52	1330	1850	1350	22
9	1.8	9.7	3.0	7.9	7.9	618	1290	17	1300	1860	1350	22
10	2.6	9.3	3.0	8.7	8.6	643	1300	17	1320	1870	1360	22
11	2.8	9.1	3.5	8.6	9.2	644	1300	17	1320	1880	1370	15
12	3.6	9.1	3.8	7.9	8.2	642	1310	17	1340	1880	1380	.35
13	4.2	8.5	3.0	7.3	7.9	641	1310	17	1340	1890	1400	.17
14	8.8	8.5	6.4	7.3	8.7	641	1290	18	1310	1230	1400	.11
15	8.2	8.5	8.5	8.8	31	637	614	18	1810	1220	1380	.06
16	7.9	8.5	8.5	8.2	8.9	639	614	18	1810	1220	1360	.06
17	7.1	8.7	7.9	8.6	8.4	641	614	17	1830	1220	1360	.06
18	4.6	8.5	8.2	7.8	8.2	643	30	17	1840	1230	1280	.05
19	4.2	10	8.0	7.6	7.7	643	14	17	1840	1240	1280	.04
20	4.2	9.2	7.1	7.9	8.1	702	14	17	1660	1250	1290	1.3
21	4.1	9.0	7.3	7.9	7.9	643	13	17	1650	1250	1290	8.2
22	3.9	8.9	7.3	7.9	7.9	1180	13	17	1660	1250	1290	8.0
23	3.6	8.5	7.5	8.6	923	1220	13	18	1680	1250	1950	7.3
24	3.1	7.9	7.9	8.2	17	1240	12	18	1680	1260	1960	6.3
25	3.3	7.9	7.9	7.9	14	1230	13	18	1670	1270	1970	5.9
26	10	7.9	7.9	8.2	14	1260	13	18	1690	1270	1980	5.2
27	12	8.0	7.9	8.5	14	1270	14	18	1690	1280	2020	4.4
28	11	8.1	7.9	7.9	14	1280	13	18	1690	1310	1900	4.2
29	12	7.0	7.9	8.0	---	1280	13	19	1720	1320	1790	4.4
30	11	6.7	7.9	8.5	---	1290	13	19	1710	1330	1800	4.0
31	11	---	7.9	8.7	---	1290	---	1210	---	1350	1820	---
TOTAL	184.0	270.0	200.9	249.7	1200.0	21033	19930	4975	45960	46610	46450	2189.10
MEAN	5.94	9.00	6.48	8.05	42.9	678	664	160	1532	1504	1498	73.0
MAX	12	11	8.5	8.8	923	1290	1310	1210	1840	1890	2020	591
MIN	1.8	6.7	3.0	7.3	7.7	14	12	11	1260	1220	1260	.04
AC-FT	365	536	398	495	2380	41720	39530	9870	91160	92450	92130	4340
CAL YR 1977 TOTAL	169061.00			MEAN 463	MAX 1660	MIN 1.8	AC-FT 335300					
WTR YR 1978 TOTAL	189251.70			MEAN 518	MAX 2020	MIN .04	AC-FT 375400					

08361000 RIO GRANDE BELOW ELEPHANT BUTTE DAM, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS) (000061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (000095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)
OCT								
03...	1230	7.9	892	--	--	21.0	40	--
11...	1225	2.9	908	--	--	24.5	35	--
17...	1030	7.9	913	--	--	17.5	40	--
19...	1759	4.6	940	7.8	24.5	20.0	40	--
25...	1450	3.4	904	--	--	20.0	30	--
NOV								
01...	1245	9.7	906	--	--	19.0	35	--
07...	1110	10	942	8.4	--	16.0	20	--
14...	1010	8.5	975	--	--	10.0	20	--
21...	1130	8.5	998	8.0	--	14.0	40	--
22...	1734	9.1	1040	8.4	--	16.0	40	--
28...	1025	7.9	1000	8.2	--	11.0	20	--
DEC								
05...	1040	5.3	1010	8.1	--	10.5	15	--
12...	1900	3.8	1060	8.3	14.5	9.0	20	--
13...	1250	3.0	1020	8.1	--	12.5	15	--
20...	1250	6.8	986	8.3	--	9.5	15	--
27...	1115	7.9	1000	8.3	--	8.0	10	--
JAN								
03...	1000	7.9	1000	8.2	--	7.0	10	--
10...	1020	8.7	1000	8.0	--	7.0	8	--
17...	1837	9.1	1060	8.6	7.5	5.5	--	15
18...	1045	7.8	1010	8.1	--	4.0	8	--
24...	1500	8.2	985	8.4	--	9.5	--	6.3
FEB								
01...	1045	8.5	1000	8.2	--	8.5	--	3.4
06...	1200	7.9	987	8.4	--	12.0	--	6.6
13...	1105	7.9	981	8.2	--	6.0	--	1.8
14...	1800	9.7	981	8.2	7.0	9.0	--	30
22...	1025	7.9	972	8.1	--	6.0	--	2.0
MAR								
01...	1235	15	992	8.2	--	9.0	--	4.6
06...	1158	14	975	8.1	--	12.0	--	2.0
15...	1010	673	984	7.5	--	9.5	--	7.0
20...	1045	702	959	8.1	--	11.0	--	4.2
20...	1850	720	890	8.4	19.5	10.0	--	4.6
28...	1315	1310	935	8.2	--	14.0	--	5.1
APR								
03...	1100	1250	915	8.2	--	13.0	--	10
11...	1305	1300	915	8.3	--	14.0	--	5.9
17...	1030	614	920	8.4	--	15.0	--	6.6
17...	1819	630	695	8.5	19.5	13.5	--	12
25...	1030	13	925	8.0	--	20.5	--	31
MAY								
01...	1130	13	913	7.9	--	15.0	--	31
08...	1207	52	894	8.8	--	22.5	--	26

08361000 RIO GRANDE BELOW ELEPHANT BUTTE DAM, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	OXYGEN, DIS- SOLVED (MG/L) (00300)	NITRO- GEN, NO2+NO3 TOTAL (MG/L) AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L) AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L) AS N) (00605)	NITRO- GEN, TOTAL (MG/L) AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L) AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L) AS P) (00671)
OCT								
03...	--	.13	--	.03	.45	.61	.07	--
11...	--	.15	--	.05	.21	.41	.08	--
17...	--	.14	--	.03	.47	.64	.07	--
19...	7.9	.18	.18	.02	.49	.64	.06	.01
25...	--	.09	--	.05	.71	.85	.06	--
NOV								
01...	--	.03	--	.01	.32	.36	.05	--
07...	--	.04	--	.01	.40	.45	.04	--
14...	--	.11	--	.01	.67	.79	.05	--
21...	--	.10	--	.02	.36	.48	.05	--
22...	9.6	.10	.08	.04	.45	.59	.07	.00
28...	--	.09	--	.03	.38	.50	.03	--
DEC								
05...	--	.09	--	.06	.32	.47	.02	--
12...	10.6	.11	.10	.12	.67	.90	.02	.01
13...	--	.07	--	.11	.16	.34	.02	--
20...	--	.12	--	.07	.37	.56	.03	--
27...	--	.06	--	.06	.52	.64	.03	--
JAN								
03...	--	.16	--	.04	.43	.63	.03	--
10...	--	.11	--	.06	.41	.58	.04	--
17...	13.8	.98	.12	.02	.16	1.2	.03	.02
18...	--	.10	--	.01	.27	.38	.04	--
24...	--	.06	--	.00	.28	.34	.03	--
FEB								
01...	--	.09	--	.02	.29	.40	.02	--
06...	--	1.0	--	.00	.33	1.3	.02	--
13...	--	.08	--	.01	.36	.45	.03	--
14...	11.7	.10	.06	.04	.40	.54	.05	.01
22...	--	.05	--	.01	.34	.40	.02	--
MAR								
01...	--	.02	--	.02	.09	.13	.02	--
06...	--	.03	--	.01	.28	.32	.04	--
15...	--	.04	--	.42	1.5	1.9	.29	--
20...	--	.01	--	.04	.46	.51	.08	--
20...	9.6	.03	.01	.12	.55	.70	.04	.00
28...	--	.02	--	.08	.52	.62	.06	--
APR								
03...	--	.03	--	.03	.65	.71	.06	--
11...	--	.01	--	.04	.45	.50	.07	--
17...	--	.05	--	.01	.46	.52	.09	--
17...	8.1	.04	.02	.11	.27	.42	.08	.06
25...	--	.02	--	.01	.55	.58	.07	--
MAY								
01...	--	.00	--	.01	.60	.61	.37	--
08...	--	.07	--	.01	.83	.91	.16	--

08361000 RIO GRANDE BELOW ELEPHANT BUTTE DAM, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CF8) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)
MAY								
15...	1000	18	1040	7.9	--	18.0	24	--
15...	2030	16	850	8.6	27.0	19.0	38	10.2
24...	1030	18	896	7.8	--	12.0	21	--
31...	1110	1270	891	7.8	--	9.5	4.0	--
JUN								
06...	1135	1310	888	8.1	--	18.0	5.6	--
12...	2040	1300	900	8.0	--	18.0	4.6	3.7
14...	1100	1290	881	8.2	--	19.0	3.7	--
20...	1000	1640	856	8.0	--	20.0	3.5	--
27...	1025	1680	822	7.8	--	20.5	2.5	--
JUL								
03...	1000	1790	801	8.0	--	22.5	4.1	--
12...	1010	1800	726	8.0	--	23.0	2.5	--
17...	1025	1220	694	8.1	--	24.0	2.1	--
18...	2112	1230	710	7.7	28.0	22.0	2.0	1.2
25...	1020	1270	674	7.9	--	24.0	1.6	--
31...	1045	1350	651	7.9	--	24.0	1.7	--
AUG								
09...	1110	1350	650	7.8	--	24.0	2.1	--
14...	2128	1400	585	7.8	28.0	24.0	8.0	2.1
15...	1015	1380	651	7.7	--	25.0	5.2	--
22...	1020	1290	661	8.1	--	23.5	12	--
29...	1110	1790	1190	8.1	--	22.0	14	--
SEP								
04...	1025	440	1130	7.9	--	24.5	4.9	--
10...	1100	22	676	8.1	--	26.0	21	--
12...	1112	1.4	700	8.2	27.5	22.0	19	8.1
17...	0800	.06	774	8.0	--	20.0	10	--
24...	0900	6.5	681	7.9	--	18.5	24	--

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
MAY							
15...	.09	--	.00	.60	.69	.09	--
15...	.07	.04	.01	.82	.90	.07	.01
24...	.00	--	.12	.51	.63	.04	--
31...	.03	--	.01	.56	.60	.07	--
JUN							
06...	.11	--	.04	.50	.65	.12	--
12...	.13	.15	.01	1.5	1.6	.07	.06
14...	.14	--	.03	.35	.52	.03	--
20...	.13	--	.00	.60	.73	.10	--
27...	.14	--	.01	1.4	1.5	.13	--
JUL							
03...	.13	--	.01	.70	.84	.14	--
12...	.08	--	.03	.40	.51	.09	--
17...	.05	--	.00	.55	.60	.11	--
18...	.13	.08	.00	.94	1.1	.11	.07
25...	.05	--	.01	.53	.59	.11	--
31...	.09	--	.00	.42	.51	.11	--
AUG							
09...	.05	--	.06	.39	.50	.05	--
14...	.16	.21	.02	1.2	1.4	.07	.04
15...	.16	--	.00	.42	.58	.04	--
22...	.09	--	.03	.51	.63	.06	--
29...	.05	--	.02	.35	.42	.06	--
SEP							
04...	.03	--	.12	.81	.96	.16	--
10...	.03	--	.02	.44	.49	.09	--
12...	.04	.05	.03	.51	.58	.09	.05
17...	.01	--	.01	.65	.67	.08	--
24...	.05	--	.04	.77	.86	.07	--

## 08362000 CABALLO RESERVOIR NEAR ARREY, NM

LOCATION.--Lat 32°53'47", long 107°17'30", in SE¼SW¼ sec.19, T.16 S., R.4 W., Sierra County, Hydrologic Unit 13030101, in control tower of Caballo Dam on Rio Grande, 0.5 mi (0.8 km) downstream from mouth of Apache Canyon, 0.9 mi (1.4 km) upstream from Bojarquez Bridge, 2 mi (3 km) upstream from Percha diversion dam, 3.5 mi (5.6 km) northeast of Arrey, 5.2 mi (8.4 km) south of Caballo, and at mile 1,356.6 (2,182.8 km).

DRAINAGE AREA.--30,700 mi<sup>2</sup> (79,510 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

PERIOD OF RECORD.--February 1938 to September 1965 (monthend contents only), October 1965 to current year.

REVISED RECORDS.--WSP 978: 1942. WSP 1632: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 43.3 ft (13.20 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam, completed Sept. 19, 1938. Storage began Feb. 8, 1938. Capacity by 1958 survey, 344,000 acre-ft (424 hm<sup>3</sup>) between gage heights 4,104 ft (1,250.9 m) bottom of tunnel entrance of gates and 4,182 ft (1,274.7 m) gage height above which spillway gates operate automatically. No dead storage. Storage held for flood control, 100,000 acre-ft (123 hm<sup>3</sup>). Figures given herein represent usable contents and are computed from mean daily gage heights. Water released from Elephant Butte Reservoir for power development is stored in Caballo Reservoir and released for irrigation on Rio Grande project for Bureau of Reclamation.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 347,000 acre-ft (428 hm<sup>3</sup>) Mar. 4, 1942, gage height, 4,182.06 ft (1,274.692 m); minimum daily contents, 118 acre-ft (0.145 hm<sup>3</sup>), Oct. 14, 1938, gage height, 4,108.1 ft (1,252.15 m).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 58,290 acre-ft (71.9 hm<sup>3</sup>) July 14, gage height 4,144.98 ft (1,263.390 m); minimum daily contents, 10,470 acre-ft (12.9 hm<sup>3</sup>) Oct. 1, gage height, 4,127.63 ft (1,258.102 m).

Capacity table (gage height, in feet, and usable contents, in thousands of acre-feet)

4,122	3.41	4,130	14.70	4,138	34.19	4,146	62.50	4,154	102.2
4,124	5.47	4,132	18.88	4,140	40.31	4,148	71.28	4,156	114.5
4,126	8.00	4,134	23.52	4,142	47.03	4,150	80.76	4,158	127.7
4,128	11.06	4,136	28.61	4,144	54.42	4,152	91.03	4,160	141.7

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10470	12800	14900	17330	19560	23290	27280	31010	30410	42440	45240	43100
2	10510	12860	14960	17370	19630	23330	27800	31280	30650	44070	44800	42250
3	10580	12960	15090	17420	19740	23450	28450	31280	30760	46070	44350	41920
4	10640	13010	15120	17500	19790	23500	29370	31340	30820	48110	43800	41560
5	10740	13070	15290	17590	19810	23520	30520	32160	30950	50240	43030	39470
6	10900	13160	15310	17650	19970	23700	31590	34790	31200	51880	42150	36880
7	11040	13220	15370	17720	19990	23770	32530	37260	31940	53320	41330	33680
8	11110	13340	15410	17760	20040	23800	33390	38530	32620	54420	40840	30740
9	11220	13370	15490	17870	20060	24270	34340	38750	33140	55480	38720	27070
10	11360	13390	15510	17930	20080	25010	35300	38750	33450	56390	37560	23820
11	11370	13490	15550	18000	20200	25010	36640	38750	33790	57220	35990	20970
12	11410	13560	15650	18060	20240	25010	38150	38870	34080	57580	34640	18490
13	11440	13600	15820	18080	20260	25090	39500	38870	34190	57970	33620	16040
14	11560	13710	15860	18100	20420	25160	41260	38940	34190	58290	32280	14510
15	11580	13750	15880	18150	20560	25210	42020	39000	34400	57100	30710	14620
16	11630	13830	15900	18240	20790	24990	42310	39000	35210	56270	29180	14620
17	11760	13880	15920	18260	20810	24840	42870	39000	35780	55360	27490	14620
18	11830	13940	16020	18430	20900	24520	42900	39030	36220	53890	25810	14700
19	11910	13960	16080	18450	20920	24270	41950	39030	36790	52150	24490	14760
20	11930	14040	16100	18580	20970	23800	41300	39120	37150	50380	24920	14860
21	12000	14130	16140	18670	20990	22740	40220	39150	36940	48800	25010	14980
22	12110	14150	16280	18730	21060	21600	39660	39060	36880	47390	24920	15080
23	12120	14320	16320	18840	21810	21100	38680	39030	36880	46690	25590	15230
24	12250	14320	16380	18900	22880	21410	37810	39030	36910	46690	27620	15350
25	12280	14360	16480	18950	23000	22050	36880	38620	36850	46720	29780	15590
26	12300	14470	16540	19020	23050	22760	35900	37120	36880	46410	32100	15670
27	12380	14510	16790	19080	23070	23500	34700	35780	36850	46000	34700	15770
28	12460	14720	16960	19130	23220	24320	33480	34490	37210	45760	37240	15810
29	12490	14720	17090	19200	---	24940	32280	33050	39150	45660	39180	15900
30	12630	14840	17160	19340	---	25590	31120	31480	41030	45210	41300	15980
31	12660	---	17220	19470	---	26480	---	30160	---	45110	43030	---
MAX	12660	14840	17220	19470	23220	26480	42900	39150	41030	58290	45240	43100
MIN	10470	12800	14900	17330	19560	21100	27280	30160	30410	42440	24490	14510
(†)	4128.92	4130.07	4131.23	4132.26	4133.87	4135.18	4136.92	4136.57	4140.22	4144.44	4140.83	4130.63
(‡)	+2240	+2180	+2380	+2250	+3750	+3260	+4640	-960	+10870	+4080	-2080	-27050
CAL YR 1977	MAX	141500	MIN	8420	(†)	-85010						
WTR YR 1978	MAX	58290	MIN	10470	(†)	+5560						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

## 08362500 RIO GRANDE BELOW CABALLO DAM, NM

LOCATION.--Lat 32°53'05", long 107°17'31", in NE¼SW¼ sec.30, T.16 S., R.4 W., Sierra County, Hydrologic Unit 13030102, on left bank 2,000 ft (600 m) upstream from Interstate Highway 25, 4,200 ft (1,300 m) downstream from Caballo Dam, 1.2 mi (1.9 km) downstream from Apache Canyon, 1.3 mi (2.1 km) upstream from Percha diversion dam, 3 mi (5 km) northeast of Arrey, 5 mi (8 km) south of Caballo, and at mile 1,355.6 (2,181.2 km).

DRAINAGE AREA.--30,700 mi<sup>2</sup> (79,510 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

PERIOD OF RECORD.--January 1938 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,140.9 ft (1,262.15 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 7, 1938, at datum 7.0 ft (2.13 m) higher, Oct. 7-12, 1938, at datum 6.0 ft (1.83 m) higher, and Oct. 13, 1938, to Dec. 31, 1945, at datum 5.0 ft (1.52 m) higher than present datum.

REMARKS.--Records good. Flow regulated by Caballo Reservoir (station 08362000) capacity, 344,000 acre-ft (424 hm<sup>3</sup>), 1958 survey and Elephant Butte Reservoir (station 08360500) capacity, 2,109,000 acre-ft (2.60 km<sup>3</sup>), 1974 survey. Diversions for irrigation of about 800,000 acres (3,200 km<sup>2</sup>) above station. Figures of daily discharge do not include Bonita ditch which diverts from Caballo Dam and bypasses station for irrigation below. See monthly table below for record of ditch.

COOPERATION.--Records furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--40 years, 848 ft<sup>3</sup>/s (24.02 m<sup>3</sup>/s), 614,400 acre-ft/yr (758 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 7,650 ft<sup>3</sup>/s (217 m<sup>3</sup>/s) May 20, 1942; minimum daily, 0.1 ft<sup>3</sup>/s (0.003 m<sup>3</sup>/s) Oct. 31 to Nov. 14, 1954, Nov. 7 to Dec. 31, 1955, Feb. 15-29, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,990 ft<sup>3</sup>/s (56.4 m<sup>3</sup>/s) July 20; minimum daily, 0.70 ft<sup>3</sup>/s (0.020 m<sup>3</sup>/s) Dec. 15-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	1.0	.80	.80	1.0	1.2	917	12	1000	965	1260	1030
2	2.4	1.0	.80	.80	.90	1.1	963	2.0	1050	885	1380	1020
3	2.4	1.0	.80	.80	.90	1.1	976	2.0	1120	672	1370	714
4	2.3	1.0	.80	.80	.90	1.0	791	2.0	1170	676	1520	713
5	2.3	1.0	.80	.80	.80	1.0	688	1.9	1180	640	1630	1080
6	2.2	1.0	.80	.80	.90	1.0	696	2.0	1060	677	1700	1200
7	2.2	1.0	.80	.80	1.0	1.2	786	2.0	922	1100	1720	1350
8	2.1	1.0	.80	.80	1.0	1.3	877	1.9	953	1090	1760	1430
9	2.1	1.0	.80	.80	1.0	1.3	856	2.0	1420	1130	1810	1440
10	2.0	.90	.80	.80	1.0	239	937	1.9	1060	1120	1710	1420
11	2.0	.90	.80	.80	.90	552	595	1.9	1090	1300	1880	1200
12	1.9	.90	.80	.80	1.0	569	608	1.9	1070	1420	1970	1070
13	1.9	.90	.80	.80	1.0	579	627	1.8	1170	1440	1790	1050
14	1.9	.90	.80	.80	.90	566	549	1.8	1290	1470	1730	781
15	1.8	.90	.70	.80	1.2	617	476	1.8	1290	1560	1940	9.4
16	1.8	.90	.70	.80	1.2	658	449	1.8	1350	1530	1880	3.3
17	1.7	.90	.70	.90	1.2	735	322	1.7	1490	1530	1920	2.9
18	1.7	.90	.70	.90	1.2	774	336	1.6	1470	1780	1950	2.7
19	1.6	.90	.70	.90	1.1	773	369	1.5	1480	1930	1880	2.3
20	1.6	.90	.70	.90	1.1	881	439	1.8	1570	1990	1170	2.2
21	1.5	.90	.70	.90	.90	1110	441	1.9	1550	1970	1230	2.0
22	1.5	.90	.70	.90	1.0	1400	427	2.0	1550	1880	1230	2.1
23	1.4	.90	.70	.80	1.0	1400	423	1.5	1520	1560	1160	2.0
24	1.4	.90	.70	.80	1.1	1090	368	1.6	1510	1180	892	1.8
25	1.4	.90	.70	.80	1.1	907	415	228	1540	1240	832	1.7
26	1.3	.90	.70	.80	1.2	893	479	655	1540	1360	889	1.8
27	1.3	.80	.70	.80	1.1	871	523	623	1530	1360	739	1.6
28	1.2	.80	.70	.80	1.2	867	539	613	1410	1360	721	1.6
29	1.1	.80	.70	.80	---	899	542	592	1130	1370	822	1.5
30	1.0	.80	.70	.80	---	912	438	707	1050	1380	814	1.9
31	1.0	---	.70	1.1	---	901	---	946	---	1240	769	---
TOTAL	54.5	27.50	23.10	25.70	28.80	18203.2	17852	4418.3	38535	40805	44068	15538.4
MEAN	1.76	.92	.75	.83	1.03	587	595	143	1285	1316	1422	518
MAX	2.5	1.0	.80	1.1	1.2	1400	976	946	1570	1990	1970	1440
MIN	1.0	.80	.70	.80	.80	1.0	322	1.5	922	640	721	1.5
AC-FT	108	55	46	51	57	36110	35410	8760	76430	80940	87410	30820
(†)	0	0	0	0	0	0	95	0	74	92	84	79
CAL YR 1977	TOTAL	210478.20	MEAN 577	MAX 2040	MIN .70	AC-FT 417500						
WTR YR 1978	TOTAL	179579.50	MEAN 492	MAX 1990	MIN .70	AC-FT 356200						

(†) DIVERSION, IN ACRE-FT, BY BONITA DITCH. BONITA DITCH DIVERTS DIRECTLY FROM CABALLO DAM AND THIS DIVERSION IS NOT INCLUDED IN THE RIVER RECORDS.



## RIO GRANDE BASIN

08363500 RIO GRANDE AT LEASBURG DAM, NEAR LAS CRUCES, NM

LOCATION.--Lat 32°28'36", long 106°55'03", in SWkSWk sec. 14, T.21 S., R.01 W., Doña Ana County, Hydrologic Unit 13030102, 1.2 mi (1.9 km) upstream from USBR gaging station which is 2.0 mi (3.2 km) downstream from Leasburg Dam, and 1.8 mi (2.9 km) southeast of Radium Springs.

PERIOD OF RECORD.--Water years 1975 to current year.

COOPERATION.--Data furnished by the New Mexico Environmental Improvement Agency.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)
JUN 29...	1420	745	7.8	24.0	6.4
JUL 31...	1530	764	8.2	26.0	7.0
AUG 30...	1445	715	8.0	25.0	6.9

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	FECAL COLI- FORM (COL. PER 100 ML) (31616)
JUL 31...	1530	34
AUG 30...	1445	74

08363840 RIO GRANDE AT VINTON BRIDGE NEAR ANTHONY, TX

LOCATION.--Lat 31°57'32", long 106°36'17", El Paso County, Hydrologic Unit 13030102, at bridge on Farm Road 273, 480 ft (146 m) west of U.S. Highway 80, and 2.8 miles (4.5 km) south of Anthony.

DRAINAGE AREA.--28,680 mi<sup>2</sup> (74,280 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--Water years 1975 to June 1978 (discontinued).

REMARKS.--Water-discharge measurements were made at the time water-quality samples were collected.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	
OCT 20...	1141	41	2000	8.1	26.0	19.0	10	--	9.8	12	
MAR 22...	1233	482	1400	8.2	28.0	17.0	--	130	8.9	39	
APR 19...	1319	104	1300	8.3	24.0	20.0	--	30	9.2	19	
MAY 17...	1252	3.4	3700	8.3	29.0	24.0	--	7.1	8.0	29	
JUN 13...	1818	484	1120	8.4	33.5	27.5	--	110	7.7	34	
DATE		HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)
OCT 20...	450	210	130	31	270	5.5	15	300	0	250	
MAR 22...	340	170	99	22	170	4.0	9.4	210	0	170	
APR 19...	310	120	88	21	160	4.0	10	230	0	190	
MAY 17...	390	65	90	39	650	14	46	390	0	320	
JUN 13...	280	110	83	18	130	3.4	10	210	0	170	
DATE		SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 20...	460	230	.8	23	1330	1310	.12	.18	.01	.41	
MAR 22...	230	200	.9	12	853	849	.25	.27	.09	1.2	
APR 19...	280	120	.9	12	803	806	.11	.10	.03	.73	
MAY 17...	700	580	1.7	27	2310	2330	.05	.00	.01	.52	
JUN 13...	230	100	.9	7.6	689	684	.01	.01	.01	1.7	
DATE		NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDEO TOTAL (MG/L AS C) (00689)	
OCT 20...	.54	.10	.11	320	10	20	3.5	3.4	1.1		
MAR 22...	1.6	.49	.08	200	10	10	7.7	3.2	--		
APR 19...	.87	.24	.16	240	10	--	--	3.1	1.5		
MAY 17...	.58	.05	.01	740	20	10	6.0	5.5	.5		
JUN 13...	1.7	.35	.07	220	0	--	--	3.1	>5.0		

08363840 RIO GRANDE AT VINTON BRIDGE NEAR ANTHONY, TX--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC	ARSENIC	BORON,	CADMIUM	CADMIUM	CHRO-	CHRO-	COBALT,	COBALT,	COPPER,	COPPER,	
		TOTAL (UG/L AS AS) (01002)	DIS- SOLVED (UG/L AS AS) (01000)	DIS- SOLVED (UG/L AS B) (01020)	TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	DIS- SOLVED (UG/L AS CD) (01025)	MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	MIUM, DIS- SOLVED (UG/L AS CR) (01030)	TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	DIS- SOLVED (UG/L AS CO) (01035)	TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	DIS- SOLVED (UG/L AS CU) (01040)	
OCT 20...	1141	2	2	320	<10	6	5	0	50	0	<10	1	
MAR 22...	1233	1	3	200	1	0	10	0	0	0	12	5	
MAY 17...	1252	7	3	740	1	0	5	5	1	0	7	2	
DATE	TIME	IRON,	IRON,	LEAD,	LEAD,	MANGA-	MANGA-	MERCURY	MERCURY	SELE-	SELE-	ZINC,	ZINC,
		TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	DIS- SOLVED (UG/L AS FE) (01046)	TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	DIS- SOLVED (UG/L AS PB) (01049)	NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	NESE, DIS- SOLVED (UG/L AS MN) (01056)	TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	DIS- SOLVED (UG/L AS HG) (71890)	NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	NIUM, DIS- SOLVED (UG/L AS SE) (01145)	TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	DIS- SOLVED (UG/L AS ZN) (01090)
OCT 20...	350	10	<100	34	60	20	.0	.0	0	0	30	8	
MAR 22...	4700	10	13	10	560	10	.0	.0	2	0	30	0	
MAY 17...	430	20	5	1	30	10	.1	.0	0	0	20	0	

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 20...	1141	660	510
MAR 22...	1233	270	1700
APR 19...	1319	19	100
MAY 17...	1252	350	310
JUN 13...	1818	180	820

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 20...	1141	41	19.0	50	5.6	48
MAR 22...	1233	482	17.0	488	635	56
APR 19...	1319	104	20.0	490	138	32
MAY 17...	1252	3.4	24.0	65	.60	42
JUN 13...	1818	484	27.5	300	392	67

08364000 RIO GRANDE AT EL PASO, TX  
(National stream-quality accounting network)

LOCATION.--Lat 31°48'10", long 106°32'25", El Paso County, Hydrologic Unit 13030102, on downstream side of first pier from left abutment of Courchesne Bridge at El Paso, 1.7 mi (2.7 km) upstream from American Dam, 5.6 mi (9.0 km) upstream from Santa Fe Street-Juarez Avenue Bridge between El Paso and Cd. Juarez, Chihuahua, and at mile 1,249.9 (2,011.1 km).

DRAINAGE AREA.--32,207 mi<sup>2</sup> (83,415 km<sup>2</sup>), approximately, including 2,940 mi<sup>2</sup> (7,610 km<sup>2</sup>) in closed basin in San Luis Valley, CO.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1889 to current year. October 1960 to September 1965 in bulletins of International Boundary and Water Commission. Monthly discharges only for some periods published in WSP 1312 or 1732.

GAGE.--Water-stage recorder. Datum of gage is 3,722.30 ft (1,134.557 m) National Geodetic Vertical Datum of 1929. See WSP 1312 or 1732 for history of changes prior to Aug. 4, 1938.

REMARKS.--Daily discharges were computed by adding discharges of American Canal at El Paso and Rio Grande below American Dam at El Paso. Reservoirs, diversions, and drainage returns modify the river flow at this station.

COOPERATION.--Records furnished by International Boundary and Water Commission, United States and Mexico.

AVERAGE DISCHARGE.--41 years (water years 1938-78), 504 ft<sup>3</sup>/s (14.27 m<sup>3</sup>/s), 365,100 acre-ft/yr (450 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,000 ft<sup>3</sup>/s (680 m<sup>3</sup>/s) June 12, 1905; no flow at times. Maximum discharge since construction of Elephant Butte Dam in 1915, 13,500 ft<sup>3</sup>/s (382 m<sup>3</sup>/s) Sept. 3, 1925.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,060 ft<sup>3</sup>/s (58.3 m<sup>3</sup>/s) Aug. 20, gage height, 5.67 ft (1.728 m); minimum 11.4 ft<sup>3</sup>/s (0.323 m<sup>3</sup>/s) Nov. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41.7	43.9	39.1	36.8	29.6	22.0	267	155	287	542	651	296
2	43.0	38.8	41.7	35.9	30.5	21.6	277	174	348	457	584	267
3	50.7	39.4	43.1	35.3	30.9	21.5	275	192	301	578	446	387
4	80.1	39.4	42.9	34.3	31.5	21.8	249	77.9	315	485	463	579
5	59.7	39.5	43.8	38.8	33.2	21.5	312	50.4	400	302	474	302
6	55.7	40.4	43.1	39.9	40.8	23.6	199	34.2	432	195	552	195
7	80.4	39.0	43.9	39.9	57.2	21.9	188	16.1	481	167	555	172
8	60.3	36.0	47.8	39.9	43.1	20.1	193	15.9	500	147	587	305
9	62.5	29.1	38.8	34.6	34.6	19.3	201	15.7	419	203	550	329
10	67.3	27.2	37.1	37.9	17.9	21.0	250	15.5	396	390	537	353
11	62.2	37.3	40.5	41.1	19.6	26.3	300	15.5	412	270	599	318
12	53.1	37.4	45.0	40.1	30.8	26.4	306	15.5	460	339	519	292
13	52.6	37.3	45.9	36.9	30.7	18.3	241	15.7	494	381	578	248
14	54.3	37.9	48.0	35.4	25.3	18.4	196	15.7	521	451	796	186
15	54.5	38.8	48.1	35.4	18.6	138	210	15.3	527	432	705	114
16	56.3	40.1	47.9	35.1	18.5	280	228	15.4	516	432	711	112
17	54.8	38.2	45.2	33.6	17.6	330	199	15.4	543	534	735	107
18	53.4	36.8	45.0	36.2	16.0	387	136	15.6	551	576	746	107
19	54.4	36.4	41.9	32.6	15.9	418	134	15.8	589	569	692	97.0
20	53.8	36.2	38.9	32.3	15.9	494	99.8	42.2	626	621	1490	98.9
21	50.5	38.9	22.2	29.7	15.8	510	88.7	26.2	607	743	1360	78.0
22	47.4	40.0	28.2	29.7	13.5	518	85.4	20.0	613	757	906	185
23	49.4	36.5	38.9	28.4	14.8	531	88.7	21.4	615	909	881	329
24	48.5	33.9	40.9	28.1	20.3	544	94.6	16.8	613	1080	827	327
25	42.5	33.8	40.9	28.3	20.5	551	108	13.9	616	1010	801	323
26	40.0	39.9	40.7	30.3	17.8	432	103.0	13.9	612	712	833	103
27	41.4	42.0	45.4	30.5	17.8	336	89.2	13.9	665	464	582	104
28	43.4	44.7	51.8	30.2	17.7	321	72.9	13.9	661	591	509	65.7
29	43.4	43.1	53.9	30.6	---	329	91.5	13.9	734	596	407	119
30	50.2	40.2	42.0	30.7	---	307	139	23.7	669	627	348	111
31	44.7	---	36.2	29.7	---	301	---	202	---	616	347	---
TOTAL	1652.2	1142.1	1308.8	1058.2	696.4	7030.7	5421.8	1308.4	15523	16176	20771	6609.6
MEAN	53.3	38.1	42.2	34.1	24.9	227	181	42.2	517	522	670	220
MAX	80.4	44.7	53.9	41.1	57.2	551	312	202	734	1080	1490	579
MIN	40.0	27.2	22.2	28.1	13.5	18.3	72.9	13.9	287	147	347	65.7
AC-FT	3277	2265	2596	2099	1381	13945	10754	2595	30789	32085	41199	13110
CAL YR 1977	TOTAL	108170.4	MEAN	296	MAX	1076	MIN	22.2	AC-FT	214553		
WTR YR 1978	TOTAL	78698.2	MEAN	216	MAX	1490	MIN	13.5	AC-FT	156095		

08364000 RIO GRANDE AT EL PASO, TX -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1930 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1978 to September 1978.

WATER TEMPERATURES: January 1978 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,200 micromhos May 16, 1978; minimum daily, 737 micromhos Aug. 21, 1978.

WATER TEMPERATURES: Maximum daily, 28.0°C July 17, 1978; minimum daily, 2.0°C Jan. 19, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,200 micromhos May 16; minimum daily, 737 micromhos Aug. 21.

WATER TEMPERATURES: Maximum daily, 28.0°C July 17; minimum daily, 2.0°C Jan. 19.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT												
17...	0800	575	2340	8.2	--	12.0	--	--	--	440	170	120
NOV												
18...	0810	47	2430	8.3	--	9.5	--	--	--	460	190	130
DEC												
19...	0800	48	2960	8.1	--	6.5	--	--	--	490	190	140
JAN												
16...	0810	43	2780	8.0	--	6.5	--	--	--	470	170	130
19...	1111	37	3200	8.2	3.5	2.0	15	--	12.7	470	170	130
FEB												
15...	1551	26	3160	8.1	11.0	13.5	10	--	10.6	480	160	130
21...	0800	16	3220	8.1	--	5.5	--	--	--	510	170	140
MAR												
20...	0800	483	1540	7.5	--	9.0	--	--	--	340	160	100
21...	1634	490	1370	8.4	24.0	17.5	140	--	9.2	340	160	100
APR												
17...	0800	208	1380	7.9	--	14.5	--	--	--	280	86	82
18...	1618	140	1400	8.4	26.5	22.0	40	--	9.2	310	110	88
MAY												
15...	0900	18	4040	8.0	--	18.0	--	--	--	510	200	140
16...	1551	20	4200	8.3	33.5	26.5	--	8.2	10.2	540	230	150
JUN												
13...	1313	500	1220	8.4	35.0	25.0	--	110	8.9	290	110	84
19...	0900	562	1150	7.6	--	21.0	--	--	--	250	75	71
JUL												
17...	0900	527	1010	8.0	--	28.0	--	--	--	240	66	69
19...	1234	572	1010	8.4	37.5	26.0	--	95	7.3	250	88	73
AUG												
14...	0825	858	867	7.6	--	25.5	--	--	--	210	58	64
15...	1415	719	820	8.4	36.5	27.5	--	90	7.3	230	79	67
SEP												
12...	1712	315	969	8.4	32.0	26.5	--	96	8.1	240	74	73
18...	0905	147	1630	8.0	--	21.0	--	--	--	300	88	86

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (000925)	SODIUM, DIS- SOLVED (MG/L AS NA) (000930)	SODIUM AD- SORP- TION RATIO (000931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (000935)	BICAR- BONATE (MG/L AS HCO3) (000440)	CAR- BONATE (MG/L AS CO3) (000445)	ALKA- LINITY (MG/L AS CACO3) (000410)	SULFATE DIS- SOLVED (MG/L AS SO4) (000945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (000940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (000950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (000955)	SOLIDS, RESIDUE AT 180 DEG. C DIB- SOLVED (MG/L) (70300)
OCT 17...	33	350	7.3	12	320	0	262	540	280	--	30	--
NOV 18...	34	370	7.5	10	340	0	279	590	300	--	34	--
DEC 19...	34	510	10	11	370	0	303	700	390	--	39	--
JAN 16...	36	470	9.4	11	370	0	303	650	380	--	35	--
FEB 19...	35	470	9.4	10	370	0	300	670	350	1.0	34	1850
MAR 15...	37	540	11	9.0	390	0	320	680	410	.9	37	2070
APR 21...	39	560	11	8.9	410	0	336	730	440	--	36	--
MAY 20...	23	200	4.7	10	220	0	180	260	250	--	14	--
JUN 21...	23	200	4.7	9.8	220	0	180	270	210	.9	13	928
JUL 17...	19	180	4.7	10	240	0	197	310	140	--	14	--
AUG 18...	21	180	4.5	9.0	230	7	200	310	150	.9	16	882
SEP 15...	39	720	14	12	380	0	312	860	560	--	41	--
OCT 16...	39	740	14	9.5	--	--	310	880	710	1.2	45	2620
NOV 13...	19	160	4.1	9.4	--	--	180	260	120	.9	8.9	755
DEC 19...	17	130	3.6	8.9	210	0	172	240	100	--	10	--
JAN 17...	16	120	3.4	8.0	210	0	172	210	82	--	12	--
FEB 19...	16	120	3.3	7.9	--	--	160	220	85	.8	12	623
MAR 14...	13	93	2.8	6.8	190	0	156	170	68	--	13	--
APR 15...	15	110	3.2	9.9	--	--	150	190	80	.7	13	574
MAY 12...	15	140	3.9	2.6	--	--	170	230	100	.7	17	711
JUN 18...	21	250	6.3	11	260	0	213	370	190	--	23	--
DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (000630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (000610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (000605)	NITRO- GEN, TOTAL (MG/L AS N) (000600)	PHOS- PHORUS, TOTAL (MG/L AS P) (000665)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (000680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (000681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (000689)	
OCT 17...	1520	--	--	--	--	--	--	--	--	--		
NOV 18...	1640	--	--	--	--	--	--	--	--	--		
DEC 19...	2010	--	--	--	--	--	--	--	--	--		
JAN 16...	1890	--	--	--	--	--	--	--	--	--		
FEB 19...	1880	.20	.08	--	--	.16	--	4.5	--	--		
MAR 15...	2040	.17	.10	.35	.62	.23	10	260	--	3.6		
APR 21...	2160	--	--	--	--	--	--	--	--	.5		
MAY 20...	965	--	--	--	--	--	--	--	--	--		
JUN 21...	935	.19	.08	1.7	2.0	.42	--	8.7	--	--		
JUL 17...	873	--	--	--	--	--	--	--	--	--		
AUG 18...	895	.05	.09	1.0	1.2	.25	--	4.0	--	--		
SEP 15...	2560	--	--	--	--	--	--	--	--	--		
OCT 16...	2760	.15	.03	--	--	.37	10	130	--	4.1		
NOV 13...	770	.01	.01	1.2								

## RIO GRANDE BASIN

08364000 RIO GRANDE AT EL PASO, TX--Continued

TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
FEB 15...	1551	10	10	100	100	0	1	0	10
MAY 16...	1551	19	21	0	100	0	0	20	5
AUG 15...	1415	5	6	300	200	1	2	0	0

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
FEB 15...	1	0	5	2	510	10	14	7	310
MAY 16...	1	0	18	5	600	10	8	1	240
AUG 15...	3	1	12	2	3900	60	12	7	290

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
FEB 15...	260	.5	.0	1	0	0	0	20	10
MAY 16...	130	.1	.0	0	0	0	0	30	10
AUG 15...	10	.0	.0	0	1	0	0	20	10

MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JAN 19...	1111	270	2800
FEB 15...	1551	77	260
MAR 21...	1634	270	1600
APR 18...	1618	30	160
MAY 16...	1551	130	130
JUN 13...	1313	300	330
JUL 19...	1234	350	200
AUG 15...	1415	470	480
SEP 12...	1712	790	920

RIO GRANDE BASIN  
08364000 RIO GRANDE AT EL PASO, TX--Continued  
QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	MAR 21,78 1634	MAY 16,78 1551	JUN 13,78 1313	JUL 19,78 1234	AUG 15,78 1415	SEP 12,78 1712		
TOTAL CELLS/ML	93000	8400	10000	56000	28000	8600		
DIVERSITY: DIVISION	1.5	0.4	1.3	1.4	1.4	1.4		
..CLASS	1.5	0.4	1.3	1.4	1.4	1.8		
..ORDER	2.2	0.7	1.7	1.9	2.4	2.2		
...FAMILY	0.0	1.5	2.1	2.5	2.8	2.4		
...GENUS	0.0	1.6	2.3	2.8	3.4	3.1		
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...CHARACIACEAE								
...SCHROEDERIA	--	-	--	-	3200	6	280	1
...COELASTRACEAE								
...COELASTRUM	--	-	--	-	700	7	--	-
...MICRACTINIACEAE								
...MICRACTINIUM	--	-	--	-	2900	5	--	-
...OOCYSTACEAE								
...ANKISTRODESMUS	--	-	330	4	730	7	580	1
...CHODATELLA	640	1	--	-	--	-	990	4
...KIRCHNERIELLA	3200	3	170	2	--	-	990	4
...OOCYSTIS	2900	3	--	-	350	4	580	1
...QUADRIGULA	--	-	--	-	--	-	3400	12
...SELENASTRUM	9600	10	--	-	--	-	--	-
...SCENEDESMACEAE					120	1	560	2
...ACTINASTRUM	--	-	--	-	--	-	560	2
...CRUCIGENIA	23000#	24	--	-	1700	3	--	-
...SCENEDESMUS	1300	1	--	-	--	-	--	-
...TETRASTRUM	--	-	--	-	470	5	280	1
...TETRASPORALES					580	1	560	2
...PALMELLACEAE								
...SPHAEROCYSTIS	--	-	--	-	2300	4	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CARTERIA	--	-	--	-	440	1	4600#	17
...CHLAMYDOMONAS	3500	4	--	-	--	-	2300	8
...PHACOTACEAE								
...PHACOTUS	--	-	--	-	1900	3	850	3
...PTEROMONAS	*	0	--	-	--	-	--	-
...VOLVOCAEAE								
...PANDORINA	--	-	--	-	2300	4	--	-
...ZYGNEMATALES								
...DESMIDIACEAE								
...CLOSTERIUM	*	0	--	-	--	-	280	1
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNIALES								
...NAVICULACEAE								
...ENTOMONEIS	--	-	83	1	--	-	--	-
...CENTRALES								
...COSCINODISCAEAE								
...CYCLOTELLA	14000	15	500	6	3000	5	560	2
...MELOSIRA	--	-	--	-	580	1	280	1
...SKELETONEMA	--	-	--	-	580	1	--	-
...PENNIALES								
...FRAGILARIACEAE								
...ASTERIONELLA	--	-	--	-	350	4	--	-
...SYNEURA	--	-	330	4	--	-	--	-
...NAVICULACEAE								
...CALONEIS	--	-	--	-	--	-	--	-
...MASTOGLOIA	--	-	--	-	*	0	--	-
...NAVICULA	3200	3	910	11	440	4	280	1
...NITZSCHIAEAE								
...CYLINDROTHECA	*	0	--	-	--	-	--	-
...NITZSCHIA	1900	2	5900#	70	580	1	560	2
...SURIRELLACEAE								
...SURIRELLA	--	-	83	1	120	1	--	-
..XANTHOPHYCEAE								
...HETEROCOCCALES								
...CHLOROTHECIACEAE								
...OPHIOCYTIUM	--	-	--	-	290	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCOCCALES								
...CHROCOCCOCCAEAE								
...AGMENELLUM	3800	4	--	-	--	-	--	-
...ANACYSTIS	14000#	15	--	-	30000#	53	4600#	17
...HORMOGONALES								
...NOSTOCACEAE								
...ANABAENA	--	-	--	-	1200	12	5900#	21
...HORMOGONALES	11000	12	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
...EUGLENA	--	-	83	1	--	-	--	-
...TRACHELOMONAS	--	-	--	-	*	0	560	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%  
\* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%



08364000 RIO GRANDE AT EL PASO, TX--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	LENGTH OF EXPO- SURE (DAYS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00022)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
FEB 15...	1551	27	14.2	8.42	8.82	3.92	Polyethylene strip
JUN 13...	1313	15	.315	.000	.000	.000	"
AUG 15...	1415	27	4.96	3.86	4.47	1.55	"

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JAN 19...	1111	37	2.0	56	5.6	43
FEB 15...	1551	26	13.5	45	3.2	54
MAR 21...	1634	490	17.5	347	459	72
APR 18...	1618	140	22.0	72	27	90
MAY 16...	1551	20	26.5	83	4.5	33
JUN 13...	1313	500	25.0	331	447	67
JUL 19...	1234	572	26.0	292	451	61
AUG 15...	1415	719	27.5	291	565	65
SEP 12...	1712	315	26.5	183	156	87

08364000 RIO GRANDE AT EL PASO, TX--Continued  
 SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
 OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---	2810	3250	1340	1350	1260	1280	1000	939
2				---	2970	3250	1340	1360	1220	1260	976	1000
3				---	2960	3230	1330	1740	1200	1260	1000	1190
4				---	3080	3200	1290	1770	1230	1670	911	1220
5				---	3110	3260	1310	3650	1210	1090	923	992
6				---	2980	3240	1280	3640	1250	1080	893	990
7				---	2850	3240	1380	3360	1190	1350	874	982
8				---	2870	3220	1400	3700	1250	1070	867	948
9				---	2970	3180	1330	4020	1250	1640	876	950
10				---	3020	3410	1300	3710	1260	1140	906	1030
11				---	2980	3350	1270	3810	1100	1230	909	1020
12				---	2960	3350	1230	3860	1130	1080	855	1200
13				---	3030	3350	1250	3910	1130	1070	857	1210
14				---	3110	3330	1390	3920	1120	1020	851	1670
15				---	3080	2130	1300	4020	1110	1040	853	1680
16				---	3110	1690	1370	3980	1070	957	867	1440
17				---	3220	1630	1350	3980	1000	1030	878	1450
18				2740	3220	1630	1440	4170	1070	957	938	1930
19				2870	3190	1560	1530	4170	1060	989	932	1930
20				2910	3190	1520	1690	3380	1040	939	792	2320
21				2820	3180	1430	1690	3380	1060	932	737	2330
22				2810	3180	1430	1700	3800	1010	862	755	1630
23				2850	3180	1440	1560	3980	1090	816	800	1680
24				2850	3140	1430	1560	4090	1100	855	805	1700
25				2840	3240	1430	1700	4040	1060	978	853	1690
26				2840	3240	1370	1570	4090	1050	939	839	1680
27				2870	3210	1370	1660	4050	1040	937	925	2250
28				2910	3220	1370	1740	4050	1000	965	930	2230
29				2940	---	1340	1380	4060	1050	937	929	2250
30				2930	---	1300	1380	4130	1030	929	747	2260
31				2850	---	1320	---	1340	---	929	992	---
MEAN				2860	3080	2300	1440	3500	1120	1070	880	1530
WTR YR 1978	MEAN	1910		MAX	4170		MIN	737				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR  
 WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---	15.5	13.0	17.5	17.0	19.0	24.5	25.5	25.5
2				---	14.5	13.5	17.0	16.0	19.5	24.0	26.0	25.0
3				---	14.0	13.5	17.5	16.0	20.5	25.0	27.0	25.0
4				---	15.0	14.0	17.0	17.0	20.0	24.0	27.0	24.5
5				---	15.0	14.0	17.0	17.0	21.0	24.5	26.5	25.0
6				---	12.5	13.5	17.5	17.5	21.5	26.0	26.0	25.5
7				---	14.0	14.0	18.0	17.0	20.0	26.5	25.5	26.0
8				---	14.0	14.0	16.5	17.5	21.0	26.0	25.5	26.0
9				---	14.5	13.5	16.0	18.0	21.5	26.5	25.0	25.5
10				---	14.0	13.0	17.0	18.0	21.0	25.0	26.0	25.0
11				---	15.0	13.5	17.0	17.5	21.0	25.5	26.0	25.0
12				---	14.5	14.0	17.5	17.5	21.5	26.0	26.0	24.0
13				---	14.0	13.5	17.5	17.0	21.5	26.5	26.5	22.0
14				---	13.5	14.0	17.0	18.0	21.0	26.0	25.5	21.0
15				---	14.0	15.5	18.0	17.5	22.0	25.5	26.0	20.0
16				---	13.5	16.5	17.5	18.0	23.0	25.5	26.0	19.5
17				---	14.0	17.0	18.0	17.5	23.5	26.0	26.5	19.0
18				14.5	14.5	17.0	16.5	17.0	23.5	26.5	26.5	18.0
19				7.0	14.5	16.5	17.0	17.5	23.0	26.0	26.0	18.5
20				9.0	13.5	16.0	17.5	17.0	22.5	25.5	25.5	18.0
21				12.0	13.0	17.0	16.0	16.5	23.0	26.0	25.0	17.5
22				12.5	13.5	17.0	17.5	17.5	23.5	25.0	26.5	17.0
23				13.0	13.0	17.5	17.0	18.0	24.5	25.0	26.0	17.0
24				7.5	14.0	18.0	16.0	18.0	24.5	26.0	26.0	16.5
25				8.0	14.0	17.5	16.5	18.5	25.0	26.0	26.5	16.5
26				8.5	13.5	17.0	17.0	18.0	25.0	26.5	26.0	17.0
27				8.0	13.0	17.5	17.5	18.5	25.5	27.0	25.5	16.5
28				12.5	14.0	17.5	17.5	18.0	24.5	27.0	26.0	16.0
29				12.0	---	16.5	18.0	18.5	23.0	27.0	26.0	16.0
30				13.5	---	17.0	17.5	19.0	23.5	26.5	25.5	15.5
31				14.0	---	17.5	---	18.0	---	26.0	25.5	---
MEAN				11.0	14.0	15.5	17.0	17.5	22.5	26.0	26.0	21.0
WTR YR 1978	MEAN	19.5		MAX	27.0		MIN	7.0				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

08370500 RIO GRANDE BELOW OLD FORT QUITMAN, TX  
(National stream-quality accounting network)

LOCATION.--Lat 31°05'05", long 105°36'25", Hudspeth County, Hydrologic Unit 13040201, at gaging station on the rectified channel of the Rio Grande, 1.5 mi (2.4 km) downstream from Old Fort Quitman, and 81.7 mi (131.5 km) downstream from the American Dam at El Paso.

DRAINAGE AREA.--31,944 mi<sup>2</sup> (82,735 km<sup>2</sup>), United States and Mexico; from International Boundary and Water Commission Water Bulletin No. 46.

PERIOD OF RECORD.--Water years 1930 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to current year.

WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Records of discharge for water year 1978 are given in International Boundary and Water Commission Water Bulletins Nos. 47 and 48.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 13,000 micromhos May 18, 1977; minimum daily, 368 micromhos Aug. 9, 1978.

WATER TEMPERATURES: Maximum 35.0°C Aug. 10, 1976; minimum daily, 0.5°C Jan. 25, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE.--Maximum daily 11,900 micromhos Apr. 9-10; minimum daily, 368 micromhos Aug. 9.

WATER TEMPERATURES.--Maximum 32.0°C July 4; minimum 0.5°C Jan. 25.

# CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L) (00310)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT												
10...	1030	1.5	9310	8.1	--	22.0	85	12.5	6.0	1700	1500	440
NOV												
09...	0800	24	5130	8.2	--	8.0	30	12.6	7.5	880	620	230
DEC												
13...	0815	14	6020	8.2	--	5.0	60	11.7	19	1000	740	270
JAN												
18...	1700	7.0	10800	8.2	10.5	13.5	10	17.2	--	1800	1500	430
FEB												
15...	1121	6.0	9560	7.9	10.0	10.0	30	14.5	--	1800	1600	460
MAR												
21...	1123	2.6	10300	7.9	26.5	17.0	30	12.0	--	2100	1900	540
APR												
18...	1224	2.0	11200	7.8	24.5	23.5	25	11.4	--	2000	1800	500
		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE AS HCO3 (00440)	CAR- BONATE AS CO3 (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4 AS CL) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
OCT												
10...	150	1600	17	19	230	0	189	1500	2400		.7	21
NOV												
09...	74	800	12	15	320	0	262	800	1100		.8	25
DEC												
13...	85	970	13	17	350	0	287	1000	1300		.9	26
JAN												
18...	170	1700	18	18	280	0	230	1500	2600		.8	21
FEB												
15...	160	1600	16	17	290	0	240	1500	2500		.7	21
MAR												
21...	180	1900	18	20	250	0	210	1700	3000		.7	15
APR												
18...	180	1800	18	41	270	0	220	1700	2900		.9	16
		SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
OCT												
10...	6310	6240	.03	.04	1.3	1.3	.15	10	170	11	--	--
NOV												
09...	3270	3200	.91	3.1	1.7	5.7	3.8	--	--	11	--	--
DEC												
13...	3840	3840	.65	4.9	3.2	8.8	2.9	--	--	12	--	--
JAN												
18...	6650	6580	.02	.02	--	--	.05	--	--	9.6	--	--
FEB												
15...	6420	6400	.01	.01	1.5	1.5	.21	70	560	--	7.5	--
MAR												
21...	7480	7480	.01	.01	1.9	1.9	.17	--	--	9.1	--	--
APR												
18...	7140	7270	.04	.09	1.3	1.4	.20	--	--	12	--	--

08370500 RIO GRANDE BELOW OLD FORT QUITMAN, TX--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
OCT 10...	1030	4	3	700	200	10	0	10	10
FEB 15...	1121	3	2	200	300	0	2	10	10

	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
OCT 10...	50	0	20	2	250	10	--	0	170
FEB 15...	1	0	6	1	930	70	16	5	550

	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 10...	170	.0	.0	0	0	10	0	20	10
FEB 15...	560	.3	.0	0	0	0	0	30	30

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L) (39516)	PCB, IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, IN BOT- TOM MA- TERIAL (UG/KG) (39333)	ATRA- ZINE, TOTAL (UG/L) (39630)	ATRA- ZINE, IN BOT- TOM MA- TERIAL (UG/KG) (39631)	CHLOR- DANE, TOTAL (UG/L) (39350)	CHLOR- DANE, IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)
OCT 10...	1030	ND	--	ND	--	ND	--	ND	--	ND	--	ND
NOV 09...	0800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAR 21...	1123	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	TIME	P,P', DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39321)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39570)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39571)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39393)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39398)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39399)
OCT 10...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
NOV 09...	1.5	ND	ND	.12	ND	ND	ND	ND	ND	ND	ND	ND
MAR 21...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND

ND Material specifically tested for but not detected.

08370500 RIO GRANDE BELOW OLD FORT QUITMAN, TX--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR, TOTAL (UG/KG) (39413)	HEPTA- CHLOR, TOTAL (UG/L) (39420)	HEPTA- CHLOR, TOTAL (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL (UG/KG) (39343)	MALA- THION, TOTAL (UG/L) (39530)	MALA- THION, TOTAL (UG/KG) (39531)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	METH- OXY- CHLOR, TOTAL (UG/KG) (39481)	METHYL THION, TOTAL (UG/L) (39600)
OCT 10...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
NOV 09...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAR 21...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	METHYL PARA- THION, TOTAL (UG/KG) (39601)	METHYL THION, TOTAL (UG/L) (39790)	METHYL THION, TOTAL (UG/KG) (39791)	PARA- THION, TOTAL (UG/L) (39540)	PARA- THION, TOTAL (UG/KG) (39541)	SIMA- ZINE TOTAL (UG/L) (39025)	SIMA- ZINE IN BOTTOM MATERIAL (UG/L) (39046)	TOXA- PHENE, TOTAL (UG/L) (39400)	TOXA- PHENE, TOTAL (UG/KG) (39403)	TRI- THION, TOTAL (UG/L) (39786)	TRI- THION, TOTAL (UG/KG) (39787)
OCT 10...	--	ND	--	ND	--	ND	--	ND	--	ND	--
NOV 09...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAR 21...	--	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	TIME	2,4-D, TOTAL (UG/L) (39730)	2,4-D, TOTAL (UG/KG) (39731)	2,4,5-T TOTAL (UG/L) (39740)	2,4,5-T TOTAL (UG/KG) (39741)	SILVEX, TOTAL (UG/L) (39760)	SILVEX, TOTAL (UG/KG) (39761)
OCT 10...	1030	ND	--	ND	--	ND	--
NOV 09...	0800	ND	ND	ND	ND	ND	ND
MAR 21...	1123	ND	--	ND	--	ND	--

MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 10...	1030	1700	260	250
NOV 09...	0800	52000	540	500
DEC 13...	0815	15000	30	300
JAN 18...	1700	--	7	220000
FEB 15...	1121	--	63	97
MAR 21...	1123	--	150	180
APR 18...	1224	--	57	120

ND Material specifically tested for but not detected.

08370500 RIO GRANDE BELOW OLD FORT QUITMAN, TX--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	LENGTH OF EXPO- SURE (DAYS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00022)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
OCT 10...	1030	--	15.2	13.9	.076	.002	Polyethylene strip
DEC 13...	0815	34	65.5	57.5	62.0	2.48	"
JAN 18...	1700	36	25.8	22.9	5.62	.860	"
FEB 15...	1121	26	23.9	21.3	3.58	.290	"

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 10...	1030	1.5	22.0	30	.12	93
NOV 09...	0800	24	8.0	44	2.9	93
DEC 13...	0815	14	5.0	82	3.1	97
JAN 18...	1700	7.0	13.5	37	.70	40
FEB 15...	1121	6.0	10.0	74	1.2	59
MAR 21...	1123	2.6	17.0	89	.62	72
APR 18...	1224	2.0	23.5	94	.51	87

## RIO GRANDE BASIN

08370500 RIO GRANDE BELOW OLD FORT QUITMAN, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	6780	9500	10000	10200	11400		---	---	---	---
2	---	---	6640	9720	10000	10500	11200		---	---	---	---
3	---	6860	5050	9200	10000	9910			---	380	---	---
4	---	---	4720	8710	10200	9720	---		---	371	---	1570
5	---	---	4900	8540	10200	9910	---		---	---	---	1130
6	---	---	4110	8710	10200	10100	---		---	---	---	1550
7	---	---	4480	9210	9810	10100	11700		---	---	---	1180
8	---	6310	6390	9380	9450	11100	11700		---	---	---	1270
9	---	4420	7520	9090	10300	10800	11900		---	---	368	---
10	9310	5050	8370	9140	9810	10400	11900		---	---	---	---
11	---	5770	8620	9170	9450	11000	10900		---	---	---	---
12	---	6220	5030	8370	9450	10900	11600		---	---	---	---
13	---	4160	6250	9090	9630	11300	11700		---	---	---	---
14	---	4000	7410	9380	10000	10900	---		---	---	---	---
15	---	4910	4470	9860	9540	11300	---		---	---	---	---
16	---	4650	5950	9060	9900	10800	---		---	---	---	---
17	---	4850	7040	9680	9290	10700	---		---	---	---	---
18	5830	4740	7690	9810	8670	11300	---		---	---	---	---
19	5250	4980	7870	10000	9120	---	---		---	---	---	---
20	4730	4420	7720	10200	9200	---	---		---	---	---	---
21	7730	4550	6830	10100	9540	---	---		---	---	---	403
22	---	3870	8850	9910	10000	---	---		---	---	---	1490
23	---	4740	8300	10000	10100	---	---		---	---	---	3240
24	---	4780	8740	9860	10400	---	---		---	---	477	2050
25	---	5690	8750	10000	9450	---	---		---	---	---	455
26	---	6010	8780	9860	10100	---	---		---	---	---	447
27	---	7040	8890	10000	10600	11000	---		---	---	---	769
28	---	6250	8700	10100	10500	11000	---		---	---	---	1520
29	---	7200	6020	10100	---	11300	---		474	---	---	1550
30	---	6950	7590	10100	---	11300	---		---	---	---	2180
31	---	---	9260	10000	---	11500	---		---	---	---	---
MEAN	6570	5350	7020	9540	9820	10700	11600		474	376	423	1390

WTR YR 1978 MEAN 7740 MAX 11900 MIN 368

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	10.5	9.0	13.0	16.5	20.5		---	---	---	---
2	---	---	11.5	9.5	14.5	17.0	21.0		---	---	---	---
3	---	---	12.0	12.0	16.0	15.5	---		---	31.5	---	---
4	---	---	16.0	15.0	11.0	19.0	---		---	32.0	---	25.0
5	---	---	16.0	13.5	10.5	17.0	---		---	---	---	24.0
6	---	---	11.0	15.0	11.0	12.5	---		---	---	---	25.0
7	---	---	6.0	13.0	10.0	13.0	15.5		---	---	---	17.0
8	---	15.0	13.5	11.0	11.5	17.0	14.5		---	---	---	28.0
9	---	16.5	8.0	12.0	12.5	16.5	15.0		---	---	24.0	---
10	---	16.0	5.0	11.5	17.0	20.0	15.0		---	---	---	---
11	---	16.0	13.0	13.0	9.0	16.5	21.5		---	---	---	---
12	---	16.0	14.0	14.0	8.5	12.5	19.5		---	---	---	---
13	---	15.0	4.0	10.0	13.0	14.5	19.0		---	---	---	---
14	---	14.5	4.0	4.0	11.5	16.0	---		---	---	---	---
15	---	17.5	13.5	8.0	13.0	15.0	---		---	---	---	---
16	---	16.5	9.5	15.0	12.0	18.0	---		---	---	---	---
17	---	17.5	11.5	12.5	10.0	22.5	---		---	---	---	---
18	13.5	17.0	11.0	13.5	12.0	18.5	---		---	---	---	---
19	16.0	10.0	12.5	6.5	8.5	---	---		---	---	---	---
20	24.0	17.0	3.0	10.0	14.0	---	---		---	---	---	---
21	20.5	18.0	8.5	11.0	3.5	---	---		---	---	---	17.0
22	---	17.5	10.0	7.0	14.0	---	---		---	---	---	18.5
23	---	10.0	12.0	12.0	18.0	---	---		---	---	---	18.5
24	---	10.0	16.0	6.0	17.5	---	---		---	---	23.5	18.0
25	---	15.0	12.5	.5	16.0	---	---		---	---	---	17.0
26	---	15.5	12.5	10.5	15.0	---	---		---	---	---	17.0
27	---	15.0	12.5	3.0	17.0	20.5	---		---	---	---	17.5
28	---	15.5	13.0	7.0	18.0	22.0	---		---	---	---	24.5
29	---	15.0	7.0	15.5	---	22.0	---		31.0	---	---	25.0
30	---	12.0	13.0	9.0	---	25.0	---		---	---	---	27.0
31	---	---	13.0	18.5	---	20.0	---		---	---	---	---
MEAN	18.5	15.0	11.0	10.5	13.0	17.5	18.0		31.0	32.0	24.0	21.5

WTR YR 1978 MEAN 14.5 MAX 32.0 MIN .5

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

08377900 RIO MORA NEAR TERRERO, NM  
(hydrologic bench-mark station)

LOCATION.--Lat 35°46'38", long 105°39'27", in E. 1/4 sec. 22, T. 18 N., R. 12 E., San Miguel County, Hydrologic Unit 13060001, in Santa Fe National Forest, on left bank 450 ft (140 m) upstream from bridge on State Highway 63, 600 ft (180 m) upstream from mouth, and 2.6 mi (4.2 km) north of Terrero.

DRAINAGE AREA.--53.2 mi<sup>2</sup> (137.8 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 7,890 ft (2,450 m), from topographic map.

REMARKS.--Water-discharge records good except those for winter period, which are poor. About 90 percent of the drainage is in the Pecos Wilderness Area and not subject to development, watershed management, or the building of highways; there is limited cattle grazing by permit.

AVERAGE DISCHARGE.--15 years, 26.8 ft<sup>3</sup>/s (0.759 m<sup>3</sup>/s), 19,420 acre-ft/yr (23.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 726 ft<sup>3</sup>/s (20.6 m<sup>3</sup>/s) May 21, 1973, gage height, 3.68 ft (1.122 m); minimum determined, 0.90 ft<sup>3</sup>/s (0.025 m<sup>3</sup>/s) Jan. 12-14, 1964, but may have been less during periods of ice effect.

EXTREMES OUTSIDE PERIOD OF RECORD.--Greatest flood since 1886 probably occurred Sept. 29, 1904 (based on statement for Pecos River near Pecos and history of that flood period).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 17	0115	*245 6.94	2.70 .823	May 22	2215	228 6.46	2.65 .808

Minimum discharge, 1.4 ft<sup>3</sup>/s (0.040 m<sup>3</sup>/s) Dec. 17, 22, result of freezeup, but may have been less during periods of ice effect.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	5.0	2.7	3.5	4.0	4.5	26	52	116	23	18	11
2	6.1	4.3	4.5	3.5	4.0	4.8	23	43	119	22	16	9.8
3	6.1	5.5	5.0	3.8	4.0	5.0	23	50	114	20	17	8.9
4	6.0	5.1	5.5	4.0	4.0	5.5	25	44	108	19	18	8.5
5	6.1	5.2	4.5	4.0	4.0	5.0	26	39	105	18	17	7.8
6	7.3	5.3	3.4	4.0	4.0	4.5	23	37	102	17	18	7.4
7	8.6	8.3	5.5	3.8	4.0	4.0	27	32	93	17	18	7.2
8	6.5	5.0	5.1	3.8	4.0	4.0	31	32	81	18	17	6.8
9	6.0	5.0	3.9	4.0	4.0	4.5	34	40	72	20	17	6.6
10	5.7	6.0	4.5	3.5	4.0	4.5	31	62	66	18	15	6.4
11	5.5	8.0	4.6	3.8	3.8	4.0	26	95	62	18	15	6.1
12	5.4	7.5	4.8	4.0	3.5	3.8	28	116	59	16	14	5.6
13	5.7	7.0	4.7	4.0	3.0	3.5	32	129	56	17	17	5.5
14	5.6	6.5	5.5	3.8	2.5	3.0	37	151	51	16	14	5.4
15	5.4	6.0	5.5	4.0	2.8	3.0	39	182	47	14	13	5.3
16	5.4	5.5	4.8	3.5	2.5	4.0	43	197	43	13	12	5.2
17	5.4	6.0	2.9	3.8	2.3	6.5	42	215	39	12	11	5.4
18	5.3	5.5	6.0	3.5	2.0	8.2	35	180	36	12	11	5.5
19	5.2	6.3	5.5	3.0	2.3	9.4	31	164	35	11	10	4.9
20	5.3	5.2	4.5	3.5	2.5	8.9	31	176	31	15	11	4.8
21	5.4	5.4	3.5	3.8	2.8	9.5	33	191	28	20	13	4.8
22	5.6	5.8	3.5	4.0	3.0	13	33	199	26	16	15	5.0
23	5.8	4.9	4.0	4.0	3.0	11	31	205	24	20	13	5.1
24	6.0	5.6	4.0	3.5	3.5	8.9	33	194	22	20	14	9.0
25	5.8	6.3	4.0	3.5	3.5	8.1	36	180	20	20	18	13
26	5.5	5.7	4.0	3.8	3.5	9.5	42	165	19	15	15	10
27	5.4	5.5	4.0	4.0	4.0	12	53	155	19	14	12	7.9
28	5.4	5.5	4.0	4.0	4.0	13	55	138	22	16	11	6.7
29	5.3	3.8	4.0	4.0	---	12	54	125	40	14	12	6.4
30	5.6	5.5	4.0	4.0	---	14	54	116	30	17	11	6.0
31	5.3	---	4.0	3.8	---	19	---	114	---	22	10	---
TOTAL	179.8	172.2	136.4	117.2	94.5	230.6	1037	3818	1685	530	443	208.0
MEAN	5.80	5.74	4.40	3.78	3.38	7.44	34.6	123	56.2	17.1	14.3	6.93
MAX	8.6	8.3	6.0	4.0	4.0	19	55	215	119	23	18	13
MIN	5.2	3.8	2.7	3.0	2.0	3.0	23	32	19	11	10	4.8
AC-FT	357	362	271	232	187	457	2060	7570	3340	1050	879	413

CAL YR 1977	TOTAL	6409.1	MEAN	17.6	MAX	122	MIN	2.7	AC-FT	12710
WTR YR 1978	TOTAL	8651.7	MEAN	23.7	MAX	215	MIN	2.0	AC-FT	17160



## RIO GRANDE BASIN

08377900 RIO MORA NEAR TERRERO, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)
NOV 03...	1300	4.7	105	7.7	16.0	.5	11.6	48	6
JAN 06...	1137	1.2	120	7.7	9.0	.0	11.3	62	14
MAR 16...	1345	14	118	7.4	8.0	.0	11.6	59	11
MAY 04...	1115	43	77	7.6	6.0	3.0	10.6	35	6
JUL 12...	1300	16	80	7.8	27.0	15.0	7.8	44	7
SEP 21...	1121	5.2	100	8.2	13.5	7.0	10.0	47	5

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
NOV 03...	16	1.9	1.6	.1	.5	51	0	42	6.6
JAN 06...	21	2.2	1.5	.1	.5	58	0	48	13
MAR 16...	20	2.3	2.4	.1	1.4	59	0	48	11
MAY 04...	12	1.2	.6	.0	.4	35	0	29	5.5
JUL 12...	15	1.6	1.1	.1	.5	--	--	37	6.2
SEP 21...	16	1.7	1.0	.1	.5	--	--	42	8.8

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CYANIDE TOTAL (MG/L AS CN) (00720)
NOV 03...	6.4	.2	6.5	59	65	.00	.00	--
JAN 06...	.6	.2	6.6	69	74	.13	.01	--
MAR 16...	1.1	.2	6.3	70	74	.05	.05	.00
MAY 04...	.7	.1	5.7	44	43	.09	.00	--
JUL 12...	.5	.1	6.7	51	54	.00	.00	--
SEP 21...	.5	.1	6.8	60	61	.01	.01	.00

08377900 RIO MORA NEAR TERRERO, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)
MAR 16...	1345	0	100	3	0	5	30
SEP 21...	1121	0	0	0	10	2	110

DATE	TIME	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)
MAR 16...		5	0	.0	0	1	10
SEP 21...		0	0	.0	0	0	10

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON EXTRAC- TION (UG/L) (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
SEP 21...	1121	<.4	<.4	.5	<.4	.5	<.4	.04	.19

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39516)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39365)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)
SEP 21...	1121	.0	0	.00	.0	.0	0	.00	.2	.00	.4

DATE	TIME	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39570)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39383)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39388)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39398)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39410)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)
SEP 21...		.00	.2	.00	.00	.0	.00	.00	.0	.00	.00	.0

## RIO GRANDE BASIN

08377900 RIO MORA NEAR TERRERO, NM--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	MALA- THION. TOTAL (UG/L) (39530)	METHYL PARA- THION. TOTAL (UG/L) (39600)	METHYL TRI- THION. TOTAL (UG/L) (39790)	PARA- THION. TOTAL (UG/L) (39540)	TOX- APHENE. TOTAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)	TOTAL TRI- THION (UG/L) (39786)
SEP 21...	.00	.0	.00	.0	.00	.00	.00	.00	0	0	.00
DATE	TIME	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	PER- THANE TOTAL (UG/L) (39034)	CHLOR. TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)				
SEP 21...	1121	.00	.00	.00	.00	.00	.00				

MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ PER 100 ML) (31625)	STREP- TOCOC FECAL, KF AGAR (COLS. PER 100 ML) (31673)
NOV 03...	1300	42	0	4
JAN 06...	1137	23	1	0
MAR 16...	1345	5	0	2
MAY 04...	1115	18	1	2
JUL 12...	1300	49	17	160
SEP 21...	1121	70	2	10

INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (00154)	DIS- CHARGE, SUS- PENDE (T/DAY) (00155)
OCT 07...	1015	8.6	8.0	1	.02
NOV 03...	1300	4.7	.5	5	.06
18...	1500	5.6	1.0	3	.05
DEC 22...	1140	1.4	.0	3	.01
FEB 14...	1030	1.3	.0	4	.01
MAR 15...	1300	2.7	1.0	4	.03
APR 12...	1100	28	6.5	5	.38
MAY 04...	1200	43	3.0	5	.58
JUN 08...	1055	82	6.0	5	1.1
JUL 05...	1500	18	13.0	6	.29
12...	1300	16	15.0	5	.22
AUG 03...	1130	17	12.0	44	2.0
SEP 21...	1121	5.2	7.0	2	.03

## 08378500 PECOS RIVER NEAR PECOS, NM

LOCATION.--Lat 35°42'30", long 105°40'55", in NE¼NE¼ sec.17, T.17 N., R.12 E., San Miguel County, Hydrologic Unit 13060001, in Santa Fe National Forest, on left bank 30 ft downstream from bridge on private road, 270 ft (82 m) upstream from Indian Creek, 2.4 mi (3.9 km) downstream from Holy Ghost Creek, 9.0 mi (14.5 km) north of Pecos, and at mile 896.6 (1,422.6 km). Prior to Oct. 27, 1977 at site 30 ft (9.1 m) upstream.

DRAINAGE AREA.--189 mi<sup>2</sup> (490 km<sup>2</sup>).

PERIOD OF RECORD.--August 1919 to current year. Monthly discharge only for some periods, published in WSP 1312. Published as "near Cowles" 1919-25, "at Irvins Ranch" 1926-29, and as "at Irvins Ranch near Pecos" 1930-39.

REVISED RECORDS.--WSP 898: Drainage area. WSP 1312: 1932(M).

GAGE.--Water-stage recorder. Datum of gage is 7,502.94 ft (2,286.896 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 27, 1977, at site 30 ft (9.1 m) upstream at same datum.

REMARKS.--Records good except those for winter period, which are poor, and those for September, which are fair. Diversions for irrigation of about 75 acres (30 km<sup>2</sup>), 1959 determination, above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--59 years, 95.6 ft<sup>3</sup>/s (2.707 m<sup>3</sup>/s), 69,260 acre-ft/yr (85.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 4,500 ft<sup>3</sup>/s (130 m<sup>3</sup>/s) Sept. 21 or 22, 1929, gage height, 6.2 ft (1.89 m), from floodmark, from rating curve extended above 1,600 ft<sup>3</sup>/s (45 m<sup>3</sup>/s); minimum, 2.0 ft<sup>3</sup>/s (0.057 m<sup>3</sup>/s) Mar. 19, 1971, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 29, 1904, was greatest since 1886, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 446 ft<sup>3</sup>/s (12.6 m<sup>3</sup>/s), at 0200 hours May 17, gage height, 3.25 ft (0.991 m), no other peak above base of 310 ft<sup>3</sup>/s (8.8 m<sup>3</sup>/s); minimum, 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) Dec. 17, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	23	20	18	21	23	68	144	312	97	51	33
2	28	21	22	18	20	24	60	123	322	89	46	29
3	29	25	24	20	21	26	59	126	316	85	51	29
4	29	24	26	21	21	28	63	117	314	79	57	30
5	28	24	24	22	21	25	70	108	311	74	55	27
6	33	24	21	22	22	23	59	102	307	69	60	27
7	38	33	24	21	21	22	70	90	286	66	55	27
8	31	25	23	21	22	22	83	87	259	64	53	26
9	28	25	20	22	21	24	92	101	238	76	50	25
10	27	27	23	20	22	24	85	150	235	66	46	25
11	27	31	24	21	21	23	70	192	235	73	47	24
12	27	30	24	23	20	22	77	192	225	63	42	24
13	27	28	22	22	19	22	92	215	218	64	43	23
14	26	27	24	21	18	20	103	242	209	67	38	23
15	26	27	24	25	19	20	106	339	202	61	35	22
16	25	26	22	22	18	22	118	373	190	55	33	22
17	25	27	19	23	17	22	116	393	177	51	32	22
18	24	26	28	23	15	24	96	362	165	50	31	24
19	24	27	23	20	16	28	90	333	161	49	30	22
20	24	25	20	21	17	28	90	349	148	61	32	22
21	24	23	17	22	18	30	96	367	138	81	32	22
22	25	24	18	23	19	34	96	388	128	98	39	22
23	26	22	22	23	20	32	92	400	119	69	35	22
24	25	22	21	20	21	30	101	409	110	70	35	24
25	25	25	21	20	21	27	113	396	104	63	45	75
26	23	24	20	21	22	29	131	370	95	54	37	44
27	24	24	21	22	20	32	160	359	97	55	32	33
28	24	25	20	23	20	35	161	330	105	54	29	30
29	24	21	21	23	---	33	152	310	150	51	31	28
30	25	24	20	22	---	39	154	305	123	54	35	27
31	25	---	20	20	---	53	---	307	---	62	32	---
TOTAL	824	759	678	665	553	846	2923	8079	5999	2030	1269	833
MEAN	26.6	25.3	21.9	21.5	19.8	27.3	97.4	261	200	65.5	40.9	27.8
MAX	38	33	28	25	22	53	161	409	322	97	60	75
MIN	23	21	17	18	15	20	59	87	95	49	29	22
AC-FT	1630	1510	1340	1320	1100	1680	5800	16020	11900	4030	2520	1650

CAL YR 1977 TOTAL 19134 MEAN 52.4 MAX 259 MIN 17 AC-FT 37950  
WTR YR 1978 TOTAL 25458 MEAN 69.7 MAX 409 MIN 15 AC-FT 50500

## 08379500 PECOS RIVER NEAR ANTON CHICO, NM

LOCATION.--Lat 35°10'44", long 105°06'30", Guadalupe County, Hydrologic Unit 13060001, in Anton Chico Grant, on right bank 2.1 mi (3.4 km) upstream from Cañon Blanco, 2.3 mi (3.7 km) southeast of Anton Chico, 9.7 mi (15.6 km) downstream from Tecolote Creek, and at mile 808.0 (1,300.1 km). Water-quality sampling site 0.5 mi (0.8 km) upstream.

DRAINAGE AREA.--1,050 mi<sup>2</sup> (2,720 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--April 1910 to May 1916, October 1916 to September 1924, August to December 1925, January 1927 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1342: 1951(M), 1952-53. WSP 1512: 1912-14, 1931, 1933(M), 1935-36(M), 1938(P), 1939-40, 1941-42(P), 1945(M), 1946(P), 1949(P). WSP 1712: 1942(P).

GAGE.--Water-stage recorder. Altitude of gage is 5,130 ft (1,564 m), from river-profile map. See WSP 1312 for history of changes prior to June 21, 1951.

REMARKS.--Water-discharge records poor. Diversions above station for irrigation of about 4,900 acres (2.0 km<sup>2</sup>), 1959 determination, above and below station. Acequia del Bodo Juan Paiz (see table below) diverts water about 8 mi (13 km) above gage and bypasses this station on left bank; ditch flow not included in record. Discharge measurements made at point opposite regular gage. A portion of this flow may be returned to the river about 5.0 mi (8.0 km) downstream.

AVERAGE DISCHARGE.--65 years (1910-15, 1916-24, 1926-78), 128 ft<sup>3</sup>/s (3.625 m<sup>3</sup>/s), 92,740 acre-ft/yr (114 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,300 ft<sup>3</sup>/s (1,140 m<sup>3</sup>/s) June 1, 1937, gage height, 20.34 ft (6.200 m), from floodmarks, at site and datum then in use, by slope-area measurement; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--The greatest flood since 1879 occurred Sept. 29, 1904, discharge about 73,000 ft<sup>3</sup>/s (2100 m<sup>3</sup>/s), from information by a local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,480 ft<sup>3</sup>/s (212 m<sup>3</sup>/s) at 0300 June 29, gage height, 10.20 ft (3.109 m), no other peak above base of 3,000 ft<sup>3</sup>/s (85 m<sup>3</sup>/s); no flow Mar. 27, 28.

Discharge measurements, in cubic feet per second, of Acequia del Bodo Juan Paiz, Water Year 1978

Oct. 11	0	Feb. 9	12
Nov. 16	0	Mar. 9	16
		June 8	38

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.81	14	24	10	8.7	.96	16	63	192	460	2.0	6.6
2	.80	15	21	6.2	8.6	2.6	40	107	212	120	1.6	5.5
3	1.2	16	20	7.8	8.2	21	54	118	225	30	8.8	5.2
4	.96	15	17	8.3	8.1	30	35	119	233	15	159	4.9
5	.72	9.1	16	8.0	7.2	27	33	128	241	10	129	4.7
6	2.0	11	25	8.8	5.5	13	42	117	265	9.0	62	4.5
7	52	24	25	10	5.6	15	44	113	274	8.0	46	4.4
8	15	48	21	7.8	6.4	13	38	105	234	7.0	33	4.3
9	14	58	16	8.8	5.3	6.7	35	90	208	6.0	22	4.3
10	5.0	40	21	6.3	9.4	5.0	47	58	186	5.0	11	4.2
11	3.3	33	23	6.4	9.4	6.3	53	83	178	4.5	6.6	4.3
12	9.0	27	21	5.6	8.5	6.8	46	130	171	4.0	2.4	4.3
13	2.0	31	19	6.9	8.1	5.1	35	171	183	3.5	2.8	4.1
14	1.8	33	19	6.6	5.6	4.3	37	191	166	3.4	1.9	4.0
15	1.6	31	13	8.2	9.9	3.2	49	213	153	3.3	1.4	4.0
16	1.6	28	10	5.8	6.3	12	49	255	138	3.2	1.3	4.0
17	2.6	27	8.1	6.7	24	17	54	270	125	3.1	1.2	3.9
18	2.2	26	6.7	4.9	13	.49	64	279	117	3.0	1.0	3.8
19	2.2	28	10	5.8	10	.19	53	259	110	2.9	1.1	3.3
20	8.5	25	5.3	9.3	9.0	.80	45	261	111	2.8	1.2	2.6
21	9.4	24	3.0	15	9.9	5.7	31	277	74	4.3	3.0	1.6
22	9.4	25	7.6	14	9.0	5.0	26	283	64	4.0	3.2	1.5
23	3.3	24	7.2	6.9	8.5	16	26	274	51	381	1.7	1.9
24	1.4	23	7.6	7.7	8.1	16	26	276	41	70	32	2.8
25	2.2	24	10	9.5	7.2	13	31	280	24	31	6.9	3.8
26	2.0	24	9.9	4.8	15	10	30	273	11	24	6.2	2.7
27	.93	22	9.4	4.1	3.3	.45	77	254	5.9	22	3.6	1.6
28	.65	24	9.3	8.0	3.3	1.3	69	244	5.3	10	2.5	2.8
29	.60	25	9.0	8.0	---	6.1	54	217	2250	5.9	8.6	3.7
30	.52	23	8.6	8.0	---	12	56	199	1850	2.3	62	2.4
31	6.1	---	9.5	7.8	---	17	---	189	---	2.0	14	---
TOTAL	163.79	777.1	432.2	242.0	241.1	292.99	1295	5896	8098.2	1260.2	639.0	111.7
MEAN	5.28	25.9	13.9	7.81	8.61	9.45	43.2	190	270	40.7	20.6	3.72
MAX	52	58	25	15	24	30	77	283	2250	460	159	6.6
MIN	.52	9.1	3.0	4.1	3.3	.19	16	58	5.3	2.0	1.0	1.5
AC-FT	325	1540	857	480	478	581	2570	11690	16060	2500	1270	222
CAL YR 1977	TOTAL	12802.02	MEAN	35.1	MAX	655	MIN	.00	AC-FT	25390		
WTR YR 1978	TOTAL	19449.28	MEAN	53.3	MAX	2250	MIN	.19	AC-FT	38580		

LOCATION.--Lat 35°39'07", long 105°19'06", San Miguel County, Hydrologic Unit 13060001, in Las Vegas Grant, on left bank 2.4 mi (3.9 km) west of Montezuma, 6.9 mi (11.1 km) northwest of Las Vegas, and at mile 74.4 (119.7 km).

PERIOD OF RECORD.--March to September 1915, June 1916 to current year. Monthly discharge only for some periods, published in WSP. 1312.  
Prior to October 1964, published as Gallinas River near Montezuma.

GAGE.--Water-stage recorder. Altitude of gage is 6,875 ft (2,096 m), from topographic map. Prior to Sept. 21, 1934, at different datum.

AVERAGE DISCHARGE.--62 years, 19.1 ft<sup>3</sup>/s (0.541 m<sup>3</sup>/s) 13,840 acre-ft/yr (17.1 hm<sup>3</sup>/yr).

EXTREMES OUTSIDE PERIOD OF RECORD.--The greatest flood since about 1900 occurred the night of Sept. 29, 1904 (discharge not determined), from information by local residents and G. B. Monk's report on floods.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 114 ft<sup>3</sup>/s (3.23 m<sup>3</sup>/s) July 23, gage height, 2.13 ft (0.649 m), no peak above base of 200 ft<sup>3</sup>/s (5.7 m<sup>3</sup>/s); minimum, 0.33 ft<sup>3</sup>/s (0.009 m<sup>3</sup>/s) Jan. 22, result of freezeup.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.9	2.4	2.0	2.1	2.5	6.2	5.7	9.3	18	4.7	6.3
2	1.4	1.9	2.2	2.0	2.0	3.4	5.9	9.9	11	12	4.7	4.8
3	1.5	1.9	2.4	2.1	2.0	3.0	5.5	9.3	11	8.8	4.3	4.1
4	1.4	2.0	2.3	2.2	2.1	3.1	5.5	14	13	6.7	5.4	3.6
5	1.4	2.0	2.3	2.2	2.2	3.7	5.6	15	12	5.4	15	5.4
6	1.7	2.1	2.2	2.2	2.1	3.4	5.4	19	16	4.4	8.5	3.3
7	1.9	4.5	2.3	2.1	2.0	3.4	5.5	15	16	3.8	6.1	2.9
8	1.8	3.8	2.1	2.0	2.0	3.0	5.8	14	13	3.3	8.5	2.6
9	1.6	3.2	2.1	2.2	1.9	3.2	6.5	16	10	3.7	7.5	2.6
10	1.6	3.1	2.4	2.0	2.1	3.4	6.9	22	8.3	3.3	5.3	2.3
11	1.6	2.9	2.6	2.1	2.1	3.3	6.8	29	6.9	3.2	4.5	2.1
12	1.6	2.9	2.4	2.2	2.0	3.1	7.6	33	6.5	4.4	4.2	1.8
13	1.7	2.9	2.1	2.1	2.0	2.9	8.1	33	6.6	4.3	3.9	1.7
14	1.8	2.9	2.5	2.0	1.9	2.9	9.0	33	5.8	3.5	3.7	1.6
15	1.7	2.9	2.3	2.2	2.0	2.8	9.5	35	4.9	3.3	3.3	1.6
16	1.7	2.8	2.2	2.0	1.9	2.8	9.9	33	3.9	3.1	2.9	1.5
17	1.7	2.8	2.0	2.2	1.7	3.0	9.5	30	4.0	3.1	2.7	1.5
18	1.8	2.8	2.1	2.0	1.6	3.3	8.0	26	3.9	2.7	2.5	1.4
19	1.8	2.8	2.0	1.9	1.7	3.4	6.0	22	3.9	2.6	2.4	1.3
20	1.8	2.7	1.9	2.0	1.8	3.5	4.5	21	3.6	3.2	2.7	1.5
21	1.7	2.6	1.8	2.1	1.9	3.7	4.6	23	3.4	5.2	2.6	1.5
22	1.8	2.6	2.0	2.2	2.0	4.0	4.7	21	3.0	7.9	3.0	1.5
23	1.9	2.4	2.2	2.2	2.1	4.5	4.6	20	2.9	27	3.1	1.5
24	1.9	2.5	2.1	2.0	2.2	4.4	4.4	20	2.7	6.8	2.8	1.9
25	1.9	2.4	2.1	2.0	2.3	4.6	5.0	19	2.4	4.6	3.1	3.3
26	1.9	2.5	2.0	2.1	2.3	4.0	5.2	17	2.3	4.0	4.1	2.8
27	1.9	2.4	2.1	2.2	2.3	4.1	5.5	16	9.0	4.0	3.3	2.4
28	1.9	2.5	2.0	2.3	2.2	4.8	5.4	15	5.0	4.1	2.9	2.1
29	2.0	2.5	2.2	2.4	---	5.2	5.4	13	45	3.5	3.8	1.9
30	1.9	2.5	2.2	2.3	---	4.9	5.2	12	33	3.5	5.1	1.8
31	1.9	---	2.2	2.1	---	5.2	---	10	---	4.5	5.8	---
TOTAL	53.6	79.7	67.7	65.6	56.5	112.5	187.7	620.9	278.3	177.9	142.4	74.6
MEAN	1.73	2.66	2.18	2.12	2.02	3.63	6.26	20.0	9.28	5.74	4.59	2.49
MAX	2.0	4.5	2.6	2.4	2.3	5.2	9.9	35	45	27	15	6.3
MIN	1.4	1.9	1.8	1.9	1.6	2.5	4.4	5.7	2.3	2.6	2.4	1.3
AC=FT	106	158	134	130	112	223	372	1230	552	353	282	148
CAL YR 1977	TOTAL	2396.2	MEAN 6.56	MAX 56	MIN 1.4	AC=FT 4750						
WTR YR 1978	TOTAL	1917.4	MEAN 5.25	MAX 45	MIN 1.3	AC=FT 3800						



08382600 PECOS RIVER ABOVE CANON DEL UTA NEAR COLONIAS, NM

LOCATION.--Lat 35°05'29", long 104°48'00", in T.10 N., R.20 E., Guadalupe County, Hydrologic Unit 13060001, in Anton Chico Grant, on right bank 0.4 mi (0.6 km) upstream from Cañon del Uta, 2.9 mi (4.7 km) southeast of Colonias, and at mile 775.8 (1,248.3 km).

DRAINAGE AREA.--2,330 mi<sup>2</sup> (6,030 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--January 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,800 ft (1,463 m), from U.S. Corps of Engineers plans.

REMARKS.--Records poor. Diversions and ground-water withdrawals for irrigation for about 11,800 acres (48 km<sup>2</sup>), 1959 determination, above station; this includes the off channel Storrie Lake project on the Gallinas River above Las Vegas. Several observations of water temperature were made during the period.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,900 ft<sup>3</sup>/s (110 m<sup>3</sup>/s) at 0800 hours June 29, gage height, 8.88 ft (2.707 m), no other peak above base of 3,000 ft<sup>3</sup>/s (85 m<sup>3</sup>/s); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	1.8	70	73	.00	.01
2	.00	.00	.00	.00	.00	.00	.00	3.8	80	23	1.7	.00
3	.00	.00	.00	.00	.00	.00	.00	11	90	6.3	.13	.00
4	.00	.00	.00	.00	.00	.00	.00	12	110	.00	86	.00
5	.00	.00	.00	.00	.00	.00	.00	11	120	.00	64	.00
6	.00	.00	.00	.00	.00	.00	.00	13	140	.00	58	.00
7	.00	.00	.00	.00	.00	.00	.00	12	150	.00	12	.00
8	.00	.00	.00	.00	.00	.00	.00	10	127	.00	1.0	.00
9	.00	.24	.00	.00	.00	.00	.00	7.7	110	.00	.00	.00
10	.00	.48	.00	.00	.00	.00	.00	4.6	79	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	1.0	57	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	6.1	42	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	12	41	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	18	55	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	20	26	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	31	23	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	41	.86	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	59	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	62	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	55	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	64	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	60	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	62	.00	145	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	72	.00	93	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	90	.00	12	6.6	.00
26	.00	.00	.00	.00	.00	.00	.00	110	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	110	20	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	100	65	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	1.6	90	1270	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	1.4	80	265	5.2	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	74	.00	6.9	6.2	.00
TOTAL	.00	.72	.00	.00	.00	.00	3.00	1304.0	2940.86	364.40	235.63	.01
MEAN	.000	.024	.000	.000	.000	.000	.10	42.1	98.0	11.8	7.60	.000
MAX	.00	.48	.00	.00	.00	.00	1.6	110	1270	145	86	.01
MIN	.00	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00
AC-FT	.00	1.4	.00	.00	.00	.00	6.0	2590	5830	723	467	.02
CAL YR 1977 TOTAL	7221.53		MEAN 19.8	MAX 886	MIN .00	AC-FT 14320						
WTR YR 1978 TOTAL	4848.62		MEAN 13.3	MAX 1270	MIN .00	AC-FT 9620						





## 08382730 LOS ESTEROS CREEK ABOVE LOS ESTEROS RESERVOIR, NM

LOCATION.--Lat 35°05'42", long 104°39'49", Guadalupe County, Hydrologic Unit 13060001 in Preston-Beck Grant, on left bank, 3.7 mi (6.0 km) upstream from mouth, 4.9 mi (7.9 km) north-northeast of Los Esteros Reservoir damsite, and 10.4 mi (16.7 km) north-northeast of Santa Rosa. Mouth at Pecos River mile 763.0 (1,227.7 km).

DRAINAGE AREA.--65.6 mi<sup>2</sup> (169.9 km<sup>2</sup>).

PERIOD OF RECORD.--July 1973 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,767 ft (1,453 m), from topographic map.

REMARKS.--Records fair. No known diversions or groundwater withdrawals for irrigation above station. Several observations of water temperature were made during the period.

AVERAGE DISCHARGE.--5 years, 2.21 ft<sup>3</sup>/s (0.063 m<sup>3</sup>/s), 1,600 acre-ft/yr (1.97 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft<sup>3</sup>/s (110 m<sup>3</sup>/s) July 24, 1976, gage height 9.3 ft (2.83 m) from rating curve extended above 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s) on basis of area-velocity studies, and slope-area measurements at gage heights 6.5 ft (1.98 m) and 9.3 ft (2.83 m); no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--A flood of unknown date reached a discharge of about 6,800 ft<sup>3</sup>/s (193 m<sup>3</sup>/s), gage height 11.6 ft (3.54 m), from floodmarks, from rating curve extended as explained above.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,830 ft<sup>3</sup>/s (51.8 m<sup>3</sup>/s) at 1930 hours June 30, gage height, 7.03 ft (2.143 m), no other peak above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s); no flow most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.03	.00	.00	.00	.00	54	.00	.00
2	.00	.00	.00	.00	.02	.00	.00	.00	.00	.84	.00	.00
3	.00	.00	.00	.00	.02	.00	.00	.00	.00	.14	.00	.00
4	.00	.00	.00	.00	.01	.01	.00	.00	.00	.03	.00	.00
5	.00	.00	.00	.00	.01	.02	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.01	.03	.00	.00	.00	.00	.00	.00
7	.11	1.5	.00	.00	.01	.11	.00	.00	.00	.00	.11	.00
8	.06	.04	.00	.00	.01	.03	.00	.00	.00	.00	5.0	.00
9	.04	.04	.00	.00	.01	.01	.00	.00	.00	.00	.15	.00
10	.03	.04	.00	.00	.01	.01	.00	.00	.00	.00	.01	.00
11	.01	.04	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
12	.00	.04	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
13	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.04	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
16	.00	.04	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
17	.00	.04	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
18	.00	.04	.00	.01	.02	.00	.00	.00	.00	.00	.00	.00
19	.00	.04	.00	.01	.02	.00	.00	.00	.00	.00	.00	.00
20	.00	.03	.00	.01	.02	.00	.00	.00	.00	.00	.00	.00
21	.00	.02	.00	.01	.02	.00	.00	.00	.00	.00	.00	.00
22	.00	.02	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00
23	.00	.02	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.02	.02	.00	.00	.00	12	.00	.00	.00
28	.00	.00	.00	.02	.00	.00	.00	.00	28	.00	.00	.00
29	.00	.00	.00	.01	---	.00	.00	.00	1.3	.00	.00	.00
30	.00	.00	.00	.01	---	.00	.00	.00	273	.00	.00	.00
31	.00	---	.00	.02	---	.00	---	.00	---	.00	.00	---
TOTAL	.25	2.07	.00	.22	.41	.22	.00	.00	314.30	55.01	5.27	.00
MEAN	.008	.069	.000	.007	.015	.007	.000	.000	10.5	1.77	.17	.000
MAX	.11	1.5	.00	.02	.03	.11	.00	.00	273	54	5.0	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC=FT	.5	4.1	.00	.4	.8	.4	.00	.00	623	109	10	.00

CAL YR 1977 TOTAL 1977.81 MEAN 5.42 MAX 690 MIN .00 AC=FT 3920  
WTR YR 1978 TOTAL 377.75 MEAN 1.03 MAX 273 MIN .00 AC=FT 749

## RIO GRANDE BASIN

08382760 LOS ESTEROS CREEK TRIBUTARY ABOVE LOS ESTEROS RESERVOIR, NM

LOCATION.--Lat 35°05'35", long 104°40'20", Preston-Beck Grant, Guadalupe County, Hydrologic Unit 13060001, 0.5 mile west-southwest of Los Esteros Creek gage, 0.8 mi. above confluence with Los Esteros Creek, 4.6 mi north-northeast of Los Esteros Reservoir damsite, and 10.2 mi north-northeast of Santa Rosa.

DRAINAGE AREA.--13.7 mi<sup>2</sup> (22.0 km<sup>2</sup>).

PERIOD OF RECORD.--July 1973 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,758 ft (1,450 m), from topographic map.

REMARKS.--Records poor. No known diversions or groundwater withdrawals for irrigation above station. Several observation of water temperature were made during the period.

AVERAGE DISCHARGE.--5 years, 0.62 ft<sup>3</sup>/s (0.018 m<sup>3</sup>/s), 449 acre-ft/yr (554,000 m<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,400 ft<sup>3</sup>/s (210 m<sup>3</sup>/s) Aug. 29, 1977, gage height, 7.80 ft (2.377 m) from rating curve extended above 0.5 ft/s (.014 m<sup>3</sup>/s) on basis of area-velocity studies, and slope-area measurement at gage height 7.8 ft (2.38 m); no flow most of the time.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 21 ft<sup>3</sup>/s (0.595 m<sup>3</sup>/s) June 27, gage height, 1.37 ft (0.418 m), no peak above base of 80 ft<sup>3</sup>/s (2.3 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	1.7	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.91	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.46	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	3.07	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.10	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	1.7	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	6.1	.00	.00	.00
CAL YR 1977	TOTAL	945.86	MEAN	2.59	MAX	819	MIN	.00	AC-FT	1880		
WTR YR 1978	TOTAL	3.07	MEAN	.008	MAX	1.7	MIN	.00	AC-FT	6.1		

LOCATION.---Lat 34°56'36", long 104°41'55", in N14SE1/4 sec.3, T.8 N., R.21 E., Guadalupe County, Hydrologic Unit 13060001, on left bank, 0.4 mi (0.6 km) downstream from bridge on U.S. Highway I-40, 0.6 mi (1.0 km) upstream from bridge on U.S. Highway I-40 Business in Santa Rosa, 1.9 mi (3.1 km) upstream from El Rito Creek, and at mile 748.4 (1,204.2 km). Water-quality sampling site 0.7 mi (1.1 km) downstream.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1903 to December 1905 (gage heights only), January to December 1906, February 1910 to July 1911, September 1912 to December 1934, March to May 1927, July 1927, January 1928 to current year. Monthly discharge only for some periods, published in WSP 1312. Figures of daily discharge for Apr. 5-20, May 4-7, 11, Aug. 13, 16-18, 24, Sept. 7-9, 11, 13, 19, 21, 23, 25, 27, Oct. 1-31, Nov. 3, 4, 9, 11, 20, 22, 1910, and Feb. 1 to Mar. 31, June 1 to July 31, 1911, published in WSP 358 are unreliable and should not be used.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 4,537.56 ft (1,383.048 m) National Geodetic Vertical Datum of 1929. For history of changes prior to Sept. 13, 1967, see WSP 2123.

AVERAGE DISCHARGE.--62 years (1906, 1913-24, 1928-78), 134 ft<sup>3</sup>/s (3.795 m<sup>3</sup>/s), 97,080 acre-ft/yr (120 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.---maximum discharge, 55,200 ft<sup>3</sup>/s (1,560 m<sup>3</sup>/s) June 2, 1937, gage height, 25.7 ft (7.83 m), site and datum then in use, from rating curve extended above 32,000 ft<sup>3</sup>/s (906 m<sup>3</sup>/s); minimum 0.28 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Jan. 7, 1971.

The flood of June 2, 1937, is the greatest since about 1886. Flood of Sept. 30, 1904, reached a stage of 24.7 ft (7.53 m), site and datum then in use, discharge, 45,000 ft<sup>3</sup>/s (1,290 m<sup>3</sup>/s), by Kutler's formula. Flood of June 9, 1903, reached a stage of 21.1 ft (6.43 m), same site and datum as in 1904, discharge, 34,000 ft<sup>3</sup>/s (963 m<sup>3</sup>/s), by comparison with 1904 flood.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,140 ft<sup>3</sup>/s (60.6 m<sup>3</sup>/s) June 29, gage height, 3.38 ft (1.030 m), no peak above base of 4,000 ft<sup>3</sup>/s (110 m<sup>3</sup>/s); minimum discharge 4.2 ft<sup>3</sup>/s (0.119 m<sup>3</sup>/s) June 21-26.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	16	16	12	13	8.1	11	6.6	78	649	24	11
2	29	17	16	13	13	9.0	10	19	75	138	11	12
3	31	17	14	13	13	10	9.0	29	94	64	14	12
4	33	17	14	13	13	12	9.0	69	164	33	59	11
5	37	17	14	12	13	12	9.0	69	147	19	116	9.0
6	71	17	14	11	13	11	9.0	58	228	16	88	8.1
7	60	18	14	10	13	11	8.1	58	216	14	72	7.3
8	27	30	13	10	13	10	8.1	49	206	14	29	6.6
9	22	24	13	9.0	12	10	7.3	38	147	17	19	7.3
10	19	22	12	9.0	13	9.0	9.0	29	123	13	14	7.3
11	17	27	14	10	13	9.0	9.0	23	94	12	12	8.1
12	17	22	14	11	10	9.0	9.0	17	69	14	10	7.3
13	16	17	14	10	9.0	8.1	9.0	17	56	19	9.0	7.3
14	16	16	14	8.1	11	7.3	8.1	55	48	14	9.0	7.3
15	16	16	13	9.0	11	7.3	7.3	88	46	14	7.3	8.1
16	17	13	12	10	11	7.3	7.3	91	24	14	8.1	8.1
17	17	14	12	11	12	8.1	7.3	123	13	16	7.3	8.1
18	17	13	11	11	13	8.1	6.6	160	7.3	22	6.6	7.3
19	16	13	11	11	13	8.1	6.6	202	5.3	10	7.3	6.6
20	16	13	10	10	13	8.1	6.6	182	5.3	9.0	7.3	8.1
21	16	13	8.1	12	12	9.0	6.6	177	4.7	9.0	8.1	10
22	16	14	10	13	11	10	6.6	187	4.7	9.0	11	12
23	16	16	11	13	11	11	6.6	197	4.7	10	10	13
24	14	14	11	14	10	10	6.6	173	4.7	228	10	16
25	14	13	10	12	9.0	10	6.6	173	4.7	88	10	20
26	14	14	11	12	7.3	11	6.6	182	4.7	31	104	19
27	13	14	12	13	7.3	11	6.6	173	81	14	14	14
28	14	14	13	12	7.3	11	6.6	151	501	10	9.0	10
29	14	16	12	12	---	12	6.6	143	1090	8.1	8.1	9.0
30	14	16	12	12	---	12	6.6	123	447	7.3	9.0	9.0
31	16	---	12	13	---	11	---	94	---	13	10	---
TOTAL	682	503	387.1	351.1	319.9	300.5	232.3	3155.6	3993.1	1548.4	733.1	299.9
MEAN	22.0	16.8	12.5	11.3	11.4	9.69	7.74	102	133	49.9	23.6	10.0
MAX	71	30	16	14	13	12	11	202	1090	649	116	20
MIN	13	13	8.1	8.1	7.3	7.3	6.6	6.6	4.7	7.3	6.6	6.6
AC-FT	1350	998	768	696	635	596	461	6260	7920	3070	1450	595
CAL YR 1977	TOTAL	21294.7	MEAN	58.3	MAX	5000	MIN	4.2	AC-FT	42240		
WTR YR 1978	TOTAL	12506.0	MEAN	34.3	MAX	1090	MIN	4.7	AC-FT	24810		

## RIO GRANDE BASIN

08383000 PECOS RIVER AT SANTA ROSA, NM -- Continued

## WATER-QUALITY RECORDS

LOCATION.--Samples collected 0.6 mi (1.0 km) downstream from discharge station.

PERIOD OF RECORD.--Water years 1905-07, 1959 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to current year.

WATER TEMPERATURES: October 1958 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1958 to current year.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,500 micromhos Jan. 18, 1974; minimum daily, 173 micromhos May 22, 1973.

WATER TEMPERATURES (1958-63, 1964-78): Maximum, 38.0°C May 11, 1970; minimum, 0.0°C on several days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 31,400 mg/L Aug. 18, 1961; minimum daily, 3 mg/L Apr. 30, 1972, Mar. 1, 15, 25, 1978.

SEDIMENT LOADS: Maximum daily, 344,000 tons (312,000 tonnes) July 30, 1971; minimum daily, .06 ton (.05 tonne) Mar. 15, 1978.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,460 micromhos Apr. 29; minimum daily, 281 micromhos July 1.

WATER TEMPERATURES: Maximum, 28.0°C May 12; minimum, 0.5°C Dec. 21.

SEDIMENT CONCENTRATIONS: Maximum daily, 9,350 mg/L June 30; minimum daily, 3 mg/L Mar. 1, 15, 25.

SEDIMENT LOADS: Maximum daily, 35,800 tons (32,500 tonnes) June 29; minimum daily, .06 ton (.05 tonne) Mar. 15.

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
MAY								
05...	0740	75	11.0	317	64	60	62	68
18...	0725	168	15.0	867	393	58	67	78
24...	1530	160	24.0	548	237	63	76	91
28...	0845	156	18.0	367	155	--	--	--
31...	0740	101	17.0	237	65	77	79	93
JUN								
09...	0745	151	18.0	1110	453	66	85	94
28...	0705	855	17.0	4420	10200	59	79	82
29...	1550	1870	20.0	14300	72200	47	60	84
JUL								
24...	0720	362	21.0	7360	7190	47	70	92
AUG								
01...	0825	24	20.0	422	27	80	90	97
26...	0735	75	17.0	1370	277	56	76	93

DATE	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)
MAY							
05...	--	--	--	83	88	94	100
18...	--	--	--	90	94	96	100
24...	--	--	--	96	99	99	100
28...	--	--	--	95	98	100	--
31...	--	--	--	94	96	98	100
JUN							
09...	--	--	--	96	98	100	--
28...	96	99	100	--	--	--	--
29...	98	99	100	--	--	--	--
JUL							
24...	--	--	--	99	100	--	--
AUG							
01...	--	--	--	99	100	--	--
26...	--	--	--	99	100	--	--

## 08383000 PECOS RIVER AT SANTA ROSA, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2000	2000	1840	2000	1990	2010	2160	2380	630	281	1130	2090
2	2000	2000	1840	2030	1980	1950	2160	1750	681	492	1620	1940
3	2000	2000	1880	2000	2000	1990	2140	1750	668	720	1550	1910
4	2000	1990	1850	1930	1980	2000	2130	1510	556	1080	1680	1880
5	2000	2020	1900	2000	2000	1970	2200	910	531	1350	667	2000
6	1950	2020	1890	2010	2000	1970	2200	978	491	1430	694	2090
7	1080	1520	1880	2010	2000	1670	2150	872	403	1610	724	2180
8	1620	1480	1840	2060	1950	1760	2170	949	382	1730	1180	2150
9	1750	1590	1900	2070	2000	1930	2190	984	426	1660	1520	2110
10	1800	1740	1990	2190	1990	1950	2120	1080	466	1800	1700	2210
11	2000	1600	1940	2270	2010	1990	2150	1240	602	1830	1820	2170
12	1990	1750	1870	2140	2010	1990	2200	1670	680	1890	1880	2300
13	1740	1890	1890	2000	2030	2040	2160	1780	787	1810	1950	2340
14	2020	1890	1880	2170	1980	2040	2140	1220	903	1920	1970	2290
15	2010	2000	1940	2080	2090	2080	2210	763	846	1950	2120	2360
16	2000	2000	1970	2020	2010	2040	2190	598	1020	1990	2030	2350
17	2000	2000	2090	2150	2250	2110	2350	560	1240	2000	2090	2260
18	1980	2000	2010	2030	2230	2150	2290	462	1510	2060	2150	2290
19	2000	2000	1920	2150	2110	2150	2270	405	1660	1930	2190	2340
20	2000	2090	2010	2190	1980	2090	2230	391	1760	2050	2100	2280
21	2000	2100	2190	2050	1920	2130	2260	404	1820	2110	2060	2250
22	2000	1820	2060	1970	1940	2200	2270	389	1890	2010	2140	2170
23	2000	1840	1890	1990	1950	2070	2300	370	1960	1980	2110	2110
24	1700	1820	1980	1920	1970	2090	2300	378	2020	1270	2000	2000
25	1990	1840	1920	1910	1980	2070	2320	379	1920	544	2000	1880
26	2000	1830	1960	1850	1980	2070	2270	376	2050	1030	554	1860
27	2020	1830	1940	2010	1980	2080	2300	370	2150	1490	1800	1450
28	2000	1800	1980	2000	1990	2050	2340	393	436	1700	1960	1520
29	2050	1850	1960	2010	---	2060	2460	413	448	1860	2060	1680
30	2000	1820	1950	2010	---	2080	2450	471	379	1920	2060	1690
31	2010	---	1980	1910	---	2070	---	539	---	1920	2040	---
MEAN	1930	1870	1940	2040	2010	2030	2240	862	1040	1590	1730	2070
WTR YR 1978	MEAN	1780	MAX	2460	MIN	281						

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	7.5	7.0	4.0	4.5	7.5	19.0	12.0	17.5	17.0	20.0	16.0
2	13.0	5.0	5.0	3.0	5.0	7.0	15.0	6.0	16.0	22.0	18.5	20.0
3	15.5	19.0	8.0	8.0	5.0	3.0	11.5	8.5	15.5	21.0	18.0	18.0
4	15.0	10.0	9.0	7.5	5.0	2.0	11.5	9.0	20.0	21.0	22.0	18.0
5	17.5	8.5	7.0	5.0	5.5	10.0	11.5	11.0	17.0	20.0	18.0	17.5
6	15.0	14.0	4.5	7.5	6.0	7.0	8.5	12.0	16.0	21.0	21.0	17.5
7	15.0	11.0	5.0	3.0	6.0	7.5	10.5	12.0	16.0	20.0	18.5	23.0
8	15.0	12.0	6.0	3.0	5.0	6.0	14.5	14.0	18.0	21.0	18.0	15.0
9	18.0	9.0	2.0	10.0	4.0	7.0	15.0	11.0	18.0	20.0	18.0	18.0
10	14.0	4.5	2.0	3.0	3.5	9.0	8.0	13.5	19.0	19.0	17.0	20.0
11	14.0	7.5	7.0	6.5	5.5	10.0	9.0	12.5	20.0	20.0	18.0	17.0
12	9.5	5.5	6.0	5.0	7.0	13.0	10.5	28.0	18.0	19.0	18.0	15.0
13	21.0	16.0	9.5	2.5	3.0	6.5	11.5	14.0	18.0	20.0	18.0	14.5
14	10.0	6.5	9.5	5.0	2.5	6.0	13.0	27.0	19.0	19.5	19.0	15.5
15	19.0	7.0	7.0	5.5	3.5	5.0	11.0	16.5	19.5	20.5	17.0	18.0
16	12.0	16.0	6.0	4.0	3.0	5.0	17.5	16.0	19.0	24.0	17.0	18.0
17	18.0	6.0	4.0	3.0	1.0	22.0	15.0	17.0	18.0	20.0	17.0	23.0
18	20.0	12.0	7.5	4.0	1.0	21.0	16.0	15.0	18.0	20.0	17.0	17.5
19	20.5	27.0	9.5	2.0	2.5	14.5	23.0	15.0	19.5	20.0	16.0	14.0
20	9.0	10.0	1.5	4.0	4.0	10.0	10.0	17.0	17.0	20.0	26.0	15.0
21	10.0	6.0	5.0	3.0	13.0	8.5	10.5	17.0	19.0	19.5	17.0	12.5
22	12.0	5.0	2.5	9.0	4.0	11.0	11.0	17.0	18.0	24.5	18.0	14.0
23	9.0	9.5	4.0	4.0	4.0	15.5	15.0	18.0	18.0	20.5	17.0	14.0
24	21.0	7.0	6.0	3.0	5.0	8.5	11.0	18.0	17.5	21.0	18.0	15.0
25	22.0	8.0	7.5	8.0	6.5	11.0	12.0	17.5	18.0	20.0	19.0	15.0
26	19.5	10.5	9.5	9.5	8.0	10.0	12.5	17.0	18.0	20.0	17.0	15.5
27	21.0	10.0	5.0	2.5	9.0	9.5	14.0	20.0	21.0	18.0	20.0	15.0
28	20.0	13.0	3.5	3.5	7.5	10.0	14.5	18.0	17.0	18.0	16.0	14.0
29	16.0	5.0	5.0	5.5	---	10.0	23.0	18.0	21.0	18.0	18.0	14.0
30	13.0	7.0	10.0	5.0	---	10.5	13.0	18.0	19.5	22.0	16.0	14.0
31	10.5	---	7.0	6.5	---	12.5	---	17.0	---	18.0	16.0	---
MEAN	15.5	10.0	6.0	5.0	5.0	9.5	13.5	15.5	18.0	20.0	18.0	16.5
WTR YR 1978	MEAN	13.0	MAX	28.0	MIN	.5						

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)		MEAN CONCENTRATION (MG/L)		LOADS (T/DAY)	
	OCTOBER				NOVEMBER				DECEMBER				JANUARY				FEBRUARY				MARCH			
1	83	6.1	24	1.0	9	.39	17	.55	23	.81	3	.07												
2	74	5.8	27	1.2	15	.65	27	.95	38	1.3	9	.22												
3	65	5.4	24	1.1	7	.26	36	1.3	44	1.5	40	1.1												
4	72	6.4	29	1.3	6	.23	27	.95	53	1.9	11	.36												
5	73	7.3	25	1.1	7	.26	15	.49	30	1.1	9	.29												
6	250	80	27	1.2	4	.15	29	.86	48	1.7	20	.59												
7	224	36	385	19	7	.26	18	.49	60	2.1	26	.77												
8	63	4.6	75	6.1	9	.32	18	.49	50	1.8	28	.76												
9	64	3.8	55	3.6	11	.39	24	.56	51	1.7	12	.32												
10	59	3.0	51	3.0	9	.29	22	.53	45	1.6	6	.15												
11	76	3.5	76	5.5	6	.23	24	.65	49	1.7	5	.12												
12	73	3.4	49	2.9	8	.30	20	.59	30	.81	4	.10												
13	68	2.9	35	1.6	9	.34	16	.43	40	.97	4	.09												
14	66	2.9	33	1.4	12	.45	14	.31	71	2.1	5	.10												
15	65	2.8	29	1.3	17	.60	12	.29	60	1.8	3	.06												
16	49	2.2	23	.81	53	1.7	20	.54	103	3.1	4	.08												
17	33	1.5	29	1.1	59	1.9	10	.30	54	1.7	8	.17												
18	28	1.3	28	.98	61	1.8	29	.86	88	3.1	19	.42												
19	25	1.1	30	1.1	27	.80	26	.77	91	3.2	19	.42												
20	24	1.0	34	1.2	37	1.0	42	1.1	57	2.0	9	.20												
21	29	1.3	30	1.1	43	.94	36	1.2	52	1.7	7	.17												
22	31	1.3	15	.57	44	1.2	26	.91	40	1.2	6	.16												
23	23	.99	10	.43	32	.95	22	.77	11	.33	4	.12												
24	31	1.2	11	.42	18	.53	25	.94	28	.76	10	.27												
25	28	1.1	10	.35	20	.54	46	1.5	6	.15	3	.08												
26	32	1.2	10	.38	25	.74	62	2.0	8	.16	7	.21												
27	33	1.2	12	.45	53	1.7	32	1.1	11	.22	10	.30												
28	39	1.5	13	.49	19	.67	28	.91	5	.10	17	.50												
29	27	1.0	16	.69	16	.52	28	.91	---	---	28	.91												
30	25	.94	10	.43	18	.58	17	.55	---	---	18	.58												
31	21	.91	---	---	25	.81	25	.88	---	---	14	.42												
TOTAL	---	193.64	---	61.80	---	21.50	---	24.70	---	40.61	---	10.11												
APRIL				MAY				JUNE				JULY				AUGUST				SEPTEMBER				
1	15	.45	19	.34	175	37	4770	9020	363	24	30	.89												
2	11	.30	69	3.5	179	36	1500	559	114	3.4	48	1.6												
3	13	.32	88	6.9	218	55	261	45	212	8.0	55	1.8												
4	14	.34	222	41	670	451	164	15	1870	298	52	1.5												
5	11	.27	277	52	425	169	160	8.2	3840	1200	41	1.0												
6	16	.39	140	22	837	689	159	6.9	3800	903	32	.70												
7	9	.20	194	30	925	539	121	4.6	7200	1400	18	.35												
8	10	.22	153	20	885	492	111	4.2	1050	82	28	.50												
9	11	.22	130	13	1010	401	118	5.4	343	18	22	.43												
10	14	.34	107	8.4	475	158	95	3.3	246	9.3	21	.41												
11	10	.24	83	5.2	243	62	81	2.6	198	6.4	20	.44												
12	20	.49	70	3.2	183	34	99	3.7	149	4.0	21	.41												
13	10	.24	45	2.1	218	33	113	5.8	124	3.0	16	.32												
14	8	.17	167	25	113	15	62	2.3	126	3.1	14	.28												
15	9	.18	285	68	134	17	65	2.5	84	1.7	13	.28												
16	8	.16	373	92	88	5.7	49	1.9	94	2.1	15	.33												
17	10	.20	607	202	69	2.4	42	1.8	82	1.6	12	.26												
18	17	.30	870	376	58	1.1	89	5.3	66	1.2	14	.28												
19	12	.21	898	490	54	.77	108	2.9	59	1.2	15	.27												
20	5	.09	836	411	136	1.9	53	1.3	63	1.2	21	.46												
21	10	.18	660	315	112	1.4	45	1.1	73	1.6	13	.35												
22	6	.11	614	310	112	1.4	42	1.0	88	2.6	8	.26												
23	8	.14	677	360	100	1.3	38	1.0	93	2.5	11	.39												
24	14	.25	590	276	105	1.3	6530	5200	71	1.9	13	.56												
25	10	.18	596	278	91	1.2	3200	760	73	2.0	36	1.9												
26	14	.25	575	283	85	1.1	400	33	1390	902	31	1.6												
27	24	.43	528	247	2050	1530	153	5.8	81	3.1	69	2.6												
28	17	.30	372	152	4740	9510	118	3.2	51	1.2	55	1.5												
29	23	.41	370	143	9050	35800	79	1.7	45	.98	55	1.3												
30	75	1.3	268	89	9350	13300	71	1.4	30	.73	57	1.4												
31	---	---	226	57	---	---	95	4.4	33	.89	---	---												
TOTAL	---	8.88	---	4381.64	---	63347.57	---	15714.3	---	4890.70	---	24.37												
TOTAL LOAD FOR YEAR:				88719.82 TONS.																				

08383500 PECOS RIVER NEAR PUERTO DE LUNA, NM  
(Surveillance program station)

LOCATION.--Lat 34°43'48", long 104°31'28", in NE¼SE¼NW¼ sec.20, T.6 N., R.23 E., Guadalupe County, Hydrologic Unit 13060001, on left bank 9 mi (14.5 km) southeast of Puerto de Luna, 17.5 mi (28.2 km) upstream from Sumner Dam, and at mile 719.5 (1,157.7 km).

DRAINAGE AREA.--3,970 mi<sup>2</sup> (10,280 km<sup>2</sup>), approximately (contributing area).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to current year.

REVISED RECORDS.--WSP 1512: 1939.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,311.34 ft (1,314.096 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 15, 1954, at datum 1 ft (0.30 m) higher.

REMARKS.--Water-discharge records good. Diversions for irrigation of about 12,500 acres (51 km<sup>2</sup>), 1959 determination, above station. Discharge represents inflow to Lake Sumner.

AVERAGE DISCHARGE.--40 years, 207 ft<sup>3</sup>/s (5.862 m<sup>3</sup>/s), 150,000 acre-ft/yr (185 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,600 ft<sup>3</sup>/s (1,380 m<sup>3</sup>/s) Sept. 1, 1942, gage height, 17.00 ft (5.182 m), from rating curve extended above 7,400 ft<sup>3</sup>/s (210 m<sup>3</sup>/s) on basis of flow at Santa Rosa; minimum, 11 ft<sup>3</sup>/s (0.31 m<sup>3</sup>/s) Jan. 31, 1951.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1886 occurred June 2, 1937, when peak at Santa Rosa was 55,200 ft<sup>3</sup>/s (1,560 m<sup>3</sup>/s) and peak inflow to Lake Sumner was about 75,000 ft<sup>3</sup>/s (2,120 m<sup>3</sup>/s). Flood of July 24, 1895, was reported as "highest in 10 years." Other major floods occurred on June 9, 1903, Sept. 30, 1904, and May 1, 1914.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,800 ft<sup>3</sup>/s (306 m<sup>3</sup>/s) at 2230 hours June 4, gage height, 7.37 ft (2.246 m), no other peak above base of 5,500 ft<sup>3</sup>/s (160 m<sup>3</sup>/s); minimum discharge 38 ft<sup>3</sup>/s (1.08 m<sup>3</sup>/s) June 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	74	91	83	89	83	79	52	119	688	76	74
2	77	76	91	85	89	87	78	111	112	342	71	71
3	76	78	91	86	88	87	73	109	119	244	67	67
4	81	79	88	85	85	85	69	118	1690	228	66	67
5	85	79	91	86	84	86	69	124	1330	211	118	67
6	317	80	90	86	84	86	68	123	455	315	149	65
7	1440	112	90	86	88	101	67	114	438	159	126	72
8	255	134	88	85	90	100	64	106	282	140	106	78
9	210	100	86	85	84	89	64	94	217	129	88	77
10	190	98	86	86	83	84	67	90	191	113	78	70
11	160	96	89	86	83	82	67	79	163	99	66	69
12	140	97	88	87	82	83	68	74	136	88	64	68
13	130	94	88	84	82	81	70	74	207	109	65	67
14	120	95	88	83	82	78	70	71	114	76	66	66
15	110	93	90	84	84	79	67	109	95	66	65	66
16	100	93	88	86	88	84	63	134	90	60	62	66
17	90	91	88	87	96	85	62	152	74	59	63	65
18	84	88	88	89	95	88	60	189	63	59	61	64
19	76	86	88	99	87	88	67	215	58	64	63	64
20	72	87	88	103	88	89	70	228	49	62	65	65
21	71	86	88	98	86	89	70	204	48	66	68	68
22	72	87	86	89	86	90	68	225	46	71	70	69
23	73	86	86	87	86	91	67	227	45	269	72	67
24	72	86	84	88	86	91	66	222	44	116	73	68
25	70	88	82	87	86	88	64	213	41	244	76	69
26	72	90	84	86	86	86	66	212	41	121	76	71
27	71	89	86	86	83	83	64	219	451	86	76	69
28	70	92	88	86	82	79	61	201	1470	71	78	71
29	73	91	90	85	---	81	58	176	943	64	80	71
30	75	90	88	85	---	81	51	165	888	62	79	71
31	74	---	86	89	---	80	---	132	---	62	77	---
TOTAL	4684	2715	2723	2707	2412	2664	1997	4562	10019	4543	2410	2062
MEAN	151	90.5	87.8	87.3	86.1	85.9	66.6	147	334	147	77.7	68.7
MAX	1440	134	91	103	96	101	79	228	1690	688	149	78
MIN	70	74	82	83	82	78	51	52	41	59	61	64
AC=FT	9290	5390	5400	5370	4780	5280	3960	9050	19870	9010	4780	4090
CAL YR 1977 TOTAL	54333				3580		MIN 42	AC=FT 107800				
WTR YR 1978 TOTAL	43498				1690		MIN 41	AC=FT 86280				



08383500 PECOS RIVER NEAR PUERTO DE LUNA, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1939-41, 1943, 1947-59, 1968 to current year.

REMARKS.--Prior to 1968 Water Year published as 8-3834, Pecos River at Puerto de Luna, N. Mex., which was located at bridge in the village of Puerto de Luna, 9 mi (14.5 km) northwest of the discharge station.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT										
27...	1000	71	2900	8.1	13.0	10.0	100	--	10.2	16
NOV										
21...	1330	86	2800	8.5	11.0	8.5	65	--	11.0	77
DEC										
15...	1000	90	2600	8.2	16.5	7.0	60	--	10.2	31
FEB										
02...	1000	90	3100	8.8	5.0	3.5	--	40	12.2	21
23...	1030	88	3000	8.4	9.0	6.5	--	40	14.0	33
MAR										
30...	1000	82	2830	8.1	19.0	14.0	--	20	10.6	15
APR										
28...	0910	62	3090	8.1	21.5	15.0	--	18	9.4	26
MAY										
25...	0930	219	1260	8.2	23.0	18.0	--	380	8.2	120
JUN										
22...	1000	50	2600	7.7	27.5	24.0	--	23	10.5	18
JUL										
20...	1030	62	2650	8.1	32.0	24.0	--	45	8.0	22
AUG										
24...	0900	72	2890	8.1	30.0	21.0	--	30	8.4	8
SEP										
27...	1030	69	3000	8.2	21.5	18.5	--	4.5	8.6	25

DATE	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)
OCT										
27...	1700	1600	560	72	96	1.0	2.5	150	0	120
NOV										
21...	1800	1700	590	75	59	.6	2.5	160	0	130
DEC										
15...	1700	1600	580	69	93	1.0	2.6	130	0	110
FEB										
02...	1800	1600	570	81	110	1.1	2.6	150	0	120
23...	1700	1600	560	74	100	1.1	2.3	140	0	110
MAR										
30...	1700	1700	540	75	98	1.0	2.5	1	0	1
APR										
28...	1900	1800	640	75	95	.9	2.8	140	0	110
MAY										
25...	660	560	220	26	20	.3	1.7	120	0	98
JUN										
22...	1600	1500	530	68	90	1.0	7.0	89	0	73
JUL										
20...	1600	--	540	66	84	.9	2.9	--	--	91
AUG										
24...	1600	--	520	64	95	1.0	2.6	--	--	97
SEP										
27...	1700	--	570	65	96	1.0	2.4	--	--	140

08383500 PECOS RIVER NEAR PUERTO DE LUNA, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT										
27...	1800	130	.7	15	2660	2750	208	.09	.12	.09
NOV										
21...	1500	140	.7	14	2660	2460	131	.23	.10	.09
DEC										
15...	1600	140	.6	16	2640	2570	146	.13	.15	.13
FEB										
02...	1500	160	.8	16	2690	2520	117	.11	.12	.11
23...	1500	140	.7	15	2700	2460	100	.07	.08	.07
MAR										
30...	1600	140	.7	13	2690	2470	31	.01	.02	.01
APR										
28...	1700	150	.7	14	2780	2750	57	.00	.02	.01
MAY										
25...	540	41	.4	11	997	920	966	.15	.15	.01
JUN										
22...	1500	120	.6	14	2560	2370	51	.05	.08	.05
JUL										
20...	1400	130	.7	16	2520	2290	98	.04	.04	.00
AUG										
24...	1500	130	.6	13	2550	2380	74	.01	.01	.03
SEP										
27...	1500	200	.7	14	2590	2530	57	.13	.14	.00

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT									
27...	--	.28	.46	.13	.02	110	30	2.7	1.1
NOV									
21...	--	.11	.43	.12	.01	110	20	.8	.6
DEC									
15...	.10	.29	.55	.08	.03	100	20	1.4	--
FEB									
02...	--	.00	.19	.09	.01	110	10	.9	.8
23...	--	.06	.20	.07	.01	110	30	.6	--
MAR									
30...	--	.14	.16	.00	.01	110	30	.5	--
APR									
28...	--	.48	.49	.03	.01	120	20	.6	.7
MAY									
25...	--	1.3	1.5	.51	.03	50	20	2.3	1.0
JUN									
22...	--	.48	.58	.02	.00	110	10	.9	.9
JUL									
20...	--	.40	.44	.04	.01	100	70	1.1	1.2
AUG									
24...	--	.20	.24	.06	.01	100	140	1.0	.9
SEP									
27...	--	.19	.32	.08	.02	140	50	7.1	.6

08383500 PECOS RIVER NEAR PUERTO DE LUNA, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)
DEC 15...	1000	1	100	1	0	6	20	5	.0
MAR 30...	1000	0	110	1	20	4	30	11	.0
JUN 22...	1000	1	110	1	5	4	10	4	.0
SEP 27...	1030	0	140	0	10	13	50	18	.0

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CR) (01029)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)
AUG 24...	0900	1	8	2	17	130	.0

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	
AUG 24...	0900	.0	0	.00	.0	.0	0	.00	.0	.00	.0	.00	
DATE	TIME	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39571)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39388)	ENDRI- N, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39390)	ENDRI- N, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39399)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39410)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- EPOXIDE TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39420)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)
AUG 24...		.0	.0	.00	.0	.00	.00	.0	.0	.00	.0	.00	.0
DATE	TIME	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39340)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	MALA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39531)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39480)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39481)	METHYL PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39601)	METHYL TRI- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39791)	PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39541)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)	TRI- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39787)	
AUG 24...		.00	.0	.0	.00	.0	.0	.0	.0	0	0	.0	

## Results of Analysis of Water and Bed Materials for Selected Chlorinated Hydrocarbon Isomers

Date	Time	o-p'-DDE	o-p'-DDD	o-p'-DDT	cis- chlordane	trans- chlordane	α - BHC	Hexachloro- benzene
Aug 24	0900 (w) (s)	0 0	0 0	0 0	0 0	0 0	0 0	0 0

NOTE: Reporting units are ug/L for water samples (w) and ug/kg for bed material sediment samples (s).  
The lowest detectable limit is 0.01 ug/L for water samples and 0.1 ug/kg for sediment samples.

08383500 PECOS RIVER NEAR PUERTO DE LUNA, NM--Continued

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT			
27...	1000	160	270
NOV			
21...	1330	16	96
DEC			
15...	1000	40	59
FEB			
02...	1000	70	4
23...	1030	0	140
MAR			
30...	1000	2	8
APR			
28...	0910	20	16
MAY			
25...	0930	3400	1000
JUN			
22...	1000	70	90
JUL			
20...	1030	140	65
AUG			
24...	0900	150	90
SEP			
27...	1030	570	300

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
27...	1000	71	10.0	407	78	51
NOV						
21...	1330	86	8.5	426	99	35
DEC						
15...	1000	90	7.0	454	110	31
FEB						
02...	1000	90	3.5	208	51	58
23...	1030	88	6.5	228	54	50
MAR						
30...	1000	82	14.0	66	15	70
APR						
28...	0910	62	15.0	146	24	46
MAY						
25...	0930	219	18.0	2000	1180	70
JUN						
22...	1000	50	24.0	74	10	73
JUL						
20...	1030	62	24.0	129	22	62
AUG						
24...	0900	72	21.0	139	27	44
SEP						
27...	1030	69	18.5	55	10	53

## 08384000 LAKE SUMNER NEAR FORT SUMNER, NM

LOCATION.--Lat 34°36'30", long 104°23'04", in SE¼SW¼ sec.34, T.5 N., R.24 E., DeBaca County, Hydrologic Unit 13060001, near center of dam on Pecos River, 5.0 mi (8.0 km) northeast of Guadalupe, 12.2 mi (19.6 km) northwest of Fort Sumner, and at mile 702.0 (1,129.5 km).

DRAINAGE AREA.--4,390 mi<sup>2</sup> (11,370 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--December 1938 to September 1965 (monthend elevations and contents), October 1965 to current year. Monthend elevations September 1937 to November 1938 published in reports of Pecos River Commission. Elevations and contents May 27, 1937 to June 10, 1937 in WSP 842. Prior to October 1974, published as "Alamogordo Reservoir".

REVISED RECORDS.--WSP 1732: 1939-54 (contents). WSP 1923: 1939-53(M) (m).

GAGE.--Nonrecording gage. Datum of gage is at Bureau of Reclamation datum. April 1, 1946, to Sept. 30, 1957, water-stage recorder above elevation 4,234.25 ft (1,290.599 m), nonrecording gage below.

REMARKS.--Reservoir is formed by earthfill dam, completed and storage began in August 1937. Capacity, 101,600 acre-ft (125 hm<sup>3</sup>) between elevation 4,200.0 ft (1,280.160 m) sill of outlet gate and elevation 4,275.0 ft (1,303.020 m), normal operating level. No dead storage. Reservoir is used to store water for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 138,300 acre-ft (171 hm<sup>3</sup>) May 23-30, June 1-10, July 21, Sept. 22, 23, 30, Oct. 12, Nov. 4, 5, 30, Dec. 23, 24, 1941, elevation, 4,275.00 ft (1,303.020 m); maximum elevation 4,276.10 ft (1,303.355 m) June 3, Sept. 8, 1958; no storage July 28 to Aug. 2, 1951, elevation 4,200.70 ft (1,280.373 m).

COOPERATION.--Elevation record and capacity table (dated November 1973) furnished by Bureau of Reclamation.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31800	35090	33260	37500	42330	46740	26160	2570	9440	10970	4190	4680
2	31800	35290	33470	37500	42330	46740	24070	2680	9680	10270	4190	4740
3	31800	35290	33470	37730	42580	47000	22280	2960	9770	8110	4190	5330
4	31610	35290	33690	37960	42830	47000	20450	3220	9850	6020	4190	5450
5	31610	35500	33690	37960	42830	47270	18490	3360	16580	4190	4190	5510
6	31420	35700	33900	38200	43090	47270	16460	3540	18760	2880	4300	5510
7	33520	35900	33900	38200	43340	47540	14600	3780	19590	3830	4400	5510
8	35500	36300	34120	38430	43340	47810	12900	3880	20160	3980	4570	5580
9	35500	36500	34120	38430	43600	48080	10790	4030	20600	4030	4740	5580
10	35500	36700	34340	38670	43600	48080	8820	4140	20740	4090	4740	5580
11	35500	36900	34340	38900	43850	48360	6840	4190	20740	4140	4740	5580
12	35500	37120	34560	38900	44110	48360	4850	4240	20890	4190	4740	5580
13	35500	37330	34560	39140	44370	48360	2840	4300	21040	4140	4680	5510
14	35500	37540	34780	39140	44370	48360	2530	4300	21350	4240	4620	5510
15	35500	37540	35000	39380	44370	48360	2530	4300	21350	4300	4570	5450
16	35500	37750	35000	39620	44370	48360	2530	4300	21350	4300	4570	5450
17	35500	37960	35220	39860	44630	48360	2530	4570	21350	4300	4570	5330
18	35500	37960	35440	39860	44890	48080	2530	4850	21190	4190	4460	5330
19	35500	38170	35440	40110	45150	48080	2530	5150	21040	4090	4460	5270
20	35500	38170	35670	40350	45410	48080	2490	5510	20890	3980	4400	5270
21	35500	38380	35670	40350	45410	48080	2490	5890	20890	3880	4400	5270
22	35290	38590	35890	40590	45670	46200	2490	6290	19030	3780	4350	5210
23	35290	38800	36120	40590	45670	46200	2460	6560	16820	3730	4350	5210
24	35290	39020	36120	40840	45670	42080	2460	6990	14830	3680	4350	5270
25	35290	39240	36350	41080	45940	39860	2490	7350	13000	3930	4350	5330
26	35290	39240	36570	41330	46200	37960	2490	7650	11060	4460	4350	5450
27	35290	39460	36570	41330	46470	36120	2490	7950	8460	4570	4400	5510
28	35090	39680	36800	41580	46470	34120	2530	8380	9440	4510	4570	5580
29	35090	39900	37030	41830	---	31990	2530	8680	10270	4460	4620	5580
30	35090	40120	37030	41830	---	30150	2530	8900	11430	4350	4620	5580
31	35090	---	37260	42080	---	28010	---	9280	---	4300	4620	---
MAX	35500	40120	37260	42080	46470	48360	26160	9280	21350	10970	4740	5580
MIN	31420	35090	33260	37500	42330	28010	2460	2570	8460	2880	4190	4680
(+)	+3100	+5030	+4000	+4820	+4390	-18460	-25480	+6750	+2150	-7130	+320	+960
CAL YR 1977	MAX	40120	MIN	3710	CHANGE IN CONTENTS	+12,990						
WTR YR 1978	MAX	48360	MIN	2460	CHANGE IN CONTENTS	-26,410						

+ Change in contents, in acre-feet

08384000 LAKE SUMNER NEAR FORT SUMNER, N. Mex.--CONTINUED

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4249.50	4251.20	4253.70	4255.60	4257.60	4259.30	4250.10	4225.40	4236.70	4238.50	4229.00	4229.90
2	4249.50	4251.30	4253.80	4255.60	4257.60	4259.30	4248.90	4225.70	4237.00	4237.70	4229.00	4230.00
3	4249.50	4251.30	4253.80	4255.70	4257.70	4259.40	4247.80	4226.40	4237.10	4235.00	4229.00	4231.00
4	4249.40	4251.30	4253.90	4255.80	4257.80	4259.40	4246.60	4227.00	4237.20	4232.10	4229.00	4231.20
5	4249.40	4251.40	4253.90	4255.80	4257.80	4259.50	4245.20	4227.30	4243.80	4229.00	4229.00	4231.30
6	4249.30	4251.50	4254.00	4255.90	4257.90	4259.50	4243.70	4227.70	4245.40	4226.20	4229.20	4231.30
7	4250.40	4251.60	4254.00	4255.90	4258.00	4259.60	4242.10	4228.20	4246.00	4228.30	4229.40	4231.30
8	4251.40	4251.80	4254.10	4256.00	4258.00	4259.70	4240.50	4228.40	4246.40	4228.60	4229.70	4231.40
9	4251.40	4251.90	4254.10	4256.00	4258.10	4259.80	4238.30	4228.70	4246.70	4228.70	4230.00	4231.40
10	4251.40	4252.00	4254.20	4256.10	4258.10	4259.80	4235.90	4228.90	4246.80	4228.80	4230.00	4231.40
11	4251.40	4252.10	4254.20	4256.20	4258.20	4259.90	4233.30	4229.00	4246.80	4228.90	4230.00	4231.40
12	4251.40	4252.20	4254.30	4256.20	4258.30	4259.90	4230.20	4229.10	4246.90	4229.00	4230.00	4231.40
13	4251.40	4252.30	4254.30	4256.30	4258.40	4259.90	4226.10	4229.20	4247.00	4228.90	4229.90	4231.30
14	4251.40	4252.40	4254.40	4256.30	4258.40	4259.90	4225.30	4229.20	4247.20	4229.10	4229.80	4231.30
15	4251.40	4252.40	4254.50	4256.40	4258.40	4259.90	4225.30	4229.20	4247.20	4229.20	4229.70	4231.20
16	4251.40	4252.50	4254.50	4256.50	4258.40	4259.90	4225.30	4229.20	4247.20	4229.20	4229.70	4231.20
17	4251.40	4252.60	4254.60	4256.60	4258.50	4259.90	4225.30	4229.70	4247.20	4229.20	4229.70	4231.00
18	4251.40	4252.60	4254.70	4256.60	4258.60	4259.80	4225.30	4230.20	4247.10	4229.00	4229.50	4231.00
19	4251.40	4252.70	4254.70	4256.70	4258.70	4259.80	4225.30	4230.70	4247.00	4228.80	4229.50	4230.90
20	4251.40	4252.70	4254.80	4256.80	4258.80	4259.80	4225.20	4231.30	4246.90	4228.60	4229.40	4230.90
21	4251.40	4252.80	4254.80	4256.80	4258.80	4259.80	4225.20	4231.90	4246.90	4228.40	4229.40	4230.90
22	4251.30	4252.90	4254.90	4256.90	4258.90	4259.10	4225.20	4232.50	4245.60	4228.20	4229.30	4230.80
23	4251.30	4253.00	4255.00	4256.90	4258.90	4259.10	4225.10	4232.90	4244.00	4228.10	4229.30	4230.80
24	4251.30	4253.10	4255.00	4257.00	4258.90	4257.50	4225.10	4233.50	4242.30	4228.00	4229.30	4230.90
25	4251.30	4253.20	4255.10	4257.10	4259.00	4256.60	4225.20	4234.00	4240.60	4228.50	4229.30	4231.00
26	4251.30	4253.20	4255.20	4257.20	4259.10	4255.80	4225.20	4234.40	4238.60	4229.50	4229.30	4231.20
27	4251.30	4253.30	4255.20	4257.20	4259.20	4255.00	4225.20	4234.80	4235.40	4229.70	4229.40	4231.30
28	4251.20	4253.40	4255.30	4257.30	4259.20	4254.10	4225.30	4235.30	4236.70	4229.60	4229.70	4231.40
29	4251.20	4253.50	4255.40	4257.40	---	4253.10	4225.30	4235.70	4237.70	4229.50	4229.80	4231.40
30	4251.20	4253.60	4255.40	4257.40	---	4252.20	4225.30	4236.00	4239.00	4229.30	4229.80	4231.40
31	4251.20	---	4255.50	4257.50	---	4251.10	---	4236.50	---	4229.20	4229.80	---
MEAN	4250.94	4252.39	4254.56	4256.51	4258.40	4258.30	4231.93	4230.58	4243.35	4229.70	4229.51	4231.10
MAX	4251.40	4253.60	4255.50	4257.50	4259.20	4259.90	4250.10	4236.50	4247.20	4238.50	4230.00	4231.40
MIN	4249.30	4251.20	4253.70	4255.60	4257.60	4251.10	4225.10	4225.40	4235.40	4226.20	4229.00	4229.90
CAL YR 1977	MEAN	4243.40	MAX	4255.50	MIN	4225.10						
WTR YR 1978	MEAN	4243.87	MAX	4259.90	MIN	4225.10						

08384500 PECOS RIVER BELOW SUMNER DAM, NM

LOCATION.--Lat 34°36'15", long 104°23'14", in lot 1, sec.2, T.4 N., R.24 E., DeBaca County, Hydrologic Unit 13060003, on left bank 1,200 ft (366 m) downstream from Sumner Dam, 2.9 mi (4.7 km) upstream from Salado Creek, 4.6 mi (7.4 km) northeast of Guadalupe, 12.2 mi (19.6 km) northwest of Fort Sumner, and at mile 701.7 (1,129.0 km).

## WATER-DISCHARGE RECORDS

DRAINAGE AREA.--4,390 mi<sup>2</sup> (11,370 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--October 1912 to April 1926, August 1926 to current year. Monthly discharge only for some periods, published in WSP 1312. October 1944 to September 1974, published as "below Alamogordo Dam." Prior to October 1944, published as "near Guadalupe."

REVISED RECORDS.--WSP 1512: 1932. WSP 1632: 1942. WSP 1712: 1944.

GAGE.--Water-stage recorder and Parshall flume, with concrete control above top of flume. Datum of gage is 4,142.67 ft (1,262.686 m) Bureau of Reclamation datum. Prior to Sept. 10, 1936, at site 1.5 mi (2.4 km) upstream at different datum. Sept. 14, 1936, to Mar. 8, 1941, and June 11, to Sept. 21, 1941, at site 0.2 mi (0.3 km) downstream at different datums.

REMARKS.--Water-discharge records good. Diversion for irrigation of about 12,500 acres (51 km<sup>2</sup>), 1959 determination, above station. Flow regulated by Lake Sumner (station 08384000).

AVERAGE DISCHARGE.--23 years (1913-25, 1927-36), 236 ft<sup>3</sup>/s (6.684 m<sup>3</sup>/s), 171,000 acre-ft/yr (211 hm<sup>3</sup>/yr), prior to completion of Sumner Dam; 42 years (1937-78), 205 ft<sup>3</sup>/s (5.806 m<sup>3</sup>/s) 148,500 acre-ft/yr (183 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,800 ft<sup>3</sup>/s (1,210 m<sup>3</sup>/s) Sept. 1, 1942, by computation of flow over spillway and through outlet gates of Sumner Dam by Bureau of Reclamation; maximum gage height, 13.58 ft (4.139 m) Sept. 22, 1941, no flow at times.

Flood of June 2, 1937, about 75,000 ft<sup>3</sup>/s (2,120 m<sup>3</sup>/s) at site 1.5 mi (2.4 km) upstream, from peak inflow to Lake Sumner.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,070 ft<sup>3</sup>/s (30.3 m<sup>3</sup>/s) July 2, 3, gage height, 3.29 ft (1.003 m); minimum 0.28 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Dec. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	1.4	.52	.51	2.3	2.3	1050	66	91	1040	73	64
2	92	1.6	.52	.56	2.2	2.3	1040	67	92	1070	73	63
3	93	1.7	.54	.64	2.0	2.4	1050	65	91	1070	74	62
4	93	2.0	.49	.77	2.0	2.3	1050	66	91	994	74	62
5	93	1.9	.49	.71	2.2	2.3	1040	66	100	759	74	62
6	94	1.7	.51	.87	2.5	2.4	1040	59	100	380	74	63
7	93	1.3	.51	.87	2.5	2.3	1040	63	101	69	74	63
8	93	1.0	.50	.93	2.4	2.5	1030	70	102	68	73	64
9	93	.84	.51	1.0	2.0	2.6	1020	70	103	68	74	64
10	82	.84	.51	1.1	2.1	2.5	971	71	103	69	74	64
11	77	.64	.51	1.1	2.2	2.5	943	71	102	70	74	72
12	70	.64	.51	1.1	2.1	2.4	904	71	104	70	74	76
13	66	.45	.51	1.1	2.2	2.0	480	71	101	70	73	75
14	65	.67	.51	1.3	2.3	53	80	70	102	70	73	75
15	65	.70	.64	1.4	2.3	88	80	70	101	70	73	76
16	66	.66	.64	1.5	2.3	88	81	70	101	70	73	77
17	66	.57	.45	1.5	2.3	87	82	71	101	91	73	76
18	66	.81	.45	1.4	2.3	87	81	71	101	104	73	75
19	73	.94	.45	1.3	2.2	88	81	71	101	104	73	76
20	77	.66	.45	1.4	2.2	88	80	71	101	105	73	77
21	78	.51	.28	1.5	2.0	712	80	72	720	104	73	77
22	77	.51	.28	1.6	1.8	1050	80	84	1040	104	73	75
23	77	.61	.28	1.8	2.0	1050	80	90	1040	104	73	75
24	87	.67	.28	1.5	2.0	1050	73	90	1040	105	73	75
25	92	.51	.28	1.4	2.2	1060	66	90	1040	105	73	75
26	92	.50	.28	1.5	2.4	1060	66	90	1040	104	73	75
27	92	.49	.28	1.4	2.4	1050	67	90	1040	103	73	74
28	92	.47	.28	1.6	2.3	1050	67	90	1040	104	66	74
29	92	.49	.45	1.6	---	1050	66	90	1040	103	64	74
30	92	.46	.45	1.4	---	1050	67	90	1040	104	64	73
31	88	---	.45	2.1	---	1050	---	91	---	84	63	---
TOTAL	2568	26.24	13.81	38.46	61.7	11841.8	13935	2337	12069	7535	2237	2133
MEAN	82.8	.87	.45	1.24	2.20	382	465	75.4	402	243	72.2	71.1
MAX	94	2.0	.64	2.1	2.5	1060	1050	91	1040	1070	74	77
MIN	65	.45	.28	.51	1.8	2.0	66	59	91	68	63	62
AC-FT	5090	52	27	76	122	23490	27640	4640	23940	14950	4440	4230

CAL YR 1977 TOTAL 45224.63 MEAN 124 MAX 1070 MIN .00 AC-FT 89700  
WTR YR 1978 TOTAL 54796.01 MEAN 150 MAX 1070 MIN .28 AC-FT 108700

08384500 PECOS RIVER BELOW SUMNER DAM, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1937-66, 1972 to current year.

INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
OCT						
07...	1200	93	1490	18.0	75	19
07...	1400	93	1500	18.0	68	17
11...	1300	77	1500	17.0	48	10
20...	0840	77	1900	14.0	84	17
26...	0900	92	1650	14.0	84	21
27...	0845	92	1920	14.5	117	29
31...	0745	92	1640	13.5	61	15
NOV						
21...	1145	.51	1860	6.5	90	.12
DEC						
15...	0845	.52	1950	5.5	106	.15
FEB						
02...	0815	2.2	2130	3.0	72	.43
23...	0830	1.9	2110	2.5	52	.27
MAR						
05...	1400	1030	2350	13.0	64	178
21...	1000	1010	2240	9.0	217	592
21...	1700	1030	2220	8.0	56	156
22...	1010	1030	2220	8.5	40	111
30...	0800	1030	2230	11.0	29	81
APR						
04...	1745	1030	2340	12.0	53	147
06...	0900	1030	2340	13.0	57	159
07...	0800	1010	2400	12.5	62	169
10...	0900	930	2410	12.5	95	239
11...	0745	930	2430	13.0	64	161
12...	0755	888	2400	13.5	75	180
12...	1800	888	2410	13.0	67	161
13...	0545	860	2460	13.0	64	149
14...	1140	80	2490	15.0	119	26
17...	0717	80	2610	15.0	106	23
18...	0730	82	2660	13.0	194	43
26...	0750	68	2860	15.5	103	19
27...	1600	67	2850	16.0	78	14
MAY						
02...	1545	66	2960	12.0	112	20
03...	1430	65	2960	12.0	64	11
04...	1730	65	2830	12.0	68	12
09...	0735	70	2790	13.0	60	11
15...	0800	70	2760	16.0	57	11



08384500 PECOS RIVER BELOW SUMNER DAM, NM--Continued

## INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
MAY						
16...	1505	70	2750	16.5	77	15
18...	1640	71	2760	18.5	89	17
22...	1530	90	2480	18.0	78	19
23...	0820	90	2540	18.5	53	13
25...	0810	91	2430	19.0	55	14
25...	1205	90	2330	19.0	125	30
30...	1940	91	1990	19.0	114	28
31...	0700	90	1870	19.0	110	27
JUN						
02...	1730	92	1760	19.0	86	21
05...	1200	102	890	13.0	76600	21100
05...	1505	101	866	13.0	79000	21500
05...	1725	92	915	13.0	80700	20000
06...	0700	99	965	11.0	6990	1870
06...	1700	99	1020	11.5	411	110
07...	0730	100	1140	11.0	168	45
09...	0905	102	1230	13.5	74	20
12...	0700	99	--	15.0	58	16
19...	0715	101	1240	17.0	75	20
21...	0730	100	1280	18.5	86	23
21...	0930	1010	1280	18.5	227	619
22...	0815	1030	1330	22.0	57	159
28...	1220	1010	1190	20.0	1080	2950
30...	0700	1030	1220	21.0	73	203
JUL						
05...	1015	659	903	24.5	93	165
06...	0835	1030	1010	24.0	85	236
15...	0830	70	1970	23.5	166	31
18...	1745	103	1870	24.0	169	47
20...	0810	104	1930	24.5	206	58
27...	0740	73	2080	22.5	85	17
AUG						
01...	1000	72	2180	23.0	76	15
14...	1420	72	2330	22.5	86	17
16...	0945	72	2410	22.0	98	19
17...	0815	72	2410	21.0	63	12
21...	1940	72	2620	21.0	94	18
22...	0815	72	2610	21.0	67	13
23...	0820	72	2570	21.0	60	12
24...	0750	72	2580	22.0	62	12
31...	1300	63	2590	21.5	104	18
SEP						
08...	0850	63	2480	20.0	60	10
12...	1040	76	2500	20.0	54	11
14...	1100	76	2590	20.5	72	15
14...	1915	76	2590	20.0	62	13
15...	0800	76	2640	20.0	72	15
19...	1410	76	2670	19.5	60	12
25...	1000	74	2810	16.5	64	13
27...	0830	74	2740	16.5	63	13

LOCATION.--Lat 34°30'30", long 104°16'40", in SE 1/4 sec.1, T.3 N., R.25 E., DeBaca County, Hydrologic Unit 13060003, on right bank of concrete canal, 200 ft (60 m) downstream from diversion dam on Pecos River, 3.0 mi (4.8 km) northwest of Fort Sumner, and at Pecos River mile 684.8 (1101.8 km).

