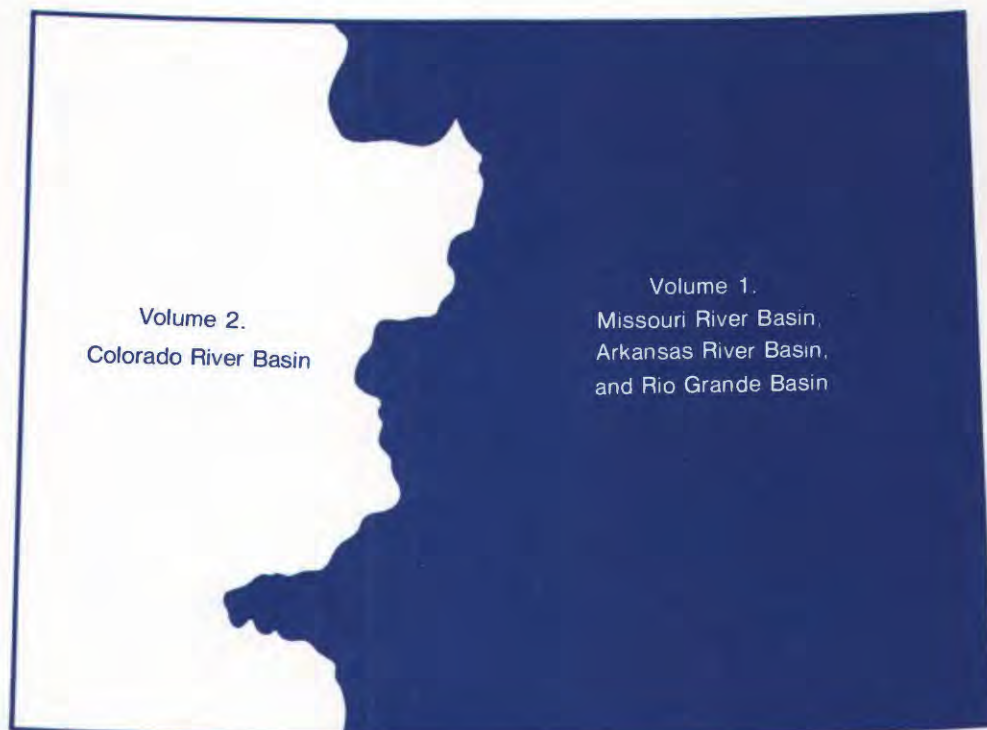




Water Resources Data Colorado Water Year 1991

Volume 1. Missouri River Basin, Arkansas River Basin
and Rio Grande Basin



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CO-91-1
Prepared in cooperation with the State of Colorado
and with other agencies

CALENDAR FOR WATER YEAR 1991

1990

OCTOBER							NOVEMBER							DECEMBER						
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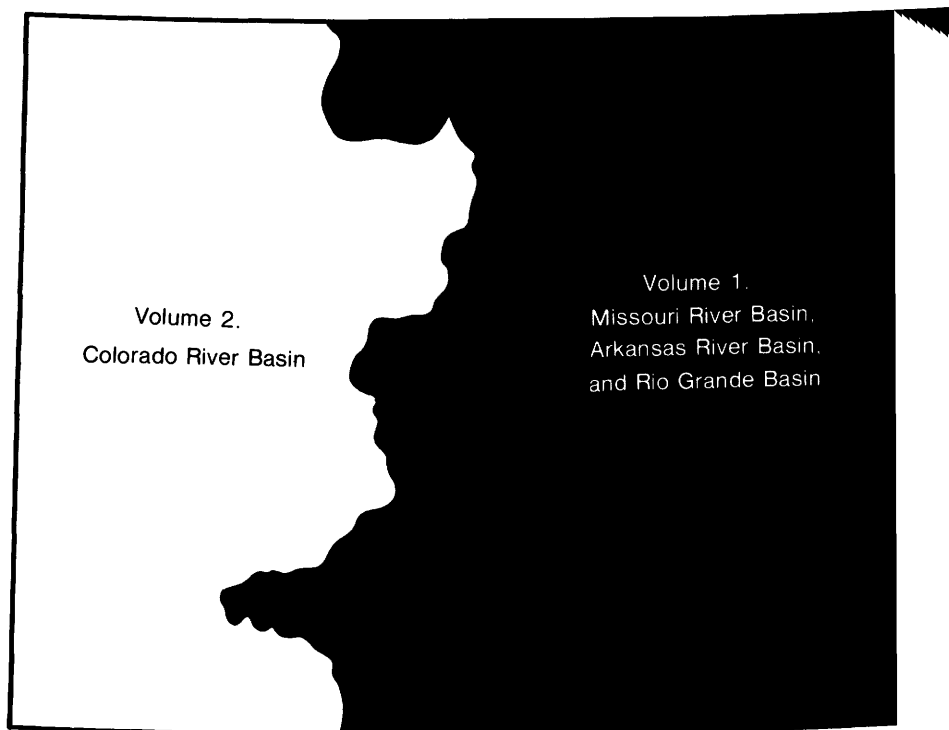
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Water Resources Data Colorado Water Year 1991

Volume 1. Missouri River Basin, Arkansas River Basin
and Rio Grande Basin

by R.C. Ugland, B.J. Cochran, M.M. Hiner, and R.D. Steger



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CO-91-1
Prepared in cooperation with the State of Colorado
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

U. S. GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in Colorado write to:

District Chief, Water Resources Division
U.S. Geological Survey
Box 25046, Mail Stop 415
Denver Federal Center
Lakewood, CO 80225

1992

PREFACE

This volume of the annual hydrologic data report of Colorado is one of a series of annual reports that document hydrologic data gathered from the U. S. Geological Survey's surface- and ground-water data-collection networks in each state, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Colorado are contained in two volumes:

Volume 1. Missouri River, Arkansas River, and Rio Grande
basins in Colorado,

Volume 2. Colorado River basin.

This report is the culmination of a concerted effort by dedicated personnel of the U. S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

W. D. Bemis	M. D. Klock	G. B. O'Neill	J. T. Steinheimer
J. A. Collins	J. M. Kuzmiak	R. S. Ortiz	M. R. Stevens
M. Corse	M. S. Lauffer	R. S. Parker	A. M. Tafoya
P. L. Cox	K. J. Lull	W. F. Payne	L. A. Walsh
A. C. Duncan	J. D. Martinez	M. A. Penrod	M. A. Wells
P. Edelman	B. C. Milne	K. G. Petty	J. B. West
J. W. Gibbs	R. H. Munson	R. L. Reed	K. R. Wilke
S. T. Green	S. V. Muro	M. A. Salay	N. O. Young
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This report was prepared in cooperation with the State of Colorado and with other agencies under the general supervision of D. J. Lystrom, District Chief, Colorado.

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13. Type of Report & Period Covered Annual--Oct. 1, 1990 to Sept. 30, 1991			14.
15. Supplementary Notes Prepared in cooperation with the State of Colorado and other agencies.			
16. Abstract (Limit: 200 words) Water-resources data for Colorado for the 1991 water year consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of wells and springs. This report (Volumes 1 and 2) contains discharge records for 321 gaging stations, stage and contents of 26 lakes and reservoirs, 1 partial-record low-flow station, peak flow information for 46 crest-stage partial record stations, and 1 miscellaneous site; water quality for 148 gaging stations, 168 miscellaneous sites, and for 14 observation wells. Seven pertinent stations operated by bordering states also are included in this report. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey under the direction of D.J. Lystrom, District Chief. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies.			
17. Document Analysis a. Descriptors *Colorado, *Hydrologic data, *Surface water, *Ground water, *Water quality; Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water analyses. b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
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(Letter after station name designates type and frequency of published data: Daily tables: (D) discharge, (C) specific conductance, (S) sediment, (T) temperature, (e) elevation or contents, (O) dissolved oxygen, (P) pH.

Partial tables: (c) chemical, (b) biological, (m) microbiological, (s) sediment, (t) temperature)

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WATER RESOURCES DATA - COLORADO, 1991

VOLUME 1: MISSOURI RIVER, ARKANSAS RIVER, AND RIO GRANDE BASINS

By R. C. Ugland, B. J. Cochran, R. D. Steger, and M. M. Hiner

INTRODUCTION

The Water-Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Colorado each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in the report series entitled "Water Resources Data - Colorado".

This report (Volume 1 of two volumes) includes records on both surface and ground water in the State, east of the Continental Divide. Specifically, it contains: (1) discharge records for 134 surface-water stations, and peak discharges for 41 partial-record surface-water stations; (2) stage and contents for 13 lakes and reservoirs; (3) surface-water-quality data for 68 surface-water stations, for 2 reservoirs, for 14 wells, and miscellaneous surface-water-quality data for 44 gaged sites. Locations of lake and surface-water stations and surface-water-quality stations are shown in figure 1, locations of crest-stage partial-record stations are shown in figure 2. Four pertinent stations operated by bordering States also are included in this report. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Colorado.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Colorado were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-water Supply of the United States," Parts 68, 7, and 8. For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States." Data on ground-water levels for the 1935 through 1955 water years were published annually under the title "Water Levels and Artesian Pressures in Observation Wells in the United States." For the 1956 through 1974 water years the data were published in four 5-year reports under the title "Ground-Water Levels in the United States." Water-supply papers may be purchased from the, U.S. Geological Survey, Books and Open-File Reports, Federal Center, Building 810, Box 25425, Denver, CO 80225.

For water years 1961 through 1970, surface-water data were released by the Survey in annual reports on a State-boundary basis. surface-water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with surface-water records.

Beginning with the 1971 water year, water data on surface-water, water quality, and ground-water are published in official Survey reports 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, this volume is identified as "U.S. Geological Survey Water-Data Report CO-91-1." These water-data reports are for sale, in paper copy or in micro-fiche, by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Beginning with the 1990 water year, all water-data reports will also be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (303) 236-4882. A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Building 810, Box 25425, Denver, CO 80225.

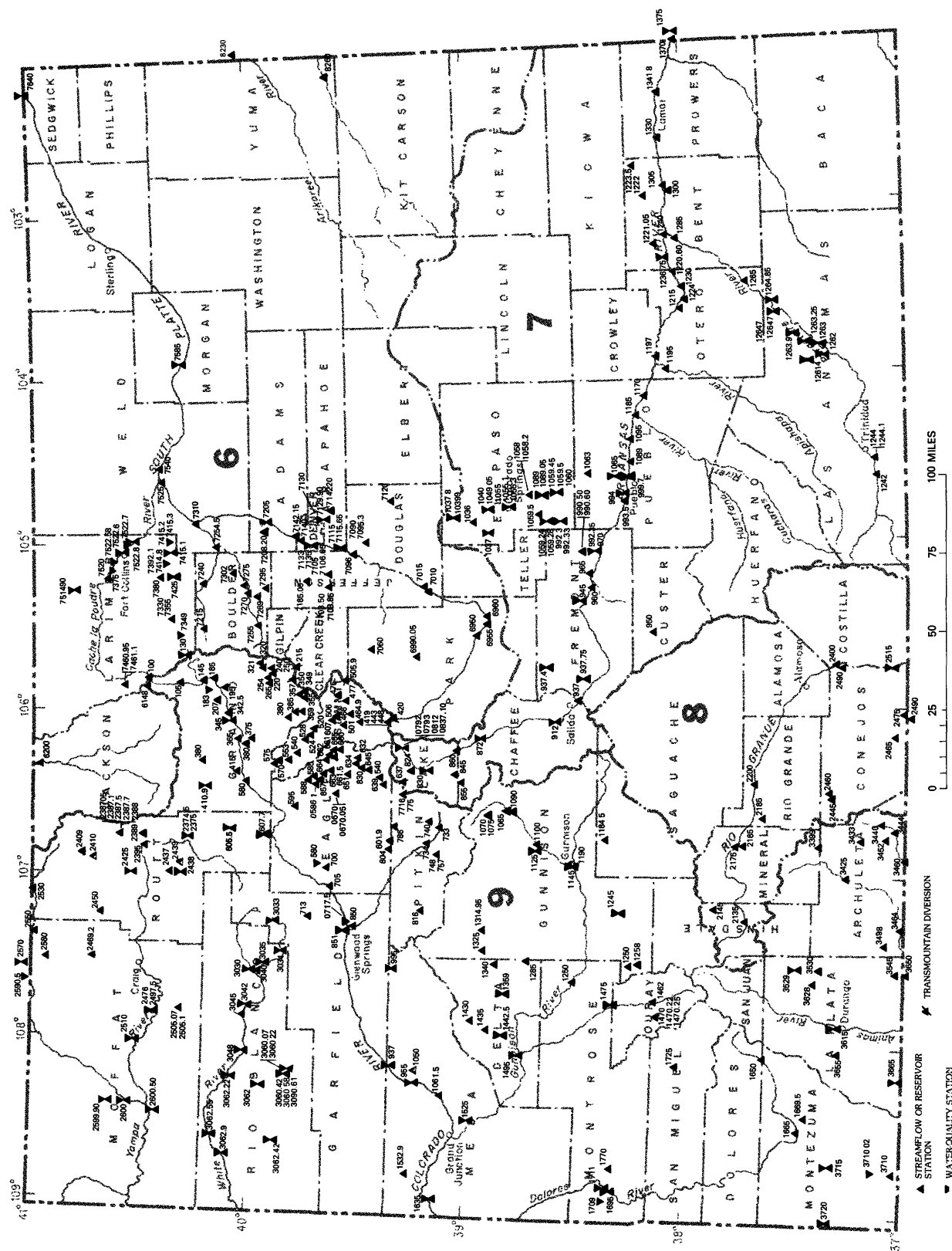
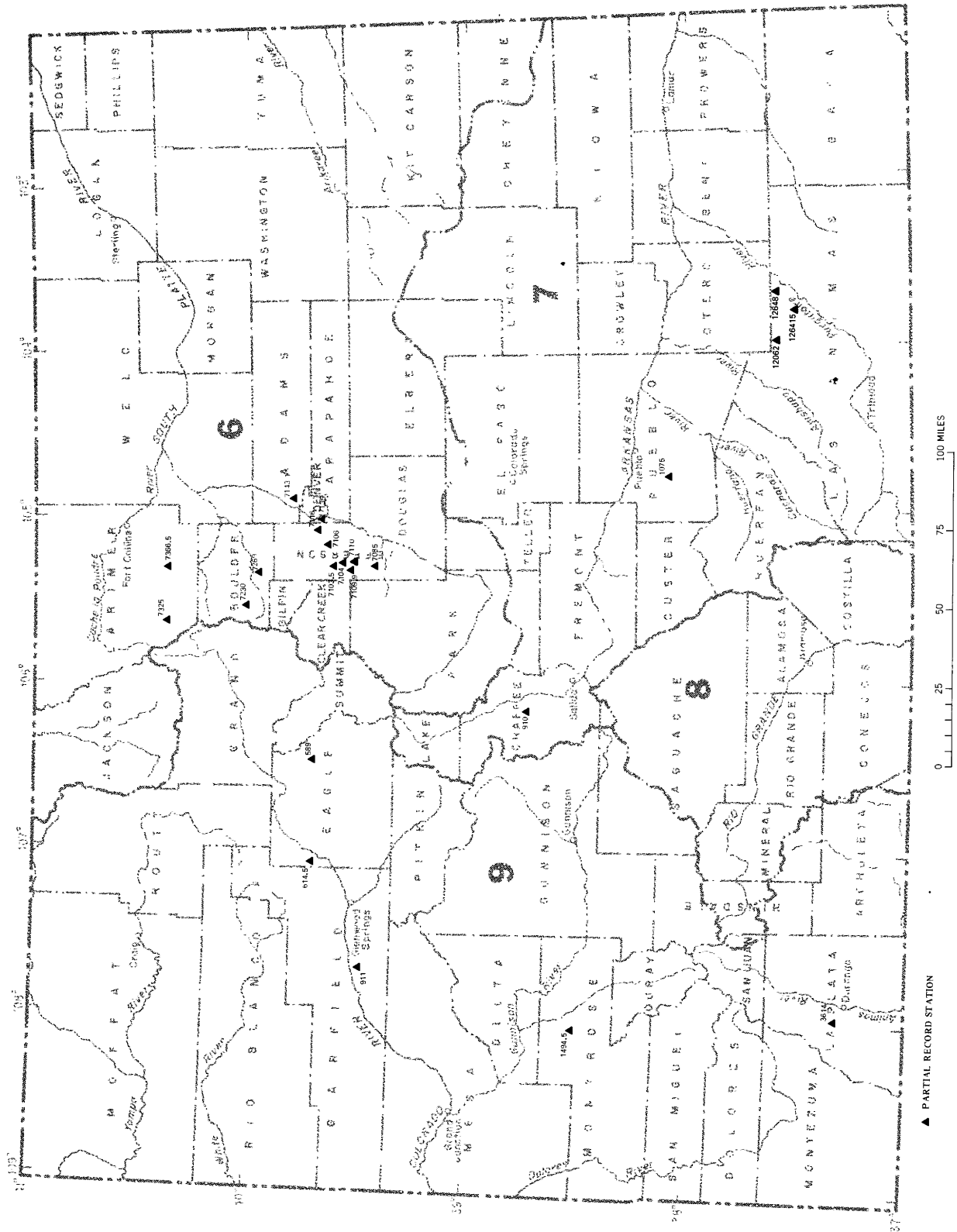


Figure 1.--Map showing locations of lakes and surface-water stations and surface-water-quality stations in Colorado.



COOPERATION

The U.S. Geological Survey and organizations of the State of Colorado have had cooperative agreements for the systematic collection of surface-water records since 1895 and for water-quality records since 1941. Organizations that assisted in collecting data for this report through cooperative agreement with the Survey are:

Arapahoe County, Water and Wastewater, Newell Wright, District Manager.
 Arkansas River Compact Administration, Jim Rodger, Secretary/Treasurer.
 Bent County Commissioners, Harrell Ridley, Chairman.
 Boulder County, Joe Huey, Water Resources Engineer.
 Centennial Water and Sanitation District, Rick McCloud, Water Resources Manager.
 Cherokee Water and Sanitation District, F. S. Loosley, General Manager.
 City and County of Denver, Board of Water Commissioners, Monte Pascoe, President.
 City of Arvada, Sterling E. Shultz.
 City of Aspen, James Markalunas, City Manager.
 City of Aurora, Thomas Griswold, Director of Utilities.
 City of Boulder, Delani Wheeler, City Manager.
 City of Colorado Springs, Department of Public Works, Gary Haynes, City Engineer.
 City of Englewood, Mike Woika, Utilities Manager.
 City of Fort Collins, G. Keith Elmund, Environmental Services Director.
 City of Glendale, Robert Taylor, City Engineer.
 City of Glenwood Springs, Robin Millyard, City Engineer.
 City of Golden, Dan Hartman, Public Works Director.
 City of Lakewood, Jay Hutchison, Water Resources Engineer.
 City of Lamar, Roy Laurichelo, City Administrator.
 City of Las Animas, Lila Maupin, City Clerk.
 City of Longmont, Randy Earley, Manager.
 City of Loveland, Richard Leffler, Chief Engineer.
 City of Northglenn, Kip Scott, Environmental Services Supervisor.
 City of Pueblo, Jim Diiorio, Director.
 City of Rockyford, Darryl Schulz, City Administrator.
 City of Steamboat Springs, Public Works Department, J. Zimmerman.
 City of Thornton, Ron Lovan, Assistant Utilities Director.
 City of Westminster, Dan Strieteimeier, Water Resources Analyst.
 Colorado Department of Health, Brad Beckham, Executive Director.
 Colorado Department of Highways, A. Siccaldi, Staff Bridge Engineer.
 Colorado Division of Mined Land Reclamation, James Pendelton, Director.
 Colorado Division of Water Resources, J. A. Danielson, State Engineer.
 Colorado Division of Wildlife, Marilyn Warmoth.
 Colorado River Water Conservation District, David Merritt, Secretary-Engineer.
 Colorado Oil and Gas Conservation Commission, Jim Kenney.
 Colorado Springs Department of Public Utilities, J. D. Phillips, Supervisory Research Engineer.
 Colorado Water Conservation Board, David Walker, Assistant Director.
 Delta County Board of County Commissioners, David Erickson, Administrator.
 Denver Board of Water Commissioners, Marc Waage.
 Eagle County Board of Commissioners, James Fritze, County Manager.
 East Grand County Water-Quality Board, Dick Leonard, Chairman.
 Evergreen Metropolitan District, G. C. Schulte, General Manager.
 Fountain Valley Authority, Edward Bailey, President.
 Fremont Sanitation District, George Medaris, District Manager.
 Garfield County, Mark Bean, Director.
 Jefferson County Board of County Commissioners, Mary Lynn Tucker, Assistant County Attorney.
 La Plata County, Rusty Bonser, Finance Director.
 Lower Fountain Water-Quality Management Association, Stuart Loosely, President.
 Metropolitan Denver Sewage Disposal District No. 1, Bob Hite, Manager.
 Moffat County, Barbara L. Baker, Clerk and Recorder.
 Northern Colorado Water Conservancy District, Larry Simpson, Manager.
 Pueblo Board of Water Works, Alan Hamel, Executive Director.
 Pueblo County Commissioners, Charles Finley, Director.
 Pueblo West Metro Water District, Leonard McDaniel, District Manager.
 Rio Blanco County Board of County Commissioners, Terry Lowell, Budget Officer.
 Rio Grande Water Conservation District, Ralph Curtis, Manager.
 Southeastern Colorado Water Conservancy District, C. L. Thomson, General Manager.
 Southern Ute Indian Tribe, Howard Richards, Chief, Natural Resources.
 Southwestern Water Conservation District, Edward Searle, Manager.
 St. Charles Mesa Water Association, Lee Simpson, Manager.
 St. Vrain and Lefthand Creek, Les Williams, Executive Director.
 Town of Breckenridge, Gary Martinez, Town Manager.
 Trans Mountain Hydro Corporation, H. C. Young, President (Federal Energy Regulatory Commission).
 Trinchera Water Conservancy District, Dava Dean, Executive Secretary.
 Uncompahgre Valley Water Users Association, J. Hokit, Manager.
 Upper Arkansas Area Council of Governments, Bill Simpson, Executive Director.
 Upper Arkansas River Water Conservancy District, K. Baker, General Manager.
 Upper Eagle Valley Water Authority, Bill George, General Manager.
 Upper Yampa Water Conservancy District, John Fetcher, Manager.
 Urban Drainage and Flood Control District, L. Scott Tucker, Executive Director.
 Ute Mountain Ute Indian Tribe, Dorrance Steele.
 Vail Valley Conservation and Water Authority, Bill George, General Manager.
 Yellow Jacket Water Conservancy District, F. G. Cooley, Secretary-Council.

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OVERVIEW OF HYDROLOGIC CONDITIONS
[East of the Continental Divide]

Prepared by K.R. Wilke

Precipitation

Precipitation data for water year 1991 were obtained from published reports of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Climate Data Center, for the four National Weather Service divisions in Colorado that are east of the Continental Divide. These data are listed in table 1. Precipitation and departures-from-normal precipitation (1951-80) are listed for the first 6 months of the water year when precipitation is predominately snow and for the remaining 6 months when precipitation is predominately rain. Also listed are the precipitation and departures-from-normal precipitation for the entire water year.

Precipitation was greater than normal for October-March and for April-September in the Kansas Drainage Basin and the Rio Grande Drainage Basin. Precipitation was less than normal for October-March and greater than normal for April-September in the Arkansas Drainage Basin and the Platte Drainage Basin. For the year, precipitation in the Arkansas Drainage Basin was 7 percent greater than normal, the Kansas Drainage Basin was 18 percent greater than normal, the Platte Drainage Basin was 11 percent greater than normal, and the Rio Grande Drainage Basin was 38 percent greater than normal.

Graphs of monthly precipitation for the water year and for normal monthly precipitation, at selected weather stations, are shown in figure 3. Monthly precipitation data for water year 1991 were supplemented by data obtained from the Colorado State University, Department of Atmospheric Science, Colorado Climate Center, in Fort Collins.

Table 1.--Precipitation during water year 1991 and departures-from-normal precipitation (1951-80), in inches

National Weather Service division	October-March		April-September		Water year 1991	
	Precipitation	Departure from normal	Precipitation	Departure from normal	Precipitation	Departure from normal
Arkansas Drainage Basin	3.96	-0.03	11.27	1.00	15.23	0.97
Kansas Drainage Basin	4.04	.73	15.02	2.23	19.06	2.96
Platte Drainage Basin	3.85	-.33	12.82	1.99	16.67	1.66
Rio Grande Drainage Basin	7.66	2.96	8.48	1.48	16.14	4.44

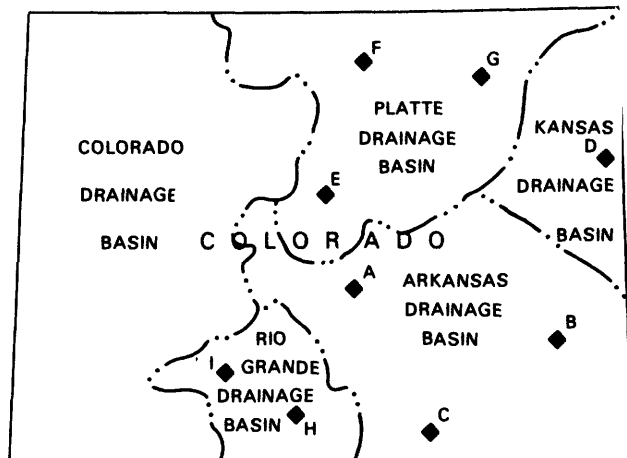
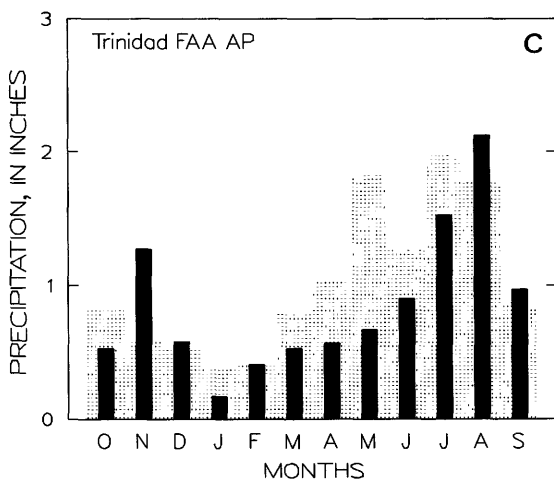
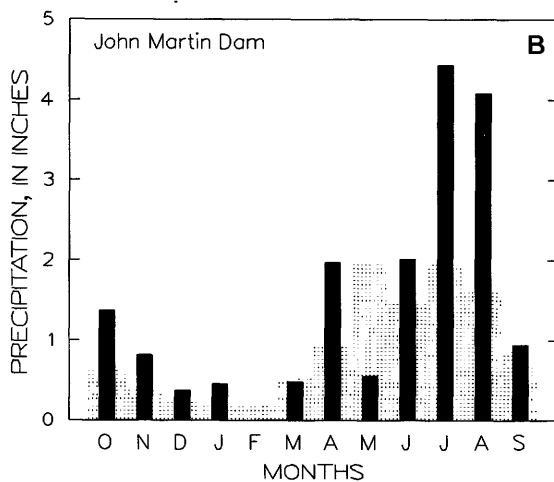
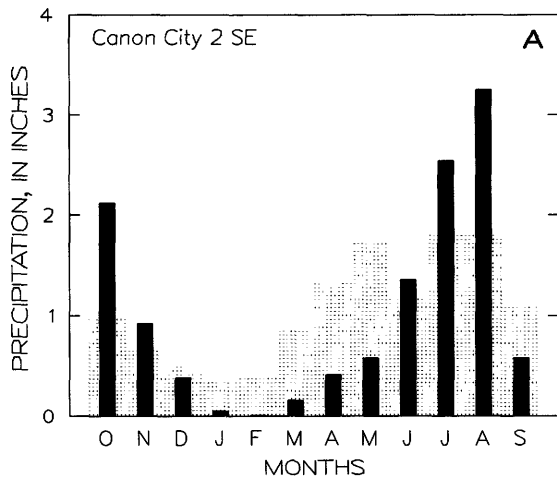
Streamflow

Monthly mean discharges during water year 1991 at selected streamflow-gaging stations are compared to long-term mean monthly discharges in figure 4. Individual graphs show the varied streamflow east of the Continental Divide during the water year. The long-term mean monthly discharges used for gaging station 06776000, North Fork South Platte River below Geneva Creek, at Grant (fig. 4, site B), do not include records prior to water year 1964 (the year that imported water from the Colorado River basin began flowing past the gaging station).

The graphs for gaging stations 06701500, South Platte River below Cheesman Lake (fig. 4, site A); 06706000, North Fork South Platte River below Geneva Creek, at Grant (fig. 4, site B); and 06758500, South Platte River near Weldona (fig. 4, site C), indicate that monthly discharges for water year 1991 were not consistent with long-term mean monthly discharges. Local water-management practices, which consisted mostly of storage, release, or diversion of water as determined by daily and seasonal irrigation and municipal needs, also affected the trends in the three discharge graphs. The water year 1991 mean discharge at gaging station 06701500, South Platte River below Cheesman Lake, was 7 percent less than the long-term average. The water year 1991 mean discharge at gaging station 06706000, North Fork South Platte River below Geneva Creek, at Grant, was 26 percent greater than the long-term average. The water year 1991 mean discharge at gaging station 06758500, South Platte River near Weldona, was 34 percent less than the long-term average.

The graph for gaging station 07094500, Arkansas River at Parkdale (fig. 4, site D), indicates that monthly discharges for water year 1991 were generally consistent with the long-term mean monthly discharges. The graphs for gaging station 07126300, Purgatoire River near Thatcher (fig. 4, site E), and 07133000, Arkansas River at Lamar (fig. 4, site F), indicate that monthly discharges for water year 1991 were not consistent with the long-term mean monthly discharges. The trends in the three discharge graphs were affected by local water-management practices, which consisted mostly of storage and release of water as determined by daily and seasonal irrigation and municipal needs. The water year 1991 mean discharge at gaging station 07094500, Arkansas River at Parkdale, was 15 percent less than the long-term average. The water year 1991 mean discharge at gaging station 07126300, Purgatoire River near Thatcher, was 42 percent less than the long-term average. The water year 1991 mean discharge at gaging station 07133000, Arkansas River at Lamar, was 56 percent less than the long-term average.

The graph for gaging station 08217500, Rio Grande at Wagonwheel Gap (fig. 4, site G), indicates that monthly discharges for water year 1991 were generally consistent with long-term mean monthly discharges. The graph for gaging station 08251500, Rio Grande near Lobatos (fig. 4, site H), indicates that monthly discharges for water year 1991 were not consistent with the long-term mean monthly discharges. The trends in the two discharge graphs were affected by local water-management practices, which consisted mostly of storage, release, and diversion of water as determined by daily and seasonal irrigation needs. The water year 1991 mean discharge at gaging station 08217500, Rio Grande at Wagonwheel Gap, was 7 percent greater than the long-term average. The water year 1991 mean discharge at gaging station 08251500, Rio Grande near Lobatos, was 23 percent less than the long-term average.



EXPLANATION

Monthly precipitation
for water year 1991

Normal monthly precipitation
for reference period

B WEATHER STATION—
Letter refers to
accompanying graph
and map

Figure 3.--Comparison of monthly precipitation for water year 1991 to normal monthly precipitation for the reference period 1951-80.

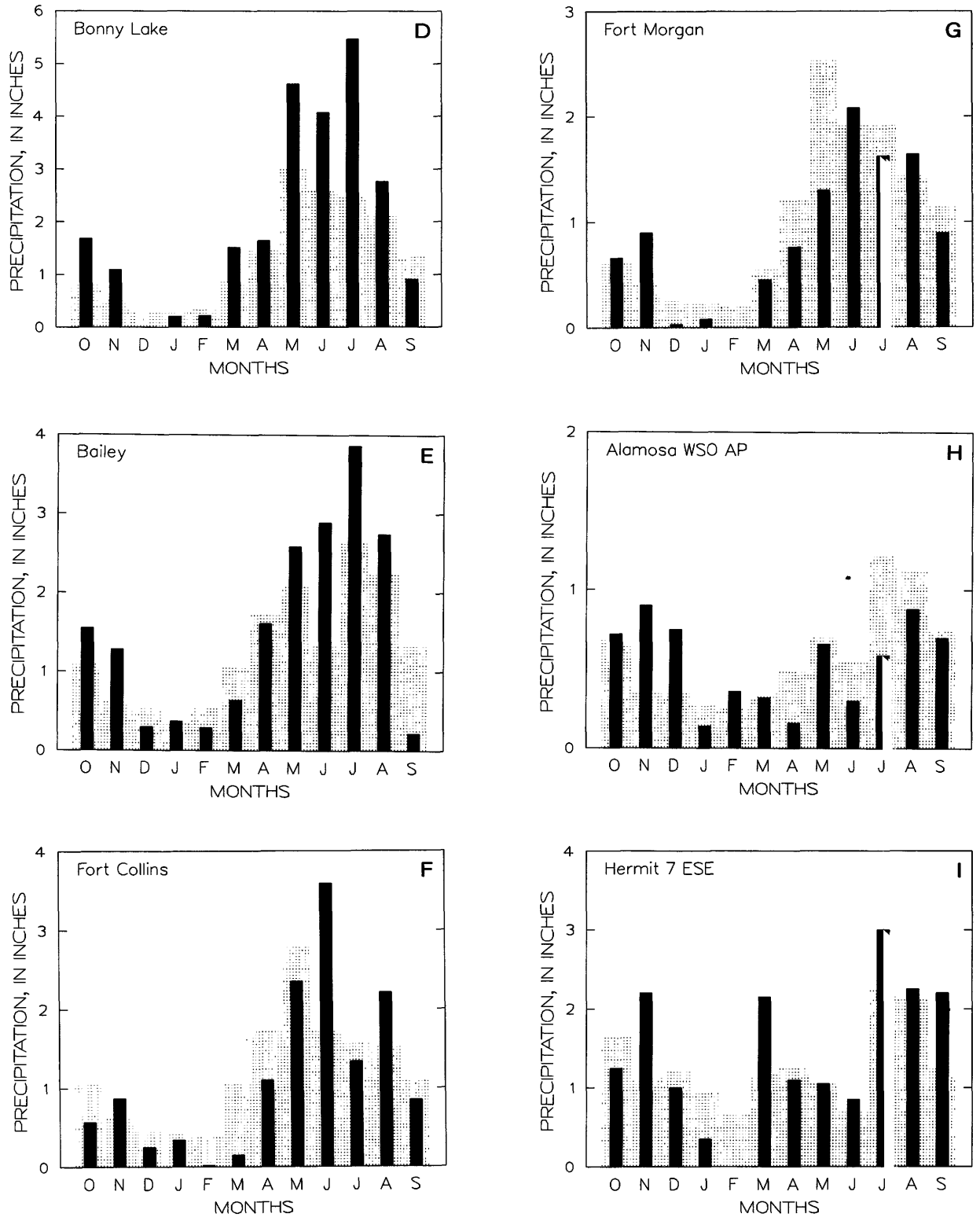
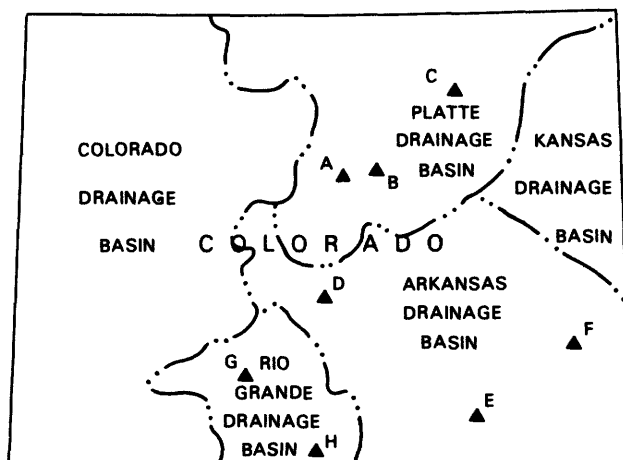
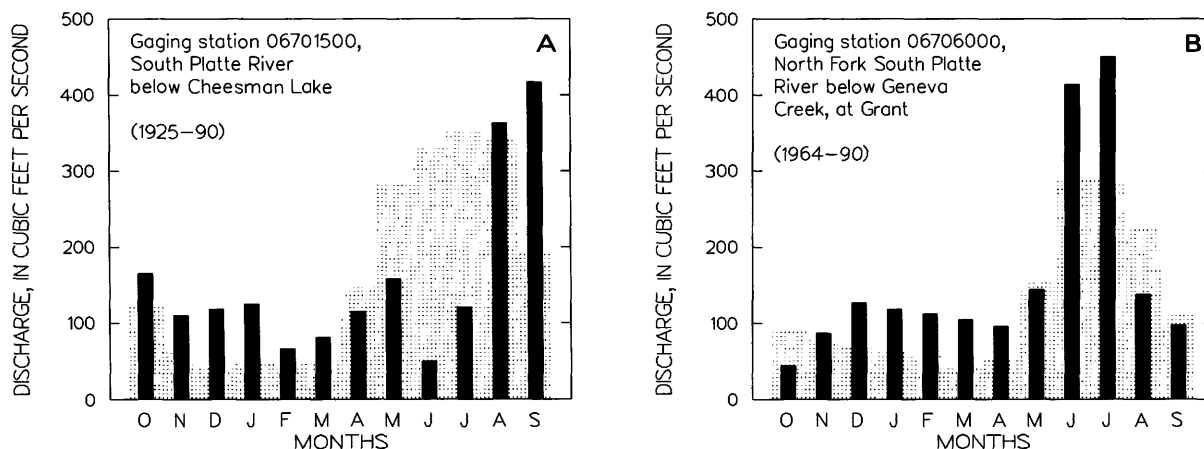


Figure 3.--(continued)



EXPLANATION

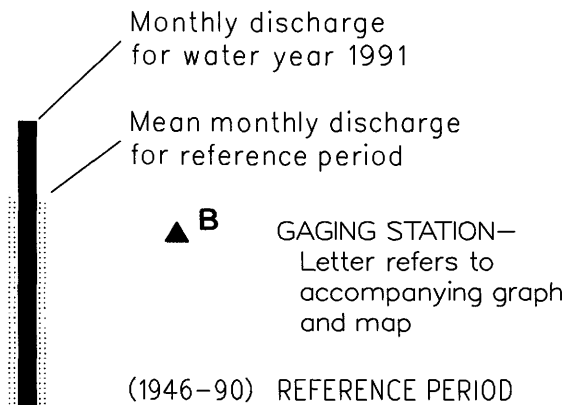


Figure 4.--Comparison of monthly discharges for water year 1991 to mean monthly discharges for the reference periods indicated on the individual graphs.

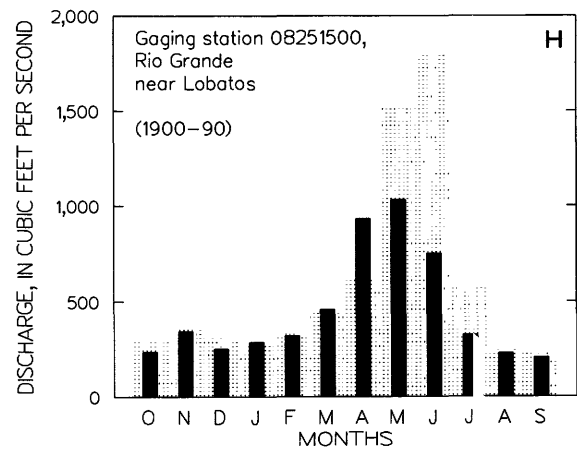
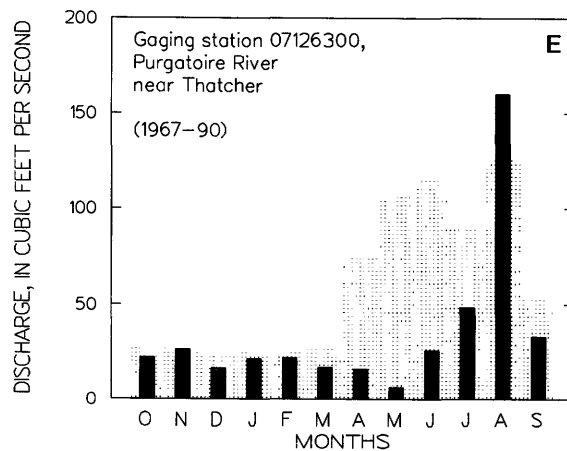
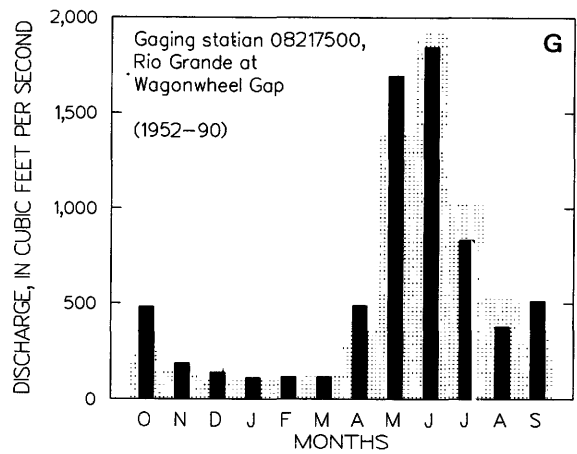
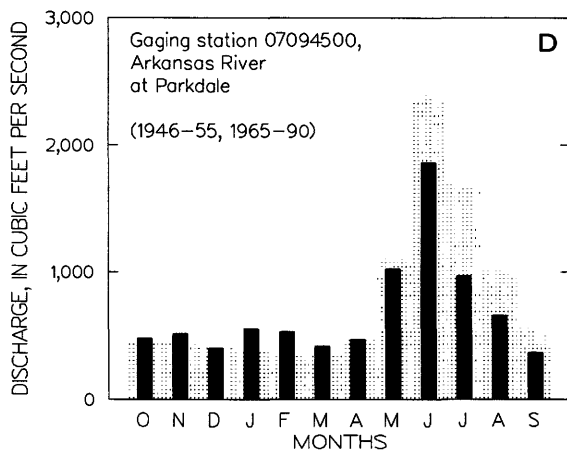
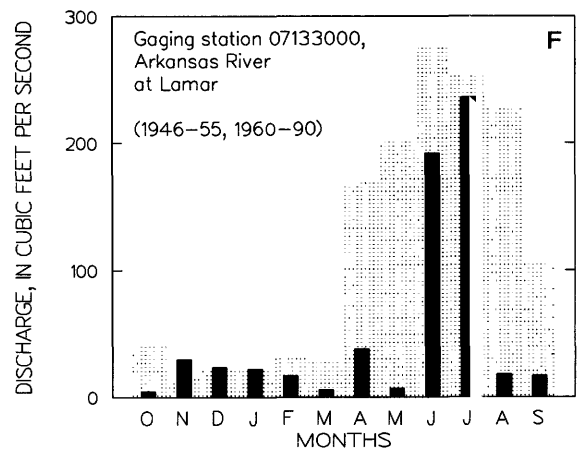
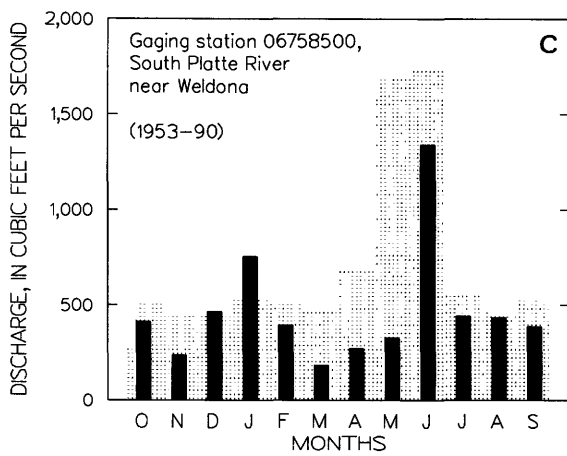


Figure 4.--(continued)

Peak discharges during water year 1991 and for the period of record for selected gaging stations are listed in table 2. Peak discharges at gaging stations 06706000, North Fork South Platte River below Geneva Creek, at Grant; 06752500, Cache la Poudre River near Greeley; 06758500, South Platte River near Weldona; and 08240000, Rio Grande above mouth of Trinchera Creek, near Lasauces, were greater than long-term median values, but were substantially less than the record highs for the stations. The peak discharge at each of the remaining selected gaging stations was less than the long-term median value. At eight of the selected gaging stations, peak discharges were less than the 25th-percentile values. At six of the eight gaging stations, peak discharges were substantially greater than the record low peak discharges for the stations; however, at gaging station 06696000, South Platte River near Lake George, the peak discharge was the third lowest for the period of record, and at gaging station 07128500, Purgatoire River near Las Animas, the peak discharge was the second lowest for the period of record.

Table 2.--Peak discharges for water year 1991 and for the period of record at selected gaging stations

[mi², square miles; ft³/s, cubic feet per second]

Gaging station identification	Drainage area (mi ²)	Period of record (water years)	Water year 1991 Peak discharge		Period of record Peak discharge		Remarks or 1991 peak discharge
			Date	(ft ³ /s)	Date	(ft ³ /s)	
06620000 North Platte River near Northgate	1,431	1904, 1915-90	6/4	2,310	6/11/23	6,720	Less than median
06696000 South Platte River near Lake George	963	1930-90	7/24	186	4/28/70	3,000	Less than 25th percentile (3d lowest)
06701500 South Platte River below Cheesman Lake	1,752	1926-90	9/11	632	4/29/70	4,640	Less than 25th percentile
06706000 North Fork South Platte River below Geneva Creek, at Grant	127	1/1964-90	6/30	637	7/8/90	835	Greater than median
06752500 Cache la Poudre River near Greeley	1,877	1903, 1916-17, 1919, 1924-90	6/3	2,060	6/14/83	6,360	Greater than median
06758500 South Platte River near Weldona	13,245	1953-90	6/4	4,590	5/8/73	26,800	Greater than median
07094500 Arkansas River at Parkdale	2,548	1946-55, 1965-90	6/13	2,940	6/26/83	6,310	Less than 25th percentile
07106500 Fountain Creek at Pueblo	926	1921-22, 1924-25, 1935, 1941-65, 1971-90	6/6	3,220	6/17/65	47,000	Less than median
07109500 Arkansas River near Avondale	6,327	1939-51, 1965-90	6/6	3,940	6/18/65	50,000	Less than 25th percentile
07124000 Arkansas River at Las Animas	14,417	1939-90	7/3	1,300	5/20/55	44,000	Less than 25th percentile
07126300 Purgatoire River near Thatcher	1,791	1965-90	8/4	2,820	6/18/65	47,700	Less than 25th percentile
07128500 Purgatoire River near Las Animas	3,318	1922-31, 1949-90	7/2	1,150	5/20/55	70,000	Less than 25th percentile (2d lowest)
07133000 Arkansas River at Lamar	19,780	1913, 1915, 1919-55, 1960-90	6/30	1,530	6/5/21	130,000	Less than 25th percentile
08220000 Rio Grande near Del Norte	1,320	1890-1990	5/21	4,760	10/5/11	18,000	Less than median
08240000 Rio Grande above mouth of Trinchera Creek, near Lasauces	5,740	1936-62, 1964-80, 1982-90	4/10	1,070	6/21/49	5,470	Greater than median
08246500 Conejos River near Mogote	282	1903-5, 1912-90	5/21	1,930	10/5/11	9,000	Less than median
08251500 Rio Grande near Lobatos	7,700	1900-90	5/23	2,130	6/8/05	13,200	Less than median

1/ Period since imported water began flowing past this gaging station.

Chemical Quality of Streamflow

To determine if substantial changes occurred during water year 1991 in the chemical quality of streamflow, an analysis was made of specific conductance, which was measured approximately monthly at gaging stations on six representative streams. Each gaging station either is the most downstream gaging station on that stream, is representative of a substantial part of the drainage area of that stream, or is the only gaging station in that drainage that had monthly specific-conductance measurements. A comparison of the range and distribution of the specific conductance for water year 1991 to long-term values for each selected gaging station is shown in figure 5.

Specific conductance can be used to estimate the dissolved-solids concentration in water because specific conductance is directly proportional to the concentrations of ions in water. To determine if there were significant differences between values of specific conductance for water year 1991 and values for the period of record used for comparison, a statistical technique called the Wilcoxon-Mann-Whitney rank sum test was used. This test is a non-parametric counterpart to the common t-test and does not require the data to have a normal distribution.

The Wilcoxon-Mann-Whitney rank sum test was applied to the hypothesis that the mean specific conductance for water year 1991 was equal to the mean for the period of record. The procedure for testing the hypothesis involves computing a test statistic from the ranks of the data by using a pooled standard deviation and comparing the test statistics to a value obtained from a table of "Student's" t values (Box and others, 1978). The table value is $(1 - \alpha/2)$, where α (the level of significance) equals 0.05, at the appropriate degrees of freedom for the number of samples. If the absolute value of the computed test statistic (t_R) is greater than the tabular t value (t_{tab}), the hypothesis is rejected. A rejection of the hypothesis is statistical evidence that the two means are different.

Results of the Wilcoxon-Mann-Whitney rank sum tests for the six gaging stations are listed in table 3. For five of the stations, 06741510, Big Thompson River at Loveland; 07094500, Arkansas River at Parkdale; 07128500, Purgatoire River near Las Animas; 07133000, Arkansas River at Lamar; and 08217500, Rio Grande at Wagonwheel Gap, the tests indicate the mean specific conductance for water year 1991 and the mean specific conductance for the period of record are not statistically different. For gaging station 06752280, Cache la Poudre River above Box Elder Creek, near Timnath, the test indicates a difference in the means.

The mean specific conductance for water year 1991 for gaging station 06752280, Cache la Poudre River above Box Elder Creek, near Timnath, was 49 percent greater than the mean specific conductance for the 10-year period of record 1981-90. Published records for the station indicates that there is an inverse relation between specific conductance and discharge. For water year 1991, mean discharge at the station was 40 percent of the 10-year mean. Therefore, it is reasonable to expect that the mean specific conductance for water year 1991 is substantially greater than the mean specific conductance for the 10-year period.

Table 3.--Results of Wilcoxon-Mann-Whitney rank sum tests comparing mean specific conductance of discharge for water year 1991 with mean for the period of record at selected gaging stations
[Specific conductance, in microsiemens per centimeter at 25 degrees Celsius;
 t_R , calculated test statistic; t_{tab} , t-values from standard table; A, accepted; R, rejected]

Gaging station identification	Specific conductance						Wilcoxon-Mann-Whitney rank sum test			
	Water year 1991			Period of record			Period used (water years)	t_R	t_{tab}	Hypoth- esis
	Number of values	Mean	Standard devia- tion	Number of values	Mean	Standard devia- tion				
06741510 Big Thompson River at Loveland-----	12	1,135	541	112	844	488	1981-90	1.98	1.98	A
06752280 Cache la Poudre River above Box Elder Creek, near Timnath-----	11	1,858	640	117	1,250	714	1981-90	2.97	1.98	R
07094500 Arkansas River at Parkdale-----	11	223	58.2	107	266	72.5	1981-90	-1.97	1.98	A
07128500 Purgatoire River near Las Animas-----	9	3,586	1,354	148	2,960	1,285	1981-90	1.59	1.98	A
07133000 Arkansas River at Lamar-----	12	3,521	692	132	3,281	1,138	1981-90	.75	1.98	A
08217500 Rio Grande at Wagonwheel Gap-----	9	90.3	24.9	95	94.5	28.6	1981-90	-.35	1.99	A

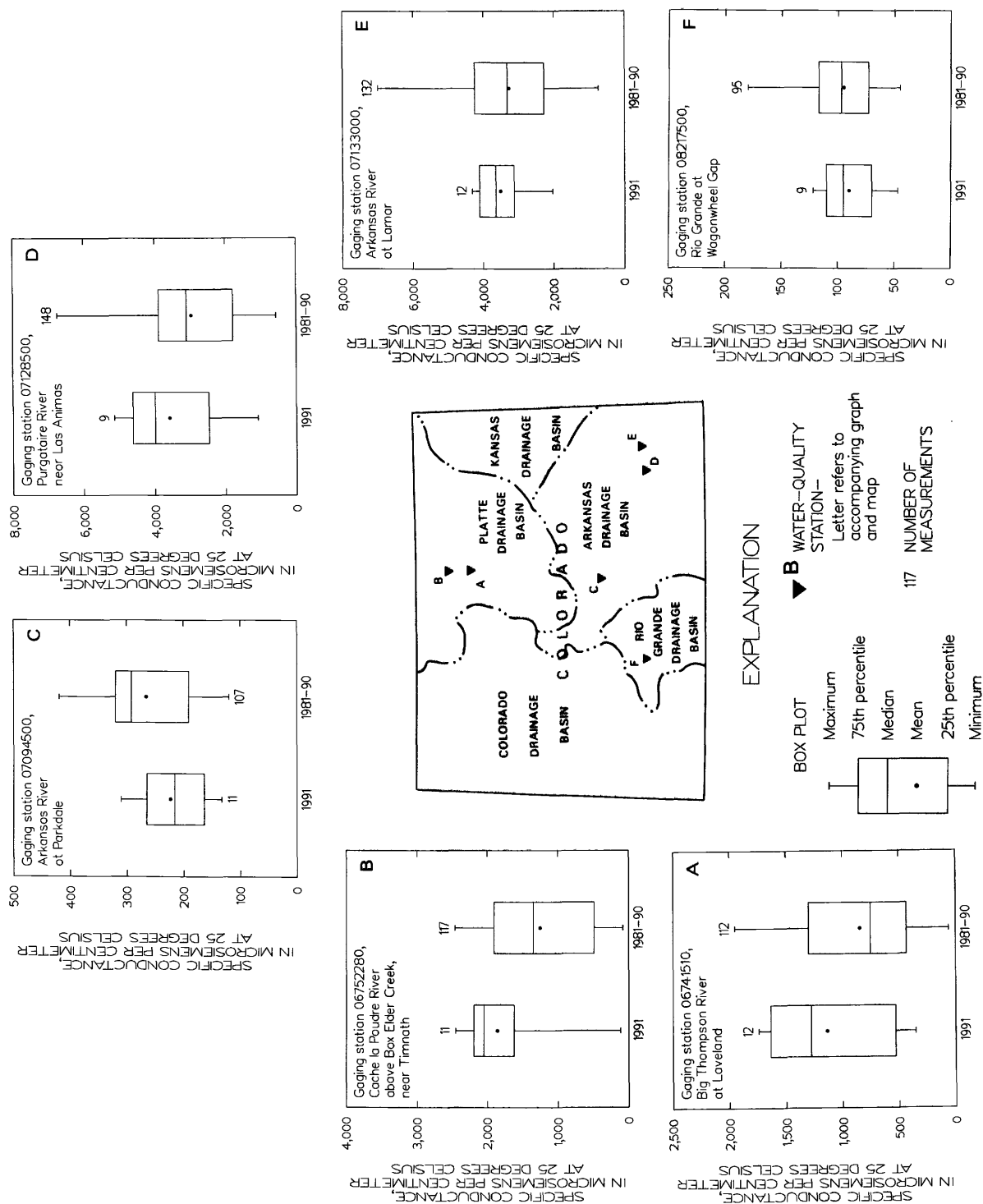


Figure 5.--Comparison of range and distribution of specific conductance measured during water year 1991 to long-term values.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 small sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1991 water year that began on October 1, 1990, and ended September 30, 1991. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface and ground water. The locations of the stations where the surface-water data were collected are shown in figures 1 and 2. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station, whether streamsite or well, in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells and, in Colorado, for surface-water stations where only infrequent measurements are made.

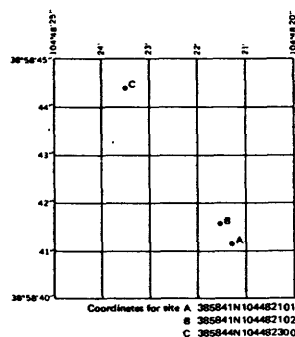
Downstream Order System

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 mainstream station are listed before that station. A station on a tributary that enters between two mainstream 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 with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this 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.

The station-identification number is assigned according to downstream order. 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 eight-digit number for each station, such as 06614800, which appears just to the left of the station name, includes the two-digit Part number "06" plus the six-digit downstream-order number "614800." The Part number designates the major river basin; for example, Part "06" is the Missouri River basin.

Latitude-Longitude System

The identification numbers for wells, springs, and miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote the degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site-identification number, once assigned, is a pure number, and may have no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See figure below.)



System for numbering wells, springs, and miscellaneous sites.

The local well number locates a well within a 10-acre tract using the U. S. Bureau of Land Management system of land subdivision. The components of the local well number proceed from the largest to the smallest land subdivisions. This is in contrast to the legal description, which proceeds from the smallest to the largest land subdivision. The largest subdivision is the survey. Colorado is governed by three surveys: The Sixth Principal Meridian Survey (S), the New Mexico Survey (N), and the Ute Survey (U). Costilla County was not included in any of the above official surveys. This report follows the convention of the Costilla County Assessor in which the northern part of the county is governed by the Sixth Principal Meridian Survey and the southern part of the county is governed by a local system called the Costilla Survey (C). The first letter of the well location designates the survey.

A survey is subdivided into four quadrants formed by the intersection of the baseline and the principal meridian. The second letter of the well location designates the quadrant: A indicates the northeast quadrant, B the northwest, C the southwest, and D the southeast. A quadrant is subdivided in the north-south direction every 6 mi by townships and is divided in the east-west direction every 6 mi by ranges. The first number of the well location designates the township and the second number designates the range.

The 36-mi² area described by the township and range designation is subdivided into 1-mi² areas called sections. The sections are numbered sequentially. The third number of the well location designates the section. The section, which contains 640 acres, is subdivided into quarter sections. The 160-acre area is designated by the first letter following the section: A indicates the northeast quarter, B the northwest, C the the southwest, and D the southeast. The quarter section is subdivided into quarter-quarter sections. The 40-acre area is designated in the same manner by the second letter following the section. The 10-acre area is designated in the same manner by the third letter following the section. If more than one well is located within the 10-acre tract, the wells are numbered sequentially in the order in which they were originally inventoried. If this number is necessary, it will follow the three-letter designation.

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles. Records of miscellaneous discharge measurements or of measurements from special studies may be considered as partial records, but they are presented separately in this report. Location of all complete-record stations for which data are given in this report are shown in figure 1.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals, with electronic recorders that store stage values on computer chips at selected time intervals, or with satellite data collection platforms that transmit near real-time data at selected time intervals to office computers. Measurements of discharge are made with current meters using methods adapted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. 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 determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves, or tables defining the relationship of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

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 from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections. "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that flow at it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Because of new information, published records occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted 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 most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a REMARKS paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listed may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District office (address given on the back of the title page of this report) to determine if the published records were ever revised after the station was discontinued. Of course, if the data for a discontinued station were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Data table of daily mean values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the average flow in cubic feet per second during the month; and the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month also is usually 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 or in acre-feet may be omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

If applicable, data collected at partial-record stations follow the information for continuous-record sites. 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. 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.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated," or by listing the dates of estimated record in the REMARKS paragraph of the station description.

Accuracy of the Records

The accuracy of streamflow records 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 measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of their true value; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for daily values less than 1 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Records Available

The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 22092, maintains an index of records of discharge collected by other agencies but not published by the Geological Survey. Information on records at specific sites can be obtained from that office upon request.

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables are on file in the Colorado District office. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the District office.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

"In March 1989 the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias."

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched or recorded at short intervals on a paper tape, magnetic tape, computer chip, or some other medium. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 1.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

Onsite Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed on pages 30 and 31 of this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey District office.

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. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors which must be evaluated by the collector.

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 U.S.G.S. District Office whose address is given on the back of the title page of this report.

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 a 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 recorded to the nearest 0.1 degree Celsius. Water temperatures measured at the time of water-discharge measurements are published in this report as supplemental water-quality for gaging stations.

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 discharges 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 and in predicting long-term sediment discharge characteristics of the stream.

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

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally, all other samples are analyzed in the Geological Survey laboratories in Arvada, Colo., or Doraville, Ga. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratories are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remarks codes may appear with the water-quality data in this report:

PRINTED OUTPUT REMARK

E Estimated value

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

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

K Based on non-ideal colony count

M Presence of material verified but not quantified

Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that for most sampling sites they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes only slowly; therefore, for most general purposes one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

Most methods for collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals listed at the end of the introductory text. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. All samples were obtained by trained personnel. The wells sampled were pumped long enough to assure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Data Presentation

The records of ground-water quality are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County, and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

ACCESS TO WATSTORE DATA

The U.S. Geological Survey is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. As part of the Geological Survey's program of releasing water data to the public, a large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. The National Water Data Storage and Retrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water-data collected through the activities of the U.S. Geological Survey and to facilitate release of the data to the public. A variety of useful products ranging from data tables to complex statistical analyses such as Log Pearson Type III, can be produced using WATSTORE. The system resides on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Virginia, and consists of related files and data bases.

- * Station Header File - Contains descriptive information on more than 440,000 sites throughout the United States and its territories where the U.S. Geological Survey collects or has collected data.
- * Daily Values File - Contains more than 220 million daily values of stream flows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.
- * Peak Flow File - Contains approximately 500,000 maximum (peak) streamflow and gage-height values at surface-water sites.
- * Water Quality File - Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, and radio-chemical characteristics of both surface and ground water.
- * Ground-Water Site Inventory Data Base - Contains inventory data for more than 900,000 wells, springs, and other sources of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

In 1976, the U.S. Geological Survey opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requester will be expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey
National Water Data Exchange
421 USGS National Center
Reston, Virginia 22092

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5-1/4 inch floppy disk; and, as noted in the introduction, on CD-ROM discs. Beginning with the 1990 water year, all water-data reports will also be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division's District offices. (see address on the back of the title page.) A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units 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 equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. 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 multicelled 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, while 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 all the organisms that produce colonies with a golden-green metallic sheen 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 intestine 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 that 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 number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warmblooded 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 organism which produce red or pink colonies with 48 hours at 35°C \pm 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the sediment mixture 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 micro-organisms, 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 (g/m³), and periphyton and benthic organisms in grams per square meter (g/m²).

Dry mass refers to the mass of residue present after drying in an oven at 105°C for zooplankton and 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 the ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash 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 flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 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 green 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 a 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 foot per second (ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic feet per second per square mile (ft³/s)/mi² 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.

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 time.

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

Dissolved refers to that material in a representative water sample which passes through a 0.45 μ 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.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Drainage area of a stream at a specified 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 stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing 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 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 computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO_3).

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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 eight-digit number.

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each groundwater observation well.

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

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 substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram ($\mu\text{g/g}$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

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

National Geodetic Vertical Datum of 1929 (NGVD of 1929) 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.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area habitat, usually square meter (m^2), acre, or hectare. 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 milliliter (mL) or liter (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.

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

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 a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter or 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 the recommendation made by the American Geophysical Unit Subcommittee on Sediment Terminology. The classification is as follows:

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
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 matter 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 living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

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

Plankton is a 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 per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (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 is dominated by small crustaceans and rotifers.

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 $mg\ C/(m^2 \cdot time)$ for periphyton and macrophytes and $mg\ C/(m^3 \cdot time)$ for phytoplankton are 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 $\text{mgO}/(\text{m}^2 \cdot \text{time})$ for periphyton and macrophytes and $\text{mgO}/(\text{m}^3 \cdot \text{time})$ 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.

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.

Recoverable from bottom material is 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 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.

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

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.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

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).

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

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) \times discharge (ft^3/s) \times 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

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 mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

7-day 10-year low flow ($7 Q_{10}$) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens 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 microsiemens). 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 the 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 lives.

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

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 multiplate samplers (made of hardboard) for benthic organism collection, and plexiglas strips for periphyton.

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

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

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 um 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 are 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 constituents.

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 um 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.....	<u>Hexagenia</u>
Species.....	<u>Hexagenia limbata</u>

Thermograph is an instrument that continuously records variation of temperature on a chart. The more general term "temperature recorder" is used in the table headings and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

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 the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY) is the quantity of a 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 of the constituent present 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 analytical method determined all of the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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 are required of all laboratories performing such analyses, because different digestion procedures are likely to produce different analytical results.

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.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1980, is called the "1980 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

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.

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

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DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Colorado have been discontinued or converted to partial-record stations. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station.

Discontinued surface-water discharge or stage-only stations

Station name	Station number	Drainage area (sq mi)	Period of record (calendar years)
Colorado Creek near Spicer, CO	06611000	25.8	1950-55
Grizzly Creek near Spicer, CO	06611100	118	1976-80
Buffalo Creek near Hebron, CO	06611200	56.3	1976-80
Grizzly Creek near Hebron, CO	06611300	223	1976-80
Grizzly Creek near Walden, CO	06611500	258	1904-05, 1923, 1926-47
Little Grizzly Creek near Coalmont, CO	06611700	10.1	1967-73
Little Grizzly Creek above Coalmont, CO	06611800	35.4	1976-80
Little Grizzly Creek above Hebron, CO	06611900	52.2	1976-80
Little Grizzly Creek near Hebron, CO	06612000	98.6	1904-05, 1931-45
Roaring Fork near Walden, CO	06612500	79.1	1904-05, 1923-47
North Platte River near Walden, CO	06613000	469	1904-05, 1923-47
North Fork North Platte River near Walden, CO	06614000	160	1923-28, 1936-45
South Fork Michigan River near Gould, CO	06615000	11.4	1950-58
Michigan River near Lindland, CO	06615500	60.9	1931-41
North Fork Michigan River near Gould, CO	06616000	20.5	1950-82
Michigan River at Walden, CO	06617100	182	1904-05, 1923-47
Illinois Creek near Rand, CO	06617500	70.6	1931-40
Willow Creek near Rand, CO	06618000	55.9	1931-40
Illinois Creek at Walden, CO	06618500	259	1923-47
Michigan River near Cowdrey, CO	06619000	478	1904-05, 1937-47
Canadian River near Lindland, CO	06619400	44.0	1978-83
Bush Draw near Walden, CO	06619415	4.10	1980-83
Williams Draw near Walden, CO	06619420	3.95	1979-83
Canadian River near Brownlee, CO	06619450	158	1978-83
Canadian River at Cowdrey, CO	06619500	181	1904-05, 1929-31, 1937-47
Laramie River near Glendevy, CO	06657500	101	1904-05, 1910-82
Middle Fork South Platte River above Fairplay, CO	06693980	62.2	1978-80
Middle Fork South Platte River near Hartsel, CO	06694100	250	1978-80
South Fork South Platte River above Fairplay, CO	06694400	50.3	1978-80
Fourmile Creek near Fairplay, CO	06694700	12.0	1978-80
South Platte River at Lake George, CO	06696200	1,084	1910-11, 1929
Tarryall Creek at Upper Station near Como, CO	06696980	23.7	1978-86
French Creek near Jefferson, CO	06697200	4.63	1986-90
Michigan Creek above Jefferson, CO	06697450	23.1	1978-86
Jefferson Creek near Jefferson, CO	06698000	11.8	1910-12, 1978-86
Tarryall Creek near Jefferson, CO	06698500	183	1910-11, 1912-17, 1977-81
Rock Creek near Jefferson, CO	06699000	45.5	1986-90
Tarryall Creek near Lake George, CO	06699500	236	1910-12, 1916, 1925-55
South Platte River above Cheesman Lake, CO	06700000	1,628	1899-1901, 1924-43
Goose Creek above Cheesman Lake, CO	06700500	86.6	1899, 1924-82
South Platte River above North Fork at South Platte, CO	06702000	2,098	1905-12
North Fork South Platte River at Grant, CO	06702500	49.0	1910-17
Geneva Creek at Grant, CO	06705500	77.5	1908-18
North Fork South Platte River at Pine, CO	06706500	374	1942-46
North Fork South Platte River at South Platte, CO	06707000	479	1909-10, 1913-82
South Platte River at South Platte, CO	06707500	2,579	1887-92, 1895-97, 1898-1982
South Platte River at Waterton, CO	06708000	2,621	1926-80
East Plum Creek at Castle Rock, CO	06708750	102	1985-89
Plum Creek near Sedalia, CO	06709000	274	1942-47
Plum Creek near Louviers, CO	06709500	302	1947-90
South Platte River at Littleton, CO	06710000	3,069	1941-86
Turkey Creek above Bear Creek Lake, near Morrison, CO	06711040	50.6	1986-89
South Platte River at Florida Avenue, at Denver, CO	06711590	--	1981-82
Cherry Creek near Melvin, CO	06712500	360	1939-69
South Platte River at 50th Avenue at Denver, CO	06714130	3,810	1980-81