GAGE.--Water-stage recorder. Datum of gage is 4,034.7 ft (1,229.78 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to March 1954 at site 2.4 mi (3.9 km) downstream at different datum. April 1954 to March 1965 at site 1.1 mi (1.8 km) downstream at datum 1.7 ft (0.52 m) lower.

AVERAGE DISCHARGE.--27 years (1940-42, 1955-78), 49.0 ft<sup>3</sup>/s (1.388 m<sup>3</sup>/s), 35,500 acre-ft/yr (43.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 174 ft<sup>3</sup>/s (4.93 m<sup>3</sup>/s) July 22, 1941; no flow many days each year.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	34	.00	.00	.00	.00	90	60	89	2.8	75	62
2	86	.00	.00	.00	.00	.00	88	89	88	2.6	66	64
3	80	.00	.00	.00	.00	.00	90	73	86	2.4	75	94
4	87	.00	.00	.00	.00	.00	90	72	84	82	64	68
5	87	.00	.00	.00	.00	.00	91	66	94	122	68	63
6	94	.00	.00	.00	.00	.00	91	63	76	117	75	63
7	85	.00	.00	.00	.00	.00	88	62	108	101	74	57
8	88	.00	.00	.00	.00	.00	89	79	104	89	88	55
9	88	.00	.00	.00	.00	.00	87	81	102	85	70	58
10	88	.00	.00	.00	.00	.00	88	75	101	79	71	59
11	84	.00	.00	.00	.00	.00	113	77	99	75	71	57
12	83	.00	.00	.00	.00	.00	113	71	100	74	71	64
13	82	.00	.00	.00	.00	.00	110	72	99	74	69	66
14	65	.00	.00	.00	.00	30	95	72	101	74	68	70
15	78	.00	.00	.00	.00	86	92	75	100	70	68	71
16	78	.00	.00	.00	.00	88	89	70	98	70	67	74
17	63	.00	.00	.00	.00	88	84	71	98	72	67	67
18	64	.00	.00	.00	.00	86	80	70	97	66	68	69
19	65	.00	.00	.00	.00	85	82	72	100	99	67	72
20	75	.00	.00	.00	.00	83	79	74	98	97	69	72
21	72	.00	.00	.00	.00	84	79	72	99	100	68	72
22	75	.00	.00	.00	.00	80	79	73	94	100	67	75
23	75	.00	.00	.00	.00	94	78	87	104	105	69	75
24	77	.00	.00	.00	.00	91	75	85	100	102	69	77
25	86	.00	.00	.00	.00	100	67	84	102	99	69	82
26	86	.00	.00	.00	.00	98	67	84	107	98	68	83
27	85	.00	.00	.00	.00	96	65	84	107	95	66	75
28	85	.00	.00	.00	.00	96	67	83	54	93	67	73
29	86	.00	.00	.00	---	96	65	83	4.6	93	68	70
30	80	.00	.00	.00	---	96	62	83	3.0	92	70	71
31	82	---	.00	.00	---	91	---	85	---	93	69	---
TOTAL	2495	34.00	.00	.00	.00	1568.00	2533	2347	2696.6	2523.8	2161	2078
MEAN	80.5	1.13	.000	.000	.000	50.6	84.4	75.7	89.9	81.4	69.7	69.3
MAX	94	34	.00	.00	.00	100	113	89	108	122	88	94
MIN	63	.00	.00	.00	.00	.00	62	60	3.0	2.4	64	55
AC-FT	4950	67	.00	.00	.00	3110	5020	4660	5350	5010	4290	4120
CAL YR 1977	TOTAL	18685.70	MEAN	51.2	MAX	109	MIN	.00	AC-FT	37060		
WTR YR 1978	TOTAL	18436.40	MEAN	50.5	MAX	122	MIN	.00	AC-FT	36570		

## 08386000 PECOS RIVER NEAR ACME, NM

LOCATION.--Lat 33°32'10", long 104°22'34", in SW 1/4 sec.14, T.9 S., R.25 E., Chaves County, Hydrologic Unit 13060007, on right bank 3.0 mi (4.8 km) downstream from U.S. Highway 70, 3.7 mi (6.0 km) downstream from Salt Creek, 4.7 mi (7.6 km) southwest of Acme, 14 mi (22.5 km) northeast of Roswell, and at mile 585.3 (941.7 km).

DRAINAGE AREA.--11,380 mi<sup>2</sup> (29,470 km<sup>2</sup>), approximately (contributing area).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1921 to June 1923, July 1937 to current year. Monthly discharge only for some periods, published in WSP 1312.

GAGE.--Water-stage recorder. Altitude of gage is 3,507 ft (1,069 m), from topographic map. Prior to Nov. 1, 1938, at site on highway bridge 3 mi (4.8 km) upstream at various datums. Since Oct. 25, 1963, supplemental water-stage recorder at site opposite base gage at same datum.

REMARKS.--Water-discharge records fair except those below 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s), which are poor. Flow regulated by Lake Sumner (station 08384000). Diversions for irrigation of about 20,000 acres (81 km<sup>2</sup>), 1959 determination, above station.

AVERAGE DISCHARGE.--41 years (1938-78), 187 ft<sup>3</sup>/s (5.296 m<sup>3</sup>/s), 135,500 acre-ft/yr (167 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,000 ft<sup>3</sup>/s (1,270 m<sup>3</sup>/s) Sept. 23, 1941, gage height, 13.71 ft (4.179 m), from rating curve extended above 26,000 ft<sup>3</sup>/s (736 m<sup>3</sup>/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of May 28, 1937, reached a discharge of 53,000 ft<sup>3</sup>/s (1,500 m<sup>3</sup>/s), gage height, 14.82 ft (4.517m), from floodmarks, site and datum then in use, by slope-area method, but may have been exceeded by the flood of Oct. 1, 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,450 ft<sup>3</sup>/s (69.4 m<sup>3</sup>/s) June 30, gage height, 6.41 ft (1.954 m), no peak above base of 2,500 ft<sup>3</sup>/s (71 m<sup>3</sup>/s); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	45	12	9.5	23	11	873	25	4.0	1190	.08	.00
2	21	41	12	9.5	21	11	884	41	89	1010	.00	.00
3	20	55	11	9.0	20	13	884	63	83	1010	5.4	.82
4	21	40	10	9.0	19	12	851	69	100	1060	7.0	.16
5	27	43	9.0	9.0	17	12	840	46	69	974	.80	2.4
6	36	34	9.0	8.6	15	12	873	35	120	763	.00	1.2
7	602	39	9.0	8.6	15	14	829	27	40	544	.00	.81
8	649	43	9.0	8.2	14	13	851	22	230	450	.00	.32
9	331	41	8.6	8.2	15	12	895	18	93	243	.00	.00
10	219	36	8.6	7.7	14	11	986	17	53	133	3.9	.00
11	143	29	8.6	7.7	15	10	917	16	33	85	9.0	.00
12	122	25	8.2	7.7	17	8.0	840	13	20	58	4.7	.00
13	105	24	8.2	8.6	16	6.0	785	9.5	82	41	1.3	.00
14	90	23	8.2	8.2	14	5.1	796	7.3	32	30	.00	.00
15	79	22	8.2	8.2	14	4.7	491	6.6	15	23	.00	.00
16	69	21	7.7	12	13	4.7	174	5.8	11	34	.00	.00
17	63	20	7.7	12	13	4.7	130	4.4	9.5	15	.00	.00
18	55	18	7.7	10	17	4.7	93	2.9	9.5	11	.00	.00
19	65	18	7.3	8.6	18	4.7	73	2.7	7.0	7.0	.00	.00
20	56	17	7.3	9.0	19	4.7	61	2.7	5.5	5.1	.00	.00
21	50	17	7.3	8.6	23	4.7	60	2.1	4.0	3.2	.00	.00
22	45	17	7.0	10	23	5.1	53	2.1	1.9	28	.00	.00
23	42	16	7.7	12	20	262	48	2.1	.81	57	.00	.00
24	40	16	8.2	11	16	747	41	1.4	534	38	.00	.00
25	37	16	9.0	11	14	710	40	.15	763	35	.00	.00
26	41	15	10	16	14	752	44	.00	730	63	.00	.00
27	41	15	10	17	13	834	37	.00	851	50	.00	8.0
28	58	14	9.5	15	12	862	34	.00	1530	14	.00	12
29	63	14	9.5	16	---	884	30	69	1250	8.2	.00	12
30	69	13	10	18	---	840	28	21	1700	4.0	.00	11
31	53	---	10	21	---	873	---	8.6	---	1.1	.00	---
TOTAL	3336	787	275.5	334.9	464	6952.1	13541	540.35	8470.21	7987.6	32.18	48.71
MEAN	108	26.2	8.89	10.8	16.6	224	451	17.4	282	258	1.04	1.62
MAX	649	55	12	21	23	884	986	69	1700	1190	9.0	12
MIN	20	13	7.0	7.7	12	4.7	28	.00	.81	1.1	.00	.00
AC-FT	6620	1560	546	664	920	13790	26860	1070	16800	15840	64	97

CAL YR 1977 TOTAL 40482.33 MEAN 111 MAX 3220 MIN .00 AC-FT 80300  
WTR YR 1978 TOTAL 42769.55 MEAN 117 MAX 1700 MIN .00 AC-FT 84830

08386000 PECOS RIVER NEAR ACME, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD---Water years 1937 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)		
OCT										
03...	1530	19	3440	7.3	20.5	1500	1400	430		
27...	1205	46	3390	7.5	13.0	--	--	--		
NOV										
29...	1105	14	4490	7.8	7.0	1600	1500	450		
JAN										
10...	1545	7.7	5130	7.9	2.0	1900	1800	540		
FEB										
17...	1150	13	4620	7.9	7.0	1800	1700	500		
MAR										
14...	1130	5.4	5720	7.9	13.5	2100	2000	590		
27...	1110	824	2400	7.8	14.0	--	--	--		
29...	1115	939	2390	7.9	14.0	1300	1200	430		
MAY										
11...	1115	16	4340	8.0	19.5	2100	2000	620		
JUN										
05...	1145	60	2240	7.8	19.0	930	860	290		
JUL										
10...	1500	124	1310	7.8	26.0	620	--	200		
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT										
03...	110	270	3.0	5.2	97	0	80	1500	380	--
27...	--	--	--	--	--	--	--	--	--	--
NOV										
29...	110	380	4.2	5.5	130	0	110	1500	520	--
JAN										
10...	130	560	5.6	5.1	130	0	110	1700	780	--
FEB										
17...	130	450	4.6	4.6	130	0	110	1600	700	--
MAR										
14...	160	600	5.7	6.4	120	0	98	1900	990	--
27...	--	--	--	--	--	--	--	--	--	--
29...	60	89	1.1	4.1	130	0	110	1100	110	--
MAY										
11...	130	380	3.6	6.1	100	0	82	1800	540	--
JUN										
05...	51	160	2.3	5.4	90	0	74	840	200	--
JUL										
10...	30	57	1.0	3.8	--	--	79	540	62	--
DATE		FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	
OCT										
03...	.7	15	--	2760	.03	--	--	--	--	
27...	--	--	--	--	--	--	--	--	--	
NOV										
29...	.6	13	--	3040	.00	--	--	--	--	
JAN										
10...	.5	10	--	3790	--	--	--	--	--	
FEB										
17...	.5	8.5	--	3460	--	--	--	--	--	
MAR										
14...	.6	8.7	--	4320	.02	--	--	--	--	
27...	--	--	--	--	--	--	--	--	--	
29...	.6	11	--	1870	--	--	--	--	--	
MAY										
11...	.7	12	--	3670	.12	.03	300	10	--	
JUN										
05...	.6	9.8	--	1600	.30	--	--	--	--	
JUL										
10...	.5	10	--	950	.21	--	--	--	--	

## RIO GRANDE BASIN

08386900 F. HERRERA DITCH-S. AT HOLLYWOOD, NM

LOCATION.--Lat 33°19'35", long 105°36'50", in NE¼ sec.30, T.11 S., R.14 E., Lincoln County, Hydrologic Unit 13060008, on left bank, at upstream end of flume over Grapevine Canyon, 1.0 mi (1.6 km) below point of diversion, 0.7 mi (1.1 km) east of Hollywood and junction of U.S. Highway 70 and State Highway 37, point of diversion at Rio Ruidoso mile 24.5 (39.4 km).

PERIOD OF RECORD.--May 1960 to current year. (Monthly acre-ft only prior to January 1973, published as a supplement to station 08387000).

GAGE.--Water stage recorder and concrete control. Altitude of gage is 6,430 ft (1,960 m), from Topographic Division. Prior to Mar. 20, 1962, at site 315 ft (96 m) downstream at datum 12.79 ft (3.898 m) lower.

REMARKS.--Records poor. Water is diverted from Rio Ruidoso 1.0 mi (1.6 km) upstream for irrigation below station 08387000. Some observations of water temperatures were made during the year.

AVERAGE DISCHARGE.--18 years, 0.49 ft<sup>3</sup>/s (0.014 m<sup>3</sup>/s), 355 acre-ft/yr (438,000 m<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.—Maximum daily discharge, 6.6 ft<sup>3</sup>/s (0.19 m<sup>3</sup>/s) June 15, 1961; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 0.01 ft<sup>3</sup>/s (0.0003 m<sup>3</sup>/s) Sept. 2; no flow most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC=FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
CAL YR 1977	TOTAL 9.56	MEAN .026	MAX .45	MIN .00	AC=FT 19							
WTR YR 1978	TOTAL 0.01	MEAN .000	MAX .01	MIN .00	AC=FT .02							

## 08387000 RIO RUIDOSO AT HOLLYWOOD, NM

LOCATION.--Lat 33°19'43", long 105°36'34", in SW¼SE¼NE¼ sec.30, T.11 S., R.14 E., Lincoln County, Hydrologic Unit 13060008, on right upstream bridge abutment on road leading to Ruidoso Downs race track, 0.2 mi (0.3 km) north of U.S. Highway 70, 1.1 mi (1.8 km) east of the Hollywood Post Office, 1.2 mi (1.9 km) downstream from the Ruidoso sewage disposal plant, 1.8 mi (2.9 km) downstream from Gavilan Canyon, 2.8 mi (4.5 km) downstream from Carrizo Creek, and at mile 23.4 (37.7 km).

DRAINAGE AREA.--120 mi<sup>2</sup> (310 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--March 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,365.42 ft (1,940.180 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 14, 1961, at datum 0.30 ft (0.091 m) higher. Oct. 14, 1961, to Mar. 8, 1962, at datum 0.60 ft (0.183 m) higher. Mar. 9, 1962, to June 18, 1965, at datum 1.0 ft (0.305 m) higher.

REMARKS.--Records good. Figures of discharge do not include F. Herrera ditch-S. (station 08386900), which diverts from right bank 1.5 mi (2.4 km) upstream and bypasses station for irrigation of 75 acres (30.4 hm<sup>2</sup>), 1959 determination. Village of Ruidoso diverts from right bank 7.0 mi (11.3 km) upstream for municipal use and returns a portion of this water as effluent from sewage disposal plant 1.2 mi (1.9 km) upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--25 years, 13.7 ft<sup>3</sup>/s (0.388 m<sup>3</sup>/s), 9,930 acre-ft/yr (12.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft<sup>3</sup>/s (37.9 m<sup>3</sup>/s) June 17, 1965, gage height, 10.05 ft (3.063 m) present datum, from rating curve extended above 110 ft<sup>3</sup>/s (3.12 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; minimum, 0.30 ft<sup>3</sup>/s (0.008 m<sup>3</sup>/s) Jan. 1, 1962, May 8-9, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Sept. 29, 1941, is probably the highest since at least 1904 (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Apr. 1	1600	* 199	5.64
May 20	1730	116	3.29
			2.43
			2.10
			0.741
			0.640

Minimum, 5.0 ft<sup>3</sup>/s (0.142 m<sup>3</sup>/s) Dec. 2, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	8.0	6.3	6.3	13	36	124	51	30	9.8	8.5	13
2	8.2	7.9	6.0	6.3	9.9	68	122	58	33	9.6	10	16
3	8.4	7.5	6.5	6.4	9.2	67	103	48	30	9.8	9.0	32
4	9.4	7.4	6.3	6.5	8.5	45	89	43	27	10	9.6	35
5	8.6	7.7	6.3	6.6	8.9	39	84	40	27	9.4	9.1	31
6	9.3	7.7	6.5	6.6	9.7	38	76	43	26	9.0	8.6	27
7	13	9.0	6.3	6.7	8.7	37	78	44	24	8.6	10	24
8	9.5	7.7	6.0	6.2	9.2	34	89	41	22	8.4	15	21
9	8.7	7.1	6.3	6.8	8.3	37	90	39	20	8.2	13	19
10	8.9	7.4	6.0	7.0	8.2	44	76	41	19	8.2	11	17
11	8.1	8.0	6.3	7.4	8.6	44	64	44	18	8.7	9.7	15
12	8.4	7.7	6.5	7.5	8.3	44	57	48	18	8.3	9.3	14
13	8.3	7.7	6.3	7.1	8.0	45	58	51	18	9.0	9.2	13
14	8.0	7.7	6.0	6.5	7.8	41	66	53	17	9.0	9.1	13
15	7.9	7.7	6.5	8.1	7.7	39	76	59	16	8.2	8.4	12
16	7.5	6.8	6.0	8.9	8.1	37	77	62	15	8.1	8.6	12
17	7.4	6.5	5.8	11	8.1	38	81	58	15	8.1	8.5	11
18	7.6	7.4	6.5	8.9	7.8	43	71	53	14	8.8	8.1	10
19	7.4	7.1	6.8	7.7	7.4	52	62	48	14	8.3	8.3	10
20	7.2	7.4	6.3	8.2	8.1	56	57	53	13	8.3	23	9.4
21	6.9	7.1	7.1	8.2	8.2	71	58	49	13	8.0	12	10
22	7.1	7.1	6.5	7.4	8.4	80	55	51	12	9.3	14	13
23	7.7	7.4	6.8	8.1	8.8	84	52	51	11	15	18	17
24	7.4	7.4	6.5	7.7	9.2	77	51	51	11	14	15	22
25	6.9	7.4	6.3	8.4	9.4	72	55	46	10	14	17	42
26	6.9	6.8	6.3	7.9	9.7	75	59	40	9.6	11	16	74
27	6.8	6.5	6.5	8.0	11	74	72	35	11	9.7	16	63
28	6.5	6.3	7.1	7.8	11	64	74	33	23	9.3	15	48
29	6.5	6.8	7.1	7.8	---	63	65	31	11	9.0	15	37
30	10	6.5	6.8	11	---	71	58	29	10	8.6	15	35
31	8.5	---	6.5	14	---	86	---	29	---	8.6	14	---
TOTAL	251.3	220.7	199.0	243.0	249.2	1701	2199	1422	537.6	292.3	373.0	715.4
MEAN	8.11	7.36	6.42	7.84	8.90	54.9	73.3	45.9	17.9	9.43	12.0	23.8
MAX	13	9.0	7.1	14	13	86	124	62	33	15	23	74
MIN	6.5	6.3	5.8	6.2	7.4	34	51	29	9.6	8.0	8.1	9.4
AC-FT	498	438	395	482	494	3370	4360	2820	1070	580	740	1420

CAL YR 1977 TOTAL 5931.7 MEAN 16.3 MAX 275 MIN 5.8 AC-FT 11770  
WTR YR 1978 TOTAL 8403.5 MEAN 23.0 MAX 124 MIN 5.8 AC-FT 16670

## 08387600 EAGLE CREEK BELOW SOUTH FORK, NEAR ALTO, NM

LOCATION.--Lat 33°23'33", long 105°43'16", in SE¼SW¼ sec.31, T.10 S., R.13 E., Lincoln County, Hydrologic Unit 13060008, in Lincoln National Forest at right bank, 100 ft (30 m) downstream from culvert under State Road No. 532, 0.1 mi (0.2 km) downstream from South Fork, and 2.4 mi (3.9 km) west of Alto. Mouth at Rio Ruidoso mile 11.3 (18.2 km).

DRAINAGE AREA.--8.14 mi<sup>2</sup> (21.08 km<sup>2</sup>).

PERIOD OF RECORD.--August 1969 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 7,600 ft (2,316 m), from topographic map.

REMARKS.--Records good. No diversions for irrigation above station. Some water is stored in small unregulated recreational ponds on the Mescalero Apache Indian Reservation upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 2.64 ft<sup>3</sup>/s (0.075 m<sup>3</sup>/s), 1,910 acre-ft/yr (2.36 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107 ft<sup>3</sup>/s (3.03 m<sup>3</sup>/s) Oct. 20, 1972, gage height, 3.49 ft (1.064 m), from rating curve extended above 21 ft<sup>3</sup>/s (0.59 m<sup>3</sup>/s); minimum, 0.05 ft<sup>3</sup>/s (0.001 m<sup>3</sup>/s) June 30, July 3, 4, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 25 ft<sup>3</sup>/s (0.7 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
June 28	1400	* 49	1.39	3.17	0.966
July 25	1300	27	0.76	2.97	0.905

Minimum, 0.16 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) Dec. 20-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	.39	.24	.26	1.1	9.0	10	4.1	2.1	.81	.52	1.8
2	.48	.38	.24	.26	.98	14	9.6	4.5	2.3	.68	.55	2.3
3	.52	.36	.25	.25	.90	9.9	8.0	4.4	2.1	.61	.54	3.6
4	.58	.36	.25	.25	.77	9.8	6.8	4.0	1.8	.65	.55	2.9
5	.50	.35	.24	.24	.72	4.8	6.5	3.7	1.7	.70	.52	2.9
6	.70	.35	.23	.24	.71	4.7	6.0	4.6	1.7	.58	.47	2.6
7	1.4	.45	.24	.22	.69	4.2	5.6	5.7	1.5	.51	.55	2.3
8	.95	.42	.24	.23	.68	3.7	5.9	5.8	1.3	.43	1.1	2.0
9	.93	.37	.22	.24	.60	3.4	6.3	5.6	1.2	.41	.91	1.7
10	.91	.38	.23	.25	.64	3.5	5.8	5.7	1.1	.41	1.1	1.4
11	.83	.37	.23	.26	.69	3.7	4.7	5.9	.96	.43	1.5	1.2
12	.75	.36	.23	.26	.54	3.5	4.1	6.1	.93	.43	1.5	1.0
13	.67	.36	.23	.24	.79	3.4	3.9	6.3	.92	.74	.98	.88
14	.62	.36	.24	.25	.70	3.2	4.3	6.2	.80	.68	.96	.79
15	.55	.35	.24	.30	.71	2.8	5.1	6.3	.72	.51	1.1	.75
16	.52	.34	.22	.42	.69	2.6	5.3	6.3	.63	.43	1.1	.71
17	.49	.33	.20	.39	.75	2.7	5.6	5.6	.58	.40	1.2	.66
18	.47	.33	.21	.37	.75	3.2	5.1	4.9	.78	.35	1.3	.60
19	.45	.31	.21	.42	.75	4.1	4.4	4.3	.77	.40	1.5	.55
20	.43	.29	.18	.38	.73	4.7	4.0	4.5	.54	.43	2.4	.53
21	.42	.29	.18	.34	2.0	5.7	3.9	4.6	.51	.47	2.1	.57
22	.41	.29	.19	.36	2.1	6.7	3.9	4.7	.46	.51	1.9	.87
23	.41	.29	.20	.33	2.1	8.3	3.7	4.4	.43	1.4	1.8	2.1
24	.40	.27	.21	.34	1.3	7.2	3.6	3.9	.40	3.2	1.8	5.5
25	.39	.28	.20	.36	1.5	6.8	3.9	3.4	.37	4.1	1.8	11
26	.37	.27	.21	.35	1.7	6.8	4.2	2.9	.36	2.6	1.7	20
27	.36	.27	.21	.36	2.0	6.8	5.2	2.8	1.1	1.6	1.7	15
28	.35	.27	.26	.38	2.8	6.7	5.6	3.6	4.6	1.1	1.6	9.7
29	.36	.27	.29	.41	---	6.5	5.1	4.1	1.9	.81	1.6	6.4
30	.55	.26	.27	.44	---	7.1	4.5	3.9	1.0	.66	1.6	5.1
31	.43	---	.25	.83	---	8.1	---	3.0	---	.57	1.7	---
TOTAL	17.70	9.97	7.04	10.23	30.39	173.6	160.6	145.8	35.56	27.61	39.65	107.41
MEAN	.57	.33	.23	.33	1.09	5.60	5.35	4.70	1.19	.89	1.28	3.58
MAX	1.4	.45	.29	.83	2.8	14	10	6.3	4.6	4.1	2.4	20
MIN	.35	.26	.18	.22	.54	2.6	3.6	2.8	.36	.35	.47	.53
AC-FT	35	20	14	20	60	344	319	289	71	55	79	213
CAL YR 1977	TOTAL 755.42		MEAN 2.07	MAX 16	MIN .18	AC-FT 1500						
WTR YR 1978	TOTAL 765.56		MEAN 2.10	MAX 20	MIN .18	AC-FT 1520						

## 08387800 EAGLE CREEK NEAR ALTO, NM

LOCATION.--Lat 35°23'29", long 105°36'39", in SWSE<sup>1</sup>/<sub>4</sub> sec.31, T.10 S., R.14 E., Lincoln County, Hydrologic Unit 13060008, on left bank 200 ft (60 m) north of Lincoln National Forest boundary, 500 ft (152 m) northeast of windmill, and 4.0 mi (6.4 km) east of Alto. Mouth at Rio Ruidoso mile 11.3 (18.2 km).

DRAINAGE AREA.--15.7 mi<sup>2</sup> (40.7 km<sup>2</sup>).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,840 ft (2,085 m), from topographic map.

REMARKS.--Records good. Discharge at this station is affected by Alto Reservoir and municipal water supply diversions for Ruidoso and Capitan. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 1.31 ft<sup>3</sup>/s (0.037 m<sup>3</sup>/s), 949 acre-ft/yr (1.17 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72 ft<sup>3</sup>/s (2.04 m<sup>3</sup>/s) Sept. 16, 1976, gage height, 2.03 ft (0.619 m); from rating curve extended above 22 ft<sup>3</sup>/s (0.62 m<sup>3</sup>/s); no flow most of time.

EXTREMES FOR CURRENT YEAR.—Maximum discharge, 11 ft<sup>3</sup>/s (0.31 m<sup>3</sup>/s) Aug. 8, gage height, 1.10 ft (0.335 m), no peak above base of 25 ft<sup>3</sup>/s (0.7 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	2.3	1.4	.28	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	5.2	2.2	.28	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	4.2	2.1	.26	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	3.3	2.6	.24	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	2.8	2.1	.22	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	2.4	1.8	.20	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	2.1	2.8	.18	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	1.9	3.0	.18	.00	.17	.00
9	.00	.00	.00	.00	.00	.00	3.0	4.0	.16	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	3.3	4.2	.13	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	2.6	4.0	.12	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	1.9	4.0	.11	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.69	3.8	.10	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.48	3.8	.09	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	1.4	3.7	.07	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	2.7	3.2	.05	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	2.8	2.6	.01	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	2.1	1.9	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	2.8	2.1	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	2.0	2.8	.00	.00	.01	.00
21	.00	.00	.00	.00	.00	.00	.97	3.8	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.69	2.8	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	1.6	1.4	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	1.6	.85	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.69	.52	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.64	.37	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.79	.34	.00	.00	.00	.12
28	.00	.00	.00	.00	.00	.00	1.7	.34	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	1.8	.31	.00	.00	.00	.07
30	.00	.00	.00	.00	---	.00	1.6	.31	.00	.00	.00	.48
31	.00	---	.00	.00	---	.03	---	.28	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.03	62.05	69.42	2.68	.00	.18	.67
MEAN	.000	.000	.000	.000	.000	.001	2.07	2.24	.089	.000	.006	.022
MAX	.00	.00	.00	.00	.00	.03	5.2	4.2	.28	.00	.17	.48
MIN	.00	.00	.00	.00	.00	.00	.48	.28	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.06	123	138	5.3	.00	.4	1.3
CAL YR 1977	TOTAL 232.98		MEAN .64	MAX 12	MIN .00	AC-FT 462						
WTR YR 1978	TOTAL 135.03		MEAN .37	MAX 5.2	MIN .00	AC-FT 268						





## 08390600 TWO RIVERS RESERVOIR NEAR ROSWELL, NM

LOCATION.--08390610 Rio Hondo Reservoir: Lat 33°17'55", long 104°43'20", in SW¼SE¼NE¼ sec.4, T.12 S., R.22 E., Chaves County, Hydrologic Unit 13060008, near center of Diamond A Dam on Rio Hondo, 13 mi (20.9 km) southwest of Roswell at mile 33.4 (53.7 km); 08390620 Rocky Arroyo Reservoir: Lat 33°16'20", long 104°43'20", in NW¼SE¼NE¼ sec.16, T.12 S., R.22 E., at left end of Rocky Dam on Rocky Arroyo, and 14 mi (22.5 km) southwest of Roswell.

DRAINAGE AREA.--1,027 mi<sup>2</sup> (2,660 km<sup>2</sup>); Rio Hondo, 963 mi<sup>2</sup> (2,494 km<sup>2</sup>); Rocky Arroyo, 64 mi<sup>2</sup> (166 km<sup>2</sup>).

PERIOD OF RECORD.--July 1963 to current year. Prior to October 1965 (monthend contents only). Prior to October 1966 contents at 0800 hours.

GAGE.--Water-stage recorders. Datum of gages is National Geodetic Vertical Datum of 1929.

REMARKS.--Two Rivers Reservoir, completed July 16, 1963, is formed by earthfill dams on Rio Hondo, which forms Rio Hondo Reservoir; and Rocky Arroyo which forms Rocky Arroyo Reservoir. Above elevation 3,980.0 ft (1,213.10 m) the pools of the two reservoirs combine to form Two Rivers Reservoir with a total capacity of 166,200 acre-ft (205 hm<sup>3</sup>) at elevation 4,032.0 ft (1,228.95 m) crest of ungated spillway. Capacity of Rio Hondo Reservoir, 181 acre-ft (223,000 m<sup>3</sup>) between elevations 3,957.0 ft (1,206.09 m), sill of outlet gate, and 3,980.0 ft (1,213.10 m). Capacity of Rocky Arroyo Reservoir, 13,410 acre-ft (16.5 hm<sup>3</sup>) between elevations 3,945.0 ft (1,202.44 m), sill of outlet gate, and 3,980.0 ft (1,213.10 m). No dead storage in Rio Hondo Reservoir, or Rocky Arroyo Reservoir. Primary objective of project is flood control. Outlet conduits in Rocky Dam have fixed openings. Figures given herein represent total contents at 2400 hours.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents at 0800 hours of Rio Hondo Reservoir, 1,260 acre-ft (1.55 hm<sup>3</sup>) July 29, 1965, elevation, 3,985.7 ft (1,214.84 m); Rocky Arroyo Reservoir at 0800 hours, 6,090 acre-ft (7.51 hm<sup>3</sup>) June 18, 1965, elevation, 3,970.7 ft (1,210.27 m); no contents both reservoirs most of time.

EXTREMES FOR CURRENT YEAR.--No contents at 2400 hours all year.

NOTE: No contents at 2400 hours either reservoir, each day, all year.

08390800 RIO HONDO BELOW DIAMOND A DAM, NEAR ROSWELL, NM

LOCATION.--Lat 33°18'05", long 104°43'12", in NE¼SE¼NE¼ sec. 4, T.12 S., R.22 E., Chaves County, Hydrologic Unit 13060008, on left bank, 500 ft (152 m) downstream from outlet conduit of Diamond A dam (Two Rivers Reservoir), 13 mi (20.9 km) southwest of Roswell, and at mile 33.3 (53.6 km). Mouth at Pecos River mile 566.0 (910.7 km).

DRAINAGE AREA.--963 mi<sup>2</sup> (2,490 km<sup>2</sup>), contributing area.

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3,949.68 ft (1,203.862 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records fair. Diversions and ground-water withdrawals for irrigation of about 6,500 acres (26 km<sup>2</sup>), 1959 determination, above station. This record represents the outflow from Two Rivers Reservoir through Diamond A Dam. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years, 7.55 ft<sup>3</sup>/s (0.214 m<sup>3</sup>/s), 5,470 acre-ft/yr (6.74 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 659 ft<sup>3</sup>/s (18.7 m<sup>3</sup>/s) July 29, 1965, gage height, 4.91 ft (1.497 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 216 ft<sup>3</sup>/s (6.12 m<sup>3</sup>/s) July 24, gage height, 3.15 ft (0.960 m); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.60	.00	.00
2	.00	.00	.00	.00	.00	.00	2.8	4.2	.20	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	30	11	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	28	5.4	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	26	.01	44	4.1	.00	.00
6	.00	.00	.00	.00	.00	.00	22	.00	28	.16	.00	.00
7	.00	.00	.00	.00	.00	.00	18	.00	3.0	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	14	.00	.28	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	11	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	17	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	23	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	2.5	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	5.8	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	4.9	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	8.7	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	3.6	.00	.00	.00	.04	.00
21	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	5.1	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	131	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8	.09	.01
26	.00	.00	.00	.00	.00	.00	.00	.03	.00	3.9	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	2.7	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	8.2	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	14	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	11	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	.00	.00	.00	.00	.00	.00	237.54	25.74	111.38	145.56	.13	.01
MEAN	.000	.000	.000	.000	.000	.000	7.92	.83	3.71	4.70	.004	.000
MAX	.00	.00	.00	.00	.00	.00	30	11	44	131	.09	.01
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	471	51	221	289	.3	.02

CAL YR 1977 TOTAL 997.10 MEAN 2.73 MAX 129 MIN .00 AC-FT 1980  
WTR YR 1978 TOTAL 520.36 MEAN 1.43 MAX 131 MIN .00 AC-FT 1030

## 08393200 ROCKY ARROYO ABOVE TWO RIVERS RESERVOIR, NEAR ROSWELL, NM

LOCATION.--Lat 33°17'07", long 104°47'47", in NE¼SW¼ sec. 11, T.12, S., R.21½ E., Chaves County, Hydrologic Unit 13060008, on left bank, 2.1 mi (3.4 km) upstream from mouth of Buchanan Draw, 5.2 mi (8.4 km) upstream from Rocky Dam (Two Rivers Reservoir), and 17 mi (27.4 km) southwest of Roswell.

DRAINAGE AREA.--31 mi<sup>2</sup> (80 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--May 1963 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,059.17 ft (1,237.235 m) Corps of Engineers datum. Prior to Dec. 7, 1968, at site on opposite bank at datum 3.72 ft (1.134 m) lower.

REMARKS.--Records good. No diversions above station. Flow past station represents inflow to Two Rivers Reservoir.

AVERAGE DISCHARGE.--15 years, 0.87 ft<sup>3</sup>/s (0.025 m<sup>3</sup>/s), 630 acre-ft/yr (777,000 m<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft<sup>3</sup>/s (340 m<sup>3</sup>/s) July 5, 1968, gage height, 11.53 ft (3.514 m), from floodmarks, present datum, from rating curve extended above 350 ft<sup>3</sup>/s (9.91 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 5.92 ft (1.804 m), 7.14 ft (2.176 m), and 11.53 ft (3.514 m), present datum; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 174 ft<sup>3</sup>/s (4.93 m<sup>3</sup>/s) at 2300 hours June 28, gage height, 2.97 ft (0.905 m), no other peak above base of 90 ft<sup>3</sup>/s (2.5 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.6
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	1.8	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	28	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	12	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	41.80	.00	.00	2.62
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	1.39	.000	.000	.087
MAX	.00	.00	.00	.00	.00	.00	.00	.00	28	.00	.00	2.6
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	83	.00	.00	5.2
CAL YR 1977	TOTAL	0.00	MEAN .000	MAX .00	MIN .00	AC-FT .00						
WTR YR 1978	TOTAL	44.42	MEAN .12	MAX 28	MIN .00	AC-FT 88						

## 08393300 ROCKY ARROYO BELOW ROCKY DAM, NEAR ROSWELL, NM

LOCATION.--Lat 33°16'11", long 104°43'13", in SE 1/4 sec. 16, T.12 S., R.22 E., Chaves County, Hydrologic Unit 13060008, on left bank, 300 ft (90 m) downstream from outlet structure in Rocky Dam (Two Rivers Reservoir) and 13.5 mi (21.7 km) southwest of Roswell,

DRAINAGE AREA.--64 mi<sup>2</sup> (166 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--May 1963 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3,935.66 ft (1,199.589 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Jan. 12, 1972, at site 1.4 mi (2.3 km) downstream at datum 28.76 ft (8.766 m) lower.

REMARKS.--Records good. No diversions above station. This record represents the outflow from Two Rivers Reservoir through Rocky Dam. Outlet conduits in Rocky Dam have fixed openings.

AVERAGE DISCHARGE.--15 years, 1.50 ft<sup>3</sup>/s (0.042 m<sup>3</sup>/s), 1,090 acre-ft/yr (1.34 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 548 ft<sup>3</sup>/s (15.5 m<sup>3</sup>/s) Aug. 21, 1966, gage height, 4.57 ft (1.393 m), site and datum then in use, from rating curve extended above 260 ft<sup>3</sup>/s (7.36 m<sup>3</sup>/s); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.2 ft<sup>3</sup>/s (0.204 m<sup>3</sup>/s) June 2, gage height, 1.42 ft (0.433 m); no flow most of the time.

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.27	.00	.08	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.009	.000	.003	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.07	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.5	.00	.2	.00
CAL YR 1977	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	.00	AC-FT	.00		
WTR YR 1978	TOTAL	0.35	MEAN	.001	MAX	.14	MIN	.00	AC-FT	.7		

## 08394100 PECOS RIVER NEAR HAGERMAN, NM

LOCATION.--Lat 33°10'08", long 104°18'24", in SE¼SW¼SE¼ sec. 23, T.13 S., R.26 E., Chaves County, Hydrologic Unit 13060007, on left bank 3.4 mi (5.5 km) upstream from Rio Felix, 4.9 mi (7.9 km) north of Hagerman, and at mile 544.6 (876.3 km).

DRAINAGE AREA.--13,630 mi<sup>2</sup> (35,300 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--February 1968 to current year (operated as a low-flow station only).

GAGE.--Water-stage recorder. Altitude of gage is 3,390 ft (1,033 m), from topographic map.

REMARKS.--Records poor. Flow partly regulated by Lake Sumner (station 08384000). Diversions and ground-water withdrawals for irrigation of about 80,000 acres (320 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined; no flow at times in 1971, 1974, 1976, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge not determined; minimum 1.3 ft<sup>3</sup>/s (0.037 m<sup>3</sup>/s) Sept. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	71	39	36	66	38	856	36	23	---	16	10
2	34	71	39	36	63	39	840	42	22	---	14	10
3	34	61	40	36	58	39	878	50	194	1050	14	16
4	34	65	41	35	51	40	856	64	128	974	20	20
5	34	62	40	36	49	40	878	71	256	950	22	20
6	34	61	40	37	46	39	856	63	166	780	16	25
7	117	61	38	38	44	39	851	49	165	605	14	20
8	743	66	37	37	42	39	851	42	132	453	14	10
9	236	66	36	38	41	36	829	34	210	269	14	10
10	178	62	35	38	41	34	878	29	133	151	14	10
11	135	59	35	38	41	34	922	29	97	118	22	9.7
12	102	56	35	38	42	32	768	27	77	111	20	5.6
13	94	55	36	38	43	30	730	24	226	91	14	2.0
14	93	51	38	34	42	28	714	22	175	79	12	1.7
15	85	50	39	34	41	25	617	20	100	67	12	2.8
16	79	49	42	37	41	24	258	18	80	57	8.7	4.4
17	74	48	36	39	40	23	192	17	40	60	9.7	4.4
18	72	47	37	40	41	21	143	15	32	46	11	6.0
19	66	46	36	41	40	21	115	15	25	40	11	6.4
20	65	43	34	40	43	20	96	14	22	31	19	7.3
21	67	42	35	39	45	20	85	23	19	27	34	6.4
22	58	42	35	42	43	21	77	22	17	29	13	8.0
23	52	42	36	41	45	20	70	15	16	35	10	8.0
24	49	44	37	41	44	457	60	12	64	60	10	8.0
25	45	42	38	42	62	697	54	8.7	554	50	8.0	8.0
26	46	41	37	42	41	746	48	9.2	675	47	8.0	8.0
27	47	41	37	43	40	796	47	8.2	785	70	8.0	8.0
28	50	40	37	45	39	802	45	6.8	---	60	8.0	16
29	65	39	37	44	---	868	42	6.8	---	50	8.0	20
30	76	41	37	45	---	812	38	38	---	35	8.0	20
31	79	---	36	55	---	818	---	45	---	20	8.0	---
TOTAL	2976	1564	1155	1225	1254	6698	13694	875.7	---	---	420.4	311.7
MEAN	96.0	52.1	37.3	39.5	44.8	216	456	28.2	---	---	13.6	10.4
MAX	743	71	42	55	66	868	922	71	---	---	34	25
MIN	33	39	34	34	39	20	38	6.8	---	---	8.0	1.7
AC=FT	5900	3100	2290	2430	2490	13290	27160	1740	---	---	834	618

## 08394500 RIO FELIX AT OLD HIGHWAY BRIDGE, NEAR HAGERMAN, NM

LOCATION.--Lat 33°07'30", long 104°20'40", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.4, T.14 S., R.26 E., Chaves County, Hydrologic Unit 13060009, near left bank on downstream side of abandoned bridge pier, 0.6 mi (1.0 km) upstream from alternate U.S. Highway 285, 1.3 mi (2.1 km) northwest of Hagerman, and 2.7 mi (4.3 km) upstream from mouth. Mouth at Pecos River mile 541.4 (871.1 km).

DRAINAGE AREA.--932 mi<sup>2</sup> (2,410 km<sup>2</sup>), contributing area.

PERIOD OF RECORD.--April 1939 to current year. March 1932 to April 1939 at site 1 mi (1.6 km) downstream; records for periods of low flow not equivalent, owing to inflow between sites.

REVISED RECORDS.--WSP 928: 1940(M). WSP 1562: 1939-40, 1941(M).

GAGE.--Water-stage recorder. Datum of gage is 3,403.40 ft (1,037.356 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Diversions for irrigation of about 350 acres (1.4 km<sup>2</sup>), 1959 determination, above station.

AVERAGE DISCHARGE.--39 years, 15.0 ft<sup>3</sup>/s (0.425 m<sup>3</sup>/s), 10,870 acre-ft/yr (13.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,000 ft<sup>3</sup>/s (2,100 m<sup>3</sup>/s) Oct. 7, 1954, gage height, 27.5 ft (8.38 m), from floodmarks, from rating curve extended above 12,000 ft<sup>3</sup>/s (340 m<sup>3</sup>/s) on basis of slope-area measurement at point 5.5 mi (8.8 km) upstream from gage (adjusted for channel storage); no flow for many periods.  
Flood in 1954 is the highest since 1894 (information from local residents).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 1, 1904, is probably second highest since 1894; another major flood occurred in April 1915.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft<sup>3</sup>/s (14 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)
June 4	2300	559	15.8	8.43	2.569
June 28	1130	*4,770	135	15.30	4.663
June 30	1100	1,070	30.3	10.21	3.112
Sept. 4	0230	1,820	51.5	10.98	3.347

No flow most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	5.6	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	40	.00	.00	475
5	.00	.00	.00	.00	.00	.00	.00	.00	72	.00	.00	21
6	.00	.00	.00	.00	.00	.00	.00	.00	45	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	21	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	8.2	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	4.7	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	4.5	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	2.9	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	2.7	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.2
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	10
27	.00	.00	.00	.00	.00	.00	.00	.00	35	.00	.00	1.0
28	.00	.00	.00	.00	.00	.00	.00	.00	2100	.00	.00	1.1
29	.00	.00	.00	.00	---	.00	.00	.00	54	.00	.00	.06
30	.00	.00	.00	.00	---	.00	.00	.00	317	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.31	2715.61	13.00	.00	510.36
MEAN	.000	.000	.000	.000	.000	.000	.000	.010	90.5	.42	.000	17.0
MAX	.00	.00	.00	.00	.00	.00	.00	.31	2100	13	.00	475
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.6	5390	26	.00	1010

CAL YR 1977	TOTAL	9.32	MEAN	.026	MAX	3.4	MIN	.00	AC-FT	18
WTR YR 1978	TOTAL	3239.28	MEAN	8.87	MAX	2100	MIN	.00	AC-FT	6430

## 08395500 PECOS RIVER NEAR LAKE ARTHUR, NM

LOCATION.--Lat 32°59'18", long 104°19'20", in SW¼NE¼ sec.27, T.15 S., R.26 E., Chaves County, Hydrologic Unit 1306007, on left bank 400 ft (120 m) upstream from county bridge, 2.5 mi (4.0 km) east of Lake Arthur, 7 mi (11.3 km) upstream from Cottonwood Creek, 11 mi (17.7 km) northeast of Artesia, and at mile 522.0 (839.9 km).

DRAINAGE AREA.--14,760 mi<sup>2</sup> (38,230 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--August 1938 to current year.

GAGE.--Water-stage recorder and rock control. Datum of gage is 3,327.07 ft (1,014.091 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow partly regulated by Lake Sumner (station 08384000). Diversions and ground-water withdrawals for irrigation of about 124,000 acres (500 km<sup>2</sup>), 1959 determination, above station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,600 ft<sup>3</sup>/s (1,410 m<sup>3</sup>/s) Sept. 24, 1941, gage height, 21.90 ft (6.675 m), from rating curve extended above 16,100 ft<sup>3</sup>/s (456 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 21.77 ft (6.635 m); no flow at times in 1947, 1953-4, 1962, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1937, reached a stage of 21.77 ft (6.635 m), discharge, 51,500 ft<sup>3</sup>/s (1,460 m<sup>3</sup>/s), on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 4,890 ft<sup>3</sup>/s (138 m<sup>3</sup>/s) June 28, gage height 9.32 ft (2.841 m); minimum 1.0 ft<sup>3</sup>/s (0.028 m<sup>3</sup>/s) July 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	85	44	46	60	42	760	30	22	1510	15	18
2	34	75	42	45	73	43	760	32	29	1100	12	17
3	36	67	42	45	72	44	783	43	170	882	10	16
4	41	64	45	44	68	43	755	42	128	879	8.5	171
5	31	69	45	45	58	44	766	55	478	868	14	125
6	31	65	43	46	54	44	766	64	257	802	9.4	60
7	36	69	45	47	54	44	787	53	201	634	17	30
8	655	68	43	44	52	42	768	45	152	470	13	14
9	414	70	42	44	51	42	763	34	209	340	18	12
10	228	68	42	43	47	40	769	26	173	151	9.6	11
11	172	65	41	43	48	38	806	28	118	103	6.4	10
12	131	62	41	45	50	32	722	23	91	62	7.2	9.5
13	107	60	41	43	47	31	650	20	191	45	6.2	9.0
14	105	59	42	42	50	27	635	19	198	32	11	8.0
15	106	57	43	39	48	23	613	19	141	23	12	7.0
16	97	56	44	40	47	23	352	19	71	19	9.5	6.5
17	91	54	43	43	47	21	180	16	42	16	8.8	6.0
18	83	52	40	46	46	19	129	12	32	15	6.2	6.5
19	82	49	42	45	48	23	102	6.5	41	6.4	10	7.0
20	74	49	40	46	47	23	89	10	29	2.4	11	7.0
21	76	49	39	47	49	23	78	12	20	3.3	12	8.0
22	73	45	41	46	51	24	61	15	16	3.5	17	14
23	67	46	41	48	47	22	55	16	14	6.4	7.7	20
24	59	46	42	48	49	224	45	11	14	24	16	35
25	56	48	43	48	49	685	41	9.4	325	44	15	70
26	50	47	44	50	47	705	33	6.7	623	33	15	60
27	50	47	43	51	46	722	33	6.7	677	31	14	52
28	52	45	44	51	44	738	34	6.8	1910	33	16	46
29	55	46	45	53	---	749	34	8.0	2200	32	17	44
30	76	44	46	54	---	770	29	6.4	1350	28	25	40
31	81	---	47	57	---	750	---	15	---	22	20	---
TOTAL	3281	1726	1325	1434	1449	6100	12398	709.5	9922	8220.0	389.5	939.5
MEAN	106	57.5	42.7	46.3	51.8	197	413	22.9	331	265	12.6	31.3
MAX	655	85	47	57	73	770	806	64	2200	1510	25	171
MIN	31	44	39	39	44	19	29	6.4	14	2.4	6.2	6.0
AC=FT	6510	3420	2630	2840	2870	12100	24590	1410	19680	16300	773	1860
CAL YR 1977	TOTAL	39650.4	MEAN 109	MAX 2500	MIN 1.6	AC=FT 78650						
WTR YR 1978	TOTAL	47893.5	MEAN 131	MAX 2200	MIN 2.4	AC=FT 95000						



LOCATION. ---Lat 32°50'25", long 104°19'23", in NW 1/4 sec.18, T.17 S., R.27 E., Eddy County, Hydrologic Unit 13060007, near left bank on downstream end of bridge pier on State Highway 83, 4.3 mi (6.9 km) east of Artesia, 7.0 mi (11.3 km) upstream from Rio Pecos, 17 mi (27.4 km) upstream from McMillan Dam, and at mile 503.9 (810.8 km).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1905 to June 1909, August 1909 to current year. Monthly discharge only for some periods, published in WSP 1312 and 1712. Records for Aug. 22-31, 1934, and October 1936 to April 1937, published in WSP 763 and 828, respectively are not reliable and should not be used. Prior to February 1936, published as "near Dayton."

GAGE.--Water-stage recorder. Datum of gage is 3,291.92 ft (1,003.376 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 27, 1914, nonrecording gage and Aug. 27, 1914, to Feb. 20, 1936, water-stage recorder at site 6.5 mi (10.5 km) downstream at different datum. Feb. 21, 1936, to Apr. 4, 1941, water-stage recorder at site 600 ft (183 m) downstream at different datum.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge probably occurred May 30, 1937, when a discharge of 51,500 ft<sup>3</sup>/s (1,460 m<sup>3</sup>/s) was measured by slope-area method at a point 15 mi (24.1 km) upstream, gage height, 14.7 ft (4.48 m), site and datum then in use; no flow at times in 1934, 1946-47, 1953-54, 1957, 1964-65.

EXTREMES OUTSIDE PERIOD OF RECORD.--Greatest flood since at least 1893 occurred Oct. 2, 1904, discharge not determined; the peak inflow to Lake McMillan, which includes Rio Peñasco and Fourmile Draw, was estimated at 82,000 ft<sup>3</sup>/s (2,320 m<sup>3</sup>/s). The second highest flood occurred July 25, 1905, discharge below Rio Peñasco, 50,300 ft<sup>3</sup>/s (1,420 m<sup>3</sup>/s), based on gain in storage and spill from Lake McMillan. The floods in August 1893 and October 1904 damaged McMillan Dam and washed out Avalon Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 2,930 ft<sup>3</sup>/s (83.0 m<sup>3</sup>/s) at 0400 hours June 29, gage height, 11.85 ft (3.612 m), no other peak above base of 2,000 ft<sup>3</sup>/s (57 m<sup>3</sup>/s); minimum, 1.7 ft<sup>3</sup>/s (0.048 m<sup>3</sup>/s) May 31.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	78	45	51	59	44	730	28	6.4	2010	21	9.3
2	39	77	45	51	65	44	732	33	64	1530	14	8.2
3	41	71	45	51	76	48	762	36	115	1060	15	13
4	44	66	46	51	74	45	758	47	154	990	14	40
5	42	66	47	50	68	44	748	48	455	965	14	161
6	33	70	47	49	59	45	755	67	403	908	16	72
7	36	69	46	50	57	46	758	69	234	735	13	27
8	275	70	47	48	53	43	742	53	204	617	19	18
9	451	69	45	47	51	41	748	44	182	512	23	15
10	192	72	44	47	50	39	742	30	218	278	19	14
11	148	70	44	47	48	39	782	25	149	184	12	13
12	114	68	44	46	51	34	762	23	122	119	8.2	11
13	92	65	44	46	49	30	672	17	119	88	7.8	8.2
14	90	64	44	46	49	27	655	16	221	69	7.5	6.0
15	93	61	44	45	50	21	629	15	177	56	9.6	5.2
16	90	60	44	42	50	18	441	13	126	44	12	4.9
17	88	58	46	43	50	21	170	13	101	38	8.9	5.7
18	81	55	48	46	49	16	140	9.6	81	35	7.8	5.2
19	78	54	44	46	48	14	112	9.6	62	33	7.5	6.4
20	74	50	43	48	50	21	97	8.6	46	18	10	6.0
21	71	50	42	50	49	18	83	14	34	15	12	6.0
22	76	48	43	49	52	18	69	14	21	15	9.3	9.3
23	70	48	45	50	52	19	52	8.2	14	17	14	14
24	64	48	45	51	50	19	46	13	12	17	8.2	23
25	59	48	46	50	51	518	42	6.0	107	45	7.1	78
26	56	50	48	52	49	626	39	5.2	586	39	5.2	59
27	52	48	48	53	48	682	34	3.9	655	44	4.9	61
28	52	48	48	52	45	700	33	2.8	1830	30	4.4	66
29	53	47	50	52	---	700	34	2.8	2720	41	4.4	44
30	60	46	51	55	---	745	34	2.4	1960	32	6.7	35
31	77	---	51	59	---	705	---	1.9	---	24	13	---
TOTAL	2828	1794	1419	1523	1502	5430	12401	679.0	11178.4	10608	348.5	844.4
MEAN	91.2	59.8	45.8	49.1	53.6	175	413	21.9	373	342	11.2	28.1
MAX	451	78	51	59	76	745	782	69	2720	2010	23	161
MIN	33	46	42	42	45	14	33	1.9	6.4	15	4.4	4.9
AC=FT	5610	3560	2810	3020	2980	10770	24600	1350	22170	21040	691	1670
CAL YR 1977	TOTAL	37166.86	MEAN	102	MAX	2110	MIN	.64	AC=FT	73720		
WTR YR 1978	TOTAL	50555.30	MEAN	139	MAX	2720	MIN	1.9	AC=FT	100300		

08396500 PECOS RIVER NEAR ARTESIA, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1937 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1937 to current year.

WATER TEMPERATURES: April 1949 to current year.

SUSPENDED SEDIMENT DISCHARGE: January 1949 to current year.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 28,800 micromhos June 24, 1977; minimum daily, 464 micromhos Sept. 23, 1974.

WATER TEMPERATURES: Maximum, 36.0°C July 27, 1966, July 25, 1969; minimum, 0.0°C on many days during winter months of most years.

SEDIMENT CONCENTRATIONS: Maximum daily, 21,300 mg/L Aug. 1, 1962; minimum daily, no flow on many days during July 1953, July and August 1954, July 1957, July to October 1964.

SEDIMENT LOADS: Maximum daily, 183,000 tons (166,000 tonnes) Sept. 26, 1955; minimum daily, 0 tons (0 tonnes) on many days during July 1953, July and August 1954, July 1957, July to October 1964.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 26,700 micromhos Sept. 1; minimum daily, 1,440 micromhos July 1.

WATER TEMPERATURES: Maximum, 34.5°C Aug. 4; minimum, 1.0°C Jan. 25.

SEDIMENT CONCENTRATIONS: Maximum daily, 10,300 mg/L Oct. 10; minimum daily, 5 mg/L Mar. 4.

SEDIMENT LOADS: Maximum daily, 21,000 tons (19,100 tonnes) June 29; minimum daily, .19 ton (.17 tonne) May 29.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT										
06...	1500	30	8400	8.1	22.0	21.5	35	--	8.4	79
NOV										
02...	1400	76	5500	8.2	17.0	14.0	60	--	11.5	56
DEC										
07...	1600	46	9800	8.1	20.0	8.5	8	--	10.7	50
JAN										
10...	1505	47	9770	8.4	1.0	4.5	8	--	14.6	150
FEB										
08...	1400	54	9000	8.5	9.0	10.0	--	6.5	14.5	170
MAR										
08...	1030	43	11900	8.0	12.5	10.5	--	2.8	10.8	41
22...	0930	18	12400	8.0	26.0	15.0	--	--	--	--
APR										
04...	1400	760	2690	8.0	--	17.3	--	--	--	--
06...	0813	755	2620	7.6	16.5	15.5	--	700	9.1	56
11...	0915	780	2680	8.1	--	12.5	--	--	--	--
MAY										
03...	1620	45	7950	8.0	17.0	20.5	--	9.7	10.8	99
12...	1000	21	8300	8.0	--	17.5	--	--	--	--
JUN										
15...	1100	187	5100	7.5	28.5	24.5	--	510	7.2	40
JUL										
20...	1000	18	8660	8.0	26.0	25.0	--	11	6.9	100
AUG										
14...	1600	7.5	13600	8.0	32.0	32.0	--	45	7.8	98
SEP										
29...	1000	47	10000	7.6	19.0	18.0	--	56	10.6	150

08396500 PECOS RIVER NEAR ARTESIA, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)
OCT 06...	2300	2200	560	210	1200	11	12	130	0	110
NOV 02...	1900	1800	500	160	700	7.0	7.1	110	0	90
DEC 07...	2500	2300	590	240	1400	12	12	200	0	160
JAN 10...	2300	2200	620	190	1400	13	11	170	1	140
FEB 08...	2400	2200	570	230	1300	12	11	150	1	120
MAR 08...	2700	2600	660	260	1500	13	13	160	0	130
22...	3100	2900	700	320	1900	15	18	160	0	130
APR 04...	1600	1400	510	66	110	1.2	4.2	130	0	107
06...	1500	1400	470	69	120	1.4	4.4	130	0	110
11...	1600	1500	510	68	110	1.2	4.0	120	0	98
MAY 03...	2300	2200	620	180	970	8.8	15	110	0	90
12...	2000	1900	490	190	1300	13	14	120	0	98
JUN 15...	1600	1500	460	110	660	7.2	9.3	95	0	78
JUL 20...	2000	1900	500	180	1300	13	15	170	0	140
AUG 14...	2400	--	680	180	2300	20	26	--	--	130
SEP 29...	2200	2000	500	220	1500	14	25	--	--	130

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDEO (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT 06...	2000	1900	.7	15	6010	5960	58	.19	.26	.03
NOV 02...	1700	1100	.8	11	4390	4230	10	.16	.19	.07
DEC 07...	2100	2300	.9	14	6780	6760	21	1.0	1.0	.29
JAN 10...	1900	2300	.9	7.8	7010	6520	14	.55	.65	.24
FEB 08...	1800	2300	.8	8.8	6640	6300	22	.01	.10	.09
MAR 08...	2300	2400	.9	6.3	7260	7220	13	.01	.02	.09
22...	2200	3400	1.0	6.6	--	8630	--	--	.00	--
APR 04...	1400	170	.7	--	--	--	--	--	--	--
06...	1400	150	.6	11	2300	2290	1490	.10	.10	.04
11...	1400	160	.7	--	--	--	--	--	--	--
MAY 03...	1900	1700	.6	13	5930	5450	40	.01	.01	.01
12...	1900	1900	.8	--	--	--	--	--	--	--
JUN 15...	1500	1000	.6	9.4	3770	3800	4780	.50	.56	.10
JUL 20...	1700	2100	.7	17	6260	5900	39	.16	.19	.14
AUG 14...	2300	3600	.8	12	9710	9180	24	.01	.01	.02
SEP 29...	1900	2500	.7	8.7	7000	6730	60	.44	.58	.18

08396500 PECOS RIVER NEAR ARTESIA, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT 06...	.45	.67	.06	.00	560	20	10	6.3	5.1	3.0
NOV 02...	.71	.94	.08	.00	390	30	--	--	2.6	4.5
DEC 07...	.81	2.1	.05	.01	560	30	50	--	7.9	1.8
JAN 10...	.86	1.7	.06	.01	550	60	--	--	4.1	1.6
FEB 08...	.74	.84	.09	.01	510	20	--	--	5.6	2.3
MAR 08...	.66	.76	.10	.04	660	20	80	5.7	4.6	1.8
22...	--	--	--	.02	760	2000	--	--	--	--
APR 04...	--	--	--	--	--	--	--	--	--	--
06...	1.8	1.9	.06	.01	120	10	10	14	1.7	5.5
11...	--	--	--	--	--	--	--	--	--	--
MAY 03...	.84	.86	.09	.00	550	350	--	--	3.1	>5.0
12...	--	--	--	--	--	--	--	--	--	--
JUN 15...	2.1	2.7	.54	.02	440	60	20	12	5.8	>5.0
JUL 20...	.82	1.1	.03	.01	640	40	70	5.9	3.6	2.2
AUG 14...	1.4	1.4	.10	.00	980	30	--	--	6.2	>4.0
SEP 29...	2.6	3.2	.23	.01	660	20	40	17	12	>5.0

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
OCT 06...	1500	1	1	--	--	560	10	0	20	10
DEC 07...	1600	1	1	--	--	560	0	2	10	0
MAR 08...	1030	1	1	--	--	660	1	1	10	10
APR 04...	1400	--	--	--	--	--	--	--	--	--
06...	0813	4	2	--	--	120	6	7	30	0
11...	0915	--	--	--	--	--	--	--	--	--
MAY 12...	1000	--	--	--	--	--	--	--	--	--
JUN 15...	1100	4	2	--	--	440	0	0	20	15
JUL 20...	1000	3	3	--	--	640	0	0	0	10
SEP 29...	1000	1	0	0	0	660	0	2	10	10

## 08396500 PECOS RIVER NEAR ARTESIA, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
OCT 06...	50	0	30	0	520	20	--	2	70	10
DEC 07...	0	0	4	2	190	30	5	6	40	50
MAR 08...	4	3	7	2	250	20	6	4	70	80
APR 04...	--	--	--	--	--	--	--	--	--	--
06...	8	2	30	1	77000	10	--	--	950	10
11...	--	--	--	--	--	--	--	--	--	--
MAY 12...	--	--	--	--	--	--	--	--	--	--
JUN 15...	7	0	22	2	13000	60	19	5	640	20
JUL 20...	0	1	5	3	640	40	2	2	170	70
SEP 29...	0	0	15	0	680	20	--	--	110	40

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 06...	.0	.0	2	1	--	--	--	30	20
DEC 07...	.0	.0	2	3	--	--	--	30	20
MAR 08...	.0	.0	5	2	--	--	--	20	30
APR 04...	--	--	--	--	--	--	6300	--	--
06...	.0	.0	2	0	--	--	--	70	10
11...	--	--	--	--	--	--	6800	--	--
MAY 12...	--	--	--	--	--	--	9300	--	--
JUN 15...	.1	.1	1	1	--	--	--	70	20
JUL 20...	.1	.1	1	1	--	--	--	20	20
SEP 29...	.0	.0	2	3	0	0	--	60	30

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G) AS CU) (01043)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G) AS PB) (01052)
AUG 14...	1600	1	0	0	17	10

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39516)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39365)
AUG 14...	1600	.0	0	.00	.0	.0	0	.00	.0	.00

08396500 PECOS RIVER NEAR ARTESIA, NM--Continued

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- ELDRIN TOTAL (UG/L) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	HEPTA- CHLOR, TOTAL (UG/L) (39410)
AUG 14...	.0	.00	.0	.00	.0	.00	.00	.0	.00
DATE	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	TOX- APHENE, TOTAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)
AUG 14...	.0	.00	.0	.00	.0	.00	.0	0	0

## Results of Analysis of Water and Bed Materials for Selected Chlorinated Hydrocarbon Isomers

Date	Time	o-p'-DDE	o-p'-DDD	o-p'-DDT	cis- chlordane	trans- chlordane	α - BHC	Hexachloro- benzene
Aug 14	1600 (w) (s)	0 0	0 0	0 0	0 0	0 0	0 0	0 0

NOTE: Reporting units are ug/L for water samples (w) and ug/kg for bed material sediment samples (s).  
The lowest detectable limit is 0.01 ug/L for water samples and 0.1 ug/kg for sediment samples.

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 06...	1500	63	35
NOV 02...	1400	30	65
DEC 07...	1600	14	7
JAN 10...	1505	1	44
FEB 08...	1400	1	60
MAR 08...	1030	1	32
APR 06...	0813	0	700
MAY 03...	1620	260	260
JUN 15...	1100	95	1200
JUL 20...	1000	60	130
AUG 14...	1600	100	180
SEP 29...	1000	310	100

08396500 PECOS RIVER NEAR ARTESIA, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
OCT								
09...	0955	484	18.0	9100	11900	56	72	94
11...	0850	152	15.0	5850	2400	65	83	99
18...	1610	78	20.0	302	64	72	83	95
DEC								
07...	1600	46	8.5	79	9.8	--	--	--
JAN								
10...	1505	47	4.5	38	4.8	--	--	--
FEB								
08...	1400	54	10.0	23	3.4	--	--	--
MAR								
08...	1030	43	10.5	21	2.4	--	--	--
28...	1500	703	14.5	2890	5490	34	48	74
APR								
11...	1810	800	15.5	1630	3520	40	48	66
16...	1135	487	19.0	1360	1790	36	45	66
17...	1115	170	18.0	687	315	59	73	92
MAY								
03...	1620	45	20.5	58	7.0	--	--	--
JUN								
05...	0910	480	19.5	3440	4460	38	57	85
05...	1205	512	20.5	4280	5920	34	46	71
07...	1515	226	25.0	1340	818	57	68	93
15...	1100	187	24.5	1160	586	45	62	88
25...	2005	356	29.0	1890	1820	39	51	78
28...	0930	1530	23.0	3280	13600	32	48	70
29...	1515	2630	24.0	2550	18100	46	57	84
JUL								
02...	0815	1660	25.0	3880	17400	55	67	88
05...	1035	975	27.0	2510	6610	37	46	61

DATE	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)
OCT							
09...	--	--	--	99	100	--	--
11...	100	--	--	--	--	--	--
18...	100	--	--	--	--	--	--
DEC							
07...	--	--	--	46	--	--	--
JAN							
10...	--	--	--	51	--	--	--
FEB							
08...	--	--	--	41	--	--	--
MAR							
08...	--	--	--	47	--	--	--
28...	88	94	100	--	--	--	--
APR							
11...	--	--	--	97	100	--	--
16...	--	--	--	98	100	--	--
17...	--	--	--	99	100	--	--
MAY							
03...	--	--	--	94	98	99	100
JUN							
05...	--	--	--	98	100	--	--
05...	92	98	100	--	--	--	--
07...	100	--	--	--	--	--	--
15...	--	--	--	95	98	100	--
25...	--	--	--	98	100	--	--
28...	--	--	--	95	100	--	--
29...	--	--	--	98	100	--	--
JUL							
02...	100	--	--	--	--	--	--
05...	88	99	100	--	--	--	--

## 08396500 PECOS RIVER NEAR ARTESIA, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7760	6260	8970	9730	8640	9210	2670	7440	15900	1440	9080	26700
2	7880	5890	9290	9870	8350	9430	2610	7240	18100	1680	8780	26600
3	8670	5680	9210	9590	8170	9310	2640	7820	3680	1860	10800	15200
4	8320	5960	9130	9850	8540	9300	2620	7250	4860	1970	10800	9950
5	8520	6300	9290	9600	8650	9550	2620	6880	2190	1740	10800	1890
6	8320	6120	9130	9590	8540	9650	2610	7740	3200	1590	16600	2180
7	8190	6190	9210	9500	8570	9900	2610	7440	3400	1520	16800	4630
8	8810	6230	9290	9500	9140	10200	2630	6290	4840	1480	15500	5140
9	2690	6530	9380	9380	9040	9990	2650	6450	4320	1510	15000	6990
10	1820	6410	9380	9420	9200	10200	2690	6890	5040	1680	9850	8140
11	2000	7170	9460	9270	9390	10300	2690	7300	4010	2230	14000	10200
12	2280	7170	9450	9340	9460	10200	2650	8260	4080	2650	15200	16000
13	2440	7120	9720	9350	9400	10400	2660	9120	4410	3190	15500	18600
14	2810	6990	9810	9350	9380	10700	2690	9380	2190	3640	14200	17500
15	3090	7030	9450	9390	9220	10700	2740	10600	5050	4340	15300	17600
16	3430	7270	9720	9690	9530	11200	2740	10600	5590	5020	18400	17900
17	4130	7620	10100	9810	9700	11600	2990	11500	6000	5700	22300	17700
18	4420	7790	10000	10000	9710	11900	3170	11800	6620	6870	18600	20900
19	4710	7960	9550	9850	9410	12000	3460	11800	7600	7810	17400	22200
20	4810	8200	9720	9440	9560	13100	3680	11800	8170	8720	16800	21500
21	5150	8450	9540	9390	9390	12800	3990	11500	8650	8330	17700	22200
22	5450	8520	9810	9250	9350	12800	4300	13900	9850	8250	19000	17500
23	5470	8580	9810	9090	9420	12700	4580	6910	11000	8600	18200	17600
24	5500	8720	9810	9250	9230	---	4960	9160	12700	11100	18700	18100
25	5910	8860	9810	9150	9200	5900	5240	17000	16700	15400	18700	10000
26	6380	8790	9550	9400	9180	3060	5700	16300	4750	8080	16200	9250
27	6750	8790	9810	9500	9000	2900	5970	14600	2250	7790	15400	9540
28	6980	8790	10100	9200	8940	2750	6300	13700	1640	7120	14000	11400
29	7380	9080	9720	9320	---	2710	6810	13800	1760	7780	13900	11300
30	7380	9160	9630	8830	---	2600	7070	14100	1750	7220	16800	10700
31	7030	---	9550	8790	---	2630	---	14300	---	8690	23500	---
MEAN	5630	7450	9560	9440	9120	8990	3690	10300	6340	5320	15600	14200
WTR YR 1978	MEAN	8810	MAX	26700	MIN	1440						

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	14.0	10.0	11.0	8.5	12.5	18.5	17.5	27.5	25.0	28.5	23.5
2	19.0	14.0	9.0	4.0	6.5	15.0	18.0	16.0	22.0	25.0	31.5	26.5
3	19.0	12.0	8.5	3.5	9.5	10.0	17.0	20.5	19.5	28.0	28.5	22.0
4	17.0	15.5	9.0	5.5	10.5	10.0	17.0	22.0	26.0	27.0	34.5	24.0
5	23.0	14.0	10.5	5.0	8.0	13.5	18.5	18.5	19.5	27.0	33.0	23.5
6	21.0	14.5	8.0	6.5	8.5	14.0	17.0	23.0	20.0	27.0	27.0	27.0
7	19.0	14.0	5.5	6.5	8.5	11.5	18.5	16.5	25.0	27.0	27.0	25.0
8	19.0	13.0	8.5	5.0	10.0	10.5	18.5	23.0	27.0	26.0	25.5	26.5
9	18.0	9.5	6.5	6.0	6.0	10.0	16.5	17.0	27.0	27.5	22.0	27.5
10	17.0	11.0	7.5	4.5	7.0	15.5	15.0	20.0	22.0	26.0	27.0	23.5
11	15.0	13.0	5.0	3.0	8.5	16.0	15.5	20.0	23.0	25.0	24.5	28.0
12	14.5	11.0	6.0	3.5	9.5	13.5	15.0	21.0	25.0	25.5	25.0	28.0
13	14.0	10.5	6.5	4.0	12.0	14.0	18.0	20.0	25.0	27.0	32.5	26.5
14	18.0	11.0	5.5	7.0	6.5	16.5	16.5	25.0	26.5	28.0	32.0	25.5
15	14.0	10.5	6.5	5.0	6.0	11.0	19.0	27.0	24.5	30.0	26.5	30.5
16	14.0	14.0	8.0	4.0	8.0	15.0	19.0	23.5	30.0	28.5	25.0	31.0
17	20.0	11.0	4.0	5.5	5.0	16.5	18.0	20.5	30.0	28.0	26.5	28.5
18	20.0	12.0	6.5	4.0	6.0	17.5	17.5	26.5	28.0	34.0	31.0	27.5
19	20.0	12.0	7.0	2.5	5.0	15.0	17.0	25.0	29.0	29.5	25.0	21.5
20	21.0	11.5	7.0	2.5	9.0	19.0	17.5	21.0	27.0	28.0	24.0	20.0
21	16.0	12.0	6.5	4.5	4.5	18.0	19.0	22.0	32.0	29.0	22.5	18.0
22	17.0	8.5	6.5	6.5	7.0	12.0	20.0	22.5	27.5	27.0	26.0	16.0
23	15.0	12.0	6.5	8.5	7.5	17.0	20.0	27.5	28.0	23.5	29.0	16.5
24	14.0	8.0	6.0	5.0	7.5	---	20.0	22.0	28.5	30.0	28.0	19.0
25	15.0	9.5	11.0	1.0	9.0	14.5	22.5	24.0	29.0	30.0	24.0	18.0
26	18.0	8.0	7.0	3.5	14.0	15.5	23.5	30.0	26.5	27.5	30.5	18.0
27	17.5	10.0	6.5	5.0	11.5	15.0	24.0	24.0	28.0	25.0	31.5	18.5
28	16.0	10.0	5.5	5.5	14.0	15.0	19.5	17.0	23.0	26.5	29.0	21.5
29	17.5	10.5	10.0	5.5	---	16.5	24.0	20.0	24.0	23.0	29.0	17.0
30	18.0	10.5	5.5	5.0	---	17.5	23.0	27.5	26.0	31.5	25.0	24.0
31	20.0	---	10.0	5.0	---	19.0	---	27.0	---	22.5	27.0	---
MEAN	17.5	11.5	7.5	5.0	8.5	14.5	19.0	22.0	26.0	27.0	27.5	23.5
WTR YR 1978	MEAN	17.5	MAX	34.5	MIN	1.0						



## RIO GRANDE BASIN

08396500 PECOS RIVER NEAR ARTESIA, NM--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)	
	LOADS (T/DAY)		LOADS (T/DAY)		LOADS (T/DAY)		LOADS (T/DAY)		LOADS (T/DAY)		LOADS (T/DAY)	
OCTOBER												
1	36	3.6	121	25	54	6.6	39	5.4	37	5.9	19	2.3
2	42	4.4	101	21	52	6.3	32	4.4	48	8.4	15	1.8
3	46	5.1	77	15	50	6.1	44	6.1	56	11	6	.78
4	40	4.8	73	13	34	4.2	36	5.0	37	7.4	5	.61
5	54	6.1	81	14	23	2.9	39	5.3	31	5.7	14	1.7
6	63	5.6	76	14	27	3.4	37	4.9	15	2.4	28	3.4
7	47	4.6	80	15	49	6.1	45	6.1	26	4.0	22	2.7
8	2770	3470	66	12	44	5.6	38	4.9	24	3.4	19	2.2
9	9600	11700	60	11	40	4.9	30	3.8	21	2.9	22	2.4
10	10300	5340	56	11	41	4.9	36	4.6	20	2.7	30	3.2
11	5300	2120	57	11	38	4.5	38	4.8	15	1.9	39	4.1
12	2570	791	57	10	45	5.3	35	4.3	13	1.8	31	2.8
13	1570	390	46	8.1	45	5.3	34	4.2	10	1.3	33	2.7
14	985	239	50	8.6	48	5.7	18	2.2	8	1.1	39	2.8
15	712	179	45	7.4	45	5.3	37	4.5	8	1.1	53	3.0
16	550	134	61	9.9	65	7.7	40	4.5	7	.94	44	2.1
17	409	97	62	9.7	59	7.3	39	4.5	14	1.9	55	3.1
18	325	71	75	11	59	7.6	34	4.2	12	1.6	48	2.1
19	274	58	79	12	59	7.0	53	6.6	16	2.1	45	1.7
20	252	50	60	8.1	53	6.2	48	6.2	14	1.9	47	2.7
21	205	39	38	5.1	37	4.2	48	6.5	20	2.6	38	1.8
22	196	40	40	5.2	39	4.5	50	6.6	17	2.4	45	2.2
23	162	31	41	5.3	42	5.1	54	7.3	20	2.8	60	3.1
24	103	18	35	4.5	45	5.5	53	7.3	21	2.8	102	15
25	80	13	28	3.6	58	7.2	57	7.7	17	2.3	4140	5790
26	86	13	36	4.9	45	5.8	62	8.7	24	3.2	3320	5610
27	85	12	47	6.1	34	4.4	66	9.4	15	1.9	2900	5340
28	86	12	43	5.6	38	4.9	48	6.7	12	1.5	2770	5240
29	86	12	55	7.0	46	6.2	38	5.3	---	---	2550	4820
30	103	17	55	6.8	41	5.6	44	6.5	---	---	2350	4730
31	147	31	---	---	35	4.8	38	6.1	---	---	2390	4550
TOTAL	---	24911.2	---	300.9	---	171.1	---	174.6	---	88.94	---	36150.29
APRIL												
MAY												
JUNE												
JULY												
AUGUST												
SEPTEMBER												
1	2670	5260	29	2.2	100	1.7	3100	16800	51	2.9	77	1.9
2	2150	4250	30	2.7	636	302	3910	16200	50	1.9	65	1.4
3	1900	3910	37	3.6	1140	632	3860	11000	45	1.8	91	3.2
4	1780	3640	39	4.9	2880	1200	3180	8500	52	2.0	636	324
5	1850	3740	41	5.3	3570	4630	2500	6510	63	2.4	2030	862
6	2130	4340	41	7.4	2620	2850	1810	4440	65	2.8	403	78
7	1740	3560	31	5.8	1430	903	2150	4270	66	2.3	67	4.9
8	1850	3710	23	3.3	690	380	1470	2450	182	9.3	58	2.8
9	1690	3410	25	3.0	768	377	1440	1990	124	7.7	54	2.2
10	1700	3410	84	6.8	1620	954	820	615	73	3.7	66	2.5
11	1680	3550	55	3.7	2320	933	410	204	67	2.2	68	2.4
12	1770	3640	31	1.9	1430	471	268	86	62	1.4	83	2.5
13	2030	3680	84	3.9	1010	419	161	38	84	1.8	88	1.9
14	1510	2670	36	1.6	1360	812	82	15	117	2.4	75	1.2
15	1450	2460	26	1.1	1010	483	50	7.6	66	1.7	72	1.0
16	1350	1610	20	.70	440	150	43	5.1	53	1.7	72	.95
17	690	317	22	.77	112	31	41	4.2	55	1.3	75	1.2
18	500	189	24	.62	48	10	51	4.8	70	1.5	78	1.1
19	350	106	22	.57	43	7.2	47	4.2	70	1.4	60	1.0
20	250	65	43	1.0	76	9.4	115	5.6	66	1.8	56	.91
21	120	27	43	1.6	46	4.2	141	5.7	138	4.5	43	.70
22	81	15	32	1.2	21	1.2	79	3.2	69	1.7	30	.75
23	31	4.4	24	.53	28	1.1	37	1.7	74	2.8	38	1.4
24	51	6.3	20	.70	26	.84	50	2.3	63	1.4	52	3.2
25	20	2.3	18	.29	750	.754	79	10	101	1.9	144	33
26	15	1.6	20	.28	7820	12400	43	4.5	193	2.7	84	13
27	27	2.5	24	.25	4570	8080	40	4.8	91	1.2	55	9.1
28	19	1.7	29	.22	3250	16100	64	5.2	52	.62	66	12
29	25	2.3	25	.19	2860	21000	42	4.6	50	.59	58	6.9
30	22	2.0	50	.32	2440	12900	37	3.2	54	.98	61	5.8
31	---	---	47	.24	---	---	45	2.9	226	7.9	---	---
TOTAL	---	57582.1	---	66.68	---	86796.64	---	73197.6	---	80.29	---	1402.91
TOTAL LOAD FOR YEAR: 280923.25 TONS.												

## 08398500 RIO PENASCO AT DAYTON, NM

LOCATION.--Lat 32°44'36", long 104°24'49", in NE¼SE¼SE¼ sec.18, T.18 S., R.26 E., Eddy County, Hydrologic Unit 13060010, on left bank 1.2 mi (1.9 km) upstream from U.S. Highway 285, 1.9 mi (3.1 km) northwest of old Dayton railway station, 5.6 mi (9.0 km) upstream from mouth, and 7.0 mi (11.3 km) south of Artesia. Mouth at Pecos River mile 496.4 (798.7 km).

DRAINAGE AREA.--1,060 mi<sup>2</sup> (2,750 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--April 1951 to current year. Prior to October 1953, published as "near Dayton."

REVISED RECORDS.--WSP 1242: 1951(M). WSP 1512: 1956. WSP 1923: 1955.

GAGE.--Water-stage recorder and rock and concrete control. Datum of gage is 3,385.19 ft (1,031.806 m) National Geodetic Vertical Datum of 1929. Prior to May 9, 1968, at site 2.4 mi (3.9 km) downstream, at datum 44.30 ft (13.503 m) lower. May 9, 1968, to June 12, 1975, at present site at datum 1.98 ft (0.604 m) higher.

REMARKS.--Records good. Diversions and ground-water withdrawals for irrigation of about 3,000 acres (12 km<sup>2</sup>), 1959 determination, above station.

AVERAGE DISCHARGE.--27 years, 5.72 ft<sup>3</sup>/s (0.162 m<sup>3</sup>/s), 4,140 acre-ft/yr (5.10 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,800 ft<sup>3</sup>/s (844 m<sup>3</sup>/s) Aug. 23, 1966, gage height, 16.4 ft (5.00 m), from floodmarks, present site and datum, from rating curve extended above 6,000 ft<sup>3</sup>/s (170 m<sup>3</sup>/s), on basis of slope-area measurements at gage heights 6.82 ft (2.079 m) and 7.90 ft (2.408 m) at previous site and datum; no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about Sept. 22, 1941, reached a stage of about 9 ft (2.7 m) previous site and datum (from old logs), and peak discharge for station "near Dunden", at river mile 66.8 (107 km), was 70,000 ft<sup>3</sup>/s (1,980 m<sup>3</sup>/s), as determined for that station in 1956, from floodmarks and rating curve extended above 36,300 ft<sup>3</sup>/s (1,030 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,400 ft<sup>3</sup>/s (39.6 m<sup>3</sup>/s) at 0600 hours Sept. 26, gage height, 5.10 ft (1.554 m), no other peak above base of 750 ft<sup>3</sup>/s (21 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	6.9	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	3.7	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	192
27	.00	.00	.00	.00	.00	.00	.00	.00	6.0	.00	.00	.30
28	.00	.00	.00	.00	.00	.00	.00	.00	38	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.15	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.10	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	55.62	.00	.00	192.30
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	1.83	.000	.000	6.41
MAX	.00	.00	.00	.00	.00	.00	.00	.00	38	.00	.00	192
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	109	.00	.00	381

CAL YR 1977 TOTAL 792.22 MEAN 2.17 MAX 780 MIN .00 AC-FT 1570  
WTR YR 1978 TOTAL 247.32 MEAN .68 MAX 192 MIN .00 AC-FT 491

## 08399500 PECOS RIVER (KAISER CHANNEL) NEAR LAKEWOOD, NM

LOCATION.--Lat 32°41'22", long 104°17'53", in NW¼SE¼ sec.5, T.19 S., R.27 E., Eddy County, Hydrologic Unit 13060011, on left bank 3.0 mi (4.8 km) upstream from high-water line of Lake McMillan, 6.0 mi (9.7 km) northeast of Lakewood, 7.0 mi (11.3 km) northeast of gates in McMillan Dam, 12 mi (19.3 km) southeast of Artesia, and at mile 492.1 (791.8 km).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1950 to current year. Prior to October 1954, published as Kaiser Lake-McMillan Channel near Lakewood.

GAGE.--Water-stage recorder. Datum of gage is 3,268.53 ft (996.248 m) National Geodetic Vertical Survey of 1929 (Bureau of Reclamation bench mark). Prior to Mar. 23, 1955, at site 3.0 mi (4.8 km) downstream at datum 7.83 ft (2.387 m) lower. Mar. 23, 1955, to Sept. 30, 1963, at present site at datum 2.00 ft (0.610 m) higher.

REMARKS.--Water-discharge records fair. Flow partly regulated by Lake Sumner (station 08384000). Diversions and ground-water withdrawals for irrigation of about 170,000 acres (690 km<sup>2</sup>), 1959 determination, above station. Above about 1,500 ft<sup>3</sup>/s (42 m<sup>3</sup>/s) flow will begin bypassing station and, depending on the magnitude and duration of flow, may reach Lake McMillan (station 08400500). Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,920 ft<sup>3</sup>/s (82.7 m<sup>3</sup>/s) July 12, 1960; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,530 ft<sup>3</sup>/s (43.3 m<sup>3</sup>/s) July 1; no flow May 30, 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	64	41	43	54	40	742	23	5.0	1530	21	11
2	27	66	40	44	64	39	740	23	45	1460	18	9.4
3	29	63	40	44	70	39	748	26	100	958	15	11
4	32	59	40	44	68	39	755	32	140	785	15	13
5	36	57	40	44	60	39	732	31	508	730	14	121
6	33	59	40	44	56	39	740	37	451	675	14	88
7	29	61	40	44	52	39	750	42	236	529	16	32
8	121	60	40	44	50	39	752	38	200	414	14	18
9	472	58	40	42	49	39	738	32	157	398	21	12
10	218	61	39	42	47	39	738	27	215	250	19	9.7
11	143	59	39	42	46	37	775	22	156	128	16	9.4
12	115	57	39	41	47	36	775	22	117	85	12	11
13	93	55	38	42	45	33	661	19	105	62	11	11
14	88	54	39	42	45	32	637	17	210	50	11	10
15	86	53	39	42	45	30	613	17	177	42	9.7	8.1
16	85	52	39	40	45	27	504	16	111	37	12	7.4
17	80	50	38	41	43	27	242	16	53	32	12	7.1
18	75	49	41	42	43	26	149	14	35	28	10	7.6
19	70	47	39	43	42	26	107	13	30	26	9.7	7.6
20	68	44	39	43	42	25	76	11	34	24	8.6	8.4
21	63	44	38	45	42	25	69	9.7	25	19	11	8.4
22	63	43	38	46	43	24	57	17	21	17	10	9.4
23	62	43	39	46	44	23	42	12	17	18	10	11
24	58	43	39	46	42	23	36	11	16	18	12	16
25	54	43	39	46	42	272	33	11	15	23	8.9	57
26	52	45	40	46	42	600	30	8.9	353	38	8.4	72
27	49	44	41	47	42	663	25	7.1	553	34	7.1	45
28	47	44	41	47	39	685	25	4.0	1290	30	6.1	45
29	47	43	42	47	---	685	25	1.8	1520	29	5.6	44
30	49	42	42	48	---	752	25	.00	1520	27	5.6	38
31	60	---	43	49	---	730	---	.00	---	25	7.8	---
TOTAL	2535	1562	1232	1366	1349	5172	12341	560.50	8415.0	8521	371.5	758.5
MEAN	81.8	52.1	39.7	44.1	48.2	167	411	18.1	281	275	12.0	25.3
MAX	472	66	43	49	70	752	775	42	1520	1530	21	121
MIN	27	42	38	40	39	23	25	.00	5.0	17	5.6	7.1
AC-FT	5030	3100	2440	2710	2680	10260	24480	1110	16690	16900	737	1500
CAL YR 1977	TOTAL	35313.64	MEAN	96.7	MAX	1470	MIN	.00	AC-FT	70040		
WTR YR 1978	TOTAL	44183.50	MEAN	121	MAX	1530	MIN	.00	AC-FT	87640		

## RIO GRANDE BASIN

08399500 PECOS RIVER (KAISER CHANNEL) NEAR LAKEWOOD, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1961, 1966, 1968, 1970, 1978.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS, AS (MG/L CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)
MAR 22...	1445	24	13800	8.3	28.0	22.5	3300	3100
APR 05...	1450	722	2600	8.0	--	22.0	1500	1400
11...	1530	805	2630	8.1	--	15.5	1600	1500
MAY 12...	1420	21	6620	8.0	--	25.2	2200	2100

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
MAR 22...	780	320	2100	16	19	150	2	130	2500
APR 05...	480	64	110	1.3	4.2	130	0	107	1300
11...	520	65	110	1.2	3.9	120	0	98	1400
MAY 12...	590	180	1100	10	12	120	0	98	1900

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
MAR 22...	3600	1.0	5.2	9400	.00	.02	800	30
APR 05...	150	.6	--	--	--	--	--	--
11...	170	.7	--	--	--	--	--	--
MAY 12...	1700	.8	--	--	--	--	--	--

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)
APR 05...	1450	6600
11...	1530	6400
MAY 12...	1420	9100

08400000 FOURMILE DRAW NEAR LAKEWOOD, NM

LOCATION.--Lat 32°40'20", long 104°22'07", in SW¼NW¼SE¼ sec.10, T.19 S., R.26 E., Eddy County, Hydrologic Unit 13060011, in left side of channel 360 ft (110 m) downstream from ford on Lakewood-Dayton road, 1.9 mi (3.1 km) downstream from U.S. Highway 285, 2.8 mi (4.5 km) north of Lakewood, 3.8 mi (6.1 km) upstream from mouth, and 11.5 mi (18.5 km) south of Artesia. Mouth at Pecos River mile 490.6 (789.4 km).

DRAINAGE AREA.--265 mi<sup>2</sup> (686 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WRD 1968: 1967.

GAGE.--Water-stage recorder. Datum of gage is 3,299.14 ft (1,005.578 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1951, to June 19, 1962, at site 1.8 mi (2.9 km) upstream at datum 30.61 ft (9.330 m) higher. June 19, 1962, to Oct. 12, 1966, at site 410 ft (125 m) upstream at datum 6.08 ft (1.853 m) higher.

REMARKS.--Records good. No surface diversions above station.

AVERAGE DISCHARGE.--27 years, 3.93 ft<sup>3</sup>/s (0.111 m<sup>3</sup>/s) 2,850 acre-ft/yr (3.51 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,300 ft<sup>3</sup>/s (830 m<sup>3</sup>/s) Aug. 23, 1966, gage height, 19.9 ft (6.07 m), from floodmarks present datum, from rating curve extended above 5,000 ft<sup>3</sup>/s (17.0 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow most of time.

The flood of Aug. 23, 1966, (information from local resident) is believed to be the greatest since at least 1920.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft<sup>3</sup>/s (5.7 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
June 2	1730	580	16.4	3.82	1.164
Sept. 26	0630	*3,240	91.8	9.65	2.941

No flow most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	24	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	95	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	1.7	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	981
27	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	15
28	.00	.00	.00	.00	.00	.00	.00	.00	8.0	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	128.84	.00	.00	996.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	4.29	.000	.000	33.2
MAX	.00	.00	.00	.00	.00	.00	.00	.00	95	.00	.00	981
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	256	.00	.00	1980

CAL YR 1977 TOTAL 139.03 MEAN .38 MAX 120 MIN .00 AC-FT 276  
WTR YR 1978 TOTAL 1124.84 MEAN 3.08 MAX 981 MIN .00 AC-FT 2230

## 08400500 LAKE MCMILLAN NEAR LAKEWOOD, NM

LOCATION.--Lat 32°35'42", long 104°20'49", in NE¼NE¼ sec.11, T.20 S., R.26 E., Eddy County, Hydrologic Unit 13060011, near outlet gates of McMillan Dam on Pecos River, 3.4 mi (5.5 km) southeast of Lakewood, and at mile 484.3 (779.2 km).

DRAINAGE AREA.--16,990 mi<sup>2</sup> (44,000 km<sup>2</sup>), approximately (contributing area).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1939 to September 1965 (monthend gage heights and contents), October 1965 to current year. Monthend gage heights January 1918 to December 1938 in files of Pecos River Commission.

GAGE.--Nonrecording gage. Datum of gage is 3,241.6 ft (988.04 m) Bureau of Reclamation datum.

REMARKS.--Lake is formed by McMillan Dam, an earthfill structure, completed and storage began in 1893. The structure was damaged by floods of October 1893 and Oct. 2, 1904. Capacity, (based on Aug. 1964 survey) 27,300 acre-ft (33.7 hm<sup>3</sup>) between gage heights 0.0 ft (sill of outlet gate) and 24.9 ft (7.59 m), crest of spillway 2. Flashboards in spillway No. 2 may be used to increase this capacity. Maximum capacity without spill, 33,620 acre-ft (41.5 hm<sup>3</sup>) at gage height 26.1 ft (7.96 m) crest of spillway 1. No dead storage. No storage allocated to flood control. Figures given herein represent usable contents. Gage heights may be affected by variable drawdown due to flow through gates. Water is used for irrigation by Carlsbad Irrigation District.

COOPERATION.--Gage-height record and capacity table furnished by Carlsbad Irrigation District.

EXTREMES FOR PERIOD OF RECORD (SINCE 1938).--Maximum contents observed, 68,500 acre-ft (84.5 hm<sup>3</sup>) Sept. 26, 1941, gage height, 29.95 ft (9.129 m); no storage for periods in 1944-54, 1957, 1964, 1965, 1974, 1976, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 26,550 acre-ft (32.7 hm<sup>3</sup>) July 7-9, gage height, 24.75 ft (7.544 m); minimum, 456 acre-ft (562,000 m<sup>3</sup>) Sept. 20, gage height 15.55 ft (4.740 m).

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1230	4860	6420	7240	8720	9900	15840	18080	9240	16380	18080	5410
2	1160	4860	6420	7240	8850	9900	16200	18080	8980	19480	17690	5080
3	1160	4970	6420	7360	8850	10040	16740	17880	9240	22290	17310	4860
4	1230	5080	6420	7360	8980	10040	17310	17880	9240	24140	16740	4750
5	1300	5080	6420	7360	8980	10040	17690	17690	9500	25100	16200	4640
6	1370	5190	6420	7480	8980	10180	18080	17500	10320	26060	16020	4540
7	1370	5190	6540	7480	9240	10180	18680	17500	10880	26550	15660	4330
8	1440	5190	6420	7480	9240	10320	19080	17310	11160	26550	15300	4220
9	1370	5300	6540	7480	9240	10320	19480	17310	11310	26550	14790	4020
10	2140	5300	6540	7600	9370	10320	20110	17120	11460	26300	14450	3710
11	2660	5410	6540	7600	9370	10320	20530	16740	11610	25580	13940	3410
12	2930	5520	6660	7600	9500	10320	20960	16200	11760	25340	13620	3220
13	3020	5520	6660	7720	9500	10180	21400	15840	12060	24860	13140	3020
14	3220	5630	6770	7840	9500	10180	21840	15480	12060	24620	12510	2750
15	3410	5740	6770	7840	9500	10180	22060	14960	12210	24140	12060	2480
16	3610	5850	6770	7840	9630	10180	22520	14620	12210	23900	11160	1900
17	3810	5960	6770	7840	9630	10180	22520	14280	12060	23210	10880	1300
18	3910	5960	6770	7960	9630	10040	22290	13940	12060	22060	10320	743
19	4020	5960	6880	7960	9760	10040	22060	13620	11460	21180	9760	497
20	4120	6080	6880	7960	9760	10040	21620	13300	10880	20530	9240	456
21	4220	6080	6880	7960	9900	10040	21400	12980	10180	19690	8980	497
22	4220	6080	6880	8080	9900	10040	20960	12660	9500	19280	8720	543
23	4330	6080	6880	8080	9900	9900	20740	12360	8980	19280	8460	589
24	4330	6200	7000	8080	9900	9900	20320	11910	8460	19280	7960	639
25	4330	6200	7000	8200	9900	9900	19900	11610	8080	19080	7480	1035
26	4440	6200	7000	8200	9900	10880	19480	11160	7480	18860	7000	2480
27	4540	6200	7000	8330	9900	11910	19080	10880	7840	18680	6660	3410
28	4640	6310	7120	8330	9900	13140	18680	10460	9110	18480	6420	3910
29	4750	6310	7120	8460	---	14280	18480	10180	11160	18480	6080	4020
30	4750	6310	7120	8460	---	14790	18280	9900	13780	18480	5850	4120
31	4750	---	7240	8590	---	15300	---	9500	---	18280	5630	---
MAX	4750	6310	7240	8590	9900	15300	22520	18080	13780	26550	18080	5410
MIN	1160	4860	6420	7240	8720	9900	15840	9500	7480	16380	5630	456

(#) +3450 +1560 +930 +1350 +1310 +5400 +2980 -8780 -4280 +4500 -12650 -1510

WTR YR 1978 MAX 26550 MIN 456 CHANGE IN CONTENTS +2820

(#) Change in contents, in acre-feet

08400500 LAKE MCMILLAN NEAR LAKEWOOD, NM -- CONTINUED

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.25	18.25	18.95	19.30	19.90	20.35	22.25	22.85	20.10	22.40	22.85	18.50
2	16.20	18.25	18.95	19.30	19.95	20.35	22.35	22.85	20.00	23.20	22.75	18.35
3	16.20	18.30	18.95	19.35	19.95	20.40	22.50	22.80	20.10	22.85	22.65	18.25
4	16.25	18.35	18.95	19.35	20.00	20.40	22.65	22.80	20.10	24.25	22.50	18.20
5	16.30	18.35	18.95	19.35	20.00	20.40	22.75	22.75	20.20	24.45	22.35	18.15
6	16.35	18.40	18.95	19.40	20.00	20.45	22.85	22.70	20.50	24.65	22.30	18.10
7	16.35	18.40	19.00	19.40	20.10	20.45	23.00	22.70	20.70	24.75	22.20	18.00
8	16.40	18.40	18.95	19.40	---	20.50	23.10	22.65	20.80	24.75	22.10	17.95
9	16.35	18.45	19.00	19.40	---	20.50	23.20	22.65	20.85	24.75	22.95	17.85
10	16.85	18.45	19.00	19.45	---	20.50	23.35	22.60	20.90	24.70	21.85	17.70
11	17.15	18.50	19.00	19.45	---	20.50	23.45	22.50	20.95	24.55	21.70	17.55
12	17.30	18.55	19.05	19.45	---	20.50	23.55	22.35	21.00	24.50	21.60	17.45
13	17.35	18.55	19.05	19.50	20.20	20.45	23.65	22.25	21.10	24.40	21.45	17.35
14	17.45	18.60	19.10	19.55	---	20.45	23.75	22.15	21.10	24.35	21.25	17.20
15	17.55	18.65	19.10	19.55	---	20.45	23.80	22.00	21.15	24.25	21.10	17.05
16	17.65	18.70	19.10	19.55	---	20.45	23.90	21.90	21.15	24.20	20.80	16.70
17	17.75	18.75	19.10	19.55	20.25	20.45	23.90	21.80	21.10	24.05	20.70	16.30
18	17.80	18.75	19.10	19.60	---	20.40	23.85	21.70	21.10	23.80	20.50	15.85
19	17.85	18.75	19.15	19.60	---	20.40	23.80	21.60	20.90	23.60	20.30	15.60
20	17.90	18.80	19.15	19.60	---	20.40	23.70	21.50	20.70	23.45	20.10	15.55
21	17.95	18.80	19.15	19.60	---	20.40	23.65	21.40	20.45	23.25	20.00	15.60
22	17.95	18.80	19.15	19.65	20.35	20.40	23.55	21.30	20.20	23.15	19.90	15.65
23	18.00	18.80	19.15	19.65	20.35	20.35	23.50	21.20	20.00	23.15	19.80	15.70
24	18.00	18.85	19.20	19.65	20.35	20.35	23.40	21.05	19.80	23.15	19.60	15.75
25	18.00	18.85	19.20	19.70	20.35	20.35	23.30	20.95	19.65	23.10	19.40	16.10
26	18.05	18.85	19.20	19.70	20.35	20.70	23.20	20.80	19.40	23.05	19.20	17.05
27	18.10	18.85	19.20	19.75	20.35	21.05	23.10	20.70	19.55	23.00	19.05	17.55
28	18.15	18.90	19.25	19.75	20.35	21.45	23.00	20.55	20.05	22.95	18.95	17.80
29	18.20	18.90	19.25	19.80	---	21.80	22.95	20.45	20.80	22.95	18.80	17.85
30	18.20	18.90	19.25	19.80	---	21.95	22.90	20.35	21.65	22.95	18.70	17.90
31	18.20	---	19.30	19.85	---	22.10	---	20.20	---	22.90	18.60	---
MEAN	17.36	18.62	19.09	19.55	---	20.63	23.26	21.81	20.54	23.73	20.84	17.15
MAX	18.20	18.90	19.30	19.85	---	22.10	23.90	22.85	21.65	24.75	22.95	18.50
MIN	16.20	18.25	18.95	19.30	---	20.35	22.25	20.20	19.40	22.40	18.60	15.55
CAL YR 1977	MEAN 17.49		MAX 22.60	MIN								

08400500 LAKE MC MILLAN NEAR LAKEWOOD, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-67, 1978.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		SAMP- LING DEPTH (FT) (000003)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (000095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)		
MAR										
23...	0930	5.0	9000	8.0	23.0	16.0	2800	2700		
23...	0945	5.0	9800	8.0	23.0	15.5	2800	2700		
APR										
06...	0945	--	4780	8.1	--	17.0	2000	1800		
06...	0950	--	4980	8.0	--	17.0	1900	1800		
12...	0915	--	4310	--	--	15.3	1900	1800		
12...	0920	--	4320	--	--	15.3	1600	1500		
25...	0845	--	3720	8.1	--	18.2	1700	1600		
25...	0850	--	3710	8.1	--	18.2	1700	1600		
MAY										
15...	1045	--	3510	8.0	--	21.5	1800	1700		
15...	1050	--	3480	8.0	--	21.5	1800	1700		
DATE	TIME	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
MAR										
23...	710	250	1300	11	12	140	0	110	2000	
23...	710	250	1300	11	13	140	0	110	2000	
APR										
06...	580	120	500	4.9	7.0	130	0	107	1700	
06...	570	120	530	5.3	6.7	130	0	107	1600	
12...	570	120	450	4.5	6.8	130	0	107	1600	
12...	560	36	460	5.1	6.8	130	0	107	1500	
25...	520	97	350	3.7	6.3	120	0	98	1500	
25...	510	99	370	3.9	6.3	120	0	98	1500	
MAY										
15...	550	110	390	4.0	7.3	120	0	98	1600	
15...	550	110	370	3.8	7.2	120	0	98	1600	
DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	
MAR										
23...	2400		.9	4.1	6750	.01	.02	120	20	
23...	2300		.9	4.0	6650	.01	.01	550	10	
APR										
06...	860		.8	--	--	--	--	--	--	
06...	830		.8	--	--	--	--	--	--	
12...	750		.8	--	--	--	--	--	--	
12...	720		.7	--	--	--	--	--	--	
25...	520		.7	--	--	--	--	--	--	
25...	510		.7	--	--	--	--	--	--	
MAY										
15...	580		.8	--	--	--	--	--	--	
15...	560		.8	--	--	--	--	--	--	

TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)
APR		
06...	0945	7700
06...	0950	7600
12...	0915	7500
12...	0920	8200
25...	0845	7100
25...	0850	6800
MAY		
15...	1045	7600
15...	1050	7400



## RIO GRANDE BASIN

08401000 PECOS RIVER BELOW MCMILLAN DAM, NM

LOCATION.--Lat 32°35'40", long 104°20'59", in NW¼NE¼ sec.11, T.20 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on left bank 700 ft (210 m) downstream from gates in McMillan Dam, 3.4 mi (5.5 km) southeast of Lakewood, and at mile 484.1 (778.9 km).

DRAINAGE AREA.--16,990 mi<sup>2</sup> (44,000 km<sup>2</sup>), approximately (contributing area).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1906 to March 1908, January 1909 to December 1911, August 1939 to December 1940, December 1946 to current year (January 1906, and January 1910 to December 1911, gage heights and discharge measurements only). Published as "near Lakewood" 1906-11, and as "below McMillan Dam, near Lakewood" 1939-40.

REVISED RECORDS.--WSP 1512: 1909.

GAGE.--Water-stage recorder and rock control. Datum of gage is 3,238.21 ft (987.006 m) National Geodetic Vertical Datum of 1929. See WSP 1732 for history of changes prior to Mar. 12, 1957. Supplemental water-stage recorders on McMillan Dam spillways, No. 1 and 2, Apr. 6, 1960, to Sept. 30, 1970.

REMARKS.--Water-discharge records good. Flow regulated by Lake Sumner and Lake McMillan (stations 08384000, 08400500). Diversions and ground-water withdrawals for irrigation of about 171,000 acres (690 km<sup>2</sup>), 1959 determination, above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--33 years (1907, 1940, 1948-78), 98.8 ft<sup>3</sup>/s (2.798 m<sup>3</sup>/s), 71,580 acre-ft/yr (88.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft<sup>3</sup>/s (467 m<sup>3</sup>/s) Aug. 23, 1966, includes flow of spillways; no flow for many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 2, 1904, may have reached 60,000 ft<sup>3</sup>/s (1,700 m<sup>3</sup>/s). The flood of Aug. 3, 1893, damaged McMillan Dam, then under construction, and destroyed Avalon Dam; this flood was described as "highest in 50 years" at Carlsbad (corrected).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge (469 ft<sup>3</sup>/s (13.3 m<sup>3</sup>/s) July 7-10, gage height, 4.08 ft (1.244 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	2.9	.71	.00	.00	.37	418	3.2	111	1.9	34	101
2	3.2	2.4	.71	.00	.00	.37	418	3.2	46	2.4	168	100
3	3.2	1.9	.61	.00	.00	.37	418	2.9	2.2	52	166	100
4	3.2	1.7	.71	.00	.00	.37	418	2.6	1.9	237	162	98
5	3.2	1.6	.71	.00	.00	.37	418	2.4	1.9	237	109	98
6	3.2	1.7	.27	.00	.00	.31	418	2.4	2.2	395	68	98
7	21	1.9	.07	.00	.00	.37	418	2.2	1.9	469	83	98
8	90	1.9	.02	.00	.00	.44	418	2.4	1.7	469	160	79
9	48	1.9	.01	.00	.00	.61	422	28	1.7	469	160	84
10	4.3	1.9	.00	.00	.00	.71	422	147	1.7	469	162	97
11	4.0	1.9	.05	.00	.00	.71	425	145	1.7	254	156	97
12	3.7	1.7	.04	.00	.00	.82	425	121	1.7	145	160	95
13	3.4	1.6	.00	.00	.00	1.1	432	121	1.9	149	160	95
14	3.2	1.4	.00	.00	.00	1.1	439	121	1.9	152	177	94
15	3.2	1.2	.00	.00	.00	1.1	307	121	60	154	282	225
16	2.9	1.1	.00	.00	.00	.94	152	120	108	205	240	274
17	2.9	.94	.00	.00	.00	.94	121	116	108	384	217	266
18	2.9	.61	.00	.00	.00	1.1	121	116	141	377	217	198
19	3.4	.71	.00	.00	.00	.94	121	116	223	338	220	.82
20	3.4	.82	.00	.00	.00	.94	121	114	332	301	141	.44
21	3.7	.94	.00	.00	.00	1.1	121	114	302	156	101	.37
22	3.7	.31	.00	.00	.00	1.2	121	114	285	126	101	.22
23	3.7	.15	.00	.00	.00	1.2	121	114	274	7.4	171	.15
24	3.7	.15	.00	.00	.02	1.2	121	113	220	5.4	210	.27
25	3.4	.12	.00	.00	.15	1.2	121	113	192	5.4	205	.44
26	3.4	.09	.00	.00	.18	1.7	120	113	194	5.7	182	.22
27	3.7	.07	.00	.00	.22	2.2	118	113	141	5.0	101	.31
28	3.4	.18	.00	.00	.27	2.4	71	113	123	4.3	101	.37
29	3.4	.27	.00	.00	---	262	5.0	113	45	3.7	100	.31
30	3.4	.71	.00	.00	---	418	3.7	113	1.7	3.2	100	.31
31	3.4	---	.00	.00	---	418	---	113	---	3.2	101	---
TOTAL	254.4	34.77	3.91	.00	.84	1124.18	7774.7	2653.3	2929.1	5585.6	4715	2301.23
MEAN	8.21	1.16	.13	.000	.030	36.3	259	85.6	97.6	180	152	76.7
MAX	90	2.9	.71	.00	.27	418	439	147	332	469	282	274
MIN	2.9	.07	.00	.00	.00	.31	3.7	2.2	1.7	1.9	34	.15
AC=FT	505	69	7.8	.00	1.7	2230	15420	5260	5810	11080	9350	4560
CAL YR 1977 TOTAL	18622.47			MEAN 51.0	MAX 422	MIN .00	AC=FT 36940					
WTR YR 1978 TOTAL	27377.03			MEAN 75.0	MAX 469	MIN .00	AC=FT 54300					

08401000 PECOS RIVER BELOW MCMILLAN DAM, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962-66, 1978.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)
MAR 23...	1220	1.2	10000	8.2	18.5	18.0	2800	2600
APR 08...	0830	418	5100	8.1	--	18.0	2000	1900
13...	0845	432	4600	8.2	--	15.7	1900	1800
MAY 15...	1445	121	3430	8.1	--	22.0	1800	1700

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LINEITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)
MAR 23...	690	250	1300	11	11	130	0	110	2000
APR 08...	590	130	550	5.3	7.5	130	0	107	1700
13...	570	110	440	4.4	6.8	130	0	107	1600
MAY 15...	540	110	400	4.1	7.3	120	0	98	1700

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
MAR 23...	2300	.9	3.3	6620	.01	.02	550	20
APR 08...	940	.8	--	--	--	--	--	--
13...	730	.8	--	--	--	--	--	--
MAY 15...	580	.8	--	--	--	--	--	--

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)
APR 08...	0830	7900
13...	0845	7700
MAY 15...	1445	7400

## RIO GRANDE BASIN

08401100 PECOS RIVER ABOVE SEVEN RIVERS, NEAR LAKEWOOD, NM

LOCATION.--Lat 32°34'42", long 104°22'42", in NE 1/4 sec. 16, T.20 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on right bank, 0.5 mi (0.80 km) upstream from mouth of Seven Rivers, 2.6 mi (4.2 km) downstream from Lake McMillan, and 3.6 mi (5.8 km) south of Lakewood, and at mile 481.4 (774.6 km).

DRAINAGE AREA.--17,000 mi<sup>2</sup> (44,030 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--May 1974 to current year. (Operated as a low-flow station only).

GAGE.--Water-stage recorder. Datum of gage is 3,213.52 ft (979.481 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Records fair. Flow regulated by Lake Sumner and Lake McMillan (stations 08384000, 08400500). Diversions and ground-water withdrawals for irrigation of about 171,000 acres (690 km<sup>2</sup>), 1959 determination, above station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge not determined; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	2.0	.00	.00	.00	.00	384	.34	101	.87	16	95
2	1.4	1.2	.00	.00	.00	.00	384	.54	54	.00	162	95
3	1.4	.99	.00	.00	.00	.00	384	.34	.33	23	154	95
4	2.0	.54	.00	.00	.00	.00	390	.08	.00	209	154	98
5	1.4	.44	.00	.00	.00	.00	390	.00	.00	209	110	95
6	1.4	.44	.00	.00	.00	.00	390	.00	.00	342	64	95
7	10	.64	.00	.00	.00	.00	396	.00	.00	427	78	95
8	84	.64	.00	.00	.00	.00	396	.00	.00	434	154	82
9	50	.87	.00	.00	.00	.00	396	16	.00	440	150	84
10	3.1	.75	.00	.00	.00	.00	396	129	.00	440	150	98
11	2.5	.75	.00	.00	.00	.00	396	129	.00	253	147	101
12	2.5	.64	.00	.00	.00	.00	396	109	.00	125	147	98
13	2.2	.34	.00	.00	.00	.00	396	109	.00	122	147	101
14	1.8	.12	.00	.00	.00	.00	402	109	.00	122	159	98
15	1.4	.00	.00	.00	.00	.00	281	109	42	122	251	128
16	1.2	.00	.00	.00	.00	.00	139	106	95	161	220	200
17	1.2	.00	.00	.00	.00	.00	109	104	95	348	195	230
18	1.4	.00	.00	.00	.00	.00	109	104	129	348	200	170
19	1.4	.00	.00	.00	.00	.00	109	104	209	320	200	1.0
20	1.6	.00	.00	.00	.00	.00	109	104	298	272	133	.00
21	1.8	.00	.00	.00	.00	.00	106	101	272	136	90	.00
22	2.0	.00	.00	.00	.00	.00	106	101	256	---	90	.00
23	2.0	.00	.00	.00	.00	.00	106	101	246	9.7	147	.00
24	2.0	.00	.00	.00	.00	.00	106	101	200	1.2	191	.00
25	2.0	.00	.00	.00	.00	.00	106	101	174	.75	187	---
26	1.8	.00	.00	.00	.00	.00	104	101	174	.75	175	---
27	2.0	.00	.00	.00	.00	.00	101	101	132	.44	92	---
28	2.0	.00	.00	.00	.00	.00	62	101	109	.34	92	.00
29	2.0	.00	.00	.00	---	248	3.2	101	45	.21	92	.00
30	2.0	.00	.00	.00	---	384	.54	101	1.2	.00	92	.00
31	2.0	---	.00	.00	---	384	---	101	---	.10	95	---
TOTAL	200.1	10.36	.00	.00	.00	1016.00	7152.74	2344.30	2632.53	---	4334	---
MEAN	6.45	.35	.000	.000	.000	32.8	238	75.6	87.8	---	140	---
MAX	84	2.0	.00	.00	.00	384	402	129	298	---	251	---
MIN	1.2	.00	.00	.00	.00	.00	.54	.00	.00	---	16	---
AC-FT	397	21	.00	.00	.00	2020	14190	4650	5220	---	8600	---

CAL YR 1977 TOTAL 16994.44 MEAN 46.6 MAX 396 MIN .00 AC-FT 33710

## 08401200 SOUTH SEVEN RIVERS NEAR LAKEWOOD, NM

LOCATION.--Lat 32°35'19", long 104°25'17", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.7, T.20 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on downstream side of center pier of bridge on U.S. Highway 285, 0.4 mi (0.6 km) south of Seven Rivers, 2.6 mi (4.2 km) upstream from mouth, and 4.0 mi (6.4 km) southwest of Lakewood. Mouth at Pecos River mile 480.9 (773.8 km).

DRAINAGE AREA.--220 mi<sup>2</sup> (570 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,276 ft (999 m), from topographic map. Prior to July 8, 1965, at site 400 ft (120 m) upstream at datum 0.57 ft (0.174 m) higher.

REMARKS.--Records poor. No surface diversions above station, ground-water withdrawals for 240 acres (97.1 hm<sup>2</sup>), above station.

AVERAGE DISCHARGE.--15 years, 5.24 ft<sup>3</sup>/s (0.148 m<sup>3</sup>/s), 3,800 acre-ft/yr (4.69 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,500 ft<sup>3</sup>/s (722 m<sup>3</sup>/s) May 30, 1965, gage height, 20.0 ft (6.10 m), from floodmarks, present site and datum, from rating curve extended above 5,700 ft<sup>3</sup>/s (161 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 18.15 ft (5.532 m) and 20.0 ft (6.10 m); no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1941, about 30,000 ft<sup>3</sup>/s (850 m<sup>3</sup>/s) gage height, 22.8 ft (6.95 m), from old debris on left bank former site and datum, from rating curve extended above 5,700 ft<sup>3</sup>/s (161 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 21.8 ft (6.64 m). Probable date of flood, Oct. 7, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 450 ft<sup>3</sup>/s (13 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
July 22	2200	*7,090 201	14.90 4.542
Sept. 25	1700	6,580 186	14.75 4.496

No flow most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.21	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.3
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.23	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.3	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.21	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	330	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	76	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1810
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	490
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	49.44	407.20	2.51	2302.70
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	1.65	13.1	.081	76.8
MAX	.00	.00	.00	.00	.00	.00	.00	.00	27	330	2.3	1810
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	98	808	5.0	4570

CAL YR 1977 TOTAL 1.02 MEAN .003 MAX .80 MIN .00 AC-FT 2.0  
WTR YR 1978 TOTAL 2761.85 MEAN 7.57 MAX 1810 MIN .00 AC-FT 5480

## 08401500 PECOS RIVER BELOW MAJOR JOHNSON SPRINGS NEAR CARLSBAD, NM

LOCATION.--Lat 32°31'54", long 104°22'40", in SW 1/4 sec. 27, T.20 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on left bank, at mouth of Willow Draw 2.4 mi (3.9 km) downstream from South Seven Rivers, 4.2 mi (6.8 km) southeast of Seven Rivers, 6.0 mi (9.7 km) south of Lakewood, 11.5 mi (18.5 km) northwest of Carlsbad, and at mile 478.6 (770.1 km).

DRAINAGE AREA.--17,650 mi<sup>2</sup> (45,710 km<sup>2</sup>), approximately (contributing area).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to current year (operated as a low-flow station only). Records for January 1947 to September 1950 at site 0.5 mi (0.8 km) upstream not equivalent owing to spring inflow between sites.

GAGE.--Water-stage recorder. Datum of gage is 3,198.44 ft (974.885 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Water-discharge records good. Flow regulated by Lake Sumner and Lake McMillan (stations 08384000, 08400500). Diversions and ground-water withdrawal for irrigation of about 173,000 acres (700 km<sup>2</sup>), 1959 determination, above station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined; minimum 7.0 ft<sup>3</sup>/s (0.198 m<sup>3</sup>/s) July 20, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge not determined; minimum, 18 ft<sup>3</sup>/s (0.510 m<sup>3</sup>/s) Mar. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	22	22	23	19	22	405	39	132	35	60	127
2	25	21	22	23	19	22	405	40	155	34	205	127
3	25	21	23	23	19	24	408	38	84	39	200	129
4	25	21	23	22	19	22	415	37	33	231	200	140
5	26	21	24	22	19	22	415	36	33	234	160	127
6	25	20	24	22	20	22	418	36	36	359	108	125
7	24	21	24	22	20	22	422	36	38	457	111	123
8	104	21	25	22	20	22	426	36	32	461	196	109
9	83	21	25	21	20	22	429	38	30	465	200	104
10	26	21	25	21	20	21	429	161	30	465	198	120
11	24	21	25	21	21	21	432	171	29	303	196	120
12	22	21	26	21	21	21	436	145	29	165	196	118
13	22	21	26	21	21	21	436	145	30	165	193	118
14	22	21	26	21	21	20	436	143	29	163	200	118
15	22	21	26	21	21	20	335	143	57	165	284	214
16	22	21	25	21	21	20	188	143	120	188	264	273
17	22	21	25	21	21	20	153	141	125	359	244	270
18	22	21	25	20	21	20	151	141	145	359	241	232
19	22	21	26	20	22	20	151	143	207	334	241	32
20	22	21	25	20	22	20	151	143	307	301	186	29
21	22	21	24	20	22	19	151	143	290	178	134	29
22	22	21	24	20	21	19	149	143	270	596	132	28
23	22	21	24	20	21	19	149	143	265	262	181	28
24	22	21	24	20	21	19	149	141	226	51	229	30
25	22	22	24	20	21	19	149	141	200	47	229	---
26	22	22	24	20	21	19	145	141	200	45	221	---
27	22	22	24	20	22	18	143	139	167	45	134	---
28	22	22	24	19	22	18	117	139	145	44	130	24
29	22	22	24	19	---	187	46	138	94	43	127	24
30	22	22	23	19	---	392	41	136	37	42	127	23
31	22	---	23	19	---	395	---	134	---	42	127	---
TOTAL	877	636	754	644	578	1548	8280	3493	3575	6677	5654	---
MEAN	28.3	21.2	24.3	20.8	20.6	49.9	276	113	119	215	182	---
MAX	104	22	26	23	22	395	436	171	307	596	284	---
MIN	22	20	22	19	19	18	41	36	29	34	60	---
AC-FT	1740	1260	1500	1280	1150	3070	16420	6930	7090	13240	11210	---
CAL YR 1977	TOTAL	24953.4	MEAN	68.4	MAX	395	MIN	7.3	AC-FT	49500		

08401500 PECOS RIVER BELOW MAJOR JOHNSON SPRINGS NEAR CARLSBAD, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960, 1962, 1978.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)
MAR 23...	1415	19	5000	7.9	22.5	20.5	2100	1900
APR 08...	1245	426	5210	8.2	--	22.3	2000	1900
13...	1435	440	4310	8.4	--	18.9	1900	1800
MAY 16...	0900	231	3670	7.9	--	20.0	1600	1500

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)
MAR 23...	600	140	450	4.3	6.5	160	0	130	1600
APR 08...	590	130	560	5.4	7.5	120	0	98	1600
13...	570	120	420	4.2	6.5	110	0	90	1600
MAY 16...	450	110	410	4.5	6.8	130	0	107	1700

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
MAR 23...	830	1.0	15	3720	.09	.02	260	0
APR 08...	950	.7	--	--	--	--	--	--
13...	670	.8	--	--	--	--	--	--
MAY 16...	640	.8	--	--	--	--	--	--

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)
APR 08...	1245	8400
13...	1435	7200
MAY 16...	0900	7500

## RIO GRANDE BASIN

08401900 ROCKY ARROYO AT HIGHWAY BRIDGE, NEAR CARLSBAD, NM

LOCATION.--Lat 32°30'23", long 104°22'28", in SE<sub>4</sub>SE<sub>4</sub> sec.3, T.21 S., R.25 E., Eddy County, Hydrologic Unit 13060011, at downstream end of bridge pier nearest left bank on U.S. Highway 285, 2.1 mi. (3.4 km) upstream from mouth and 10 mi (16.1 km) northwest of Carlsbad. Mouth at Pecos River mile 475.2 (764.6 km).

DRAINAGE AREA.--285 mi (738 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,250 ft (991 m), from topographic map.

REMARKS.--Records good. Diversions for irrigation of 220 acres (89.0 hm<sup>2</sup>); above station.

AVERAGE DISCHARGE.--15 years, 9.76 ft<sup>3</sup>/s (0.276 m<sup>3</sup>/s) 7,070 acre-ft/yr (8.72 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,600 ft<sup>3</sup>/s (895 m<sup>3</sup>/s) Aug. 23, 1966, gage height, 15.35 ft, (4.679 m), from rating curve extended above 8,500 ft<sup>3</sup>/s (156 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.—Since about 1941 the maximum discharge probably occurred Oct. 7, 1954, discharge 63,600 ft<sup>3</sup>/s (1,800 m<sup>3</sup>/s), gage height, 19.2 ft (5.85 m), from highwater marks on downstream end of bridge pier, by slope-area measurement at site 5 mi (8.0 km) upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)
July 22	2200	1,840	52.1	7.70	2.347
Sept. 25	1700	*13,580	385	12.11	3.691

No flow most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	114	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	98	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.16	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5080
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1190
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	70
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	20
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	11
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	6.5
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	212.16	.00	6377.50
MEAN	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	6.84	.0000	213
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	114	.00	5080
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC=FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	421	.00	12650
CAL YR 1977	TOTAL	250.23	MEAN	.69	MAX	114	MIN	.00	AC=FT	496		
WTR YR 1978	TOTAL	6589.66	MEAN	18.1	MAX	5080	MIN	.00	AC=FT	13070		

## 08402000 PECOS RIVER AT DAMSITE 3, NEAR CARLSBAD, NM

LOCATION.--Lat 32°30'40", long 104°19'58", in lot 14, sec.6, T.21 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on right bank at damsite 3 of Carlsbad project of Bureau of Reclamation, about 1 mi (1.6 km) upstream from flow line of Lake Avalon, 1.3 mi (2.1 km) downstream from Rocky Arroyo, 8.0 mi (12.9 km) northwest of Carlsbad, and at mile 473.8 (762.3 km).

DRAINAGE AREA.--17,980 mi<sup>2</sup> (46,570 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--August 1939 to December 1940, August 1944 to current year.

REVISED RECORDS.--WSP 1512: 1946-47(M), 1948(p), 1949, 1950(P). WSP 1712: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,171.31 ft (966.615 m) Bureau of Reclamation datum. Prior to Aug. 10, 1944, at site 1,000 ft (305 m) downstream, at datum 1.00 ft (0.035 m) higher. Aug. 10, 1944, to Dec. 31, 1966, at present site at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good. Flow regulated by Lake Sumner and Lake McMillan (stations 08384000, 08400500). Diversions and ground-water withdrawals for irrigation of about 173,000 acres (700 km<sup>2</sup>), 1959 determination, above station. Discharge represents inflow to Lake Avalon. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--35 years (1940, 1945-78), 161 ft<sup>3</sup>/s (4.560 m<sup>3</sup>/s), 116,600 acre-ft/yr (144 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,000 ft<sup>3</sup>/s (1,950 m<sup>3</sup>/s) Aug. 23, 1966, gage height, 21.32 ft (6.194 m), present datum, from floodmark, from rating curve extended above 25,000 ft<sup>3</sup>/s (708 m<sup>3</sup>/s) on basis of slope-area measurement at gage height 19.53 ft (5.953 m) present datum; minimum, 4.3 ft<sup>3</sup>/s (0.12 m<sup>3</sup>/s) Aug. 5, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Peaks which probably exceeded 40,000 ft<sup>3</sup>/s (1,130 m<sup>3</sup>/s) occurred in August 1893, Oct. 2, 1904, July 25, 1905, Apr. 17, 1915, Aug. 7, 1916, and May 30, 1937, based primarily on records for station "at Carlsbad." Peak of May 22, 1941, was estimated at 60,000 ft<sup>3</sup>/s (1,700 m<sup>3</sup>/s). Floods of 1893 and 1904 originated above McMillan Dam and contributed to the two failures of Avalon Dam.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft<sup>3</sup>/s (48 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
July 23	2330	4,610	131	8.08	2.463
Sept. 25	2000	*15,290	433	13.54	4.127

Minimum, 10 ft<sup>3</sup>/s (0.283 m<sup>3</sup>/s) Mar. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	20	20	19	19	19	379	42	135	34	39	110
2	28	19	20	20	19	18	379	44	121	33	158	110
3	26	19	20	20	19	18	383	43	146	33	185	113
4	28	19	20	21	20	18	387	40	38	193	185	136
5	26	19	20	21	19	18	387	39	38	225	164	115
6	25	19	20	19	19	17	387	39	40	316	100	114
7	25	19	20	19	20	17	394	39	43	436	96	110
8	77	19	20	20	19	17	390	40	33	436	173	102
9	91	19	20	20	20	17	390	42	33	440	191	83
10	30	19	20	20	20	15	387	139	33	440	191	104
11	23	20	20	20	20	15	387	180	33	325	188	104
12	23	21	20	20	21	15	390	152	33	156	182	104
13	23	21	19	19	20	15	394	152	33	156	182	106
14	23	21	19	19	20	15	394	149	33	156	182	108
15	23	21	19	18	20	16	332	149	41	156	271	173
16	21	21	16	18	20	16	180	146	123	156	262	259
17	21	21	18	19	20	17	130	144	126	333	234	256
18	21	20	18	19	19	17	132	144	149	357	231	246
19	21	18	18	18	19	17	135	149	202	327	234	35
20	21	19	18	18	19	18	137	146	312	298	194	30
21	21	19	18	18	20	18	139	144	298	180	128	29
22	21	19	18	18	20	17	139	144	272	446	126	29
23	21	19	18	18	20	17	142	144	272	688	158	29
24	20	20	18	19	20	17	142	142	234	58	216	32
25	20	20	18	19	20	18	144	139	202	46	216	5580
26	20	19	18	19	20	18	144	139	193	44	213	1370
27	20	18	18	19	18	17	142	137	171	43	128	48
28	21	20	18	19	18	16	132	137	137	43	117	28
29	21	20	18	19	---	134	49	137	108	42	117	26
30	20	20	18	19	---	368	40	137	38	42	113	25
31	19	---	18	20	---	376	---	137	---	40	110	---
TOTAL	852	588	583	594	548	1351	7687	3555	3670	6678	5284	9714
MEAN	27.5	19.6	18.8	19.2	19.6	43.6	256	115	122	215	170	324
MAX	91	21	20	21	21	376	394	180	312	688	271	5580
MIN	19	18	16	18	18	15	40	39	33	33	39	25
AC-FT	1690	1170	1160	1180	1090	2680	15250	7050	7280	13250	10480	19270
CAL YR 1977 TOTAL	23800.9			65.2		387		6.1	AC-FT	47210		
WTR YR 1978 TOTAL	41104.0			113		5580		15	AC-FT	81530		



## RIO GRANDE BASIN

08403500 CARLSBAD MAIN CANAL AT HEAD, NEAR CARLSBAD, NM

LOCATION.--Lat 32°29'25", long 104°15'08", in NW¼SW¼ sec.12, T.21 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on right bank 220 ft (67 m) downstream from headgates in Avalon Dam, and 3.3 mi (5.3 km), north of Carlsbad. Pecos River mile 467.2 (751.7 km).

PERIOD OF RECORD.--July 1939 to current year (monthly discharge only July 1939 to September 1965). January 1941 to March 1951 published in WSP 1732.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3,156.50 ft (962.101 m) Bureau of Reclamation datum. Prior to March 1951 at site 20 ft (6.1 m) upstream at datum 0.9 ft (0.274 m) higher.

REMARKS.--Records good. Carlsbad main canal diverts water from Lake Avalon for irrigation of about 25,000 acres (100 km<sup>2</sup>) in the Carlsbad Irrigation District. About 1,600 acres (6.5 km<sup>2</sup>) are irrigated, on the left bank, most of it above gaging station 08405200. The remaining acreage (most of which is downstream from station 08405200) is on the right bank.

AVERAGE DISCHARGE.--39 years, 105 ft<sup>3</sup>/s (2.974 m<sup>3</sup>/s), 76,070 acre-ft/yr (93.8 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 526 ft<sup>3</sup>/s (14.9 m<sup>3</sup>/s) Sept. 15, 16, 1946; no flow many days each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	.00	.00	.00	.00	.00	322	110	76	84	151	142
2	49	.00	.00	.00	.00	.00	330	86	55	72	189	127
3	74	.00	.00	.00	.00	.00	353	72	.00	116	180	126
4	67	.00	.00	.00	.00	.00	366	96	.00	139	171	149
5	42	.00	.00	.00	.00	.00	366	96	.00	146	108	105
6	61	.00	.00	.00	.00	.00	379	64	.00	185	90	110
7	72	.00	.00	.00	.00	.00	379	51	.00	226	129	89
8	54	.00	.00	.00	.00	.00	345	56	.00	239	178	86
9	40	.00	.00	.00	.00	.00	291	94	.00	205	169	94
10	14	.00	.00	.00	.00	.00	260	107	.00	216	149	80
11	.00	.00	.00	.00	.00	.00	274	124	.00	243	168	99
12	.14	.00	.00	.00	.00	.00	254	129	74	268	166	146
13	.20	.00	.00	.00	.00	.00	222	127	121	280	144	161
14	.00	.00	.00	.00	.00	.00	184	115	139	282	180	182
15	.00	.00	.00	.00	.00	.00	166	140	194	260	232	178
16	.00	.00	.00	.00	.00	.00	159	189	215	232	224	146
17	.00	.00	.00	.00	.00	.00	205	185	203	294	234	129
18	.00	.00	.00	.00	.00	.00	200	166	194	264	239	156
19	.00	.00	.00	.00	.00	.00	184	164	205	262	187	139
20	.00	.00	.00	.00	.00	.00	180	123	198	241	129	111
21	.00	.00	.00	.00	.00	.00	185	67	211	230	175	86
22	.00	.00	.00	.00	.00	.00	173	90	237	196	187	203
23	.00	.00	.00	.00	.00	.00	154	123	215	142	175	314
24	.00	.00	.00	.00	.00	.00	162	105	187	124	182	66
25	.00	.00	.00	.00	.00	.00	157	110	147	108	189	1.4
26	.00	.00	.00	.00	.00	.00	132	129	187	119	142	.00
27	.00	.00	.00	.00	.00	83	115	121	175	105	104	.00
28	.00	.00	.00	.00	.00	206	87	118	131	107	118	.00
29	.00	.00	.00	.00	---	288	99	126	82	123	115	.00
30	.00	.00	.00	.00	---	308	100	108	75	127	135	.00
31	.00	---	.00	.00	---	324	---	86	---	126	115	---
TOTAL	549.34	.00	.00	.00	.00	1209.00	6783	3477	3321.00	5761	5054	3225.40
MEAN	17.7	.000	.000	.000	.000	39.0	226	112	111	186	163	108
MAX	76	.00	.00	.00	.00	324	379	189	237	294	239	314
MIN	.00	.00	.00	.00	.00	.00	87	51	.00	72	90	.00
AC=FT	1090	.00	.00	.00	.00	2400	13450	6900	6590	11430	10020	6400
CAL YR 1977	TOTAL	18921.64	MEAN	51.8	MAX	400	MIN	.00	AC=FT	37530		
WTR YR 1978	TOTAL	29379.74	MEAN	80.5	MAX	379	MIN	.00	AC=FT	58270		

## 08403800 LAKE AVALON NEAR CARLSBAD, NM

LOCATION.--Lat 32°29'27", long 104°15'05", in NW¼SW¼ sec.12, T.21 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on headwall at outlet gate of dam on Pecos River, 3.3 mi (5.3 km) north of Carlsbad, and at mile 467.2 (751.7 km).

DRAINAGE AREA.--18,070 mi<sup>2</sup> (46,800 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--January 1939 to September 1965 (monthend gage heights and contents). October 1965 to current year. Monthend gage heights January 1919 to December 1938 in files of Pecos River Commission.

REVISED RECORDS.--WSP 898: 1939.

GAUGE.--Nonrecording gage. Datum of gage is 3,157.0 ft (962.25 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Lake is formed by Avalon Dam, an earthfill structure. The original Eddy (Avalon) Dam was completed and storage began in 1891. The dam was destroyed by flood of Aug. 3, 1893; repaired immediately. The dam was destroyed again Oct. 2, 1904; construction of present dam commenced on June 1, 1906, and was 88 percent complete June 30, 1907. Capacity (based on Aug. 1964 survey), 4,970 acre-ft (6.1 hm<sup>3</sup>) between gage heights 0.0 (sill of outlet gates) and 20.4 ft (6.22 m), crest of spillway 2. No dead storage. No storage allocated to flood control. Figures given herein represent usable contents. Water is used by Carlsbad Irrigation District.

COOPERATION.--Capacity table based on data furnished by Carlsbad Irrigation District.

EXTREMES FOR PERIOD OF RECORD (SINCE 1938).--Maximum contents, 11,000 acre-ft (13.6 hm<sup>3</sup>) May 22, 1941, gage height, 25.0 ft (7.62 m); no storage at times when natural flow was passing through reservoir.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 5,570 acre-ft (6.87 hm<sup>3</sup>) Sept. 27, gage height, 21.00 ft (6.401 m); no storage Sept. 24.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1540	1480	1840	2160	2440	2550	1770	2890	1940	1580	1980	1700
2	1440	1510	1840	2160	2440	2550	1880	2780	2050	1440	1740	1670
3	1350	1580	1880	2190	2440	2590	1980	2620	2300	1280	1700	1640
4	1250	1580	1880	2190	2440	2590	2050	2510	2330	1070	1700	1580
5	1160	1610	1880	2190	2440	2590	2080	2440	2400	1250	1740	1640
6	1100	1610	1910	2190	2440	2590	2080	2190	2480	1380	1800	1640
7	982	1610	1940	2190	2480	2590	2120	2120	2510	1700	1770	1640
8	845	1640	1940	2190	2480	2590	2160	2050	2550	2080	1670	1670
9	928	1640	1940	2190	2480	2620	2260	1940	2550	2480	1700	1640
10	1010	1640	1940	2190	2480	2620	2550	1770	2550	2850	1670	1670
11	1040	1670	1940	2190	2480	2620	2810	1910	2550	3250	1700	1670
12	1040	1670	1980	2190	2510	2620	3090	1910	2590	3210	1700	1670
13	1070	1670	1980	2190	2510	2620	3370	1940	2360	2930	1740	1540
14	1100	1700	1980	2190	2510	2620	3730	1910	2120	2620	1770	1410
15	1100	1700	1980	2190	2510	2620	4160	1980	1840	2330	1740	1280
16	1130	1740	1980	2220	2510	2590	4300	1940	1510	2120	1800	1350
17	1130	1740	1980	2220	2510	2590	4250	1770	1980	1980	1840	1580
18	1190	1740	2020	2220	2510	2590	3980	1670	1770	2020	1770	1800
19	1190	1770	2020	2300	2550	2550	3850	1580	1010	2190	1740	1940
20	1220	1770	2020	2300	2550	2550	3730	1540	1010	2260	1880	1700
21	1250	1770	2020	2300	2550	2510	3610	1640	1250	2300	1910	1510
22	1280	1770	2020	2300	2550	2510	3490	1770	1380	2120	1740	1540
23	1280	1770	2020	2330	2550	2510	3410	1770	1410	3570	1580	872
24	1320	1770	2050	2330	2550	2480	3330	1800	1510	3690	1610	0
25	1320	1770	2050	2360	2550	2480	3290	1840	1580	3450	1640	587
26	1350	1770	2050	2360	2550	2480	3250	1880	1640	3290	1700	4970
27	1350	1770	2120	2360	2550	2440	3210	1840	1640	3050	1840	5570
28	1380	1770	2120	2360	2550	2190	3250	1840	1640	2890	1840	5170
29	1380	1800	2120	2400	---	1670	3250	1840	1670	2660	1770	5020
30	1410	1800	2120	2400	---	1510	3090	1840	1700	2440	1770	4970
31	1440	---	2120	2400	---	1640	---	1880	---	2220	1700	---
MAX	1540	1800	2120	2400	2550	2620	4300	2890	2590	3690	1980	5570
MIN	845	1480	1840	2160	2440	1510	1770	1540	1010	1070	1580	.00

(#) -140 +360 +320 +280 +150 -910 +1450 -1210 -180 +520 -520 +3270

CAL YR 1977 MAX 4200 MIN .00 CHANGE IN CONTENTS -1330  
WTR YR 1978 MAX 5570 MIN .00 CHANGE IN CONTENTS +3390

(#) Change in contents, in acre-feet.

08403800 LAKE AVALON NEAR CARLSBAD, NM --- CONTINUED

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.05	15.95	16.50	16.95	17.35	17.50	16.40	17.95	16.65	16.10	16.70	16.30
2	15.90	16.00	16.50	16.95	17.35	17.50	16.55	17.80	16.80	15.90	16.35	16.25
3	15.75	16.10	16.55	17.00	17.35	17.55	16.70	17.60	17.15	15.65	16.30	16.20
4	15.60	16.10	16.55	17.00	17.35	17.55	16.80	17.45	17.20	15.30	16.30	16.10
5	15.45	16.15	16.55	17.00	17.35	17.55	16.85	17.35	17.30	15.60	16.35	16.20
6	15.35	16.15	16.60	17.00	17.35	17.55	16.85	17.00	17.40	15.80	16.45	16.20
7	15.15	16.15	16.65	17.00	17.40	17.55	16.90	16.90	17.45	16.30	16.40	16.20
8	14.90	16.20	16.65	17.00	17.40	17.55	16.95	16.80	17.50	16.85	16.25	16.25
9	15.05	16.20	16.65	17.00	17.40	17.60	17.10	16.65	17.50	17.40	16.30	16.20
10	15.20	16.20	16.65	17.00	17.40	17.60	17.50	16.40	17.50	17.90	16.25	16.25
11	15.25	16.25	16.65	17.00	17.40	17.60	17.85	16.60	17.50	18.40	16.30	16.25
12	15.25	16.25	16.70	17.00	17.45	17.60	18.20	16.60	17.55	18.35	16.30	16.25
13	15.30	16.25	16.70	17.00	17.45	17.60	18.55	16.65	17.25	18.00	16.35	16.05
14	15.35	16.30	16.70	17.00	17.45	17.60	19.00	16.60	16.90	17.60	16.40	15.85
15	15.35	16.30	16.70	17.00	17.45	17.60	19.50	16.70	16.50	17.20	16.35	15.65
16	15.40	16.35	16.70	17.05	17.45	17.55	19.65	16.65	16.00	16.90	16.45	15.75
17	15.40	16.35	16.70	17.05	17.45	17.55	19.60	16.40	15.70	16.70	16.50	16.10
18	15.50	16.35	16.75	17.05	17.45	---	19.30	16.25	15.40	16.75	16.40	16.45
19	15.50	16.40	16.75	17.15	17.50	---	19.15	16.10	15.20	17.00	16.35	16.65
20	15.55	16.40	16.75	17.15	17.50	---	19.00	16.05	15.20	17.10	16.55	16.30
21	15.60	16.40	16.75	17.15	17.50	---	18.85	16.20	15.60	17.15	16.60	16.00
22	15.65	16.40	16.75	17.15	17.50	---	18.70	16.40	15.80	16.90	16.35	16.05
23	15.65	16.40	16.75	17.20	17.50	---	18.60	16.40	15.85	18.80	16.10	14.95
24	15.70	16.40	16.80	17.20	17.50	17.40	18.50	16.45	16.00	18.95	16.15	14.00
25	15.70	16.40	16.80	17.25	17.50	17.40	18.45	16.50	16.10	18.65	16.20	14.40
26	15.75	16.40	16.80	17.25	17.50	17.40	18.40	16.55	16.20	18.45	16.30	20.40
27	15.75	16.40	16.90	17.25	17.50	17.35	18.35	16.50	16.20	18.15	16.50	21.00
28	15.80	16.40	16.90	17.25	17.50	17.00	18.40	16.50	16.20	17.95	16.50	20.60
29	15.80	16.45	16.90	17.30	---	16.25	18.40	16.50	16.25	17.65	16.40	20.45
30	15.85	16.45	16.90	17.30	---	16.00	18.20	16.50	16.30	17.35	16.40	20.40
31	15.90	---	16.90	17.30	---	16.20	---	16.55	---	17.05	16.30	---
MEAN	15.53	16.28	16.71	17.10	17.44	---	18.11	16.70	16.54	17.22	16.37	16.26
MAX	16.05	16.45	16.90	17.30	17.50	---	19.65	17.95	17.55	18.95	16.70	21.00
MIN	14.90	15.95	16.50	16.95	17.35	---	16.40	16.05	15.20	15.30	16.10	14.00
CAL YR 1977	MEAN 16.68		MAX 19.55		MIN 14.00							

## 08404000 PECOS RIVER BELOW AVALON DAM, NM

LOCATION.--Lat 32°28'55", long 104°15'47", in SW¼SW¼NE¼ sec.14, T.21 S., R.26 E., Eddy County, Hydrologic Unit 13060011, on right bank 4,800 ft (1,460 m) below Avalon Dam, 4.5 mi (7.2 km) northwest of Carlsbad, and at mile 466.3 (750.3 km).

DRAINAGE AREA.--18,080 mi<sup>2</sup> (46,830 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--January 1906 to March 1907, (published as "at Avalon"), June 1951 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,130 ft (954 m), from topographic map. January 1906 to March 1907 nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum.

REMARKS.--Records good. Flow regulated by Lake Sumner, Lake McMillan, and Lake Avalon (stations 08384000, 09400500, 08403800). Diversions and ground-water withdrawals above station for irrigation of about 198,000 acres (800 km<sup>2</sup>), 1959 determination. Station bypassed by Carlsbad main canal (station 08403500).

AVERAGE DISCHARGE.--27 years 35.2 ft<sup>3</sup>/s (0.997 m<sup>3</sup>/s), 25,500 acre-ft/yr (31.4 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,500 ft<sup>3</sup>/s (1,570 m<sup>3</sup>/s) Aug. 23, 1966, gage height, 26.4 ft (8.05 m), from floodmarks, from rating curve extended above 33,000 ft<sup>3</sup>/s (935 m<sup>3</sup>/s) on basis of computation of peak flow over Tansill Dam 5.8 mi (1.3 km) downstream; no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 2, 1904, caused in part, by failure of Avalon Dam, probably exceeded 90,000 ft<sup>3</sup>/s (2,550 m<sup>3</sup>/s) and is probably the greatest flood since 1842. A major flood occurred Aug. 3, 1893, and was described as "greatest in 50 years"; it damaged McMillan Dam, then under construction, and washed out the original Avalon Dam. Another major flood occurred Aug. 7, 1916, discharge 70,000 ft<sup>3</sup>/s (1,980 m<sup>3</sup>/s) at site 6.5 mi (10.5 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,540 ft<sup>3</sup>/s (327 m<sup>3</sup>/s) Sept. 26, gage height, 12.33 ft (3.758 m); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2060
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3850
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	357
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	86
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	18
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.8
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6400.90
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	213
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3850
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	12700
CAL YR 1977 TOTAL	0.00		MEAN	.000	MAX	.00	MIN	.00	AC-FT	0		
WTR YR 1978 TOTAL	6400.90		MEAN	17.5	MAX	3850	MIN	.00	AC-FT	12700		

## 08405000 PECOS RIVER AT CARLSBAD, NM

LOCATION.--Lat 32°24'42", long 104°13'17", in SE 1/4 NE 1/4 sec. 7, T.22 S., R.27 E., Eddy County, Hydrologic Unit 13060011, immediately downstream from Lower Tansil Dam, which is approximately 0.2 mi (0.3 km) upstream from Dark Canyon, and 0.5 mi (0.8 km) downstream from the Greene Street Bridge on U.S. Highway 62-180 in Carlsbad.

DRAINAGE AREA.--18,100 mi<sup>2</sup> (46,900 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--Water years 1905-07, 1937-46, 1951 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1905 to April 1907, May 1937 to September 1946, July 1951 to current year.

WATER TEMPERATURES: July 1951 to current year.

HARDNESS: May 1905 to April 1907, May 1937 to September 1946, July 1951 to current year.

DISSOLVED SOLIDS: May 1905 to April 1907, May 1937 to September 1946, July 1951 to current year.

REMARKS.--Prior to impoundment above Lower Tansil Dam in January 1970 samples were collected at gage on Greene Street Bridge. Additional samples were collected at 08405200 Pecos River below Dark Canyon for comparison with those collected at this station. Mean daily discharges are estimated from discharge station below Dark Canyon.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,800 micromhos Aug. 3, 1974; minimum daily, 401 micromhos Sept. 23, 1974.

WATER TEMPERATURES: Maximum, 38.0°C May 28, 1969; minimum, 0.0°C Dec. 18, 1965.

HARDNESS: Maximum, 2,400 mg/L July 1-31, 1974; minimum, 190 mg/L Sept. 26, 1978.

DISSOLVED SOLIDS: Maximum, 4,680 mg/L July 1-31, 1974; minimum, 252 mg/L Sept. 26, 1978.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,690 micromhos Sept. 18; minimum daily, 420 micromhos Sept. 26.

WATER TEMPERATURES: Maximum, 29.0°C June 16, 25, July 2; minimum, 4.0°C on several days in January.

HARDNESS: Maximum, 1,600 mg/L Aug. 1-31, Sept. 1-22, 23-24; minimum, 190 mg/L Sept. 26.

DISSOLVED SOLIDS: Maximum, 3,240 mg/L Sept. 1-22; minimum, 252 mg/L Sept. 26.

## CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREAM- FLOW (CFS) (000600)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)
OCT												
01-31	9.1	4090	7.2	1300	1200	270	160	560	6.7	13	130	0
NOV												
01-30	8.1	3760	7.8	1300	1200	350	110	350	4.2	5.7	170	0
DEC												
01-31	9.6	3410	7.7	1300	1200	320	130	300	3.6	4.7	170	0
JAN												
01-31	9.8	2930	7.6	1100	970	270	110	260	3.4	4.4	190	0
FEB												
01-28	10	2720	7.6	1100	900	270	93	230	3.1	4.2	190	0
MAR												
01-31	6.0	2660	8.0	1000	860	250	91	230	3.2	4.6	170	0
APR												
01-30	5.6	2860	8.1	1100	960	250	110	260	3.4	5.0	140	0
MAY												
01-31	5.4	3230	7.8	1200	1100	300	110	300	3.8	5.3	120	0
JUN												
01-30	3.7	3640	7.8	1400	1300	330	130	340	4.0	6.0	110	0
JUL												
01-31	2.4	3660	7.5	1300	--	340	110	330	4.0	6.4	--	--
AUG												
01-31	2.6	4120	7.6	1600	--	400	140	380	4.2	7.4	--	--
SEP												
01-22	9.1	4620	7.5	1600	--	410	150	400	4.3	7.2	--	--
23-24	266	4240	7.8	1600	--	430	130	380	4.1	6.7	--	--
25...	3590	3120	7.3	1200	--	340	75	290	3.7	7.0	--	--
26...	7040	420	7.8	190	--	60	9.5	8.5	.3	3.4	--	--
27-30	206	561	7.7	240	--	74	14	14	.4	4.6	--	--
WTD. AVG.	--	1740	7.6	673	--	185	49	146	1.9	4.9	--	--
TIME WTD.												
AVG.	39	3420	7.7	1260	--	309	118	323	3.9	6.1	--	--
TOT. LOAD (TONS)	--	--	--	--	--	7190	1900	5670	--	192	--	--

08405000 PECOS RIVER AT CARLSBAD, NM--Continued

## CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ALKA- LITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 01-31	110	1400	640	.8	18	--	3130	4.26	76.9	--	--	--
NOV 01-30	140	1200	560	.8	18	--	2680	3.64	58.6	.76	--	--
DEC 01-31	140	1100	530	.7	17	--	2490	3.39	64.5	--	--	--
JAN 01-31	160	840	430	.7	16	--	2020	2.75	53.5	--	--	--
FEB 01-28	160	860	380	.7	13	--	1940	2.64	52.4	--	--	--
MAR 01-31	140	800	370	.7	12	--	1840	2.50	29.8	--	--	--
APR 01-30	110	860	420	.7	9.5	--	1980	2.69	29.9	--	--	--
MAY 01-31	98	1100	450	.7	8.2	2390	2330	3.17	34.0	--	200	10
JUN 01-30	90	1100	570	.7	12	--	2540	3.45	25.4	--	--	--
JUL 01-31	92	1100	560	.7	13	--	2510	3.41	16.3	.42	--	--
AUG 01-31	78	1300	670	.8	16	--	2950	4.01	20.7	.41	--	--
SEP 01-22	98	1500	710	.8	17	--	3240	4.41	79.6	.39	--	--
23-24	120	1300	630	.8	20	--	2940	4.00	2110	.77	--	--
25...	64	1100	460	.5	9.6	--	2310	3.14	22400	.48	--	--
26...	93	97	18	.1	8.7	--	252	.34	4790	.53	--	--
27-30	75	160	27	.2	9.5	--	341	.46	190	.86	--	--
WTD. AVG. TIME WTD. AVG.	91	560	234	.3	10	--	1240	1.68	--	--	--	--
TOT. LOAD (TONS)	118	1080	514	.7	14	--	2430	3.30	--	--	--	--
	3550	21700	9080	13	403	--	48000	--	--	--	--	--

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4470	3980	3570	3120	2870	2690	2720	3160	3650	3600	3820	4640
2	4470	3960	3620	3080	2800	2680	2740	3000	3620	3580	3840	4520
3	4410	3940	3570	3060	2780	2680	2760	2930	3560	3520	3870	4510
4	4290	3940	3540	3050	2790	2660	2760	2970	3560	3530	3870	4480
5	4190	3940	3590	3030	2770	2660	2760	3070	3600	3560	3620	4160
6	3990	3930	3520	3020	2770	2640	2800	3110	3620	3590	3840	4300
7	4130	3850	3480	3010	2780	2640	2780	3160	3550	3630	3900	4340
8	4100	3880	3520	2990	2770	2640	2780	3190	3630	3690	3970	4460
9	4120	3830	3530	2990	2750	2650	2780	3220	3630	3720	3900	4450
10	4100	3800	3550	2990	2750	2640	2760	3280	3630	3750	3970	4460
11	4100	3810	3550	2990	2760	2650	2760	3310	3700	3790	4010	4460
12	4100	3770	3480	2990	2700	2650	2760	3360	3670	3830	4130	4520
13	4110	3750	3460	2950	2780	2650	2780	3380	3710	3870	4170	4560
14	4130	3720	3460	2940	2710	2650	2780	3420	3750	3900	4180	4580
15	4140	3720	3410	2940	2680	2650	2780	3470	3710	3950	3950	4500
16	4140	3720	3380	2930	2680	2630	2800	3500	3790	4010	4250	4570
17	4140	3710	3370	2920	2680	2630	2820	3500	3770	4090	4290	4650
18	4130	3690	3370	2920	2700	2650	2870	3530	3810	4150	4320	4690
19	4150	3670	3490	2900	2700	2670	2850	3550	3830	4220	4290	4630
20	4150	3690	3450	2900	2680	2670	2870	3550	3820	4310	4320	4540
21	4100	3690	3340	2900	2680	2650	2870	3330	3850	4400	4340	4630
22	4080	3650	3390	2860	2680	2690	2890	3410	4160	4520	4370	4050
23	3890	3620	3260	2870	2680	2560	2960	3430	3930	4360	4430	4320
24	3940	3580	3300	2850	2670	2690	2980	3460	3900	3640	4410	3870
25	3960	3620	3300	2830	2680	2670	3020	3440	3940	3800	4420	3120
26	4000	3610	3260	2830	2680	2660	3030	3470	3980	3840	4480	420
27	3990	3560	3240	2820	2660	2700	3030	3470	4060	3590	4410	462
28	3970	3570	3280	2820	2670	2700	3060	3540	3870	3640	4480	542
29	3930	3510	3180	2800	---	2700	3060	3540	3650	3730	4460	567
30	3910	3500	3220	2800	---	2660	3090	3540	3520	3810	4480	616
31	3910	---	3160	2790	---	2690	---	3570	---	3840	4510	---
MEAN	4100	3740	3410	2930	2730	2660	2860	3350	3750	3850	4170	3750
WTR YR 1978	MEAN	3450		MAX	4690		MIN	420				

## 08405000 PECOS RIVER AT CARLSBAD, NM--Continued

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.5	16.5	10.0	7.5	6.5	11.0	17.5	19.5	22.0	25.0	24.0	24.0
2	20.5	13.0	11.0	7.5	7.5	11.0	19.0	17.5	22.0	29.0	25.5	24.0
3	20.5	15.0	10.5	6.5	7.5	10.0	17.5	16.5	21.0	27.0	25.0	25.5
4	20.5	14.0	11.0	6.5	7.5	8.0	17.5	16.0	22.5	27.5	24.0	24.0
5	20.5	14.5	10.5	6.0	9.5	11.0	16.5	17.5	22.5	27.0	23.0	25.0
6	21.0	16.0	9.0	7.0	8.5	10.0	15.0	18.0	23.0	26.5	23.5	24.5
7	20.5	15.0	10.0	7.5	9.0	11.0	16.5	18.5	22.5	26.0	23.0	24.0
8	20.5	13.5	10.0	8.0	8.5	10.5	19.0	17.5	24.0	27.0	23.0	24.5
9	20.0	12.5	8.0	7.0	8.0	11.0	18.0	18.5	24.0	26.0	24.0	24.0
10	19.0	12.5	7.5	7.0	9.0	11.5	16.0	20.0	24.0	26.0	25.0	25.5
11	18.5	8.0	8.0	7.0	7.5	10.5	15.0	19.0	25.5	26.0	24.0	24.5
12	17.5	12.5	7.5	5.5	9.5	13.0	15.0	19.0	22.5	25.5	25.5	24.0
13	17.0	13.5	8.0	6.0	9.0	11.0	16.5	20.5	24.0	25.5	25.5	24.0
14	16.5	12.5	7.5	7.0	7.5	10.0	17.5	20.0	24.0	26.5	25.0	24.5
15	17.5	12.0	7.5	7.0	7.5	10.0	18.0	22.0	24.0	26.0	25.0	24.0
16	19.0	12.5	9.0	7.5	7.5	11.5	19.0	20.0	29.0	27.5	25.0	24.0
17	17.5	12.5	5.0	6.0	6.0	11.5	16.5	21.0	24.5	26.0	25.0	24.5
18	18.0	11.5	7.5	5.5	7.5	12.0	13.0	20.0	26.0	26.5	25.0	23.0
19	17.5	12.5	8.0	4.0	7.5	14.0	16.5	21.5	23.0	25.0	25.0	23.0
20	17.5	12.5	7.5	4.0	6.0	14.0	17.5	21.0	24.0	25.0	25.0	22.5
21	18.0	12.0	7.5	4.0	6.0	15.0	17.5	23.0	22.5	26.0	25.0	20.0
22	17.5	10.5	6.0	6.0	6.5	15.0	17.5	23.0	23.0	24.5	26.0	19.0
23	18.0	12.5	7.0	4.0	8.5	15.0	19.0	23.0	25.0	26.0	24.5	20.5
24	18.0	13.0	8.0	4.5	7.5	12.5	18.0	23.0	24.0	25.0	24.0	19.0
25	17.5	11.0	8.0	4.0	9.5	14.0	18.0	22.5	29.0	26.0	25.0	18.0
26	18.0	10.5	7.5	4.0	10.5	19.0	19.0	23.0	26.0	26.5	24.0	17.0
27	18.0	12.5	8.0	6.5	11.0	14.0	19.5	23.0	25.0	25.5	25.5	16.0
28	17.5	10.0	7.0	6.0	13.0	15.0	19.5	20.0	24.0	24.0	25.0	16.0
29	17.5	10.0	7.5	8.0	---	14.5	19.0	22.5	25.0	25.0	22.0	16.5
30	18.0	11.0	7.5	6.5	---	17.5	19.5	23.0	25.0	27.5	22.5	17.5
31	18.0	---	8.5	7.0	---	19.0	---	23.0	---	24.0	22.5	---
MEAN	18.5	12.5	8.0	6.0	8.0	12.5	17.5	20.5	24.0	26.0	24.5	22.0
WTR YR 1978	MEAN	17.0		MAX	29.0		MIN	4.0				

## 08405150 DARK CANYON DRAW AT CARLSBAD, NM

LOCATION.--Lat 32°24'24", long 104°13'34", in NE¼NW¼SE¼ sec.7, T.22 S., R.27 E., Eddy County, Hydrologic Unit 13060011, on downstream side of U.S. Highway 62-285 (Canal Street) bridge in Carlsbad, and 0.6 mi (1.0 km) upstream from mouth. Mouth at Pecos River mile 459.2 (738.9 km).

DRAINAGE AREA.--450 mi<sup>2</sup> (1,170 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--January 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,088.21 ft (941.286 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. A Soil Conservation Service flood control project on Hackberry Draw, an upstream tributary, has some effect on flood peaks and flow duration. Ground-water withdrawals above station for irrigation of approximately 2,100 acres (8.5 km<sup>2</sup>), 1973 determination, and for municipal supply for Carlsbad.

AVERAGE DISCHARGE.--5 years, 8.52 ft<sup>3</sup>/s (0.241 m<sup>3</sup>/s), 6,170 acre-ft/yr (7.61 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft<sup>3</sup>/s (402 m<sup>3</sup>/s) Oct. 23, 1974, gage height, 10.80 ft (3.290 m); no flow most of time.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Aug. 23, 1966, reached a discharge of 66,000 ft<sup>3</sup>/s (1,870 m<sup>3</sup>/s) as determined by slope-area measurement at site 1.2 mi (1.9 km) upstream. Another flood of approximately the same magnitude occurred Sept. 20, 1941. Other major peaks occurred July 17, 1906, July 24, 1908, July 24, 1911, Apr. 18, 1915, Aug. 8, 1916, Sept. 15, 1919, Aug. 4, 1925, and May 23, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,900 ft<sup>3</sup>/s (280 m<sup>3</sup>/s) at 1900 hours Sept. 25, gage height, 9.82 ft (2.993 m) no other peak above base of 500 ft<sup>3</sup>/s (14 m<sup>3</sup>/s); no flow most of the time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3480
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1810
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	95
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.8
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5387.80
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	180
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3480
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	10690

CAL YR 1977 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT 0  
WTR YR 1978 TOTAL 5387.80 MEAN 14.8 MAX 3480 MIN .00 AC-FT 10690



## 08405200 PECOS RIVER BELOW DARK CANYON DRAW, AT CARLSBAD, NM

LOCATION.--Lat 32°24'37", long 104°12'58", in NE¼SW¼NW¼ sec.8, T.22 S., R.27 E., Eddy County, Hydrologic Unit 13060011, on left bank, 700 ft (210 m) downstream from mouth of Dark Canyon Draw, 0.3 mi (0.5 km) downstream from Lower Tansill Dam and Bataan recreational area, 0.8 mi (1.3 km) downstream from bridge on U.S. Highway 62-180 in Carlsbad, and at mile 459.1 (738.7 km).

DRAINAGE AREA.--18,550 mi<sup>2</sup> (48,040 km<sup>2</sup>), approximately (contributing area.)

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1970 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3,075.19 ft (937.318 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow regulated by Lake Sumner, Lake McMillan, and Lake Avalon (stations 08384000, 08400500, 08403800), and at low stages by power plant above station. Gage is bypassed on left bank by Carlsbad main canal east which irrigates several hundred acres adjacent to and below gage site, and on right bank by Carlsbad main canal south, which with supplemental ground-water withdrawals irrigates about 23,000 acres (93 km<sup>2</sup>) below. Diversions and ground-water withdrawals above station for irrigation of about 198,000 acres (800 km<sup>2</sup>), 1959 determination.

AVERAGE DISCHARGE.--8 years, 54.9 ft<sup>3</sup>/s (1.555 m<sup>3</sup>/s), 39,780 acre-ft/yr (49.0 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft<sup>3</sup>/s (671 m<sup>3</sup>/s) Oct. 23, 1974, gage height, 13.1 ft (3.99 m), from flood marks; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Aug. 23, 1966, reached a stage of about 22 ft (6.7 m), discharge not determined. (For dates of other historical floods see station 08404000.)

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,000 ft<sup>3</sup>/s (595 m<sup>3</sup>/s) Sept. 26, gage height, 12.28 ft (3.743 m); no flow at times during June and July.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	10	8.5	9.2	11	8.9	5.0	7.7	4.3	.27	.27	.25
2	1.8	4.7	9.4	8.9	9.5	11	6.2	17	7.1	.68	.22	.52
3	4.1	7.6	9.4	9.9	10	9.3	3.6	6.9	5.7	3.0	2.3	2.4
4	20	7.7	9.4	10	11	8.7	2.1	8.5	5.6	4.6	1.9	6.2
5	9.9	7.7	9.4	11	9.2	10	4.1	8.5	6.4	5.9	1.6	5.5
6	7.0	8.5	7.7	10	14	11	1.1	9.4	9.0	6.0	2.7	3.3
7	8.9	11	9.4	10	12	8.5	3.3	5.5	8.8	6.3	3.9	3.8
8	9.5	10	9.4	9.1	12	8.5	3.8	5.5	6.5	6.3	5.1	4.3
9	17	6.2	7.7	9.0	11	9.4	5.5	5.5	5.8	2.9	6.7	4.3
10	15	6.9	7.7	8.9	11	11	4.9	6.2	6.1	1.8	8.2	4.3
11	8.1	6.9	8.5	9.2	13	4.3	2.8	7.3	5.8	2.5	9.0	4.3
12	8.1	6.9	10	11	17	8.5	4.9	3.8	5.3	.30	7.5	4.9
13	8.5	7.7	9.4	8.6	9.8	6.9	5.5	3.6	4.0	.07	4.4	3.8
14	8.9	7.7	9.4	9.2	10	2.8	4.9	4.0	6.1	.00	3.7	2.8
15	8.1	7.7	11	11	9.3	2.4	4.9	5.1	5.2	.00	4.2	2.4
16	7.5	7.7	18	10	12	1.1	3.6	3.9	2.8	.00	4.2	2.4
17	8.7	7.7	.78	8.8	9.4	2.0	4.9	5.2	.53	.00	4.3	3.3
18	8.7	8.5	9.4	13	9.1	7.2	1.2	1.2	.12	.00	1.2	2.1
19	8.5	9.4	11	6.2	10	3.0	3.3	.62	.04	.00	.65	2.4
20	8.8	8.9	9.4	9.9	9.4	8.1	6.9	1.9	.52	.00	.36	2.8
21	9.3	6.2	11	10	8.8	8.3	10	7.8	.05	.00	.44	13
22	12	6.9	6.2	10	9.5	1.1	11	5.9	.00	.00	.47	122
23	11	7.7	11	10	9.0	3.3	10	4.1	2.1	6.4	.54	367
24	9.3	7.7	9.4	12	10	.33	10	6.2	.16	1.2	.63	164
25	8.6	9.4	10	9.3	8.9	3.1	5.5	4.2	.04	.29	.66	7070
26	8.5	9.9	10	10	8.9	4.9	6.2	3.8	.02	5.2	.52	8850
27	10	7.7	9.4	10	12	6.4	6.9	3.6	.02	4.2	1.3	701
28	8.5	9.4	13	8.2	8.5	3.2	6.1	1.2	.95	5.3	2.5	136
29	8.3	8.5	9.3	9.3	---	5.6	9.1	2.2	7.4	4.8	.16	52
30	9.9	9.4	11	10	---	2.9	11	5.4	3.3	5.3	1.1	33
31	8.7	---	11	12	---	5.0	---	5.2	---	.77	.22	---
TOTAL	282.5	242.2	296.18	303.7	295.3	186.73	168.3	166.92	109.75	74.08	80.94	17574.07
MEAN	9.11	8.07	9.55	9.80	10.5	6.02	5.61	5.38	3.66	2.39	2.61	586
MAX	20	11	18	13	17	11	11	17	9.0	6.4	9.0	8850
MIN	1.3	4.7	.78	6.2	8.5	.33	1.1	.62	.00	.00	.16	.25
AC-FT	560	480	587	602	586	370	334	331	218	147	161	34860
CAL YR 1977 TOTAL	3491.52			MEAN 9.57	MAX 96	MIN .00	AC-FT 6930					
WTR YR 1978 TOTAL	19780.67			MEAN 54.2	MAX 8850	MIN .00	AC-FT 39230					

08405200 PECOS RIVER BELOW DARK CANYON, AT CARLSBAD, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

REMARKS.--Samples collected at this station for comparison with those collected at 08405000 Pecos River at Carlsbad, N. Mex.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
OCT					
06...	0845	7.2	4040	7.6	21.5
NOV					
04...	1140	7.4	4180	7.4	16.5
DEC					
05...	1300	10	3550	7.7	13.5
JAN					
04...	1430	10	3060	7.7	13.0
FEB					
01...	1530	10	2840	7.9	8.0
MAR					
06...	1100	15	2670	7.9	10.5
APR					
04...	1510	2.3	2820	7.9	21.0
MAY					
02...	1155	21	3120	7.8	18.0
JUL					
07...	1035	5.5	3630	7.3	29.0
AUG					
03...	1115	1.5	3920	7.5	25.0
SEP					
06...	1530	3.7	4160	8.0	27.5

## 08405500 BLACK RIVER ABOVE MALAGA, NM

LOCATION.--Lat 32°13'44", long 104°09'02", in SW 1/4 SW 1/4 sec. 12, T. 24 S., R. 27 E., Eddy County, Hydrologic Unit 13060011, on right bank 0.6 mi (1.0 km) upstream from Black River diversion dam, 4.6 mi (7.4 km) west of Malaga, and 7.1 mi (11.4 km) upstream from mouth. Mouth at Pecos River mile 436.3 (702.0 km).

DRAINAGE AREA.--343 mi<sup>2</sup> (888 km<sup>2</sup>).

PERIOD OF RECORD.--March to December 1940, December 1946 to current year.

REVISED RECORDS.--WSP 1632: 1948, 1949-50(F).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,070 ft (936 m), from topographic map. March to December 1940 water-stage recorder and Cippoletti weir at site 0.3 mi (0.5 km) downstream at different datum.

AVERAGE DISCHARGE.--31 years (1948-78), 13.5 ft<sup>3</sup>/s (0.382 m<sup>3</sup>/s), 9,780 acre-ft/yr (12.1 hm<sup>3</sup>/yr).

REMARKS.--Records good. Diversions and ground-water withdrawals for irrigation of about 1,000 acres (4.0 km<sup>2</sup>), 1959 determination, above station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,600 ft<sup>3</sup>/s (2,110 m<sup>3</sup>/s) Aug. 23, 1966, gage height, 21.7 ft (6.61 m), from floodmarks, from rating curve extended above 6,000 ft<sup>3</sup>/s (170 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 12.60 and 21.7 ft (3.840 and 6.61 m); minimum, 0.73 ft<sup>3</sup>/s (0.021 m<sup>3</sup>/s) June 25, 1969.

The flood of Aug. 23, 1966, exceeded the previous maximum stage which occurred in 1908 by about 1.0 ft (0.30 m), information from local resident.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 20 or 21, 1941, reached a stage of 19.0 ft (5.79 m) determined in 1947 from well defined flood marks, discharge, 33,000 ft<sup>3</sup>/s (935 m<sup>3</sup>/s), from rating curve extended above 1,400 ft<sup>3</sup>/s (39.6 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 8.41 and 12.60 ft (2.563 and 3.840 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 450 ft<sup>3</sup>/s (13 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
June 2	1800	*16,880 478	12.87 3.923
Sept. 26	0230	3,660 104	6.66 2.030

Minimum discharge, 0.98 ft<sup>3</sup>/s (0.028 m<sup>3</sup>/s) Nov. 10-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	1.4	1.2	8.7	11	2.6	2.2	4.5	5.4	4.5	3.1	11
2	2.8	1.2	1.2	8.7	11	2.6	4.5	11	1500	4.5	3.1	5.4
3	2.8	1.1	1.2	8.7	11	2.6	5.0	6.6	121	6.2	2.8	4.3
4	4.0	1.1	1.2	8.7	11	2.6	5.1	5.9	24	5.9	3.1	5.4
5	5.1	1.1	1.2	9.1	10	2.6	5.1	5.4	12	4.0	3.3	4.8
6	5.1	1.1	1.2	9.1	10	2.4	5.1	5.1	9.5	3.8	3.1	4.0
7	8.3	1.2	1.2	9.1	10	2.4	5.4	5.1	8.0	3.8	2.8	3.8
8	5.6	1.2	1.2	9.5	10	2.4	5.4	4.8	7.2	3.3	2.8	3.5
9	4.8	1.1	1.2	9.5	10	2.2	5.4	4.8	6.9	3.1	6.2	3.5
10	4.8	.98	1.2	9.5	10	2.2	5.6	4.8	6.2	2.8	15	3.5
11	4.3	.98	1.2	9.5	10	2.0	5.6	4.8	5.9	2.8	6.9	3.3
12	4.0	.98	1.4	9.9	10	1.8	5.6	4.8	5.6	2.4	4.5	3.3
13	3.8	.98	1.4	9.9	10	1.8	5.6	4.5	5.4	2.4	3.5	3.1
14	3.8	.98	1.7	9.9	10	1.7	5.6	4.5	5.4	2.6	3.1	3.1
15	3.5	1.1	5.1	9.9	10	1.7	5.4	4.5	5.6	2.6	2.8	3.1
16	3.5	1.1	5.9	6.9	10	1.7	5.1	4.0	5.6	3.3	2.4	3.1
17	3.3	1.2	5.6	5.6	9.5	1.7	4.5	4.0	5.1	3.3	2.4	3.1
18	3.5	1.2	6.6	5.4	9.5	1.7	4.0	3.8	4.8	2.6	2.4	2.8
19	3.3	1.2	6.6	5.1	9.9	1.8	4.0	5.6	4.5	2.4	2.4	2.8
20	3.3	1.2	6.6	5.1	9.9	2.0	4.0	9.9	4.8	2.4	2.4	3.1
21	3.3	1.2	5.1	5.4	9.9	2.0	4.3	6.2	4.8	2.4	2.4	4.8
22	3.3	1.2	4.0	5.4	9.1	2.0	4.3	5.1	4.0	2.4	2.4	6.9
23	3.8	1.2	3.8	5.1	5.9	2.0	4.0	4.8	3.8	3.1	2.8	6.6
24	4.5	1.2	5.4	5.1	4.3	1.8	4.0	4.5	3.8	3.5	3.5	30
25	4.0	1.2	7.2	8.0	3.5	1.8	4.5	4.3	3.8	3.5	2.4	1710
26	4.0	1.2	7.2	9.5	3.3	1.8	4.0	4.3	3.5	3.3	2.6	1030
27	3.8	1.2	7.2	9.5	3.1	1.7	4.5	4.3	3.5	3.1	2.6	70
28	3.1	1.2	7.2	10	2.8	1.7	4.0	4.3	4.3	2.8	2.6	29
29	2.2	1.2	7.6	10	---	1.7	4.0	4.3	4.5	2.8	2.4	16
30	1.8	1.2	8.0	10	---	1.7	4.3	5.1	4.8	3.3	2.4	12
31	1.5	---	8.3	11	---	1.7	---	5.1	---	3.1	37	---
TOTAL	117.7	34.40	125.1	256.8	244.7	62.4	140.1	160.7	1793.7	102.0	141.2	2995.3
MEAN	3.80	1.15	4.04	8.28	8.74	2.01	4.67	5.18	59.8	3.29	4.55	99.8
MAX	8.3	1.4	8.3	11	11	2.6	5.6	11	1500	6.2	37	1710
MIN	1.5	.98	1.2	5.1	2.8	1.7	2.2	3.8	3.5	2.4	2.4	2.8
AC=FT	233	68	248	509	485	124	278	319	3560	202	280	5940
CAL YR 1977 TOTAL	2148.90			MEAN 5.89	MAX 46	MIN .98	AC=FT 4260					
WTR YR 1978 TOTAL	6174.10			MEAN 16.9	MAX 1710	MIN .98	AC=FT 12250					

LOCATION.--Lat 32°12'26", long 104°01'22", in SW 1/4 sec.19, T.24 S., R.29 E., Eddy County, Hydrologic Unit 13060011, on right bank 3.1 mi (5.0 km) southeast of Malaga, 4.3 mi (6.9 km) downstream from Black River, and at mile 432.2 (695.4 km). Water-quality sampling site 2.2 mi (3.5 km) upstream.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1632: 1925, 1932-37.

GAGE.—Water-stage recorder. Datum of gage is 2,895.64 ft (882.591 m) National Geodetic Vertical Datum of 1929. May 1, 1920, to Mar. 24, 1949, at datum 3 ft (0.91 m) higher.

REMARKS.--Water-discharge records fair. Flow regulated by storage in Lake Sumner, Lake McMillan, and Lake Avalon (stations 08384000, 08400500, 08403800), and by small diversion dams that divert for power or irrigation. Diversions and ground-water withdrawals above station for irrigation of about 202,000 acres (820 km<sup>2</sup>), 1959 determination. Harroun canal bypasses gage on left bank and irrigates approximately 1,000 acres (4.0 km<sup>2</sup>) adjacent to and below gage. This bypass is not gaged.

AVERAGE DISCHARGE.--16 years (1921-36), 274 ft<sup>3</sup>/s (7.760 m<sup>3</sup>/s), 198,500 acre-ft/yr (245 hm<sup>3</sup>/yr), prior to completion of Lake Sumner;  
42 years (1938-78) 184 ft<sup>3</sup>/s (5.211 m<sup>3</sup>/s), 133,300 acre-ft/yr (164 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 120,000 ft<sup>3</sup>/s (3,400 m<sup>3</sup>/s) Aug. 23, 1966, gage height, 42.1 ft (12.83 m), from floodmarks, from rating curve extended above 36,000 ft<sup>3</sup>/s (1,020 m<sup>3</sup>/s), on basis of slope-area measurement at gage height 42.1 ft (12.83 m); minimum, 3.7 ft<sup>3</sup>/s (0.10 m<sup>3</sup>/s) Oct. 20, 1976.  
The flood of Aug. 23, 1966, exceeded all floods at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--A major flood occurred in 1904, discharge not determined. Flood of Aug. 7, 1916, reached a discharge of 70,000 ft<sup>3</sup>/s (1,980 m<sup>3</sup>/s) at Carlsbad, 27 mi (43.4 km) upstream. Flood in September 1919 reached a stage of 29.4 ft (8.96 m), present datum, discharge, 40,400 ft<sup>3</sup>/s (1,140 m<sup>3</sup>/s).

EXTREMES FOR CURRENT YEAR.—Peak discharges above base of 1,800 ft<sup>3</sup>/s (51 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge		Gage height	
		(ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	(ft)	(m)
June 2	2130	5,580	158	14.03	4.276
Sept. 26	0600	*25,410	720	25.39	7.739

Minimum discharge, 4.7 ft<sup>3</sup>/s (0.133 m<sup>3</sup>/s) June 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	6.4	7.3	10	15	11	9.1	7.6	6.8	9.1	8.2	13
2	7.8	6.4	7.3	10	15	11	9.1	17	854	8.2	11	11
3	6.4	7.9	7.3	11	15	11	9.2	11	618	7.8	11	6.4
4	10	6.6	7.3	11	15	11	8.9	9.9	53	6.4	9.4	18
5	10	7.2	7.3	11	16	11	9.3	10	29	6.0	8.7	18
6	8.6	7.3	6.8	11	12	11	9.5	8.5	25	7.5	9.6	8.6
7	9.6	7.4	6.8	11	12	11	9.6	7.9	16	7.8	10	7.6
8	8.6	7.2	6.8	11	12	11	9.1	7.8	12	9.0	8.8	8.3
9	11	7.3	6.4	11	12	11	9.5	7.7	10	9.5	9.0	9.3
10	9.6	7.4	6.8	11	11	9.7	17	7.7	10	9.1	9.5	10
11	8.2	7.5	6.8	11	12	9.1	14	8.1	10	9.9	13	9.8
12	7.8	7.6	7.3	11	12	9.0	9.9	7.6	9.1	8.8	10	11
13	7.3	8.1	7.3	11	12	8.8	9.1	7.2	9.1	8.6	8.5	13
14	7.8	8.0	7.3	11	12	8.7	8.8	7.1	9.6	8.7	7.8	11
15	7.8	8.3	6.8	11	11	8.7	8.7	6.9	9.1	8.7	9.1	9.1
16	7.3	8.2	6.8	12	11	8.4	8.6	6.6	8.6	8.5	8.9	8.7
17	7.3	8.6	9.6	13	11	8.7	8.1	6.5	8.2	8.3	9.8	7.6
18	7.3	8.7	9.1	11	12	8.6	7.9	6.4	7.8	7.6	10	8.8
19	6.8	8.4	7.3	8.2	12	8.6	8.7	6.8	7.3	7.7	10	14
20	6.8	8.3	6.8	7.8	13	8.6	8.7	8.1	7.3	8.6	9.8	11
21	6.8	8.6	11	7.8	16	8.6	8.5	7.7	6.4	9.1	11	13
22	6.8	8.9	11	7.3	20	8.6	8.4	7.7	6.8	10	11	34
23	27	9.0	8.2	7.3	19	8.6	8.4	7.3	6.0	23	10	17
24	9.6	8.6	8.2	7.8	16	8.2	8.3	6.8	7.3	16	9.0	24
25	7.3	8.6	6.8	7.8	13	8.6	8.4	6.9	13	12	11	2690
26	6.8	8.5	9.1	7.8	12	8.2	8.5	7.2	10	9.6	10	14600
27	7.3	7.8	8.6	11	11	9.0	8.0	7.0	9.6	8.6	8.8	1770
28	7.3	7.3	8.6	13	11	9.1	7.7	6.3	19	8.6	8.2	397
29	7.3	7.1	8.6	13	---	9.1	7.6	6.4	13	9.1	9.3	194
30	7.3	7.3	9.1	13	---	8.6	7.6	6.7	11	7.8	10	120
31	6.8	---	9.6	14	---	9.1	---	6.8	---	6.8	10	---
TOTAL	263.3	234.5	244.0	324.8	371	291.6	274.2	243.2	1822.0	286.4	300.4	20073.2
MEAN	8.49	7.82	7.87	10.5	13.3	9.41	9.14	7.85	60.7	9.24	9.69	669
MAX	27	9.0	11	14	20	11	17	17	854	23	13	14600
MIN	6.4	6.4	6.4	7.3	11	8.2	7.6	6.3	6.0	6.0	7.8	6.4
AC=FT	522	465	484	644	736	578	544	482	3610	568	596	39820

CAL YR 1977	TOTAL	4662.2	MEAN	12.8	MAX	72	MIN	5.4	AC-FT	9250
WTR YR 1978	TOTAL	24728.6	MEAN	67.7	MAX	14600	MIN	6.0	AC-FT	49050

08406500 PECOS RIVER NEAR MALAGA, NM -- Continued

## WATER-QUALITY RECORDS

LOCATION.--Samples collected 2.5 mi (4.0 km) upstream from discharge station.

PERIOD OF RECORD.--Water years 1937 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1937 to current year.  
 WATER TEMPERATURES: February 1959 to current year.  
 HARDNESS: July 1937 to current year.  
 DISSOLVED SOLIDS: July 1937 to current year.

REMARKS.--No appreciable inflow between discharge station and sampling point except during periods of heavy local rains.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 28,100 micromhos June 7, 1966; minimum daily, 450 micromhos Sept. 21, 1941.  
 WATER TEMPERATURES: Maximum, 34.0°C June 25, 1964; minimum, 3.0°C Jan. 13, 1963.  
 HARDNESS: Maximum, 3,110 mg/L June 7, 1966; minimum, 235 mg/L Oct. 21, 1969.  
 DISSOLVED SOLIDS: Maximum, 18,700 mg/L June 7, 1966; minimum, 335 mg/L Sept. 26, 1978.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,100 micromhos Apr. 3; minimum daily, 538 micromhos Sept. 26.  
 WATER TEMPERATURES: Maximum, 32.0°C Aug. 2; minimum, 5.0°C Jan. 25-26.  
 HARDNESS: Maximum, 2,500 mg/L Dec. 1-31; minimum, 240 mg/L Sept. 26.  
 DISSOLVED SOLIDS: Maximum, 7,280 mg/L Apr. 1-30; minimum, 335 mg/L Sept. 26.

## CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREAM- FLOW (CFS) (00060)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)
OCT												
01-22	8.0	9060	7.5	2200	2000	550	200	1500	14	34	190	0
23-24	18	5310	7.4	1600	1500	420	140	640	6.9	19	130	0
25-31	7.2	8150	7.4	2000	1900	500	180	1100	11	35	170	0
NOV												
01-30	7.8	9500	7.7	2400	2200	580	230	1400	12	45	190	0
DEC												
01-31	7.9	9200	7.7	2500	2300	610	230	1300	11	40	180	0
JAN												
01-31	10	8050	7.7	2100	2000	550	180	1200	11	35	190	0
FEB												
01-28	13	7380	8.0	2000	1900	530	170	1000	9.7	33	190	0
MAR												
01-31	9.4	9520	7.9	2200	2100	550	210	1400	13	54	190	0
APR												
01-30	9.1	10100	7.9	2400	2300	590	230	1700	15	53	190	0
MAY												
01-31	7.8	9980	7.7	2200	2000	500	220	1500	14	51	200	0
JUN												
01-02	430	10000	7.8	2400	2300	600	220	1500	13	50	140	0
03...	618	2470	7.4	1200	1200	440	28	110	1.4	7.4	74	0
04-08	27	5420	7.6	1500	1400	440	98	580	6.5	21	120	0
09-30	9.5	9340	7.7	2300	2100	600	190	1400	13	42	190	0
JUL												
01-31	9.2	8700	8.0	2100	--	530	190	1300	12	38	--	--
AUG												
01-31	9.7	7740	7.7	2200	2100	580	180	1100	10	16	--	--
SEP												
01-24	13	6670	7.8	2000	1900	520	170	880	8.6	26	--	--
25...	5780	2080	7.6	820	740	240	54	140	2.1	4.5	--	--
26...	19600	538	7.6	240	130	76	12	14	.4	3.6	--	--
27-28	1500	819	7.8	290	190	79	22	61	1.6	4.4	--	--
29-30	156	1920	7.8	510	400	130	46	210	4.0	8.7	--	--
WTD. AVG.												
TIME WTD.	--	1940	7.6	618	501	174	45	208	2.3	8.6	--	--
AVG.												
TOT. LOAD	92	8590	7.8	2170	2040	547	196	1270	12	38	--	--
(TONS)	--	--	--	--	--	15800	4060	18900	--	782	--	--

08406500 PECOS RIVER NEAR MALAGA, NM--Continued

## CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT												
01-22	160	2100	2200	1.0	19	--	6700	9.11	145	--	--	--
23-24	110	1400	1100	.7	13	--	3800	5.17	185	--	--	--
25-31	140	1800	1800	.9	17	--	5520	7.51	107	--	--	--
NOV												
01-30	160	1900	2300	1.1	19	--	6570	8.94	138	--	--	--
DEC												
01-31	148	2200	1900	1.0	18	--	6390	8.69	136	--	--	--
JAN												
01-31	160	1700	1800	.9	18	--	5580	7.59	151	--	--	--
FEB												
01-28	160	1600	1600	.8	15	--	5040	6.85	177	--	--	--
MAR												
01-31	160	1900	2300	1.7	17	--	6530	8.88	166	--	--	--
APR												
01-30	160	2000	2600	1.0	16	--	7280	9.90	179	--	--	--
MAY												
01-31	160	1900	2200	.1	4.1	7260	6470	8.80	136	.09	630	30
JUN												
01-02	110	2100	2500	1.0	20	--	7060	9.60	8200	--	--	--
03...	61	1000	170	.2	18	--	1810	2.46	3020	--	--	--
04-08	98	1000	1100	.6	13	--	3310	4.50	241	--	--	--
09-30	160	1700	2300	.9	18	--	6340	8.62	163	--	--	--
JUL												
01-31	130	1900	2100	1.1	15	--	6140	8.35	153	1.2	--	--
AUG												
01-31	120	2100	1800	.8	17	--	5870	--	--	1.3	--	--
SEP												
01-24	130	1800	1500	.8	14	5080	4990	6.79	178	--	430	10
25...	84	740	250	.3	8.9	--	1490	2.03	23300	--	140	10
26...	110	130	24	.2	9.4	--	335	.46	17700	--	50	<0
27-28	100	200	110	.2	9.4	541	546	.74	2210	--	70	0
29-30	110	440	380	.3	11	1320	1290	1.75	543	--	140	0
WTD. AVG.	108	487	340	.3	10	--	1300	1.77	--	--	--	--
TIME WTD.												
AVG.	148	1860	2000	.9	16	--	6020	8.19	--	--	--	--
TOT. LOAD (TONS)	9770	44200	30900	28	944	--	117000	--	--	--	--	--

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CAC03) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
FEB										
09...	1008	12	7460	7.8	--	9.5	5.5	--	--	--
MAR										
08...	1330	11	9000	8.0	--	16.0	8.7	--	--	--
APR										
06...	1323	9.6	10700	7.5	30.5	23.5	6.8	8.8	--	--
MAY										
04...	1500	10	10300	7.6	29.0	24.0	6.3	10.3	--	--
JUL										
19...	1200	7.8	9600	7.6	33.5	29.0	4.7	9.1	--	--
AUG										
17...	1030	10	8400	7.9	29.0	28.0	5.7	6.6	2200	580
SEP										
28...	1230	335	1200	7.3	22.5	17.0	25	7.3	390	110

## RIO GRANDE BASIN

08406500 PECOS RIVER NEAR MALAGA, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
FEB 09...	--	--	--	--	--	--	--	--	--	--
MAR 08...	--	--	--	--	--	--	--	--	--	--
APR 06...	--	--	--	--	--	--	--	--	--	--
MAY 04...	--	--	--	--	--	--	--	--	--	--
JUL 19...	--	--	--	--	--	--	--	--	--	--
AUG 17...	190	1100	10	32	130	1600	1700	1.0	16	--
SEP 28...	29	120	2.6	5.1	100	260	190	.2	9.8	815

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTH- DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
FEB 09...	1.9	2.0	.12	.45	2.5	.03	.00	--	--
MAR 08...	1.9	2.0	.06	.70	2.7	.08	.00	--	--
APR 06...	1.3	1.1	.14	.66	2.1	.02	.01	--	--
MAY 04...	1.1	1.2	.06	.65	1.8	.03	.00	--	--
JUL 19...	.02	.89	.01	.53	.56	.06	.04	--	--
AUG 17...	.32	.35	.16	1.0	1.5	.07	.02	--	--
SEP 28...	.81	.86	.18	.92	1.9	.15	.03	110	30

## 08406500 PECOS RIVER NEAR MALAGA, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9230	8970	9390	9140	8810	8620	10600	10200	9900	9030	8420	7450
2	9560	9460	9470	7570	6420	8440	10800	9900	10100	9110	8240	7190
3	9560	9460	9470	8350	7380	8200	11100	9620	2470	9190	8180	7500
4	9000	9050	9730	7740	5880	8500	10900	9180	4030	9190	8120	7450
5	9150	8970	9730	7850	6580	8000	10800	8860	5310	9360	7940	6100
6	9230	8820	9820	7850	7430	8390	10600	9440	5960	9440	7830	6070
7	8780	9290	9730	7660	8190	8860	10700	9710	6340	9360	8120	6360
8	8930	9050	9730	8330	7270	8580	10500	9810	6940	9180	8480	6950
9	9390	9720	9550	7780	7590	8140	10500	9710	7390	8950	8480	7450
10	8850	9900	9820	8060	7220	8340	10900	9530	7910	8790	8000	7390
11	8850	9720	9910	7740	8740	8880	8110	9350	8430	8730	7520	7550
12	8570	9720	9550	8350	8060	9380	7920	9620	8950	8570	7470	7610
13	8640	9380	9220	7800	7760	9600	8960	9900	9190	8660	7670	7140
14	8570	9380	9390	6620	7270	9760	9540	9810	9360	8640	7780	6910
15	8850	9460	9070	6970	7270	10000	9720	9810	9440	8640	8180	6910
16	9000	9460	9070	7520	7320	10100	9900	10000	9900	8430	7720	6950
17	8920	9550	9820	8620	8060	9920	10000	10300	10200	8360	7520	7340
18	9070	9450	8840	8020	7590	9810	10000	10500	10300	8430	7620	7660
19	9150	9450	8490	7460	7760	9890	10200	10600	10100	8640	7230	---
20	9390	9450	8490	7570	7940	10300	10000	10400	10000	9030	7230	7340
21	9300	9900	8920	7460	8000	10500	9720	10300	10200	9440	7230	6950
22	9300	10300	8430	8220	6800	10400	9810	10400	10200	9190	7320	5970
23	5220	10200	7990	8020	6150	10300	10300	10300	10300	8950	7720	5360
24	5540	9540	8050	8540	7120	10400	10300	10400	10600	7450	8000	5360
25	7280	9450	8170	9300	7070	10300	10200	10700	10700	7610	7890	2080
26	8110	9460	8360	9550	7070	10600	10100	10800	10200	8100	7180	538
27	7990	9380	8410	9550	7590	10500	10200	10500	9900	8290	7230	559
28	8110	9460	8150	8680	7820	10500	---	10400	9620	8230	7570	1080
29	8490	9720	8110	9130	---	10600	10400	10400	9270	8080	7570	1720
30	8490	9450	8430	7950	---	10800	10400	10300	9030	8030	7670	2260
31	8630	---	8620	7000	---	10700	---	10100	---	8350	7370	---
MEAN	8620	9490	9030	8080	7430	11900	10100	9390	8740	8690	7760	5770

WTR YR 1978 MEAN 8750 MAX 11100 MIN 538

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	17.0	11.5	9.5	10.0	15.0	21.0	23.0	---	27.0	28.0	25.5
2	22.0	14.0	9.5	6.5	9.5	14.5	20.0	20.0	---	26.5	32.0	26.0
3	21.0	14.0	10.0	11.0	9.0	12.0	19.0	15.0	---	29.5	26.0	25.5
4	20.0	14.0	11.5	7.5	8.5	9.5	23.0	18.5	---	32.0	25.0	25.0
5	20.5	14.0	11.5	12.0	10.0	10.5	22.0	22.0	---	29.0	24.0	24.5
6	21.5	15.0	11.5	9.0	11.0	13.0	23.0	19.0	---	30.0	23.5	26.0
7	21.0	15.5	9.0	10.0	11.0	13.0	20.0	19.0	---	29.0	30.0	23.5
8	21.0	14.0	10.0	8.5	10.0	17.5	20.5	18.5	---	27.0	29.5	23.0
9	20.5	14.0	10.0	9.0	9.0	15.5	19.0	18.5	---	30.0	24.0	25.5
10	23.0	11.5	8.0	8.0	9.0	16.0	16.5	22.0	---	29.0	28.0	25.0
11	20.5	10.5	8.0	6.5	10.0	18.0	14.0	21.0	---	31.0	29.0	27.0
12	20.0	11.5	9.0	7.0	12.0	15.0	16.0	22.0	---	31.0	26.5	27.0
13	19.5	11.5	12.0	8.0	10.0	13.0	19.5	25.0	---	28.5	30.0	28.0
14	22.0	12.5	13.0	7.0	10.0	15.5	19.0	22.5	---	31.0	30.0	27.0
15	17.0	12.5	13.0	8.5	9.0	13.5	19.0	23.0	---	31.0	30.0	25.0
16	17.5	15.5	14.0	9.5	10.0	14.5	20.0	25.0	29.0	29.0	29.0	25.0
17	18.0	12.5	14.0	8.5	9.5	18.0	18.5	21.0	28.0	28.0	32.0	25.0
18	22.0	12.0	10.0	7.5	8.0	13.5	19.0	21.0	26.0	31.0	27.0	25.0
19	19.0	13.0	13.0	8.5	9.0	16.0	18.0	23.0	28.0	28.0	27.5	---
20	20.5	14.5	9.0	7.0	8.0	21.0	17.5	22.0	28.0	26.0	27.0	24.0
21	21.5	13.0	8.5	7.0	9.0	21.0	18.5	22.5	27.5	26.0	28.0	20.0
22	19.0	12.0	8.5	8.0	12.5	23.0	18.5	23.5	28.5	27.0	28.0	22.0
23	20.5	11.5	8.5	6.0	14.0	20.0	22.5	23.5	27.0	27.0	28.0	18.5
24	20.0	11.0	10.0	7.5	11.0	20.0	19.0	23.0	26.0	28.5	29.0	19.5
25	20.0	11.0	9.5	5.0	11.5	17.5	21.0	24.0	26.0	28.0	26.0	17.5
26	21.0	14.0	9.0	5.0	13.5	17.0	20.0	24.0	29.0	27.0	31.0	17.0
27	18.0	12.5	9.5	7.0	14.0	19.5	21.0	28.0	27.0	29.0	27.5	16.0
28	22.0	12.0	10.5	8.5	14.0	19.0	---	25.5	28.0	30.0	25.0	17.0
29	18.0	12.0	7.5	9.0	---	18.0	23.5	23.5	28.0	29.0	24.0	19.0
30	19.5	10.5	10.0	8.5	---	22.5	20.0	23.5	28.5	25.0	26.0	21.0
31	18.0	---	10.0	8.5	---	19.0	---	23.5	---	25.0	23.0	---
MEAN	20.5	13.0	10.5	8.0	10.5	16.5	19.5	22.0	27.5	28.5	27.5	23.0

WTR YR 1978 MEAN 18.5 MAX 32.0 MIN 5.0



## RIO GRANDE BASIN

08407000 PECOS RIVER AT PIERCE CANYON CROSSING, NEAR MALAGA, NM

LOCATION.--Lat 32°11'19", long 102°58'43", in SW¼SW¼ sec.27, T.24 S., R.29 E., Eddy County, Hydrologic Unit 13060011, on right bank 550 ft (168 m) upstream from Pierce Canyon Crossing, and 6.0 mi (9.7 km) southeast of Malaga, and at mile 425.7 (685.0 km).

DRAINAGE AREA.--19,260 mi<sup>2</sup> (49,880 km<sup>2</sup>), approximately (contributing area).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1938 to September 1941, August 1951 to current year.

REVISED RECORDS,--WSP 898: 1938(M). WSP 1712: 1959.

GAGE.--Water-stage recorder. Datum of gage is 2,889.18 ft (880.622 m) National Geodetic Vertical Datum of 1929. July 1938 to September 1941 at datum 1.19 ft (0.363 m) higher.

REMARKS.--Water-discharge records good. Flow regulated by storage in Lake Sumner, Lake McMillan, and Lake Avalon (stations 08384000, 08400500, 08403800), and by several small diversion dams that divert for power or irrigation. Diversions and ground-water withdrawals above station for irrigation of about 202,000 acres (820 km<sup>2</sup>), 1959 determination.

AVERAGE DISCHARGE.--30 years (1939-41, 1952-78), 144 ft<sup>3</sup>/s (4.078 m<sup>3</sup>/s), 104,300 acre-ft/yr (129 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 31.6 ft (9.63 m) from floodmarks, Aug.23, 1966, (discharge not determined); minimum discharge, 0.54 ft<sup>3</sup>/s (0.015 m<sup>3</sup>/s) May 30, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge not determined, maximum gage height 19.49 ft (5.941 m) Sept. 26; minimum, 1.8 ft<sup>3</sup>/s (0.05 m<sup>3</sup>/s) June 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	8.3	7.6	11	16	12	10	4.7	7.0	6.0	6.6	10
2	2.3	7.4	8.6	12	17	14	11	6.7	189	6.2	5.5	11
3	4.2	7.9	9.0	12	17	13	11	11	1240	6.5	9.3	11
4	7.0	6.7	7.6	13	17	13	7.2	8.0	130	6.0	9.6	10
5	11	6.7	5.8	13	17	12	5.9	5.2	45	7.0	8.2	13
6	10	6.7	7.9	13	17	12	5.0	5.3	23	6.0	7.6	15
7	11	7.6	9.3	14	15	10	4.7	5.7	16	5.3	7.2	13
8	9.8	8.2	9.3	13	14	9.2	5.4	4.9	12	5.0	7.0	11
9	9.0	7.6	9.0	14	14	9.6	8.0	4.1	10	5.1	6.5	9.9
10	11	7.9	9.3	13	14	11	9.5	3.5	10	6.2	4.7	10
11	10	8.2	9.3	14	15	10	13	5.3	9.6	6.3	4.8	11
12	8.8	8.2	9.3	14	16	10	17	7.6	9.3	7.0	8.6	12
13	8.1	8.2	8.6	14	15	9.8	16	7.3	8.6	7.0	7.2	12
14	7.9	8.2	7.6	14	15	9.3	11	7.4	8.2	6.5	7.0	13
15	8.0	7.2	7.6	14	15	8.5	7.5	6.6	7.9	6.8	6.5	13
16	7.9	6.0	9.3	13	15	7.3	8.3	5.4	7.9	6.5	6.0	12
17	7.7	4.4	8.6	13	13	7.7	8.2	6.3	7.6	6.4	6.2	11
18	7.7	5.0	11	15	13	8.8	5.0	7.3	7.2	5.6	6.5	10
19	7.5	5.0	12	13	14	7.9	5.3	6.1	6.2	5.1	7.6	8.7
20	7.5	7.6	10	11	14	8.6	5.8	7.1	3.5	5.8	7.9	9.2
21	6.8	7.9	9.3	10	14	9.1	5.3	8.3	2.6	7.1	7.9	15
22	7.1	7.6	11	9.5	17	9.1	6.2	8.0	2.1	7.3	7.2	23
23	12	4.8	14	8.6	20	10	6.3	6.3	2.5	21	6.7	32
24	21	5.8	12	9.7	19	10	5.0	6.7	3.2	32	6.7	38
25	12	6.5	10	9.1	15	10	3.4	6.5	4.1	18	7.2	1000
26	8.3	4.7	9.3	9.2	13	10	3.4	6.0	5.3	14	7.9	---
27	8.7	6.5	8.6	9.7	13	10	3.9	6.7	5.0	8.1	8.6	2740
28	9.0	7.0	10	11	11	10	4.9	6.7	5.5	7.7	8.6	572
29	8.8	4.5	11	14	---	10	5.4	6.0	4.5	7.3	11	320
30	8.8	4.7	9.6	15	---	10	5.1	5.3	5.3	7.3	10	185
31	8.4	---	9.6	16	---	10	---	4.7	---	7.7	9.6	---
TOTAL	269.6	203.0	291.1	384.8	425	311.9	223.7	196.7	1798.1	259.8	231.9	---
MEAN	8.70	6.77	9.39	12.4	15.2	10.1	7.46	6.35	59.9	8.38	7.48	---
MAX	21	8.3	14	16	20	14	17	11	1240	32	11	---
MIN	2.3	4.4	5.8	8.6	11	7.3	3.4	3.5	2.1	5.0	4.7	---
AC=FT	535	403	577	763	843	619	444	390	3570	515	460	---
CAL YR 1977 TOTAL	5137.6		MEAN 14.1		MAX 58		MIN 2.3	AC=FT 10190				

08407000 PECOS RIVER AT PIERCE CANYON CROSSING, NEAR MALAGA, NM -- Continued

## WATER-QUALITY RECORDS

LOCATION.--Samples collected 0.2 mi (0.3 km) downstream from discharge station.

PERIOD OF RECORD.--Water years 1938-41, 1952 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1938 to September 1941, October 1951 to current year.

WATER TEMPERATURES: October 1952 to current year.

HARDNESS: March 1938 to September 1941, October 1951 to current year.

DISSOLVED SOLIDS: March 1938 to September 1941, October 1951 to current year.

REMARKS.--No appreciable inflow between discharge station and sampling point except during periods of heavy local rains.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 66,000 micromhos Aug. 1, 2, 1966; minimum daily, 433 micromhos Sept. 21, 1941.

WATER TEMPERATURES: Maximum 35.0°C July 6, 1968; minimum, 1.5°C Jan. 10, 1977.

HARDNESS: Maximum, 4,850 mg/L Aug. 16, 1969; minimum, 202 mg/L Sept. 21, 1941.

DISSOLVED SOLIDS: Maximum, 40,900 mg/L Aug. 1-7, 1966; minimum, 280 mg/L Sept. 21, 1941.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 48,200 micromhos Oct. 3; minimum daily, 625 micromhos Sept. 27.

WATER TEMPERATURES: Maximum, 33.0°C Aug. 2; minimum, 4.0°C on several days in January.

HARDNESS: Maximum, 3,900 mg/L Oct. 1-6; minimum 240mg/L Sept. 27.

DISSOLVED SOLIDS: Maximum, 31,800 mg/L Oct. 1-6; minimum, 405 mg/L Sept. 27.

08407000 PECOS RIVER AT PIERCE CANYON CROSSING, NEAR MALAGA, NM--Continued

## CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREAM- FLOW (CFS) (000600)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)
OCT												
01-06	6.1	46300	7.1	3900	3800	780	480	9600	67	410	180	0
07-23	8.7	30400	7.3	3300	3100	650	400	6900	53	290	180	0
24-31	11	26500	7.4	3100	3000	650	370	5400	42	220	180	0
NOV												
01-11	7.6	30700	7.9	3300	3200	620	430	6200	47	270	170	0
12-26	6.5	27000	8.0	3100	3000	580	400	5600	44	230	160	0
27-30	5.7	34500	8.0	3200	3100	620	410	7600	58	310	180	0
DEC												
01-11	8.4	32800	7.5	3200	3100	640	400	7000	53	290	190	0
12-15	8.3	23500	7.7	3100	2900	660	350	4700	37	170	180	0
16-22	10	30300	7.7	3200	3100	640	400	6200	47	280	190	0
23-31	10	21700	7.9	3100	2900	660	350	4300	34	160	190	0
JAN												
01-09	13	21400	7.5	2800	2700	600	320	3900	32	170	190	0
10-16	14	20100	7.6	2800	2600	610	310	3900	32	140	190	0
17...	13	30900	7.5	3000	2800	590	370	5700	45	300	190	0
18-27	10	19100	7.7	2700	2500	590	290	3600	30	140	190	0
28...	11	29000	7.6	3000	2800	650	330	5900	47	250	190	0
29-31	15	19200	7.6	2600	2500	580	290	3600	30	140	190	0
FEB												
01-05	17	18200	8.1	2700	2500	600	290	3500	29	130	190	0
06...	17	27100	8.2	2900	2800	620	330	4900	40	200	190	0
07...	15	18600	8.2	2700	2500	600	280	4000	34	130	180	0
08...	14	26100	8.2	2800	2700	590	330	5900	48	200	190	0
09-12	15	19000	8.1	2700	2500	600	280	3600	30	140	190	0
13-14	15	26800	8.0	2500	2400	390	380	5200	45	200	180	0
15...	15	19900	8.2	2400	2300	540	260	3700	33	150	180	0
16-21	14	24000	8.0	2700	2600	570	310	4900	41	180	180	0
22-28	15	19000	7.9	2600	2400	570	280	3800	33	140	180	0
MAR												
01-31	10	24200	7.9	2800	2600	560	330	5200	43	210	160	0
APR												
01-30	7.5	24300	7.6	3400	3200	650	420	5200	39	200	160	0
MAY												
01-31	6.4	25500	7.6	2700	2600	500	360	5200	43	210	150	0
JUN												
01-02	98	28300	7.6	2900	2700	500	390	5800	47	230	150	0
03...	1240	1800	7.5	810	740	290	20	93	1.4	7.8	86	0
04...	130	3380	7.4	1300	1200	440	43	290	3.5	15	70	0
05-07	28	5380	7.7	1400	1300	460	64	640	7.4	28	82	0
08-12	10	11100	7.5	1700	1600	480	120	1800	19	71	110	0
13-17	9.2	18000	7.6	2300	2200	580	210	3400	31	130	150	0
18-30	4.4	26000	7.5	2700	2600	610	290	5400	45	210	160	0
JUL												
01-23	6.9	27400	8.0	2800	--	550	340	5900	49	220	--	--
24-31	13	19900	8.0	2300	--	500	260	4000	36	140	--	--
AUG												
01-31	7.5	21600	7.5	2800	--	640	300	4300	35	170	--	--
SEP												
01-24	14	18800	7.7	2500	2400	470	330	3700	32	150	--	--
25...	945	21300	7.7	2200	2100	420	290	4200	39	210	--	--
26...	22500	1080	7.7	360	260	110	21	71	1.6	5.4	--	--
27...	2980	625	7.8	240	140	70	15	40	1.1	4.4	--	--
28-30	359	2250	7.9	460	370	120	40	330	6.7	16	--	--
WTD. AVG.	--	4170	7.7	696	562	175	63	719	6.9	32	--	--
TIME WTD.												
AVG.	89	24000	7.7	2830	2700	578	336	4930	40	197	--	--
TOT. LOAD (TONS)	--	--	--	--	--	15300	5550	63000	--	2820	--	--

08407000 PECOS RIVER AT PIERCE CANYON CROSSING, NEAR MALAGA, NM--Continued

CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS S102) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT												
01-06	150	3400	17000	.7	20	--	31800	43.2	524	--	--	--
07-23	150	2700	11000	.9	19	--	22000	29.9	517	--	--	--
24-31	150	2700	8600	.7	17	--	18000	24.5	535	--	--	--
NOV												
01-11	140	2900	10000	.9	11	--	20500	27.9	421	--	--	--
12-26	130	2700	8600	.7	9.0	--	18200	24.8	319	--	--	--
27-30	150	2700	12000	.8	9.7	--	23700	32.2	365	--	--	--
DEC												
01-11	160	3000	11000	.9	13	--	22400	30.5	508	--	--	--
12-15	150	2600	7200	.9	15	--	15800	21.5	354	--	--	--
16-22	160	3100	9900	.8	13	--	20600	28.0	584	--	--	--
23-31	160	2400	7100	.9	16	--	15100	20.5	436	--	--	--
JAN												
01-09	160	2100	6700	.9	15	--	13900	18.9	488	--	--	--
10-16	160	2300	6300	.9	15	--	13700	18.6	518	--	--	--
17...	160	2500	11000	1.0	13	--	20600	28.0	723	--	--	--
18-27	160	2200	5700	.9	15	--	12600	17.1	354	--	--	--
28...	160	2500	9500	1.0	13	--	19200	26.1	570	--	--	--
29-31	160	2200	5900	.9	14	--	12800	17.4	518	--	--	--
FEB												
01-05	160	2200	5800	.9	14	--	12600	17.1	578	--	--	--
06...	160	2200	8700	.9	13	--	17100	23.3	785	--	--	--
07...	150	2300	6200	.9	15	--	13600	18.5	551	--	--	--
08...	160	2200	8000	.8	12	--	17300	23.5	654	--	--	--
09-12	160	2200	5800	.9	14	--	12700	17.3	514	--	--	--
13-14	150	2200	8600	.8	12	--	17100	23.3	693	--	--	--
15...	150	2100	6100	.9	13	--	13000	17.7	527	--	--	--
16-21	150	2300	7700	.8	13	--	16100	21.9	609	--	--	--
22-28	150	2200	6400	.9	13	--	13500	18.4	572	--	--	--
MAR												
01-31	130	2400	8000	.8	10	--	16800	22.8	454	--	--	--
APR												
01-30	130	2600	8100	.9	12	--	17300	23.5	350	--	--	--
MAY												
01-31	120	2500	8600	.9	12	17900	17500	23.8	302	--	1600	20
JUN												
01-02	120	2900	8700	.9	23	--	18600	25.3	4920	--	--	--
03...	71	670	230	.3	8.8	--	1360	1.85	4550	--	--	--
04...	57	980	450	.2	17	--	2270	3.09	797	--	--	--
05-07	67	1200	1100	.3	11	--	3540	4.81	268	--	--	--
08-12	90	1400	3000	.4	13	--	6940	9.44	187	--	--	--
13-17	120	1600	5500	.5	12	--	11500	15.6	286	--	--	--
18-30	130	2300	8600	.5	20	--	17500	23.8	208	--	--	--
JUL												
01-23	120	2900	9300	.9	13	--	19300	26.2	360	.15	--	--
24-31	110	2300	6400	.9	13	--	13700	18.6	481	.07	--	30
AUG												
01-31	120	2600	7100	.8	18	--	15200	20.7	308	.80	--	--
SEP												
01-24	110	2500	5900	.8	13	13100	13100	17.8	495	--	1200	10
25...	110	2000	6300	.6	8.4	--	13500	18.4	34400	--	1200	10
26...	100	240	110	.2	8.7	--	627	.85	38100	--	90	0
27...	100	150	56	.2	8.7	--	405	.55	3260	--	90	10
28-30	98	350	540	.2	6.3	1420	1460	1.99	1420	--	160	10
WTD. AVG.	103	552	1140	.3	9.2	--	2750	3.74	--	--	--	--
TIME WTD.												
AVG.	133	2480	7900	.8	14	--	16500	22.5	--	--	--	--
TOT. LOAD (TONS)	8990	48300	99600	25	810	--	241000	--	--	--	--	--

## RIO GRANDE BASIN

08407000 PECOS RIVER AT PIERCE CANYON CROSSING, NEAR MALAGA, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39800	29000	37000	26200	18200	22900	25000	25700	28300	28800	19200	22300
2	41100	29900	34800	19900	18200	23100	25500	25400	28200	29200	19500	21400
3	48200	30600	32000	21000	16300	23400	25100	25200	1800	29200	19200	19900
4	46700	29200	29900	18300	18500	23700	25000	24900	3380	28700	19500	19600
5	46900	30300	32600	17900	19900	21800	24800	24600	4680	28300	20000	19300
6	47100	31000	41700	17300	27100	20000	24800	24400	5520	27900	20400	19000
7	34200	32900	34200	19300	18600	19700	25000	24200	6970	27700	20500	19000
8	29500	32100	22700	24700	26100	20300	25100	23900	8280	27400	20600	19000
9	34500	31300	35400	28800	17400	22000	25600	23700	10500	27800	20700	18000
10	31100	31600	35200	20800	19600	21800	25700	23600	11400	27700	20900	18400
11	30300	30300	27800	21000	17800	22700	25800	23700	12200	27400	21100	18500
12	29400	25900	23200	17600	21000	23000	26000	23700	13500	27500	21400	18700
13	29400	27900	20500	22200	24700	23700	21500	23800	16500	27000	22400	18600
14	25400	26400	25500	21500	29000	24500	22400	24100	17200	27800	22800	18400
15	23900	25900	25500	19700	19900	25200	22600	24600	17700	27400	22900	18400
16	29400	23200	32300	18400	26800	25600	23300	24700	18800	26500	22700	18900
17	31100	25200	34900	30900	24900	25500	23200	24900	20100	26400	22700	18900
18	28700	25900	32300	19300	25100	25500	23600	25200	21000	26300	22900	18000
19	30300	28700	27600	21700	22500	25400	23600	25400	21800	26100	22000	---
20	32100	30800	26400	17500	23400	24900	23700	25400	22600	26000	22100	19900
21	30800	31400	29000	23200	21200	25100	24000	25800	22800	26200	22100	20200
22	32800	27600	31100	17200	19600	25800	24100	26000	23700	26400	22500	20200
23	33100	25000	22500	15900	18000	25900	24400	26300	24200	26500	22900	18100
24	27800	24400	18200	15900	16300	25700	24600	26500	26100	20600	23200	14900
25	21700	26200	22300	19300	19900	25800	24600	26800	27700	19700	23200	21300
26	29600	27300	22400	20600	20900	26000	24500	27200	28800	19400	23000	1080
27	27500	34100	29100	19400	19200	26400	24500	27700	29400	18700	22600	625
28	27400	35200	19400	29000	21300	27200	---	28000	29200	19900	21900	1470
29	23600	34000	18700	17600	---	27100	24800	28100	29700	19900	21400	2660
30	27700	34300	22000	17900	---	27000	24000	28200	29400	19700	21700	3890
31	28000	---	23000	22100	---	27000	---	28300	---	19700	21900	---
MEAN	32200	29300	28000	20700	21100	24300	24400	25500	18700	25400	21600	16200

WTR YR 1978 MEAN 24000 MAX 48200 MIN 625

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	19.5	14.5	11.0	7.0	15.0	22.0	24.0	24.0	29.5	30.0	26.0
2	23.0	16.5	10.0	4.0	7.5	14.5	22.0	21.0	24.0	27.0	33.0	26.5
3	24.0	16.5	9.0	9.0	7.0	11.5	21.0	17.0	17.5	27.0	27.0	27.0
4	22.5	13.0	11.5	5.5	8.0	10.0	25.0	17.5	21.0	32.0	26.0	25.0
5	22.0	14.0	12.0	7.0	8.0	9.5	22.0	25.0	25.5	29.0	25.0	25.0
6	23.0	15.0	16.0	6.0	12.0	12.0	24.5	21.0	24.0	30.0	25.0	25.0
7	22.0	17.0	7.0	9.5	9.0	12.5	20.5	20.0	28.0	30.0	28.0	25.0
8	21.5	14.5	7.0	10.5	10.0	16.5	21.0	20.5	28.5	29.0	29.5	24.0
9	21.0	16.0	10.5	11.0	8.0	15.5	21.0	20.5	27.0	30.5	25.0	26.0
10	18.0	13.0	9.5	6.0	8.5	15.5	18.5	22.0	28.0	27.0	29.5	25.0
11	21.0	12.0	6.0	6.0	7.5	18.0	16.5	21.0	26.0	30.0	29.5	28.0
12	17.0	10.5	9.0	5.0	12.5	15.5	17.0	23.0	25.0	29.0	26.5	28.0
13	19.0	12.5	10.0	8.5	11.0	14.0	18.5	25.0	27.0	29.0	29.5	29.0
14	22.0	12.0	12.0	5.5	12.0	15.5	20.0	24.0	29.0	28.5	31.0	28.0
15	19.0	12.5	7.5	6.5	6.5	14.0	20.0	24.0	28.0	30.0	31.0	26.0
16	18.0	14.0	13.5	8.5	9.5	14.5	22.0	24.0	27.0	29.0	28.0	25.5
17	20.0	12.5	11.5	9.5	10.0	16.5	20.5	22.0	28.0	29.5	29.0	26.5
18	19.5	12.0	11.0	4.5	8.0	13.0	20.0	23.0	25.5	30.0	30.5	27.0
19	21.0	15.0	9.0	7.0	7.0	16.0	19.0	25.0	29.0	29.0	29.0	---
20	23.0	15.0	7.0	6.0	9.0	20.5	19.0	24.0	30.0	27.0	28.0	25.0
21	22.5	15.0	7.0	7.0	6.5	20.0	19.0	24.0	30.0	29.0	28.0	21.0
22	21.0	10.0	8.0	5.0	8.0	23.0	20.0	24.5	30.0	28.0	29.0	20.0
23	20.5	9.5	6.0	4.0	9.0	21.0	23.0	25.0	29.0	28.0	29.0	18.0
24	18.0	10.0	7.5	5.0	9.5	20.5	20.0	25.0	27.0	27.5	30.0	19.0
25	16.5	10.0	8.5	4.0	12.5	17.5	22.5	25.5	26.0	26.5	27.5	17.0
26	23.0	10.0	8.0	5.5	15.0	17.5	21.0	26.0	31.0	27.0	29.0	17.0
27	19.0	15.0	11.5	5.0	13.0	20.5	24.0	26.0	28.0	30.0	28.0	16.0
28	19.0	14.0	6.0	11.5	14.5	20.0	---	25.5	26.0	31.0	27.0	17.5
29	19.0	13.0	6.5	7.0	---	19.0	24.0	25.0	29.5	29.0	25.0	19.0
30	21.0	11.5	8.0	7.0	---	23.0	22.0	25.5	28.0	26.0	24.0	21.0
31	21.0	---	9.0	9.0	---	20.5	---	25.0	---	27.0	24.5	---
MEAN	21.0	13.5	9.5	7.0	9.5	16.5	21.0	23.0	27.0	28.5	28.0	23.5

WTR YR 1978 MEAN 19.0 MAX 33.0 MIN 4.0

08407500 PECOS RIVER AT RED BLUFF, NM  
(National stream-quality accounting network and pesticide program station)

LOCATION.--Lat 32°04'30", long 104°02'21", in SW¼NW¼ sec.1, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13060011, on right bank at Red Bluff, 0.2 mi (0.3 km) downstream from Red Bluff Draw, 1.6 mi (2.6 km) northwest of the El Paso Natural Gas (Pecos River) compressor station, 5.2 mi (8.4 km) north of the New Mexico-Texas state line, 5.5 mi (8.8 km) upstream from Delaware River, and at mile 411.2 (661.6 km). Water-quality sampling site 1.4 (2.3 km) downstream at mile 409.8 (659.4 km).

DRAINAGE AREA.--19,540 mi<sup>2</sup> (50,600 km<sup>2</sup>), approximately (contributing area).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,850.05 ft (368.695 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow regulated by storage in Lake Sumner, Lake McMillan, and Lake Avalon (stations 08384000, 08400500, 08403800), and by several small diversion dams that divert for power or irrigation. Diversions and ground-water withdrawals above station for irrigation of about 202,000 acres (820 km<sup>2</sup>), 1959 determination.

AVERAGE DISCHARGE.--41 years, (1933-78), 177 ft<sup>3</sup>/s (5.013 m<sup>3</sup>/s), 128,200 acre-ft/yr (158 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 111,000 ft<sup>3</sup>/s (3,140 m<sup>3</sup>/s) Aug. 23, 1966, gage height, 33.32 ft (10.156 m), from rating curve extended above 30,000 ft<sup>3</sup>/s (850 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; minimum, 0.19 ft<sup>3</sup>/s (0.005 m<sup>3</sup>/s) Aug. 1, 1966.

The flood of Aug. 23, 1966, exceeded all floods at this location.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1904 reached a stage of 28.0 ft (8.53 m), from information by Panhandle and Santa Fe Railway Co. (For dates of other historical floods see stations 08405000, 08406500.)

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft<sup>3</sup>/s (51 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
June 2	2130	12,800 362	15.08 4.596
Sept. 26	1500	*29,400 833	20.57 6.270

Minimum discharge, 0.42 ft<sup>3</sup>/s (0.012 m<sup>3</sup>/s) Mar. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	8.6	3.6	8.6	15	11	7.1	6.2	20	5.5	6.5	6.8
2	1.2	8.2	4.4	9.0	16	11	9.4	50	1800	6.0	6.2	6.8
3	1.1	7.4	7.8	10	17	13	9.0	10	1870	6.0	133	7.8
4	2.6	7.1	8.6	11	17	13	8.6	12	273	5.5	13	8.6
5	6.2	7.1	8.6	12	16	13	6.8	13	102	5.5	11	13
6	9.9	6.5	5.9	11	17	12	6.2	8.6	44	5.5	9.4	9.9
7	12	6.8	5.6	12	19	12	5.6	7.1	25	5.3	7.8	11
8	9.9	6.5	8.2	12	16	10	5.0	7.4	5.0	5.0	7.1	10
9	8.6	7.4	9.0	12	13	9.0	4.4	6.8	5.0	4.7	7.1	7.1
10	7.8	7.4	8.6	12	14	9.0	5.9	5.0	5.0	4.4	6.8	6.2
11	8.6	7.4	9.0	12	14	10	6.5	4.0	5.0	5.3	4.2	5.9
12	8.2	7.8	9.0	11	17	9.9	7.8	4.0	5.0	5.9	3.4	6.2
13	7.1	7.8	9.4	13	18	9.9	9.4	6.5	5.0	7.1	7.8	6.8
14	6.5	8.2	8.6	13	16	9.9	10	6.5	5.0	7.4	8.2	7.1
15	6.2	8.2	7.1	14	16	9.4	8.2	5.9	5.0	7.1	7.8	7.8
16	5.9	8.2	6.2	15	16	9.0	6.8	5.0	5.0	7.4	7.1	8.2
17	5.9	6.8	8.6	14	17	6.8	5.9	4.0	5.0	7.4	6.2	7.4
18	5.9	4.7	7.4	12	16	6.8	6.5	3.4	5.0	7.1	6.5	6.8
19	5.9	4.0	9.9	16	16	8.2	5.3	6.7	5.0	6.8	8.8	6.5
20	5.6	4.4	12	16	16	9.0	4.2	9.4	5.0	5.9	8.6	6.2
21	5.6	6.2	9.9	12	16	7.8	4.2	7.4	5.0	5.9	7.4	27
22	5.9	7.8	8.2	11	16	7.8	5.0	8.6	5.0	7.4	6.8	32
23	13	7.8	9.9	9.4	20	3.6	5.3	9.0	5.0	52	6.9	29
24	14	6.5	13	9.0	23	1.4	7.1	7.1	5.0	43	13	143
25	26	5.0	12	8.6	22	.91	7.1	6.5	5.0	29	5.0	1730
26	15	5.9	9.9	8.6	16	.64	5.0	7.8	5.0	18	5.6	17100
27	11	5.3	9.0	8.6	13	.50	4.2	7.1	5.0	12	5.6	6160
28	11	4.4	7.8	8.6	13	1.1	4.0	7.4	5.0	6.5	6.5	951
29	9.9	6.8	8.6	10	---	4.2	5.0	9.0	14	5.9	6.5	342
30	9.9	5.0	9.9	14	---	4.7	5.9	9.0	5.0	5.9	9.0	220
31	9.4	---	9.9	15	---	5.9	---	26	---	5.9	7.4	---
TOTAL	310.3	201.2	265.6	360.4	461	240.45	191.4	286.4	4258.0	312.3	356.2	26890.1
MEAN	10.0	6.71	8.57	11.6	16.5	7.76	6.38	9.24	142	10.1	11.5	896
MAX	59	8.6	13	16	23	13	10	50	1870	52	133	17100
MIN	1.1	4.0	3.6	8.6	13	.50	4.0	3.4	5.0	4.4	3.4	5.9
AC-FT	615	399	527	715	914	477	380	568	8450	619	707	53340

CAL YR 1977	TOTAL	5247.70	MEAN	14.4	MAX	81	MIN	1.1	AC-FT	10410
WTR YR 1978	TOTAL	34133.35	MEAN	93.5	MAX	17100	MIN	.50	AC-FT	67700

08407500 PECOS RIVER AT RED BLUFF, NM -- Continued

## WATER-QUALITY RECORDS

LOCATION.--Samples collected 2 ml (3.2 km) downstream from discharge station.

PERIOD OF RECORD.--Water years 1937 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1937 to current year.

WATER TEMPERATURES: October 1952 to current year.

REMARKS.--No appreciable inflow between discharge station and sampling point except during periods of heavy local rains.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 51,400 micromhos June 20, 1972; minimum daily, 268 micromhos Sept. 19, 1946.

WATER TEMPERATURES: Maximum, 36.0°C July 31, 1966, July 13, 1970; minimum, 1.0°C Jan. 10, 11, 1962, Jan. 13, 1963.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 46,500 micromhos Oct. 3; minimum daily, 525 micromhos Sept. 27.

WATER TEMPERATURES: Maximum, 32.5°C June 25, 28; minimum, 3.5°C Jan. 11.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	
OCT 07...	0800	13	36000	8.1	20.5	22.0	4	--	6.4	100	
NOV 03...	1030	7.1	31000	8.2	17.5	15.5	9	--	10.3	120	
DEC 08...	1000	8.2	29500	8.2	29.5	9.5	6	--	10.2	67	
JAN 11...	0918	12	21500	8.3	-1.0	3.5	2	--	11.6	480	
FEB 09...	1050	13	17500	8.4	9.0	8.5	3	--	13.3	270	
MAR 08...	1415	9.9	21300	8.3	18.0	14.5	4	--	13.6	72	
APR 06...	1500	6.2	30800	8.1	30.0	23.0	8	--	9.7	150	
MAY 04...	1600	14	21500	8.2	27.0	21.5	10	--	12.1	270	
JUN 14...	1230	5.0	15000	8.0	36.0	28.5	--	3.1	8.9	220	
JUL 19...	0900	7.8	24200	7.5	27.5	26.5	--	1.0	6.5	340	
AUG 16...	1100	7.1	17100	7.9	31.5	26.5	--	2.7	8.4	260	
SEP 27...	1130	4840	525	7.2	20.0	16.0	--	38	7.1	71	
DATE		HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)
OCT 07...	3800	3700	740	470	6000	42	310	120	0	98	
NOV 03...	3100	3000	650	370	6700	52	250	150	0	120	
DEC 08...	3300	3200	670	400	6400	48	250	150	0	120	
JAN 11...	2800	2700	650	290	4200	34	160	160	0	130	
FEB 09...	2300	2200	490	270	3700	33	140	160	1	130	
MAR 08...	2600	2400	530	300	4600	40	170	140	0	110	
APR 06...	3400	3200	690	400	7100	53	280	150	0	120	
MAY 04...	2300	2200	470	270	4100	37	8.2	100	0	82	
JUN 14...	2100	--	560	160	2900	28	94	--	--	73	
JUL 19...	3800	--	800	430	7900	56	140	--	--	83	
AUG 16...	2000	--	420	230	3200	31	110	--	--	66	
SEP 27...	240	--	77	12	24	.7	4.0	--	--	100	

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT 07...	660	12000	1.1	11	26000	20300	--	.12	.09	.07
NOV 03...	2900	9900	.8	8.1	21700	20900	14	.03	.02	.30
DEC 08...	3000	9700	.9	4.8	21000	20500	--	.15	.16	.23
JAN 11...	2600	6600	.9	9.8	14800	14600	--	1.3	1.4	.27
FEB 09...	2400	5700	.8	9.7	12600	12800	--	.93	.92	.14
MAR 08...	2300	7100	.8	6.3	12300	15100	--	.26	.34	.11
APR 06...	2800	11000	.9	2.5	21100	22400	10	.47	.04	.19
MAY 04...	2000	6300	.8	2.0	13400	13200	--	.65	.67	.25
JUN 14...	1700	4400	.4	6.4	10500	--	--	.03	.03	.17
JUL 19...	3000	13000	.6	2.6	26500	--	--	.01	.06	.00
AUG 16...	1700	5300	.6	10	11600	--	--	.03	.03	.00
SEP 27...	130	35	.1	8.9	382	--	--	.41	.44	.19

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT 07...	1.2	1.4	.05	.00	2300	70	50	13	8.9	2.0
NOV 03...	.90	1.2	.07	.00	1900	30	--	6.2	14	3.3
DEC 08...	.97	1.4	.04	.01	1800	20	60	--	5.2	.8
JAN 11...	.58	2.2	.04	.01	1300	70	--	2.9	4.7	1.3
FEB 09...	.61	1.7	.02	.01	1200	10	--	4.0	4.0	--
MAR 08...	.75	1.1	.12	.00	1300	0	50	--	5.6	--
APR 06...	1.0	1.7	.04	.02	1800	20	--	10	6.6	3.0
MAY 04...	1.8	2.7	.12	.01	1200	10	--	15	12	2.7
JUN 14...	1.1	1.3	.00	.01	670	20	60	--	8.1	1.7
JUL 19...	1.2	1.2	.03	.02	2100	50	90	--	10	.9
AUG 16...	1.7	1.7	.05	.00	1000	30	--	17	8.6	4.0
SEP 27...	2.3	2.9	.03	.04	70	140	80	--	29	>10



## RIO GRANDE BASIN

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
OCT 07...	0800	1	0	600	--	2300	30	0	20	20
DEC 08...	1000	1	1	600	600	1800	0	0	30	40
MAR 08...	1415	0	0	200	100	1300	1	1	20	20
JUN 14...	1230	1	1	50	300	670	2	1	10	15
JUL 19...	0900	4	2	300	300	2100	1	0	30	20
SEP 27...	1130	4	1	0	0	70	1	1	20	0

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
OCT 07...	150	0	30	0	220	70	--	3	1000
DEC 08...	0	0	6	2	160	20	3	4	40
MAR 08...	1	0	4	2	170	0	14	10	60
JUN 14...	2	0	6	2	230	20	10	4	170
JUL 19...	0	0	5	2	180	50	12	0	120
SEP 27...	8	1	31	1	14000	140	21	1	480

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 07...	50	.0	.0	1	0	30	0	40	20
DEC 08...	60	.0	.2	2	2	0	0	60	30
MAR 08...	50	.0	.0	4	4	1	0	30	30
JUN 14...	60	.0	.3	1	1	0	0	30	30
JUL 19...	90	.0	.0	0	0	0	0	70	70
SEP 27...	80	.0	.0	1	0	0	0	80	10

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED AS (U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (U-NAT) (80040)	GROSS BETA, DIS- SOLVED AS (CS-137) (03515)	GROSS BETA, SUSP. TOTAL (CS-137) (03516)	GROSS BETA, DIS- SOLVED AS SR/ YT-90 (80050)	GROSS BETA, SUSP. TOTAL (PC/L YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PC/L) (09511)	URANIUM NATURAL DIS- SOLVED (U/L) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (U/L) (80020)
NOV 03...	1030	14	<280	<.4	230	.8	200	.8	.20	5.2	--
APR 06...	1500	10	<240	<.4	180	.8	150	.8	.18	--	7.5

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	ATRA- ZINE, TOTAL (UG/L) (39630)	CHLOR- DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI- AZINON, TOTAL (UG/L) (39570)	DI- ELDRIN, TOTAL (UG/L) (39380)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)
NOV 03...	1030	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 09...	1148	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND
MAY 04...	1600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 16...	1100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA- THION, TOTAL (UG/L) (39530)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	METHYL PARA- THION, TOTAL (UG/L) (39600)	METHYL TRI- THION, TOTAL (UG/L) (39790)	PARA- THION, TOTAL (UG/L) (39540)	SIMA- ZINE TOTAL COUL- SON COND, (UG/L) (39025)	TOX- APHENE, TOTAL (UG/L) (39400)	TOTAL TRI- THION (UG/L) (39786)
NOV 03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 09...	ND	ND	ND	ND	ND	ND	ND	ND	--	ND	ND
MAY 04...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 16...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	TIME	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)
NOV 03...	1030	ND	ND	ND

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 07...	0800	86	2000
NOV 03...	1030	3	90
DEC 08...	1000	0	12
JAN 11...	0918	0	14
FEB 09...	1050	0	15
MAR 08...	1415	0	3
APR 06...	1500	10	65
MAY 04...	1600	35	880
JUN 14...	1230	6	65
JUL 19...	0900	4	920
AUG 16...	1100	14	460
SEP 27...	1130	3400	13000

ND Material specifically tested for but not detected.

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	IDENTIFICATION OF PHYTOPLANKTON											
	NOV 3,77 1030	MAR 8,78 1415	MAY 4,78 1600	JUN 14,78 1230	JUL 19,78 0900	AUG 16,78 1100						
TOTAL CELLS/ML	6000	4600	23000	13000	1300	160000						
DIVERSITY: DIVISION	1.8	0.2	0.2	1.6	1.5	0.3						
..CLASS	1.9	0.9	0.2	1.6	1.6	0.3						
..ORDER	2.2	1.5	0.3	2.4	2.3	1.3						
...FAMILY	2.2	1.6	0.3	2.6	2.6	1.3						
....GENUS	3.0	1.6	0.3	3.1	2.7	2.2						
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
....OOCYSTACEAE												
.....ANKISTRODESMUS	88	1	--	--	--	--	920	7	--	--	*	0
.....CHODATELLA	--	--	--	--	--	--	120	1	--	--	--	--
.....FRANCEIA	--	--	--	--	--	--	*	0	--	--	--	--
.....KIRCHNERIELLA	530	9	--	--	--	--	520	4	--	--	1000	1
.....OOCYSTIS	180	3	--	--	--	--	980	8	--	--	2100	1
...SCENEDESMACEAE												
....SCENEDESMUS	--	--	--	--	--	--	690	6	--	--	2100	1
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CARTERIA	180	3	27	1	--	--	--	--	96	7	--	--
....CHLAMYDOMONAS	220	4	--	--	--	--	1200	10	--	--	--	--
CHRYSOPHYTA												
..BACILLARIOPHYCEAE												
...CENTRALES												
....CHAETOCERACEAE												
.....CHAETOCEROS	--	--	--	--	--	--	--	--	--	--	2100	1
...COSCINODISCACEAE												
....CYCLOTELLA	970#	16	2900#	63	22000#	96	2100#	17	400#	30	*	0
...PENNALES												
....ACHNANTHACEAE												
.....COCCONEIS	--	--	*	0	--	--	--	--	--	--	--	--
....CYMBELLACEAE												
.....CYMBELLA	--	--	--	--	--	--	*	0	--	--	--	--
....NAVICULACEAE												
.....DIPLONEIS	--	--	--	--	--	--	--	--	27	2	--	--
.....GYROSIGMA	--	--	*	0	--	--	--	--	--	--	--	--
....NAVICULA	44	1	54	1	*	0	120	1	300#	22	--	--
...NITZSCHACEAE												
....NITZSCHIA	130	2	590	13	--	--	230	2	82	6	--	--
..CHRYSOPHYCEAE												
...CHRYSONOMADACEAE												
....OCHROMONAS	88	1	--	--	--	--	--	--	14	1	--	--
...SYNURACEAE												
....SYNURA	--	--	900#	20	--	--	--	--	--	--	--	--
CRYPTOPHYTA (CRYPTOMONADS)												
..CRYPTOPHYCEAE												
...CRYPTOMONIDALES												
....CRYPTOCHRYSIDACEAE												
.....CHROOMONAS	180	3	94	2	--	--	--	--	--	--	--	--
...CRYPTOMONODACEAE												
....CRYPTOMONAS	--	--	--	--	--	--	*	0	--	--	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROCOCCOCCALES												
....CHROCOCCOCCAEAE												
.....AGMENELLUM	1100#	18	--	--	--	--	3700#	29	220#	16	46000#	29
....ANACYSTIS	2000#	34	--	--	--	--	350	3	--	--	22000	13
...HORMOGONALES												
....OSCILLATORIACEAE												
.....LYNGBYA	--	--	--	--	--	--	1300	11	--	--	21000	13
....OSCILLATORIA	--	--	--	--	910	4	--	--	--	--	65000#	40
...SPIRULINA	--	--	--	--	--	--	--	--	14	1	--	--
EUGLENOPHYTA (EUGLENOIDS)												
..EUGLENOPHYCEAE												
...EUGLENALES												
....EUGLENACEAE												
.....EUGLENA	130	2	*	0	--	--	--	--	--	--	*	0
PYRRHOPHYTA (FIRE ALGAE)												
..DINOPHYCEAE												
...PERIDINIALES												
....GLENODINIACEAE												
.....GLENODINIUM	180	3	--	--	--	--	--	--	82	6	--	--
...PERIDINIACEAE												
....PERIDINIUM	--	--	--	--	--	--	*	0	110	8	--	--

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%.

08407500 PECOS RIVER AT RED BLUFF, NM--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	LENGTH OF EXPO- SURE (DAYS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00022)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
OCT 07...	0800	44	76.6	62.4	3.99	.107	Polyethylene strip
NOV 03...	1030	60	234	199	28.5	.000	"
DEC 08...	1000	33	85.3	74.5	18.8	8.95	"
JAN 11...	0918	33	6.06	4.96	8.45	.220	"
MAR 08...	1415	27	1.26	.709	1.09	.040	"
APR 06...	1500	29	6.53	3.62	1.54	.030	"
JUL 19...	0900	35	12.9	11.2	37.6	.000	"

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 07...	0800	13	22.0	29	1.0	86
NOV 03...	1030	7.1	15.5	6	.12	94
DEC 08...	1000	8.2	9.5	7	.15	35
JAN 11...	0918	12	3.5	30	.97	67
FEB 09...	1050	13	8.5	30	1.1	99
MAR 08...	1415	9.9	14.5	26	.69	69
APR 06...	1500	6.2	23.0	26	.44	54
MAY 04...	1600	14	21.5	23	.87	90
JUN 14...	1230	5.0	28.5	53	.72	61
JUL 19...	0900	7.8	26.5	66	1.4	36
AUG 16...	1100	7.1	26.5	48	.92	37
SEP 27...	1130	4840	16.0	821	10700	97

## 08407500 PECOS RIVER AT RED BLUFF, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46100	32000	31500	30100	21000	24500	24500	30000	6190	20200	26500	24600
2	46100	31600	32000	28800	21100	23300	24900	28500	6560	20700	27000	24400
3	46500	32800	31500	26400	20500	22700	25500	26800	3620	20900	25800	24700
4	37700	32800	31200	26800	20900	22200	26200	24200	4680	21300	19300	25100
5	37200	32800	31000	25200	21600	21200	26100	20400	19500	21200	16500	24900
6	37100	32700	30900	25200	21300	20500	28200	20600	7770	21500	13100	25200
7	37200	32100	30800	24500	21200	21000	30200	21800	8630	21700	11000	25300
8	40000	31900	30900	24700	21400	21000	29400	22800	9270	22000	10900	25500
9	40500	31800	30800	24800	21400	21300	29700	24000	10100	22200	9370	24800
10	38600	31200	31100	25500	20100	21600	30200	24700	10800	22700	8520	24500
11	38900	31200	31100	26100	20100	21800	30400	25100	11600	22900	8000	24600
12	38500	31000	31000	24800	19600	22100	30600	25600	12700	23600	9540	23900
13	38500	30500	31000	23300	20600	22600	31000	26000	12400	24300	8140	22600
14	38000	29800	30700	21800	20600	23800	31500	26300	13400	25500	7550	21600
15	38000	29800	31800	21500	21600	23800	31500	26500	14000	26400	7500	21300
16	38900	29900	32100	21500	23300	24200	31300	26500	14600	27400	9050	21300
17	38200	30000	32900	24300	23300	24600	31000	26500	15100	29700	9210	21600
18	38600	30100	33600	24300	22500	24600	31000	27100	15400	29900	10900	21700
19	39900	30300	35200	25100	22500	24600	30800	26800	16000	30800	10900	21900
20	40100	30500	35200	24100	22100	24600	30700	22100	16400	31700	13300	22100
21	40200	30600	35000	24100	22100	24100	30700	25500	16800	32300	14700	19700
22	39900	30800	31800	23800	22300	23800	30700	26100	17100	33100	15800	20000
23	20500	31200	31800	23300	24600	23800	30500	26800	17400	19200	17000	18800
24	18600	31500	31600	23600	24800	23600	30400	27200	17600	30100	18600	11500
25	16700	31700	31300	23500	25900	23900	30000	27700	17800	24700	20000	2100
26	19400	31900	31200	23400	26100	23900	29900	26500	18000	25600	21600	693
27	23000	32300	32000	23200	25000	24400	29900	28600	18200	25400	22400	1070
28	26100	32200	32400	23200	24900	24300	30000	28900	15300	24400	23300	3660
29	28500	32500	32800	23000	---	24400	30100	29100	17500	25200	24000	9120
30	31000	32400	32800	22900	---	24500	30300	29500	19400	25600	24500	9570
31	30800	---	31900	22800	---	24600	---	29600	---	26000	24200	---
MEAN	35100	31400	32000	24400	22200	23300	29600	26100	13500	25100	15700	18800
WTR YR 1978	MEAN	24800	MAX	46500	MIN	693						

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	17.0	12.0	6.5	6.5	13.5	22.0	24.5	20.0	31.5	30.5	26.0
2	20.0	17.0	10.0	6.0	6.0	13.5	21.0	20.5	20.5	32.0	30.5	25.0
3	20.0	16.0	11.5	6.0	8.5	10.0	21.5	22.0	20.0	31.5	27.5	27.0
4	21.0	16.0	11.5	6.5	9.0	10.0	21.0	24.5	23.5	30.5	25.5	26.0
5	21.5	15.5	15.0	8.0	9.5	11.0	21.5	23.5	26.0	31.0	25.5	27.0
6	22.0	17.0	10.5	8.5	9.5	13.0	22.5	28.0	24.5	30.5	28.5	27.5
7	22.0	15.5	10.0	8.0	10.0	13.0	22.5	20.5	26.5	29.0	30.5	26.0
8	22.5	15.0	12.5	8.0	9.5	13.5	22.0	24.5	28.0	30.0	28.0	27.0
9	19.5	14.0	9.5	7.5	9.0	14.5	19.5	25.0	26.0	29.5	28.5	27.5
10	22.0	13.0	9.0	6.0	9.0	15.0	18.0	22.0	27.5	28.5	28.5	28.0
11	18.5	13.0	8.5	6.5	9.5	15.5	19.0	26.5	30.0	29.5	29.0	28.0
12	19.0	13.0	10.0	8.0	10.0	14.5	19.5	26.0	29.0	30.0	30.0	28.0
13	19.0	13.5	10.0	7.5	10.0	15.0	20.0	25.0	29.5	31.0	30.0	28.5
14	21.0	14.0	9.5	7.5	9.0	15.0	22.0	26.5	28.0	30.0	27.5	28.0
15	19.0	15.0	9.5	8.5	10.0	14.5	22.0	27.0	29.0	31.0	26.0	28.0
16	18.5	14.0	9.5	9.0	10.0	15.0	23.0	27.0	30.0	32.0	28.0	28.0
17	20.5	13.5	9.0	6.0	9.0	15.0	23.0	26.0	29.5	31.0	30.0	28.5
18	20.5	14.0	9.0	7.0	8.5	15.5	22.0	26.5	29.5	30.5	30.0	27.5
19	20.0	14.0	9.5	6.5	7.0	15.5	21.0	25.0	28.5	29.5	30.5	27.0
20	20.0	14.0	9.0	6.0	8.0	18.0	22.0	27.0	30.5	30.0	30.5	24.0
21	19.0	13.0	8.0	5.0	8.0	18.0	22.5	26.5	30.0	27.0	29.0	20.0
22	21.5	13.0	7.5	5.5	9.5	20.0	22.5	27.0	29.5	31.0	29.0	19.0
23	20.0	12.0	7.5	6.0	10.0	20.0	22.5	26.5	27.5	26.0	29.0	19.0
24	20.0	12.0	9.0	5.0	11.5	20.0	22.0	28.0	29.5	30.0	30.0	19.0
25	20.0	11.5	9.0	6.0	12.5	16.5	22.0	28.0	32.5	31.0	30.0	17.5
26	20.0	12.5	7.0	7.0	12.5	18.5	22.0	27.0	32.0	32.0	30.5	17.0
27	19.0	12.5	6.0	6.5	13.0	22.0	22.0	29.0	24.5	30.0	30.5	17.0
28	21.0	13.5	8.0	7.0	14.0	18.0	24.5	29.0	32.5	28.0	27.0	19.0
29	21.0	12.0	9.0	6.0	---	18.0	24.5	26.0	26.0	30.0	26.0	21.0
30	20.0	12.0	10.0	6.0	---	22.0	24.0	27.0	28.5	28.5	26.5	22.5
31	20.5	---	9.5	5.5	---	24.5	---	26.0	---	28.0	25.5	---
MEAN	20.5	14.0	9.5	6.5	9.5	16.0	22.0	25.5	27.5	30.0	28.5	24.5
WTR YR 1978	MEAN	19.5	MAX	32.5	MIN	5.0						

LOCATION.—Lat 32°01'23", long 104°03'15", in NE¼, SW¼ sec.23, T.26 S., R.28 E., Eddy County, Hydrologic Unit 13070002, near center of channel on downstream side of pier of bridge on U.S. Highway 285, 2.1 mi (3.4 km) north of the New Mexico-Texas state line, 3.6 mi (5.8 km) southwest of Red Bluff, 3.7 mi (6.0 km) upstream from mouth and 14 mi (22.5 km) south of Malaga. Mouth at Pecos River mile 405.6 (652.6 km).

PERIOD OF RECORD.--April 1912 to September 1913, May 1914 to June 1915, October 1937 to current year. Published as "near Malaga" 1912-13, and as "near Angeles, Tex." 1914-15.

REMARKS.--Records fair. One small upstream diversion. Several observations of water temperature during year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81,400 ft<sup>3</sup>/s (2,310 m<sup>3</sup>/s) Oct. 2, 1955, gage height, 27.0 ft (8.23 m), from floodmarks, from rating curve extended above 1,500 ft<sup>3</sup>/s (42.5 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 8.65 ft (2.637 m), 12.84 ft (3.914 m), 18.00 ft (5.486 m), and 27.0 ft (8.230 m); no flow many days most years.

Maximum discharge since at least 1911 is that of Oct. 2, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,040 ft<sup>3</sup>/s (483 m<sup>3</sup>/s) at 2300 hours Sept. 25, gage height, 14.61 ft (4.453 m), no other peak above base of 1,700 ft<sup>3</sup>/s (48 m<sup>3</sup>/s); no flow at times.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.67	1.7	2.1	2.2	1.9	1.7	.15	.00	.00	.00	.00
2	.00	.67	1.7	2.0	2.1	1.9	1.6	.93	510	.00	.03	2.0
3	.00	.67	1.7	2.0	2.1	1.9	1.3	.33	450	5.0	35	79
4	.00	.81	1.7	2.1	2.0	1.9	1.3	.68	21	2.0	1.6	154
5	.00	1.0	1.7	2.1	2.0	1.9	1.2	.92	6.0	.20	.22	18
6	.00	1.0	1.6	2.1	2.0	1.7	1.2	.65	3.0	.00	.00	4.0
7	.00	1.1	1.6	2.1	2.0	1.6	1.2	.40	2.0	17	.00	1.3
8	.01	1.1	1.6	2.0	2.0	1.6	1.3	.15	1.0	23	.00	.67
9	.45	1.0	1.6	2.0	2.0	1.6	1.3	.07	.70	5.1	.00	.38
10	.54	1.1	1.6	2.0	1.9	1.9	1.2	.05	.40	1.2	3.3	.15
11	.49	1.2	1.6	2.1	2.0	1.8	1.3	.06	.20	.50	2.7	.08
12	.48	1.4	1.7	2.1	2.3	1.7	1.3	.04	.10	.28	.22	.00
13	.42	1.4	1.8	2.1	2.1	1.6	1.2	.03	.00	.13	.00	.00
14	.43	1.5	1.9	2.1	2.1	1.6	1.3	.03	.00	.15	.00	.00
15	.44	1.5	1.9	2.1	1.9	1.6	1.3	.00	.00	.02	.00	.00
16	.45	1.5	1.7	2.1	1.9	1.7	1.2	.00	.00	.00	.00	.00
17	.46	1.4	1.7	2.1	1.9	1.6	.85	.00	.00	.00	.00	.00
18	.44	1.5	1.7	2.1	1.9	1.7	.73	.00	.00	.00	.00	.00
19	.47	1.5	1.7	2.0	1.8	1.7	.68	.00	.00	.00	.00	.00
20	.47	1.5	1.8	2.1	1.8	1.8	.69	.00	.00	.00	.00	.00
21	.47	1.4	1.8	2.1	1.8	1.7	.73	.00	.00	.00	.00	9.9
22	.52	1.4	1.8	2.1	1.8	1.8	.84	.00	.00	.00	.00	9.1
23	4.7	1.5	1.9	2.1	1.8	1.7	.85	.00	.00	.39	.00	2.3
24	1.7	1.5	1.9	2.1	1.9	1.7	.56	.00	.00	17	.00	81
25	.84	1.6	1.9	2.1	1.8	1.7	.46	9.3	.00	6.2	.00	4960
26	.74	1.6	1.9	2.1	1.8	1.7	.58	11	.00	.91	.00	3180
27	.81	1.5	1.9	2.1	1.9	1.8	.52	1.1	.00	.04	.00	269
28	1.0	1.6	2.0	2.1	1.9	1.7	.54	.00	.00	.00	.00	135
29	1.0	1.6	2.0	2.0	---	1.6	.60	.00	.00	.00	.00	104
30	.95	1.7	2.1	2.0	---	1.6	.43	.00	.00	.00	.00	86
31	.74	---	2.1	2.1	---	1.5	---	.00	---	.00	.00	---
TOTAL	19.02	38.92	55.3	64.3	54.7	53.2	29.96	25.89	994.40	79.12	43.07	9095.88
MEAN	.61	1.30	1.78	2.07	1.95	1.72	1.00	.84	33.1	2.55	1.39	303
MAX	4.7	1.7	2.1	2.1	2.3	1.9	1.7	11	510	23	35	4960
MIN	.00	.67	1.6	2.0	1.8	1.5	.43	.00	.00	.00	.00	.00
AC=FT	38	77	110	128	108	106	59	51	1970	157	85	1804

CAL YR 1977	TOTAL	832.97	MEAN	2.28	MAX	139	MIN	.00	AC-FT	1650
WTR YR 1978	TOTAL	10553.76	MEAN	28.9	MAX	4960	MIN	.00	AC-FT	20930

## 08410000 RED BLUFF RESERVOIR NEAR ORLA, TX

LOCATION (revised).--Lat 31°54'04", long 103°54'35", Reeves County, Hydrologic Unit 13070001, at right end of Red Bluff Dam on the Pecos River, 2.8 mi (4.5 km) upstream from Salt Creek, and 5.2 mi (8.4 km) north of Orla.

DRAINAGE AREA.--20,720 mi<sup>2</sup> (53,660 km<sup>2</sup>), approximately (contributing area).

PERIOD OF RECORD.--February 1937 to current year. Monthly contents only for some periods, published in WSP 1312.

GAGE.--Nonrecording gage. Datum of gage is 0.43 ft (0.131 m) below National Geodetic Vertical Datum of 1929.

REMARKS.--The reservoir is formed by a rock-faced earthfill dam 9,200 ft (2,800 m) long. The dam was completed and storage began in September 1936. The dam and reservoir are owned and operated by the Red Bluff Water Power Control District. The water is used for power development and for irrigation from Mentone to Grandfalls. The uncontrolled emergency spillway, 790 ft (241 m) wide, is a cut through natural ground located to the right of right end of dam. The controlled service spillway is equipped with 12 tainter gates that are 25 by 15 ft (8 by 5 m) high. Inflow is partly regulated by storage in Lake Sumner, Lake McMillan, and Lake Avalon, total combined capacity 154,400 acre-ft (190 hm<sup>3</sup>), and by several small diversion dams that divert water for power or irrigation. The capacity curve is based on Geological Survey topographic map, survey of 1925. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam.....	2,856.0	-
Crest of spillway.....	2,845.0	340,000
Top of gates (top of conservation pool).....	2,842.0	310,000
Crest of spillway.....	2,827.0	166,500
Lowest gated outlet (invert).....	2,764.0	3,000

COOPERATION.--Gage-height records and capacity curve were furnished by the Red Bluff Water Power and Control District.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents observed, 352,000 acre-ft (434 hm<sup>3</sup>) Sept. 27, 28, 1941, gage height, 2,846.2 ft (867.52 m), observed on nonrecording gage at service spillway (affected by variable drawdown due to flow through tainter gates); minimum observed, 11,080 acre-ft (13.7 hm<sup>3</sup>) May 13, 1948, gage height, 2,781.4 ft (847.77 m).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 96,500 acre-ft (119 hm<sup>3</sup>) Sept. 30, gage height, 2,815.5 ft (858.16 m); minimum observed, 20,960 acre-ft (25.8 hm<sup>3</sup>) Oct. 2, gage height, 2,790.4 ft (850.51 m).

Capacity table (gage height, in feet, and total contents, in acre-feet)

2,790.0	20,400	2,810.0	71,500
2,796.0	30,300	2,816.0	99,000
2,803.0	47,000		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21100	22160	22280	22880	23760	25070	25240	24710	24520	34400	33560	32720
2	20960	22040	22280	22880	23950	25070	25240	24710	24520	34400	33560	32720
3	21100	22040	22400	22880	23950	25070	25240	24710	31300	34400	33560	32720
4	21100	22040	22400	22880	23950	25070	25240	24710	35060	34400	33560	32720
5	21100	22040	22400	22880	23950	25240	25240	24710	35280	34190	33770	32930
6	21100	22040	22400	23000	24140	25240	25240	24520	35500	34190	33770	32930
7	21100	22040	22400	23000	24140	25240	25070	24520	35500	34190	33770	33140
8	21100	22160	22400	23000	24140	25240	25070	24520	35500	34190	33770	33140
9	21100	22160	22400	23000	24330	25240	25070	24520	35500	34190	33770	32930
10	21100	22160	22400	23000	24330	25240	25070	24520	35500	33980	33560	32930
11	21100	22160	22400	23000	24330	25240	25070	24520	35500	33980	33560	32930
12	21100	22160	22400	23190	24330	25240	25070	24520	35500	33980	33560	32930
13	21100	22160	22520	23190	24520	25240	25070	24520	35280	33770	33350	32930
14	21240	22160	22520	23190	24520	25240	25070	24330	35280	33770	33350	32930
15	21240	22160	22520	23190	24520	25240	25070	24330	35280	33770	33350	32930
16	21240	22160	22520	23190	24520	25240	25070	24330	35280	33560	33350	32930
17	21240	22160	22520	23190	24520	25240	25070	24330	35060	33560	33350	32930
18	21240	22160	22520	23190	24520	25240	24900	24330	35060	33560	33140	32930
19	21240	22160	22640	23380	24710	25240	24900	24140	35060	33350	33140	32930
20	21240	22280	22640	23380	24710	25240	24900	24520	34840	33350	32930	32720
21	21240	22280	22640	23380	24710	25240	24900	24710	34840	33350	32930	32930
22	21240	22280	22640	23380	24710	25410	24900	24710	34840	33350	32930	33140
23	21520	22280	22640	23380	24900	25410	24900	24710	34620	33350	33140	33350
24	21800	22280	22640	23570	24900	25410	24900	24710	34620	33770	32930	33350
25	21920	22280	22640	23570	24900	25410	24710	24710	34400	33770	32930	35940
26	21920	22280	22640	23570	24900	25410	24710	24710	34400	33770	32930	61400
27	21920	22280	22640	23570	24900	25240	24710	24710	34400	33770	32930	89000
28	22040	22280	22760	23570	24900	25240	24710	24520	34190	33770	32930	95000
29	22040	22280	22760	23760	---	25240	24710	24520	34400	33560	32930	96000
30	22040	22280	22760	23760	---	25240	24710	24520	34400	33560	32720	96500
31	22040	---	22880	23760	---	25240	---	24520	---	33560	32720	---
MAX	22040	22280	22880	23760	24900	25410	25240	24710	35500	34400	33770	96500
MIN	20960	22040	22280	22880	23760	25070	24710	24140	24520	33350	32720	32720
(†)	2791.2	2791.4	2791.9	2792.4	2793.0	2793.2	2792.9	2792.8	2798.0	2797.6	2797.2	2815.5
(#)	+940	+240	+600	+880	+1140	+340	-530	-190	+9880	-840	-840	+63780

CAL YR 1977 MAX 70700 MIN 20960 # -45820  
WTR YR 1978 MAX 96500 MIN 20960 # +75400

† Gage height, in feet, at end of month.

# Change in contents, in acre-feet.

08412500 PECOS RIVER NEAR ORLA, TX

LOCATION.--Lat 31°52'21", long 103°49'52", Reeves County, Hydrologic Unit 13070001, on right bank at bridge on Farm Road 652, 5.5 mi (8.8 km) downstream from Salt Creek (Screw Bean Arroyo), 5.9 mi (9.5 km) northeast of Orla, and 8.5 mi (13.7 km) downstream from Red Bluff Reservoir.

DRAINAGE AREA.--21,210 mi<sup>2</sup> (54,930 km<sup>2</sup>), approximately (contributing area).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1937 to current year.

REVISED RECORDS.--WSP 928: 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,730.86 ft (832.366 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 16, 1969, at site 6.9 mi (11.1 km) downstream at datum 12.81 ft (3.904 m) lower.

REMARKS.--Water-discharge records fair. Most of flow is released from storage in Red Bluff Reservoir (station 08410000). Occasional runoff from draws between dam and station. Many diversions above Red Bluff Reservoir for irrigation.

AVERAGE DISCHARGE.--41 years (water years 1938-78), 173 ft<sup>3</sup>/s (4.899 m<sup>3</sup>/s), 125,300 acre-ft/yr (154 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft<sup>3</sup>/s (671 m<sup>3</sup>/s) Sept. 29, 1941, gage height, 20.74 ft (6.322 m), site and datum then in use; no flow at times in 1946 and 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,000 ft<sup>3</sup>/s (538 m<sup>3</sup>/s) Sept. 26, gage height, 24.64 ft (7.510 m), from rating curve extended above 5,100 ft<sup>3</sup>/s (144 m<sup>3</sup>/s); minimum, 1.5 ft<sup>3</sup>/s (0.042 m<sup>3</sup>/s) June 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	7.2	10	8.6	6.0	8.6	5.6	2.3	20	18	8.0
2	11	10	7.2	9.7	9.7	6.0	9.2	5.1	17	12	15	7.5
3	12	9.8	7.2	9.2	9.7	5.6	8.6	6.0	531	8.6	14	7.5
4	13	9.8	7.7	9.2	9.2	6.0	7.5	6.0	112	7.0	19	27
5	14	9.8	6.7	9.4	9.2	6.5	7.5	6.0	22	6.0	21	14
6	14	9.8	6.2	9.4	9.2	7.0	7.0	5.6	14	5.6	17	9.2
7	14	10	6.1	8.6	9.0	7.0	7.0	5.1	10	5.1	16	8.6
8	14	10	6.2	8.6	8.6	6.0	6.5	4.4	8.6	4.7	15	8.6
9	14	10	6.6	8.6	9.2	6.0	6.5	4.0	10	4.4	14	8.0
10	14	10	6.5	8.6	9.0	7.5	7.0	4.4	9.7	4.0	13	8.0
11	15	8.6	8.5	8.6	8.0	8.0	7.5	4.7	6.5	4.0	12	8.0
12	15	8.6	7.6	9.2	11	7.5	8.0	4.7	5.6	3.6	13	7.5
13	15	8.6	8.3	9.7	13	8.0	8.0	4.4	8.6	3.6	12	7.5
14	9.1	9.1	8.1	9.2	8.3	7.5	7.5	4.0	19	2.9	12	7.5
15	8.7	8.6	8.2	9.2	6.5	8.0	7.0	4.0	11	2.9	12	7.0
16	9.2	8.2	9.7	8.5	5.1	8.0	7.5	3.6	5.6	2.9	14	6.5
17	9.2	8.6	8.5	8.1	5.6	7.5	6.5	3.2	4.4	2.9	26	7.0
18	9.7	8.6	8.0	8.3	5.6	7.5	6.0	2.9	4.0	2.9	12	7.5
19	9.7	8.2	6.9	8.1	5.6	8.6	5.1	3.6	3.6	3.2	11	8.0
20	9.7	9.1	6.8	8.3	5.1	9.2	5.1	25	3.2	3.6	10	10
21	9.7	8.2	7.5	8.1	5.6	9.2	5.6	29	2.9	3.6	10	976
22	9.8	8.2	7.7	8.1	4.7	8.6	5.1	12	2.9	3.6	10	302
23	181	9.1	8.6	8.9	4.7	8.6	5.6	5.6	2.6	340	11	69
24	35	7.2	8.7	9.4	4.4	8.0	5.6	4.4	2.6	896	21	100
25	21	6.2	8.6	9.7	4.7	8.0	5.1	3.2	2.0	32	15	4490
26	15	6.2	8.6	9.7	5.1	8.6	6.0	2.9	2.3	20	10	11400
27	12	6.2	8.6	9.8	5.6	9.2	7.0	2.9	2.0	16	7.0	2120
28	13	6.7	8.7	8.6	5.1	8.6	7.5	2.6	17	15	7.0	316
29	14	7.2	9.6	8.5	---	9.2	6.5	2.3	20	14	7.0	122
30	13	6.7	11	8.1	---	9.2	6.0	2.3	49	14	7.0	79
31	11	---	12	8.1	---	9.2	---	2.3	---	14	8.0	---
TOTAL	575.8	258.3	247.8	275.5	205.1	239.8	203.6	181.8	911.4	1478.1	409.0	20156.9
MEAN	18.6	8.61	7.99	8.89	7.33	7.74	6.79	5.86	30.4	47.7	13.2	672
MAX	181	11	12	10	13	9.2	9.2	29	531	896	26	11400
MIN	8.7	6.2	6.1	8.1	4.4	5.6	5.1	2.3	2.0	2.9	7.0	6.5
AC-FT	1140	512	492	546	407	476	404	361	1810	2930	811	39980
CAL YR 1977	TOTAL	25378.4	MEAN 69.5	MAX	336	MIN 4.3	AC-FT	50340				
WTR YR 1978	TOTAL	25143.1	MEAN 68.9	MAX	11400	MIN 2.0	AC-FT	49870				

NOTE.--No gage-height record Sept. 24-30.



08412500 PECOS RIVER NEAR ORLA, TX -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1937 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1937 to current year.

WATER TEMPERATURES: March 1953 to current year.

REMARKS.--Station is operated by the Texas District.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 29,400 micromhos May 16, 1978; minimum daily, 1,610 micromhos June 2, 1948.

WATER TEMPERATURES (1953-61, 1968-78): Maximum, 31.0° C Aug. 13, 1978; minimum, 0.5° C Jan. 6, 1971, Jan. 11, 1973.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 29,400 micromhos May 16; minimum daily, 1,730 micromhos Sept. 26.

WATER TEMPERATURES: Maximum, 31.0° C Aug. 13; minimum 2.0° C Jan. 22.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
DEC 31...	0830	8.0	25500	7.7	8.5	3700	3600	950	330	4900
FEB 14...	1530	8.5	24100	7.7	9.0	3600	3400	880	330	4500
MAR 29...	0915	9.3	26000	7.3	15.0	4000	3900	1000	360	5400
APR 19...	0820	7.6	27200	--	16.0	4600	4500	1200	390	5400
JUN 13...	1525	13	19400	--	27.0	3400	3300	930	260	3700
JUL 25...	1600	28	8880	--	26.5	1500	1400	420	110	1600
AUG 19...	0830	6.6	12500	--	25.0	1900	1900	490	170	2300
SEP 06...	1450	9.2	21000	--	28.5	2900	2900	830	210	4400

DATE	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
DEC 31...	35	48	140	0	115	3200	8100	--	5.5	17600
FEB 14...	33	47	140	0	115	2900	7600	--	11	16300
MAR 29...	37	55	140	0	115	3500	8400	--	1.3	18800
APR 19...	35	110	150	0	123	4000	8500	--	3.6	19700
JUN 13...	28	58	130	0	107	3000	5800	1.1	6.7	13800
JUL 25...	18	24	110	0	90	1300	2400	.7	13	5920
AUG 19...	23	36	88	0	72	1900	3400	.7	3.4	8340
SEP 06...	35	52	94	0	77	3000	6800	1.1	1.8	15300

## 08412500 PECOS RIVER NEAR ORLA, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18500	24500	23800	25900	23800	24800	26200	28300	22100	13600	17200	22000
2	18400	25400	24600	25600	23500	24600	26100	28200	18000	11900	18100	23600
3	18300	24900	24700	25400	23600	24800	26200	27900	5700	11800	20600	23200
4	18100	25000	24600	25200	23900	24700	26300	27600	11200	12600	20700	21400
5	18000	24600	24500	25100	23800	24600	26200	27300	13000	13200	26000	22000
6	20800	24200	24700	25400	23600	24100	26300	27700	13600	14400	23100	21600
7	21000	24500	24900	25400	23500	24300	26100	27800	15000	14700	23500	21500
8	20300	24100	24900	26500	23300	24400	26200	27900	16400	15700	24200	21400
9	21000	23800	24600	24900	23200	24800	26300	28000	17400	16200	24500	20900
10	20900	23600	24800	24600	23400	24700	26100	28100	17900	16700	24300	20400
11	20700	23700	24700	24500	23600	24700	26000	28300	18000	17600	22800	20000
12	20500	23500	24900	24700	23300	25200	26100	28500	18300	18300	21300	20500
13	20900	23300	24400	24800	23200	25100	26200	29000	19400	19300	21500	20300
14	20700	23500	24700	24700	23900	25100	26300	28100	17500	19200	21600	20200
15	20400	23400	25000	24600	23400	24800	26400	29100	18500	19900	21700	20300
16	22800	23300	25100	24600	23700	27700	26700	29400	18700	20300	21800	20400
17	21800	24600	25500	24400	22900	26000	26800	29200	19900	20800	12000	21000
18	22100	24100	24900	24500	22400	25200	27000	29100	21600	17500	12100	20900
19	22200	23800	25500	24400	23300	25100	27100	29000	22100	21400	12200	21700
20	22500	23500	25800	24300	23500	25000	27200	16500	22300	21600	13000	20000
21	22700	23400	25700	24500	23700	25200	26900	15000	22600	19900	17300	3860
22	22400	23300	25700	24800	23900	25300	26800	18200	22800	22200	20100	6310
23	9000	23400	25300	24300	23800	25700	27000	19600	22700	10000	21400	9850
24	9190	23000	24700	23700	23900	25900	27100	19800	22200	4180	18000	9700
25	12500	22800	24600	24300	24400	25800	27200	20200	21700	9310	22500	2120
26	14300	25300	24700	24400	24500	25900	27000	20400	21300	10700	17900	1730
27	17600	23500	24800	24400	24600	25800	26800	20600	21200	12500	18100	3300
28	20400	24900	24700	24300	24600	25700	26600	21200	17000	14200	16800	6450
29	21200	24500	25500	24200	---	25900	27700	21400	15000	14800	17900	10000
30	21500	24000	25100	24100	---	25800	28300	21600	12500	15500	19500	12500
31	23400	---	25300	24000	---	26000	---	21900	---	16100	21200	---
MEAN	19500	24000	24900	24700	23700	25200	26600	25000	18200	15700	19800	16300
WTR YR 1978	MEAN	22000		MAX	29400		MIN	1730				

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	---	8.0	8.5	6.0	13.5	25.0	18.5	23.5	28.5	30.0	21.0
2	---	12.0	9.5	4.5	7.0	15.0	20.0	18.5	27.0	26.0	27.0	23.5
3	19.5	---	10.0	3.0	7.0	11.0	23.5	15.0	18.5	26.0	26.0	22.0
4	21.0	---	9.5	4.0	6.0	7.0	18.5	---	25.0	26.0	26.0	22.0
5	20.5	---	9.5	5.0	7.0	13.0	19.0	19.5	26.0	25.0	26.0	23.5
6	23.0	---	8.5	6.0	8.5	14.5	22.0	19.5	25.0	30.0	23.5	23.0
7	22.0	---	8.0	8.5	8.0	11.0	19.5	19.5	24.5	25.0	25.0	---
8	21.0	---	7.0	6.0	8.5	15.0	19.0	18.5	24.5	30.0	26.0	20.5
9	19.5	---	9.0	5.0	8.0	10.0	20.0	25.0	29.5	24.5	30.0	22.0
10	17.0	---	5.0	4.0	6.0	17.0	16.0	21.0	25.0	24.5	25.0	23.5
11	18.5	---	9.5	3.5	6.0	17.0	20.0	20.0	27.0	30.0	30.5	22.0
12	15.5	---	5.0	4.0	9.0	16.5	15.5	19.5	26.0	30.0	25.0	26.0
13	15.0	10.0	6.0	5.0	9.0	12.0	22.0	20.0	29.5	30.0	31.0	23.5
14	15.0	9.5	6.0	5.5	9.5	17.0	18.5	---	27.0	25.0	27.0	23.5
15	15.5	10.0	5.5	5.5	8.5	12.0	22.0	---	30.0	25.0	26.5	23.0
16	15.0	10.0	8.5	7.0	---	14.5	22.0	---	27.0	25.0	26.0	---
17	15.5	13.5	7.0	6.0	8.5	10.0	19.5	---	27.0	25.0	25.0	---
18	16.0	9.5	8.5	4.5	9.5	18.5	23.5	---	26.0	30.0	---	---
19	16.5	10.5	7.0	4.5	8.0	13.5	16.0	---	26.5	25.0	25.0	---
20	16.0	12.0	6.0	4.0	---	14.5	16.0	---	26.0	25.0	26.5	---
21	18.0	11.0	3.5	3.5	10.0	17.0	16.5	---	26.0	24.0	23.5	---
22	18.5	---	3.0	2.0	5.0	17.0	16.0	---	30.0	26.0	25.5	---
23	15.0	10.0	5.0	3.5	13.0	22.0	23.5	---	26.0	25.0	29.5	---
24	15.0	9.5	7.0	3.0	8.5	---	17.0	---	26.5	20.0	26.0	12.0
25	15.5	9.0	8.5	3.0	15.0	15.0	23.0	27.0	26.0	27.0	25.0	18.5
26	16.0	13.5	7.0	3.0	12.0	14.5	18.5	25.0	26.5	28.5	24.5	17.0
27	18.5	9.0	6.0	6.0	11.0	15.0	25.0	24.5	24.5	29.5	25.0	16.0
28	17.0	9.5	6.0	5.0	12.0	19.5	21.0	26.0	19.5	30.0	24.5	16.0
29	19.5	9.5	7.0	---	---	16.5	20.0	24.5	---	---	21.0	20.0
30	19.0	8.5	8.0	5.5	---	17.0	19.5	23.5	23.5	26.0	21.5	20.0
31	19.5	---	8.5	6.0	---	18.5	---	24.5	---	25.0	20.0	---
MEAN	18.0	10.5	7.0	5.0	8.5	15.0	20.0	21.5	26.0	26.5	26.0	21.0
WTR YR 1978	MEAN	17.0		MAX	31.0		MIN	2.0				

## MIMBRES RIVER BASIN

08477110 MIMBRES RIVER AT MIMBRES, NM  
(National stream-quality accounting network station)

LOCATION.--Lat 32°51'17", long 107°58'23", in NW¼SW¼ sec.3, T.16 S., R.11 W., Grant County, Hydrologic Unit 13030202, on left bank 100 ft (30 m) downstream from Willow Springs Canyon, 0.3 mi (0.5 km) east of Mimbres, 1.1 mi (1.8 km) downstream from Shepard Canyon, 2.5 mi (4.0 km) downstream from Bear Canyon and at mile 73.1 (117.6 km).

DRAINAGE AREA.--184 mi<sup>2</sup> (477 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 5,920 ft (1,804 m), from topographic map.

REMARKS.--Water-discharge records good.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 249 ft<sup>3</sup>/s (7.05 m<sup>3</sup>/s) at 2015 hours Mar. 3, gage height, 5.98 ft (1.823 m); minimum, 0.26 ft<sup>3</sup>/s (0.007 m<sup>3</sup>/s) Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						9.2	43	16	8.3	15	4.2	2.3
2						46	46	18	8.5	14	4.2	2.6
3						185	43	17	16	9.2	2.0	3.0
4						141	39	16	15	7.2	.67	2.6
5						100	36	16	14	7.4	2.4	2.7
6						92	31	14	13	4.5	2.3	2.8
7						71	29	13	12	3.8	2.3	2.9
8						52	28	14	11	3.9	1.1	3.4
9						45	27	13	9.5	3.4	1.5	3.2
10						48	26	13	7.2	2.8	1.5	3.3
11						53	23	13	7.9	2.2	1.6	2.8
12						62	20	12	8.2	2.0	2.3	2.4
13						65	18	12	8.4	2.2	2.6	2.2
14						67	20	11	6.6	2.5	2.2	2.2
15						73	16	11	5.4	3.6	1.8	2.4
16						79	15	11	6.6	3.2	3.3	2.4
17						74	18	10	7.2	3.2	3.6	2.2
18						74	16	8.8	7.9	4.7	4.1	2.1
19						75	17	9.6	8.0	4.9	4.6	2.0
20						78	16	10	6.8	4.5	5.5	2.0
21						82	16	10	6.9	4.2	5.1	2.3
22						83	14	11	7.6	4.3	8.4	2.5
23						85	13	12	8.1	5.9	7.3	2.6
24						81	12	11	7.0	5.3	7.0	2.8
25						72	13	8.1	7.3	4.7	7.2	3.2
26						66	13	7.9	7.3	4.9	5.8	3.3
27						60	14	8.0	7.5	4.7	5.3	3.1
28						54	13	8.2	8.8	4.2	3.9	2.9
29						47	13	8.9	9.8	4.2	3.0	2.8
30						43	15	8.0	11	3.8	2.6	2.3
31						40	---	7.8	---	3.8	2.4	---
TOTAL	---	---	---	---	---	2202.2	663	359.3	268.8	154.2	111.77	79.3
MEAN	---	---	---	---	---	71.0	22.1	11.6	8.96	4.97	3.61	2.64
MAX	---	---	---	---	---	185	46	18	16	15	8.4	3.4
MIN	---	---	---	---	---	9.2	12	7.8	5.4	2.0	.67	2.0
AC-FT	---	---	---	---	---	4370	1320	713	533	306	222	157

08477110 MIMBRES RIVER AT MIMBRES, NM--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--January to September 1978.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
JAN 20...	1123	6.9	248	8.4	1.0	3.5	1	--	11.6	110	0	32
FEB 16...	1333	4.6	275	8.4	2.0	9.0	1	--	9.7	110	0	31
MAR 22...	1844	83	164	7.8	13.0	13.5	10	--	8.7	75	17	21
APR 19...	1919	16	230	8.0	17.0	14.5	1	--	8.2	96	6	28
MAY 17...	1917	9.9	283	7.8	21.5	15.5	--	1.0	8.0	120	0	34
JUN 14...	1314	8.3	269	8.6	30.0	22.5	--	.90	8.6	120	0	35
JUL 19...	2021	4.4	303	8.1	27.0	20.5	--	.50	6.1	130	0	39
AUG 16...	1919	2.9	303	7.8	27.0	21.0	--	1.0	6.5	140	0	42
SEP 13...	1551	2.0	259	8.8	23.5	24.0	--	1.5	8.0	120	0	36

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
JAN 20...	7.2	11	.5	2.5	130	3	110	12	3.3	.3	47	177
FEB 16...	7.0	11	.5	2.4	130	1	110	10	3.5	.3	47	169
MAR 22...	5.5	6.9	.3	2.0	71	0	58	23	2.5	.2	38	137
APR 19...	6.4	9.6	.4	2.5	110	0	90	19	3.3	.2	44	157
MAY 17...	7.8	11	.4	3.1	--	--	120	19	3.3	.3	46	191
JUN 14...	7.7	12	.5	2.8	--	--	120	19	3.0	.2	47	196
JUL 19...	8.3	12	.5	3.2	--	--	140	17	3.3	.3	52	216
AUG 16...	9.0	13	.5	3.6	--	--	150	15	3.3	.3	56	231
SEP 13...	7.3	12	.5	5.3	--	--	130	14	3.0	.3	50	209

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
JAN 20...	182	.28	.00	--	--	.07	--	--	1.2	--	--
FEB 16...	177	.17	.00	.13	.30	.07	10	10	--	2.0	.3
MAR 22...	134	.28	.01	.59	.88	.13	--	--	5.0	--	--
APR 19...	167	.33	.03	.25	.61	.07	--	--	2.1	--	--
MAY 17...	197	.30	.01	--	--	.06	0	0	--	2.9	--
JUN 14...	199	.00	.00	.55	.55	--	--	--	3.4	--	--
JUL 19...	219	.08	.00	.21	.29	.06	--	--	4.6	--	--
AUG 16...	233	.00	.00	.30	.30	.06	40	4	--	2.8	.4
SEP 13...	206	.02	.00	.37	.39	.06	--	--	7.5	--	--

## RIO GRANDE BASIN

08477110 MIMBRES RIVER AT MIMBRES, NM -- Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
FEB 16...	1333	1	1	0	0	0	1	0	0
MAY 17...	1917	3	2	100	100	0	0	20	0
AUG 16...	1919	1	1	200	60	0	1	0	0

DATE	TIME	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CU) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
FEB 16...	2	0	0	5	1	80	10	6	5	10
MAY 17...	1	0	0	7	2	80	0	7	1	0
AUG 16...	0	<1	<1	9	4	30	40	6	12	10

DATE	TIME	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
FEB 16...	10	.9	.9	.0	0	0	0	0	10	0
MAY 17...	0	.2	.2	.0	0	0	1	0	20	0
AUG 16...	4	.1	.1	.0	0	0	0	0	10	9

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JAN 20...	1123	10	5600
FEB 16...	1333	110	120
MAR 22...	1844	39	100
APR 19...	1919	45	160
MAY 17...	1917	90	950
JUN 14...	1314	180	1400
JUL 19...	2021	160	1200
AUG 16...	1919	100	520
SEP 13...	1551	110	95

08477110 MIMBRES RIVER AT MIMBRES, NM -- Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	MAR 22,78 1844	MAY 17,78 1917	JUN 14,78 1314	JUL 19,78 2021	AUG 16,78 1919	SEP 13,78 1551
TOTAL CELLS/ML	8600	780	3000	590	140	600
DIVERSITY: DIVISION	0.2	0.4	0.7	1.3	0.0	0.0
..CLASS	0.2	0.4	0.7	1.3	0.0	0.0
..ORDER	0.2	0.7	1.1	1.3	0.0	0.2
...FAMILY	0.2	2.5	1.7	1.9	1.8	1.4
....GENUS	0.2	2.6	1.7	2.1	2.1	1.9
ORGANISM	CELLS /ML PER- CENT	CELLS /ML PER- CENT	CELLS /ML PER- CENT	CELLS /ML PER- CENT	CELLS /ML PER- CENT	CELLS /ML PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	* 0	-- -	-- -	14 2	-- -	-- -
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINODISCAEAE						
....CYCLOTELLA	-- -	32 4	-- -	-- -	-- -	14 2
...PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	* 0	49 6	-- -	29 5	14 10	86 14
...COCCONEIS	-- -	32 4	130 4	160# 27	29# 20	330# 55
...CYMBELLACEAE						
....CYMBELLA	-- -	32 4	29 1	-- -	-- -	14 2
...FRAGILARIACEAE						
....SYNEDRA	* 0	-- -	-- -	14 2	-- -	14 2
...GOMPHONEMACEAE						
....GOMPHONEMA	-- -	110 15	-- -	57 10	29# 20	120# 19
...NAVICULACEAE						
....CALONEIS	-- -	-- -	-- -	14 2	-- -	-- -
....NAVICULA	67 1	240# 31	120 4	-- -	14 10	-- -
...PINNULARIA	-- -	-- -	* 0	-- -	-- -	-- -
...NITZSCHACEAE						
....NITZSCHIA	45 1	210# 27	29 1	-- -	58# 40	29 5
...TABELLARIACEAE						
....TABELLARIA	-- -	-- -	160 5	-- -	-- -	-- -
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCOCCOCEAE						
....CHROCOCCOCEAE						
...ANACYSTIS	-- -	65 8	180 6	-- -	-- -	-- -
...HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	-- -	-- -	2100# 70	-- -	-- -	-- -
...OSCILLATORIACEAE						
....MICROCOLEUS	8400# 98	-- -	-- -	-- -	-- -	-- -
...OSCILLATORIA	-- -	-- -	180 6	290# 49	-- -	-- -
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
...EUGLENA	-- -	-- -	44 1	-- -	-- -	-- -
....TRACHELOMONAS	-- -	-- -	-- -	14 2	-- -	-- -

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08477110 MIMBRES RIVER AT MIMBRES, NM -- Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	LENGTH OF EXPO- SURE (DAYS) (00022)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
FEB 16...	1333	27	4.17	1.89	2.07	2.09	Polyethylene strip
MAY 17...	1917	56	14.9	12.9	31.9	1.65	"
AUG 16...	1919	28	2.99	1.18	1.53	1.74	"

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JAN 20...	1123	6.9	3.5	3	.06	98
FEB 16...	1331	4.6	9.0	4	.05	78
MAR 22...	1844	83	13.5	62	14	49
APR 19...	1919	16	14.5	7	.30	70
MAY 17...	1917	9.9	15.5	6	.16	96
JUN 14...	1314	8.3	22.5	6	.13	99
JUL 19...	2021	4.4	20.5	4	.05	77
AUG 16...	1919	2.9	21.0	4	.03	78
SEP 13...	1551	2.0	24.0	6	.03	96

LOCATION.—Lat 33°08'41", long 105°53'50", in SE¼ sec. 32, T.13 S., R.11 E., Otero County, Hydrologic Unit 13050003, on right bank 50 ft (15 m) downstream from old U.S. Highway 70 bridge, 2.6 mi (4.2 km) west of Bent, and 8.5 mi (13.7 km) northeast of Tularosa, and at mile 19.4 (31.2 km).

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 125 ft<sup>3</sup>/s (3.54 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge		Gage height	
		(ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	(ft)	(m)
July 19	1530	146	4.13	2.69	0.820
July 23	1400	*1,160	32.9	3.42	1.042
Aug. 24	2030	152	4.30	2.67	.814

Minimum discharge, 1.6 ft<sup>3</sup>/s (0.045 m<sup>3</sup>/s) June 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	12	12	14	14	14	12	9.5	7.7	8.0	10	14
2	9.5	12	13	14	13	14	11	12	11	8.7	12	13
3	11	12	13	14	13	13	11	12	10	9.7	10	11
4	12	12	12	13	13	13	12	12	9.8	9.7	7.7	12
5	12	12	12	13	13	12	11	12	8.4	9.9	9.5	12
6	13	12	13	13	13	12	11	12	7.9	11	7.7	14
7	13	12	12	13	12	12	11	12	8.0	10	8.9	14
8	12	12	12	13	13	12	11	12	7.0	9.5	13	14
9	13	12	12	12	12	12	11	11	7.1	8.8	11	13
10	9.2	12	13	12	12	11	11	11	7.2	8.5	6.9	13
11	9.9	12	13	13	12	11	12	11	5.7	10	5.8	13
12	10	12	12	13	12	12	12	11	7.1	13	6.4	13
13	11	12	12	13	12	12	12	10	9.3	14	6.4	14
14	11	12	12	13	13	12	11	9.4	11	14	6.0	13
15	11	12	13	14	13	12	9.9	9.8	11	13	5.4	12
16	11	12	13	14	13	11	8.8	9.3	11	13	5.4	12
17	10	12	13	14	13	11	8.9	9.7	10	12	5.8	11
18	9.9	12	13	14	13	11	9.2	9.1	10	11	5.6	13
19	9.9	12	13	13	13	11	11	8.7	8.7	16	6.2	13
20	10	12	13	14	13	11	12	7.8	6.9	12	11	12
21	10	12	13	13	13	11	12	7.1	7.1	11	15	12
22	10	12	13	14	13	11	11	6.8	7.3	10	13	12
23	11	12	13	14	13	11	12	7.0	5.7	61	17	12
24	11	12	13	14	13	11	11	7.0	5.4	11	23	13
25	11	12	13	14	13	11	11	7.0	4.1	9.9	13	13
26	11	12	13	14	13	11	11	7.0	4.8	8.6	13	13
27	12	12	13	14	13	10	9.9	13	5.4	9.0	12	13
28	12	12	13	14	13	10	9.6	15	7.6	9.5	12	12
29	12	12	14	14	---	11	9.4	15	8.9	8.9	13	11
30	13	12	14	14	---	11	9.2	16	8.4	8.9	13	11
31	12	---	14	16	---	12	---	7.2	---	9.2	14	---
TOTAL	342.9	360	397	421	359	359	324.9	319.4	239.5	378.8	318.7	378
MEAN	11.1	12.0	12.8	13.6	12.8	11.6	10.8	10.3	7.98	12.2	10.3	12.6
MAX	13	12	14	16	14	14	12	16	11	61	23	14
MIN	9.2	12	12	12	12	10	8.8	6.8	4.1	8.0	5.4	11
AC=FT	680	714	787	835	712	712	644	634	475	751	632	750
CAL YR 1977	TOTAL	4155.8	MEAN	11.4	MAX	33	MIN	3.4	AC=FT	8240		
WTR YR 1978	TOTAL	4198.2	MEAN	11.5	MAX	61	MIN	4.1	AC=FT	8330		



## TULAROSA VALLEY BASIN

08481500 RIO TULAROSA NEAR BENT, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (000061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (000095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT 06...	1030	10	1390	8.1	24.5	14.5	10	--	9.2	14
NOV 04...	0930	11	1490	8.1	18.0	9.5	20	--	10.0	11
DEC 07...	1130	12	1400	8.3	14.0	8.0	7	--	10.1	10
JAN 10...	1100	13	1330	8.2	14.0	7.0	20	--	10.5	9
FEB 10...	0955	12	1660	8.2	13.5	7.0	9	--	11.0	17
MAR 09...	1330	12	1800	8.2	18.5	14.5	40	--	8.3	9
APR 05...	1330	11	1320	8.1	21.5	17.0	--	--	9.2	--
MAY 03...	1200	12	1580	8.1	10.0	11.0	25	--	9.5	9
JUN 13...	1300	8.3	1480	8.0	25.0	21.0	--	6.0	7.7	18
JUL 18...	1130	12	1380	8.0	28.0	19.0	--	1.9	9.4	7
AUG 15...	1130	5.8	1300	8.1	25.5	17.5	--	18	7.6	19
SEP 20...	1230	13	1320	8.0	23.0	16.0	--	6.0	8.4	14

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CACO3) (00410)
OCT 06...	730	570	200	57	40	.6	1.3	200	0	160
NOV 04...	780	570	210	62	43	.7	1.4	260	0	210
DEC 07...	800	590	220	62	46	.7	1.5	260	0	210
JAN 10...	810	600	220	63	44	.7	1.3	250	0	210
FEB 10...	810	600	220	64	47	.7	1.3	260	0	210
MAR 09...	840	640	230	65	45	.7	1.4	250	0	210
APR 05...	--	--	--	--	--	--	--	--	--	--
MAY 03...	800	570	220	60	44	.7	1.6	280	0	230
JUN 13...	780	--	210	62	46	.7	1.3	--	--	170
JUL 18...	720	--	190	59	42	.7	1.3	--	--	180
AUG 15...	700	--	190	54	40	.7	1.3	--	--	190
SEP 20...	720	--	200	54	41	.7	1.2	--	--	180

08481500 RIO TULAROSA NEAR BENT, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 06...	510	54	.5	14	1030	978	.39	.44	.03	.05
NOV 04...	510	62	.5	15	1060	1030	.35	.50	.02	.12
DEC 07...	570	62	.5	14	1100	1110	.36	.41	.06	.51
JAN 10...	550	63	.5	14	1080	1080	.51	.54	.04	.42
FEB 10...	560	65	.5	14	1140	1100	.53	.61	.02	.26
MAR 09...	580	67	.6	13	1160	1130	.82	.89	.01	.38
APR 05...	--	--	--	--	--	--	--	--	--	--
MAY 03...	520	62	.5	13	1090	1060	.49	.52	.00	.31
JUN 13...	560	68	.5	14	1090	1060	.54	.53	.01	.62
JUL 18...	500	58	.5	16	1030	975	.64	.71	.00	.36
AUG 15...	470	55	.5	14	1000	939	.75	.76	.00	.60
SEP 20...	510	57	.5	14	1040	986	.00	.72	.05	.14

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)
OCT 06...	.47	.02	.00	40	20	30	1.8	1.8	1.9
NOV 04...	.49	.05	.00	50	20	--	2.9	1.6	1.3
DEC 07...	.93	.01	.01	40	20	30	--	2.2	--
JAN 10...	.97	.03	.02	50	70	--	2.1	1.3	1.3
FEB 10...	.81	.03	.01	40	10	--	2.6	1.5	--
MAR 09...	1.2	.11	.00	50	0	40	--	1.6	1.5
APR 05...	--	--	--	--	--	--	--	--	--
MAY 03...	.80	.06	.06	50	10	--	4.0	2.6	.9
JUN 13...	1.2	.00	.01	60	10	20	--	2.2	.7
JUL 18...	1.0	.01	.00	50	30	20	--	2.0	1.0
AUG 15...	1.4	.02	.00	50	<10	--	2.3	2.4	1.0
SEP 20...	.19	.03	.01	70	20	40	--	1.7	.5

## TULAROSA VALLEY BASIN

08481500 RIO TULAROSA NEAR BENT, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
OCT 06...	1030	0	0	400	800	40	10	0	0	0
DEC 07...	1130	0	0	0	100	40	0	0	0	4
MAR 09...	1330	1	1	100	100	50	0	0	10	10
JUN 13...	1300	2	2	200	100	60	1	1	5	0
JUL 18...	1130	2	0	100	200	50	0	1	20	0
SEP 20...	1230	1	0	0	0	70	1	0	0	10

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
OCT 06...	<50	0	<10	0	580	20	<100	2	50
DEC 07...	0	0	6	2	150	20	2	3	30
MAR 09...	4	0	8	1	1600	0	6	2	80
JUN 13...	2	0	10	0	540	10	13	0	30
JUL 18...	0	0	4	2	230	30	3	0	20
SEP 20...	1	2	1	0	430	20	1	0	30

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 06...	30	.0	.0	0	0	<10	0	10	90
DEC 07...	30	.0	.0	1	1	0	0	20	20
MAR 09...	40	.1	.0	2	2	1	0	10	10
JUN 13...	20	.0	.0	1	0	0	0	20	20
JUL 18...	20	.0	.0	1	1	0	0	20	10
SEP 20...	40	.0	.0	1	1	0	0	20	10

08481500 RIO TULAROSA NEAR BENT, NM--Continued

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 06...	1030	90	280
NOV 04...	0930	59	120
DEC 07...	1130	9	51
JAN 10...	1100	20	51
FEB 10...	0955	20	72
MAR 09...	1330	420	57
APR 05...	1330	100	51
MAY 03...	1200	73	280
JUN 13...	1300	120	370
JUL 18...	1130	380	880
AUG 15...	1130	120	420
SEP 20...	1230	34	150

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PERIPHYTON							SAMPLING METHOD
DATE	TIME	LENGTH OF EXPO- SURE (DAYS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00022)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00573)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	
JAN 10...	1100	33	16.9	15.7	2.09	.000	Polyethylene strip
MAR 09...	1330	28	29.0	27.2	6.71	.000	"

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	NOV 4,77 0930	MAR 9,78 1330	MAY 3,78 1200	JUN 13,78 1300	JUL 18,78 1130	AUG 15,78 1130				
TOTAL CELLS/ML	670	61	890	650	800	14				
DIVERSITY: DIVISION	1.9	0.0	1.3	0.0	1.1	0.0				
..CLASS	1.9	0.0	1.4	0.0	1.1	0.0				
..ORDER	1.9	0.0	1.7	0.0	1.3	0.0				
...FAMILY	2.6	1.3	2.3	1.1	2.2	0.0				
....GENUS	2.7	1.8	2.8	1.3	2.4	0.0				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
....OOCYSTACEAE										
....FRANCEIA			--	-	--	-	14	2	--	-
....OOCYSTIS	32	5	--	-	--	-	--	-	--	-
....TREUBARIA	14	2	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	250#	37	--	-	--	-	27	3	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	76	9	--	-	210#	26
CHRYSPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCACEAE										
....STEPHANODISCUS	5	1	--	-	--	-	--	-	--	-
...PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	--	-	200#	31	330#	41
....COCCONEIS	23	3	--	-	--	-	22	3	--	-
...DIATOMACEAE										
....DIATOMA	9	1	--	-	--	-	--	-	14	2
....FRAGILARIACEAE										
....SYNEDRA	14	2	15#	25	130	15	--	-	14	2
...GOMPHONEMATACEAE										
....GOMPHONEMA	32	5	8	13	--	-	--	-	--	-
...NAVICULACEAE										
....DIPLONEIS	--	-	--	-	--	-	--	-	14	2
....GYROSIGMA	--	-	8	13	--	-	--	-	--	-
....NAVICULA	74	11	30#	50	95	11	400#	62	120#	16
....PINNULARIA	--	-	--	-	--	-	--	-	14	2
...NITZSCHIA										
....NITZSCHIA	--	-	--	-	19	2	22	3	14	2
...SURIPELLACEAE										
....SURIPELLA	--	-	--	-	95	11	--	-	--	-
...CHRYSPHYCEAE										
...CHRYSOMONADALES										
...UCHROMONADACEAE										
....DINOBRYON	--	-	--	-	19	2	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
....ANACYSTIS	120#	17	--	-	38	4	--	-	--	-
...HORMOGONALES										
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	230#	26	--	-	--	-
....OSCILLATORIA	--	-	--	-	190#	21	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
....EUGLENA	110#	16	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	27	3

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

08481500 RIO TULAROSA NEAR BENT, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
06...	1030	10	14.5	40	1.1	61
NOV						
04...	0930	11	9.5	61	1.8	75
DEC						
07...	1130	12	8.0	75	2.4	43
JAN						
10...	1100	13	7.0	100	3.5	43
FEB						
10...	0955	12	7.0	80	2.6	41
APR						
05...	1330	11	17.0	55	1.6	58
MAY						
03...	1200	12	11.0	92	3.0	57
JUN						
13...	1500	8.6	21.0	65	1.5	58
JUL						
18...	1130	12	19.0	42	1.4	74
AUG						
15...	1130	5.8	17.5	66	1.0	61
SEP						
20...	1230	13	16.0	63	2.2	56



## 09349800 PIEDRA RIVER NEAR ARBOLES, CO

LOCATION.--Lat 37°05'18", long 107°23'50", in NE¼SW¼ sec.21, T.33 N., R.5 W., Archuleta County, Hydrologic Unit 14080102, on left bank 3 mi (5 km) downstream from Ignacio Creek, 5.2 mi (8.4 km) northeast of Arboles Post Office, and 8 mi (13 km) upstream from mouth.

DRAINAGE AREA.--629 mi<sup>2</sup> (1,629 km<sup>2</sup>).

PERIOD OF RECORD.--August 1962 to current year. Gage operated 1895-1899, 1910-1927 at a site 7.5 mi (12.1 km) downstream at altitude 6,000 ft (1,830 m). Low flow records probably not equivalent.

GAGE.--Water-stage recorder. Datum of gage is 6,147.52 ft (1,873.764 m) National Geodetic Vertical Datum of 1929, from Colorado State Highway Department bench mark.

REMARKS.--Records good except those for winter period which are poor. Diversions for irrigation of about 2,800 acres (11 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--16 years, 336 ft<sup>3</sup>/s (9.516 m<sup>3</sup>/s), 243,400 acre-ft/yr (300 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,370 ft<sup>3</sup>/s (237 m<sup>3</sup>/s) Sept. 6, 1970, gage height, 6.38 ft (1.945 m) recorded, 7.55 ft (2.301 m) from floodmarks, from rating curve extended above 3,300 ft<sup>3</sup>/s (93 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; minimum, 11 ft<sup>3</sup>/s (0.31 m<sup>3</sup>/s) Dec. 9, 1963, Oct. 1, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Other major floods occurred Sept. 5 or 6, 1909; Oct. 5, 1911.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,260 ft<sup>3</sup>/s (64.0 m<sup>3</sup>/s) at 0500 hours May 16, gage height, 3.99 ft (1.216 m), no other peak above base of 1,500 ft<sup>3</sup>/s (42 m<sup>3</sup>/s); minimum daily, 25 ft<sup>3</sup>/s (0.71 m<sup>3</sup>/s) Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	60	51	42	46	62	1030	772	1460	432	64	37
2	78	55	48	42	44	73	832	818	1510	426	71	36
3	76	57	53	54	47	101	625	783	1510	370	64	34
4	73	57	52	49	43	89	599	762	1510	330	58	34
5	72	57	52	44	45	122	688	678	1420	295	55	33
6	71	60	50	41	46	117	674	694	1250	266	50	33
7	176	92	45	46	45	103	820	681	1180	242	46	31
8	204	92	50	49	46	103	1020	687	1270	218	44	29
9	154	76	51	55	45	109	1010	804	1340	203	44	29
10	136	54	47	50	45	103	796	855	1520	196	43	28
11	122	60	50	45	48	92	739	846	1640	222	47	27
12	114	65	50	43	46	96	986	923	1580	200	46	26
13	101	63	56	44	45	87	1070	1020	1560	178	51	25
14	99	61	46	47	51	80	901	1280	1550	153	45	26
15	94	60	51	52	47	68	806	1710	1590	141	42	26
16	87	60	48	51	51	68	783	2070	1550	132	39	26
17	85	57	49	43	47	76	714	2040	1300	130	37	27
18	82	56	39	47	48	100	596	1520	1140	118	36	33
19	78	55	46	45	51	123	589	1420	1050	109	33	37
20	75	57	46	44	54	151	603	1430	1030	98	30	39
21	75	50	39	45	48	174	663	1430	912	92	30	44
22	73	54	64	44	45	216	655	1430	876	86	33	42
23	74	58	84	48	43	236	608	1430	825	83	41	40
24	74	54	84	51	43	251	655	1400	778	79	43	40
25	71	52	71	46	45	232	810	1430	757	83	40	41
26	69	53	61	52	48	256	886	1270	684	77	40	46
27	67	59	72	55	48	306	1020	1250	596	69	41	51
28	63	60	72	54	48	361	904	1070	534	66	36	48
29	62	52	70	51	---	384	847	966	579	65	33	46
30	64	49	58	51	---	498	813	1100	592	63	34	45
31	62	---	42	46	---	639	---	1270	---	63	36	---
TOTAL	2814	1795	1697	1476	1308	5476	23742	35839	35093	5285	1352	1059
MEAN	90.8	59.8	54.7	47.6	46.7	177	791	1156	1170	170	43.6	35.3
MAX	204	92	84	55	54	639	1070	2070	1640	432	71	51
MIN	62	49	39	41	43	62	589	678	534	63	30	25
AC-FT	5580	3560	3370	2930	2590	10860	47090	71090	69610	10480	2680	2100
CAL YR 1977 TOTAL	33608			MEAN 92.1	MAX 586	MIN 32	AC-FT 66660					
WTR YR 1978 TOTAL	116936			MEAN 320	MAX 2070	MIN 25	AC-FT 231900					



## SAN JUAN RIVER BASIN

09354500 LOS PINOS RIVER AT LA BOCA, CO

LOCATION.--Lat 37°00'34", long 107°35'56", in NE¼NW¼ sec. 22, T.32 N., R.7 W., La Plata County, Hydrologic Unit 14080101, on downstream end of right abutment of the Denver & Rio Grande Western Railroad Co. bridge, at southeast edge of La Boca, 0.1 mi (0.2 km) upstream from Spring Creek, and 13 mi (21 km) upstream from mouth.

DRAINAGE AREA.--510 mi<sup>2</sup> (1,320 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1950 to current year. Monthly discharge only for some periods, published in WSP 1733.

GAGE.--Water-stage recorder. Datum of gage is 6,143.58 ft (1,872.563 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Vallecito Reservoir (station 09353000) 24 mi (39 km) upstream since April 1941. Diversions for irrigation of about 33,000 acres (130 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--28 years, 198 ft<sup>3</sup>/s (5.607 m<sup>3</sup>/s), 143,500 acre-ft/yr (177 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,400 ft<sup>3</sup>/s (181 m<sup>3</sup>/s) July 27, 1957, gage height, 8.95 ft (2.728 m), from rating curve extended above 5,100 ft<sup>3</sup>/s (140 m<sup>3</sup>/s); minimum determined, 5.6 ft<sup>3</sup>/s (0.16 m<sup>3</sup>/s) May 1, 3, 1977 (may have been lower during periods of freezeup).

EXTREMES OUTSIDE PERIOD OF RECORD.--A major flood occurred Oct. 5, 1911 at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 932 ft<sup>3</sup>/s (26.4 m<sup>3</sup>/s) June 14, gage height, 5.39 ft (1.643 m); minimum daily, 23 ft<sup>3</sup>/s (0.65 m<sup>3</sup>/s) Dec. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	54	36	30	38	89	289	117	76	204	160	170
2	45	52	40	28	34	146	340	127	83	184	155	171
3	45	52	39	32	33	263	234	130	85	153	151	156
4	46	55	35	39	34	244	184	85	85	147	150	156
5	48	58	34	34	36	264	180	73	92	145	146	149
6	51	60	33	31	43	260	170	122	88	122	143	137
7	57	70	36	26	42	231	174	168	103	134	150	137
8	46	56	34	28	47	245	202	146	110	145	155	136
9	39	45	32	33	39	245	206	138	111	169	139	140
10	37	45	34	38	47	209	179	143	104	172	158	144
11	38	47	33	35	52	181	151	127	166	187	157	146
12	37	47	33	31	42	203	168	119	338	168	165	141
13	35	48	33	28	36	101	180	125	634	160	173	135
14	41	48	39	29	36	96	174	130	818	144	165	139
15	47	47	43	32	37	51	161	114	699	138	97	150
16	42	46	38	34	41	38	155	109	634	143	108	143
17	41	43	34	37	36	84	149	92	840	149	92	197
18	47	43	38	35	31	232	127	79	810	133	100	179
19	47	43	33	37	30	256	124	75	610	136	120	170
20	39	52	28	36	34	270	123	72	383	139	133	156
21	39	46	23	36	35	247	124	139	261	139	166	149
22	43	46	44	34	35	236	122	114	203	139	280	142
23	43	44	57	36	35	276	115	90	183	146	247	139
24	40	42	45	33	37	231	116	86	178	137	221	159
25	42	41	34	30	37	186	121	82	183	140	207	194
26	57	40	34	32	40	171	119	74	158	139	195	175
27	59	40	44	34	43	178	126	77	158	132	177	154
28	64	40	36	40	51	187	122	89	178	132	172	149
29	64	38	39	38	---	150	112	83	222	148	165	142
30	84	38	37	40	---	192	115	76	253	129	172	139
31	70	---	34	45	---	212	---	71	---	143	159	---
TOTAL	1485	1426	1132	1051	1081	5974	4862	3272	8846	4596	4978	4594
MEAN	47.9	47.5	36.5	33.9	38.6	193	162	106	295	148	161	153
MAX	84	70	57	45	52	276	340	168	840	204	280	197
MIN	35	38	23	26	30	38	112	71	76	122	92	135
AC-FT	2950	2830	2250	2080	2140	11850	9640	6490	17550	9120	9870	9110
CAL YR 1977 TOTAL	20168.8			55.3	MAX 336	MIN 6.1	AC-FT 40000					
WTR YR 1978 TOTAL	43297.0			MEAN 119	MAX 840	MIN 23	AC-FT 85680					

09355000 SPRING CREEK AT LA BOCA, CO

LOCATION.--Lat 37°00'40", long 107°35'47", in SE¼SW¼ sec.15, T.32 N., R.7 W., La Plata County, Hydrologic Unit 14080101, on right bank in an excavated channel, 0.2 mi (0.3 km) upstream from mouth, and 0.2 mi (0.3 km) east of La Boca.