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

Station name	Station number	Drainage area (sq mi)	Period of record (calendar years)
West Fork Clear Creek above Empire, CO	06715500	40.5	1942-46
West Fork Clear Creek near Empire, CO	06716000	58.2	1929-31
Clear Creek near Lawson, CO	06716500	147	1946-86
Clear Creek below Idaho Springs, CO	06718000	259	1951-55
North Clear Creek near Blackhawk, CO	06718500	52.2	1951-55
Clear Creek at Forks Creek, CO	06719000	339	1899-1912
Clear Creek near Golden, CO	06719500	399	1908-09, 1911-74
Clear Creek at Tabor Street, at Lakewood, CO	06719526	427	1981-83
Ralston Creek near Plainview, CO	06719725	36.9	1983-84
Schwartzwalder Mine Effluent near Plainview, CO	06719730	--	1983-84
Ralston Creek below Schwartzwalder Mine near Plainview, CO	06719735	38.9	1983-84
Ralston Creek above Ralston Reservoir near Golden, CO	06719740	42.7	1983-84
Clear Creek at Mouth Near Derby, CO	06720000	575	1914, 1927-82
Grange Hall Creek at Grant Park at Northglenn, CO	06720330	--	1978-79
Grange Hall Creek at Northglenn, CO	06720415	3.08	1978-81
Grange Hall Creek below Northglenn, CO	06720417	--	1981-82
Woman Creek near Plainview, CO	06720690	--	1973-74
South Platte River at Fort Lupton, CO	06721000	5,010	1906, 1929-57
North Saint Vrain Creek at Longmont Dam near Lyons, CO	06722000	106	1925-53
South Saint Vrain Creek near Ward, CO	06722500	14.4	1925-27, 1928-31, 1954-73
Middle Saint Vrain Creek near Raymond, CO	06722900	16.8	1956-58
Middle Saint Vrain Creek near Allens Park, CO	06723000	28.0	1925-30, a
South Saint Vrain Creek above Lyons, CO	06723400	81.4	1971-80
Lefthand Creek near Boulder, CO	06724500	52.0	1929-31, 1947-53, 1976-80
Lefthand Creek at Mouth at Longmont, CO	06725000	72.0	1927-42, 1953-55, 1976-79
Saint Vrain Creek near Longmont, CO	06725100	370	1964-68
North Boulder Creek at Silver Lake, CO	06726000	8.70	1913-32
North Boulder Creek near Nederland, CO	06726500	30.4	1929-31
South Boulder Creek near Rollinsville, CO	06729000	42.7	1910-18, 1945-49
South Boulder Creek at Pinecliff, CO	06729300	72.7	1979-80
Coal Creek near Plainview, CO	06730300	15.1	1959-82
Boulder Creek at Mouth near Longmont, CO	06730500	439	1927-49, 1951-55, 1978-90
Boulder Brook near Estes Park, CO	06731800	3.83	1968-70
Glacier Creek near Estes Park, CO	06732000	20.8	1941-57, 1968-70
Beaver Brook near Estes Park, CO	06732300	1.49	1968-70
Fall River at Estes Park, CO	06732500	39.8	1945-53, a
Big Thompson River at Estes Park, CO	06733000	137	1946-86
Fish Creek near Estes Park, CO	06734500	15.8	1947-55
North Fork Big Thompson River at Drake, CO	06736000	85.1	1947-55
Big Thompson River below Power House near Drake, CO	06736500	278	1917-55
Dry Creek near Pinewood, CO	06740000	7.11	1950-52
Cottonwood Creek near Pinewood, CO	06741000	14.7	1947-53
Big Thompson River near Loveland, CO	06741500	505	1947-55
Little Thompson River near Berthoud, CO	06742000	100	1929-30, 1947-61
Little Thompson River at Milliken, CO	06743500	199	1951-55
Big Thompson River at Mouth near La Salle, CO	06744000	830	1914-15, 1927-82
Cache La Poudre River above Chambers Lake Outlet, CO	06745000	89.7	1929-31
Joe Wright Creek near Cameron Pass, CO	06746100	5.05	1974-78
Cache La Poudre River near Rustic, CO	06747500	198	1956-68
Cache La Poudre River near Log Cabin, CO	06748000	234	1909-11, 1929-31
Fall Creek near Rustic, CO	06748200	3.59	1960-73
South Fork Cache La Poudre near Eggers, CO	06748500	70.6	1929-31
Little Beaver Creek near Idylwilde, CO	06748510	0.88	1960-73
Little Beaver Creek near Rustic, CO	06748530	12.3	1960-73
South Fork Cache La Poudre River near Rustic, CO	06748600	92.4	1956-79
Cache La Poudre River below Elkhorn, CO	06749000	409	1946-59
North Fork Cache La Poudre River near Livermore, CO	06751500	567	1947-65
Lonetree Creek near Nunn, CO	06753500	199	1951-57
Crow Creek near Barnsville, CO	06756500	1,324	1951-57
South Platte River at Masters, CO	06756995	12,175	1976-88
South Platte River at Sublette, CO	06757000	12,170	1926-42, 1943-55
Kiowa Creek at K-79 Reservoir near Eastonville, CO	06757600	3.20	1955-65
Kiowa Creek at Elbert, CO	06758000	28.6	1955-65
West Kiowa Creek at Elbert, CO	06758100	35.9	1962-65
Kiowa Creek at Kiowa, CO	06758200	111	1955-65

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

Station name	Station number	Drainage area (sq mi)	Period of record (calendar years)
Kiowa Creek at Bennett, CO	06758300	236	1960-65
Bijou Creek near Wiggins, CO	06759000	1,314	1950-56
Bijou Creek near Fort Morgan, CO	06759100	1,500	1976-87
South Platte River at Fort Morgan, CO	06759500	14,810	1943-58
South Platte River at Balzac, CO	06760000	16,852	1916-87
South Platte River near Crook, CO	06760500	19,238	1953-58
North Fork Republican River near Wray, CO	06822000	1,019	1937-46, 1951-57, 1962-64
South Fork Republican River near Idalia, CO	06825000	1,300	1950-71, 1972-81
Landsman Creek near Hale, CO	06825500	268	1950-75, 1977-81
South Fork Republican River near Hale, CO	06826500	1,825	1946-48, 1951-85
East Fork Arkansas River near Leadville, CO	07079500	50.0	1890-1903, 1910-24
Tennessee Creek near Leadville, CO	07081000	48.0	1890-1903, 1910-1924
Arkansas River near Leadville, CO	07081200	97.2	1967-83
Lake Fork above Sugar Loaf Reservoir, CO	07082000	23.9	1946-67
Halfmoon Creek near Leadville, CO	07083500	25.2	1911-14
Arkansas River near Malta, CO	07083700	228	1964-67, 1976-84
Cottonwood Creek below Hot Springs near Buena Vista, CO	07089000	65.0	1910-23, 1949-85
Chalk Creek Upper Station near Saint Elmo, CO	07090000	48.0	1913-19
Chalk Creek near Saint Elmo, CO	07090500	83.0	1910-16
Chalk Creek near Mathrop, CO	07091000	97.0	1910, 1949-55, a
Arkansas River at Salida, CO	07091500	1,218	1895-97, 1901-03, 1909-80
South Arkansas River at Poncha, CO	07092000	140	1910-18
Poncha Creek at Poncha, CO	07093000	56.0	1910-18
South Arkansas River near Salida, CO	07093500	208	1922-23, 1929-40
South Colony Creek nr Westcliffe, CO	07094600	6.03	1974-78
Middle Taylor Creek near Westcliffe, CO	07094900	3.19	1974-78, 1984-85
Beaver Creek near Portland, CO	07099100	214	1971-81
Arkansas River near Portland, CO	07099200	4,280	1964-79
Turkey Creek near Fountain, CO	07099215	13.0	1978-89
Little Turkey Creek near Fountain, CO	07099220	9.59	1978-88
Turkey Creek above Teller Reservoir near Stone City, CO	07099230	62.3	1978-88
Turkey Creek near Stone City, CO	07099235	71.5	1978-83, 1987
Arkansas River near Pueblo, CO	07099500	4,686	1885-87, 1889, 1894-1975
Monument Creek at Palmer Lake, CO	07103747	25.9	1977-90
Monument Creek at Monument, CO	07103750	28.5	1976-77
West Monument Creek near Pikeview, CO	07103900	15.4	1957-70
Kettle Creek near Black Forest, CO	07103950	9.01	1976-80
Templeton Gap Floodway at Colorado Springs, CO	07104500	8.73	1951-81
B Ditch Drain near Security, CO	07105780	--	1981-80
Clover Ditch near Widefield, CO	07105820	--	1981-80
Little Fountain Creek above Keaton Reservoir near Fort Carson, CO	07105920	11.0	1978-80
Little Fountain Creek near Fort Carson, CO	07105928	11.8	1978-80
Little Fountain Creek near Fountain, CO	07105940	26.9	1978-80
Rock Creek above Fort Carson Reservation, CO	07105945	6.79	1978-84
Rock Creek near Fountain, CO	07105960	16.9	1978-80
Saint Charles River at San Isabel, CO	07107000	16.0	1936-41
Greenhorn Creek near Rye, CO	07107900	9.56	1974-75
Greenhorn Creek near Colorado City, CO	07108050	29.6	1974-75
Saint Charles River near Pueblo, CO	07108500	467	1941-55, 1955
Saint Charles River near Vineland, CO	07108800	473	1968-74
Saint Charles River at Mouth near Pueblo, CO	07109000	475	1922-25
Sixmile Creek near Avondale, CO	07110000	45.0	1922-24, 1941-46
Chico Creek near North Avondale, CO	07110500	864	1941-46
Huerfano River at Manzanares Crossing near Redwing, CO	07111000	73.0	1923-82
Huerfano River at Malachite, CO	07111500	107	1923-25
Huerfano River near Badito, CO	07112000	499	1941-46
Huerfano River at Badito, CO	07112500	532	1912, 1923-25, 1938-41, 1946-54
Huerfano River at Huerfano, CO	07113000	717	1923-28
Huerfano River near Mustang, CO	07113500	803	1942-47

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

Station name	Station number	Drainage area (sq mi)	Period of record (calendar years)
Cucharas River at Boyd Ranch near La Veta, CO	07114000	56.0	1934-82
Cucharas River near La Veta, CO	07114500	75.0	1923-34
Huerfano River below Huerfano Valley Dam nr Undercliffe, CO	07116000	1,673	1939-67
Arkansas River at Nepesta, CO	07117500	9,460	1898-1902, 1904-06, 1936
Chicosa Creek near Fowler, CO	07117600	109	1968-74
Apishapa River near Aguilar, CO	07118000	126	1939-50
Apishapa River at Aguilar, CO	07118500	149	1938-39, 1978-81
Apishapa River near White Rock, CO	07119000	737	1942-47
Big Arroyo near Thatcher, CO	07120620	15.5	1983-90 a
Timpas Creek near Rocky Ford, CO	07121000	451	1922-27, 1940-50
Fort Lyon Canal near Hasty, CO	07122200	--	1968-75
Crooked Arroyo near La Junta, CO	07122500	--	1922-25
Horse Creek near Sugar City, CO	07123500	1,080	1940-47
Middle Fork Purgatoire River at Stonewall, CO	07124050	57.1	1978-81
Molino Canyon near Weston, CO	07124100	4.23	1978-81
Sarcillo Canyon near Segundo, CO	07124120	35.3	1978-81
Mulligan Canyon near Boncarbo, CO	07124210	4.53	1978-81
Reilly Canyon at Cokedale, CO	07124220	35.1	1978-81
Long Canyon Creek near Madrid, CO	07124300	100	1972-89
Carplos Canyon near Jansen, CO	07124350	4.57	1978-81
Purgatoire River at Trinidad, CO	07124500	795	1895-99, 1905-12, 1915-60, 1961-82
Purgatoire River near Hoehne, CO	07125000	857	1954-68
Frijole Creek near Alfalfa, CO	07125100	80.0	1957-68
San Francisco Creek near Alfalfa, CO	07125500	160	1954-68
Purgatoire River near Alfalfa, CO	07126000	1,320	1905-07, 1924-28, 1951-68
Van Bremer Arroyo near Thatcher, CO	07126130	80.6	1983-85
Burke Arroyo Tributary near Thatcher, CO	07126320	4.66	1983-87
Red Rock Canyon Creek at Mouth, near Thatcher, CO	07126415	48.8	1983-90 a
Bent Canyon Creek at Mouth near Timpas, CO	07126480	56.2	1983-90 a
Purgatoire River at Highland Dam near Las Animas, CO	07128000	3,376	1898, 1931-55
Rule Creek near Caddoa, CO	07129500	435	1941-46
Caddoa Creek at Caddoa, CO	07131000	131	1941-46
Willow Creek near Lamar, CO	07133050	42.0	1974-77
Big Sandy Creek above Amity Canal near Korman, CO	07134000	3,396	1941-46
Big Sandy Creek near Lamar, CO	07134100	3,307	1968-82
Two Butte Creek near Holly, CO	07135000	817	1942-46
Arkansas River at Holly, CO	07135500	25,073	1894, 1901-02, 1907-53
Wild Horse Creek at Holly, CO	07136000	270	1922-35, 1938-50
Holly Drain near Holly, CO	07136500	--	1924-50
Willow Creek at Creede, CO	08216500	51.7	1951-82
Rio Grande at Wason below Creede, CO	08217000	705	1907-54
Goose Creek near Wagonwheel Gap, CO	08218000	53.6	1924-26, 1939-52
Pinos Creek near Del Norte, CO	08220500	53.0	1919-24, 1936-82
San Francisco Creek at upper station near Del Norte, CO	08220900	11.8	1967-69
Rio Grande near Monte Vista, CO	08221500	1,590	1926-80
Rio Grande at Alamosa, CO	08223000	1,710	1912-80
Rock Creek near Monte Vista, CO	08223500	32.9	1935-55, 1966-70
San Luis Creek near Poncha Pass, CO	08224110	6.57	1979-85
San Luis Creek above Villa Grove, CO	08224113	11.2	1979-85
Raspberry Creek near Villa Grove, CO	08224200	1.78	1967-70
Kerber Creek at Ashley Ranch near Villa Grove, CO	08224500	38.0	1923-26, 1936-82
Noland Gulch Tributary Reservoir Inflow, near Villa Grove, CO	08226600	0.08	1979-89
Cotton Creek near Mineral Hot Springs, CO	08226700	13.6	1967-70
Saguache Creek near Saguache, CO	08227000	595	1910-12, 1914-82
Anaconda Reservoir near Villa Grove, CO	08227300	0.17	1979-85
Tracy Pit Reservoir Inflow near Saguache, CO	08227400	.05	1979-89
North Crestone Creek near Crestone, CO	08227500	10.7	1936-82
Cottonwood Creek near Crestone, CO	08229500	6.77	1936, 1967-70
Carnero Creek near La Garita, CO	08230500	117	1919-82
La Garita Creek near La Garita, CO	08231000	61.0	1919-82
Mosca Creek near Mosca, CO	08234200	3.67	1967-70
Alamosa Creek above Terrace Reservoir, CO	08236000	107	1911-12, 1914-27, 1934-82

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

Station name	Station number	Drainage area (sq mi)	Period of record (calendar years)
Alamosa Creek below Terrace Reservoir, CO	08236500	116	1909-55
La Jara Creek at Gallegos Ranch near Capulin, CO	08238000	98.0	1916-17, 1919-23 1936-82
Yellow Warbler Reservoir Inflow near Antonito, CO	08238350	.18	1979-89
Turkey Reservoir Inflow near Conejos, CO	08238380	.24	1979-89
Bobolink Reservoir near Conejos, CO	08238400	.23	1979-89
Trinchera Creek above Turners Ranch near Ft Garland, CO	08240500	45.0	1923-82
Trinchera Creek above Mountain Home Reservoir nr Ft Garland, CO	08241000	61.0	1923-55
Sangre De Cristo Creek near Ft Garland, CO	08241500	190	1916, 1923-30, 1931-82
Ute Creek near Ft Garland, CO	08242500	32.0	1916, 1923-82
Trinchera Creek below Smith Reservoir near Blanca, CO	08243500	396	1928-82
Conejos River at Platoro, CO	08245500	44.4	1936-53
Conejos River at Counsellors Cabin near Mogote, CO	08246000	211	1943-47
San Antonio River at mouth near Manassa, CO	08248500	348	1923-82
Culebra Creek near Chama, CO	08249400	72.4	1967-70
Culebra Creek at San Luis, CO	08250000	220	1927-82
Culebra Creek below San Luis, CO	08250500	255	1938-55
Rio Grande at CO-NM State Line	08252000	--	1953-82

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 1989 water year. Daily records of temperature, specific conductance, pH, dissolved oxygen or sediment were collected and published for the period of record shown for each station.

Discontinued continuous-record surface-water-quality stations

Station name	Station number	Drainage area (sq mi)	Type of record	Period of record (water years)
Canadian River near Lindland, CO	06619400	44.0	Temp., S.C., Sed.	1978-83
Canadian River near Brownlee, CO	06619450	158	Temp., S.C., Sed.	1978-83
South Platte River at Littleton, CO	06710000	3,069	Temp.	1970-86
			S.C.	1984-86
South Platte River at 64th Ave. at Commerce City, CO	06714215	3,884	Temp., pH., D.O.	1987
Ralston Creek near Plainview, CO	06719725	36.9	Temp., S.C., pH., D.O.	1983-84
Schwartzwalder Mine Effluent nr Plainview, CO	06719730	--	Temp., S.C., pH., D.O.	1983-84
Ralston Creek below Schwartzwalder Mine, CO	06719735	38.9	Temp., S.C., pH., D.O.	1983-84
Ralston Creek above Ralston Res. nr Plainview, CO	06719740	42.7	Temp., S.C., pH., D.O.	1983-84
Cache La Poudre River near Greeley, CO	06752500	1,877	Temp., S.C., pH., D.O.	1975
South Platte River near Kersey, CO	06754000	8,598	Temp.	1950-53
Kiowa Creek at Elbert, CO	06758000	28.6	Sed.	1957-68, 1960-62, 1964-65
West Kiowa Creek at Elbert, CO	06758100	35.9	Sed.	1962-65
Kiowa Creek at Kiowa, CO	06758200	111	Sed.	1956-65
South Platte River at Julesburg, CO (Chan. 2)	06763990	--	Temp.	1967-73
			S.C.	1971-73
North Fork Republican River near Wray, CO	06822000	1,019	Temp., Sed.	1962-63
Halfmoon Creek near Malta, CO	07083000	23.6	Temp.	1967-82
Fountain Creek near Pinon, CO	07106300	849	Temp., S.C.	1976-79
Apishapa River at Aguilar, CO	07118500	149	Sed.	1979-81
Apishapa River near Fowler, CO	07119500	1,125	Temp., S.C.	1966-68
Big Arroyo near Thatcher, CO	07120620	15.5	Temp., S.C., Sed.	1983-90 a
Arkansas River near La Junta, CO	07122000	--	Temp., S.C.	1966-68
Middle Fork Purgatoire River at Stonewall, CO	07124050	52.1	Temp., S.C.	1978-81
			Sed.	1979-81
Molino Canyon near Weston, CO	07124100	4.23	Sed.	1979-81
Sarcillo Canyon near Segundo, CO	07124120	35.3	Sed.	1980-81
Purgatoire River at Madrid, CO	07124200	550	Temp., S.C.	1979-81
			Sed.	1978-81
Mulligan Canyon near Boncarbo, CO	07124210	4.53	Sed.	1979-81
Reilly Canyon at Cokedale, CO	07124220	35.1	Sed.	1979-81
Carpio Canyon near Jansen, CO	07124350	100	Sed.	1979-81
Purgatoire River below Trinidad Lake, CO	07124410	672	Sed.	1977-82
Luning Arroyo Tributary near Model, CO	07126110	--	Temp., S.C.	1984
Van Bremer Arroyo near Thatcher, CO	07126130	80.6	Temp., S.C.	1985
Burke Arroyo Tributary near Thatcher, CO	07126320	4.66	Temp., S.C.	1983-86
			Sed.	1984-86
Red Rock Canyon Creek at Mouth, near Thatcher, CO	07126415	41.4	Temp., S.C.	1983-90 a
Bent Canyon Creek at Mouth near Timpas, CO	07126480	56.2	Temp., S.C.	1983-90 a
Purgatoire River at Highland Dam nr Las Animas, CO	07128000	3,376	S.C.	1967-68
Willow Creek at Creede, CO	08216500	35.3	Temp., S.C.	1976-77
Rio Grande at Wagonwheel Gap, CO	08217500	780	Temp., S.C.	1976-77
San Luis Creek near Poncha Pass, CO	08224110	6.57	Sed.	1981-83
San Luis Creek above Villa Grove, CO	08224113	11.2	Sed.	1981-83
Rio Grande above Culebra Creek nr Lobatos, CO	08249200	--	Temp.	1964-66
			S.C.	1946-66

Type of record: Temp. (temperature), S.C. (specific conductance), pH (pH), D.O. (dissolved oxygen), Sed. (sediment).

a Converted to a crest-stage partial-record station.

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting 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) pertains to 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.

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- 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.
- 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.
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- 3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS—TWRI Book 3, Chapter A10. 1984. 59 pages.

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- 3-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS—TWRI Book 3, Chapter A12. 1986. 41 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS—TWRI Book 3, Chapter A13. 1983. 53 pages.
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- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS—TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F. A. Kilpatrick and E. D. Cobb: USGS—TWRI Book 3, Chapter A16. 1985. 52 pages.
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- 3-A19. *Levels of streamflow gaging stations*, by E. J. Kennedy: USGS—TWRI Book 3, Chapter A19. 1990. 27 pages.
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- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS—TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by Richard L. Cooley and Richard L. Naff: USGS—TWRI Book 3, Chapter B4. 1990. 232 pages.
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- 6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M. G. McDonald and A. W. Harbaugh: USGS—TWRI Book 6, Chapter A1. 1988. 586 pages.
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- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Brädehoeft: USGS—TWRI Book 7, Chapter C2. 1978. 90 pages.
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PLATTE RIVER BASIN

06614800 MICHIGAN RIVER NEAR CAMERON PASS, CO

LOCATION.--Lat 40°29'46", long 105°51'52", in S½ sec.12, T.6 N., R.76 W. (unsurveyed), Jackson County, Hydrologic Unit 10180001, on right bank 500 ft upstream from Michigan ditch, 2.2 mi southeast of Cameron Pass, 8 mi east of Gould, and 27 mi southeast of Walden.

DRAINAGE AREA.--1.53 mi².

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 10,390 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 5-12, and Nov. 15 to May 7. Records good above 5.0 ft³/s and fair below, except for estimated daily discharges, which are poor. No diversion upstream from station. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--18 years, 3.05 ft³/s; 2,210 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79 ft³/s, June 22, 1990, gage height, 3.59 ft; minimum daily discharge, 0.08 ft³/s, Nov. 16, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 42 ft³/s at 1700 June 15, gage height, 3.43 ft; minimum daily, 0.15 ft³/s, Jan. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	.89	.39	.19	.21	.31	.40	.32	15	11	2.9	1.2
2	1.2	.88	.38	.19	.22	.32	.40	.33	12	10	3.0	1.2
3	1.0	.95	.37	.18	.22	.32	.40	.35	10	9.6	3.0	1.1
4	1.1	.83	.36	.17	.22	.32	.40	.36	9.9	9.1	3.2	1.1
5	1.0	.73	.35	.17	.22	.32	.41	.39	13	8.6	2.8	1.0
6	.96	.70	.34	.17	.23	.33	.41	.43	15	8.2	2.9	1.0
7	1.1	.68	.34	.17	.24	.34	.41	.50	16	7.9	2.8	1.1
8	1.3	.66	.34	.16	.25	.35	.41	.57	18	8.1	2.5	1.6
9	1.2	.64	.34	.16	.26	.35	.40	.80	20	8.4	2.3	1.6
10	1.2	.60	.34	.16	.26	.35	.39	1.5	21	7.4	2.2	1.3
11	1.1	.58	.33	.16	.26	.35	.38	2.1	23	6.7	2.1	1.3
12	1.1	.57	.32	.16	.26	.35	.36	2.1	24	6.1	2.0	1.3
13	.97	.54	.30	.16	.26	.35	.35	1.5	23	5.9	2.1	1.2
14	.93	.60	.30	.16	.26	.35	.35	2.3	25	5.5	1.9	1.2
15	.98	.70	.30	.16	.26	.35	.35	2.0	29	5.2	1.9	1.5
16	1.0	.62	.29	.16	.27	.36	.35	1.3	22	5.1	1.9	1.5
17	1.2	.60	.28	.16	.28	.37	.34	1.3	19	4.8	1.8	1.3
18	1.2	.58	.27	.16	.28	.38	.32	2.5	19	4.5	1.6	1.2
19	1.1	.56	.26	.16	.29	.38	.31	4.2	20	4.5	2.0	1.0
20	1.1	.54	.25	.16	.30	.38	.30	4.5	19	4.3	2.2	.94
21	1.0	.52	.25	.15	.30	.38	.30	5.0	19	4.3	1.9	.86
22	.99	.50	.25	.16	.30	.38	.30	6.1	19	4.2	1.8	.80
23	.96	.50	.25	.16	.30	.38	.30	6.0	18	4.4	1.7	.73
24	.93	.50	.24	.16	.30	.38	.30	4.9	18	4.5	1.5	.72
25	.94	.50	.23	.16	.30	.38	.30	5.8	16	5.3	1.4	.70
26	.96	.49	.22	.17	.30	.39	.30	7.5	14	4.6	1.4	.66
27	.95	.46	.21	.18	.30	.39	.30	9.4	13	3.9	1.4	.63
28	.95	.44	.20	.19	.30	.39	.30	13	14	3.5	1.5	.63
29	.94	.42	.19	.20	---	.39	.30	14	13	3.3	1.6	.65
30	.93	.40	.19	.20	---	.39	.30	13	12	3.1	1.4	.77
31	.92	---	.19	.20	---	.39	---	13	---	2.9	1.3	---
TOTAL	32.51	18.18	8.87	5.25	7.45	11.17	10.44	127.05	528.9	184.9	64.0	31.79
MEAN	1.05	.61	.29	.17	.27	.36	.35	4.10	17.6	5.96	2.06	1.06
MAX	1.3	.95	.39	.20	.30	.39	.41	14	29	11	3.2	1.6
MIN	.92	.40	.19	.15	.21	.31	.30	.32	9.9	2.9	1.3	.63
AC-FT	64	36	18	10	15	22	21	252	1050	367	127	63

CAL YR 1990 TOTAL 1339.78 MEAN 3.67 MAX 45 MIN .19 AC-FT 2660
WTR YR 1991 TOTAL 1030.51 MEAN 2.82 MAX 29 MIN .15 AC-FT 2040

06620000 NORTH PLATTE RIVER NEAR NORTHGATE, CO

LOCATION.--Lat 40°56'15", long 106°20'16", in NE¼SW¼SE¼ sec.11, T.11 N., R.80 W., Jackson County, Hydrologic Unit 10180001, on right bank 350 ft downstream from bridge on State Highway 125, 0.8 mi upstream from Camp Creek, 4.2 mi northwest of Northgate, and 4.4 mi south of Colorado-Wyoming State line.

DRAINAGE AREA.--1,431 mi².

PERIOD OF RECORD.--May to November 1904 (published as "near Pinkhampton"), May 1915 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1916-21, 1929(M), 1930-32. WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,810.39 ft above National Geodetic Vertical Datum of 1929. See WSP 1730 for history of changes prior to Apr. 8, 1918. Apr. 8, 1918, to Aug. 21, 1961, water-stage recorder, at site 0.8 mi downstream at datum 3.36 ft, lower. Aug. 22, 1961, to Sept. 18, 1984, at site 650 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 4 to Apr. 12. Records good except for estimated daily discharges, which are poor. Diversions for irrigation of about 130,000 acres of hay meadows upstream from station. Transbasin diversions upstream from station to Cache la Poudre River basin.

AVERAGE DISCHARGE.--76 years, 436 ft³/s; 316,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,720 ft³/s, June 11, 1923, gage height, 6.24 ft, site and datum then in use; maximum gage height recorded, 9.65 ft, Apr. 25, 1980, (ice jam); minimum daily discharge, 19 ft³/s, July 17-19, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,310 ft³/s, June 4, gage height, 4.99 ft; minimum daily, 47 ft³/s, Dec. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	131	86	70	58	95	140	222	908	437	203	82
2	68	126	81	73	58	100	155	203	1460	411	198	79
3	67	122	75	68	59	105	170	195	2130	361	212	83
4	65	100	76	68	60	110	190	211	2220	350	244	81
5	57	90	78	69	62	115	185	240	2030	340	284	75
6	57	85	70	68	66	123	220	225	1950	318	247	65
7	74	80	72	66	64	110	370	220	1860	299	214	66
8	106	96	73	66	65	102	340	232	1720	285	208	67
9	126	109	76	66	69	100	310	305	1700	342	200	86
10	120	120	81	63	71	105	290	417	1650	380	186	112
11	119	127	84	64	72	110	280	498	1510	412	174	103
12	128	133	82	65	74	115	270	552	1380	373	159	99
13	128	136	79	66	76	110	263	568	1360	313	162	93
14	124	140	72	70	78	110	257	432	1540	286	167	89
15	125	144	64	66	80	110	247	326	1760	255	153	96
16	123	148	60	64	84	120	280	451	1770	254	150	120
17	121	153	63	62	82	120	330	614	1600	279	161	120
18	130	157	68	60	79	125	388	568	1330	314	158	122
19	137	160	66	58	74	140	383	555	1150	309	140	101
20	159	160	62	55	70	130	326	728	1030	348	138	85
21	186	137	54	52	74	130	310	915	923	338	160	81
22	167	85	47	52	79	130	314	1120	811	315	167	75
23	154	105	55	54	83	130	302	1350	704	378	142	71
24	154	118	60	54	80	130	334	1420	642	402	126	67
25	151	127	62	57	78	135	372	1370	564	559	115	65
26	146	118	64	56	84	140	403	1280	466	549	105	65
27	142	95	69	56	88	140	367	1310	403	464	99	65
28	136	80	68	58	92	130	295	1230	370	379	97	64
29	133	82	68	58	---	130	253	1140	340	306	95	61
30	132	85	68	58	---	135	232	1030	382	262	90	59
31	129	---	68	58	---	130	---	964	---	230	86	---
TOTAL	3732	3549	2151	1920	2059	3715	8576	20891	37663	10848	5040	2497
MEAN	120	118	69.4	61.9	73.5	120	286	674	1255	350	163	83.2
MAX	186	160	86	73	92	140	403	1420	2220	559	284	122
MIN	57	80	47	52	58	95	140	195	340	230	86	59
AC-FT	7400	7040	4270	3810	4080	7370	17010	41440	74700	21520	10000	4950

CAL YR 1990 TOTAL 86926 MEAN 238 MAX 2220 MIN 47 AC-FT 172400
WTR YR 1991 TOTAL 102641 MEAN 281 MAX 2220 MIN 47 AC-FT 203600

LOCATION.--Lat 38°58'03", long 105°34'51", in NE¼ sec.32, T.12 S., R.73 W., Park County, Hydrologic Unit 10190001, on left bank 200 ft downstream from highway bridge, 2.5 mi upstream from water line of Elevenmile Canyon Reservoir, at elevation 8,561 ft, and 13 mi southeast of Hartsel.

PERIOD OF RECORD.--June 1933 to current year (no winter records prior to 1940). Monthly discharge only for some periods, published in WSP 1310.

GAGE---Water-stage recorder with satellite telemetry, and Parshall flume. Datum of gage is 8,612.83 ft. Denver Board of Water Commissioners Datum. Prior to May 27, 1939, water-stage recorder near present site at different datum. May 27, 1939, to Nov. 4, 1961, at datum 0.46 ft. lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Antero Reservoir, capacity, 22,300 acre-ft, prior to Sept. 15 1981, and by Spinney Mountain Reservoir, 3.6 mi upstream, capacity, 152,900 acre-ft, since Sept. 15 1981. Many small diversions upstream from station for irrigation of about 24,000 acres.

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

AVERAGE DISCHARGE.--42 years, (water years 1940-81), 77.3 ft³/s; 56,000 acre-ft/yr, prior to completion of Spinney Mountain Dam; 10 years, (water years 1982-91), 112 ft³/s; 81,140 acre-ft/yr, subsequent to completion of Spinney Mountain Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum instantaneous discharge, not determined, occurred Apr. 28, 1970, gage height, 7.60 ft, from floodmarks; maximum daily discharge, 3,970 ft³/s, Apr. 27, 1970; minimum daily, 0.20 ft³/s, Oct. 25, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 234 ft³/s at 1700 July 23, gage height, 1.80 ft; minimum daily, 28 ft³/s, June 4, 5, 11.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142	65	73	65	48	37	77	36	38	116	151	142
2	142	68	73	65	48	38	78	36	39	184	152	144
3	142	75	72	65	47	38	78	36	33	184	133	140
4	141	71	73	65	47	38	78	36	28	184	126	140
5	141	66	66	64	44	38	78	37	28	176	169	141
6	128	66	67	64	37	38	78	38	30	167	175	133
7	120	66	75	65	37	37	78	38	29	168	99	120
8	101	71	67	64	36	38	115	38	29	177	57	114
9	48	75	66	64	36	38	143	38	29	186	57	115
10	46	75	65	65	37	38	143	38	29	170	58	115
11	57	75	65	65	37	38	143	38	28	157	58	115
12	90	75	65	66	37	38	120	38	29	157	58	118
13	90	75	65	65	38	38	107	38	39	157	71	116
14	85	75	64	65	36	38	107	39	58	157	106	128
15	81	76	68	65	36	38	107	39	38	155	152	136
16	80	76	66	65	36	38	74	43	38	155	167	131
17	79	76	65	60	36	38	39	50	38	155	160	131
18	80	76	66	49	38	38	38	50	38	141	157	119
19	80	94	65	50	37	41	43	50	38	130	185	111
20	89	101	65	50	36	48	52	44	37	124	167	111
21	95	95	66	49	36	48	53	39	38	116	149	121
22	95	100	66	50	37	48	53	38	38	115	159	125
23	99	96	67	50	37	47	66	39	37	168	155	124
24	102	95	68	50	37	46	75	47	37	210	151	124
25	102	93	68	49	38	47	74	45	37	153	153	103
26	102	80	67	49	37	47	74	40	37	46	179	50
27	99	65	67	48	37	47	74	40	36	47	196	68
28	93	69	63	49	38	64	73	40	59	47	185	112
29	92	71	62	48	---	77	53	39	76	47	176	112
30	91	73	66	50	---	77	36	36	75	72	168	112
31	76	---	64	50	---	77	---	37	---	135	141	---
TOTAL	3008	2334	2075	1788	1081	1396	2407	1240	1163	4356	4270	3571
MEAN	97.0	77.8	66.9	57.7	38.6	45.0	80.2	40.0	38.8	141	138	119
MAX	142	101	75	66	48	77	143	50	76	210	196	144
MIN	46	65	62	48	36	37	36	36	28	46	57	50
AC-FT	5970	4630	4120	3550	2140	2770	4770	2460	2310	8640	8470	7080
CAL YR 1990	TOTAL	42496	MEAN 116	MAX 345	MIN 31	AC-FT	84290					
WTR YR 1991	TOTAL	28689	MEAN 78.6	MAX 210	MIN 28	AC-FT	56900					

06696000 SOUTH PLATTE RIVER NEAR LAKE GEORGE, CO

LOCATION.--Lat 38°54'19", long 105°28'22", in SW¼ sec.20, T.13 S., R.72 W., Park County, Hydrologic Unit 10190001, on left bank 700 ft downstream from Elevenmile Canyon Reservoir and 8.2 mi southwest of town of Lake George.

DRAINAGE AREA.--963 mi².

PERIOD OF RECORD.--October 1929 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 8,458 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 26, 1940, at site 1 mi downstream at datum 8,423.95 ft, National Geodetic Vertical Datum, adjustment of 1912.

REMARKS.--Estimated daily discharges: Apr. 30, and May 1. Records good. Natural flow of stream affected by transmountain diversions through East and West Hoosier ditches at Hoosier Pass prior to 1941, storage in Elevenmile Canyon Reservoir (see elsewhere in this report) and Antero Reservoir, capacity, 22,300 acre-ft, 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.--62 years, 78.9 ft³/s; 57,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 3,000 ft³/s, Apr. 28, 1970, gage height, 8.34 ft, from floodmarks, by computation of outflow from Elevenmile Canyon Reservoir; no flow at times in January 1930, February 1931, and November 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 186 ft³/s at 1400 July 24, gage height, 2.03 ft; minimum daily, 18 ft³/s, June 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	72	74	62	30	38	59	64	38	28	105	153
2	139	60	73	63	33	38	64	58	39	40	109	151
3	140	60	71	64	33	37	67	57	40	59	113	148
4	135	61	70	68	33	36	69	53	35	76	122	142
5	133	70	61	76	34	37	71	53	31	89	123	139
6	130	78	57	75	35	39	72	50	36	98	138	136
7	111	82	61	69	35	40	72	48	40	106	151	134
8	105	76	67	66	35	39	75	47	37	123	135	127
9	103	74	71	67	35	39	83	45	36	139	127	115
10	83	66	72	67	36	39	91	41	33	144	122	113
11	54	56	69	66	36	39	97	39	33	144	111	111
12	47	53	69	68	36	39	101	38	31	145	100	109
13	52	55	68	67	36	38	102	35	32	143	94	109
14	53	56	69	65	35	38	103	33	32	144	92	109
15	53	64	67	65	35	38	100	33	32	143	95	105
16	55	68	67	66	35	37	98	38	31	143	103	103
17	56	68	68	66	36	37	90	40	30	143	109	100
18	56	75	69	65	36	37	82	39	29	142	122	98
19	57	78	68	56	36	37	74	40	28	142	147	98
20	61	87	66	49	36	39	70	46	28	142	151	97
21	70	91	67	52	36	42	69	48	26	138	148	97
22	96	91	67	52	36	43	64	46	24	139	145	94
23	138	87	65	37	35	41	66	44	25	148	145	95
24	118	87	65	29	36	42	69	56	25	164	144	94
25	107	87	62	30	37	43	74	56	26	176	145	95
26	103	87	61	32	37	42	80	53	22	164	152	87
27	70	88	61	30	38	43	73	50	18	143	158	80
28	77	86	61	30	39	43	74	47	18	127	162	80
29	85	80	61	31	---	49	73	44	21	112	167	81
30	85	74	62	32	---	55	68	41	26	103	165	85
31	84	---	62	32	---	58	---	38	---	100	160	---
TOTAL	2774	2217	2051	1697	990	1262	2350	1420	902	3847	4060	3285
MEAN	89.5	73.9	66.2	54.7	35.4	40.7	78.3	45.8	30.1	124	131	109
MAX	140	91	74	76	39	58	103	64	40	176	167	153
MIN	47	53	57	29	30	36	59	33	18	28	92	80
AC-FT	5500	4400	4070	3370	1960	2500	4660	2820	1790	7630	8050	6520

CAL YR 1990 TOTAL 42496 MEAN 116 MAX 435 MIN 29 AC-FT 84290
WTR YR 1991 TOTAL 26855 MEAN 73.6 MAX 176 MIN 18 AC-FT 53270

06699005 TARRYALL CREEK BELOW ROCK CREEK, NEAR JEFFERSON, CO

LOCATION.--Lat 39°27'13", long 105°41'43", in NW¼NW¼ sec.8, T.9 S., R.74 W., Park County, Hydrologic Unit 10190001, on left bank 1,800 ft downstream from Rock Creek, 1.0 mi northwest of Bordenville and 9 mi southeast of Jefferson.