DRAINAGE AREA.--58 mi<sup>2</sup> (150 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1950 to current year. Monthly discharge only for some periods, published in WSP 1733.

GAGE.--Water-stage recorder. Altitude of gage is 6,160 ft (1,878 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Part of flow is return waste from irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--28 years, 29.4 ft<sup>3</sup>/s (0.833 m<sup>3</sup>/s), 21,300 acre-ft/yr (26.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft<sup>3</sup>/s (56.1 m<sup>3</sup>/s) Sept. 6, 1970, gage height, 4.62 ft (1.408 m), from rating curve extended above 160 ft<sup>3</sup>/s (4.53 m<sup>3</sup>/s) on basis of field estimate of peak flow; maximum gage height, 5.98 ft (1.823 m) Mar. 9, 1960 (backwater from ice); minimum discharge, 0.6 ft<sup>3</sup>/s (0.017 m<sup>3</sup>/s) Nov. 27, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 231 ft<sup>3</sup>/s (6.54 m<sup>3</sup>/s) Mar. 3, gage height, 1.80 ft (0.549 m), no other peak above base of 180 ft<sup>3</sup>/s (5.1 m<sup>3</sup>/s); minimum daily, 1.8 ft<sup>3</sup>/s (0.051 m<sup>3</sup>/s) Apr. 27-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	3.5	3.2	2.8	4.0	36	10	3.7	23	71	63	65
2	7.5	3.1	3.6	2.9	3.7	73	14	38	24	67	60	63
3	7.5	3.1	3.0	3.0	3.7	93	7.1	15	28	67	62	61
4	6.8	3.1	3.8	3.0	3.8	89	5.2	14	34	66	62	62
5	7.5	2.8	3.1	3.2	4.5	72	4.7	16	36	64	61	60
6	9.0	3.2	3.0	3.0	3.9	76	4.2	20	34	63	66	57
7	12	6.5	3.1	2.9	4.2	64	4.1	18	41	65	64	58
8	7.8	5.5	3.1	2.9	4.2	61	4.3	12	42	66	67	57
9	6.8	3.5	2.8	3.0	4.1	54	4.9	8.9	43	68	68	56
10	6.5	3.5	3.0	3.0	4.4	39	4.3	6.0	41	67	70	58
11	5.4	3.5	2.9	2.9	4.0	28	3.5	5.3	43	67	71	56
12	5.3	3.5	2.9	3.0	4.1	21	3.4	4.2	43	64	71	55
13	5.8	3.8	2.8	3.0	4.1	21	3.4	3.5	41	62	71	57
14	5.6	4.0	3.3	2.8	4.2	23	3.6	3.2	43	61	66	57
15	4.0	3.7	3.8	2.6	3.8	13	3.1	12	41	61	59	58
16	3.8	3.6	3.8	3.0	3.7	7.2	3.0	9.5	44	63	62	58
17	3.9	3.7	3.1	2.9	3.4	6.3	2.7	7.8	47	65	60	72
18	3.8	3.3	3.5	3.0	3.9	7.7	2.7	11	49	62	59	68
19	3.7	3.3	3.0	3.0	4.2	9.0	2.5	8.1	49	59	59	67
20	3.8	3.7	2.4	3.1	4.3	7.4	2.5	16	49	58	62	65
21	3.7	3.8	2.1	2.5	4.2	9.1	2.4	28	51	57	65	64
22	3.4	3.6	2.3	2.6	4.2	9.2	2.2	22	51	55	96	64
23	3.3	3.9	2.6	3.0	4.2	14	1.9	21	50	53	74	61
24	3.3	3.6	4.0	2.7	4.1	11	1.9	22	52	54	75	67
25	3.3	3.6	3.0	2.9	4.5	6.9	1.9	18	53	52	70	77
26	3.1	3.3	2.8	3.4	4.7	5.9	1.9	20	53	53	70	64
27	3.2	3.2	2.8	3.7	5.7	6.3	1.8	23	56	52	66	58
28	3.1	3.3	4.1	3.9	7.5	6.2	1.8	27	61	54	65	53
29	3.2	3.9	3.2	3.8	---	6.0	1.8	27	74	56	67	52
30	4.7	4.4	2.6	4.2	---	6.6	2.3	23	76	57	70	48
31	3.6	---	2.9	3.5	---	7.4	---	24	---	61	69	---
TOTAL	162.9	110.5	95.6	95.2	119.3	889.2	113.1	487.2	1372	1890	2070	1818
MEAN	5.25	3.68	3.08	3.07	4.26	28.7	3.77	15.7	45.7	61.0	66.8	60.6
MAX	12	6.5	4.1	4.2	7.5	93	14	38	76	71	96	77
MIN	3.1	2.8	2.1	2.5	3.4	5.9	1.8	3.2	23	52	59	48
AC=FT	323	219	190	189	237	1760	224	966	2720	3750	4110	3610

CAL YR 1977 TOTAL 4985.1 MEAN 13.7 MAX 118 MIN 1.8 AC=FT 9890  
WTR YR 1978 TOTAL 9223.0 MEAN 25.3 MAX 96 MIN 1.8 AC=FT 18290

## 09355100 NAVAJO RESERVOIR NEAR ARCHULETA, NM

LOCATION.--Lat 36°48'28", long 107°36'31", in SW¼SE¼ sec.18, T.30 N., R.7 W., San Juan County, Hydrologic Unit 14080101, in gate shaft of outlet works structure near right abutment of Navajo Dam on San Juan River, 5.5 mi (8.8 km) east of Archuleta, 33 mi (53 km) east of Farmington, and at mile 298.6 (480.4 km).

DRAINAGE AREA.--3,230 mi<sup>2</sup> (8,370 km<sup>2</sup>), approximately.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

PERIOD OF RECORD.--June 1962 to current year. Prior to October 1968 dead storage included.

REMARKS.--Reservoir is formed by earth-rock-fill dam, completed in June 1963; storage began June 27, 1962. Capacity, 1,708,600 acre-ft (2.11 km<sup>3</sup>) between elevation 5,720 ft (1,743 m) upstream toe of dam and 6,085 ft (1,855 m) crest of spillway. Usable capacity 1,696,000 acre-ft (2.09 km<sup>3</sup>) above elevation 5,774.9 ft (1,760.19 m) minimum operating level. Dead storage below elevation 5,774.9 ft (1,760.19 m) is 12,600 acre-ft (15.5 hm<sup>3</sup>). Figures given herein are usable contents. Reservoir is used for irrigation storage, river regulation, desilting, flood control, and recreation.

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 1,731,000 acre-ft (2.13 km<sup>3</sup>) July 2-4, 1973, elevation, 6,087.25 ft (1,855.394 m); minimum daily contents after June 1964 (initial filling period), 234,300 acre-ft (289 hm<sup>3</sup>) Mar. 10, 11, 1965, elevation, 5,906.36 ft (1,800.259 m).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 1,295,000 acre-ft (1.60 km<sup>3</sup>) July 13, 14, elevation, 6,056.09 ft (1,845.896 m); minimum daily contents, 935,100 acre-ft (1.15 km<sup>3</sup>) Feb. 28, elevation, 6,022.64 ft (1,835.701 m).

Capacity table (elevation, in feet and contents, in thousands of acre-feet)

6,015	864.5	6,035	1,036.7	6,055	1,281.3	6,075	1,546.2
6,020	910.1	6,040	1,109.4	6,060	1,343.5	6,080	1,619.5
6,025	957.2	6,045	1,164.3	6,065	1,408.3	6,085	1,696.0
6,030	1,006.0	6,050	1,221.6	6,070	1,475.8	6,090	1,775.7

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1038000	1019000	1000000	977600	955200	935300	965000	1031000	1150000	1285000	1287000	1263000
2	1037000	1018000	1000000	976400	954600	936000	968800	1033000	1155000	1286000	1288000	1262000
3	1036000	1018000	998900	975700	953600	937200	972400	1036000	1161000	1290000	1287000	1261000
4	1035000	1017000	998400	974900	952800	938400	974600	1039000	1166000	1290000	1286000	1261000
5	1034000	1017000	997400	974100	952200	939900	976500	1041000	1172000	1292000	1285000	1259000
6	1033000	1016000	996700	973700	951100	940500	978600	1044000	1177000	1292000	1284000	1258000
7	1032000	1016000	996100	972600	950300	941200	980600	1046000	1181000	1292000	1284000	1257000
8	1032000	1015000	995300	972000	949800	941800	982900	1049000	1185000	1292000	1283000	1256000
9	1032000	1014000	994600	971400	948900	942600	985300	1051000	1189000	1292000	1283000	1255000
10	1032000	1014000	993600	970700	948300	943100	989400	1054000	1195000	1292000	1281000	1254000
11	1032000	1013000	992900	970200	947300	943700	991400	1056000	1201000	1295000	1281000	1253000
12	1031000	1013000	992200	969400	946700	944100	993600	1058000	1210000	1295000	1281000	1252000
13	1031000	1012000	991300	968700	946100	944600	996400	1063000	1216000	1295000	1280000	1251000
14	1031000	1012000	990600	968000	945100	944600	999100	1067000	1223000	1295000	1279000	1252000
15	1030000	1011000	990000	967200	944000	944100	1001000	1069000	1230000	1295000	1278000	1248000
16	1029000	1010000	989000	966900	943200	943700	1004000	1076000	1237000	1294000	1278000	1247000
17	1029000	1010000	988300	966600	942300	943200	1005000	1083000	1246000	1294000	1277000	1247000
18	1028000	1009000	987700	966000	941700	943100	1006000	1090000	1252000	1294000	1275000	1246000
19	1028000	1008000	987000	965100	940900	944600	1008000	1094000	1255000	1294000	1274000	1245000
20	1027000	1008000	986000	964500	940100	944100	1009000	1098000	1259000	1294000	1273000	1244000
21	1026000	1007000	985100	963900	939400	945100	1011000	1104000	1263000	1293000	1273000	1243000
22	1026000	1006000	984100	962900	938700	946200	1012000	1109000	1266000	1293000	1273000	1242000
23	1025000	1006000	983400	962400	938100	948000	1014000	1114000	1269000	1292000	1272000	1242000
24	1024000	1005000	982700	961700	937400	956800	1015000	1118000	1270000	1292000	1272000	1241000
25	1024000	1004000	982300	960700	936800	951300	1017000	1123000	1270000	1292000	1270000	1241000
26	1023000	1004000	981400	959900	936200	952500	1019000	1128000	1274000	1291000	1269000	1240000
27	1022000	1003000	980500	959000	935700	953700	1021000	1130000	1276000	1291000	1268000	1240000
28	1022000	1002000	979700	958100	935100	955200	1024000	1132000	1278000	1290000	1267000	1239000
29	1021000	1002000	978900	957200	---	957100	1027000	1135000	1280000	1290000	1266000	1239000
30	1021000	1001000	978600	956400	---	958800	1029000	1139000	1282000	1289000	1265000	1238000
31	1020000	---	978300	955900	---	961100	---	1145000	---	1288000	1264000	---
MAX	1038000	1019000	1000000	977600	955200	961100	1029000	1145000	1282000	1295000	1288000	1263000
MIN	1020000	1001000	978300	955900	935100	935300	965000	1031000	1150000	1285000	1264000	1238000
(†)	6031.38	6029.40	6028.24	6024.83	6022.64	6025.37	6032.27	6043.20	6055.04	6055.50	6053.55	6051.34
(‡)	-18.0	-19.0	-22.7	-22.4	-20.8	+26.0	+67.9	+116.0	+137.0	+6.0	-24.0	-26.0
CAL YR 1977	MAX	1204000	MIN	978300	(†)	-227.7						
WTR YR 1978	MAX	1295000	MIN	935100	(‡)	+200.0						

† Elevation, in feet, at end of month.

‡ Change in contents, in thousands of acre-feet.

## SAN JUAN RIVER BASIN

405

09355500 SAN JUAN RIVER NEAR ARCHULETA, NM

LOCATION.--Lat 36°48'05", long 107°41'51", in N½ sec.20, T.30 N., R.8 W., San Juan County, Hydrologic Unit 14080101, on left bank 0.5 mi (0.8 km) upstream from Gobernador Canyon, 0.8 mi (1.3 km) northeast of Archuleta, 7.2 mi (11.6 km) downstream from Navajo Dam, and at mile 291.4 (468.9 km).

DRAINAGE AREA.--3,260 mi<sup>2</sup> (8,440 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1954 to current year.

REVISED RECORDS.--The annual runoff for the 1958 water year as published in table 2, WSP 1733, is 455,000 acre-ft (561 hm<sup>3</sup>). The correct value is 1,455,000 acre-ft (1,790 hm<sup>3</sup>).

GAGE.--Water-stage recorder. Altitude of gage is 5,653 ft (1,723 m), from river-profile survey. Prior to Dec. 29, 1959, at site 5.0 mi (8.0 km) upstream at altitude 55 ft (17 m) higher. Dec. 29, 1959 to Dec. 15, 1964, at site 0.4 mi (0.6 km) upstream at altitude 5 ft (1.5 m) higher. Prior to Nov. 28, 1966, at altitude 2.0 ft (0.610 m) higher.

AVERAGE DISCHARGE.--7 years (1956-62), 1,304 ft<sup>3</sup>/s (36.93 m<sup>3</sup>/s), 944,700 acre-ft/yr (1,160 hm<sup>3</sup>/yr) prior to closure of Navajo Dam. 16 years (1963-78), 1,010 ft<sup>3</sup>/s (28.60 m<sup>3</sup>/s), 731,700 acre-ft/yr (902 hm<sup>3</sup>/yr) since closure of Navajo Dam.

REMARKS.--Water-discharge records good. Flow completely regulated by Navajo Reservoir (station 09355100) 7 mi (11 km) upstream except for minor inflow from 30 mi<sup>2</sup> (80 km<sup>2</sup>) intervening drainage area. Highwater diversions through Azotea tunnel (station 08284160) into Rio Grande Basin began in March 1971. Diversions for irrigation of about 47,000 acres (190 km<sup>2</sup>) above station. Releases from Navajo Reservoir, beginning in January 1976, for use on Navajo Indian Irrigation Project bypass gage in tunnel on left bank. See tabulation below for monthly and annual releases as furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,900 ft<sup>3</sup>/s (535 m<sup>3</sup>/s) July 27, 1957, gage height, 11.00 ft (3.353 m), site and datum then in use; minimum determined, 8 ft<sup>3</sup>/s (0.23 m<sup>3</sup>/s) Feb. 28, 1963. Maximum discharge since construction of Navajo Dam in 1962, 6,500 ft<sup>3</sup>/s (184 m<sup>3</sup>/s) June 20, 1965, gage height, 4.57 ft (1.393 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,760 ft<sup>3</sup>/s (49.8 m<sup>3</sup>/s) Nov. 8, gage height, 4.59 ft (1.399 m); minimum daily, 434 ft<sup>3</sup>/s (12.3 m<sup>3</sup>/s) Dec. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	508	551	487	461	545	483	552	536	449	503	466	654
2	506	551	485	455	547	483	545	543	449	503	465	654
3	510	551	485	455	551	496	545	539	444	503	463	654
4	512	551	485	467	551	484	548	530	444	503	466	660
5	521	551	483	467	551	485	541	534	449	503	464	660
6	528	554	485	467	543	483	510	534	456	500	460	660
7	528	557	485	467	570	481	506	530	467	496	462	660
8	528	920	479	467	570	481	500	534	460	499	462	654
9	528	498	473	467	570	485	509	534	456	495	460	654
10	528	480	473	469	566	490	509	528	459	498	460	659
11	528	479	473	473	579	502	509	534	467	492	461	656
12	528	479	473	480	581	500	509	523	471	491	464	652
13	527	479	473	485	567	506	507	522	473	492	460	641
14	528	479	473	485	576	508	516	522	473	493	458	637
15	528	479	467	497	582	507	510	517	473	492	456	631
16	530	473	475	504	592	509	513	522	475	492	456	633
17	534	473	473	504	562	505	515	528	479	493	595	637
18	534	473	475	504	455	508	517	528	480	492	660	626
19	539	480	477	510	450	508	528	528	478	485	654	624
20	540	485	473	510	450	512	522	533	479	482	654	624
21	545	485	467	510	450	520	523	534	486	480	660	618
22	545	485	467	516	447	526	524	534	491	480	654	618
23	545	484	467	518	455	528	528	529	492	480	660	611
24	545	479	470	521	452	524	528	512	498	476	660	611
25	545	479	473	528	455	528	528	509	499	480	660	611
26	545	479	473	528	456	530	530	506	503	479	660	605
27	545	479	463	528	467	527	534	516	503	477	654	605
28	539	479	439	529	467	528	537	516	503	474	654	599
29	542	479	434	534	---	525	539	509	507	470	654	599
30	557	480	442	534	---	532	535	535	509	466	660	599
31	551	---	454	542	---	546	---	509	---	465	654	---
TOTAL	16517	15351	14601	15382	14607	15730	15717	16308	14272	15134	17176	19006
MEAN	533	512	471	496	522	507	524	526	476	488	554	634
MAX	557	920	487	542	592	546	552	543	509	503	660	660
MIN	506	473	434	455	447	481	500	506	444	465	456	599
AC=FT	32760	30450	28960	30510	28970	31200	31170	32350	28310	30020	34070	37700
(†)	1280	0	0	0	0	746	4510	5420	11000	6760	9150	9020
CAL YR 1977 TOTAL	220324											
WTR YR 1978 TOTAL	189801											
MEAN 604												
MAX 1250												
MIN 434												
AC=FT 437000												
(†) 37520												
AC=FT 376500												
(†) 47890												

† Discharge in acre-feet, through Navajo Project tunnel.

09355500 SAN JUAN RIVER NEAR ARCHULETA, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE, (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT 18...	1530	536	215	8.7	22.0	9.0	3	--	12.4	10
NOV 28...	1200	480	270	8.2	13.0	7.0	4	--	12.8	34
DEC 20...	1200	438	291	8.4	-1.0	4.0	9	--	12.6	11
FEB 21...	1319	468	293	8.2	10.0	6.0	5	--	13.9	5
MAY 23...	1414	570	315	9.1	24.5	11.0	--	2.0	10.6	50
AUG 15...	1203	456	325	8.5	22.0	9.0	--	2.2	12.9	5

DATE	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NONCAR- BONATE (MG/L AS CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINEITY AS CAC03 (00410)
------	---	--	---	---	---	--	--	---	---	--

OCT 18...	100	24	31	5.9	15	.6	1.8	95	0	78
NOV 28...	110	25	32	6.2	15	.6	--	98	0	80
DEC 20...	130	50	43	6.3	18	.7	2.0	100	1	84
FEB 21...	120	28	37	6.3	17	.7	2.2	110	0	90
MAY 23...	120	--	35	6.8	20	.8	2.3	--	--	88
AUG 15...	120	--	35	6.7	20	.8	2.6	--	--	86

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
------	--	--	---	---	---	---	--	--	---

OCT 18...	50	2.9	.2	13	159	167	.07	.07	.00
NOV 28...	51	3.0	.2	12	167	167	.13	.13	.06
DEC 20...	58	3.5	.2	11	180	193	.12	.12	.02
FEB 21...	56	3.2	.2	10	186	186	.04	.04	.01
MAY 23...	61	4.1	.4	8.8	196	191	.02	.02	.00
AUG 15...	63	3.5	.3	11	192	194	.07	.07	.00

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
------	---	--	--	---	---	---	---	---	--

OCT 18...	.03	.10	.01	.01	20	10	--	3.4	.6
NOV 28...	.02	.21	.00	.00	20	20	--	4.7	.5
DEC 20...	.49	.62	.03	.01	20	10	--	5.7	--
FEB 21...	.25	.30	.07	.00	30	0	10	2.4	.4
MAY 23...	--	--	.01	.00	30	10	0	2.5	.4
AUG 15...	.29	.36	.24	.24	50	<10	5	2.8	.2

## SAN JUAN RIVER BASIN

407

09355500 SAN JUAN RIVER NEAR ARCHULETA, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
FEB 21...	1319	2	1	100	100	30	1	1	10	10
MAY 23...	1414	1	1	100	100	30	1	1	0	0
AUG 15...	1203	1	1	300	90	50	2	<1	10	10

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS Pb) (01051)	LEAD, DIS- SOLVED (UG/L AS Pb) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
FEB 21...	1	0	4	2	180	0	7	--	10
MAY 23...	0	0	10	2	60	10	6	6	20
AUG 15...	0	<1	15	2	70	<10	35	3	20

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (01000)	MERCURY DIS- SOLVED (UG/L AS HG) (01090)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
FEB 21...	10	.1	.0	1	1	0	0	10	10
MAY 23...	0	.1	.0	1	1	0	0	20	20
AUG 15...	5	.0	--	1	1	0	0	10	4

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C+ SUS- PENDE (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED (UG/L U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
FEB 21...	1319	5	3.5	<.4	8.6	.5	7.8	.5	.09	.45

## SAN JUAN RIVER BASIN

09356565 CAÑON LARGO WASH NEAR BLANCO, NM

LOCATION.--Lat 36°41'24", long 107°45'21", in NW¼ sec. 35, T.29 N., R.9 W., San Juan County, Hydrologic Unit 14080103, on left bank upstream side of country highway bridge, 1.2 mi (1.9 km) upstream from Medina Canyon, 4.0 mi (6.4 km) upstream from mouth, and 5.0 mi (8.0 km) east southeast of Blanco.

DRAINAGE AREA.--1,700 mi<sup>2</sup> (4,400 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 5,644 ft (1,720 m), from topographic map.

REMARKS.--Water-discharge records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,460 ft<sup>3</sup>/s (69.7 m<sup>3</sup>/s) May 9, 1978, gage height, 3.87 ft (1.180 m), from rating curve extended above 114 ft<sup>3</sup>/s (3.22 m<sup>3</sup>/s); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Mar. 3	1030	1,510 428	3.62 1.103	May 9	1500	*2,460 69.7	3.87 1.180
Mar. 21	0800	2,000 56.6	3.76 1.146				

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.14	.47	.86	64	.00	.07	.00	.00	.00	.00
2	.00	.00	.26	.49	.53	198	.00	2.1	.00	.00	.00	.00
3	.00	.00	.14	.50	.62	372	.00	.62	.00	.00	.00	.00
4	.00	.00	.19	.52	.34	67	.00	.00	.00	.00	.00	.00
5	.00	.00	.19	.54	.31	14	.00	3.8	.00	.00	.00	.00
6	.00	.02	.25	.55	.81	7.9	.00	2.7	.00	.00	2.3	.00
7	.00	35	.31	.57	.71	6.2	.00	77	.00	.00	.01	.00
8	.00	13	.31	.31	4.1	4.1	.04	49	.00	.00	.00	.00
9	.00	.50	.44	.30	1.2	6.0	.75	71	.00	.00	.00	.00
10	.00	.08	.25	.39	3.1	92	.00	2.5	.00	.00	.00	.00
11	.00	.03	.28	.69	6.5	55	.00	.15	.00	.00	.00	.00
12	.00	.03	.31	.54	5.4	7.5	.00	.00	.00	.00	.00	.00
13	.00	.03	.32	.14	2.3	4.2	.00	.00	.00	.00	.00	.00
14	.00	.01	.36	.71	1.5	1.0	.00	.00	.00	.00	.00	.00
15	.00	.01	.33	2.9	1.2	.00	.00	.00	.00	.00	.00	.00
16	.00	.01	.47	1.9	1.5	.00	.00	.00	.00	.00	.00	.00
17	.00	.01	.34	6.7	1.4	.00	.00	.00	.00	.00	.00	.00
18	.00	.01	.29	7.6	1.1	13	.00	.00	.00	.00	.00	.00
19	.00	.01	.39	2.0	1.1	74	.00	.00	.00	.00	.00	.00
20	.00	.09	.28	2.2	1.5	99	.00	4.6	.00	.00	.00	.00
21	.00	.05	.33	1.4	2.1	78	.00	.00	.00	.00	.00	.00
22	.00	.06	1.3	1.3	1.5	80	.00	.00	.00	.00	.00	.00
23	.00	.06	1.2	2.0	2.9	81	.00	.00	.00	.00	.00	.00
24	.00	.10	.75	1.5	1.6	28	.00	.00	.00	.00	.00	.01
25	.00	.12	.51	1.4	1.5	4.2	.00	.00	.00	.00	.00	.00
26	.00	.12	.36	1.7	3.6	7.2	.00	.00	.00	.00	.00	8.4
27	.00	.14	.39	.98	13	.38	.00	.00	.00	.00	.00	.07
28	.00	.14	.41	.69	5.1	.00	.00	.00	.00	.00	.00	.00
29	.00	.16	.42	.65	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.19	.44	.53	---	.00	.15	.00	.00	.00	.00	.00
31	.00	---	.46	3.2	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	49.98	12.42	45.37	67.38	1342.78	.94	213.54	.00	.00	2.31	8.48
MEAN	.000	1.67	.40	1.46	2.41	43.3	.031	6.89	.000	.000	.075	.28
MAX	.00	35	1.3	7.6	13	372	.75	77	.00	.00	2.3	8.4
MIN	.00	.00	.14	.14	.31	.00	.00	.00	.00	.00	.00	.00
AC=FT	.00	99	25	90	134	2660	1.9	424	.00	.00	4.6	17
WTR YR 1978	TOTAL	1743.20	MEAN	4.78	MAX	372	MIN	.00	AC=FT	3460		

09356565 CANON LARGO WASH NEAR BLANCO, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--December to September 1978.

REMARKS.--Under the heading SAMPLE SOURCE numerical values are used to indicate method of sampling; 40 indicates single-stage sampler.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		SPECIFIC CONDUCTANCE (MICRO-MHOS) (00095)												PH (UNITS) (00400)		TEMPERATURE, AIR (DEG C) (00020)		TEMPERATURE (DEG C) (00010)		OXYGEN, DIS-SOLVED (MG/L) (00300)		HARDNESS, NONCARBONATE (MG/L) (00900)		HARDNESS, CARBONATE (MG/L) (00902)		CALCIUM, DIS-SOLVED (MG/L) (00915)		MAGNESIUM, DIS-SOLVED (MG/L) (00925)		SODIUM, DIS-SOLVED (MG/L) (00930)						
DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)																																		
DEC 16...	1445	.70	5000		8.1		.0		2.5		11.6		1300		1000		410		59		790															
JAN 13...	1230	.14	8300		8.2		8.0		5.5		10.3		780		440		300		6.3		1400															
FEB 03...	1130	.60	4300		8.5		.0		2.0		11.0		960		670		300		50		770															
MAR 06...	1400	25	1200		8.3		11.0		10.0		8.6		190		44		62		7.5		190															
MAY 02...	1430	4.1	4380		8.2		7.5		12.0		8.6		1000		760		330		48		900															
07...	0215	E224	2400		7.7		--		--		--		--		--		--		--		--															
09...	0530	E860	1850		7.7		--		--		--		--		--		--		--		--															
09...	0545	E1670	1975		7.6		--		--		--		--		--		--		--		--															
DATE		SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L) (00935)	CALCIUM, DIS-SOLVED (MG/L) (00440)	CARBONATE (MG/L) (00445)	ALKALINITY (MG/L) (00410)	SULFATE, DIS-SOLVED (MG/L) (00945)	CHLORIDE, DIS-SOLVED (MG/L) (00940)	FLUORIDE, DIS-SOLVED (MG/L) (00950)	SILICA, DIS-SOLVED (MG/L) (00955)	SOLIDS, RESIDUE AT 180 DEG. C (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	NITROGEN, NO2+NO3 TOTAL (MG/L) (00630)																							
DEC 16...	9.7	5.7	310	0	254	2700	24	.8	9.0	4030	4150	.39																								
JAN 13...	22	5.2	410	0	336	3600	34	1.1	7.8	5650	5560	.01																								
FEB 03...	11	4.9	310	20	288	2300	23	.7	7.1	1850	3630	.11																								
MAR 06...	6.1	3.4	178	0	146	420	8.0	.7	6.1	813	785	.58																								
MAY 02...	12	7.8	318	0	261	2600	30	.6	6.1	4060	4080	.12																								
07...	--	--	--	--	--	--	--	--	--	--	--	--	--																							
09...	--	--	--	--	--	--	--	--	--	--	--	--	--																							
09...	--	--	--	--	--	--	--	--	--	--	--	--	--																							
DATE		NITROGEN, AMMONIA TOTAL (MG/L) (00610)	NITROGEN, ORGANIC TOTAL (MG/L) (00605)	NITROGEN, TOTAL (MG/L) (00600)	PHOSPHORUS, TOTAL (MG/L) (00665)	BORON, DIS-SOLVED (UG/L) (01020)	IRON, DIS-SOLVED (UG/L) (01046)	MANGANESE, DIS-SOLVED (UG/L) (01056)	CARBON, ORGANIC TOTAL (MG/L) (00680)	CARBON, ORGANIC DIS-SOLVED (MG/L) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L) (00689)	SAMPLE SOURCE (72005)																								
DEC 16...	.06	1.3	1.8	.56	160	70	--	--	--	2.9	--	--																								
JAN 13...	.00	.58	.59	.15	280	20	--	--	3.7	.5	--	--																								
FEB 03...	.07	.66	.84	.22	160	30	--	--	4.3	.8	--	--																								
MAR 06...	.07	.90	1.6	4.9	60	0	--	--	8.2	8.9	--	--																								
MAY 02...	.21	4.0	4.3	2.3	180	30	20	--	9.0	<10	--	--																								
07...	--	--	--	--	--	--	--	--	362	--	--	40																								
09...	--	--	--	--	--	--	--	--	538	--	--	40																								
09...	--	--	--	--	--	--	--	--	539	--	--	40																								



09356565 CAÑON LARGO WASH NEAR BLANCO, NM -- Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	
MAY													
02...	1430	0	20	2	400	0	10	10	180	1	1	120	
07...	0215	--	4	--	--	--	--	--	--	--	--	--	
09...	0530	--	8	--	--	--	--	--	--	--	--	--	
09...	0545	--	6	--	--	--	--	--	--	--	--	--	
		CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
MAY													
02...	10	46	2	200	3	30	56	2	160	60	3700	20	
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
		MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, TOTAL RECOV- ERABLE (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SAMPLE SOURCE (72005)
MAY													
02...	.1	.0	0	3	75	0	2	1	1.0	510	40	--	--
07...	1.7	--	--	--	--	--	23	--	--	--	--	40	40
09...	2.6	--	--	--	--	--	27	--	--	--	--	40	40
09...	2.6	--	--	--	--	--	35	--	--	--	--	40	40

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BE) (01013)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CR) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
MAY								
02...	1430	2	30	1	0	1	0	0
DATE	TIME	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS MN) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS MO) (01063)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS V) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
MAY								
02...		0	93	.0	0	0	0	4

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
MAY					
02...	1430	<56	390	23	220

09356565 CAÑON LARGO WASH NEAR BLANCO, NM --- Continued

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
DEC 16...	1445	K23	780
JAN 13...	1230	E1	190
FEB 03...	1130	K1	210
MAY 02...	1430	K14	1200

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)
DEC 16...	1445	.70	2.5	1820	3.4	--	--
JAN 13...	1230	.14	5.5	470	.18	--	--
FEB 03...	1130	.60	2.0	349	.57	--	--
MAR 06...	1400	25	10.0	31100	2100	--	--
MAY 02...	1430	4.1	12.0	7130	79	95	3
07...	0215	E224	--	158000	95600	--	--
09...	0530	E860	--	525000	1220000	--	--
09...	0545	E1670	--	319000	1440000	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. FALL DIAM. % FINER THAN 2.00 MM (80163)	SAMPLE SOURCE (72005)
DEC 16...	--	--	--	--	--	--
JAN 13...	--	--	--	--	--	--
FEB 03...	--	--	--	--	--	--
MAR 06...	--	--	--	--	--	--
MAY 02...	13	72	91	99	100	--
07...	--	--	--	--	--	40
09...	--	--	--	--	--	40
09...	--	--	--	--	--	40

## 09357100 SAN JUAN RIVER AT HAMMOND BRIDGE, NEAR BLOOMFIELD, NM

LOCATION.--Lat 36°41'22", long 108°05'42", in NE¼ sec.33, T.29 N., R.12 W., San Juan County, Hydrologic Unit 14080101 on downstream end of center pier of Hammond Bridge, 0.9 mi (1.4 km) to State Highway 17, 1.2 mi (1.9 km) downstream from Gallegos Canyon, 4.1 mi (6.6 km) upstream from Kutz Canyon, and at mile 261 (420 km).

DRAINAGE AREA.--5,540 mi<sup>2</sup> (14,350 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 5,330 ft (1,624 m), from topographic map. Prior to May 3, 1978, at site 6.5 mi (10.4 km) upstream at different datum.

REMARKS.--Water-discharge records poor. Since June 1962 flow is partly controlled by operation of Navajo Reservoir 41 mi (66 km) upstream (see station 09355100). Diversions above station for irrigation about 81.2 mi<sup>2</sup> (210 km<sup>2</sup>). Hammond Main Canal bypasses gage on left bank. The bypass flow is not included in the record.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 1,400 ft<sup>3</sup>/s (39.65 m<sup>3</sup>/s) Sept. 26, 1978, gage height, 3.83 ft (1.167 m); minimum 312 ft<sup>3</sup>/s (8.84 m<sup>3</sup>/s) Aug. 6, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--A major flood occurred in October 1911 at this station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,400 ft<sup>3</sup>/s (39.65 m<sup>3</sup>/s) at 0945 hours Sept. 26, gage height, 3.83 ft (1.167 m), no peak above base of 4,000 ft<sup>3</sup>/s (110 m<sup>3</sup>/s); minimum 330 ft<sup>3</sup>/s (9.35 m<sup>3</sup>/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	440	585	560	560	610	616	646	470	388	364	337	486
2	440	585	545	575	610	742	640	495	358	364	337	462
3	440	575	590	560	622	838	658	480	365	360	332	446
4	410	530	585	565	658	706	652	610	350	367	470	438
5	410	575	560	565	688	658	658	641	357	356	393	438
6	410	545	590	565	712	640	616	713	369	336	332	412
7	445	652	600	565	706	658	610	698	365	352	343	438
8	485	724	585	550	712	600	600	669	351	380	344	438
9	490	664	560	555	688	605	640	703	372	383	348	446
10	490	490	610	575	694	640	605	652	379	406	353	446
11	490	515	605	575	694	622	580	677	368	412	359	438
12	500	475	610	610	670	664	570	681	360	406	355	454
13	495	440	640	670	652	622	565	601	369	384	368	470
14	505	430	634	652	610	610	550	606	399	395	376	470
15	540	480	628	718	595	616	565	587	364	386	367	478
16	515	485	616	676	616	616	555	489	348	408	367	494
17	565	515	605	658	535	616	515	435	355	409	376	520
18	530	540	585	652	550	652	495	437	365	394	470	520
19	510	570	610	634	540	694	495	445	355	413	494	530
20	555	575	585	646	520	694	520	493	352	414	502	540
21	550	495	585	622	505	730	505	462	361	387	494	540
22	600	545	545	610	525	768	510	432	352	370	560	580
23	580	580	585	622	520	775	490	465	376	388	520	590
24	570	605	570	600	540	736	465	442	399	406	502	640
25	550	610	555	595	540	694	475	478	351	382	494	626
26	575	585	595	605	585	664	490	462	370	384	486	715
27	535	545	580	622	590	640	480	435	330	356	478	649
28	530	525	565	616	570	646	460	442	341	349	494	636
29	545	570	585	616	---	652	470	436	367	352	494	675
30	565	580	590	616	---	640	480	448	394	356	486	590
31	560	---	580	628	---	634	---	487	---	393	478	---
TOTAL	15825	16590	18238	18878	17057	20688	16560	16571	10930	11812	13109	15605
MEAN	510	553	588	609	609	667	552	535	364	381	423	520
MAX	600	724	640	718	712	838	658	713	399	414	560	715
MIN	410	430	545	550	505	600	460	432	330	336	332	412
AC-FT	31390	32910	36180	37440	33830	41030	32850	32870	21680	23430	26000	30950
WTR YR 1978	TOTAL	191863	MEAN	526	MAX	838	MIN	330	AC-FT	380600		

09357100 SAN JUAN RIVER AT HAMMOND BRIDGE NEAR BLOOMFIELD, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--December to September 1978.

REMARKS.--Samples collected at 09357000 San Juan River at Bloomfield until May 1978.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPECIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	
DATE	TIME											
DEC												
09...	1100	579	507	8.1	10.0	4.0	10.4	150	52	46	8.0	
09...	1101	579	507	8.1	--	4.0	--	--	--	--	--	
JAN												
03...	1230	550	507	8.1	--	2.0	--	--	--	--	--	
24...	1050	606	472	8.3	5.0	2.0	11.3	140	44	44	8.0	
FEB												
22...	1100	519	430	8.4	6.0	3.0	11.0	150	47	47	7.7	
MAR												
28...	1315	653	425	8.6	14.5	10.0	4.8	140	42	44	7.5	
APR												
27...	1100	480	460	8.6	14.0	13.0	8.7	150	46	45	8.6	
JUN												
27...	1330	339	550	8.5	31.0	23.5	7.4	180	61	57	9.5	
JUL												
18...	1050	380	550	8.2	24.0	19.0	9.0	180	0	55	9.4	
AUG												
21...	1200	496	510	8.4	20.0	22.0	8.4	170	60	52	8.6	
SEP												
15...	1630	490	509	8.5	28.0	19.0	8.2	160	59	52	8.3	
		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
DATE												
DEC												
09...	34	1.2	2.4	120	0	98	100	3.9	.2	12	261	
09...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
24...	37	1.3	2.2	120	0	98	120	4.0	.3	13	283	
FEB												
22...	37	1.3	2.2	121	2	103	120	4.0	.2	10	285	
MAR												
28...	34	1.2	2.3	116	2	98	120	4.5	.2	9.9	266	
APR												
27...	39	1.4	2.4	115	6	104	120	4.3	.3	10	299	
JUN												
27...	47	1.5	2.6	130	8	120	120	5.4	.3	11	359	
JUL												
18...	46	1.5	2.5	260	0	213	150	4.8	.2	11	355	
AUG												
21...	42	1.4	2.5	118	5	105	140	4.5	.2	11	325	
SEP												
15...	40	1.4	2.6	120	4	105	140	5.0	.3	11	168	
		SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00635)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
DATE												
DEC												
09...	266	.31	.27	.09	.67	3.8	40	280	40	3.4	.8	
09...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
24...	288	.13	.00	.14	.27	.06	30	20	--	3.0	.8	
FEB												
22...	290	.23	.13	1.3	1.6	.02	40	50	--	4.2	.3	
MAR												
28...	282	.06	.01	.51	.58	.17	30	20	--	3.1	1.9	
APR												
27...	292	.05	.03	.33	.41	.04	40	20	10	3.7	.8	
JUN												
27...	325	.14	.03	.52	.69	.07	40	30	--	4.6	.8	
JUL												
18...	407	.09	.00	.39	.48	.03	50	20	10	8.0	.7	
AUG												
21...	324	.08	.02	.33	.43	.07	50	<10	4	7.7	.6	
SEP												
15...	322	.08	.04	.42	.54	.02	40	40	--	4.9	.4	

09357100 SAN JUAN RIVER AT HAMMOND BRIDGE NEAR BLOOMFIELD, NM -- Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)
DEC 09...	1100	130	1	1	300	100	0	0	40	1	1	0
APR 27...	1100	0	--	1	--	100	--	0	40	--	1	--
JUL 18...	1030	0	20	2	300	200	10	0	50	1	1	0
AUG 21...	1200	0	--	1	--	70	--	<1	50	--	<1	--

DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
DEC 09...	0	0	0	22	3	280	4	4	20	20	40	40
APR 27...	0	--	0	--	2	20	--	0	--	30	--	10
JUL 18...	0	2	2	15	6	20	10	0	30	30	100	10
AUG 21...	0	--	<1	--	3	<10	--	3	--	20	--	4

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
DEC 09...	.0	.0	1	0	7	0	1	1	.7	20	20
APR 27...	--	.0	--	0	--	0	--	0	1.0	--	10
JUL 18...	.0	.0	3	3	8	3	1	1	.7	40	20
AUG 21...	--	.1	--	1	--	0	--	0	.0	--	5

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIUM, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS BE) (01013)	CADMIUM RECOV- FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS CR) (01029)	COBALT, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
DEC 09...	1100	1	70	0	<1	4	<5	2

DATE	LEAD, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS MN) (01053)	MERCURY RECOV- FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV- FM BOT- TOM MA- TERIAL (UG/G) (01063)	NICKEL, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01148)	ZINC, RECOV- FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
DEC 09...	<10	120	.0	3	<5	0	5

09357100 SAN JUAN RIVER AT HAMMOND BRIDGE NEAR BLOOMFIELD, NM -- Continued

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01013)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
JUL 18...	1030	1	30	1	0	5	0	0

DATE	TIME	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01063)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
JUL 18...	0	140	.0	0	0	0	0	3

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
DEC 09...	1101	<3.7	3.8	3.4	2.6
APR 27...	1100	<2.8	2.0	3.0	2.5

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
APR 27...	1100	K14	140
JUL 18...	1030	2600	950
AUG 21...	1200	73	500
SEP 15...	1630	31	94

09357100 SAN JUAN RIVER AT HAMMOND BRIDGE NEAR BLOOMFIELD, NM -- Continued  
 QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	FEB 22,78 1100	MAR 28,78 1315	APR 27,78 1100	MAY 24,78 1015
TOTAL CELLS/ML	770	1000	800	320
DIVERSITY: DIVISION	0.3	0.1	1.2	0.3
..CLASS	0.3	0.1	1.2	0.3
...ORDER	0.6	0.5	1.4	0.3
...FAMILY	2.5	2.2	2.8	2.4
....GENUS	2.8	2.2	3.0	2.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...TETRASPORALES								
....PALMELLACEAE								
....SPHAEROYSTIS	--	-	--	-	76	10	--	-
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	110	14	20	6
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISCEAE								
....CYCLOTELLA	25	3	--	-	--	-	--	-
....MELOSIRA	--	-	95	9	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	130#	17	54	5	95	12	60#	19
....RHOICOSPHEA	19	2	14	1	19	2	20	6
...CYMBELLACEAE								
....AMPHORA	--	-	27	3	--	-	--	-
....CYMBELLA	51	7	--	-	--	-	--	-
....EPITHEMIA	--	-	--	-	38	5	--	-
...DIATOMACEAE								
....DIATOMA	240#	31	340#	33	250#	31	20	6
....OPEPHORA	38	5	--	-	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	130#	17	390#	39	19	2	--	-
...GOMPHONEMACEAE								
....GOMPHONEMA	19	2	--	-	38	5	40	13
...NAVICULACEAE								
....NAVICULA	63	8	81	8	76	10	60#	19
...NITZSCHIACEAE								
....NITZSCHIA	--	-	--	-	--	-	99#	31
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	51	7	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
....EUGLENACEAE								
....EUGLENA	--	-	14	1	--	-	--	-
....PHACUS	--	-	--	-	19	2	--	-
....TRACHELOMONAS	--	-	--	-	57	7	--	-

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09357100 SAN JUAN RIVER AT HAMMOND BRIDGE NEAR BLOOMFIELD, NM -- Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE	JUN 27, 78
TIME	1330
TOTAL CELLS/ML	1300

DIVERSITY: DIVISION	0.8
..CLASS	0.8
...ORDER	1.1
....FAMILY	2.3
.....GENUS	2.4

ORGANISM	CELLS /ML	PER- CENT
----------	--------------	--------------

CHRYSTOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
....COSCINODISCACEAE		
.....MELOSIRA	46	4

..PENNALES		
...ACHNANTHACEAE		
....COCCONEIS	490#	38
...RHOICOSPHEA	23	2
...CYMBELLACEAE		
....EPITHEMIA	23	2
...DIATOMACEAE		
....DIATOMA	46	4
...FRAGILARIACEAE		
....FRAGILARIA	23	2
...GOMPHONEMATACEAE		
....GOMPHONEMA	69	5
...NAVICULACEAE		
....NAVICULA	190	15
...NITZSCHACEAE		
....NITZSCHIA	23	2

CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONALES		
....OSCILLATORIACEAE		
.....LYNGBYA	350#	27

DATE	JUL 18, 78
TIME	1030
TOTAL CELLS/ML	1400

DIVERSITY: DIVISION	1.2
..CLASS	1.2
...ORDER	1.5
....FAMILY	2.0
.....GENUS	2.0

ORGANISM	CELLS /ML	PER- CENT
----------	--------------	--------------

CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...VOLVOCALES		
....CHLAMYDOMONADACEAE		
.....CHLAMYDOMONAS	66	5

CHRYSTOPHYTA		
..BACILLARIOPHYCEAE		
...PENNALES		
...ACHNANTHACEAE		
....COCCONEIS	290#	21
...CYMBELLACEAE		
....CYMBELLA	44	3
...DIATOMACEAE		
....DIATOMA	22	2
...NITZSCHACEAE		
....NITZSCHIA	130	10

CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCOCEAE		
....CHROCOCCOCEAE		
...ANACYSTIS	88	6
...HORMOGONALES		
....OSCILLATORIACEAE		
.....OSCILLATORIA	750#	54

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%  
 \* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%



## SAN JUAN BASIN

09357100 SAN JUAN RIVER AT HAMMOND BRIDGE NEAR BLOOMFIELD, NM -- Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
JAN 03...	1230	.866	.630	.000	.000	Polyethylene strip "
MAY 24...	1015	1.34	.709	.420	.100	

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
DEC 09...	1100	579	4.0	2220	3470	3	4
JAN 24...	1030	606	2.0	885	1450	--	--
FEB 22...	1100	519	3.0	977	1370	--	--
MAR 28...	1315	653	10.0	1820	3210	--	--
APR 13...	1150	564	12.0	1240	1890	--	--
27...	1100	480	13.0	438	568	--	--
MAY 12...	1300	613	12.0	1910	3160	--	--
JUN 08...	0915	345	16.5	622	579	--	--
27...	1330	339	23.5	388	355	--	--
JUL 05...	1500	365	24.5	360	355	--	--
18...	1030	380	19.0	354	363	--	--
AUG 01...	1140	327	17.0	331	292	--	--
21...	1200	496	22.0	383	513	16	17
SEP 05...	0900	436	17.0	191	225	--	--
15...	1630	490	19.0	401	531	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)

DEC 09...	4	12	29	77	100	--
JAN 24...	--	--	--	--	--	--
FEB 22...	--	--	--	--	--	--
MAR 28...	--	--	--	--	--	--
APR 13...	--	--	--	--	--	--
27...	--	--	--	--	--	16
MAY 12...	--	--	--	--	--	--
JUN 08...	--	--	--	--	--	--
27...	--	--	--	--	--	--
JUL 05...	--	--	--	--	--	--
18...	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--
21...	23	35	61	96	100	--
SEP 05...	--	--	--	--	--	--
15...	--	--	--	--	--	--

## 09357250 GALLEGOS CANYON WASH NEAR FARMINGTON, NM

LOCATION.--Lat 36°38'27", long 108°07'33", in SE¼SE¼ sec.20, T.28 N., R.12 W., San Juan County, Hydrologic Unit 14080101, on right bank downstream from Navajo Indian Irrigation Project Highway bridge, 4.0 mi (6.4 km) upstream from mouth, 7.0 mi (11.3 km) southwest of Farmington, and at mile 258.9 (417 km).

DRAINAGE AREA.--290 mi<sup>2</sup> (751 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 5,550 ft (1,692 m), from topographic map.

REMARKS.--Water-discharge records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22 ft<sup>3</sup>/s (0.623 m<sup>3</sup>/s) Nov. 7, 1977, gage height, 2.36 ft (0.719 m) from rating curve extended above 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22 ft<sup>3</sup>/s (0.623 m<sup>3</sup>/s) Nov. 7, 1977, gage height, 2.36 ft (0.719 m), no peak above base of 50 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.3	.89	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.96	1.3	.00	1.5	.00	.00	.00	.00
3	.00	.00	.00	.00	.99	.89	.00	.05	.00	.00	.00	.00
4	.00	.00	.00	.14	.98	.42	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.42	1.1	.28	.00	.45	.00	.00	.00	.00
6	.00	.35	.00	.53	1.5	.11	.00	7.3	.00	.00	.00	.00
7	.00	3.9	.00	.47	2.6	.02	.00	.31	.00	.00	.00	.00
8	.00	3.4	.00	.26	1.7	.01	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.81	1.1	.00	.22	.00	.00	.00	.00	.00
10	.00	.00	.00	.53	1.6	.23	.37	.00	.00	.00	.00	.00
11	.00	.00	.00	.29	1.3	1.1	.16	.00	.00	.00	.00	.00
12	.00	.00	.00	.20	1.1	2.8	.00	.00	.00	.01	.00	.00
13	.00	.00	.00	.02	1.1	.65	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.12	.74	.05	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.87	.81	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.12	.81	.33	.00	.00	.00	.00	.00	.00	.00
17	.23	.00	.00	.74	.67	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.81	.67	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	1.3	.53	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	1.1	.42	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.89	.67	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.67	1.0	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.89	.58	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.37	.44	.00	.00	.00	.00	.00	.00	.40
25	.00	.00	.00	.10	.18	.00	.00	.00	.00	.00	.00	.93
26	.00	.00	.00	.36	.06	.00	.00	.00	.00	.00	.00	.20
27	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.32	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.20	.12	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.46	.20	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.41	.81	---	.00	---	.00	---	.00	.00	---
TOTAL	.23	7.65	1.19	13.90	24.75	8.75	.75	9.61	.00	.01	.00	1.53
MEAN	.007	.26	.038	.45	.88	.28	.025	.31	.000	.000	.000	.051
MAX	.23	3.9	.46	1.3	2.6	2.8	.37	7.3	.00	.01	.00	.93
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.5	15	2.4	26	49	17	1.5	19	.00	.02	.00	3.0

WTR YR 1978 TOTAL 68.37 MEAN .19 MAX 7.3 MIN .00 AC-FT 136

09357250 GALLEGOS CANYON WASH NEAR FARMINGTON, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--February, to September 1978.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
FEB											
03...	1500	.80	2300	8.4	1.0	2.5	11.0	190	0	64	7.3
03...	1501	.80	2300	8.4	--	2.5	--	--	--	--	--
MAR											
02...	1200	1.7	2200	8.6	13.0	11.0	9.4	150	0	51	4.5

DATE	TIME	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
FEB												
03...	390	12		4.5	310	8	268	770	30	.9	10	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
02...	430	16		4.4	400	17	356	450	43	1.0	10	1460

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
FEB 03...	1440	1.7	.06	3.9	5.7	.83	--	330	--	9.0	>2.4
03...	--	--	--	--	--	--	--	--	.7	--	--
MAR 02...	1190	3.3	.05	44	47	2.2	130	40	--	3.6	>33

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
FEB			
03...	1500	K2	K10000

## INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)
FEB					
03...	1500	.80	2.5	7350	16
MAR					
02...	1200	1.7	11.0	30200	139

09357300 SAN JUAN RIVER ABOVE ANIMAS RIVER, AT FARMINGTON, NM

LOCATION.--Lat 36°43'10", long 108°12'45", in NE¼SE¼NE¼ sec.20, T.29 N., R.13 W., San Juan County, Hydrologic Unit 14080101, 100 ft (30 m) upstream from mouth of Animas River, at south edge of Farmington, and at mile 99 (159 km).

DRAINAGE AREA.--5,800 mi<sup>2</sup> (15,000 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--Water years 1963 to current year.

REMARKS.--Discharges are estimated from the streamflow records of the San Juan River at Farmington and Animas River at Farmington stations.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	
OCT										
20...	1100	384	525	8.0	18.5	10.5	10.0	170	68	
NOV										
28...	1500	401	500	8.1	15.0	7.0	10.8	170	68	
DEC										
20...	1600	603	466	8.1	1.0	1.5	12.2	160	58	
JAN										
25...	1330	673	520	8.3	4.0	1.0	8.6	160	60	
FEB										
21...	1610	669	575	7.9	12.0	9.0	10.2	170	64	
MAR										
16...	1012	594	538	7.8	9.5	4.5	11.5	160	65	
APR										
20...	0930	619	493	7.9	16.0	9.5	10.6	170	63	
MAY										
24...	0800	366	505	8.3	17.0	12.5	7.9	170	67	
JUN										
13...	1338	200	525	8.3	27.5	23.0	6.8	180	69	
JUL										
12...	1339	520	555	8.4	31.0	24.5	7.8	190	--	
AUG										
15...	1520	158	590	8.7	33.0	22.5	9.5	200	--	
SEP										
19...	1200	489	510	8.1	24.0	14.0	8.8	170	--	
DATE		CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
OCT										
20...	53		8.2	38	1.3	2.1	120	0	98	140
NOV										
28...	52		8.8	42	1.4	2.1	120	0	98	160
DEC										
20...	49		8.3	38	1.3	2.1	120	0	98	130
JAN										
25...	50		8.1	39	1.4	2.3	120	0	98	140
FEB										
21...	54		8.8	45	1.5	2.4	130	0	110	160
MAR										
16...	51		8.7	42	1.4	2.2	120	0	98	120
APR										
20...	52		9.7	40	1.3	2.3	130	0	110	130
MAY										
24...	55		8.9	48	1.6	2.4	130	0	110	140
JUN										
13...	55		9.4	45	1.5	2.7	130	0	110	150
JUL										
12...	61		10	50	1.6	2.8	--	--	110	170
AUG										
15...	65		9.0	41	1.3	2.6	--	--	110	170
SEP										
19...	55		8.7	41	1.4	2.4	--	--	110	150

## SAN JUAN RIVER BASIN

09357300 SAN JUAN RIVER ABOVE ANIMAS RIVER, AT FARMINGTON, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOSPHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT 20...	4.9	.2	13	--	319	.17	.01	40	50
NOV 28...	4.9	.2	12	--	342	.26	.01	30	20
DEC 20...	4.4	.2	11	--	303	.24	.01	30	10
JAN 25...	7.4	.2	12	--	319	.17	.00	30	10
FEB 21...	5.0	.3	10	--	350	.19	.00	40	0
MAR 16...	4.8	.2	10	--	299	.13	.01	40	10
APR 20...	5.3	.4	10	--	315	.16	.01	40	20
MAY 24...	5.3	.3	9.4	344	334	.09	.01	40	50
JUN 13...	6.0	.2	10	--	343	.07	.01	50	30
JUL 12...	5.8	.3	11	--	376	.14	.02	50	20
AUG 15...	5.8	.3	9.9	--	370	.15	.02	50	<10
SEP 19...	5.8	.2	10	--	339	.08	.02	60	20

## 09363500 ANIMAS RIVER NEAR CEDAR HILL, NM

LOCATION.--Lat 37°02'17", long 107°52'25", in sec.7, T.32 N., R.9 W., La Plata County, Colorado, Hydrologic Unit 14080104, on right bank 0.8 mi (1.3 km) downstream from Florida River, 2.5 mi (4.0 km) upstream from Colorado-New Mexico State line, 8.5 mi (13.7 km) north of Cedar Hill, and at mile 32.9 (52.9 km).

DRAINAGE AREA.--1,090 mi<sup>2</sup> (2,820 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1933 to current year. Monthly discharge only for October and November 1933, published in WSP 1313.

REVISED RECORDS.--WSP 1563: 1940 and 1946 (monthly figures only).

GAGE.--Water-stage recorder. Altitude of gage is 5,960 ft (1,817 m), from topographic map. Prior to Sept. 14, 1937, at datum between 1.52 ft (0.46 m) and 1.36 ft (0.41 m) higher. Sept. 15, 1937, to Sept. 30, 1946, at datum 1.36 ft (0.41 m) higher.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 20,000 acres (81 km<sup>2</sup>) above station. During water years 1944-49, Twin Rocks Canal diverted above station for irrigation below. Slight regulation by Lemon Dam about 30 mi (48 km) upstream on Florida River since November 1963 (capacity, 40,100 acre-ft or 49.4 hm<sup>3</sup>). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--45 years, 879 ft<sup>3</sup>/s (24.89 m<sup>3</sup>/s), 636,800 acre-ft/yr (785 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft<sup>3</sup>/s (371 m<sup>3</sup>/s) June 19, 1949, gage height, 11.45 ft (3.490 m); minimum, 63 ft<sup>3</sup>/s (1.78 m<sup>3</sup>/s) Jan. 21, 1935.

EXTREMES OUTSIDE PERIOD OF RECORD.--A major flood occurred in October 1911 at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft<sup>3</sup>/s (110 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 17	1200	4,060 115	7.60 2.316
June 16	1500	*5,160 146	8.17 2.490

Minimum daily discharge, 160 ft<sup>3</sup>/s (4.53 m<sup>3</sup>/s) Dec. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	229	232	192	195	185	230	1200	1420	3750	2000	624	267
2	221	212	187	179	185	270	1300	1330	3910	1930	588	267
3	211	189	210	176	185	350	1010	1180	3970	1860	545	260
4	213	189	196	195	188	340	864	1140	3970	1680	508	253
5	199	190	196	210	202	330	866	1100	3790	1470	473	242
6	210	199	189	202	220	340	878	1040	3530	1330	443	234
7	240	264	188	192	220	330	936	1020	3710	1240	415	220
8	380	236	185	185	226	350	1030	920	3730	1220	397	205
9	357	212	183	182	209	370	1060	882	4010	1180	380	205
10	309	195	175	200	204	360	933	967	4500	1300	371	202
11	290	189	176	209	245	350	857	1120	4580	1380	377	195
12	273	218	176	203	224	370	1050	1320	4380	1430	361	197
13	248	224	182	185	198	340	1350	1530	4400	1370	356	207
14	238	212	182	189	198	290	1330	1940	4510	1210	350	209
15	238	229	178	182	199	260	1200	2800	4600	1090	348	214
16	229	194	189	212	203	250	1190	3530	4700	1130	322	216
17	224	205	202	212	198	277	1190	3730	3920	1180	305	250
18	226	206	189	199	176	337	1040	2610	3430	1330	288	259
19	233	200	195	193	192	382	962	2300	3160	1250	272	246
20	247	204	160	189	188	400	1000	2520	3310	1080	269	269
21	254	186	160	192	199	500	1120	2640	3120	1010	262	274
22	249	179	170	195	188	540	1220	2350	3140	936	313	261
23	248	207	200	185	204	600	1180	2680	3050	856	366	256
24	256	212	230	185	195	680	1190	2890	3160	822	361	310
25	254	224	212	173	214	600	1430	2930	3330	789	338	289
26	244	220	220	189	224	540	1620	2870	3110	732	355	284
27	226	208	223	199	223	580	1950	3000	2450	684	339	310
28	223	206	206	212	225	680	1850	2610	2370	658	289	310
29	245	196	210	202	---	760	1600	2460	2380	673	264	316
30	258	189	199	179	---	810	1500	3000	2160	673	275	303
31	242	---	204	180	---	850	---	3560	---	639	278	---
TOTAL	7714	6226	5964	5980	5717	13666	35906	65389	108130	36132	11432	7530
MEAN	249	208	192	193	204	441	1197	2109	3604	1166	369	251
MAX	380	264	230	212	245	850	1950	3730	4700	2000	624	316
MIN	199	179	160	173	176	230	857	882	2160	639	262	195
AC-FT	15300	12350	11830	11860	11340	27110	71220	129700	214500	71670	22680	14940
CAL YR 1977	TOTAL	118313	MEAN 324	MAX 1290	MIN 129	AC-FT 234700						
WTR YR 1978	TOTAL	309786	MEAN 849	MAX 4700	MIN 160	AC-FT 614500						



09364500 ANIMAS RIVER AT FARMINGTON, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1940 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1941 to current year.

WATER TEMPERATURES: December 1950 to current year.

SUSPENDED SEDIMENT DISCHARGE: December 1950 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,980 micromhos Aug. 19, 1944; minimum daily, 146 micromhos July 11, 1975.

WATER TEMPERATURES: Maximum, 32.0°C Aug. 26, 1966, July 16, 1977; minimum, 0.0°C on many days during winter months (each year).

SEDIMENT CONCENTRATIONS: Maximum daily, 36,800 mg/L July 23, 1954; minimum daily, 1 mg/L on several days during September 1956, September 1958, and September 1974.

SEDIMENT LOADS: Maximum daily, 337,000 tons (306,000 tonnes) July 23, 1954; minimum daily, less than .50 ton (.45 tonne) on many days during 1955-57, 1959, 1960, 1963, 1972, 1974, and 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,080 micromhos Sept. 11; minimum daily, 194 micromhos June 17.

WATER TEMPERATURES: Maximum, 29.0°C Aug. 11; minimum, 0.0°C Dec. 21, 22, 27, Feb. 18.

SEDIMENT CONCENTRATIONS: Maximum daily, 9,800 mg/L Nov. 7; minimum daily, 6 mg/L Sept. 5.

SEDIMENT LOADS: Maximum daily, 14,400 tons (13,100 tonnes) June 6; minimum daily, .38 tons (.34 tonnes) Sept. 12.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	
OCT											
18...	1530	178	680	8.3	25.0	15.5	50	--	9.7	16	
NOV											
28...	1400	216	850	8.3	14.0	7.0	15	--	10.9	30	
DEC											
20...	1430	178	866	8.1	2.0	1.0	20	--	12.4	14	
FEB											
24...	1338	225	791	7.7	12.0	7.5	40	--	11.8	10	
MAY											
26...	0930	2466	269	8.1	18.0	9.0	--	40	9.9	56	
AUG											
15...	1400	57	700	8.3	27.0	25.0	--	1.5	9.3	14	
DATE		HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, AD- SORP- TION RATIO (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)
OCT											
18...	350	210	110	19	49	1.1	4.1	180	0	150	
NOV											
28...	350	180	110	18	46	1.1	3.7	200	0	160	
DEC											
20...	380	210	120	19	46	1.0	3.6	210	0	170	
FEB											
24...	340	180	110	17	40	.9	3.6	200	0	160	
MAY											
26...	120	--	39	5.2	5.9	.2	1.1	--	--	68	
AUG											
15...	320	--	100	16	49	1.2	3.9	--	--	140	
DATE		SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 DIS- TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT											
18...	250	33	.6	8.8	546	564	--	.09	.09	.02	
NOV											
28...	250	34	.5	7.8	547	569	--	.15	.15	.07	
DEC											
20...	240	31	.5	8.8	588	574	--	.32	.32	.01	
FEB											
24...	220	31	.6	8.4	515	531	100	.30	.30	.02	
MAY											
26...	47	3.7	.3	10	142	153	--	.19	.19	.00	
AUG											
15...	220	27	.5	6.6	516	507	--	.04	.04	.02	



## SAN JUAN RIVER BASIN

09364500 ANIMAS RIVER AT FARMINGTON, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT 18...	.03	.14	.06	.01	110	10	--	1.7	2.3
NOV 28...	.33	.55	.03	.01	90	10	--	2.2	1.4
DEC 20...	.27	.60	.07	.01	90	10	--	2.0	1.3
FEB 24...	.33	.65	.12	.03	90	0	10	.9	1.2
MAY 26...	--	--	.04	.00	20	20	10	2.1	1.5
AUG 15...	.26	.32	.02	.01	100	<10	20	2.6	.3

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC, TOTAL (UG/L AS AS) (01002)	ARSENIC, DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM, TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM, DIS- SOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHROMIUM, DIS- SOLVED (UG/L AS CR) (01030)
FEB 24...	1338	1	1	200	100	90	2	2	0	0
MAY 26...	0930	2	1	100	100	20	1	1	10	0
AUG 15...	1400	1	1	200	90	100	2	2	0	0

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
FEB 24...	0	0	9	1	2100	0	13	8	160
MAY 26...	0	0	40	6	3600	20	--	2	350
AUG 15...	0	<1	12	4	20	<10	9	9	30

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY, TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY, DIS- SOLVED (UG/L AS HG) (71890)	SILVER, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
FEB 24...	10	.0	.0	1	1	1	0	60	10
MAY 26...	10	.0	.0	0	0	4	0	220	30
AUG 15...	20	.1	.0	1	0	0	0	20	5

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED METHOD (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
FEB 24...	1338	100	<5.3	7.1	4.2	3.7	3.7	3.3	.14	1.6

09364500 ANIMAS RIVER AT FARMINGTON, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
NOV									
07...	1700	305	10.5	10300	8480	18	23	31	--
FEB									
07...	0945	258	4.0	2800	1950	47	58	82	90
MAR									
03...	1720	450	6.5	8780	10700	42	59	86	99
10...	1130	380	4.0	1900	1950	41	52	77	--
21...	1600	462	13.0	4750	5930	42	51	75	--
APR									
02...	1530	823	10.0	2790	6200	24	35	57	87
28...	1400	1810	12.0	684	3340	32	38	58	--
MAY									
18...	1000	3420	13.0	425	3920	38	41	58	--
23...	0930	2370	9.0	179	1150	--	--	--	--
JUN									
06...	1230	3320	11.5	2410	21600	54	69	93	--
12...	1245	4470	13.5	268	3230	37	46	66	--
22...	1430	3290	15.5	608	5400	7	9	13	42

DATE	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM (70336)
NOV									
07...	--	--	--	37	38	42	80	98	100
FEB									
07...	92	98	100	--	--	--	--	--	--
MAR									
03...	100	--	--	--	--	--	--	--	--
10...	--	--	--	95	99	100	--	--	--
21...	--	--	--	97	100	--	--	--	--
APR									
02...	99	100	--	--	--	--	--	--	--
28...	--	--	--	87	98	100	--	--	--
MAY									
18...	--	--	--	90	99	100	--	--	--
23...	--	--	--	69	92	98	100	--	--
JUN									
06...	--	--	--	99	100	--	--	--	--
12...	--	--	--	99	100	--	--	--	--
22...	89	100	--	--	--	--	--	--	--

## 09364500 ANIMAS RIVER AT FARMINGTON, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	858	800	834	799	855	817	---	358	223	282	611	876
2	840	800	832	823	805	755	409	373	223	289	609	916
3	890	810	837	852	807	897	447	410	217	295	642	934
4	898	810	824	823	798	743	462	412	215	300	615	980
5	920	820	826	822	816	778	495	408	276	319	678	1040
6	954	850	824	823	815	761	496	430	233	344	629	999
7	918	950	851	805	860	776	480	441	236	366	657	1020
8	878	845	841	798	838	809	478	491	216	376	690	964
9	831	810	843	816	817	740	444	466	222	386	739	997
10	726	800	857	822	795	714	451	460	210	393	731	997
11	751	820	855	817	930	838	474	---	199	381	740	1080
12	754	800	874	---	814	812	472	398	200	370	765	1000
13	786	872	864	812	809	760	425	362	202	360	737	1040
14	805	862	870	811	818	781	369	344	200	369	755	1020
15	832	856	884	792	842	808	386	301	200	403	741	1060
16	853	825	873	853	808	788	394	275	197	433	786	1040
17	830	840	898	817	807	775	399	---	194	432	815	1000
18	830	852	872	821	807	765	393	240	212	420	759	1020
19	800	860	865	826	859	762	419	273	225	399	787	946
20	800	858	886	817	842	724	427	280	224	391	---	875
21	780	841	953	833	849	654	410	276	220	441	877	925
22	800	870	953	822	809	663	384	282	222	451	854	877
23	800	845	884	816	767	648	372	287	225	481	862	873
24	790	845	808	835	824	570	388	---	221	495	787	804
25	780	848	822	864	795	599	379	260	260	526	777	1040
26	800	842	824	857	798	620	342	257	256	523	791	916
27	790	841	823	856	799	645	334	262	259	551	785	893
28	800	843	816	832	794	608	306	253	251	---	824	847
29	870	842	786	880	---	576	328	284	250	607	870	852
30	880	847	829	795	---	531	343	271	260	581	882	828
31	800	---	829	901	---	516	---	---	---	588	---	---
MEAN	827	840	853	828	821	717	411	339	225	418	752	955
WTR YR 1978	MEAN	669		MAX	1080		MIN	194				

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.5	9.0	2.5	4.5	3.0	6.5	---	9.0	11.0	14.0	19.5	25.0
2	12.5	9.5	2.0	2.0	1.0	6.0	10.0	8.0	14.0	14.5	24.0	22.0
3	20.5	12.0	4.5	1.0	2.0	6.5	11.5	11.5	14.0	17.0	25.0	22.5
4	21.0	13.0	3.0	2.0	2.0	3.5	10.5	9.5	9.5	18.0	24.0	26.5
5	22.0	10.5	5.0	5.5	2.0	7.0	12.5	7.0	10.0	16.0	24.5	28.0
6	17.0	10.0	4.5	3.5	5.0	5.5	14.5	8.0	11.5	16.0	20.0	19.5
7	16.5	10.5	1.5	3.5	4.0	5.0	11.0	8.5	13.0	16.0	26.0	19.0
8	14.5	8.0	5.0	.5	5.5	6.5	10.5	10.0	11.0	17.0	26.5	20.0
9	11.0	5.0	4.5	4.0	1.5	10.0	10.5	12.5	14.0	17.0	27.5	16.5
10	15.0	6.5	3.5	2.5	6.5	4.0	10.0	14.0	13.0	20.0	27.5	19.0
11	15.0	8.5	1.5	2.0	4.5	9.0	14.0	---	11.0	21.0	29.0	16.0
12	13.5	5.5	3.0	---	4.5	6.0	13.0	17.0	13.5	18.0	25.5	14.5
13	15.0	6.0	4.5	4.5	1.0	7.0	11.5	16.5	14.5	22.0	22.0	15.0
14	16.0	8.5	3.0	2.5	1.5	5.0	12.0	14.0	15.0	19.0	20.0	11.0
15	15.0	8.0	3.0	2.0	2.0	3.0	13.5	15.5	15.0	23.0	25.0	21.0
16	10.0	8.5	3.0	.5	2.5	10.0	9.5	16.0	14.5	20.5	26.0	18.0
17	8.5	8.0	1.0	3.5	2.0	---	9.0	---	10.5	21.0	26.5	22.0
18	15.5	7.5	4.0	4.0	.0	---	7.5	13.0	10.0	20.5	26.0	15.0
19	16.5	7.0	2.0	2.0	4.5	9.0	9.5	7.5	15.5	19.0	17.0	13.5
20	16.5	6.5	.5	3.5	.5	12.0	9.0	10.0	15.0	19.0	---	10.0
21	17.0	5.5	.0	2.5	7.5	13.0	13.0	10.5	15.5	24.0	24.0	10.0
22	15.0	5.0	.0	3.0	8.5	11.0	10.5	13.0	15.5	22.0	26.0	12.5
23	10.0	6.5	3.5	2.0	7.5	12.0	7.5	13.5	16.5	22.0	24.5	14.0
24	13.5	5.5	4.0	1.5	6.5	9.5	12.0	---	16.5	24.0	23.0	16.0
25	14.0	3.0	2.0	1.0	8.5	9.5	10.5	12.5	15.0	25.0	25.0	14.0
26	13.5	7.5	1.0	2.0	8.5	---	12.0	13.0	16.0	25.5	24.5	14.0
27	12.5	6.0	.0	3.0	7.0	15.0	11.5	13.0	15.0	25.0	21.5	15.0
28	12.5	7.5	3.0	4.5	7.0	10.5	12.0	11.5	14.0	---	15.0	21.0
29	13.0	6.0	3.0	5.0	---	14.0	11.5	13.5	14.5	23.0	16.5	15.0
30	13.5	5.5	4.5	4.0	---	10.5	11.0	12.0	13.0	24.5	25.0	14.0
31	11.0	---	5.5	2.5	---	12.0	---	---	---	20.5	---	---
MEAN	14.5	7.5	3.0	3.0	4.0	8.5	11.0	12.0	13.5	20.0	23.5	17.5
WTR YR 1978	MEAN	11.5		MAX	29.0		MIN	.0				

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

TOTAL LOAD FOR YEAR: 472079.75 TONS.

## SAN JUAN RIVER BASIN

09365000 SAN JUAN RIVER AT FARMINGTON, NM

LOCATION.--Lat 36°43'22", long 108°13'30", in NW¼SE¼ sec.17, T.29 N., R.13 W., San Juan County, Hydrologic Unit 14080105, on left bank 360 ft (110 m) downstream from highway bridge on State Highway 371 in Farmington, 4,000 ft (1,200 m) downstream from Animas River, 2.3 mi (3.7 km) upstream from La Plata River, and at mile 251.4 (404.5 km).

DRAINAGE AREA.--7,240 mi<sup>2</sup> (18,750 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to December 1904, January 1905 to September 1906 (gage heights and discharge measurements only), September 1912 to current year. Monthly discharge only for some periods, published in WSP 1313. Discharge records for January to December 1905, published in WSP 175, are unreliable and should not be used.

REVISED RECORDS.--WSP 1119: Drainage area. WSP 1243: 1938. WSP 1313: 1905, 1914. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 5,230.37 ft (1,594.217 m) National Geodetic Vertical Datum of 1929. See WSP 1313 or 1733 for history of changes prior to Nov. 19, 1933.

REMARKS.--Water-discharge records good. Since June 1962 flow is partly controlled by operation of Navajo Reservoir (station 09355100) 50 mi (80 km) upstream. Diversions above station for irrigation of about 86,000 acres (350 km<sup>2</sup>), 4,000 of which is irrigated by Farmers Mutual ditch which diverts from Animas River and bypasses this station; ditch flow not included in record. At times this ditch may be supplied partly or entirely by diversion from San Juan River below this station. National Weather Service gage height telemeter at station.

AVERAGE DISCHARGE.--66 years (water years 1913-78), 2,353 ft<sup>3</sup>/s (66.64 m<sup>3</sup>/s), 1,705,000 acre-ft/yr (2.10 km<sup>3</sup>/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 68,000 ft<sup>3</sup>/s (1,930 m<sup>3</sup>/s) June 29, 1927, gage height, 10.2 ft (3.109 m), site and datum then in use, from rating curve extended above 37,000 ft<sup>3</sup>/s (1,050 m<sup>3</sup>/s); minimum, 14 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) Aug. 22, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood occurred Oct. 6, 1911. Flood of Sept. 6, 1909, reached a stage of about 12.3 ft (3.8 m), site and datum in use May to September 1906.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,690 ft<sup>3</sup>/s (161 m<sup>3</sup>/s) at 1830 hours June 10, gage height, 5.04 ft (1.536 m), no other peak above base of 5,000 ft<sup>3</sup>/s (140 m<sup>3</sup>/s); minimum, 250 ft<sup>3</sup>/s (7.08 m<sup>3</sup>/s) Aug. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	528	711	713	820	1010	1010	1740	1610	3860	2120	559	570
2	513	683	737	820	985	1420	2060	1750	3780	2050	555	565
3	544	697	749	760	993	1890	1790	1540	3760	1990	524	559
4	595	685	780	772	993	1440	1510	1480	3710	1810	608	578
5	550	712	745	827	986	1240	1390	1640	3630	1620	564	574
6	518	726	754	848	1020	1270	1310	1760	3520	1440	482	565
7	546	997	741	843	1070	1160	1280	1610	3840	1310	427	576
8	562	925	740	822	1120	1150	1350	1650	4200	1230	375	575
9	635	1090	751	812	1030	1170	1540	1750	4610	1210	369	583
10	692	672	763	857	1030	1240	1400	1600	5190	1210	335	574
11	696	738	757	879	1210	1250	1100	1700	5400	1400	327	568
12	694	769	740	882	1090	1150	1210	1800	5010	1500	300	556
13	675	753	777	867	1060	1130	1420	2100	4760	1490	314	600
14	684	721	736	858	1050	1070	1520	2500	4820	1370	323	630
15	719	738	683	909	1020	1010	1510	3000	4760	1160	306	669
16	697	728	741	968	1030	961	1560	3700	4790	1090	295	674
17	646	730	801	939	1030	945	1470	4000	4330	1190	268	726
18	645	718	801	994	901	989	1430	3610	3680	1240	362	739
19	650	700	785	896	839	1200	1370	3460	3390	1380	372	752
20	667	692	792	949	894	1100	1270	3360	3410	1130	411	720
21	681	714	770	942	903	1300	1340	3450	3280	1010	430	768
22	676	678	768	915	894	1290	1420	3190	3230	945	440	847
23	686	715	770	931	889	1550	1460	2890	3240	870	459	869
24	662	751	804	920	865	1510	1540	3360	3240	818	486	1030
25	669	732	796	897	871	1330	1610	3660	3370	775	510	1010
26	698	743	794	929	879	1200	1670	3610	3290	745	515	957
27	662	759	787	950	909	1210	1950	3550	2730	686	518	865
28	653	721	790	981	927	1280	1830	3340	2450	623	524	931
29	641	756	810	984	---	1320	2020	3010	2510	583	546	970
30	684	731	840	975	---	1420	1730	3240	2370	606	564	955
31	708	---	830	1060	---	1540	---	3910	---	598	560	---
TOTAL	19876	22485	23845	27806	27498	38745	45800	82830	114160	37199	13628	21555
MEAN	641	750	769	897	982	1250	1527	2672	3805	1200	440	719
MAX	719	1090	840	1060	1210	1890	2060	4000	5400	2120	608	1030
MIN	513	672	683	760	839	945	1100	1480	2370	583	268	556
AC-FT	39420	44600	47300	55150	54540	76850	90840	164300	226400	73780	27030	42750
CAL YR 1977 TOTAL	292826			802	MAX 3180	MIN 286	AC-FT 580800					
WTR YR 1978 TOTAL	475427			1303	MAX 5400	MIN 268	AC-FT 943000					

09365000 SAN JUAN RIVER AT FARMINGTON, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1962 to current year.

WATER TEMPERATURES: June 1962 to current year.

HARDNESS: May 1962 to current year.

DISSOLVED SOLIDS: 1962 to current year.

REMARKS.--Daily chemical samples are collected by transversing the stream cross section.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,290 micromhos Aug. 8, 1970; minimum daily, 154 micromhos May 13, 1962.

WATER TEMPERATURES: Maximum, 33.0°C July 6, 1967; minimum, 0.0°C on several days during December and January of most years.

HARDNESS: Maximum, 820 mg/L Aug. 6, 1968; minimum, 65 mg/L May 11-15, 1962.

DISSOLVED SOLIDS: Maximum, 1,720 mg/L Aug. 8, 1970; minimum, 103 mg/L May 11-15, 1962.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 992 micromhos Mar. 3; minimum daily, 210 micromhos June 13.

WATER TEMPERATURES: Maximum, 27.5°C Aug. 3; minimum, 0.0°C Dec. 21.

HARDNESS: Maximum, 280 mg/L Oct. 1-31, Nov. 7; minimum, 91 mg/L June 10-16.

DISSOLVED SOLIDS: Maximum, 728 mg/L Mar. 3; minimum, 128 mg/L June 10-16.

## CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREAM- FLOW (CFS) (00060)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)
OCT												
01-31	641	564	7.6	280	160	83	17	66	1.7	3.3	140	0
NOV												
01-06	702	568	7.8	210	93	65	11	40	1.2	2.7	140	0
07...	997	925	7.3	280	120	91	12	94	2.5	4.4	190	0
08-13	824	653	7.8	230	96	73	11	53	1.5	3.2	160	0
14-30	725	602	7.9	220	81	70	11	41	1.2	3.0	170	0
DEC												
01-04	745	614	7.7	230	92	73	12	47	1.3	3.6	170	0
05-31	773	615	7.6	230	100	72	11	42	1.2	2.9	150	0
JAN												
01-31	897	602	7.9	220	110	70	11	47	1.4	2.8	140	0
FEB												
01-10	1020	624	7.7	210	91	66	10	50	1.5	2.9	140	0
11...	1210	868	7.7	170	42	58	6.9	120	4.0	3.9	160	0
12-28	944	610	7.8	210	85	65	11	45	1.4	2.9	150	0
MAR												
01-02	1220	772	7.8	230	99	76	9.7	90	2.6	3.3	160	0
03...	1890	992	7.4	250	59	83	9.9	150	4.1	5.0	230	0
APR												
01-30	1530	435	7.8	190	88	58	10	24	.8	2.1	120	0
MAY												
01-10	1640	529	8.0	180	76	59	8.6	43	1.4	2.4	130	0
11-14	2030	424	8.9	160	67	50	7.9	26	.9	2.2	110	0
15-31	3430	322	8.0	130	54	43	6.1	14	.5	1.5	96	0
JUN												
01-09	3880	265	7.7	110	53	35	4.9	9.4	.4	1.3	66	0
10-16	4960	227	7.7	91	38	30	3.9	7.2	.3	1.2	65	0
17-26	3450	253	7.7	110	54	35	4.4	9.8	.4	1.3	63	0
27-30	2520	305	7.8	110	52	38	4.2	14	.6	1.5	73	0
JUL												
01-15	1530	413	8.5	160	84	54	7.1	23	.8	1.9	--	--
16-31	893	496	8.7	180	80	58	8.1	32	1.0	2.3	--	--
AUG												
01-05	562	522	8.2	180	70	57	9.1	40	1.3	2.5	--	--
06...	482	837	7.4	240	70	78	11	94	2.6	4.2	--	--
07-30	479	522	8.1	190	77	59	9.7	46	1.5	2.5	--	--
SEP												
01-23	661	509	8.0	190	79	61	9.0	39	1.2	2.5	--	--
25...	1010	712	7.8	190	67	63	7.2	90	2.9	3.9	--	--
26-30	941	551	8.0	190	97	63	8.3	45	1.4	3.0	--	--
WTD. AVG.	--	437	7.9	168	76	54	8.2	29	.9	2.1	--	--
TIME WTD.												
AVG.	1320	514	7.9	197	89	62	9.9	39	1.2	2.5	--	--
TOT. LOAD												
(TONS)	--	--	--	--	--	63900	9750	35100	--	2540	--	--

## SAN JUAN RIVER BASIN

09365000 SAN JUAN RIVER AT FARMINGTON, NM--Continued

CHEMICAL ANALYSES, COMPOSITES OF DAILY SAMPLES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	AL-KA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT											
01-31	110	210	25	.4	11	485	.66	839	--	70	20
NOV											
01-06	110	160	12	.3	11	371	.50	703	--	50	10
07...	160	300	18	.4	12	626	.85	1690	--	80	0
08-13	130	190	15	.4	11	436	.59	970	--	70	0
14-30	140	140	13	.2	11	373	.51	730	--	70	10
DEC											
01-04	140	170	15	.3	12	417	.57	839	--	60	10
05-31	120	160	15	.3	11	388	.53	810	--	60	0
JAN											
01-31	110	170	15	.3	12	397	.54	962	--	60	10
FEB											
01-10	110	170	10	.3	9.5	388	.53	1070	--	60	10
11...	130	280	10	.4	10	568	.77	1860	--	80	10
12-28	120	160	11	.3	9.1	378	.51	963	--	60	10
MAR											
01-02	130	250	15	.3	11	534	.73	1760	--	60	10
03...	190	340	15	.4	11	728	.99	3720	--	120	10
APR											
01-30	98	130	7.1	.4	9.0	300	.41	1240	--	40	10
MAY											
01-10	110	160	8.0	.3	9.6	355	.48	1570	--	40	20
11-14	90	100	5.8	.3	8.9	255	.35	1400	--	40	70
15-31	79	70	4.5	.8	7.1	195	.27	1810	.21	30	70
JUN											
01-09	54	57	3.8	.2	6.4	151	.21	1580	--	20	70
10-16	53	44	3.4	.2	6.0	128	.17	1710	--	20	20
17-26	52	58	4.2	.2	6.2	150	.20	1400	--	20	20
27-30	60	71	5.5	.2	6.7	177	.24	1200	--	30	20
JUL											
01-15	80	110	7.6	.3	6.6	259	.35	1070	--	40	20
16-31	98	120	8.6	.3	6.7	295	.40	711	--	50	60
AUG											
01-05	110	140	7.3	.3	11	333	.45	505	--	60	<10
06...	170	240	11	.5	13	554	.75	721	--	100	<10
07-30	110	160	6.6	.3	11	361	.49	467	--	60	<10
SEP											
01-23	110	170	6.1	.3	11	365	.50	651	--	50	20
25...	120	250	9.3	.3	12	509	.69	1390	--	70	610
26-30	95	180	7.8	.3	12	377	.51	958	--	50	20
WTD. AVG.	90	118	8.3	.4	8.6	284	.39	--	--	42	--
TIME WTD.											
AVG.	104	147	11	.3	9.7	345	.47	--	--	52	--
TOT. LOAD											
(TONS)	108000	141000	9950	423	10200	339000	--	--	--	50	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	HARD- NESS (MG/L AS CAC03) (00900)
OCT										
19...	0930	650	480	8.2	10.5	7.5	--	10.4	--	170
NOV										
28...	1600	680	505	8.0	9.5	7.0	--	10.7	--	170
DEC										
21...	0900	790	499	8.0	-4.0	.0	--	--	--	170
JAN										
25...	1500	860	505	8.1	2.0	3.0	--	13.2	--	170
FEB										
21...	1700	870	550	7.8	7.0	8.0	--	10.2	--	180
MAR										
16...	1100	930	539	7.8	9.5	5.0	--	11.6	--	190
APR										
20...	1010	1835	440	7.6	21.0	10.0	--	9.9	--	180
MAY										
24...	0930	4070	295	8.2	19.5	11.0	50	7.9	63	130
JUN										
13...	1426	5517	210	8.0	30.5	16.0	--	7.9	--	92
JUL										
12...	1500	1595	385	8.4	30.5	22.0	--	8.6	--	160
AUG										
15...	1545	130	570	8.5	30.5	22.5	--	8.7	--	190

09365000 SAN JUAN RIVER AT FARMINGTON, NM--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)
OCT 19...	67	53	8.1	38	1.3	2.1	120	0	98	140
NOV 28...	66	54	9.2	42	1.4	2.2	130	0	110	150
DEC 21...	60	52	9.0	40	1.3	3.2	130	0	110	140
JAN 25...	64	54	8.8	39	1.3	2.3	130	0	110	140
FEB 21...	77	58	9.5	45	1.4	2.5	130	0	110	150
MAR 16...	81	59	9.8	41	1.3	2.4	130	0	110	150
APR 20...	72	56	9.4	23	.8	2.1	130	0	110	110
MAY 24...	51	41	6.5	12	.5	1.6	95	0	78	67
JUN 13...	38	30	4.2	7.5	.3	1.1	66	0	54	45
JUL 12...	--	52	7.5	21	.7	2.2	--	--	76	110
AUG 15...	--	61	9.9	48	1.5	3.3	--	--	120	160

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 19...	4.8	.2	13	--	319	--	.22	--	--
NOV 28...	5.8	.3	11	--	341	--	.43	--	--
DEC 21...	5.3	.2	12	--	327	--	.28	--	--
JAN 25...	5.0	.2	12	--	326	--	.19	--	--
FEB 21...	7.2	.3	10	--	347	--	.19	--	--
MAR 16...	7.8	.2	10	--	345	--	.19	--	--
APR 20...	8.3	.3	8.2	--	282	--	.15	--	--
MAY 24...	4.6	.3	5.8	220	188	.16	.19	.03	.32
JUN 13...	3.9	.2	6.0	--	131	--	.16	--	--
JUL 12...	9.7	.3	7.8	--	256	--	.10	--	--
AUG 15...	8.5	.3	10	--	373	--	.09	--	--



## SAN JUAN RIVER BASIN

09365000 SAN JUAN RIVER AT FARMINGTON, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHOPHOS- PHATE, SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT 19...	--	--	--	40	--	--	--	--	--
NOV 28...	--	--	--	30	--	--	--	--	--
DEC 21...	--	--	--	40	--	--	--	--	--
JAN 25...	--	--	--	40	--	--	--	--	--
FEB 21...	--	--	--	40	--	--	--	--	--
MAR 16...	--	--	--	40	--	--	--	--	--
APR 20...	--	--	--	40	--	--	--	--	--
MAY 24...	.51	.03	.04	30	1400	70	3.4	2.6	2.2
JUN 13...	--	--	--	20	--	--	--	--	--
JUL 12...	--	--	--	40	30	--	--	--	--
AUG 15...	--	--	--	50	--	--	--	--	--

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)
MAY 24...	0930	3	2	50	2	1	15	0	7	0	60

DATE	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
MAY 24...	11	13000	1400	1100	70	.1	.0	1	1	460	70

09365000 SAN JUAN RIVER AT FARMINGTON, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	557	568	585	618	683	616	---	431	258	353	509	503
2	543	535	593	585	609	893	446	463	269	356	533	497
3	574	591	635	587	588	992	460	557	267	329	530	503
4	578	575	637	643	571	806	468	474	263	368	522	496
5	527	551	634	583	595	672	477	517	259	375	514	499
6	571	586	601	613	605	688	488	609	303	399	790	497
7	611	925	615	635	659	665	481	545	271	431	543	491
8	614	823	621	579	691	667	471	557	252	437	550	497
9	623	638	651	568	598	629	485	557	225	450	544	497
10	607	642	640	599	637	587	477	563	242	452	550	504
11	564	629	615	599	868	768	479	---	248	476	547	517
12	580	615	605	---	667	675	481	449	255	455	547	510
13	586	570	643	560	628	665	436	425	257	428	559	518
14	530	679	651	562	523	642	395	404	261	431	561	512
15	588	675	593	577	597	614	418	351	263	456	562	523
16	543	595	623	726	497	588	421	319	269	481	548	512
17	568	574	578	674	562	624	423	---	---	478	564	541
18	554	600	617	691	628	669	436	282	---	471	521	537
19	548	580	587	616	651	672	469	315	---	443	496	514
20	552	595	602	627	598	642	451	331	---	451	---	497
21	522	571	559	614	633	597	434	372	---	469	500	503
22	544	554	613	594	622	630	419	320	---	484	509	516
23	537	605	619	609	602	626	417	336	---	506	479	514
24	523	627	569	596	615	587	435	---	---	519	510	---
25	551	598	605	602	696	562	418	335	263	510	517	712
26	572	596	574	565	687	571	405	303	---	521	504	571
27	651	590	606	562	597	556	405	305	271	522	507	575
28	510	625	595	568	607	535	352	297	314	---	504	528
29	515	584	681	576	---	527	382	322	314	534	503	558
30	604	590	659	549	---	511	379	317	335	526	501	527
31	541	---	629	570	---	495	---	---	---	519	---	---
MEAN	564	616	614	602	626	644	438	409	269	454	535	523
WTR YR 1978	MEAN	533	MAX	992	MIN	225						

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	7.0	3.5	5.0	2.0	7.0	---	10.0	11.5	15.5	21.0	22.0
2	10.0	7.5	3.0	2.5	1.5	6.0	11.5	8.5	14.5	16.0	26.0	17.0
3	18.5	10.0	4.5	1.5	4.0	7.0	13.5	13.0	15.5	19.5	27.5	18.0
4	18.0	11.0	3.5	3.0	2.5	4.5	11.0	9.0	10.5	19.0	23.0	23.5
5	18.0	10.0	6.0	6.5	3.0	7.0	13.0	6.5	10.0	16.5	24.5	23.0
6	15.0	9.0	5.5	4.0	6.5	6.0	15.5	8.5	12.5	17.0	17.5	17.0
7	15.0	8.5	3.0	4.0	4.5	6.0	11.5	9.0	15.5	17.0	24.5	17.5
8	13.0	7.5	5.5	1.0	6.0	7.5	11.0	10.0	11.5	18.5	23.5	17.0
9	8.5	4.5	6.0	3.5	1.5	9.5	11.5	13.0	13.5	19.0	26.0	15.0
10	14.0	5.5	4.5	3.5	7.0	6.5	12.0	15.0	13.5	22.0	25.5	16.5
11	12.5	7.0	2.5	3.0	6.0	8.5	15.0	---	11.0	23.0	26.0	15.0
12	15.0	5.0	4.0	---	4.5	5.5	14.0	17.5	14.0	19.0	23.0	13.0
13	13.0	6.5	4.0	6.0	1.0	6.0	12.0	17.0	14.5	25.0	21.0	13.0
14	14.0	7.0	3.5	4.0	2.5	6.0	13.0	14.0	15.0	20.5	19.0	12.5
15	14.0	7.5	3.5	3.5	2.5	3.0	14.5	15.0	16.0	26.0	23.0	13.0
16	13.5	8.0	2.5	2.5	3.0	9.5	10.0	15.5	15.0	21.5	22.0	13.0
17	7.0	8.5	1.0	5.0	2.0	---	8.5	---	11.0	22.0	22.5	18.5
18	13.5	8.0	4.5	5.0	4.5	---	8.0	13.5	11.0	20.0	22.0	14.0
19	14.0	6.0	2.5	2.5	4.5	9.5	11.0	8.5	16.5	20.0	15.0	12.0
20	14.0	6.0	1.0	4.5	1.5	12.0	10.0	11.0	16.0	20.0	---	8.5
21	14.5	5.5	.0	3.0	8.0	12.5	14.5	10.5	16.5	26.0	21.0	7.5
22	12.0	5.0	1.5	4.0	8.0	11.0	11.0	10.0	16.5	23.0	21.0	9.0
23	8.5	6.5	3.5	2.0	9.0	13.0	8.0	15.0	17.5	23.0	22.0	12.0
24	12.0	5.5	5.5	2.0	7.0	10.0	13.0	---	17.5	26.0	20.5	---
25	13.5	3.0	3.0	2.0	7.5	8.5	11.5	14.0	16.0	26.5	22.0	13.0
26	12.5	8.0	2.0	3.5	8.5	---	12.5	14.0	---	27.0	21.0	11.5
27	11.0	6.0	1.0	5.0	6.5	15.5	12.5	13.0	17.0	26.5	19.0	12.0
28	12.0	6.5	4.5	6.0	8.0	10.0	13.0	12.0	17.5	---	13.5	18.0
29	11.5	5.0	4.5	6.0	---	14.5	13.0	15.5	16.0	24.5	15.0	12.5
30	12.0	4.5	5.0	5.5	---	11.0	12.0	14.5	15.0	25.0	20.5	11.5
31	9.5	---	7.0	3.5	---	12.0	---	---	---	22.0	---	---
MEAN	13.0	7.0	3.5	4.0	4.5	9.0	12.0	12.5	14.5	21.5	21.5	14.5
WTR YR 1978	MEAN	11.5	MAX	27.5	MIN	.0						

## 09366500 LA PLATA RIVER AT COLORADO-NEW MEXICO STATE LINE

LOCATION.--Lat 36°59'51", long 108°11'17", in NW¼SE¼ sec.10, T.32 N., R.13 W., La Plata County, Colorado, Hydrologic Unit 14080105, on right bank at Colorado-New Mexico State Line, 0.2 mi (0.3 km) downstream from Ponds Arroyo, and 4.8 mi (7.7 km) north of La Plata, NM.

DRAINAGE AREA.--331 mi<sup>2</sup> (857 km<sup>2</sup>).

PERIOD OF RECORD.--January 1920 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1313: 1934(M), 1936(M).

GAGE.--Water-stage recorder. Datum of gage is 5,975.15 ft (1,821.226 m) National Geodetic Vertical Datum of 1929. See WSP 1713 or 1733 for history of changes prior to Mar. 17, 1934.

REMARKS.--Records good except those for periods of no gage height record, which are fair. Diversions above station for irrigation of about 15,000 acres (61 km<sup>2</sup>), mostly above station.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

AVERAGE DISCHARGE.--58 years, 33.0 ft<sup>3</sup>/s (0.935 m<sup>3</sup>/s), 23,910 acre-ft/yr (29.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,750 ft<sup>3</sup>/s (135 m<sup>3</sup>/s) Aug. 24, 1927, gage height, 11.36 ft (3.463 m), present datum, from rating curve extended above 750 ft<sup>3</sup>/s (21 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 300 ft<sup>3</sup>/s (8.50 m<sup>3</sup>/s) at 1000 hours May 17, gage height, 2.28 ft (0.695 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.4	1.4	2.1	2.8	8.0	64	56	126	43	1.6	.15
2	.00	1.4	.30	1.7	2.8	10	79	67	114	36	1.2	.45
3	.00	1.4	.45	2.4	2.8	14	103	55	96	30	1.0	.30
4	.00	1.4	.15	2.4	2.8	10	91	41	90	26	.80	.15
5	.00	1.4	.10	2.4	2.9	12	86	36	70	23	.60	.05
6	.00	2.1	.10	2.1	2.9	10	84	40	47	26	.45	.05
7	.00	3.2	.10	1.8	3.2	8.5	92	51	53	25	.30	.15
8	.00	1.8	.10	1.8	3.5	7.0	111	53	75	24	.15	.05
9	.00	1.8	.10	2.4	2.9	6.6	116	51	92	24	.80	.00
10	.00	1.8	.10	2.1	3.2	6.6	103	48	87	25	2.6	.00
11	.00	1.8	.10	1.0	4.4	6.6	84	48	90	32	1.8	.00
12	.00	1.8	.10	.30	3.2	6.6	106	47	62	26	1.6	.00
13	.00	1.8	.10	.15	2.9	6.6	155	48	62	21	1.4	.00
14	.40	1.8	.30	1.5	2.9	5.1	155	73	63	18	.80	.00
15	.45	1.6	.45	4.9	2.6	4.8	143	143	86	16	1.4	.00
16	.45	1.6	.60	4.8	3.2	4.4	137	232	70	15	1.2	.00
17	.60	1.6	1.2	3.5	2.5	4.1	128	254	51	14	1.0	.00
18	.51	1.6	1.2	3.5	2.8	3.8	94	150	85	24	.45	.00
19	.05	1.8	1.2	3.5	2.8	3.8	84	83	106	22	.45	.00
20	.00	2.4	1.2	3.2	3.0	4.1	74	84	94	14	.45	.00
21	.00	2.4	1.5	2.9	3.9	4.1	72	100	70	13	.45	.00
22	.02	2.4	3.2	2.4	3.5	4.4	68	79	92	12	.60	.00
23	.48	2.1	3.5	3.2	3.8	7.0	60	99	58	13	1.4	.00
24	.00	1.8	3.5	3.4	3.5	10	60	100	69	14	1.6	.00
25	.00	1.8	2.3	1.8	3.8	21	78	96	83	13	1.2	.00
26	.00	1.8	2.3	2.4	4.1	27	75	79	70	11	1.0	.00
27	.00	1.8	2.9	2.5	4.1	35	79	80	51	9.5	.60	.00
28	.00	2.1	2.6	2.5	4.8	40	74	72	53	7.0	.45	.00
29	.01	1.8	2.6	2.9	---	34	64	54	63	6.2	.30	.00
30	.67	1.8	2.4	2.9	---	44	55	86	70	3.2	.45	.00
31	1.2	---	2.4	3.0	---	46	---	101	---	2.1	.30	---
TOTAL	4.84	55.3	38.55	77.45	91.6	415.1	2774	2606	2298	588.0	28.40	1.35
MEAN	.16	1.84	1.24	2.50	3.27	13.4	92.5	84.1	76.6	19.0	.92	.045
MAX	1.2	3.2	3.5	4.9	4.8	46	155	254	126	43	2.6	.45
MIN	.00	1.4	.10	.15	2.5	3.8	55	36	47	2.1	.15	.00
AC=FT	9.6	110	76	154	182	823	5500	5170	4560	1170	56	2.7
CAL YR 1977	TOTAL	1441.09	MEAN	3.95	MAX	291	MIN	.00	AC=FT	2860		
WTR YR 1978	TOTAL	8978.59	MEAN	24.6	MAX	254	MIN	.00	AC=FT	17810		

09367500 LA PLATA RIVER NEAR FARMINGTON, NM

LOCATION.--Lat 36°44'23", long 108°14'51", in NE1/4SW1/4 sec.7, T.29 N., R.13 W., San Juan County, Hydrologic Unit 14080105, on right bank 1,300 ft (400 m) upstream from bridge on U.S. Highway 550 in Farmington, and 1,800 ft (550 m) upstream from mouth.

DRAINAGE AREA.--583 mi<sup>2</sup> (1,510 km<sup>2</sup>).

PERIOD OF RECORD.--March 1938 to current year.

REVISED RECORDS.--WSP 1243: 1944-45. WSP 1313: 1943-44(M), 1946-50(M). WSP 1733: 1951(M).

GAGE.--Water-stage recorder. Altitude of gage is 5,214 ft (1,589 m), from river-profile map. Prior to July 28, 1978 at altitude 1.0 ft (0.305 m) higher.

REMARKS.--Records poor. Diversions for irrigation of about 24,000 acres (97 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--40 years, 23.7 ft<sup>3</sup>/s (0.671 m<sup>3</sup>/s), 17,170 acre-ft/yr (21.2 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 6.03 ft (1.838 m) Sept. 10, 1939, (discharge not determined); no flow for long periods in some years.  
Major floods occurred Sept. 5 or 6, 1909, and Oct. 5 or 6, 1911.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,180 ft<sup>3</sup>/s (33.4 m<sup>3</sup>/s) May 20, gage height, 4.36 ft (1.329 m), from rating curve extended above 700 ft<sup>3</sup>/s (20 m<sup>3</sup>/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.04	.04	.20	.70	15	38	.34	21	.95	.05	.00
2	.07	.04	.04	.04	.60	42	61	1.4	47	.50	.03	.00
3	.02	.04	.04	.04	.50	110	83	1.4	47	.01	.05	.00
4	.01	.04	.04	.01	.42	41	91	3.0	33	.00	.05	.00
5	.07	.04	.04	.01	.27	30	63	4.0	26	.00	.05	.00
6	.15	11	.04	.01	.60	30	45	2.4	17	.00	.05	.00
7	.20	4.5	.04	.01	.34	25	40	2.6	7.3	.00	.05	.00
8	.20	.50	.04	.01	4.0	23	35	35	14	.00	.05	.00
9	.42	.50	.04	.02	3.0	20	81	37	43	.00	.05	.00
10	.34	.50	.04	.04	2.6	20	59	10	55	.00	.05	.00
11	.34	.50	.04	.42	2.6	19	34	5.0	57	.85	.05	.00
12	.42	.50	.04	.11	2.6	17	28	4.0	35	.03	.05	.00
13	.50	.50	.04	.04	2.4	16	70	2.6	16	.03	.06	.00
14	.50	.50	.04	.02	2.0	16	106	7.3	5.0	.02	.05	.00
15	.50	.50	.04	1.2	1.6	14	97	72	2.6	.02	.04	.00
16	.50	.50	.04	1.2	1.4	14	70	170	5.1	.02	.03	.00
17	.50	.50	.04	1.6	1.1	12	55	194	1.8	.02	.03	.01
18	.60	.50	.04	1.2	.95	12	44	126	.50	.02	.02	.01
19	.50	.50	.04	.95	.80	11	22	55	13	.02	.02	.01
20	.50	.30	.04	.70	.70	10	10	288	19	.02	.03	.01
21	.40	.15	.04	.60	.70	8.0	5.0	35	12	.01	.03	.02
22	.35	.04	.04	.42	.70	8.0	3.0	26	1.6	.01	.02	.02
23	.30	.01	.04	.34	.50	7.0	2.0	16	4.0	.01	.02	.02
24	.25	.00	.04	.27	.50	6.0	1.1	28	.42	.01	.00	10
25	.20	.00	.04	.20	.42	5.0	.50	27	.95	.01	.00	.46
26	.15	.00	.04	.03	.34	4.0	2.0	20	12	.01	.00	.11
27	.10	.00	.04	.00	.27	4.0	2.6	14	11	.01	.00	.10
28	.04	.01	.04	.00	.15	3.0	2.4	7.3	5.1	.01	.00	.05
29	.04	.02	.20	.00	---	3.0	.80	2.0	.34	.01	.00	.02
30	.42	.04	.34	.00	---	12	.27	1.2	.42	.01	.00	.02
31	.20	---	.42	.04	---	22	---	1.2	---	.03	.00	---
TOTAL	8.83	22.27	2.08	9.73	32.76	579.0	1151.67	1198.74	513.13	2.64	.93	10.86
MEAN	.28	.74	.067	.31	1.17	18.7	38.4	38.7	17.1	.085	.030	.36
MAX	.60	.11	.42	1.6	4.0	110	106	288	57	.95	.06	.10
MIN	.01	.00	.04	.00	.15	3.0	.27	.34	.34	.00	.00	.00
AC=FT	18	44	4.1	19	65	1150	2280	2380	1020	5.2	1.8	22
CAL YR 1977	TOTAL	1434.53	MEAN	3.93	MAX	205	MIN	.00	AC=FT	2850		
WTR YR 1978	TOTAL	3532.64	MEAN	9.68	MAX	288	MIN	.00	AC=FT	7010		

09367500 LA PLATA RIVER NEAR FARMINGTON, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970-1973, 1978.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	
DEC												
12...	0930	.02	2485	7.9	2.5	2.0	8.2	710	380	200	52	
12...	0931	.04	2485	7.9	--	2.0	--	--	--	--	--	
JAN												
03...	1400	.04	2485	7.9	--	2.0	--	--	--	--	--	
24...	1400	.27	3225	8.3	4.5	3.0	10.3	930	690	250	75	
FEB												
27...	1100	E1.2	3300	8.3	13.0	8.0	10.2	1200	1000	290	110	
MAR												
22...	0900	8.0	3900	8.4	9.0	8.0	9.2	1300	1100	340	110	
APR												
24...	1100	1.4	2690	8.4	24.0	23.0	6.9	910	710	250	69	
MAY												
22...	1500	26	1800	8.5	30.0	23.5	6.7	860	650	250	56	
JUN												
26...	1200	E8.0	1340	8.5	34.5	25.0	6.7	560	370	140	50	
JUL												
17...	1045	.02	1190	8.3	28.0	23.5	7.0	420	170	120	28	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SURP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
DEC												
12...	310	5.1	2.9	398	0	326	850	160	.9	10	1810	
12...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
24...	450	6.4	5.0	300	0	246	1400	170	.7	8.9	2440	
FEB												
27...	360	4.6	4.7	245	0	201	1500	110	.5	10	2660	
MAR												
22...	520	6.3	6.0	285	4	240	1800	240	.3	8.3	3170	
APR												
24...	300	4.3	5.8	245	2	204	1200	96	.4	7.9	2170	
MAY												
22...	140	2.1	5.9	240	10	213	860	37	.4	9.3	1540	
JUN												
26...	100	1.8	3.3	216	8	190	500	29	.4	10	1010	
JUL												
17...	100	2.1	3.1	302	0	248	280	52	.8	12	776	
DATE		SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
DEC												
12...	1780	.01	.12	.00	.11	.00	120	20	960	3.5	.7	
12...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
24...	2510	.62	.12	.18	.92	.03	110	40	--	3.8	--	
FEB												
27...	2510	.07	.09	.45	.61	.04	130	10	--	4.3	.4	
MAR												
22...	3170	.11	.06	2.2	2.4	.29	120	340	--	6.6	1.9	
APR												
24...	2050	.29	.03	.61	.93	.05	100	50	20	7.7	.6	
MAY												
22...	1490	.39	.08	1.6	2.1	.47	100	10	--	6.4	.5	
JUN												
26...	947	.20	.03	.79	1.0	.07	70	40	--	3.9	.8	
JUL												
17...	746	.01	.03	.32	.36	.02	100	20	560	3.7	.5	

09367500 LA PLATA RIVER NEAR FARMINGTON, NM -- Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	
DEC 12...	0930	10	1	1	200	--	0	0	120	1	1	0	
APR 24...	1100	0	--	1	--	100	--	0	100	--	1	--	
JUL 17...	1045	0	2	2	400	100	0	0	100	0	0	10	
		CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
DEC 12...	--	0	0	9	1	20	14	3	40	40	960	960	
APR 24...	0	--	0	--	16	30	--	--	--	30	--	20	
JUL 17...	0	4	2	11	3	20	11	0	40	30	800	560	
		MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	
DEC 12...	.0	.0	3	1	7	0	0	0	.4	10	10		
APR 24...	--	.0	--	0	--	0	--	2	1.0	--	50		
JUL 17...	.0	.0	5	5	13	5	0	0	.0	50	20		

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BE) (01013)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CR) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
DEC 12...	0930	3	70	0	<1	4	<5	2
JUL 17...	1045	2	40	1	0	1	0	0
DATE	TIME	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01063)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS SE) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
DEC 12...		<10	220	.0	3	10	1	6
JUL 17...		0	170	.0	0	0	0	6

## SAN JUAN RIVER BASIN

09367500 LA PLATA RIVER NEAR FARMINGTON, NM --- Continued

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)
DEC 12...	0931	<22	<.4	<5.9	.8	--
APR 24...	1100	<22	4.2	16	3.3	16

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
MAR 22...	0900	320	4000
APR 24...	1100	21	105
MAY 22...	1500	K620	2300
JUN 26...	1200	E110	120
JUL 17...	1045	340	440

09367500 LA PLATA RIVER NEAR FARMINGTON, NM --- Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	DEC 12,77 0930	FEB 27,78 1100	MAR 22,78 0900	APR 24,78 1100
TOTAL CELLS/ML	5900	120	0	41
DIVERSITY: DIVISION	0.1	0.0	0.0	0.0
..CLASS	0.1	0.0	0.0	0.0
..ORDER	0.1	0.0	0.0	0.0
...FAMILY	0.1	1.6	0.0	1.6
....GENUS	0.1	1.6	0.0	1.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
....SCENEDESMACEAE								
.....SCENEDESMUS	--	-	--	-	--	-	--	-
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALES								
....NAVICULACEAE								
.....ENTOMONEIS	*	0	--	-	--	-	--	-
...ACHNANTHACEAE								
....ACHNANTHES	--	-	50#	43	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	14#	33
...FRAGILARIACEAE								
....SYNEDRA	*	0	33#	29	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
....NAVICULA	*	0	33#	29	--	-	14#	33
...PINNULARIA	--	-	--	-	--	-	--	-
...NITZSCHIA								
....NITZSCHIA	*	0	--	-	--	-	--	-
...SURIPELLACEAE								
....SURIPELLA	--	-	--	-	--	-	14#	33
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDALES								
....CRYPTOCHRYSIDACEAE								
.....CHROOMONAS	*	0	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCOCCALES								
....CHROCOCCOCCAEAE								
.....ANACYSTIS	--	-	--	-	--	-	--	-
...HORMOGONALES								
....NOSTOCACEAE								
.....APHANIZOMENON	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	5800#	99	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
....EUGLENACEAE								
.....EUGLENA	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15X

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2X



## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	MAY 22,78 1500	JUN 26,78 1200	JUL 17,78 1045
TOTAL CELLS/ML	0	1000	3000
DIVERSITY: DIVISION	0.0	1.1	0.9
..CLASS	0.0	1.1	0.9
..ORDER	0.0	1.1	1.2
...FAMILY	0.0	1.8	1.4
....GENUS	0.0	1.9	1.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	67	2
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	93	5	22	1
CHRYSTOPHYTA						
..BACILLARIOPHYCEAE						
...PENNALES						
....NAVICULACEAE						
....ENTOMONEIS	--	-	--	-	--	-
...ACHNANTHACEAE						
....ACHNANTHES	--	-	--	-	110	4
...CYMBELLACEAE						
....CYMBELLA	--	-	23	1	--	-
...FRAGILARIACEAE						
....SYNEORA	--	-	--	-	--	-
...GOMPHONEMACEAE						
....GOMPHONEMA	--	-	--	-	22	1
...NAVICULACEAE						
....NAVICULA	--	-	93	5	44	1
...PINNULARIA	--	-	93	5	--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	230	13	180	6
...SURIPELLACEAE						
....SURIPELLA	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONIDALES						
....CRYPTOCHRYSIDACEAE						
....CHROOMUNAS	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCOCCALES						
....CHROCOCCACEAE						
....ANACYSTIS	--	-	--	-	220	7
...HORMOGONALES						
...NOSTOCACEAE						
....APHANIZOMENON	--	-	190	10	--	-
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	1100#	60	2300#	76
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
....EUGLENA	--	-	--	-	67	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09367500 LA PLATA RIVER NEAR FARMINGTON, NM -- Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
JAN 03...	1400	2.60	2.44	.000	.000	Polyethylene strip

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. FALL DIAM. % FINER THAN 2.00 MM (80163)
DEC 12...	0930	.02	2.0	59	.00	--	11	14	20	65	96	100
JAN 24...	1400	.27	3.0	39	.03	--	--	--	--	--	--	--
FEB 27...	1100	E1.2	8.0	330	1.1	--	--	--	--	--	--	--
MAR 22...	0900	8.0	8.0	1360	29	--	--	--	--	--	--	--
APR 11...	0945	48	9.5	2600	337	--	--	--	--	--	--	--
24...	1100	1.4	23.0	423	1.6	61	3	11	43	87	100	--
MAY 12...	1100	6.2	12.0	975	16	--	--	--	--	--	--	--
22...	1500	26	23.5	1910	134	--	--	--	--	--	--	--
JUN 09...	0830	6.2	15.0	867	15	--	--	--	--	--	--	--
26...	1200	E8.0	25.0	261	5.6	--	--	--	--	--	--	--
JUL 11...	0900	E.85	19.5	35100	81	--	--	--	--	--	--	--
17...	1045	.02	23.5	246	.01	--	3	3	13	69	97	100

09367540 SAN JUAN RIVER NEAR FRUITLAND, NM

LOCATION.--Lat 36°44'25", long 108°24'09", in NW¼SE¼ sec.10, T.29 N., R.15 W., San Juan County, Hydrologic Unit 14080105, on right bank 300 ft (91.4 m) downstream from Four Corners Power Plant highway bridge, 0.4 mi (0.64 km) west of Fruitland, 10 mi (16.1 km) downstream from La Plata River, 14.0 mi (22.5 km) upstream from Chaco River, and at mile 239 (385 km).

DRAINAGE AREA.--8,010 mi<sup>2</sup> (20,750 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 5,150 ft (1,570 m), from topographic map.

REMARKS.--Water-discharge records fair. Diversion for irrigation of about 95,000 acres (384 km<sup>2</sup>) above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 5,000 ft<sup>3</sup>/s (142 m<sup>3</sup>/s) June 7, 1978, gage height, 6.63 ft (2.021 m), from rating curve extended above 3,700 ft<sup>3</sup>/s (105 m<sup>3</sup>/s); minimum, 320 ft<sup>3</sup>/s (9.06 m<sup>3</sup>/s) Aug. 14, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--A major flood occurred in October 1911 at this location.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,000 ft<sup>3</sup>/s (142 m<sup>3</sup>/s) June 7, 1978, gage height, 6.63 ft (2.021 m), from rating curve extended as explained above; minimum, 320 ft<sup>3</sup>/s (9.06 m<sup>3</sup>/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	510	652	755	787	899	923	1520	1640	3600	2170	584	415
2	500	665	750	777	881	1010	1670	1620	3700	2070	527	415
3	510	664	754	773	866	1160	1510	1580	3800	1980	464	446
4	580	669	760	804	872	984	1420	1620	3900	1840	504	498
5	565	683	758	826	878	922	1500	1550	3800	1690	479	455
6	560	689	771	828	922	926	1540	1650	4110	1480	469	380
7	562	795	764	821	946	907	1570	1490	4480	1340	450	395
8	570	775	773	821	973	918	1600	1630	4630	1250	489	405
9	606	882	779	823	901	923	1670	1730	4510	1230	350	400
10	630	694	774	845	890	976	1620	1540	4380	1220	330	415
11	610	666	778	855	944	978	1550	1660	4280	1400	320	415
12	595	676	777	871	896	980	1620	1770	3890	1500	300	395
13	588	693	788	854	861	965	1730	1950	3930	1490	310	390
14	592	700	787	852	843	972	1820	2180	4510	1370	320	415
15	603	715	782	873	838	962	1740	2460	4490	1160	310	435
16	621	728	805	874	848	957	1710	3200	4510	1090	290	450
17	624	757	795	886	813	1050	1720	3600	4270	1190	270	510
18	627	759	802	873	782	1140	1660	3500	3760	1240	350	567
19	633	744	794	860	791	1130	1680	2240	3570	1380	368	624
20	635	765	765	855	827	1130	1720	2940	3540	1130	380	600
21	654	751	749	860	808	1150	1760	2940	3460	1000	358	564
22	640	745	751	866	866	1200	1800	3060	3400	945	340	570
23	644	760	794	890	872	1200	1810	3040	3410	870	345	582
24	656	760	801	887	891	1230	1720	3080	3340	818	412	800
25	652	756	786	879	857	1140	1790	3090	3330	775	420	911
26	644	754	780	885	845	1140	1910	3220	3340	735	385	897
27	629	759	788	903	862	1210	1920	3490	2770	703	400	790
28	642	750	790	906	873	1280	1880	3570	2480	660	400	780
29	631	758	801	902	---	1310	1770	3300	2530	614	395	762
30	642	768	800	899	---	1370	1690	3300	2390	630	395	770
31	644	---	792	934	---	1450	---	3500	---	665	395	---
TOTAL	18799	21932	24143	26569	24345	33593	50620	77140	112110	37635	12109	16451
MEAN	606	731	779	857	869	1084	1687	2488	3737	1214	391	548
MAX	656	882	805	934	973	1450	1920	3600	4630	2170	584	911
MIN	500	652	749	773	782	907	1420	1490	2390	614	270	380
AC-FT	37290	43500	47890	52700	48290	66630	100400	153000	222400	74650	24020	32630
WTR YR 1978	TOTAL	455446	MEAN	1248	MAX	4630	MIN	270	AC-FT	903400		

09367540 SAN JUAN RIVER NEAR FRUITLAND, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD---December, 1977, to September 1978.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L) AS CACO3 (00900)	HARD- NESS, NONCAR- BONATE (MG/L) CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L) AS CA (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L) AS MG (00925)	SODIUM, DIS- SOLVED (MG/L) AS NA (00930)
DEC 14...	1200	791	605	8.0	10.5	3.5	11.7	230	100	73	12	44
JAN 03...	1430	630	605	8.0	--	2.0	--	--	--	--	--	--
JAN 27...	1015	900	590	8.3	4.5	1.5	11.4	220	86	69	11	42
FEB 21...	1100	792	640	8.3	5.0	3.0	11.3	230	120	73	12	49
MAR 20...	1200	1110	660	8.4	19.0	10.0	9.7	230	100	74	10	62
APR 26...	1400	1790	420	8.4	28.0	15.5	8.1	170	61	53	8.6	22
MAY 22...	1230	3030	360	8.1	28.5	13.5	8.2	150	99	47	6.9	17
JUN 06...	1400	3700	280	8.0	27.0	13.0	8.5	110	54	35	4.7	12
JUL 20...	1500	1160	450	8.6	38.0	25.0	8.4	160	51	52	7.7	25
AUG 22...	1230	344	1160	8.6	26.5	23.0	9.9	380	260	100	31	96
SEP 21...	1030	565	660	8.4	5.0	13.0	8.6	230	81	73	12	49
DATE		SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA; DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)
DEC 14...		1.3	2.5	153	0	125	180	14	.3	11	404	412
JAN 03...		--	--	--	--	--	--	--	--	--	--	--
JAN 27...		1.2	2.7	160	0	131	170	13	.2	11	388	398
FEB 21...		1.4	2.8	140	0	115	190	17	.3	10	426	423
MAR 20...		1.8	3.1	150	2	126	180	16	.4	8.7	425	430
APR 26...		.7	2.5	127	3	109	100	7.0	.3	7.9	248	267
MAY 22...		.6	1.6	62	0	51	87	5.5	.2	5.8	216	202
JUN 06...		.5	2.3	68	0	56	77	6.1	.4	4.6	163	176
JUL 20...		.9	2.0	108	12	109	120	9.3	.3	7.7	275	289
AUG 22...		2.2	4.3	137	5	121	400	31	.7	7.6	800	744
SEP 21...		1.4	2.8	160	11	151	170	16	.4	9.8	419	424
DATE		SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
DEC 14...		98	.25	.15	.00	.38	.07	60	20	0	2.6	.9
JAN 03...		--	--	--	--	--	--	--	--	--	--	--
JAN 27...		--	.23	.06	.42	.71	.11	50	20	--	2.8	.8
FEB 21...		--	.36	.08	.22	.66	.14	60	10	--	3.7	1.0
MAR 20...		--	.39	.04	.57	1.0	2.0	60	20	--	3.5	>25
APR 26...		--	.21	.14	.96	1.3	.49	30	20	0	6.0	--
MAY 22...		--	.22	.01	.78	1.0	.23	40	20	--	5.6	.8
JUN 06...		--	.32	.08	4.1	4.5	2.0	20	120	--	4.5	7.1
JUL 20...		--	.09	.01	.39	.49	.08	40	20	0	2.4	1.0
AUG 22...		--	.90	.14	2.3	3.3	.73	480	<10	4	6.7	3.4
SEP 21...		--	.15	.05	.41	.61	.07	80	10	--	5.1	.2

09367540 SAN JUAN RIVER NEAR FRUITLAND, NM -- Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	
DEC 14...	1200	20	1	1	100	100	0	0	60	1	1	0	
APR 26...	1400	30	--	0	--	100	--	0	30	--	1	--	
JUN 06...	1400	--	--	--	--	--	--	--	20	--	--	--	
JUL 20...	1500	40	2	2	300	--	0	0	40	2	2	0	
AUG 22...	1230	8	--	1	--	100	--	<1	480	--	<1	--	
DATE		CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
DEC 14...	0	0	0	0	8	2	20	30	--	30	30	50	0
APR 26...	0	--	--	1	--	11	20	--	5	--	20	--	0
JUN 06...	--	--	--	--	--	--	120	--	5	--	--	--	--
JUL 20...	0	2	2	2	16	4	20	27	3	30	20	100	0
AUG 22...	0	--	--	<1	--	4	<10	--	0	--	60	--	4
DATE		MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, TOTAL RECOV- ERABLE (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	
DEC 14...	.0	.0	.0	2	0	8	0	1	1	.0	40	10	
APR 26...	--	--	.0	--	0	--	0	--	0	1.0	--	10	
JUN 06...	--	--	--	--	--	--	--	--	--	--	--	120	
JUL 20...	.0	.0	.0	5	3	4	0	1	0	.0	90	10	
AUG 22...	--	--	.0	--	10	--	0	--	5	.0	--	5	

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BE) (01013)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CR) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
DEC 14...	1200	1	80	0	<1	2	<5	4
JUL 20...	1500	0	80	0	0	1	0	0
DATE	TIME	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01063)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
DEC 14...		<10	160	.0	2	<5	0	27
JUL 20...		0	190	.0	4	0	0	34

09367540 SAN JUAN RIVER NEAR FRUITLAND, NM --- Continued

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED (UG/L) AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L) AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L) AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L) AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L) AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L) AS SR/ YT-90) (80060)
DEC 14...	1200	98	45.6	3.6	4.3	4.8	3.8	4.6
APR 26...	1400	--	3.7	26	16	15	--	--

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JAN 27...	1015	530	340
MAR 20...	1200	1400	1200
APR 26...	1400	470	385
MAY 22...	1230	1640	1525
JUN 06...	1400	1200	350
JUL 20...	1500	410	200
AUG 22...	1230	180	2400
SEP 21...	1030	127	170

09367540 SAN JUAN RIVER NEAR FRUITLAND, NM -- Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	DEC 14,77 1200	FEB 21,78 1100	MAR 20,78 1200	APR 26,78 1400				
TOTAL CELLS/ML	610	1000	1100	160				
DIVERSITY: DIVISION	0.4	0.3	0.8	0.0				
..CLASS	0.4	0.3	0.8	0.0				
...ORDER	0.7	0.3	0.8	0.0				
....FAMILY	2.9	2.9	1.5	1.4				
.....GENUS	3.0	3.2	1.5	1.4				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
....ODCYSTACEAE								
.....ANKISTRODESMUS	6	1	--	--	--	--	--	--
.....ODCYSTIS	--	--	54	5	--	--	--	--
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	--	--	--	--	--	--	--
CHRRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	--	--	--	--	--	--	--
....MELOSIRA	34	6	--	--	--	--	--	--
...PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	--	54	5	--	--	--	--
...COCCONEIS	28	5	--	--	570#	50	--	--
...RHOICOSPHEA	11	2	110	11	--	--	--	--
...CYMBELLACEAE								
....AMPHORA	--	--	--	--	--	--	--	--
....CYMBELLA	11	2	270#	26	--	--	27#	17
....RHODALODIA	6	1	--	--	--	--	--	--
...DIATOMACEAE								
....DIATOMA	230#	38	54	5	--	--	14	8
...FRAGILARIACEAE								
....FRAGILARIA	--	--	--	--	--	--	--	--
...SYNEDRA	62	10	54	5	--	--	110#	67
...GOMPHONEMACEAE								
....GOMPHONEMA	34	6	110	11	--	--	--	--
...NAVICULACEAE								
....DIPLONEIS	--	--	--	--	--	--	--	--
....NAVICULA	68	11	110	11	290#	25	14	8
....NEIDIUM	--	--	54	5	--	--	--	--
...PINNULARIA	--	--	--	--	--	--	--	--
...NITZSCHIA	62	10	110	11	--	--	--	--
...SURIARELLACEAE								
....SURIARELLA	23	4	54	5	--	--	--	--
...TABELLARIACEAE								
....TABELLARIA	--	--	--	--	--	--	--	--
CYANOPHYTA (BLUE=GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCOCCALES								
....CHROCOCCOCCAEAE								
.....ANACYSTIS	--	--	--	--	--	--	--	--
...HORMOGONALES								
...OSCILLATORIACEAE								
....LYNGBYA	--	--	--	--	--	--	--	--
....OSCILLATORIA	34	6	--	--	--	--	--	--
...RIVULARIACEAE								
....RAPHIDIOPSIS	--	--	--	--	--	--	--	--
...HORMOGONALES	--	--	--	--	--	--	--	--
EUGLENOPHYTA (EUGLENIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	--	--	--	290#	25	--	--

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09367540 SAN JUAN RIVER NEAR FRUITLAND, NM --- Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	MAY 22,78 1230	JUN 6,78 1400	JUL 20,78 1500
TOTAL CELLS/ML	500	11000	19000
DIVERSITY: DIVISION	0.9	0.0	0.5
..CLASS	0.9	0.0	0.5
...ORDER	0.9	0.2	1.2
...FAMILY	0.0	1.8	1.5
....GENUS	0.0	2.6	1.6

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	--	-	140	1
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	290	3	--	-
....MELOSIRA	--	-	--	-	*	0
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	36	7	--	-	*	0
....COCCONEIS	36	7	--	-	*	0
...RHODOSIPHENIA	--	-	--	-	*	0
...CYMBELLACEAE						
....AMPHORA	--	-	150	1	--	-
....CYMBELLA	72	14	2100#	18	180	1
....RHOPALODIA	--	-	--	-	--	-
...DIATOMACEAE						
....DIATOMA	36	7	--	-	*	0
...FRAGILARIACEAE						
....FRAGILARIA	--	-	--	-	*	0
....SYNEDRA	--	-	--	-	410	2
...GOMPHONEMACEAE						
....GOMPHONEMA	--	-	1200	11	*	0
...NAVICULACEAE						
....DIPLONEIS	--	-	1200	11	--	-
....NAVICULA	72	14	4400#	39	230	1
....NEIDIUM	--	-	--	-	--	-
....PINNULARIA	--	-	730	7	--	-
...NITZSCHACEAE						
....NITZSCHIA	110#	21	290	3	450	2
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	270	1
...TABELLARIACEAE						
....TABELLARIA	--	-	860	8	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCOCCALES						
...CHROCOCCACEAE						
....ANACYSTIS	--	-	--	-	13000#	68
...HORMOGONALES						
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	290	2
...OSCILLATORIA	--	-	--	-	3600#	19
...RIVULARIACEAE						
....RAPIDIOPSIS	--	-	--	-	140	1
...HORMOGONALES	140#	29	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....TRACHELONAS	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%



09367540 SAN JUAN RIVER NEAR FRUITLAND, NM -- Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	SAMPLING METHOD
JAN 03...	1430	.079	.079	.000	.000	Polyethylene strip "
MAY 22...	1230	.079	.079	.000	.000	

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)
DEC 14...	1200	791	3.5	2700	5770	3	3	4	9	26
JAN 27...	1015	900	1.5	1020	2480	--	--	--	--	--
FEB 21...	1100	792	3.0	1250	2670	--	--	--	--	--
MAR 20...	1200	1110	10.0	10700	32100	--	--	--	--	--
APR 10...	1600	1580	12.5	1660	7080	--	--	--	--	--
26...	1400	1790	15.5	2000	9670	--	--	--	--	--
MAY 11...	1345	1620	13.0	2420	10600	--	--	--	--	--
22...	1230	3030	13.5	3660	29900	--	--	--	--	--
JUN 06...	1400	3700	13.0	4910	49100	--	--	--	--	--
29...	0930	2220	16.0	3030	18200	--	--	--	--	--
JUL 06...	1530	1370	23.0	502	1860	--	--	--	--	--
20...	1500	1160	25.0	148	464	--	--	--	--	--
AUG 02...	0945	517	22.0	60	84	--	--	--	--	--
22...	1230	344	23.0	81	75	53	66	84	--	--
SEP 06...	1145	392	18.5	86	91	--	--	--	--	--
21...	1030	565	13.0	89	136	--	--	--	--	--

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

## SAN JUAN RIVER BASIN

09367555 SHURWAY ARROYO NEAR FRUITLAND, NM

LOCATION.--Lat 36°48'23", long 108°23'42", in NE¼NE¼ sec. 22, T.30 N., R.15 W., San Juan County, Hydrologic Unit 14080102, on right bank 1.7 mi (2.7 km) downstream from Narrows Wash, 2.0 mi (3.2 km) northeast of San Juan Power Plant, 4.6 mi (7.4 km) north of Fruitland, and at mile 8.5 (13.7 km).

DRAINAGE AREA.--62.8 mi<sup>2</sup> (163 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,240 ft (1,597 m), from topographic map.

REMARKS.--Water-discharge records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft<sup>3</sup>/s (142 m<sup>3</sup>/s) May 20, 1978, gage height, 13.00 ft (3.962 m), on basis of slope-area measurement at gage height, 13.00 ft (3.962 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)	Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)
May 20	1630	*5,000	142	13.00	3.962	Sept. 24	1730	85	2.41	2.35	0.716

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	254	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.4
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.94
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	.00	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.57	.05	256.00	.00	.00	.00	7.40
MEAN	.000	.000	.000	.000	.000	.018	.002	8.26	.000	.000	.000	.25
MAX	.00	.00	.00	.00	.00	.39	.03	254	.00	.00	.00	6.4
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	1.1	.10	508	.00	.00	.00	15

CAL YR 1977	TOTAL	8.10	MEAN	.022	MAX	3.1	MIN	.00	AC-FT	16
WTR YR 1978	TOTAL	264.02	MEAN	.72	MAX	254	MIN	.00	AC-FT	524

09367555 SHUMWAY ARROYO NEAR FRUITLAND, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976, 1978.

REMARKS.--Under the heading SAMPLE SOURCE numerical values are used to indicate method of sampling; 40 indicates single-stage sample.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SAMPLE SOURCE (72005)
MAY								
20...	1545	E390	860	7.2	.08	5.2	6000	40
20...	1555	E745	890	7.2	--	--	--	40
20...	1600	E985	840	7.1	--	--	--	40

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01092)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS B) (01007)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SAMPLE SOURCE (72005)
MAY										
20...	1555	43	--	--	--	--	--	--	.1	40
20...	1600	--	5200	480	8	160	19	20000	--	40

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO- GEN+NH4 TOTAL IN BOT. MAT. (MG/KG AS N) (00611)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	SAMPLE SOURCE (72005)
MAY					
20...	1545	.0	24	340	40

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
MAY						
20...	1545	E390	966000	1020000	42	40
20...	1555	E745	81600	164000	92	40
20...	1600	E985	92700	247000	71	40

LOCATION.--Lat 36°46'24", long 108°26'26", in SE 1/4 sec. 32, T. 30 N., R. 15 W., San Juan County, Hydrologic Unit 14080105, on right bank 0.6 mi (1.0 km) downstream from Westwater Arroyo, 0.7 mi (1.1 km) upstream from highway to San Juan Power Plant, 14 mi (22 km) west of Farmington, and at mile 4.5 (7.2 km).

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) and maximum(\*):

Minimum daily, 0.00 ft<sup>3</sup>/s (0.0000 m<sup>3</sup>/s) Jan. 10.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	2.2	.12	.10	.33	.44	1.0	4.1	4.0	3.4	1.7	2.0
2	.88	2.0	.12	.22	.50	.76	.81	4.1	3.7	3.0	1.6	2.1
3	1.4	1.7	.22	.88	.19	1.0	.88	6.8	3.1	10	1.5	2.5
4	1.1	1.0	.16	.12	.33	1.3	1.2	6.8	3.4	3.7	1.5	1.9
5	1.1	.96	.33	.10	.50	1.7	.88	8.5	3.3	4.0	1.6	2.0
6	1.4	.88	.50	.08	.41	2.0	1.1	8.5	3.8	6.5	1.7	2.1
7	.96	.74	.41	.05	.41	2.7	1.0	6.8	4.2	3.3	1.8	2.1
8	1.7	.67	.50	.03	.55	1.7	1.0	6.3	4.4	2.9	1.9	3.0
9	1.1	.61	.33	.04	.45	2.7	.74	6.8	3.6	2.7	2.0	3.0
10	1.4	.74	.74	.00	.41	2.3	.45	4.1	3.1	3.1	2.1	2.3
11	1.7	.88	.45	.03	.41	2.0	1.7	1.2	2.5	3.8	1.8	2.1
12	1.8	.74	.14	.01	.37	1.5	2.7	.81	2.8	4.6	1.9	2.2
13	1.2	.55	.22	.04	.41	.75	2.7	1.2	2.9	4.9	1.3	2.7
14	1.4	.50	.41	.10	.37	.55	2.7	4.1	4.1	3.6	1.9	2.6
15	1.8	.45	.50	.22	.37	.45	2.7	1.3	4.1	4.7	2.0	2.7
16	1.8	.50	.41	.37	.30	.96	2.7	4.1	4.2	4.6	1.9	2.0
17	2.0	.37	.67	.10	.25	.81	1.3	3.6	3.2	5.7	1.4	2.4
18	2.4	.33	.29	.29	.21	1.3	1.1	2.4	2.6	4.8	1.7	2.2
19	1.6	.29	.33	.61	.19	1.4	2.4	1.4	3.3	2.7	1.4	2.6
20	1.1	.33	.45	.29	.19	1.3	3.6	320	3.6	2.8	1.6	1.9
21	.55	.29	.50	.14	.18	2.2	1.9	30	3.8	2.4	1.2	2.3
22	.67	.37	.25	.22	.14	1.7	3.0	9.0	3.3	2.6	1.7	2.4
23	.55	.25	.33	.16	.10	1.1	3.0	8.0	3.5	2.3	1.7	2.3
24	.61	.29	.14	.12	.18	2.4	3.0	8.5	2.1	2.4	1.4	5.8
25	.74	.33	.33	.55	.19	1.7	2.0	9.0	1.9	2.5	1.8	3.3
26	1.0	.29	.81	.50	.21	1.4	4.6	9.5	2.7	2.4	1.7	2.6
27	2.0	.29	.29	.81	.25	1.3	5.8	8.5	4.2	2.2	1.9	3.4
28	1.6	.22	.41	.81	.37	1.1	6.3	9.0	3.8	1.8	1.9	2.6
29	1.4	.33	.37	.55	---	1.0	6.8	8.0	3.6	1.8	2.3	2.4
30	1.2	.12	.16	.61	---	1.0	5.8	8.5	2.7	1.6	2.2	2.1
31	1.6	---	.10	.55	---	1.0	---	9.0	---	1.5	2.2	---
TOTAL	40.86	19.22	10.99	8.70	8.77	43.52	74.86	519.91	101.5	108.3	54.3	75.6
MEAN	1.32	.64	.35	.28	.31	1.40	2.50	16.8	3.38	3.49	1.75	2.52
MAX	2.4	2.2	.81	.88	.55	2.7	6.8	320	4.4	10	2.3	5.8
MIN	.55	.12	.10	.00	.10	.44	.45	.81	1.9	1.5	1.2	1.9
AC=FT	81	38	22	17	17	86	148	1030	201	215	108	150
CAL YR 1977	TOTAL	399.92	MEAN	1.10	MAX	13	MIN	.10	AC=FT	793		
WTR YR 1978	TOTAL	1066.53	MEAN	2.92	MAX	320	MIN	.00	AC=FT	2120		

09367561 SHUNWAY ARROYO NEAR WATERFLOW, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--Under the heading SAMPLE SOURCE numerical values are used to indicate method of sampling; 26 indicates by automatic pump, 29 indicates dip or grab sample, and 40 indicates single-stage sample.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT										
20...	0900	1.2	3550	7.8	15.0	9.5	50	--	9.2	64
FEB										
23...	0812	2.2	6600	7.9	.0	.0	15	--	12.6	35
APR										
11...	1245	2.4	8100	8.4	--	--	--	--	--	--
MAY										
25...	1530	20	4300	6.7	20.0	18.5	--	820	1.8	230
31...	1130	5.6	3100	7.2	--	18.0	--	--	--	--
31...	1650	8.7	2800	7.3	--	19.5	--	--	--	--
JUN										
01...	1730	3.5	6900	5.0	--	--	--	--	--	--
27...	1600	4.5	6200	3.6	--	--	--	--	--	--
AUG										
03...	1045	1.3	13000	4.7	--	27.0	--	--	--	--
09...	1240	2.3	9050	5.4	--	26.0	--	--	--	--
17...	1300	3.0	7300	7.4	34.0	30.0	--	11	5.9	63
SEP										
12...	1300	2.5	9750	3.5	--	21.0	--	--	--	--
24...	1645	11	3950	7.5	--	--	--	--	--	--
24...	2145	15	1870	7.6	--	--	--	8400	--	--

DATE	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)
OCT										
20...	1400	1300	340	130	440	5.1	13	94	0	77
FEB										
23...	2400	2200	370	350	870	7.8	11	240	0	200
APR										
11...	--	--	--	--	--	--	--	--	--	--
MAY										
25...	570	--	160	42	900	16	9.3	--	--	43
31...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
JUN										
01...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
AUG										
03...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
17...	1200	1200	210	160	1600	20	21	--	--	3
SEP										
12...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	490	320	150	29	300	5.9	9.0	--	--	170

## SAN JUAN RIVER BASIN

09367561 SHUMWAY ARROYO NEAR WATERFLOW, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 20...	1900	120	1.5	28	3260	3030	2.7	3.0	2.0	1.3
FEB 23...	3400	210	.6	6.0	5980	5390	13	13	.03	.48
APR 11...	--	--	--	--	--	--	2.0	2.0	1.1	5.3
MAY 25...	2000	180	.7	11	3360	--	3.8	3.7	.32	--
31...	--	--	--	--	--	--	--	5.0	--	--
31...	--	--	--	--	--	--	--	5.6	--	--
JUN 01...	--	--	--	--	--	--	--	3.0	--	--
27...	--	--	--	--	--	--	--	--	--	--
AUG 03...	--	--	--	--	--	--	.41	.41	.44	8.4
09...	--	--	--	--	--	--	1.6	1.6	.05	3.2
17...	4400	160	10	27	7320	6600	2.4	2.4	.19	4.7
SEP 12...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	1.9	1.7	.02	3.2
24...	840	44	2.8	14	1540	1520	5.8	5.8	.01	21

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, ORTHOPHOSPHATE, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHOPHOSPHATE, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	SAMPLE SOURCE (72005)
OCT 20...	6.0	.56	.01	550	30	--	21	11	3.9	--
FEB 23...	14	.13	.03	350	20	140	--	6.2	.8	--
APR 11...	8.4	.05	--	1300	--	200	--	27	.6	--
MAY 25...	--	.17	.08	2200	40	770	--	12	7.2	--
31...	--	--	.06	910	--	3	--	--	--	--
31...	--	.50	.05	780	--	3	--	--	--	--
JUN 01...	--	--	.22	4200	--	1700	--	--	--	--
27...	--	--	--	3300	--	2800	--	--	--	--
AUG 03...	9.2	.73	.26	--	--	520	--	--	--	--
09...	4.8	.73	.25	2	--	340	--	--	--	--
17...	7.3	.43	.10	2600	30	400	--	12	1.2	--
SEP 12...	--	--	--	2	--	250	--	--	--	--
24...	5.1	2.9	.04	1900	--	20	--	--	--	26
24...	27	6.5	.03	1000	--	20	--	--	--	26

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)
FEB 23...	0812	2	1	100	100	--	350	3	0	20
APR 11...	1245	30	28	--	--	1300	1300	2	--	--
MAY 25...	1530	7	4	700	200	--	2200	20	1	40
31...	1130	--	2	600	300	920	910	--	--	--
31...	1650	--	1	600	200	840	780	--	--	--
JUN 01...	1730	--	2	400	100	4200	4200	--	--	--
27...	1600	--	2	400	100	3300	3300	--	--	--
AUG 03...	1045	12	12	--	--	--	--	--	7	--
09...	1240	12	10	--	--	--	2	--	--	--
17...	1300	12	7	100	100	--	2600	1	0	10
SEP 12...	1300	14	10	--	--	--	2	--	5	--
24...	1645	28	3	--	--	--	1900	--	1	--
24...	2145	31	1	--	--	--	1000	--	3	--

09367561 SHUMWAY ARROYO NEAR WATERFLOW, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHROMIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
FEB 23...	10	0	1	13	2	1600	20	1	5	200
APR 11...	--	2	2	--	--	--	--	46	14	250
MAY 25...	0	21	5	90	3	51000	40	30	6	1700
31...	--	--	--	--	--	--	--	13	13	760
31...	--	--	--	--	--	--	--	14	14	1100
JUN 01...	--	--	--	--	--	--	--	9	9	1700
27...	--	--	--	--	--	--	--	22	22	3900
AUG 03...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
17...	10	2	2	31	5	1400	30	10	3	410
SEP 12...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
DATE	MANGANESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELENIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SAMPLE SOURCE (72005)
FEB 23...	140	.0	.0	9	9	0	0	50	20	--
APR 11...	200	--	--	--	--	--	--	--	--	--
MAY 25...	770	.2	.0	150	90	0	0	260	50	--
31...	3	--	--	--	40	--	--	--	--	--
31...	3	--	--	--	50	--	--	--	--	--
JUN 01...	1700	--	--	--	240	--	--	--	--	--
27...	2800	--	--	--	60	--	--	--	--	--
AUG 03...	520	--	--	230	200	--	--	--	--	--
09...	340	--	--	100	1	--	--	--	--	--
17...	400	.3	.3	--	110	0	0	40	30	--
SEP 12...	250	--	--	140	140	--	--	--	--	--
24...	20	--	--	58	50	--	--	--	--	26
24...	20	--	--	44	18	--	--	--	--	26

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ARSENIC TOTAL IN BOT. TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHROMIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CR) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	
AUG 17...	1300	1.5	220	2	0	3	0	
		COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGANESE, RECOV. FM BOT- TOM MA- TERIAL (UG/L AS MN) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	SELENIUM, TOTAL RECOV. FM BOT- TOM MA- TERIAL (UG/L AS SE) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/L AS ZN) (01093)
AUG 17...	33	140000	100	30	.0	0	10	

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED (PCI/L METHOD (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
MAY 25...	1530	<29	99	12	67	--	--	.19	1.1	--
AUG 17...	1300	<61	2.5	<22	1.0	<20	1.1	.06	--	6.8



## SAN JUAN RIVER BASIN

09367561 SHUMWAY ARROYO NEAR WATERFLOW, NM--Continued

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 20...	0900	5400	8000
FEB 23...	0812	10	1600
MAY 25...	1530	2300	20000
AUG 17...	1300	1400	620

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	NOV 30,77 0845	FEB 23,78 0812	MAY 25,78 1530	AUG 17,78 1300
TOTAL CELLS/ML	1200	10000	1400	11000
DIVERSITY: DIVISION	1.5	0.9	0.4	1.0
..CLASS	1.5	1.1	0.4	1.0
..ORDER	1.5	1.8	0.5	1.4
...FAMILY	2.1	1.9	0.5	1.5
....GENUS	2.1	2.0	0.5	1.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...COELASTRACEAE								
....COELASTRUM	300#	25	--	-	--	-	690	6
...SCENEDESMACEAE								
...SCENEDESMUS	300#	25	170	2	--	-	170	2
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	--	-	170	2	--	-	7900#	70
CHRYSTOPHYTA								
..BACILLARIOPHYCEAE								
...PENNIALES								
...NAVICULACEAE								
....ENTOMONEIS	150	13	690	7	--	-	--	-
...CENTRALES								
...COSCINODISCACEAE								
...CYCLOTELLA	--	-	6100#	60	63	4	170	2
...PENNIALES								
...NAVICULACEAE								
....NAVICULA	--	-	950	9	--	-	87	1
...NITZSCHIA								
...NITZSCHIA	50	4	86	1	63	4	87	1
...SURIPELLACEAE								
...SURIPELLA	--	-	86	1	--	-	--	-
..CHRYSTOPHYCEAE								
...CHRYDOMONADALES								
...OCHROMONADACEAE								
...DINOBRYON	--	-	430	4	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCALES								
...CHROCOCCACEAE								
....ANACYSTIS	400#	33	1400	13	--	-	--	-
...HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	1900#	17
...OSCILLATORIA								
...OSCILLATORIA	--	-	--	-	1300#	91	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
...TRACHELOMONAS	--	-	170	2	--	-	260	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09367561 SHUMWAY ARROYO NEAR WATERFLOW, NM--Continued

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
OCT							
20...	0900	1.2	9.5	250	.81	48	--
NOV							
30...	0845	.13	.0	16	.01	--	--
FEB							
23...	0812	2.2	.0	23	.14	66	--
APR							
11...	1245	2.4	--	409	2.6	55	--
MAY							
20...	1730	E39	--	534000	56200	61	40
20...	1745	E136	--	69000	25300	72	40
25...	1530	20	18.5	3650	197	76	--
31...	1130	5.6	18.0	4020	61	39	--
31...	1650	8.7	19.5	5770	136	51	--
JUN							
01...	1730	3.5	--	2140	21	64	--
27...	1600	4.5	--	11000	135	95	--
AUG							
03...	1045	1.3	27.0	389	1.4	45	--
09...	1240	2.3	26.0	789	4.9	39	--
17...	1300	3.0	30.0	49	.40	65	--
SEP							
12...	1300	2.5	21.0	534	3.6	36	--
24...	1600	E8.0	--	19700	426	44	26
24...	1630	E17	--	17600	808	76	26
24...	1700	E13	--	12900	453	48	26
24...	1730	E11	--	7740	230	58	26
24...	1800	E8.7	--	54200	1270	61	26
24...	2030	E8.5	--	51600	1180	82	26
24...	2100	E24	--	38100	2470	85	26
24...	2130	E17	--	65100	2990	81	40
24...	2200	E14	--	28200	1070	90	26
24...	2230	E11	--	25500	757	89	26

09367660 CHACO WASH NEAR STAR LAKE TRADING POST, NM

LOCATION.--Lat 35°56'97", long 107°31'39", in NE¼NW¼SE¼ sec.25, T.20 N., R.7 W., McKinley County, Hydrologic Unit 14080106, on right bank, 4.8 mi (7.7 km) northwest of Star Lake Trading Post, and 7.6 mi (12.2 km) southeast of Pueblo Pintada.

DRAINAGE AREA.--59.0 mi<sup>2</sup> (153 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 6,580 ft (2,006 m), from topographic map.

REMARKS.--Water-discharge records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97 ft<sup>3</sup>/s (2.75 m<sup>3</sup>/s), Oct. 3, 1977, gage height, 4.60 ft (1.402 m) on basis of step-backwater analysis; no flow many days.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 50 ft<sup>3</sup>/s (1.42 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
Oct. 3	2030	*97	2.75	4.60	1.402	May 7	1800	88	2.49	4.45	1.356

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	7.6	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	7.0	.00	4.0	.00	.00	.00	.00
3	14	.00	.00	.00	.00	4.5	.00	2.8	.00	.00	.00	.00
4	1.7	.00	.00	.00	.00	2.8	.00	.50	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	1.5	.00	2.3	.00	.00	.00	.00
6	.54	.00	.00	.00	1.7	9.9	.00	9.1	.00	.00	.00	.00
7	.19	12	.00	.00	5.5	1.2	.00	32	.00	.00	.00	.00
8	.00	.47	.00	.00	3.2	.04	.00	11	.00	.00	.00	.00
9	.00	.01	.00	.00	2.8	.00	.00	.70	.00	.00	.00	.00
10	.00	.00	.00	.00	3.2	.00	.00	.13	.00	.01	.00	.00
11	.00	.00	.00	.00	2.3	.00	.00	.00	.00	1.4	.00	.00
12	.00	.00	.00	.00	1.1	.00	.00	.00	.00	.40	.00	.00
13	.00	.00	.00	.00	1.4	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	1.6	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.70	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	1.2	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.42	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	5.8	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	11	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	8.5	.00	.00	.00	.00	.00	.00	.53
25	.00	.00	.00	.00	4.7	.00	.00	.00	.00	.00	.00	15
26	.00	.00	.00	.00	7.0	.00	.00	.00	.00	.00	.00	.77
27	.00	.00	.00	.00	5.8	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	3.3	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.40	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.94	.00	---	.00	.00	.00	.00	.00	.00	1.3
31	.00	---	.34	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	16.43	12.48	1.68	.00	71.37	34.54	.00	62.53	.00	1.81	.00	17.60
MEAN	.53	.42	.054	.000	2.55	1.11	.000	2.02	.000	.058	.000	.59
MAX	14	12	.94	.00	11	9.9	.00	32	.00	1.4	.00	15
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	33	25	3.3	.00	142	69	.00	124	.00	3.6	.00	35

WTR YR 1978 TOTAL 218.44 MEAN .60 MAX 32 MIN .00 AC-FT 433

09367660 CHACO WASH NEAR STARLAKE TRADINGPOST, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November, 1977, to September 1978.

REMARKS.--Under the heading of SAMPLE SOURCE numerical values are used to indicate sampling method; 40 indicates single-stage sample.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	
NOV													
07...	0130	E.12	3400	7.5	--	--	--	--	--	--	--	--	
07...	0145	E7.8	6700	8.3	--	--	--	--	--	--	--	--	
DEC													
30...	2300	E.12	4200	7.5	--	--	--	--	--	--	--	--	
FEB													
06...	1800	E.12	160	7.0	--	--	--	--	--	--	--	--	
06...	1850	E7.8	200	8.1	--	--	--	--	--	--	--	--	
23...	2015	E34	185	8.1	--	--	--	--	--	--	--	--	
MAY													
02...	1715	E.12	500	7.6	--	--	--	--	--	--	--	--	
07...	1545	E34	350	8.0	--	--	--	--	--	--	--	--	
08...	1300	4.9	210	8.2	12.5	12.0	8.5	21	0	7.8	.4	44	
SEP													
24...	1700	E1.6	490	7.4	--	--	--	--	--	--	--	--	
24...	1715	E8.1	390	7.3	--	--	--	--	--	--	--	--	
24...	1730	E34	320	7.0	--	--	--	--	--	--	--	--	
DATE		SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	4.2	2.0	94	0	77	35	3.6	.4	12	165	152	1.0	--
SEP													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
DATE		NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	SAMPLE SOURCE (72005)	
NOV													
07...	--	--	--	--	--	--	--	--	171	--	--	40	
07...	--	--	--	--	--	--	--	--	158	--	--	40	
DEC													
30...	--	--	--	--	--	--	--	--	98	--	--	40	
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	40	
06...	--	--	--	--	--	--	--	--	240	--	--	40	
23...	--	--	--	--	--	--	--	--	110	--	--	40	
MAY													
02...	--	--	--	--	--	--	--	--	97	--	--	40	
07...	--	--	--	--	--	--	--	--	138	--	--	40	
08...	.03	3.7	4.7	1.4	50	120	0	--	14	20	--	--	
SEP													
24...	--	--	--	--	--	--	--	--	170	--	--	40	
24...	--	--	--	--	--	--	--	--	108	--	--	40	
24...	--	--	--	--	--	--	--	--	102	--	--	40	

09367660 CHACO WASH NEAR STARLAKE TRADINGPOST, NM -- Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)
NOV												
07...	0130	--	20	--	--	--	--	--	--	--	--	--
07...	0145	--	12	--	--	--	--	--	--	--	--	--
DEC												
30...	2300	--	14	--	--	--	--	--	--	--	--	--
FEB												
06...	1800	--	3	--	--	--	--	--	--	--	--	--
06...	1850	--	26	--	--	--	--	--	--	--	--	--
23...	2015	--	24	--	--	--	--	--	--	--	--	--
MAY												
02...	1715	--	1	--	--	--	--	--	--	--	--	--
07...	1545	--	3	--	--	--	--	--	--	--	--	--
08...	1300	140	15	1	1100	100	10	5	50	1	1	60
SEP												
24...	1700	--	69	--	--	--	--	--	--	--	--	--
24...	1715	--	32	--	--	--	--	--	--	--	--	--
24...	1730	--	33	--	--	--	--	--	--	--	--	--

DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)
NOV												
07...	--	--	--	--	--	--	--	--	--	--	--	.8
07...	--	--	--	--	--	--	--	--	--	--	--	.8
DEC												
30...	--	--	--	--	--	--	--	--	--	--	--	.6
FEB												
06...	--	--	--	--	--	--	--	--	--	--	--	.0
06...	--	--	--	--	--	--	--	--	--	--	--	.6
23...	--	--	--	--	--	--	--	--	--	--	--	.4
MAY												
02...	--	--	--	--	--	--	--	--	--	--	--	.4
07...	--	--	--	--	--	--	--	--	--	--	--	.4
08...	10	50	1	240	40	120	95	80	7	1100	0	.2
SEP												
24...	--	--	--	--	--	--	--	--	--	--	--	.9
24...	--	--	--	--	--	--	--	--	--	--	--	.6
24...	--	--	--	--	--	--	--	--	--	--	--	.6

DATE	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SAMPLE SOURCE (72005)
NOV											
07...	--	--	--	--	--	1	--	--	--	--	40
07...	--	--	--	--	--	3	--	--	--	--	40
DEC											
30...	--	--	--	--	--	4	--	--	--	--	40
FEB											
06...	--	--	--	--	--	0	--	--	--	--	40
06...	--	--	--	--	--	4	--	--	--	--	40
23...	--	--	--	--	--	4	--	--	--	--	40
MAY											
02...	--	--	--	--	--	5	--	--	--	--	40
07...	--	--	--	--	--	10	--	--	--	--	40
08...	0	3	0	26	4	1	1	5.0	360	140	--
SEP											
24...	--	--	--	--	--	3	--	--	--	--	40
24...	--	--	--	--	--	3	--	--	--	--	40
24...	--	--	--	--	--	3	--	--	--	--	40

09367660 CHACO WASH NEAR STARLAKE TRADINGPOST, NM --- Continued

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01013)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
MAY 08...	1300	3	110	1	0	2	4	5
DATE		LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01063)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
MAY 08...		0	270	.0	0	10	0	12

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
MAY 08...	1300	<1.4	100	8.5	100

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
MAY 08...	1300	K100	2100

09367660 CHACO WASH NEAR STARLAKE TRADINGPOST, NM -- Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN ,002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN ,004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN ,016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN ,062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN ,125 MM (70343)
NOV										
07...	0130	E.12	--	23200	7.5	--	--	--	--	--
07...	0145	E7.8	--	20800	438	--	--	--	--	--
DEC										
30...	2300	E.12	--	14400	4.7	--	--	--	--	--
FEB										
06...	1800	E.12	--	706	.23	--	--	--	--	--
06...	1850	E7.8	--	21600	455	--	--	--	--	--
23...	2015	E34	--	14300	1310	--	--	--	--	--
MAY										
02...	1715	E.12	--	15800	5.1	--	--	--	--	--
07...	1545	E34	--	11900	1090	--	--	--	--	--
08...	1300	4.9	12.0	7240	96	69	72	77	81	85
SEP										
24...	1700	E1.6	--	21200	92	--	--	--	--	--
24...	1715	E8.1	--	15200	332	--	--	--	--	--
24...	1730	E34	--	17000	1560	--	--	--	--	--

[illegible]

## 09367680 CHACO WASH AT CHACO CANYON NATIONAL MONUMENT, NM

LOCATION.--Lat 36°01'43", long 107°55'04", in NW¼NE¼ sec. 29, T.21 N., R.10 W., San Juan County, Hydrologic Unit 14080106, on down stream side of center bridge pier, 800 ft (240 m) downstream from Fajada Wash, and 0.5 mi (0.8 km) southwest of Chaco Canyon National Monument Visitors Center.

DRAINAGE AREA.--578 mi<sup>2</sup> (1,497 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,140 ft (1,871 m), from topographic map.

REMARKS.--Water-discharge records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 898 ft<sup>3</sup>/s (25.4 m<sup>3</sup>/s) July 24, 1977, gage height, 5.35 ft (1.631 m), from rating curve extended above 4.0 ft<sup>3</sup>/s (0.113 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights, 3.44 ft (1.049 m) and 3.68 ft (1.122 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s) and maximum(\*).

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Mar. 2	0015	128 3.62	2.49 0.759	May 8	0230	*340 9.63	3.31 1.009

No flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	33	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	74	.00	.91	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	66	.00	3.0	.00	.00	.00	.00
4	5.0	.00	.00	.00	.00	21	.00	1.3	.00	.00	.00	.00
5	2.0	.00	.00	.00	.00	16	.00	2.2	.00	.00	.00	.00
6	.91	.11	.00	.00	.78	3.5	.00	9.4	.00	.00	1.9	.00
7	.37	.04	.00	.00	2.1	1.7	.00	56	.00	.00	.00	.00
8	.06	.00	.00	.00	6.0	.91	.00	160	.00	.00	.00	.00
9	.00	.00	.00	.00	2.0	.06	.37	49	.00	.00	.00	.00
10	.00	.00	.00	.00	1.6	.00	.18	5.0	.00	.00	.00	.00
11	.00	.00	.00	.00	4.5	.00	.00	.44	.00	.00	.00	.00
12	.00	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	3.8	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	2.5	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	1.4	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.25	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.4	7.4
25	.00	.00	.00	.00	8.2	.00	.00	.00	.00	.00	.06	42
26	.00	.00	.00	.00	32	.00	.00	.00	.00	.00	.00	7.4
27	.00	.00	.00	.00	28	.00	.00	.00	.00	.00	.00	.91
28	.00	.00	.00	.00	22	.00	.00	.00	.00	.00	.00	.24
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	18	.00
31	.00	---	.00	1.3	---	.00	---	.00	---	.00	.51	---
TOTAL	8.34	.15	.00	1.55	118.88	216.17	.55	287.25	.00	.00	28.17	57.95
MEAN	.27	.005	.000	.050	4.25	6.97	.018	9.27	.000	.000	.91	1.93
MAX	5.0	.11	.00	1.3	32	74	.37	160	.00	.00	18	42
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	17	.3	.80	3.1	236	429	1.1	578	.00	.00	56	115
CAL YR 1977 TOTAL	1597.91			MEAN 4.38	MAX 260	MIN .00	AC-FT 3170					
WTR YR 1978 TOTAL	719.01			MEAN 1.97	MAX 160	MIN .00	AC-FT 1430					



09367680 CHACO WASH AT CHACO CANYON NATIONAL MONUMENT, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to current year.

REMARKS.--Under the heading SAMPLE SOURCE numerical values are used to indicate method of sampling; 29 indicates dip or grab sample and 40 indicates single-stage sample.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW (CFS) (00060)	STREAM- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT										
04...	--	14	--	570	7.4	--	120	0	44	1.5
04...	1040	--	4.5	540	--	16.5	--	--	--	--
FEB										
07...	1110	--	3.2	475	7.3	5.0	--	--	--	--
07...	1135	--	3.5	485	7.4	5.0	--	--	--	--
07...	1200	--	3.5	470	7.5	5.5	--	--	--	--
07...	1400	--	3.0	440	7.6	5.5	--	--	--	--
07...	1600	--	2.5	440	7.7	5.5	--	--	--	--
08...	--	11	--	425	7.7	--	49	0	18	1.0
08...	1215	--	9.4	450	7.9	4.0	--	--	--	--
09...	1345	--	7.9	430	8.0	--	31	0	11	.8
09-12	--	9.0	--	475	7.8	--	28	0	10	.8
15...	--	1.5	--	430	7.8	--	--	--	--	--
25-28	--	239	--	395	8.1	--	20	0	6.8	.7
27...	--	13	--	335	7.8	5.0	29	0	10	.9
MAR										
02...	--	102	--	420	8.0	4.5	--	--	--	--
03...	--	140	--	410	8.0	5.0	--	--	--	--
MAY										
03-04	--	1.5	--	590	7.8	--	--	--	--	--
04-05	--	5.2	--	280	7.8	--	--	--	--	--
06...	--	9.4	--	275	7.5	--	--	--	--	--
07...	--	56	--	440	7.9	--	--	--	--	--
08...	1700	--	66	420	8.3	13.0	--	--	--	--
09...	1150	--	41	450	8.5	10.0	22	0	7.8	.7
09-11	--	--	E18	525	7.7	--	40	--	14	1.1
AUG										
06...	--	1.9	--	375	7.3	--	94	0	32	3.5
24...	--	7.4	--	570	7.2	--	--	--	--	--
24...	1330	--	8.7	480	7.5	--	99	--	33	4.0
24-25	--	3.7	--	695	7.6	--	--	--	--	--
25...	--	.50	--	395	7.9	--	--	--	--	--
30-31	--	9.2	--	390	7.2	--	--	--	--	--
SEP										
24...	--	7.4	--	415	7.6	--	--	--	--	--
25...	--	42	--	420	7.6	--	--	--	--	--
26-27	--	4.2	--	780	7.5	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM, AD- SORP- TION RATIO (00931)	POTAS- SIUM, UIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
OCT 04...	100	4.0	3.4	280	0	230	76	8.8	.8	13
OCT 04...	--	--	--	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	--	--	--	--	--
FEB 08...	88	5.5	3.4	190	0	160	62	3.4	.7	14
FEB 08...	--	--	3.4	--	--	--	--	--	--	--
FEB 09...	96	7.5	3.0	190	0	160	78	3.5	.6	13
FEB 09-12	94	7.7	2.9	180	0	150	76	5.9	.7	14
FEB 15...	--	--	--	--	--	--	--	--	--	--
FEB 25-28	89	8.7	2.5	190	0	160	45	2.9	.9	12
FEB 27...	85	6.9	2.3	210	0	170	36	2.4	.7	10
MAR 02...	--	--	--	--	--	--	--	--	--	--
MAR 03...	--	--	--	--	--	--	--	--	--	--
MAY 03-04	--	--	--	240	--	200	--	--	--	--
MAY 04-05	--	--	--	90	--	74	54	2.0	.5	12
MAY 06...	--	--	--	92	--	75	--	--	--	--
MAY 07...	--	--	2.2	208	--	170	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--
MAY 09...	110	10	2.3	--	--	150	83	3.5	.9	15
MAY 09-11	110	7.6	2.9	--	--	180	76	3.8	.8	13
AUG 06...	67	3.0	3.8	--	--	170	49	10	.7	9.7
AUG 24...	--	--	--	--	--	--	--	--	--	--
AUG 24...	59	2.6	5.0	--	--	160	48	20	.8	7.9
AUG 24-25	--	--	--	--	--	--	--	--	--	--
AUG 25...	--	--	--	--	--	--	--	--	--	--
AUG 30-31	--	--	5.1	--	--	--	--	--	--	--
SEP 24...	--	--	--	292	--	239	--	--	--	--
SEP 25...	--	--	--	252	--	207	--	--	--	--
SEP 26-27	--	--	--	520	--	427	--	--	--	--
	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDEO (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, TOTAL NO2+NO3 (MG/L AS N) (00630)	NITRO- GEN, TOTAL NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 04...	--	388	--	--	--	--	.60	--	--	--
OCT 04...	--	--	--	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	--	--	--	--	--
FEB 07...	--	--	--	--	--	2.4	2.4	--	.00	--
FEB 07...	--	--	--	--	--	--	--	--	--	--
FEB 08...	--	292	--	--	--	--	1.8	--	--	--
FEB 08...	--	--	25000	--	--	--	--	--	--	--
FEB 09...	--	311	--	--	--	2.5	2.5	--	--	--
FEB 09-12	--	310	--	--	--	--	3.7	--	--	--
FEB 15...	--	--	--	--	--	--	--	--	--	--
FEB 25-28	--	264	--	--	--	--	2.0	--	--	--
FEB 27...	--	257	--	--	--	--	1.3	--	--	--
MAR 02...	--	--	--	--	--	--	--	--	--	--
MAR 03...	--	--	--	--	--	--	1.4	--	.11	--
MAY 03-04	--	--	--	2.6	.00	2.6	2.6	<.01	.01	11
MAY 04-05	183	--	--	--	--	1.6	1.6	<.01	--	3.7
MAY 06...	--	--	--	--	--	--	--	--	--	--
MAY 07...	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--
MAY 09...	--	314	--	--	--	2.2	--	.00	--	14
MAY 09-11	--	330	--	--	--	--	2.5	--	--	--
AUG 06...	--	283	--	.97	.03	8.2	1.0	.01	.04	9.0
AUG 24...	--	--	--	--	--	--	--	--	--	--
AUG 24...	--	274	--	--	--	.99	.75	.01	--	15
AUG 24-25	--	--	--	--	--	--	--	--	--	--
AUG 25...	--	--	--	--	--	1.6	1.2	.02	--	3.8
AUG 30-31	--	--	--	--	--	--	--	--	--	--
SEP 24...	--	--	--	--	--	--	--	--	--	--
SEP 25...	--	--	--	--	--	--	--	--	--	--
SEP 26-27	--	--	--	--	--	--	--	--	--	--

## SAN JUAN RIVER BASIN

09367680 CHACO WASH AT CHACO CANYON NATIONAL MONUMENT, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)	SAMPLE SOURCE (72005)
OCT										
04...	--	--	.06	60	30	--	170	--	--	29
04...	--	--	--	60	--	--	188	6.1	--	--
FEB										
07...	--	--	--	--	--	--	--	--	--	29
07...	--	--	--	--	--	--	--	--	--	29
07...	--	--	--	--	40	0	--	--	--	29
07...	15	2.7	.07	50	--	--	100	5.0	--	29
07...	--	--	--	--	--	--	--	--	--	29
08...	--	--	.08	50	40	--	96	--	--	29
08...	--	--	--	--	--	--	149	6.1	1.3	--
09...	16	2.7	.07	50	120	--	4.0	--	--	--
09-12	--	--	.08	50	90	--	74	--	--	29
15...	--	--	--	--	--	--	36	--	--	29
25-28	--	--	.16	50	1000	--	113	--	--	29
27...	--	--	.06	50	40	--	--	--	--	29
MAR										
02...	--	--	--	--	150	10	--	--	--	29
03...	--	2.0	.06	--	--	--	132	4.0	--	29
MAY										
03-04	14	2.0	.02	--	100	0	54	4.9	--	29
04-05	5.3	.61	.02	--	110	0	14	2.6	--	29
06...	--	--	--	40	--	--	--	--	--	29
07...	--	--	--	--	--	--	--	--	--	29
08...	--	--	--	--	80	0	--	--	--	--
09...	16	2.3	--	120	130	--	91	4.8	--	--
09-11	--	--	--	--	110	190	--	--	--	29
AUG										
06...	17	.93	.04	60	20	--	42	4.3	--	29
24...	--	--	--	--	70	920	--	--	--	29
24...	16	4.2	.03	60	50	--	120	6.6	--	--
24-25	--	--	--	--	--	--	--	--	--	29
25...	5.4	1.2	.03	--	--	--	20	4.2	--	29
30-31	--	--	--	--	--	--	--	--	--	29
SEP										
24...	--	--	--	60	20	0	--	--	--	29
25...	--	--	--	60	30	0	--	--	--	29
26-27	--	--	--	80	90	0	--	--	--	29

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)
OCT										
04...	--	--	300	--	8000	--	210	60	0	--
04...	1040	--	320	4	--	100	210	60	--	--
FEB										
07...	1110	--	50	2	--	--	--	--	--	--
07...	1135	--	--	--	4000	0	--	--	0	0
07...	1200	30	--	--	--	--	--	--	--	--
07...	1400	--	--	--	--	--	200	50	--	--
07...	1600	--	40	2	4000	0	--	--	--	--
08...	1215	--	--	--	4900	100	--	--	1	1
15...	--	--	27	--	1800	--	160	--	0	--
27...	--	--	65	5	--	--	--	50	--	--
MAR										
02...	--	--	--	--	1300	100	--	--	14	1
MAY										
03-04	--	--	32	3	2000	--	--	--	8	0
04-05	--	--	18	1	--	--	--	--	2	1
06...	--	--	--	--	900	--	--	40	5	--
07...	--	--	22	--	--	--	--	--	--	--
08...	1700	50	--	--	--	--	--	--	--	--
AUG										
24...	--	--	63	5	4000	100	--	--	4	2
24-25	--	--	70	--	2400	--	230	--	--	--
SEP										
24...	--	--	25	1	1800	100	190	60	--	--
25...	--	--	21	2	1600	100	240	60	--	--
26-27	--	--	50	7	4800	100	130	80	--	--

09367680 CHACO WASH AT CHACO CANYON NATIONAL MONUMENT, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
OCT										
04...	120	--	--	--	--	--	--	30	380	--
04...	120	0	--	--	--	--	--	--	500	--
FEB										
07...	--	--	--	--	--	--	--	--	--	--
07...	220	0	--	--	500	6	--	--	2	2
07...	--	--	100	0	--	--	170000	40	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	140	0	--	--	--	--	--	--	440	5
08...	120	0	--	--	--	--	--	--	--	--
15...	100	--	33	--	75	--	170000	--	38	--
27...	--	--	--	--	--	--	--	40	--	--
MAR										
02...	140	0	230	2	--	--	290000	150	500	--
MAY										
03-04	60	0	89	2	400	12	--	100	250	4
04-05	20	0	--	--	--	--	--	110	82	10
06...	--	--	0	0	140	11	--	--	130	--
07...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	80	--	--
AUG										
24...	160	0	130	4	450	1	--	70	300	7
24-25	--	--	--	--	--	--	300000	--	600	--
SEP										
24...	--	--	--	--	--	--	220000	20	300	0
25...	--	--	--	--	--	--	170000	30	200	0
26-27	--	--	--	--	--	--	200000	90	700	0

DATE	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)
OCT									
04...	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--
FEB									
07...	--	--	--	--	1.1	.0	--	--	8
07...	--	--	--	--	--	--	--	--	--
07...	180	10	5500	0	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	3	2	--
15...	120	--	2400	--	.4	--	--	--	37
27...	--	--	--	--	1.4	.2	--	--	--
MAR									
02...	--	--	1400	10	--	--	--	--	--
MAY									
03-04	--	--	--	0	.6	.0	--	--	5
04-05	--	--	--	0	.2	.0	--	--	1
06...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	5	5	5
08...	--	--	--	0	--	--	--	3	--
AUG									
24...	--	--	--	920	.8	.0	--	--	0
24-25	--	--	6300	--	--	--	--	--	--
SEP									
24...	--	--	4500	0	--	--	--	--	--
25...	--	--	3700	0	--	--	--	--	--
26-27	--	--	8200	0	--	--	--	--	--

## SAN JUAN RIVER BASIN

09367680 CHACO WASH AT CHACO CANYON NATIONAL MONUMENT, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SAMPLE SOURCE (72005)
OCT									
04...	--	--	--	--	--	--	--	--	29
04...	--	--	--	--	--	--	--	--	--
FEB									
07...	0	--	--	--	--	--	--	--	29
07...	--	--	--	--	--	--	--	--	29
07...	--	3	--	3000	330	--	440	10	29
07...	--	--	--	--	--	--	--	--	29
07...	--	--	--	--	--	--	--	--	29
08...	--	--	--	--	--	3.0	--	--	--
15...	--	--	--	--	--	--	--	--	29
27...	--	--	--	--	--	--	--	--	29
MAR									
02...	--	--	--	4800	100	--	--	--	29
MAY									
03-04	3	--	0	--	--	--	880	30	29
04-05	1	--	--	--	--	--	--	--	29
06...	--	1	0	--	--	--	330	10	29
07...	--	--	--	--	--	1.1	--	--	29
08...	--	--	--	--	--	--	--	--	--
AUG									
24...	0	--	0	--	--	--	1200	10	29
24-25	--	--	--	--	--	--	--	--	29
SEP									
24...	--	--	--	--	--	--	--	--	29
25...	--	--	--	--	--	--	--	--	29
26-27	--	--	--	--	--	--	--	--	29

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L U-NAT) (80040)	GROSS BETA, DIS- SOLVED AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED AS YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
FEB										
08...	1215	25000	7.1	1800	5.4	710	4.8	620	.04	2.4
MAY										
07...	--	--	7.8	510	5.9	410	5.4	380	.06	7.2
AUG										
30-31	--	--	5.2	890	6.6	460	6.1	400	.56	2.3

09367680 CHACO WASH AT CHACO CANYON NATIONAL MONUMENT, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT						
04...	0630	9.4	13.5	44400	1130	--
04...	0640	25	14.0	45200	3050	100
04...	0650	20	14.0	42800	2310	--
04...	0730	18	14.5	45800	2230	--
04...	0745	16	14.5	42900	1850	--
04...	0800	13	14.5	44100	1550	--
04...	0900	9.4	15.0	42000	1070	--
04...	1000	3.5	15.0	42300	400	--
04...	1040	4.5	16.5	61500	747	100
04...	1900	11	15.0	29600	879	--
04...	2000	11	15.0	27000	802	--
FEB						
07...	1110	3.2	5.0	25800	223	--
07...	1125	5.0	5.0	25800	348	--
07...	1135	3.5	5.0	25400	240	--
07...	1145	5.0	5.5	25500	344	100
07...	1200	3.5	5.5	25400	240	--
07...	1300	5.0	5.5	25400	343	--
07...	1400	3.0	5.5	25400	206	--
07...	1500	4.5	5.5	25400	309	--
07...	1600	2.5	5.5	26100	176	--
07...	1700	4.0	5.5	25400	274	--
08...	0800	7.0	1.5	29800	563	--
08...	0810	13	1.5	29700	1040	--
08...	0820	14	1.5	29500	1120	--
08...	0830	15	1.5	29400	1190	--
08...	0900	9.4	1.5	29300	744	--
08...	0930	5.0	1.5	29200	394	--
08...	1000	6.0	1.5	29200	473	100
08...	1030	6.0	1.5	29100	471	--
08...	1100	5.5	1.5	29200	434	--
08...	1130	9.4	1.5	29500	749	--
08...	1215	9.4	4.0	32700	830	100
08...	1400	4.5	.5	32300	392	--
08...	1530	4.5	.5	33600	408	--
08...	1600	4.5	4.5	32800	399	--
08...	1700	7.0	4.0	33400	631	--
09...	0745	18	.0	24100	1170	--
09...	0800	18	.0	24300	1180	--
09...	0815	18	.0	24700	1200	100
09...	1345	7.9	--	25400	542	99
09...	1600	5.5	.5	21200	315	--
09...	1700	4.5	.5	21300	259	--
09...	1730	4.5	.5	21300	259	--
09...	1800	4.5	.0	21300	259	--
10...	0750	6.0	.0	18800	305	--
10...	0830	6.0	.1	19000	308	100
10...	0900	5.0	.5	18800	254	--
10...	0930	2.5	.5	19000	128	--
11...	0800	19	.0	32300	1660	--
11...	0815	19	.0	32400	1660	--
11...	0900	19	.2	33800	1730	97
11...	1000	20	.5	32800	1770	--
12...	0900	6.0	.0	24600	399	--
12...	1000	5.0	.0	24400	329	--
12...	1030	13	.0	24400	856	--
12...	1100	12	.0	24900	807	100
12...	1400	7.9	.0	24600	525	--
15...	--	--	--	12400	50	100
15...	1000	3.5	.0	12700	120	--
15...	1100	3.5	.0	15000	142	--
15...	1200	3.5	.0	15100	143	100
15...	1300	3.5	.0	13900	131	--
15...	1400	3.2	.0	13000	112	--
25...	1400	20	.5	40500	2190	--
25...	1410	20	.5	41600	2250	--
25...	1420	19	.5	41500	2130	--
25...	1430	19	.5	42200	2160	96
25...	1440	19	.5	34900	1790	--
25...	1455	18	.5	34300	1670	--
25...	1500	18	.5	33300	1620	--
25...	1600	16	.5	58600	2530	--
25...	1630	15	.5	30300	1230	--
25...	1640	15	.5	35600	1440	--
25...	1700	15	.5	32200	1300	--
25...	1800	16	.5	33600	1450	--
26...	0800	52	1.0	44700	6280	--
26...	0810	52	1.5	41900	5880	--
26...	0820	49	1.5	43100	5700	--

09367680 CHACO WASH AT CHACO CANYON NATIONAL MONUMENT, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
FEB						
26...	0830	44	1.5	49700	5900	--
26...	0845	42	2.0	42000	4760	97
26...	0900	42	2.5	42400	4810	--
26...	1000	40	3.0	40500	4370	--
26...	1100	37	3.0	41900	4190	--
26...	1200	37	4.0	39200	3920	--
26...	1300	39	4.0	41300	4350	--
26...	1400	39	5.0	43500	4580	--
27...	1210	29	5.0	25100	1970	--
27...	1300	29	5.0	25600	2000	97
27...	1420	29	5.0	24900	1950	--
27...	1530	28	5.0	25400	1920	--
27...	1615	28	5.0	25100	1900	--
28...	1100	22	3.5	25100	1490	--
28...	1110	22	3.5	23600	1400	--
MAR						
02...	1000	58	4.5	27600	4320	--
02...	1120	54	4.5	27200	3970	97
02...	1200	52	4.5	56900	7990	--
03...	1100	86	5.0	50100	11600	--
03...	1215	106	5.0	71800	20500	77
03...	1300	101	5.0	58100	15800	--
03...	1400	79	5.0	66700	14200	80
04...	1000	21	4.5	36200	2050	--
04...	1110	21	5.0	25900	1470	--
04...	1200	19	5.0	26200	1340	--
04...	1315	17	5.0	27800	1280	--
04...	1430	15	5.0	27400	1110	--
MAY						
03...	1800	2.0	14.0	18800	102	--
03...	1815	2.0	14.0	18800	102	--
03...	1900	1.7	14.0	18600	85	--
04...	--	--	--	4710	17	100
04...	1200	1.2	15.5	18700	61	--
04...	1400	1.2	15.5	18700	61	--
04...	1500	1.3	15.5	5700	20	--
04...	1600	1.3	15.5	6670	23	--
04...	1700	1.4	15.5	5970	23	--
04...	1800	1.4	15.5	6660	25	--
05...	1330	3.2	3.0	5520	48	--

09367680 CHACO WASH AT CHACO CANYON NATIONAL MONUMENT, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
MAY							
05...	1400	7.0	3.0	5860	111	--	--
05...	1430	7.0	3.0	5740	108	--	--
05...	1500	9.4	3.0	6620	168	--	--
05...	1600	9.4	2.0	5690	144	--	--
05...	1800	6.5	1.0	5420	95	--	--
05...	2000	6.5	1.0	5320	93	--	--
06...	--	--	--	4330	110	96	97
06...	1100	3.5	15.0	5360	51	--	--
06...	1130	3.5	16.0	5480	52	--	--
06...	1230	4.5	16.0	5000	61	--	--
06...	1330	12	16.0	5070	164	--	--
06...	1500	21	16.0	5190	294	--	--
07...	--	--	--	51100	7730	--	--
07...	0700	182	1.5	49200	24200	45	51
07...	0800	166	1.5	59200	26500	--	--
07...	0900	136	1.5	64500	23700	--	--
07...	1000	119	2.0	46000	14800	--	--
07...	1100	121	2.5	65800	21500	--	--
07...	1300	98	3.0	92700	24500	--	--
07...	1600	72	3.0	32900	6400	--	--
08...	1700	66	13.0	33900	6040	--	--
09...	1150	41	10.0	31600	3500	--	--
09...	1900	16	14.0	21500	929	--	--
10...	0830	32	10.0	20600	1780	--	--
10...	1800	21	14.0	35000	1980	--	--
11...	0920	25	12.0	34200	2310	--	--
11...	1700	16	16.0	20200	873	--	--
AUG							
06...	--	--	--	7850	40	--	--
06...	0830	2.8	15.0	7440	56	--	--
06...	1200	2.0	18.0	7570	41	--	--
06...	1700	7.78	23.0	7620	16	--	--
24...	--	--	--	14500	290	--	--
24...	0700	4.5	13.0	23600	287	--	--
24...	0710	4.0	13.0	24600	266	--	--
24...	0900	3.5	14.0	23500	222	--	--
24...	1100	25	17.0	23700	1600	--	--
24...	1200	13	18.0	21700	762	--	--
24...	1330	8.7	--	15600	366	--	--
24...	1500	12	22.0	21800	706	--	--



09367680 CHACO WASH AT CHACO CANYON NATIONAL MONUMENT, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SED. SUSP. FALL DIAM. % FINER THAN (70340)	SED. SUSP. FALL DIAM. % FINER THAN (70342)	SED. SUSP. FALL DIAM. % FINER THAN (70343)	SED. SUSP. FALL DIAM. % FINER THAN (70344)	SED. SUSP. FALL DIAM. % FINER THAN (70331)	SED. SUSP. FALL DIAM. % FINER THAN (70332)
MAY						
05...	--	--	--	--	--	--
05...	--	--	--	--	--	--
05...	--	--	--	--	--	--
05...	--	--	--	--	--	--
05...	--	--	--	--	--	--
05...	--	--	--	--	--	--
06...	99	--	--	--	99	100
06...	--	--	--	--	--	--
06...	--	--	--	--	--	--
06...	--	--	--	--	--	--
06...	--	--	--	--	--	--
07...	--	--	--	--	61	--
07...	61	81	98	100	--	--
07...	--	--	--	--	--	--
07...	--	--	--	--	--	--
07...	--	--	--	--	--	--
07...	--	--	--	--	--	--
08...	--	--	--	--	88	--
09...	--	--	--	--	86	--
09...	--	--	--	--	96	--
10...	--	--	--	--	100	--
10...	--	--	--	--	96	--
11...	--	--	--	--	96	--
11...	--	--	--	--	100	--
AUG						
06...	--	--	--	--	100	--
06...	--	--	--	--	--	--
06...	--	--	--	--	--	--
06...	--	--	--	--	--	--
24...	--	--	--	--	100	--
24...	--	--	--	--	--	--
24...	--	--	--	--	100	--
24...	--	--	--	--	--	--
24...	--	--	--	--	--	--
24...	--	--	--	--	--	--
24...	--	--	--	--	--	--
24...	--	--	--	--	100	--
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN (70331)
AUG						
24...	1700	2.0	22.0	21900	118	100
24-25	--	--	--	22500	225	100
25...	1300	.68	29.0	3640	6.7	99
30...	0430	127	5.0	17000	5830	--
30...	0640	138	5.0	18200	6780	100
30...	0650	99	6.0	18000	4810	100
30...	0700	173	6.0	18700	8730	--
30...	0710	99	6.0	16100	4300	100
30...	0730	84	7.0	16100	3650	--
30...	0800	67	10.0	16800	3040	100
30...	1600	11	17.0	19200	570	100
30...	1700	36	18.0	19200	1870	--
30...	1800	9.5	20.0	30900	793	89
30...	1900	8.9	20.0	16600	399	100
30...	2000	9.3	18.0	18300	460	--
30-31	--	--	--	16300	405	100
31...	0900	7.9	15.0	18900	403	77
SEP						
24...	--	--	--	13300	266	100
24...	1710	6.0	15.0	13100	212	100
24...	2045	3.8	15.0	14300	147	98
25...	--	--	--	11300	1280	100
25...	0645	.30	11.0	15600	13	100
25...	0830	.24	12.0	16500	11	100
25...	1500	.24	17.0	8910	5.8	100
26...	0730	7.9	11.0	130000	2770	100
26...	0830	7.4	11.0	70800	1410	100
26-27	--	--	--	55800	633	100
27...	0730	.65	10.0	50500	89	100
27...	0845	.65	10.0	57500	101	100

09367682 GALLO WASH NEAR CHACO CANYON NATIONAL MONUMENT, NM

LOCATION.--Lat 36°02'06", long 107°53'25", in SE 1/4 sec. 22, T. 21 N., R. 10 W., San Juan County, Hydrologic Unit 14080106, on left bank, 1.1 mi (1.8 km) northeast of Chaco Canyon National Monument Visitors Center, and 3.2 mi (5.1 km) upstream from mouth.

DRAINAGE AREA.--36.2 mi<sup>2</sup> (93.8 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 6,220 ft (1,896 m), from topographic map.

REMARKS.--Water-discharge records poor.

EXTREMES FOR PERIOD OF RECORD.--No flow all year.

EXTREMES FOR CURRENT YEAR.--No flow all year.

No flow during year

WTR YR 1978	TOTAL	0	MEAN	0	MAX	0	MIN	0	AC-FT	0
-------------	-------	---	------	---	-----	---	-----	---	-------	---

## SAN JUAN RIVER BASIN

09367685 AH-SHI-SLE-PAH WASH NEAR KIMBETO, NM

LOCATION.--Lat 36°09'18", long 107°56'47", in NW¼SW¼ sec.3, T.22 N., R.10 W., San Juan County, Hydrologic Unit 14080106, on right bank 6.0 mi (9.7 km) west of Kimbeto, and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--8.2 mi<sup>2</sup> (13.2 km<sup>2</sup>).

## WATER-DISCHARGE RECORD

PERIOD OF RECORD.--March 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6.180 ft (1.884 m) from topographic map.

REMARKS.--Water-discharge records fair.

EXTREMES FOR CURRENT PERIOD.--Water year 1977: maximum discharge, 1,170 ft<sup>3</sup>/s (33.1 m<sup>3</sup>/s) at 2030 hours July 20, gage height, 4.46 ft (1.359 m), peak above base of 300 ft<sup>3</sup>/s (8.5 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
July 19	2330	632 17.9	3.05 0.93	Aug. 14	1345	580 16.4	2.90 0.884
July 20	2030	*1,170 33.1	4.46 1.359	Aug. 15	1400	492 13.9	2.65 0.808
Aug. 12	1200	445 12.6	2.50 0.762				

No flow most of time.

Water year 1978: peak discharge above base of 300 ft<sup>3</sup>/s (8.5 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 7	1545	*542 15.3	2.79 0.850	Sept. 25	1400	400 11.3	2.35 0.716
Sept. 24	1930	370 10.5	2.35 0.716				

No flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	.00	.00	.00	.00	.00	.00
2						---	.00	.00	.00	.00	.00	.00
3						---	.00	.00	2.0	.00	.00	.00
4						---	.00	.00	1.8	.00	.00	.14
5						---	.00	.00	.32	.00	.00	.00
6						---	.00	.00	.00	.00	.00	.00
7						---	.00	.00	.00	.00	.00	.00
8						---	.00	.00	.00	.00	.00	.00
9						---	.00	.00	.00	.00	.00	.00
10						---	.00	.00	.00	.00	.00	.00
11						---	.00	.00	.00	.00	14	.00
12						---	.00	.00	.00	.00	32	.08
13						---	.00	.00	.00	.00	5.8	.00
14						---	.00	.00	.00	.00	34	.00
15						---	.00	.00	.00	.00	19	.00
16						---	.00	.00	.00	.00	.92	.00
17						---	.00	.00	.00	3.3	.11	.00
18						.00	.00	.00	.00	7.8	.00	.00
19						.00	.00	.00	.00	97	.00	.00
20						.00	.00	.00	.00	133	.00	.00
21						.00	.00	.00	.00	1.7	.00	.00
22						.00	.00	.00	.00	1.2	.00	.53
23						.00	.00	.00	.00	.00	.00	.44
24						.00	.00	.00	.00	.00	.00	.00
25						.00	.00	.00	.00	.00	.00	.00
26						.00	.00	.00	.00	.00	.00	.00
27						.00	.00	.00	.00	.06	.00	.00
28						.00	.00	.00	.00	.17	.00	.00
29						.00	.00	.00	.00	.00	.00	.00
30						.00	.00	.00	.00	.00	.00	.00
31						.00	---	.00	---	.00	.00	---
TOTAL						---	.00	.00	4.12	244.17	105.83	1.19
MEAN						---	.000	.000	.14	7.88	3.41	.040
MAX						---	.00	.00	2.0	133	34	.53
MIN						---	.00	.00	.00	.00	.00	.00
AC-FT						---	.00	.00	8.2	484	210	2.4

09367685 AH-SHI-SLE-PAH WASH NEAR KIMBETO, NM -- Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.10	.22	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	6.0	11	.00	13	.00	.00	.00	.00
3	.00	.00	.00	.00	5.0	1.6	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	3.0	.00	.00	7.3	.00	.00	.00	.00
6	.96	13	.00	.00	1.0	.00	.00	39	.00	.00	.00	.00
7	.00	.18	.00	.00	.50	.00	.00	106	.00	.00	.00	.00
8	.00	.00	.00	.00	2.1	.00	.03	11	.00	.00	.90	.00
9	.00	.00	.00	.00	.50	.00	.90	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.40	4.6	.30	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	1.1	1.1	.01	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.78	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	1.9	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.52	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00	.40
25	.00	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00	.40
26	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.83	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.50	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.30	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	11	---	.00	---	.00	---	.00	.00	---
TOTAL	.96	13.18	.00	18.08	23.70	19.12	1.24	176.30	.00	.00	.90	80.00
MEAN	.031	.44	.000	.58	.85	.62	.041	5.69	.000	.000	.029	2.67
MAX	.96	13	.00	11	6.0	11	.90	106	.00	.00	.90	.40
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.9	26	.00	36	47	38	2.5	350	.00	.00	1.8	159

WTR YR 1978 TOTAL 333.48 MEAN .91 MAX 106 MIN .00 AC-FT 661

## SAN JUAN RIVER BASIN

09367685 AN-SHI-SLE-PAH WASH NEAR KIMBETO, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1977 to current year.

REMARKS.--Under the heading SAMPLE SOURCE numerical values are used to indicate method of sampling; 26 indicates by automatic pump and 40 indicates single-stage sample.

## 1977 DATA NOT PREVIOUSLY PUBLISHED

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	BICAR- BONATE (MG/L AS HCO3) (00440)	ALKA- LINITY (MG/L AS CACO3) (00410)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	SAMPLE SOURCE (72005)
JUL											
18...	2330	140	1100	7.5	290	238	--	542	--	--	40
18...	2331	140	990	7.7	--	--	--	442	--	--	40
19...	2000	140	825	7.6	300	246	80	385	6.4	<50	40
19...	2005	140	680	7.4	--	--	--	279	--	--	40
19...	2015	480	1100	7.1	340	279	80	561	13	<100	40
20...	2000	1000	1000	6.9	250	205	90	311	6.8	<100	40
AUG											
11...	2230	140	580	7.6	280	230	--	167	--	--	40
11...	2331	140	800	7.5	--	--	--	293	--	--	40
12...	1145	480	800	7.5	230	189	--	350	--	--	40

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
JUL												
18...	2330	670	--	310	--	20	1200	--	2.4	--	3	--
18...	2331	620	--	290	--	--	--	--	--	--	3	--
19...	2000	240	2	160	80	--	800	28	2.3	.0	2	0
19...	2005	140	--	320	--	--	--	--	--	--	2	--
19...	2015	65	1	240	80	--	--	--	3.0	.0	1	1
20...	2000	240	1	260	90	--	--	--	2.4	.0	4	0
AUG												
11...	2230	220	--	300	--	--	--	--	1.4	--	4	--
11...	2331	220	--	270	--	--	--	--	--	--	6	--
12...	1145	370	--	260	--	--	--	--	1.7	--	6	--

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
JUL						
18...	2258	140	72800	27500	87	40
18...	2259	140	85500	32300	78	40
18...	2330	140	79200	29900	83	40
18...	2331	140	78300	29600	90	40
19...	1957	140	66700	25200	67	40
19...	1958	140	109000	41200	45	40
19...	1959	140	76000	28700	62	40
19...	2000	140	83800	31700	58	40
19...	2005	140	55000	20800	89	40
19...	2012	480	220000	285000	71	40
19...	2013	480	102000	132000	63	40
19...	2014	480	55100	71400	85	40
19...	2015	480	126000	163000	73	40
20...	1957	1000	79000	213000	74	40
20...	1958	1000	84400	228000	80	40
20...	1959	1000	85200	230000	81	40
20...	2000	1000	82900	224000	78	40
AUG						
11...	2227	140	49100	18600	72	40
11...	2228	140	34200	12900	97	40
11...	2229	140	44600	16900	79	40
11...	2230	140	46900	17700	75	40
11...	2331	140	70800	26800	77	40
12...	1143	480	74400	96400	80	40
12...	1144	480	57900	75000	76	40
12...	1145	480	67700	87700	78	40

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW (CFS) (000060)	INSTAN- TANEOUS (CFS) (000061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (000095)	PH (UNITS) (000400)	TEMPER- ATURE (DEG C) (000010)	TUR- BID- ITY (NTU) (000076)	HARD- NESS (MG/L AS CAC03) (000900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (000902)	CALCIUM DIS- SOLVED (MG/L AS CA) (000915)
JAN										
12...	1500	--	.01	1125	7.7	--	--	--	--	--
FEB										
08...	1010	--	2.5	910	7.7	12.0	--	--	--	--
08...	1215	--	1.7	790	8.2	12.0	--	--	--	--
08...	1350	--	2.8	800	7.8	9.0	--	27	0	9.5
08...	1415	--	1.9	940	7.7	7.0	--	--	--	--
10...	1045	--	.01	910	7.5	7.5	--	--	--	--
MAR										
02...	2000	--	140	520	8.3	--	--	--	--	--
MAY										
07...	1233	--	140	520	8.3	--	--	--	--	--
07...	1300	--	280	460	8.2	--	--	--	--	--
08...	--	55	--	1140	7.5	--	--	--	--	--
08...	1456	--	52	1275	7.3	--	--	--	--	--
08...	1500	--	57	1650	7.3	--	--	--	--	--
SEP										
24...	--	140	--	740	8.1	--	150	9	0	2.6
24...	1715	--	140	580	8.2	--	--	--	--	--
24...	1716	--	140	535	8.5	--	--	--	--	--
24...	1717	--	140	555	8.4	--	--	--	--	--

[illegible]

09367685 AH-SHI-SLE-PAN WASH NEAR KIMBETO, NM -- Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)
JAN									
12...	--	--	--	--	--	--	--	--	--
FEB									
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	22	--
08...	17	--	581	15000	--	7.7	--	--	--
08...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
MAR									
02...	--	--	--	--	--	--	--	--	--
MAY									
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
SEP									
24...	19	735	402	--	1.1	--	.19	--	15
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHOPHOSPHATE, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	SAMPLE SOURCE (72005)
JAN									
12...	--	--	--	90	180	10	26	--	29
FEB									
08...	--	--	--	--	--	--	40	5.6	--
08...	--	1.5	.06	--	--	--	3.8	--	--
08...	--	--	.02	60	170	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
MAR									
02...	--	--	--	--	--	--	140	--	40
MAY									
07...	--	--	--	--	--	--	165	--	40
07...	--	--	--	--	--	--	106	--	40
08...	--	--	--	--	--	--	171	5.1	26
08...	--	--	--	--	--	--	201	4.5	--
08...	--	--	--	--	--	--	189	--	26
SEP									
24...	16	3.4	--	--	--	--	--	--	26
24...	--	--	--	--	--	--	220	--	40
24...	--	--	--	--	--	--	180	--	40
24...	--	--	--	--	--	--	310	--	40

TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]



## SAN JUAN RIVER BASIN

09367685 AH-SHI-SLE-PAH WASH NEAR KIMBETO, NM -- Continued

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED (UG/L) AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L) AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L) AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L) AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L) AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L) AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
FEB 08...	1350	15000	<6.2	880	14	420	12	370	.06	1.0

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
JAN 12...	1500	.01	--	7710	.21	100	--
FEB 08...	1010	2.5	12.0	13800	93	99	--
08...	1050	2.4	13.0	14800	96	--	--
08...	1130	2.4	13.0	14000	91	--	--
08...	1131	2.4	12.0	13800	89	--	--
08...	1215	1.7	12.0	12800	59	99	--
08...	1225	4.2	11.0	14200	161	--	--
08...	1230	4.2	12.0	14400	163	--	--
08...	1245	4.2	12.0	15000	170	--	--
08...	1315	2.8	11.0	14200	107	95	--
08...	1350	2.8	9.0	14700	111	98	--
08...	1415	1.9	7.0	17000	87	99	--
10...	1045	.01	7.5	9010	.24	100	--
MAR 02...	2000	140	--	51700	19500	74	40
MAY 07...	1230	140	--	29700	11200	72	40
07...	1231	140	--	43300	16400	54	40
07...	1232	140	--	36900	13900	63	40
07...	1300	280	--	26500	20000	85	40
07...	1346	480	--	40000	51800	78	40
07...	1347	480	--	37300	48300	65	40
08...	1430	62	--	51400	8600	94	26
08...	1431	62	--	52500	8790	94	--
08...	1445	55	--	51800	7690	96	26
08...	1455	52	--	52500	7370	96	26
08...	1456	52	--	58100	8160	91	--
08...	1457	52	--	55800	7830	92	--
08...	1500	57	--	64800	9970	97	26
08...	1515	42	--	52500	5950	97	26
SEP 24...	1715	140	--	57400	21700	78	40
24...	1716	140	--	62000	23400	91	40
24...	1717	140	--	69800	26400	78	40
24...	1730	81	--	59800	13100	85	26
24...	1800	163	--	81200	35700	78	26
24...	1815	225	--	41600	25300	88	26
24...	1845	379	--	63200	64700	93	26
24...	1915	391	--	43500	45900	89	26

09367710 DE-NA-ZIN WASH NEAR BISTI TRADING POST, NM

LOCATION.--Lat 36°13'51", long 108°11'57", in NE¼ Sec. 14, T.23 N., R.13 W., San Juan County, Hydrologic Unit 14080106, on right bank 400 ft (122 m) upstream from county road, 0.8 mi (1.3 km) downstream from Alamo Wash, 4.5 mi (7.2 km) southeast of Bisti Trading Post, and at mile 7.3 (11.7 km).

DRAINAGE AREA.--184 mi<sup>2</sup> (477 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,840 ft (1,780 m), from topographic map.

REMARKS.--Water-discharge records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft<sup>3</sup>/s (273 m<sup>3</sup>/s) May 7, 1978, gage height, 3.20 ft (0.975 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s) and maximum (\*).

Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)	Date	Time	Discharge (ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	Gage height (ft)	(m)
May 7	1530	*9,640	273	3.20	0.975	Aug. 24	1600	1,760	49.8	2.30	0.701
Aug. 22	1930	422	12	1.86	0.567						

No flow most of time.

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	4.7	.00	61	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	54	.00	41	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	3.1	.00	54	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	2.0	.00	27	.00	.00	.00	.00
6	.00	.00	.00	.00	1.4	1.0	.00	1180	.00	.00	.00	.00
7	.00	16	.00	.00	3.1	1.0	.00	575	.00	.00	.00	.00
8	.00	38	.00	.00	4.1	.00	.00	14	.00	.00	.00	.00
9	.00	16	.00	.00	2.9	.00	2.4	2.7	.00	.00	.00	.00
10	.00	.03	.00	.00	3.1	.00	3.6	2.0	.00	.00	.00	.00
11	.00	.01	.00	.00	2.6	4.2	.65	1.0	.00	.20	.00	.00
12	.00	.00	.00	.00	3.3	4.5	.32	.50	.00	.00	4.5	.00
13	.00	.00	.00	.00	1.5	4.0	.28	.05	.00	.00	2.2	.00
14	.00	.00	.00	.00	.00	2.1	.11	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.65	.16	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.36	.02	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	1.1	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	1.2	.00	.00	.00	.00	.00	16	.00
23	.00	.00	.00	.00	1.1	.00	.00	.00	.00	.00	2.0	.00
24	.00	.00	.00	.00	.65	.00	.00	.00	.00	.00	.04	353
25	.00	.00	.00	.00	.36	.00	.00	.00	.00	.00	.00	4.2
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.8
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.9
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	.00	70.04	.00	.00	26.41	81.69	7.54	1958.25	.00	.20	24.74	371.20
MEAN	.000	2.33	.000	.000	.94	2.64	.25	63.2	.000	.006	.80	12.4
MAX	.00	38	.00	.00	4.1	54	3.6	1180	.00	.20	16	353
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	139	.00	.00	52	162	15	3880	.00	.4	49	736

CAL YR 1977 TOTAL 646.86 MEAN 1.77 MAX 140 MIN .00 AC-FT 1280  
WTR YR 1978 TOTAL 2540.07 MEAN 6.96 MAX 1180 MIN .00 AC-FT 5040



09367710 DE-NA-ZIN WASH NEAR BISTI TRADING POST, NM -- Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)
JAN 29...	1500	60	--	--	--	--	--	--	--	--	--
FEB 06...	1415	--	--	4300	100	--	2	1	110	0	500
FEB 09...	1015	40	4	--	--	--	--	--	--	--	--
AUG 22...	--	40	--	10000	200	120	60	--	220	--	--
SEP 22...	1830	--	--	4000	0	100	--	--	--	--	--
SEP 24...	--	58	2	--	--	--	10	0	140	0	--

DATE	TIME	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	SAMPLE SOURCE (72005)
JAN 29...	--	--	--	--	--	2.2	--	3	--	--	--	40
FEB 06...	32	--	--	340	6	--	--	--	--	3800	130	--
FEB 09...	--	--	--	--	--	1.0	.0	6	2	--	--	--
AUG 22...	--	--	80	1100	--	2.2	--	4	--	--	--	26
SEP 22...	--	--	340	--	--	--	--	--	--	--	--	--
SEP 24...	--	--	--	430	1	2.8	.2	18	3	--	--	26

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS YT-90) (80060)	RADIUM 226, DIS- SOLVED, METHOD (PCI/L) (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
FEB 10...	1400	18	720	4.1	320	3.7	290	--	--
SEP 26...	1700	8.4	700	5.5	440	5.1	420	.16	4.6

## SAN JUAN RIVER BASIN

09367710 DE-NA-ZIN WASH NEAR BISTI TRADING POST, NM -- Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
JAN							
29...	1500	E350	--	55700	52600	94	40
FEB							
06...	1415	4.5	--	34600	420	93	--
06...	1430	E35	--	33100	3130	--	--
06...	1530	5.2	--	32900	462	99	--
09...	1015	2.5	.0	22800	154	100	--
10...	1400	E98	15.0	13100	3470	--	--
AUG							
22...	1830	30	--	40500	3280	99	--
22...	1840	46	--	31500	3910	100	--
22...	1845	E70	--	72900	13800	96	26
22...	1850	E106	--	84500	24200	96	26
22...	1855	E153	--	61900	25600	97	26
22...	1900	E221	--	54600	32600	97	26
22...	1901	243	--	62800	41200	96	--
22...	1915	E320	--	59200	51100	97	26
22...	1935	E422	--	69000	78600	97	26
22...	1940	E388	--	69400	72700	97	26
23...	1715	.72	--	29600	58	100	--
SEP							
24...	1215	E36	--	21600	2100	95	26
24...	1230	E56	--	21900	3310	96	26
24...	1245	E62	--	29700	4970	98	26
24...	1300	E77	--	35300	7340	98	26
24...	1315	E89	--	42800	10300	97	26
24...	1330	E98	--	65200	17300	93	26
24...	1345	E137	--	65700	24300	95	26
26...	1700	E5.0	--	23300	315	100	--

09367930 HUNTER WASH AT BISTI TRADING POST, NM

LOCATION.--Lat 36°16'37", long 108°15'12", in NW¼ sec.32, T.24 N., R.13 W., San Juan County, Hydrologic Unit 14080106, on right bank 150 ft (46 m) upstream from road crossing at Bisti Trading Post, and 35 mi (56 km) south of Farmington.

DRAINAGE AREA.--45.6 mi<sup>2</sup> (118 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,770 ft (1,759 m), from topographic map.

REMARKS.--Water-discharge records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,570 ft<sup>3</sup>/s (44.5 m<sup>3</sup>/s) Aug. 19, 1976, gage height, 6.22 ft (1.896 m), from rating curve extended above 10 ft<sup>3</sup>/s (0.28 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
May 6	1830	152	4.30	2.67	0.814	Sept. 24	1230	*850	24.1	4.60	1.402

No flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.5	2.7	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.42	9.4	.00	4.8	.00	.00	.00	.00
3	.00	.00	.00	.00	.20	.18	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	6.7	.00	.00	.00	.00
6	.18	12	.00	.00	.00	.00	.00	48	.00	.00	.00	.00
7	.00	.08	.00	.00	.00	.00	.00	24	.00	.00	.00	.00
8	.00	.00	.00	.00	.21	.00	.23	.06	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	5.3	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	1.1	.46	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	1.4	.00	.00	.00	.00	1.6	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.91	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.76
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00	.99	.00
20	.00	.00	.00	.00	.42	.00	.00	.00	.00	.00	1.1	.00
21	.00	.00	.00	1.2	.42	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.62	.26	.00	.00	.00	.00	.00	1.7	.00
23	.00	.00	.00	.49	.06	.00	.00	.00	.00	.00	.79	.00
24	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00	.00	168
25	.00	.00	.00	.15	.00	.00	.00	.00	.00	.00	.00	5.6
26	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.15	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.10	.17	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.06	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	1.7	---	.00	---	.00	---	.00	.00	---
TOTAL	.18	12.08	.00	4.93	4.06	14.78	5.99	83.56	.00	.00	7.09	174.36
MEAN	.006	.40	.000	.16	.15	.48	.20	2.70	.000	.000	.23	5.81
MAX	.18	12	.00	1.7	1.5	9.4	5.3	.48	.00	.00	1.7	168
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.4	24	.00	9.8	8.1	29	12	166	.00	.00	14	346

CAL YR 1977 TOTAL 233.67 MEAN .64 MAX 74 MIN .00 AC-FT 463  
WTR YR 1978 TOTAL 307.03 MEAN .84 MAX 168 MIN .00 AC-FT 609

## SAN JUAN RIVER BASIN

09367930 HUNTER WASH AT BISTI TRADING POST, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD--Water years 1975 to current year.

REMARKS.--Under the heading SAMPLE SOURCE numerical values are used to indicate sampling method; 29 indicates dip or grab sample and 40 indicates single-stage sample.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHQS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	BICAR- BONATE AS HCO3) (00440)	ALKA- LILITY AS CACO3) (00410)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SAMPLE SOURCE (72005)
OCT 04...	1630	E2.8	1025	7.7	--	--	--	433	40
JAN 23...	1700	.18	725	7.7	.0	--	--	70	--
MAR 01...	2200	E23	1000	7.7	--	--	--	164	40
MAY 06...	1730	E155	1050	7.6	--	--	--	--	40
SEP 24...	1150	E155	875	7.7	--	312	256	--	40
24...	1200	E285	535	7.9	--	--	--	--	40
24...	1215	E600	625	8.0	--	--	--	--	40

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)
OCT 04...	1630	95	--	--	--	--	--	--	--	--
JAN 23...	1700	170	--	1000	180	0	70	76	200	210000
MAR 01...	2200	25	--	--	--	--	--	--	--	--
MAY 06...	1730	38	--	--	--	--	--	--	--	--
SEP 24...	1150	20	--	2000	200	--	--	--	--	280000
24...	1200	200	1	--	--	--	--	--	--	--
24...	1215	59	--	--	--	--	--	--	--	--

DATE	TIME	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	SAMPLE SOURCE (72005)
OCT 04...	--	--	--	--	--	2.1	--	1	--	40
JAN 23...	37	--	--	150	3400	.9	--	4	2800	--
MAR 01...	--	--	--	--	--	2.3	--	0	--	40
MAY 06...	800	--	--	--	--	.8	--	--	--	40
SEP 24...	600	--	--	--	9000	.2	--	--	--	40
24...	--	28	--	--	--	--	.2	--	--	40
24...	1600	--	--	--	--	2.4	--	--	--	40

09367930 HUNTER WASH AT BISTI TRADING POST, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
OCT							
04...	1620	E1.2	--	47000	152	99	40
04...	1630	E2.8	--	98300	743	86	40
JAN							
23...	1700	.18	.0	19700	9.6	100	--
MAR							
01...	2200	E23	--	93900	5830	87	40
MAY							
06...	1730	E155	--	18000	7530	99	40
SEP							
24...	1150	E155	--	34700	14500	95	40
24...	1200	E285	--	167000	129000	74	40
24...	1215	E600	--	124000	201000	65	40



09367934 TEEC-NI-DI-TSO WASH NEAR BURNHAM TRADING POST, NM

LOCATION.--Lat 36°18'26", long 108°27'22", on the Navajo Indian Reservation, San Juan County, Hydrologic Unit 14080106, 4.9 mi (7.9 km) southeast of Burnham Trading Post, and 6.5 mi (10.5 km) upstream from mouth.

DRAINAGE AREA.--7.2 mi<sup>2</sup> (18.6 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 5,500 ft (1,874 m), from topographic map.

REMARKS.--Water-discharge records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 268 ft<sup>3</sup>/s (7.590 m<sup>3</sup>/s), Sept. 24, 1978, gage height, 3.07 ft (0.936 m), on basis of step-backwater analysis; minimum, no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s), and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft <sup>3</sup> /s)	Discharge (m <sup>3</sup> /s)	Gage height (ft)	Gage height (m)
Aug. 22	1500	57	1.614	2.33	0.710	Sept. 24	1140	*268	7.590	3.07	0.936
Sept. 17	0600	30	0.850	2.15	0.655						

No flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	1.1	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.10	1.1	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.73	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	1.7	.00	.00	.00	.00
6	.39	2.3	.00	.00	.00	.00	.00	6.1	.00	.00	.00	.00
7	.77	.35	.00	.00	.00	.00	.00	1.2	.00	.00	.00	2.0
8	.27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.76
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.3
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.8
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	1.43	2.65	.00	.00	.00	.00	1.20	10.83	.00	.00	1.10	8.90
MEAN	.046	.088	.000	.000	.000	.000	.040	.35	.000	.000	.035	.30
MAX	.77	2.3	.00	.00	.00	.00	1.1	6.1	.00	.00	1.1	3.3
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	2.8	5.3	.00	.00	.00	.00	2.4	21	.00	.00	2.2	18

WTR YR 1978 TOTAL 26.11 MEAN .072 MAX 6.1 MIN .00 AC-FT 52

09367934 TEEC-NI-DI-TSO WASH NEAR BURNHAM, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--May to September 1978.

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. FALL DIAM. % FINER THAN 2.00 MM (80163)
MAY 02...	1445	2.7	16.5	43600	318	97	2	4	21	56	94	100

09367936 BURNHAM WASH NEAR BURNHAM, NM

LOCATION.--Lat 36°21'11", long 108°27'16", in Navajo Reservation, San Juan County, Hydrologic Unit 14080106, on left bank 3.0 mi (4.8 km) upstream from Burnham Wash, 3.2 mi (5.1 km) east of Burnham Trading Post, and 32 mi (51.5 km) southeast of Shiprock.

DRAINAGE AREA.--8.6 mi<sup>2</sup> (21.6 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-Stage recorder. Altitude of gage is 5,480 ft (1,670 m), from topographic map.

REMARKS.--Water-discharge records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 518 ft<sup>3</sup>/s (14.7 m<sup>3</sup>/s) Sept. 7, 1978, gage height, 4.20 ft (1.280 m) from rating curve extended above 10 ft<sup>3</sup>/s (0.283 m<sup>3</sup>/s) on basis of slope-area measurement at gage height, 4.20 ft (1.280 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
May 6	0100	281 7.96	3.30 1.006	Sept. 24	1930	424 12.0	3.85 1.173
*aSept. 7	0630	518 14.7	4.20 1.280				

No flow most of time.  
a Slope-area measurement.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.43	.29	.22	.42	.00	.00	.00	.00
2	.00	.00	.00	.00	.03	.15	3.8	6.5	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.92	.00	.67	.00	.00	.00	.00
4	1.6	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
5	.24	.00	.00	.00	.00	.06	.00	9.2	.00	.00	.00	.00
6	3.1	8.9	.00	.00	.00	.29	.00	71	.00	.00	.00	12
7	2.0	.82	.00	.00	.00	.00	.00	66	.00	.00	.00	.04
8	.97	.02	.00	.00	.00	.00	.00	16	.00	.00	.00	.00
9	.86	.00	.00	.00	.00	.00	1.4	.00	.00	.00	.00	.00
10	.27	.00	.00	.00	.00	.83	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.53	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.4
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.89	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	2.9	.30	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.76	.06	.00	.00	.00	.00	.00	1.6	.00
23	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00	.04	.00
24	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	18
25	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.36
26	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	1.3	---	.00	---	.00	---	.00	.00	---
TOTAL	9.04	9.74	.00	5.35	1.91	3.10	5.42	169.79	.00	.00	1.64	33.80
MEAN	.29	.32	.000	.17	.068	.10	.18	5.48	.000	.000	.053	1.13
MAX	3.1	8.9	.00	2.9	.89	.92	3.8	71	.00	.00	1.6	18
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	18	19	.00	11	3.8	6.1	11	337	.00	.00	3.3	67

WTR YR 1978 TOTAL 239.79 MEAN .66 MAX 71 MIN .00 AC-FT 476

09367936 BURNHAM WASH NEAR BURNHAM, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November to September 1978.

REMARKS.--Under the heading SAMPLE SOURCE numerical values are used to indicate sampling method; 40 indicates single-stage sample.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L CAC03) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
NOV										
06...	1600	E18	1040	8.1	--	--	--	--	--	--
FEB										
19...	0830	E18	520	8.7	--	--	--	--	--	--
MAY										
02...	1200	10	1000	9.3	8.0	12.0	8.5	54	18	2.2
SEP										
07...	0545	E18	560	8.2	--	--	--	--	--	--
07...	0550	E27	620	8.3	--	--	--	--	--	--
07...	0600	E118	540	8.1	--	--	--	--	--	--
24...	0945	E18	1070	7.6	--	--	--	--	--	--

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L) (70300)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
NOV										
06...	--	--	--	--	--	--	--	--	--	--
FEB										
19...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	140	8.3	5.5	130	10	1.0	15	419	5.7	.40
SEP										
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)	SAMPLE SOURCE (72005)
NOV										
06...	--	--	--	--	--	--	365	--	--	40
FEB										
19...	--	--	--	--	--	--	56	--	--	40
MAY										
02...	12	18	3.2	120	1700	120	--	11	20	--
SEP										
07...	--	--	--	--	--	--	301	--	--	40
07...	--	--	--	--	--	--	217	--	--	40
07...	--	--	--	--	--	--	268	--	--	40
24...	--	--	--	--	--	--	545	--	--	40

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)
NOV 06...	1600	--	78	--	--	--	--	--	--	--	--	--
FEB 19...	0830	--	50	--	--	--	--	--	--	--	--	--
MAY 02...	1200	300	20	2	1800	200	30	5	120	9	1	120
SEP 07...	0545	--	31	--	--	--	--	--	--	--	--	--
07...	0550	--	34	--	--	--	--	--	--	--	--	--
07...	0600	--	36	--	--	--	--	--	--	--	--	--
24...	0945	--	600	--	--	--	--	--	--	--	--	--

DATE	TIME	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
NOV 06...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB 19...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY 02...	10	200	0	700	96	1700	750	31	310	10	7800	120	120
SEP 07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

DATE	TIME	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SAMPLE SOURCE (72005)
NOV 06...	3.3	--	--	--	--	--	0	--	--	--	--	40
FEB 19...	1.0	--	--	--	--	--	7	--	--	--	--	40
MAY 02...	2.7	.0	0	78	4	11	2	2.0	1800	250	--	--
SEP 07...	1.6	--	--	--	--	--	0	--	--	--	--	40
07...	1.4	--	--	--	--	--	1	--	--	--	--	40
07...	--	--	--	--	--	--	0	--	--	--	--	40
24...	3.2	--	--	--	--	--	0	--	--	--	--	40

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01013)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
MAY 02...	1200	8	20	0	0	2	2	2
		LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01063)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
MAY 02...	0	340	.0	1	4	0	5	

09367936 BURNHAM WASH NEAR BURNHAM, NM -- Continued

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
MAY 02...	1200	5.4	1400	9.8	1000

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
MAY 02...	1200	K214	20000

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)
NOV 06...	1600	E18	--	99200	4820	85	--
FEB 19...	0830	E18	--	45000	2190	--	--
MAY 02...	1200	10	12.0	42900	1160	94	3
AUG 22...	1330	E18	--	115000	5590	--	--
SEP 07...	0545	E18	--	41500	2020	--	--
07...	0550	E27	--	44900	3270	--	--
07...	0600	E118	--	87100	27800	--	--
24...	0945	E18	--	186000	9040	--	--

DATE	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. FALL DIAM. % FINER THAN 2.00 MM (80163)	SAMPLE SOURCE (72005)
NOV 06...	--	--	--	--	--	40
FEB 19...	--	--	--	--	--	40
MAY 02...	8	32	64	94	100	--
AUG 22...	--	--	--	--	--	40
SEP 07...	--	--	--	--	--	40
07...	--	--	--	--	--	40
07...	--	--	--	--	--	40
24...	--	--	--	--	--	40

09367938 CRACO RIVER NEAR BURNHAM, NM

LOCATION.--Lat 36°21'57", long 108°33'57", in Navajo Reservation, San Juan County, Hydrologic Unit 14080106, on downstream end of second pier on Navajo Highway bridge, 1,300 ft (396 m) downstream from Captain Tom Wash, 2,100 ft (640 m) downstream from Brimhall Wash, 3.5 mi (5.6 km) west of Burnham Trading Post, and about 35 mi (56.3 km) upstream from mouth.

DRAINAGE AREA.--3,640 mi<sup>2</sup> (9,428 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 5,320 ft (1,622 m), from topographic map.

REMARKS.--Water-discharge records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,130 ft<sup>3</sup>/s (170 m<sup>3</sup>/s) May 8, 1978, gage height, 4.32 ft (1.317 m) from rating curve extended above 1,160 ft<sup>3</sup>/s (32.8 m<sup>3</sup>/s); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,000 ft<sup>3</sup>/s (28.3 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Feb. 23	1400	1,600 45.3	3.68 1.122	Sept. 7	0915	1,090 30.9	3.45 1.052
May 8	1100	*3,130 170	4.32 1.317				

No flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	28	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	73	.00	12	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	105	.00	6.1	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	97	.00	9.8	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	26	.00	18	.00	.00	.00	.00
6	.00	9.3	.00	.00	.00	18	.00	97	.00	.00	.00	.00
7	.00	25	.00	.00	1.9	5.0	.00	412	.00	.00	.00	71
8	.00	28	.00	.00	5.1	4.0	.00	877	.00	.00	.00	.00
9	.00	16	.00	.00	7.5	5.0	.00	81	.00	.00	.00	.00
10	.00	17	.00	.00	18	10	.00	40	.00	.00	.00	.00
11	.00	17	.00	.00	11	5.0	.00	10	.00	.00	.00	.00
12	.00	19	.00	.00	7.1	5.0	.00	.00	.00	.00	.00	.00
13	.00	14	.00	.00	12	4.0	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	21	8.0	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	14	7.0	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	11	5.0	.00	.00	.00	1.8	.00	.00
17	.00	.00	.00	.00	11	5.0	.00	.00	.00	.00	.00	18
18	.00	.00	.00	.00	10	4.0	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	9.0	4.0	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	9.0	4.0	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	8.0	5.0	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	2.5	8.0	6.0	.00	.00	.00	.00	1.8	.00
23	.00	.00	.00	.00	7.0	4.0	.00	.00	.00	.00	66	.00
24	.00	.00	.00	.00	7.0	.00	.00	.00	.00	.60	34	1140
25	.00	.00	.00	.00	6.0	.00	.00	.00	.00	.00	.00	1560
26	.00	.00	.00	.00	5.0	.00	.00	.00	.00	.00	.00	250
27	.00	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00	40
28	.00	.00	.00	.00	16	.00	.00	.00	.00	.00	.00	5.0
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	145.30	.00	2.50	208.60	437.00	.00	1562.90	.00	2.40	101.80	3084.00
MEAN	.000	4.84	.000	.081	7.45	14.1	.000	50.4	.000	.077	3.28	103
MAX	.00	28	.00	2.5	21	105	.00	877	.00	1.8	66	1560
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	288	.00	5.0	414	867	.00	3100	.00	4.8	202	6120

WTR YR 1978 TOTAL 5544.50 MEAN 15.2 MAX 1560 MIN .00 AC-FT 11000

09367938 CHAGO RIVER NEAR BURNHAM, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--November<sup>1977</sup> to September 1978.

REMARKS.--Under the heading SAMPLE SOURCE numerical values are used to indicate sampling method; 40 indicates single-stage sample.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
FEB												
07...	1400	1.9	770	8.9	11.0	11.0	9.2	70	0	23	3.0	130
22...	1445	E1210	890	8.1	--	--	--	--	--	--	--	--
MAR												
01...	1330	26	700	8.5	10.0	8.0	9.6	52	--	17	2.2	130
MAY												
07...	1000	E1190	980	8.0	--	--	--	--	--	--	--	--
07...	1500	1500	850	8.1	--	--	--	--	--	--	--	--
08...	1700	1160	700	8.6	17.0	16.0	8.8	52	--	17	2.3	250
AUG												
11...	2000	E1300	6700	8.3	--	--	--	--	--	--	--	--
SEP												
24...	1200	E1190	860	7.5	--	--	--	--	--	--	--	--
24...	1500	E7230	1220	7.5	--	--	--	--	--	--	--	--
25...	1300	748	750	8.4	15.0	10.0	8.6	54	0	19	1.6	130

DATE	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
FEB												
07...	6.8	5.6	203	25	209	150	12	.9	6.4	590	459	4.3
22...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
01...	7.9	3.2	--	8	--	120	8.3	1.0	7.1	513	--	4.4
MAY												
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
08...	15	4.1	--	10	--	140	8.5	1.0	12	475	--	5.9
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
25...	7.7	3.7	140	0	115	180	6.8	1.1	12	456	423	1.7

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	SAMPLE SOURCE (72005)
FEB											
07...	.62	34	39	2.2	70	2100	--	--	15	--	--
22...	--	--	--	--	--	--	--	504	--	--	40
MAR											
01...	.49	55	59	2.1	270	490	--	--	4.9	151	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	40
07...	--	--	--	--	--	--	--	283	--	--	--
08...	.06	26	32	2.8	130	680	20	--	7.2	50	--
AUG											
11...	--	--	--	--	--	--	--	210	--	--	40
SEP											
24...	--	--	--	--	--	--	--	158	--	--	40
24...	--	--	--	--	--	--	--	792	--	--	40
25...	.18	20	22	3.9	30	60	--	--	9.7	>10	--



09367938 CHACO RIVER NEAR BURNHAM, NM -- Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	
FEB													
22...	1445	--	160	--	--	--	--	--	--	--	--	--	
MAY													
07...	1000	--	60	--	--	--	--	--	--	--	--	--	
07...	1500	--	50	--	--	--	--	--	--	--	--	--	
08...	1700	320	30	2	7500	200	50	5	130	4	1	170	
AUG													
11...	2000	--	50	--	--	--	--	--	--	--	--	--	
SEP													
24...	1200	--	67	--	--	--	--	--	--	--	--	--	
24...	1500	--	170	--	--	--	--	--	--	--	--	--	
DATE	TIME	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
FEB													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	0	250	0	1000	30	680	1000	7	390	20	18000	20	20
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
DATE	TIME	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SAMPLE SOURCE (72005)	
FEB													
22...	2.4	--	--	--	--	--	12	--	--	--	--	40	
MAY													
07...	1.9	--	--	--	--	--	21	--	--	--	--	40	
07...	--	--	--	--	--	--	18	--	--	--	--	--	
08...	2.0	.0	0	100	3	10	4	3.0	1800	20	--	--	
AUG													
11...	2.3	--	--	--	--	--	2	--	--	--	--	40	
SEP													
24...	2.0	--	--	--	--	--	0	--	--	--	--	40	
24...	4.6	--	--	--	--	--	3	--	--	--	--	40	

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIUM, TOTAL RECOV- ERABLE (UG/G AS BA) (01008)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/G AS BE) (01013)	CADMIUM TOTAL RECOV- ERABLE (UG/G AS CD) (01028)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/G AS CR) (01029)	COBALT, TOTAL RECOV- ERABLE (UG/G AS CO) (01038)	COPPER, TOTAL RECOV- ERABLE (UG/G AS CU) (01043)
MAY								
08...	1700	2	110	1	0	4	2	4
DATE	TIME	LEAD, TOTAL RECOV- ERABLE (UG/G AS PB) (01052)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/G AS MN) (01053)	MERCURY TOTAL RECOV- ERABLE (UG/L AS CU) (71921)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/G AS NI) (01063)	NICKEL, TOTAL RECOV- ERABLE (UG/G AS NI) (01068)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/G AS SE) (01148)	ZINC, TOTAL RECOV- ERABLE (UG/G AS ZN) (01093)
MAY								
08...	0	130	.0	0	4	0	9	

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS	GROSS	GROSS	GROSS
		ALPHA,	ALPHA,	BETA,	BETA,
		DIS-	SUSP.	DIS-	SUSP.
		SOLVED	TOTAL	SOLVED	TOTAL
		(UG/L	(UG/L	(PCI/L	(PCI/L
		AS	AS	AS	AS
		U-NAT)	U-NAT)	CS-(137)	CS-(137)
		(80030)	(80040)	(03515)	(03516)
MAY					
08...	1700	10	1800	7.5	760

MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLIFORM, FECAL, G.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)
FEB 07...	1400	K93	57000
MAY 08...	1700	3800	250000
SEP 25...	1300	K0	7800

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
FEB								
07...	1400	1.9	11.0	44500	228	--	--	--
22...	1445	E1210	--	118000	386000	--	--	--
MAR								
01...	1330	26	8.0	52800	3710	--	--	--
MAY								
07...	1008	E1190	--	89900	289000	--	--	--
08...	1700	1160	16.0	67900	213000	64	71	82
SEP								
24...	1200	E1190	--	56900	183000	--	--	--
24...	1500	E7230	--	174000	3400000	--	--	--
25...	1300	748	10.0	37000	74700	93	97	100

[illegible]

## SAN JUAN RIVER BASIN

09367950 CHACO RIVER NEAR WATERFLOW, NM

LOCATION.--Lat 36°43'28", long 108°35'27", in SW¼SW¼ sec. 13, T.29 N., R.17 W., San Juan County, Hydrologic Unit 14080106, on downstream end of right bridge pier, 4.2 mi (6.8 km) upstream from Dead Mans Wash, 5.3 mi (8.5 km) downstream from the Hogback, 6.6 mi (10.6 km) southwest of Waterflow, 7.2 mi (11.6 km) southeast of Shiprock and at mile 4.5 (7.2 km).

DRAINAGE AREA.--4,350 mi<sup>2</sup> (11,300 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Water years 1959-69 (annual maximum only), November 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,980 ft (1,518 m), from topographic map. Prior to 1975 at site 1.8 mi (2.9 km) upstream.

REMARKS.--Water-discharge records good, except those above 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s), which are fair. Base flow is mostly waste water from Four Corners Power Plant.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,300 ft<sup>3</sup>/s (207 m<sup>3</sup>/s), Sept. 20, 1969, gage height, 7.88 ft (2.402 m) site and datum then in use; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 290 ft<sup>3</sup>/s (8.2 m<sup>3</sup>/s) and maximum (\*).

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Mar. 4	1030	665 18.8	3.82 1.164	Sept. 25	1140	a*4,450 126	8.45 2.576

Minimum discharge, 3.0 ft<sup>3</sup>/s (0.085 m<sup>3</sup>/s) few days in May.  
a From rating curve extended above 3,400 ft<sup>3</sup>/s (96.3 m<sup>3</sup>/s).

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	13	7.6	23	17	28	27	5.8	22	22	18	17
2	9.9	19	8.2	24	17	37	27	5.8	20	22	18	17
3	9.6	18	8.2	24	20	163	27	7.0	21	20	18	17
4	10	18	8.2	26	18	270	26	11	22	20	17	17
5	12	18	8.2	20	21	158	25	9.2	20	21	17	17
6	14	23	8.2	20	20	53	25	68	20	22	17	17
7	14	62	8.2	19	23	44	26	460	21	21	17	17
8	14	68	8.2	19	24	35	25	1080	20	21	17	16
9	14	64	9.8	19	24	26	27	505	18	20	17	17
10	12	60	18	19	25	23	26	168	18	18	16	14
11	11	44	18	19	40	23	27	71	16	19	15	14
12	11	25	16	19	62	24	28	29	18	21	17	10
13	11	18	18	19	56	23	27	19	18	20	16	14
14	11	15	18	18	42	23	26	12	18	20	15	15
15	11	12	19	17	56	23	34	8.1	19	20	14	14
16	11	11	20	17	59	22	51	7.6	18	21	15	14
17	12	10	20	17	42	24	52	6.9	19	22	15	15
18	11	11	18	17	32	25	45	6.1	18	20	15	14
19	11	10	18	17	32	23	19	6.0	18	21	16	14
20	11	10	20	19	32	22	15	5.0	20	21	17	14
21	11	10	22	19	31	21	13	5.0	22	21	18	17
22	11	10	23	20	31	24	11	4.0	22	20	18	19
23	11	9.0	22	17	31	24	11	4.0	22	20	18	17
24	11	5.1	22	17	30	22	11	3.0	21	20	15	510
25	11	5.1	22	21	30	21	9.2	3.0	20	17	13	2050
26	11	5.1	22	21	29	21	8.7	3.0	20	17	14	368
27	11	5.1	23	19	28	21	7.6	3.0	20	17	14	86
28	11	5.1	23	18	28	24	7.0	6.1	20	16	15	23
29	11	5.1	23	18	---	23	6.5	6.9	20	16	17	18
30	12	5.4	22	18	---	24	6.2	7.6	22	17	17	15
31	11	---	18	17	---	25	---	12	---	17	18	---
TOTAL	352.5	594.0	519.8	597	900	1319	676.2	2549.1	593	610	504	3427
MEAN	11.4	19.8	16.8	19.3	32.1	42.5	22.5	82.2	19.8	19.7	16.3	114
MAX	14	68	23	26	62	270	52	1080	22	22	18	2050
MIN	9.6	5.1	7.6	17	17	21	6.2	3.0	16	16	13	10
AC=FT	699	1180	1030	1180	1790	2620	1340	5060	1180	1210	1000	6800
CAL YR 1977	TOTAL	12986.0	MEAN 35.6	MAX 1380	MIN 5.1	AC=FT 25760						
WTR YR 1978	TOTAL	12641.6	MEAN 34.6	MAX 2050	MIN 3.0	AC=FT 25080						

09367950 CHACO RIVER NEAR WATERFLOW, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1976 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED SEDIMENT DISCHARGE: October 1976 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler.

REMARKS.--Under the heading of SAMPLE SOURCE numerical values are used to indicate sampling method; 26 indicates by automatic pump, 29 indicates dip or grab sample, and 40 indicates single-stage sample.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily, 134,000 mg/L Sept. 25, 1978; minimum daily, 15 mg/L May 26, 27, 1978.

SEDIMENT LOADS: Maximum daily, 740,000 tons (671,000 tonnes) Sept. 25, 1978; minimum daily, .10 tones (.09 tonnes) May 26, 27, 1978.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily, 134,000 mg/L Sept. 25; minimum daily, 15 mg/L May 26, 27.

SEDIMENT LOADS: Maximum daily, 740,000 tons (671,000 tonnes) Sept. 25; minimum daily .10 tons (.09 tonnes) May 26, 27.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	HARD- NESS (MG/L AS CACO3) (00900)
OCT											
19...	1100	11	2350	8.1	18.0	12.0	260	--	9.8	36	730
NOV											
29...	1245	5.1	1900	8.1	10.0	7.0	240	--	10.5	38	690
FEB											
07...	0955	28	2200	8.1	--	--	--	--	--	--	--
22...	0845	31	2400	8.1	3.5	4.5	1200	--	11.4	33	660
MAR											
07...	1240	49	1620	8.0	--	11.0	--	--	--	--	--
APR											
11...	1415	27	1800	8.1	--	--	--	--	--	--	--
MAY											
06...	2215	E245	1300	7.5	--	--	--	--	--	--	--
07...	2300	E780	1400	7.5	--	--	--	--	--	--	--
11...	1100	55	950	7.9	--	13.5	--	--	--	--	--
25...	1100	3.0	5300	8.2	21.0	20.5	--	6.1	8.5	110	1900
JUN											
27...	1100	21	3500	7.6	--	24.0	--	--	--	--	--
AUG											
03...	1240	17	3300	8.0	--	27.0	--	--	--	--	--
08...	1425	17	3500	8.0	--	--	--	--	--	--	--
17...	1000	15	2300	8.4	28.0	19.0	--	260	8.5	35	670
SEP											
12...	1030	14	1800	8.2	--	16.0	--	--	--	--	--
24...	2030	E245	3500	7.3	--	--	--	--	--	--	--
24...	2031	E245	4000	7.4	--	--	--	--	--	--	--
24...	2035	E780	2000	7.2	--	--	--	--	--	--	--
24...	2040	E1710	2150	7.2	--	--	--	--	--	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

09367950 CHACO RIVER NEAR WATERFLOW, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHOPHOS- PHATE, TOTAL (MG/L AS P) (00671)	BORON, TOTAL (UG/L AS B) (01020)	IRON, TOTAL (UG/L AS FE) (01046)	MANGA- NESE, TOTAL (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC TOTAL (MG/L AS C) (00681)	CARBON, ORGANIC TOTAL (MG/L AS C) (00689)	SAMPLE SOURCE (72005)
OCT 19...	3.7	.23	.01	3000	20	--	5.7	3.4	--	--
NOV 29...	5.1	.24	.01	2700	60	0	--	4.4	1.8	--
FEB 07...	--	--	--	4300	--	--	18	13	--	--
FEB 22...	3.3	.99	.01	4200	20	10	--	4.7	7.8	--
MAR 07...	--	--	--	1100	--	--	82	3.2	.4	--
APR 11...	--	--	--	2500	--	--	8.9	3.6	.4	--
MAY 06...	--	--	--	--	--	--	274	--	--	40
MAY 07...	--	--	--	--	--	--	253	--	--	40
MAY 11...	--	--	--	--	--	--	83	--	--	--
MAY 25...	--	.01	.00	19000	10	90	--	3.4	--	--
JUN 27...	--	--	--	7900	--	--	7.6	5.2	--	--
AUG 03...	--	--	--	4600	--	--	8.1	4.6	--	--
AUG 08...	--	--	--	--	--	--	7.1	--	--	--
AUG 17...	2.9	.28	.00	5700	20	10	--	5.0	1.3	--
SEP 12...	--	--	--	2200	10	10	--	--	--	--
SEP 24...	--	--	--	--	--	--	--	--	--	40
SEP 24...	--	--	--	--	--	--	--	--	--	40
SEP 24...	--	--	--	--	--	--	--	--	--	40
SEP 24...	--	--	--	--	--	--	--	--	--	40

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01009)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)
NOV 29...	1245	4	3	700	500	--	2700	1	0	8	8	3
FEB 07...	0955	--	--	300	100	4300	4300	--	--	--	--	--
FEB 22...	0845	6	3	400	200	--	4200	0	0	50	0	11
MAR 07...	1240	--	--	1600	0	1500	1100	--	--	--	--	--
APR 11...	1415	3	2	300	0	2600	2500	--	--	20	10	--
MAY 06...	2215	--	--	--	--	640	--	--	--	--	--	--
MAY 07...	2300	--	--	2400	--	1100	--	--	--	--	--	--
MAY 11...	1100	--	--	36000	--	600	--	--	--	--	--	--
MAY 25...	1100	6	6	100	0	--	19000	20	1	20	5	0
JUN 27...	1100	2	2	--	--	7900	7900	--	--	--	--	--
AUG 03...	1240	--	--	200	--	4600	4600	--	--	--	--	--
AUG 08...	1425	--	--	300	--	8600	--	--	--	--	--	--
AUG 17...	1000	3	1	200	--	--	5700	1	0	20	10	3
SEP 12...	1030	2	1	100	0	2300	2200	--	--	--	--	--
SEP 24...	2030	95	--	800	--	1500	--	--	--	--	--	--
SEP 24...	2031	80	--	600	--	1600	--	--	--	--	--	--
SEP 24...	2035	170	--	1000	--	630	--	--	--	--	--	--
SEP 24...	2040	130	--	800	--	480	--	--	--	--	--	--

## SAN JUAN RIVER BASIN

09367950 CHACO RIVER NEAR WATERFLOW, NM--Continued

TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	COPALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
NOV 29...	0	15	3	8300	60	11	2	--	--	140	0
FEB 07...	--	--	--	--	--	--	--	140	110	--	--
22...	0	70	2	52000	20	53	4	--	--	880	10
MAR 07...	--	--	--	--	--	--	--	280	20	--	--
APR 11...	--	--	--	--	--	--	--	100	90	--	--
MAY 06...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	590	--	--	--
11...	--	--	--	--	--	--	--	330	--	--	--
25...	0	7	3	590	10	10	3	--	--	100	90
JUN 27...	--	--	--	--	--	--	--	--	--	--	--
AUG 03...	--	--	--	--	--	--	--	120	110	--	--
08...	--	--	--	--	--	--	--	160	--	--	--
17...	0	24	3	12000	20	16	4	--	--	180	10
SEP 12...	--	--	--	10000	10	100	0	--	--	130	10
24...	--	--	--	310000	--	800	--	--	--	17000	--
24...	--	--	--	280000	--	700	--	--	--	13000	--
24...	--	--	--	400000	--	1400	--	--	--	28000	--
24...	--	--	--	450000	--	1200	--	--	--	28000	--

[illegible]

## 09367950 CHACO RIVER NEAR WATERFLOW, NM--Continued

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
MAY 25...	1100	5.6	260	8	0	2	6	20
AUG 17...	1000	2.7	200	5	0	1	100	50

DATE	TIME	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)	CARBON, ORGANIC TOT. IN BOTTOM MAT. (G/KG AS C) (00687)
------	------	---	---	--	---	--	---	--

MAY 25...	900	6	350	.0	0	4	.2
AUG 17...	48000	100	330	.0	0	5	--

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED (UG/L U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	URANIUM OIS- SOLVED, EXTRAC- TION (UG/L) (80020)
NOV 29...	1245	450	<21	25	7.3	14	6.6	13	.18	6.7	--
MAY 25...	1100	--	<57	.6	30	2.8	--	--	.11	18	--
AUG 17...	1000	--	18	29	11	21	10	17	.09	--	7.1

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 19...	1100	33	350
NOV 29...	1245	7	430
FEB 22...	0845	0	2300
MAY 25...	1100	5	6
AUG 17...	1000	90	190



## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	NOV 29,77 1245	FEB 22,78 0845	MAY 25,78 1100	AUG 17,78 1000
TOTAL CELLS/ML	33000	5200	13000	25000
DIVERSITY: DIVISION	0.4	0.6	0.3	1.0
..CLASS	0.4	0.6	0.3	1.0
...ORDER	1.3	0.6	0.8	1.0
...FAMILY	1.4	0.6	0.9	1.0
....GENUS	1.4	0.6	0.9	1.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...COELASTRACEAE								
...COELASTRUM	--	-	4600#	89	--	-	--	-
...OOCYSTACEAE								
...OOCYSTIS	620	2	--	-	--	-	--	-
...SCENEDESMACEAE								
...CRUCIGENIA	--	-	--	-	550	4	--	-
...SCENEDESMUS	830	3	--	-	--	-	--	-
...TETRASPORALES								
...PALMELLACEAE								
...SPHAEROCYSTIS	--	-	--	-	11000#	86	--	-
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CARTERIA	--	-	--	-	69	1	--	-
...CHLAMYDOMONAS	--	-	--	-	620	5	--	-
...ZYGNEMATALES								
...DESMIDIACEAE								
...COSMARIUM	620	2	--	-	--	-	7700#	30
...STAURASTRUM	410	1	--	-	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALES								
...NAVICULACEAE								
...NAVICULA	--	-	--	-	340	3	--	-
...NITZSCHIACEAE								
...NITZSCHIA	--	-	290	6	340	3	540	2
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCOCCALES								
...CHROCOCCOCCAEAE								
...AGMENELLUM	20000#	61	--	-	--	-	--	-
...HORMOGONALES								
...NOSTOCACEAE								
...APHANIZOMENON	--	-	--	-	--	-	17000#	67
...OSCILLATORIACEAE								
...OSCILLATORIA	10000#	32	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
...TRACHELOMONAS	--	-	290	6	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09357950 CHACO RIVER NEAR WATERFLOW, NM--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PERIPHYTON					SAMPLING METHOD
		LENGTH OF EXPOSURE (DAYS)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT (G/SQ M (00022))	PERI-PHYTON BIOMASS ASH WEIGHT (G/SQ M (00572))	CHLOR-A PERI-PHYTON CHROMO-FLUOROM (MG/M2) (70957)	CHLOR-B PERI-PHYTON CHROMO-FLUOROM (MG/M2) (70958)	
OCT 19...	1100	21	94.6	81.6	1.60	.040	Polyethylene strip
JUN 14...	0843	20	5.98	5.04	.000	.000	"

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
OCT 19...	1100	11	12.0	460	14	98	--
NOV 29...	1245	5.1	7.0	450	6.2	--	--
FEB 07...	0955	28	--	3020	228	92	--
FEB 22...	0845	31	4.5	3060	256	--	--
MAR 07...	1240	49	11.0	30700	4060	99	--
APR 11...	1415	27	--	1200	87	99	--
MAY 06...	2215	E245	--	98700	65300	83	40
MAY 07...	2300	E780	--	171000	360000	36	40
MAY 11...	1100	55	13.5	43700	6490	99	--
MAY 25...	1100	3.0	20.5	14	.11	53	--
JUN 27...	1120	21	24.0	814	46	92	--
AUG 03...	1240	17	27.0	2090	98	86	--
AUG 08...	1425	17	--	970	45	98	--
AUG 17...	1000	15	19.0	637	26	96	--
SEP 12...	1030	14	16.0	508	19	97	--
SEP 24...	2030	E245	--	76200	50400	74	40
SEP 24...	2031	E245	--	54800	36300	92	40
SEP 24...	2035	E780	--	132000	278000	76	40
SEP 24...	2036	E780	--	61700	130000	100	40
SEP 24...	2040	E1710	--	127000	586000	71	40
SEP 24...	2041	E1710	--	50300	232000	100	40

## SAN JUAN RIVER BASIN

09367950 CHACO RIVER NEAR WATERFLOW, NM--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)	MEAN CONCENTRATION (MG/L)	LOADS (T/DAY)
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	440	12	480	17	440	9.0	1800	110	675	31	3000	230
2	440	12	620	32	450	10	2010	130	675	31	6000	600
3	420	11	600	29	450	10	2010	130	1150	62	61000	27000
4	440	12	600	29	450	10	2560	180	823	40	74000	54000
5	490	16	600	29	450	10	1150	62	1310	74	61000	26000
6	500	19	8700	540	450	10	1150	62	1150	62	31000	4500
7	500	19	35000	5900	450	10	975	50	1800	110	29000	3400
8	500	19	38000	7000	450	10	975	50	2010	130	19000	1800
9	500	19	36000	6200	450	12	975	50	2010	130	7100	500
10	490	16	35000	5600	600	29	975	50	2220	150	4000	250
11	470	14	26000	3100	600	29	975	50	23000	2500	640	40
12	470	14	5900	400	530	23	975	50	35000	5800	730	47
13	470	14	600	29	600	29	975	50	32000	4900	640	40
14	470	14	520	21	600	29	823	40	25000	2800	640	40
15	470	14	490	16	620	32	675	31	32000	4900	640	40
16	470	14	470	14	650	35	675	31	31000	5400	560	33
17	490	16	440	12	650	35	675	31	25000	2800	730	47
18	470	14	470	14	600	29	675	31	12000	1000	840	57
19	470	14	440	12	600	29	675	31	5800	500	640	40
20	470	14	440	12	650	35	975	50	4200	360	560	33
21	470	14	440	12	760	45	975	50	3800	320	480	27
22	470	14	440	12	810	50	1150	62	3800	320	730	47
23	470	14	410	10	760	45	675	31	3800	320	730	47
24	470	14	400	6.0	760	45	675	31	3600	290	560	33
25	470	14	400	6.0	760	45	1310	74	3600	290	480	27
26	470	14	400	6.0	760	45	1310	74	3300	260	480	27
27	470	14	400	6.0	810	50	975	50	3000	230	480	27
28	470	14	400	6.0	810	50	823	40	3000	230	730	47
29	470	14	400	6.0	810	50	823	40	---	---	640	40
30	490	16	400	6.0	760	45	823	40	---	---	730	47
31	470	14	---	---	600	29	675	31	---	---	840	57
TOTAL	---	453	---	29082.0	---	924.0	---	1792	---	34040	---	119123
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1100	82	50	1.0	2500	150	1500	90	1600	80	680	31
2	1100	82	50	1.0	1100	62	1500	90	1900	90	680	31
3	1100	82	60	1.0	1300	74	1100	62	2100	98	680	31
4	980	69	130	4.0	1500	90	1100	62	2000	90	680	31
5	840	57	120	3.0	1100	62	1300	74	1500	70	680	31
6	840	57	38000	7000	1100	62	1500	90	1300	60	680	31
7	980	69	89000	110000	1300	74	1300	74	980	45	680	31
8	840	57	113000	330000	1100	62	1300	74	680	31	560	24
9	1100	82	88000	120000	820	40	1100	62	680	31	680	31
10	980	69	62000	28000	820	40	820	40	560	24	370	14
11	1100	82	41000	7800	530	23	970	50	470	19	370	14
12	1300	100	14000	1100	820	40	1300	74	680	31	220	6.0
13	1100	82	3900	200	820	40	1100	62	560	24	370	14
14	980	69	930	30	820	40	1100	62	470	19	470	19
15	2600	240	160	4.0	970	50	1100	62	370	14	370	14
16	30000	4100	100	2.0	820	40	1300	74	470	19	370	14
17	30000	4200	50	1.0	970	50	1500	90	470	19	470	19
18	26000	3200	50	1.0	820	40	1100	62	470	19	370	14
19	1900	100	50	1.0	820	40	1300	74	560	24	370	14
20	250	10	50	.7	1100	62	1300	74	680	31	370	14
21	170	6.0	50	.6	1500	90	1300	74	820	40	680	31
22	130	4.0	40	.4	1500	90	1100	62	820	40	970	50
23	130	4.0	30	.3	1500	90	1100	62	820	40	680	31
24	130	4.0	25	.2	1300	74	1100	62	470	19	94000	130000
25	120	3.0	20	.2	1100	62	700	32	310	11	134000	740000
26	90	2.0	15	.1	1100	62	700	32	370	14	82000	82000
27	80	2.0	15	.1	1100	62	700	32	370	14	43000	10000
28	60	1.0	910	15	1100	62	560	24	470	19	8700	540
29	50	1.0	1900	35	1100	62	560	24	680	31	2500	120
30	50	1.0	4100	84	1500	90	700	32	680	31	470	19
31	---	---	4600	150	---	---	1100	50	820	40	---	---
TOTAL	---	12917.0	---	604435.6	---	1885	---	1888	---	1137	---	963219.0

TOTAL LOAD FOR YEAR: 1770895.6 TONS.

09368000 SAN JUAN RIVER AT SHIPROCK, NM  
(National stream-quality accounting network,  
surveillance network, and radiochemical network station)

LOCATION.--Lat 36°47'32", long 108°43'54", in NW¼ sec.27, T.30 N., R.18 W., San Juan County, Hydrologic Unit 14080105, on left bank 3 mi (5 km) west of Shiprock, 6 mi (10 km) downstream from Chaco River, and at mile 215.0 (345.9 km).

DRAINAGE AREA.--12,900 mi<sup>2</sup> (33,400 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to October 1911, February 1927 to current year. Monthly or yearly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1243: 1931, 1934-38, 1951. WSP 1313: 1911, 1933.

GAGE.--Water-stage recorder. Datum of gage is 4,848.68 ft (1,477.878 m) National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to Apr. 6, 1922, nonrecording gage and Apr. 7, 1922, to Oct. 25, 1933, water-stage recorder, at site 3 mi (5 km) upstream at different datum. Oct. 26, 1933, to Sept. 30, 1936, water-stage recorder at present site at datum 3.31 ft (1.01 m) higher and Oct. 1, 1936, to Sept. 30, 1952, at datum 1.77 ft (0.54 m) higher. Supplementary water-stage recorders at nearby sites, same datum, used at times.

REMARKS.--Water-Discharge records good. Since 1962 flow partly regulated by Navajo Reservoir (station 09355100). Diversions for irrigation of about 118,000 acres (480 km<sup>2</sup>) above station. Ungaged canals bypass station on both right and left bank, though some of bypass flow is returned to river below gage.

AVERAGE DISCHARGE.--51 years (water years 1927-77), 2,175 ft<sup>3</sup>/s (61.60 m<sup>3</sup>/s), 1,576,000 acre-ft/yr (1.94 km<sup>3</sup>/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD (SINCE 1927).--Maximum discharge, about 80,000 ft<sup>3</sup>/s (2,270 m<sup>3</sup>/s) Aug. 11, 1929, gage height, 5.7 ft (1.73 m), site and datum then in use; minimum daily, 8 ft<sup>3</sup>/s (0.23 m<sup>3</sup>/s) Aug. 25, 26, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood occurred Oct. 6, 1911, and reached a stage of 22 ft (6.7 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,120 ft<sup>3</sup>/s (145 m<sup>3</sup>/s) at 1630 hours Aug. 18, gage height, 5.55 ft (1.692 m), no peak above base of 6,000 ft<sup>3</sup>/s (170 m<sup>3</sup>/s); minimum, 72 ft<sup>3</sup>/s (2.04 m<sup>3</sup>/s) July 8.

REVISIONS.--Revised figures of discharge for the water year 1977, superseding those published in the report for 1977 are given herein.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD OCTOBER 1976 TO DECEMBER 1976  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1170	734	881									
2	1160	794	920									
3	1120	802	1210									
4	890	809	1810									
5	895	800	1830									
6	874	826	1770									
7	803	826	1730									
8	798	836	1680									
9	744	861	1680									
10	721	825	1750									
11	690	806	1750									
12	706	807	1710									
13	843	810	1600									
14	777	820	1570									
15	754	831	1520									
16	674	829	1520									
17	659	844	1520									
18	640	809	1540									
19	661	794	1550									
20	621	803	1580									
21	695	797	1590									
22	709	810	1560									
23	729	796	1590									
24	767	800	1610									
25	779	786	1670									
26	710	773	1620									
27	676	793	1630									
28	604	851	1650									
29	618	882	1650									
30	702	824	1640									
31	682	---	1690									
TOTAL	23871	24378	49021									
MEAN	770	813	1581									
MAX	1170	882	1830									
MIN	604	734	881									
AC-FT	47350	48350	97230									

CAL YR 1976	TOTAL	504065	MEAN	1377	MAX	4410	MIN	253	AC-FT	999800
WTR YR 1977	TOTAL	265723	MEAN	783	MAX	3590	MIN	76	AC-FT	566700

09368000 SAN JUAN RIVER AT SHIPROCK, NM  
(National stream-quality accounting network,  
surveillance network, and radiochemical network station)

LOCATION.--Lat 36°47'32", long 108°43'54", in NW¼ sec.27, T.30 N., R.18 W., San Juan County, Hydrologic Unit 14080105, on left bank 3 mi (5 km) west of Shiprock, 6 mi (10 km) downstream from Chaco River, and at mile 215.0 (345.9 km).

DRAINAGE AREA.--12,900 mi<sup>2</sup> (33,400 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to October 1911, February 1927 to current year. Monthly or yearly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1243: 1931, 1934-38, 1951. WSP 1313: 1911, 1933.

GAGE.--Water-stage recorder. Datum of gage is 4,848.68 ft (1,477.878 m) National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to Apr. 6, 1922, nonrecording gage and Apr. 7, 1922, to Oct. 25, 1933, water-stage recorder, at site 3 mi (5 km) upstream at different datum. Oct. 26, 1933, to Sept. 30, 1936, water-stage recorder at present site at datum 3.31 ft (1.01 m) higher and Oct. 1, 1936, to Sept. 30, 1952, at datum 1.77 ft (0.54 m) higher. Supplementary water-stage recorders at nearby sites, same datum, used at times.

REMARKS.--Water-Discharge records good except those for May, which are poor. Since 1962 flow partly regulated by Navajo Reservoir (station 09355100). Diversions for irrigation of about 118,000 acres (480 km<sup>2</sup>) above station. Ungaged canals bypass station on both right and left bank, though some of bypass flow is returned to river below gage.

AVERAGE DISCHARGE.--52 years (water years 1927-78), 2,156 ft<sup>3</sup>/s (61.06 m<sup>3</sup>/s), 1,562,000 acre-ft/yr (1.93 km<sup>3</sup>/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD (SINCE 1927).--Maximum discharge, about 80,000 ft<sup>3</sup>/s (2,270 m<sup>3</sup>/s) Aug. 11, 1929, gage height, 5.7 ft (1.73 m), site and datum then in use; minimum daily, 8 ft<sup>3</sup>/s (0.23 m<sup>3</sup>/s) Aug. 25, 26, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood occurred Oct. 6, 1911, and reached a stage of 22 ft (6.7 m), site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,700 ft<sup>3</sup>/s (331 m<sup>3</sup>/s) at 1815 hours May 20, gage height, 7.26 ft (2.213 m), no other peak above base of 6,000 ft<sup>3</sup>/s (170 m<sup>3</sup>/s); minimum, 108 ft<sup>3</sup>/s (3.06 m<sup>3</sup>/s) Aug. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	368	545	751	780	909	1010	1590	1520	3360	1850	333	273
2	358	604	751	766	834	1280	1890	1470	3500	1750	268	276
3	374	611	746	759	832	1700	1850	1480	3580	1650	259	261
4	402	722	764	780	852	1640	1570	1380	3380	1560	218	318
5	375	724	750	799	844	1220	1560	1430	3400	1480	292	304
6	468	752	746	827	868	1260	1460	1700	3450	1310	254	221
7	575	874	710	886	950	1160	1480	1960	3250	1170	231	175
8	595	1020	732	775	1020	1000	1490	2250	3450	1020	240	187
9	639	997	746	740	1010	1040	1680	2110	3500	1020	219	198
10	681	772	731	825	959	1100	1630	1760	3900	971	136	200
11	622	663	734	812	1100	1170	1510	1630	4400	1210	145	214
12	558	647	734	842	1060	1140	1470	1670	4100	1430	173	212
13	542	686	751	860	1050	1200	1680	1800	3970	1590	155	234
14	523	700	743	815	985	1120	1880	1950	4060	1570	140	237
15	524	637	752	808	957	1120	1880	2370	4150	1120	130	274
16	560	621	799	886	1030	1040	1730	3270	4380	947	120	302
17	535	728	794	871	1030	995	1750	3870	4280	1060	113	364
18	535	695	791	891	999	1040	1620	3520	3380	1180	110	400
19	531	668	809	845	949	1130	1480	2180	3260	1360	147	450
20	550	721	790	855	958	1200	1480	3140	3040	1280	170	468
21	564	732	752	858	906	1200	1520	2800	3200	998	193	492
22	597	730	780	793	930	1310	1560	2290	3270	894	287	566
23	607	750	788	808	911	1440	1560	2220	3270	899	222	587
24	572	784	844	811	894	1550	1570	2360	3470	726	235	828
25	541	803	852	784	899	1410	1560	2650	3420	584	291	3230
26	516	801	852	821	892	1210	1690	2760	3420	540	251	1370
27	526	812	890	826	928	1190	1830	2710	3010	462	254	1030
28	513	802	879	806	940	1240	2070	2780	2210	388	291	800
29	513	798	831	828	---	1280	1790	2440	2370	331	235	720
30	536	805	833	823	---	1360	1670	2640	2320	314	242	699
31	571	---	805	833	---	1460	---	2960	---	327	258	---
TOTAL	16371	22204	24230	25413	26496	38215	49500	71070	103750	32991	6612	15890
MEAN	528	740	782	820	946	1233	1650	2293	3458	1064	213	530
MAX	681	1020	890	891	1100	1700	2070	3870	4400	1850	333	3230
MIN	358	545	710	740	832	995	1460	1380	2210	314	110	175
AC-FT	32470	44040	48060	50410	52550	75800	98180	141000	205800	65440	13110	31520
CAL YR 1977 TOTAL	251258			688	MAX 3590	MIN 76	AC-FT 498400					
WTR YR 1978 TOTAL	432742			MEAN 1186	MAX 4400	MIN 110	AC-FT 858300					

09368000 SAN JUAN RIVER AT SHIPROCK, NM --- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1941-45, 1951 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1941 to September 1945, July 1957 to current year.

WATER TEMPERATURES: December 1950 to current year.

SUSPENDED SEDIMENT DISCHARGE: December 1950 to current year.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1957-78): Maximum daily, 4,360 micromhos July 31, 1959; minimum daily, 188 micromhos June 6, 1958.

WATER TEMPERATURES: Maximum, 34.0°C July 20, 1968; minimum, 0.0°C on many days during winter months of most years.

SEDIMENT CONCENTRATIONS: Maximum daily, 114,000 mg/L Aug. 11, 1967; minimum daily, 2 mg/L May 4, 1963.

SEDIMENT LOADS: Maximum daily, 2,000,000 tons (1,810,000 tonnes) Aug. 11, 1967; minimum daily, 1 ton (.91 tonne) on several days during July and September 1959, September 1962, May and July 1963.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,670 micromhos May 20; minimum daily, 225 micromhos June 17.

WATER TEMPERATURES: Maximum, 28.0°C July 28, 30; minimum, 0.0°C Dec. 21.

SEDIMENT CONCENTRATIONS: Maximum daily, 75,000 mg/L Sept. 25; minimum daily, 53 mg/L Sept. 6.

SEDIMENT LOADS: Maximum daily, 683,000 tons (620,000 tonnes) Sept. 25; minimum daily, 18 tons (16 tonnes) Aug. 16.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCTANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)
OCT										
19...	1400	530	850	8.0	22.0	12.0	160	--	10.0	40
NOV										
29...	0845	804	690	8.1	7.0	3.0	90	--	12.0	49
DEC										
21...	1030	724	794	8.0	-3.0	.0	75	--	12.9	12
JAN										
26...	1012	860	725	8.2	.5	.5	75	--	13.2	21
FEB										
22...	1230	1010	780	7.9	8.0	6.5	120	--	11.6	9
MAR										
16...	1215	1050	760	8.0	11.5	9.0	260	--	10.4	35
APR										
19...	1330	1530	505	7.9	28.0	12.5	180	--	9.4	28
MAY										
24...	1320	2480	386	8.0	25.0	17.0	--	110	8.5	62
JUN										
14...	0926	4380	265	8.0	25.0	15.0	--	180	6.8	38
JUL										
13...	0930	1690	529	8.3	27.0	21.0	--	75	8.4	13
AUG										
16...	1100	120	1300	8.4	27.5	21.0	--	19	9.8	34
SEP										
20...	0900	801	855	8.1	12.0	10.5	--	28	9.6	11

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CACO3) (00445)	ALKA- LITY (MG/L AS CACO3) (00410)
OCT										
19...	300	170	89	19	68	1.7	3.3	160	0	130
NOV										
29...	270	150	81	16	61	1.6	2.7	150	0	120
DEC										
21...	290	160	89	17	60	1.5	3.0	160	0	130
JAN										
26...	270	150	82	16	55	1.5	2.9	150	0	120
FEB										
22...	270	140	82	15	63	1.7	3.0	150	0	120
MAR										
16...	280	160	85	16	59	1.5	3.2	150	0	120
APR										
19...	190	81	57	11	31	1.0	2.4	130	0	110
MAY										
24...	150	--	48	8.2	20	.7	1.8	--	--	86
JUN										
14...	96	--	30	5.0	12	.5	1.3	--	--	55
JUL										
13...	200	--	60	11	38	1.2	2.5	--	--	91
AUG										
16...	430	--	120	32	120	2.5	5.1	--	--	150
SEP										
20...	320	--	97	18	67	1.6	3.3	--	--	140

## SAN JUAN RIVER BASIN

09368000 SAN JUAN RIVER AT SHIPROCK, NM--Continued

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
OCT										
19...	280	22	.5	12	557	577	400	.88	.81	.00
NOV										
29...	230	18	.4	11	382	498	294	.72	.72	.09
DEC										
21...	250	22	.6	11	538	535	304	.53	.60	.16
JAN										
26...	240	13	.4	12	494	498	464	.50	.49	.12
FEB										
22...	230	18	.4	11	516	499	339	.57	.57	.08
MAR										
16...	240	21	.5	9.9	484	512	565	.57	.61	.36
APR										
19...	130	12	.3	8.4	348	319	582	.33	.36	.10
MAY										
24...	100	7.4	.3	7.0	240	245	410	.08	.20	.01
JUN										
14...	58	4.5	.3	5.7	149	150	340	.26	.20	.05
JUL										
13...	150	15	.5	8.4	349	340	184	.31	.35	.03
AUG										
16...	490	24	.9	5.4	953	887	40	.49	.55	.05
SEP										
20...	280	18	.5	9.2	609	577	48	.33	.36	.01

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (MG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
OCT										
19...	1.0	1.9	.27	.03	130	20	--	6.4	3.8	4.3
NOV										
29...	.45	1.3	.18	.02	90	20	0	--	3.1	--
DEC										
21...	.45	1.1	.25	.04	270	10	--	3.1	2.6	1.4
JAN										
26...	.42	1.0	.20	.00	260	20	--	3.1	6.7	1.1
FEB										
22...	.37	1.0	.44	.07	160	20	10	--	2.4	--
MAR										
16...	.19	1.1	.36	.07	120	20	--	6.3	3.7	2.3
APR										
19...	.25	.68	.49	.20	90	30	--	4.4	2.1	--
MAY										
24...	.24	.33	.37	.03	40	20	10	--	2.2	1.9
JUN										
14...	.70	1.0	.43	.01	30	40	--	7.4	2.9	<5.0
JUL										
13...	.66	1.0	.15	.03	200	20	--	3.7	2.6	2.9
AUG										
16...	.72	1.3	.05	.01	510	10	20	--	3.9	.8
SEP										
20...	.80	1.1	.08	.01	140	710	--	4.6	5.6	.5

09368000 SAN JUAN RIVER AT SHIPROCK, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
NOV. 29...	0845	2	1	500	100	90	2	0	0	0
FEB 22...	1230	2	2	400	100	160	1	1	10	10
MAY 24...	1320	3	1	400	0	40	1	1	15	0
AUG 16...	1100	2	2	400	200	510	1	1	0	0

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
------	--	---	--	---	--	---	--	---	--

NOV. 29...	6	0	20	1	10000	20	--	2	540
FEB 22...	3	2	7	2	7800	20	10	5	320
MAY 24...	10	0	50	5	21000	20	--	0	1300
AUG 16...	0	0	8	3	760	10	10	3	40

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
------	---	--	---	---	--	--	---	--	---

NOV. 29...	0	.0	.0	1	1	1	0	110	10
FEB 22...	10	.5	.5	4	4	0	0	70	10
MAY 24...	10	.2	.0	0	0	4	0	350	10
AUG 16...	20	.0	.1	7	6	0	0	20	10

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)
AUG 16...	1100	1	13	1	17	100	.0

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDE (MG/L) (800530)	GROSS ALPHA, DIS- SOLVED (UG/L U-NAT) (80030)	GROSS BETA, SUSP. TOTAL (UG/L U-NAT) (80040)	GROSS BETA, DIS- SOLVED AS (CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS (CS-137) (03516)	GROSS BETA, DIS- SOLVED AS (AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
OCT 19...	1400	400	<6.9	31	7.3	16	6.3	14	.10	2.2
MAY 24...	1320	410	3.0	18	2.1	9.4	--	--	.09	1.5



09368000 SAN JUAN RIVER AT SHIPROCK, NM--Continued

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL (UG/L) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)	DDT, TOTAL (UG/L) (39370)
AUG 16...	1100	.0	0	.00	.0	.0	0	.00	.0	.00	.0	.00

DATE	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39571)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN, TOTAL (UG/L) (39388)	ENDRI- N, TOTAL (UG/L) (39390)	ENDRI- N, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39399)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39410)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)	HEPTA- CHLOR EPOXIDE TOT. IN BOT- TOM MA- TERIAL (UG/L) (39420)	HEPTA- CHLOR EPOXIDE BOT- TOM MA- TERIAL (UG/KG) (39423)
AUG 16...	.0	.0	.00	.0	.00	.00	.0	.0	.00	.0	.00	.0

DATE	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	MALA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39531)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39480)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39481)	METHYL PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39601)	METHYL PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39791)	PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39541)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)	TRI- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39787)
AUG 16...	.00	.0	.0	.00	.0	.0	.0	.0	0	0	.0

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOC- CI, FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 19...	1400	250	650
NOV 29...	0845	23	170
JAN 26...	1012	22	1600
FEB 22...	1230	10	60
MAR 16...	1215	170	180
APR 19...	1330	150	160
MAY 24...	1320	320	520
JUN 14...	0926	400	980
JUL 13...	0930	900	370
AUG 16...	1100	42	16
SEP 20...	0900	260	400

09368000 SAN JUAN RIVER AT SHIPROCK, NM--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	NOV 29,77 0845	MAR 16,78 1215	MAY 24,78 1320	JUN 14,78 0926				
TOTAL CELLS/ML	1400	1300	1200	630				
DIVERSITY: DIVISION	0.6	1.2	0.9	0.9				
..CLASS	0.6	1.2	0.9	0.9				
...ORDER	0.9	1.3	0.9	0.9				
...FAMILY	3.1	2.5	1.6	2.5				
....GENUS	3.3	2.5	1.7	2.7				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
....COELASTRACEAE								
.....COELASTRUM	--	-	--	-	--	-	180#	29
....OOCYSTACEAE								
.....ANKISTRODESMUS	12	1	--	-	--	-	--	-
.....OOCYSTIS	--	-	29	2	--	-	--	-
....SCENEDESMACEAE								
.....SCENEDESMUS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-
...PHACOTACEAE								
....PHACOTUS	--	-	--	-	--	-	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
....COSMARIUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
....COSCINODISCACEAE								
.....CYCLOTELLA	12	1	14	1	--	-	--	-
....MELOSIRA	81	6	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	81	6	29	2	67	6	--	-
....RHOICOSPHEA	35	2	--	-	22	2	--	-
...CYMBELLACEAE								
....AMPHORA	--	-	--	-	--	-	22	4
....CYMBELLA	58	4	100	8	--	-	22	4
....EPITHEMIA	--	-	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-	22	4
...DIATOMACEAE								
....DIATOMA	390#	28	230#	17	89	8	110#	18
...FRAGILARIACEAE								
....FRAGILARIA	*	0	29	2	--	-	--	-
....SYNEDRA	120	8	--	-	--	-	--	-
...GOMPHONEMACEAE								
....GOMPHONEMA	130	9	14	1	--	-	22	4
...NAVICULACEAE								
....CALONEIS	--	-	--	-	--	-	--	-
....GYROSIGMA	--	-	--	-	--	-	--	-
...NAVICULA	200	14	86	7	89	8	160#	25
...NITZSCHIACEAE								
....NITZSCHIA	81	6	86	7	89	8	22	4
...SURIRELLACEAE								
....SURIRELLA	46	3	57	4	22	2	67	11
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...HORMOGONALES								
....OSCILLATORIACEAE								
.....PHORMIDIUM	58	4	--	-	--	-	--	-
...CHROCOCCOCCALES								
....CHROCOCCOCCAEAE								
.....AGMENELLUM	--	-	--	-	--	-	--	-
.....ANACYSTIS	--	-	--	-	--	-	--	-
...HORMOGONALES								
....NOSTOCACEAE								
.....ANABAENA	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
....LYNGBYA	120	8	*	0	780#	67	--	-
....OSCILLATORIA	--	-	630#	48	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
....EUGLENACEAE								
.....TRACHELOMONAS	--	-	14	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2X

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	JUL 13, 78 0930		AUG 16, 78 1100		SEP 20, 78 0900	
TOTAL CELLS/ML	2700		3800		5400	
DIVERSITY: DIVISION	1.4		1.4		1.1	
..CLASS	1.4		1.4		1.1	
...ORDER	1.8		1.9		1.2	
...FAMILY	3.4		2.4		2.5	
...GENUS	3.5		2.4		2.7	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...COELASTRACEAE						
...COELASTRUM	--	-	--	-	--	-
...OOCYSTACEAE						
...ANKISTRODESMUS	44	2	66	2	*	0
...OOCYSTIS	--	-	--	-	--	-
...SCENEDESMACEAE						
...SCENEDESMUS	130	5	--	-	69	1
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
...CHLAMYDOMONAS	67	2	1400#	38	--	-
...PHACOTACEAE						
...PHACOTUS	22	1	--	-	--	-
...ZYGNEATALES						
...DESMIDIACEAE						
...COSMARUM	--	-	330	9	--	-
CHRYSTOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINODISCACEAE						
...CYCLOTELLA	44	2	66	2	69	1
...MELOSIRA	--	-	--	-	--	-
...PENNALES						
...ACHNANTHACEAE						
...COCCONEIS	110	4	99	3	250	5
...RHOICOSPHEA	22	1	--	-	160	3
...CYMBELLACEAE						
...AMPHORA	--	-	--	-	*	0
...CYMBELLA	44	2	66	2	*	0
...EPITHEMIA	22	1	--	-	--	-
...RHOPALODIA	--	-	--	-	--	-
...DIATOMACEAE						
...DIATOMA	--	-	--	-	69	1
...FRAGILARIACEAE						
...FRAGILARIA	22	1	--	-	--	-
...SYNEDRA	110	4	--	-	46	1
...GOMPHONEMACEAE						
...GOMPHONEMA	67	2	--	-	*	0
...NAVICULACEAE						
...CALONEIS	22	1	--	-	*	0
...GYROSIGMA	--	-	--	-	46	1
...NAVICULA	220	8	960#	25	1600#	30
...NITZSCHACEAE						
...NITZSCHIA	670#	25	300	8	320	6
...SURIRELLACEAE						
...SURIRELLA	360	13	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...HORMOGONALES						
...OSCILLATORIACEAE						
...PHORMIDIUM	--	-	--	-	--	-
...CHROCOCCALES						
...CHROCOCCACEAE						
...AGMENELLUM	180	7	--	-	--	-
...ANACYSTIS	--	-	460	12	--	-
...HORMOGONALES						
...NUSTOCACEAE						
...ANABAENA	--	-	--	-	1400#	26
...OSCILLATORIACEAE						
...LYNGBYA	--	-	--	-	--	-
...OSCILLATORIA	420#	16	--	-	1200#	22
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
...TRACHELOMONAS	89	3	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09368000 SAN JUAN RIVER AT SHIPROCK, NM--Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		PERIPHYTON					SAMPLING METHOD
DATE	TIME	LENGTH OF EXPO- SURE (DAYS) (00022)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M (00573)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M (00572)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70957)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2) (70958)	
DEC 21...	1030	24	8.66	7.87	3.30	.340	Polyethylene strip
FEB 22...	1230	27	.787	.630	.040	.000	"
APR 19...	1330	37	12.0	10.0	1.16	.330	"

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT OIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)
OCT 06...	1616	572	16.0	10600	16400	36	50	70
NOV 07...	1745	1030	10.0	24000	66700	45	55	67
29...	0845	804	3.0	2860	6210	4	4	5
DEC 21...	1030	724	.0	1280	2500	--	--	--
JAN 26...	1012	860	.5	1730	4020	5	6	9
FEB 11...	1545	1160	6.5	2340	7330	41	50	64
15...	1615	976	4.0	7830	20600	18	19	21
22...	1230	1010	6.5	1290	3520	--	--	--
MAR 03...	1630	1800	8.5	33700	164000	46	59	75
16...	1215	1050	9.0	1240	3520	--	--	--
22...	1700	1260	15.5	11800	40100	52	64	85
APR 02...	1700	1930	14.0	14400	75000	7	9	13
19...	1330	1530	12.5	1990	8220	--	--	--
28...	1745	2080	15.5	4380	24600	7	8	12
MAY 08...	1645	2320	13.5	35900	225000	49	57	--
11...	1730	1690	18.0	6580	30000	50	55	61
17...	1730	3650	15.0	8690	85600	4	5	8
20...	1830	10700	5.0	74700	2160000	28	33	48
24...	1320	2480	17.0	3440	23000	--	--	--
JUN 14...	0926	4380	15.0	1260	14900	--	--	--
15...	0640	4530	--	2670	32700	5	7	10
JUL 13...	0930	1690	21.0	300	1370	--	--	--
AUG 07...	1700	237	28.0	3410	2180	69	84	99
16...	1100	120	21.0	51	17	--	--	--

## SAN JUAN RIVER BASIN

09368000 SAN JUAN RIVER AT SHIPROCK, NM--Continued

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)	SED. SUSP. FALL DIAM. % FINER THAN 2.00 MM (70347)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)
OCT							
06...	95	99	100	--	--	--	--
NOV							
07...	80	96	99	100	--	--	--
29...	14	50	72	95	100	--	--
DEC							
21...	26	81	96	100	--	--	--
JAN							
26...	22	55	95	100	--	--	--
FEB							
11...	92	100	--	--	--	--	--
15...	25	35	61	87	100	--	--
22...	--	--	--	--	--	--	23
MAR							
03...	90	95	99	100	--	--	--
16...	--	--	--	--	--	--	57
22...	98	100	--	--	--	--	--
APR							
02...	30	41	56	96	100	--	--
19...	--	--	--	--	--	--	26
28...	29	48	86	100	--	--	--
MAY							
08...	--	--	--	99	100	--	--
11...	73	82	93	100	--	--	--
17...	21	38	66	81	98	100	--
20...	89	98	99	100	--	--	--
24...	--	--	--	--	--	--	13
JUN							
14...	--	--	--	--	--	--	42
15...	22	32	64	98	100	--	--
JUL							
13...	--	--	--	--	--	--	71
AUG							
07...	100	--	--	--	--	--	--
16...	--	--	--	--	--	--	96

09368000 SAN JUAN RIVER AT SHIPROCK, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	829	777	761	780	798	739						
2	828	816	764	750	778	865						
3	814	810	767	739	750	1050						
4	814	800	752	726	725	997						
5	866	800	759	770	706	796						
6	2370	762	747	770	716	858						
7	830	1100	767	756	751	810						
8	816	1080	752	740	739	799						
9	838	665	762	756	852	758						
10	768	799	781	744	766	770						
11	744	835	746	764	770	786						
12	737	809	788	769	888	810						
13	796	820	779	764	763	778						
14	811	816	784	733	733	747						
15	779	794	802	740	745	750						
16	791	816	806	796	704	---						
17	806	796	---	797	718	---						
18	817	759	742	906	746	---						
19	827	846	771	828	801	---						
20	808	779	781	782	799	---						
21	833	804	779	782	760	---						
22	794	743	782	772	808	---						
23	788	796	777	746	786	---						
24	810	772	782	741	758	---						
25	818	768	764	765	770	---						
26	812	774	761	755	759	---						
27	827	785	761	739	761	---						
28	822	789	759	724	753	---						
29	822	738	790	733	---	---						
30	839	729	766	720	---	---						
31	850	---	812	714	---	---						
MEAN	861	806	771	761	764	821						
WTR YR 1978	MEAN	796		MAX	2370	MIN	665					

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), RECORDER MAXIMUM, MINIMUM, AND MEAN, WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1				---	---	---	615	535	591	525	455	474
2				---	---	---	600	495	556	530	480	510
3				---	---	---	565	530	538	645	535	606
4				---	---	---	580	515	571	650	570	617
5				---	---	---	610	565	595	605	560	583
6				---	---	---	605	570	590	755	580	655
7				---	---	---	615	585	602	865	680	781
8				---	---	---	605	560	588	850	735	770
9				---	---	---	585	535	564	795	670	739
10				---	---	---	620	585	599	750	670	713
11				---	---	---	595	575	585	695	575	629
12				---	---	---	605	515	576	575	520	555
13				---	---	---	585	520	554	535	455	502
14				---	---	---	530	470	501	490	445	475
15				755	750	753	515	465	494	465	410	438
16				765	735	756	540	500	529	410	340	366
17				760	675	752	545	475	530	360	310	325
18				770	665	740	545	525	529	335	300	312
19				755	645	710	535	520	526	380	335	357
20				885	670	744	545	505	535	2670	375	838
21				780	640	742	535	485	524	955	455	652
22				840	640	755	530	495	515	445	395	412
23				800	615	707	510	460	496	500	395	418
24				725	605	685	515	425	491	420	350	394
25				695	590	667	515	430	485	410	350	371
26				700	605	674	525	450	478	360	345	351
27				715	605	680	470	435	457	365	350	354
28				730	620	686	475	400	425	355	340	345
29				695	590	653	425	385	412	380	355	368
30				645	600	626	455	385	438	385	370	380
31				650	530	601	---	---	---	370	325	344
MONTH				885	530	702	620	385	529	2670	300	504

## SAN JUAN RIVER BASIN

09368000 SAN JUAN RIVER AT SHIPROCK, NM--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG.° C), RECORDER MAXIMUM, MINIMUM, AND MEAN, WATER YEAR  
OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	325	265	306	430	385	412	870	785	824	985	930	955
2	355	280	315	435	420	427	870	815	837	965	920	945
3	310	295	301	460	425	433	885	845	868	960	925	945
4	305	295	300	460	435	449	890	845	870	970	935	952
5	305	290	298	495	455	472	895	835	864	985	950	966
6	330	300	316	535	480	508	860	820	842	980	945	959
7	330	315	324	590	510	549	865	825	846	980	955	967
8	315	295	301	590	555	572	860	825	844	985	950	965
9	300	280	290	590	555	573	915	845	869	975	935	953
10	300	260	278	590	550	571	950	855	908	935	905	918
11	280	245	254	600	555	575	870	805	846	920	900	911
12	250	240	246	605	530	576	920	855	885	920	870	904
13	250	240	244	560	535	547	975	910	939	925	895	910
14	250	235	243	555	490	531	1060	950	1010	1010	925	945
15	245	235	239	610	555	587	1110	1000	1060	1060	950	1010
16	240	230	237	640	585	614	1120	1040	1090	970	945	960
17	250	225	237	635	595	618	1130	1050	1090	945	840	883
18	275	250	258	655	565	619	1320	1070	1220	890	845	862
19	295	270	283	615	535	586	1330	1080	1200	850	780	818
20	310	290	301	580	530	555	1140	1000	1040	835	790	816
21	300	290	295	610	545	580	1050	915	1010	810	750	781
22	305	295	298	630	580	610	1140	960	1010	780	740	758
23	300	285	294	645	605	623	1100	1030	1050	750	730	740
24	305	290	297	685	640	657	1090	1050	1070	2050	745	965
25	295	280	286	710	675	694	1080	905	966	1210	1080	1140
26	285	275	280	745	705	730	955	915	932	1120	1080	1090
27	325	280	298	755	740	750	950	900	925	1130	890	966
28	370	330	354	780	755	765	945	855	902	975	930	956
29	385	365	373	850	785	807	1070	955	1020	930	855	900
30	390	370	378	900	850	869	1050	995	1010	885	825	853
31	---	---	---	915	845	879	1020	970	991	---	---	---
MONTH	390	225	291	915	385	604	1330	785	963	2050	730	923
YEAR	2670	225	642									

WATER TEMPERATURE (DEG.° C), (ONCE-DAILY MEASUREMENT), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	8.5	3.0	6.0	5.0	6.0					---	26.0
2	15.0	10.0	4.0	4.0	5.0	7.5					---	27.0
3	19.5	10.0	5.0	5.0	4.5	8.5					---	22.0
4	21.0	10.5	5.5	6.0	4.5	8.0					---	26.0
5	20.0	15.0	6.0	5.5	6.0	8.0					---	27.0
6	16.0	10.0	4.0	6.0	5.0	10.0					---	27.0
7	16.0	10.0	5.5	5.0	5.5	6.5					---	25.0
8	15.0	6.0	5.0	4.0	5.0	10.0					---	26.0
9	15.5	4.0	3.5	4.0	5.0	8.0					---	25.0
10	14.0	5.0	---	5.0	7.0	10.0					---	22.0
11	12.5	7.0	---	4.0	6.5	8.5					---	23.0
12	13.0	10.0	---	5.0	5.0	9.5					---	24.0
13	13.0	8.0	---	4.5	3.0	9.5					---	22.0
14	12.0	8.5	---	5.0	4.0	9.0					---	23.0
15	16.0	9.5	---	6.0	4.0	7.5					---	23.0
16	15.5	8.5	---	5.0	4.5	---					24.0	24.0
17	16.0	7.0	---	5.0	3.0	---					26.0	17.0
18	---	6.5	---	5.0	3.0	---					23.0	15.0
19	12.0	7.5	---	4.0	4.5	---					25.0	---
20	---	4.0	---	5.0	5.0	---					27.0	21.0
21	15.5	6.0	.0	5.5	7.5	---					25.0	18.0
22	14.0	6.5	.5	4.5	5.0	---					26.0	20.0
23	12.0	6.0	2.5	4.5	7.5	---					25.0	22.0
24	11.0	3.0	5.5	3.0	9.5	---					27.0	20.0
25	13.0	4.0	6.5	1.0	9.0	---					26.0	23.0
26	15.0	7.5	2.0	2.0	9.5	---					25.0	17.0
27	8.5	7.0	3.0	5.5	7.0	---					25.0	15.0
28	13.5	7.0	8.0	5.0	7.5	---					26.0	20.0
29	---	3.0	---	5.0	---	---					24.0	24.0
30	13.0	5.0	7.0	5.0	---	---					25.0	20.0
31	10.0	---	8.0	---	---	---					26.0	---
MEAN	14.5	7.5	4.5	4.5	5.5	8.5					25.5	22.0
WTR YR 1978	MEAN	11.0		MAX	27.0	MIN	.0					

WATER TEMPERATURE (DEG.° C), RECORDER MAXIMUM, MINIMUM, AND MEAN, WATER YEAR OCTOBER 1977 to SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1				---	---	---	14.0	11.0	12.5	13.0	10.5	12.0
2				---	---	---	11.5	9.5	10.5	11.5	9.5	10.5
3				---	---	---	13.5	9.0	11.0	14.5	9.0	11.5
4				---	---	---	13.5	9.5	11.5	13.0	10.5	11.5
5				---	---	---	13.0	9.5	11.0	11.0	---	---
6				---	---	---	14.5	9.5	12.0	10.5	6.0	8.0
7				---	---	---	15.0	10.5	12.5	11.5	7.5	9.5
8				---	---	---	14.5	11.0	12.5	13.0	8.5	11.0
9				---	---	---	12.5	9.5	10.5	16.0	10.0	13.0
10				---	---	---	13.0	8.5	10.5	16.5	12.0	14.0
11				---	---	---	15.0	9.0	11.5	17.5	12.0	14.5
12				---	---	---	15.5	10.5	13.0	17.5	12.5	15.0
13				---	---	---	13.5	11.0	12.5	19.5	13.0	16.0
14				---	---	---	14.0	9.5	11.5	20.5	14.5	17.5
15				---	---	---	15.0	10.0	12.0	19.5	15.5	17.5
16				9.0	6.0	8.0	14.5	10.5	12.5	17.0	14.0	15.5
17				11.5	4.5	8.0	11.5	8.5	10.0	14.0	11.0	12.5
18				13.0	6.5	9.5	12.0	7.0	9.5	13.5	10.5	12.0
19				12.0	8.5	10.0	13.0	7.5	10.0	15.0	10.5	13.0
20				13.0	8.0	10.5	14.5	8.5	11.5	15.0	3.5	12.0
21				13.0	8.0	10.5	14.5	10.0	12.0	15.0	8.5	12.0
22				14.0	10.0	11.5	13.0	8.0	10.5	16.5	12.0	14.0
23				13.5	9.5	11.5	14.5	8.5	11.0	17.0	13.0	14.5
24				12.5	9.5	11.0	15.5	10.0	13.0	17.0	12.5	14.5
25				12.0	7.5	9.5	14.5	12.0	13.0	16.0	12.5	14.0
26				13.5	8.0	10.5	16.5	11.5	14.0	16.5	12.0	14.0
27				15.0	9.5	12.0	16.5	12.5	14.0	17.0	13.0	15.0
28				15.0	11.0	12.5	16.0	11.0	13.5	16.5	12.5	14.5
29				15.5	10.0	12.5	15.0	11.5	13.0	18.0	12.0	15.0
30				15.5	11.0	13.0	15.0	11.5	13.0	18.5	13.0	15.5
31				16.5	11.5	14.0	---	---	---	17.5	13.0	15.0
MONTH				16.5	4.5	11.0	16.5	7.0	12.0	20.5	3.5	13.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	17.5	13.5	15.0	22.0	17.0	19.5	27.0	21.5	24.5			
2	16.5	13.5	15.0	22.5	17.5	20.0	27.5	22.0	24.5			
3	16.5	13.0	14.5	22.0	17.5	19.5	27.0	21.0	24.0			
4	16.5	13.5	15.0	22.0	17.0	19.5	26.5	20.5	23.5			
5	15.0	13.0	14.0	22.0	17.5	19.5	26.5	20.0	23.0			
6	16.5	12.5	14.0	23.0	16.5	20.0	26.5	21.0	24.0			
7	17.5	13.0	15.0	24.0	17.5	20.5	25.5	21.5	23.5			
8	17.0	14.0	15.5	22.5	19.5	21.0	25.5	20.0	22.5			
9	18.0	14.0	15.5	23.0	19.5	21.0	25.5	19.5	22.5			
10	17.0	14.5	15.5	23.5	20.0	21.5	26.0	19.5	22.0			
11	16.0	13.5	15.0	23.5	20.0	22.0	26.0	18.0	22.5			
12	16.5	13.5	15.0	25.0	20.0	22.5	24.0	20.5	22.5			
13	17.0	14.5	15.5	25.5	20.0	23.0	25.5	18.0	21.5			
14	17.5	14.5	16.0	26.5	20.5	23.5	25.0	17.5	20.5			
15	17.5	15.0	16.0	26.5	22.0	24.0	23.0	14.5	18.5			
16	16.5	14.5	15.5	26.0	22.0	23.5	21.0	14.5	16.0			
17	16.5	14.0	15.0	25.5	21.5	23.0	---	---	---			
18	17.5	14.0	15.5	26.5	20.0	23.0	---	---	---			
19	19.0	14.5	16.5	26.0	21.0	23.5	---	---	---			
20	19.5	14.5	17.0	26.0	21.5	23.5	---	---	---			
21	19.5	15.0	17.5	25.5	21.0	23.5	---	---	---			
22	20.0	15.5	17.5	25.5	20.5	23.0	---	---	---			
23	21.0	16.0	18.0	25.0	20.0	22.0	---	---	---			
24	21.0	16.5	18.5	26.5	20.5	23.0	---	---	---			
25	20.5	16.5	18.0	26.5	21.0	23.5	---	---	---			
26	20.0	16.0	17.5	27.0	21.5	24.0	---	---	---			
27	20.5	16.5	18.0	27.0	22.0	24.5	---	---	---			
28	19.5	16.5	18.0	28.0	22.0	25.0	---	---	---			
29	19.5	17.0	18.0	27.5	22.5	25.0	---	---	---			
30	21.0	16.0	18.5	28.0	22.0	25.0	---	---	---			
31	---	---	---	27.0	21.5	24.5	---	---	---			
MONTH	21.0	12.5	16.0	28.0	16.5	22.5	27.5	14.5	22.0			
YEAR	28.0	3.5	16.0									



09368000 SAN JUAN RIVER AT SHIPROCK, NM--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN CONCENTRATION (MG/L)		MEAN CONCENTRATION (MG/L)		MEAN CONCENTRATION (MG/L)		MEAN CONCENTRATION (MG/L)		MEAN CONCENTRATION (MG/L)		MEAN CONCENTRATION (MG/L)	
	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	
OCTOBER												
1	965	862	945	1330	2340	4560	1140	2400	3730	9150	10900	29700
2	2930	2490	3340	5160	1890	3680	1110	2300	1890	4260	9900	34200
3	1950	1700	2510	3960	760	1470	715	1470	1190	2670	28600	131000
4	1020	958	3180	5780	2540	5020	410	863	2980	6860	33500	148000
5	776	683	2560	4670	3740	7270	1670	3600	1700	3870	18000	59300
NOVEMBER												
6	4420	4790	2580	4900	1900	3700	1220	2720	2170	5090	14100	48000
7	2630	3490	15000	32400	1250	2320	1180	2020	760	1950	8000	25100
8	1010	1380	22000	54700	1350	2570	1690	3540	3100	8540	9750	15500
9	1530	2260	19600	48300	1440	2790	1250	2500	4010	10900	5450	15300
10	2500	3960	6750	13100	1920	3650	1580	3520	1470	3810	6480	19200
DECEMBER												
11	2160	3140	4330	7340	1480	2840	1820	3990	1800	5350	8300	26200
12	1950	2560	3370	5590	1600	3070	2000	4550	1950	5580	7300	22500
13	1400	1810	1610	2840	1720	3380	1440	3340	4240	12000	17400	56400
14	1310	1640	1890	3400	1370	2630	1220	2680	2990	7950	7400	22400
15	1210	1540	2080	3430	1210	2360	1800	3930	6280	16200	3800	11500
JANUARY												
16	1150	1560	1690	2720	738	1520	4090	9780	1510	4200	1800	5050
17	1230	1600	2110	3930	1700	3470	4610	10800	1540	4280	600	1610
18	1380	1800	1160	2070	4350	8900	6900	16600	600	1620	2200	6180
19	1300	1680	2020	3510	3830	7990	1920	4380	1180	3020	3600	11000
20	1210	1630	1060	1970	2560	5240	1820	4200	1890	4890	16000	51800
FEBRUARY												
21	1430	1990	1720	3240	1390	2730	1950	4520	1720	4210	11400	36900
22	1350	1980	2360	4440	1650	3310	1880	4030	1270	3190	13400	47400
23	1270	1900	1830	3520	2450	5010	1760	3840	1030	2530	13600	52900
24	1440	2050	2450	4900	2560	5530	1910	4180	1310	3160	19600	82000
25	1580	2140	1940	3960	5990	13000	1540	3260	2120	5150	19500	74200
MARCH												
26	1690	2210	1820	3740	4160	9040	1790	3970	1620	3900	4400	14400
27	1850	2490	1980	4110	4090	9150	1360	3030	1540	3860	5750	18500
28	1450	1900	1660	3390	2710	6040	1190	2590	1660	4210	5300	17700
29	1420	1880	1950	4000	2160	4610	1800	4020	---	---	8500	29400
30	1380	1900	1730	3570	2280	4870	1520	3380	---	---	7300	26800
31	1380	2010	---	---	1790	3720	1820	4090	---	---	8010	31600
TOTAL	---	63983	---	249970	---	145440	---	130893	---	152400	---	1171740
APRIL												
1	7400	31800	4650	19100	4800	43500	615	3070	136	122	71	52
2	12600	64300	4820	19100	6670	63000	600	2840	144	104	71	53
3	6600	33000	3590	14300	5770	55800	490	2180	115	80	68	48
4	3500	14800	2030	7560	3510	32000	900	3790	91	54	69	59
5	2700	11400	2140	8260	1890	17400	1000	4000	3140	2480	55	45
MAY												
6	1830	7210	7400	34000	5920	55100	420	1490	3260	2240	53	32
7	1710	6830	35600	188000	3850	33800	360	1140	3210	2000	146	69
8	2120	8530	38800	236000	4620	43000	120	330	1070	693	209	106
9	1350	6120	25500	145000	4090	38700	105	289	410	242	263	141
10	1680	7390	22200	105000	4730	49800	310	813	210	77	175	94
JUNE												
11	2370	9660	9800	43100	5030	59800	635	2070	169	66	92	53
12	2070	8220	3900	17600	4100	45400	1050	4050	360	168	83	48
13	2570	11700	8800	42800	2870	30800	650	2790	158	66	99	63
14	5360	27200	5500	29000	1980	21700	730	3090	87	33	79	51
15	5530	28100	5900	37800	2420	27100	238	720	77	27	92	68
JULY												
16	4030	18800	7500	66200	2300	27200	195	499	56	18	81	66
17	5900	27900	8000	83600	1390	16100	135	386	75	23	127	125
18	5700	24900	4650	44200	1280	11700	138	440	89	26	119	129
19	2480	9910	3700	21800	1490	13100	266	1090	220	87	112	136
20	1740	6950	19600	270000	1490	12200	210	726	205	94	154	195
AUGUST												
21	2930	12000	15700	146000	1300	11200	113	304	170	89	175	232
22	3950	16600	5550	34300	2810	24800	317	765	1150	1100	209	319
23	2400	10100	960	5750	4110	36300	245	595	330	198	324	514
24	2460	10400	3050	19400	2090	19600	360	706	119	76	14200	57000
25	4150	17500	3290	23500	790	7290	395	623	128	101	75000	683000
SEPTEMBER												
26	3270	14900	720	5370	560	5170	166	242	100	68	28500	106000
27	5140	25400	270	1980	600	4880	116	145	109	75	15100	42000
28	4840	27100	2930	22000	1210	7220	107	112	108	85	845	1830
29	2500	12100	1950	12800	1550	9920	79	71	101	64	475	923
30	2170	9780	545	3680	970	6080	78	66	89	58	500	944
31	---	---	310	2480	---	---	85	75	80	56	---	---
TOTAL	---	520600	---	1709880	---	829660	---	39507	---	10670	---	894395
TOTAL LOAD FOR YEAR: 5919138 TONS.												

## 09371010 SAN JUAN RIVER AT FOUR CORNERS, CO

LOCATION.--Lat 37°00'20", long 109°02'00", SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.21, T.32 N., R.20 W., Montezuma County, Hydrologic Unit 14080201, on right bank 1,300 ft (396 m) upstream from bridge on Colorado Highway 40, 0.1 mi (0.16 km) north of New Mexico-Colorado State Line, 1.0 mi (1.6 km) east of Four Corners monument, 3.0 mi (4.8 km) downstream from Mancos River, and at river mile 187.2 (301 km).

DRAINAGE AREA.--14,600 mi<sup>2</sup> (42,500 km<sup>2</sup>), approximately.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 4,900 ft (1,493 m), from topographic map.

REMARKS.--Water-discharge records fair except those for last quarter, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,990 ft<sup>3</sup>/s (169.6 m<sup>3</sup>/s) May 20, gage height, 4.63 ft (1.411 m<sup>3</sup>/s); minimum 110 ft<sup>3</sup>/s (3.11 m<sup>3</sup>/s) Aug. 19, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,990 ft<sup>3</sup>/s (169.6 m<sup>3</sup>/s) at 2215 hours May 20, gage height, 4.63 ft (1.411 m), no peak above base of 6,000 ft<sup>3</sup>/s (170 m<sup>3</sup>/s); minimum, 110 ft<sup>3</sup>/s (3.11 m<sup>3</sup>/s) Aug. 19, 1978.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	743	840	905	1180	1160	1960	1640	3780	2640	415	318
2	---	818	788	860	1040	1530	2510	1800	3840	2080	443	367
3	---	812	776	775	975	2100	2310	1880	4000	2140	363	366
4	---	879	758	772	1010	2150	1990	1630	4020	2120	323	358
5	---	850	770	815	1000	1540	1870	1640	4050	2030	321	473
6	---	1510	767	815	1040	1540	1910	1920	3890	1520	400	439
7	---	1420	815	800	1170	1330	1860	2160	3850	1370	341	310
8	---	1520	830	788	1200	1240	1910	2420	4110	1160	336	258
9	---	1510	860	775	1260	1260	2150	2540	4220	1030	348	276
10	---	1080	845	890	1110	1290	2110	2060	4420	1070	238	259
11	---	876	860	1050	1180	1680	1860	1740	4600	1000	134	260
12	---	794	845	969	1400	1550	1710	1680	4430	1140	208	268
13	---	748	786	958	1160	1500	1920	1810	4440	1270	177	290
14	---	727	728	942	1080	1390	2190	1970	4580	1210	140	309
15	---	716	698	946	1040	1330	2130	2340	4560	1040	130	439
16	---	683	775	952	1090	1190	1960	3190	4530	806	120	417
17	---	803	808	953	1160	1130	2070	3700	4510	762	110	444
18	---	801	781	947	1100	1130	2000	3700	4220	865	110	519
19	---	673	785	928	943	1310	1960	3170	3850	885	130	513
20	628	696	778	915	897	1640	1910	3170	3740	860	140	537
21	660	827	682	910	827	1490	1840	3480	3650	826	150	565
22	677	792	713	909	847	1630	1820	2960	3650	830	170	621
23	724	778	762	919	881	1810	1790	2810	3680	780	296	674
24	638	782	923	930	892	2040	1650	2910	3550	720	225	716
25	631	769	861	913	905	1980	1660	3200	3600	600	307	2680
26	664	771	920	915	938	1670	1960	3330	3600	560	339	1440
27	674	771	920	916	967	1520	2090	3230	3360	460	300	1320
28	654	787	920	928	1020	1550	2410	3200	2520	494	317	856
29	641	766	966	940	---	1640	2090	3070	2720	446	387	833
30	764	819	1010	972	---	1680	1700	2590	2940	399	309	772
31	726	---	966	973	---	1780	---	3320	---	410	298	---
TOTAL	---	26521	25536	27980	29312	47780	59300	80260	116910	33523	8025	17897
MEAN	---	884	824	903	1047	1541	1977	2589	3897	1081	259	597
MAX	---	1520	1010	1050	1400	2150	2510	3700	4600	2640	443	2680
MIN	---	673	682	772	827	1130	1650	1630	2520	399	110	258
AC-FT	---	52600	50650	55500	58140	94770	117600	159200	231900	66490	15920	35500

09371010 SAN JUAN RIVER AT FOUR CORNERS, CO -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October<sup>1977</sup> to September 1978.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	
DEC 13...	1500	748	816	8.0	9.0	4.0	11.1	300	160	87	20	
JAN 03...	1630	--	816	8.0	--	2.0	--	--	--	--	--	
JAN 25...	1415	853	850	8.1	3.0	1.0	12.3	290	160	87	18	
FEB 20...	1300	813	865	8.5	8.5	3.5	11.2	300	170	89	19	
MAR 27...	1430	1450	780	8.4	23.5	14.5	8.5	260	130	74	19	
APR 25...	1430	1710	580	8.4	26.0	16.0	8.0	230	120	66	15	
MAY 23...	1330	2810	450	8.4	29.5	16.0	8.1	170	70	50	10	
JUN 07...	1330	3940	440	7.9	28.5	16.5	7.4	140	63	45	7.8	
JUL 21...	1200	900	648	8.3	34.0	26.0	7.8	230	120	67	14	
AUG 23...	1200	391	616	8.2	31.0	24.0	7.0	200	6	63	11	
SEP 22...	1200	595	970	8.6	15.0	13.0	8.5	330	160	94	22	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
DEC 13...	70	1.8	3.2	173	0	144	290	21	.5	11	576	
JAN 03...	--	--	--	--	--	--	--	--	--	--	--	
JAN 25...	67	1.7	3.0	160	0	131	280	23	.4	11	599	
FEB 20...	75	1.9	3.5	154	5	135	270	25	.5	11	584	
MAR 27...	61	1.6	3.5	150	2	126	240	20	.4	9.3	512	
APR 25...	36	1.0	2.4	120	5	107	150	10	.3	8.7	360	
MAY 23...	24	.8	2.1	120	1	100	130	7.9	.2	6.3	280	
JUN 07...	18	.7	2.3	94	0	77	110	6.3	.4	5.7	225	
JUL 21...	42	1.2	2.4	130	0	107	190	15	.6	7.7	405	
AUG 23...	52	1.6	2.5	240	0	197	140	12	.3	9.8	397	
SEP 22...	76	1.8	3.5	170	15	166	300	22	.5	8.6	626	
DATE		SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)
DEC 13...	588	1.4	.12	.39	1.9	.09	240	20	0	3.9	.5	
JAN 03...	--	--	--	--	--	--	--	--	--	--	--	
JAN 25...	569	1.3	.03	.40	1.7	.20	240	50	--	3.4	1.0	
FEB 20...	574	1.4	.07	.35	1.8	.18	230	20	--	3.0	1.8	
MAR 27...	503	1.1	.01	2.8	3.9	1.1	100	50	--	3.0	>5.0	
APR 25...	353	.59	.17	.65	1.4	.40	120	10	0	2.8	1.9	
MAY 23...	291	.54	.00	1.2	1.7	.65	70	50	--	4.9	4.5	
JUN 07...	242	.75	.01	2.2	3.0	1.5	50	30	30	2.3	>5.0	
JUL 21...	403	.42	.00	.68	1.1	.12	250	10	0	2.8	--	
AUG 23...	409	.09	.06	.33	.48	.09	60	<10	10	5.0	1.7	
SEP 22...	626	.96	.05	.55	1.6	.13	150	20	--	--	--	

09371010 SAN JUAN RIVER AT FOUR CORNERS, CO -- Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BAHIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, TOTAL RECOV- ERABLE (UG/L AS BE) (01012)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)
DEC 13...	1500	20	2	1	200	200	0	0	240	0	1	0
APR 25...	1430	20	--	0	--	0	--	0	120	--	0	--
JUN 07...	1330	2	40	3	800	200	5	0	50	9	0	25
JUL 21...	1200	20	2	1	300	200	0	0	250	2	2	0
AUG 23...	1200	8	--	1	--	80	--	<1	60	--	4	--

DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
DEC 13...	0	3	0	14	3	20	9	2	50	40	140	0
APR 25...	0	--	0	--	18	10	--	6	--	30	--	0
JUN 07...	0	2	2	12	3	30	--	0	60	20	4500	30
JUL 21...	0	2	2	12	3	10	20	3	30	30	100	0
AUG 23...	0	--	<1	--	4	<10	--	2	--	30	--	10

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
DEC 13...	.0	.0	3	2	15	0	5	4	.3	70	20
APR 25...	--	.0	--	0	--	0	--	2	1.0	--	10
JUN 07...	.1	.0	8	4	6	2	3	1	.0	8800	30
JUL 21...	.0	.0	7	4	7	0	2	2	.0	70	10
AUG 23...	--	.0	--	2	--	0	--	0	.0	--	9

09371010 SAN JUAN RIVER AT FOUR CORNERS, CO -- Continued

## CHEMICAL ANALYSES OF BOTTOM MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	BARIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA) (01008)	BERYL- LIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01013)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)
DEC 13...	1500	1	50	0	<1	2	<5	4
JUL 21...	1200	1	40	0	0	1	17	0
DATE	TIME	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01063)	NICKEL, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS NI) (01068)	SELE- NIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
DEC 13...	<10	200	.0	2	<5	0	32	
JUL 21...	0	130	.0	3	0	0	24	

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
DEC 13...	1500	12	11	8.9	8.9
APR 25...	1430	<3.7	44	3.1	19

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, FECAL, 0.7 UM-HF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
JAN 25...	1415	K10	160
MAR 27...	1430	270	0
APR 25...	1430	210	310
MAY 23...	1330	230	1400
JUN 07...	1330	430	1300
JUL 21...	1200	350	370
AUG 23...	1200	1300	2500
SEP 22...	1200	370	220

09371010 SAN JUAN RIVER AT FOUR CORNERS, CO -- Continued

## QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## IDENTIFICATION OF PHYTOPLANKTON

DATE TIME	FEB 20,78 1300	MAR 27,78 1430	APR 25,78 1430	MAY 23,78 1330	JUN 7,78 1330	JUL 21,78 1200						
TOTAL CELLS/ML	740	270	1300	420	8400	8700						
DIVERSITY: DIVISION	0.0	1.0	1.1	0.7	0.8	1.6						
..CLASS	0.0	1.0	1.1	0.7	0.8	1.6						
..ORDER	0.6	1.0	1.2	1.1	1.1	2.2						
...FAMILY	2.5	1.0	2.1	0.0	2.1	3.1						
....GENUS	2.7	1.0	2.2	0.0	2.4	3.3						
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT		
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
....MICRACTINIACEAE												
.....GOLENKINIA	--	-	--	-	--	-	--	-	46	1		
....MICRACTINIUM	--	-	--	-	--	-	--	-	280	3		
...OOCYSTACEAE												
....ANKISTROOESMUS	--	-	--	-	29	2	--	-	--	-		
...OOCYSTIS	--	-	--	-	--	-	--	-	92	1		
...SCENEDESMACEAE												
....CRUCIGENIA	--	-	--	-	--	-	--	-	180	2		
....SCENEDESMUS	--	-	--	-	--	-	2100#	25	730	8		
...VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	1000	12		
CHRYSOPHYTA												
..BACILLARIOPHYCEAE												
...CENTRALES												
....COSCINODISCAEAE												
.....CYCLOTELLA	--	-	--	-	29	2	38	9	440	5	180	2
....MELOSIRA	110	14	--	-	--	-	--	-	--	-	--	-
...PENNALES												
....ACHNANTHACEAE												
.....ACHNANTHES	--	-	--	-	43	3	--	-	--	-	--	-
....COCconeis	--	-	--	-	43	3	--	-	--	-	92	1
....RHOICOSPHEIA	--	-	--	-	--	-	--	-	--	-	46	1
...CYMBELLACEAE												
....CYMBELLA	110	14	--	-	14	1	--	-	1500#	18	320	4
...DIATOMACEAE												
....DIATOMA	210#	29	--	-	29	2	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	--	-	14	1	--	-	--	-	--	-
....SYNEORA	--	-	--	-	29	2	--	-	--	-	280	3
...GOMPHONEMACEAE												
....GOMPHONEMA	--	-	--	-	57	4	--	-	590	7	46	1
...NAVICULACEAE												
....DIPLONEIS	--	-	--	-	--	-	--	-	150	2	--	-
....NAVICULA	53	7	140#	50	57	4	150#	36	3100#	37	500	6
....NEIDIUM	53	7	--	-	--	-	--	-	--	-	--	-
....PINNULARIA	--	-	--	-	--	-	--	-	440	5	--	-
...NITZSCHACEAE												
....NITZSCHIA	110	14	--	-	86	6	150#	36	150	2	1900#	22
...SURIRELLACEAE												
....SURIRELLA	110	14	--	-	43	3	--	-	--	-	46	1
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROCCOCCALES												
....CHROCCOCCAEAE												
.....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	180	2
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-	2300#	26
...HORMOGONALES												
....NOSTOCACEAE												
.....ANABAENA	--	-	--	-	--	-	38	9	--	-	--	-
...OSCILLATORIACEAE												
....OSCILLATORIA	--	-	--	-	860#	64	--	-	--	-	370	4
....SPIRULINA	--	-	--	-	--	-	--	-	--	-	46	1
...HORMOGONALES	--	-	--	-	--	-	38	9	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
..EUGLENOPHYCEAE												
...EUGLENALES												
....EUGLENAEAE												
....TRACHELOMONAS	--	-	140#	50	14	1	--	-	--	-	92	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

\* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

## SAN JUAN BASIN

09371010 SAN JUAN RIVER AT FOUR CORNERS, CO -- Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## PERIPHYTON

DATE	TIME	PERI-	PERI-	CHLOR-A	CHLOR-B	SAMPLING METHOD
		PHYTON	PHYTON	PERI-	PERI-	
		BIOMASS	BIOMASS	PHYTON	PHYTON	
		TOTAL	CHROMO-	CHROMO-		
		DRY	ASH	GRAPHIC	GRAPHIC	
		WEIGHT	WEIGHT	FLUOROM	FLUOROM	
		G/SQ M	G/SQ M	(MG/M2)	(MG/M2)	
(00573)	(00572)	(70957)	(70958)			
JAN 03...	1630	.000	.000	.000	.000	Polyethylene strip
MAY 23...	1330	.079	.000	.000	.000	

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)
DEC										
13...	1500	748	4.0	1170	2360	11	12	15	34	84
JAN										
25...	1415	853	1.0	3080	7090	--	--	--	--	--
FEB										
20...	1300	813	3.5	1280	2810	--	--	--	--	--
MAR										
27...	1430	1450	14.5	5150	20200	--	--	--	--	--
APR										
12...	1545	1720	16.5	2260	10500	--	--	--	--	--
25...	1430	1710	16.0	2890	13300	--	--	--	--	--
MAY										
09...	1600	2320	16.0	33100	207000	--	--	--	--	--
23...	1330	2810	16.0	3380	25600	--	--	--	--	--
JUN										
07...	1330	3940	16.5	3810	40500	--	--	--	--	--
28...	1030	2500	14.0	1780	12000	--	--	--	--	--
JUL										
07...	1400	1300	24.5	1410	4950	--	--	--	--	--
21...	1200	900	26.0	202	491	24	32	34	57	73
AUG										
03...	1300	342	24.0	114	105	--	--	--	--	--
23...	1200	391	24.0	2120	2240	35	40	64	87	92
SEP										
07...	1100	297	--	193	155	--	--	--	--	--
22...	1200	595	13.0	560	900	--	--	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN	SED. SUSP. FALL DIAM. % FINER THAN	SED. SUSP. FALL DIAM. % FINER THAN	BED MAT. FALL DIAM. % FINER THAN	BED MAT. FALL DIAM. % FINER THAN	BED MAT. FALL DIAM. % FINER THAN	BED MAT. FALL DIAM. % FINER THAN	BED MAT. FALL DIAM. % FINER THAN	BED MAT. FALL DIAM. % FINER THAN
	.250 MM	.500 MM	.062 MM	.062 MM	.125 MM	.250 MM	.500 MM	1.00 MM	2.00 MM
	(70344)	(70345)	(70331)	(80158)	(80159)	(80160)	(80161)	(80162)	(80163)

[illegible]

## 09379500 SAN JUAN RIVER NEAR BLUFF, UT

Location.--Lat 37°08'49", long 109°51'51", in SE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.7, T.42 S., R.19 E., San Juan County, Hydrologic Unit 14080205, on left bank 1,600 ft (490 m) downstream from Gypsum Creek, 1,800 ft (550 m) upstream from highway bridge, 20 mi (32 km) southwest of Bluff, and at mile 113.5 (182.6 km).