DRAINAGE AREA.--230 mi².

PERIOD OF RECORD.--April 1983 to current year.

REVISED RECORDS.--WDR CO-86-1: Drainage area. WDR CO-87-1: 1986 (M).

GAGE.--Water-stage recorder. Elevation of gage is 9,020 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 9-23, Nov. 1 to Apr. 30, and May 12-14. Records good except for estimated daily discharges, which are poor. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 49.0 ft³/s; 35,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 654 ft³/s, Apr. 19, 1987, gage height, 7.00 ft, from floodmarks; minimum daily, 3.0 ft³/s, Jan. 3-29, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 6	1415	*278	*4.30	No other peak greater than base discharge.			

Minimum daily, 4.8 ft³/s, Feb. 7-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	22	14	5.0	5.0	6.2	14	19	86	85	53	38
2	29	21	12	5.0	5.0	6.6	15	28	136	78	56	41
3	29	21	11	5.0	5.0	7.2	16	27	122	75	85	39
4	27	21	10	5.0	5.0	7.7	17	28	91	65	158	34
5	24	20	9.5	5.0	5.0	8.4	18	24	89	60	104	30
6	24	20	9.0	5.0	4.9	9.0	19	24	197	56	75	31
7	26	19	8.8	5.0	4.8	9.0	20	27	205	59	69	36
8	31	18	8.4	5.0	4.8	9.0	21	30	149	70	60	36
9	33	18	8.0	5.0	4.8	9.0	22	38	141	80	62	35
10	30	18	7.6	5.0	4.8	9.0	20	47	141	102	71	33
11	27	19	7.4	5.0	5.0	9.3	18	52	159	80	67	37
12	30	22	7.0	5.0	5.0	9.8	17	50	176	76	60	37
13	32	23	6.8	5.0	5.0	10	16	46	166	75	72	41
14	34	24	6.6	5.0	5.0	11	15	44	191	62	62	39
15	36	25	6.4	5.0	5.0	11	13	42	178	47	52	33
16	38	25	6.2	5.0	5.0	11	14	39	174	43	48	31
17	39	25	6.1	5.0	5.0	11	15	48	168	43	47	30
18	40	26	5.9	5.0	5.0	11	16	43	139	44	49	29
19	39	25	5.8	5.0	5.0	11	17	52	129	54	51	28
20	37	24	5.6	5.0	5.0	11	18	47	116	59	51	27
21	36	20	5.5	5.0	5.0	11	19	52	109	58	47	28
22	33	19	5.2	5.0	5.4	11	20	62	105	87	43	27
23	31	19	5.1	5.0	5.7	11	22	67	101	97	40	25
24	31	18	5.0	5.0	6.0	11	23	87	92	87	43	25
25	27	18	5.0	5.0	6.0	11	24	80	79	87	41	24
26	26	17	5.0	5.0	6.0	12	25	74	64	93	41	23
27	25	16	5.0	5.0	6.0	13	23	70	57	74	42	22
28	24	16	5.0	5.0	6.0	14	21	73	58	59	44	23
29	24	16	5.0	5.0	---	14	20	72	88	52	45	23
30	23	15	5.0	5.0	---	14	18	70	102	49	40	26
31	22	---	5.0	5.0	---	14	---	75	---	51	38	---
TOTAL	939	610	217.9	155.0	145.2	323.2	556	1537	3808	2107	1816	931
MEAN	30.3	20.3	7.03	5.00	5.19	10.4	18.5	49.6	127	68.0	58.6	31.0
MAX	40	26	14	5.0	6.0	14	25	87	205	102	158	41
MIN	22	15	5.0	5.0	4.8	6.2	13	19	57	43	38	22
AC-FT	1860	1210	432	307	288	641	1100	3050	7550	4180	3600	1850

CAL YR 1990 TOTAL 13151.2 MEAN 36.0 MAX 275 MIN 5.0 AC-FT 26090
WTR YR 1991 TOTAL 13145.3 MEAN 36.0 MAX 205 MIN 4.8 AC-FT 26070

RESERVOIRS IN SOUTH PLATTE RIVER BASIN

06695500 ELEVENMILE CANYON RESERVOIR.--Lat 38°54'19", long 105°28'30", in N½SW¼ sec.20, T.13 S., R.72 W., Park County, Hydrologic Unit 10190001, at north end of dam on South Platte River, 8 mi southwest of Lake George. DRAINAGE AREA, 963 mi². PERIOD OF RECORD, October 1932 to current year. Prior to September 1938, published in WSP 1310. REVISED RECORDS, WSP 1730: Drainage area. GAGE, nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Denver Board of Water Commissioners); gage readings have been reduced to elevations above National Geodetic Vertical Datum of 1929.

Reservoir is formed by concrete arch dam; storage began in October 1932; dam completed in November 1932. Spillway built 5.00 ft. higher, Aug. 1, 1957. Capacity, 97,780 acre-ft, between elevations 8,488.25 ft, invert of outlet pipe, and 8,597.00 ft, crest of spillway. Dead storage is negligible. Figures given represent total contents. Water is for municipal use by city of Denver. Records provided by Denver Board of Water Commissioners.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 111,200 acre-ft, Apr. 28, 1970, elevation, 8,600.82 ft; no contents at times in 1935.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 100,800 acre-ft, July 24, 25, elevation, 8,597.88 ft; minimum observed, 98,460 acre-ft, Oct. 10-18, elevation, 8,597.20 ft.

06701000 CHEESMAN LAKE.--Lat 39°12'26", long 105°16'18", in NW¼SW¼ sec.6, T.10 S., R.70 W., Douglas County, Hydrologic Unit 10190002, at dam on South Platte River, 4.1 mi southwest of Deckers. DRAINAGE AREA, 1,752 mi². PERIOD OF RECORD, September 1900 to December 1901, September 1902 to current year. Prior to October 1938, published in WSP 1310. Published as Lake Cheesman prior to 1947. REVISED RECORDS, WSP 1730: Drainage area. GAGE, nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Denver Board of Water Commissioners).

Reservoir is formed by masonry dam. Storage began September 1900. Dam completed about October 1902. Capacity, 79,060 acre-ft at gage height 212 ft, spillway crest, above sill of lowest gate. No dead storage. Figures given represent total contents. Water is for municipal use by city of Denver. Records provided by Denver Board of Water Commissioners.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 81,360 acre-ft, Apr. 29, 1970, gage height, 214.60 ft; minimum observed since appreciable storage was attained, 3,650 acre-ft, Apr. 20, 1933, gage height, 55.02 ft.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 79,690 acre-ft, Aug. 9, gage height, 212.70 ft; minimum observed, 54,140 acre-ft, May 16, gage height, 180.15 ft.

MONTHEND ELEVATION IN FEET AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation a(feet)	Contents (acre-feet)	Change in contents (acre-feet)	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
	06695500	ELEVENMILE CANYON RESERVOIR			06701000	CHEESMAN LAKE
Sept. 30.....	8,597.33	98,900	-	189.48	60,860	-
Oct. 31.....	8,597.26	98,660	-240	189.30	60,720	-140
Nov. 30.....	8,597.26	98,660	0	190.41	61,550	+830
Dec. 31.....	8,597.25	98,630	-30	187.42	59,330	-2,220
CAL YR 1990....	-	-	-1,670	-	-	-10,090
Jan. 31.....	8,597.33	98,900	+270	182.63	55,880	-3,450
Feb. 28.....	8,597.39	99,110	+210	181.55	55,120	-760
Mar. 31.....	8,597.50	99,490	+380	180.83	54,620	-500
Apr. 30.....	8,597.49	99,450	-40	184.09	56,920	+2,300
May 31.....	8,597.37	99,040	-410	185.36	57,830	+910
June 30.....	8,597.28	98,730	-310	203.04	71,470	+13,640
July 31.....	8,597.62	99,900	+1,170	212.37	79,390	+7,920
Aug. 31.....	8,597.84	100,700	+800	208.93	76,410	-2,980
Sept. 30.....	8,597.61	99,860	-840	191.75	62,560	-13,850
WTR YR 1991....	-	-	+960	-	-	+1,700

a National Geodetic Vertical Datum of 1929.

06701500 SOUTH PLATTE RIVER BELOW CHEESMAN LAKE, CO

LOCATION.--Lat 39°12'33", long 105°16'02", in SE¼NW¼ sec.6, T.10 S., R.70 W., Jefferson County, Hydrologic Unit 10190002, on left bank 1,400 ft downstream from toe of Cheesman Dam and 3.8 mi southwest of Deckers.

DRAINAGE AREA.--1,752 mi².

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1949. WSP 1730: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry, and Parshall flume. Datum of gage is 6,609.29 ft above National Geodetic Vertical Datum of 1929. Prior to May 14, 1956, at site 370 ft upstream at datum 0.50 ft, higher.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by minor transmountain diversion from Colorado River basin through Boreas Pass ditch, Elevenmile Canyon Reservoir and Cheesman Lake (see elsewhere in this report), diversions for irrigation of about 40,000 acres, and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--67 years, 170 ft³/s; 123,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,640 ft³/s, Apr. 29, 1970, gage height, 13.4 ft, from floodmarks, by computation of outflow from Cheesman Lake; minimum daily determined, 1.6 ft³/s, Apr. 8-14, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 632 ft³/s at 1530 Sept. 11, gage height, 2.98 ft; minimum daily, 28 ft³/s, Feb. 15-18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	253	311	73	117	106	94	50	194	41	42	214	405
2	287	173	73	117	106	97	49	172	41	42	224	404
3	313	77	89	136	106	97	48	212	41	42	261	422
4	313	146	96	149	79	98	48	238	41	42	336	435
5	313	129	96	149	54	86	91	238	42	41	390	469
6	313	43	95	149	54	67	146	226	42	40	415	516
7	313	44	94	149	54	58	146	193	42	40	436	513
8	286	44	94	149	65	58	111	187	43	41	387	512
9	225	67	94	149	73	58	81	209	44	41	347	512
10	115	157	94	149	73	58	80	195	45	41	344	512
11	48	183	94	142	73	58	81	147	46	41	361	562
12	48	183	94	136	73	69	81	147	47	41	345	630
13	48	183	94	136	65	76	81	161	48	41	312	610
14	47	165	94	119	45	76	81	313	48	41	322	541
15	69	155	94	106	28	67	81	415	48	58	360	528
16	139	147	94	106	28	62	81	298	48	126	362	559
17	160	133	94	106	28	62	81	169	48	147	344	578
18	160	134	94	106	28	62	81	151	48	147	342	529
19	131	117	94	106	30	83	82	151	48	148	343	438
20	113	106	116	106	30	99	82	121	48	148	341	391
21	113	88	130	106	188	99	82	84	48	149	340	418
22	91	52	131	106	51	99	103	56	47	113	329	417
23	57	52	132	121	50	99	161	91	47	53	379	379
24	45	52	132	133	50	99	194	101	47	45	452	250
25	63	53	132	133	57	110	194	102	47	230	472	200
26	109	54	150	133	84	133	194	103	80	363	442	203
27	129	54	176	132	87	123	193	66	117	362	411	185
28	130	54	215	117	87	91	192	41	75	321	411	137
29	185	64	214	106	---	74	229	41	42	283	408	128
30	216	73	214	106	---	52	244	41	42	252	408	130
31	293	---	170	106	---	50	---	41	---	228	407	---
TOTAL	5125	3293	3656	3881	1852	2514	3448	4904	1491	3749	11245	12513
MEAN	165	110	118	125	66.1	81.1	115	158	49.7	121	363	417
MAX	313	311	215	149	188	133	244	415	117	363	472	630
MIN	45	43	73	106	28	50	48	41	41	40	214	128
AC-FT	10170	6530	7250	7700	3670	4990	6840	9730	2960	7440	22300	24820

CAL YR 1990 TOTAL 77930 MEAN 214 MAX 646 MIN 42 AC-FT 154600
WTR YR 1991 TOTAL 57671 MEAN 158 MAX 630 MIN 28 AC-FT 114400

06706000 NORTH FORK SOUTH PLATTE RIVER BELOW GENEVA CREEK, AT GRANT, CO

LOCATION.--Lat 39°27'26", long 105°39'29", in NW¼ sec.10, T.7 S., R.74 W., Park County, Hydrologic Unit 10190002, on left bank at Grant, 1,550 ft downstream from Geneva Creek, and 1.3 mi downstream from east portal of Harold D. Roberts tunnel.

DRAINAGE AREA.--127 mi².

PERIOD OF RECORD.--July 1908 to November 1913 (published as "at Cassells"), June 1942 to current year. Monthly discharge only for some periods, published in WSP 1310. December 1913 to March 1918, equivalent records may be obtained by summation of flow of North Fork South Platte River at Grant (above Geneva Creek) and Geneva Creek at Grant.

REVISED RECORDS.--WSP 956: Drainage area at site at Cassells. WSP 1116: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry, and concrete control. Datum of gage is 8,560.81 ft above National Geodetic Vertical Datum of 1929, adjustment of 1960. See WSP 1710 or 1730 for history of changes prior to July 23, 1948. July 23, 1948, to Nov. 15, 1968, water-stage recorder at site 50 ft downstream at datum 3.49 ft, lower.

REMARKS.--Estimated daily discharges: Oct. 18, 20, 21, and Nov. 3, 4. Records good. Small diversions upstream from station for irrigation of about 200 acres. Diversions from Colorado River basin to North Fork South Platte River upstream from station through Harold D. Roberts tunnel (see elsewhere in this report).

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

AVERAGE DISCHARGE.--54 years (water years 1909-13, 1943-91), 72.0 ft³/s; 52,160 acre-ft/yr, adjusted for inflow from Harold D. Roberts tunnel since 1964.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 990 ft³/s, June 7, 8, 1912, gage height, 3.30 ft, site and datum then in use, from rating curve extended above 530 ft³/s; maximum gage height, 4.72 ft, site and datum then in use, Feb. 11, 1952 (backwater from ice); minimum daily discharge, 6.5 ft³/s, Nov. 27, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 637 ft³/s at 0100 June 30, gage height, 1.89 ft; minimum daily, 25 ft³/s, Apr. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	36	154	121	121	103	108	28	428	549	294	49
2	54	34	150	121	119	103	110	31	447	540	294	48
3	52	29	131	118	118	102	110	30	436	583	309	45
4	48	38	126	118	118	103	112	32	455	589	316	45
5	46	43	128	118	117	102	123	30	467	590	276	45
6	46	46	124	120	119	103	129	34	548	596	270	45
7	50	54	125	121	120	102	125	37	400	603	279	49
8	52	60	128	121	119	102	117	53	270	603	193	51
9	46	61	129	121	118	104	110	82	269	570	96	46
10	48	64	128	118	118	106	112	121	270	525	91	50
11	47	64	127	116	118	106	112	150	278	490	90	52
12	43	62	127	118	118	106	112	124	297	492	93	56
13	43	62	127	118	118	105	112	101	291	494	101	55
14	42	63	127	118	118	106	114	117	299	480	84	50
15	42	67	127	118	114	106	114	101	299	450	74	48
16	41	75	127	118	103	105	118	70	296	410	98	46
17	41	89	127	118	103	104	127	79	267	401	164	45
18	42	88	127	118	103	108	128	164	248	399	167	44
19	44	85	127	118	103	108	122	208	300	398	176	43
20	42	86	126	118	103	106	125	197	473	389	125	43
21	41	115	123	117	103	104	126	188	458	387	64	43
22	47	141	127	115	103	104	122	189	476	380	59	41
23	43	143	125	115	106	105	71	195	459	364	59	53
24	41	144	124	115	106	105	33	168	451	375	60	176
25	40	142	124	115	104	98	36	164	538	365	62	276
26	40	141	122	115	105	94	32	232	591	376	68	276
27	39	139	122	116	105	105	29	272	592	357	68	272
28	39	134	121	118	103	105	32	268	597	322	73	270
29	37	147	122	118	---	104	26	295	603	291	64	271
30	37	156	121	117	---	104	25	364	613	290	53	281
31	36	---	121	119	---	105	---	355	---	288	49	---
TOTAL	1363	2608	3944	3655	3123	3223	2872	4479	12416	13946	4269	2914
MEAN	44.0	86.9	127	118	112	104	95.7	144	414	450	138	97.1
MAX	54	156	154	121	121	108	129	364	613	603	316	281
MIN	36	29	121	115	103	94	25	28	248	288	49	41
AC-FT	2700	5170	7820	7250	6190	6390	5700	8880	24630	27660	8470	5780

CAL YR 1990 TOTAL 49719 MEAN 136 MAX 672 MIN 10 AC-FT 98620
WTR YR 1991 TOTAL 58812 MEAN 161 MAX 613 MIN 25 AC-FT 116700

LOCATION.--Lat 39°26'18", long 104°58'57", in NE¼SE¼ sec.15, T.7 S., R.68 W., Douglas County, Hydrologic Unit 10190002, on south side of county road no. 20 bridge, over Plum Creek, 1.0 mi west of Sedalia, and 1.4 mi downstream of the confluence of East and West Plum Creeks.

PERIOD OF RECORD.--June 1942 to September 1947. August 1990 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,720 ft above National Geodetic Vertical Datum of 1929, from topographic map. Aug. 1942 to Sept. 1947, water-stage recorder at site 150 ft upstream at different datum. Prior to Aug. 1942, non-recording gage at bridge.

REMARKS.--Estimated daily discharges: Water year 1990; Aug. 1, 2, Aug. 27 to Sept. 6, Sept. 8-19, and 24. Water year 1991; Dec. 20 to Feb. 19, July 30 to Aug. 1, Sept. 9, 16-18, and 23. Records poor. Diversions upstream from station for irrigation. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

COOPERATION.--U.S. Army Corps of Engineers.

AVERAGE DISCHARGE.--6 years (1943-47, 1991), 29.3 ft³/s; 21,230 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,700 ft³/s, Aug. 8, 1945, gage height, 6.52 ft, site and datum then in use, from rating curve extended above 350 ft³/s on basis of slope-area determination of peak flow; no flow at times during 1943, 1944 and 1946.

EXTREMES FOR PERIOD AUGUST TO SEPTEMBER 1990.--Maximum discharge, not determined; minimum daily, 1.0 ft³/s, Sept. 20.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 110 ft³/s, at 1745 Aug. 4, gage height, 4.60 ft; minimum daily, 1.0 ft³/s, several days.

[illegible]

PLATTE RIVER BASIN

06709000 PLUM CREEK NEAR SEDALIA, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	3.6	13	6.2	5.0	7.8	14	33	37	9.8	1.0	3.7
2	9.3	5.8	19	5.4	6.8	6.8	16	27	39	8.6	1.5	2.9
3	20	9.7	13	5.0	6.2	3.5	18	23	37	7.9	16	2.2
4	12	9.0	16	5.6	5.6	6.2	15	23	36	8.9	36	1.5
5	9.5	11	16	5.2	5.8	7.3	15	36	31	10	31	1.2
6	8.7	17	13	5.0	5.8	10	16	38	35	8.4	22	1.2
7	7.7	17	10	5.4	5.9	10	18	37	46	5.6	18	1.6
8	11	21	16	4.9	6.0	10	32	39	57	3.3	25	1.4
9	9.2	21	14	5.0	6.0	10	30	40	58	4.0	27	1.0
10	7.1	25	12	5.2	5.8	8.2	36	47	57	4.6	29	1.5
11	9.9	19	9.1	4.9	6.0	7.3	31	48	58	6.9	27	1.7
12	11	15	12	4.8	6.2	11	37	46	62	6.5	23	1.8
13	11	11	10	5.4	6.0	11	31	43	55	6.2	30	2.2
14	11	10	6.7	6.4	6.2	9.5	25	40	55	6.3	29	1.7
15	7.4	7.9	3.2	5.4	5.6	8.4	29	42	56	4.4	26	1.3
16	6.2	6.3	3.6	6.0	6.0	6.7	27	48	53	2.6	27	1.0
17	5.7	11	5.8	4.8	5.6	5.8	26	49	50	1.7	27	1.0
18	3.4	8.6	2.2	4.6	5.0	8.0	24	42	52	1.2	30	1.0
19	1.8	6.9	2.1	5.2	5.4	8.2	25	47	47	2.8	25	1.7
20	5.0	5.5	2.0	3.9	5.6	7.8	20	42	39	3.1	25	1.7
21	4.6	12	1.9	3.9	11	8.0	18	42	42	2.3	22	1.2
22	5.9	12	2.2	4.7	7.9	11	19	32	40	5.8	19	1.2
23	6.8	13	2.8	4.7	5.8	11	22	33	37	13	16	1.0
24	7.7	18	3.2	4.3	4.7	12	23	38	34	6.6	13	1.5
25	9.6	16	3.6	3.9	7.1	13	18	40	24	12	9.9	1.8
26	8.9	12	4.4	3.7	11	11	27	40	18	13	7.7	2.0
27	6.2	9.6	4.2	3.5	9.5	16	29	39	16	11	6.1	2.2
28	6.0	5.8	4.3	3.8	8.5	18	22	36	14	4.7	7.9	2.2
29	6.2	5.6	3.0	4.1	---	15	26	40	13	1.6	12	1.2
30	3.9	12	3.9	3.5	---	12	30	30	12	1.0	7.1	1.6
31	3.0	---	4.2	3.8	---	17	---	25	---	1.0	4.9	---
TOTAL	238.8	357.3	236.4	148.2	182.0	307.5	719	1185	1210	184.8	601.1	49.2
MEAN	7.70	11.9	7.63	4.78	6.50	9.92	24.0	38.2	40.3	5.96	19.4	1.64
MAX	20	25	19	6.4	11	18	37	49	62	13	36	3.7
MIN	1.8	3.6	1.9	3.5	4.7	3.5	14	23	12	1.0	1.0	1.0
AC-FT	474	709	469	294	361	610	1430	2350	2400	367	1190	98

WTR YR 1991 TOTAL 5419.3 MEAN 14.8 MAX 62 MIN 1.0 AC-FT 10750

06709530 PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO

LOCATION.--Lat 39°30'27", long 105°01'26", on line between sec.20 and sec.29, T.6 S., R.68 W., Douglas County, Hydrologic Unit 10190002, on upstream side of bridge on Titan Road, 2.4 mi north of Louviers.

DRAINAGE AREA.--315 mi².

PERIOD OF RECORD.--May 1, 1984 to current year.

REVISED RECORDS.--WDR CO-86-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,520 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 3, 6-8, 27-29, Dec. 2 to Mar. 2, Mar. 7-9, 14, 18, 30, and Aug. 27 to Sept. 23. Records poor. Diversions upstream from station for irrigation. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--7 years, 34.5 ft³/s; 25,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 2,300 ft³/s, May 15, 1984, gage height, 7.00 ft; maximum gage-height, 7.52 ft, Dec. 25, 1985 (backwater from ice); no flow many days, most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage Height (ft)
June 1	1700	*525	*8.23	No other peak greater than base discharge.			
No flow many days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	7.6	10	6.2	5.0	7.8	17	42	138	5.1	7.2	.00
2	.00	7.9	12	5.6	7.0	7.2	20	46	152	2.6	11	.00
3	.00	7.8	10	5.0	6.2	9.2	22	45	120	3.2	40	.00
4	.12	7.5	11	5.6	5.8	12	19	46	67	4.4	46	.00
5	.00	7.8	11	5.2	5.9	20	19	55	41	.29	41	.00
6	.00	7.8	10	5.4	6.0	20	25	46	44	.00	34	.00
7	.00	7.2	9.0	5.4	6.0	20	29	47	57	.00	25	.00
8	1.7	7.4	11	5.0	6.2	20	41	46	55	.70	19	.00
9	3.1	7.6	9.8	5.2	6.0	19	31	47	69	.66	16	.00
10	2.2	8.4	9.0	5.2	6.0	19	27	47	66	.48	15	.00
11	2.1	6.3	8.4	5.0	6.2	15	23	49	69	3.7	11	.00
12	4.0	9.6	9.8	5.2	6.2	18	29	64	66	5.2	8.7	.00
13	4.9	11	9.4	5.8	6.2	24	41	66	63	6.7	11	.00
14	4.8	8.9	6.8	6.4	5.8	16	36	59	69	2.4	7.2	.00
15	3.6	9.4	3.3	5.6	6.0	15	34	72	46	.06	4.5	.00
16	3.0	8.7	3.7	6.0	6.0	17	29	66	38	.00	4.6	.00
17	2.3	9.1	5.8	5.0	5.6	38	30	64	42	.00	2.7	.00
18	3.5	8.9	2.5	4.6	5.2	22	29	68	37	.00	2.2	.00
19	4.1	8.6	2.2	5.2	5.6	23	31	54	33	.00	3.1	.00
20	8.6	8.5	2.0	4.0	5.8	25	25	46	30	.00	3.4	.00
21	8.3	8.1	1.9	4.0	11	22	19	43	37	.00	2.4	.00
22	6.9	9.3	2.3	4.5	8.0	22	17	38	45	.00	.59	.00
23	7.2	11	2.7	4.8	6.0	19	22	41	37	16	.00	.00
24	6.2	12	3.2	4.3	5.0	16	27	54	36	16	.00	.00
25	5.2	12	3.7	3.9	9.0	13	29	59	21	15	.00	.00
26	4.8	12	4.4	3.6	11	10	32	61	18	16	.00	.00
27	4.6	11	4.3	3.7	9.2	17	33	57	16	16	.00	.00
28	7.0	11	4.3	3.8	8.6	18	35	59	14	10	.00	.00
29	6.7	10	3.6	4.1	---	17	35	63	12	8.5	.00	.00
30	6.3	10	4.0	3.6	---	23	37	54	9.1	7.0	.00	.00
31	6.9	---	4.2	3.8	---	22	---	57	---	7.3	.00	---
TOTAL	118.12	272.4	195.3	150.7	186.5	566.2	843	1661	1547.1	147.29	315.59	0.00
MEAN	3.81	9.08	6.30	4.86	6.66	18.3	28.1	53.6	51.6	4.75	10.2	.070
MAX	8.6	12	12	6.4	11	38	41	72	152	16	46	.00
MIN	.00	6.3	1.9	3.6	5.0	7.2	17	38	9.1	.00	.00	.00
AC-FT	234	540	387	299	370	1120	1670	3290	3070	292	626	.00

CAL YR 1990 TOTAL 5491.25 MEAN 15.0 MAX 127 MIN .00 AC-FT 10890
WTR YR 1991 TOTAL 6003.20 MEAN 16.4 MAX 152 MIN .00 AC-FT 11910

06709600 CHATFIELD LAKE NEAR LITTLETON, CO

LOCATION.--Lat 39°33'26", long 105°03'27", in NW¼SE¼ sec.1, T.6 S., R.69 W., Jefferson County, Hydrologic Unit 10190002, near left end of dam on South Platte River at mouth of Plum Creek and 4.7 mi southwest of courthouse in Littleton.

DRAINAGE AREA.--3,018 mi².

PERIOD OF RECORD.--Contents, May 1975 to current year. Water-quality data available, October 1976 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army, Corps of Engineers); gage readings have been reduced to elevations above National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam. Storage began May 29, 1975. Capacity, 235,000 acre-ft at elevation 5,500 ft, crest of spillway. No dead storage. Figures given represent total contents. Reservoir is for flood control and recreation.

COOPERATION.--Records provided by U.S. Army, Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 54,690 acre-ft, May 26, 1980, elevation, 5,447.58 ft; minimum since first filling in June 1979; 17,300 acre-ft, Nov. 17, 1986, elevation 5,424.46 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 28,310 acre-ft, Mar. 24, elevation, 5,432.11 ft; minimum, 18,370 acre-ft, Nov. 21, elevation, 5,424.33 ft.

MONTHEND ELEVATION AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	5,426.69	21,120	-
Oct. 31.	5,427.19	21,740	+620
Nov. 30.	5,424.88	18,980	-2,760
Dec. 31.	5,426.71	21,150	+2,170
CAL YR 1990.	-	-	-290
Jan. 31.	5,428.83	23,830	+2,680
Feb. 28.	5,430.65	26,270	+2,440
Mar. 31.	5,431.97	28,110	+1,840
Apr. 30.	5,429.22	24,340	-3,770
May 31.	5,427.39	21,990	-2,350
June 30.	5,429.64	24,900	+2,910
July 31.	5,431.80	27,870	+2,970
Aug. 31.	5,428.94	23,970	-3,900
Sept. 30.	5,427.82	22,530	-1,440
WTR YR 1991	-	-	+1,410

06710245 SOUTH PLATTE RIVER AT UNION AVENUE, AT ENGLEWOOD, CO

LOCATION.--Lat 39°37'52", long 105°00'50", in NW¼SW¼ sec.9, T.5 S., R.68 W., Arapahoe County, Hydrologic Unit 10190002, on right bank 280 ft downstream from Big Dry Creek, 285 ft upstream from Union Avenue bridge in Englewood, and 7.1 mi downstream from Chatfield Dam.

DRAINAGE AREA.--3,043 mi².

PERIOD OF RECORD.--April 11, 1989 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,300 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 3, 4, 15, Dec. 17 to Jan. 12, Jan. 15 to Feb. 5, Feb. 7, 19, 24-27. Records fair below 300 ft³/s and poor above, except for estimated daily discharges, which are poor. Flow regulated by Chatfield Reservoir (station 06709600) 7.1 mi upstream. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,520 ft³/s, June 1, 1991, gage height, 6.63 ft; minimum daily, 9.7 ft³/s, Feb. 18, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,520 ft³/s at 1900 June 1, gage height, 6.63 ft; minimum daily, 9.7 ft³/s, Feb. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	71	19	22	14	10	29	68	355	262	57	190
2	70	156	18	22	14	10	53	98	164	341	127	190
3	70	208	18	22	14	11	55	67	83	334	240	172
4	65	190	20	21	14	11	85	72	94	333	346	141
5	67	205	20	20	14	30	142	82	51	306	418	172
6	63	260	22	19	13	22	142	64	62	218	355	267
7	63	278	23	19	13	16	142	66	65	110	166	225
8	81	254	22	19	13	13	175	83	61	89	204	221
9	70	197	22	19	12	11	262	77	118	129	200	198
10	73	163	23	17	12	11	302	48	176	183	260	72
11	120	163	22	16	12	13	218	57	178	164	198	51
12	145	160	21	16	11	14	144	96	154	173	146	47
13	97	158	20	15	11	12	126	117	231	153	156	53
14	96	157	21	14	11	13	123	177	163	149	218	57
15	93	155	21	13	11	13	123	125	127	137	259	50
16	55	149	22	13	10	14	117	116	131	83	270	58
17	50	107	22	13	11	14	79	134	135	76	266	126
18	53	104	22	13	9.7	13	61	187	181	51	225	123
19	51	104	22	13	10	12	63	171	206	39	249	94
20	98	101	24	14	10	12	77	149	189	84	408	69
21	60	83	24	14	11	16	78	219	279	66	278	60
22	75	48	24	14	12	54	78	248	230	105	284	57
23	137	44	24	14	10	52	76	200	203	139	285	61
24	119	40	24	14	10	52	78	123	196	89	235	52
25	147	39	24	14	10	70	105	93	185	52	171	42
26	134	39	24	14	10	142	137	68	243	84	157	36
27	63	42	24	14	10	146	116	99	287	253	219	35
28	57	30	23	14	9.8	121	115	118	203	263	341	32
29	57	34	22	14	---	30	108	114	141	204	316	30
30	64	25	22	14	---	23	122	82	158	128	237	43
31	59	---	22	14	---	21	---	130	---	53	193	---
TOTAL	2502	3764	681	494	322.5	1002	3531	3548	5049	4850	7484	3024
MEAN	80.7	125	22.0	15.9	11.5	32.3	118	114	168	156	241	101
MAX	147	278	24	22	14	146	302	248	355	341	418	267
MIN	50	25	18	13	9.7	10	29	48	51	39	57	30
AC-FT	4960	7470	1350	980	640	1990	7000	7040	10010	9620	14840	6000
CAL YR 1990	TOTAL	40863	MEAN	112	MAX	405	MIN	15	AC-FT	81050		
WTR YR 1991	TOTAL	36251.5	MEAN	99.3	MAX	418	MIN	9.7	AC-FT	71900		

06710385 BEAR CREEK ABOVE EVERGREEN, CO

LOCATION.--Lat 39°37'58", long 105°19'59", in SE¼NE¼ sec.9, T.5 S., R.71 W., Jefferson County, Hydrologic Unit 10190002, on right bank 0.6 mi upstream of Evergreen Lake dam at Evergreen.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--August 1984 to current year.