DRAINAGE AREA.--23,000 mi<sup>2</sup> (60,000 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1914 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1213: 1940. WSP 1313: 1917, 1929. WSP 1343: 1945.

GAGE.--Water-stage recorder. Datum of gage is 4,048 ft (1,234 m) National Geodetic Vertical Datum of 1929 (levels of Topographic Division, USGS). Prior to Mar. 16, 1927, chain gages at sites about 1,700 ft (520 m) downstream at different datums.

REMARKS.--Records good. Diversions for irrigation of approximately 200,000 acres (810 km<sup>2</sup>) above station. No diversion between station and mouth of river. Flow partly regulated by Navajo Reservoir since June 28, 1962 (see station 09355100). Water quality records for the current year are published in Water Resources Data for Utah.

AVERAGE DISCHARGE.--64 years, 2,523 ft<sup>3</sup>/s (71.45 m<sup>3</sup>/s), 1,828,000 acre-ft/yr (2.25 km<sup>3</sup>/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD (1914-17 AND SINCE 1927).--Maximum discharge, 70,000 ft<sup>3</sup>/s (1,980 m<sup>3</sup>/s) Sept. 10, 1927, gage height, 32.0 ft (9.75 m) from rating curve extended above 31,000 ft<sup>3</sup>/s (787 m<sup>3</sup>/s) and slope-area measurement at gage height 26.62 ft (8.114 m); no flow July 3-13, 1934, Aug. 24-27, 29, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 6, 1911, which is greatest known at Shiprock, NM, probably exceeded that of Sept. 10, 1927 at this station but stage was not accurately determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,640 ft<sup>3</sup>/s (160 m<sup>3</sup>/s) May 21, gage height, 8.05 ft (2.454 m), no peak above base of 8,000 ft<sup>3</sup>/s (227 m<sup>3</sup>/s); minimum, 157 ft<sup>3</sup>/s (4.45 m<sup>3</sup>/s) Aug. 17, 20-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	654	704	776	869	1140	1180	1880	1800	3210	2170	337	250
2	506	704	800	848	1090	2460	2280	1940	3530	1860	452	237
3	479	724	774	828	997	3390	2670	1890	3680	1690	374	250
4	462	745	773	803	905	3130	2250	1720	3730	1580	336	262
5	467	767	782	775	886	2700	1900	1600	3730	1530	317	255
6	494	760	785	804	894	1950	1740	1760	3670	1420	295	254
7	491	1700	765	845	1040	1750	1680	1970	3480	1240	299	289
8	853	1200	756	844	1270	1320	1600	2680	3450	1100	291	275
9	663	1270	732	841	1290	1330	1830	2950	3590	1020	267	223
10	624	1360	731	838	1260	1280	1990	2080	3720	936	270	214
11	736	906	733	857	2960	1350	1830	1730	4110	1010	281	220
12	724	842	735	875	1650	1460	1570	1600	4480	900	232	220
13	653	789	741	874	1300	1510	1540	1550	4280	1040	200	224
14	656	774	738	877	1070	1330	1900	1710	4210	1160	232	234
15	622	774	753	1320	980	1180	2100	1930	4240	1130	211	271
16	595	760	801	1380	980	1080	1990	2820	4250	1050	160	287
17	599	718	800	1380	1060	970	1900	3700	4410	865	160	361
18	615	811	812	1100	1030	939	1910	4220	4080	823	160	348
19	603	811	807	1050	990	939	1770	3670	3370	1080	160	384
20	595	758	805	1090	850	1230	1590	2800	3010	963	157	445
21	583	727	803	991	850	1470	1550	3960	2990	1030	157	465
22	601	812	797	935	842	1600	1550	3220	2880	882	251	480
23	607	793	700	927	860	2050	1640	2980	2800	769	195	483
24	645	790	773	978	866	1990	1690	2660	2790	744	200	532
25	632	813	866	978	873	1890	1560	2810	2690	701	254	750
26	607	795	843	854	873	1680	1610	2970	2790	627	214	2920
27	620	794	849	870	897	1490	1810	2950	2810	560	254	1140
28	620	786	862	863	922	1470	1920	2850	2410	512	261	1070
29	607	787	866	859	---	1550	2240	2840	2070	463	241	786
30	1200	764	856	867	---	1630	1960	2400	2130	417	259	756
31	827	---	869	901	---	1710	---	2550	---	365	286	---
TOTAL	19640	25738	24483	29121	30625	51008	55450	78310	102590	31637	7763	14885
MEAN	634	858	790	939	1094	1645	1848	2526	3420	1021	250	496
MAX	1200	1700	869	1380	2960	3390	2670	4220	4480	2170	452	2920
MIN	462	704	700	775	842	939	1540	1550	2070	365	157	214
AC-FT	38960	51050	48560	57760	60740	101200	110000	155300	203500	62750	15400	29520
CAL YR 1977 TOTAL	286957			786	5200	70	AC-FT	569200				
WTR YR 1978 TOTAL	471250			1291	4480	157	AC-FT	934700				



## 09386900 RIO NUTRIA NEAR RAMAH, NM

LOCATION.--Lat 35°16'57", long 108°33'10", in NW¼SW¼ sec.8, T.12 N., R.16 W., McKinley County, Hydrologic Unit 15020004, on Zuni Indian Reservation, on left bank at mouth of Nutria Canyon, 0.9 mi (1.4 km) upstream from Nutria Diversion Dam, 1.3 mi (2.1 km) northeast of Upper Nutria, and 10.4 mi (16.7 km) northwest of Ramah.

DRAINAGE AREA.--71.4 mi<sup>2</sup> (185 km<sup>2</sup>).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder and concrete control. Concrete control raised 1.0 ft (0.305 m) June 6, 1975. Altitude of gage is 6,860 ft (2,091 m), from topographic map.

REMARKS.--Records good except those for winter period, which are fair. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--8 years, 3.52 ft<sup>3</sup>/s (0.100 m<sup>3</sup>/s), 2,550 acre-ft/yr (3.14 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 782 ft<sup>3</sup>/s (22.1 m<sup>3</sup>/s) Apr. 14, 1973, gage height, 4.58 ft (1.396 m), from rating curve extended above 470 ft<sup>3</sup>/s (13.3 m<sup>3</sup>/s); no flow Oct. 1-20, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
July 24	1900	73 2.07	3.42 1.042
Aug. 17	2100	*174 4.93	3.94 1.201

Minimum discharge, 0.01 ft<sup>3</sup>/s (0.0003 m<sup>3</sup>/s) at times.

REVISIONS.--Revised figures of discharge for the water year 1977, superseding those published in the report for 1977 are given herein.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD OCTOBER 1976 TO DECEMBER 1976  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.05	.16									
2	.08	.05	.15									
3	.08	.05	.14									
4	.08	.05	.14									
5	.08	.06	.14									
6	.07	.06	.14									
7	.07	.06	.12									
8	.07	.07	.12									
9	.07	.07	.12									
10	.07	.08	.13									
11	.06	.09	.13									
12	.07	.08	.12									
13	.07	.08	.12									
14	.07	.09	.12									
15	.07	.09	.10									
16	.06	.08	.10									
17	.06	.09	.10									
18	.06	.09	.10									
19	.06	.09	.10									
20	.06	.09	.10									
21	.06	.09	.10									
22	.07	.10	.10									
23	.08	.10	.09									
24	.08	.10	.09									
25	.06	.12	.09									
26	.06	.13	.09									
27	.06	.14	.09									
28	.06	.16	.09									
29	.06	.15	.09									
30	.06	.14	.09									
31	.05	---	.08									
TOTAL	2.09	2.70	3.45									
MEAN	.067	.090	.11									
MAX	.08	.16	.16									
MIN	.05	.05	.08									
AC-FT	4.1	5.4	6.8									

CAL YR 1976	TOTAL 49.01	MEAN .13	MAX 5.6	MIN .01	AC-FT 97
WTR YR 1977	TOTAL 89.31	MEAN .24	MAX 11	MIN .01	AC-FT 177

## LITTLE COLORADO RIVER BASIN

531

09386900 RIO NUTRIA NEAR RAMAH, NM

LOCATION.--Lat 35°16'57", long 108°33'10", in NW¼SW¼ sec. 8, T.12 N., R.16 W., McKinley County, Hydrologic Unit 15020004, on Zuni Indian Reservation, on left bank at mouth of Nutria Canyon, 0.9 mi (1.4 km) upstream from Nutria Diversion Dam, 1.3 mi (2.1 km) northeast of Upper Nutria, and 10.4 mi (16.7 km) northwest of Ramah.

DRAINAGE AREA.--71.4 mi<sup>2</sup> (185 km<sup>2</sup>).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder and concrete control. Concrete control raised 1.0 ft (0.305 m) June 6, 1975. Altitude of gage is 6,860 ft (2,091 m), from topographic map.

REMARKS.--Records good except those for winter period, which are fair. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 3.70 ft<sup>3</sup>/s (0.105 m<sup>3</sup>/s), 2,680 acre-ft/yr (3.30 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 782 ft<sup>3</sup>/s (22.1 m<sup>3</sup>/s) Apr. 14, 1973, gage height, 4.58 ft (1.396 m), from rating curve extended above 470 ft<sup>3</sup>/s (13.3 m<sup>3</sup>/s); no flow Oct. 1-20, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 30 ft<sup>3</sup>/s (0.85 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Mar. 1	1445	155 4.39	3.80 1.158
Mar. 26	1845	*278 7.87	4.33 1.320

Minimum discharge, 0.01 ft<sup>3</sup>/s (0.0003 m<sup>3</sup>/s) Nov. 26 - Dec. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.03	.01	.02	.39	76	52	.52	.09	.04	.07	.06
2	.03	.03	.01	.02	.32	37	47	.95	.07	.04	.07	.06
3	.03	.03	.01	.02	.29	34	28	1.5	.07	.04	.07	.06
4	.03	.03	.01	.02	.26	21	18	.85	.08	.04	.09	.06
5	.03	.03	.01	.02	.27	26	12	.69	.08	.04	.08	.06
6	.04	.04	.01	.02	2.4	21	9.4	2.0	.08	.04	.07	.06
7	.06	.06	.01	.03	3.5	18	7.6	2.1	.08	.04	.07	.06
8	.04	.05	.01	.03	3.5	22	6.3	1.1	.08	.05	.07	.05
9	.04	.03	.02	.03	1.8	21	6.8	.68	.08	.05	.07	.05
10	.03	.02	.02	.03	1.3	20	6.0	.52	.07	.05	.07	.05
11	.03	.02	.02	.04	2.5	17	4.8	.41	.08	.05	.07	.05
12	.03	.02	.02	.04	2.6	14	4.0	.33	.08	.05	.07	.05
13	.03	.02	.02	.05	2.4	9.6	3.5	.26	.08	.04	.07	.05
14	.03	.02	.02	.05	1.6	8.7	3.0	.24	.08	.05	.07	.05
15	.03	.02	.02	.06	1.1	6.5	2.5	.22	.08	.05	.07	.05
16	.03	.02	.02	.07	1.0	6.3	2.0	.18	.08	.05	.07	.05
17	.03	.02	.02	.07	.75	15	1.7	.21	.09	.05	.07	.05
18	.03	.02	.02	.07	.70	30	1.4	.28	.09	.08	.07	.05
19	.02	.02	.02	.07	.57	45	1.5	.28	.09	.09	.06	.05
20	.02	.02	.02	.07	.46	57	1.4	.28	.09	.06	.06	.04
21	.03	.02	.02	.08	.41	57	1.2	.28	.08	.06	.06	.04
22	.03	.02	.02	.08	.62	106	.97	.46	.08	.06	.07	.04
23	.03	.02	.02	.10	1.6	97	.83	.29	.07	.06	.07	.04
24	.03	.02	.02	.09	4.1	106	.82	.21	.06	.06	.06	.05
25	.03	.02	.02	.11	6.1	109	.82	.19	.05	.06	.06	.53
26	.03	.01	.02	.14	8.7	133	.69	.18	.05	.07	.06	.26
27	.03	.01	.03	.13	7.0	134	.62	.17	.05	.07	.06	.05
28	.02	.01	.03	.15	9.1	104	.52	.16	.05	.09	.06	.04
29	.03	.01	.03	.16	---	78	.51	.16	.04	.07	.06	.04
30	.04	.01	.03	.21	---	61	.49	.10	.04	.07	.06	.04
31	.03	---	.03	.28	---	47	---	.10	---	.07	.06	---
TOTAL	.98	.70	.59	2.36	65.34	1537.1	226.37	15.90	2.19	1.74	2.09	2.19
MEAN	.032	.023	.019	.076	2.33	49.6	7.55	.51	.073	.056	.067	.073
MAX	.06	.06	.03	.28	9.1	134	52	2.1	.09	.09	.09	.53
MIN	.02	.01	.01	.02	.26	6.3	.49	.10	.04	.04	.06	.04
AC-FT	1.9	1.4	1.2	4.7	130	3050	449	32	4.3	3.5	4.1	4.3

CAL YR 1977 TOTAL 83.34 MEAN .23 MAX 11 MIN .01 AC-FT 165  
WTR YR 1978 TOTAL 1857.55 MEAN 5.09 MAX 134 MIN .01 AC-FT 3680

## 09386950 ZUNI RIVER ABOVE BLACK ROCK RESERVOIR, NM

LOCATION.--Lat 35°06'03", long 108°45'03", in NE¼ sec.17, T.10 N., R.18 W., McKinley County, Hydrologic Unit 15020004, on Zuni Indian Reservation, on left bank downstream from highway bridge on State Highway 36, 0.8 mi (1.3 km) upstream from flow line of Black Rock Reservoir, 2.3 mi (3.7 km) northeast of Black Rock, and 5.9 mi (9.5 km) northeast of Zuni Pueblo.

DRAINAGE AREA.--810 mi<sup>2</sup> (2,100 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--October 1969 to current year. Prior to October 1974 published as "above Zuni Reservoir".

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,480 ft (1,975 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 8.06 ft<sup>3</sup>/s (0.228 m<sup>3</sup>/s), 5,840 acre-ft/yr (7.20 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft<sup>3</sup>/s (147 m<sup>3</sup>/s) Aug. 4, 1974, gage height, 6.61 ft (2.015 m), from rating curve extended above 670 ft<sup>3</sup>/s (19.0 m<sup>3</sup>/s) on basis of slope-area measurements at gage heights 4.05 ft (1.234 m), 3.94 ft (1.201 m), 5.16 ft (1.573 m), and 6.61 ft (2.015 m); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 360 ft<sup>3</sup>/s (10.2 m<sup>3</sup>/s) at 2000 hours Mar. 2, gage height, 3.99 ft (1.216 m), no other peak above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.37	.10	.50	4.0	39	58	.49	.00	.00	.07	.15
2	.29	.44	.10	.50	3.5	86	55	.68	.00	.00	.35	.20
3	.28	.49	.10	.30	3.0	158	54	1.0	.00	.00	.43	.22
4	.26	.48	.10	.60	3.5	22	47	.69	.00	.00	.33	.25
5	.30	.45	.10	1.0	4.5	9.0	35	.50	.00	.00	.16	.37
6	.79	2.6	.50	1.4	4.5	7.0	28	2.2	.00	.00	.10	.89
7	1.5	8.5	.50	1.4	4.5	4.6	17	2.9	.00	.00	.31	1.3
8	.89	4.0	.50	1.0	4.0	2.5	12	1.2	.00	.00	.21	.45
9	.69	2.6	.10	.80	3.3	2.0	11	.74	.00	.00	.13	.23
10	.75	1.2	.12	1.2	2.2	2.3	11	.51	.00	.00	.11	.08
11	.56	1.1	.12	1.2	2.5	3.1	9.6	.52	.00	.00	.09	.11
12	.48	1.3	.10	1.2	2.5	2.5	6.6	.43	.00	.00	.08	.14
13	.53	1.0	.10	1.2	2.0	2.3	5.4	.58	.00	.17	.10	.19
14	.40	.98	.10	.80	2.0	1.7	3.9	.14	.00	.00	.15	.27
15	.63	.88	.07	.80	1.5	1.6	2.4	.11	.00	.00	.01	.52
16	.63	1.1	.08	1.2	1.2	1.5	1.8	.00	.00	.00	.00	2.1
17	.50	.93	.08	1.2	.80	1.4	1.5	.00	.00	.00	.00	2.0
18	.47	.85	.08	1.2	.50	1.4	1.6	.00	.00	.00	.00	.93
19	.54	.85	.08	1.2	.80	1.3	1.8	.00	.00	16	.00	.97
20	.59	.71	.08	1.2	1.0	1.4	1.7	.35	.00	5.2	.00	.77
21	.58	.48	.08	1.0	1.2	1.4	1.4	3.4	.00	1.6	5.4	.81
22	.59	.47	.90	.80	1.4	1.9	1.2	.42	.00	.25	4.6	.85
23	.36	.58	.90	.60	1.4	2.9	1.3	.29	.00	.08	1.1	.85
24	.51	.77	.90	.40	1.4	1.9	1.3	.10	.00	.06	.61	.65
25	1.0	.86	.90	.10	1.5	3.3	1.3	.00	.00	.13	.81	.77
26	.59	.75	1.0	.50	1.5	9.0	1.2	.00	.00	.35	.57	.73
27	.54	.77	1.0	1.0	1.6	15	.90	.00	.00	.32	.53	.45
28	.57	.82	1.0	1.4	7.6	15	.89	.00	.00	.14	.40	.32
29	.94	.72	1.0	2.0	---	12	.85	.00	.00	.03	.20	.32
30	2.0	.20	1.0	2.5	---	14	.56	.00	.00	.02	.13	.19
31	.99	---	1.0	3.5	---	39	---	.00	---	.02	.13	---
TOTAL	20.03	37.25	12.79	33.70	69.40	466.0	375.20	17.25	.00	24.37	17.11	18.08
MEAN	.65	1.24	.41	1.09	2.48	15.0	12.5	.56	.000	.79	.55	.60
MAX	2.0	8.5	1.0	3.5	7.6	158	58	3.4	.00	16	5.4	2.1
MIN	.26	.20	.07	.10	.50	1.3	.56	.00	.00	.00	.00	.08
AC-FT	40	74	25	67	138	924	744	34	.00	48	34	36
CAL YR 1977	TOTAL	1780.49	MEAN	4.88	MAX	369	MIN	.00	AC-FT	3530		
WTR YR 1978	TOTAL	1091.18	MEAN	2.99	MAX	158	MIN	.00	AC-FT	2160		

## 09395500 PUERCO RIVER AT GALLUP, NM

LOCATION.--Lat 35°31'45", long 108°44'41", in NE¼SE¼ sec.16, T.15 N., R.18 W., McKinley County, near center of span on downstream side of Third Street bridge in Gallup, 0.8 mi (1.3 km) upstream from Camerco Wash, 3.5 mi (5.6 km) downstream from Hogback, and 4.9 mi (7.9 km) downstream from South Fork.

DRAINAGE AREA.--558 mi<sup>2</sup> (1,450 km<sup>2</sup>).

PERIOD OF RECORD.--June 1940 to July 1946, June 1957 to August 1977 (annual maximum only), September 1977 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,480 ft (1,975 m) from topographic map. Prior to September 1977 at site 2,000 ft (610 m) upstream at different datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years (water years 1941-45, 1978), 7.83 ft<sup>3</sup>/s (0.222 m<sup>3</sup>/s), 5,670 acre-ft/yr (6.99 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft<sup>3</sup>/s (340 m<sup>3</sup>/s) July 17, 1972, gage height, 15.3 ft (4.663 m) site and datum then in use; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 74 ft<sup>3</sup>/s (2.10 m<sup>3</sup>/s) at 1345 hours Oct. 6, gage height, 1.84 ft (0.561 m), no peak above base of 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s); no flow at times.

## DISCHARGE, IN CUBIC FEET PER SECOND, SEPTEMBER, 1977

Sept. 1 ..... 3.0	Sept. 7 ..... 3.2	Sept. 13 ..... 11	Sept. 19 ..... 1.9	Sept. 25 ..... 3.4
Sept. 2 ..... 3.0	Sept. 8 ..... 1.5	Sept. 14 ..... 3.6	Sept. 20 ..... 2.1	Sept. 26 ..... 4.0
Sept. 3 ..... 3.0	Sept. 9 ..... 1.7	Sept. 15 ..... 2.3	Sept. 21 ..... 1.0	Sept. 27 ..... 6.9
Sept. 4 ..... 3.5	Sept. 10 ..... 2.0	Sept. 16 ..... 1.3	Sept. 22 ..... 1.5	Sept. 28 ..... 7.3
Sept. 5 ..... 4.0	Sept. 11 ..... 4.0	Sept. 17 ..... 1.4	Sept. 23 ..... 3.1	Sept. 29 ..... 1.4
Sept. 6 ..... 5.6	Sept. 12 ..... 5.5	Sept. 18 ..... 3.3	Sept. 24 ..... 3.4	Sept. 30 ..... 1.6

Month	cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
September 1977	100.5	11	1.0	3.35	199

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.9	2.5	4.0	14	24	5.7	3.1	1.6	2.1	.78	1.6
2	3.3	3.3	3.5	2.5	8.8	24	5.7	3.4	1.4	2.1	.89	2.2
3	5.0	3.3	4.0	2.5	6.0	36	4.4	4.4	.75	2.0	.90	2.6
4	2.6	3.1	2.2	4.0	4.5	20	2.2	4.6	.76	1.9	1.0	3.1
5	.91	2.6	2.0	3.9	4.0	9.0	2.2	6.0	.74	.77	1.2	3.3
6	13	12	1.8	3.4	7.6	6.0	2.3	8.8	.79	.80	1.7	3.0
7	8.7	9.5	2.5	2.0	9.4	6.0	2.4	9.5	.96	.70	2.2	3.1
8	5.0	3.0	3.0	2.0	6.2	6.0	2.4	5.6	1.0	.68	2.0	3.2
9	5.0	2.0	2.5	4.0	3.5	6.0	2.7	4.7	.93	1.4	2.1	2.6
10	6.2	3.0	3.0	7.8	6.0	6.0	3.0	4.6	.73	2.0	1.8	2.5
11	5.0	3.5	2.5	4.8	5.0	6.0	3.6	4.6	.52	2.2	1.5	2.3
12	4.2	4.0	2.2	4.6	4.0	6.0	3.8	4.4	.96	2.2	1.4	1.7
13	2.8	4.0	2.0	4.0	7.5	6.0	3.2	4.1	1.1	2.4	1.5	1.3
14	2.8	3.0	2.0	4.5	7.5	6.0	1.2	4.2	1.0	2.5	1.7	1.0
15	2.5	2.5	2.5	5.0	7.0	6.0	1.0	4.1	.92	2.7	.89	1.1
16	2.5	2.0	2.5	5.4	5.5	6.2	2.0	9.0	.43	3.0	.70	1.5
17	5.8	2.0	2.5	8.8	5.0	4.6	1.9	3.4	.38	2.9	.37	2.3
18	2.5	2.0	3.0	7.6	6.0	3.6	2.9	3.2	.78	2.8	.50	1.9
19	1.5	5.0	2.5	5.6	7.0	7.5	4.1	2.7	2.9	3.0	.72	1.9
20	1.7	3.0	2.0	5.0	8.0	20	4.8	1.9	.86	3.2	1.4	1.9
21	3.4	3.0	1.5	4.5	7.6	22	3.9	2.6	1.1	3.0	2.8	1.3
22	4.6	2.7	1.0	4.0	7.0	27	2.7	2.6	1.2	2.8	3.8	1.5
23	3.1	3.5	.60	3.5	7.5	22	2.7	2.7	.06	2.7	4.5	1.9
24	4.6	3.0	.40	3.2	7.2	18	3.4	2.3	.30	2.8	4.7	3.8
25	4.2	3.0	3.5	3.0	7.1	15	3.2	1.1	.50	2.8	4.6	6.6
26	2.8	3.5	2.5	3.5	7.2	13	3.1	1.2	.80	3.0	4.1	2.1
27	2.8	4.0	8.8	4.8	7.0	10	2.4	1.5	1.1	2.7	2.9	1.1
28	3.4	3.0	10	8.3	19	8.5	2.0	1.5	1.5	2.4	1.7	1.7
29	8.8	2.5	8.2	11	---	7.0	2.3	1.8	1.6	2.0	1.1	2.1
30	9.4	2.5	7.0	9.4	---	5.8	2.4	1.6	2.0	1.6	1.4	2.3
31	2.8	---	5.0	17	---	4.7	---	1.7	---	1.0	1.3	---
TOTAL	132.61	105.4	99.20	163.6	202.1	367.9	89.6	116.9	29.67	68.15	58.15	68.5
MEAN	4.28	3.51	3.20	5.28	7.22	11.9	2.99	3.77	.99	2.20	1.88	2.28
MAX	13	12	10	17	19	36	5.7	9.5	2.9	3.2	4.7	6.6
MIN	.91	1.9	.40	2.0	3.5	3.6	1.0	1.1	.06	.68	.37	1.0
AC=FT	263	209	197	325	401	730	178	232	59	135	115	136

WTR YR 1978 TOTAL 1501.78 MEAN 4.11 MAX 36 MIN .06 AC=FT 2980

09430500 GILA RIVER NEAR GILA, NM

LOCATION.--Lat 33°03'40", long 108°32'12", in NE¼NW¼ sec.30, T.14 S., R.16 W., Grant County, Hydrologic Unit 15040001, on left bank at Hooker damsite, 1.6 mi (2.6 km) upstream from Mogollon Creek, 7 mi (11 km) northeast of Gila, and at mile 572.5 (921.2 km).

DRAINAGE AREA.--1,864 mi<sup>2</sup> (4,828 km<sup>2</sup>).

PERIOD OF RECORD.--April to December 1914, December 1927 to current year. Monthly discharge only December 1927 to September 1930, published in WSP 1313.

REVISED RECORDS.--WSP 1283: Drainage area. WSP 1313: 1944 (M), 1949 (M).

GAGE.--Water-stage recorder. Datum of gage is 4,655.8 ft (1,419.09 m) National Geodetic Vertical Datum of 1929, (river-profile survey). Prior to Dec. 31, 1928, at site 5 mi (8 km) upstream at different datum. Dec. 31, 1928, to Jan. 7, 1942, at site 200 ft (61 m) upstream at same datum.

REMARKS.--Records good except those above 500 ft<sup>3</sup>/s (14 m<sup>3</sup>/s), which are fair. Diversions for irrigation of about 500 acres (2.0 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--50 years (water years 1928-77), 133 ft<sup>3</sup>/s (3.767 m<sup>3</sup>/s), 96,360 acre-ft/yr (119 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,400 ft<sup>3</sup>/s (719 m<sup>3</sup>/s) Sept. 29, 1941, gage height, 17.2 ft (5.24 m), from floodmark, from rating curve extended above 3,900 ft<sup>3</sup>/s (110 m<sup>3</sup>/s) on basis of velocity-area studies; minimum, 14 ft<sup>3</sup>/s (0.40 m<sup>3</sup>/s) July 15, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Other major floods occurred in November 1905, December 1906, and January 1916.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 696 ft<sup>3</sup>/s (19.7 m<sup>3</sup>/s) at 0630 hours Aug. 20, gage height, 3.35 ft (1.021 m), no other peak above base of 600 ft<sup>3</sup>/s (17 m<sup>3</sup>/s); minimum, 18 ft<sup>3</sup>/s (0.51 m<sup>3</sup>/s) June 19, 20.

REVISIONS.--Revised figures of discharge for the water year 1977, superseding those published in the report for 1977 are given herein

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD OCTOBER 1976 TO DECEMBER 1976  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	69	65									
2	49	67	65									
3	49	65	65									
4	48	65	65									
5	45	64	65									
6	44	64	65									
7	44	64	64									
8	42	64	64									
9	44	64	64									
10	45	64	64									
11	45	65	65									
12	45	69	65									
13	47	72	65									
14	51	72	65									
15	55	70	64									
16	54	69	64									
17	52	69	64									
18	51	69	64									
19	49	69	65									
20	49	67	65									
21	52	67	67									
22	60	65	65									
23	62	65	64									
24	62	65	64									
25	60	67	62									
26	58	67	62									
27	67	69	62									
28	80	74	62									
29	82	70	64									
30	74	67	65									
31	72	---	67									
TOTAL	1682	2017	1996									
MEAN	54.3	67.2	64.4									
MAX	82	74	67									
MIN	42	64	62									
AC-FT	3340	4000	3960									

CAL YR 1976	TOTAL	40313	MEAN	110	MAX	1780	MIN	30	AC-FT	79960
WTR YR 1977	TOTAL	30600	MEAN	83.8	MAX	565	MIN	20	AC-FT	60700

LOCATION.--Lat 33°03'40", long 108°32'12", in NE¼NW¼ sec.30, T.14 S., R.16 W., Grant County, Hydrologic Unit 15040001, on left bank at Hooker damsite, 1.6 mi (2.6 km) upstream from Mogollon Creek, 7 mi (11 km) northeast of Gila, and at mile 572.5 (921.2 km).

PERIOD OF RECORD.--April to December 1914, December 1927 to current year. Monthly discharge only December 1927 to September 1930, published in WSP 1313.

GAGE.—Water-stage recorder. Datum of gage is 4,655.8 ft (1,419.09 m) National Geodetic Vertical Datum of 1929, (river-profile survey). Prior to Dec. 31, 1928, at site 5 mi (8 km) upstream at different datum. Dec. 31, 1928, to Jan. 7, 1942, at site 200 ft (61 m) upstream at same datum.

AVERAGE DISCHARGE.--51 years (water years 1928-78), 134 ft<sup>3</sup>/s (3.795 m<sup>3</sup>/s), 97,080 acre-ft/yr (120 hm<sup>3</sup>/yr).

EXTREMES OUTSIDE PERIOD OF RECORD.--Other major floods occurred in November 1905, December 1906, and January 1916.

Date	Time	Discharge		Gage height	
		(ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	(ft)	(m)
Jan. 31	1400	640	18.1	3.25	0.991
Mar. 3	Unknown	*4,790	136	6.76	2.060

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	64	63	65	381	1190	315	161	82	38	36	42
2	62	60	62	64	257	8000	341	161	79	37	41	42
3	62	60	62	63	206	4000	327	169	73	34	42	46
4	62	60	62	62	177	2000	287	155	71	31	90	44
5	65	60	60	61	157	1180	261	138	68	29	128	42
6	72	65	60	60	151	1220	241	138	66	27	108	41
7	74	78	59	60	145	1040	229	142	67	25	99	39
8	76	78	59	59	141	805	214	146	66	25	95	37
9	78	74	58	58	135	633	213	134	64	25	104	35
10	80	74	59	59	128	531	210	124	62	25	79	33
11	78	72	59	64	129	476	200	116	58	25	66	32
12	74	72	59	63	130	423	180	115	54	28	56	31
13	72	72	59	61	126	403	168	121	52	31	49	30
14	70	69	59	59	133	372	161	126	50	33	43	31
15	69	69	59	63	136	358	166	133	48	32	40	31
16	67	69	59	84	137	332	176	146	47	30	37	32
17	65	67	58	84	132	298	180	157	44	28	36	31
18	65	65	59	88	125	273	180	155	42	27	35	30
19	65	65	58	81	120	270	178	148	40	27	34	30
20	64	64	59	86	117	306	175	139	38	28	42	30
21	64	62	58	85	124	370	166	148	36	29	43	31
22	64	62	57	88	140	424	161	145	35	31	44	32
23	64	62	57	86	159	424	157	132	35	33	49	34
24	64	62	60	88	170	436	150	124	33	35	50	36
25	62	62	60	86	183	395	145	121	32	40	46	37
26	60	62	60	83	195	370	148	116	31	40	53	40
27	60	62	63	82	211	351	153	111	31	44	65	42
28	60	63	65	81	322	347	164	106	33	38	59	40
29	60	63	72	84	---	334	171	99	37	35	50	37
30	67	63	72	87	---	326	170	92	36	35	45	36
31	65	---	68	424	---	319	---	87	---	33	43	---
TOTAL	2074	1980	1884	2618	4667	28206	5987	4105	1510	978	1807	1074
MEAN	66.9	66.0	60.8	84.5	167	910	200	132	50.3	31.5	58.3	35.8
MAX	80	78	72	424	381	8000	341	169	82	44	128	46
MIN	60	60	57	58	117	270	145	87	31	25	34	30
AC=FT	4110	3930	3740	5190	9260	55950	11880	8140	3000	1940	3580	2130
CAL YR 1977	TOTAL	30843	MEAN	84.5	MAX	565	MIN 20	AC=FT	61180			
WTR YR 1978	TOTAL	56890	MEAN	156	MAX	8000	MIN 25	AC=FT	112800			

09430600 MOGOLLON CREEK NEAR CLIFF, NM  
(Hydrologic bench-mark station)

LOCATION.--Lat 33°10'01", long 108°38'58", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 13, T.13 S., R.18 W., Grant County, Hydrologic Unit 15040001, on right bank 0.3 mi (0.5 km) downstream from Rain Creek, 0.8 mi (1.3 km) downstream from Gila Wilderness Boundary, 12 mi (19 km) upstream from mouth, and 14 mi (23 km) north of Cliff.

DRAINAGE AREA.--69 mi<sup>2</sup> (179 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,440 ft (1,658 m), from topographic map.

REMARKS.--Water-discharge records good.

AVERAGE DISCHARGE.--11 years, 25.2 ft<sup>3</sup>/s (0.714 m<sup>3</sup>/s), 18,260 acre-ft/yr (22.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft<sup>3</sup>/s (306 m<sup>3</sup>/s) Aug. 12, 1967, gage height, 13.7 ft (4.18 m), from floodmarks, from rating curve extended above 220 ft<sup>3</sup>/s (6.23 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft<sup>3</sup>/s (2.8 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Jan. 31	0630	224 6.34	3.47 1.058
Mar. 1	1600	*2,600 73.6	7.44 2.268

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	4.0	1.6	3.4	114	1550	205	28	4.9	.39	1.4	.41
2	1.2	3.3	1.6	2.9	84	1480	148	27	4.5	.00	1.6	.43
3	1.2	3.0	1.6	2.7	65	903	117	23	4.1	.00	2.1	2.2
4	1.2	2.6	1.5	2.5	47	393	105	21	3.5	.00	4.0	1.4
5	7.5	2.4	1.5	2.6	36	276	94	24	3.1	.00	8.5	1.0
6	15	3.2	1.4	2.4	32	234	88	31	2.9	.00	4.4	.82
7	50	13	1.4	2.3	31	170	89	28	3.0	.00	2.5	.63
8	24	6.9	1.4	2.2	30	127	90	25	2.7	.00	3.4	.49
9	16	5.3	1.5	2.1	26	123	69	25	2.4	.00	5.5	.38
10	12	4.4	1.5	2.4	23	129	55	29	2.2	.00	3.6	.15
11	8.9	4.0	1.4	3.5	33	108	45	34	1.7	.00	2.4	.00
12	7.2	3.7	1.4	3.5	28	93	43	32	1.5	.00	1.5	.00
13	6.1	3.4	1.5	3.7	23	86	65	32	1.4	.00	1.1	.00
14	5.1	3.2	1.4	3.7	23	86	72	34	1.3	.00	.82	.00
15	4.3	2.9	1.4	6.4	22	84	71	35	1.1	.00	.58	.00
16	3.7	2.6	1.5	19	23	81	70	29	.89	.00	.32	.00
17	3.3	2.5	1.5	19	20	85	68	24	.70	.00	.00	.00
18	2.9	2.4	1.6	18	18	102	55	20	.41	.00	.00	.00
19	2.7	2.3	1.5	14	20	133	49	17	.06	.00	.05	.00
20	2.6	2.2	1.4	11	24	164	48	16	.00	.00	.47	.00
21	2.4	2.3	1.8	9.4	49	216	48	16	.00	.00	3.2	.00
22	2.4	2.1	1.6	9.0	72	221	43	15	.00	.00	3.9	.00
23	2.3	2.1	1.6	11	88	232	39	14	.00	1.7	2.0	.00
24	2.2	2.1	1.7	11	91	192	39	12	.00	5.7	1.9	.00
25	2.1	2.0	1.7	10	93	180	44	11	.00	9.5	13	.00
26	1.9	2.0	1.7	8.6	89	178	46	9.3	.00	4.9	4.1	.44
27	1.9	1.9	2.2	10	80	174	53	8.1	.00	3.3	2.1	1.0
28	1.9	1.7	2.8	11	252	158	48	7.4	.00	1.9	1.3	.71
29	2.4	1.7	5.2	15	---	166	38	6.5	.53	1.4	.89	.31
30	7.0	1.7	5.9	24	---	155	33	5.8	.80	1.4	.69	.00
31	5.6	---	4.3	192	---	163	---	5.3	---	1.9	.55	---
TOTAL	208.3	96.9	60.1	438.3	1536	8442	2077	644.4	43.69	32.09	77.87	10.37
MEAN	6.72	3.23	1.94	14.1	54.9	272	69.2	20.8	1.46	1.04	2.51	.35
MAX	50	13	5.9	192	252	1550	205	35	4.9	9.5	13	2.2
MIN	1.2	1.7	1.4	2.1	18	81	33	5.3	.00	.00	.00	.00
AC-FT	413	192	119	869	3050	16740	4120	1280	87	64	154	21
CAL YR 1977 TOTAL	2373.90			MEAN 6.50	MAX 87	MIN .00	AC-FT 4710					
WTR YR 1978 TOTAL	13667.02			MEAN 37.4	MAX 1550	MIN .00	AC-FT 27110					

09430600 MOGOLLON CREEK NEAR CLIFF, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG. C) (00020)	TEMPER- ATURE (DEG. C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS MG/L AS CAC03 (00900)	HARD- NESS, NONCAR- BONATE (MG/L) CAC03 (00902)
OCT 21...	1012	2.4	102	7.6	15.5	12.0	9.3	37	5
DEC 13...	1415	1.5	110	7.5	13.0	2.0	11.2	35	2
MAR 23...	1123	260	74	7.2	15.0	8.0	10.0	27	14
APR 20...	1102	59	73	7.1	19.0	9.5	9.6	25	8
JUN 14...	1814	.85	111	7.7	30.5	22.5	7.2	41	8
AUG 16...	1441	.32	103	8.3	31.0	26.5	7.5	43	5

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)
OCT 21...	11	2.3	6.1	.4	.8	39	0	32	15
DEC 13...	10	2.4	6.0	.4	.6	40	0	33	14
MAR 23...	7.9	1.7	3.9	.3	.8	15	0	12	23
APR 20...	7.4	1.6	3.9	.3	.6	21	0	17	15
JUN 14...	12	2.6	6.1	.4	1.0	--	--	33	13
AUG 16...	13	2.6	6.9	.5	1.2	--	--	38	15

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CYANIDE TOTAL (MG/L AS CN) (00720)
OCT 21...	1.1	.5	21	78	77	<1	.01	.02	.00
DEC 13...	1.4	.5	20	76	75	--	.02	.00	--
MAR 23...	1.7	.2	18	66	65	--	.01	.03	--
APR 20...	1.4	.2	17	51	57	--	.02	.01	.00
JUN 14...	1.0	.4	22	77	78	--	.14	.01	--
AUG 16...	2.8	.5	20	85	85	--	.01	.02	--



09430600 MOGOLLON CREEK NEAR CLIFF, NM--Continued

## TRACE ELEMENT ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L) AS AS) (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L) AS BA) (01007)	CADMIUM TOTAL RECOV- ERABLE (UG/L) AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L) AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L) AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L) AS FE) (01045)
OCT 21...	1012	0	0	<10	5	<10	30
APR 20...	1102	0	200	1	0	3	100

DATE	TIME	LEAD, TOTAL RECOV- ERABLE (UG/L) AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L) AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L) AS HG) (71900)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L) AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L) AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L) AS ZN) (01092)
OCT 21...		<100	0	.0	0	<10	20
APR 20...		14	0	.0	0	0	10

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED (UG/L) U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L) U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L) CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L) CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L) AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L) AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
OCT 21...	1012	<1	<.7	<.4	1.3	<.4	1.2	<.4	.06	.04

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39516)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39519)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39330)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39333)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39350)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39351)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39360)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39363)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39365)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39368)
OCT 21...	1012	.0	0	.00	.0	.0	0	.00	.0	.00	.0

DATE	TIME	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39370)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39373)	DI- AZINON, TOTAL (UG/L) (39570)	DI- ELDRIN, TOTAL (UG/L) (39380)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39383)	ENDO- SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39410)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39413)
OCT 21...		.00	.0	.00	.00	.0	.00	.00	.0	.00	.00	.0

09430600 MOGOLLON CREEK NEAR CLIFF, NM--Continued

## PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39343)	MALA- THION, TOTAL (UG/L) (39530)	METHYL PARA- THION, TOTAL (UG/L) (39600)	METHYL TRI- THION, TOTAL (UG/L) (39790)	PARA- THION, TOTAL (UG/L) (39540)	TOX- APHENE, TOTAL (UG/L) (39400)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG) (39403)	TOTAL TRI- THION (UG/L) (39786)
OCT 21...	.00	.0	.00	.0	.00	.00	.00	.00	0	0	.00
								NAPH- THA- LENES, POLY-			
					2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SILVEX, TOTAL (UG/L) (39760)	CHLOR, TOTAL (UG/L) (39250)	MIREX, TOTAL (UG/L) (39755)		
OCT 21...				1012	.00	.00	.00	.00	.00		

## MICROBIOLOGICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 21...	1012	20	4	60
DEC 13...	1415	280	0	3
MAR 23...	1123	83	1	5
APR 20...	1102	170	0	2
JUN 14...	1814	350	1	120
AUG 16...	1441	8100	16	39

## INSTANTANEOUS SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
OCT 02...	1220	1.3	19.0	3	.01
21...	1012	2.4	12.0	9	.06
26...	1035	2.0	10.0	2	.01
DEC 06...	1300	1.4	6.0	0	.00
13...	1415	1.5	2.0	1	.00
JAN 10...	1115	2.4	2.5	2	.01
23...	1255	11	4.5	2	.06
FEB 23...	1350	88	5.0	5	1.2
MAR 09...	1010	123	5.0	4	1.3
23...	1123	260	8.0	12	8.4
28...	1415	158	10.0	4	1.7
APR 12...	1315	43	11.0	2	.23
20...	1102	59	9.5	3	.48
26...	1330	46	13.0	2	.25
MAY 13...	1040	32	11.0	1	.09
JUN 14...	1814	.85	22.5	3	.01
JUL 24...	1505	5.7	22.0	70	1.1
AUG 16...	1441	.32	26.5	5	.00
29...	1325	.89	22.0	3	.01

09431100 MANGAS CREEK BELOW MANGAS SPRINGS, NM

LOCATION.--Lat 32°50'57, long 108°31'13", in SE¼SW¼ sec.5, T.17 S., R.16 W., Grant County, Hydrologic Unit 15040002, 0.1 mi (0.2 km) upstream from Blacksmith Canyon and 15 mi (24 km) southeast of Gila.

DRAINAGE AREA.--177 mi<sup>2</sup> (458 km<sup>2</sup>).

PERIOD OF RECORD.--Water years 1970 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
JAN 16...	1120	3.6	636	8.0	14.0	260	58	79
MAR 31...	0925	2.9	580	8.0	17.0	250	45	77
MAY 10...	1330	2.8	556	8.2	24.0	240	46	74
JUL 12...	0905	2.6	569	8.0	19.0	250	--	76
SEP 11...	1600	2.9	547	8.3	25.0	230	--	72

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
JAN 16...	16	36	1.0	3.9	250	0	210	92	20
MAR 31...	14	27	.7	2.0	250	0	210	65	15
MAY 10...	14	29	.8	1.9	240	0	200	67	11
JUL 12...	14	28	.8	2.3	--	--	190	66	11
SEP 11...	12	26	.7	3.5	--	--	190	66	12

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
JAN 16...	.6	31	--	402	--	--	--	--
MAR 31...	.5	26	--	374	5.5	--	--	--
MAY 10...	.5	29	365	368	5.2	.00	40	0
JUL 12...	.5	30	--	342	4.8	--	--	--
SEP 11...	.5	30	369	336	6.0	.04	70	10

09431500 GILA RIVER NEAR REDROCK, NM  
(Radiochemical network station)

LOCATION.--Lat 32°43'37", long 108°40'30", in W<sub>2</sub> sec.23, T.18 S., R.18 W., Grant County, Hydrologic Unit 15040002, on left bank 0.2 mi (0.3 km) downstream from Copper Canyon, 0.2 mi (0.3 km) upstream from lower end of box canyon, 4.7 mi (7.6 km) northeast of Redrock, 14 mi (23 km) downstream from Mangas Creek, and at mile 539.2 (867.6 km).

DRAINAGE AREA.--2,829 mi<sup>2</sup> (7,327 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1904 to February 1905 (gage heights only). May 1905 to December 1906, January to December 1907 and July to October 1908 (gage heights only). November 1908 to December 1910, January 1911 to January 1912 and May to June 1912 (gage heights only). August 1912 to September 1955, October 1962 to current year. Monthly or annual discharge only for some periods, published in WSP 1313. Published as "near Cliff" 1904-7.

REVISED RECORDS.--WSP 1213: 1906, 1911-15, 1931, 1936-37, 1939, 1941, 1944, 1945(P), 1946(M), 1947. WSP 1283: Drainage area. WSP 1926: 1955.

GAGE.--Water-stage recorder. Altitude of gage is 4,090 ft (1,247 m), from plane table survey. Prior to Dec. 31, 1907, nonrecording gage at site 13.5 mi (21.7 km) upstream at different datum. May 14, 1908, to July 16, 1909, nonrecording gage at site 0.2 mi (0.3 km) downstream at different datum.

REMARKS.--Water-discharge records fair. Diversions for irrigation of about 5,000 acres (20 km<sup>2</sup>) above station. National Weather Service gage height telemeter at station.

AVERAGE DISCHARGE.--61 years (water years 1906, 1909-10, 1913-55, 1963-77), 195 ft<sup>3</sup>/s (5.522 m<sup>3</sup>/s), 141,300 acre-ft/yr (174 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft<sup>3</sup>/s (1,130 m<sup>3</sup>/s) Sept. 29, 1941, gage height, 31 ft (9.4 m), from floodmarks, computed on basis of known peak flow for station below Blue Creek; minimum, 2.2 ft<sup>3</sup>/s (0.062 m<sup>3</sup>/s) Aug. 5, 1947.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,270 ft<sup>3</sup>/s (92.6 m<sup>3</sup>/s) at 2245 hours Aug. 16, gage height, 11.91 ft (3.630 m), no other peak above base of 3,000 ft<sup>3</sup>/s (85 m<sup>3</sup>/s); minimum, 13 ft<sup>3</sup>/s (0.37 m<sup>3</sup>/s) June 19, 20.

REVISIONS.--Revised figures of discharge for the water year 1977, superseding those published in the report for 1977 are given herein.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD OCTOBER 1976 TO DECEMBER 1976  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	80	72									
2	44	77	71									
3	44	75	71									
4	44	73	72									
5	42	77	65									
6	40	76	62									
7	37	74	68									
8	34	75	74									
9	22	74	75									
10	23	75	71									
11	25	75	69									
12	35	75	66									
13	35	85	70									
14	33	84	71									
15	30	83	72									
16	37	83	71									
17	53	82	72									
18	51	78	72									
19	49	75	72									
20	49	77	72									
21	49	75	71									
22	52	73	71									
23	53	73	70									
24	56	73	62									
25	46	72	60									
26	53	65	60									
27	67	64	64									
28	94	71	63									
29	85	70	63									
30	82	71	66									
31	79	---	66									
TOTAL	1486	2260	2124									
MEAN	47.9	75.3	68.5									
MAX	94	85	75									
MIN	22	64	60									
AC-FT	2950	4480	4210									
CAL YR 1976	TOTAL	45523.6	MEAN	124	MAX	2730	MIN	9.6	AC-FT	90300		
WTR YR 1977	TOTAL	31492.0	MEAN	86.3	MAX	783	MIN	13	AC-FT	62460		

09431500 GILA RIVER NEAR REDROCK, NM  
(Radiochemical network station)

LOCATION.--Lat 32°43'37", long 108°40'30", in W<sub>1/2</sub> sec.23, T.18 S., R.18 W., Grant County, Hydrologic Unit 15040002, on left bank 0.2 mi (0.3 km) downstream from Copper Canyon, 0.2 mi (0.3 km) upstream from lower end of box canyon, 4.7 mi (7.6 km) northeast of Redrock, 14 mi (23 km) downstream from Mangas Creek, and at mile 539.2 (867.6 km).

DRAINAGE AREA.--2,829 mi<sup>2</sup> (7,327 km<sup>2</sup>).

#### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1904 to February 1905 (gage heights only). May 1905 to December 1906, January to December 1907 and July to October 1908 (gage heights only). November 1908 to December 1910, January 1911 to January 1912 and May to June 1912 (gage heights only). August 1912 to September 1955, October 1962 to current year. Monthly or annual discharge only for some periods, published in WSP 1313. Published as "near Cliff" 1904-7.

REVISED RECORDS.--WSP 1213: 1906, 1911-15, 1931, 1936-37, 1939, 1941, 1944, 1945(P), 1946(M), 1947. WSP 1283: Drainage area. WSP 1926: 1955.

GAGE.--Water-stage recorder. Altitude of gage is 4,090 ft (1,247 m), from plane table survey. Prior to Dec. 31, 1907, nonrecording gage at site 13.5 mi (21.7 km) upstream at different datum. May 14, 1908, to July 16, 1909, nonrecording gage at site 0.2 mi (0.3 km) downstream at different datum.

REMARKS.--Water-discharge records fair. Diversions for irrigation of about 5,000 acres (20 km<sup>2</sup>) above station. National Weather Service gage height telemeter at station.

AVERAGE DISCHARGE.--62 years (water years 1906, 1909-10, 1913-55, 1963-78), 196 ft<sup>3</sup>/s (5.551 m<sup>3</sup>/s), 142,000 acre-ft/yr (175 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft<sup>3</sup>/s (1,130 m<sup>3</sup>/s) Sept. 29, 1941, gage height, 31 ft (9.4 m), from floodmarks, computed on basis of known peak flow for station below Blue Creek; minimum, 2.2 ft<sup>3</sup>/s (0.062 m<sup>3</sup>/s) Aug. 5, 1947.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft<sup>3</sup>/s (85 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Mar. 3	2330	*12,700 360	15.6 4.755

Minimum discharge, 3.1 ft<sup>3</sup>/s (0.09 m<sup>3</sup>/s) July 20.

#### DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	61	61	82	120	2390	533	180	88	33	13	51
2	53	61	62	80	578	10300	540	176	81	32	47	84
3	51	60	59	87	414	9080	504	186	77	30	134	44
4	53	56	63	77	325	3950	443	186	72	29	52	34
5	51	57	70	70	253	2060	381	160	66	29	74	26
6	63	69	71	66	220	2010	341	147	58	28	55	25
7	72	78	61	69	180	1650	318	147	48	28	48	24
8	64	93	66	81	160	1200	289	159	45	26	78	22
9	64	89	64	83	145	898	257	157	42	17	106	21
10	109	95	66	66	135	711	260	129	40	13	71	20
11	100	87	72	60	122	582	224	111	40	9.1	62	19
12	91	85	65	61	127	490	210	111	39	8.4	52	19
13	79	85	62	61	141	475	195	111	39	9.2	43	19
14	71	81	63	59	175	426	190	103	42	11	38	22
15	61	81	63	62	184	391	193	113	39	13	34	18
16	58	84	63	93	191	369	197	123	35	8.0	30	15
17	65	84	64	105	173	341	204	129	24	7.2	28	14
18	63	82	62	108	142	323	201	137	21	5.8	26	14
19	61	85	61	106	122	326	197	143	17	4.6	214	13
20	60	73	59	114	117	374	192	131	12	3.6	63	14
21	58	78	59	103	118	481	187	143	11	4.7	57	13
22	50	80	57	105	143	583	167	149	11	7.9	57	15
23	57	75	58	101	182	647	159	137	11	11	64	14
24	70	67	62	105	210	695	154	124	11	19	187	14
25	47	70	58	104	220	637	153	114	11	23	137	13
26	40	81	57	97	272	586	137	120	11	19	90	17
27	45	92	74	94	311	560	145	109	11	17	72	14
28	52	72	81	79	399	523	163	102	23	12	64	16
29	53	65	86	78	---	508	167	88	30	9.2	56	13
30	57	62	89	86	---	492	172	83	34	8.5	90	20
31	57	---	87	160	---	508	---	90	---	7.1	60	---
TOTAL	1935	2288	2045	2702	5879	44566	7473	4098	1089	483.3	2202	667
MEAN	62.4	76.3	66.0	87.2	210	1438	249	132	36.3	15.6	71.0	22.2
MAX	109	95	89	160	578	10300	540	186	88	33	214	84
MIN	40	56	57	59	117	323	137	83	11	3.6	13	13
AC-FT	3840	4540	4060	5360	11660	88400	14820	8130	2160	959	4370	1320
CAL YR 1977 TOTAL	31890.0			MEAN 87.4	MAX 783	MIN 13	AC-FT 63250					
WTR YR 1978 TOTAL	75427.3			MEAN 207	MAX 10300	MIN 3.6	AC-FT 149600					

09431500 GILA RIVER NEAR REDROCK, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	
OCT										
05...	1115	53	435	8.2	20.0	130	0	40	8.1	
18...	1040	63	420	8.2	13.0	--	--	--	--	
NOV										
02...	1500	62	420	8.2	14.0	--	--	--	--	
14...	1100	81	395	8.1	8.5	140	0	41	8.5	
29...	1100	62	393	8.2	6.0	--	--	--	--	
DEC										
14...	1100	62	403	8.1	4.0	180	36	49	13	
JAN										
09...	1150	85	394	8.1	4.0	--	--	--	--	
27...	1050	94	373	8.1	5.0	130	0	38	7.7	
FEB										
09...	1435	153	329	8.2	11.0	110	0	31	7.1	
24...	1020	210	267	7.9	7.0	--	--	--	--	
MAR										
30...	1245	478	221	8.1	14.0	76	10	23	4.6	
APR										
20...	1325	197	297	8.3	17.0	110	9	32	6.8	
MAY										
03...	1240	193	305	8.5	17.0	--	--	--	--	
16...	1405	130	340	8.5	21.0	--	--	--	--	
29...	1415	91	350	8.4	23.0	120	0	35	7.5	
JUN										
14...	1210	48	391	8.4	25.0	130	0	40	8.3	
23...	1455	11	406	8.5	29.0	--	--	--	--	
JUL										
11...	0940	9.9	420	8.4	23.0	140	--	42	8.5	
27...	1025	16	504	7.4	23.0	--	--	--	--	
AUG										
14...	1110	32	428	8.1	24.0	140	--	42	8.3	
31...	1135	58	386	8.2	21.0	--	--	--	--	
SEP										
13...	1310	16	444	8.5	23.0	160	--	47	9.4	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
OCT										
05...	34	1.3	2.5	200	0	160	35	12	2.1	--
18...	--	--	--	--	--	--	--	--	--	--
NOV										
02...	--	--	--	--	--	--	--	--	--	--
14...	35	1.3	2.3	180	0	150	33	16	2.2	--
29...	--	--	--	--	--	--	--	--	--	--
DEC										
14...	23	.8	2.1	170	0	140	36	14	2.2	--
JAN										
09...	--	--	--	--	--	--	--	--	--	--
27...	33	1.3	1.8	160	0	130	33	19	2.2	--
FEB										
09...	28	1.2	1.8	140	0	110	31	10	1.9	--
24...	--	--	--	--	--	--	--	--	--	--
MAR										
30...	16	.8	1.5	81	0	66	24	6.2	1.2	--
APR										
20...	27	1.1	2.2	120	0	98	33	9.7	.7	--
MAY										
03...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
29...	31	1.2	2.0	160	3	140	32	13	2.0	--
JUN										
14...	34	1.3	2.7	170	1	140	36	12	2.2	--
23...	--	--	--	--	--	--	--	--	--	--
JUL										
11...	37	1.4	3.3	--	--	150	42	13	2.3	--
27...	--	--	--	--	--	--	--	--	--	--
AUG										
14...	38	1.4	2.7	--	--	160	35	14	2.1	--
31...	--	--	--	--	--	--	--	--	--	--
SEP										
13...	37	1.3	3.3	--	--	170	37	13	2.1	--

## GILA RIVER BASIN

09431500 GILA RIVER NEAR REDROCK, NM--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SILICA, DIS- SOLVED (MG/L AS S102) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT								
05...	34	250	266	--	--	--	50	10
18...	--	--	--	--	--	--	--	--
NOV								
02...	--	--	--	22	--	--	--	--
14...	36	--	263	--	.13	.03	50	20
29...	--	--	--	--	--	--	--	--
DEC								
14...	34	--	257	--	--	--	50	0
JAN								
09...	--	--	--	--	--	--	--	--
27...	33	--	248	--	.25	.05	50	0
FEB								
09...	33	--	231	--	4.1	.05	40	0
24...	--	--	--	--	--	--	--	--
MAR								
30...	25	--	142	--	.09	.04	30	20
APR								
20...	33	--	204	--	.14	.00	40	40
MAY								
03...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
29...	32	222	238	--	.33	.05	50	20
JUN								
14...	34	--	254	--	.05	.05	50	30
23...	--	--	--	--	--	--	--	--
JUL								
11...	34	--	272	--	.06	.07	60	20
27...	--	--	--	--	--	--	--	--
AUG								
14...	37	--	276	--	.01	.04	60	10
31...	--	--	--	--	--	--	--	--
SEP								
13...	33	--	284	--	.02	.04	90	10

## RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L AS U)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L)
		(00530)	(80030)	(80040)	(03515)	(03516)	(80050)	(80060)	(09511)	(22703)	(80020)
NOV 02...	1500	22	<4.1	.9	3.2	1.1	2.8	1.2	.08	1.4	--
MAY 29...	1415	--	<2.4	<.4	3.0	<.4	--	--	.03	1.6	--

09431500 GILA RIVER NEAR REDROCK, NM--Continued

## INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT									
05...	1115	53	20.0	60	8.6	--	--	--	--
18...	1040	63	13.0	57	9.7	--	--	--	--
NOV									
14...	1100	81	8.5	31	6.8	--	--	--	--
29...	1100	62	6.0	28	4.7	--	--	--	--
DEC									
14...	1100	62	4.0	11	1.8	--	--	--	--
JAN									
09...	1150	85	4.0	25	5.7	--	--	--	--
27...	1050	94	5.0	92	23	--	--	--	--
FEB									
09...	1435	153	11.0	117	48	--	--	--	--
24...	1020	210	7.0	282	160	--	--	--	--
MAR									
30...	1245	478	14.0	139	179	--	--	--	--
APR									
20...	1325	197	17.0	28	15	--	--	--	--
MAY									
03...	1240	193	17.0	29	15	--	--	--	--
29...	1415	91	23.0	10	2.5	--	--	--	--
JUN									
14...	1210	48	25.0	16	2.1	--	--	--	--
23...	1455	11	29.0	14	.42	--	--	--	--
JUL									
11...	0940	9.9	23.0	11	.29	--	--	--	--
27...	1025	16	23.0	1820	79	75	89	99	100
AUG									
14...	1110	32	24.0	74	6.4	--	--	--	--
31...	1135	58	21.0	952	149	--	--	--	--
SEP									
13...	1310	16	23.0	34	1.5	--	--	--	--
26...	1155	17	20.0	53	2.4	--	--	--	--



## GILA RIVER BASIN

09432000 GILA RIVER BELOW BLUE CREEK, NEAR VIRDEN, NM

LOCATION.--Lat 32°38'53", long 108°50'43", in SE¼SW¼ sec.18, T.19 S., R.19 W., Grant County, Hydrologic Unit 15040002, on left bank at head of canyon, 1.4 mi (2.3 km) downstream from Blue Creek, 10 mi (16 km) east of Virden, 16 mi (26 km) upstream from New Mexico-Arizona State line, and at mile 523.6 (842.5 km).

DRAINAGE AREA.--3,203 mi<sup>2</sup> (8,296 km<sup>2</sup>), excluding Animas River Basin.

PERIOD OF RECORD.--May to November 1914, March to September 1915, July 1927 to current year. July 1927 to May 1931 monthly discharge only, published in WSP 1313, computed as sum of flow at Virden Bridge, 9 mi (14 km) downstream, and in Sunset Canal. Published as Gila River near Duncan, AZ, 1914-15 and as Gila River at Fuller's Ranch, near Duncan, AZ, 1931-38.

REVISED RECORDS.--WSP 1283: Drainage area. WSP 1313: 1929, 1931-32(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,875 ft (1,181 m), from river-profile map. May 11, 1914, to Sept. 30, 1915, at site 6 mi (10 km) downstream, 1,000 ft (300 m) upstream from intake of Sunset Canal. June 1 to July 7, 1931, nonrecording gage at present site and datum.

REMARKS.--Records good. Station is above all Duncan Valley diversions. Diversions for irrigation of about 6,200 acres (25 km<sup>2</sup>) above station.

AVERAGE DISCHARGE.--51 years (water years 1927-78), 176 ft<sup>3</sup>/s (4,984 m<sup>3</sup>/s), 127,500 acre-ft/yr (157 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,700 ft<sup>3</sup>/s (1,180 m<sup>3</sup>/s) Sept. 29, 1941, gage height, 25.78 ft (7.858 m); minimum, 1 ft<sup>3</sup>/s (0.028 m<sup>3</sup>/s) July 14, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,800 ft<sup>3</sup>/s (221 m<sup>3</sup>/s) Mar. 3, gage height, 14.25 ft (4.343 m), no other peak above base of 1,900 ft<sup>3</sup>/s (54 m<sup>3</sup>/s); minimum daily, 3.5 ft<sup>3</sup>/s (0.099 m<sup>3</sup>/s) July 25, 26, Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	55	69	78	514	937	546	179	73	15	3.5	54
2	49	57	68	78	364	5300	554	179	75	15	5.4	53
3	49	57	69	78	287	7340	542	174	73	14	24	89
4	49	56	67	79	240	4290	502	172	71	13	90	53
5	48	56	72	74	203	2550	458	154	64	13	48	30
6	66	61	72	73	181	2280	422	147	62	12	63	26
7	57	63	70	73	165	1940	396	150	56	12	51	25
8	55	69	69	74	156	1520	364	148	46	11	52	19
9	55	70	69	80	148	1260	337	150	46	11	94	19
10	59	72	69	75	141	1140	331	139	43	10	66	13
11	66	72	70	70	136	1060	313	123	40	9.7	57	13
12	64	71	70	68	138	960	287	114	36	9.0	47	12
13	61	71	69	68	145	910	266	111	34	8.0	35	10
14	58	71	68	69	172	850	250	108	33	7.6	29	10
15	55	71	68	69	224	795	243	102	32	7.6	28	9.9
16	54	71	67	70	253	758	243	103	30	6.7	26	9.4
17	55	72	68	86	214	707	240	110	28	5.8	23	8.8
18	55	73	68	94	188	666	237	113	26	5.4	21	8.0
19	55	71	67	94	170	629	235	114	24	5.0	58	7.9
20	55	73	66	97	165	638	222	113	21	4.5	161	7.9
21	55	73	66	95	165	661	214	114	18	4.5	54	8.4
22	51	73	65	95	179	721	203	118	17	4.5	57	9.0
23	50	73	65	92	203	749	194	116	16	4.5	48	9.4
24	56	72	67	95	235	767	185	105	14	4.0	113	9.4
25	54	71	67	95	243	717	179	96	12	3.5	77	9.5
26	49	71	66	94	271	666	172	92	12	3.5	73	9.5
27	49	83	68	91	289	652	166	94	12	5.0	58	10
28	50	76	77	85	313	602	170	88	14	4.8	53	9.7
29	51	71	84	84	---	579	172	80	14	4.5	50	9.9
30	52	70	79	86	---	562	177	76	14	4.3	62	8.4
31	55	---	83	193	---	554	---	74	---	4.3	59	---
TOTAL	1688	2065	2162	2652	6102	43760	8820	3756	1056	242.7	1685.9	571.1
MEAN	54.5	68.8	69.7	85.5	218	1412	294	121	35.2	7.83	54.4	19.0
MAX	66	83	84	193	514	7340	554	179	75	15	161	89
MIN	48	55	65	68	136	554	166	74	12	3.5	3.5	7.9
AC-FT	3350	4100	4290	5260	12100	86800	17490	7450	2090	481	3340	1130
CAL YR 1977 TOTAL	33543.0			MEAN 91.9	MAX 1360	MIN 14	AC-FT 66530					
WTR YR 1978 TOTAL	74560.7			MEAN 204	MAX 7340	MIN 3.5	AC-FT 147900					

09442680 SAN FRANCISCO RIVER NEAR RESERVE, NM

LOCATION.--Lat 33°44'12", long 108°46'14", in NE¼NW¼SE¼ sec.35, T.6 S., R.19 W., Catron County, Hydrologic Unit 15040004, on left bank 1,300 ft (400 m) downstream from Rainbow Bridge Canyon, 1.7 mi (2.7 km) northwest of Reserve, and at mile 563.1 (906.0 km).

DRAINAGE AREA.--350 mi<sup>2</sup> (907 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--March 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,820 ft (1,774 m), from topographic map. Prior to Dec. 15, 1972 at site 1,800 ft (549 m) upstream at different datum.

REMARKS.--Records fair. Possible minor regulation by Luna Lake, 27 mi (43 km) upstream. Diversions for irrigation of about 280 acres (1.1 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years, 23.4 ft<sup>3</sup>/s (0.663 m<sup>3</sup>/s), 16,950 acre-ft/yr (20.9 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft<sup>3</sup>/s (337 m<sup>3</sup>/s) Oct. 20, 1972, gage height, 7.47 ft (2.277 m) in gage well, 8.05 ft (2.454 m), from outside floodmarks, site and datum then in use, from rating curve extended above 9,000 ft<sup>3</sup>/s (255 m<sup>3</sup>/s) on basis of velocity-area study; minimum, 1.0 ft<sup>3</sup>/s (0.028 m<sup>3</sup>/s) Mar. 16, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, about 15 ft (4.6 m), as determined in 1962 from old floodmarks. Major floods of Nov. 26, 1905 and Dec. 3, 1906, exceeded 20,000 ft<sup>3</sup>/s (566 m<sup>3</sup>/s) at Alma (downstream). See WSP 1313.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 642 ft<sup>3</sup>/s (18.2 m<sup>3</sup>/s) at 1845 hours Sept. 3, gage height, 5.14 ft (1.567 m), no peak above base of 450 ft<sup>3</sup>/s (13 m<sup>3</sup>/s); minimum, 1.1 ft<sup>3</sup>/s (0.031 m<sup>3</sup>/s) July 9, 10.

REVISIONS.--Revised figures of discharge for the water year 1977, superseding those published in the report for 1977 are given herein.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD OCTOBER 1976 TO DECEMBER 1976  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	6.1	4.2									
2	5.7	6.0	4.2									
3	5.7	5.9	4.3									
4	5.5	5.9	4.4									
5	5.4	5.8	4.4									
6	5.5	5.8	4.3									
7	5.5	5.7	4.1									
8	5.5	5.7	4.3									
9	5.6	5.6	4.2									
10	5.6	5.6	4.2									
11	5.6	5.4	4.3									
12	5.6	5.5	4.5									
13	5.6	5.5	4.5									
14	5.7	5.3	4.6									
15	5.7	5.2	4.8									
16	5.7	5.1	4.9									
17	5.4	4.9	5.0									
18	5.7	5.0	5.4									
19	5.7	5.0	5.0									
20	5.7	4.9	5.4									
21	5.7	4.8	5.7									
22	5.8	4.7	5.6									
23	5.9	4.7	5.7									
24	6.0	4.7	5.9									
25	6.1	4.6	6.1									
26	6.0	4.6	6.1									
27	6.3	4.8	6.4									
28	6.4	4.2	6.8									
29	6.2	4.2	6.6									
30	6.2	4.2	7.4									
31	6.1	--	7.3									
TOTAL	178.7	155.4	160.6									
MEAN	5.76	5.18	5.18									
MAX	6.4	6.1	7.4									
MIN	5.4	4.2	4.1									
AC-FT	354	308	319									

CAL YR 1976	TOTAL	3540.2	MEAN 9.67	MAX 115	MIN 2.6	AC-FT 7020
WTR YR 1977	TOTAL	2572.4	MEAN 7.05	MAX 115	MIN 1.4	AC-FT 5100

## 09442680 SAN FRANCISCO RIVER NEAR RESERVE, NM

LOCATION.--Lat 33°44'12", long 108°46'14", in NE¼NW¼SE¼ sec.35, T.6 S., R.19 W., Catron County, Hydrologic Unit 15040004, on left bank 1,300 ft (400 m) downstream from Rainbow Bridge Canyon, 1.7 mi (2.7 km) northwest of Reserve, and at mile 563.1 (906.0 km).

DRAINAGE AREA.--350 mi<sup>2</sup> (907 km<sup>2</sup>), approximately.

PERIOD OF RECORD.--March 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,820 ft (1,774 m), from topographic map. Prior to Dec. 15, 1972 at site 1,800 ft (549 m) upstream at different datum.

REMARKS.--Records fair. Possible minor regulation by Luna Lake, 27 mi (43 km) upstream. Diversions for irrigation of about 280 acres (1.1 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years, 22.9 ft<sup>3</sup>/s (0.649 m<sup>3</sup>/s), 16,590 acre-ft/yr (20.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft<sup>3</sup>/s (337 m<sup>3</sup>/s) Oct. 20, 1972, gage height, 7.47 ft (2.277 m) in gage well, 8.05 ft (2.454 m), from outside floodmarks, site and datum then in use, from rating curve extended above 9,000 ft<sup>3</sup>/s (255 m<sup>3</sup>/s) on basis of velocity-area study; minimum, 1.0 ft<sup>3</sup>/s (0.028 m<sup>3</sup>/s) Mar. 16, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, about 15 ft (4.6 m), as determined in 1962 from old floodmarks. Major floods of Nov. 26, 1905 and Dec. 3, 1906, exceeded 20,000 ft<sup>3</sup>/s (566 m<sup>3</sup>/s) at Alma (downstream). See WSP 1313.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 275 ft<sup>3</sup>/s (7.79 m<sup>3</sup>/s) at 2030 hours Mar. 1, gage height, 3.80 ft (1.158 m), no peak above base of 450 ft<sup>3</sup>/s (13 m<sup>3</sup>/s); minimum, 1.5 ft<sup>3</sup>/s (0.042 m<sup>3</sup>/s) July 20, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	5.9	5.5	6.0	9.5	99	60	7.9	3.0	2.9	17	6.1
2	5.3	5.9	5.5	5.8	9.2	141	62	9.6	2.8	2.6	13	5.4
3	5.3	5.8	5.7	5.7	8.5	113	53	9.0	2.7	2.4	8.8	4.9
4	5.6	5.8	5.4	5.9	8.3	93	44	8.0	2.6	2.4	6.7	4.1
5	5.8	6.0	5.4	5.9	8.5	92	41	7.4	2.4	2.3	5.8	4.9
6	6.3	7.1	5.3	6.0	8.9	101	36	8.6	2.5	2.2	4.5	4.7
7	7.4	8.0	5.0	6.1	8.9	87	33	9.1	2.6	2.0	2.7	4.7
8	6.1	7.3	5.2	5.7	8.8	75	29	8.0	2.4	2.1	5.3	4.4
9	24	6.6	5.2	5.7	8.5	73	28	7.2	2.2	2.1	5.2	4.3
10	8.6	6.2	4.9	6.3	8.4	74	28	6.7	2.0	2.2	4.6	3.9
11	11	6.1	4.8	6.5	10	72	26	6.6	1.9	8.1	3.9	3.9
12	8.5	6.2	4.8	6.2	8.4	67	23	6.2	1.9	4.1	4.9	3.6
13	6.5	6.0	4.8	6.0	8.0	63	21	5.7	2.1	3.4	5.4	3.5
14	5.9	6.2	4.5	6.0	9.0	66	17	5.5	2.0	3.8	8.0	3.5
15	5.6	6.2	4.7	7.1	8.9	58	16	5.4	2.1	8.0	6.1	3.1
16	5.4	6.2	4.8	6.8	8.4	49	15	5.5	2.0	5.7	4.8	4.0
17	5.9	6.1	4.2	7.1	7.6	46	14	5.1	2.0	3.9	4.0	9.5
18	6.4	6.1	4.7	7.3	7.1	48	13	4.1	2.0	3.1	3.2	6.1
19	6.7	6.0	5.0	6.9	7.1	54	13	3.9	2.0	3.2	6.4	5.3
20	6.6	6.0	4.1	6.9	7.7	63	12	4.7	2.0	2.0	20	5.1
21	6.6	5.9	4.0	7.0	8.4	69	11	4.6	1.8	1.8	11	4.9
22	6.8	5.8	5.0	6.6	8.4	72	11	4.7	1.8	3.0	16	9.4
23	6.8	5.6	5.5	6.6	8.6	87	9.6	4.5	1.9	2.8	16	5.7
24	6.7	5.7	5.2	6.7	8.5	98	9.2	4.1	1.9	4.0	27	7.9
25	6.5	5.9	5.1	6.4	8.3	88	9.1	4.1	1.7	4.1	13	11
26	6.5	6.0	5.1	6.7	8.4	77	8.2	3.9	1.9	3.8	13	7.1
27	6.4	6.0	5.7	6.9	8.5	71	7.8	3.8	2.0	3.7	11	6.1
28	6.6	6.0	5.7	7.3	16	68	7.7	3.6	2.6	3.3	8.2	5.7
29	6.7	5.9	5.9	7.5	---	65	7.4	3.4	2.7	2.0	8.2	5.5
30	6.9	5.7	5.8	7.9	---	61	7.4	3.3	3.5	2.6	7.6	5.3
31	6.3	---	6.0	10	---	60	---	3.0	---	3.4	7.3	---
TOTAL	221.4	184.2	158.5	205.5	244.8	2350	672.4	177.2	67.0	103.0	278.6	163.6
MEAN	7.14	6.14	5.11	6.63	8.74	75.8	22.4	5.72	2.23	3.32	8.99	5.45
MAX	24	8.0	6.0	10	16	141	62	9.6	3.5	8.1	27	11
MIN	5.3	5.6	4.0	5.7	7.1	46	7.4	3.0	1.7	1.8	2.7	3.1
AC-FT	439	365	314	408	486	4660	1330	351	133	204	553	325

CAL YR 1977 TOTAL 2641.8 MEAN 7.24 MAX 115 MIN 1.4 AC-FT 5240  
WTR YR 1978 TOTAL 4826.2 MEAN 13.2 MAX 141 MIN 1.7 AC-FT 9570

09442692 TULAROSA RIVER ABOVE ARAGON, NM

LOCATION.--Lat 33°53'29", long 108°30'54", in NW¼ sec.9, T.5 S., R.16 W., Catron County, Hydrologic Unit 15040004, on right bank 0.4 mi (0.6 km) upstream from first diversion, 1.4 mi (2.3 km) northeast of Aragon, and 3 mi (13 km) upstream from Apache Creek.

DRAINAGE AREA.--94 mi<sup>2</sup> (244 km<sup>2</sup>).

PERIOD OF RECORD.--July 1966 to current year. 1955 to 1965 at site 0.6 mi (1.0 km) upstream (drainage area, 89 mi<sup>2</sup> or 231 km<sup>2</sup>), annual maximum only.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,750 ft (2,057 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--11 years, 3.35 ft<sup>3</sup>/s (0.095 m<sup>3</sup>/s), 2,430 acre-ft/yr (3.00 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 392 ft<sup>3</sup>/s (11.1 m<sup>3</sup>/s) Sept. 1, 1971, gage height, 3.13 ft (0.954 m), from rating curve extended above 80 ft<sup>3</sup>/s (2.27 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; minimum, 1.1 ft<sup>3</sup>/s (0.031 m<sup>3</sup>/s) July 22, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43 ft<sup>3</sup>/s (1.22 m<sup>3</sup>/s) at 1515 hours Sept. 2, gage height, 1.81 ft (0.552 m), no other peak above base of 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s); minimum, 2.0 ft<sup>3</sup>/s (0.057 m<sup>3</sup>/s) Aug. 1, 2.

REVISIONS.--Revised figures of discharge for the water year 1977, superseding those published in the report for 1977 are given herein.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD OCTOBER 1976 TO DECEMBER 1976  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	2.4	3.0									
2	3.6	2.4	3.0									
3	3.4	2.4	3.0									
4	3.3	2.4	3.0									
5	3.2	2.4	3.0									
6	3.2	2.4	3.1									
7	3.1	2.5	3.1									
8	3.1	2.5	3.1									
9	3.0	2.5	3.1									
10	3.0	2.5	3.1									
11	3.0	2.5	3.1									
12	3.0	2.6	3.1									
13	3.0	2.7	3.1									
14	3.0	2.7	3.1									
15	2.9	2.7	3.1									
16	2.9	2.6	3.1									
17	2.8	2.7	3.0									
18	2.8	2.6	3.0									
19	2.7	2.7	3.0									
20	2.7	2.7	3.0									
21	2.7	2.7	3.0									
22	2.7	2.8	3.0									
23	2.7	2.8	3.0									
24	2.7	2.8	3.0									
25	2.6	2.9	3.0									
26	2.7	2.8	3.0									
27	2.8	3.0	3.0									
28	2.7	3.0	3.0									
29	2.6	3.0	3.0									
30	2.6	3.0	3.0									
31	2.4	---	2.9									
TOTAL	90.5	79.9	94.0									
MEAN	2.92	2.66	3.03									
MAX	3.6	3.0	3.1									
MIN	2.4	2.4	2.9									
AC-FT	180	158	186									

CAL YR 1976 TOTAL 1113.5 MEAN 3.04 MAX 21 MIN 2.4 AC-FT 2210  
WTR YR 1977 TOTAL 1046.4 MEAN 2.87 MAX 4.4 MIN 2.0 AC-FT 2080

09442692 TULAROSA RIVER ABOVE ARAGON, NM

LOCATION.--Lat 33°53'29", long 108°30'54", in NW¼ sec.9, T.5 S., R.16 W., Catron County, Hydrologic Unit 15040004, on right bank 0.4 mi (0.6 km) upstream from first diversion, 1.4 mi (2.3 km) northeast of Aragon, and 8 mi (13 km) upstream from Apache Creek.

DRAINAGE AREA.--94 mi<sup>2</sup> (244 km<sup>2</sup>).

PERIOD OF RECORD.--July 1966 to current year. 1955 to 1965 at site 0.6 mi (1.0 km) upstream (drainage area, 89 mi<sup>2</sup> or 231 km<sup>2</sup>), annual maximum only.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,750 ft (2,057 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--12 years, 3.31 ft<sup>3</sup>/s (0.094 m<sup>3</sup>/s), 2,400 acre-ft/yr (2.96 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 392 ft<sup>3</sup>/s (11.1 m<sup>3</sup>/s) Sept. 1, 1971, gage height, 3.13 ft (0.954 m), from rating curve extended above 80 ft<sup>3</sup>/s (2.27 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; minimum, 1.1 ft<sup>3</sup>/s (0.031 m<sup>3</sup>/s) July 22, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft<sup>3</sup>/s (0.57 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
July 24	1400	*89 2.52	2.44 0.744
Aug. 1	2015	57 1.61	2.24 0.683

Minimum discharge, 2.2 ft<sup>3</sup>/s (0.06 m<sup>3</sup>/s) Feb. 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	2.7	2.6	2.7	2.7	3.4	3.4	2.8	2.8	3.3	5.7	2.6
2	2.7	2.7	2.6	2.6	2.8	3.5	3.4	2.9	2.8	3.2	3.6	2.6
3	2.7	2.7	2.6	2.6	2.7	5.9	3.4	2.8	2.8	3.3	2.9	2.7
4	2.7	2.7	2.6	2.6	2.6	3.4	3.4	2.8	2.8	3.3	2.9	2.7
5	2.7	2.7	2.6	2.7	2.7	3.2	3.3	2.7	2.9	3.3	2.9	2.7
6	2.8	2.8	2.6	2.6	2.8	3.2	3.3	2.8	3.0	3.1	2.9	2.7
7	2.9	2.7	2.6	2.6	2.9	3.2	3.2	2.8	2.9	3.1	3.1	2.6
8	2.8	2.7	2.6	2.6	3.0	3.3	3.2	2.7	2.9	3.1	3.1	2.6
9	2.7	2.7	2.6	2.6	2.9	3.3	3.3	2.7	2.9	3.0	3.0	2.7
10	2.7	2.7	2.6	2.6	2.9	3.3	3.3	2.7	2.9	3.0	2.9	2.7
11	2.6	2.7	2.6	2.7	3.0	3.3	3.2	2.7	3.0	2.9	2.9	2.7
12	2.6	2.7	2.6	2.7	2.9	3.3	3.2	2.6	2.9	2.8	2.8	2.7
13	2.6	2.7	2.6	2.6	2.9	3.3	3.2	2.6	2.9	2.8	2.8	2.7
14	2.6	2.6	2.6	2.6	3.1	3.2	3.2	2.6	2.9	3.2	2.8	2.8
15	2.6	2.6	2.7	2.7	3.0	3.2	3.1	2.6	2.9	2.5	2.8	2.8
16	2.6	2.6	2.7	2.7	3.0	3.2	3.0	2.6	3.0	2.5	2.7	2.9
17	2.6	2.6	2.7	2.8	3.0	3.2	3.0	2.6	3.0	2.6	2.7	3.2
18	2.6	2.6	2.7	2.7	3.0	3.3	3.0	2.6	3.0	2.6	2.7	2.8
19	2.6	2.6	2.7	2.7	3.1	3.3	3.0	2.6	3.0	2.7	2.9	2.8
20	2.6	2.6	2.7	2.7	3.1	3.3	3.0	2.7	3.1	2.6	2.8	2.8
21	2.7	2.6	2.7	2.7	3.1	3.4	2.9	2.7	3.1	2.6	2.7	2.8
22	2.7	2.6	2.7	2.6	3.1	3.5	2.9	2.8	3.1	2.7	2.8	2.8
23	2.7	2.6	2.7	2.7	3.1	3.6	2.9	2.8	3.1	2.7	2.7	2.8
24	2.7	2.6	2.7	2.7	3.1	3.5	2.9	2.8	3.1	5.3	2.7	2.8
25	2.7	2.6	2.7	2.6	3.2	3.7	2.9	2.7	3.1	2.8	2.8	2.8
26	2.7	2.6	2.7	2.6	3.2	6.9	2.9	2.7	3.2	2.8	2.8	2.8
27	2.7	2.6	2.6	2.6	3.2	5.4	2.8	2.7	3.2	2.8	2.7	2.7
28	2.7	2.6	2.6	2.7	3.2	4.0	2.8	2.8	3.4	2.8	2.7	2.7
29	2.7	2.6	2.6	2.7	---	3.6	2.8	2.8	3.4	2.8	2.7	2.8
30	2.7	2.6	2.6	2.7	---	3.5	2.8	2.9	3.3	2.9	2.7	2.8
31	2.7	---	2.6	2.9	---	3.4	---	2.9	---	2.9	2.7	---
TOTAL	83.0	79.4	81.8	82.6	83.3	112.8	92.7	84.5	90.4	92.0	90.9	82.6
MEAN	2.68	2.65	2.64	2.66	2.98	3.64	3.09	2.73	3.01	2.97	2.93	2.75
MAX	2.9	2.8	2.7	2.9	3.2	6.9	3.4	2.9	3.4	5.3	5.7	3.2
MIN	2.6	2.6	2.6	2.6	2.6	3.2	2.8	2.6	2.8	2.5	2.7	2.6
AC=FT	165	157	162	164	165	224	184	168	179	182	180	164

CAL YR 1977 TOTAL 1026.2 MEAN 2.81 MAX 4.4 MIN 2.0 AC=FT 2040  
WTR YR 1978 TOTAL 1056.0 MEAN 2.89 MAX 6.9 MIN 2.5 AC=FT 2090

09443000 SAN FRANCISCO RIVER NEAR ALMA, NM

LOCATION.--Lat 33°22'05", long 108°54'35", in SW¼SE¼ sec.4, T.11 S., R.20 W., Catron County, Hydrologic Unit 15040004, on right bank 1.2 mi (1.9 km) downstream from Alma, 4 mi (6 km) northwest of Glenwood, 6 mi (10 km) upstream from Whitewater Creek, and at mile 523.5 (842.3 km).

DRAINAGE AREA.--1,546 mi<sup>2</sup> (4,004 km<sup>2</sup>).

PERIOD OF RECORD.--September 1904 to January 1914, fragmentary (see WSP 1313), January 1964 to current year. Prior to October 1911, published as "at Alma".

GAGE.--Water-stage recorder. Altitude of gage is 4,842 ft (1,476 m), from topographic map. Prior to Aug. 11, 1912, nonrecording gages at various sites, within 500 ft (150 m) of each other, 0.8 mi (1.3 km) upstream, at different datums. Aug. 11, 1912, to Feb. 2, 1914, nonrecording gage at approximately present site and datum. Jan. 10, 1964 to Nov. 1, 1972, at datum 3.00 ft (0.91 m) higher.

REMARKS.--Records good. Diversions for irrigation of about 1,600 acres (6.5 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years (water years 1965-77), 64.6 ft<sup>3</sup>/s (1.829 m<sup>3</sup>/s), 46,800 acre-ft/yr (57.7 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,600 ft<sup>3</sup>/s (867 m<sup>3</sup>/s) Oct. 20, 1972, gage height, 18.16 ft (5.535 m), present datum, from floodmarks in well, from rating curve extended above 3,500 ft<sup>3</sup>/s (99.1 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Major floods probably occurred Jan. 19 and Oct. 14, 1916, when discharges of 60,000 ft<sup>3</sup>/s (1,700 m<sup>3</sup>/s) or greater were computed at Clifton, AZ.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)	Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
June 22	1630	1,010 28.6	4.48 1.366	Sept. 4	0230	1,560 44.2	4.83 1.472
Aug. 13	Unknown	*4,940 140	6.74 2.054				

No flow for many days.

REVISIONS.--Revised figures of discharge for the water year 1977, superseding those published in the report for 1977 are given herein.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD OCTOBER 1976 TO DECEMBER 1976  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	3.2	4.4									
2	1.9	3.2	4.6									
3	.86	3.2	5.7									
4	.62	2.9	6.0									
5	.56	2.9	7.2									
6	.45	2.6	7.9									
7	.50	2.6	7.9									
8	.50	2.6	7.9									
9	.56	2.9	8.3									
10	.56	2.9	7.9									
11	.56	3.2	7.9									
12	.56	3.9	7.9									
13	.86	4.6	7.9									
14	1.2	4.9	7.6									
15	.94	4.6	7.6									
16	.86	4.6	7.6									
17	.78	6.0	7.6									
18	.78	6.4	7.9									
19	.78	6.4	7.9									
20	.78	6.4	8.7									
21	.78	6.4	8.7									
22	.70	5.7	7.9									
23	.78	5.7	7.6									
24	1.2	5.7	7.2									
25	1.3	5.7	6.4									
26	1.5	6.0	5.7									
27	2.4	7.2	5.3									
28	2.9	5.7	6.8									
29	2.6	4.2	7.2									
30	2.4	3.9	8.3									
31	2.9	---	9.8									
TOTAL	36.07	136.2	227.3									
MEAN	1.16	4.54	7.33									
MAX	2.9	7.2	9.8									
MIN	.45	2.6	4.4									
AC-FT	72	270	451									
CAL YR 1976	TOTAL	6867.06	MEAN 18.8	MAX 1150	MIN .11	AC-FT 13620						
WTR YR 1977	TOTAL	4612.47	MEAN 12.6	MAX 275	MIN .00	AC-FT 9150						

## 09443000 SAN FRANCISCO RIVER NEAR ALMA, NM

LOCATION.--Lat 33°22'05", long 108°54'35", in SW¼SE¼ sec.4, T.11 S., R.20 W., Catron County, Hydrologic Unit 15040004, on right bank 1.2 mi (1.9 km) downstream from Alma, 4 mi (6 km) northwest of Glenwood, 6 mi (10 km) upstream from Whitewater Creek, and at mile 523.5 (842.3 km).

DRAINAGE AREA.--1,546 mi<sup>2</sup> (4,004 km<sup>2</sup>).

PERIOD OF RECORD.--September 1904 to January 1914, fragmentary (see WSP 1313), January 1964 to current year. Prior to October 1911, published as "at Alma".

GAGE.--Water-stage recorder. Altitude of gage is 4,842 ft (1,476 m), from topographic map. Prior to Aug. 11, 1912, nonrecording gages at various sites, within 500 ft (150 m) of each other, 0.8 mi (1.3 km) upstream, at different datums. Aug. 11, 1912, to Feb. 2, 1914, nonrecording gage at approximately present site and datum. Jan. 10, 1964 to Nov. 1, 1972, at datum 3.00 ft (0.91 m) higher.

REMARKS.--Records good. Diversions for irrigation of about 1,600 acres (6.5 km<sup>2</sup>) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years (water years 1965-78), 63.2 ft<sup>3</sup>/s (1.790 m<sup>3</sup>/s), 45,790 acre-ft/yr (56.5 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,600 ft<sup>3</sup>/s (867 m<sup>3</sup>/s) Oct. 20, 1972, gage height, 18.16 ft (5.535 m), present datum, from floodmarks in well, from rating curve extended above 3,500 ft<sup>3</sup>/s (99.1 m<sup>3</sup>/s) on basis of slope-area measurement of peak flow; no flow many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Major floods probably occurred Jan. 19 and Oct. 14, 1916, when discharges of 60,000 ft<sup>3</sup>/s (1,700 m<sup>3</sup>/s) or greater were computed at Clifton, AZ.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft<sup>3</sup>/s (28 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Mar. 2	1500	*4,390 124	8.26 2.518
Aug. 23	1730	1,600 45.3	6.30 1.920

No flow for many days.

DISCHARGE IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	10	7.1	17	427	161	7.7	2.5	1.6	4.5	.60
2	.00	.00	8.7	7.1	16	2630	164	23	2.5	1.4	1.4	.30
3	.00	1.8	8.2	7.1	16	2220	139	23	2.1	1.4	30	2.5
4	.00	6.9	8.2	6.8	15	945	129	24	1.9	1.3	33	.40
5	.00	7.8	8.2	6.8	14	572	113	27	1.9	1.4	13	10
6	.00	29	7.8	7.1	14	545	106	27	2.1	1.4	8.6	1.2
7	.00	30	6.9	6.8	14	394	95	29	2.2	1.3	3.5	.40
8	.00	24	6.9	7.1	14	273	87	27	2.2	1.3	25	.40
9	35	20	6.9	7.1	14	213	84	25	2.2	1.2	13	.30
10	140	18	7.4	7.4	14	187	78	23	2.2	1.2	6.5	.30
11	33	16	7.4	8.3	16	180	70	14	2.2	1.2	2.1	.10
12	24	15	7.4	8.3	19	168	61	5.5	2.1	1.2	14	.10
13	21	15	7.4	8.3	18	168	54	5.3	1.9	1.3	3.9	.10
14	19	14	6.9	8.3	20	159	50	4.5	1.9	1.6	1.9	.00
15	18	14	6.5	9.2	20	151	44	4.3	2.1	1.6	1.6	.00
16	16	12	6.9	9.5	21	137	40	3.7	2.2	1.4	1.4	1.4
17	15	12	6.0	10	21	129	37	3.5	2.1	1.4	1.3	.00
18	14	11	6.9	11	19	129	31	3.5	1.9	1.3	1.3	.70
19	14	11	6.9	11	18	133	27	3.5	1.9	1.3	1.3	1.8
20	13	9.6	5.6	12	18	153	32	3.5	1.8	1.4	1.3	.75
21	13	10	3.8	12	18	189	35	3.5	1.8	1.4	11	.60
22	13	10	3.8	12	18	203	30	3.5	1.8	11	48	1.0
23	12	10	7.4	13	18	228	23	3.3	1.8	1.8	58	1.2
24	8.4	10	6.9	13	11	235	22	3.3	1.6	1.4	19	.80
25	.00	10	6.9	12	11	225	16	3.1	1.6	1.3	31	9.4
26	.00	9.1	6.9	12	11	205	14	2.9	1.6	8.8	24	20
27	.00	9.1	6.9	12	11	195	12	2.9	1.8	2.5	13	12
28	.00	9.1	7.1	11	15	191	12	2.7	2.9	1.3	8.6	8.3
29	.00	9.1	7.8	11	---	180	10	2.5	1.9	1.0	2.9	6.0
30	.00	9.6	7.8	12	---	166	10	2.7	1.8	1.0	7.1	.00
31	.00	---	7.8	14	---	161	---	2.5	---	1.0	1.9	---
TOTAL	408.40	363.10	220.2	300.3	451	12091	1786	319.9	60.5	59.7	393.1	80.65
MEAN	13.2	12.1	7.10	9.69	16.1	390	59.5	10.3	2.02	1.93	12.7	2.69
MAX	140	30	10	14	21	2630	164	29	2.9	11	58	20
MIN	.00	.00	3.8	6.8	11	129	10	2.5	1.6	1.0	1.3	.00
AC-FT	810	720	437	596	895	23980	3540	635	120	118	780	160
CAL YR 1977 TOTAL	5204.60			MEAN 14.3	MAX 275	MIN .00	AC-FT 10320					
WTR YR 1978 TOTAL	16533.85			MEAN 45.3	MAX 2630	MIN .00	AC-FT 32790					

09444000 SAN FRANCISCO RIVER NEAR GLENWOOD, NM

LOCATION.--Lat 33°14'48", long 108°52'47", in NE¼NW¼ sec.23, T.12 S., R.20 W., Catron County, Hydrologic Unit 15040004, on left bank 0.2 mi (0.3 km) upstream from hot springs, 5 mi (8 km) south of Glenwood, 6 mi (10 km) downstream from Whitewater Creek, and at mile 511.5 (823.0 km).

DRAINAGE AREA.--1,653 mi<sup>2</sup> (4,281 km<sup>2</sup>).

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1927 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1213: 1931, 1934, 1936-37, 1940-42, 1943-44(M), 1945-47. WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,560 ft (1,390 m), from topographic map; prior to Feb. 15, 1934, at site 4.5 mi (7.2 km) upstream at datum 98.82 ft (30.120 m) higher.

REMARKS.--Water-discharge records good. Diversions for irrigation of about 2,000 acres (8.1 km<sup>2</sup>) above station. National Weather Service gage height telemeter at station.

AVERAGE DISCHARGE.--50 years, 69.7 ft<sup>3</sup>/s (1.974 m<sup>3</sup>/s), 50,500 acre-ft/yr (62.3 hm<sup>3</sup>/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,100 ft<sup>3</sup>/s (966 m<sup>3</sup>/s) Oct. 20, 1972, gage height, 16.61 ft (5.063 m), from rating curve extended above 22,000 ft<sup>3</sup>/s (623 m<sup>3</sup>/s); minimum, 1.5 ft<sup>3</sup>/s (0.042 m<sup>3</sup>/s) Aug. 6, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Major floods probably occurred Jan. 19 and Oct. 14, 1916 when discharges of 60,000 ft<sup>3</sup>/s (1,700 m<sup>3</sup>/s) or greater were computed for station at Clifton, AZ. On Nov. 26, 1905, a peak of 25,000 ft<sup>3</sup>/s (708 m<sup>3</sup>/s) was measured (by float-area method) at station at Alma (about 12 mi or 19 km upstream, drainage area, 1,560 mi<sup>2</sup> or 4,040 km<sup>2</sup>); a similar measurement of 21,000 ft<sup>3</sup>/s (595 m<sup>3</sup>/s) was made at the Alma station for peak of Dec. 3, 1906.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft<sup>3</sup>/s (23 m<sup>3</sup>/s) and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s) (m <sup>3</sup> /s)	Gage height (ft) (m)
Aug. 13	2215	*1,260 35.7	5.39 1.643
Aug. 17	0600	1,210 34.3	5.23 1.594

Minimum discharge, 13 ft<sup>3</sup>/s (0.37 m<sup>3</sup>/s) Oct. 21, Apr. 10, 20.

REVISIONS.--Revised figures of discharge for the water year 1977, superseding those published in the report for 1977 are given herein.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD OCTOBER 1976 TO DECEMBER 1976  
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	18	23									
2	22	17	22									
3	19	17	22									
4	18	18	22									
5	20	18	24									
6	19	17	25									
7	18	17	26									
8	19	17	26									
9	21	16	27									
10	20	16	27									
11	20	16	26									
12	20	17	26									
13	19	17	26									
14	19	19	26									
15	20	20	26									
16	20	20	26									
17	17	20	26									
18	14	22	27									
19	15	21	27									
20	15	21	27									
21	15	21	26									
22	18	21	26									
23	19	23	26									
24	18	23	25									
25	18	23	24									
26	18	23	24									
27	21	24	24									
28	19	25	24									
29	19	24	25									
30	19	23	26									
31	18	---	26									
TOTAL	581	594	783									
MEAN	18.7	19.8	25.3									
MAX	24	25	27									
MIN	14	16	22									
AC-FT	1150	1180	1550									

CAL YR 1976	TOTAL	14493	MEAN 39.6	MAX 940	MIN 14	AC-FT	28750
WTR YR 1977	TOTAL	11444	MEAN 31.4	MAX 374	MIN 14	AC-FT	22700



LOCATION.--Lat 33°14'48", long 108°52'47", in NE¼NW¼ sec.23, T.12 S., R.20 W., Catron County, Hydrologic Unit 15040004, on left bank, 0.2 mi (0.3 km) upstream from hot springs, 5 mi (8 km) south of Glenwood, 6 mi (10 km) downstream from Whitewater Creek, and at mile 511.5 (823.0 km).

WATER-DISCHARGE RECORDS

EXTREMES OUTSIDE PERIOD OF RECORD.--Major floods probably occurred Jan. 19 and Oct. 14, 1916 when discharges of 60,000 ft<sup>3</sup>/s (1,700 m<sup>3</sup>/s) or greater were computed for station at Clifton, AZ. On Nov. 26, 1905, a peak of 25,000 ft<sup>3</sup>/s (708 m<sup>3</sup>/s) was measured (by float-area method) at station at Alma (about 12 mi or 19 km upstream, drainage area, 1,560 mi<sup>2</sup> or 4,040 km<sup>2</sup>); a similar measurement of 21,000 ft<sup>3</sup>/s (595 m<sup>3</sup>/s) was made at the Alma station for peak of Dec. 3, 1906.

Date	Time	Discharge		Gage height	
		(ft <sup>3</sup> /s)	(m <sup>3</sup> /s)	(ft)	(m)
Mar. 2	1600	*3,750	106	8.35	2.545
July 22	1545	1,380	39.1	5.74	1.750

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	25	25	25	33	502	249	60	31	21	20	28
2	20	24	26	24	34	2870	246	64	29	18	27	42
3	19	24	26	23	33	2750	223	63	29	18	40	26
4	22	24	25	23	33	1080	195	56	32	19	76	25
5	23	25	24	24	32	566	174	57	30	19	57	30
6	31	31	24	24	33	558	160	67	30	17	33	25
7	27	44	23	24	33	461	148	71	29	16	27	23
8	29	39	23	23	33	341	144	69	27	17	30	22
9	25	36	24	23	32	268	137	58	26	16	49	23
10	178	35	24	24	32	250	124	50	27	16	29	22
11	58	34	23	24	33	245	110	57	27	17	25	22
12	39	33	22	24	36	222	104	53	27	17	28	19
13	36	32	22	24	37	224	101	57	26	17	28	16
14	33	31	22	24	39	203	100	67	29	16	24	19
15	31	32	24	25	39	196	100	74	28	15	23	21
16	31	31	22	26	40	174	98	72	26	16	23	20
17	29	30	20	26	40	153	97	60	26	16	21	22
18	29	30	24	26	39	150	87	56	25	15	21	22
19	27	31	24	26	37	162	75	46	23	15	21	21
20	27	29	23	27	36	191	69	42	22	15	22	20
21	26	29	23	28	36	240	77	47	24	15	20	20
22	24	30	22	28	36	275	78	50	23	81	64	20
23	24	30	23	28	36	311	66	47	24	38	71	21
24	23	29	25	27	36	334	61	44	24	30	59	20
25	23	28	24	26	37	311	60	41	24	28	52	20
26	23	28	23	26	37	280	65	39	24	36	56	35
27	22	28	23	27	37	262	73	37	25	32	44	26
28	22	28	22	26	38	254	74	33	31	24	39	28
29	22	28	24	27	---	249	67	32	29	22	35	21
30	25	26	24	26	---	237	61	35	23	20	37	19
31	25	---	25	31	---	234	---	32	---	20	32	---
TOTAL	995	904	728	789	997	14553	3423	1636	800	682	1133	698
MEAN	32.1	30.1	23.5	25.5	35.6	469	114	52.8	26.7	22.0	36.5	23.3
MAX	178	44	26	31	40	2870	249	74	32	81	76	42
MIN	19	24	20	23	32	150	60	32	22	15	20	16
AC-FT	1970	1790	1440	1560	1980	28870	6790	3250	1590	1350	2250	1380
CAL YR 1977	TOTAL	12113	MEAN	33.2	MAX	374	MIN	14	AC-FT	24030		
WTR YR 1978	TOTAL	27338	MEAN	74.9	MAX	2870	MIN	15	AC-FT	54220		

09444000 SAN FRANCISCO RIVER NEAR GLENWOOD, NM -- Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

## CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT								
12...	1155	41	360	7.9	15.0	130	0	38
NOV								
11...	1010	33	354	7.9	8.0	150	0	40
27...	1530	29	335	8.3	15.0	--	--	--
DEC								
12...	1035	22	350	8.0	9.0	300	130	77
JAN								
25...	1020	25	359	8.2	6.0	150	0	41
FEB								
09...	1055	32	443	8.3	12.0	150	0	41
23...	1140	36	442	8.4	12.5	--	--	--
MAR								
07...	1230	480	233	8.3	9.0	98	16	28
27...	1020	262	238	8.2	12.0	--	--	--
APR								
12...	1025	107	305	8.2	14.0	120	0	33
25...	1035	58	268	8.0	17.0	--	--	--
MAY								
11...	1235	57	273	7.9	19.0	--	--	--
24...	1220	48	277	8.0	20.0	90	0	26
JUN								
13...	1410	23	295	8.6	25.0	120	0	33
26...	1325	23	316	8.3	26.0	--	--	--
JUL								
13...	1220	17	345	8.3	26.0	140	--	40
24...	1130	31	350	7.9	23.0	--	--	--
AUG								
07...	1440	26	400	8.3	29.0	140	--	39
25...	1330	52	393	7.8	25.0	--	--	--
SEP								
11...	1425	22	439	8.6	27.0	140	--	39

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT									
12...	9.5	23	.9	2.3	200	0	160	15	5.8
NOV									
11...	11	23	.8	2.2	210	0	170	14	7.7
27...	--	--	--	--	--	--	--	--	--
DEC									
12...	26	63	1.6	2.6	210	0	170	20	12
JAN									
25...	11	22	.8	2.0	210	0	170	13	6.8
FEB									
09...	11	39	1.4	2.5	190	0	160	18	32
23...	--	--	--	--	--	--	--	--	--
MAR									
07...	6.7	17	.8	1.8	99	0	81	47	17
27...	--	--	--	--	--	--	--	--	--
APR									
12...	7.9	21	.9	2.1	150	0	120	18	12
25...	--	--	--	--	--	--	--	--	--
MAY									
11...	--	--	--	--	--	--	--	--	--
24...	6.1	22	1.0	2.0	120	0	98	12	19
JUN									
13...	8.6	19	.8	2.2	160	6	140	13	6.0
26...	--	--	--	--	--	--	--	--	--
JUL									
13...	10	21	.8	2.4	--	--	160	14	6.9
24...	--	--	--	--	--	--	--	--	--
AUG									
07...	9.2	33	1.2	3.7	--	--	150	15	29
25...	--	--	--	--	--	--	--	--	--
SEP									
11...	10	40	1.5	3.7	--	--	160	15	38

## GILA RIVER BASIN

09444000 SAN FRANCISCO RIVER NEAR GLENWOOD, NM--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 12...	.4	32	--	226	.18	.02	30	110
NOV 11...	.4	36	--	239	.29	.02	30	10
27...	--	--	--	--	--	--	--	--
DEC 12...	.4	36	--	342	.30	.03	30	20
JAN 25...	.4	35	--	237	.36	.06	30	10
FEB 09...	.5	37	--	276	.32	.03	50	10
23...	--	--	--	--	--	--	--	--
MAR 07...	.2	29	--	197	.14	.11	50	40
27...	--	--	--	--	--	--	--	--
APR 12...	.3	32	--	201	.21	.08	20	10
25...	--	--	--	--	--	--	--	--
MAY 11...	--	--	--	--	--	--	--	--
24...	.3	31	173	178	.02	.05	20	0
JUN 13...	.4	33	--	200	.03	.03	20	30
26...	--	--	--	--	--	--	--	--
JUL 13...	.4	34	--	225	.10	.03	20	30
24...	--	--	--	--	--	--	--	--
AUG 07...	.5	40	--	259	.34	.01	40	<10
25...	--	--	--	--	--	--	--	--
SEP 11...	.5	38	283	280	.13	.03	80	10

INSTANTANEOUS SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70334)
OCT 12...	1155	41	15.0	208	23	--	--	--	--	--	--	--
27...	1115	23	14.0	10	.62	--	--	--	--	--	--	--
NOV 11...	1010	33	8.0	37	2.2	--	--	--	--	--	--	--
27...	1530	29	15.0	25	2.0	--	--	--	--	--	--	--
DEC 12...	1035	22	9.0	52	3.1	--	--	--	--	--	--	--
JAN 25...	1020	25	6.0	7	.47	--	--	--	--	--	--	--
FEB 09...	1055	32	12.0	19	1.6	--	--	--	--	--	--	--
23...	1140	36	12.5	31	3.0	--	--	--	--	--	--	--
MAR 07...	1230	480	9.0	809	1050	--	--	--	55	--	--	--
27...	1020	262	12.0	388	274	--	--	--	--	--	--	--
APR 12...	1025	107	14.0	41	12	--	--	--	--	--	--	--
25...	1035	58	17.0	38	6.0	--	--	--	--	--	--	--
MAY 11...	1235	57	19.0	60	9.2	--	--	--	--	--	--	--
24...	1220	48	20.0	18	2.3	--	--	--	--	--	--	--
JUN 13...	1410	23	25.0	11	.68	--	--	--	--	--	--	--
26...	1325	23	26.0	12	.75	--	--	--	--	--	--	--
JUL 13...	1220	17	26.0	13	.60	--	--	--	--	--	--	--
24...	1130	31	23.0	246	21	--	--	--	--	--	--	--
AUG 07...	1440	26	29.0	173	12	--	--	--	--	--	--	--
25...	1330	52	25.0	1820	256	49	70	87	94	96	99	100
SEP 11...	1425	22	27.0	24	1.4	--	--	--	--	--	--	--
28...	1335	28	24.0	190	14	--	--	--	--	--	--	--

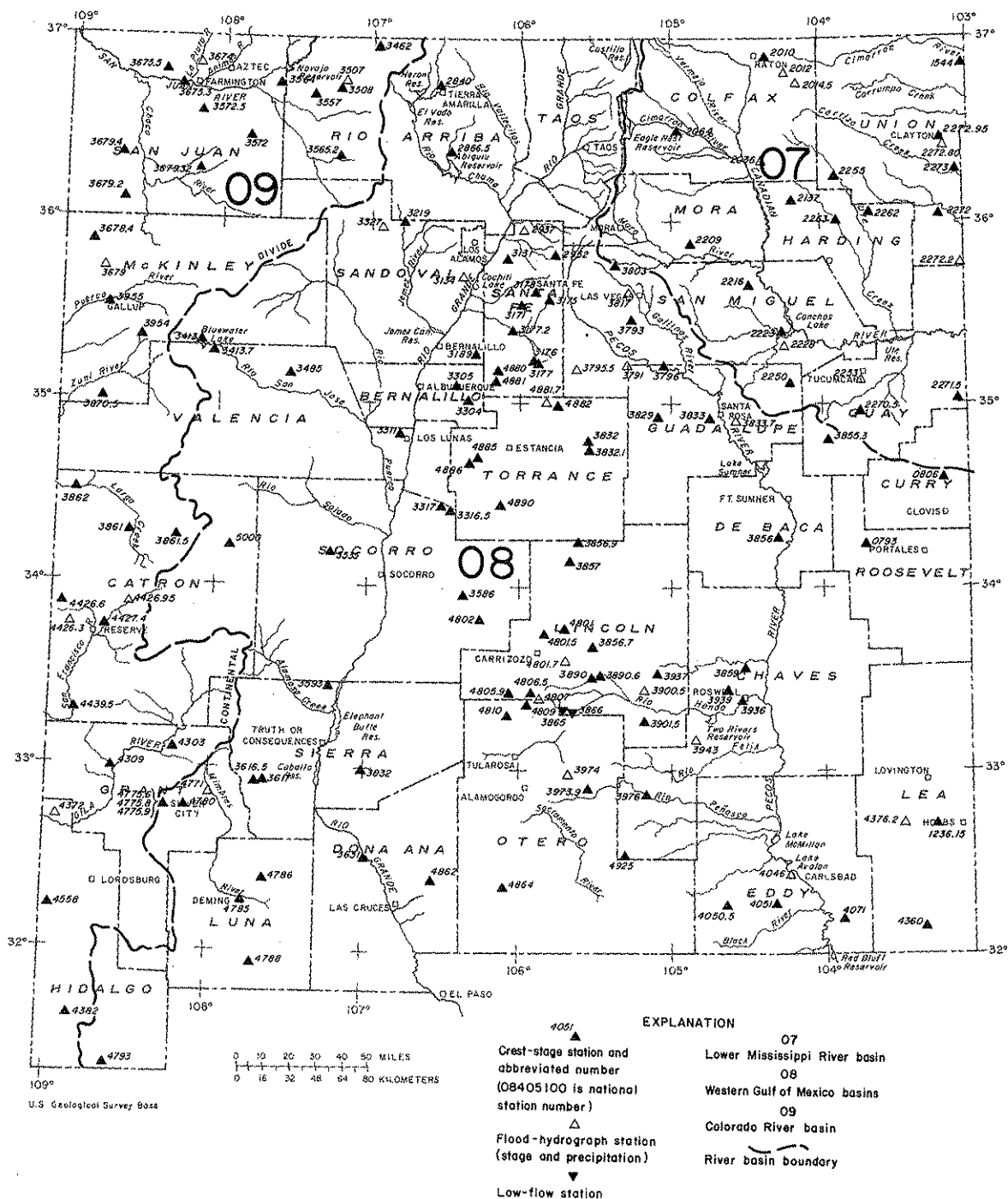


Figure 5.—Map of New Mexico showing location of partial-record stations.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

#### Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of a stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1978

Station No.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
Rio Grande basin						
08386500	Rio Ruidoso near Ruidoso, NM	Lat 33°20'11", long 105°43'31", in NW¼SW¼SW¼ sec.19, T.11 S., R.13 E., Lincoln County at Mescalero Apache Indian Reservation boundary, 3.0 miles (4.8 km) west of Ruidoso.	17.2	1953-78	10-31-77	2.9
					2-07-78	1.9
					3-30-78	59
					5-31-78	24
					7-03-78	2.9
					8-01-78	2.6
					8-30-78	8.5
					9-28-78	36
08386600	Carrizo Creek at Ruidoso, NM	Lat 33°19'27", long 105°30'13", in SW¼NW¼SW¼ sec.26, T.11 S., R.13 E., Lincoln County, at mouth, at Ruidoso.	24.2	1908-09	10-31-77	4.4
					2-07-78	3.6
				1953-78	3-30-78	18
					5-31-78	4.9
					7-03-78	3.7
					7-31-78	4.3
					8-30-78	4.6
					9-28-78	5.0

## Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. An S under the station number indicates that a complete hydrograph of flow events and precipitation data are recorded. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each year is given. Information on some lower floods may have been obtained, and discharge measurements made for purposes of establishing the stage-discharge relation, but these are not published herein. The year given in the period of record column represents the first year of a period extending through the current year unless otherwise noted. For some stations, publication of discharge is delayed pending definition of stage-discharge relationship. Published maximums are for water years.

## Annual maximum discharge at crest-stage partial-record stations

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Arkansas River Basin							
07154400	Carrizozo Creek near Kenton, Okla.	Lat 36°52'55", long 103°01'05", Union County, under bridge on New Mexico State Highway 18, 4 miles southwest of Kenton.	111	1953-	06-10-78	6.01	2,200
07201000	Raton Creek at Raton, N. Mex.	Lat 36°55'38", long 104°26'22", Colfax County, 60 ft above bridge on State Highway 72 at Raton.	14.4	1953-	- -78	(e)	-
07201200 S	Chicorica Creek tributary near Raton, N. Mex.	Lat 36°49'41", long 104°19'58", Colfax County, upstream from culvert on U.S. Highway 64-87, 7.7 miles southeast of Raton.	5.18	1971-	08-29-78	4.77	34
07201450 S	Green Mountain Arroyo near Raton, N. Mex.	Lat 36°47'00", long 104°15'42", Colfax County, about 1,500 feet upstream from bridge on U.S. Highway 64-87 12.8 miles southeast of Raton.	18.2	1971-	08-29-78	6.58	421
07203600 S	Rio del Plano tributary near Taylor Springs, N. Mex.	Lat 36°26'59", long 104°22'34", Colfax County, 1.7 miles south of Sauble Ranch, 11.0 miles northeast of Taylor Springs.	6.71	1971-	06-27-78	6.70	56
07206400	Clear Creek near Ute Park, N. Mex.	Lat 36°31'35", long 105°10'30", Colfax County, Maxwell Grant, 0.25 mile upstream from mouth, and 4 miles southwest of Ute Park.	7.44	1962-67# 1968	- -78	(e)	-
07213700	Canadian River tributary near Mills, N. Mex.	Lat 36°10'00", long 104°15'47", Harding County, on downstream end of left bridge abutment on State Highway 39, 6 miles north of Mills.	44.2	1954-	- -78	-	0
07220900	Dog Creek near Shoemaker, N. Mex.	Lat 36°49'32", long 104°53'28", Mora County, 0.5 mile above Valmora-Shoemaker road, and 1.8 miles northwest of Shoemaker.	18.4	1954-	- -78	6.46	166
07221600	Lagartija Creek tributary near Sanchez, N. Mex.	Lat 35°39'21", long 104°24'57" San Miguel County, at bridge on State Highway 65, 0.9 mile northeast of Sanchez.	41	1961-	07-19-78	2.83	(+)

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Arkansas River Basin - Concluded							
07222300	Trementina Creek at Trementina, N. Mex.	Lat 35°29'28", long 104°24'59", San Miguel County, at bridge on State Highway 65, at Trementina.	a65	1959-	05-02-78	4.08	550
07222800	Garita Creek tributary near Variadero, N. Mex.	Lat 35°20'10", long 104°21'50", San Miguel County, 1.2 miles upstream from mouth, 6.3 miles southeast of Variadero.	a12	1971-	- -78	(e)	-
07225000	Pajarito Creek at Newkirk, N. Mex.	Lat 35°04'20", long 104°14'50" Guadalupe County, downstream side of bridge on U.S. Highway 66, 1 mile east of Newkirk.	55.0	1954-	06-28-78	3.67	790
07225300 S	Bluewater Creek near Tucumcari, N. Mex.	Lat 35°08'31", long 103°47'32", Quay County, in Tucumcari Metropolitan Park, 1,600 feet north of the park's southern boundary, and 4.8 miles southwest of Tucumcari.	15.2	1971-	05-02-78	7.75	(+)
07226200	Bueyeros Creek at Bueyeros, N. Mex.	Lat 35°58'10", long 103°41'05", in E½ sec.7, T.20 N., R.31 E., Harding County, on right upstream wingwall of culvert on State Road 102 at Bueyeros.	a34	1957-	06-28-78	3.57	(+)
07226300	Carrizo Creek near Roy, N. Mex.	Lat 36°02'58", long 103°57'48", Harding County, 800 ft below State Highway 120, and 15 miles northeast of Roy.	a68	1954-	05-02-78	4.97	690
07227050	Plaza Larga Creek tributary near Ragland, N. Mex.	Lat 34°48'29", long 103°45'35", Quay County, at culvert on State Highway 18, 1.2 miles northwest of Ragland.	.36	1952-	- -78	-	0
07227150	Arroyo del Puerto near Endee, N. Mex.	Lat 35°03'32", long 103°06'04", Quay County, at bridge on State Highway 93, 5.4 miles south of Endee.	a25	1961-	06-04-78	7.48	(+)
07227200	Tramperos Creek near Stead, N. Mex.	Lat 36°04'15", long 103°12'10", in NW¼NW¼ sec.10, T.21 N., R.35 E., Union County, at bridge on State Highway 18, 2.1 miles south of Stead and 26 miles south Clayton.	a556	1966-73* 1974-	06-28-78	7.03	955
07227220 S	Fullingim Draw, near Nara Visa, N. Mex.	Lat 35°45'50", long 103°07'30", Union County upstream from culvert on State Highway 18, 11.3 miles north of Nara Visa.	15.1	1971-	- -78	5.11	(+)
07227295	Sand Draw tributary near Clayton, N. Mex.	Lat 36°23'20", long 103°19'05", Union County, above culvert on State Highway 58, 8 miles southwest of Clayton.	1.25	1952-	05-23-78	1.64	64
07227300	Sand Draw near Clayton, N. Mex.	Lat 36°20'30", long 103°11'30", Union County, on downstream side of bridge on State Highway 18, 7.5 miles south of Clayton.	a42	1953-	05-23-78	3.84	(+)

## Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum			
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)	
Brazos River basin								
08079300	Blackwater Draw tributary near Floyd, N. Mex.	Lat 34°14'52", long 103°44'51", Roosevelt County, 0.5 mile below section road and 10 miles west of Floyd.	10	1963-	05-02-78	0.35	(+)	
08080600	Running Water Draw near Clovis, N. Mex.	Lat 34°31'55", long 103°12'05", Curry County, 0.25 mile upstream from Highway 18 and 8 miles north of Clovis.	109	1953-56 1957-64* 1965-	05-02-78	1.45	<100	
08123615	Monument Draw near Monument, N. Mex.	Lat 32°41'48", long 103°16'10", SW¼SE¼ sec.32, T.18 S., R.37 E., Lea County upstream from culvert on U.S. Highway 62-180, 8 miles west of Hobbs, and 5 miles north of Monument.	17.2	1975-	- -78	1.80	(+)	
Rio Grande basin								
08284000	Rito de Tierra Amarilla at Tierra Amarilla, N. Mex.	Lat 36°41'55", long 106°33'25", Rio Arriba County, 400 ft below culvert on U.S. Highway 84, at Tierra Amarilla.	49.7	1957-	- -78	(b)	<150	
08286650	Canjilon Creek above Abiquiu Reservoir, N. Mex.	Lat 36°18'55", long 106°29'05", Rio Arriba County, in Piedra Lumbre Grant, 300 ft upstream from bridge on U.S. Highway 84, 0.2 mile northwest of entrance to Ghost Ranch and about 12 miles northwest of Abiquiu.	144	1965-	- -78	3.26	(+)	
08293700 S	Arroyo Seco tributary near Pojoaque, N. Mex.	Lat 35°56'33", long 106°01'12", Santa Fe County, upstream from culvert on U.S. Highway 64-84-285, 3.5 miles north of Pojoaque.	.72	1971-	06-09-79	6.62	119	
08295200	Rio en Medio near Santa Fe, N. Mex.	Lat 35°47'30", long 105°47'38", Santa Fe County, in Santa Fe National Forest, on right bank 300 feet east of Santa Fe Ski Basin parking area, and 10.8 miles northeast of Santa Fe.		1963-73* 1974-	- -78	1.00	4	
08313400 S	Bland Canyon near Cochiti Pueblo, N. Mex.	Lat 35°42'11", long 106°24'56", Sandoval County, 200 ft south of Forest Service Road, 0.3 mile inside Santa Fe National Forest, 7.5 miles north of Cochiti.	7.57	1962-	08-30-78	2.25	25	
08317500	Galisteo Creek at Canoncito, N. Mex.	Lat 35°33'02", long 105°49'20", Santa Fe County, above railroad bridge, 0.2 mile above Apache Canyon at Canoncito.	11.3	1955-56 1959-	- -78	(b)	<300	
08317600	San Cristobal Arroyo near Galisteo, N. Mex.	Lat 35°22'55", long 105°51'05", Santa Fe County, at bridge on U.S. Highway 285, 5.5 miles east of Galisteo.	116	1955-	- -78	3.81	.330	



## Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (ft <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Rio Grande basin - Continued							
08317800	Tarhole Canyon near Galisteo N. Mex.	Lat 35°21'55", long 105°50'40", Santa Fe County, at culvert on U.S. Highway 285, 6 miles southeast of Galisteo.	2.15	1952-	07-23-78	16.62	560
08317720	Canada de la Cueva near Galisteo, N. Mex.	Lat 35°26'13", long 106°00'45", Santa Fe County, 6.4 miles east of Cerrillos and 4.8 miles northwest of Galisteo.	1.79	1970-	- -78	(e)	-
08317800	Canada de las Minas tributary near Santa Fe, N. Mex.	Lat 35°36'27", long 105°54'42", Santa Fe County, at culvert on U.S. Highway 84, 85 and 285, 1.3 miles northeast of Seton Village, and 5.7 miles south of Santa Fe.	.56	1952-78g	- -78	(e)	-
08318900	San Pedro Creek near Golden, N. Mex.	Lat 36°13'45", long 106°18'00", Sandoval County, 1 mile below bridge on State Highway 10 and 5.5 miles southwest of Golden.	45.2	1953-	07-23-78	1.03	720
08321900	Rio de las Vacas near Senorita, N. Mex.	Lat 35°59'35", long 106°47'45", Sandoval County, at bridge on side road, 0.1 mile south of State Highway 126 and 6.5 miles east of Senorita.	26.8	1957-	06-29-78	3.78	245
08330400	Juan Toro Canyon near Miera, N. Mex.	Lat 35°00'57", long 106°20'14", Bernalillo County, 150 ft east of State Highway 10, 1 mile southeast of Cedro, and 4.5 miles northwest of Miera.	1.57	1959-	- -78	-	0
08330500	Tijeras Arroyo at Albuquerque, N. Mex.	Lat 35°03'40", long 106°28'40", Bernalillo County, 300 ft south of U.S. Highway 66 and 0.4 mile southeast of city limits of Albuquerque.	75.3	1943-48* 1958-	06-29-78	3.96	2,600
08331100	Belen Highline Canal tributary near Los Lunas, N. Mex.	Lat 34°49'20", long 106°49'10", Valencia County, above culvert on Highway 6, 5.0 miles west of Los Lunas.	.16	1952-53 1955-	08-20-78	4.55	138
08331650	Canada Montoso near Scholle, N. Mex.	Lat 34°23'11", long 106°28'37", County, 130 ft upstream from dip on abandoned highway, 500 ft upstream from bridge on U.S. Highway 60, 3.6 miles southwest of Scholle.	a35	1961-	09-03-78	3.99	1,530
08331700	Abo Arroyo tributary near Scholle, N. Mex.	Lat 34°24'10", long 106°30'35", Socorro County, at culvert on U.S. Highway 60, 2.5 miles south-east of junction of U.S. Highway 60, and State Highway 6, southwest of Scholle.	.23	1954-	- -78	-	0

## Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Rio Grande basin - Continued							
08332700 S	San Pablo Creek near Cuba, N. Mex.	Lat 35°56'55", long 106°56'44", Sandoval County, upstream from bridge on old section of State Highway 44 and 5.6 miles south of Cuba.	12.8	1970-78g	09-19-78	2.67	(+)
08341300	Bluewater Creek above Bluewater Dam, near Bluewater, N. Mex.	Lat 35°15'35", long 108°07'05", Valencia County, 2.3 miles south of Bluewater Dam, and 8 miles west of Bluewater.	a75	1953-78g	- -78	(e)	-
08341370	Pine Canyon near Thoreau, N. Mex.	Lat 35°18'34", long 108°10'14", McKinley County, about 1 mile southwest of the north end of Bluewater Lake and about 7 miles southeast of Thoreau.	6.09	1969-	- -78	-	0
08348500	Encinal Creek near Casa Blanca, N. Mex.	Lat 35°08'35", long 107°27'55", Valencia County, 1.8 miles north of village of Encinal and 6.8 miles north of Casa Blanca.	6.19	1937-39* 1959-	08-22-78	2.90	137
08353500	La Jencia Creek near Magdalena, N. Mex.	Lat 34°09'45", long 107°12'35", Socorro County, 3.5 miles northeast of Magdalena.	195	1957-	08-19-78	4.70	2,500
08358600	Chupadera Wash tributary at Bingham, N. Mex.	Lat 33°51'39", long 106°22'06", Socorro County, 75 ft upstream from culvert on U.S. Highway 380, 0.1 mile west of Bingham.	1.29	1961	05-02-78	1.30	<100
08359300	San Jose Arroyo near Monticello, N. Mex.	Lat 33°28'05", long 107°14'30", Sierra County, at head of box canyon just below major tributary, 800 ft below culvert on U.S. Highway 85, 13 miles Northeast of Monticello.	26.9	1959-	- -78	-	0
08361650	Percha Creek near Kingston, N. Mex.	Lat 32°55'05", long 107°38'55", Sierra County, at bridge on State Highway 180, 3.3 miles east of Kingston.	21.5	1953-	06-29-78	5.14	700
08361700	Percha Creek near Hillsboro, N. Mex.	Lat 32°54'55", long 107°36'05", Sierra County, 150 ft south of State Highway 180, and 2 miles west of Hillsboro.	35.4	1957-	06-29-78	3.19	520
08363100	Rio Grande tributary near Radium Springs, N. Mex.	Lat 32°30'05", long 106°57'05", Dona Ana County, above culvert on U.S. Highway 85, 120 ft above mouth, and 1.4 miles west of Radium Springs.	.40	1955-	- -78	6.90	240
08363200	Aleman Draw at Aleman, N. Mex.	Lat 33°00'00", long 107°00'20", Sierra County, on Santa Fe Railroad bridge, 140 ft above dip on Engle-Rincon road, and 0.26 mile west of Aleman.	25.5	1959-	08-20-78	7.26	2,350

## Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Rio Grande basin - Continued							
08379100 S	Pecos River tributary near Sena, N. Mex.	Lat 35°18'37", long 105°23'37", San Miguel County, upstream from culvert on State Highway 3, 0.8 mile north of Sena.	1.24	1971-	07-22-78	8.15	(+)
08379300	Tecolote Creek at Tecolote, N. Mex.	Lat 35°27'20", long 105°16'55", San Miguel County, on bridge on U.S. Highway 85 at Tecolote.	122	1954-	- -78	5.41	510
08379550 S	Cañon Blanco near Leyba, N. Mex.	Lat 35°13'14", long 105°40'12", San Miguel County, 0.2 mile south of White Lakes-Leyba road and 5.0 miles west of Leyba.	11.2	1971-	08-04-78	11.04d	(+)
08379600	Pecos River tributary near Dilia, N. Mex.	Lat 35°12'50", long 105°04'50", Guadalupe County, above culvert on U.S. Highway 84, and 1.7 miles northwest of Dilia.	.16	1952-	- -78	-	0
08380300	Sandoval Canyon at Gallinas, N. Mex.	Lat 35°41'19", long 105°21'17", San Miguel County, about 500 ft upstream from culvert on State Highway 65, at north edge of Gallinas.	7.6	1957 1961-	- -78	(b)	< 7
08382900	Pecos River tributary near Pintada, N. Mex.	Lat 34°58'06", long 105°05'38", Guadalupe County, in Anton Chico Grant, 1,500 ft south of U.S. Highway 66, 6.8 miles north of Pintada.	.16	1961-	- -78	-	0
08383200	Pintada Arroyo tributary near Clines Corners, N. Mex.	Lat 34°50'40", long 105°35'05", Torrance County, above culvert on U.S. Highway 285, 12.2 miles south of Clines Corners.	29.2	1952-78g	- -78	(e)	-
08383210	Pintada Arroyo tributary near Encino, N. Mex.	Lat 34°48'40", long 105°34'00", Torrance County, above culvert on U.S. Highway 285, 0.1 mile south of ranch road, and 12.5 miles northwest of Encino.	a1	1959-	- -78	1.66	72
08383300	Pintada Arroyo near Santa Rosa, N. Mex.	Lat 34°53'20", long 104°43'50", Guadalupe County, at bridge on U.S. Highway 54, and 4.5 miles southwest of Santa Rosa.	896	1959-	06-28-78	4.41	(+)
08383370 S	Pecos River tributary near Puerto de Luna, N. Mex.	Lat 34°52'35", long 104°38'16", Guadalupe County, 25 ft upstream from culvert on State Highway 91, 3.1 miles north of Puerto de Luna.	.37	1961-	06-04-78	7.19	68

## Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Rio Grande basin - Continued							
08385530	Alamosa Creek tributary near Jordan, N. Mex.	Lat 34°47'44", long 103°58'07", Quay County, 500 ft upstream from dip on State Highway 156, 6.9 miles west of Jordon.	9.71	1962-	- -78	-	0
08385600	Yeso Creek near Fort Sumner, N. Mex.	Lat 34°16'32", long 104°17'28", De Baca County, at abandoned bridge 1 mile downstream from State Highway 20, and 14.5 miles south of Fort Sumner.	242	1937-1952-	- -78	(b)	(+)
08385670	Aragon Creek tributary near Encinoso, N. Mex.	Lat 33°43'35", long 105°31'43", Lincoln County, 0.3 mile upstream from wooden bridge on dirt road, 1.2 miles north of State Highway 48, 4.3 miles west of Encinoso.	6.07	1961-	- -78	(b)	(+)
08385690	Bonita Canyon tributary near Corona, N. Mex.	Lat 34°14'04", long 105°37'12", Lincoln County, above culvert on U.S. Highway 54, and 1.8 miles southwest of Corona.	a.6	1959-	- -78	(b)	(+)
08385700	Cloud Canyon tributary near Gallinas, N. Mex.	Lat 34°07'53", long 105°40'57", Lincoln County, above culvert on U.S. Highway 54, and 2.0 miles southwest of Gallinas.	a10	1957-	- -78	(b)	<25
08385900	Salt Creek tributary near Roswell, N. Mex.	Lat 33°32'22", long 104°31'08", Chavez County, at culvert on U.S. Highway 285, 4.7 miles north of junction of U.S. Highway 70 and 285, and 10 miles north of Roswell.	.04	1952-	06-27-78	3.43	(+)
08389000	Rio Bonito near Fort Stanton, N. Mex.	Lat 33°31'05", long 105°29'10", Lincoln County, at bridge on U.S. Highway 380, 2.5 miles northeast of Fort Stanton.	a85	1955-	08-08-78	3.74	200
08389060	Rio Bonito tributary near Fort Stanton, N. Mex.	Lat 33°31'15", long 105°28'05", Lincoln County, at culvert on U.S. Highway 380, 150 ft above mouth, and 3.5 miles northeast of Fort Stanton.	.72	1955-	- -78	(b)	(+)
08390050 S	Rio Hondo tributary at Tinnie, N. Mex.	Lat 33°22'36", long 105°13'01", Lincoln County, upstream from culvert on U.S. Highway 70-380, 0.5 mile east of junction of U.S. Highway 70-380 and State Highway 368, and at Tinnie.	.23	1971-	06-28-78	5.14	23c
08390150	Gallo Canyon near Picacho, N. Mex.	Lat 33°17'23", long 105°10'49", Lincoln County, 500 ft east of road, 5 miles south of Arabela.	1.32	1962-	- -78	(b)	<70

## Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Rio Grande basin - Continued							
08393600	North Spring River at Roswell, N. Mex.	Lat 33°23'47", long 105°32'53", Chavez County, Roswell Municipal Golf Course, 2,400 ft upstream from Montana Ave. in Roswell.	19.5	1958-	- -78	(b)	(+)
08393700	Pancho Canyon near Arabela, N. Mex.	Lat 33°30'36", long 105°11'38", Lincoln County, 200 ft downstream from dip on State Highway 368, 5.6 miles south of Arabela.	16.7	1962-	- -78	(b)	(+)
08393900	Eight Mile Draw near Roswell, N. Mex.	Lat 33°24'05", long 104°37'54", Chavez County, 6.5 miles west of Roswell.	397	1941-1952-	- -78	(b)	<10
08394300 S	Twin Butte Canyon tributary near Roswell, N. Mex.	Lat 33°10'34", long 104°51'30", Chavez County, about 0.1 mile upstream from mouth and about 22 miles southwest of Roswell.	5.01	1968-	06-27-78	4.73	920
08397390	Curtis Canyon Mayhill, N. Mex.	Lat 32°51'52", long 105°31'05", Otero County, 0.26 mile above SCS dam, 0.4 mile west of State Highway 130, and 2.5 miles southwest of Mayhill.	10.3	1959-	- -78	(b)	(+)
08397400 S	Hyatt Canyon near Cloudcroft, N. Mex.	Lat 32°56'06", long 105°37'37", Otero County, 0.5 mile south of State Highway 83, and 7 miles east of Cloudcroft.	3.08	1953-	08-20-78	2.10	(+)
08397600	Rio Penasco near Dunken, N. Mex.	Lat 33°52'55", long 105°10'40", Chavez County, on bridge on State Highway 24, 5 miles north of Dunken.	583	1952-56 1956-62* 1963-	06-06-78	7.09	400
08405050	Last Chance Canyon tributary near Carlsbad Caverns, N. Mex.	Lat 32°17'30", long 104°36'20", Eddy County, above culvert on State Highway 137, 0.1 mile north of road to Sitting Bull Falls, and 12.5 miles northwest of Carlsbad Caverns.	.2	1959-	09-25-78	3.52	182
08405100	Mosley Canyon White City, N. Mex.	Lat 32°15'27", long 104°22'43", Eddy County, 600 ft below dip on Dark Canyon Road, and 5.5 miles north of White City.	14.6	1959-	09-25-78	5.17	(+)
08407100	Pierce Canyon near Malaga, N. Mex.	Lat 32°11'24", long 103°57'41", SW¼NW¼, Sec.26, T.24 S., R.29 E., Eddy County, about 1 mile east of the Pierce Canyon crossing on the Pecos River, 8 miles east of Malaga.	8.55	1975-78g	- -78	(e)	-
08436000	Antelope Draw near Jal, N. Mex.	Lat 32°09'18", long 103°21'51", Lea County, 0.4 mile south of State Highway 128, and 10.7 miles west of Jal.	a20	1963-	- -78	(b)	(+)

## Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Rio Grande basin - Concluded							
08437620 S	Monument Draw tributary near Monument, N. Mex.	Lat 32°39'44", long 103°27'16", Lea County, upstream from culvert on U.S. Highway 62-180, about 12 miles northwest of Monument and 19.5 miles west of Hobbs.	6.23	1968-	06-05-78	5.81	(+)
Mimbres River basin							
08477100 S	Willow Springs Canyon at Mimbres, N. Mex.	Lat 32°51'20", long 107°58'35", Grant County, about 600 ft downstream from State Road 61, 0.2 mile north of post office in Mimbres.	3.84	1970-	- -78	(b)	(+)
08477560	Little Walnut Creek near Silver City, N. Mex.	Lat 32°48'20", long 108°17'35", Grant County, 85 ft above dip on Bear Mountain Road, and 2 miles north of Silver City.	5.10	1959-	- -78	-	0
08477580	Silva Creek at Silver City, N. Mex.	Lat 32°46'41", long 108°16'41", Grant County, 190 ft above Twelfth Street bridge at Silver City.	10.0	1958-	- -78	2.22	215
08477590	Pinos Altos Creek at Silver City, N. Mex.	Lat 32°46'52", long 108°16'04", Grant County, 2 blocks below U.S. Highway 260 at Silver City.	4.63	1958-	- 78	-	0
08478000	Cameron Creek at Central, N. Mex.	Lat 32°47'38", long 108°08'58", Grant County, 0.5 mile above culvert on U.S. Highway 260, at north edge of Central.	18.8	1954-	08-19-78	2.05	275
08478500	Mimbres River at Deming, N. Mex.	Lat 32°17'00", long 107°45'35", Luna County, at bridge on U.S. Highway 260, at north end of Deming.	1,370	1954-	03-05-78	2.49	705
08478600	Mimbres basin tributary near Florida, N. Mex.	Lat 32°21'25", long 107°37'35", Luna County, above culvert on State Highway 26, and 5 miles southwest of Florida.	.55	1959-	- -78	4.27	410
08478800	Seventysix Draw tributary near Waterloo, N. Mex.	Lat 31°56'34", long 107°44'38", Luna County, upstream from culvert on State Road 11, 3.9 miles southeast of Waterloo, and 7.9 miles north of Columbus.	.2	1967-	- -78	(e)	-
Playas Valley							
08479300	Deer Creek tributary near Antelope Wells, N. Mex.	Lat 31°23'00", long 108°42'15", Hidalgo County, 0.1 mile below dip on State Highway 79, 2.5 miles east of San Luis Pass, and 12 miles west of Antelope Wells.	4.3	1959-	- -78	1.44	185

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Tularosa Valley							
08480100	White Oaks Canyon at White Oaks, N. Mex.	Lat 33°46', long 105°44', Lincoln County, 40 ft upstream from culvert on State Highway 349, 1 mile northeast of White Oaks.	1.14	1961-	- -78	(b)	(+)
08480150	White Oaks Canyon near Carrizozo, N. Mex.	Lat 33°43'51", long 105°50'11", Lincoln County, 100 ft upstream from culvert on U.S. Highway 54, 6 miles north of Carrizozo.	31	1959-1961-	08-08-78	1.07	<450
08480170 S	Nogal Creek tributary near Nogal, N. Mex.	Lat 33°34'54", long 105°41'10", Lincoln County, upstream from culvert on U.S. Highway 380, about 2.0 road miles west of Indian Divide, 7 miles northwest of Capitan and 2 miles north of Nogal.	1.94	1968-	- -78	(b)	(+)
08480200	Taylor Canyon tributary near Bingham, N. Mex.	Lat 33°48'11", long 106°12'00", Socorro County, 200 ft north of U.S. Highway 380, 12 miles southeast of Bingham.	2.66	1961-	05-02-78	1.53	(+)
08480590	Tularosa Valley tributary near Oscura, N. Mex.	Lat 33°24'41", long 106°04'09", Lincoln County, 50 ft below culvert on U.S. Highway 54, and 5.2 miles south of Oscura.	3.22	1958-	- -78	(b)	(+)
08480650	Minnie Hall Draw near Three Rivers, N. Mex.	Lat 33°23'40", long 105°58'11", Lincoln County, 8 miles northeast of Three Rivers.	9.70	1956-	- -78	(e)	-
08480700 S	Indian Creek near Three Rivers, N. Mex.	Lat 33°22'10", long 105°53'25", Otero County, 150 ft above diversion dam, and 12 miles east of Three Rivers.	6.8	1956-58# 1959-	- -78	(b)	(+)
08480900	Indian Creek at mouth near Three Rivers, N. Mex.	Lat 33°22'45", long 105°57'25", Otero County, 75 ft above diversion dam, 0.35 mile above mouth, and 5.5 miles east of three Rivers.	10.9	1956-58# 1959-	- -78	(b)	<100
08481000	Three Rivers at Three Rivers, N. Mex.	Lat 33°18'10", long 106°04'20", Otero County, 150 ft below Southern Pacific Railroad bridge, 400 ft above bridge on U.S. Highway 54, and 1.3 miles south of Three Rivers.	96.0	1956-78g	- -78	(e)	-
08486200	Black Prince Canyon tributary near Organ, N. Mex.	Lat 32°26'11", long 106°32'03", Dona Ana County, above culvert on U.S. Highway 70, 2.3 miles east of San Augustin Pass, and 4.0 miles east of Organ.	.73	1959-	08-20-78	1.90	42
08486400	Tularosa Valley tributary near Orogrande, N. Mex.	Lat 32°24'55", long 106°04'20", Otero County, at bridge on U.S. Highway 54, and 2.7 miles northeast of Orogrande.	2.53	1959-	- -78	(e)	-

## Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Estancia Valley							
08488000	Estancia Valley tributary at Cedar Grove, N. Mex.	Lat 35°10'05", long 106°10'08", Santa Fe County, 50 ft upstream from culvert on State Highway 344, 0.1 mile south of Cedar Grove.	1.21	1955-1961-	- -78	(b)	(+)
08488100	Juan Tomas Canyon near Edgewood, N. Mex.	Lat 35°04'35", long 106°13'46", County, 140 ft upstream from culvert on U.S. Highway 66, 2.5 miles northwest of Edgewood.	a20	1962-	- -78	(b)	(+)
08488170 S	Chavez Draw tributary near Clines Corners, N. Mex.	Lat 35°01'06", long 105°49'06", Torrance County, one mile north of Interstate 40, 13 miles east of Moriarty and 9 miles west of Clines Corners.	2.73	1968-	08- -78	6.22	37c
08488200	Osita Draw near Clines Corners N. Mex.	Lat 35°00'18", long 105°48'00", Torrance County, 100 ft upstream from culvert on U.S. Highway 66, 7.5 miles west of Clines Corners.	a10	1961-	- -78	(b)	<100
08488500	Cañon de Torreon at Torreon, N. Mex.	Lat 34°43'20", long 106°17'50", Torrance County, at culvert on State Highway 10, in Torreon.	18.2	1954-	- -78	-	0
08488600	Arroyo del Cuervo near Torreon, N. Mex.	Lat 34°41'35", long 106°18'27", Torrance County, in Town of Torreon Grant, about 0.3 mile above culvert on State Road 10 and 2 miles south of Torreon.	11.8	1969-	05-20-78	3.15	420
08489000	Big Draw near Mountainair, N. Mex.	Lat 34°18'45", long 106°11'35", 0.25 mile above culvert on State Highway 10, and 8.4 miles southeast of Mountainair.	3.9	1953-	05-20-78	4.86	273
Crow Flats							
08492500	Fleming Draw near Pinon, N. Mex.	Lat 32°31'01", long 105°20'42", Otero County, 0.2 mile above dip in ranch road, and 7.5 miles south of Pinon.	16.6	1959-	- -78	(b)	<200
San Augustin Plains basin							
08500000	Swingle Canyon near Datil, N. Mex.	Lat 34°11'17", long 107°53'55", Catron County, about 0.3 mile upstream from U.S. Highway 60, and 4.3 miles northwest of Datil.	6.35	1970-	- -78	-	0



## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
San Juan River basin							
09346200	Rio Amargo at Dulce, N. Mex.	Lat 36°56'00", long 107°00'00", Rio Arriba County, under bridge on State Highway 17, at Dulce.	168	1956-	05-15-78	4.36	555
09350700 S	Ruben Canyon near Gobernador, N. Mex.	Lat 36°44'26", long 107°14'33", Rio Arriba County, in Carson National Forest, upstream from culvert on State Highway 17, and 6.5 miles east of Gobernador.	5.06	1970-	- -78	(b)	(+)
09350800	Vaqueros Canyon near Gobernador, N. Mex.	Lat 36°43'23", long 107°16'47", Rio Arriba County, 100 ft east of State Highway 17, and 4.2 miles east of Gobernador.	60.5	1956-	- -78	2.65	113
09355700	Gobernador Canyon near Gobernador, N. Mex.	Lat 36°41'05", long 107°25'10", San Juan County, 0.2 mile south of State Highway 17, and 4 miles southwest of Gobernador.	19.8	1956-	- -78	(b)	<300
09356400	Manzanares Canyon near Turley, N. Mex.	Lat 36°44'15", long 107°42'15", San Juan County, 600 ft above culvert on State Highway 17, and 4.2 miles east of Turley.	3.20	1956-	- -78	(b)	<50
09356520	Burro Canyon near Lindrith, N. Mex.	Lat 36°16'21", long 107°14'46", Rio Arriba County, upstream from culvert on State Highway 537, 11.5 miles west of Lindrith.	9.11	1970-	11-07-77	3.63	(+)
09357200	Gallegos Canyon tributary near Nageezi, N. Mex.	Lat 36°24'59", long 107°51'45", San Juan County, at culvert on State Highway 44, 1.1 miles northwest of Huerfano Trading Post, and 12.5 miles northwest of Nageezi.	.20	1952-	09-24-78	4.41	295
09357250	West Draw near Farmington, N. Mex.	Lat 36°35'24", long 108°11'03", San Juan County, 15 ft upstream of culvert on State Highway 371, 11 miles south of Farmington.	.32	1975-	09-24-78	2.64	(+)
09367400 S	La Plata River tributary near Farmington, N. Mex.	Lat 36°47'10", long 108°13'31", San Juan County, about 700 ft upstream from culvert on State Highway 17 and 4.1 miles northwest of Farmington.	1.03	1970-	- -78	2.33	29
09367530	Locke Arroyo near Kirtland, N. Mex.	Lat 36°43'51", long 108°17'46", San Juan County, on upstream side of abandoned culvert, 200 ft above U.S. Highway 550, 0.4 mile above mouth, and 3.3 miles east of Kirtland.	2.96	1951-	05-05-78	1.16	675

## Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
San Juan River basin - Concluded							
09367550	Stevens Arroyo near Kirtland, N. Mex.	Lat 36°46'00", long 108°22'10", San Juan County, upstream from gravel road to Young's Lake, 0.6 mile north of El Paso Natural Gas, San Juan Plant, and 2.3 miles north of Kirtland.	4.59	1970-	- -78	(e)	-
09367840	Yazzie Wash near Mexican Springs, N. Mex.	Lat 35°50'40", long 108°53'00", McKinley County, 5.0 miles northwest of Mexican Springs, and 23 miles north of Gallup.	a2.1	1953-54 1956-	11-06-77	2.86	120
09367900 S	Black Springs Wash near Mexican Springs, N. Mex.	Lat 35°45'40", long 108°49'00", McKinley County, 2.5 miles south of Mexican Springs and 17 miles north of Gallup.	7.05	1954-	- -78	-	0
09357920	Coyote Wash tributary near Naschitti, N. Mex.	Lat 36°05'55", long 108°41'48", San Juan County, on bridge on U.S. Highway 666, 2.4 miles north of Naschitti, and 39 miles north of Gallup.	12.0	1967-	- -78	2.99	(+)
09367932	Hunter Wash tributary near Bisti Trading Post, N. Mex.	Lat 36°15'33", long 108°15'06", San Juan County, on left bank upstream of culverts, 1.2 mile south of Bisti Trading Post.	8.47	1975-	09-17-78	7.20	(+)
09367940	Peña Blanca near Newcomb, N. Mex.	Lat 36°21'39", long 108°43'09", San Juan County, on bridge on U.S. Highway 666, 5.2 miles north of Newcomb.	h46.8	1967-	- -78	6.81	(+)
Little Colorado River basin							
09386100	Largo Creek near Quemado, N. Mex.	Lat 34°19'25", long 108°31'40", Catron County, on downstream side of bridge on ranch road 2.5 miles southwest of Quemado.	151	1954-	03-02-78	1.59	161
09386150	Mangas Creek tributary near Pietown, N. Mex.	Lat 34°18'11", long 108°08'30", Catron County, above culvert on U.S. Highway 60, 1.3 miles west of Junction with state road 36 in Pietown.	a.08	1952-	- -78	-	0
09386200	Carriazo Creek near Salt Lake, N. Mex.	Lat 34°31', long 109°01', Catron County, on left downstream wingwall of bridge, 1.3 miles east of New Mexico-Arizona State line and 15 miles west of Salt Lake.	f560	1957-	07-24-78	3.59	(+)
09387050	Galestena Canyon tributary near Black Rock, N. Mex.	Lat 34°58'45", long 108°40'00", McKinley County, 100 ft below bridge on State Highway 32 and 10.5 miles southeast of Black Rock.	a19	1957-	- -78	1.32	34

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations - Continued

Station no.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft <sup>3</sup> /s)
Little Colorado River basin - Concluded							
09395400	Milk Ranch Canyon near Fort Wingate, N. Mex.	Lat 35°26'30", long 108°33'30", McKinley County, 0.5 mile below culvert on secondary road between Fort Wingate and McGaffey, and 3 miles south of Fort Wingate.	14.0	1949-1953-	- -78	-	0
Gila River Basin							
09430300	Copperas Canyon near Pinos Altos, N. Mex.	Lat 33°04'42", long 108°12'14", Grant County, on east side of Copperas Canyon road and 15 miles north of Pinos Altos.	3.95	1963-	11-24-77	1.61	(+)
09430900	Duck Creek at Cliff, N. Mex.	Lat 32°58'03", long 108°36'36", Grant County, at Cliff below bridge on State Highway 211, and 0.6 mile above mouth.	228	1957-	- -78	3.45	290
09437200 S	Mexican Canyon at Virden, N. Mex.	Lat 32°41'03", long 108°59'00", Hidalgo County, upstream from dip in State Road 82, and about 0.8 mile east of Virden.	3.40	1968-	- -78	(b)	(+)
09438200	Animas Creek near Cloverdale, N. Mex.	Lat 31°34'15", long 108°52'30", Hidalgo County, near head of small box canyon 0.1 mile west of State Highway 338, and 11 miles north of Cloverdale.	157	1959-	- -78	3.96	360
09442630 S	Mail Hollow near Luna, N. Mex.	Lat 33°47'38", long 108°56'59", Catron County, upstream from culvert on U.S. Highway 180, 2.3 miles south of Luna.	4.20	1970-	08-20-78	3.02	64
09442660	Trout Creek at Luna, N. Mex.	Lat 33°50'50", long 108°59'38", Catron County, 500 ft downstream from bridge on Luna-Red Hill road and 2.6 miles north of Luna.	10.8 31.9	1954-	- -78	-	0
09442695 S	Negro Canyon at Aragon, N. Mex.	Lat 33°52'47", long 108°33'08", Catron County, above culvert on State Highway 12, at west edge of Aragon.	9.62	1958-	- -78	.92	(+)
09442740	Tularosa River near Reserve, N. Mex.	Lat 33°44'00", long 108°42'10", Catron County, 150 ft west of Eagle Peak Lookout road and 3.3 miles northeast of Reserve.	426	1956-	03-02-78	2.70	180
09443950	Red Colt Canyon at Pleasanton, N. Mex.	Lat 33°15'30", long, 108°52'15", Catron County, above culvert on U.S. Highway 260, and 1 mile south of Pleasanton.	3.00	1959-	07-12-78	2.79	(+)
09455800	Steins Creek at Steins, N. Mex.	Lat 32°13'47", long 109°00'01", Hidalgo County, at culvert on State Highway 14, 0.9 mile west of Steins.	1.26	1959-	08-12-78	3.04	< 200

Annual maximum discharge at crest-stage partial-record stations - Concluded

---

- < Less than.
- S Flood-hydrograph site.
- + Discharge not yet determined.
- \* Operated as continuous-record gaging station.
- a Approximately.
- b Peak did not reach bottom of gage.
- c Estimated.
- d From floodmark.
- e Gage height not determined.
- f Contributing area.
- g Discontinued at end of year.
- h Revised.
- j May not have been peak for year.

## Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (\*); measurements of peak flow by a dagger (†).

## Discharge measurements at miscellaneous sites during water year 1978

Discharge measurements at miscellaneous sites during water year 1978						
Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
Arkansas River basin						
Chicorica Creek a07202000	Canadian River	Lat 36°46'15", long 104°23'45", in S½ sec.4, T.29 N., R.24 E., Colfax County, at highway bridge near east boundary of Maxwell Grant, 300 ft downstream from Uña de Gato Creek, 4.4 miles northeast of Hebron, and 9.0 miles south of Raton, NM.	381	1945-52† 1966-77	10-19-77	1.1
					11-14-77	.12
					12-13-77	1.8
					1-11-78	1.2
					2- 9-78	2.1
					3- 8-78	2.6
					4- 4-78	.10
					5- 9-78	.68
					5-31-78	.01
					6-27-78	0
					7-26-78	0
					8-22-78	0
					9-19-78	0
Canadian River 07224500	Arkansas River	Lat 35°24'12", long 104°11'18", San Miguel County, in Pablo Montoya Grant, 300 feet below Conchas Dam, and 24 miles north of Newkirk, NM.	7,417	1936-38† 1942-72† 1973-77	11-29-77	1.9
					12- 8-77	3.9
					1- 9-78	2.5
					2- 9-78	3.3
					3- 7-78	3.9
					4- 3-78	3.7
					5-17-78	3.8
					6- 8-78	3.7
					9-21-78	3.8
Canadian River a07227140	Arkansas River	Lat 35°23'35", long 103°02'30", in SW¼ sec.32, T.14 N., R.37 E., Quay County at New Mexico-Texas Stateline, 14.7 miles north of Glenrio, NM.	12,616	1964-77	10-26-77	5.9
					11-23-77	5.8
					12-14-77	7.6
					2- 1-78	12
					2-22-78	12
					3-29-78	10
					4-27-78	2.3
					5-24-78	1.6
					6-21-78	3.8
					7-19-78	16
					9-26-78	38
Rio Grande basin						
Alamosa Creek 08360000	Rio Grande	Lat 33°34'09", long 107°35'33", in SE¼ sec.31, T.8 S., R.7 W., Socorro County, just downstream from Wildhorse Creek, and 15 miles northwest of Monticello, NM.	403	1931-42† 1958-71† 1972-77	11-25-77	6.7
					2- 6-78	7.1
					5-15-78	6.5
					8-11-78	6.2
Lea Lake Drain	Pecos River	Lat 33°18'56", long 104°19'56", in SW¼SE¼SW¼ sec.34, T.11 S., R.26 E., Chaves County, just below road crossing at Bottomless Lake State Park visitor center southeast of Roswell, NM.	-	1976-77	10-26-77	4.5
					1-27-78	4.9
					4-14-78	2.8
					8-25-78	2.7
Lea Lake Drain	Pecos River	Lat 33°18'55", long 104°19'56", in SW¼ sec.34, T.11 S., R.26 E., Chaves County, 0.12 mile downstream from Lea Lake, and 14 miles southeast of Roswell, NM.	-	-	1-27-78	2.2
					4-14-78	.06

## Measurements at miscellaneous sites

## Discharge measurements at miscellaneous sites during water year 1978

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
Rio Grande basin--Continued						
Blue Springs 08405450	Black River	Lat 32°11'07", long 104°16'50", in SW <sup>1</sup> / <sub>4</sub> NE <sup>1</sup> / <sub>4</sub> SW <sup>1</sup> / <sub>4</sub> sec.27, T.24 S., R.26 E., Eddy County, above all diversions, 5.5 miles east of White City, NM	-	1907, 1919-20, 1923, 1935 1952-70 1974-77	3-16-78	*10
					5-12-78	*9.4
Castle Springs	Black River	Lat 32°11'59", long 104°15'13", in SW <sup>1</sup> / <sub>4</sub> SW <sup>1</sup> / <sub>4</sub> SW <sup>1</sup> / <sub>4</sub> sec.24, T.24 S., R.26 E., above mouth at Black River Village, Eddy County, 7.2 miles east of White City, NM.	-	1975-77	3-16-78	*.84
					6-12-78	*.67
Gila River basin						
Mangas Creek a09431100	Gila River	Lat 32°50'48", long 108°30'57", in NW <sup>1</sup> / <sub>4</sub> NE <sup>1</sup> / <sub>4</sub> sec.8, T.17 S., R.16 W., Grant County, 0.4 mile northwest of Mangas Springs, NM.	177	1972-77	1-16-78	*3.6
					3-31-78	*3.0
					5-10-78	*2.8
					7-12-78	*2.7
					9-11-78	*3.0
					11-10-78	*3.6

\* Base flow.

† Operated as a continuous record station.

a Also a water-quality continuing record station.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## RIO GRANDE BASIN

08329520 VILLA DEL OSO DRAIN AT ALBUQUERQUE, NM (LAT 35 08 04 LONG 106 34 16 00)

DATE	TIME	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT			
06...	1203	50000	58000
06...	1230	23000	70000
06...	1240	37000	75000

08405450 BLUE SPRINGS ABOVE DIVERSIONS. NM (LAT 32 11 05 LONG 104 17 05 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH  (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
MAR 16...	0955	10	1510	7.8	17.0
JUN 12...	1100	9.4	1520	7.8	21.5

## SAN JUAN RIVER BASIN

POWERPLANT ARROYO BELOW SAN JUAN POWERPLANT RESERVOIR, NM (LAT 36 47 06 LONG 108 26 26 10)  
(LOCAL IDENTIFIER-30N.15W.29.322)

[illegible]

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

POWERPLANT ARROYO BELOW SAN JUAN POWERPLANT RESERVOIR, NM (LAT 36 47 06 LONG 108 26 26 10)  
(LOCAL IDENTIFIER-30N.15W.29.322)--Continued

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
NOV 29...	180	.4	4.2	6790	19	.01	390	70
FEB 23...	32	.4	4.6	4740	11	.01	290	20
MAY 25...	140	.4	.6	6720	10	.00	440	30
AUG 17...	120	.4	2.8	--	8.8	.02	450	--

WESTWATER ARROYO AT SAN JUAN POWERPLANT, NM (LAT 36 47 37 LONG 108 25 47 10)  
(LOCAL IDENTIFIER-30N.15W.21.333)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)
FEB 23...	1200	2.0	25000	7.6	13.0	9.0	11.7	2200	1700
MAY 25...	1345	2.0	9100	6.1	24.0	23.0	.1	1100	1100
AUG 17...	1515	2.0	7600	7.0	34.0	28.0	.0	780	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SURP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
FEB 23...	320	330	5400	51	6.0	540	0	440	9000
MAY 25...	330	64	2400	32	16	27	0	22	5800
AUG 17...	190	73	1700	27	20	--	--	42	4000

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
FEB 23...	2800	1.5	10	18300	30	.04	1400	40
MAY 25...	160	--	36	8870	1.2	1.2	8900	840
AUG 17...	130	--	33	--	.21	.25	3100	80



## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

SHUMWAY ARROYO ABOVE DUNLAP FARM NEAR WATERFLOW, NM (LAT 36 46 31 LONG 108 26 10 10)  
(LOCAL IDENTIFIER-30N.15W.32.223)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE, AIR (DEG C) (00020)	TEMPER- ATURE (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS (MG/L) AS CAC03 (00900)	HARD- NESS, NONCAR- BONATE (MG/L) CAC03 (00902)
NOV 30...	0845	.13	7000	8.3	10.0	.0	12.5	1900	1700
FEB 23...	1055	2.2	5050	7.9	12.0	3.0	12.5	2300	2100
MAY 25...	1445	20	4100	6.7	25.0	18.0	.1	590	560
AUG 17...	1422	3.0	7450	7.2	33.0	30.0	2.5	1100	--

DATE	CALCIUM DIS- SOLVED (MG/L) AS CA (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L) AS MG (00925)	SODIUM, DIS- SOLVED (MG/L) AS NA (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L) AS K (00935)	BICAR- BONATE (MG/L) AS HC03 (00440)	CAR- BONATE (MG/L) AS C03 (00445)	ALKA- LITY (MG/L) AS CAC03 (00410)	SULFATE DIS- SOLVED (MG/L) AS S04 (00945)
NOV 30...	290	290	1200	12	8.3	300	0	250	3500
FEB 23...	350	350	880	8.0	11	240	0	200	3500
MAY 25...	170	40	630	15	9.2	33	0	27	2000
AUG 17...	190	150	1700	22	19	--	--	6	4300

DATE	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL (00940)	FLUO- RIDE, DIS- SOLVED (MG/L) AS F (00950)	SILICA, DIS- SOLVED (MG/L) AS SiO2 (00955)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L) AS P (00671)	BORON, DIS- SOLVED (UG/L) AS B (01020)	IRON, DIS- SOLVED (UG/L) AS FE (01046)
NOV 30...	440	.6	6.7	5950	16	.04	180	60
FEB 23...	200	.5	5.6	5470	13	.02	330	20
MAY 25...	160	--	11	3250	1.1	.61	2100	50
AUG 17...	170	.9	27	--	2.4	.14	2600	50

CHACO RIVER BELOW ESCAVADO WASH NR CHACO NAT MONUMENT, NM (LAT 36 04 53 LONG 108 01 20 10)  
(LOCAL IDENTIFIER-21N.11W.05.4220)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	NITRO- GEN, NO2+NO3 TOTAL (MG/L) AS N (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L) AS N (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L) AS N (00605)	NITRO- GEN, TOTAL (MG/L) AS N (00600)	PHOS- PHORUS, TOTAL (MG/L) AS P (00665)	CARBON, ORGANIC TOTAL (MG/L) AS C (00680)
SEP 26...	1430	E40	540	8.4	2.5	.17	13	16	3.0	68

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

CHACO RIVER BELOW ESCAVADO WASH NR CHACO NAT MONUMENT, NM (LAT 36 04 53 LONG 108 01 20 10)  
(LOCAL IDENTIFIER-21N.11W.05.4220)--Continued

DATE	TIME	ARSENIC	ARSENIC	LEAD,	MERCURY	MERCURY		
		TOTAL	DIS-	DIS-	TOTAL	DIS-		
		(UG/L	SOLVED	SOLVED	RECOV-	SOLVED		
		AS AS)	AS AS)	AS PB)	ERABLE	AS HG)		
		(01002)	(01000)	(01049)	(71900)	(71890)		
SEP								
26...	1430	62	17	0	1.0	.0		
DATE	TIME	NITRO-	NITRO-	PHOS-	ARSENIC	CADMIUM	CHRO-	COBALT,
		GEN.	GEN.	PHOSUS,	TOTAL	RECOV.	MIUM,	RECOV.
		NO2+NO3	TOTAL	TOTAL	IN BOT-	FM BOT-	RECOV.	FM BOT-
		TOT. IN	IN BOT.	IN BOT.	TOM MA-	TOM MA-	FM BOT-	TOM MA-
		BOT MAT	MAT.	MAT.	TERIAL	TERIAL	TOM MA-	TERIAL
		(MG/KG	(MG/KG	(MG/KG	(UG/G	(UG/G	TERIAL	(UG/G
		AS N)	AS N)	AS P)	AS AS)	AS CD)	(UG/G)	AS CU)
		(00633)	(00611)	(00668)	(01003)	(01028)	(01029)	(01038)
MAY								
07...	2200 <sup>a</sup>	--	--	--	2	--	--	--
SEP								
26...	1430	1.3	6.3	45	0	0	0	3
DATE	TIME	IRON,	LEAD,	MANGA-	MERCURY	MOLYB-	SELE-	ZINC,
		RECOV.	RECOV.	NESE,	RECOV.	DENUM,	NIUM,	RECOV.
		FM BOT-	FM BOT-	RECOV.	FM BOT-	RECOV.	TOTAL	FM BOT-
		TOM MA-	TOM MA-	FM BOT-	TOM MA-	FM BOT-	IN BOT-	TOM MA-
		TERIAL	TERIAL	TOM MA-	TERIAL	TOM MA-	TOM MA-	TERIAL
		(UG/G	(UG/G	TERIAL	(UG/L	TERIAL	TERIAL	(UG/G
		AS FE)	AS PB)	(UG/G)	AS HG)	(UG/G)	(UG/G)	AS ZN)
		(01170)	(01052)	(01053)	(71921)	(01063)	(01148)	(01093)
								(72005)
MAY								
07...	--	--	--	--	--	0	0	--
SEP								
26...	98000	4	160	.0	--	--	3	--
DATE	TIME	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SAMPLE
		DIS-	DIS-	DIS-	DIS-	DIS-	DIS-	SOURCE
		CHARGE	CHARGE	CHARGE	CHARGE	CHARGE	CHARGE	
		SUS-	SUS-	SUS-	SUS-	SUS-	SUS-	
		PENDE	PENDE	PENDE	PENDE	PENDE	PENDE	
		(CFS)	(MG/L)	(T/DAY)	(MG/L)	(T/DAY)	(MG/L)	
		(00061)	(80154)	(80155)	(70331)	(72005)		
MAY								
07...	2200	E500	43200	58300	100	40		
SEP								
26...	1430	E40	23400	2530	100	--		

<sup>a</sup> Other values by custom analysis of bottom materials: gross alpha as natural uranium, 3.80 ug/g; gross beta, 0.61 pCi/g as strontium-90 and 0.72 pCi/g as cesium-137; radium-226, 0.08 pCi/g; natural uranium, 0.21 ug/g

Note.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

KIN KLIZHIN WASH NEAR CHACO, NM (LAT 36 04 39 LONG 108 04 10 10)  
(LOCAL IDENTIFIER-21N.12W.01.3412)

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	SAMPLE SOURCE (72005)
MAY				
07...	2100 <sup>a</sup>	435	7.2	40
08...	0100 <sup>b</sup>	520	7.3	40

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L) (09510)	URANIUM DIS- SOLVED (UG/L AS U) (22703)
MAY						
07...	2100	8.1	11	9.7	.1	3.5
08...	0100	6.3	10	9.5	.2	2.7

KIMMENIOLI WASH NEAR PHILLIPS MINE NEAR CROWNPOINT, NM (LAT 35 58 41 LONG 108 08 18 10)  
(LOCAL IDENTIFIER-20N.12W.08.323)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
MAR								
27...	1340	E1.5	3000	8.1	20.5	38	0	13

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
MAR									
27...	1.3	750	53	3.8	480	0	390	1200	57

<sup>a</sup> Other values by custom analysis of suspended sediments: suspended sediment concentration 40,500 mg/l; gross alpha suspended as natural uranium, 31.1 ug/g; gross beta suspended, 14.1 pCi/g as Sr-90; and 15.1 pCi/g as cesium-137; radium-226 suspended, 0.33 pCi/g; natural uranium suspended, 0.36 ug/g.

<sup>b</sup> Other values by custom analysis of suspended sediments: suspended sediment concentration, 32,000 mg/l; gross alpha suspended as natural uranium, 41.6 ug/g; gross beta suspended, 21.1 pCi/g as strontium-90 and 22.7 pCi/g as cesium-137; radium-226 suspended, 0.47 pCi/g; natural uranium suspended, 0.75 ug/g.

Note.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

KIMMENIOLI WASH NEAR PHILLIPS MINE NEAR CROWNPOINT, NM (LAT 35 58 41 LONG 108 08 18 10)  
(LOCAL IDENTIFIER-20N.12W.08.323)--Continued

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+N03 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	SAMPLE SOURCE (72005)
MAR 27...	1.9	51	2340	5.7	.01	380	110	29

DATE	TIME	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	SAMPLE SOURCE (72005)
MAR 27...	1340	380	110	4	29

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PC1/L) (09511)
MAR 27...	1340	.19

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDEO (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDEO (T/DAY) (80155)
MAR 27...	1340	E1.5	20.5	511	2.1

KIMMENIOLI WASH NEAR LAKE VALLEY, NM (LAT 36 06 41 LONG 108 10 38 10)  
(LOCAL IDENTIFIER-22N.13W.25.322)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	SAMPLE SOURCE (72005)
MAY 07...	2100 <sup>a</sup>	--	745	7.5	40
SEP 24...	1700	E20	430	7.1	40
24...	1900	E50	275	7.0	40

NOTE.--Under SAMPLE SOURCE the number 29 indicates dip or grab sample.

<sup>a</sup> Other values from custom analysis of suspended sediments: gross alpha suspended as natural uranium, 23.1 ug/g; gross beta suspended, 23.0 pCi/g as strontium-90 and 23.7 pCi/g as cesium-137; radium-226 suspended, 0.52 pCi/g; natural uranium suspended, 0.75 ug/g. Other values from custom analysis of bottom materials: gross alpha as natural uranium, 3.30 ug/g; gross beta, 3.00 pCi/g as strontium-90 and 3.20 as cesium-137; radium-226, 0.25 pCi/g; natural uranium, 0.51 ug/g.

Note.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

KIMMENIOLI WASH NEAR LAKE VALLEY, NM (LAT 36 06 41 LONG 108 10 38 10)  
(LOCAL IDENTIFIER-22N.13W.25.322)--Continued

DATE	TIME	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO- GEN,NH4 TOTAL IN BOT. MAT. (MG/KG AS N) (00611)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)
MAY 07...	2100	--	--	--	9	--	--	--
SEP 27...	1000	7.0	22	0	1	0	5	2

DATE	TIME	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01063)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)	SAMPLE SOURCE (72005)
MAY 07...	--	--	--	--	--	--	4	--	40
SEP 27...	12	8800	20	280	.0	--	40	--	--

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L) (09510)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
MAY 07...	2100	<7.4	7.1	6.5	.1	--	2.4	--
SEP 24...	1700	--	--	--	--	.11	--	1.1
SEP 24...	1900	--	--	--	--	.10	--	.40

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
SEP 24...	1700	E20	15500	837	96	40
SEP 24...	1900	E50	8600	1160	89	40

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

09367700 ALAMO WASH NEAR TANNER LAKE, NM (LAT 36 14 07 LONG 108 10 52 00)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	SAMPLE SOURCE (72005)
SEP					
24...	1115	E500	790	7.4	40
24...	1245	E1000	1125	7.3	40

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	SAMPLE SOURCE (72005)
SEP								
24...	1115	60	5200	320	400000	1000	20000	40
24...	1245	54	3600	260	310000	1000	14000	40

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
JUN							
02...	1330	E500	25.5	47	63	--	40
SEP							
24...	1115	E500	--	68700	92700	86	40
24...	1245	E1000	--	89200	241000	89	40

CHACO RIVER BELOW DE-NA-ZIN WASH NEAR BISTI, NM (LAT 36 11 37 LONG 108 20 21 10)  
(LOCAL IDENTIFIER-NR066.0500X0388)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SAMPLE SOURCE (72005)
MAY											
07...	0300 <sup>a</sup>	500	645	7.4	--	--	--	--	--	--	40
SEP											
24...	1715	E200	1250	7.2	--	--	--	--	--	--	40
24...	1945	E500	1025	7.4	--	--	--	--	--	--	40
27...	1400	E40	900	7.7	.77	.05	28	29	7.3	210	--

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

<sup>a</sup> Other values by custom analysis of suspended sediments: suspended sediment concentration 43,500 mg/l; gross alpha suspended as natural uranium 28.8 ug/g; gross beta suspended, 15.1 pCi/g as strontium-90 and 16.7 pCi/g as cesium-137; radium-226 suspended, 0.33 pCi/g; natural uranium suspended 0.78 ug/g.

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

CHACO RIVER BELOW DE-NA-ZIN WASH NEAR BISTI, NM (LAT 36 11 37 LONG 108 20 21 10)  
(LOCAL IDENTIFIER-NR066.0500X0388)--Continued

DATE	TIME	ARSENIC		LEAD,	MERCURY		SAMPLE SOURCE	
		TOTAL	DIS-	SOLVED	TOTAL	RECOV-		
		(UG/L	SOLVED	(UG/L	ERABLE			
		AS AS)	(UG/L	(UG/L	(UG/L	AS HG)		
		(01002)	(01000)	(01049)	(71900)	(72005)		
SEP								
24...	1715	61	--	--	2.4	40		
24...	1945	--	2	5	--	40		
DATE	TIME	NITRO-	NITRO-	PHOS-	ARSENIC	CADMIUM	CHRO-	
		GEN,	GEN,NH4	PHORUS,	TOTAL	RECOV.	MIUM,	
		NO2+NO3	TOTAL	TOTAL	IN BOT-	FM BOT-	RECOV.	
		TOT. IN	IN BOT.	IN BOT.	TOM MA-	TOM MA-	FM BOT-	
		BOT MAT	MAT.	MAT.	TERIAL	TERIAL	TOM MA-	
		(MG/KG	(MG/KG	(MG/KG	(UG/G	(UG/G	TERIAL	
		AS N)	AS N)	AS P)	AS AS)	AS CD)	(UG/G	
		(00633)	(00611)	(00668)	(01003)	(01028)	(01029)	
SEP								
27...	1400	1.1	16	110	0	0	3	
DATE	TIME	COBALT,	COPPER,	IRON,	LEAD,	MANGA-	MERCURY	ZINC,
		RECOV.	RECOV.	RECOV.	RECOV.	NESE,	RECOV.	RECOV.
		FM BOT-	FM BOT-	FM BOT-	FM BOT-	RECOV.	FM BOT-	FM BOT-
		TOM MA-	TOM MA-	TOM MA-	TOM MA-	FM BOT-	TOM MA-	TOM MA-
		TERIAL	TERIAL	TERIAL	TERIAL	TOM MA-	TERIAL	TERIAL
		(UG/G	(UG/G	(UG/G	(UG/G	TERIAL	(UG/L	(UG/G
		AS CO)	AS CU)	AS FE)	AS PB)	(UG/G)	AS HG)	AS ZN)
		(01038)	(01043)	(01170)	(01052)	(01053)	(71921)	(01093)
SEP								
27...	1	2	87000	0	130	.0	4	
DATE	TIME	GROSS	GROSS	GROSS	RA=226,	URANIUM		
		ALPHA,	BETA,	BETA,	DIS-	DIS-		
		DIS-	DIS-	DIS-	SOLVED,	NATURAL		
		SOLVED	SOLVED	SOLVED	PLAN-	DIS-		
		(UG/L	(PCI/L	(PCI/L	CHET	SOLVED		
		AS	AS	AS SR/	COUNT	(UG/L		
		U-NAT)	CS-137)	YT-90)	(PCI/L)	AS U)		
		(80030)	(03515)	(80050)	(09510)	(22703)		
MAY								
07...	0300	16	6.8	6.3	.1	11		
DATE	TIME	STREAM-	SEDI-	SEDI-	SED.	SAMPLE SOURCE		
		FLOW,	MENT,	MENT	SUSP.			
		INSTAN-	SUS-	DIS-	SIEVE			
		TANEOUS	PENDE	CHARGE,	DIAM.			
		(CFS)	(MG/L)	(T/DAY)	% FINER			
		(00061)	(80154)	(80155)	THAN			
					.062 MM			
					(70331)	(72005)		
SEP								
24...	1715	E200	55500	30000	96	40		
24...	1945	E500	93500	126000	73	40		
27...	1400	E40	74400	8040	80	--		

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

COYOTE WASH NR NASCHITTI, NM (LAT 36 08 09 LONG 108 32 34 10)  
(LOCAL IDENTIFIER-NR067.0225X0788)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)				
MAY 07...	2100 <sup>a</sup>	20	565	7.5				
SEP 28...	1310	E71	640	8.1				
DATE	TIME	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO- GEN, NH4 TOTAL IN BOT. MAT. (MG/KG AS N) (00611)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)	
SEP 28...	1310	1.2	37	300	1	0	4	
DATE	TIME	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
SEP 28...	10	11	550000	12	200	.0	19	
DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L) (09510)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)	
MAY 07...	2100	<5.4	9.5	8.7	.1	2.4	--	
SEP 28...	1310	--	--	--	--	--	5.9	
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDIM- ENT SIEVE DIAM. % FINER THAN .062 MM (70331)			
SEP 28...	1310	E71	2610	500	100			

<sup>a</sup> Other values by custom analysis of suspended sediments: suspended sediment concentration 9,000 mg/l; gross alpha suspended as natural uranium 13.0 ug/g; gross beta suspended, 14.6 pCi/g as strontium-90 and 14.5 pCi/g as cesium-137; radium-226 suspended, 0.45 pCi/g; natural uranium suspended 0.89 ug/g.



## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

CHACO RIVER BELOW HUNTER WASH NEAR BURNHAM, NM (LAT 36 17 51 LONG 108 32 52 10)  
(LOCAL IDENTIFIER-NR049.0268X1397)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
MAY 07...	0900 <sup>a</sup>	2000	700	7.4	--	--	--	--	--
SEP 24...	1820	E500	1175	7.3	--	--	--	--	--
24...	1920	E1000	1175	7.3	--	--	--	--	--
28...	1110	35	660	8.0	45	0	16	1.2	130

DATE	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
MAY 07...	--	--	--	--	--	--	--	--	--
SEP 24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
28...	8.4	4.0	140	160	6.7	1.3	14	418	2.1

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SAMPLE SOURCE (72005)
MAY 07...	--	--	--	--	--	--	--	40
SEP 24...	--	--	--	--	--	--	--	40
24...	--	--	--	--	--	--	--	40
28...	.08	12	14	3.7	110	40	84	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SAMPLE SOURCE (72005)
SEP 24...	1820	--	2	0	--	40
24...	1920	90	--	--	4.2	40

<sup>a</sup> Other values by custom analysis of suspended sediments: suspended sediment concentration, 70,000 mg/l; gross alpha suspended as natural uranium, 16.9 ug/g; gross beta suspended, 14.2 pCi/g as strontium-90 and 15.1 pCi/g as cesium-137; radium-226 suspended, 0.31 pCi/g; natural uranium suspended 0.56 ug/g.

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

CHACO RIVER BELOW HUNTER WASH NEAR BURNHAM, NM (LAT 36 17 51 LONG 108 32 52 10)  
(LOCAL IDENTIFIER-NR049.0268X1397)--Continued

DATE	TIME	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO- GEN, NH4 TOTAL IN BOT. MAT. (MG/KG AS N) (00611)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01029)
------	------	---	--	--	--	---	---

SEP 28...	1110	.0	5.5	100	1	0	2
--------------	------	----	-----	-----	---	---	---

DATE	TIME	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
------	------	---	---	---	---	--	---	---

SEP 28...	4	1	180000	6	100	.0	4
--------------	---	---	--------	---	-----	----	---

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L) (09510)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
------	------	---	--	---	--	---

MAY 07...	0900	16	8.9	8.1	.1	9.8
--------------	------	----	-----	-----	----	-----

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
------	------	--	--	---	--	-----------------------------

SEP 24...	1820	E500	81300	110000	99	40
24...	1920	E1000	95100	257000	99	40
24...	2020	E3000	45300	367000	100	40
28...	1110	35	19900	1880	100	--

SANOSTEE WASH NEAR SANOSTEE, NM (LAT 36 28 13 LONG 108 34 41 10)  
(LOCAL IDENTIFIER-NR049.0433X0206)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	SAMPLE SOURCE (72005)
------	------	--	---	--------------------------	-----------------------------

SEP 24...	1930	E20	1300	7.1	40
24...	2000	E50	1175	7.3	40
24...	2200	E100	1200	7.1	40
25...	1000	E200	950	7.3	40

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

SANOSTEE WASH NEAR SANOSTEE, NM (LAT 36 28 13 LONG 108 34 41 10)  
(LOCAL IDENTIFIER-NR049.0433X0206)--Continued

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SAMPLE SOURCE (72005)	
SEP 24...	2000	--	3	--	8	--	.0	40	
24...	2200	47	--	1100	--	1.6	--	40	
DATE	TIME	NITRO- GEN, NO2+NO3 TOT. IN BOT MAT (MG/KG AS N) (00633)	NITRO- GEN, NH4 TOTAL IN BOT. MAT. (MG/KG AS N) (00611)	PHOS- PHORUS, TOTAL IN BOT. MAT. (MG/KG AS P) (00668)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD) (01028)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01029)	COBALT, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CO) (01038)	
JUN 23...	1200	--	--	--	4	--	--	--	
SEP 29...	1130	2.8	10	65	0	0	2	0	
DATE	TIME	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU) (01043)	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE) (01170)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MANGA- NESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) (01053)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG) (71921)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG) (01063)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G AS ZN) (01148)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN) (01093)
JUN 23...	--	--	--	--	--	--	3	0	--
SEP 29...	3	1500	10	73	.0	--	--	10	--
DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
SEP 24...	1930	.66	6.5						
25...	1000	.26	6.1						
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
SEP 24...	1930	E20	56900	3070	96	40			
24...	2000	E50	41100	5550	97	40			
24...	2200	E100	47200	12700	97	40			
25...	1000	E200	21400	11600	97	40			

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

<sup>a</sup> Other values by custom analysis of bottom materials: gross alpha as natural uranium, 4.20 ug/g; gross beta, 2.10 pCi/g as strontium-90 and 2.22 pCi/g as cesium-137, radium-226, 0.28 pCi/g; natural uranium 0.44 ug/g.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN--Continued

CHACO R AB FOUR CORNERS POWERPLANT NR FRUITLAND, NM (LAT 36 34 17 LONG 108 33 49 10)  
(LOCAL IDENTIFIER-NR032.0352X1230)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	SAMPLE SOURCE (72005)			
MAY 07...	a --	1000	780	7.5	40			
SEP 24...	2030	E500	950	7.5	40			
24...	2100	E2000	825	7.3	40			
24...	2300	E5000	1075	7.5	40			
DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SAMPLE SOURCE (72005)	
SEP 24...	2030	64	--	1100	--	3.0	40	
24...	2100	--	1	--	0	--	40	
DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01003)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS AS) (01063)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G) (01146)	SAMPLE SOURCE (72005)			
MAY 07...		2	0	0	40			
DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS BETA, DIS- SOLVED (PCI/L CS-137) (03515)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L) (09510)	RADIUM 226, DIS- SOLVED, HADON METHOD (PCI/L) (09511)	URANIUM NATURAL SOLVED AS U) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
MAY 07...	--	23	9.8	9.0	<1.4	--	10	--
SEP 24...	2300	--	--	--	--	.13	--	8.6
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)		
SEP 24...	2030	E500	85300	115000	88	40		
24...	2100	E2000	78500	424000	91	40		
24...	2300	E5000	93200	1260000	97	40		
25...	1100	E7000	52400	990000	100	40		
28...	1700	E40	31900	3450	100	--		

<sup>a</sup> Other values by custom analysis of suspended sediments: suspended sediment concentration 154,000 mg/l; gross alpha suspended as natural uranium 55.8 ug/g; gross beta suspended, 26.9 pCi/g as strontium-90 and 29.7 pCi/g as cesium-137; radium-226 suspended, 0.33 pCi/g; natural uranium suspended 0.45 ug/g.

Other values by custom analysis of bottom materials: gross alpha as natural uranium, 2.6 ug/g; gross beta, 0.64 pCi/g as strontium-90 and 0.69 pCi/g as cesium-137; radium-226, 0.08 pCi/g; natural uranium 0.20 ug/g.

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

Samples are collected at sites other than gaging stations and partial-record stations to give better areal coverage in a river basin. Such sites are referred to as miscellaneous sites. Under the heading SAMPLE SOURCE, numerical values are used to indicate method of sampling; 26 indicates by automatic pump, 29 indicates dip or grab, and 40 indicates single stage sample.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## RIO GRANDE BASIN

CANON DE MARQUEZ AT MARQUEZ, NM (LAT 35 19 03 LONG 107 19 14 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
------	------	--	---	--------------------------	--	---	---	---

APR 08...	1100	.50	900	9.5	25.0	15	4.1	1.1
-----------	------	-----	-----	-----	------	----	-----	-----

DATE	TIME	SODIUM, AD- SORP- TION (MG/L AS NA) (00930)	SODIUM AD- SORP- TION (MG/L AS K) (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
------	------	---	---	--	--	--	---	--

APR 08...	230	26	3.2	100	22	1.2	40
-----------	-----	----	-----	-----	----	-----	----

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
------	------	---	--	--	---

APR 08...	1100	1	3	0	5.0
-----------	------	---	---	---	-----

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
------	------	--	---

APR 08...	1100	.13	4.0
-----------	------	-----	-----

EFFLUENT FROM RIO PUERCO MINE NEAR MARQUEZ, NM (LAT 35 16 06 LONG 107 12 18 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
------	------	--	---	--------------------------	--	---	---	---

APR 09...	1115	.90	1700	8.9	17.0	64	16	5.8
JUN 08...	1224	.77	1700	8.8	24.0	--	--	--

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

591

RIO GRANDE BASIN - CONTINUED

EFFLUENT FROM RIO PUERCO MINE NEAR MARQUEZ, NM (LAT 35 16 06 LONG 107 12 18 10) -- Continued

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
------	---	--	--	--	--	---	--

APR 09...	400	22	4.6	560	31	1.0	18
JUN 08...	--	--	--	--	--	--	--

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
------	------	---	--	--	---

APR 09...	1115	2	23	0	1.0
JUN 08...	1224	--	18	0	.9

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
------	------	--	---

APR 09...	1115	5.9	20
JUN 08...	1224	23	34

EFFLUENT JOHNNY M MINE NEAR SAN MATEO, NM (LAT 35 21 35 LONG 107 43 24 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
------	------	--	---	--------------------------	--	---	---	---	---	---

FEB 26...	1100	2.9	2550	8.2	12.0	1600	1300	490	94	170
--------------	------	-----	------	-----	------	------	------	-----	----	-----

DATE	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
------	--	--	---	---	--	--	---	--	--

FEB 26...	1.8	2.4	360	295	1500	31	.5	17	2480
--------------	-----	-----	-----	-----	------	----	----	----	------

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

RIO GRANDE BASIN - CONTINUED

EFFLUENT JOHNNY M MINE NEAR SAN MATEO, NM (LAT 35 21 35 LONG 107 43 24 10) - CONTINUED

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
------	------	---	--	--	---

FEB 26...	1100	0	3	6	.0
--------------	------	---	---	---	----

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
------	------	--	---

FEB 26...	1100	.51	22
--------------	------	-----	----

EFFLUENT FROM SEC. 35 & 36 MINES AT FLUME NEAR SAN MATEO, NM (LAT 35 23 30 LONG 107 45 14 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
------	------	--	---	--------------------------	--

JUN 07...	0945	4.5	1650	8.2	19.0
AUG 03...	1050	5.7	1600	8.2	23.0

DATE	TIME	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
------	------	--	--	---

JUN 07...	0945	--	36	23
AUG 03...	1050	980	--	2.2

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
------	------	--	---

JUN 07...	0945	.69	1600
AUG 03...	1050	1.1	1700

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## RIO GRANDE BASIN - CONTINUED

EFFLUENT FROM SEC. 35 & 36 MINES  $\frac{1}{2}$  MI SOUTH OF FLUME NEAR SAN MATEO, NM  
(LAT 35 23 00 LONG 107 45 14 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
------	------	--	---	--------------------------	--

JUN 06...	1100	4.4	1650	8.4	--
AUG 03...	1230	6.1	1600	8.3	26.0

DATE	TIME	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
------	------	--	--	---

JUN 06...	1100	100	37	32
AUG 03...	1230	950	--	22

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
------	------	--	---

JUN 06...	1100	1.0	1000
AUG 03...	1230	1.6	510

PUERTOCITO CREEK NEAR KERR MCGEE MILL NEAR SAN MATEO, NM (LAT 35 23 30 LONG 107 48 55 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
------	------	--	---	--------------------------	--

JUN 06...	1200	1.3	2500	8.2	15.0
JUL 13...	1150	--	2200	8.0	25.0
AUG 01...	1130	1.8	2000	--	--

DATE	TIME	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
------	------	--	--	---

JUN 06...	1200	--	440	180
JUL 13...	1150	520	--	64
AUG 01...	1130	570	--	100



ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

RIO GRANDE BASIN - CONTINUED

PUERTOCITO CREEK NEAR KERR MCGEE MILL NEAR SAN MATEO, NM (LAT 35 23 30 LONG 107 48 55 10) - CONTINUED

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
JUN 06...	1200	4.5	2200
JUL 13...	1150	2.5	2400
AUG 01...	1130	4.4	1400

PUERTOCITO CREEK AT BRIDGE NM HWY 53 NEAR SAN MATEO, NM (LAT 35 20 22 LONG 107 47 38 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR 05...	1100	1.1	2450	8.4	5.0	890	190	100
JUN 06...	1005	.40	2490	8.4	17.0	--	--	--
JUL 13...	1020	.66	2250	8.3	22.0	--	--	--
AUG 01...	1005	--	2400	8.2	22.0	--	--	--

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
MAR 05...	210	3.1	14	910	210	.6	4.3
JUN 06...	--	--	--	--	--	--	--
JUL 13...	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
MAR 05...	1100	3	500	68	16
JUN 06...	1005	--	450	440	21
JUL 13...	1020	--	560	--	9.2
AUG 01...	1005	--	340	--	5.5

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

595

RIO GRANDE BASIN - CONTINUED

PUERTOCITO CREEK AT BRIDGE NM HWY 53 NEAR SAN MATEO, NM (LAT 35 20 22 LONG 107 47 38 10) - CONTINUED

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
MAR 05...	1100	5.3	1700
JUN 06...	1005	9.9	1700
JUL 13...	1020	8.7	1200
AUG 01...	1005	6.1	1100

SAN JUAN RIVER BASIN

STEVENS ARROYO AT EL PASO NATURAL GAS PLANT AT FRUITLAND, NM (LAT 36 45 25 LONG 108 22 42 10)  
(LOCAL IDENTIFIER-29N.15W.02.244)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)
MAY 04...	1700	<.01	5200	7.7	17.0	950	890	290	55	1000	14

DATE	TIME	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	SAMPLE SOURCE (72005)
MAY 04...	9.2	77	64	3000	49	.6	11	4450	370	10	29	
					BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	SAMPLE SOURCE (72005)				
MAY 04...	1700				370	10	35	29				

NOTE.—Under SAMPLE SOURCE the number 29 indicates dip or grab sample.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

SAN JUAN RIVER BASIN - CONTINUED

SAN JUAN MINE 1977 GRADED SOILS PILE NEAR WATERFLOW, NM (LAT 36 46 31 LONG 108 25 08 10)  
(LOCAL IDENTIFIER-30N.15W.33.214)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	
SEP 24...	1700	E.10	940	7.4	160	0	53	7.8	100	
DATE	TIME	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINEITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
SEP 24...	3.4	22	210	200	7.9	.5	14	546	532	
DATE	TIME	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SAMPLE SOURCE (72005)
SEP 24...	.04	7.2	14	21	3.6	130	400	6.4	40	
DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)			
SEP 24...	1700	7	1	0	0	130	0			
DATE	TIME	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SAMPLE SOURCE (72005)			
SEP 24...	400	.4	.0	0	10	40				
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, SUS- PENDED (T/DAY) (80155)	SED- SUSP. CHARGE, SUS- PENDED (T/DAY) (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)			
SEP 24...	1700	E.10	6870	1.9	100	40				

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
 WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

597

SAN JUAN RIVER BASIN - CONTINUED

WESTWATER ARROYO ABOVE SAN JUAN MINE NR WATERFLOW, NM (LAT 36 48 43 LONG 108 25 50 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	SAMPLE SOURCE (72005)
MAY 20...	1400	ES0	1090	7.3	40

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SAMPLE SOURCE (72005)
MAY 20...	1400	240	.3	40

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
MAY 20...	1400	ES0	171000	23100	90	40

GALLO WASH TANK NR CHACO, NM (LAT 36 03 22 LONG 107 48 37 20)  
 (LOCAL IDENTIFIER-21N.09W.17.214)

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)
MAR 28...	1130	760	9.0	16.5	42	0	14	1.6	150	10	7.0	190

DATE	TIME	CAR- BONATE (MG/L AS C03) (00445)	ALKA- LITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
MAR 28...	11	170	220	8.1	1.0	1.4	517	2.0	.04	90	30	16	

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)
MAR 28...	1130	3	400	90	9	10	30	120

DATE	TIME	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)
MAR 28...	1130	16.5	834

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

SAN JUAN RIVER BASIN - CONTINUED

GALLO WASH AT DIKE NEAR CHACO, NM (LAT 36 03 08 LONG 107 48 43 10)  
(LOCAL IDENTIFIER-21N.09W.17.233)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
MAR 28...	1200	.01	635	8.2	11.5	44	0	16

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
MAR 28...	1.1	120	7.8	4.5	180	0	150	150	7.8

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
MAR 28...	1.0	8.1	399	.43	.03	80	60	8.8

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)
MAR 28...	1200	4	300	80	1	10	60	11

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
MAR 28...	1200	.01	11.5	412	.01

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

599

SAN JUAN RIVER BASIN - CONTINUED

ESCAVADO WASH AT HIWAY 56 BRIDGE NEAR CHACO CANYON TRADING POST, NM (LAT 36 06 14 LONG 107 57 20 10)  
(LOCAL IDENTIFIER-22N.11W.25.433)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
------	------	--	---	--------------------------	--	---	---	---	---

FEB 28...	1230	E36	500	8.4	6.0	--	--	--	--
MAY 09...	1020	E15	590	8.5	12.0	21	7.4	.5	140

DATE	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINEITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	NITRO- GEN, DIS- SOLVED TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
------	--	--	--	--	--	---	--	--	--

FEB 28...	--	--	--	--	--	--	--	--	--
MAY 09...	13	2.0	170	130	3.3	1.1	14	4.0	3.8

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
------	---	---	--	---	---	---	---	--	---

FEB 28...	--	--	--	--	--	--	--	53	2.6
MAY 09...	.06	16	20	.68	.68	110	490	50	5.8

DATE	THIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)
------	-------	--	---	--	---	---	--

FEB 28...	1230	40	20	5200	0	--	2
MAY 09...	1020	35	--	6400	200	110	30

DATE	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)
------	---	---	--	---	--	---

FEB 28...	2	90	0	--	--	--
MAY 09...	--	160	10	490	.8	0

DATE	THIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
------	-------	--	--	---	--	--

FEB 28...	1230	E36	6.0	28100	2730	96
MAY 09...	1020	E15	12.0	35600	1440	94

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

SAN JUAN RIVER BASIN - CONTINUED

TSOSIE SWALE NEAR KIMBETO, NM (LAT 36 07 43 LONG 107 57 14 10)  
(LOCAL IDENTIFIER-22N.11W.24.214)

DATE	TIME	STREAM- FLOW (CFS) (00060)	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS) (00095)	PH (UNITS) (00400)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
MAY 07...	--	E5.0	--	240	7.5	25	0	8.0	1.2	40
SEP 24...	1130	--	E1.6	400	6.9	--	--	--	--	--

DATE	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HC03) (00440)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
MAY 07...	3.5	3.2	104	85	24	4.4	.6	9.4	152	2.1
SEP 24...	--	--	220	180	--	--	--	--	--	--

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	SAMPLE SOURCE (72005)
MAY 07...	2.1	.07	3.5	5.7	.31	.02	60	50	40
SEP 24...	--	--	--	--	--	--	--	--	40

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SAMPLE SOURCE (72005)
MAY 07...	--	10	--	--	60	--	50	82	--	.4	40
SEP 24...	1130	8	1300	330	--	140000	--	400	1900	--	40

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
MAY 07...	--	--	4020	54	99	40
07...	1200	E81	4890	1070	100	40
07...	1205	E85	3310	760	99	40
07...	1210	E87	3860	907	99	40
SEP 24...	1130	E1.6	16200	70	97	40

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN RIVER BASIN - CONTINUED

KIMMENIOLI WASH BELOW PHILLIPS MINE, NM (LAT 35 51 02 LONG 108 03 31 10)  
(LOCAL IDENTIFIER-19N.12W.25.243)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	SAMPLE SOURCE (72005)
MAR 27...	1130	E2.5	2800	8.4	20.0	360	30	0	2.6	1.8	.4	29

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BARIIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)
MAR 27...	1130	3	2	400	100	390	360	1	1

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
MAR 27...	0	0	5000	30	8	8	60	60	90

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	SAMPLE SOURCE (72005)
MAR 27...	0	.0	.0	0	0	610	610	29



ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

SAN JUAN RIVER BASIN - CONTINUED

TRIBUTARY TO DE-NA-ZIN WASH 0.9 MILE NORTH OF TANNER LAKE, NM (LAT 36 14 39 LONG 108 08 42 10)  
(LOCAL IDENTIFIER-23N.12W.08.1341)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	BICAR- BONATE AS HCO3 (MG/L) (00440)	ALKA- LINEITY AS CAC03 (MG/L) (00410)	CARBON, ORGANIC TOTAL (MG/L) AS C (00680)	SAMPLE SOURCE (72005)
NOV 06...	2045	E20	500	8.4	--	--	120	40
SEP 24...	1000	E20	610	7.4	--	--	--	40
24...	1130	E50	490	7.4	296	243	--	40
24...	1200	E100	600	7.5	--	--	111	40

DATE	TIME	ARSENIC TOTAL (UG/L) AS AS (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L) AS BA (01007)	BORON, TOTAL RECOV- ERABLE (UG/L) AS B (01022)	IRON, TOTAL RECOV- ERABLE (UG/L) AS FE (01045)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L) AS MN (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L) AS HG (71900)	SELE- NIUM, TOTAL (UG/L) AS SE (01147)	SAMPLE SOURCE (72005)
NOV 06...	2045	25	--	220	--	--	1.2	5	40
SEP 24...	1000	42	2400	180	250000	12000	--	--	40
24...	1130	73	2000	170	200000	7800	--	--	40
24...	1200	30	--	--	--	--	.4	--	40

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
NOV 06...	2045	E20	47800	2580	68	40
SEP 24...	1000	E20	41100	2220	80	40
24...	1130	E50	27800	3750	91	40
24...	1200	E100	38700	10400	69	40

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

603

SAN JUAN RIVER BASIN - CONTINUED

TRIBUTARY TO DE-NA-ZIN WASH 1.8 MILES NORTH OF TANNER LAKE, NM (LAT 36 15 28 LONG 108 08 46 10)  
(LOCAL IDENTIFIER-23N.12W.05.1334)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	BICAR- BONATE (MG/L AS HCO3) (00440)	ALKA- LINITY (MG/L AS CACO3) (00410)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SAMPLE SOURCE (72005)
NOV 06...	2040	E20	710	7.3	--	--	269	40
SEP 24...	1100	E20	525	6.9	328	269	167	40

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV- ERABLE (UG/L AS B) (01022)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SAMPLE SOURCE (72005)
NOV 06...	2040	48	--	240	--	--	--	1.8	6	40
SEP 24...	1100	55	3600	200	330000	800	15000	.9	--	40

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)
NOV 06...	2040	E20	62000	3350	81	40
SEP 24...	1100	E20	38000	2050	87	40

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

SAN JUAN RIVER BASIN - CONTINUED

NAVAJO MINE 1978 RECLAMATION PLOT NEAR FRUITLAND, NM (LAT 36 43 48 LONG 108 25 13 10)  
(LOCAL IDENTIFIER-29N.15W.16.231)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	
SEP 24...	1700	E.10	3400	7.2	1000	870	280	74	440	
24...	1710	E.10	3600	7.3	1100	1000	300	92	510	
DATE	TIME	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINEITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
SEP 24...	6.0	13	130	1600	130	1.9	10	2900	2630	
24...	6.6	15	100	1900	210	2.4	9.4	3300	3100	
DATE	TIME	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SAMPLE SOURCE (72005)
SEP 24...	6.0	.06	7.8	14	2.0	30	40	69	40	
24...	9.6	.01	2.1	12	.06	20	20	19	40	
DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)			
SEP 24...	1700	1	1	0	9	30	0			
24...	1710	1	1	0	140	20	0			
DATE	TIME	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SAMPLE SOURCE (72005)			
SEP 24...	40	.9	.0	7	10	40				
24...	20	.1	.0	16	10	40				
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE SOURCE (72005)				
SEP 24...	1700	E.10	10500	2.8	90	40				
24...	1710	E.10	187	.05	93	40				

NOTE.--Under SAMPLE SOURCE the number 40 indicates single-stage sample.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

605

LITTLE COLORADO RIVER BASIN

RIO PESCADO BELOW PESCADO, NM (LAT 35 07 07 LONG 108 36 11 10)  
(LOCAL IDENTIFIER-10.17W.11.1212)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)
JUN 20...	1130	.23	732	7.9	24.5	190	0	73	2.3	75	2.4	2.8

DATE	TIME	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINIT (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
JUN 20...	330	0	270	84	17	.4	19	437	.03	.01	110	40	

EFFLUENT FROM UNITED NUCLEAR MINE NEAR CHURCHROCK, NM (LAT 35 39 50 LONG 108 30 10 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
MAY 16...	1330	2.6	700	9.0	23.0

DATE	TIME	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
MAY 16...	1330	21	40	200

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
MAY 16...	1330	.74	3600

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

LITTLE COLORADO RIVER BASIN - CONTINUED

EFFLUENT FROM UNITED NUCLEAR & KERR MCGEE MINES NEAR CHURCHROCK, NM (LAT 35 39 30 LONG 108 29 48 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
MAR 04...	1500	5.0	630	9.0	14.0	46	12	3.8
MAY 25...	1200	6.4	550	9.2	20.0	--	--	--

DATE	TIME	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
MAR 04...	150		9.7	6.2	73	23	.4	15
MAY 25...	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
MAR 04...	1500	4	20	8	16
MAY 25...	1200	--	12	4	19

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
MAR 04...	1500	4.6	1000
MAY 25...	1200	2.6	807

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

607

LITTLE COLORADO RIVER BASIN - CONTINUED

PUERCO RIVER TRIBUTARY BL MINES AT CHURCHROCK, NM (LAT 35 39 23 LONG 108 29 47 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)
OCT						
13...	1230 a	5.1	575	8.7	19.5	12
13...	1231 b	5.1	575	8.7	19.5	--
13...	1232 c	5.1	575	8.7	19.5	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO) (01062)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
OCT											
13...	1230	4	3	<100	.0	.0	26	24	24	9	14

DATE	TIME	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS) (01003)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB) (01052)	MOLYB- DENUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS MO) (01063)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G AS SE) (01148)
OCT					
13...	1230	6	10	2	6
13...	1231	4	10	0	2
13...	1232	3	10	2	2

DATE	TIME	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	GROSS ALPHA, DIS- SOLVED AS (U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS) (80040)	GROSS BETA, DIS- SOLVED AS (CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS) (CS-137) (03516)	GROSS BETA, DIS- SOLVED AS SR/ YT-90 (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
OCT										
13...	1230	12	1200	130	160	120	130	100	13	840

a Other values by custom analysis of bottom materials: V, 10.8ug/g; Ra, 4.1 pCi/g; U, 5.5 ug/g  
b Other values by custom analysis of bottom materials: V, 6.4 ug/g; Ra, 1.4 pCi/g; U, 2.3 ug/g  
c Other values by custom analysis of bottom materials: V, 4.0 ug/g; Ra, 2.5 pCi/g; U, 2.1 ug/g

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

LITTLE COLORADO RIVER BASIN - CONTINUED  
PIPELINE CANYON AT TRESTLE NEAR CHURCHROCK, NM (LAT 35 38 50 LONG 108 30 15 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
JUL 11...	1130	8.5	700	8.9	25.0
19...	1140	6.6	900	8.8	30.0
20...	1220	7.1	900	8.8	26.0

DATE	TIME	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
JUL 11...	1130	230	11
19...	1140	430	8.7
20...	1220	260	10

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
JUL 11...	1130	8.6	940
19...	1140	3.5	591
20...	1220	4.3	627

PIPELINE CANYON NEAR MOUTH NEAR CHURCHROCK, NM (LAT 35 37 40 LONG 108 31 28 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
MAY 25...	1030	5.3	600	9.1	14.0
JUL 12...	1150	8.4	800	8.7	26.0
19...	1000	6.2	900	8.6	24.0
20...	1050	6.5	900	8.8	25.0

DATE	TIME	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
MAY 25...	1030	820	110	28
JUL 12...	1150	260	--	6.0
19...	1000	300	--	6.2
20...	1050	300	--	9.0

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
MAY 25...	1030	1.5	2300
JUL 12...	1150	1.3	763
19...	1000	2.9	547
20...	1050	2.5	666

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA. WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

609

LITTLE COLORADO RIVER BASIN - CONTINUED

PUERCO RIVER NEAR SPRINGSTEAD, NM (LAT 35 36 46 LONG 108 33 09 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
MAY 18...	1345	6.4	600	8.8	24.0
JUL 12...	0950	--	800	8.6	20.0

DATE	TIME	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
MAY 18...	1345	12	0	16
JUL 12...	0950	240	--	9.0

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
MAY 18...	1345	.78	1100
JUL 12...	0950	2.2	768



ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

LITTLE COLORADO RIVER BASIN - CONTINUED

PUERCO RIVER AT GALLUP, NM (LAT 35 31 48 LONG 108 44 21 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHGS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
FEB 25...	1530	10	880	8.5	13.0	120	36	6.8

DATE	TIME	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS S04) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
FEB 25...	170	6.8	3.4	190	53	.7	12	

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
FEB 25...	1530	2	17	20	3.0

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
FEB 25...	1530	.28	960

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

611

LITTLE COLORADO RIVER BASIN - CONTINUED

PUERCO RIVER AT LUFTON, AZ (LAT 35 21 29 LONG 109 02 30 10)

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
------	------	--	---	--------------------------	--	---	---	---	---	---

FEB 25...	1300	<10	1300	8.9	12.0	180	0	52	11	260
--------------	------	-----	------	-----	------	-----	---	----	----	-----

DATE	TIME	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CAC03) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
------	------	--	--	---	---	---	--	--	---	--	--

FEB 25...	8.6	5.3	380	12	332	330	73	1.0	13	945
--------------	-----	-----	-----	----	-----	-----	----	-----	----	-----

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
------	------	---	--	--	---

FEB 25...	1300	8	8	10	2.0
--------------	------	---	---	----	-----

DATE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
------	------	--	---

FEB 25...	1300	.11	400
--------------	------	-----	-----

## RADIOCHEMICAL ANALYSES OF ATMOSPHERIC PRECIPITATION

DATA NOT PREVIOUSLY PUBLISHED

1206 FIELD DRIVE NE, ALBUQUERQUE, NM (LAT 35 05 35 LONG 106 32 40 00)

WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TRITIUM IN WATER MOLE- CULES (TU) (07012)	TRITIUM WATER MOLE- CULES COUNT ERROR (TU) (07013)
APR 01 TO JUN 30	114	5.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	(TU) (07012)	(TU) (07013)
OCT 01 TO DEC 31	32.4	1.5
JAN 01 TO MAR 31	33.8	1.2
APR 01 TO JUN 30	84.0	3.6
JUL 01 TO SEP 30	38.9	1.8
SEP 22	45.5	2.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	(TU) (07012)	(TU) (07013)
JAN 01 TO MAR 31	60.3	2.6

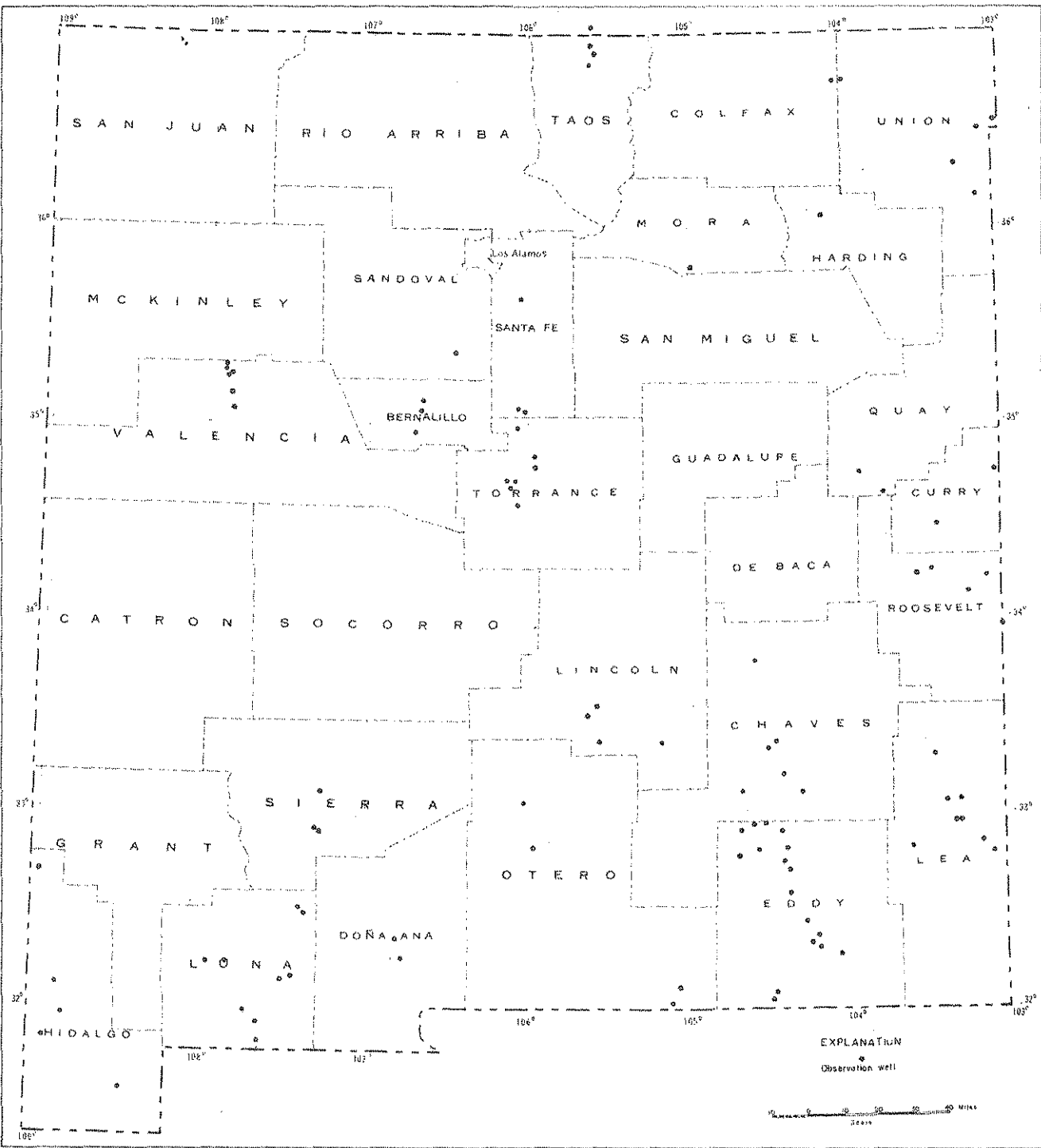


Figure 6.-- Map of New Mexico showing location of observation wells.

## GROUND-WATER LEVELS

## BERNALILLO COUNTY

## Albuquerque Area

345730106431001. Local number, 9N.2E.34.322.

LOCATION.--Lat 34°57'30", long 106°43'10", Hydrologic Unit 13020203.

Owner: Denison.

AQUIFER.--Santa Fe Group of middle (?) Miocene to Pleistocene (?) Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 in (0.30 m), depth unknown, cased to 12 ft (3.7 m).

DATUM.--Altitude of land-surface datum is 4,910 ft (1,497 m). Measuring point: Top of casing, 1.38 ft (0.42 m) above land-surface datum.

PERIOD OF RECORD.--July 1956 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.22 ft (3.42 m) below land-surface datum, Aug. 10, 1973; lowest, 16.30 ft (4.97 m) below land-surface datum, Jan. 12, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 30	12.99
Aug. 17	11.88

350655106395001. Local number, 10N.2E.12.223.

LOCATION.--Lat 36°06'55", long 106°39'50", Hydrologic Unit 13020203.

Owner: City of Albuquerque.

AQUIFER.--Alluvium and Santa Fe Group.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in (0.15 m), depth 950 ft (290 m).

DATUM.--Altitude of land-surface datum is 4,962 ft (1,512 m). Measuring point: Top north side of casing, 6.00 ft (1.83 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1953, Jan. 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.10 ft (3.69 m) below land-surface datum, Apr. 16, 1953; lowest measured, 34.74 ft (10.59 m) below land-surface datum, Aug. 31, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 30	29.19
Aug. 17	31.05

350415106403001. Local number, 10N.2E.24.413.

LOCATION.--Lat 35°04'15", long 106°40'30", Hydrologic Unit 13020203.

Owner: City of Albuquerque.

AQUIFER.--Alluvium and Santa Fe Group.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in (0.15 m), depth and casing information not available.

DATUM.--Altitude of land-surface datum is 4,945 ft (1,507 m). Measuring point: Top east side of casing, 5.50 ft (1.68 m) above land-surface datum.

PERIOD OF RECORD.--Nov. 1956 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.22 ft (5.22 m) below land-surface datum, Aug. 17, 1978; lowest measured, 27.05 ft (8.24 m) below land-surface datum, Aug. 12, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 30	15.85
Aug. 17	15.22

## CHAVES COUNTY

## Roswell Basin

334645104344501. Local number, 7S.23E.23.244.

LOCATION.--Lat 33°46'45", long 104°34'45", Hydrologic Unit 13060005.

Owner: Jess Corn.

AQUIFER.--San Andres Limestone of Permian Age.

WELL CHARACTERISTICS.--Drilled irrigation artesian well, diameter 14 in (0.36 m), depth 426 ft (130 m).

DATUM.--Altitude of land-surface datum is 3,810 ft (1,161 m). Measuring point: Lower outer edge of mouth of discharge pipe, 3.71 ft (1.13 m) above land-surface datum.

PERIOD OF RECORD.--May 1951-Mar. 1960, Jan. 1962-Jan. 1966, Jan. 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 239.83 ft (73.10 m) below land-surface datum, May 26, 1951; lowest, 290.80 ft (88.40 m) below land-surface datum, Aug. 21, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 19	285.26
Aug. 21	290.80

## CHAVES COUNTY

## Roswell Basin

331930104261001. Local number, 11S.25E.29.34333.

LOCATION.--Lat 33°19'30", long 104°26'10", Hydrologic Unit 13060007.

Owner: Valle Ranch.

AQUIFER.--Valley Fill

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 160 ft (48.8 m), cased to 160 ft (48.8 m).

DATUM.--Altitude of land-surface datum is 3,535 ft (1,077 m). Measuring point: Edge of pump base, southeast corner, at land-surface datum.

PERIOD OF RECORD.--Aug. 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.20 ft (4.94 m) below land-surface datum, Jan. 13, 1975; lowest measured, 20.97 ft (6.37 m) below land-surface datum, Aug. 18, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 19	20.90
Aug. 18	20.97

332200104270001. Local number, 12S.25E.9.422.

LOCATION.--Lat 33°22'00", long 104°27'00", Hydrologic Unit 13060007.

Owner: Cumberland Townsite.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 10 in (0.25 m), reported depth 90 ft (27.4 m), cased to 90 ft (27.4 m).

DATUM.--Altitude of land-surface datum is 3,564 ft (1,086 m). Measuring point: Top of 3/4 in (1.9 cm) collar, 0.62 ft (0.19 m) above land-surface datum.

PERIOD OF RECORD.--May 1937 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 38.64 ft (11.78 m) below land-surface datum, Oct. 16, 1941; lowest measured, 83.06 ft (25.32 m) below land-surface datum, Aug. 21, 1973.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 19	79.58
Aug. 18	80.74

331205104245101. Local number, 12S.25E.23.344.

LOCATION.--Lat 33°12'05", long 104°24'51", Hydrologic Unit 13060007.

Owner: U.S. Geological Survey.

AQUIFER.--San Andres Limestone.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 9 to 7 in (0.23 to 0.18 m), depth 930 ft (283 m), 9 in (0.23 m) casing 0-304 ft (0-93 m), 7 in (0.18 m) casing 304-714 ft (93-218 m).

DATUM.--Altitude of land-surface datum is 3,539 ft (1,079 m). Measuring point: Top of recorder shelf, 2.90 ft (0.88 m) above land surface datum.

PERIOD OF RECORD.--Jan. 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 24.55 ft (7.48 m) below land-surface datum, Feb. 5, 1975; lowest, 174.04 ft (53.04 m) below land-surface datum, June 5, 1973.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	79.60	46.17	36.17	30.68	28.49	35.89	146.57	124.35	95.12	189.57	153.85	121.35
10	69.90	44.64	35.26	30.77	28.75	49.06	153.33	106.99	183.80	184.57	151.99	113.59
15	60.94	41.14	33.95	31.15	28.61	73.32	153.33	188.19	183.80	125.31	154.36	118.59
20	55.12	39.67	34.26	32.67	29.04	103.23	153.33	188.78	100.37	137.56	137.96	118.39
25	51.60	39.07	32.15	31.26	32.91	124.34	144.58	98.18	121.15	147.75	150.30	81.61
eam	49.11	37.41	31.32	29.41	37.03	142.60	138.83	124.10	90.29	144.84	140.36	66.70

WTR YEAR 1978 MAX 28.49 Feb. 5, 1978 MIN 189.57 July 5, 1978

330700104402501. Local number, 14S.23E.8.144.

LOCATION.--Lat 33°07'00", long 104°40'25", Hydrologic Unit 13060009.

Owner: M. D. Kincaid.

AQUIFER.--San Andres Limestone of Permian Age.

WELL CHARACTERISTICS.--Drilled stock water-table well, diameter 8 in (0.20 m), depth 460 ft (140 m), casing information not available.

DATUM.--Altitude of land-surface datum is 3,845 ft (1,173 m). Measuring point: Top of casing, 1.00 ft (0.30 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1940 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 257.55 ft (78.50 m) below land-surface datum, Feb. 9, 1943; lowest measured, 327.34 ft (99.77 m) below land-surface datum, Aug. 28, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 25	318.83
Aug. 24	318.18

## GROUND-WATER LEVELS

## CHAVES COUNTY

## Roswell Basin

330640104174501. Local number, 14S.26E.12.433b.

LOCATION.--Lat 33°06'40", long 104°17'45", Hydrologic Unit 13060007.

Owner: C. B. Donaghay.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 13 in (0.33 m), depth 125 ft (38.1 m), cased 0-125 ft (0-38.1 m), perforated 50-115 ft (15.2-35.1 m).

DATUM.--Land-surface datum is 3,396.4 ft (1,035.2 m) above mean sea level. Measuring point: Top of casing, at land surface datum.

PERIOD OF RECORD.--Jan. 1940 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.50 ft (3.81 m) below land-surface datum, Jan. 22, 1942; lowest measured, 23.77 ft (7.25 m) below land-surface datum, Aug. 25, 1967.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 19	20.48
Aug. 18	21.80

## COLFAX COUNTY

## Capulin Basin

364500104031501. Local number, 29N.27E.16.222.

LOCATION.--Lat 36°45'00", long 104°03'15", Hydrologic Unit 11040001.

Owner: John King.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), depth 120 ft (37 m), cased to 20 ft (37 m).

DATUM.--Land-surface datum is 6,821.5 ft (2,079.2 m) above mean sea level. Measuring point: Top of casing, 1.50 ft (0.46 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1957-Feb. 1969, Feb. 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.65 ft (1.42 m) below land-surface datum, Feb. 3 and Aug. 24, lowest measured, 9.37 ft (2.86 m) below land-surface datum, Aug. 13, 1975.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 25	6.91
Aug. 9	7.87

## COSTILLA COUNTY (in Colorado)

## Sunshine Valley

375655105354001. Local number, 1N.74W.33.332.

LOCATION.--Lat 37°56'55", long 105°35'40", Hydrologic Unit 13020101.

Owner: Waller and Allen.

AQUIFER.--Santa Fe Group.

WELL CHARACTERISTICS.--Drilled unused water-table well diameter 15 in (0.38 m), depth 232 ft (70.7 m), casing information not available.

DATUM.--Altitude of land-surface datum is 7,495 ft (2,284 m). Measuring point: Edge of hole inside pumpcase, 2.00 ft (0.60 m) above land-surface datum (since 1971).

PERIOD OF RECORD.--Feb. 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 101.82 ft (31.03 m) below land-surface datum, Aug. 26, 1968; lowest measured, 134.87 ft (41.11 m) below land-surface datum, Aug. 19, 1971.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 27	132.41
Aug. 9	133.38

## CURRY COUNTY

## Clovis Area

342815103270001. Local number, 3N.34E.23.433.

LOCATION.--Lat 34°28'15", long 103°27'00", Hydrologic Unit 12050001.

Owner: Monte Matlock.

AQUIFER.--Ogallala Formation of Pliocene Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m), depth 418 ft (127 m), cased to 418 ft (127 m), perforated 365-418 ft (111-127 m).

DATUM.--Altitude of land-surface datum is 4,432 ft (1,351 m). Measuring point: Top of casing level, with concrete base, 0.40 ft (0.12 m) above land-surface datum (since 1967).

PERIOD OF RECORD.--Apr. 1954 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 340.62 ft (103.82 m) below land-surface datum, Mar. 16, 1957; lowest measured, 349.85 ft (106.35 m) below land-surface datum, Aug. 8, 1978.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 4	348.63
Aug. 15	348.97

## GROUND-WATER LEVELS

617

## CURRY COUNTY

## Clovis Area

4344500103052001. Local number, 6N.37E.8.333.

LOCATION.--Lat 34°45'00", long 103°05'20", Hydrologic Unit 11120101.

Owner: Paul Harrison.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 400 ft (121 m), casing information not available.

DATUM.--Altitude of land-surface datum is 4,430 ft (1,340 m). Measuring point: Southeast anchor bolt hole, 0.10 ft (0.03 m) above concrete base and 0.70 ft (0.21 m) above land surface datum.

PERIOD OF RECORD.--Jan. 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 289.30 ft (88.13 m) below land-surface datum, Jan. 3, 1975; lowest measured, 295.98 ft (89.97 m) below land-surface datum, Aug. 15, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 4	290.99
Aug. 8	295.65

## DONA ANA COUNTY

## Rincon and Mesilla Valleys

3222101064830001. Local number, 22S.1E.26.411.

LOCATION.--Lat 32°22'10", long 106°48'30", Hydrologic Unit 13030102.

Owner: H. Worthem.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 18 in (0.46 m), depth 107 ft (32.6 m), cased to 107 ft (32.6 m).

DATUM.--Altitude of land-surface datum is 3,920 ft (1,195 m). Measuring point: Top of east side of casing, 1.50 ft (0.46 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.12 ft (3.07 m) below land-surface datum, Jan. 27, 1977; lowest measured, 25.57 ft (7.79 m) below land-surface datum, Apr. 25, 1957.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 27	14.14
Aug. 14	17.33

321620106461501. Local number, 23S.2E.31.213.

LOCATION.--Lat 32°16'20", long 106°46'15", Hydrologic Unit 13030102.

Owner: New Mexico State University.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 14 in (0.36 m), reported depth 70 ft (21.3 m), cased to 70 ft (21.3 m).

DATUM.--Altitude of land-surface datum is 3,880 ft (1,183 m). Measuring point: Top of 5/8 in (0.63 cm) hole in pumpbase, 1.08 ft (0.33 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1948, Apr. 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.13 ft (4.31 m) below land-surface datum, Feb. 10, 1948; lowest measured, 29.12 ft (8.88 m) below land-surface datum, Jan. 7, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 13.16 ft (4.01 m) below land-surface datum, Dec. 3, 1947; lowest, same as for period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 9	23.17
Aug. 14	26.00

## EDDY COUNTY

## Roswell Basin

325510104410001. Local number, 16S.23E.15.323.

LOCATION.--Lat 32°55'10", long 104°41'00", Hydrologic Unit 13060007.

Owner: D. W. Runyan.

AQUIFER.--San Andres Limestone of Permian Age.

WELL CHARACTERISTICS.--Drilled stock water-table well, diameter 10 in (0.25 m), depth 1,485 ft (453 m), cased. DATUM.--Altitude of land-surface datum is 3,900 ft (1,189 m). Measuring point: Top of casing, 0.70 ft (0.21 m) below land-surface datum.

PERIOD OF RECORD.--Jan. 1951-Jan. 1965, Feb. 1970-Aug. 1971, Jan. 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 225.16 ft (68.63 m) below land-surface datum, Jan. 12, 1951; lowest measured, 277.60 ft (84.61 m) below land-surface datum, Aug. 5, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 211.87 ft (64.58 m) below land-surface datum, Mar. 25, 1945; lowest, same as period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 18	unable to measure
Aug. 14	unable to measure



## GROUND-WATER LEVELS

## EDDY COUNTY

## Roswell Basin

325735104360701. Local number, 16S.24E.4.23123.

LOCATION.--Lat 32°57'35", long 104°36'07", Hydrologic Unit 13060007.

Owner: Ellis Hunlic.

AQUIFER.--San Andres Limestone.

WELL CHARACTERISTICS.--Drilled irrigation artesian well, diameter not available, depth 610 ft (186 m).

DATUM.--Altitude of land-surface datum is 3,623 ft (1,104 m). Measuring point: southwest side of pump, 1.50 ft (0.46 m) above land-surface datum.

PERIOD OF RECORD.--Jan 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 90.03 ft (29.53 m) below land-surface datum

Jan. 13, 1977; lowest measured, 100.54 ft (30.64 m) below land-surface datum, Aug. 27, 1974.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 18	90.87
Aug. 14	well being pumped

325712104314501. Local number, 16S.25E.6.313.

LOCATION.--Lat 32°57'12", long 104°31'45", Hydrologic Unit 13060007.

Owner: Frank Childress.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), depth 39 ft (11.9 m), cased to 39 ft (11.9 m).

DATUM.--Altitude of land-surface datum is 3,600 ft (1,097 m). Measuring point: Top of 20 in (0.51 m) wood cribbing, 0.40 ft (0.12 m) above land-surface datum.

PERIOD OF RECORD.--Sept. 1937-Jan. 1966, Aug. 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.41 ft (7.44 m) below land-surface datum, July 17, 1961; lowest measured, 31.72 ft (9.64 m) below land-surface datum, Aug. 14, 1978.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 18	31.34
Aug. 14	31.72

325445104253501. Local number, 16S.26E.19.211.

LOCATION.--Lat 32°54'45", long 104°25'35", Hydrologic Unit 13060007.

Owner: H. V. Parker.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 in (0.30 m), depth 107 ft (32.6 m) cased to 107 ft (32.6 m).

DATUM.--Land-surface datum is 3,397.9 ft (1,035.7 m) above mean sea level. Measuring point: Hole in top of pump, west side, 0.30 ft (0.09 m) above top of casing (since 1975).

PERIOD OF RECORD.--Jan. 1938 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.34 ft (2.85 m) below land-surface datum, Jan. 15, 1942; lowest measured, 109.00 ft (33.22 m) below land-surface datum, Aug. 31, 1972.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 18	100.99
Aug. 14	well being pumped

324831104435701. Local number, 17S.23E.30.13244.

LOCATION.--Lat 32°48'31", long 104°43'57", Hydrologic Unit 13060007.

Owner: Village of Hope.

AQUIFER.--San Andres Limestone.

WELL CHARACTERISTICS.--Drilled public-supply artesian well, diameter 16 in (0.41 m), depth 600 ft (183 m), cased to 558 ft (170 m), perforated 498-558 ft (152-170 m).

DATUM.--Altitude of land-surface datum is 4,095 ft (1,248 m). Measuring point: Top of 2 in (0.05 m) pipe extension out of north side of concrete base, 2.00 ft (0.61 m) above land-surface datum.

PERIOD OF RECORD.--Dec. 1968, Jan. 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 544.18 ft (165.43 m) below land-surface datum, Jan. 13, 1977, lowest measured, 553.18 ft (168.61 m) below land-surface datum, Aug. 7, 1974.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 18	545.00
Aug. 24	547.65

## GROUND-WATER LEVELS

619

## EDDY COUNTY

## Roswell Basin

324930104234501. Local number, 17S.26E.21.112.

LOCATION.--Lat 32°49'30", long 104°23'45", Hydrologic Unit 13060007.

Owner: Western Land Co., Inc.

AQUIFER.--Artesia Group.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 in (0.30 m), depth 242 ft (73.8 m), cased to 242 ft (73.8 m).

DATUM.--Altitude of land-surface datum is 3,373 ft (1,028 m). Measuring point: 3/4 in (1.9 cm) plug on discharge pipe, 2.00 ft (0.61 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1938-Jan. 1945, Jan. 1947-Aug. 1958, Jan. 1960-Jan. 1963, Jan 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 42.23 ft (13.18 m) below land-surface datum, Jan. 13, 1955; lowest measured, 106.28 ft (32.39 m) below land-surface datum, Aug. 16, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 17	94.08
Aug. 16	104.35

324615104421001. Local number, 18S.23E.5.333.

LOCATION.--Lat 32°46'15", long 104°42'10", Hydrologic Unit 13060010.

Owner: Joe Clements.

AQUIFER.--San Andres Limestone of Permian Age.

WELL CHARACTERISTICS.--Drilled stock water-table well, diameter 6 in (0.15 m), depth 500 ft (152 m), surface casing.

DATUM.--Land-surface datum is 4,007.6 ft (1,221.5 m) above mean sea level. Measuring point: Top of casing, 0.40 ft (0.12 m) above land-surface datum.

PERIOD OF RECORD.--July 1945 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 385.50 ft (117.50 m) below land-surface datum, July 21, 1945; lowest measured, 478.73 ft (145.92 m) below land-surface datum, Jan. 14, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 25	473.56
Aug. 24	470.62

324624104244501. Local number, 18S.26E.6.442a.

LOCATION.--Lat 32°46'24", long 104°24'45", Hydrologic Unit 130600007.

Owner: Pecos Valley Artesian Conservancy District.

AQUIFER.--San Andres Limestone.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 9 in (0.23 m), depth 1,008 ft (307 m), cased to 726 ft (221 m).

DATUM.--Land-surface datum is 3402.10 ft (1036.96 m) above mean sea level. Measuring point: Top of recorder shelf, 3.40 ft (1.04 m) above land-surface datum.

REMARKS.--Depth to artesian aquifers 768 ft (234 m), 820 ft (250 m), 889 ft (271 m), and 999 ft (305 m).

PERIOD OF RECORD.--June 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 71.79 ft (21.88 m) below land-surface datum, Jan. 26, 1962; lowest, 209.15 ft (63.75 m) below land-surface datum, July 31-Aug. 2, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAILY HIGHEST WATER LEVEL, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	--	121.89	109.93	99.87	98.12	95.72	148.74	148.36	151.61	136.80	179.69	163.32
10	--	119.55	108.00	98.45	96.08	101.10	151.94	143.58	149.02	143.31	180.92	160.72
15	--	117.06	106.52	95.34	95.41	105.82	158.08	140.42	140.09	155.02	180.92	161.31
20	132.04	115.17	105.53	--	94.42	113.63	157.82	154.47	138.86	162.34	181.13	164.03
25	128.97	113.07	103.69	--	95.67	129.87	161.61	160.13	143.91	164.78	181.13	146.51
com	125.40	111.30	102.70	99.45	97.02	140.48	159.83	166.31	138.84	170.97	181.13	137.65

WTR YEAR 1978 MAX 94.42 Feb. 20, 1978 MIN 181.13 Aug. 20, 1978

324325104233001. Local number, 18S.26E.28.121a.

LOCATION.--Lat 32°43'25", long 104°23'30", Hydrologic Unit 13060011.

Owner: Town of Dayton.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in (0.20 m), depth 250 ft (76.2 m), cased to 182 ft (55.5 m), casing slotted 92-182 ft (28.0-55.5 m).

DATUM.--Altitude of land-surface datum is 3,403 ft (1,037 m). Measuring point: Top of casing, 0.06 ft (0.02 m) above land-surface datum.

PERIOD OF RECORD.--Aug. 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 59.79 ft (18.22 m) below land-surface datum, Feb. 5, 1952; lowest, 118.98 ft (36.16 m) below land-surface datum, Sept. 20, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	118.27	118.29	118.39	118.49	118.46	118.50	118.58	118.62	118.69	118.79	118.88	118.90
10	118.28	118.42	118.42	118.46	118.42	118.50	118.67	118.66	118.69	118.79	118.80	118.88
15	118.33	118.31	118.33	118.39	118.55	118.68	118.64	118.60	118.72	118.80	118.89	118.94
20	118.29	118.37	118.61	118.47	118.52	118.56	118.56	118.75	118.75	118.86	118.89	118.98
25	118.38	118.41	118.50	118.52	118.54	118.64	118.66	118.70	118.71	118.80	118.91	118.90
com	118.31	118.30	118.48	118.48	118.56	118.53	118.63	118.71	118.77	118.83	118.90	118.95

WTR YEAR 1978 MAX 118.24 Oct. 4, 1978 MIN 118.98 Sept. 20, 1978

## GROUND-WATER LEVELS

## EDDY COUNTY

## Roswell Basin

323540104232001. Local number, 20S.26E.8.112

LOCATION.--Lat 32°35'40", long 104°23'20", Hydrologic Unit 13060011.

Owner: Moutry.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 13 in (0.33 m), depth 364 ft (111 m), casing information not available.

DATUM.--Altitude of land-surface datum is 2,386 ft (1,002 m). Measuring point: Top of basal flange of pump head, 0.20 ft (0.06 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1938 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.87 ft (7.89 m) below land-surface datum, Jan. 2, 1943; lowest measured, 100.22 ft (30.46 m) below land-surface datum, Aug. 16, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 17	74.75
Aug. 16	100.22

## Carlsbad Area

322640104165801. Local number, 21S.27E.32.112.

LOCATION.--Lat 32°26'40", long 104°16'58", Hydrologic Unit 13060011.

Owner: L. E. Loman.

AQUIFER.--Capitan Limestone of Permian Age.

WELL CHARACTERISTICS.--Drilled domestic and irrigation artesian well, diameter 12 in (0.30 m), reported depth 305 ft (93 m).

DATUM.--Altitude of land-surface datum is 3,112 ft (949 m). Measuring point: Top of casing, 0.40 ft (0.12 m) above land-surface datum.

PERIOD OF RECORD.--Oct. 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.64 ft (1.41 m) below land-surface datum, Jan. 17, 1950; lowest measured, 17.35 ft (5.29 m) below land-surface datum, Aug. 9, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 25	14.33
Aug. 17	13.74

322120104151501. Local number, 22S.26E.36.111a.

LOCATION.--Lat 32°21'20", long 104°15'15", Hydrologic Unit 13060011.

Owner: Carlsbad Airfield.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 12 in (0.30 m), depth 260 ft (79.3 m), cased to 260 ft (79.3 m).

DATUM.--Altitude of land-surface datum is 3,225 ft (983 m). Measuring point: Top of recorder platform, 2.70 ft (0.83 m) above land-surface datum.

PERIOD OF RECORD.--July 1942 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 131.50 ft (40.08 m) below land-surface datum, Oct. 14, 1942; lowest, 207.75 ft (63.32 m) below land-surface datum, Aug. 25, 1973.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	--	--	205.10	--	--	--	--	--	--	--	211.32	214.60
10	--	--	--	--	--	--	--	--	--	--	211.26	213.32
15	--	--	--	--	--	--	--	--	--	--	212.85	--
20	--	--	203.30	--	--	--	--	--	--	--	213.24	--
25	--	--	--	--	--	--	--	--	--	209.31	312.67	--
com	--	--	--	--	--	--	--	--	--	210.10	--	--

WTR YEAR 1978 MAX 203.30 Dec. 20, 1977 MIN 214.60 Sept. 5, 1978

322231104131001. Local number, 22S.27E.22.421.

LOCATION.--Lat 32°22'31", long 104°31'10", Hydrologic Unit 13060011.

Owner: Enea Grandi.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), reported depth 150 ft (45.7 m), cased.

DATUM.--Altitude of land-surface datum is 3,100 ft (945 m). Measuring point: Top of casing, 1.20 ft (0.37 m) above land-surface datum.

PERIOD OF RECORD.--Sept. 1947-Aug. 1968, Jan. 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.43 ft (6.53 m) below land-surface datum, Sept. 15, 1950; lowest measured, 81.10 ft (24.65 m) below land-surface datum, Aug. 8, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 23	68.76
Aug. 19	79.16

## Carlsbad Area

321740104035501. Local number, 23S.27E.9.211.

LOCATION.--Lat 32°17'40", long 104°03'55", Hydrologic Unit 13060011.

Owner: J. A. Cox.

AQUIFER.-- Alluvium.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 200 ft (60.9 m).

DATUM.--Altitude of land-surface datum is 3,150 ft (960 m). Measuring point: Top of casing, under pump base, 1.25 ft (0.41 m) above land-surface datum.

PERIOD OF RECORD.--July 1949-Nov. 1955, Jan. 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 41.70 ft (12.71 m) below land-surface datum, Sept. 15, 1950; lowest measured, 64.72 ft (19.67 m) below land-surface datum, Jan. 23, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, same as period of record; lowest measured, 68.22 ft (20.79 m) below land-surface datum, Jan. 28, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 23	64.72
Aug.	well being pumped

321740104035501. Local number, 23S.28E.23.133.

LOCATION.--Lat 32°17'40", long 104°03'55", Hydrologic Unit 13060011.

Owner: A. R. Donaldson.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 148 ft (45.1 m), cased.

DATUM.--Altitude of land-surface datum is 3,020 ft (921 m). Measuring point: Bottom edge of north 1/2 in (1.27 cm) hole in west side of pump base, 0.80 ft (0.24 m) above land-surface datum.

PERIOD OF RECORD.--Sept. 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 38.25 ft (11.66 m) below land-surface datum, Sept. 14, 1950; lowest measured, 93.62 ft (28.46 m) below land-surface datum, Aug. 8, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 23	74.18
Aug. 15	93.18

320602104285201. Local number, 25S.24E.27.421.

LOCATION.--Lat 32°06'02", long 104°28'52", Hydrologic Unit 13060011.

Owner: Walker Hood.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 101 ft (31 m), uncased.

DATUM.--Altitude of land-surface datum is 3,701 ft (1,128 m). Measuring point: Northwest corner of pumpbase, 1.00 ft (0.30 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1952-Aug. 1967, Jan. 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 55.22 ft (16.83 m) below land-surface datum, Sept. 21, 1966; lowest measured, 85.10 ft (25.93 m) below land-surface datum, Aug. 25, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 20	59.05
Aug. 17	well being pumped

320257104295201. Local number, 26S.24E.9.441.

LOCATION.--Lat 32°02'57", long 104°29'52", Hydrologic Unit 13060011.

Owner: John Mayes.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 in (0.30 m), depth 100 ft (30.5 m), cased to 85 ft (25.9 m).

DATUM.--Land-surface datum is 3,749.4 ft (1,142.8 m) above mean sea level. Measuring point: Top of air-line flange support, 1.40 ft (0.43 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 42.29 ft (12.89 m) below land-surface datum, Nov. 8, 1955; lowest measured, 54.98 ft (16.76 m) below land-surface datum, Sept. 8, 1965.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 26	48.09
Aug. 17	49.10

GROUND-WATER LEVELS  
HARDING COUNTY

360340104085001. Local number, 21N.26E.3.4443.

LOCATION.--Lat 36°03'40", long 104°08'50", Hydrologic Unit 11080007.

Owner: Unknown.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 5 in (0.13 m), depth 120 ft (36.3 m), cased to 120 ft (36.3 m).

DATUM.--Altitude of land-surface datum is 5,870 ft (1,777 m). Measuring point: Top of 5 in (0.13 m) galvanized casing, 0.30 ft (0.09 m) above land-surface datum on east side.

PERIOD OF RECORD.--1976.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 82.92 ft (25.27 m) below land-surface datum,

Jan. 28, 1976; lowest measured, 83.25 ft (25.30 m) below land-surface datum, Jan. 26, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 82.16 ft (24.88 m) below land-surface datum, June 10, 1969; lowest measured, same as period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 26	83.35
Aug. 8	83.21

HIDALGO COUNTY

Virden Valley

324053108594101. Local number, 19S.21W.3.414.

LOCATION.--Lat 32°40'53", long 108°59'41", Hydrologic Unit 15040002.

Owner: Jones, Clouse, Jensen.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 20 in (0.51 m), depth 72 ft (22.0 m).

DATUM.--Altitude of land-surface datum is 3,750 ft (1,143 m). Measuring point: Hole inside pumpshell, 0.90 ft (0.27 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.97 ft (3.02 m) below land-surface datum,

Aug. 25, 1976; lowest measured, 14.54 ft (4.43 m) below land-surface datum, Sept. 12, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 9	11.06
Aug. 4	15.79

Animas Valley

320700108515001. Local number, 25S.20W.24.313.

LOCATION.--Lat 32°07'00", long 108°51'50", Hydrologic Unit 15040003.

Owner: Rudiger and Jundt.

AQUIFER.--Bolson deposits.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 358 ft (109 m), cased to 320 ft (97.5 m).

DATUM.--Land-surface datum is 4,221.43 ft (1,286.69 m) above mean sea level. Measuring point: Top of casing, 0.43 ft (0.13 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1948 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 42.43 ft (12.93 m) below land-surface datum,

Apr. 1, 1948; lowest measured, 117.96 ft (35.85 m) below land-surface datum, Aug. 1, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 5	not measured
Aug. 1	117.96 (nearby well being pumped)

315645108493501. Local number, 27S.19W.20.343.

LOCATION.--Lat 31°56'45", long 108°49'35", Hydrologic Unit 15040003.

Owner: Felix Gauthier.

AQUIFER.--Bolson deposits.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 358 ft (109 m), cased to 358 ft (109 m).

DATUM.--Altitude of land-surface datum is 4,420 ft (1,347 m). Measuring point: Top edge of 1 1/4 in (3.16 cm) pipe in concrete pump base, 1.25 ft (0.38 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 132.12 ft (40.27 m) below land-surface datum,

Jan. 19, 1950; lowest measured, 198.50 ft (60.34 m) below land-surface datum, Aug. 1, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 131.90 ft (40.20 m) below land-surface datum, July 29, 1949; lowest measured, same as period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 5	172.75
Aug. 1	198.50 (well pumped recently)

GROUND-WATER LEVELS  
San Simon Creek Valley

623

315010108570001. Local number, 28S.21W.30.222.  
LOCATION.--Lat 31°50'10", long 108°57'00", Hydrologic Unit 15040006.  
Owner: C. L. Johnston.  
AQUIFER.--Bolson deposits.  
WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 8 in (0.20 m), depth 471 ft (143 m), cased to 471 ft (143 m).  
DATUM.--Altitude of land-surface datum is 4,440 ft (1,355 m). Measuring point: Hole in west side of casing, 0.70 ft (0.21 m) above land-surface datum.  
PERIOD OF RECORD.--Jan. 1971 to current year.  
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 112.62 ft (34.33 m) below land-surface datum, Jan. 19, 1971; lowest measured, 122.94 ft (37.37 m) below land-surface datum, Aug. 4, 1978.  
EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 110.88 ft (33.80 m) below land-surface datum, Jan. 15, 1969; lowest measured, same as period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 11	120.66
Aug. 4	122.94

Playas Valley

313502108275001. Local number, 31S.16W.33.233.  
LOCATION.--Lat 31°35'02", long 108°27'50", Hydrologic Unit 13030201.  
Owner: U-Bar Ranch.  
AQUIFER.--Bolson deposits.  
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 16 in (0.41 m), depth 654 ft (199 m), 16 in (0.41 m) casing.  
DATUM.--Altitude of land-surface datum is 4,400 ft (1,341 m). Measuring point: Bottom edge of shelf, 4.05 ft (1.23 m) above land-surface datum.  
PERIOD OF RECORD.--Jan. 1971 to current year.  
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 44.66 ft (13.61 m) below land-surface datum, Apr. 18-20, and 30, 1973; lowest, 54.95 ft (16.74 m) below land-surface datum, Sept. 4, 1976.  
EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level, same as period of record; lowest, 79.37 ft (24.19 m) below land-surface datum, Sept. 3-4, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	---	49.99	50.03	50.13	50.14	50.14	50.23	50.23	50.35	50.44	50.51	50.57
10	---	50.04	50.07	50.10	50.07	50.14	50.25	50.31	50.39	50.47	50.51	50.58
15	---	50.00	50.04	50.09	50.14	50.21	50.26	50.30	50.41	50.47	50.52	50.61
20	---	50.00	50.07	50.10	50.17	50.19	50.25	50.32	50.40	50.46	50.54	50.62
25	---	50.05	50.10	50.14	50.16	50.21	50.28	50.34	50.42	50.48	50.50	50.65
30	---	50.02	50.10	50.13	50.15	50.21	50.26	50.33	50.44	50.49	50.56	50.66
WTR YEAR 1978 MAX 49.93 Nov. 6, 1977 MIN 50.66 Sept. 30, 1978												

LEA COUNTY

Tatum-Lovington-Hobbs Area

331740103285001. Local number, 12S.34E.11.413.  
LOCATION.--Lat 33°17'40", long 103°28'50", Hydrologic Unit 12080006.  
Owner: A. D. Jones.  
AQUIFER.--Ogallala Formation of Pliocene Age.  
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 15 in (0.38 m), depth 87 ft (26.5 m).  
DATUM.--Altitude of land-surface datum is 4,150 ft (1,265 m). Measuring point: Top of concrete pump base, 0.80 ft (0.24 m) above land-surface datum.  
PERIOD OF RECORD.--May 1949 to current year.  
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.57 ft (9.01 m) below land-surface datum, May 24, 1949; lowest measured, 34.03 ft (10.34 m) below land-surface datum, Aug. 9, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 4	33.95
Aug. 9	34.03

330325103245501. Local number, 14S.35E.33.433.  
LOCATION.--Lat 33°03'25", long 103°24'55", Hydrologic Unit 12080003.  
Owner: W. A. Anderson.  
AQUIFER.--Ogallala Formation of Pliocene Age.  
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), depth 62 ft (18.9 m), not cased.  
DATUM.--Land-surface datum is 4,013.61 ft (1,223.35 m) above mean sea level. Measuring point: Top of concrete collar on well, 1.00 ft (0.30 m) above land-surface datum.  
PERIOD OF RECORD.--Nov. 1929 to current year.  
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.65 ft (12.09 m) below land-surface datum, May 21, July 25, 1951 and Jan. 9, May 24, 1952; lowest measured, 46.84 ft (14.28 m) below land-surface datum, Aug. 13, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 4	45.37
Aug. 9	45.32

## GROUND-WATER LEVELS

## LEA COUNTY

## Tatum-Lovington-Hobbs Area

330400103193401. Local number, 14S.36E.32.121.

LOCATION.--Lat 33°04'00", long 103°19'34", Hydrologic Unit 12080003.

Owner: E. T. Howell.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth and casing information not available.

DATUM.--Altitude of land-surface datum is 3,990 ft (1,216 m). Measuring point: Top of concrete pump base, 0.50 ft (0.15 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1949-Jan. 1950, Jan. 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 53.38 ft (15.9 m) below land-surface datum, Jan. 19, 1949, lowest measured, 70.07 ft (21.36 m) below land-surface datum, Jan. 14, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 4	68.55
Aug. 9	67.47

325703103213201. Local number, 16S.36E.4.322.

LOCATION.--Lat 32°57'03", long 103°21'32", Hydrologic Unit 12080003.

Owner: City of Lovington.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 13 in (0.33 m), depth 212 ft (64.6 m), perforated 80-208 ft (24.4-63.4 m).

DATUM.--Altitude of land-surface datum is 3,926 ft (1,197 m). Measuring point: Top of shelf, 4.00 ft (1.22 m) above land-surface datum.

PERIOD OF RECORD.--Aug. 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 65.00 ft (19.81 m) below land-surface datum, Dec. 14, 16, and 24, 1973; lowest measured, 67.11 ft (20.46 m) below land-surface datum, Aug. 24, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	66.03	65.96	65.85	65.89	65.80	65.71	65.60	65.60	65.74	65.81	65.97	66.03
10	66.02	66.02	65.87	65.88	65.75	65.69	65.62	65.63	65.75	65.86	65.21	66.22
15	66.07	65.93	65.79	65.84	65.77	65.73	65.60	65.61	65.76	65.89	65.91	66.19
20	66.01	65.93	65.87	65.84	65.74	65.68	65.59	65.71	65.77	65.89	65.99	66.00
25	66.02	65.93	65.81	65.83	65.74	65.68	65.61	65.70	65.77	65.83	66.04	66.08
com	65.95	65.86	65.79	65.81	65.73	65.62	65.58	65.72	65.79	65.96	66.21	66.07

WTR YEAR 1978 MAX 15.58 Apr. 21, 1978 MIN 66.23 Sept. 10, 1978

325658103200001. Local number, 16S.37E.11.111.

LOCATION.--Lat 32°56'58", long 103°20'00", Hydrologic Unit 12080003.

Owner: H. J. Taylor.

AQUIFER.--Ogallala Formation of Pliocene Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), reported depth 118 ft (36.0 m).

DATUM.--Altitude of land-surface datum is 3,900 ft (1,189 m). Measuring point: Top of 1 in (2.54 cm) hole in southwest side of pump, 1.34 ft (0.41 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1949 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 31.93 ft (9.73 m) below land-surface datum, Jan. 23, 1949; lowest measured, 78.56 ft (23.95 m) below land-surface datum, Sept. 13, 1965.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 4	78.42
Aug. 9	well being pumped

324947103371001. Local number, 17S.33E.13.341.

LOCATION.--Lat 32°49'47", long 103°37'10", Hydrologic Unit 12080003.

Owner: Potash Co. of America.

AQUIFER.--Ogallala Formation of Pliocene Age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in (0.15 m), depth 252 ft (76.8 m), cased to 252 ft (76.8 m).

DATUM.--Altitude of land-surface datum is 4,124 ft (1,257 m). Measuring point: Top of casing, 1.10 ft. (0.34 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1953 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 146.00 ft (44.50 m) below land-surface datum, Jan. 21, 1953; lowest measured, 170.98 ft (51.97 m) below land-surface datum, Sept. 24, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	--	169.40	169.75	169.87	169.42	169.66	169.98	170.06	170.37	170.53	170.76	170.77
10	--	169.52	169.77	169.77	169.42	169.68	170.11	170.09	170.32	170.59	170.66	170.82
15	--	169.42	169.63	169.60	169.49	169.94	170.06	170.13	170.30	170.63	170.77	170.90
20	--	169.53	169.83	169.62	169.55	169.87	169.95	170.26	170.31	170.66	170.77	170.90
25	--	169.62	169.82	169.59	169.65	169.96	170.06	170.24	170.42	170.68	170.78	170.98
com	--	169.63	169.88	169.71	169.73	169.94	170.06	170.29	170.47	170.68	170.83	170.97

WTR YEAR 1978 MAX 169.38 Nov. 8, 1977 MIN 170.98 Sept. 24, 1978

## GROUND-WATER LEVELS

625

## LEA COUNTY

## Tatum-Lovington-Hobbs Area

325132103112501. Local number, 17S.38E.7.111a.

LOCATION.--Lat 32°51'32", long 103°11'25", Hydrologic Unit 12080003.

Owner: L. R. Seblings.

AQUIFER.--Ogallala Formation of Pliocene Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), reported depth 125 ft (38.1 m), cased.

DATUM.--Altitude of land-surface datum is 3,740 ft (1,140 m). Measuring point: Edge of small pipe projecting from west side of pump, 0.96 ft (0.29 m) above concrete pump base, and 1.91 ft (0.58 m) above land-surface datum (since 1971).

PERIOD OF RECORD.--July 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 35.59 ft (10.85 m) below land-surface datum, Mar. 21, 1952; lowest measured, 71.94 ft (21.86 m) below land-surface datum, Aug. 16, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 5	67.99
Aug. 9	well being pumped

324745103082001. Local number, 17S.38E.34.113.

LOCATION.--Lat 32°47'45", long 103°08'20", Hydrologic Unit 12080003.

Owner: W. E. Busby.

AQUIFER.--Ogallala Formation of Pliocene Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 in (0.30 m), depth 125 ft (38.1 m), cased to 90 ft (27.4 m).

DATUM.--Altitude of land-surface datum is 3,660 ft (1,116 m). Measuring point: Top of 1/2 in (1.3 cm) hole in pump base, 0.54 ft (0.16 m) above land-surface datum.

PERIOD OF RECORD.--Nov. 1943 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.78 ft (7.55 m) below land-surface datum, Jan. 15, 1944; lowest measured, 54.52 ft (16.57 m) below land-surface datum, Aug. 9, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 4	53.50
Aug. 9	54.52

## LINCOLN COUNTY

## Hondo Valley

333015105382201. Local number, 9S.13E.25.113.

LOCATION.--Lat 33°30'15", long 105°38'22", Hydrologic Unit 13060008, 0.4 mi (0.6 km) southwest of intersection of Magado Creek and State Highway 48.

Owner: M W. Coll.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled irrigation and domestic water-table well, diameter 8 in (0.20 m), depth 90 ft (27.4 m), cased to 40 ft (12.1 m).

DATUM.--Altitude of land-surface datum is 6,750 ft (2,057 m). Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--Dec. 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.04 ft (5.05 m) below land-surface datum, Nov. 25, 1958; lowest measured, 44.36 ft (13.52 m) below land-surface datum, Aug. 13, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 7	26.65
Aug. 1	26.00

333242105340701. Local number, 9S.14E.10.132.

LOCATION.--Lat 33°32'42", long 105°34'07", Hydrologic Unit 13060008, east end of Village on south side of Highway U.S. 380.

Owner: Village of Capitan.

AQUIFER.--Mancos Shale of Late Cretaceous Age.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 8 in (0.20 m), depth 324 ft (98.8 m), cased to 271 ft (82.6 m).

DATUM.--Altitude of land-surface datum is 6,340 ft (1,932 m). Measuring point: Top of breather hole on west side of pump base, 1.00 ft (0.30 m) above land-surface datum.

PERIOD OF RECORD.--June 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 38.39 ft (11.70 m) below land-surface datum, Aug. 14, 1973; lowest measured, 69.77 ft (21.27 m) below land-surface datum, Nov. 28, 1956.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 7	37.56
Aug. 31	38.10



## GROUND-WATER LEVELS

## LINCOLN COUNTY

## Hondo Valley

33214510533001. Local number, 11S.14E.15.431.

LOCATION.--Lat 33°21'45", long 105°33'30", Hydrologic Unit 13060008, 0.1 mi (0.16 km) west of Valley View Motel.

Owner: E. H. Fuchs.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), depth 90 ft (27.4 m), casing information not available.

DATUM.--Altitude of land-surface datum is 6,200 ft (1,890 m). Measuring point: Top of east edge of 8 in (0.20 m) casing, 1.00 ft (0.30 m) above land-surface datum.

PERIOD OF RECORD.--July 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 57.16 ft (17.42 m) below land-surface datum, Mar. 26, 1958; lowest measured, 63.75 ft (19.43 m) below land-surface datum, Aug. 10, 1970.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 6	58.36
Aug. 30	58.36

332157105094101. Local number, 11S.18E.16.444.

LOCATION.--Lat 33°21'57", long 105°09'41", Hydrologic Unit 13060008, 0.4 mi (0.6 km) south of Picacho Bridge on east of Casey Canyon Road.

Owner: Lincoln County Limestone Co.

AQUIFER.--Yeso Formation of Permian Age.

WELL CHARACTERISTICS.--Drilled domestic and stock water-table well, diameter 12 in (0.30 m), depth 125 ft (38.1 m), cased to 110 ft (33.5 m).

DATUM.--Altitude of land-surface datum is 5,010 ft (1,526 m). Measuring point: Top of casing, 0.5 ft (0.15 m) above land-surface datum.

PERIOD OF RECORD.--Oct. 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.02 ft (13.68 m) below land-surface datum, Jan. 25, 1977; lowest measured, 60.18 ft (18.34 m) below land-surface datum, Jan. 15, 1959.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 6	50.59
Aug. 30	50.25

## LUNA COUNTY

## Mimbres Valley

323110107235001. Local number, 20S.5W.31.334.

LOCATION.--Lat 32°31'10", long 107°23'50", Hydrologic Unit 13030202.

Owner: Leonard Farms (formerly Jack Carter).

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 421 ft (128 m), perforated 221-421 ft (67-128 m).

DATUM.--Altitude of land-surface datum is 4,486.6 ft (1,367.5 m). Measuring point: 1/2 in (1.3 cm) pipe west side of pumpbase, 1.00 ft (0.30 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 54.69 ft (16.67 m) below land-surface datum, Jan. 19, 1959; lowest measured, 100.46 ft (30.62 m) below land-surface datum, Sept. 8, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 30	not measured
Aug. 1	not measured

322930107221001. Local number, 21S.5W.8.444.

LOCATION.--Lat 32°29'30", long 107°22'10", Hydrologic Unit 13030202.

Owner: Leonard Farms (formerly Jack Carter).

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 435 ft (133 m), cased to 435 ft (133 m).

DATUM.--Altitude of land-surface datum is 4,530 ft (1,381 m). Measuring point: Hole in NE side of pump shell, 1.60 ft (0.49 m) above land-surface datum.

PERIOD OF RECORD.--Nov. 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 102.06 ft (31.11 m) below land-surface datum, Jan. 17, 1962; lowest measured, 158.31 ft (48.12 m) below land-surface datum, Aug. 1, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 30	155.24
Aug. 1	158.31

## GROUND-WATER LEVELS

627

LUNA COUNTY  
Mimbres Valley

321352107493901. Local number, 24S.10W.12.431.

LOCATION.--Lat 32°13'52", long 107°49'39", Hydrologic Unit 13030202.

Owner: Steve Hrna.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Dug and drilled unused water-table well, diameter 36 in (0.91 m), reported depth 132 ft (40.2 m), cased.

DATUM.--Altitude of land-surface datum is 4,330 ft (1,319 m). Measuring point: Top of recorder shelter shelf, 1.36 ft (0.42 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1939 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 71.61 ft (23.66 m) below land-surface datum, May 6-13, 1940; lowest, 113.30 ft (34.53 m) below land-surface datum, Aug. 12 and 20, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	108.92	105.05	104.42	105.17	105.12	105.85	107.51	108.16	107.68	106.82	106.23	105.95
10	108.37	104.80	104.70	105.08	105.33	105.93	107.62	108.37	107.53	106.68	106.07	105.77
15	107.96	104.54	104.52	105.30	105.68	106.35	107.84	108.21	107.40	106.52	106.13	105.72
20	107.16	104.48	105.22	105.34	105.77	106.53	107.93	108.27	107.26	106.35	106.22	105.44
25	106.64	104.32	104.99	105.26	105.53	106.93	108.16	108.06	107.09	106.30	106.12	105.07
com	105.82	104.26	105.01	105.11	105.60	107.35	108.13	107.80	107.01	106.20	106.10	104.70

WTR YEAR 1978 MAX 104.18 Nov. 20, 1977 MIN 109.33 Oct. 2, 1977

321415107565501. Local number 24S.11W.14.122.

LOCATION.--Lat 32°14'15", long 107°56'55", Hydrologic Unit 13030202.

Owner: Charles Waldrop.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 in (0.30 m), reported depth 210 ft (64.0 m), cased to 198 ft (60.4 m).

DATUM.--Altitude of land-surface datum is 4,405 ft (1,343 m). Measuring point: Top of 1 in (2.54 cm) hole in pump base, 0.80 ft (0.24 m) above land-surface datum.

PERIOD OF RECORD.--July 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 107.66 ft (32.82 m) below land-surface datum, Jan. 23, 1952; lowest measured, 228.00 ft (69.31 m) below land-surface datum, May 11, 1956.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 9	177.45
Aug. 1	228.00

321015107260501. Local number, 25S.6W.2.111.

LOCATION.--Lat 32°10'15", long 107°26'05", Hydrologic Unit 13030202.

Owner: C. W. Johnson, Jr.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation artesian well, diameter 16 in (0.41 m), depth 235 ft (71.6 m), perforated 180-235 ft (54.9-71.6 m), gravel packed.

DATUM.--Altitude of land-surface datum is 4,220 ft (1,282 m). Measuring point: Top of casing, 1.30 ft (0.40 m) above land-surface datum.

PERIOD OF RECORD.--May 1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.45 ft (0.14 m) below land-surface datum, Mar. 14, 1953; lowest measured, 108.77 ft (32.86 m) below land-surface datum, Aug. 1, 1978.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 13	52.48
Aug. 1	108.77

320915104294501. Local number, 25S.6W.7.211.

LOCATION.--Lat 32°09'15", long 104°29'45", Hydrologic Unit 13030202.

Owner: H. C. Telles.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 230 ft (70.1 m), cased to 230 ft (70.1 m).

DATUM.--Land-surface datum is 4,084.22 ft (1,244.87 m) above mean sea level. Measuring point: MP hole in pump base, 1.20 ft (0.37 m) above land-surface datum (since Jan. 15, 1966).

PERIOD OF RECORD.--Jan. 1953 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 65.34 ft (19.92 m) below land-surface datum, Mar. 14, 1953; lowest measured, 122.16 ft (37.23 m) below land-surface datum, Aug. 13, 1970.

## WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 13	90.77
Aug. 1	90.18

## GROUND-WATER LEVELS

## LUNA COUNTY

## Mimbres Valley

315525107374501. Local number, 27S.8W.35.122.

LOCATION.--Lat 31°55'25", long 107°37'45", Hydrologic Unit 13030202.

Owner: M. M. Gibson.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled unused irrigation water-table well, diameter 12 in (0.30 m) to 8 in (0.20 m), depth 550 ft (168 m), cased to 550 ft (168 m), perforated 155-550 ft (47-168 m).

DATUM.--Altitude of land-surface datum is 4,070 ft (1,241 m). Measuring point: Top of casing, 0.20 ft (0.06 m) above land-surface datum.

PERIOD OF RECORD.--July 1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.84 ft (6.35 m) below land-surface datum, Mar. 16, 1953; lowest measured, 114.92 ft (34.93 m) below land-surface datum, Aug. 1, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 4	82.70
Aug. 1	114.92

315905107425001. Local number, 27S.9W.1.431.

LOCATION.--Lat 31°59'05", long 107°42'50", Hydrologic Unit 13030202.

Owner: I. G. Burns.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 62 ft (18.9 m), cased to 62 ft (18.9 m).

DATUM.--Altitude of land-surface datum is 4,135 ft (1,260 m). Measuring point: Top edge of rectangular hole in pump base, 0.65 ft (0.20 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1954 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.61 ft (9.33 m) below land-surface datum, Jan. 19, 1954; lowest measured, 47.26 ft (14.36 m) below land-surface datum, Aug. 11, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 5	36.40
Aug. 2	no access

314938107371401. Local number, 28S.8W.36.411.

LOCATION.--Lat 31°49'38", long 107°37'14", Hydrologic Unit 13030202.

Owner: M. R. Hemley.

AQUIFER.--Bolson deposits.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 250 ft (76.2 m), cased to 250 ft (76.2 m).

DATUM.--Altitude of land-surface datum is 4,008 ft (1,222 m). Measuring point: Top of casing, 1.85 ft (0.56 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1961 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.70 ft (3.89 m) below land-surface datum, Aug. 9, 1977; lowest measured, 27.85 ft (8.49 m) below land-surface datum, Jan. 14, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 1	unable to measure
Aug. 1	10.71

## MORA COUNTY

354840104590301. Local number, 18N.18E.1.333.

LOCATION.--Lat 35°48'40", long 104°59'03", Hydrologic Unit 11080004.

Owner: Sellman Bros.

AQUIFER.--Alluvium.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 14 in (0.36 m), depth 100 ft (30.5 m), cased. DATUM.--Altitude of land-surface datum is 6,420 ft (1,944 m). Measuring point: Hole in southeast corner of pump base, 2.00 ft (0.64 m) above land-surface datum.

PERIOD OF RECORD.--1976.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.97 ft (1.82 m) below land-surface datum, Aug. 23, 1976; lowest measured, 5.97 ft (1.82 m) below land-surface datum, Aug. 23, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 4.40 ft (1.33 m) below land-surface datum Mar. 25, 1969; lowest measured, 6.86 ft (2.09 m) below land-surface datum, Aug. 22, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 22	5.42
Aug. 8	5.49

## OTERO COUNTY

## Tularosa-Alamogordo Area

330324106011201. Local number, 14S.10E.31.144.

LOCATION.--Lat 33°03'24", long 106°01'12", Hydrologic Unit 13050003.

Owner: Luther Watson.

AQUIFER.--Bolson deposits.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 17 in (0.43 m), depth 230 ft (70.1 m), 16 in (0.41 m) to 14 in (0.36 m) casing 0-130 ft (0-39 m).

DATUM.--Altitude of land-surface datum is 4,450 ft (1,356 m). Measuring point: Top edge of 1 in (2.54 cm) hole in pump base, 0.70 ft (0.21 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 73.75 ft (22.48 m) below land-surface datum, Apr. 8, 1952; lowest measured, 134.21 ft (40.79 m) below land-surface datum, Aug. 3, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 13	121.38
Aug. 3	134.21

324853105582501. Local number, 17S.9E.24.343.

LOCATION.--Lat 32°48'53", long 105°58'25", Hydrologic Unit 13050003.

Owner: U.S. Air Force.

AQUIFER.--Bolson deposits.

WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 10 in (0.25 m), depth 236 ft (71.9 m), cased to 236 ft (71.9 m).

DATUM.--Altitude of land-surface datum is 4,144 ft (1,263 m). Measuring point: Top of 1 1/2 in (3.8 cm) pipe with screw plug on south side of concrete base, 2.10 ft (0.64 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 61.42 ft (18.72 m) below land-surface datum, Apr. 6, 1960; lowest measured, 80.54 ft (24.55 m) below land-surface datum, Aug. 28, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 13	well being pumped
Aug. 3	well being pumped

## Crow Flats Basin

(Salt Basin)

320650105034801. Local number, 26S.18E.21.331.

LOCATION.--Lat 32°06'50", long 105°03'48", Hydrologic Unit 13050004.

Owner: Frank Gentry.

AQUIFER.--Bolson deposits.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 18 in (0.46 m), depth 544 ft (165 m).

DATUM.--Altitude of land-surface datum is 4,000 ft (1,216 m). Measuring point: Top of casing, 2.50 ft (0.75 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 51.08 ft (15.57 m) below land-surface datum,

Jan. 8, 1973, lowest measured, 82.94 ft (25.21 m) below land-surface datum, Aug. 17, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 33.64 ft (10.65 m) below land-surface datum, Jan. 15, 1957; lowest measured, same as period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 26	59.35
Aug. 17	82.94

## QUAY COUNTY

House Area

343810103463001. Local number, 5N.30E.18.331.

LOCATION.--Lat 34°38'10", long 103°46'30", Hydrologic Unit 13060004.

Owner: W. C. and H. J. Lee.

AQUIFER.--Ogallala Formation of Pliocene Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 75 ft (22.9 m), cased to 60 ft (18.3 m).

DATUM.--Altitude of land-surface datum is 4,640 ft (1,414 m). Measuring point: Top of concrete pump base, 0.50 ft (0.15 m) above land-surface datum.

PERIOD OF RECORD.--May 1944 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.76 ft (10.60 m) below land-surface datum, Mar. 28, 1946; lowest measured, 51.49 ft (15.69 m) below land-surface datum, Aug. 11, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 8	46.60
Aug. 8	47.92

## GROUND-WATER LEVELS

## QUAY COUNTY

## House Area

344350103553001. Local number, 6N.28E.24.233.

LOCATION.--Lat 34°43'50", long 103°55'30", Hydrologic Unit 13060004.

Owner: G. B. Irwin.

AQUIFER.--Ogallala Formation of Pliocene Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), reported depth 131 ft (39.9 m), cased to 131 ft (39.9 m).

DATUM.--Altitude of land-surface datum is 4,790 ft (1,460 m). Measuring point: Top of 2 in (5 cm) opening in concrete base, 1.21 ft (0.37 m) above land-surface datum.

PERIOD OF RECORD.--Mar. 1944 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 77.97 ft (23.77 m) below land-surface datum, Mar. 27, 1944; lowest measured, 113.50 ft (34.60 m) below land-surface datum, Aug. 20, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 8	96.72
Aug. 8	97.44

## ROOSEVELT COUNTY

## Portales Valley

341400103353701. Local number, 1S.32E.16.112.

LOCATION.--Lat 34°14'00", long 103°35'37", Hydrologic Unit 12050001.

Owner: Dorsey Nash.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled unused irrigation water-table well, diameter 16 in (0.41 m), depth unknown, surface casing.

DATUM.--Altitude of land-surface datum is 4,010 ft (1,249 m). Measuring point: Edge of center hole in old car wheel, 0.30 ft (0.10 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 80.75 ft (24.61 m) below land-surface datum, Jan. 6, 1971; lowest measured, 86.26 ft (26.22 m) below land-surface datum, Aug. 16, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 66.78 ft (20.35 m) below land-surface datum, Jan. 17, 1961; lowest measured, same as period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 6	85.45
Aug. 9	85.89

341530103292001. Local number, 1S.33E.4.1121.

LOCATION.--Lat 34°15'30", long 103°29'20", Hydrologic Unit 12050001.

Owner: Unknown.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled unused irrigation water-table well, diameter 12 in (0.30 m), depth unknown.

DATUM.--Altitude of land-surface datum is 4,109 ft (1,252 m). Measuring point: Top of casing level with 4 ft x 4 ft (1 m x 1 m) concrete base, 1.00 (0.30 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 79.07 ft (24.10 m) below land-surface datum, Jan. 8, 1973; lowest measured, 86.08 ft (26.14 m) below land-surface datum, Aug. 16, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 7	82.78
Aug. 9	no access

341317103083301. Local number, 1S.36E.14.31111.

LOCATION.--Lat 34°13'17", long 103°08'33", Hydrologic Unit 12050001.

Owner: City of Portales.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled unused observation water-table well, diameter 18 in (0.46 m), depth 208 ft (63.4 m).

DATUM.--Altitude of land-surface datum is 4,032 ft (1,229 m). Measuring point: Top of casing, 0.70 ft (0.21 m) below top of concrete base which is 0.80 ft (0.24 m) above land-surface datum.

PERIOD OF RECORD.--May 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 54.74 ft (16.68 m) below land-surface datum, May 30, 1972; lowest, 72.83 ft (22.20 m) below land-surface datum, Sept. 29, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	67.90	66.48	65.11	64.04								
10	64.81	64.72	64.31	63.98								
15	71.53	64.66	66.39	64.15	THIS WELL DISCONTINUED FEB. 2, 1978							
20	65.17	66.09	64.73	63.93								
25	65.24	64.45	64.40	63.86								
com	67.70	66.21	64.12	64.04								

WTR YEAR 1978 MAX 63.97 Jan. 3, 1978 MIN 70.63 Oct. 1, 1977

## GROUND-WATER LEVELS

631

## ROOSEVELT COUNTY

## Portales Valley

340740103145501. Local number, 2S.35E.23.111.  
LOCATION.--Lat 34°07'40", long 103°14'55", Hydrologic Unit 12050001.

Owner: P. O. Dozier.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well diameter, depth and casing information not available.

DATUM.--Altitude of land-surface datum is 3,963 ft (1,208 m). Measuring point: Top of concrete pump base, 1.50 ft (0.46 m) above land-surface datum.

PERIOD OF RECORD.--Jan 1949 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.32 ft (6.50 m) below land-surface datum, Mar. 27, 1951; lowest measured, 49.26 ft (15.01 m) below land-surface datum, Aug. 11, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 6	42.43
Aug. 9	44.05

## Causey-Lingo Area

335655103032001. Local number, 6S.38E.21.233.

LOCATION.--Lat 33°56'55", long 103°03'20", Hydrologic Unit 12050001.

Owner: C. C. Harvey.

AQUIFER.--Undifferentiated Cretaceous rocks.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 140 ft (42.7 m), cased to 140 ft (42.7 m), casing slotted 100-140 ft (30.5-42.7 m).

DATUM.--Altitude of land-surface datum is 3,927 ft (1,197 m). Measuring point: Top of 1 in (2.54 cm) hole in north side of pump, 2.10 ft (0.64 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1956 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 87.18 ft (26.57 m) below land-surface datum, Jan. 13, 1956; lowest measured, 115.21 ft (35.12 m) below land-surface datum, Aug. 11, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 5	96.19
Aug. 9	well being pumped

## SANDOVAL COUNTY

352235106282401. Local number, 13N.4E.12.112.

LOCATION.--Lat 35°22'35", long 106°28'24", Hydrologic Unit 13020201.

Owner: John Bowers.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 12 in (0.31 m), depth 50 ft (15.2 m), cased.

DATUM.--Altitude of land-surface datum is 5,130 ft (1,553 m). Measuring point: Top of casing, 0.50 ft (0.15 m) above land-surface datum.

PERIOD OF RECORD.--1976

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.04 ft (6.70 m) below land-surface datum, Aug. 17, 1978; lowest, 25.94 ft (7.89 m) below land-surface datum, Jan. 17, 1977.

WATER YEAR, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 31	25.27
Aug. 17	22.04

## SANTA FE COUNTY

## Estancia Valley

350525106025001. Local number, 10N.8E.13.133.

LOCATION.--Lat 35°05'25", long 106°02'50", Hydrologic Unit 13050001.

Owner: W. R. Irby.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter unknown, reported depth 513 ft (156 m), casing information not available.

DATUM.--Altitude of land-surface datum is 6,265 ft (1,910 m). Measuring point: Lower inside edge of hole in south side of casing, 0.45 ft (0.14 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 86.75 ft (26.44 m) below land-surface datum, Feb. 22, 1950; lowest measured, 143.98 ft (43.76 m) below land-surface datum, Aug. 21, 1978.

WATER YEAR, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 30	124.76
Aug. 21	143.98

## GROUND-WATER LEVELS

## SANTA FE COUNTY

## Estancia Valley

350340106005001. Local number, 10N.9E.29.130.

LOCATION.--Lat 35°03'40", long 106°00'50", Hydrologic Unit 13050001.

Owner: Glen Terry.

AQUIFER.--Glorieta Sandstone of Permian Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 14 in (0.36 m), reported depth 200 ft (61.0 m), cased to 140 ft (42.7 m).

DATUM.--Altitude of land-surface datum is 6,240 ft (1,902 m). Measuring point: Top edge of 3 in (7.5 cm) pipe on north side of pump, 1.30 ft (0.40 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 57.96 ft (17.67 m) below land-surface datum, Feb. 16, 1951; lowest measured, 103.84 ft (36.67 m) below land-surface datum, Aug. 21, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 55.13 ft (16.80 m) below land-surface datum, Feb. 18, 1949; lowest measured, same as period of record.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 30	103.83
Aug. 21	103.84

## Santa Fe Area

353810106025501. Local number, 16N.8E.12.131.

LOCATION.--Lat 35°38'10", long 106°02'55", Hydrologic Unit 13020201.

Owner: Santa Fe Country Club.

AQUIFER.--Ancha Formation(?) and Tesuque Formation(?).

WELL CHARACTERISTICS.--Drilled unused well, diameter 5 in (0.13 m), depth 400 ft (122 m), cased.

DATUM.--Altitude of land-surface datum is 6,420 ft (1,957 m). Measuring point: Top of 3/8 in (0.95 cm) hole in cover plate, 0.20 ft (0.06 m) above land-surface datum.

PERIOD OF RECORD.--Aug. 1951, Jan. 1953 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 249.04 ft (75.70 m) below land-surface datum, Aug. 29, 1977; lowest measured, 272.06 ft (82.92 m) below land-surface datum, Aug. 10, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 12	248.74
Aug. 21	248.48

## SIERRA COUNTY

## Hot Springs Area

330715107171901. Local number, 14S.4W.6.3221.

LOCATION.--Lat 33°07'15", long 107°17'19", Hydrologic Unit 13030101.

Owner: City of Truth or Consequences.

AQUIFER.--Santa Fe Group of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused municipal well, diameter 12 in (0.31 m), depth 442 ft (134 m) cased.

DATUM.--Altitude of land-surface datum is 4,265 ft (1,291 m). Measuring point: Top of casing extension, 1 ft (0.30 m) above former casing, and 1.60 ft (0.48 m) above land-surface datum.

PERIOD OF RECORD.--1976.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.25 ft (2.81 m) below land-surface datum, Feb. 28, 1977; lowest measured, 31.31 ft (9.48 m) below land-surface datum, Aug. 23, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 16	no access
Aug. 25	no access

325550107184001. Local number, 15S.5W.24.312.

LOCATION.--Lat 32°55'50", long 107°18'40", Hydrologic Unit 13030101.

Owner: William M. Dawson.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled unused irrigation water-table well, diameter 16 in (0.41 m), depth and casing information not available.

DATUM.--Altitude of land-surface datum is 4,279 ft (1,304 m). Measuring point: Top of casing, 1.20 ft (0.36 m) above land-surface datum.

PERIOD OF RECORD.--May 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 25.13 ft (7.66 m) below land-surface datum, Sept. 11, 1975; lowest, 37.33 ft (11.38 m) below land-surface datum, Sept. 30, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	37.40	37.85	38.20	38.53	--	39.26	39.69	40.18	40.44	40.25	38.96	39.55
10	37.46	37.92	38.25	38.58	--	39.33	39.76	40.21	40.50	39.22	39.12	39.77
15	37.54	37.98	38.30	38.63	--	39.41	39.84	40.25	40.53	39.02	39.27	39.80
20	37.61	38.03	38.36	38.70	39.09	39.49	39.91	40.31	40.55	39.03	39.44	39.62
25	37.69	38.09	38.42	--	39.15	39.55	40.04	40.35	40.73	38.80	39.44	39.50
com	37.78	38.15	38.47	--	39.19	39.63	40.12	40.40	40.75	38.84	39.38	39.42

WTR YEAR 1978 MAX 37.40 Oct. 5, 1977 MIN 40.75 June 30, 1978

## GROUND-WATER LEVELS

633

## Rincon Valley

325350107175501. Local number, 16S.5W.25.211.

LOCATION.--Lat 32°53'35", long 107°17'55", Hydrologic Unit 13030102.

Owner: U.S. Government.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 10 in (0.25 m), depth 32 ft (9.8 m), cased to 32 ft (9.8 m).

DATUM.--Altitude of land-surface datum is 4,050 ft (1,234 m). Measuring point: Top of casing, 3.00 ft (0.91 m) above land-surface datum.

PERIOD OF RECORD.--Apr. 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.03 ft (3.97 m) below land-surface datum, Jan. 8, 1975; lowest measured, 27.78 ft (8.47 m) below land-surface datum, Jan. 6, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 11.30 ft (3.44 m) below land-surface datum, Apr. 17, 1947; lowest measured, same as period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 6	23.58
Aug. 14	24.93

## TAOS COUNTY

## Sunshine Valley

365036105355301. Local number, 30N.13E.18.1121.

LOCATION.--Lat 36°50'36", long 105°35'53", Hydrologic Unit 13020101.

Owner: Unknown.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 10 in (0.25 m), depth 500 ft (152 m).

DATUM.--Altitude of land-surface datum is 7,600 ft (2,316 m). Measuring point: Top of casing, 2.00 ft (0.60 m) above land-surface datum.

PERIOD OF RECORD.--Sept. 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 70.00 ft (21.34 m) below land-surface datum, Aug. 14, 1975; lowest measured, 77.33 ft (23.50 m) below land-surface datum, Aug. 9, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 27	77.28
Aug. 9	77.33

365655105354001. Local number, 1S.73W.19.422.

LOCATION.--Lat 36°56'55", long 105°35'40", Hydrologic Unit 13020101.

Owner: Spring Bros.

AQUIFER.--Santa Fe Group.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m), depth 446 ft (136 m), cased to 446 ft (136 m).

DATUM.--Altitude of land-surface datum is 7,657 ft (2,334 m). Measuring point: Top of casing, 1.18 ft (0.36 m) above land-surface datum.

PERIOD OF RECORD.--July 1955-Aug. 1965, Feb. 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 193.95 ft (59.11 m) below land-surface datum, June 5, 1957; lowest measured, 219.94 ft (67.04 m) below land-surface datum, Aug. 2, 1961.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Date	Water Level
Jan. 21	no access
Aug. 31	no access

365410105354501. Local number, 2S.73W.5.222.

LOCATION.--Lat 36°54'10", long 105°35'45", Hydrologic Unit 13020101.

Owner: Unknown.

AQUIFER.--Santa Fe Group.

WELL CHARACTERISTICS.--Drilled domestic and stock water-table well, diameter 6 in (0.15 m), depth unknown.

DATUM.--Altitude of land-surface datum is 7,587 ft (2,313 m). Measuring point: 1 in (2.54 cm) hole in plate over casing, 10 ft (3.1 m) above top of casing, 1 ft (0.3 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 77.54 ft (26.63 m) below land-surface datum, Aug. 14, 1975; lowest measured, 84.78 ft (25.77 m) below land-surface datum, Jan. 27, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 27	82.72
Aug. 9	83.82



## GROUND-WATER LEVELS

## TORRANCE COUNTY

## Estancia Valley

343458106042001. Local number, 4N.8E.11.433.

LOCATION.--Lat 34°34'58", long 106°04'20", Hydrologic Unit 13050001.

Owner: F. D. Breedlove.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m), reported depth 180 ft (54.9 m), cased to 160 ft (48.8 m).

DATUM.--Altitude of land-surface datum is 6,148 ft (1,874 m). Measuring point: Top of casing at high point on northwest side of well, 0.70 ft (0.21 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 82.93 ft (25.28 m) below land-surface datum, May 2, 1951; lowest measured, 115.60 ft (35.23 m) below land-surface datum, Feb. 4, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 16	106.98
Aug. 3	115.32

344016106064701. Local number, 5N.8E.8.424.

LOCATION.--Lat 34°40'16", long 106°06'47", Hydrologic Unit 13050001.

Owner: A T. Austin.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), reported depth 204 ft (62.2 m), cased to 98 ft (29.9 m).

DATUM.--Altitude of land-surface datum is 6,214 ft (1,894 m). Measuring point: Top of casing, 0.80 ft (0.24 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1948 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 62.03 ft (18.91 m) below land-surface datum, Mar. 23, 1948; lowest measured, 114.74 ft (34.88 m) below land-surface datum, Jan. 16, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 16	114.74
Aug. 3	well being pumped

344234106074901. Local number, 6N.8E.32.212.

LOCATION.--Lat 34°42'34", long 106°07'49", Hydrologic Unit 13050001.

Owner: Revis Strong.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 18 in (0.46 m), reported depth 209 ft (63.7 m), cased to 84 ft (25.6 m).

DATUM.--Altitude of land-surface datum is 6,165 ft (1,879 m). Measuring point: Top of 1 1/2 in (3.8 cm) hole in pumpbase, 0.04 ft (0.01 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 23.22 ft (7.08 m) below land-surface datum, Feb. 18, 1947; lowest measured, 67.04 ft (20.38 m) below land-surface datum, Jan. 16, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 16	67.04
Aug. 3	well being pumped

344622105575501. Local number, 6N.9E.11.211.

LOCATION.--Lat 34°46'22", long 105°57'55", Hydrologic Unit 13050001.

Owner: R. O. Brown.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 18 in (0.46 m), reported depth 148 ft (45.1 m), cased to 140 ft (42.7 m).

DATUM.--Altitude of land-surface datum is 6,086 ft (1,855 m). Measuring point: Top of casing, 0.75 ft (0.23 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1950 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.80 ft (1.77 m) below land-surface datum, Feb. 8, 1950; lowest measured, 21.27 ft (6.46 m) below land-surface datum, Aug. 3, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 5.07 ft (1.55 m) below land-surface datum, May 4, 1949; lowest measured, same as period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 18	10.02
Aug. 3	21.27

GROUND-WATER LEVELS  
TORRANCE COUNTY  
Estancia Valley

635

344937106092201. Local number, 7N.7E.13.4312.

LOCATION.--Lat 34°49'37", long 106°09'22", Hydrologic Unit 13050001.

Owner: Woodrow Clements.

AQUIFER.--Madera Formation.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 7 in (0.18 m), depth and casing information not available.

DATUM.--Altitude of land-surface datum is 6,500 ft (1,980 m). Measuring point: Top of casing at concrete slab level which is 0.2 ft (0.06 m) above land-surface datum.

REMARKS.--Old CO<sub>2</sub> well.

PERIOD OF RECORD.--Feb. 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 110.25 ft (33.51 m) below land-surface datum, Jan. 18, 1978; lowest measured, 110.37 ft (33.55 m) below land-surface datum, Jan. 18, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 18	110.25
Aug. 3	110.30

345231106043601. Local number, 8N.8E.35.322.

LOCATION.--Lat 34°52'31", long 106°04'36", Hydrologic Unit 13050001.

Owner: A. C. Hibner.

AQUIFER.--Valley Fill(?).

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), reported depth 228 ft (69.5 m), cased to 110 ft (33.5 m).

DATUM.--Altitude of land-surface datum is 6,240 ft (1,902 m). Measuring point: Top of casing, 0.75 ft (0.23 m) above land-surface datum.

PERIOD OF RECORD.--Jan. 1948 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 51.08 ft (15.57 m) below land-surface datum, Mar. 25, 1948; lowest measured, 106.87 ft (32.48 m) below land-surface datum, Aug. 3, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water-level measured, 50.12 ft (15.28 m) below land-surface datum, May 28, 1947; lowest measured, same for period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 18	99.37
Aug. 3	106.87

345900106034301. Local number, 9N.8E.24.334.

LOCATION.--Lat 34°59'00", long 106°30'43", Hydrologic Unit 13050001.

Owner: Valley Land and Irrigation Co.

AQUIFER.--Valley Fill.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m), depth unknown.

DATUM.--Altitude of land-surface datum is 6,380 ft (1,944 m). Measuring point: Top of casing south side, 0.50 ft (0.15 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 64.67 ft (19.71 m) below land-surface datum, Feb. 23, 1973; lowest measured, 91.37 ft (27.85 m) below land-surface datum, Aug. 12, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 18	70.60
Aug. 3	no access

UNION COUNTY  
Clayton Area

360940103083501. Local number, 19N.36E.23.244.

LOCATION.--Lat 36°09'40", long 103°08'35", Hydrologic Unit 11090102.

Owner: Stevens.

AQUIFER.--Dakota and Purgatoire Sandstone.

WELL CHARACTERISTICS.--Drilled unused irrigation water-table well, diameter 14 in (0.36 m), depth 206 ft (62.8 m).

DATUM.--Altitude of land-surface datum is 4,326 ft (1,318 m). Measuring point: Top of casing, 1.00 ft (0.30 m) above land-surface datum.

PERIOD OF RECORD.--Mar. 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 145.22 ft (44.26 m) below land-surface datum, Mar. 17, 1971; lowest measured, 155.65 ft (47.77 m) below land-surface datum, Mar. 24, 1970.

WATER YEAR, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 24	145.82
Aug. 8	145.95

## GROUND-WATER LEVELS

## UNION COUNTY

## Clayton Area

361910103170501. Local number, 24N.36E.17.244.

LOCATION.--Lat 36°19'10", long 103°17'05", Hydrologic Unit 11090103.

Owner: Glen Burrows.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled unused irrigation water-table well, diameter 10 in (0.25 m), depth 231 ft (70.4 m).

DATUM.--Altitude of land-surface datum is 4,707 ft (1,434 m). Measuring point: Top of casing, 1.30 ft (0.40 m) above land-surface datum.

PERIOD OF RECORD.--May 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 82.99 ft (27.23 m) below land-surface datum, Jan 8, 1972; lowest measured, 86.91 ft (26.42 m) below land-surface datum, Aug. 9, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water-level measured, 81.38 ft (24.80 m) below land-surface datum, May 8, 1968; lowest, same as period of record.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 26	86.50
Aug. 9	86.91

363005103081001. Local number, 26N.36E.7.142.

LOCATION.--Lat 36°30'05", long 103°08'10", Hydrologic Unit 11090103.

Owner: J. E. Ames.

AQUIFER.--Dakota, Purgatoire, and Morrison Sandstone.

WELL CHARACTERISTICS.--Drilled unused irrigation water-table well, diameter 16 in (0.41 m), depth 770 ft (234 m).

DATUM.--Altitude of land-surface datum is 4,980 ft (1,517 m). Measuring point: Top of 16 in (0.41 m) casing level with concrete base, 1.00 ft (0.30 m) above land-surface datum.

PERIOD OF RECORD.--Mar. 1971 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 127.41 ft (38.83 m) below land-surface datum, Mar. 17, 1971; lowest measured, 233.26 ft (70.91 m) below land-surface datum, Sept. 20, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 24	158.92
Aug. 9	167.72

## Capulin Basin

364430103595501. Local number, 29N.28E.18.341.

LOCATION.--Lat 36°44'30", long 103°59'55", Hydrologic Unit 11040001, 300 ft (91 m) north of U.S. Highway 64-87 at Capulin.

Owner: City of Raton.

AQUIFER.--Cinders.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 78 ft (23.8 m). DATUM.--Land-surface datum is 6,821.2 ft (2,079.1 m) above mean sea level. Measuring point: Edge of 2 in (5 cm) hole in west side of steel plate, at land-surface datum.

PERIOD OF RECORD.--July 1951, Feb. 1957 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.01 ft (8.54 m) below land-surface datum, Feb. 8, 1974; lowest measured, 36.23 ft (10.97 m) below land-surface datum, Aug. 24, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 25	33.65
Aug. 9	34.62

364330103015201. Local number, 29N.37E.30.110.

LOCATION.--Lat 36°43'30", long 103°01'52", Hydrologic Unit 11040001.

Owner: F. P. Seneca.

AQUIFER.--Dakota - Purgatoire Formation.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 14 in (0.36 m), depth 332 ft (101 m). DATUM.--Altitude of land-surface datum is 4,880 ft (1,478 m). Measuring point: Entry port in west side of pump base, 1.00 ft (0.30 m) above land-surface datum.

PERIOD OF RECORD.--1976.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 240.20 ft (73.21 m) below land-surface datum, Jan. 27, 1976; lowest measured, 242.76 ft (73.79 m) below land-surface datum, Jan. 23, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest water level measured, 224.55 ft (68.44 m), Mar. 6, 1971; lowest measured 246.80 ft (75.22 m), Feb. 6, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Jan. 23	242.76
Aug. 8	unable to measure

GROUND-WATER LEVELS  
VALENCIA COUNTY  
Grants-Bluewater Area

637

350400107510501. Local number, 10N.10W.26.331.

LOCATION.--Lat 35°04'00", long 107°51'05", Hydrologic Unit 13020207.

Owner: Monico Mirabal.

AQUIFER.--Glorieta Sandstone of Permian Age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in (0.41 m), depth 216 ft (65.8 m).  
DATUM.--Altitude of land-surface datum is 6,455 ft (1,967 m). Measuring point: Top of 1/2 in (1.3 cm) hole in pump base, 1.00 ft (0.30 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.18 ft (6.76 m) below land-surface datum, Feb. 21, 1952; lowest measured, 34.69 ft (11.57 m) below land-surface datum, Jan. 17, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 2	29.71
Aug. 7	30.49

350925107523001. Local number, 11N.10W.27.241.

LOCATION.--Lat 35°09'25", long 107°52'30", Hydrologic Unit 13020207.

Owner: City of Grants.

AQUIFER.--San Andres Limestone of Permian Age.

WELL CHARACTERISTICS.--Drilled industrial water-table well, diameter 16 to 12 in (0.41-0.30 m), depth 158 ft (48.2 m), perforated to 58 ft (17.7 m).

DATUM.--Altitude of land-surface datum is 6,840 ft (1,975 m). Measuring point: Top of 1 in (2.5 cm) hole in pump base, 1.35 ft (0.41 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1953 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.86 ft (6.05 m) below land-surface datum, Feb. 20, 1953; lowest measured, 39.08 ft (11.91 m) below land-surface datum, Aug. 1, 1972.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 2	32.98
Aug. 7	36.98

351400107524201. Local number, 12N.10W.29.434.

LOCATION.--Lat 35°14'00", long 107°52'42", Hydrologic Unit 13020207.

Owner: A. R. Card.

AQUIFER.--San Andres Limestone of Permian Age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 18 in (0.46 m), reported depth 205 ft (62.5 m), cased 0-150 ft (0-45.7 m), perforated 93-130 ft (28.4-39.6 m).

DATUM.--Altitude of land-surface datum is 6,552 ft (1,997 m). Measuring point: Lower edge of hole in north side of casing, 2.20 ft (0.67 m) above land-surface datum.

PERIOD OF RECORD.--Oct. 1944, Feb. 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 65.46 ft (19.95 m) below land-surface datum, Oct. 14, 1944; lowest measured, 107.61 ft (32.80 m) below land-surface datum, Aug. 6, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 2	98.84
Aug. 7	98.75

351730107535001. Local number, 12N.11W.9.221.

LOCATION.--Lat 35°17'30", long 107°53'50", Hydrologic Unit 13020207.

Owner: J. Church Co.

AQUIFER.--San Andres Limestone of Permian Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 18 in (0.46 m), depth 500 ft (152 m), cased to 500 ft (152 m).

DATUM.--Altitude of land-surface datum is 6,649 ft (2,027 m). Measuring point: Top of casing at low point, 2.22 ft (0.68 m) above land-surface datum.

PERIOD OF RECORD.--Feb. 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 115.70 ft (35.27 m) below land-surface datum, Feb. 26, 1946; lowest, 193.21 ft (58.89 m) below land-surface datum, June 29, 1957.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978  
DAILY HIGHEST VALUES, FROM RECORDER GRAPH

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
5	159.30	157.24	--	--								
10	158.73	156.75	--	--								
15	158.61	156.57	--	--								
20	158.13	--	--	--								
25	157.94	--	--	--								
com	157.48	--	--	--								

THIS WELL DISCONTINUED FEB. 1978

WTR YEAR 1978 MAX 156.46 Nov. 12, 1977 MIN 159.59 Oct. 1, 1977

## GROUND-WATER LEVELS

## VALENCIA COUNTY

## Grants-Bluewater Area

351650107535001. Local number, 12N.11W.9.424.

LOCATION.--Lat 35°16'50", long 107°53'50", Hydrologic Unit 13020207.

Owner: George Rowley.

AQUIFER.--San Andres Limestone and Yeso Formation of Permian Age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 16 in (0.41 m), reported depth 505 ft (154 m), 16 in (0.41 m) casing to 175 ft (53.3 m), 12 in (0.30 m) casing to 325 ft (99.1 m).

DATUM.--Altitude of land-surface datum is 6,642 ft (2,024 m). Measuring point: Top of casing, 3.05 ft (0.93 m) above land-surface datum.

PERIOD OF RECORD.--May 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 93.75 ft (28.58 m) below land-surface datum, May 10, 1946; lowest measured, 139.05 ft (42.38 m) below land-surface datum, Aug. 1, 1957.

WATER LEVEL, IN FEET BELOW LAND-SURFACE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 2	123.15
Aug. 7	118.47

351610107514501. Local number, 12N.11W.14.213.

LOCATION.--Lat 35°16'10", long 107°51'35", Hydrologic Unit 13020207.

Owner: Duane Berryhill.

AQUIFER.--Alluvium of Quaternary Age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), depth 130 ft (39.6 m), surface casing 5 ft (1.5 m).

DATUM.--Land-surface datum is 6,605.4 ft (2,013.3 m). Measuring point: Top of 4 in (0.10 m) down spout, 3.70 ft (1.3 m) above land-surface datum (since Feb. 10, 1966).

PERIOD OF RECORD.--June 1949 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 85.83 ft (26.16 m) below land-surface datum, Aug. 3, 1967; lowest measured, 101.39 ft (30.90 m) below land-surface datum, June 10, 1954.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	WATER LEVEL
Feb. 2	86.50
Aug. 7	86.82

Note: Measurement was discontinued in 1977-1978 for the following wells:

Roosevelt County, Portales Basin - 3413171030833 - Local number 1S.36E.14.31111 and

Valencia County, Grants-Bluewater Area - 3517301075350 - Local number 12N.11W.9.221.

EXPLANATION OF GEOLOGIC UNIT (AQUIFER) CODES (LISTED FROM YOUNGEST TO OLDEST AGE) U-upper, M-middle, L-lower: 110 AVMB-Cenozoic, Quaternary, Alluvium, Bolson Deposits and other Surface Deposits; 110 BLSN-Cenozoic, Quaternary, Bolson Fill; 112 SNTF-Cenozoic, Quaternary, Pleistocene, Santa Fe Group; 121 TSUQ-Cenozoic, Tertiary, Pliocene, Tesuque Formation, Undifferentiated Unit; 211 CLFH-Mesozoic U-Cretaceous, Cliff House Sandstone (Includes La Ventana Tongues in NW Sandoval Co); 211 DKOT-Mesozoic, U-Cretaceous, Dakota Sandstone or Formation; 211 FRLD-Mesozoic, U-Cretaceous, Fruitland Formation; 211 GLLP-Mesozoic, U-Cretaceous, Gallup Sandstone; 211 MENF-Mesozoic, U-Cretaceous, Menefee Formation; 211 PCCF-Mesozoic, U-Cretaceous, Pictured Cliffs Sandstone; 211 PNLK-Mesozoic, U-Cretaceous, Point Lookout Sandstone; 221 ENRD-Mesozoic, U-Jurassic, Entrada Sandstone, Upper Sandy Member of San Rafael Group; 231 CHNL-Mesozoic, Upper Triassic, Chinle Formation, 231 SNRS-Mesozoic, Upper Triassic Santa Rosa Sandstone; 313 SVRV-Paleozoic, Guadalupian, Seven Rivers Formation.

REMARKS.--Ground-water sites in this table are segregated by county which appear alphabetically. The sites are then listed in ascending local identifiers.