GAGE.--Water-stage recorder. Elevation of gage 7,076 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 1, 1986, at site 200 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 27 to Apr. 2. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by small diversions for irrigation. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--6 years, 41.2 ft³/s; 29,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 388 ft³/s, Aug. 26, 1984, gage height 3.80 ft, site then in use; minimum daily, 8 ft³/s, Feb. 15-16, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 6	1600	*224	*3.63	Aug. 4	0400	187	3.45

Minimum daily discharge, 8.6 ft³/s, Feb. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	27	19	13	11	9.5	14	17	134	69	69	62
2	43	27	19	13	10	9.5	13	21	160	65	72	65
3	44	21	18	12	10	10	14	17	134	64	108	68
4	39	31	18	12	10	11	12	20	126	61	152	61
5	38	33	17	12	11	12	11	19	142	56	105	58
6	38	28	17	11	11	13	14	21	181	54	100	56
7	36	31	17	11	10	12	16	21	174	54	102	55
8	39	41	16	11	10	11	16	25	149	60	92	59
9	36	33	16	10	10	10	11	43	143	58	95	52
10	40	29	16	10	10	10	11	47	153	75	93	53
11	39	28	15	11	10	10	10	57	153	62	99	53
12	35	26	15	11	10	10	9.0	57	150	61	100	61
13	35	26	15	11	10	11	11	43	140	63	100	67
14	33	28	14	11	10	10	14	47	161	53	96	54
15	32	26	14	11	10	10	12	46	138	49	86	50
16	32	25	14	11	11	9.8	14	57	157	46	82	48
17	31	24	13	11	10	9.4	17	56	140	48	78	47
18	31	24	13	11	9.8	9.4	16	67	125	50	76	47
19	31	23	13	13	9.8	9.4	13	103	116	54	97	47
20	33	23	13	11	9.8	9.8	13	113	110	50	90	45
21	29	19	13	11	9.8	11	15	113	108	55	83	43
22	36	28	13	11	9.6	11	16	94	106	67	74	41
23	35	29	13	11	9.2	11	16	104	100	100	71	40
24	33	27	13	11	8.9	10	15	115	95	99	69	39
25	31	24	13	11	8.6	10	17	118	86	88	68	39
26	31	24	13	11	8.8	11	19	129	78	89	71	38
27	30	23	13	11	8.8	11	14	128	74	81	71	37
28	29	22	13	11	9.0	12	13	122	73	71	89	36
29	28	21	13	11	---	13	14	114	73	66	84	35
30	28	20	13	11	---	13	16	102	77	64	69	47
31	26	---	13	11	---	14	---	97	---	62	65	---
TOTAL	1065	791	455	348	276.1	333.8	416.0	2133	3756	1994	2706	1503
MEAN	34.4	26.4	14.7	11.2	9.86	10.8	13.9	68.8	125	64.3	87.3	50.1
MAX	44	41	19	13	11	14	19	129	181	100	152	68
MIN	26	19	13	10	8.6	9.4	9.0	17	73	46	65	35
AC-FT	2110	1570	902	690	548	662	825	4230	7450	3960	5370	2980

CAL YR 1990 TOTAL 12620.1 MEAN 34.6 MAX 125 MIN 8.0 AC-FT 25030
WTR YR 1991 TOTAL 15776.9 MEAN 43.2 MAX 181 MIN 8.6 AC-FT 31290

06710500 BEAR CREEK AT MORRISON, CO

LOCATION.--Lat 39°39'11", long 105°11'43", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.35, T.4 S., R.70 W., Jefferson County, Hydrologic Unit 10190002, on left bank at Morrison, 180 ft upstream from bridge on State Highway 8 and 0.2 mi upstream from Mount Vernon Creek.

DRAINAGE AREA.--164 mi².

PERIOD OF RECORD.--Streamflow records, September 1887 to September 1891, May 1895 to December 1901, February 1902 (gage heights only), October 1919 to current year. No winter records for water years 1888-90, 1896, 1897, 1900. Monthly discharge only for some periods, published in WSP 1310. Published as "near Morrison" 1900-1902, as "at Starbuck" 1919-28, and as "at Idledale" 1929-34. Water-quality data available, October 1976 to September 1981.

REVISED RECORDS.--WSP 976: 1942. WSP 1310: 1888, 1890-91, 1898, 1935(M). WSP 1730: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 5,780.43 ft above National Geodetic Vertical Datum of 1929. See WSP 1710 or 1730 for history of changes prior to Oct. 1, 1934. Oct. 1, 1934, to Oct. 10, 1961, water-stage recorder at site 80 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 28 to Dec. 11, Dec. 14-16, Dec. 19 to Feb. 28, and Mar. 7-9. Records good except for estimated daily discharges, which are fair. Small diversions for irrigation of about 1,000 acres upstream from station.

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

AVERAGE DISCHARGE.--76 years (water years 1891, 1897, 1899, 1901, 1920-91), 53.6 ft³/s; 38,830 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,600 ft³/s, estimated, July 24, 1896; minimum daily, 0.8 ft³/s, Nov. 26, 1939, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 1	1600	*298	*5.37	No other peak greater than base discharge			
Minimum daily, 13 ft ³ /s, Feb. 25-27, Mar. 1.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	35	27	23	17	13	20	30	176	70	70	64
2	51	36	26	23	17	16	22	34	203	67	76	67
3	55	33	26	22	16	16	22	31	160	66	105	70
4	46	30	25	22	16	18	19	36	148	64	160	61
5	43	40	25	22	16	20	22	37	155	59	116	59
6	42	41	25	22	16	19	25	37	193	55	106	56
7	41	29	25	21	16	18	26	37	191	54	105	55
8	45	39	24	21	16	17	26	40	178	62	93	59
9	42	37	24	21	16	16	22	53	164	62	95	53
10	45	38	23	21	15	15	21	61	164	74	93	52
11	43	35	23	20	15	18	22	69	170	64	98	54
12	40	32	25	20	15	16	23	71	159	65	98	58
13	40	31	25	20	15	14	17	58	151	64	100	68
14	36	33	25	20	15	15	20	62	159	57	96	56
15	36	32	26	20	15	15	22	66	153	49	86	51
16	35	31	27	19	15	14	25	94	156	49	84	48
17	35	31	27	19	14	14	29	87	155	50	83	46
18	37	31	26	19	14	14	30	89	126	52	81	47
19	37	30	26	19	14	16	27	119	121	58	95	47
20	32	29	25	19	14	18	26	132	111	57	94	45
21	40	26	25	19	14	15	28	132	115	60	86	44
22	33	18	25	18	14	16	30	111	114	66	76	43
23	32	28	25	18	14	14	30	120	105	86	74	43
24	40	28	24	18	14	15	29	133	98	96	72	41
25	38	27	24	18	13	17	29	137	90	93	70	41
26	38	25	24	18	13	18	31	144	82	87	71	39
27	38	28	24	18	13	18	27	141	76	80	68	38
28	37	28	24	17	16	15	26	134	77	71	83	37
29	37	27	23	17	---	16	27	125	75	70	86	37
30	37	27	23	17	---	15	30	113	78	65	68	53
31	36	---	23	17	---	17	---	106	---	66	64	---
TOTAL	1238	935	769	608	418	498	753	2639	4103	2038	2752	1532
MEAN	39.9	31.2	24.8	19.6	14.9	16.1	25.1	85.1	137	65.7	88.8	51.1
MAX	55	41	27	23	17	20	31	144	203	96	160	70
MIN	32	18	23	17	13	13	17	30	75	49	64	37
AC-FT	2460	1850	1530	1210	829	988	1490	5230	8140	4040	5460	3040

CAL YR 1990 TOTAL 16394 MEAN 44.9 MAX 142 MIN 13 AC-FT 32520
WTR YR 1991 TOTAL 18283 MEAN 50.1 MAX 203 MIN 13 AC-FT 33000

06710605 BEAR CREEK ABOVE BEAR CREEK LAKE NEAR MORRISON, CO

LOCATION.--Lat 39°39'08", long 105°10'23", in NW¼NE¼ sec.1, T.5 S. R.70 W., Jefferson County, Hydrologic Unit 10190002, on left bank, 0.9 mi downstream from Strain Gulch, 1.0 mi east of Morrison, 1.1 mi downstream from Mt. Vernon Creek.

DRAINAGE AREA.--176 mi².

PERIOD OF RECORD.--May 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage 5.645 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 21, 1989, at datum 3.37 ft, higher.

REMARKS.--Estimated daily discharges: Dec. 20-31, Jan. 16-31, Feb. 24-26, and Sept. 5-20. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by diversions to Harriman Canal, and Ward Canal, 0.7 mi upstream from gage. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--5 years, 39.0 ft³/s; 28,260 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 825 ft³/s, July 8, 1990, gage height, 5.84 ft; minimum daily, 0.25 ft³/s, Nov. 11-13, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 273 ft³/s at 1600 June 1, gage height, 5.32 ft; minimum daily, 0.42 ft³/s, Mar. 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	15	30	17	12	12	2.5	9.6	162	52	38	38
2	37	13	21	16	13	13	1.5	11	192	46	44	39
3	44	13	15	15	12	14	1.7	13	146	47	97	47
4	32	13	18	15	14	16	.96	20	129	45	150	40
5	25	19	28	15	13	19	1.6	23	132	38	98	39
6	15	26	29	14	13	16	4.5	18	180	39	88	38
7	15	23	24	13	13	14	5.5	14	192	37	88	37
8	15	29	20	14	13	14	4.7	22	140	44	76	36
9	15	32	20	13	14	14	3.8	33	127	44	78	39
10	15	35	20	12	14	13	3.6	41	137	58	78	34
11	14	32	20	13	14	17	3.2	47	137	44	79	34
12	16	29	21	13	14	16	3.4	48	132	48	78	35
13	16	28	22	14	14	14	.81	40	121	45	81	38
14	17	31	19	14	14	13	1.1	38	143	37	74	42
15	15	30	14	14	16	13	2.3	33	127	29	66	37
16	16	30	18	13	16	12	4.7	82	140	24	65	34
17	17	32	24	12	16	12	4.2	79	132	22	60	31
18	16	32	22	13	14	13	2.3	69	108	21	49	30
19	17	30	19	12	14	14	1.3	89	100	27	62	30
20	20	29	17	10	14	16	2.0	99	91	27	65	30
21	18	26	14	10	14	14	2.9	93	93	30	60	30
22	24	18	12	11	13	14	2.7	81	84	42	49	27
23	23	28	10	11	13	12	2.4	85	80	74	47	27
24	22	30	9.5	10	12	13	2.2	101	74	83	47	25
25	21	29	9.0	9.0	11	14	2.9	106	66	74	46	25
26	21	26	11	9.5	11	14	10	112	57	66	47	24
27	21	30	15	10	12	15	8.8	110	52	60	44	24
28	21	15	12	9.0	13	8.8	7.7	102	54	53	61	23
29	17	11	10	10	---	4.5	7.0	92	52	44	65	23
30	17	31	13	11	---	2.8	9.0	84	55	36	49	35
31	16	---	16	11	---	.42	---	79	---	34	43	---
TOTAL	633	765	552.5	383.5	376	397.52	111.27	1873.6	3435	1370	2072	991
MEAN	20.4	25.5	17.8	12.4	13.4	12.8	3.71	60.4	114	44.2	66.8	33.0
MAX	44	35	30	17	16	19	10	112	192	83	150	47
MIN	14	11	9.0	9.0	11	.42	.81	9.6	52	21	38	23
AC-FT	1260	1520	1100	761	746	788	221	3720	6810	2720	4110	1970

CAL YR 1990 TOTAL 11573.2 MEAN 31.7 MAX 165 MIN 3.7 AC-FT 22960
WTR YR 1991 TOTAL 12960.39 MEAN 35.5 MAX 192 MIN .42 AC-FT 25710

06711500 BEAR CREEK AT MOUTH, AT SHERIDAN, CO

LOCATIDN.--Lat 39°39'08", long 105°01'57", in NW¼NW¼ sec.5, T.5 S., R.68 W., Arapahoe County, Hydrologic Unit 10190002, on left bank just downstream from bridge on road to Fort Logan Mental Health Center, at Highway Department maintenance building at northwest city limits of Sheridan, 1.3 mi upstream from mouth, and 2.1 mi west of city hall in Englewood.

DRAINAGE AREA.--260 mi².

PERIOD OF RECORD.--April to November 1914, March 1927 to current year. Monthly discharge only prior to October 1933, published in WSP 1310. Published as "at Sheridan Junction" 1934-41.

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,295 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1710 or 1730 for history of changes prior to Oct. 9, 1953. Oct. 9, 1953, to Aug. 6, 1969, water-stage recorder at present site at datum 1.0 ft, higher.

REMARKS.--Estimated daily discharges: Dec. 20, and Jan. 5 to Feb. 3. Records good except for estimated daily discharges, which are fair. Flow regulated by Bear Creek Lake since July 1979. Storage and diversions upstream from station for irrigation of about 12,000 acres.

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

AVERAGE DISCHARGE.--64 years, 43.8 ft³/s; 31,730 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,150 ft³/s, May 7, 1969, gage height, 10.5 ft, present datum, from floodmarks, from rating curve extended above 3,400 ft³/s; no flow, July 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,650 ft³/s at 2030 June 1, gage height, 5.91 ft; minimum daily, 8.0 ft³/s, Apr. 1-5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	24	28	31	23	23	8.0	27	334	40	49	55
2	53	29	31	28	23	22	8.0	23	318	42	64	54
3	53	30	24	28	23	23	8.0	24	223	55	172	58
4	47	25	18	28	23	23	8.0	30	178	44	203	59
5	41	30	25	28	23	27	8.0	38	187	44	154	52
6	32	38	30	28	23	27	8.6	32	194	40	127	49
7	32	31	29	28	23	25	10	26	245	38	126	47
8	34	28	32	28	23	22	16	29	220	53	115	48
9	29	35	34	28	22	20	16	35	192	70	107	48
10	27	30	32	28	23	20	13	43	173	74	107	44
11	28	28	32	28	23	21	12	55	177	63	107	45
12	28	24	32	28	22	22	18	56	162	61	107	46
13	28	22	34	28	22	23	20	49	162	63	110	57
14	27	22	33	27	21	23	17	45	172	52	107	58
15	25	36	32	27	23	23	15	55	166	43	103	50
16	24	42	24	27	24	26	14	106	163	38	95	45
17	24	42	30	27	24	26	14	120	176	32	84	42
18	24	42	32	27	23	27	15	101	147	31	80	42
19	25	42	31	27	22	35	14	125	127	35	94	43
20	36	39	30	26	21	36	13	119	112	41	90	42
21	32	36	42	26	21	31	13	113	122	41	80	40
22	32	30	42	26	22	16	14	102	127	48	71	39
23	31	26	42	26	22	15	15	126	98	82	63	39
24	32	32	43	26	22	16	9.7	129	84	107	64	39
25	30	32	44	26	21	16	9.5	133	75	116	61	38
26	28	32	41	26	21	20	11	147	57	104	61	37
27	25	32	37	26	22	16	13	144	46	92	62	36
28	26	29	35	25	23	18	17	166	52	79	81	34
29	26	22	32	25	---	13	19	123	45	68	93	35
30	24	26	34	24	---	8.4	43	96	43	55	71	44
31	25	---	32	24	---	8.5	---	99	---	51	61	---
TOTAL	977	936	1017	835	628	671.9	419.8	2516	4577	1802	2969	1365
MEAN	31.5	31.2	32.8	26.9	22.4	21.7	14.0	81.2	153	58.1	95.8	45.5
MAX	53	42	44	31	24	36	43	166	334	116	203	59
MIN	24	22	18	24	21	8.4	8.0	23	43	31	49	34
AC-FT	1940	1860	2020	1660	1250	1330	833	4990	9080	3570	5890	2710

CAL YR 1990 TOTAL 16472.2 MEAN 45.1 MAX 180 MIN 8.5 AC-FT 32670
WTR YR 1991 TOTAL 18713.7 MEAN 51.3 MAX 334 MIN 8.0 AC-FT 37120

06711565 SOUTH PLATTE RIVER AT ENGLEWOOD, CO

LOCATION.--Lat 39°39'54", Long 105°00'13", in NW¼NE¼ sec.33, T.4 S., R.68 W., Arapahoe County, Hydrologic Unit 10190002, on right bank, 0.3 mi downstream from Dartmouth Ave bridge at Englewood, 1.4 mi downstream from Bear Creek.

DRAINAGE AREA.--3,387 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,250 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 20-31 and Apr. 27 to May 3. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions, storage and flood control reservoirs, power developments, diversions for irrigation and municipal use, and return flow from irrigated areas. Flow regulated by Chatfield Dam since May 29, 1975 (station 06709600), and Bear Creek Dam since July 1979.

AVERAGE DISCHARGE.--8 years, 344 ft³/s; 249,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,090 ft³/s, Aug. 20, 1984, gage height, 5.25 ft; minimum daily, 25 ft³/s, Feb. 1, 1990 and Mar. 31, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,680 ft³/s at 2100 June 6, gage height, 4.96 ft; minimum daily, 25 ft³/s, Mar. 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	77	61	48	43	35	29	95	982	272	104	180
2	135	171	57	56	46	31	44	107	656	377	309	176
3	140	280	46	48	44	32	53	86	362	383	711	165
4	119	250	40	49	44	31	74	103	336	380	747	137
5	106	267	48	49	44	58	132	136	256	347	729	147
6	97	407	60	63	36	59	127	93	285	243	620	244
7	97	410	60	62	35	44	138	89	324	130	329	200
8	127	379	59	47	37	37	193	108	267	137	387	202
9	99	282	62	43	32	29	318	107	341	204	309	188
10	98	221	62	44	35	29	358	85	416	303	406	84
11	153	222	64	36	36	37	259	99	416	226	307	76
12	185	210	59	35	33	33	193	148	354	254	240	74
13	123	209	65	38	35	36	133	169	479	286	256	90
14	113	212	62	39	33	36	124	260	382	217	343	94
15	109	210	56	33	34	33	116	253	311	192	404	83
16	75	202	53	43	34	43	121	378	322	115	407	80
17	68	150	60	41	39	39	73	368	325	105	385	120
18	70	146	66	42	33	36	67	362	357	76	316	128
19	69	147	57	41	29	39	66	341	380	71	299	106
20	168	144	50	43	30	47	72	308	343	165	424	88
21	99	128	45	45	30	43	73	425	532	117	297	80
22	101	82	42	46	36	57	75	481	464	180	284	79
23	174	80	46	54	30	53	70	476	316	282	278	84
24	157	80	48	57	39	49	71	344	290	216	224	81
25	187	81	52	42	33	60	97	253	255	196	156	73
26	171	79	55	41	30	138	141	207	311	200	140	68
27	84	86	54	52	31	195	135	256	350	445	223	66
28	83	70	53	47	34	143	134	325	246	467	392	63
29	83	55	52	39	---	48	122	326	173	353	358	62
30	80	52	51	50	---	29	72	196	188	210	233	95
31	78	---	50	35	---	25	---	279	---	111	187	---
TOTAL	3543	5389	1695	1408	995	1604	3680	7263	11019	7260	10804	3413
MEAN	114	180	54.7	45.4	35.5	51.7	123	234	367	234	349	114
MAX	187	410	66	63	46	195	358	481	982	467	747	244
MIN	68	52	40	33	29	25	29	85	173	71	104	62
AC-FT	7030	10690	3360	2790	1970	3180	7300	14410	21860	14400	21430	6770

CAL YR 1990 TOTAL 61493 MEAN 168 MAX 742 MIN 25 AC-FT 122000
WTR YR 1991 TOTAL 58073 MEAN 159 MAX 982 MIN 25 AC-FT 115200

06711565 SOUTH PLATTE RIVER AT ENGLEWOOD, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1985 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1985 to current year.

pH: March 1985 to current year.

WATER TEMPERATURE: March 1985 to current year.

DISSOLVED OXYGEN: March 1985 to current year.

INSTRUMENTATION.--Water-quality monitor since March 1985. Values recorded hourly.

REMARKS.--Daily maximum and minimum specific conductance data available in District office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum mean, 995 microsiemens, Jan. 31, 1990; minimum mean, 223 microsiemens, May 16, 1987.

pH: Maximum, 9.9 units, July 14, 15, 18, 1987; minimum, 6.4 units, Oct. 18, 1989.

WATER TEMPERATURE: Maximum, 29.0°C, Aug. 17, 1986, July 30, 1987; minimum, 0.0°C, freezing point on many days during winter months.

DISSOLVED OXYGEN: Maximum, 17.4 mg/L, Mar. 14, 1985; minimum, 3.4 mg/L, July 31, 1987.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum mean, 936 microsiemens, Apr. 4; minimum mean, 324 microsiemens Aug. 3.

pH: Maximum, 9.7 units, Apr. 28; minimum, 6.9 units, Apr. 23.

WATER TEMPERATURE: Maximum, 24.8°C, Aug. 27; minimum, 0.2°C, Nov. 28.

DISSOLVED OXYGEN: Maximum, 14.80 mg/L, Nov. 22; minimum, 5.9 mg/L, Oct. 16.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	595	---	---	---	---	---	---	815	390	---	422	422
2	575	---	---	---	---	---	---	717	430	---	350	427
3	532	---	---	---	---	---	---	795	449	---	324	434
4	558	---	---	---	---	---	---	782	472	---	391	465
5	572	---	---	---	---	---	686	649	439	---	507	462
6	610	---	---	---	---	---	700	741	450	---	645	428
7	623	---	---	---	---	---	682	829	---	---	740	446
8	588	---	---	---	---	---	640	732	---	---	803	451
9	641	---	---	---	---	---	505	726	---	---	571	456
10	658	492	---	---	---	---	493	786	---	---	381	541
11	568	493	---	---	---	---	566	758	---	---	394	578
12	---	487	---	---	---	---	632	615	---	---	398	543
13	573	486	---	---	---	---	675	601	---	---	393	558
14	579	490	---	---	---	---	714	522	---	---	380	515
15	583	479	---	---	---	---	734	562	---	---	370	561
16	660	478	---	---	---	---	720	470	---	---	377	567
17	702	517	---	---	---	---	827	593	---	---	380	547
18	698	523	---	---	---	---	854	635	---	---	381	543
19	688	---	---	---	---	---	844	615	---	---	410	563
20	555	539	---	---	---	---	797	578	---	---	374	560
21	578	565	---	---	---	---	802	553	---	---	381	567
22	666	655	---	---	---	---	797	537	---	---	373	577
23	---	687	---	---	---	---	797	484	---	---	370	541
24	---	643	---	---	---	---	791	475	---	---	386	547
25	---	635	---	---	---	---	727	489	---	---	411	572
26	---	632	---	---	---	720	615	491	---	---	424	579
27	---	778	---	---	---	640	667	482	---	---	419	585
28	---	718	---	---	---	695	656	475	---	---	373	573
29	---	---	---	---	---	---	661	455	---	---	379	577
30	---	---	---	---	---	---	556	493	---	361	398	589
31	---	---	---	---	---	---	---	501	---	416	416	---
MEAN	---	---	---	---	---	---	---	611	---	---	430	526

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	9.0	7.8	---	---	---	---	---	---	---	---
12	---	---	9.1	7.7	---	---	---	---	---	---	---	---
13	---	---	9.1	7.7	---	---	---	---	---	---	---	---
14	---	---	9.1	7.7	---	---	---	---	---	---	---	---
15	---	---	9.1	7.7	---	---	---	---	---	---	---	---
16	---	---	9.1	7.6	---	---	---	---	---	---	---	---
17	---	---	9.0	7.6	---	---	---	---	---	---	---	---
18	---	---	9.1	7.6	---	---	---	---	---	---	---	---
19	---	---	7.8	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	8.0	7.6
27	---	---	---	---	---	---	---	---	---	---	7.9	7.7
28	---	---	---	---	---	---	---	---	---	---	8.0	7.5
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
OAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.7	7.8	---	---	---	---	---	---	---	---
2	---	---	9.2	7.9	7.8	7.2	---	---	---	---	---	---
3	---	---	8.8	7.9	8.1	7.0	---	---	---	---	---	---
4	---	---	8.3	8.0	8.6	7.2	---	---	---	---	---	---
5	---	---	8.9	7.9	8.0	7.3	---	---	---	---	---	---
6	---	---	8.7	7.4	8.1	---	---	---	---	---	---	---
7	8.0	7.1	8.6	7.7	8.2	7.4	---	---	---	---	---	---
8	8.0	---	8.4	7.7	8.6	7.7	---	---	---	---	---	---
9	8.0	7.1	8.5	7.4	8.7	7.7	---	---	---	---	---	---
10	7.9	7.3	8.4	7.2	8.6	7.7	---	---	---	---	---	---
11	7.7	7.2	8.4	7.3	---	---	---	---	8.6	7.8	---	---
12	7.4	---	8.7	7.3	---	---	---	---	8.5	7.6	---	---
13	---	---	8.7	7.2	---	---	---	---	8.8	7.5	---	---
14	7.6	---	8.8	7.3	---	---	---	---	8.8	7.6	---	---
15	7.6	7.0	7.8	7.2	---	---	---	---	8.7	7.6	---	---
16	7.8	---	8.0	7.0	---	---	---	---	8.9	7.6	---	---
17	7.9	---	---	---	---	---	---	---	8.8	7.5	---	---
18	7.8	7.0	---	---	---	---	---	---	9.3	7.6	---	---
19	8.1	---	---	---	---	---	---	---	8.9	7.6	---	---
20	8.2	---	7.8	7.0	---	---	---	---	8.7	7.7	---	---
21	8.3	7.2	8.0	7.1	---	---	---	---	9.4	7.6	---	---
22	8.7	7.0	8.1	7.2	---	---	---	---	8.1	7.3	---	---
23	8.8	6.9	8.2	7.1	---	---	---	---	---	---	---	---
24	9.0	7.0	8.5	---	---	---	---	---	---	---	---	---
25	9.5	7.2	8.5	---	---	---	---	---	---	---	---	---
26	9.6	7.4	8.5	7.4	---	---	---	---	---	---	---	---
27	8.9	7.3	8.9	7.3	---	---	---	---	---	---	---	---
28	9.7	7.4	9.0	7.7	---	---	---	---	---	---	---	---
29	9.2	7.2	8.6	7.2	---	---	---	---	---	---	---	---
30	8.9	7.9	8.9	7.3	---	---	---	---	---	---	---	---
31	---	---	8.7	7.5	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

06712000 CHERRY CREEK NEAR FRANKTOWN, CO

LOCATION.--Lat 39°21'21", long 104°45'46", in NE¼ sec.15, T.8 S., R.66 W., Douglas County, Hydrologic Unit 10190003, on right bank 1.5 mi upstream from Russellville Gulch, and 2.5 mi south of Franktown.

DRAINAGE AREA.--169 mi².

PERIOD OF RECORD.--November 1939 to current year.

REVISED RECORDS.--WSP 173D: Drainage area. WDR CO-87-1: 1983-85 (P).

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 6,170 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1730 for history of changes prior to Oct. 1, 1953.

REMARKS.--Estimated daily discharges: Dec. 20 to Feb. 4, and Feb. 25. Records good except for estimated daily discharges, which are poor. Many small diversions upstream from station for irrigation of about 800 acres. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--51 years (water years 1941-91), 9.74 ft³/s; 7,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,170 ft³/s, Aug. 5, 1945, gage height, 4.91 ft, site and datum then in use, by float measurement; minimum daily, 0.20 ft³/s, July 13, 1946, Sept. 30, Oct. 1, 1950.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 3, 1933, caused by Castlewood Dam failure, exceeded all other observed floods at this location.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 10	1635	*742	*5.85	No other peak greater than base discharge.			
Minimum daily, 1.5 ft ³ /s, July 7.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	4.5	4.8	2.6	3.9	8.7	8.4	7.6	8.7	1.7	3.1	2.6
2	4.4	4.7	3.9	2.7	4.0	8.4	8.7	7.0	4.8	1.6	14	2.5
3	5.4	5.1	4.1	2.8	4.1	7.9	10	6.5	4.3	1.7	20	2.5
4	4.2	5.3	4.6	2.9	4.5	8.7	9.0	6.6	3.8	2.0	9.8	2.5
5	3.8	5.5	4.5	3.0	4.8	10	7.7	6.5	3.4	1.7	5.4	2.8
6	3.6	6.3	4.2	3.0	5.2	11	7.7	6.0	3.3	1.6	4.5	3.5
7	3.4	6.1	4.7	3.1	5.5	10	7.4	5.3	3.3	1.5	4.0	3.5
8	4.0	6.0	4.7	3.2	5.9	8.8	9.3	5.2	3.2	1.7	3.8	3.0
9	4.1	5.9	4.7	3.2	6.1	8.5	11	5.2	3.0	3.9	3.7	2.7
10	4.2	6.4	4.9	3.2	6.1	8.8	9.7	4.9	65	3.2	3.6	2.6
11	4.3	6.8	5.3	3.3	6.6	9.9	9.0	4.4	7.4	2.7	3.3	2.6
12	4.2	6.8	5.7	3.3	7.3	9.7	10	3.9	4.6	12	3.3	2.5
13	4.1	6.8	5.8	3.4	7.7	9.0	11	3.5	4.1	6.5	3.3	2.5
14	4.0	6.7	4.8	3.6	7.5	8.8	11	3.2	3.9	3.2	3.3	2.4
15	3.8	6.2	5.0	3.8	8.1	8.4	11	3.5	3.9	2.5	3.3	2.5
16	3.8	6.0	5.0	3.9	8.5	8.5	9.8	4.4	3.7	2.2	3.1	2.6
17	3.6	5.8	4.9	4.0	8.7	7.6	9.0	4.5	3.7	2.0	3.1	2.6
18	3.8	5.7	4.8	4.2	7.9	8.2	8.7	4.0	3.4	2.0	3.1	2.8
19	3.6	5.7	4.5	4.2	8.7	8.1	8.8	3.7	3.5	19	3.1	3.0
20	5.2	5.6	4.3	4.1	8.4	8.5	8.4	3.4	3.2	6.3	3.2	3.0
21	6.1	5.4	4.0	4.0	7.9	9.1	8.2	3.2	3.1	3.5	3.1	3.0
22	6.1	5.1	4.0	4.0	8.7	8.5	7.9	3.2	3.1	3.4	3.0	2.8
23	6.0	4.8	4.0	3.9	8.7	7.9	7.4	3.5	3.0	25	3.0	2.7
24	5.6	4.9	4.0	3.9	7.8	6.9	7.1	7.0	2.8	16	2.9	2.5
25	5.3	5.1	3.5	3.9	8.0	7.1	6.1	5.8	2.5	12	2.8	2.6
26	5.0	5.3	3.0	3.9	7.9	7.2	5.2	4.2	2.1	7.5	2.7	2.6
27	4.7	5.0	2.7	3.9	7.8	8.3	4.6	3.8	2.0	5.2	2.6	2.6
28	4.7	4.2	2.5	3.9	7.9	8.2	4.9	3.5	2.0	4.2	3.2	2.5
29	4.6	4.6	2.5	3.9	---	8.2	5.2	3.6	1.9	3.7	2.9	2.5
30	4.5	4.8	2.6	3.8	---	7.3	7.3	3.3	1.8	3.4	2.9	2.6
31	4.5	---	2.6	3.8	---	8.6	---	6.8	---	3.2	2.9	---
TOTAL	137.1	167.1	130.6	110.4	194.2	264.8	249.5	147.2	168.5	166.1	136.0	81.1
MEAN	4.42	5.57	4.21	3.56	6.94	8.54	8.32	4.75	5.62	5.36	4.39	2.70
MAX	6.1	6.8	5.8	4.2	8.7	11	11	7.6	65	25	20	3.5
MIN	2.5	4.2	2.5	2.6	3.9	6.9	4.6	3.2	1.8	1.5	2.6	2.4
AC-FT	272	331	259	219	385	525	495	292	334	329	270	161

CAL YR 1990 TOTAL 2411.7 MEAN 6.61 MAX 95 MIN 1.4 AC-FT 4780
WTR YR 1991 TOTAL 1952.6 MEAN 5.35 MAX 65 MIN 1.5 AC-FT 3870

06712990 CHERRY CREEK LAKE NEAR DENVER, CO

LOCATION.--Lat 39°39'03", long 104°51'13", in NW¼NE¼ sec.2, T.5 S., R.67 W., Arapahoe County, Hydrologic Unit 10190003, 0.8 mi southwest from intersection of Interstate Highway 225 and Parker Road, 0.2 mi from right end of dam, 1.6 mi northwest of intersection of Parker and Airline Roads, and 11.5 mi upstream from mouth.

DRAINAGE AREA.--385 mi².

PERIOD OF RECORD.--Contents, October 1960 to current year. Water-quality data available, October 1976 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army, Corps of Engineers); gage readings have been reduced to elevations above National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam. Dam completed in June 1950; storage began May 15, 1957. Capacity, 92,820 acre-ft, at elevation 5,598.00 ft, crest of spillway. No dead storage. Figures given represent total contents. Reservoir is for flood control and recreation.

COOPERATION.--Records provided by U.S. Army, Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,120 acre-ft, June 3, 1973, elevation, 5,565.82 ft; minimum, 9,980 acre-ft, Nov. 23, 24, 1978, elevation, 5,545.90 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 13,530 acre-ft, Apr. 19, 20, elevation, 5,550.85 ft; minimum, 11,670 acre-ft, Sept. 25-30, elevation, 5,548.62.

MONTHEND ELEVATION AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	5,550.40	13,150	-
Oct. 31.	5,550.25	13,020	-130
Nov. 30.	5,549.91	12,730	-290
Dec. 31.	5,549.94	12,760	+30
CAL YR 1990	-	-	-280
Jan. 31.	5,550.27	13,040	+280
Feb. 28.	5,550.46	13,200	+160
Mar. 31.	5,550.69	13,400	+200
Apr. 30.	5,550.66	13,370	-30
May 31.	5,550.45	13,180	-190
June 30.	5,550.10	12,890	-290
July 31.	5,549.35	12,270	-620
Aug. 31.	5,548.89	11,890	-380
Sept. 30.	5,548.62	11,670	-220
WTR YR 1991	-	-	-1,480

06713000 CHERRY CREEK BELOW CHERRY CREEK LAKE, CO

LOCATION.--Lat 39°39'10", long 104°51'40", in SW¼SW¼ sec.35, T.4 S., R.67 W., Arapahoe County, Hydrologic Unit 10190003, on right bank 2,000 ft downstream from Cherry Creek Dam, 2.2 mi southeast of Sullivan, 9 mi southeast of Civic Center in Denver, and 11 mi upstream from mouth.

DRAINAGE AREA.--385 mi².

PERIOD OF RECORD.--June 1950 to current year.

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 5,490.51 ft, (Corps of Engineers bench mark).

REMARKS.--Estimated daily discharges: May 16-19. Records poor. Flow regulated by Cherry Creek Lake (see elsewhere in this report). Diversions upstream from station for irrigation of about 1,800 acres. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--41 years, 6.86 ft³/s; 4,970 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft³/s, July 31, 1956, gage height, 6.07 ft; no flow most of time since May 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood known, 34,000 ft³/s Aug. 3, 1933, by slope-area measurement near present site (Castlewood Dam failure).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 700 ft³/s at 1200 May 21, gage height, 5.57 ft; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.05	.00	.00	4.6	.00	.00	11	2.5	6.6	9.4	2.0
2	.00	.00	.00	.00	8.4	.00	.00	11	1.9	6.8	10	2.0
3	.00	.00	.00	.00	4.0	.00	.00	11	1.8	11	12	2.0
4	.00	.00	.00	.00	2.1	.00	.00	11	1.7	15	8.8	2.0
5	.00	.00	.00	.00	.02	.00	.00	12	1.6	16	11	1.8
6	.00	.00	.00	.00	.00	.00	.00	12	1.9	17	15	1.7
7	.00	7.3	.00	.00	.00	.00	.00	12	1.5	18	15	1.5
8	.00	19	.00	.00	.00	.00	.00	12	1.6	18	14	1.5
9	.00	22	.00	.00	.00	.00	.00	13	1.5	15	14	1.3
10	.00	22	.32	.00	.00	.00	.00	13	7.1	10	14	.88
11	.00	18	2.1	1.9	.00	.00	.00	13	18	11	14	.00
12	.00	20	2.8	.53	.00	.00	.00	14	19	11	14	.06
13	.00	20	2.9	.41	.00	.00	.00	8.3	21	11	14	.00
14	.00	18	3.3	.09	.00	.00	.00	.24	30	10	14	.00
15	.00	18	3.3	.00	.00	.00	.00	.00	46	10	14	.00
16	.00	12	3.6	.00	.00	.00	.00	.00	46	10	14	.00
17	.00	.00	3.6	.00	.00	.00	.00	.00	16	9.3	14	.00
18	.00	.00	3.5	.00	.00	.00	.00	.00	.00	8.5	14	.00
19	1.3	.00	3.5	.00	.00	.00	.00	.00	.00	8.5	14	.08
20	1.5	1.9	3.6	.00	.00	.00	.00	14	.00	8.5	14	.00
21	1.4	7.9	2.1	.00	.00	.00	.00	81	.07	8.6	13	.00
22	1.5	8.7	.26	.00	.00	.00	5.9	9.4	.00	8.5	13	.00
23	1.6	9.1	.00	.00	.00	.00	15	2.6	.00	8.5	13	.00
24	7.5	10	.00	.00	.00	.00	16	2.1	.00	8.5	13	.00
25	12	11	.00	.00	.00	.00	14	2.0	.00	8.6	13	.00
26	12	7.2	.00	.00	.00	.00	15	2.0	2.0	8.4	13	.00
27	12	.00	.00	.00	.00	.00	15	1.8	5.1	8.5	5.8	.00
28	12	.00	.00	.00	.00	.00	6.0	1.9	3.8	8.7	.64	.00
29	5.9	.00	.00	.00	---	.00	4.0	1.9	3.7	9.1	1.0	.07
30	.58	.00	.00	.00	---	.00	11	2.0	4.6	9.1	2.0	.03
31	.26	---	.00	.00	---	.00	---	2.1	---	9.4	2.0	---
TOTAL	69.54	232.15	34.88	2.93	19.12	0.00	101.90	276.34	238.37	327.1	352.64	16.92
MEAN	2.24	7.74	1.13	.095	.68	.000	3.40	8.91	7.95	10.6	11.4	.56
MAX	12	22	3.6	1.9	8.4	.00	16	81	46	18	15	2.0
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.6	.64	.00
AC-FT	138	460	69	5.8	38	.00	202	548	473	649	699	34

CAL YR 1990 TOTAL 1372.38 MEAN 3.76 MAX 35 MIN .00 AC-FT 2720
WTR YR 1991 TOTAL 1671.89 MEAN 4.58 MAX 81 MIN .00 AC-FT 3320

06713300 CHERRY CREEK AT GLENDALE, CO.

LOCATION.--Lat 39°42'22", long 104°56'13", in SW¼NW¼ sec.18, T.4 S., R.67 W., Denver County, Hydrologic Unit 10190003, on left bank 900 ft upstream from Colorado Blvd. on Cherry Creek South Drive and Ash Ct. in the City of Glendale, and 5 miles downstream from Cherry Creek Reservoir.

DRAINAGE AREA.--404 mi².

PERIOD OF RECORD.--January 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,320 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 20-30. Records fair. Flow regulated by Cherry Creek Lake (see elsewhere in this report). Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--6 years, 24.3 ft³/s, 17,610 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,970 ft³/s, July 20, 1986, gage height, 6.74 ft, maximum gage height, 7.54 ft, June 8, 1987; minimum daily discharge, 1.1 ft³/s, Apr. 1, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 635 ft³/s at 1800 Aug. 5, gage height, 6.58 ft; minimum daily, 1.1 ft³/s, Apr. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	6.8	7.3	6.3	8.9	2.9	1.1	33	134	13	18	17
2	36	13	7.0	5.6	9.1	2.6	2.3	16	150	13	102	16
3	28	25	6.6	5.2	6.8	2.3	2.3	14	26	24	266	16
4	13	12	6.8	5.0	5.8	2.3	1.6	19	5.0	22	61	16
5	13	13	7.1	5.0	4.4	12	1.5	32	4.6	22	80	14
6	14	26	7.2	5.0	4.0	7.3	1.6	15	83	23	46	12
7	14	13	7.1	5.0	3.9	5.1	1.7	13	53	23	32	12
8	24	20	8.5	5.1	3.7	4.1	27	14	21	46	24	12
9	14	20	8.5	5.4	3.6	3.9	5.5	14	22	61	25	11
10	19	20	7.0	5.1	3.9	3.9	4.0	14	10	36	25	11
11	32	18	7.8	5.0	3.5	3.9	3.8	13	23	14	25	10
12	13	19	8.3	5.0	2.9	3.9	30	13	36	33	27	11
13	9.3	18	8.1	5.0	2.8	3.3	14	13	38	22	27	13
14	7.7	18	9.2	5.0	2.5	3.0	8.4	6.4	38	15	27	12
15	7.9	17	9.7	4.8	2.5	3.0	4.7	21	44	14	28	11
16	7.2	16	9.0	7.2	2.5	3.0	3.9	69	44	14	45	11
17	6.5	7.3	9.0	6.0	2.5	2.6	3.4	19	33	14	37	11
18	6.8	6.6	9.0	5.9	2.5	2.6	3.3	9.4	18	14	33	12
19	7.0	6.8	7.2	5.4	2.5	2.6	3.1	8.2	13	14	30	11
20	41	6.7	6.5	5.0	2.9	2.3	3.0	8.9	18	83	34	11
21	17	12	6.0	5.0	3.3	2.4	4.5	75	54	32	35	11
22	12	15	5.4	5.2	3.3	5.6	4.4	56	32	48	29	11
23	11	15	5.0	4.8	3.2	2.9	8.3	92	15	59	30	10
24	9.4	15	5.5	4.6	4.3	2.6	12	55	13	21	33	9.6
25	16	16	5.5	4.3	3.1	2.6	13	15	18	19	38	9.1
26	16	16	5.4	4.5	2.7	6.0	13	9.6	21	19	29	9.0
27	15	15	5.2	4.9	2.4	32	14	8.8	18	17	34	9.9
28	16	9.6	5.2	5.1	2.3	3.2	13	10	15	17	52	9.5
29	15	8.1	5.5	5.1	---	2.8	7.9	17	14	17	23	10
30	9.1	7.0	6.0	5.2	---	1.8	78	9.5	12	17	17	28
31	7.8	---	6.3	4.6	---	1.2	---	24	---	17	18	---
TOTAL	471.7	430.9	217.9	160.3	105.8	139.7	294.3	736.8	1025.6	803	1330	367.1
MEAN	15.2	14.4	7.03	5.17	3.78	4.51	9.81	23.8	34.2	25.9	42.9	12.2
MAX	41	26	9.7	7.2	9.1	32	78	92	150	83	266	28
MIN	6.5	6.6	5.0	4.3	2.3	1.2	1.1	6.4	4.6	13	17	9.0
AC-FT	936	855	432	318	210	277	584	1460	2030	1590	2640	728

CAL YR 1990 TOTAL 7589.4 MEAN 20.8 MAX 204 MIN 1.5 AC-FT 15050
WTR YR 1991 TOTAL 6083.1 MEAN 16.7 MAX 266 MIN 1.1 AC-FT 12070

06713500 CHERRY CREEK AT DENVER, CO

LOCATION.--Lat 39°44'58", long 105°00'08", in NE¼ sec.33, T.3 S., R.68 W., Denver County, Hydrologic Unit 10190003, on right bank on downstream side of Wazee Street Bridge in Denver, 0.5 mi upstream from mouth.

DRAINAGE AREA.--409 mi².

PERIOD OF RECORD.--August 1942 to September 1969, February 1980 to September 1983, and annual maximums 1984, 1985, April 1986 to current year.

REVISED RECORDS.--WSP 1710: Drainage area. WDR CO-82-1: 1982 (M).

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 5,175.48 ft above National Geodetic Vertical Datum of 1929. See WSP 1730 for history of changes prior to July 16, 1951. July 16, 1951 to Sept. 30, 1969, water-stage recorder at present site and datum.

REMARKS.--No estimated daily discharges. Records fair. Several diversions upstream from station for irrigation of about 1,900 acres. Floodflow regulated by Cherry Creek Reservoir 11 mi upstream, capacity, 95,960 acre-ft. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--35 years (water years 1943-69, 1981-83, 1987-91), 20.0 ft³/s; 14,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 3,120 ft³/s, Aug. 5, 1945, gage height, 5.25 ft, site and datum then in use; maximum gage height, 11.91 ft, June 17, 1965 (backwater from South Platte River); minimum daily discharge, 0.4 ft³/s, June 16-18, 1948.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 26, 1885, reached a discharge of 20,000 ft³/s, by float measurement. Flood of May 19, 20, 1864, reached a somewhat higher stage. Flood of Aug. 3, 1933, reached a discharge of about 15,000 ft³/s, as determined by rise of South Platte River at Denver.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,060 ft³/s at 2330 June 21, gage height, 5.42 ft; minimum daily, 6.5 ft³/s, Mar. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	16	12	12	17	8.9	8.0	48	159	18	23	24
2	43	29	12	12	16	8.9	8.4	27	152	20	123	22
3	43	48	12	12	13	8.6	8.7	23	58	33	323	24
4	19	22	12	13	12	9.0	9.5	31	20	28	78	23
5	19	28	12	13	11	26	8.1	54	15	28	124	20
6	19	57	12	13	9.5	14	8.2	18	117	27	71	19
7	22	24	12	14	9.4	9.7	8.3	18	99	29	49	19
8	45	35	14	17	9.4	8.4	49	17	34	55	33	18
9	21	34	13	16	9.2	7.9	12	16	76	81	33	19
10	25	32	12	14	8.9	7.4	10	19	25	69	36	17
11	42	32	12	16	8.9	8.4	17	18	40	25	33	20
12	21	32	13	12	8.6	7.8	62	19	55	96	36	19
13	18	32	13	11	8.3	8.6	28	18	56	41	37	21
14	17	33	16	11	8.3	8.0	18	12	55	25	33	20
15	17	32	14	11	8.6	8.3	9.8	38	60	27	34	20
16	15	33	12	15	8.4	7.7	8.2	102	63	23	51	20
17	15	17	13	13	8.3	7.1	8.8	26	49	22	44	18
18	17	15	14	12	8.6	7.9	8.8	14	27	21	39	19
19	15	15	13	12	8.9	7.9	9.2	15	19	22	34	19
20	74	15	11	12	9.1	7.1	11	18	24	108	38	25
21	27	21	12	11	8.9	8.4	19	84	103	51	42	19
22	21	23	13	11	9.1	13	11	53	61	86	34	22
23	19	23	12	11	8.4	7.6	14	161	22	85	35	22
24	19	24	14	11	11	6.5	22	95	19	29	37	22
25	25	24	14	11	10	9.3	22	29	24	22	43	21
26	26	24	13	9.9	9.5	18	22	19	27	22	36	18
27	24	24	15	11	9.0	63	23	15	25	21	37	19
28	25	14	13	11	9.6	11	23	24	20	23	72	18
29	26	12	12	10	---	10	13	31	19	23	34	19
30	19	12	12	12	---	9.8	129	15	17	24	25	48
31	19	---	12	11	---	8.2	---	47	---	23	24	---
TOTAL	771	782	396	380.9	276.9	352.4	609.0	1124	1540	1207	1691	634
MEAN	24.9	26.1	12.8	12.3	9.89	11.4	20.3	36.3	51.3	38.9	54.5	21.1
MAX	74	57	16	17	17	63	129	161	159	108	323	48
MIN	14	12	11	9.9	8.3	6.5	8.0	12	15	18	23	17
AC-FT	1530	1550	785	756	549	699	1210	2230	3050	2390	3350	1260

CAL YR 1990 TOTAL 9266.8 MEAN 25.4 MAX 189 MIN 9.5 AC-FT 18380
WTR YR 1991 TOTAL 9764.2 MEAN 26.8 MAX 323 MIN 6.5 AC-FT 19370

06714000 SOUTH PLATTE RIVER AT DENVER, CO

LOCATION.--Lat 39°45'35", long 105°00'10", in NW¼SE¼ sec.28, T.3 S., R.68 W., Denver County, Hydrologic Unit 10190003, on right bank 90 ft upstream from Nineteenth Street Bridge in Denver and 0.4 mi downstream from Cherry Creek.

DRAINAGE AREA.--3,861 mi².

PERIOD OF RECORD.--May to October 1889, June to October 1890, July 1895 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1934(M). WSP 1730: 1957(M). WDR CO-86-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 5,157.64 ft above National Geodetic Vertical Datum, adjustment of 1960. Prior to Aug. 12, 1909, nonrecording gages, and Aug. 12, 1909, to Aug. 28, 1931, water-stage recorder, at several sites within 0.5 mi of present site at various datums. Aug. 29, 1931, to June 28, 1965, water-stage recorder at site 70 ft downstream at datum 3.66 ft, lower. June 29, 1965, to Mar. 18, 1966, water-stage recorder at site 70 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 79,000 acres and municipal use, and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--79 years (water years 1896-1974), 344 ft³/s; 249,200 acre-ft/yr, prior to completion of Chatfield Dam; 16 years (water years 1976-91), 398 ft³/s; 288,400 acre-ft/yr, subsequent to completion of Chatfield Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,300 ft³/s, June 17, 1965, gage height, 18.66 ft, from floodmarks, present datum, from rating curve extended above 2,700 ft³/s, on basis of contracted-opening measurement of peak flow; minimum daily, 8.8 ft³/s, Mar. 25, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,460 ft³/s at 1900 June 1, gage height, 8.01 ft; minimum daily, 59 ft³/s, Jan. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192	117	115	91	99	79	86	205	1690	321	189	262
2	220	204	116	98	117	84	86	200	1090	424	757	261
3	280	336	105	94	103	85	103	158	509	463	1550	253
4	203	272	99	93	97	72	108	210	415	436	1030	226
5	188	270	102	92	94	130	173	289	394	411	1120	217
6	178	462	114	96	85	139	184	167	562	326	847	321
7	178	399	109	91	84	102	183	160	499	222	445	275
8	249	380	116	97	86	90	268	177	347	313	475	276
9	181	306	117	91	80	89	345	179	576	488	390	272
10	176	253	115	89	85	82	392	161	486	434	519	178
11	215	257	111	90	85	85	336	167	484	299	429	164
12	232	249	107	85	76	87	381	225	426	456	359	158
13	186	247	116	85	84	85	234	233	544	379	368	177
14	167	245	120	88	81	90	202	330	456	288	428	184
15	160	248	108	81	83	88	183	494	402	262	498	172
16	126	247	108	98	82	94	191	958	407	198	526	164
17	114	200	115	83	86	97	140	526	407	183	487	194
18	119	195	116	90	85	91	126	475	398	163	422	208
19	120	196	111	93	80	92	126	437	28	153	373	189
20	292	193	75	92	79	96	132	396	382	390	515	172
21	166	188	70	79	78	96	153	568	915	243	400	160
22	142	152	106	72	68	123	144	616	870	440	368	158
23	200	149	133	86	82	107	132	948	428	475	381	167
24	183	145	92	67	97	104	135	592	394	321	332	160
25	217	144	93	78	96	103	147	394	360	291	278	149
26	215	140	97	59	78	202	203	325	390	262	248	138
27	149	157	94	89	82	341	180	355	419	480	307	134
28	137	131	101	86	86	206	182	478	340	521	605	131
29	139	112	92	77	---	115	176	610	466	424	469	128
30	126	114	101	69	---	95	536	291	456	302	326	220
31	122	---	94	83	---	84	---	464	---	208	272	---
TOTAL	5572	6708	3268	2662	2418	3433	5967	11788	15940	10576	15713	5868
MEAN	180	224	105	85.9	86.4	111	199	380	531	341	507	196
MAX	292	462	133	98	117	341	536	958	1690	521	1550	321
MIN	114	112	70	59	68	72	86	158	340	153	189	128
AC-FT	11050	13310	6480	5280	4800	6810	11840	23380	31620	20980	31170	11640

CAL YR 1990 TOTAL 93541 MEAN 256 MAX 1660 MIN 70 AC-FT 185500
WTR YR 1991 TOTAL 89913 MEAN 246 MAX 1690 MIN 59 AC-FT 178300

06714215 SOUTH PLATTE RIVER AT 64TH AVENUE AT COMMERCE CITY, CO

LOCATION.--Lat 39°48'44", Long 104°57'28", in NW¼NW¼ sec.12, T.3 S., R.68 W., Adams County, Hydrologic Unit 10190003, on right bank 300 ft southeast of intersection of York Street and East 64th Avenue and 1,970 ft upstream from mouth of Sand Creek at northeast corner of Metro Denver Sewage Disposal plant at Commerce City.

DRAINAGE AREA.--3,884 mi².

PERIOD OF RECORD.--January 1982 to current year.

REVISED RECORDS.--WDR CO-86-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,105 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good except for period Aug. 19 to Sept. 20, which is poor. Natural flow of stream affected by transmountain diversions, storage and flood-control reservoirs, power developments, diversions for irrigation and municipal use, and return flow from irrigated areas. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--9 years, 353 ft³/s; 255,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft³/s, June 8, 1987, gage height, 8.09 ft; minimum daily, 3.2 ft³/s, Nov. 29, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,190 ft³/s at 1945 June 1, gage height, 5.96 ft; minimum daily, 4.6 ft³/s, Mar. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	7.9	9.6	6.6	48	7.0	52	17	1210	263	106	146
2	23	9.9	9.2	8.0	64	7.0	12	6.9	856	384	563	142
3	17	35	7.6	8.3	46	5.0	12	7.3	117	436	1330	137
4	14	15	8.7	8.6	41	4.6	12	8.6	34	400	636	117
5	12	14	9.6	11	23	32	10	76	50	383	759	101
6	11	105	9.0	12	13	34	13	7.2	295	304	576	115
7	11	48	6.5	9.9	12	10	12	6.3	261	180	157	85
8	18	35	9.7	9.1	13	7.9	19	6.6	45	227	217	84
9	12	12	6.9	9.3	12	7.0	17	5.8	203	378	89	77
10	11	10	5.8	9.7	11	6.9	23	28	52	449	221	20
11	10	10	6.1	9.5	11	8.7	25	86	37	259	144	15
12	11	9.5	11	9.7	14	8.1	54	135	17	493	151	13
13	12	8.5	7.1	11	13	7.5	13	143	66	337	184	12
14	11	9.4	6.6	9.9	9.9	5.3	9.1	142	116	215	242	11
15	11	10	5.4	7.8	9.7	6.1	8.8	373	60	187	317	11
16	10	10	5.8	39	7.9	10	8.0	755	56	117	373	9.7
17	9.7	7.8	5.5	49	11	8.7	8.4	298	46	94	317	9.4
18	9.1	8.9	5.9	29	11	5.7	8.4	246	25	78	273	8.7
19	9.0	7.1	5.9	34	9.1	6.4	10	208	40	64	230	9.4
20	27	7.1	8.6	33	8.5	7.7	12	125	14	283	255	8.6
21	11	7.0	8.0	24	7.8	5.3	12	240	384	198	283	9.0
22	9.0	7.9	12	27	7.5	6.6	8.2	297	546	439	267	8.9
23	8.1	9.4	14	26	6.4	7.3	7.7	623	34	391	270	8.9
24	8.7	7.6	8.5	22	7.3	8.0	6.3	336	20	46	231	8.9
25	8.1	6.3	11	27	7.9	5.8	5.7	106	13	31	206	8.7
26	9.5	28	12	24	7.4	16	5.6	40	134	21	185	8.6
27	8.6	63	14	31	8.1	223	8.1	35	341	139	195	8.4
28	7.7	5.4	13	28	8.0	16	6.0	61	307	220	554	8.0
29	8.6	7.2	11	25	---	14	6.7	365	221	172	376	7.7
30	8.8	7.9	10	27	---	16	224	14	212	170	217	34
31	8.6	---	8.6	29	---	17	---	51	---	128	155	---
TOTAL	369.5	529.8	272.6	614.4	448.5	530.6	629.0	4848.7	5812	7486	10079	1242.9
MEAN	11.9	17.7	8.79	19.8	16.0	17.1	21.0	156	194	241	325	41.4
MAX	27	105	14	49	64	223	224	755	1210	493	1330	146
MIN	7.7	5.4	5.4	6.6	6.4	4.6	5.6	5.8	13	21	89	7.7
AC-FT	733	1050	541	1220	890	1050	1250	9620	11530	14850	19990	2470

CAL YR 1990 TOTAL 38583.8 MEAN 106 MAX 1270 MIN 5.4 AC-FT 76530
WTR YR 1991 TOTAL 32863.0 MEAN 90.0 MAX 1330 MIN 4.6 AC-FT 65180

06714220 SENAC CREEK AT NORTH BORDER SLUDGE AREA NEAR AURORA, CO

LOCATION (REVISED).--Lat 39°39'06", long 104°40'34", NW¼NW¼ sec.4, T.5 S., R.65 W., Arapahoe County, Hydrologic Unit 10190003, on left bank 0.9 mi downstream from where stream crosses under E. Quincy Ave. 2 mi east of Lowry landfill site.

DRAINAGE AREA.--7.81 mi².

PERIOD OF RECORD.--August 1989 to current year (seasonal record only).

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 5,705 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 24-31, June 1-7, July 18-29, and Aug. 4-6. Records poor. Flow is partially regulated by the City of Aurora, Aurora Reservoir, located approximately 2 mi upstream of gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (estimate) 250 ft³/s, May 31, 1991, gage height, 4.76 ft; no flow many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (estimate), 250 ft³/s May 31, gage height 4.76 ft; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	---	---	---	.00	.00	.00	.00	8.1	.00	.09	.00
2	.00	---	---	---	.00	.00	.00	.00	.00	.00	.39	.00
3	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
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
30	.00	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	---	---	---	.00	---	5.3	---	.00	.00	---
TOTAL	0.00	---	---	---	0.00	0.00	0.00	5.30	8.10	0.00	0.48	0.00
MEAN	.000	---	---	---	.000	.000	.000	.17	.27	.000	.015	.000
MAX	.00	---	---	---	.00	.00	.00	5.3	8.1	.00	.39	.00
MIN	.00	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	---	---	---	.00	.00	.00	11	16	.00	1.0	.00

06719505 CLEAR CREEK AT GOLDEN, CO

LOCATION.--Lat 39°45'11", long 105°14'05", in NE¼NW¼ sec.33, T.3 S., R.70 W., Jefferson County, Hydrologic Unit 10190004, on left bank 100 ft downstream from U.S. Highway 6 bridge at west edge of Golden, 0.7 mi downstream from headgate of Church ditch, and 13.3 mi downstream from North Clear Creek.

DRAINAGE AREA.--400 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year. Records for station at site 0.8 mi upstream (October 1908 to December 1909, June 1911 to September 1974) are not equivalent due to diversions by Church ditch. Sediment data available April to September 1981.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,695 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 28 to Dec. 25, Dec. 29, Dec. 31 to Jan. 28, and Jan. 31 to Feb. 5. Records fair except for estimated daily discharges, which are poor. Natural flow of stream affected by minor transmountain diversions from Colorado River basin through Berthoud Pass ditch (see elsewhere in this report) and several small reservoirs upstream from station. Diversion by Welch ditch 1.4 mi upstream from station and by Church Ditch 0.7 mi upstream from station for irrigation of about 5,200 acres downstream from station.

AVERAGE DISCHARGE.--17 years, 187 ft³/s; 135,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,370 ft³/s, July 10, 1983, gage height, 6.44 ft, minimum daily, 18 ft³/s, Dec. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,200 ft³/s at 0200 June 16, gage height, 4.75 ft; minimum daily, 28 ft³/s, Mar. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	74	52	36	40	36	40	56	702	554	216	165
2	135	73	50	37	38	35	43	61	849	528	229	165
3	138	70	49	37	38	36	45	59	712	490	274	160
4	128	65	48	37	38	37	43	64	645	451	323	151
5	125	72	47	37	38	38	47	67	712	416	270	147
6	124	72	46	37	38	34	55	65	808	401	260	146
7	120	54	45	37	37	30	54	66	892	383	288	155
8	129	69	45	37	37	28	55	73	813	387	246	167
9	122	70	45	37	37	32	44	98	868	409	238	165
10	117	71	45	36	36	40	41	132	899	442	225	190
11	117	72	45	36	36	35	40	178	903	390	222	184
12	108	73	44	36	33	31	42	203	1050	385	220	176
13	103	67	44	36	32	30	35	168	1030	353	305	172
14	98	70	44	36	32	30	39	181	1010	330	240	136
15	95	67	44	36	33	33	41	197	1070	299	222	127
16	92	63	44	36	35	33	42	238	1060	283	202	126
17	93	61	44	36	35	34	47	198	980	319	180	126
18	88	61	44	37	33	35	52	225	950	344	183	116
19	100	61	44	37	34	37	51	319	888	313	236	121
20	103	60	44	37	32	40	50	365	845	304	193	131
21	93	58	43	37	35	37	54	417	792	284	195	129
22	93	45	43	38	33	41	57	422	797	303	180	121
23	96	51	43	38	33	39	56	488	747	352	170	126
24	91	61	43	38	32	42	59	468	695	337	159	112
25	84	60	43	38	33	43	59	416	639	337	158	114
26	80	56	43	38	35	46	60	486	584	328	149	111
27	79	56	41	40	33	42	57	530	537	284	160	106
28	79	56	39	43	35	36	53	583	555	252	167	102
29	79	55	37	42	---	39	55	564	581	241	185	105
30	80	54	36	40	---	36	62	536	569	226	173	116
31	77	---	36	42	---	37	---	549	---	221	167	---
TOTAL	3201	1897	1360	1165	981	1122	1478	8472	24182	10946	6635	4168
MEAN	103	63.2	43.9	37.6	35.0	36.2	49.3	273	806	353	214	139
MAX	138	74	52	43	40	46	62	583	1070	554	323	190
MIN	77	45	36	36	32	28	35	56	537	221	149	102
AC-FT	6350	3760	2700	2310	1950	2230	2930	16800	47960	21710	13160	8270

CAL YR 1990 TOTAL 52629 MEAN 144 MAX 855 MIN 29 AC-FT 104400
WTR YR 1991 TOTAL 65607 MEAN 180 MAX 1070 MIN 28 AC-FT 130100

PLATTE RIVER BASIN

06719505 CLEAR CREEK AT GOLDEN, CD--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1981 to current year.

pH: March to September 1981.

WATER TEMPERATURE: March 1981 to current year.

DISSOLVED OXYGEN: March to September 1981.

SUSPENDED-SEDIMENT DISCHARGE: March to September 1981.

INSTRUMENTATION.--Water-quality monitor since March 1981.

REMARKS.--Records rated fair. Daily maximum and minimum specific conductance data available in district office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum mean, 597 microsiemens, Jan. 9, 1983; minimum mean, 38 microsiemens, July 1, 1983.

pH: Maximum, 8.7 units, Mar. 27, April 10, 1981; minimum, 6.6 units, July 16, 1981.

WATER TEMPERATURE: Maximum, 23.0°C, Aug. 4, 1981; minimum, freezing point on many days during winter months most years.

DISSOLVED OXYGEN: Maximum, 14.2 mg/L, May 7, 1981; minimum, 5.2 mg/L, July 16, 1981.

SEDIMENT CONCENTRATION: Maximum daily, 282 mg/L, May 29, 1981; minimum daily, 3 mg/L, Sept. 21-24, 1981.

SEDIMENT LOAD: Maximum daily, 230 tons, June 3, 1981; minimum daily, 0.62 ton, Sept. 23-24, 1981.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum mean, 448 microsiemens, Dec. 23; minimum mean, 56 microsiemens, June 8.

WATER TEMPERATURES: Maximum, 18.4°C, July 31 and Aug. 17; minimum, freezing point on many days during winter months.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	182	229	285	359	354	359	304	288	88	96	151	168
2	182	232	317	346	353	342	298	274	67	86	147	167
3	184	233	301	330	347	341	290	273	73	87	153	170
4	186	260	331	321	349	332	289	271	77	88	145	169
5	184	254	282	317	348	324	282	281	78	87	144	169
6	178	250	265	314	353	363	270	287	73	87	148	167
7	182	262	295	317	347	357	269	281	57	85	144	165
8	182	265	293	317	345	377	272	284	56	85	140	165
9	185	242	287	325	345	378	277	272	63	80	139	163
10	186	250	280	331	345	348	296	270	63	120	143	157
11	186	269	274	331	348	341	303	241	121	113	140	156
12	186	262	272	324	349	345	296	206	115	110	143	161
13	196	263	271	323	349	356	315	206	76	120	140	162
14	202	256	274	320	348	366	306	205	100	121	142	169
15	201	255	295	318	343	353	312	193	114	124	144	173
16	203	254	306	330	337	339	306	194	113	125	146	173
17	205	256	292	342	342	341	295	197	113	125	147	167
18	208	255	301	344	351	335	289	186	112	124	149	168
19	202	259	310	347	361	335	282	156	114	127	178	172
20	203	263	338	345	363	331	285	142	116	130	160	171
21	212	265	369	349	350	329	283	135	112	128	150	174
22	210	284	372	357	347	315	278	135	109	138	154	178
23	200	298	448	357	349	310	282	134	106	147	158	176
24	204	272	422	355	350	308	281	142	110	141	153	176
25	214	270	404	359	368	306	277	150	112	144	160	176
26	218	276	392	349	374	302	279	148	111	150	166	177
27	221	276	386	352	365	302	283	142	102	148	162	180
28	221	291	363	350	358	305	285	138	97	151	163	186
29	224	309	356	356	---	306	286	129	80	154	163	186
30	226	290	375	356	---	307	274	86	95	156	167	182
31	227	---	375	356	---	309	---	78	---	153	166	---
TOTAL	6200	7900	10131	10497	9838	10362	8644	6124	2823	3730	4705	5123
MEAN	200	263	327	339	351	334	288	198	94	120	152	171
MAX	227	309	448	359	374	378	315	288	121	156	178	186
MIN	178	229	265	314	337	302	269	78	56	80	139	156

06719505 CLEAR CREEK AT GOLDEN, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	12.6	9.2	4.9	3.0	.0	.0	.0	.0	.1	.0	2.0	.1
2	11.3	9.3	3.3	.0	.0	.0	.0	.0	.1	.0	1.6	.0
3	9.5	7.1	.0	.0	.0	.0	.0	.0	.1	.0	3.1	.1
4	10.6	7.0	.0	.0	.0	.0	.0	.0	.1	.0	3.4	.8
5	9.7	7.0	1.9	.0	.0	.0	.0	.0	.1	.0	2.7	.7
6	9.3	6.2	1.6	.0	.0	.0	.0	.0	.1	.0	3.0	.3
7	8.1	3.0	.0	.0	.0	.0	.0	.0	.2	.0	2.7	.0
8	3.8	2.5	.0	.0	.0	.0	.0	.0	.2	.0	2.4	.0
9	4.2	.6	.5	.0	.1	.0	.1	.0	.2	.0	2.4	.0
10	6.5	2.8	2.5	.5	.1	.0	.1	.0	.2	.0	3.9	.0
11	5.7	4.0	2.1	1.0	.2	.0	.0	.0	.3	.0	5.1	.6
12	4.6	1.8	1.4	.1	.2	.0	.0	.0	.3	.0	4.6	1.1
13	6.7	2.9	.9	.0	.3	.0	.0	.0	.7	.1	5.1	.6
14	6.5	3.7	2.1	.6	.1	.0	.0	.0	.9	.0	4.1	1.1
15	7.4	4.1	3.1	1.4	.0	.0	.0	.0	1.0	.0	2.9	.5
16	7.6	4.7	2.2	.5	.1	.0	.0	.0	.7	.1	3.3	.0
17	6.4	3.1	2.6	1.4	.0	.0	.0	.0	1.1	.0	5.8	.5
18	4.2	1.4	3.1	1.8	.0	.0	.0	.0	.6	.0	6.6	.5
19	6.3	3.1	2.2	1.1	.1	.0	.0	.0	.3	.0	6.4	1.5
20	5.1	1.7	2.7	.7	.1	.0	.0	.0	2.0	.0	6.8	2.2
21	2.4	.0	1.5	.0	.1	.0	.1	.0	1.9	.0	5.3	1.1
22	4.9	1.7	.0	.0	.3	.0	.1	.0	1.6	.0	4.0	1.4
23	4.7	2.8	.0	.0	.2	.0	.0	.0	.5	.0	6.1	.5
24	5.1	2.9	1.9	.0	.1	.0	.1	.0	.0	.0	8.2	1.6
25	6.0	3.8	1.2	.0	.0	.0	.0	.0	.2	.0	7.9	2.8
26	6.7	4.1	1.0	.0	.1	.0	.0	.0	.9	.0	7.1	3.2
27	5.6	3.7	.0	.0	.1	.0	.0	.0	.9	.0	7.5	2.6
28	5.9	3.2	.0	.0	.1	.0	.1	.0	1.3	.0	7.3	1.3
29	6.1	4.0	.0	.0	.1	.0	.1	.0	---	---	3.3	.4
30	5.8	4.1	.0	.0	.1	.1	.1	.0	---	---	6.2	.0
31	5.1	3.1	---	---	.1	.0	.1	.0	---	---	9.1	1.6
MONTH	12.6	.0	4.9	.0	.3	.0	.1	.0	2.0	.0	9.1	.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	10.4	3.7	11.5	3.2	8.1	6.7	15.5	9.9	16.6	13.8	17.8	13.1
2	10.0	5.6	8.9	5.4	9.4	5.7	16.2	10.8	15.6	12.9	16.1	13.1
3	8.5	5.0	10.1	4.6	9.2	5.7	15.8	11.7	14.9	13.0	17.0	12.9
4	11.2	3.8	7.8	4.1	11.2	5.6	16.3	10.9	16.0	11.7	17.7	13.5
5	12.3	6.2	11.8	4.1	10.4	6.6	16.7	10.9	16.8	12.2	16.3	12.8
6	11.7	7.0	11.1	6.2	9.6	6.2	14.6	11.5	15.9	13.1	15.1	12.7
7	9.5	6.4	12.1	7.1	10.1	6.2	15.1	12.3	16.3	11.1	15.1	12.4
8	8.1	4.1	15.0	6.8	10.5	6.2	14.0	12.0	16.4	11.5	15.6	11.9
9	7.9	2.3	11.4	9.1	10.7	6.4	15.1	11.1	16.1	11.6	15.2	10.8
10	7.8	3.4	14.4	8.2	9.9	6.9	14.5	11.3	16.0	11.8	14.8	13.0
11	4.1	1.1	14.1	9.0	12.1	6.2	15.4	11.8	16.5	12.1	14.4	11.2
12	1.7	.6	12.6	7.3	10.8	7.5	16.0	11.3	14.6	12.8	13.6	11.4
13	5.5	.0	12.1	6.0	10.4	6.8	17.1	11.5	15.8	11.8	12.7	10.8
14	6.4	.7	11.4	7.6	11.6	7.6	17.3	11.4	17.2	12.1	12.9	9.2
15	8.8	2.6	9.0	6.1	14.3	7.3	17.9	12.3	16.1	13.0	11.9	8.9
16	10.3	4.4	8.2	5.2	11.9	7.9	17.2	12.6	17.2	13.0	11.5	7.1
17	10.5	5.1	11.5	6.8	12.7	7.3	18.3	12.6	18.4	13.1	12.2	8.1
18	6.9	4.8	13.5	8.2	12.2	7.6	16.2	12.9	18.1	13.6	10.9	8.4
19	8.4	3.6	11.7	7.7	12.3	8.1	16.3	13.0	16.1	12.8	10.9	7.1
20	9.3	5.4	10.0	8.0	11.9	8.0	16.2	12.8	16.3	11.9	12.3	8.6
21	8.5	6.3	9.2	6.8	13.1	8.0	15.6	12.8	16.9	12.2	13.8	9.1
22	11.0	5.7	10.2	6.8	13.1	9.1	15.1	13.1	16.3	12.8	11.9	9.1
23	10.7	6.2	9.2	6.4	13.6	8.0	13.4	12.3	15.6	12.4	11.3	6.8
24	11.9	5.7	8.1	6.1	13.1	8.5	13.0	11.7	16.1	12.6	11.1	6.8
25	10.9	6.2	11.5	5.0	13.7	7.8	14.1	10.6	16.7	13.1	12.1	7.5
26	7.6	3.1	10.3	6.2	12.9	8.0	14.2	10.6	17.3	13.0	12.6	8.4
27	6.0	2.1	10.6	6.4	13.4	8.4	16.7	10.9	17.3	13.1	12.5	8.5
28	7.0	2.3	10.9	5.7	14.5	9.3	17.8	12.1	16.3	13.3	12.7	9.1
29	9.6	2.9	10.2	5.6	14.0	9.9	17.2	13.0	17.0	12.9	12.1	9.8
30	9.4	1.7	9.6	5.0	14.7	11.2	16.4	13.1	17.8	13.0	12.2	10.8
31	---	---	9.5	5.5	---	---	18.4	13.1	17.6	12.9	---	---
MONTH	12.3	.0	15.0	3.2	14.7	5.6	18.4	9.9	18.4	11.1	17.8	6.8

06720500 SOUTH PLATTE RIVER AT HENDERSON, CO

LOCATION.--Lat 39°55'19", long 104°52'00", in SE¼NE¼ sec.34, T.1 S., R.67 W., Adams County, Hydrologic Unit 10190003, on right bank 500 ft upstream from bridge on State Highway 22 and 0.2 mi northwest of Hendersor.