## BERNALILLO COUNTY

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)
ATRISCO GR ABQ COLLEGE 1	350646106443	201	GW	78-09-25	1425	112SNTF	406.00	1675	1651	660
ATRISCO GR ABQ COLLEGE 3	350727106423	201	GW	78-09-14	1030	112SNTF	164.00	1452	251	251

LOCAL IDENT- I- FIER	DATE OF SAMPLE	PUMP OR FLOW PERIOD PRIOR TO SAM- PLING (MIN) (72004)	FLOW RATE, INSTAN- TANEOUS (GPM) (00059)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH	TEMPER- ATURE (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
ATRISCO GR ABQ COLLEGE 1	78-09-25	4320	23	450	8.7	28.0	5	11	3.7	.4
ATRISCO GR ABQ COLLEGE 3	78-09-14	270	--	560	7.9	26.0	0	33	10	1.8

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SODIUM, AD- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
ATRISCO GR ABQ COLLEGE 1	78-09-25	110	15	1.6	160	.0	57	5.6	1.3
ATRISCO GR ABQ COLLEGE 3	78-09-14	97	7.4	4.4	120	.1	99	18	1.1

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
ATRISCO GR ABQ COLLEGE 1	78-09-25	30	2.7	60	10
ATRISCO GR ABQ COLLEGE 3	78-09-14	50	1.5	60	10

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
ATRISCO GR ABQ COLLEGE 1	350646106443	201	GW	78-09-25	1425	41	0	1	10	2
ATRISCO GR ABQ COLLEGE 3	350727106423	201	GW	78-09-14	1030	22	200	0	10	1

## QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## BERNALILLO COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
ATRISCO GR ABQ COLLEGE 1	78-09-25	60	8	10	.0	2	0	0
ATRISCO GR ABQ COLLEGE 3	78-09-14	60	0	10	.0	1	0	0

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
ATRISCO GR ABQ COLLEGE 1	350646106443201	GW	78-09-25	1425	6.6	4.3	3.9	5.6
ATRISCO GR ABQ COLLEGE 3	350727106423201	GW	78-09-14	1030	7.3	5.4	5.0	4.2

LOCAL IDENT- I- FIER	STATION NUMBER	DATE OF SAMPLE	PER- THANE TOTAL (UG/L) (39034)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)	LINDANE TOTAL (UG/L) (39340)	CHLOR- DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)
ATRISCO GR ABQ COLLEGE 1	350646106443201	78-09-25	.00	.00	.00	.00	.0	.00	.00
ATRISCO GR ABQ COLLEGE 3	350727106423201	78-09-14	.00	.00	.00	.00	.0	.00	.00

LOCAL IDENT- I- FIER	DATE OF SAMPLE	DDT, TOTAL (UG/L) (39370)	DI- ELDRIN TOTAL (UG/L) (39380)	ENDO- SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	TOX- APHENE, TOTAL (UG/L) (39400)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	PCB, TOTAL (UG/L) (39516)
ATRISCO GR ABQ COLLEGE 1	78-09-25	.00	.00	.00	.00	0	.00	.00	--	.0
ATRISCO GR ABQ COLLEGE 3	78-09-14	.00	.00	--	.00	0	.00	.00	.00	.0

LOCAL IDENT- I- FIER	DATE OF SAMPLE	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	MIREX, TOTAL (UG/L) (39755)	SILVEX, TOTAL (UG/L) (39760)
ATRISCO GR ABQ COLLEGE 1	78-09-25	.00	.00	.00	.00
ATRISCO GR ABQ COLLEGE 3	78-09-14	.00	.00	.00	.00

## CHAVES COUNTY

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)
11S.26E.LEA LAKE,NM	331902104194801	GW	78-03-24	1100	313SVRV	14600	7.9	16.0	3000

## QUALITY OF GROUND WATER

641

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## CHAVES COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)
11S.26E.LEA LAKE,NM	78-03-24	2900	950	160	2500	20	16	200	0	160

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L AS N) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
11S.26E.LEA LAKE,NM	78-03-24	2400	4000	1.2	13	10100	.00	.01	650	10

## COLFAX COUNTY

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)
29N.27E.13.331 TW NO 3	364435104013001		GW	78-01-24	1015	110AVMB	30.00	186	160	140
29N.27E.16.112 TW NO 2	364520104043001		GW	78-01-17	1500	110AVMB	18.60	186	186	18
29N.27E.36.442 TW NO 6	364205104003001		GW	78-01-26	0300	211DKOT	219.00	322	320	295

LOCAL IDENT- I- FIER	DATE OF SAMPLE	PUMP OR FLOW PERIOD PRIOR TO SAM- PLING (MIN) (72004)	FLOW RATE, INSTAN- TANEOUS (GPM) (00059)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
29N.27E.13.331 TW NO 3	78-01-24	1320	50	365	7.7	13.5	150	0	37	15
29N.27E.16.112 TW NO 2	78-01-17	3144	100	394	7.8	13.0	150	0	35	16
29N.27E.36.442 TW NO 6	78-01-26	720	15	476	7.8	17.0	170	0	34	20

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
29N.27E.13.331 TW NO 3	78-01-24	24	.8	2.4	220	0	180	9.7	4.0	.4
29N.27E.16.112 TW NO 2	78-01-17	30	1.1	2.5	230	0	190	21	3.8	.5
29N.27E.36.442 TW NO 6	78-01-26	41	1.4	4.3	240	0	200	46	9.5	1.1

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L AS SiO2) (70301)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
29N.27E.13.331 TW NO 3	78-01-24	22	223	40	10	10
29N.27E.16.112 TW NO 2	78-01-17	21	243	50	20	40
29N.27E.36.442 TW NO 6	78-01-26	23	297	100	20	20



## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## DONA ANA COUNTY

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)
19S-05E-17-331, WSMR, MAR-	323906106472301		GW	78-09-08	1100	--	--	--	--	--
21S-05E-16-132	322856106262701		GW	78-09-08	1400	110BSLN	--	--	--	--
22S-04E-12-214	322446106290801		GW	78-02-14	1200	110BSLN	--	--	--	--
22S-04E-12-434, WELL WSM	322405106290101		GW	78-09-12	1130	--	--	--	--	--
22S-04E-13-311	322331106293801		GW	78-09-06	1100	110BSLN	--	--	--	--
22S-04E-24-112	322310106293401		GW	78-02-13	0900	110BSLN	--	--	--	--
22S-04E-24-212A	322309106290201		GW	78-09-06	1030	--	--	--	--	--
22S-05E-07-342	322415106281801		GW	78-08-22	--	110BSLN	--	--	840	840
22S-05E-19-141 WSMR WELL	322307106282601		GW	78-02-15	1000	--	--	--	--	--
22S-05E-19-323	322237106282201		GW	78-02-15	1100	110BSLN	--	--	--	--
23S-01E-13-4118 FIRESTAT	321827106473503		GW	78-02-01	1530	--	--	629	629	429
23S-01E-13-4118, LAS CRUC	321826106473403		GW	77-12-02	1630	112SNTF	--	634	--	--
23S-02E-28-333, NMSU #9 W	321623106445601		GW	77-12-02	1030	112SNTF	--	610	--	--
23S-02E-29-243, NMSU #1 W	321650106431301		GW	77-12-02	1100	112SNTF	--	387	--	--
23S-02E-29-331B 274 FT D	321629106460103		GW	78-02-02	0843	112SNTF	--	278	278	273
24S-01E-13-221A	321335106472101		GW	78-08-08	1730	112SNTF	111.00	370	370	145
24S-02E-07-231 EBID LOUI	321410106462701		GW	78-08-08	1630	112SNTF	108.60	460	460	180
24S-02E-07-234, LOUISIAN	321412106462601		GW	78-02-01	1410	112SNTF	--	310	310	305
24S-02E-07-234A, LOUISIA	321412106462602		GW	78-02-01	1428	112SNTF	--	310	125	120
			GW	78-09-13	1556	112SNTF	--	310	125	120
24S-02E-07-234B, LOUISIA	321412106462603		GW	78-09-13	1540	112SNTF	--	80	80	75
24S-02E-17-322	321308106453801		GW	78-08-08	1650	112SNTF	117.85	464	464	180
24S-02E-17-423A, BIG WEL	321304106451402		GW	78-08-08	1700	112SNTF	138.20	686	680	310
24S-02E-17-423C 310 FT O	321304106451504		GW	78-02-01	1143	112SNTF	--	310	307	302
24S-02E-17-423D, 121 FT	321304106451505		GW	78-02-01	1120	112SNTF	--	121	118	113
			GW	78-09-13	1330	112SNTF	--	121	118	113
24S-02E-21-123	321239106444501		GW	78-08-08	1712	112SNTF	84.00	480	480	470
24S-01E-13-221A, EBID #5,	321335106472102		GW	78-08-08	1730	112SNTF	111.00	370	370	145
26S-03E-35-144	320017106363501		GW	78-01-10	--	112SNTF	--	--	--	--
LOCAL IDENT- I- FIER	DATE OF SAMPLE	PUMP OR FLOW PERIOD PRIOR TO SAM- PLING (MIN) (72004)	FLOW RATE, INSTAN- TANEOUS (GPM) (00059)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
19S-05E-17-331, WSMR, MAR-	78-09-08	--	--	934	7.2	--	420	220	91	47
21S-05E-16-132	78-09-08	--	--	784	7.5	--	370	130	74	45
22S-04E-12-214	78-02-14	--	--	569	7.6	--	210	83	61	13
22S-04E-12-434, WELL WSM	78-09-12	--	--	365	7.7	--	120	9	35	6.8
22S-04E-13-311	78-09-06	--	--	600	7.2	--	230	86	69	15
22S-04E-24-112	78-02-13	--	--	830	7.2	--	350	210	97	25
22S-04E-24-212A	78-09-06	--	--	318	7.6	--	110	16	31	6.9
22S-05E-07-342	78-08-22	--	--	479	8.0	27.0	110	21	38	3.9
22S-05E-19-141 WSMR WELL	78-02-15	--	--	359	7.9	--	93	0	30	4.3
22S-05E-19-323	78-02-15	--	--	278	7.5	--	100	9	28	7.2
23S-01E-13-4118 FIRESTAT	78-02-01	4320	1040	670	--	18.5	--	--	--	--
23S-01E-13-4118, LAS CRUC	77-12-02	--	1070	660	--	18.5	--	--	--	--
23S-02E-28-333, NMSU #9 W	77-12-02	--	--	1350	--	20.0	--	--	--	--
23S-02E-29-243, NMSU #1 W	77-12-02	--	--	540	--	20.5	--	--	--	--
23S-02E-29-331B 274 FT D	78-02-02	17	6.0	785	8.0	18.0	--	--	--	--
24S-01E-13-221A	78-08-08	45000	2150	544	8.0	18.0	170	40	54	8.6
24S-02E-07-231 EBID LOUI	78-08-08	45000	2180	651	8.1	18.5	220	81	72	10
24S-02E-07-234, LOUISIAN	78-02-01	30	3.0	460	8.1	18.0	150	24	47	7.3
24S-02E-07-234A, LOUISIA	78-02-01	14	5.0	995	7.9	19.0	340	180	110	17
	78-09-13	13	6.0	1210	8.0	19.5	470	270	150	22
24S-02E-07-234B, LOUISIA	78-09-13	16	3.0	1770	8.0	20.0	590	270	190	29
24S-02E-17-322	78-08-08	45000	2420	579	8.0	18.5	190	51	61	9.5
24S-02E-17-423A, BIG WEL	78-08-08	45000	2980	483	8.0	19.0	150	20	48	7.3
24S-02E-17-423C 310 FT O	78-02-01	18	4.5	473	8.0	18.0	150	15	49	7.7
24S-02E-17-423D, 121 FT	78-02-01	18	2.0	1140	8.0	19.0	420	210	130	22
	78-09-13	23	2.0	1160	8.0	21.0	440	230	140	21
24S-02E-21-123	78-08-08	45000	2620	713	7.9	19.0	250	91	79	13
24S-01E-13-221A, EBID #5,	78-08-08	45000	2150	544	8.0	18.0	170	40	54	8.6
26S-03E-35-144	78-01-10	--	--	804	7.8	31.0	52	0	20	.5

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## DONA ANA COUNTY--Continued

LOCAL IDENT- Y- FIER	DATE OF SAMPLE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
19S-05E-17-331, WSMR, MAR-	78-09-08	36	.8	2.3	240	0	200	220	52	.3
21S-05E-16.132	78-09-08	26	.6	2.0	290	0	240	140	13	1.0
22S-04E-12.214	78-02-14	31	.9	2.4	150	0	120	100	32	.6
22S-04E-12.434, WELL WSM	78-09-12	29	1.2	2.1	130	0	110	53	3.1	.4
22S-04E-13.311	78-09-06	32	.9	2.6	180	0	150	100	10	.5
22S-04E-24.112	78-02-13	36	.8	3.2	170	0	140	170	37	.4
22S-04E-24.212A	78-09-06	19	.8	2.0	110	0	90	44	1.5	.3
22S-05E-07.342	78-08-22	56	2.3	2.7	110	0	90	89	25	.5
22S-05E-19.141 WSMR WELL	78-02-15	39	1.8	2.3	130	0	110	55	9.6	.5
22S-05E-19.323	78-02-15	18	.8	1.7	110	0	90	34	7.5	.4
23S-01E-13.411B FIRESTAT	78-02-01	--	--	--	--	--	--	--	--	--
23S-01E-13.411B, LAS CRUC	77-12-02	--	--	--	--	--	--	--	--	--
23S-02E-28.333, NMSU #9 W	77-12-02	--	--	--	--	--	--	--	--	--
23S-02E-29.243, NMSU #1 W	77-12-02	--	--	--	--	--	--	--	--	--
23S-02E-29.331B 274 FT D	78-02-02	--	--	--	--	--	--	--	--	--
24S-01E-13.221A	78-08-08	49	1.6	3.2	--	--	130	78	44	.5
24S-02E-07.231 EBID LOUI	78-08-08	46	1.3	3.9	--	--	140	100	64	.4
24S-02E-07.234, LOUISIAN	78-02-01	38	1.4	--	150	0	120	47	36	--
24S-02E-07.234A, LOUISIA	78-02-01	69	1.6	--	200	0	160	200	96	--
	78-09-13	79	1.6	5.4	--	--	200	270	110	.4
24S-02E-07.234B, LOUISIA	78-09-13	190	3.4	8.0	--	--	320	470	130	.5
24S-02E-17.322	78-08-08	48	1.5	3.1	--	--	140	76	52	.4
24S-02E-17.423A, BIG WEL	78-08-08	41	1.5	2.8	--	--	130	50	37	.4
24S-02E-17.423C 310 FT O	78-02-01	40	1.4	--	170	0	140	42	34	--
24S-02E-17.423D, 121 FT	78-02-01	79	1.7	--	250	0	210	240	100	--
	78-09-13	78	1.6	5.0	--	--	210	230	120	.4
24S-02E-21.123	78-08-08	57	1.6	3.5	--	--	160	120	56	.5
24S-01E-13-221A, EBID #5,	78-08-08	49	1.6	3.2	--	--	130	78	44	.5
26S-03E-35.144	78-01-10	--	--	--	160	0	131	140	79	--

LOCAL IDENT- Y- FIER	DATE OF SAMPLE	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTIT- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
19S-05E-17-331, WSMR, MAR-	78-09-08	23	597	1.4	.18	60	20	20
21S-05E-16.132	78-09-08	27	477	1.3	.01	50	10	10
22S-04E-12.214	78-02-14	42	369	3.0	.02	--	10	0
22S-04E-12.434, WELL WSM	78-09-12	36	235	1.3	.01	40	10	0
22S-04E-13.311	78-09-06	39	391	7.7	.03	30	20	0
22S-04E-24.112	78-02-13	43	549	12	.02	--	10	0
22S-04E-24.212A	78-09-06	43	207	1.1	.02	20	10	0
22S-05E-07.342	78-08-22	31	310	2.2	--	40	10	0
22S-05E-19.141 WSMR WELL	78-02-15	30	239	.99	.01	--	10	10
22S-05E-19.323	78-02-15	46	203	1.4	.02	--	10	0
23S-01E-13.411B FIRESTAT	78-02-01	--	--	--	--	--	40	60
23S-01E-13.411B, LAS CRUC	77-12-02	--	--	--	--	--	80	40
23S-02E-28.333, NMSU #9 W	77-12-02	--	--	--	--	--	610	470
23S-02E-29.243, NMSU #1 W	77-12-02	--	--	--	--	--	100	10
23S-02E-29.331B 274 FT D	78-02-02	--	--	--	--	--	90	270
24S-01E-13.221A	78-08-08	22	--	.21	--	--	20	40
24S-02E-07.231 EBID LOUI	78-08-08	24	405	.04	--	--	410	160
24S-02E-07.234, LOUISIAN	78-02-01	--	--	--	--	--	--	--
24S-02E-07.234A, LOUISIA	78-02-01	--	--	--	--	--	--	--
	78-09-13	26	--	.30	--	--	20	600
24S-02E-07.234B, LOUISIA	78-09-13	29	--	.04	--	--	20	1200
24S-02E-17.322	78-08-08	23	358	.12	--	--	60	10
24S-02E-17.423A, BIG WEL	78-08-08	23	288	.03	--	--	10	20
24S-02E-17.423C 310 FT O	78-02-01	--	--	--	--	--	--	--
24S-02E-17.423D, 121 FT	78-02-01	--	--	--	--	--	--	--
	78-09-13	24	--	.76	--	--	50	350
24S-02E-21.123	78-08-08	24	451	.28	--	--	10	100
24S-01E-13-221A, EBID #5,	78-08-08	22	338	.21	--	--	20	40
26S-03E-35.144	78-01-10	--	--	--	--	--	--	--

## QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## EDDY COUNTY

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	TEMPER- ATURE (DEG C) (00010)
228.31E.15.2244 H-5C	322342103452403		GW	78-05-24	1545	2318NRS	221.00	225	1500	25.0
LOCAL IDENT- I- FIER	DATE OF SAMPLE	HARD- NESS (MG/L AS CAC03) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CAC03) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	ALKA- LINITY (MG/L AS CAC03) (00410)
228.31E.15.2244 H-5C	78-05-24	350	150	56	51	280	6.5	25	240	200
LOCAL IDENT- I- FIER	DATE OF SAMPLE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)			
228.31E.15.2244 H-5C	78-05-24	530	120	1.2	11	1200	.36			
LOCAL IDENT- I- FIER	DATE OF SAMPLE	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)					
228.31E.15.2244 H-5C	78-05-24	.41	890	10	60					
LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)
228.31E.15.2244 H-5C	322342103452403		GW	78-05-24	1545	3	1	890	2	2
LOCAL IDENT- I- FIER	DATE OF SAMPLE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO) (01037)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)
228.31E.15.2244 H-5C	78-05-24	0	0	0	0	5	1	2400	10	8
LOCAL IDENT- I- FIER	DATE OF SAMPLE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
228.31E.15.2244 H-5C	78-05-24	0	100	60	.0	.0	18	6	40	10

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MCKINLEY COUNTY

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)
20N.12W.18.422 BIA IK-9	355752108084801		GW	78-03-27	1315	211MENF	6090.00	2740	8.3	19.0

LOCAL IDENT- I- FIER	DATE OF SAMPLE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CA) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)
20N.12W.18.422 BIA IK-9	78-03-27	15	0	5.0	.6	710	80	2.8	1090	0

LOCAL IDENT- I- FIER	DATE OF SAMPLE	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
20N.12W.18.422 BIA IK-9	78-03-27	890	250	240	5.8	10	1770	.66

LOCAL IDENT- I- FIER	DATE OF SAMPLE	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
20N.12W.18.422 BIA IK-9	78-03-27	.03	550	110	1.5

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)
20N.12W.18.422 BIA IK-9	355752108084801		GW	78-03-27	1315	300	550	1	0	920

LOCAL IDENT- I- FIER	DATE OF SAMPLE	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LITHIUM TOTAL RECOV- ERABLE (UG/L AS LI) (01132)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	STRON- TIUM, TOTAL RECOV- ERABLE (UG/L AS SR) (01082)
20N.12W.18.422 BIA IK-9	78-03-27	110	21	50	0	440

## QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## QUAY COUNTY

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)
13N.33E.16.121 WELL AT U	352137103264001		GW	78-04-27	1200	231SNRS	1000	7.7	17.0	450

LOCAL IDENT- I- FIER	DATE OF SAMPLE	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CACO3) (00410)
13N.33E.16.121 WELL AT U	78-04-27	180	60	72	47	1.0	4.2	320	0	260

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L AS (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
13N.33E.16.121 WELL AT U	78-04-27	190	68	.3	21	627	1.5

## RIO ARRIBA COUNTY

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)
25N.04E.02.434 DAKOTA SP	362526106284310		SP	78-08-22	1100	--	1500	7.8	20.0	900

LOCAL IDENT- I- FIER	DATE OF SAMPLE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
25N.04E.02.434 DAKOTA SP	78-08-22	250	68	31	.4	8.6	780	23	.3	15

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
25N.04E.02.434 DAKOTA SP	362526106284310		SP	78-08-22	1100	0	2	1	.0

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
25N.04E.02.434 DAKOTA SP	362526106284310		SP	78-08-22	1100	.19	6.3

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SANDOVAL COUNTY

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	PUMP OR FLOW PERIOD PRIOR TO SAM- PLING (MIN) (72004)
16N.01E.34.44 RIO SALADO	363400106485001		GW	78-04-00	--	231CHNL	--	200	--	--
16N.04W.18.444 NMBM R21	353637107172801		GW	78-07-27	1330	211PNLK	--	244	6410.00	--
16N.04W.36.241 HOMESTAKE	353432107121801		GW	78-04-13	1300	211GLLP	-77.50	602	6165.00	60
19N.01W.08.223 BRANDY 1	355344106572501		GW	78-04-25	--	211MENF	--	670	--	--
20N.01W.07.32 BRANDY 2 B	355840106590001		GW	78-04-00	--	110AVMB	--	260	--	--
21N.05W.32.424 STAR LK N	360017107223901		GW	78-01-23	1230	211CLFH	--	2450	6840.00	1500

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	TUR- BID- ITY (JTU) (00070)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (00340)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3) (00902)	ACIDITY (MG/L AS H) (71825)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
16N.01E.34.44 RIO SALADO	78-04-00	1700	3.9	17.0	--	--	680	680	7.3	200
16N.04W.18.444 NMBM R21	78-07-27	580	8.8	16.0	--	40	25	--	--	6.9
16N.04W.36.241 HOMESTAKE	78-04-13	490	9.2	17.5	--	7	4	0	--	1.2
19N.01W.08.223 BRANDY 1	78-04-25	6500	6.2	17.0	--	--	3100	2700	--	300
20N.01W.07.32 BRANDY 2 B	78-04-00	3500	6.0	16.0	--	--	1100	840	--	350
21N.05W.32.424 STAR LK N	78-01-23	3000	8.2	33.0	20	16	91	0	--	26

LOCAL IDENT- I- FIER	DATE OF SAMPLE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFIDE DIS- SOLVED (MG/L AS S) (00746)
16N.01E.34.44 RIO SALADO	78-04-00	44	7.0	.1	3.5	0	0	0	--	--
16N.04W.18.444 NMBM R21	78-07-27	1.8	130	11	2.6	--	--	250	.0	--
16N.04W.36.241 HOMESTAKE	78-04-13	.3	120	25	.8	269	20	250	.2	.2
19N.01W.08.223 BRANDY 1	78-04-25	570	630	4.9	13	470	0	390	--	--
20N.01W.07.32 BRANDY 2 B	78-04-00	56	450	5.9	8.5	320	0	260	--	--
21N.05W.32.424 STAR LK N	78-01-23	5.8	710	33	5.4	223	0	180	.1	.0

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
16N.01E.34.44 RIO SALADO	78-04-00	980	13	ND	52	--	1400	--	--	--
16N.04W.18.444 NMBM R21	78-07-27	39	5.5	.5	9.8	--	--	--	--	--
16N.04W.36.241 HOMESTAKE	78-04-13	18	3.5	.7	14	287	312	.01	.00	.01
19N.01W.08.223 BRANDY 1	78-04-25	4000	19	.6	11	--	5800	--	--	--
20N.01W.07.32 BRANDY 2 B	78-04-00	1700	33	1.2	18	--	2800	--	--	--
21N.05W.32.424 STAR LK N	78-01-23	1300	120	.8	14	2190	2290	.01	.00	.02

LOCAL IDENT- I- FIER	DATE OF SAMPLE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, ORTHOPHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHOPHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00671)
16N.01E.34.44 RIO SALADO	78-04-00	.20	--	--	--	--	.06
16N.04W.18.444 NMBM R21	78-07-27	.11	--	--	--	--	.03
16N.04W.36.241 HOMESTAKE	78-04-13	.01	.19	.12	.32	.00	.02
19N.01W.08.223 BRANDY 1	78-04-25	5.0	--	--	--	--	.01
20N.01W.07.32 BRANDY 2 B	78-04-00	2.1	--	--	--	--	.01
21N.05W.32.424 STAR LK N	78-01-23	.01	.57	.00	.02	.03	.00

## QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SANDOVAL COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
16N.01E.34.44 RIO SALADO	78-04-00	140	96000	--	--
16N.04W.18.444 NMBM R21	78-07-27	110	50	9	--
16N.04W.36.241 HOMESTAKE	78-04-13	80	10	--	.1
19N.01W.08.223 BRANDY 1	78-04-25	650	3700	--	--
20N.01W.07.32 BRANDY 2 B	78-04-00	120	11000	--	--
21N.05W.32.424 STAR LK N	78-01-23	80	20	--	1.5

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)
16N.01E.34.44 RIO SALADO	363400106485001	GW	78-04-00	--	--	--	--	140	--
16N.04W.18.444 NMBM R21	353637107172801	GW	78-07-27	1330	200	3	90	110	14
16N.04W.36.241 HOMESTAKE	353432107121801	GW	78-04-13	1300	50	1	0	80	0
19N.01W.08.223 BRANDY 1	355344106572501	GW	78-04-25	--	--	--	--	650	--
20N.01W.07.32 BRANDY 2 B	355840106590001	GW	78-04-00	--	--	--	--	120	--
21N.05W.32.424 STAR LK N	360017107223901	GW	78-01-23	1230	0	1	0	80	1

LOCAL IDENT- I- FIER	DATE OF SAMPLE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
16N.01E.34.44 RIO SALADO	78-04-00	--	--	--	96000	--	120	--	--	--
16N.04W.18.444 NMBM R21	78-07-27	0	0	3	50	7	--	9	.0	4
16N.04W.36.241 HOMESTAKE	78-04-13	0	0	0	10	2	30	--	.0	2
19N.01W.08.223 BRANDY 1	78-04-25	--	--	--	3700	--	570	--	--	--
20N.01W.07.32 BRANDY 2 B	78-04-00	--	--	--	11000	--	350	--	--	--
21N.05W.32.424 STAR LK N	78-01-23	0	0	1	20	3	200	--	.0	0

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
16N.01E.34.44 RIO SALADO	78-04-00	--	--	--	--	--
16N.04W.18.444 NMBM R21	78-07-27	0	--	300	2.0	10
16N.04W.36.241 HOMESTAKE	78-04-13	0	0	10	.0	--
19N.01W.08.223 BRANDY 1	78-04-25	--	--	--	--	--
20N.01W.07.32 BRANDY 2 B	78-04-00	--	--	--	--	--
21N.05W.32.424 STAR LK N	78-01-23	0	0	1600	.0	--

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS BETA, DIS- SOLVED (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PC/L AS CS-137) (03515)	GROSS BETA, DIS- SOLVED (PC/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PC/L AS Y-90) (80050)
16N.04W.18.444 NMBM R21	353637107172801	GW	78-07-27	1330	3.0	1800	3.3	720	3.1
16N.04W.36.241 HOMESTAKE	353432107121801	GW	78-04-13	1300	<3.8	--	<1.0	--	--
21N.05W.32.424 STAR LK N	360017107223901	GW	78-01-23	1230	<35	--	<6.8	--	--

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SANDOVAL COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
16N.04W.18.444 NMBM R21	78-07-27	660	.15	1.1	24
16N.04W.36.241 HOMESTAKE	78-04-13	--	.06	--	4.01
21N.05W.32.424 STAR LK N	78-01-23	--	.64	--	.10

## SAN JUAN COUNTY

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)
NR032.0336X1502 COTTONWO	363113108333501	GW	77-12-21	1130	110AVMB	5.67	11	5195.00	2700
		GW	78-03-13	1400	110AVMB	5.73	11	5195.00	2790
NR032.0407X1145 CHACO R	363503108342101	GW	77-12-21	1015	110AVMB	3.68	7.5	5130.00	1580
		GW	78-03-13	1200	110AVMB	3.57	7.5	5130.00	1600
		GW	78-08-25	1300	110AVMB	4.35	7.5	5130.00	1800
NR032.0505X0180 CHACO R	364325108353001	GW	77-12-21	0830	110AVMB	3.58	9.5	4980.00	4800
		GW	78-03-15	1100	110AVMB	3.61	9.5	4980.00	4300
		GW	78-08-25	1130	110AVMB	4.07	9.5	4980.00	3580
NR048.0898X1715 HUNTER W	361503108243801	GW	77-12-20	1250	110AVMB	4.74	8.0	5545.00	10000
		GW	78-03-15	1530	110AVMB	4.70	8.0	5545.00	15000
NR049.0115X0950 BRIMHALL	362145108310901	GW	77-12-18	1315	110AVMB	5.06	8.1	5390.00	1570
		GW	78-03-16	1000	110AVMB	4.87	8.1	5390.00	1900
NR049.0335X1618 CHACO R	361554108333201	GW	77-12-20	1430	110AVMB	5.63	12	5405.00	840
		GW	78-03-16	1130	110AVMB	5.04	12	5405.00	830
NR049.0388X0895 CHACO R	362213108340501	GW	77-12-18	1115	110AVMB	3.65	9.5	5320.00	1040
		GW	78-03-16	1330	110AVMB	3.22	9.5	5320.00	1100
NR049.0389X0894 CHACO R	362212108340701	GW	77-12-18	1030	110AVMB	5.06	7.5	5320.00	1280
		GW	78-03-16	1500	110AVMB	4.77	7.5	5320.00	1250
NR066.0668X0380 CHACO R.	361142108220401	GW	77-12-20	1145	110AVMB	3.86	8.0	5650.00	1495
		GW	78-03-15	1400	110AVMB	3.54	8.0	5650.00	1600
21N.09W.07.333 CCR9 WELL	360336107501801	GW	78-03-28	1100	--	--	--	6327.00	3000
21N.09W.16.4423 GALLO 2 W	360249107471601	GW	78-07-22	0600	221ENRD	21.00	5744	6418.00	11400
21N.10W.11.431 DOME OIL	360344107515601	GW	78-03-28	1010	221ENRD	--	--	6378.00	10000
21N.11W.07.242 CHACO R W	360415108022201	GW	77-12-19	1430	110AVMB	2.47	--	6018.00	950
		GW	78-03-14	1500	110AVMB	1.51	--	6018.00	980
22N.09W.19.144 DH10K KIM	360731107494701	GW	77-11-15	1415	211PCCF	--	486	6380.00	3600
		GW	78-05-25	1100	211PCCF	155.00	486	6380.00	11000
22N.10W.04.133 DH6K KIMB	361008107543901	GW	78-05-24	1200	211FRLD	69.37	290	6280.00	13000
22N.10W.08.244 DH5K KIMB	360916107543901	GW	77-11-14	1300	211PCCF	--	474	6305.00	11250
		GW	78-02-24	1145	211PCCF	138.00	474	6305.00	14500
22N.10W.17.422 DH4K KIMB	360823107544001	GW	78-02-23	1130	211FRLD	--	190	6330.00	3200
		GW	78-05-24	1530	211FRLD	115.00	190	6330.00	3800
22N.10W.18.211 DH2K KIMB	360849107561801	GW	78-02-24	0930	211FRLD	90.70	205	6290.00	4200
22N.10W.18.411 DH1K KIMB	360822107561601	GW	78-02-23	1400	211PCCF	94.47	285	6245.00	3100
22N.10W.22.244 DH7K KIMB	360734107523101	GW	77-11-16	1245	211FRLD	--	185	6300.00	2900
		GW	78-05-25	1430	--	92.20	185	6300.00	2200
22N.10W.24.211 DH9K KIMB	360754107505201	GW	77-11-16	0930	211FRLD	--	130	6340.00	1250
		GW	78-05-25	1300	211FRLD	10.10	130	6340.00	1180
22N.11W.26.432 ESCAVADO	360621107582301	GW	77-12-19	1300	110AVMB	1.67	7.5	6120.00	1340
		GW	78-03-14	1310	110AVMB	0.61	7.5	6120.00	1280



## QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)
NR032.0336X1582 COTTONWOOD	77-12-21	7.6	11.0	--	290	14	91	15	540	14
	78-03-13	8.1	11.0	--	290	12	90	15	550	14
NR032.0407X1145 CHACO R	77-12-21	7.7	10.5	--	250	0	82	12	330	9.0
	78-03-13	7.7	9.0	--	230	0	72	12	270	7.8
	78-08-25	7.6	21.0	--	220	0	71	11	310	9.0
NR032.0505X0180 CHACO R	77-12-21	8.4	11.5	--	220	0	36	31	1000	30
	78-03-15	7.9	9.5	--	210	10	33	31	1000	30
	78-08-25	8.3	22.0	--	110	0	19	15	750	31
NR048.0898X1715 HUNTER W	77-12-20	8.0	12.0	--	1300	850	300	130	2300	28
	78-03-15	7.5	10.0	--	1800	1400	420	190	3100	32
NR049.0115X0950 BRIMHALL	77-12-18	8.0	11.0	--	220	0	77	7.7	350	10
	78-03-16	8.5	9.0	--	240	0	83	7.9	350	9.8
NR049.0335X1618 CHACO R	77-12-20	7.8	10.0	--	98	0	34	3.1	180	7.9
	78-03-16	8.3	10.0	--	100	0	35	3.3	160	6.9
NR049.0388X0895 CHACO R	77-12-18	8.0	13.0	--	130	0	42	5.2	210	8.1
	78-03-16	7.9	9.0	--	140	0	48	5.7	200	7.3
NR049.0389X0894 CHACO R	77-12-18	8.3	13.0	--	120	0	40	5.2	290	11
	78-03-16	8.1	11.0	--	110	0	36	5.4	280	12
NR066.0668X0380 CHACO R	77-12-20	8.1	12.0	--	170	0	56	7.4	290	9.7
	78-03-15	7.8	10.0	--	200	0	66	7.5	290	9.0
21N.09W.07.333 CCR9 WELL	78-03-28	8.3	14.0	--	430	10	38	81	630	13
21N.09W.16.4423GALLO 2 W	78-07-22	7.7	62.0	30	240	50	71	14	3600	102
21N.10W.11.431 DOME OIL	78-03-28	8.3	42.0	--	210	0	70	8.3	2800	84
21N.11W.07.242 CHACO R W	77-12-19	8.0	8.5	--	62	0	21	2.4	210	12
	78-03-14	8.2	7.0	--	71	0	24	2.6	200	10
22N.09W.19.144 DH10K KIM	77-11-15	10.9	15.0	--	11	0	4.0	.1	900	121
	78-05-25	8.5	15.0	150	70	0	19	5.2	2500	131
22N.10W.04.133 DH6K KIMB	78-05-24	7.8	16.0	180	260	0	99	1.8	3300	90
22N.10W.08.244 DH5K KIMB	77-11-14	8.0	15.5	--	140	0	37	12	2600	95
	78-02-24	8.0	15.5	--	170	0	40	15	3100	106
22N.10W.17.422 DH4K KIMB	78-02-23	10.2	14.0	--	15	0	5.6	.2	800	90
	78-05-24	9.1	15.0	42	29	0	9.1	1.5	960	78
22N.10W.18.211 DH2K KIMB	78-02-24	8.0	14.0	--	45	0	14	2.2	1000	66
22N.10W.18.411 DH1K KIMB	78-02-23	9.2	15.5	--	16	0	4.9	.8	800	88
22N.10W.22.244 DH7K KIMB	77-11-16	9.9	14.5	--	10	0	3.6	.2	720	100
	78-05-25	10.2	14.0	32	10	0	4.0	.0	490	67
22N.10W.24.211 DH9K KIMB	77-11-16	9.0	13.0	--	11	0	3.8	.4	310	40
	78-05-25	8.5	13.0	23	7	0	1.4	.8	280	47
22N.11W.26.432 ESCAVADO	77-12-19	7.7	7.0	--	110	0	37	3.4	280	12
	78-03-14	7.8	5.0	--	120	0	42	3.3	260	10

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	HY- DROXIDE ION (MG/L AS OH) (71830)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFIDE DIS- SOLVED (MG/L AS S) (00746)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
NR032.0336X1562 COTTONWOOD	77-12-21	4.5	335	0	--	275	--	--	1100	36
	78-03-13	4.0	335	0	--	275	--	--	1100	44
NR032.0407X1145 CHACO R	77-12-21	5.2	414	0	--	340	--	--	560	16
	78-03-13	4.4	346	0	--	284	--	--	510	17
	78-08-25	5.8	400	0	--	328	--	--	530	13
NR032.0505X0180 CHACO R	77-12-21	7.8	275	2	--	229	--	--	1800	310
	78-03-15	7.1	244	0	--	200	--	--	1600	330
	78-08-25	5.9	240	0	--	197	--	--	1300	180
NR048.0898X1715 HUNTER W	77-12-20	10	534	0	--	438	--	--	5700	30
	78-03-15	11	510	0	--	418	--	--	7600	36
NR049.0115X0950 BRIMHALL	77-12-18	3.6	312	0	--	256	--	--	670	12
	78-03-16	3.4	268	19	--	252	--	--	640	16
NR049.0335X1618 CHACO R	77-12-20	2.8	261	0	--	214	--	--	210	8.7
	78-03-16	2.3	318	0	--	261	--	--	200	8.0
NR049.0388X0895 CHACO R	77-12-18	3.5	334	0	--	274	--	--	290	9.3
	78-03-16	2.9	293	0	--	240	--	--	300	9.0
NR049.0389X0894 CHACO R	77-12-18	3.1	492	0	--	404	--	--	350	11
	78-03-16	2.7	437	0	--	358	--	--	330	13
NR066.0668X0380 CHACO R	77-12-20	4.4	458	0	--	376	--	--	400	9.5
	78-03-15	4.3	425	0	--	349	--	--	420	10
21N.09W.07.333 CCR9 WELL	78-03-28	4.5	510	0	--	420	--	--	1300	34
21N.09W.16.4423 GALLO 2 W	78-07-22	22	232	0	--	190	.2	--	6400	550
21N.10W.11.431 DOME OIL	78-03-28	15	570	0	--	470	--	--	4300	810
21N.11W.07.242 CHACO R W	77-12-19	1.9	417	0	--	342	--	--	160	7.5
	78-03-14	1.6	388	0	--	318	--	--	170	6.3
22N.09W.19.144 DH10K KIM	77-11-15	5.2	89	240	--	470	.0	--	1100	300
	78-05-25	13	508	10	--	430	.2	--	98	3800
22N.10W.04.133 DH6K KIMB	78-05-24	14	712	0	--	580	.2	--	16	4700
22N.10W.08.244 DH5K KIMB	77-11-14	12	700	0	--	570	.0	--	250	3400
	78-02-24	14	720	0	--	590	.5	--	100	4400
22N.10W.17.422 DH4K KIMB	78-02-23	12	248	713	--	1390	.6	--	140	200
	78-05-24	9.7	1560	191	--	1600	.2	--	130	270
22N.10W.18.211 DH2K KIMB	78-02-24	4.3	2060	0	--	1690	13	--	24	470
22N.10W.18.411 DH1K KIMB	78-02-23	3.6	992	181	--	1120	1.0	--	280	230
22N.10W.22.244 DH7K KIMB	77-11-16	5.6	940	500	--	1600	.0	--	190	62
	78-05-25	4.9	252	370	--	820	.4	--	160	30
22N.10W.24.211 DH9K KIMB	77-11-16	2.5	510	45	--	490	.0	--	200	8.7
	78-05-25	2.2	486	10	--	420	.1	--	170	7.2
22N.11W.26.432 ESCAVADO	77-12-19	3.0	419	0	--	344	--	--	340	9.3
	78-03-14	2.5	426	0	--	349	--	--	310	9.2

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
NR032.0336X1582 COTTONWOOD	77-12-21	1.6	12	1950	1970	--	--	1.9	--	.02
	78-03-13	1.5	11	1950	1980	--	--	1.4	--	.07
NR032.0407X1145 CHACO R	77-12-21	.9	14	1150	1230	--	--	.01	--	.57
	78-03-13	.8	11	1080	1070	--	--	.03	--	.27
	78-08-25	.9	16	1130	1160	--	--	.00	--	.50
NR032.0505X0180 CHACO R	77-12-21	1.7	7.8	3320	3340	--	--	.05	--	1.7
	78-03-15	1.7	7.5	3150	3140	--	--	.00	--	1.5
	78-08-25	2.2	9.0	2410	2400	--	--	.00	--	1.5
NR048.0898X1715 HUNTER W	77-12-20	1.3	21	8440	8760	--	--	.18	--	.04
	78-03-15	1.3	18	11500	11600	--	--	.01	--	.01
NR049.0115X0950 BRIMHALL	77-12-18	1.5	13	1290	1290	--	--	2.3	--	.01
	78-03-16	1.4	11	1260	1270	--	--	2.1	--	.00
NR049.0335X1618 CHACO R	77-12-20	1.0	13	557	586	--	--	.01	--	.04
	78-03-16	1.0	10	532	582	--	--	.03	--	.05
NR049.0388X0895 CHACO R	77-12-18	1.4	12	738	748	--	--	.03	--	.46
	78-03-16	1.3	9.0	700	741	--	--	.02	--	.46
NR049.0389X0894 CHACO R	77-12-18	1.5	15	931	961	--	--	.00	--	.29
	78-03-16	1.5	12	887	905	--	--	.01	--	.29
NR066.0668X0380 CHACO R.	77-12-20	.8	15	991	1010	--	--	.01	--	.73
	78-03-15	.8	14	1020	1030	--	--	.00	--	.63
21N.09W.07.333 CCR9 WELL	78-03-28	.4	9.7	--	2350	--	--	--	.05	--
21N.09W.16.4423GALLO 2 W	78-07-22	3.6	35	--	10800	--	--	--	.01	--
21N.10W.11.431 DOME OIL	78-03-28	5.3	30	--	8320	--	--	--	.04	--
21N.11W.07.242 CHACO R W	77-12-19	.9	11	636	623	--	--	.00	--	.08
	78-03-14	.8	9.2	607	607	--	--	.02	--	.03
22N.09W.19.144 DH10K KIM	77-11-15	3.0	20	--	2620	--	--	--	.10	--
	78-05-25	1.6	30	5670	6740	--	.00	--	2.0	--
22N.10W.04.133 DH6K KIMB	78-05-24	.8	10	6590	8500	.03	.01	--	.04	--
22N.10W.08.244 DH5K KIMB	77-11-14	1.4	9.6	--	6670	--	--	--	.07	--
	78-02-24	1.3	9.4	--	8040	--	--	--	.04	--
22N.10W.17.422 DH4K KIMB	78-02-23	1.7	38	--	2040	--	--	--	.11	--
	78-05-24	1.7	16	2260	2370	1.6	.00	--	1.6	--
22N.10W.18.211 DH2K KIMB	78-02-24	2.2	11	--	2540	--	--	--	.02	--
22N.10W.18.411 DH1K KIMB	78-02-23	4.3	10	--	2010	--	--	--	.04	--
22N.10W.22.244 DH7K KIMB	77-11-16	3.0	24	--	1970	--	--	--	.11	--
	78-05-25	4.9	37	1250	1240	2.4	.00	--	2.4	--
22N.10W.24.211 DH9K KIMB	77-11-16	2.2	12	--	838	--	--	--	.35	--
	78-05-25	1.7	10	738	725	.19	.05	--	.24	--
22N.11W.26.432 ESCAVADO	77-12-19	.6	13	877	895	--	--	.00	--	.39
	78-03-14	.6	11	835	850	--	--	.00	--	.35

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NR032.0336X1582 COTTONWO	77-12-21	--	.21	--	2.1	.11	--
	78-03-13	--	.29	--	1.8	.10	--
NR032.0407X1145 CHACO R	77-12-21	--	.00	--	.56	.61	--
	78-03-13	--	.72	--	1.0	.18	--
	78-08-25	--	.21	--	.71	.04	--
NR032.0505X0180 CHACO R	77-12-21	--	.00	--	1.7	2.1	--
	78-03-15	--	.80	--	2.3	.18	--
	78-08-25	--	.40	--	1.9	.13	--
NR048.0898X1715 HUNTER W	77-12-20	--	.33	--	.55	.13	--
	78-03-15	--	.41	--	.43	.06	--
NR049.0115X0950 BRIMHALL	77-12-18	--	.29	--	2.6	.12	--
	78-03-16	--	.12	--	2.2	.06	--
NR049.0335X1618 CHACO R	77-12-20	--	.11	--	.16	.05	--
	78-03-16	--	.15	--	.23	.06	--
NR049.0388X0895 CHACO R	77-12-18	--	.52	--	1.0	.08	--
	78-03-16	--	.74	--	1.2	.06	--
NR049.0389X0894 CHACO R	77-12-18	--	1.0	--	1.3	.48	--
	78-03-16	--	.25	--	.55	.07	--
NR066.0668X0380 CHACO R.	77-12-20	--	.03	--	.77	.06	--
	78-03-15	--	.26	--	.89	.06	--
21N.09W.07.333 CCR9 WELL	78-03-28	--	--	--	--	--	.01
21N.09W.16.4423 GALLO 2 W	78-07-22	--	--	--	--	--	.02
21N.10W.11.431 DOME OIL	78-03-28	--	--	--	--	--	.01
21N.11W.07.242 CHACO R W	77-12-19	--	.77	--	.85	.17	--
	78-03-14	--	.20	--	.25	.03	--
22N.09W.19.144 DH10K KIM	77-11-15	--	--	--	--	--	.07
	78-05-25	.00	--	.48	--	--	.13
22N.10W.04.133 DH6K KIMB	78-05-24	2.6	--	--	--	--	.03
22N.10W.08.244 DH5K KIMB	77-11-14	--	--	--	--	--	.01
	78-02-24	--	--	--	--	--	.01
22N.10W.17.422 DH4K KIMB	78-02-23	--	--	--	--	--	.32
	78-05-24	.10	--	1.0	--	--	1.9
22N.10W.18.211 DH2K KIMB	78-02-24	--	--	--	--	--	.01
22N.10W.18.411 DH1K KIMB	78-02-23	--	--	--	--	--	.05
22N.10W.22.244 DH7K KIMB	77-11-16	--	--	--	--	--	.10
	78-05-25	.21	--	3.0	--	--	.10
22N.10W.24.211 DH9K KIMB	77-11-16	--	--	--	--	--	.04
	78-05-25	.01	--	1.5	--	--	.03
22N.11W.26.432 ESCAVADO	77-12-19	--	.00	--	.37	.02	--
	78-03-14	--	.36	--	.71	.12	--

## QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NR032.0336X1582 COTTONWOOD	77-12-21	110	20	50	--
	78-03-13	110	30	60	--
NR032.0407X1145 CHACO R	77-12-21	110	20	1800	--
	78-03-13	90	710	2100	--
	78-08-25	150	420	1400	--
NR032.0505X0180 CHACO R	77-12-21	1500	40	250	--
	78-03-15	1400	30	270	--
	78-08-25	2200	20	110	--
NR048.0898X1715 HUNTER W	77-12-20	200	30	20	--
	78-03-15	40	180	60	--
NR049.0115X0950 BRIMHALL	77-12-18	70	270	280	--
	78-03-16	70	50	190	--
NR049.0335X1618 CHACO R	77-12-20	80	40	440	--
	78-03-16	70	90	680	--
NR049.0388X0895 CHACO R	77-12-18	130	1800	1300	--
	78-03-16	100	9000	1400	--
NR049.0389X0894 CHACO R	77-12-18	150	80	1300	--
	78-03-16	140	3200	1100	--
NR066.0668X0380 CHACO R.	77-12-20	80	70	2600	--
	78-03-15	80	1100	2500	--
21N.09W.07.333 CCR9 WELL	78-03-28	150	10	--	14
21N.09W.16.4423 GALLO 2 W	78-07-22	1500	30	100	--
21N.10W.11.431 DOME OIL	78-03-28	1900	--	--	5.1
21N.11W.07.242 CHACO R W	77-12-19	90	90	800	--
	78-03-14	50	40	760	--
22N.09W.19.144 DH10K KIM	77-11-15	370	50	0	--
	78-05-25	730	10	5	--
22N.10W.04.133 DH6K KIMB	78-05-24	670	20	80	--
22N.10W.08.244 DH5K KIMB	77-11-14	590	40	60	--
	78-02-24	620	20	50	--
22N.10W.17.422 DH4K KIMB	78-02-23	490	20	0	--
	78-05-24	580	0	10	--
22N.10W.18.211 DH2K KIMB	78-02-24	620	30	20	--
22N.10W.18.411 DH1K KIMB	78-02-23	600	80	0	--
22N.10W.22.244 DH7K KIMB	77-11-16	470	110	0	--
	78-05-25	630	30	0	--
22N.10W.24.211 DH9K KIMB	77-11-16	330	190	0	--
	78-05-25	190	150	20	--
22N.11W.26.432 ESCAVADO	77-12-19	40	140	2000	--
	78-03-14	40	10	550	--

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)
22N.13W.24.322 CHACO R W	360733108103201	GW	77-12-19	1630	110AVMB	2.61	8.5	5880.00	800
		GW	78-03-17	1100	110AVMB	1.65	8.5	5880.00	890
23N.13W.17.334 DE-NA-ZIN	361318108151401	GW	77-12-20	1015	110AVMB	2.13	8.0	5780.00	1800
		GW	78-03-15	1230	110AVMB	191.00	8.0	5780.00	1900
30N.15W.13.414 SJ13-2 CO	364845108214201	GW	78-02-22	1430	211FRLD	158.10	715	5370.00	8800
30N.15W.23.441 SJ23-4 CD	364744108225001	GW	78-02-21	1630	211PCCF	123.75	730	5290.00	11000
		GW	78-05-23	1310	211PCCF	124.00	730	5290.00	19000
30N.15W.24.423 SJ24-4 CD	364750108214701	GW	78-02-22	1100	211FRLD	79.90	582	5370.00	13000
		GW	78-05-23	1600	211FRLD	121.00	582	5370.00	16000
30N.15W.36.321 PNM GT2 C	364613108221801	GW	78-05-23	1000	211FRLD	133.40	500	5280.00	6570

## QUALITY OF GROUND WATER

655

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS, NONCAR- BONATE (MG/L CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)
22N.13W.24.322 CHACO R W	77-12-19	7.9	10.0	--	95	0	31	4.3	160	7.1
	78-03-17	8.1	7.0	--	110	0	35	4.5	160	6.8
23N.13W.17.334 DE-NA-ZIN	77-12-20	8.0	10.0	--	200	0	68	7.5	380	12
	78-03-15	8.0	8.0	--	210	0	73	7.5	370	11
30N.15W.13.414 SJ13-2 CO	78-02-22	8.1	18.0	--	46	0	12	3.6	2000	130
30N.15W.23.441 SJ23-4 CD	78-02-21	8.1	15.0	--	820	620	230	58	2100	32
	78-05-23	8.1	16.0	290	520	56	130	45	4400	85
30N.15W.24.423 SJ24-4 CD	78-02-02	12.0	17.0	--	250	0	100	.0	2000	55
	78-05-23	11.9	18.0	380	110	0	41	.3	2900	124
30N.15W.36.321 PNM GT2 C	78-05-23	9.7	16.0	60	14	0	1.8	2.2	1600	189

LOCAL IDENT- IFIER	DATE OF SAMPLE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	HY- DROXIDE ION (MG/L AS OH) (71830)	ALKA- LINITY (MG/L AS CACO3) (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFIDE DIS- SOLVED (MG/L AS S) (00746)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
22N.13W.24.322 CHACO R W	77-12-19	2.4	314	0	--	258	--	--	170	6.7
	78-03-17	2.2	297	0	--	244	--	--	180	6.9
23N.13W.17.334 DE-NA-ZIN	77-12-20	4.0	387	0	--	317	--	--	630	22
	78-03-15	2.7	345	0	--	283	--	--	640	22
30N.15W.13.414 SJ13-2 CO	78-02-22	7.4	1480	0	--	1210	14	--	160	2000
30N.15W.23.441 SJ23-4 CD	78-02-21	20	248	0	--	200	2.7	--	1500	2700
	78-05-23	30	564	0	--	460	.3	--	1000	6300
30N.15W.24.423 SJ24-4 CD	78-02-02	24	0	171	440	1580	160	--	880	1600
	78-05-23	25	0	190	335	1300	26	--	290	3300
30N.15W.36.321 PNM GT2 C	78-05-23	10	1090	433	--	1620	1.0	.2	130	1100

LOCAL IDENT- IFIER	DATE OF SAMPLE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)
22N.13W.24.322 CHACO R W	77-12-19	1.1	10	529	546	--	--	.01	--	.00
	78-03-17	1.0	9.0	541	547	--	--	.14	--	.00
23N.13W.17.334 DE-NA-ZIN	77-12-20	.8	12	1320	1320	--	--	3.0	--	.01
	78-03-15	.8	11	1280	1300	--	--	2.9	--	.01
30N.15W.13.414 SJ13-2 CO	78-02-22	2.4	11	--	4930	--	--	--	.04	--
30N.15W.23.441 SJ23-4 CD	78-02-21	1.8	15	--	6750	--	--	--	.01	--
	78-05-23	1.4	12	11900	12200	.02	.01	--	.03	--
30N.15W.24.423 SJ24-4 CD	78-02-02	2.2	11	--	5230	--	--	--	.09	--
	78-05-23	1.7	13	7290	7100	.05	.02	--	.07	--
30N.15W.36.321 PNM GT2 C	78-05-23	2.3	8.0	3850	3830	.04	.02	--	.06	--

LOCAL IDENT- IFIER	DATE OF SAMPLE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHORUS, ORTHOPHOS- PHATE DIS- SOLVED (MG/L AS P) (00671)
22N.13W.24.322 CHACO R W	77-12-19	--	.54	--	.55	.11	--

## QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

SAN JUAN COUNTY--Continued

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)
			78-03-17	--	.15	--	.29	.06	--
23N.13W.17.334 DE-NA-ZIN			77-12-20	--	.35	--	3.4	.08	--
			78-03-15	--	.73	--	3.6	.06	--
30N.15W.13.414 SJ13-2 CO			78-02-22	--	--	--	--	--	.01
30N.15W.23.441 SJ23-4 CO			78-02-21	--	--	--	--	--	.16
			78-05-23	9.1	--	1.9	--	--	.03
30N.15W.24.423 SJ24-4 CO			78-02-02	--	--	--	--	--	.06
			78-05-23	23	--	1.0	--	--	.08
30N.15W.36.321 PNM GT2 C			78-05-23	.70	--	1.2	--	--	.08
LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)
	22N.13W.24.322 CHACO R W		77-12-19		60	1600	260	--	
			78-03-17		50	220	220	--	
	23N.13W.17.334 DE-NA-ZIN		77-12-20		90	30	30	--	
			78-03-15		70	30	40	--	
	30N.15W.13.414 SJ13-2 CO		78-02-22		1100	90	10	--	
	30N.15W.23.441 SJ23-4 CO		78-02-21		490	10	60	--	
			78-05-23		960	0	100	--	
	30N.15W.24.423 SJ24-4 CO		78-02-02		150	10	0	--	
			78-05-23		180	0	5	--	
	30N.15W.36.321 PNM GT2 C		78-05-23		1200	20	0	--	
LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)
NR032.0336X1582 COTTONWOOD	363113108333501	GW	77-12-21	1130	30	--	0	0	0
		GW	78-03-13	1400	0	--	0	0	0
NR032.0407X1145 CHACO R	363503108342101	GW	77-12-21	1015	10	--	1	0	0
		GW	78-03-13	1200	10	--	1	0	0
		GW	78-08-25	1300	0	--	1	50	<1
NR032.0505X0180 CHACO R	364325108353001	GW	77-12-21	0830	20	--	1	0	0
		GW	78-03-15	1100	20	--	0	100	0
		GW	78-08-25	1130	0	--	2	0	0
NR048.0898X1715 HUNTER W	361503108243801	GW	77-12-20	1250	10	--	0	0	0
		GW	78-03-15	1530	30	--	0	100	0
NR049.0115X0950 BRIMHALL	362145108310901	GW	77-12-18	1315	10	--	1	0	0
		GW	78-03-16	1000	30	--	1	100	10
NR049.0335X1618 CHACO R	361554108333201	GW	77-12-20	1430	20	--	1	100	0
		GW	78-03-16	1130	30	--	0	0	0
NR049.0388X0895 CHACO R	362213108340501	GW	77-12-18	1115	10	--	3	100	0
		GW	78-03-16	1330	30	--	2	100	0
NR049.0389X0894 CHACO R	362212108340701	GW	77-12-18	1030	20	--	4	100	0
		GW	78-03-16	1500	30	--	3	100	0
NR066.0668X0380 CHACO R.	361142108220401	GW	77-12-20	1145	10	--	2	100	0
		GW	78-03-15	1400	30	--	1	100	0
21N.09W.16.4423 GALLO 2 W	360249107471601	GW	78-07-22	0600	100	--	1	0	--
21N.10W.11.431 DOME OIL	360344107515601	GW	78-03-28	1010	--	--	--	--	--
21N.11W.07.242 CHACO R W	360415108022201	GW	77-12-19	1430	160	--	1	0	0
		GW	78-03-14	1500	40	--	2	100	10
22N.09W.19.144 DH10K KIM	360731107494701	GW	77-11-15	1415	--	--	6	300	--
		GW	78-05-25	1100	50	--	6	200	0
22N.10W.04.133 DH6K KIMB	361008107543901	GW	78-05-24	1200	2	--	1	3400	5
22N.10W.08.244 DH5K KIMB	360916107543901	GW	77-11-14	1300	--	--	1	300	--
		GW	78-02-24	1145	--	--	0	1300	--
22N.10W.17.422 DH4K KIMB	360823107544001	GW	78-02-23	1130	--	--	10	0	--
		GW	78-05-24	1530	10	--	10	200	0
22N.10W.18.211 DH2K KIMB	360849107561801	GW	78-02-24	0930	--	--	1	200	--
22N.10W.18.411 DH1K KIMB	360822107561601	GW	78-02-23	1400	--	--	1	0	--
22N.10W.22.244 DH7K KIMB	360734107523101	GW	77-11-16	1245	--	--	1	0	--
		GW	78-05-25	1430	70	--	6	50	0
22N.10W.24.211 DH9K KIMB	360754107505201	GW	77-11-16	0930	--	--	14	0	--
		GW	78-05-25	1300	60	--	15	50	0
22N.11W.26.432 ESCAVADO	360621107582301	GW	77-12-19	1300	10	--	3	0	0
		GW	78-03-14	1310	40	--	2	100	0
22N.13W.24.322 CHACO R W	360733108103201	GW	77-12-19	1630	410	--	1	0	0

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)
NR032.0336X1582 COTTONWOOD	77-12-21	110	1	--	0	0	0	20	11	30
	78-03-13	110	2	--	0	0	1	30	20	40
NR032.0407X1145 CHACO R	77-12-21	110	2	--	0	1	0	20	--	30
	78-03-13	90	2	--	0	0	2	710	--	30
	78-08-25	150	5	--	0	3	1	420	0	30
NR032.0505X0180 CHACO R	77-12-21	1500	1	--	0	0	0	40	--	360
	78-03-15	1400	3	--	10	0	1	30	--	170
	78-08-25	2200	0	--	0	0	2	20	1	290
NR048.0898X1715 HUNTER W	77-12-20	200	2	--	10	0	2	30	12	180
	78-03-15	40	4	--	0	0	1	180	13	100
NR049.0115X0950 BRIMHALL	77-12-18	70	1	--	0	0	0	270	6	40
	78-03-16	70	1	--	10	0	1	50	5	20
NR049.0335X1618 CHACO R	77-12-20	80	1	--	0	1	1	40	4	20
	78-03-16	70	3	--	0	0	1	90	8	20
NR049.0388X0895 CHACO R	77-12-18	130	6	--	0	0	1	1800	5	30
	78-03-16	100	3	--	0	0	1	9000	8	10
NR049.0389X0894 CHACO R	77-12-18	150	0	--	0	0	0	80	1	30
	78-03-16	140	3	--	0	0	1	3200	2	10
NR066.0668X0380 CHACO R.	77-12-20	80	1	--	0	0	1	70	5	20
	78-03-15	80	4	--	10	0	1	1100	14	10
21N.09W.16.4423 GALLO 2 W	78-07-22	1500	--	--	10	0	0	30	50	--
21N.10W.11.431 DOME OIL	78-03-28	1900	--	0	--	--	--	--	--	--
21N.11W.07.242 CHACO R W	77-12-19	90	0	--	0	1	7	90	5	30
	78-03-14	50	2	--	0	0	2	40	12	20
22N.09W.19.144 DH10K KIM	77-11-15	370	2	--	0	0	2	50	--	60
	78-05-25	730	4	--	0	0	3	10	--	240
22N.10W.04.133 DH6K KIMB	78-05-24	670	2	--	0	0	1	20	15	240
22N.10W.08.244 DH5K KIMB	77-11-14	590	1	--	8	0	1	40	8	270
	78-02-24	620	1	--	10	0	0	20	0	290
22N.10W.17.422 DH4K KIMB	78-02-23	490	1	--	20	0	11	20	1	80
	78-05-24	580	1	--	5	0	6	0	20	90
22N.10W.18.211 DH2K KIMB	78-02-24	620	1	--	10	0	2	30	0	90
22N.10W.18.411 DH1K KIMB	78-02-23	600	1	--	60	0	2	80	6	80
22N.10W.22.244 DH7K KIMB	77-11-16	470	0	--	8	0	6	110	7	60
	78-05-25	630	3	--	10	0	6	30	27	40
22N.10W.24.211 DH9K KIMB	77-11-16	330	3	--	8	--	12	190	11	30
	78-05-25	190	3	--	0	0	10	150	18	20
22N.11W.26.432 ESCAVADO	77-12-19	40	1	--	0	0	1	140	0	20
	78-03-14	40	3	--	10	1	3	10	--	20
22N.13W.24.322 CHACO R W	77-12-19	60	2	--	0	1	18	1600	--	20



## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NR032.0336X1582 COTTONWO	77-12-21	50	.0	4	1	6	--	--	.0	250
	78-03-13	60	.0	5	3	8	--	--	.0	2100
NR032.0407X1145 CHACO R	77-12-21	1800	.0	3	1	0	--	--	.0	600
	78-03-13	2100	.0	3	0	0	--	--	.0	3700
	78-08-25	1400	.0	13	0	0	--	--	.0	410
NR032.0505X0180 CHACO R	77-12-21	250	.0	6	1	0	--	--	1.6	870
	78-03-15	270	.0	9	0	0	--	--	1.0	2400
	78-08-25	110	.0	17	0	0	--	--	.3	10
NR048.0898X1715 HUNTER W	77-12-20	20	.0	2	1	0	--	--	.0	490
	78-03-15	60	.0	2	0	0	--	--	.0	4400
NR049.0115X0950 BRIMHALL	77-12-18	280	.0	5	0	7	--	--	.3	190
	78-03-16	190	.0	6	0	10	--	--	1.0	1000
NR049.0335X1618 CHACO R	77-12-20	440	.0	5	2	0	--	--	.0	4400
	78-03-16	680	.0	6	0	0	--	--	.0	5000
NR049.0388X0895 CHACO R	77-12-18	1300	.0	5	1	0	--	--	.0	6600
	78-03-16	1400	.0	6	0	0	--	--	.0	10000
NR049.0389X0894 CHACO R	77-12-18	1300	.0	5	0	0	--	--	.0	1100
	78-03-16	1100	.0	7	0	0	--	--	.0	4000
NR066.0668X0380 CHACO R.	77-12-20	2600	.0	5	2	0	--	--	.0	200
	78-03-15	2500	.0	6	0	0	--	--	.0	700
21N.09W.16.4423GALLO 2 W	78-07-22	100	.1	0	--	0	--	4100	3.0	40
21N.10W.11.431 DOME OIL	78-03-28	--	--	--	--	--	--	--	--	--
21N.11W.07.242 CHACO R W	77-12-19	800	.0	4	2	0	--	--	18	1800
	78-03-14	760	.0	2	0	0	--	--	.0	480
22N.09W.19.144 DH10K KIM	77-11-15	0	--	--	--	1	--	310	--	--
	78-05-25	5	.1	6	0	0	0	1200	51	30
22N.10W.04.133 DH6K KIMB	78-05-24	80	.0	0	0	0	0	3500	63	440
22N.10W.08.244 DH5K KIMB	77-11-14	60	--	--	--	0	--	1800	--	--
	78-02-24	50	.0	--	--	0	--	2200	--	--
22N.10W.17.422 DH4K KIMB	78-02-23	0	.0	--	--	3	--	80	--	--
	78-05-24	10	.0	7	0	0	0	240	2.0	30
22N.10W.18.211 DH2K KIMB	78-02-24	20	.0	--	--	0	--	430	--	--
22N.10W.18.411 DH1K KIMB	78-02-23	0	.0	--	--	0	--	150	--	--
22N.10W.22.244 DH7K KIMB	77-11-16	0	--	--	--	1	--	80	--	--
	78-05-25	0	.0	6	0	1	0	110	12	100
22N.10W.24.211 DH9K KIMB	77-11-16	0	--	--	--	1	--	100	--	--
	78-05-25	20	.0	20	0	2	0	120	2.0	10
22N.11W.26.432 ESCAVADO	77-12-19	2000	.0	3	1	0	--	--	.0	380
	78-03-14	550	.0	2	3	0	--	--	.0	420
22N.13W.24.322 CHACO R W	77-12-19	260	.0	4	2	0	--	--	.0	3000

LOCAL IDENT- I- FIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)
22N.13W.24.322 CHACO R W	360733108103201		GW	78-03-17	1100	20	--	1	100	0
23N.13W.17.334 DE-NA-ZIN	361318108151401		GW	77-12-20	1015	30	--	0	0	0
			GW	78-03-15	1230	30	0	0	100	10
30N.15W.13.414 SJ13-2 CD	364845108214201		GW	78-02-22	1430	--	--	0	200	--
30N.15W.23.441 SJ23-4 CD	364744108225001		GW	78-02-21	1630	--	--	0	100	--
			GW	78-05-23	1310	1	--	1	300	5
30N.15W.24.423 SJ24-4 CD	364750108214701		GW	78-02-02	1100	--	--	0	200	--
			GW	78-05-23	1600	--	--	2	400	5
30N.15W.36.321 PNM GT2 C	364613108221801		GW	78-05-23	1000	50	--	3	0	5

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECov- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)
22N.13W.24.322 CHACO R W	78-03-17	50	5	--	10	0	2	220	--	9
23N.13W.17.334 DE-NA-ZIN	77-12-20	90	2	--	0	0	3	30	9	40
	78-03-15	70	4	--	0	0	1	30	8	40
30N.15W.13.414 SJ13-2 CO	78-02-22	1100	0	--	10	0	0	90	0	140
30N.15W.23.441 SJ23-4 CD	78-02-21	490	2	--	20	0	0	10	5	220
	78-05-23	960	1	--	15	0	0	0	6	390
30N.15W.24.423 SJ24-4 CD	78-02-02	150	1	--	10	0	2	10	1	110
	78-05-23	180	1	--	0	0	0	0	3	130
30N.15W.36.321 PNM GT2 C	78-05-23	1200	7	--	0	1	0	20	55	100

LOCAL IDENT- IFIER	DATE OF SAMPLE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
22N.13W.24.322 CHACO R W	78-03-17	220	.0	6	0	0	--	--	.0	1200
23N.13W.17.334 DE-NA-ZIN	77-12-20	30	.0	4	1	5	--	--	.2	380
	78-03-15	40	.0	4	0	6	0	--	--	1400
30N.15W.13.414 SJ13-2 CO	78-02-22	10	.0	--	--	0	--	1000	--	--
30N.15W.23.441 SJ23-4 CD	78-02-21	80	.0	--	--	0	--	4600	--	--
	78-05-23	100	.0	2	3	0	0	7700	53	1100
30N.15W.24.423 SJ24-4 CD	78-02-02	0	.0	--	--	5	--	1600	--	--
	78-05-23	5	.0	2	7	4	0	2400	72	20
30N.15W.36.321 PNM GT2 C	78-05-23	0	.0	6	0	0	0	240	14	20

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- IFIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS YT-90) (80050)
NR032.0336X1582 COTTONWOOD	363113108333501	GW	78-03-13	1400	<25	1.1	5.9	.8	--
NR032.0407X1145 CHACO R	363503108342101	GW	78-03-13	1200	<14	6.8	5.0	3.9	--
		GW	78-08-25	1300	<13	19	8.1	16	--
NR032.0505X0180 CHACO R	364325108353001	GW	77-12-21	0830	40	27	12	19	--
		GW	78-03-15	1100	<28	2.2	<9.6	1.4	--
		GW	78-08-25	1130	<24	.6	<12	.5	--
NR048.0898X1715 HUNTER W	361503108243801	GW	77-12-20	1250	<94	4.0	<21	12	--
		GW	78-03-15	1530	<140	5.1	<30	8.8	--
NR049.0115X0950 BRIMHALL	362145108310901	GW	77-12-18	1315	<19	26	5.6	14	--
		GW	78-03-16	1000	25	10	3.8	3.4	--
NR049.0335X1618 CHACO R	361554108333201	GW	77-12-20	1430	<8.8	7.2	2.4	4.7	--
		GW	78-03-16	1130	<6.0	1.8	3.7	1.4	--
NR049.0388X0895 CHACO R	362213108340501	GW	77-12-18	1115	<9.2	1.8	4.2	2.3	--
		GW	78-03-16	1330	<6.8	.7	4.3	.5	--
NR049.0389X0894 CHACO R	362212108340701	GW	77-12-18	1030	<20	77	5.4	44	--
		GW	78-03-16	1500	<9.1	2.4	8.2	1.6	--
NR066.0668X0380 CHACO R.	361142108220401	GW	77-12-20	1145	<14	4.4	5.1	2.0	--
		GW	78-03-15	1400	<12	1.0	3.1	.6	--
21N.09W.16.4423 GALLO 2 W	360249107471601	GW	78-07-22	0600	<140	--	<52	--	<47
21N.11W.07.242 CHACO R W	360415108022201	GW	77-12-19	1430	11	32	2.5	14	--
		GW	78-03-14	1500	29	1.3	80	1.1	--
22N.09W.19.144 DM10K KIM	360731107494701	GW	77-11-15	1415	--	--	--	--	--
		GW	78-05-25	1100	<54	--	<25	--	<24
22N.10W.04.133 DM6K KIMB	361008107543901	GW	78-05-24	1200	220	--	44	--	40
22N.10W.08.244 DM5K KIMB	360916107543901	GW	77-11-14	1300	--	--	--	--	--
		GW	78-02-24	1145	--	--	--	--	--
22N.10W.17.422 DM4K KIMB	360823107544001	GW	78-05-24	1530	<23	--	<7.2	--	<6.4
22N.10W.18.211 DM2K KIMB	360849107561801	GW	78-02-24	0930	--	--	--	--	--
22N.10W.18.411 DM1K KIMB	360822107561601	GW	78-02-23	1400	--	--	--	--	--
22N.10W.22.244 DM7K KIMB	360734107523101	GW	77-11-16	1245	--	--	--	--	--
		GW	78-05-25	1430	<11	--	<4.0	--	<3.7
22N.10W.24.211 DM9K KIMB	360754107505201	GW	77-11-16	0930	--	--	--	--	--
		GW	78-05-25	1300	<6.2	--	<2.4	--	<2.2
22N.11W.26.432 ESCAVADO	360621107582301	GW	77-12-19	1300	22	.6	3.9	1.7	--
		GW	78-03-14	1310	21	55	26	21	--
22N.13W.24.322 CHACO R W	360733108103201	GW	77-12-19	1630	<7.0	11	2.7	4.8	--
		GW	78-03-17	1100	9.4	1.0	2.7	1.3	--
23N.13W.17.334 DE-NA-ZIN	361318108151401	GW	77-12-20	1015	25	5.8	6.2	5.3	--
		GW	78-03-15	1230	21	<4.4	5.3	1.2	--
30N.15W.13.414 SJ13-2 CO	364845108214201	GW	78-02-22	1430	--	--	--	--	--

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## SAN JUAN COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L) (09510)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)
NR032.0336X1582 COTTONWO	78-03-13	--	--	--	--
NR032.0407X1145 CHACO R	78-03-13	--	--	--	--
	78-08-25	--	--	--	--
NR032.0505X0180 CHACO R	77-12-21	--	--	--	--
	78-03-15	--	--	--	--
	78-08-25	--	--	--	--
NR048.0898X1715 HUNTER W	77-12-20	--	--	--	--
	78-03-15	--	--	--	--
NR049.0115X0950 BRIMHALL	77-12-18	--	--	--	--
	78-03-16	--	--	--	--
NR049.0335X1618 CHACO R	77-12-20	--	--	--	--
	78-03-16	--	--	--	--
NR049.0388X0895 CHACO R	77-12-18	--	--	--	--
	78-03-16	--	--	--	--
NR049.0389X0894 CHACO R	77-12-18	--	--	--	--
	78-03-16	--	--	--	--
NR066.0668X0380 CHACO R.	77-12-20	--	--	--	--
	78-03-15	--	--	--	--
21N.09W.16.4423 GALLO 2 W	78-07-22	--	.50	--	.08
21N.11W.07.242 CHACO R W	77-12-19	--	--	--	--
	78-03-14	--	--	--	--
22N.09W.19.144 DH10K KIM	77-11-15	<.1	--	.6	--
	78-05-25	.5	--	2.3	--
22N.10W.04.133 DH6K KIMB	78-05-24	7.3	--	<.4	--
22N.10W.08.244 DH5K KIMB	77-11-14	1.1	--	.5	--
	78-02-24	3.8	--	<.4	--
22N.10W.17.422 DH4K KIMB	78-05-24	.2	--	1.2	--
22N.10W.18.211 DH2K KIMB	78-02-24	.6	--	<.4	--
22N.10W.18.411 DH1K KIMB	78-02-23	<.1	--	1.4	--
22N.10W.22.244 DH7K KIMB	77-11-16	.2	--	.9	--
	78-05-25	<.1	--	.9	--
22N.10W.24.211 DH9K KIMB	77-11-16	.2	--	4.6	--
	78-05-25	<.1	--	1.6	--
22N.11W.26.432 ESCAVADO	77-12-19	--	--	--	--
	78-03-14	--	--	--	--
22N.13W.24.322 CHACO R W	77-12-19	--	--	--	--
	78-03-17	--	--	--	--
23N.13W.17.334 DE-NA-ZIN	77-12-20	--	--	--	--
	78-03-15	--	--	--	--
30N.15W.13.414 SJ13-2 CO	78-02-22	.9	--	<.4	--

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03516)
30N.15W.23.441 SJ23-4 CD	364744108225001	GW	78-02-21	1630	--	--	--	--	--	--
		GW	78-05-23	1310	<110	--	53	--	48	--
30N.15W.24.423 SJ24-4 CD	364750108214701	GW	78-02-02	1100	--	--	--	--	--	--
		GW	78-05-23	1600	<60	--	<28	--	<26	--
30N.15W.36.321 PNM GT2 C	364613108221801	GW	78-05-23	1000	<30	--	<15	--	<14	--

QUALITY OF GROUND WATER  
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

SAN JUAN COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L) (09510)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)	URANIUM DIS- SOLVED, EXTRAC- TION (UG/L) (80020)	ETHION, TOTAL (UG/L) (39398)
30N.15W.23.441 SJ23-4 CD	78-02-21	.2	--	1.7	--	--
	78-05-23	1.5	--	.6	--	--
30N.15W.24.423 SJ24-4 CD	78-02-02	.1	--	.4	--	--
	78-05-23	.5	--	.6	--	150
30N.15W.36.321 PNM GT2 C	78-05-23	4.1	--	58	--	--

SANTA FE COUNTY

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS) (00095)	PH (UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	HARD- NESS (MG/L AS CACO3) (00900)
CAJA DEL RIO GRANT WELL	354950106092101	GW	78-08-24	1000	121TSUG	1000	7.8	24.0	180
CAJA DEL RIO GRANT WELL	355002106093301	GW	78-08-24	1000	121TSUG	300	8.3	21.0	18

LOCAL IDENT- I- FIER	DATE OF SAMPLE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
CAJA DEL RIO GRANT WELL	78-08-24	28	26	250	8.2	4.3	35	19	.6	30
CAJA DEL RIO GRANT WELL	78-08-24	6.6	.4	77	7.9	2.2	11	2.6	.8	38

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)
CAJA DEL RIO GRANT WELL	354950106092101	GW	78-08-24	1000	1	6	0	.0
CAJA DEL RIO GRANT WELL	355002106093301	GW	78-08-24	1000	14	4	0	64

LOCAL IDENT- I- FIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
CAJA DEL RIO GRANT WELL	354950106092101	GW	78-08-24	1000	.22	189
CAJA DEL RIO GRANT WELL	355002106093301	GW	78-08-24	1000	.08	15

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## VALENCIA COUNTY

LOCAL IDENT- IFIER	STATION	NUMBER	SITE	DATE OF SAMPLE	TIME	GEO- LOGIC UNIT	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)	FLOW RATE, INSTAN- TANEOUS (GPM) (00059)
05N.10W.12.113	CEBOLLA S	344045107505801	SP	78-08-29	1130	--	--	--	--	--
05N.11W.15.242	INDIAN WI	343947107583301	GW	78-09-06	1600	--	--	--	--	--
05N.11W.26.323	CEDAR WIN	343743107581401	GW	78-09-06	1800	--	--	--	--	--
05N.12W.01.224	FOUR CORN	344142108024101	GW	78-08-30	1630	--	--	--	--	--
05N.12W.04.112	LINE WELL	344146108064601	GW	78-08-31	1500	--	--	--	--	--
05N.12W.13.141	ROCK TANK	343952108032301	GW	78-08-30	1700	--	--	--	--	--
05N.12W.20.133	DOS CERRI	343852108075501	GW	78-08-30	1500	--	--	--	--	--
05N.12W.25.344	SAND WDM	343735108031701	GW	78-08-31	1400	--	--	--	--	--
05N.12W.27.313	WEST WELL	343748108054801	GW	78-08-31	1230	--	--	--	--	--
05N.13W.15.333	LUIS WELL	343715108120601	GW	78-08-31	1130	--	--	--	--	--
06N.10W.06.121	NO. 6 WEL	344657107533401	GW	78-08-28	1500	--	--	--	--	--
06N.10W.07.232	HENSON NO	344549107531301	GW	78-08-28	0830	--	--	--	--	--
06N.10W.20.114	SAND CY W	344410107551301	GW	78-08-29	0900	--	--	--	--	--
06N.10W.20.411	HENSON 1	344349107544301	GW	78-08-29	1000	--	--	--	--	--
06N.11W.02.412	MALPAIS W	344626107524901	GW	78-08-31	1800	--	--	--	--	--
06N.11W.34.113	PT WINDML	344229107592701	GW	78-08-28	1600	--	--	--	--	--
06N.11W.34.323	HEAD WIND	344205107591101	GW	78-08-31	1700	--	--	--	--	--
06N.12W.01.311	HORSE CAM	344636108033901	GW	78-09-06	1400	--	--	--	--	--
06N.12W.13.421	SO CAMP	344448108024901	GW	78-08-31	1600	--	--	--	--	--
07N.09W.09.332	CEBOLLITA	344533107474501	SP	78-08-09	1000	--	--	--	--	--
07N.10W.20.414	NORTH WIN	344900107544001	GW	78-08-04	0900	--	--	--	--	--
07N.10W.22.112	WITCH WEL	344859107530201	GW	78-09-05	1630	--	--	--	--	--
07N.12W.13.244	NORTH CAM	345013108023801	GW	78-09-06	1100	--	--	--	--	--
08N.10W.24.221	BERRYHILL	345458107501901	GW	78-08-02	--	--	--	--	--	--
08N.10W.24.311	KOWINA	345430107512001	GW	78-08-11	1100	--	555	555	550	5.0
08N.20W.20.4222	SACRED S	345430108573201	SP	78-06-21	1135	--	--	--	--	--
08N.20W.21.1441	RAINBOW	345430108570201	SP	78-06-21	1155	--	--	--	--	--
09N.09W.28.113	LAS VENTA	345903107480901	GW	78-08-10	1300	--	--	--	--	--
10N.09W.26.434		350337107452601	GW	78-08-10	0800	--	--	--	--	--
LOCAL IDENT- IFIER				DATE OF SAMPLE						

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## VALENCIA COUNTY--Continued

LOCAL IDENT- I- FIER	DATE OF SAMPLE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	CAR- BONATE (MG/L AS CO3) (00445)	ALKA- LITY (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)
05N.10W.12.113 CEBOLLA S	78-08-29	2.6	--	--	240	45	19	.3	27	351
05N.11W.15.242 INDIAN WI	78-09-06	2.6	--	--	270	150	16	.8	13	547
05N.11W.26.323 CEDAR WIN	78-09-06	3.6	--	--	160	680	25	.3	14	1270
05N.12W.01.224 FOUR CORN	78-08-30	2.6	--	--	210	160	9.7	.9	18	471
05N.12W.04.112 LINE WELL	78-08-31	2.5	--	--	200	130	7.3	1.4	11	444
05N.12W.13.141 ROCK TANK	78-08-30	1.9	--	--	260	110	9.7	2.0	13	445
05N.12W.20.133 DOS CERRI	78-08-30	1.7	--	--	380	110	9.5	1.0	11	614
05N.12W.25.344 SAND WDM	78-08-31	2.0	--	--	440	110	26	3.4	8.7	688
05N.12W.27.313 WEST WELL	78-08-31	.8	--	--	220	39	18	.8	22	311
05N.13W.15.333 LUIS WELL	78-08-31	4.5	--	--	240	73	16	.8	32	420
06N.10W.06.121 NO. 6 WEL	78-08-28	2.6	--	--	240	39	2.7	1.1	12	300
06N.10W.07.232 HENSON NO	78-08-28	3.6	--	--	290	280	11	.5	17	736
06N.10W.20.114 SAND CY W	78-08-29	3.2	--	--	400	560	16	.6	18	1250
06N.10W.20.411 HENSON 1	78-08-29	3.5	--	--	340	760	12	.6	19	1520
06N.11W.02.412 MALPAIS W	78-08-31	3.9	--	--	210	430	3.5	1.1	12	863
06N.11W.34.113 PT WINDML	78-08-28	1.8	--	--	180	50	9.8	.3	14	328
06N.11W.34.323 HEAD WIND	78-08-31	1.2	--	--	140	32	10	.5	18	242
06N.12W.01.311 HORSE CAM	78-09-06	3.9	--	--	180	54	11	.6	28	304
06N.12W.13.421 SO CAMP	78-08-31	2.5	--	--	150	39	34	.4	31	303
07N.09W.09.332 CEBOLLITA	78-08-09	2.6	--	--	210	53	33	.4	28	368
07N.10W.20.414 NORTH WIN	78-08-04	2.6	--	--	260	80	5.5	.2	12	362
07N.10W.22.112 WITCH WEL	78-09-05	3.3	--	--	270	150	9.3	.6	12	543
07N.12W.13.244 NORTH CAM	78-09-06	3.5	--	--	230	110	41	1.0	27	462
08N.10W.24.221 BERRYHILL	78-08-02	3.0	--	--	210	260	9.6	.4	12	645
08N.10W.24.311 KOWINA	78-08-11	3.2	--	--	230	130	7.1	.6	14	426
08N.20W.20.4222 SACRED S	78-06-21	5.7	310	0	250	300	32	.5	14	--
08N.20W.21.1441 RAINBOW	78-06-21	5.1	--	0	--	330	42	.5	14	--
09N.09W.28.113 LAS VENTA	78-08-10	2.0	--	--	170	94	10	.5	14	345
10N.09W.26.434	78-08-10	2.1	--	--	230	100	7.8	.5	18	407

LOCAL IDENT- I- FIER	DATE OF SAMPLE	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)
05N.10W.12.113 CEBOLLA S	78-08-29	357	.35	--	120	20	0
05N.11W.15.242 INDIAN WI	78-09-06	548	.16	--	200	40	10
05N.11W.26.323 CEDAR WIN	78-09-06	1160	.03	--	100	440	30
05N.12W.01.224 FOUR CORN	78-08-30	469	.12	--	270	280	40
05N.12W.04.112 LINE WELL	78-08-31	419	.03	--	250	90	0
05N.12W.13.141 ROCK TANK	78-08-30	454	.13	--	360	90	20
05N.12W.20.133 DOS CERRI	78-08-30	596	.20	--	280	220	30
05N.12W.25.344 SAND WDM	78-08-31	681	.37	--	690	50	0
05N.12W.27.313 WEST WELL	78-08-31	325	.82	--	110	80	10
05N.13W.15.333 LUIS WELL	78-08-31	414	.80	--	180	70	0
06N.10W.06.121 NO. 6 WEL	78-08-28	414	1.5	--	140	130	10
06N.10W.07.232 HENSON NO	78-08-28	731	3.1	--	120	400	10
06N.10W.20.114 SAND CY W	78-08-29	1230	.28	--	160	420	240
06N.10W.20.411 HENSON 1	78-08-29	1430	.03	--	160	2500	1000
06N.11W.02.412 MALPAIS W	78-08-31	846	.43	--	200	400	10
06N.11W.34.113 PT WINDML	78-08-28	295	7.5	--	130	40	0
06N.11W.34.323 HEAD WIND	78-08-31	228	4.1	--	120	20	0
06N.12W.01.311 HORSE CAM	78-09-06	311	.76	--	130	40	10
06N.12W.13.421 SO CAMP	78-08-31	293	.80	--	30	50	0
07N.09W.09.332 CEBOLLITA	78-08-09	363	1.2	--	130	60	0
07N.10W.20.414 NORTH WIN	78-08-04	402	1.2	--	40	80	0
07N.10W.22.112 WITCH WEL	78-09-05	501	6.6	--	70	210	30
07N.12W.13.244 NORTH CAM	78-09-06	478	.87	--	170	270	30
08N.10W.24.221 BERRYHILL	78-08-02	599	2.7	--	80	60	40
08N.10W.24.311 KOWINA	78-08-11	426	1.9	--	150	160	0
08N.20W.20.4222 SACRED S	78-06-21	740	.05	.01	120	--	--
08N.20W.21.1441 RAINBOW	78-06-21	621	.05	.01	110	--	--
09N.09W.28.113 LAS VENTA	78-08-10	330	2.5	--	140	40	0
10N.09W.26.434	78-08-10	406	1.1	--	110	50	0

## WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## VALENCIA COUNTY--Continued

LOCAL IDENT- IFIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)
05N.10W.12.113 CEBOLLA S	344045107505801	SP	78-08-29	1130	1	120	0	0	0
05N.11W.15.242 INDIAN WI	343947107583301	GW	78-09-06	1600	0	200	0	0	0
05N.11W.26.323 CEDAR WIN	343743107581401	GW	78-09-06	1800	0	100	0	0	0
05N.12W.01.224 FOUR CORN	344142108024101	GW	78-08-30	1630	0	270	0	0	0
05N.12W.04.112 LINE WELL	344146108064601	GW	78-08-31	1500	1	250	0	0	0
05N.12W.13.141 ROCK TANK	343952108032301	GW	78-08-30	1700	1	360	0	0	0
05N.12W.20.133 DOS CERRI	343852108075501	GW	78-08-30	1500	1	280	0	10	10
05N.12W.25.344 SAND WDML	343735108031701	GW	78-08-31	1400	0	690	0	0	0
05N.12W.27.313 WEST WELL	343748108054801	GW	78-08-31	1230	1	110	0	0	0
05N.13W.15.333 LUIS WELL	343715108120601	GW	78-08-31	1130	2	180	0	0	0
06N.10W.06.121 NO. 6 WEL	344657107533401	GW	78-08-28	1500	0	140	0	0	0
06N.10W.07.232 HENSON NO	344549107531301	GW	78-08-28	0830	1	120	0	0	10
06N.10W.20.114 SAND CY W	344410107551301	GW	78-08-29	0900	1	160	0	0	0
06N.10W.20.411 HENSON 1	344349107544301	GW	78-08-29	1000	1	160	0	0	0
06N.11W.02.412 MALPAIS W	344626107524901	GW	78-08-31	1800	1	200	0	0	0
06N.11W.34.113 PT WINDML	344229107592701	GW	78-08-28	1600	1	130	10	0	0
06N.11W.34.323 HEAD WIND	344205107591101	GW	78-08-31	1700	1	120	0	10	0
06N.12W.01.311 HORSE CAM	344636108033901	GW	78-09-06	1400	1	130	0	0	0
06N.12W.13.421 SO CAMP	344448108024901	GW	78-08-31	1600	1	30	0	0	0
07N.09W.09.332 CEBOLLITA	344533107474501	SP	78-08-09	1000	1	130	0	0	0
07N.10W.20.414 NORTH WIN	344900107544001	GW	78-08-04	0900	0	40	10	0	20
07N.10W.22.112 WITCH WEL	344859107530201	GW	78-09-05	1630	0	70	0	0	0
07N.12W.13.244 NORTH CAM	345013108023801	GW	78-09-06	1100	1	170	10	10	0
08N.10W.24.221 BERRYHILL	345458107501901	GW	78-08-02	--	0	80	0	0	0
08N.10W.24.311 KOWINA	345430107512001	GW	78-08-11	1100	1	150	0	0	10
09N.09W.28.113 LAS VENTA	345903107480901	GW	78-08-10	1300	1	140	0	0	0
10N.09W.26.434	350337107452601	GW	78-08-10	0800	1	110	0	0	0

LOCAL IDENT- IFIER	DATE OF SAMPLE	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGANESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
05N.10W.12.113 CEBOLLA S	78-08-29	20	0	0	.2	10
05N.11W.15.242 INDIAN WI	78-09-06	40	0	10	.0	90
05N.11W.26.323 CEDAR WIN	78-09-06	440	0	30	.0	360
05N.12W.01.224 FOUR CORN	78-08-30	280	0	40	.0	60
05N.12W.04.112 LINE WELL	78-08-31	90	0	0	.0	20
05N.12W.13.141 ROCK TANK	78-08-30	90	0	20	.0	50
05N.12W.20.133 DOS CERRI	78-08-30	220	0	30	.0	40
05N.12W.25.344 SAND WDML	78-08-31	50	0	0	.0	30
05N.12W.27.313 WEST WELL	78-08-31	80	--	10	.0	60
05N.13W.15.333 LUIS WELL	78-08-31	70	0	0	.0	90
06N.10W.06.121 NO. 6 WEL	78-08-28	130	0	10	.2	310
06N.10W.07.232 HENSON NO	78-08-28	400	0	10	.1	40
06N.10W.20.114 SAND CY W	78-08-29	420	0	240	.0	90
06N.10W.20.411 HENSON 1	78-08-29	2500	0	1000	.0	40
06N.11W.02.412 MALPAIS W	78-08-31	400	0	10	.0	300
06N.11W.34.113 PT WINDML	78-08-28	40	--	0	.0	150
06N.11W.34.323 HEAD WIND	78-08-31	20	0	0	.0	60
06N.12W.01.311 HORSE CAM	78-09-06	40	0	10	.0	30
06N.12W.13.421 SO CAMP	78-08-31	50	0	0	.0	80
07N.09W.09.332 CEBOLLITA	78-08-09	60	--	0	.3	20
07N.10W.20.414 NORTH WIN	78-08-04	80	--	0	.0	0
07N.10W.22.112 WITCH WEL	78-09-05	210	0	30	.0	770
07N.12W.13.244 NORTH CAM	78-09-06	270	0	30	.0	1200
08N.10W.24.221 BERRYHILL	78-08-02	60	0	40	.0	1200
08N.10W.24.311 KOWINA	78-08-11	160	0	0	.2	860
09N.09W.28.113 LAS VENTA	78-08-10	40	0	0	.2	40
10N.09W.26.434	78-08-10	50	--	0	.2	20



## QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

## VALENCIA COUNTY--Continued

LOCAL IDENT- IFIER	STATION NUMBER	SITE	DATE OF SAMPLE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U=NAT) (80030)	GROSS BETA, DIS- SOLVED (PCI/L AS CS=137) (03515)	GROSS BETA, DIS- SOLVED (PCI/L AS YT=90) (80050)	URANIUM NATURAL DIS- SOLVED (UG/L AS U) (22703)
05N.10W.12.113 CEBOLLA S	344045107505801	SP	78-08-29	1130	8.0	3.6	3.2	1.1
05N.11W.15.242 INDIAN WI	343947107583301	GW	78-09-06	1600	<8.3	<3.2	<2.9	<4.4
05N.11W.26.323 CEDAR WIN	343743107581401	GW	78-09-06	1800	27	9.7	8.7	4.7
05N.12W.01.224 FOUR CORN	344142108024101	GW	78-08-30	1630	<7.1	2.6	2.6	.7
05N.12W.04.112 LINE WELL	344146108064601	GW	78-08-31	1500	<5.1	4.4	4.2	1.1
05N.12W.13.141 ROCK TANK	343952108032301	GW	78-08-30	1700	12	5.4	4.6	.6
05N.12W.20.133 DOB CERRI	343852108075501	GW	78-08-30	1500	<11	<3.2	<3.0	<4.4
05N.12W.25.344 SAND WDM	343735108031701	GW	78-08-31	1400	<13	3.8	3.8	.7
05N.12W.27.313 WEST WELL	343748108054801	GW	78-08-31	1230	8.3	<2.1	<2.0	7.7
05N.13W.19.333 LUIS WELL	343715108120601	GW	78-08-31	1130	12	4.3	3.9	3.5
06N.10W.06.121 NO. 6 WEL	344657107533401	GW	78-08-28	1500	<4.2	2.2	2.0	1.6
06N.10W.07.232 HENSON NO	344549107531301	GW	78-08-28	0830	<12	<4.3	<3.9	2.5
06N.10W.20.114 SAND CY W	344410107551301	GW	78-08-29	0900	39	<6.6	<5.9	8.0
06N.10W.20.411 HENSON 1	344349107544301	GW	78-08-29	1000	<22	<6.6	<5.9	2.8
06N.11W.02.412 MALPAIS W	344626107524901	GW	78-08-31	1800	13	5.6	5.1	1.7
06N.11W.34.113 PT WINDML	344229107592701	GW	78-08-28	1600	6.3	3.8	3.4	3.9
06N.11W.34.323 HEAD WIND	344205107591101	GW	78-08-31	1700	<3.9	<1.3	<1.2	1.5
06N.12W.01.311 HORSE CAM	344636108033901	GW	78-09-06	1400	12	4.0	3.7	2.6
06N.12W.13.421 SO CAMP	344448108024901	GW	78-08-31	1600	<4.9	2.8	2.8	3.4
07N.09W.09.332 CEBOLLITA	344533107474501	SP	78-08-09	1000	7.8	3.2	2.9	1.8
07N.10W.22.112 WITCH WEL	344859107530201	GW	78-09-05	1630	<13	4.8	4.4	8.2
07N.12W.13.244 NORTH CAM	345013108023801	GW	78-09-06	1100	<11	3.0	2.8	4.0
08N.10W.24.221 BERRYHILL	345458107501901	GW	78-08-02	--	--	--	--	3.7
08N.10W.24.311 KOWINA	345430107512001	GW	78-08-11	1100	<6.3	4.9	4.9	3.3
09N.09W.28.113 LAS VENTA	345903107480901	GW	78-08-10	1300	6.1	<1.4	<1.3	2.4
10N.09W.26.434	350337107452601	GW	78-08-10	0800	20	3.1	2.8	5.9

PARM. CODE	NEW TERMINOLOGY -- FIRST LINE OLD TERMINOLOGY -- SECOND LINE
00623	NITROGEN, AMMONIA PLUS ORGANIC, DISSOLVED (MG/L AS N)
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)
00624	NITROGEN, AMMONIA PLUS ORGANIC, SUSPENDED TOTAL (MG/L AS N)
00624	NITROGEN, KJELDAHL, SUSPENDED (MG/L AS N)
00625	NITROGEN, AMMONIA PLUS ORGANIC, TOTAL (MG/L AS N)
00625	NITROGEN, KJELDAHL, TOTAL (MG/L AS N)
00626	NITROGEN, AMMONIA PLUS ORGANIC, TOTAL IN BOTTOM MATERIAL, DRY WT (MG/KG AS N)
00626	NITROGEN, KJELDAHL, TOTAL IN BOTTOM MATERIAL, DRY WT (MG/KG AS N)
00683	CARBON, ORGANIC, SUSPENDED TOTAL (MG/L AS C)
00683	CARBON, ORGANIC, SUSPENDED (MG/L AS C)
00688	CARBON, INORGANIC, SUSPENDED TOTAL (MG/L AS C)
00688	CARBON, INORGANIC, SUSPENDED (MG/L AS C)
00689	CARBON, ORGANIC, SUSPENDED TOTAL (MG/L AS C)
00689	CARBON, ORGANIC, SUSPENDED (MG/L AS C)
00694	CARBON, INORGANIC PLUS ORGANIC, SUSPENDED TOTAL (MG/L AS C)
00694	CARBON, INORGANIC PLUS ORGANIC, SUSPENDED (MG/L AS C)
00916	CALCIUM, TOTAL RECOVERABLE (MG/L AS CA)
00916	CALCIUM, TOTAL (MG/L AS CA)
00926	MAGNESIUM, SUSPENDED RECOVERABLE (MG/L AS MG)
00926	MAGNESIUM, SUSPENDED (MG/L AS MG)
00927	MAGNESIUM, TOTAL RECOVERABLE (MG/L AS MG)
00927	MAGNESIUM, TOTAL (MG/L AS MG)
01001	ARSENIC, SUSPENDED TOTAL (UG/L AS AS)
01001	ARSENIC, SUSPENDED (UG/L AS AS)
01006	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA)
01006	BARIUM, SUSPENDED (UG/L AS BA)
01007	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)
01007	BARIUM, TOTAL (UG/L AS BA)
01008	BARIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS BA)
01008	BARIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS BA)
01011	BERYLLIUM, SUSPENDED RECOVERABLE (UG/L AS BE)
01011	BERYLLIUM, SUSPENDED (UG/L AS BE)
01012	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)
01012	BERYLLIUM, TOTAL (UG/L AS BE)
01013	BERYLLIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS BE)
01013	BERYLLIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS BE)
01016	BISMUTH, SUSPENDED TOTAL (UG/L AS BI)
01016	BISMUTH, SUSPENDED (UG/L AS BI)
01021	BORON, SUSPENDED RECOVERABLE (UG/L AS B)
01021	BORON, SUSPENDED (UG/L AS B)
01022	BORON, TOTAL RECOVERABLE (UG/L AS B)
01022	BORON, TOTAL (UG/L AS B)
01023	BORON, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS B)
01023	BORON, TOTAL IN BOTTOM MATERIAL (UG/G AS B)
01026	CADMIUM, SUSPENDED RECOVERABLE (UG/L AS CD)
01026	CADMIUM, SUSPENDED (UG/L AS CD)
01027	CADMIUM, TOTAL RECOVERABLE (UG/L AS CD)
01027	CADMIUM, TOTAL (UG/L AS CD)
01028	CADMIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CD)
01028	CADMIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS CD)
01029	CHROMIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CR)
01029	CHROMIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS CR)
01031	CHROMIUM, SUSPENDED RECOVERABLE (UG/L AS CR)
01031	CHROMIUM, SUSPENDED (UG/L AS CR)
01034	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
01034	CHROMIUM, TOTAL (UG/L AS CR)

PARAM. CODE	NEW TERMINOLOGY -- FIRST LINE OLD TERMINOLOGY -- SECOND LINE
01036	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO)
01036	COBALT, SUSPENDED (UG/L AS CO)
01037	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
01037	COBALT, TOTAL (UG/L AS CO)
01038	COBALT, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CO)
01038	COBALT, TOTAL IN BOTTOM MATERIAL (UG/G AS CO)
01041	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)
01041	COPPER, SUSPENDED (UG/L AS CU)
01042	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
01042	COPPER, TOTAL (UG/L AS CU)
01043	COPPER, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CU)
01043	COPPER, TOTAL IN BOTTOM MATERIAL (UG/G AS CU)
01044	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)
01044	IRON, SUSPENDED (UG/L AS FE)
01045	IRON, TOTAL RECOVERABLE (UG/L AS FE)
01045	IRON, TOTAL (UG/L AS FE)
01050	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)
01050	LEAD, SUSPENDED (UG/L AS PB)
01051	LEAD, TOTAL RECOVERABLE (UG/L AS PB)
01051	LEAD, TOTAL (UG/L AS PB)
01052	LEAD, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS PB)
01052	LEAD, TOTAL IN BOTTOM MATERIAL (UG/G AS PB)
01053	MANGANESE, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS MN)
01053	MANGANESE, TOTAL IN BOTTOM MATERIAL (UG/G AS MN)
01054	MANGANESE, SUSPENDED RECOVERABLE (UG/L AS MN)
01054	MANGANESE, SUSPENDED (UG/L AS MN)
01055	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)
01055	MANGANESE, TOTAL (UG/L AS MN)
01061	MOLYBDENUM, SUSPENDED RECOVERABLE (UG/L AS MO)
01061	MOLYBDENUM, SUSPENDED (UG/L AS MO)
01062	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)
01062	MOLYBDENUM, TOTAL (UG/L AS MO)
01063	MOLYBDENUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS MO)
01063	MOLYBDENUM, TOTAL IN BOTTOM MATERIAL (UG/G AS MO)
01066	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
01066	NICKEL, SUSPENDED (UG/L AS NI)
01067	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)
01067	NICKEL, TOTAL (UG/L AS NI)
01068	NICKEL, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS NI)
01068	NICKEL, TOTAL IN BOTTOM MATERIAL (UG/G AS NI)
01076	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)
01076	SILVER, SUSPENDED (UG/L AS AG)
01077	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
01077	SILVER, TOTAL (UG/L AS AG)
01078	SILVER, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS AG)
01078	SILVER, TOTAL IN BOTTOM MATERIAL (UG/G AS AG)
01081	STRONTIUM, SUSPENDED RECOVERABLE (UG/L AS SR)
01081	STRONTIUM, SUSPENDED (UG/L AS SR)
01082	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR)
01082	STRONTIUM, TOTAL (UG/L AS SR)
01083	STRONTIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS SR)
01083	STRONTIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS SR)
01086	VANADIUM, SUSPENDED TOTAL (UG/L AS V)
01086	VANADIUM, SUSPENDED (UG/L AS V)
01091	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)
01091	ZINC, SUSPENDED (UG/L AS ZN)
01092	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
01092	ZINC, TOTAL (UG/L AS ZN)

PARAM. CODE	NEW TERMINOLOGY -- FIRST LINE OLD TERMINOLOGY -- SECOND LINE
01093	ZINC, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS ZN)
01093	ZINC, TOTAL IN BOTTOM MATERIAL (UG/G AS ZN)
01096	ANTIMONY, SUSPENDED TOTAL (UG/L AS SB)
01096	ANTIMONY, SUSPENDED (UG/L AS SB)
01101	TIN, SUSPENDED RECOVERABLE (UG/L AS SN)
01101	TIN, SUSPENDED (UG/L AS SN)
01102	TIN, TOTAL RECOVERABLE (UG/L AS SN)
01102	TIN, TOTAL (UG/L AS SN)
01105	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)
01105	ALUMINUM, TOTAL (UG/L AS AL)
01107	ALUMINUM, SUSPENDED RECOVERABLE (UG/L AS AL)
01107	ALUMINUM, SUSPENDED (UG/L AS AL)
01108	ALUMINUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS AL)
01108	ALUMINUM, TOTAL IN BOTTOM MATERIAL (UG/G AS AL)
01116	CESIUM, SUSPENDED TOTAL (UG/L AS CS)
01116	CESIUM, SUSPENDED (UG/L AS CS)
01121	GALLIUM, SUSPENDED TOTAL (UG/L AS GA)
01121	GALLIUM, SUSPENDED (UG/L AS GA)
01126	GERMANIUM, SUSPENDED TOTAL (UG/L AS GE)
01126	GERMANIUM, SUSPENDED (UG/L AS GE)
01131	LITHIUM, SUSPENDED RECOVERABLE (UG/L AS LI)
01131	LITHIUM, SUSPENDED (UG/L AS LI)
01132	LITHIUM, TOTAL RECOVERABLE (UG/L AS LI)
01132	LITHIUM, TOTAL (UG/L AS LI)
01136	RUBIDIUM, SUSPENDED TOTAL (UG/L AS RB)
01136	RUBIDIUM, SUSPENDED (UG/L AS RB)
01146	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)
01146	SELENIUM, SUSPENDED (UG/L AS SE)
01151	TITANIUM, SUSPENDED TOTAL (UG/L AS TI)
01151	TITANIUM, SUSPENDED (UG/L AS TI)
01161	ZIRCONIUM, SUSPENDED TOTAL (UG/L AS ZR)
01161	ZIRCONIUM, SUSPENDED (UG/L AS ZR)
01170	IRON, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS FE)
01170	IRON, TOTAL IN BOTTOM MATERIAL (UG/G AS FE)
01505	ALPHA, SUSPENDED TOTAL (PCI/L)
01505	ALPHA, SUSPENDED (PCI/L)
01506	ALPHA, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
01506	ALPHA, SUSPENDED, COUNTING ERROR (PCI/L)
01516	GROSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS U NATURAL)
01516	GROSS ALPHA RADIOACTIVITY, SUSPENDED (PCI/L AS U NATURAL)
01517	GROSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (PCI/G AS U NATURAL)
01517	GROSS ALPHA RADIOACTIVITY, SUSPENDED (PCI/G AS U NATURAL)
01518	GROSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (UG/G AS U NATURAL)
01518	GROSS ALPHA RADIOACTIVITY, SUSPENDED (UG/G AS U NATURAL)
03505	BETA, SUSPENDED TOTAL (PCI/L)
03505	BETA, SUSPENDED (PCI/L)
03506	BETA, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
03506	BETA, SUSPENDED, COUNTING ERROR (PCI/L)
03516	GROSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS CS-137)
03516	GROSS BETA RADIOACTIVITY, SUSPENDED (PCI/L AS CS-137)

## TABLE OF REVISED TERMINOLOGY FOR WATER-QUALITY PARAMETERS -- CONTINUED

PARAM. CODE	NEW TERMINOLOGY -- FIRST LINE OLD TERMINOLOGY -- SECOND LINE
03517	GROSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/G AS SR/YT-90)
03517	GROSS BETA RADIOACTIVITY, SUSPENDED (PCI/G AS SR/YT-90)
03518	GROSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/G AS CS-137)
03518	GROSS BETA RADIOACTIVITY, SUSPENDED (PCI/G AS CS-137)
07010	TRITIUM, SUSPENDED TOTAL (PCI/L)
07010	TRITIUM, SUSPENDED (PCI/L)
07011	TRITIUM, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07011	TRITIUM, SUSPENDED, COUNTING ERROR (PCI/L)
07014	TRITIUM, SUSPENDED TOTAL, COUNTING ERROR (TRITIUM UNITS)
07014	TRITIUM, SUSPENDED, COUNTING ERROR (TRITIUM UNITS)
07016	TRITIUM, SUSPENDED TOTAL (TRITIUM UNITS)
07016	TRITIUM, SUSPENDED (TRITIUM UNITS)
07052	CALCIUM 45, SUSPENDED TOTAL (PCI/L)
07052	CALCIUM 45, SUSPENDED (PCI/L)
07053	CALCIUM 45, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07053	CALCIUM 45, SUSPENDED, COUNTING ERROR (PCI/L)
07062	IRON 59, SUSPENDED TOTAL (PCI/L)
07062	IRON 59, SUSPENDED (PCI/L)
07063	IRON 59, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07063	IRON 59, SUSPENDED, COUNTING ERROR (PCI/L)
07082	RHODAMINE WT, SUSPENDED TOTAL (UG/L)
07082	RHODAMINE WT, SUSPENDED (UG/L)
07102	SELENIUM 75, SUSPENDED TOTAL (PCI/L)
07102	SELENIUM 75, SUSPENDED (PCI/L)
07103	SELENIUM 75, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07103	SELENIUM 75, SUSPENDED, COUNTING ERROR (PCI/L)
07122	SILVER 110, SUSPENDED TOTAL (PCI/L)
07122	SILVER 110, SUSPENDED (PCI/L)
07123	SILVER 110, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07123	SILVER 110, SUSPENDED, COUNTING ERROR (PCI/L)
07142	SULFUR 35, SUSPENDED TOTAL (PCI/L)
07142	SULFUR 35, SUSPENDED (PCI/L)
07143	SULFUR 35, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07143	SULFUR 35, SUSPENDED, COUNTING ERROR (PCI/L)
09505	RADIUM 226, SUSPENDED TOTAL (PCI/L)
09505	RADIUM 226, SUSPENDED (PCI/L)
13505	STRONTIUM 90, SUSPENDED TOTAL (PCI/L)
13505	STRONTIUM 90, SUSPENDED (PCI/L)
13506	STRONTIUM 90, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
13506	STRONTIUM 90, SUSPENDED, COUNTING ERROR (PCI/L)
22705	URANIUM, NATURAL, SUSPENDED TOTAL (UG/L AS U NATURAL)
22705	URANIUM, NATURAL, SUSPENDED (UG/L AS U NATURAL)
28404	CESIUM 137, SUSPENDED TOTAL (PCI/L)
28404	CESIUM 137, SUSPENDED (PCI/L)
28405	CESIUM 137, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
28405	CESIUM 137, SUSPENDED, COUNTING ERROR (PCI/L)
28412	CESIUM 134, SUSPENDED TOTAL (PCI/L)
28412	CESIUM 134, SUSPENDED (PCI/L)
28413	CESIUM 134, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
28413	CESIUM 134, SUSPENDED, COUNTING ERROR (PCI/L)
29633	SCANDIUM 46, SUSPENDED TOTAL (PCI/L)
29633	SCANDIUM 46, SUSPENDED (PCI/L)
29634	SCANDIUM 46, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
29634	SCANDIUM 46, SUSPENDED, COUNTING ERROR (PCI/L)
39332	ALDRIN, SUSPENDED TOTAL (UG/L)
39332	ALDRIN, SUSPENDED (UG/L)

PARM. CODE	NEW TERMINOLOGY -- FIRST LINE OLD TERMINOLOGY -- SECOND LINE
39342	LINDANE, SUSPENDED TOTAL (UG/L)
39342	LINDANE, SUSPENDED (UG/L)
39353	CHLORDANE, SUSPENDED TOTAL (UG/L)
39353	CHLORDANE, SUSPENDED (UG/L)
39362	DDD, SUSPENDED TOTAL (UG/L)
39362	DDD, SUSPENDED (UG/L)
39367	DDE, SUSPENDED TOTAL (UG/L)
39367	DDE, SUSPENDED (UG/L)
39372	DDT, SUSPENDED TOTAL (UG/L)
39372	DDT, SUSPENDED (UG/L)
39382	DIELDRIN, SUSPENDED TOTAL (UG/L)
39382	DIELDRIN, SUSPENDED (UG/L)
39392	ENDRIN, SUSPENDED TOTAL (UG/L)
39392	ENDRIN, SUSPENDED (UG/L)
39402	TOXAPHENE, SUSPENDED TOTAL (UG/L)
39402	TOXAPHENE, SUSPENDED (UG/L)
39412	HEPTACHLOR, SUSPENDED TOTAL (UG/L)
39412	HEPTACHLOR, SUSPENDED (UG/L)
39422	HEPTACHLOR EPOXIDE, SUSPENDED TOTAL (UG/L)
39422	HEPTACHLOR EPOXIDE, SUSPENDED (UG/L)
39432	ISODRIN, SUSPENDED TOTAL (UG/L)
39432	ISODRIN, SUSPENDED (UG/L)
39502	AROCLOR, SUSPENDED TOTAL, 1248 PCB SERIES (UG/L)
39502	AROCLOR, SUSPENDED, 1248 PCB SERIES (UG/L)
39506	AROCLOR, SUSPENDED TOTAL, 1254 PCB SERIES (UG/L)
39506	AROCLOR, SUSPENDED, 1254 PCB SERIES (UG/L)
39510	AROCLOR, SUSPENDED TOTAL, 1260 PCB SERIES (UG/L)
39510	AROCLOR, SUSPENDED, 1260 PCB SERIES (UG/L)
39518	PCB, SUSPENDED TOTAL (UG/L)
39518	PCB, SUSPENDED (UG/L)
39533	MALATHION, SUSPENDED TOTAL (UG/L)
39533	MALATHION, SUSPENDED (UG/L)
39543	PARATHION, SUSPENDED TOTAL (UG/L)
39543	PARATHION, SUSPENDED (UG/L)
39573	DIAZINON, SUSPENDED TOTAL (UG/L)
39573	DIAZINON, SUSPENDED (UG/L)
39603	METHYL PARATHION, SUSPENDED TOTAL (UG/L)
39603	METHYL PARATHION, SUSPENDED (UG/L)
39733	2,4-D, SUSPENDED TOTAL (UG/L)
39733	2,4-D, SUSPENDED (UG/L)
39743	2,4,5-T, SUSPENDED TOTAL (UG/L)
39743	2,4,5-T, SUSPENDED (UG/L)
39757	MIREX, SUSPENDED TOTAL (UG/L)
39757	MIREX, SUSPENDED (UG/L)
39763	SILVEX, SUSPENDED TOTAL (UG/L)
39763	SILVEX, SUSPENDED (UG/L)
70299	SOLIDS, RESIDUE AT 110 DEG. C, SUSPENDED TOTAL (MG/L)
70299	SOLIDS, RESIDUE AT 110 DEG. C, SUSPENDED (MG/L)
71895	MERCURY, SUSPENDED RECOVERABLE (UG/L AS HG)
71895	MERCURY, SUSPENDED (UG/L AS HG)
71900	MERCURY, TOTAL RECOVERABLE (UG/L AS HG)
71900	MERCURY, TOTAL (UG/L AS HG)
71921	MERCURY, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS HG)
71921	MERCURY, TOTAL IN BOTTOM MATERIAL (UG/G AS HG)
80040	GROSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (UG/L AS U NATURAL)
80040	GROSS ALPHA RADIOACTIVITY, SUSPENDED (UG/L AS U NATURAL)
80060	GROSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS SR/YT-90)
80060	GROSS BETA RADIOACTIVITY, SUSPENDED (PCI/L AS SR/YT-90)



	Page		Page
Abiquiu Reservoir, near Abiquiu.....	136	Blackwater Draw tributary near Floyd (crest).....	561
Rio Chama above.....	134-135	Blanco, Cañon Largo Wash near.....	408-411
Rio Chama below.....	137-138	Bland Canyon near Cochiti (flood-h).....	561
Abeyta Trujillo Ditch near Abiquiu.....	142-143	Blue-green algae, definition of.....	6
Abo Arroyo tributary near Scholle (crest).....	562	Bluewater, Bluewater Lake near.....	217
Accuracy of field data and computed results.....	13	Bluewater Creek, above Bluewater Dam, near	
Acequia Madre at Costilla.....	101	Bluewater (crest).....	563
Acme, Pecos River near.....	316-317	Bluewater Creek near Tucumcari (flood-h).....	560
Acres-foot, definition of.....	2	Bluewater Lake near Bluewater.....	217
Adenosine triphosphate, definition of.....	2	Bluff, UT, San Juan River near.....	529
Ah-shi-sle-pah Wash near Kimbeto.....	476-482	Bonita Canyon tributary nr Corona (crest).....	565
Alameda, North Floodway channel near.....	188	Bottom material, definition of.....	3
Alamosa Creek near Monticello (misc).....	574	Brazos River basin, crest-stage partial-record	
Alamosa Creek tributary near Jordan (crest).....	565	stations in.....	561
Albuquerque, Rio Grande at.....	189-195	Bueyeros Creek at Bueyeros (crest).....	560
Tijeras Arroyo at (crest).....	562	Burnham, Burnham Wash near.....	492-495
Tijeras Arroyo near.....	196,197	Chaco River near.....	496-499
Aleman Draw at Aleman (crest).....	563	Teece-ni-di-tso Wash near.....	490-491
Algae, definition of.....	2	Burro Canyon near Lindrith (crest).....	570
Algal growth potential, definition of.....	2		
Alma, San Francisco River near.....	551-552	Caballo Dam, Rio Grande below.....	273
Aito, Eagle Creek below South Fork near.....	321	Caballo Reservoir near Arrey.....	272
Eagle Creek near.....	322	Cabresto Creek near Questa.....	104
Amalia, Costilla Creek near.....	97	Cameron Creek at Central (crest).....	567
Analysis of samples collected at, miscellaneous sites.....	590-612	Cañada de la Cueva near Galisteo (crest).....	562
water-quality partial-record stations.....	576-589	Cañada de las Minas tributary near Santa Fe (crest).....	562
Animas Creek near Cloverdale (crest).....	572	Cañada Montoso near Scholle (crest).....	562
Animas River, at Farmington.....	424-429	Canadian River, above New Mexico-Texas State line.....	75-79
near Cedar Hill.....	423	at Logan.....	71
Antelope Draw near Jal (crest).....	566	below Conchas Dam (misc).....	574
Anton Chico, Pecos River near.....	294	near Hebron.....	22-24
Aquifer, definition of.....	2	near Sanchez.....	52-56
Aragon, Negro Canyon at, (flood-h).....	572	near Taylor Springs.....	47
Tularosa River above.....	549-550	Canadian River tributary near Mills (crest).....	559
Aragon Creek tributary near Encinosa (crest).....	565	Canjilon Creek above Abiquiu Reservoir (crest).....	561
Arboles, CO, Piedra River near.....	401	Cañon de Torreón at Torreón (crest).....	569
Archuleta, Navajo Reservoir near.....	404	Cañon Blanco near Leyba (flood-h).....	564
San Juan River near.....	408-411	Cañon Largo Wash near Blanco.....	408-411
Arkansas River basin, crest-stage partial-record		Cañon Piedra Lumbre near Las Vegas (flood-h).....	-
stations in.....	559-560	Capulin, Bennett Spring near.....	20
discharge measurements at miscellaneous sites in.....	574	Carlsbad, Dark Canyon Draw at.....	361
gaging station records in.....	20-79	Lake Avalon near.....	355-356
Arrey, Caballo Reservoir near.....	272	Pecos River at.....	358-360
Arroyo Chico near Guadalupe.....	214-216	Pecos River below Dark Canyon Draw at.....	362-363
Arroyo del Cuervo near Torreón (crest).....	569	Pecos River near.....	353
Arroyo del Puerto near Endea (crest).....	560	Rocky Arroyo near.....	352
Arroyo Hondo at Arroyo Hondo.....	110	Carlsbad main canal near Carlsbad.....	354
Arroyo Seco, Rio Lucero near.....	113	Carracas, CO, San Juan River near.....	400
Arroyo Seco tributary near Pojoaque (flood-h).....	561	Carrizo Creek at Ruidoso (low-flow).....	558
Artesia, Pecos River near.....	330-338	Carrizo Creek near Roy (crest).....	560
Artesian, definition of.....	3	Carrizo Creek near Salt Lake (crest).....	571
Artificial substrate, definition of.....	7	Carrizozo Creek near Kenton, OK (crest).....	559
Ash mass, definition of.....	3	Casias Creek near Costilla.....	93
Avalon Dam, Pecos River below.....	357	Cedar Hill, Animas River near.....	423
Azotea tunnel at outlet, near Chama.....	127	Cells/volume, definition of.....	3
		Cerro, Rio Grande near.....	102
Bacteria, definition of.....	3	Cerro Canal, at Costilla.....	101
Bandelier National Monument, Rito de los Frijoles in.....	161-162	at State line near Jaroso, CO.....	101
Bed material, definition of.....	3	below Association Ditch, at Costilla.....	101
Belén Highline Canal trib near Los Lunas (crest).....	563	New Mexico Branch, near Jaroso, CO.....	101
Beil Ranch Canal below Conchas Dam.....	58	Cfs-day, definition of.....	3
Bennett Spring near Capulin.....	20	Chaco River, near Burnham.....	496-499
Bent, Rio Tularosa near.....	393-399	near waterflow.....	500-508
Bernalillo, Jemez Canyon Reservoir near.....	184	Chaco Wash, at Chaco Canyon National Monument.....	465-474
Bernalillo County, ground-water levels in.....	614	near Star Lake Trading Post.....	460-464
quality of ground water in.....	639-640	Chamita, Rio Chama near.....	140-141
Bernardo, Bernardo interior drain near.....	210	Chamita ditch near Chamita.....	143
Lower San Juan Riverside drain near.....	203	Chaves County, ground-water levels in.....	614-616
Rio Grande conveyance channel near.....	202	Chavez Draw tributary near Cíanes Corners (flood-h).....	569
Rio Grande floodway near.....	203-209	Chemical oxygen demand, definition of.....	3
Rio Puerco near.....	225-229	Chicorica Creek, near Hebron.....	31-32
Bernardo interior drain near Bernardo.....	210	near Yankee.....	26-27
Big Draw near Mountainair (crest).....	569	Chicorica Creek tributary near Raton (flood-h).....	559
Biological data, explanation of.....	14	Chili ditch near Hernandez.....	142-143
Biochemical oxygen demand, definition of.....	3	Chlorophyll, definition of.....	4
Biomass, definition of.....	3	Chupadera Wash tributary at Bingham (crest).....	563
Bisri Trading Post, De-na-zin Wash near.....	483-486	Cieneguilla Creek near Eagle Nest.....	38
Hunter Wash at.....	487-489	Cimarron, Cimarron River near.....	43
Black Prince Canyon tributary near Organ (crest).....	568	Ponil Creek near.....	44
Black River above Malaga.....	364	Rayado Creek near.....	45
Black Springs Wash near Mexican Springs (flood-h).....	571		



	Page		Page
Cimarron River, at Springer.....	46	El Vado Dam, Rio Chama below.....	133
below Eagle Nest Dam.....	41	El Vado Reservoir near Tierra Amarilla.....	132
near Cimarron.....	43	Elephant Butte Dam, Rio Grande below.....	268-271
near Kanton, OK.....	21	Elephant Butte Reservoir at Elephant Butte.....	267
Clear Creek near Uta Park (crest).....	559	Embudo, Rio Grande at.....	124
Cliff, Mogollon Creek near.....	536-539	Embudo Creek at Dixon.....	122-123
Cloud Canyon near Gallinas (crest).....	565	Encinal Creek near Casa Blanca (crest).....	563
Cochiti Dam, Rio Grande below.....	168-172	Estancia Valley, crest-stage partial-record stations in.....	569
Cochiti Lake, near Cochiti Pueblo.....	167	Estancia Valley tributary at Cedar Grove (crest).....	569
Santa Fe River above.....	166	Explanation of, ground-water level records.....	14
Colfax County, ground-water levels in.....	616	Stage and water-discharge records.....	11
quality of ground water in.....	641	Water-quality records.....	13
Coliform organisms, definition of.....	3	F. Herrera ditch S. at Hollywood.....	318
Collection and computation of data (SW).....	11	Farmington, Animas River at.....	424-429
Collection and examination of data (QW).....	13	Gallegos Canyon Wash near.....	419-420
Collection of data (GW).....	14	La Plata River near.....	437-443
Colonias, Gallinas River near.....	296	San Juan River above Animas River, at.....	421-422
Pecos River near.....	297	San Juan River at.....	430-435
Color unit, definition of.....	4	Fecal coliform bacteria, definition of.....	3
Conchas Dam, Bell Ranch Canal below.....	58	Fecal streptococcal bacteria, definition of.....	3
Canadian River below (misc).....	574	Ferran ditch near Abiquiu.....	142-143
Conchas Canal below Conchas Dam.....	58	Fleming Draw near Pinon (crest).....	569
Conchas Lake at Conchas Dam.....	59	Fort Sumner, Lake Sumner near.....	310-311
Conchas River at Variadero.....	57	Four Corners, San Juan River at.....	523-528
Contents, definition of.....	4	Fournile Draw near Lakewood.....	342
Control, definition of.....	4	Fruitland, San Juan River near.....	444-451
Control structure, definition of.....	4	Shumway Arroyo near.....	452-453
Cooperation.....	1	Fullingim Draw near Nara Visa (flood-h).....	569
Copperas Canyon near Pinos Altos (crest).....	572	Gage height, definition of.....	4
Correo, Rio San Jose at.....	224	Gaging station, definition of.....	4
Costilla, Casias Creek near.....	93	Galestena Canyon tributary near Black Rock (crest).....	571
Costilla Creek at.....	99	Galisteo Creek, at Canoncito (crest).....	561
Costilla Creek near.....	98	below Galisteo Dam.....	174-176
Costilla County, (CO) ground-water levels in.....	616	Galisteo Reservoir near Cerrillos.....	173
Costilla Creek, above Costilla Dam.....	92	Gallegos Canyon tributary near Nageezi (crest).....	570
at Garcia, CO.....	100	Gallegos Canyon Wash near Farmington.....	419-420
below Costilla Dam.....	96	Gallinas Creek near Montezuma.....	295
below diversion dam, at Costilla.....	99	Gallinas River near Colonias.....	296
diversions from.....	101	Gallo Canyon near Picacho (crest).....	565
near Amalia.....	97	Gallo Wash at Chaco Canyon National Monument.....	475
near Costilla.....	98	Garcia, CO, Costilla Creek at.....	100
Costilla Dam, Costilla Creek above.....	92	Garcia Creek tributary near Variadero (crest).....	560
Costilla Creek below.....	96	Gila River, below Blue Creek, near Virden.....	546
Costilla Reservoir near Costilla.....	95	near Gila.....	534
Coyote Creek, near Golondrinas.....	50	Gila River near Redrock.....	541-545
Coyote Wash tributary near Naschitti (crest).....	571	Gila River basin, crest-stage partial-record stations in.....	572
Crest-stage partial-record stations.....	559-573	gaging station records in.....	534-556
Cubic feet per second, definition of.....	4	measurements at miscellaneous sites in.....	575
Cundiyo, Santa Cruz River at.....	144	Gobernador Canyon near Gobernador (crest).....	570
Curry County, ground-water levels in.....	616-617	Golondrinas, Coyote Creek near.....	50
Curtis Canyon near Mayhill (crest).....	566	Mora River near.....	49
Dark Canyon Draw at Carlsbad.....	361	Gonzales ditch at Abiquiu.....	142-143
Dawson, Vermejo River near.....	34	Grant County, quality of ground-water in.....	-
Dayton, Rio Penasco at.....	339	Grants, Rio San Jose at.....	220
Deer Creek tributary near Antelope Wells (crest).....	567	Rio San Jose near.....	222
Definition of terms.....	2	Grants Canyon at Grants.....	221
Delaware River near Red Bluff.....	383	Green algae, definition of.....	6
De-na-zin Wash near Bisti Trading Post.....	483	Green Mountain Arroyo near Raton (flood-h).....	559
Diatoms, definition of.....	6	Ground water, quality of.....	639-666
Discharge, definition of.....	4	Guadalupe, Arroyo Chico near.....	214-216
Dissolved, definition of.....	4	Rio Puerco near.....	211
Diversions from Rio Chama.....	142-143	Guique ditch near San Juan Pueblo.....	125
Diversity index, definition of.....	4	Hagerman, Pecos River near.....	327
Dixon, Embudo Creek at.....	122-123	Rio Felix near.....	328
Dog Creek near Shoemaker (crest).....	559	Harding County, ground-water levels in.....	622
Dofia Ana County, ground-water levels in.....	617	Hardness, definition of.....	4
quality of ground water in.....	642-643	Hebron, Canadian River near.....	22-24
Downstream order and station number.....	9	Hernandez ditch near Hernandez.....	143
Drainage area, definition of.....	4	Heron Reservoir near Los Ojos.....	130
Drainage basin, definition of.....	4	Hidalgo County, ground-water levels in.....	623-624
Dry mass, definition of.....	3	Hollywood, F. Herrera ditch S. at.....	318
Duck Creek at Cliff (crest).....	572	Rio Ruidoso at.....	319
Eagle Creek, below South Fork near Alto.....	320	Horse Lake Creek above Heron Reservoir.....	129
near Alto.....	321	Hunter Wash at Bisti Trading Post.....	487-489
Eagle Nest, Cieneguilla Creek near.....	38	Hunter Wash tributary at Bisti Trading Post (crest).....	571
Eagle Nest Lake near.....	40	Hyatt Canyon near Cloudcroft (flood-h).....	566
Moreno Creek at.....	37	Hydrologic bench-mark station, definition of.....	10
Sixmile Creek near.....	39	Hydrologic conditions.....	2
Eagle Nest Dam, Cimarron River below.....	41	Hydrologic-data station records.....	20-589
Eagle Nest Lake near Eagle nest.....	40	Hydrologic unit, definition of.....	5
Eagle Tail ditch near Maxwell.....	33	Indian Creek, at mouth, near Three Rivers (crest).....	568
Eastdale No. 1 intake canal near Jaroso, CO.....	101	near Three Rivers (flood-h).....	568
Eddy County, ground-water levels in.....	617-621		
quality of ground water in.....	644		
Eight Mile Draw near Roswell (crest).....	566		
El Paso, TX, Rio Grande at.....	277-283		

	Page		Page
Instantaneous discharge, definition of.....	4	Mail Hollow near Luna (flood-h).....	572
Introduction.....	1	Malaga, Pecos River near.....	365-369
		Black River above.....	364
Jemez, Jemez River near.....	183	Mangas Creek (tributary to Gila River) below	
Jemez Canyon Dam, Jemez River below.....	185	Mangas Springs.....	540,575
Jemez Canyon Reservoir near Bernalillo.....	184	Mangas Creek tributary near Pietown (crest).....	571
Jemez River, below Jemez Canyon Dam.....	185	Manzanaras Canyon near Turley (crest).....	570
near Jemez.....	183	Manzanaras and Montoya ditch near Medanales.....	142-143
Jose Pablo Gonzales ditch near Abiquiu.....	142-143	Map of New Mexico showing location of hydrologic units.	17
Juan Tomas Canyon near Edgewood (crest).....	569	observation wells.....	613
Juan Toro Canyon near Miera (crest).....	562	Partial-record stations (SW).....	557
		Surface-water stations.....	18
Kenton, OK, Cimarron River near.....	21	Water-quality stations.....	19
Kimbeto, Ah-shi-sie-pah Wash near.....	476	Mariano ditch near Abiquiu.....	142-143
		Martinez and Duranes ditch near Medanales.....	142-143
La Boca, CO, Los Pinos River at.....	402	Maxwell, Eagle Tail ditch near.....	33
Spring Creek at.....	403	McClure Reservoir near Santa Fe.....	163
La Cueva, Mora River at.....	48	McKinley County, quality of ground water in.....	645
La Cueva Canal below La Cueva.....	48	Mean concentration, definition of.....	7
La Jencia Creek, near Magdalena (crest).....	563	Mean discharge, definition of.....	4
La Madera, Rio Ojo Caliente at.....	139	Measurements at miscellaneous sites.....	574-575
La Plata River, at Colo.-N.Mex. State line.....	436	Mesa ditch near Garcia, CO.....	101
near Farmington.....	437-443	Metamorphic stage, definition of.....	5
La Plata River tributary near Farmington (flood-h).....	570	Methylene blue active substance, definition of.....	5
La Puente, Rio Chama near.....	126	Mexican Canyon at Virden (flood-hydro).....	572
La Puente ditch near Abiquiu.....	142-143	Micrograms per gram, definition of.....	5
Lagartija Creek tributary near Sanchez (crest).....	559	Micrograms per liter, definition of.....	5
Laguna, Rio Paguate below Jackpile Mine near.....	223	Milk Ranch Canyon near Fort Wingate (crest).....	572
Lake Alice near Raton.....	25	Milligan Gulch near San Marcial.....	266
Lake Arthur, Pecos River near.....	329	Milligrams per liter, definition of.....	5
Lake Avalon near Carlsbad.....	335-336	Mimbres basin tributary near Florida (crest).....	567
Lake Maloya near Raton.....	25	Mimbres River, at Deming (crest).....	567
Lake McMillan near Lakewood.....	343-345	at Mimbres.....	388-392
Lake Sumner near Fort Sumner.....	310-311	Mimbres River basin, crest-stage partial-record	
Lakewood, Fourmile Draw near.....	342	stations in.....	567
Lake McMillan near.....	343-345	Minnie Hall Draw near Three Rivers (crest).....	568
Pecos River near.....	348	Mogollon Creek near Cliff.....	536-539
South Seven Rivers near.....	349	Monastery Pump near Alire.....	142-143
Lakes and reservoirs:		Montezuma, Gallinas Creek near.....	295
Abiquiu Reservoir near Abiquiu.....	136	Monument Draw near Monument (crest).....	561
Alice, Lake, near Raton.....	25	Monument Draw tributary near Monument (flood-h).....	567
Avalon, Lake, near Carlsbad.....	335-336	Mora County, ground-water levels in.....	628
Bluewater Lake near Bluewater.....	217	Mora River, at La Cueva.....	48
Caballo Reservoir near Arroyo.....	272	near Golondrinas.....	49
Cochiti Lake near Cochiti Pueblo.....	167	near Shoemaker.....	51
Conchas Lake at Conchas Dam.....	59	Moreno Creek at Eagle Nest.....	37
Costilla Reservoir near Costilla.....	95	Mosley Canyon near White City (crest).....	566
Eagle Nest Lake near Eagle Nest.....	40		
Elephant Butte Reservoir at Elephant Butte.....	267	Nambe, Rio Nambe at Nambe Falls, near.....	146
El Vado Reservoir near Tierra Amarilla.....	132	Nambe Falls Reservoir near Nambe.....	145
Galisteo Reservoir near Cerrillos.....	173	National Geodetic Vertical datum.....	5
Heron Reservoir near Los Ojos.....	130	National stream-quality accounting network.....	10
Maloya, Lake, near Raton.....	25	Natural substrate, definition of.....	7
Jemez Canyon Reservoir near Bernalillo.....	184	Navajo Reservoir near Archuleta.....	404
McClure Reservoir near Santa Fe.....	163	Negro Canyon at Aragon (flood-h).....	572
McMillan, Lake, near Lakewood.....	343-345	New Mexico Branch Cerro canal near Jaroso, CO.....	101
Nambe Falls Reservoir near Nambe.....	145	Nichols Reservoir near Santa Fe.....	165
Navajo Reservoir near Archuleta.....	404	Nogal Creek tributary near Nogal (flood-h).....	568
Nichols Reservoir near Santa Fe.....	165	North Floodway Channel near Alameda.....	188
Red Bluff Reservoir near Oria, TX.....	384	North Spring River at Roswell (crest).....	566
Sumner, Lake, near Fort Sumner.....	310-311	Numbering system for wells, springs, and miscellaneous	
Two Rivers Reservoir near Roswell.....	323	sites.....	9
Ute Reservoir near Logan.....	61-70		
Largo Creek near Quemado (crest).....	571	Organic mass, definition of.....	3
Last Chance Canyon tributary near Carlsbad Caverns (cr).....	566	Organism, definition of.....	5
Lea County, ground-water levels in.....	623-625	Organism count, per unit area, definition of.....	5
Lincoln County, ground-water levels in.....	625-626	per unit volume, definition of.....	5
Little Colorado River basin, crest-stage partial-		Oria, TX, Red Bluff Reservoir near.....	384
record stations in.....	571-572	Pecos River near.....	385-387
Little Walnut Creek near Silver City (crest).....	567	Osita Draw near Clines Corners (crest).....	569
Llano ditch near Questa.....	104	Otero County, ground-water levels in.....	629
Lobatos, CO, Rio Grande near.....	80-90	Other data available.....	13
Locke Arroyo near Kirtland (crest).....	571		
Logan, Canadian River at.....	71	Pajarito Creek at Newkirk (crest).....	562
Revuelto Creek near.....	72-74	Papers Wash near Star Lake Trading Post.....	212-213
Ute Creek near.....	60	Partial-record station, definition of.....	5
Ute Reservoir near.....	61-70	Particle size, definition of.....	5
Los Esteros Creek above Los Esteros Reservoir.....	299	Particle size classification, definition of.....	5
Los Esteros Creek tributary above Los Esteros Reservoir.....	300	Pancho Canyon near Arabella (crest).....	566
Los Cordovas, Rio Pueblo de Taos below.....	118	Pecos River, above Cañon de Uta.....	297
Los Ojos, Heron Reservoir near.....	130	above Los Esteros Reservoir.....	298
Horse Lake Creek near.....	129	at Carlsbad.....	358-360
Willow Creek below Heron Dam near.....	131	at damsite 3, near Carlsbad.....	353
Los Pinos River at La Boca, CO.....	402	at Pierce Canyon Crossing, near Malaga.....	370-374
Lower San Juan Riverside drain near Bernardo.....	203	at Red Bluff.....	375-382
Luna County, ground-water levels in.....	627-628	at Santa Rosa.....	301-304

	Page		Page
Pecos River below Avalon Dam.....	357	Rio Grande, at Embudo.....	124
below Dark Canyon Draw, at Carlsbad.....	362-363	at Isleta.....	198-201
below Major Johnson Springs near Carlsbad.....	350-351	at Leasburg Dam, near Las Cruces.....	274
below McMillan Dam.....	346-347	at Otowi Bridge, near San Ildefonso.....	148-160
below Six Mile Dam.....	-	at San Felipe.....	177-182
below Sumner Dam.....	312-314	at Vinton Bridge, near Anthony.....	275-276
Kaiser Channel near Lakewood.....	340-341	below Caballo Dam.....	273
near Acme.....	316-317	below Cochiti Dam.....	168-172
near Anton Chico.....	294	below Elephant Butte Dam.....	268-271
near Artesia.....	330-338	below Old Fort Quitman, TX.....	284-288
near Hagerman.....	327	below Taos Junction Bridge.....	119-121
near Lake Arthur.....	329	near Arroyo Hondo.....	111
near Malaga.....	365-369	near Cerro.....	102
near Orla, TX.....	385-387	near Lobatos.....	80-90
near Pecos.....	293	Rio Grande basin, crest-stage partial-record	
near Puerto de Luna.....	305-309	stations in.....	561-567
Pecos River tributary, near Dilla (crest).....	564	discharge measurements at miscellaneous sites in.....	574-575
near Pintada (crest).....	564	gaging station records in.....	80-529
near Puerto de Luna (flood-h).....	564	low-flow partial-record stations in.....	558
near Sena (flood-h).....	564	water-quality miscellaneous sites in.....	590-595
Peña Blanca Arroyo near Newcomb (crest).....	571	water-quality partial-record stations in.....	576
Percent composition, definition of.....	5	Rio Grande conveyance channel, at San Acacia.....	233-239
Percha Creek, near Hillsboro (crest).....	563	at San Marcial.....	252-265
near Kingston (crest).....	563	near Bernardo.....	202
Periphyton, definition of.....	6	Rio Grande del Rancho near Talpa.....	116
Pesticide program, definition of.....	10	Rio Grande floodway, at San Acacia.....	240-244
Phytoplankton, definition of.....	6	at San Marcial.....	266
Picocurie, definition of.....	6	near Bernardo.....	203-209
Piedra River near Arboles.....	401	Rio Grande tributary near Radium Springs (crest).....	563
Pierce Canyon near Malaga (crest).....	566	Rio Hondo, at Diamond A Ranch, near Roswell.....	322
Pine Canyon near Thoreau (crest).....	563	below Diamond A Dam, near Roswell.....	324
Pinos Altos Creek at Silver City (crest).....	567	Rio Hondo near Valdez (trib to Rio Grande).....	109
Pintada Arroyo near Santa Rosa (crest).....	564	see also ("Arroyo Hondo").....	673
Pintada Arroyo tributary, near Clines Corners (crest).....	564	Rio Hondo tributary at Tinnie (flood-h).....	565
near Encino (crest).....	564	Rio Lucero near Arroyo Seco.....	113
Plankton, definition of.....	6	Rio Mora near Terrero.....	289-292
Plaza Larga Creek tributary near Ragland (crest).....	560	Rio Nambé at Nambé Falls, near Nambé.....	146
Polychlorinated biphenols, definition of.....	6	Rio Nutria near Ramah.....	530-531
Ponil Creek near Cimarron.....	43	Rio Ojo Caliente at La Madera.....	139
Primary productivity, definition of.....	6	Rio Paguate below Jackpile Mine, near Laguna.....	223
Publications on techniques of water-resources		Rio Peñasco at Dayton.....	339
investigations.....	15-16	Rio Peñasco near Dunkan (crest).....	566
Puerco River at Gallup (d).....	533	Rio Pueblo de Taos, below Los Cordovas.....	118
Puerto de Luna, Pecos River near.....	305-309	near Ranchito.....	115
Quality of ground water.....	639-666	near Taos.....	112
Quay County, ground-water levels in.....	629-630	Rio Puerco, above Arroyo Chico, near Guadalupe.....	211
Questa, Cabresto Creek near.....	104	near Bernardo.....	225-229
Red River near.....	103	Rio Ruidoso, at Hollywood.....	319
Quintana ditch near Abiquiú.....	142-143	near Ruidoso (low-flow).....	558
Radiochemical program, explanation of.....	10	Rio Salado near San Acacia.....	230-231
Ranchito, Rio Pueblo de Taos, near.....	115	Rio San Jose, at Correo.....	224
Raton, Lake Alice near.....	25	at Grants.....	220
Lake Maloya near.....	25	near Grants.....	222
Raton Creek at Raton (crest).....	559	Rio Tularosa near Bent.....	393-399
Rayado Creek at Sauble Ranch, near Cimarron.....	45	Rito de los Frijoles in Bandelier National Monument.....	161-162
Red Bluff, Delaware River near.....	383	Rito de Tierra Amarilla at Tierra Amarilla (crest).....	561
Pecos River at.....	375-382	Rocky Arroyo, above Two Rivers Reservoir.....	325
Red Bluff Reservoir near Orla, TX.....	384	below Rocky Dam, near Roswell.....	326
Red Colt Canyon at Pleasanton (crest).....	572	Rocky Arroyo near Carlsbad.....	352
Red River, at mouth near Questa.....	108	Roosevelt County, ground-water levels in.....	330-331
below Fish Hatchery, near Questa.....	105-107	Roswell, North Spring River at (crest).....	566
near Questa.....	103	Rio Hondo near.....	322, 324
Redrock, Gila River near.....	541-545	Rocky Arroyo near.....	326
Reserve, San Francisco River near.....	547-548	Two Rivers Reservoir near.....	323
Reservoirs, see Lakes and reservoirs.....	675	Ruben Canyon near Gobernador (flood-h).....	510
Reuelto Creek near Logan.....	72-74	Running Water Draw near Clovis (crest).....	561
Rio Amargo at Dulce (crest).....	570	Salazar ditch at Hernandez.....	142-143
Rio Bonito near Fort Stanton (crest).....	565	Salt Creek tributary near Roswell (crest).....	565
Rio Bonito tributary near Fort Stanton (crest).....	565	San Acacia, Rio Grande conveyance channel at.....	233-239
Rio Chama, above Abiquiú Reservoir.....	134-135	Rio Grande floodway at.....	240-244
below Abiquiú Dam.....	137-138	Rio Salado near.....	230-231
below El Vado Dam.....	133	Socorro main canal north at.....	232
near Chamita.....	140-141	San Cristobal Arroyo near Galisteo (crest).....	561
near La Puente.....	126	San Felipe, Rio Grande at.....	177-182
Rio Chiquito near Talpa.....	117	San Francisco River near Alma.....	551-552
Rio de Chama ditch near Medanales.....	142-143	near Glenwood.....	553-556
Rio de las Vacas near Senorita (crest).....	562	near Reserve.....	547-548
Rio del Plano tributary near Taylor Springs (flood-h).....	559	San Ildefonso, Rio Grande near.....	143-160
Rio En Medio near Santa Fe (crest).....	561	Pojoaque River near.....	147
Rio Felix at old highway bridge, near Hagerman.....	328	San Jose Arroyo near Monticello (crest).....	563
Rio Fernando de Taos near Taos.....	114	San Juan County, quality of ground water in.....	649-662
Rio Grande, above San Juan Pueblo.....	125	San Juan lateral above San Juan Pueblo.....	125
at Albuquerque.....	189-195	San Juan Pueblo, Rio Grande above.....	125
at Colorado-New Mexico State line.....	91	San Juan Pueblo ditch above San Juan Pueblo.....	125
at El Paso, TX.....	277-283	San Juan River, above Animas River, at Farmington.....	421-422
		at Farmington.....	430-435

	Page		Page
San Juan River, at Four Corners, CO.....	523-528	Taos County, ground-water levels in.....	633
at Hammond Bridge, near Bloomfield.....	412-417	Tarhole Canyon near Galisteo (crest).....	562
at Shiprock.....	509-522	Taylor Canyon tributary near Bingham (crest).....	568
near Archuleta.....	405-407	Taxonomy, definition of.....	8
near Bluff, UT.....	529	Techniques of water-resources investigation, list of... 15-16	
near Caracas, CO.....	400	Tecolote Creek at Tecolote (crest).....	564
near Fruitland.....	444-451	Teec-ni-di-tao Wash near Burnham.....	490-491
San Juan River basin, crest-gage partial-record		Terms, definition of.....	2-9
stations in.....	570-571	Terrero, Rio Mora near.....	289-292
gaging station records in.....	400-529	Three Rivers at Three Rivers (crest).....	568
water-quality miscellaneous sites in.....	590-611	Tierra Amarilla, El Vado Reservoir near.....	132
water-quality partial-record stations in.....	595-604	Tierra Azul ditch near Medanales.....	142-143
San Marcial, Milligan Gulch near.....	266	Tijeras Arroyo, at Albuquerque (crest).....	562
Rio Grande conveyance channel at.....	245-251	below south diversion, near Albuquerque.....	197
Rio Grande floodway at.....	252-265	Tijeras Arroyo, near Albuquerque.....	196
San Mateo Creek at San Mateo.....	218-219	Time-weighted average, definition of.....	8
San Miguel County, quality of ground water in.....	-	Tons per acre-foot, definition of.....	8
San Pablo Creek near Cuba (flood-h).....	563	Tons per day, definition of.....	8
San Pedro Creek near Golden (crest).....	562	Torrance County, ground-water levels in.....	634-635
Sanchez, Canadian River near.....	52-56	quality of ground water in.....	-
Sand Draw near Clayton (crest).....	560	Total, definition of.....	8
Sand Draw tributary, near Clayton (crest).....	560	in bottom material, definition of.....	8
No. 2 near Clayton (flood-h).....	-	recoverable, definition of.....	9
Sandoval Canyon at Gallinas (crest).....	564	recoverable from bottom material.....	8
Sandoval County, ground-water levels in.....	631	Total coliform bacteria, definition of.....	3
Santa Cruz River at Cundiyo.....	144	Total load, definition of.....	8
Santa Fe, McClure Reservoir near.....	163	Total organism count, definition of.....	5
Nichols Reservoir near.....	165	Total sediment discharge, definition of.....	7
Santa Fe County, ground-water levels in.....	631-632	Tramperos Creek near Stead (crest).....	560
quality of ground water in.....	665	Tramantina Creek at Tramentina (crest).....	560
Santa Fe River, above Cochiti Lake.....	166	Tritium network, explanation of.....	10
near Santa Fe.....	164	Trout Creek near Luna (crest).....	572
Santa Rosa, Pecos River at.....	301-304	Tularosa River, above Aragon.....	549-550
Santistevan Creek near Costilla.....	94	near Reserve (crest).....	572
Seepage investigations.....	-	Tularosa Valley, crest-stage partial-record	
Sediment, definition of.....	7	stations in.....	568
explanation of program.....	14	gaging station records in.....	393-399
Seventy-six Draw tributary near Waterloo (crest).....	567	Tularosa Valley tributary, near Oscura (crest).....	568
Shiprock, San Juan River at.....	509-522	near Orogrande (crest).....	568
Shoemaker, Mora River near.....	51	Twin Butte Canyon tributary near Roswell (flood-h).....	566
Shumway Arroyo, near Fruitland.....	452-453	Two Rivers Reservoir near Roswell.....	323
near Waterflow.....	454-459		
Sierra County, ground-water levels in.....	632-633	Uña de Gato Creek, below Throttle Dam.....	28-30
Silva Creek at Silver City (crest).....	567	Union County, ground-water levels in.....	636
Silver City, Silva Creek at.....	567	quality of ground water in.....	-
Socorro main canal north at San Acacia.....	232	Ute Creek, near Gladstone (crest).....	-
Sodium adsorption ratio, definition of.....	7	near Logan.....	60
Solute, definition of.....	7	Ute Reservoir near Logan.....	61-70
Solution, definition of.....	7		
South Seven Rivers near Lakewood.....	349	Valdez, Rio Hondo near.....	109
Special networks and programs.....	10	Valencia County, ground-water levels in.....	637-638
Specific conductance, definition of.....	7	quality of ground water in.....	663-666
Spring Creek at La Boca, CO.....	403	Valentine Martinez ditch near Abiquiu.....	142-143
Springer, Cimarron River at.....	46	Vaqueros Canyon near Gobernador (crest).....	570
Stage-discharge relation, definition of.....	7	Variadero, Conchas River at.....	57
Star Lake Trading Post, Chaco Wash near.....	460-464	Vermejo River near Dawson.....	34-36
Papers Wash near.....	212-213	Virden, Gila River below Blue Creek near.....	546
Stead, Tramperos Creek near (crest).....	560		
Steins Creek near Steins (crest).....	572	Water analysis.....	13
Stevens Arroyo near Kirtland (crest).....	571	Water temperature.....	13
Streamflow, definition of.....	7	Water quality at partial-record stations, analysis of.. 576-589	
Substrate, definition of.....	7	Water-quality records, explanation of.....	13
Summer, Lake, near Fort Sumner.....	310-311	Waterflow, Chaco River near.....	500-508
Summer Dam, Pecos River below.....	312-314	Shumway Arroyo near.....	454-459
Surface area, definition of.....	7	Weighted average, definition of.....	9
Surface-water data, accuracy of.....	13	West Draw near Farmington (crest).....	570
collection and computation of.....	11	Wet mass, definition of.....	3
Surficial bed material, definition of.....	8	White Oaks Canyon, at White Oaks (crest).....	568
Surveillance program, explanation of.....	10	near Carrizozo (crest).....	568
Suspended, recoverable, definition of.....	8	Willow Creek, above Heron Reservoir.....	128
Suspended, total, definition of.....	8	below Heron Dam.....	131
Suspended sediment, definition of.....	7	Willow Springs Canyon at Himbres (flood-h).....	567
Suspended sediment concentration, definition of.....	7	Winfield Morton Pump near Abiquiu.....	142-143
Suspended sediment discharge, definition of.....	7	WRD, definition of.....	9
Suspended sediment load, definition of.....	7	WSP, definition of.....	9
Swingle Canyon near Datil (crest).....	569		
		Yankee, Chicorica Creek near.....	26-27
Talpa, Rio Chiquito near.....	117	Yazzie Wash near Mexican Springs (crest).....	571
Rio Grande del Rancho near.....	116	Yaso Creek near Fort Sumner (crest).....	565
Taos, Rio Fernando de Taos near.....	114		
Rio Grande near.....	119-121	zooplankton, definition of.....	6
Rio Pueblo de Taos near.....	112	Zuni River above Black Rock Reservoir.....	532



# FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

Factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit station manuscript descriptions.

inch-pound units	By	To obtain SI units
<i>Length</i>		
	$2.54 \times 10^1$	millimeters (mm)
	$2.54 \times 10^{-2}$	meters (m)
	$3.048 \times 10^{-1}$	meters (m)
	$1.609 \times 10^0$	kilometers (km)
<i>Area</i>		
	$4.047 \times 10^3$	square meters (m <sup>2</sup> )
	$4.047 \times 10^{-1}$	square hectometers (hm <sup>2</sup> )
	$4.047 \times 10^{-3}$	square kilometers (km <sup>2</sup> )
	$2.590 \times 10^0$	square kilometers (km <sup>2</sup> )
<i>Volume</i>		
	$3.785 \times 10^0$	liters (L)
	$3.785 \times 10^0$	cubic decimeters (dm <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic meters (m <sup>3</sup> )
	$3.785 \times 10^3$	cubic meters (m <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
	$2.832 \times 10^1$	cubic decimeters (dm <sup>3</sup> )
	$2.832 \times 10^{-2}$	cubic meters (m <sup>3</sup> )
	$2.447 \times 10^3$	cubic meters (m <sup>3</sup> )
	$2.447 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
	$1.233 \times 10^3$	cubic meters (m <sup>3</sup> )
	$1.233 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
	$1.233 \times 10^{-6}$	cubic kilometers (km <sup>3</sup> )
<i>Flow</i>		
per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liters per second (L/s)
	$2.832 \times 10^1$	cubic decimeters per second (dm <sup>3</sup> /s)
	$2.832 \times 10^{-2}$	cubic meters per second (m <sup>3</sup> /s)
per minute (gal/min)	$6.309 \times 10^{-2}$	liters per second (L/s)
	$6.309 \times 10^{-2}$	cubic decimeters per second (dm <sup>3</sup> /s)
	$6.309 \times 10^{-5}$	cubic meters per second (m <sup>3</sup> /s)
per day	$4.381 \times 10^1$	cubic decimeters per second (dm <sup>3</sup> /s)
	$4.381 \times 10^{-2}$	cubic meters per second (m <sup>3</sup> /s)
<i>Mass</i>		
	$9.072 \times 10^{-1}$	megagrams (Mg) or metric tons

# FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	$2.54 \times 10^1$ $2.54 \times 10^{-2}$	millimeters (mm) meters (m)
feet (ft)	$3.048 \times 10^{-1}$	meters (m)
miles (mi)	$1.609 \times 10^0$	kilometers (km)
<i>Area</i>		
acres	$4.047 \times 10^3$ $4.047 \times 10^{-1}$ $4.047 \times 10^{-3}$	square meters (m <sup>2</sup> ) square hectometers (hm <sup>2</sup> ) square kilometers (km <sup>2</sup> )
square miles (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometers (km <sup>2</sup> )
<i>Volume</i>		
gallons (gal)	$3.785 \times 10^0$ $3.785 \times 10^0$ $3.785 \times 10^{-3}$	liters (L) cubic decimeters (dm <sup>3</sup> ) cubic meters (m <sup>3</sup> )
million gallons	$3.785 \times 10^3$ $3.785 \times 10^{-3}$	cubic meters (m <sup>3</sup> ) cubic hectometers (hm <sup>3</sup> )
cubic feet (ft <sup>3</sup> )	$2.832 \times 10^1$ $2.832 \times 10^{-2}$	cubic decimeters (dm <sup>3</sup> ) cubic meters (m <sup>3</sup> )
cfs-days	$2.447 \times 10^3$ $2.447 \times 10^{-3}$	cubic meters (m <sup>3</sup> ) cubic hectometers (hm <sup>3</sup> )
acre-feet (acre-ft)	$1.233 \times 10^3$ $1.233 \times 10^{-3}$ $1.233 \times 10^{-6}$	cubic meters (m <sup>3</sup> ) cubic hectometers (hm <sup>3</sup> ) cubic kilometers (km <sup>3</sup> )
<i>Flow</i>		
cubic feet per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$ $2.832 \times 10^{-1}$ $2.832 \times 10^{-2}$	liters per second (L/s) cubic decimeters per second (dm <sup>3</sup> /s) cubic meters per second (m <sup>3</sup> /s)
gallons per minute (gal/min)	$6.309 \times 10^{-2}$ $6.309 \times 10^{-2}$ $6.309 \times 10^{-5}$	liters per second (L/s) cubic decimeters per second (dm <sup>3</sup> /s) cubic meters per second (m <sup>3</sup> /s)
million gallons per day	$4.381 \times 10^1$ $4.381 \times 10^{-2}$	cubic decimeters per second (dm <sup>3</sup> /s) cubic meters per second (m <sup>3</sup> /s)
<i>Mass</i>		
tons (short)	$9.072 \times 10^{-1}$	megagrams (Mg) or metric tons

U.S. DEPARTMENT OF THE INTERIOR  
Geological Survey  
Water Resources Division, P.O.Box 26659  
Albuquerque, NM 87125

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE \$300  
SPECIAL 4TH CLASS BOOK RATE

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF THE INTERIOR  
INT 413