DRAINAGE AREA.--4,713 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1926 to current year. Prior to October 1933, monthly discharge only, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1934-36(M). WSP 1730: Drainage area. WDR CO-88-1: 1986.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 5,003.12 ft above National Geodetic Vertical Datum of 1929. See WSP 1710 or 1730 for history of changes prior to June 1, 1960. June 1, 1960, to May 10, 1969, water-stage recorder at site 1,200 ft upstream at datum 2.00 ft, higher. May 11 to Oct. 2, 1969, nonrecording gage at site 500 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals, diversions for irrigation of about 253,000 acres, and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--48 years (water years 1927-74), 366 ft³/s; 265,200 acre-ft/yr, prior to completion of Chatfield Dam; 16 years (water years 1976-91), 574 ft³/s; 415,900 acre-ft/yr, subsequent to completion of Chatfield Dam.

The figure of average discharge published in the reports for 1980-90, were in error. The correct figures are: 5 years (water years 1976-80), 450 ft³/s; 326,000 acre-ft/yr; 6 years (water years 1976-81), 417 ft³/s; 302,100 acre-ft/yr; 7 years (water years 1976-82), 404 ft³/s; 292,700 acre-ft/yr; 8 years (water years 1976-83), 526 ft³/s; 381,100 acre-ft/yr; 9 years (water years 1976-84), 594 ft³/s; 430,400 acre-ft/yr; 10 years (water years 1976-85), 626 ft³/s; 453,500 acre-ft/yr; 11 years (water years 1976-86), 615 ft³/s; 445,600 acre-ft/yr; 12 years (water years 1976-87), 626 ft³/s; 453,500 acre-ft/yr; 13 years (water years 1976-88), 618 ft³/s; 447,700 acre-ft/yr; 14 years (water years 1976-89), 601 ft³/s; 435,400 acre-ft/yr; 15 years (water years 1976-90), 586 ft³/s; 424,600 acre-ft/yr, subsequent to completion of Chatfield Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s, May 6, 1973, gage height, 11.67 ft, from rating curve extended above 7,200 ft³/s, partly on basis of flow-over-road measurement of peak flow; maximum gage height, 12.93 ft, June 17, 1965, site and datum then in use; minimum daily discharge, 4.4 ft³/s, Apr. 1, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,720 ft³/s at 2300 June 1, gage height, 9.06 ft; minimum daily, 90 ft³/s, Mar. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	312	222	204	244	313	195	151	318	2170	609	400	374
2	327	207	203	272	344	179	105	210	3000	711	559	380
3	335	312	210	276	323	171	101	190	1080	884	3530	411
4	301	266	210	282	311	182	94	208	662	794	1510	406
5	288	239	202	282	314	251	109	353	802	759	1200	391
6	273	365	213	286	289	264	115	197	982	658	1070	343
7	262	290	202	283	276	220	112	171	1630	622	643	355
8	348	252	196	288	274	196	191	154	1100	626	532	357
9	335	248	204	280	275	187	213	145	1120	813	413	339
10	312	228	203	284	268	184	210	179	1190	1250	480	262
11	312	225	223	283	273	181	266	243	1010	768	419	269
12	305	222	209	285	270	177	383	305	914	1090	383	261
13	280	215	204	289	291	173	269	289	882	1300	428	255
14	260	210	209	294	281	170	222	237	947	835	420	252
15	262	208	203	297	264	134	200	489	901	650	424	230
16	254	199	219	316	263	90	182	1350	904	548	500	216
17	249	193	217	335	255	93	177	587	841	502	524	213
18	242	190	223	315	257	99	176	453	779	522	432	223
19	239	198	208	316	247	100	176	447	688	509	465	233
20	340	210	205	324	247	100	166	411	592	479	416	229
21	303	207	215	331	247	103	185	462	663	677	411	225
22	266	202	229	319	249	98	191	533	1890	1070	390	217
23	273	189	229	322	249	97	176	1150	701	1500	405	223
24	256	194	226	311	243	95	169	1040	576	782	378	223
25	243	195	229	314	241	93	157	523	496	685	387	219
26	242	217	219	309	188	96	158	504	515	606	377	225
27	248	301	232	313	179	342	152	440	616	548	378	217
28	242	249	239	312	182	127	149	477	701	566	732	211
29	239	259	232	306	---	114	153	846	649	469	583	202
30	246	242	232	300	---	118	617	494	551	424	406	301
31	269	---	237	305	---	107	---	458	---	418	370	---
TOTAL	8663	6954	6686	9273	7413	4736	5725	13863	29552	22674	19565	8262
MEAN	279	232	216	299	265	153	191	447	985	731	631	275
MAX	348	365	239	335	344	342	617	1350	3000	1500	3530	411
MIN	239	189	196	244	179	90	94	145	496	418	370	202
AC-FT	17180	13790	13260	18390	14700	9390	11360	27500	58620	44970	38810	16390
CAL YR 1990	TOTAL 143009		MEAN 392	MAX 2200	MIN 164	AC-FT 283700						
WTR YR 1991	TOTAL 143366		MEAN 393	MAX 3530	MIN 90	AC-FT 284400						

PLATTE RIVER BASIN

06720500 SOUTH PLATTE RIVER AT HENDERSON, CO--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1955 to September 1957, June 1962 to September 1973. Established as NASQAN station in 1988 water year. April 18, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, O.7 UM-MF (COLS./ 100 ML)	STREP- TOCOC- CI, FECAL, KF AGAR (COLS. PER 100 ML)	HARO- NESS TOTAL (MG/L AS CACO3)
NOV 28...	1000	207	1160	7.8	6.5	16	8.4	350	300	230
APR 16...	0915	144	1020	8.0	10.5	6.0	9.9	K61	K71	220
JUN 11...	1005	1030	399	7.7	15.5	23	7.6	490	550	100
AUG 07...	1145	545	620	8.0	20.0	44	6.4	--	1200	160
22...	1015	331	768	8.0	20.5	5.5	6.3	960	170	200
SEP 19...	1055	182	983	8.0	17.0	2.5	7.7	410	140	230
DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR-(B) BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR-(C) BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA-(A) LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV 28...	67	15	130	4	9.6	230	0	183	170	150
APR 16...	63	14	100	3	10	200	0	168	180	84
JUN 11...	30	6.4	37	2	3.8	88	0	69	66	24
AUG 07...	49	9.6	57	2	5.7	150	0	118	110	40
22...	60	11	75	2	7.5	170	0	137	140	56
SEP 19...	67	15	100	3	11	200	0	166	180	59
DATE	FLUO- RIDE, 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, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
NOV 28...	0.9	11	666	691	0.91	372	0.16	2.7	2.7	7.5
APR 16...	2.4	9.9	572	599	0.78	222	0.29	4.5	4.6	5.6
JUN 11...	0.6	9.5	228	231	0.31	634	0.14	1.4	1.3	1.2
AUG 07...	0.9	11	361	369	0.49	531	0.17	2.1	2.0	0.96
22...	1.0	12	453	469	0.62	405	0.45	3.7	3.7	1.3
SEP 19...	1.4	12	573	582	0.78	282	0.49	5.6	5.6	2.9

A Field total dissolved alkalinity, determined by incremental titration method.

B Field dissolved bicarbonate, determined by incremental titration method.

C Field dissolved carbonate, determined by incremental titration method.

K Based on non-ideal colony count.

06720500 SOUTH PLATTE RIVER AT HENDERSON, CD--Continued
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

		NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)		
NOV	28...	6.2	1.0	--	8.5	--	11	2.0	1.8	1.8		
APR	16...	5.8	0.60	--	6.2	--	11	3.0	2.8	2.7		
JUN	11...	1.2	0.60	--	1.8	--	3.2	0.96	0.66	0.69		
AUG	07...	0.87	1.0	0.23	2.0	1.1	4.1	1.2	0.92	0.95		
	22...	1.2	1.2	0.90	2.5	2.1	6.2	1.7	1.6	1.5		
SEP	19...	3.0	1.1	--	4.0	--	9.6	2.4	2.2	2.3		
DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	
NOV	28...	1000	10	2	37	<0.5	<1.0	<1	<3	4	65	<1
APR	16...	0915	--	--	--	--	--	--	--	--	--	--
JUN	11...	1005	30	1	24	<0.5	<1.0	<1	<3	6	35	<1
AUG	07...	1145	20	2	35	<0.5	<1.0	1	<3	5	21	<1
	22...	1015	--	--	--	--	--	--	--	--	--	--
SEP	19...	1055	<10	1	30	<0.5	<1.0	<1	<3	3	29	<1
DATE		LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	
NOV	28...	25	290	<0.1	<10	5	2	<1.0	660	<6	32	
APR	16...	--	--	--	--	--	--	--	--	--	--	
JUN	11...	8	170	<0.1	10	3	<1	<1.0	250	<6	50	
AUG	07...	16	120	<0.1	10	2	2	<1.0	410	<6	19	
	22...	--	--	--	--	--	--	--	--	--	--	
SEP	19...	23	170	<0.1	10	6	3	<1.0	590	<6	24	

SUSPENDED-SOLID DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV				
28...	1000	207	191	107
APR				
16...	0915	144	36	14
JUN				
11...	1005	1030	116	323
AUG				
07...	1145	545	149	219
22...	1015	331	20	18
SEP				
19...	1055	182	42	21

06720820 BIG DRY CREEK AT WESTMINSTER, CO

LOCATION.--Lat 39°54'20", long 105°02'04", NE¼SE¼ sec.6, T.2 S., R.6B W., Adams County, Hydrologic Unit 10190003, on left bank 0.75 mi upstream from bridge on 120th Ave., and 5.2 mi downstream from outlet of Standley Lake.

DRAINAGE AREA.--43.8 mi², revised.

PERIOD OF RECORD.--July 1987 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 5,215 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 2-11, Nov. 27 to Dec. 3, and Dec. 18 to Feb. 20. Records good except for estimated daily discharges, which are poor. Flow affected by storage diversions, ground-water withdrawals and diversions for irrigation and return flow from irrigated areas. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 273 ft³/s, June 1, 1991, gage height, 4.63 ft; minimum daily, 0.60 ft³/s, Dec. 21, 22, 1989; Dec. 24-26, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 273 ft³/s at 2100 June 1, gage height, 4.63 ft; minimum daily, 0.60 ft³/s, Dec. 24-26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	1.8	1.3	.75	1.6	1.8	1.5	8.2	91	63	5.3	65
2	3.7	1.6	1.3	.72	1.9	1.8	1.4	4.0	51	36	12	62
3	3.6	1.5	1.4	.70	2.0	1.6	17	3.2	31	35	24	59
4	2.9	1.4	1.8	.68	2.0	1.6	14	4.9	20	26	16	56
5	2.7	1.3	1.6	.65	1.9	2.4	1.3	10	14	23	13	47
6	2.4	1.3	1.6	.62	1.9	3.6	1.2	3.7	16	22	11	46
7	2.2	1.2	1.5	.62	1.9	1.8	1.3	2.9	21	20	8.6	43
8	6.8	1.3	1.5	.65	1.9	1.6	1.6	2.4	38	26	6.3	44
9	4.3	1.5	1.5	.80	1.9	1.5	1.6	2.5	46	28	12	41
10	3.5	1.9	1.5	.90	1.9	1.5	1.2	2.3	55	28	11	40
11	3.2	2.2	1.5	1.1	1.9	1.5	3.9	2.3	55	23	9.7	43
12	2.6	2.2	1.5	1.2	1.9	1.5	17	2.2	59	24	20	38
13	2.4	2.0	1.4	1.3	1.8	1.5	6.2	2.8	59	27	23	35
14	2.2	1.9	1.4	1.5	1.8	1.4	5.0	35	57	19	31	31
15	2.0	1.8	1.6	1.5	1.8	1.4	3.0	31	54	17	30	26
16	1.7	1.8	1.4	1.5	1.8	1.4	2.1	44	56	14	32	21
17	1.6	1.8	1.4	1.4	1.8	1.4	1.7	48	56	13	30	20
18	1.7	1.7	1.3	1.4	1.8	1.4	1.9	34	59	13	30	20
19	1.9	1.7	1.0	1.3	1.8	1.3	1.9	32	62	13	30	19
20	7.6	1.7	.90	1.3	1.8	1.4	2.8	27	63	10	33	19
21	3.8	1.6	.80	1.2	1.8	1.2	4.5	27	73	11	33	19
22	2.6	1.5	.70	1.2	1.7	1.3	4.5	34	92	23	37	16
23	2.1	1.5	.65	1.2	1.7	1.2	3.3	41	86	29	68	17
24	1.9	1.5	.60	1.2	1.6	1.2	2.3	35	86	13	68	20
25	2.5	1.5	.60	1.1	1.6	1.2	1.9	29	91	11	64	19
26	3.3	1.5	.60	1.1	1.7	1.3	1.7	29	91	28	63	17
27	2.4	1.4	.62	1.1	1.8	3.8	1.6	25	94	11	62	12
28	2.0	1.3	.62	1.1	1.8	1.6	1.9	25	84	3.3	67	3.8
29	2.2	1.3	.62	1.1	---	1.5	2.1	25	86	2.8	66	3.5
30	2.2	1.4	.62	1.2	---	1.6	23	25	85	4.6	66	8.3
31	1.9	---	.65	1.3	---	1.5	---	35	---	4.6	67	---
TOTAL	89.7	48.1	35.48	33.39	50.8	50.8	134.4	632.4	1831	621.3	1048.9	910.6
MEAN	2.89	1.60	1.14	1.08	1.81	1.64	4.48	20.4	61.0	20.0	33.8	30.4
MAX	7.6	2.2	1.8	1.5	2.0	3.8	23	48	94	63	68	65
MIN	1.6	1.2	.60	.62	1.6	1.2	1.2	2.2	14	2.8	5.3	3.5
AC-FT	178	95	70	66	101	101	267	1250	3630	1230	2080	1810

CAL YR 1990 TOTAL 4500.67 MEAN 12.3 MAX 98 MIN .60 AC-FT 8930

WTR YR 1991 TOTAL 5486.87 MEAN 15.0 MAX 94 MIN .60 AC-FT 10880

06721500 NORTH ST VRAIN CREEK NEAR ALLENS PARK, CO

LOCATION.--Lat. 40°13'08", Long 105°31'40", in SW¼SE¼ sec.14, T.3 N., R.73 W., Boulder County, Hydrologic Unit 10190005, on left bank 64 ft upstream from bridge on Colorado Highway 7, 0.8 mi upstream from Horse Creek, and 1.7 mi north of Allens Park.

DRAINAGE AREA.--32.6 mi².

PERIOD OF RECDRD.--October 1925 to September 1930. October 1986 to current year.

GAGE.--Water stage recorder. Elevation of gage is 8,280 ft above National Geodetic Vertical Datum of 1929, from topographic map. Oct. 1, 1926 to June 6, 1929, water-stage recorder at present site at different datum. June 6, 1929 to Sept. 30, 1930 at site 300 ft downstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 8, 9, 18, 21, 22, Nov. 4, 5, 7-9, 12, 13, 22-24, 26-30, Dec. 2, 3, Dec. 14 to Mar. 23, Mar. 28 to Apr. 1, Apr. 4, 8-15, 17-19, and Apr. 27, 28. Records good except for estimated daily discharges, which are poor. No diversions upstream from station. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--10 years (water years 1926-30, 1987-91), 53.6 ft³/s; 38,830 acre-ft/yr. The figures of average discharge published in the reports for water years 1987-90, were in error; the correct figures are: 6 years (water years 1926-30, 1987), 58.8 ft³/s; 42,600 acre-ft/yr; 7 years (water years 1926-30, 1987-88), 56.7 ft³/s; 41,080 acre-ft/yr; 8 years (water years 1926-30, 1987-89), 54.6 ft³/s; 39,560 acre-ft/yr; 9 years (water years 1926-30, 1987-90), 54.0 ft³/s; 39,120 acre-ft/yr.

EXTREMES FOR PERIOD OF RECDRD.--Maximum discharge, 1,000 ft³/s (estimated) June 9, 1929, caused by failure of Copeland Lake dam 0.5 mi upstream; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 22	2400	253	5.64	June 15	0230	438	6.31
June 1	2300	*569	*6.70				

Minimum daily discharge, 4.4 ft³/s, Dec. 21.

REVISIONS.--Revised figures of daily discharge for water years 1987-88, and peak discharges for water years 1987-89, are given herein, these figures supersede those published in the reports for 1987-89.

EXTREMES FOR WATER YEARS 1987-1989.--Peak discharges greater than base discharge of 150 ft³/s, and maximum (*):

Water year	Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Water year	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
1987	June 10, 1987	0100	*306	*5.87	1989	May 23, 1989	2300	168	5.33
						May 30, 1989	2100	208	5.50
1988	May 18, 1988	2200	203	5.48		June 11, 1989	2200	251	5.67
	May 29, 1988	2300	286	5.80		June 16, 1989	2400	*283	*5.79
	June 4, 1988	2400	*395	*6.17					
	June 29, 1988	0030	300	5.85					

PLATTE RIVER BASIN

06721500 NORTH ST VRAIN CREEK NEAR ALLENS PARK, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	17	12	7.8	7.0	6.7	7.1	99	106	142	69	27
2	32	17	12	7.8	7.0	6.8	7.1	102	111	121	65	28
3	35	17	12	7.8	6.8	6.9	7.1	77	106	107	60	27
4	36	17	11	7.8	6.9	6.8	7.1	60	113	104	52	26
5	34	17	11	7.8	6.6	7.0	6.8	52	125	89	48	26
6	33	17	11	7.8	6.6	7.0	7.9	55	138	82	45	25
7	33	17	11	7.8	6.6	7.0	7.0	66	159	78	46	24
8	33	17	11	7.8	6.4	7.0	7.2	85	172	78	49	23
9	34	16	10	7.8	6.4	7.0	7.4	107	275	76	48	22
10	35	16	10	7.8	6.5	7.0	7.6	121	258	71	45	21
11	37	15	10	7.8	6.5	7.0	8.0	123	200	70	42	20
12	39	15	10	7.8	6.5	7.0	8.0	123	177	88	41	20
13	46	15	10	7.6	6.4	7.0	8.2	157	163	90	41	19
14	43	15	10	7.6	6.4	7.0	8.8	170	168	76	37	19
15	32	14	10	7.6	6.4	7.0	9.5	181	159	71	34	28
16	31	14	10	7.6	6.4	7.0	12	213	163	69	36	29
17	29	14	10	7.6	6.4	7.0	16	215	155	68	34	33
18	28	15	9.6	7.6	6.5	7.1	20	177	131	66	32	31
19	28	15	9.4	7.6	6.5	7.1	26	166	127	64	29	26
20	32	14	9.8	7.5	6.5	7.1	30	148	123	63	28	25
21	33	14	9.6	13	6.6	7.1	26	140	119	60	28	23
22	29	14	9.4	39	6.6	7.1	24	127	115	61	29	23
23	26	13	9.2	7.4	6.6	7.1	29	119	111	63	33	22
24	24	13	9.0	7.4	6.6	7.1	43	119	109	63	42	21
25	23	13	8.8	7.4	6.7	7.1	54	111	107	60	40	19
26	22	12	8.6	7.4	6.7	7.1	57	104	106	61	40	18
27	21	12	8.4	7.4	6.6	7.1	57	99	104	65	37	17
28	20	12	8.2	7.4	6.6	7.1	58	88	102	66	34	17
29	20	12	8.2	7.4	---	7.1	78	82	113	60	32	16
30	19	12	8.2	7.6	---	7.1	85	81	123	61	29	16
31	19	---	8.0	7.2	---	7.1	---	87	---	64	27	---
TOTAL	938	441	305.4	272.9	184.3	217.6	728.8	3654	4238	2357	1252	691
MEAN	30.3	14.7	9.85	8.80	6.58	7.02	24.3	118	141	76.0	40.4	23.0
MAX	46	17	12	39	7.0	7.1	85	215	275	142	69	33
MIN	19	12	8.0	7.2	6.4	6.7	6.8	52	102	60	27	16
AC-FT	1860	875	606	541	366	432	1450	7250	8410	4680	2480	1370

WTR YR 1987 TOTAL 15280.0 MEAN 41.9 MAX 275 MIN 6.4 AC-FT 30310

06721500 NORTH ST VRAIN CREEK NEAR ALLENS PARK, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	10	7.8	6.0	5.9	5.9	8.4	41	134	166	58	19
2	15	10	7.8	6.0	6.0	5.9	8.0	37	127	148	56	19
3	14	10	7.8	6.0	5.9	5.9	7.6	33	177	136	56	18
4	14	10	7.7	5.6	5.9	5.9	7.4	27	272	138	55	17
5	13	10	7.7	5.6	5.9	5.9	8.1	33	345	144	49	17
6	13	9.8	7.8	5.6	5.9	5.9	10	42	309	140	46	16
7	13	9.6	7.9	5.6	5.9	5.9	10	35	300	131	48	15
8	11	9.7	7.7	5.6	5.9	5.9	12	28	283	115	49	15
9	11	9.6	7.6	5.6	5.9	5.9	11	25	289	109	45	15
10	11	9.4	7.5	5.6	6.0	5.9	11	24	292	102	39	15
11	11	9.8	7.5	5.4	6.0	5.9	11	26	300	99	37	15
12	10	9.8	7.4	5.4	6.0	5.9	11	46	303	95	35	19
13	10	9.8	7.3	5.4	6.0	5.9	16	79	240	90	33	19
14	13	9.5	7.2	5.4	5.9	5.9	17	107	208	92	30	21
15	13	9.4	7.3	5.4	5.9	5.9	19	113	206	88	28	20
16	12	9.6	7.3	5.4	5.9	5.9	21	129	196	80	30	18
17	10	10	7.3	5.4	5.9	5.9	25	152	203	75	31	16
18	10	10	7.0	5.4	5.9	6.0	22	179	223	72	29	16
19	9.5	12	6.9	5.4	5.9	6.1	24	179	245	75	26	15
20	8.5	9.1	6.8	5.4	5.9	6.1	24	121	243	70	25	15
21	10	9.0	6.6	5.5	5.9	6.2	28	92	251	64	24	15
22	9.1	8.8	6.6	5.7	5.9	6.3	27	73	251	61	27	15
23	9.0	8.6	6.4	5.7	5.9	6.3	22	64	218	59	24	15
24	8.9	8.4	6.3	5.6	5.9	6.3	20	78	208	56	24	14
25	9.5	8.4	6.3	5.6	5.9	6.7	17	111	193	59	23	14
26	9.6	8.3	6.0	5.6	5.9	7.0	19	129	203	66	22	13
27	9.0	8.0	6.0	5.6	5.9	7.5	17	155	196	61	24	13
28	9.1	8.0	6.0	5.7	5.9	7.9	16	188	206	62	22	13
29	9.1	7.9	6.0	5.7	5.9	8.2	20	218	253	69	20	13
30	10	7.8	6.0	5.7	---	8.6	31	248	198	62	19	13
31	11	---	6.0	5.9	---	8.5	---	191	---	60	19	---
TOTAL	341.3	280.3	217.5	173.5	171.6	198.0	500.5	3003	7072	2844	1053	478
MEAN	11.0	9.34	7.02	5.60	5.92	6.39	16.7	96.9	236	91.7	34.0	15.9
MAX	15	12	7.9	6.0	6.0	8.6	31	248	345	166	58	21
MIN	8.5	7.8	6.0	5.4	5.9	5.9	7.4	24	127	56	19	13
AC-FT	677	556	431	344	340	393	993	5960	14030	5640	2090	948

CAL YR 1987 TOTAL 14434.7 MEAN 39.5 MAX 275 MIN 6.0 AC-FT 28630

WTR YR 1988 TOTAL 16332.7 MEAN 44.6 MAX 345 MIN 5.4 AC-FT 32400

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	16	9.8	6.0	6.4	5.8	7.8	11	281	141	71	40
2	26	15	9.8	5.8	5.6	5.6	8.2	10	347	129	71	42
3	27	15	9.4	5.1	6.4	5.8	8.1	11	229	127	76	38
4	25	17	9.1	5.4	5.8	6.0	7.8	11	216	124	88	36
5	24	17	9.6	6.0	5.8	5.6	9.4	11	256	116	77	35
6	23	17	9.6	5.8	5.8	5.4	10	10	269	112	73	33
7	24	17	9.8	6.0	5.8	5.4	9.8	10	290	110	74	34
8	24	16	9.9	5.5	6.4	5.8	8.6	13	262	106	72	39
9	24	16	9.8	5.0	5.9	6.2	8.0	23	293	125	71	45
10	26	16	9.4	5.6	6.2	6.8	8.4	38	294	116	68	46
11	25	17	9.2	5.4	5.3	6.6	8.0	69	294	106	63	42
12	22	16	8.8	5.6	5.6	6.4	7.4	76	314	102	59	42
13	21	16	8.8	6.0	5.4	6.8	7.6	63	310	95	67	44
14	21	14	8.8	6.4	5.0	6.6	8.0	74	325	87	63	39
15	20	14	8.0	5.8	5.2	6.8	8.2	69	366	85	59	39
16	20	13	8.0	5.8	4.5	7.0	8.9	58	306	86	69	36
17	19	13	8.0	5.8	4.5	7.6	8.6	53	270	84	75	33
18	20	13	8.0	5.2	4.5	8.0	9.3	65	249	84	70	31
19	21	12	7.2	5.8	4.5	7.7	8.8	108	225	87	69	30
20	21	12	4.5	6.2	4.6	7.6	9.0	136	204	84	63	29
21	21	12	4.4	6.0	5.0	7.4	9.5	129	212	82	58	28
22	21	12	4.5	6.4	5.2	7.4	9.7	165	211	92	53	26
23	20	12	4.8	6.5	4.8	7.6	10	191	193	107	50	24
24	19	12	5.0	6.2	4.8	8.1	10	136	177	124	50	22
25	18	12	5.4	5.6	4.8	7.6	10	113	166	132	48	21
26	18	12	5.6	5.2	5.0	7.4	10	148	155	114	45	20
27	18	11	5.7	5.8	5.2	7.6	9.8	160	134	98	45	20
28	18	11	5.7	5.8	5.6	7.8	10	155	137	87	46	20
29	17	12	5.2	5.8	---	7.6	9.3	146	148	81	44	19
30	17	11	5.1	4.9	---	8.2	9.4	143	154	77	43	20
31	16	---	5.6	6.4	---	8.6	---	126	---	75	40	---
TOTAL	662	419	232.5	178.8	149.6	214.8	267.6	2531	7287	3175	1920	973
MEAN	21.4	14.0	7.50	5.77	5.34	6.93	8.92	81.6	243	102	61.9	32.4
MAX	27	17	9.9	6.5	6.4	8.6	10	191	366	141	88	46
MIN	16	11	4.4	4.9	4.5	5.4	7.4	10	134	75	40	19
AC-FT	1310	831	461	355	297	426	531	5020	14450	6300	3810	1930
CAL YR 1990	TOTAL	18407.0	MEAN	50.4	MAX	415	MIN	4.4	AC-FT	36510		
WTR YR 1991	TOTAL	18010.3	MEAN	49.3	MAX	366	MIN	4.4	AC-FT	35720		

06724000 ST VRAIN CREEK AT LYONS, CO

LOCATION.--Lat 40°13'05", long 105°15'34", in NW 1/4 sec. 20, T.3 N., R.70 W., Boulder County, Hydrologic Unit 10190005, on left bank 75 ft southwest of U.S. Highway 36 (State Highways 7 and 66) at southeast edge of Lyons, 400 ft upstream from St. Vrain Supply Canal, and 0.4 mi downstream from confluence of North and South St. Vrain Creeks.

DRAINAGE AREA.--212 mi².

PERIOD OF RECORD.--Streamflow records, August 1887 to September 1891, June 1895 to current year. Monthly discharge only for some periods, published in WSP 1310. Published as "near Lyons" 1901, 1903. Water-quality data available, October 1977 to February 1981.

REVISED RECORDS.--WSP 1310: 1898, 1900. WSP 1730: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,292 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 6, 1923, nonrecording gages near present site at different datums. Apr. 6, 1923, to Sept. 30, 1956, water-stage recorder at same site at datum 1.00 ft, higher.

REMARKS.--Estimated daily discharges: Dec. 20-27, and June 1, 2. Records good except for estimated daily discharges, which are fair. Diversions upstream from station for irrigation of about 2,000 acres. Flow partly regulated by small reservoirs upstream from station.

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

AVERAGE DISCHARGE.--100 years (water years 1888-91, 1896-1991), 128 ft³/s; 92,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,500 ft³/s June 22, 1941, gage height, 9.06 ft, present datum, from floodmark, from rating curve extended above 2,100 ft³/s, on basis of slope-area measurement at gage height, 8.90 ft; no flow Jan. 19, 20, 1922, Jan. 12, 13, 1950.

EXTREMES OUTSIDE PERIOD OF RECORD.--Outstanding floods occurred in June 1864 and May 1876. Flood in May or June 1894 reached a stage of 9.13 ft, from information by local resident, discharge, about 9,800 ft³/s. For discussions of these floods, see WSP 997.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,280 ft³/s at 1715 June 21, gage height, 5.40 ft; minimum daily, 9.6 ft³/s, Mar. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	32	23	17	17	15	15	50	584	325	148	70
2	37	33	20	15	18	14	17	56	826	282	147	73
3	41	32	12	14	16	14	21	47	528	272	224	79
4	44	31	18	17	17	15	24	53	560	270	249	75
5	28	33	22	20	19	21	23	58	898	250	203	62
6	22	32	20	19	16	17	26	52	799	226	192	53
7	28	27	19	19	16	17	33	44	893	224	197	55
8	45	30	20	21	16	15	36	36	773	216	198	63
9	46	32	20	22	17	16	24	55	725	257	180	66
10	43	27	20	22	17	15	30	77	737	256	164	85
11	45	29	21	23	17	15	35	95	700	218	150	87
12	42	30	19	22	17	15	37	138	727	207	134	96
13	41	29	19	21	17	15	33	170	705	192	148	101
14	35	28	15	19	18	15	31	165	746	177	159	91
15	29	37	12	19	18	15	29	154	768	161	142	75
16	29	67	19	18	19	13	20	179	698	160	154	70
17	32	68	19	17	20	14	17	192	606	168	162	62
18	30	68	17	16	18	12	23	211	563	163	149	70
19	31	67	16	16	17	9.6	26	238	508	173	154	68
20	35	69	14	16	17	16	30	276	415	174	140	61
21	35	57	13	17	18	15	35	268	472	185	123	57
22	41	21	13	17	16	14	38	280	446	175	112	57
23	61	21	13	17	17	12	36	344	410	268	100	58
24	58	23	14	17	16	12	33	302	370	267	90	54
25	59	21	15	17	17	12	33	301	345	310	93	46
26	53	20	16	18	17	12	35	324	315	272	89	41
27	31	23	17	19	18	22	34	322	278	220	92	42
28	30	18	18	18	16	16	31	329	278	184	96	43
29	29	16	17	18	---	17	32	324	329	171	96	35
30	30	26	17	18	---	17	44	312	345	164	85	40
31	31	---	18	17	---	12	---	316	---	155	73	---
TOTAL	1184	1047	536	566	482	459.6	881	5768	17347	6742	4443	1935
MEAN	38.2	34.9	17.3	18.3	17.2	14.8	29.4	186	578	217	143	64.5
MAX	61	69	23	23	20	22	44	344	898	325	249	101
MIN	22	16	12	14	16	9.6	15	36	278	155	73	35
AC-FT	2350	2080	1060	1120	956	912	1750	11440	34410	13370	8810	3840

CAL YR 1990 TOTAL 43938.0 MEAN 120 MAX 834 MIN 1.4 AC-FT 87150
WTR YR 1991 TOTAL 41390.6 MEAN 113 MAX 898 MIN 9.6 AC-FT 82100

06725450 ST VRAIN CREEK BELOW LONGMONT, CO

LOCATION.--Lat 40°09'30", long 105°00'48", in NW¼NW¼ sec.9, T.2 N., R.6B W., Weld County, Hydrologic Unit 10190005, on left bank 1,750 ft upstream from mouth of Boulder Creek, 1.8 mi downstream from Spring Gulch, and 4.7 mi southeast of Longmont.

DRAINAGE AREA.--424 mi².

PERIOD OF RECORD.--October 1976 to September 1982, August 1984 to current year. Water-quality data available, October 1976 to February 1981.

GAGE.--Water-stage recorder. Elevation of gage is 4,852 ft, above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-30, and Dec. 19 to Jan. 9. Records fair except for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--13 years, 111 ft³/s, 80,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft³/s, May 1, 1980, gage height, 6.37 ft; minimum daily, 20 ft³/s, Dec. 28, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,520 ft³/s at 0200 June 2, gage height, 5.18 ft; minimum daily, 20 ft³/s, Dec. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	48	45	24	31	39	35	48	294	115	137	121
2	46	51	46	25	32	40	37	45	1020	119	157	133
3	46	59	47	26	34	39	36	49	695	129	344	126
4	48	59	48	28	37	40	36	66	497	137	231	125
5	51	58	48	29	39	48	35	72	759	142	192	125
6	64	68	50	30	38	45	36	58	738	138	228	120
7	60	60	52	32	38	41	36	55	952	135	204	176
8	57	56	51	33	39	39	39	57	844	142	169	169
9	55	54	50	34	39	37	38	57	888	166	162	162
10	54	51	52	34	38	38	38	58	843	166	168	161
11	52	52	53	33	40	37	40	61	794	162	165	159
12	51	48	51	33	40	36	43	65	780	162	157	162
13	50	49	51	35	39	36	41	68	749	162	145	146
14	49	47	53	36	39	34	41	67	803	157	147	134
15	48	47	48	35	39	34	42	106	829	140	143	127
16	47	46	51	36	39	32	42	125	779	133	148	125
17	47	45	51	35	39	33	42	56	577	140	154	135
18	46	45	51	33	40	31	40	57	389	153	132	129
19	46	45	49	33	39	31	41	62	276	171	141	129
20	46	45	45	33	39	33	42	76	178	189	138	129
21	46	46	40	34	39	32	43	77	177	181	140	111
22	46	44	36	36	39	32	45	59	259	176	118	88
23	46	44	32	33	39	32	45	99	237	234	121	95
24	46	47	29	33	38	33	42	91	176	198	123	86
25	46	46	26	32	38	33	41	82	119	202	116	91
26	46	46	23	31	40	35	42	94	94	198	115	87
27	46	48	21	32	39	36	40	91	106	209	123	84
28	46	45	20	33	40	35	40	88	125	200	139	84
29	46	46	21	34	---	35	41	81	146	176	125	82
30	46	46	22	33	---	35	50	85	122	147	118	135
31	46	---	23	31	---	35	---	84	---	146	116	---
TOTAL	1515	1491	1285	999	1070	1116	1209	2239	15245	5025	4816	3736
MEAN	48.9	49.7	41.5	32.2	38.2	36.0	40.3	72.2	508	162	155	125
MAX	64	68	53	36	40	48	50	125	1020	234	344	176
MIN	46	44	20	24	31	31	35	45	94	115	115	82
AC-FT	3010	2960	2550	1980	2120	2210	2400	4440	30240	9970	9550	7410

CAL YR 1990 TOTAL 38304 MEAN 105 MAX 649 MIN 20 AC-FT 75980
WTR YR 1991 TOTAL 39746 MEAN 109 MAX 1020 MIN 20 AC-FT 78840

06725500 MIDDLE BOULDER CREEK AT NEDERLAND, CO

LOCATION.--Lat 39°57'42", long 105°30'14", in NE¼SE¼ sec.13, T.1 S., R.73 W., Boulder County, Hydrologic Unit 10190005, on left bank at Nederland just downstream from North Beaver Creek and 1,000 ft upstream from Barker Reservoir.

DRAINAGE AREA.--36.2 mi².

PERIOD OF RECORD.--June 1907 to current year. Monthly discharge only for some periods, published in WSP 131C.

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder and compound sharp-crested weir. Datum of gage is 8,186.0 ft, Public Service Co. datum. Prior to Mar. 18, 1909, at datum 4.0 ft, lower. Mar. 18, 1909, to Apr. 23, 1952, at datum 2.5 ft, lower than present datum.

REMARKS.--Estimated daily discharges: Nov. 29, Dec. 2-4, 7, 15-18, 20-27, 29-31, Jan. 20-23, 26-30, Feb. 25, Mar. 8, 18, and 21. Records good except for estimated daily discharges, which are fair. No diversion above station. Flow regulated at times by Jasper Lake, capacity, 326 acre-ft. North Beaver Creek entered Middle Boulder Creek downstream from station June 1 to Dec. 31, 1907, March 1911 to Dec. 31, 1916.

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

AVERAGE DISCHARGE.--84 years, 54.2 ft³/s; 39,270 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 811 ft³/s, June 2, 1914, gage height, 5.37 ft, datum then in use, by computation of peak flow over compound weir; minimum daily, 0.8 ft³/s, Jan. 14, 1908.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 1	2130	*540	*3.41	No other peak greater than base discharge.			
Minimum daily, 4.3 ft ³ /s, Feb. 10, 28.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	13	7.7	5.3	4.5	4.7	6.3	14	336	147	46	26
2	21	13	7.1	5.1	4.5	4.7	7.3	17	359	135	46	26
3	26	8.9	6.7	4.9	4.5	4.7	7.7	17	256	132	57	26
4	21	12	6.7	5.3	4.7	4.9	8.3	17	227	122	77	25
5	17	13	7.1	5.3	4.5	5.1	11	18	246	114	56	24
6	17	12	7.5	5.7	4.5	5.1	13	17	284	116	62	23
7	18	11	7.5	5.9	4.5	4.9	14	20	307	110	85	28
8	20	12	7.3	5.7	4.5	5.1	13	28	274	108	61	32
9	20	12	7.3	5.5	4.5	5.3	14	40	276	130	57	47
10	22	12	7.3	5.5	4.3	5.1	10	57	264	112	54	48
11	24	12	7.5	5.3	4.5	5.1	9.5	86	264	104	56	46
12	18	12	7.5	5.5	4.5	5.1	8.9	101	299	93	52	50
13	17	12	7.7	5.7	4.7	4.9	10	93	320	93	51	51
14	17	11	7.3	5.5	4.9	4.5	9.1	97	319	85	45	44
15	17	11	7.3	5.1	5.1	4.5	11	95	338	77	42	42
16	17	11	7.3	5.1	4.9	4.9	11	83	302	76	45	38
17	14	10	7.1	5.5	4.9	4.5	14	73	272	77	41	36
18	17	10	7.3	5.3	4.9	4.7	14	86	254	77	39	31
19	22	10	7.3	5.3	4.9	4.9	13	132	229	77	42	26
20	21	10	6.9	5.3	5.1	4.9	14	156	218	82	39	25
21	17	7.1	6.7	5.3	4.7	4.7	17	165	225	80	38	24
22	19	6.1	6.3	5.3	4.7	4.5	17	190	232	82	35	22
23	22	8.7	5.5	5.3	4.8	4.7	17	171	217	93	34	20
24	20	8.9	4.9	5.3	4.7	4.9	17	128	206	86	32	19
25	19	8.7	4.9	5.3	4.7	5.3	20	147	187	85	31	18
26	18	9.3	4.5	5.1	4.7	5.1	22	204	169	82	31	18
27	18	8.7	4.9	4.9	4.5	5.1	16	204	156	72	31	17
28	17	7.3	5.3	4.9	4.3	5.1	15	199	169	61	29	17
29	16	7.7	5.1	4.7	---	4.9	14	190	163	54	29	16
30	14	8.1	5.1	4.5	---	5.7	14	185	162	50	28	16
31	14	---	5.1	4.5	---	6.1	---	187	---	47	29	---
TOTAL	582	308.5	203.7	162.9	130.5	153.7	388.1	3217	7530	2859	1400	881
MEAN	18.8	10.3	6.57	5.25	4.66	4.96	12.9	104	251	92.2	45.2	29.4
MAX	26	13	7.7	5.9	5.1	6.1	22	204	359	147	85	51
MIN	14	6.1	4.5	4.5	4.3	4.5	6.3	14	156	47	28	16
AC-FT	1150	612	404	323	259	305	770	6380	14940	5670	2780	1750

CAL YR 1990 TOTAL 19565.3 MEAN 53.6 MAX 404 MIN 3.4 AC-FT 38810
WTR YR 1991 TOTAL 17816.4 MEAN 48.8 MAX 359 MIN 4.3 AC-FT 35340

06726900 BUMMERS GULCH NEAR EL VADO, CO

LOCATION.--Lat 40°00'42", long 105°20'53", in NE¼NW¼ sec.33, T.1 N., R.71 W., Boulder County, Hydrologic Unit 10190005, on left bank, 0.8 mi north of Highway 119 on Sugarloaf Road, 0.1 mi south of service road to Boulder Filtration Plant, 0.65 mi upstream from mouth and, 3.7 mi from Boulder County courthouse.

DRAINAGE AREA.--3.87 mi².

PERIOD OF RECORD.--July 1983 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 6,270 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 5-31, and Aug. 8 to Sept. 16. Records good except for estimated daily discharges which are poor. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 0.50 ft³/s; 362 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26 ft³/s, Aug. 11, 1990, gage height, 3.39 ft, no flow, July 26, 28, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1.0 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	2200	1.7	2.66	July 22	1515	*1.1	*3.12
June 1	1445	6.4	2.96	July 26	1545	2.6	2.74
June 13	1645	3.2	2.79	Aug. 3	1245	2.4	2.72
July 11	0700	1.4	2.64	Aug. 6	1900	2.4	2.72

Minimum daily discharge, 0.19 ft³/s, Jan. 3-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.25	.31	.21	.25	.35	.33	.41	2.4	.44	.53	.30
2	.25	.30	.26	.20	.26	.35	.31	.38	2.6	.43	.54	.29
3	.25	.32	.23	.19	.28	.34	.29	.36	2.6	.45	1.1	.31
4	.23	.34	.31	.19	.28	.37	.29	.38	2.2	.38	.90	.30
5	.23	.37	.31	.19	.29	.43	.27	.42	2.2	.42	.79	.29
6	.23	.37	.30	.19	.28	.40	.27	.36	1.7	.43	1.1	.28
7	.23	.33	.30	.20	.29	.33	.27	.32	1.6	.44	.83	.27
8	.26	.37	.30	.21	.28	.31	.27	.31	1.5	.48	.85	.26
9	.30	.38	.28	.21	.30	.33	.26	.30	1.4	.56	.80	.25
10	.31	.41	.28	.21	.30	.39	.26	.28	1.4	.53	.70	.33
11	.30	.39	.28	.23	.31	.38	.30	.27	1.3	.53	.60	.43
12	.31	.36	.29	.23	.33	.36	.25	.26	1.2	.40	.55	.50
13	.28	.36	.29	.23	.31	.34	.34	.25	1.4	.38	.60	.44
14	.26	.36	.33	.23	.30	.35	.36	.25	1.3	.34	.58	.37
15	.26	.36	.37	.23	.31	.34	.45	.42	1.2	.30	.50	.31
16	.27	.38	.29	.25	.33	.35	.45	1.1	1.0	.31	.52	.28
17	.26	.37	.30	.25	.33	.34	.43	.97	.95	.31	.50	.26
18	.27	.36	.30	.25	.33	.34	.42	.81	.87	.34	.48	.33
19	.26	.36	.28	.25	.34	.34	.41	.74	.85	.38	.50	.31
20	.30	.36	.28	.26	.33	.34	.39	.69	.77	.56	.45	.27
21	.28	.35	.28	.29	.33	.33	.41	.65	.75	.60	.43	.24
22	.26	.33	.28	.30	.33	.34	.42	.66	.75	1.7	.40	.27
23	.31	.33	.28	.28	.33	.33	.38	.86	.70	.95	.37	.27
24	.28	.33	.28	.28	.30	.33	.35	.81	.61	.89	.34	.28
25	.26	.30	.26	.28	.34	.33	.33	.73	.57	.80	.32	.26
26	.26	.29	.22	.28	.37	.34	.32	.69	.54	1.0	.30	.25
27	.25	.28	.21	.27	.37	.32	.32	.65	.50	.71	.33	.23
28	.23	.29	.21	.28	.36	.30	.30	.61	.49	.60	.35	.20
29	.21	.33	.21	.26	---	.32	.30	.57	.52	.57	.34	.21
30	.24	.36	.21	.27	---	.36	.39	.54	.48	.55	.32	.35
31	.25	---	.20	.25	---	.34	---	.91	---	.54	.31	---
TOTAL	8.14	10.29	8.53	7.45	8.76	10.72	10.14	16.96	36.35	17.32	17.23	8.94
MEAN	.26	.34	.28	.24	.31	.35	.34	.55	1.21	.56	.56	.30
MAX	.31	.41	.37	.30	.37	.43	.45	1.1	2.6	1.7	1.1	.50
MIN	.21	.25	.20	.19	.25	.30	.25	.25	.48	.30	.30	.20
AC-FT	16	20	17	15	17	21	20	34	72	34	34	18

CAL YR 1990 TOTAL 177.53 MEAN .49 MAX 2.0 MIN .11 AC-FT 352
WTR YR 1991 TOTAL 160.83 MEAN .44 MAX 2.6 MIN .19 AC-FT 319

06727000 BOULDER CREEK NEAR ORODELL, CO

LOCATION.--Lat 40°00'23", long 105°19'49", in NE¼SW¼ sec.34, T.1 N., R.71 W., Boulder County, Hydrologic Unit 10190005, on left bank along State Highway 119, 0.7 mi southwest of old Orodell, 1.1 mi upstream from Fourmile Creek, and 2.9 mi southwest of courthouse in Boulder.

DRAINAGE AREA.--102 mi².

PERIOD OF RECORD.--August to October 1887, April to October 1888, October 1906 to November 1914, March 1916 to current year. Monthly discharge only for some periods, published in WSP 1310. Figures of daily discharge for Feb. 3-10, 17-25, 1912, published in WSP 326, have been found to be unreliable and should not be used. Published as North Boulder Creek, Colorado 1887-88 and as "at Orodell" March 1907 to December 1916.

REVISED RECORDS.--WSP 1310: 1941(M). WSP 1560: 1914(M). WSP 1730: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,826 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 1, 1907, nonrecording gage, and Sept. 1, 1907, to May 11, 1917, water-stage recorder, at sites 1.1 mi downstream, just upstream from Fourmile Creek, at different datums.

REMARKS.--Estimated daily discharges: Jan. 24-30. Records good except for estimated daily discharges, which are fair. Flow regulated by Barker Reservoir, capacity, 11,500 acre-ft. Low flow during nonirrigation season regulated by Orodell powerplant 1,500 ft upstream from station.

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

AVERAGE DISCHARGE.--83 years (water years 1907-14, 1917-91), 86.6 ft³/s; 62,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,500 ft³/s, June 6, 1921, gage height, 4.31 ft, from rating curve extended above 1,200 ft³/s; minimum daily, 1 ft³/s, Jan. 29, Feb. 1-3, 16-24, 1933.

EXTREMES OUTSIDE PERIOD OF RECORD.--Outstanding floods are known to have occurred in June 1864, May 1876, June 1894, and June 1914, stages and discharges unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 428 ft³/s at D530 June 18, gage height, 3.27 ft; minimum daily, 8.4 ft³/s, Dec. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	10	22	12	15	15	13	18	263	207	74	49
2	28	25	19	13	15	14	21	17	253	187	77	45
3	30	35	15	18	17	12	28	22	206	180	114	40
4	33	27	15	19	14	19	30	26	185	166	148	45
5	28	31	22	23	14	20	30	27	189	148	130	44
6	26	26	21	18	13	20	40	27	199	134	129	32
7	22	27	21	18	12	20	31	29	206	124	164	19
8	20	29	18	23	11	20	17	25	166	137	160	38
9	25	25	18	22	13	21	21	28	146	170	145	47
10	29	26	19	22	18	15	16	49	137	166	159	61
11	28	20	18	19	15	20	14	69	134	173	150	70
12	27	24	20	22	14	21	12	72	143	163	129	81
13	25	25	28	22	15	20	11	61	148	148	99	91
14	25	32	19	24	14	23	16	54	138	125	94	86
15	34	38	14	25	15	25	16	104	140	110	80	76
16	33	28	16	24	12	23	25	194	383	98	79	64
17	22	28	17	20	12	24	32	128	402	97	75	65
18	18	28	18	26	13	23	25	101	409	116	72	69
19	20	28	16	25	15	23	19	137	372	102	79	61
20	25	29	22	24	13	21	17	170	338	117	70	61
21	26	28	11	21	14	18	19	137	349	114	73	59
22	24	36	19	28	17	19	21	186	350	142	69	47
23	13	32	13	27	13	19	27	219	352	178	64	49
24	12	31	11	10	18	20	27	188	319	185	59	33
25	12	30	8.4	10	17	20	29	180	274	185	52	29
26	11	28	9	10	16	16	29	195	243	185	51	35
27	12	21	12	10	12	15	25	242	207	164	56	33
28	12	23	9.7	14	15	13	24	255	216	147	51	16
29	11	21	12	9.3	---	15	23	247	224	125	48	17
30	10	20	11	10	---	14	20	259	230	98	52	19
31	11	---	11	16	---	13	---	254	---	92	46	---
TOTAL	681	811	505.1	584.3	402	581	678	3720	7321	4483	2848	1481
MEAN	22.0	27.0	16.3	18.8	14.4	18.7	22.6	120	244	145	91.9	49.4
MAX	34	38	28	28	18	25	40	259	409	207	164	91
MIN	10	10	8.4	9.3	11	12	11	17	134	92	46	16
AC-FT	1350	1610	1000	1160	797	1150	1340	7380	14520	8890	5650	2940

CAL YR 1990 TOTAL 25158.5 MEAN 68.9 MAX 454 MIN 3.7 AC-FT 49900
WTR YR 1991 TOTAL 24095.4 MEAN 66.0 MAX 409 MIN 8.4 AC-FT 47790

06727500 FOURMILE CREEK AT ORODELL, CO

LOCATION.--Lat 40°01'08", long 105°19'32", in NW¼SE¼ sec.27, T.1 N., R.71 W., Boulder County, Hydrologic Unit 10190005, on right bank 30 ft downstream from private bridge, 0.3 mi upstream from Highway 119 and mouth, and 2.5 mi west of courthouse in Boulder.

DRAINAGE AREA.--24.1 mi².

PERIOD OF RECORD.--April 1947 to September 1953, April 1978 to September 1982 (peak stage and discharge only), July 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,760 ft above National Geodetic Vertical Datum of 1929, from topographic map. April 1, 1947 to September 30, 1953 water-stage recorder 500 feet downstream; April 1, 1978 to September 1982 crest-stage gage 200 feet downstream, at different datums.

REMARKS.--Estimated daily discharges: Dec. 16 to Jan. 31, June 9-19, and June 26 to July 3. Records fair except for estimated daily discharges, which are poor. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--14 years (water years 1947-53, 1983-91), 6.48 ft³/s, 4,690 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 256 ft³/s, June 6, 1949, gage height, 3.66 ft, site and datum then in use, and June 1, 1991, gage height, 4.38 ft, present site and datum; maximum gage height, 4.62 ft, June 9, 1989 (backwater from debris); no flow, Sept. 1-7, 15-18, 1948, and Sept. 5-11, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 256 ft³/s at 1500 June 1, gage height, 4.38 ft; minimum daily, 0.73 ft³/s, Feb. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.2	1.6	.86	1.3	.97	1.1	5.3	67	8.2	2.6	1.3
2	1.4	1.4	1.6	.83	1.5	.99	1.3	5.3	92	7.0	2.8	1.3
3	1.5	1.6	1.6	.80	1.6	.87	1.3	4.9	97	5.4	9.2	1.4
4	1.3	1.6	1.6	.80	1.7	1.1	1.4	5.0	83	4.0	10	1.2
5	1.2	1.8	1.2	.80	1.8	1.5	1.6	5.3	69	3.2	7.8	1.1
6	1.2	2.0	1.1	.80	1.7	1.4	1.8	5.5	59	2.8	7.0	1.1
7	1.4	1.9	1.2	.88	1.7	.97	2.0	5.5	52	2.6	6.8	1.1
8	2.0	1.9	1.5	.94	1.7	.94	2.0	5.8	45	2.8	5.6	1.1
9	2.0	2.0	1.4	.96	1.6	1.4	1.8	6.4	40	3.8	5.5	1.0
10	1.9	1.9	1.3	1.0	1.5	1.3	1.8	7.2	36	3.2	5.4	1.9
11	1.8	1.8	1.3	1.1	1.5	1.3	2.0	8.6	34	2.9	4.8	2.5
12	2.0	1.8	1.2	1.1	1.4	1.2	1.9	9.7	33	2.6	5.1	3.4
13	1.8	1.8	1.2	1.2	1.1	1.1	1.7	9.9	35	2.4	5.6	2.0
14	1.6	1.9	1.0	1.2	1.0	1.0	2.2	10	33	2.1	5.2	1.7
15	1.5	1.8	.86	1.2	.94	1.1	2.4	12	30	1.8	4.4	1.4
16	1.6	1.7	.91	1.2	.87	.96	2.8	20	27	1.6	3.8	1.3
17	1.6	1.6	.94	1.3	.98	1.0	3.2	22	24	1.4	3.4	1.3
18	1.7	1.7	.92	1.3	.98	.90	3.8	24	21	1.4	3.2	1.5
19	1.6	1.7	.90	1.3	1.1	.97	3.4	25	18	1.6	3.7	1.4
20	2.1	1.7	.89	1.4	1.1	.96	3.5	27	16	1.8	3.1	1.3
21	1.9	1.5	.88	1.4	.96	1.0	3.8	26	15	1.7	2.6	1.1
22	1.7	1.2	.88	1.5	.89	1.0	4.1	25	14	6.3	2.4	1.1
23	2.1	1.6	.88	1.4	.87	.97	4.4	32	12	7.0	2.1	1.2
24	1.8	1.6	.88	1.4	.73	.93	4.4	29	11	5.8	2.0	1.0
25	1.8	1.6	.88	1.4	.95	1.0	4.7	28	10	5.9	1.8	1.0
26	1.8	1.5	.88	1.4	1.3	1.0	5.0	26	9.6	7.3	1.7	.97
27	1.6	1.4	.88	1.4	1.3	1.2	4.7	25	9.0	5.7	1.9	.93
28	1.5	1.5	.88	1.3	1.1	.95	4.8	24	9.0	4.4	1.7	.91
29	1.4	1.6	.87	1.3	---	1.1	4.8	23	11	3.7	1.8	.82
30	1.3	1.8	.87	1.3	---	.93	5.5	22	9.0	3.1	1.6	1.2
31	1.3	---	.86	1.2	---	1.1	---	25	---	2.8	1.4	---
TOTAL	50.9	50.1	33.86	35.97	35.17	33.11	89.2	509.4	1020.6	116.3	126.0	40.53
MEAN	1.64	1.67	1.09	1.16	1.26	1.07	2.97	16.4	34.0	3.75	4.06	1.35
MAX	2.1	2.0	1.6	1.5	1.8	1.5	5.5	32	97	8.2	10	3.4
MIN	1.2	1.2	.86	.80	.73	.87	1.1	4.9	9.0	1.4	1.4	.82
AC-FT	101	99	67	71	70	66	177	1010	2020	231	250	80

CAL YR 1990 TOTAL 2223.50 MEAN 6.09 MAX 41 MIN .65 AC-FT 4410
WTR YR 1991 TOTAL 2141.14 MEAN 5.87 MAX 97 MIN .73 AC-FT 4250

06729500 SOUTH BOULDER CREEK NEAR ELDORADO SPRINGS, CO

LOCATION.--Lat 39°55'52", long 105°17'43", in SE¼ sec.26, T.1 S., R.71 W., Boulder County, Hydrologic Unit 10190005, on left bank 0.2 mi downstream from South Draw, 1.0 mi west of Eldorado Springs, 1.8 mi downstream from South Boulder diversion canal, 5.0 mi south of Boulder, and 6.7 mi downstream from Gross Reservoir.

DRAINAGE AREA.--109 mi².

PERIOD OF RECORD.--April 1888 to October 1892, May 1895 to September 1901, August 1904 to current year. No winter records for water years 1889-92, 1900. Monthly discharge only for some periods, published in WSP 1310. Prior to January 1911, published as "at" or "near Marshall"; January 1911 to December 1913 as "at Eldorado Springs." Records for periods June 1900 to September 1901, August 1904 to September 1908, and October 1909 to September 1911, are not adjusted for diversions by Community ditch and South Boulder and Coal Creek ditch; all other records contain flow in these ditches.

REVISED RECORDS.--WSP 856: 1937(M). WSP 1310: 1937. WSP 1440: 1896. WSP 1710: Drainage area. WSP 1730: 1959-60.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 6,080 ft, from topographic map. See WSP 1710 or 1730 for history of changes prior to May 10, 1940.

REMARKS.--Estimated daily discharges: Nov. 7, 27-29, and Dec. 1 to Feb. 12. Records good except for estimated daily discharges, which are fair. Many small diversions upstream from station for irrigation. Water is imported upstream from Gross Reservoir from Colorado River basin through Moffat water tunnel. Flow regulated since May 1, 1955, by Gross Reservoir, capacity, 43,060 acre-ft, 6.7 mi upstream from station. City of Denver diverts water 1.8 mi upstream from station.

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

AVERAGE DISCHARGE.--35 years (water years 1957-91), 61.5 ft³/s; 44,560 acre-ft/yr, unadjusted for storage and diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,390 ft³/s, Sept. 2, 1938, gage height, 9.24 ft, from floodmarks, site and datum then in use, from rating curve extended above 600 ft³/s, on basis of slope-area measurement of peak flow; no flow Oct. 15, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 368 ft³/s at 2030 June 1, gage height, 3.06 ft; minimum daily, 2.0 ft³/s, Dec. 16-18, 22-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	20	4.7	3.0	11	9.1	11	35	335	166	70	25
2	14	17	5.0	3.0	8.0	9.1	23	37	355	145	64	24
3	14	16	5.0	3.0	9.0	8.3	36	35	308	139	59	21
4	15	16	4.5	3.0	11	8.1	36	35	284	132	58	20
5	17	16	3.8	3.0	11	12	42	34	300	116	56	23
6	17	17	3	3.0	11	15	49	35	307	106	57	20
7	18	18	2.5	2.8	10	16	48	35	308	98	56	20
8	21	22	2.5	2.8	14	15	48	35	311	95	56	19
9	20	22	2.5	2.8	16	15	35	35	312	96	68	19
10	20	22	2.5	2.5	16	15	25	35	313	95	67	17
11	20	22	2.5	2.5	16	15	22	35	311	93	54	20
12	18	22	2.5	2.5	16	15	24	36	271	95	53	22
13	16	22	2.5	2.5	16	16	23	57	235	97	53	21
14	16	22	2.5	2.5	15	16	22	99	236	97	53	20
15	17	22	2.2	2.5	12	15	22	121	236	82	45	20
16	17	22	2.0	2.5	9.6	14	22	140	236	70	38	20
17	17	22	2.0	2.5	9.4	13	20	160	234	70	38	20
18	16	22	2.0	2.5	9.3	13	19	168	234	63	37	20
19	22	19	2.5	4.0	10	13	22	172	235	61	37	21
20	28	12	2.5	5.0	10	13	24	203	233	61	37	22
21	27	5.2	2.2	5.5	9.6	17	24	255	235	60	36	22
22	27	6.6	2.0	12	9.4	19	24	288	239	85	36	22
23	29	5.1	2.0	18	8.9	19	26	301	239	80	30	24
24	28	4.8	2.0	14	8.8	19	31	310	238	78	24	23
25	27	4.7	2.0	5.5	8.2	16	32	309	235	125	24	23
26	26	4.8	2.5	5.0	8.2	13	32	310	215	163	24	21
27	26	4.8	3.0	5.0	9.6	13	32	306	197	169	24	19
28	26	4.8	3.0	5.0	9.0	13	32	316	194	167	24	18
29	17	4.7	3.0	6.0	---	13	32	318	191	114	24	18
30	14	4.7	3.6	14	---	12	33	321	189	68	25	20
31	21	---	3.2	21	---	12	---	323	---	69	25	---
TOTAL	625	443.2	87.7	168.9	312.0	431.6	871	4899	7766	3155	1352	624
MEAN	20.2	14.8	2.83	5.45	11.1	13.9	29.0	158	259	102	43.6	21.8
MAX	29	22	5.0	21	16	19	49	323	355	169	70	25
MIN	14	4.7	2.0	2.5	8.0	8.1	11	34	189	60	24	17
AC-FT	1240	879	174	335	619	856	1730	9720	15400	6260	2680	1240

CAL YR 1990 TOTAL 20968.9 MEAN 57.4 MAX 345 MIN 2.0 AC-FT 41590

LOCATION.--Lat 40°03'06", long 105°10'42", in NE¼SW¼ sec.13, T.2 N., R.68 W., Boulder County, Hydrologic Unit 1019005, on left bank, 50 ft upstream from bridge on North 75th Street, 0.2 mi downstream from Boulder feeder ditch, and 6 mi northeast of Boulder.

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder with satellite telemetry, and concrete control. Elevation of gage is 5,106 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 20-22, and May 11-14. Records good except for estimated daily discharges, which are poor. Flow is partially regulated by Barker Reervoir, and affected by Boulder feeder ditch, Boulder sewage treatment plant, and Public Service power plant. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,090 ft³/s, June 1, 1991, gage height, 6.72 ft; maximum gage height, 6.76, June 9, 1987; minimum daily, 20 ft³/s, Dec. 26, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,090 ft³/s at 2015 June 1, gage height, 6.72 ft; minimum daily, 21 ft³/s, Apr. 24.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	42	36	39	43	44	34	45	656	184	104	119
2	38	55	36	39	43	37	35	43	659	188	119	119
3	43	59	35	37	41	41	33	39	498	206	261	119
4	48	54	38	41	43	38	32	49	340	213	227	118
5	43	59	39	45	43	45	31	52	223	185	159	107
6	40	68	38	47	42	47	33	43	253	195	135	97
7	40	59	38	44	46	42	32	37	228	215	144	97
8	50	60	38	48	42	39	32	37	169	230	123	97
9	57	65	36	47	44	31	39	44	153	274	78	84
10	61	61	36	45	44	31	45	59	142	269	85	55
11	55	61	37	45	44	33	42	64	137	279	82	47
12	56	53	39	46	41	34	34	70	155	270	78	53
13	56	47	38	49	39	34	41	77	139	255	77	61
14	58	51	40	50	40	33	45	84	129	290	67	69
15	68	46	36	53	37	32	47	90	116	229	44	63
16	64	45	36	42	43	32	50	275	315	224	53	54
17	56	44	41	46	39	32	51	169	364	201	67	52
18	51	47	39	47	41	33	54	109	352	218	63	61
19	52	45	41	50	35	35	57	125	302	189	70	51
20	65	47	39	45	44	34	61	184	234	199	71	59
21	60	47	37	47	39	31	60	155	236	203	77	59
22	61	43	36	50	40	34	49	156	216	253	91	46
23	45	42	35	46	40	30	37	208	230	292	78	47
24	44	44	36	45	38	36	21	149	194	222	77	49
25	44	46	34	49	35	40	26	129	146	154	68	37
26	44	42	36	48	44	36	27	140	127	153	71	37
27	45	44	36	48	36	35	24	182	136	146	75	44
28	47	39	39	49	37	33	28	199	172	112	73	37
29	49	40	36	47	---	32	36	146	201	95	72	31
30	43	36	35	40	---	33	61	157	218	79	81	55
31	42	---	37	43	---	32	---	204	---	103	89	---
TOTAL	1566	1491	1153	1417	1143	1099	1197	3520	7440	6325	2959	2007
MEAN	50.5	49.7	37.2	45.7	40.8	35.5	39.9	114	248	204	95.5	66.7
MAX	68	68	41	53	46	47	61	275	659	292	261	119
MIN	38	36	34	37	35	30	21	37	116	79	44	31
AC-FT	3110	2960	2290	2810	2270	2180	2370	6980	14760	12550	5870	3977
CAL YR 1990	TOTAL 34134	MEAN 93.5	MAX 402	MIN 34	AC-FT 67700							
WTR YR 1991	TOTAL 31310	MEAN 85.8	MAX 659	MIN 21	AC-FT 62100							

LOCATION.--Lat 40°15'29", long 104°52'45", in SE¼NW¼ sec.3, T.3 N., R.67 W., Weld County, Hydrologic Unit 10190005, on right bank 140 ft downstream from bridge on county road, 1.3 mi upstream from mouth, and 4.2 mi northwest of Platteville.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,770 ft³/s at 1415 June 2, gage height, 5.41 ft; minimum daily, 61 ft³/s, May 15.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	134	139	110	157	120	83	101	311	185	212	215
2	166	136	136	110	157	115	83	86	1490	175	214	228
3	164	169	134	110	155	112	85	73	1320	168	401	237
4	170	172	136	110	144	110	86	84	913	181	567	240
5	183	170	138	110	138	121	82	132	874	192	467	235
6	174	187	137	110	140	132	81	112	890	179	408	237
7	163	187	139	110	139	118	76	104	1010	185	438	281
8	190	175	136	110	141	114	70	101	1000	197	393	311
9	215	182	135	110	137	106	78	90	901	215	358	266
10	203	180	133	110	141	104	81	79	902	310	355	271
11	202	179	134	110	139	102	84	82	893	323	348	275
12	195	170	131	110	143	108	109	81	892	336	307	277
13	199	164	133	110	142	113	105	71	929	303	288	271
14	187	163	138	110	136	116	91	65	935	273	279	273
15	186	161	127	110	137	107	87	61	942	249	263	241
16	188	158	128	133	137	106	89	174	978	225	261	279
17	175	153	130	124	135	107	84	232	989	191	274	218
18	167	155	129	117	134	106	85	147	820	185	256	215
19	167	154	126	120	131	110	83	105	655	204	246	213
20	170	152	75	118	132	109	83	99	527	247	234	272
21	176	151	110	124	130	109	83	124	388	247	230	186
22	171	149	110	132	130	107	86	98	472	304	218	165
23	159	146	110	144	131	107	92	150	465	533	211	161
24	147	144	110	131	124	106	75	162	365	523	220	164
25	143	144	110	143	118	103	69	138	249	460	218	164
26	144	146	110	121	120	91	70	152	172	403	209	157
27	138	149	110	150	118	99	64	147	159	442	199	150
28	146	142	110	147	119	93	67	156	168	388	183	148
29	134	139	110	96	---	85	65	150	167	331	202	143
30	135	141	110	129	---	84	68	139	177	273	210	173
31	133	---	110	153	---	84	---	149	---	227	212	---
TOTAL	5263	4752	3824	3732	3805	3304	2444	3644	20953	8654	8881	6596
MEAN	170	158	123	120	136	107	81.5	118	698	279	286	217
MAX	215	187	139	153	157	132	109	232	1490	533	567	311
MIN	133	134	75	96	118	84	64	61	159	168	183	143
AC-FT	10440	9430	7580	7400	7550	6550	4850	7230	41560	17170	17620	12970
CAL YR 1990	TOTAL 80275		MEAN 220	MAX 896	MIN 75	AC-FT 159200						
WTR YR 1991	TOTAL 75762		MEAN 208	MAX 1490	MIN 61	AC-FT 150300						

06733000 BIG THOMPSON RIVER AT ESTES PARK, CO

LOCATION.--Lat 40°22'42", long 105°30'48", in NW¼NW¼ sec.30, T.5 N., R.72 W., Larimer County, Hydrologic Unit 10190006, on right bank in Estes Park, 600 ft downstream from bridge on State Highways 7 and 66, 900 ft downstream from Black Canyon Creek, and 0.3 mi northwest of Estes powerplant. Station is upstream from Lake Estes.

DRAINAGE AREA.--137 mi².

PERIOD OF RECORD.--October 1946 to current year. Prior to October 1947, published as Thompson River at Estes Park.

GAGE.--Water-stage recorder with satellite telemetry, and Parshall flume with overflow weirs. Datum of gage is 7,492.5 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to May 18, 1949, at site 740 ft downstream at different datum. May 18, 1949, to Mar. 22, 1951, at site 60 ft upstream at datum 1.2 ft, higher.

REMARKS.--Estimated daily discharges: Dec. 19 to Mar. 9, Mar. 21, and 23. Records good except for estimated daily discharges, which are fair. Diversion from Colorado River basin passed this station from Aug. 10, 1947 to Aug. 2, 1950. Small power developments and small diversions for irrigation and municipal use above station. Diversions upstream from station from Wind River to Lake Estes (bypassing this station) were 200 acre-ft (estimated), during current year.

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

AVERAGE DISCHARGE.--45 years, 125 ft³/s; 90,560 acre-ft/yr, adjusted for inflow from Alva B. Adams tunnel Aug. 10, 1947, to Aug. 2, 1950.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,500 ft³/s July 15, 1982, caused by failure of Lawn Lake Dam, gage height, indeterminate; maximum natural discharge, 1,660 ft³/s June 18, 1949, gage height, 3.16 ft, site and datum then in use; maximum known gage height, 6.89 ft, June 17, 1965; minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 2	0100	*1,300	*6.30	June 7	0230	814	5.24

Minimum daily discharge, 8.6 ft³/s, Mar. 15.

06733000 BIG THOMPSON RIVER AT ESTES PARK, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	34	18	10	10	11	13	20	668	307	134	79
2	52	35	16	10	10	11	14	22	905	277	147	82
3	50	30	9.6	10	10	10	15	21	584	269	160	76
4	45	36	15	10	10	11	14	23	508	259	210	73
5	41	35	16	10	11	10	16	24	593	243	173	70
6	40	33	15	10	11	9.5	18	22	649	235	154	70
7	52	34	14	10	11	9.8	20	24	692	225	161	68
8	60	32	14	10	11	10	21	29	624	227	148	76
9	54	33	15	10	12	11	18	49	640	263	139	83
10	55	33	15	10	12	11	17	84	610	247	131	80
11	54	33	15	10	12	9.5	17	129	574	226	122	75
12	45	34	15	10	12	8.8	15	150	630	211	125	75
13	43	32	15	10	13	9.2	18	116	598	200	174	72
14	42	30	14	10	13	9.2	16	130	585	183	173	69
15	40	29	9.3	10	13	8.6	17	144	650	176	150	69
16	41	28	14	10	13	9.2	20	143	584	173	142	67
17	41	27	14	10	14	9.5	22	122	490	173	135	63
18	38	27	12	10	14	10	23	144	455	176	124	61
19	46	26	11	10	14	11	20	277	440	183	122	56
20	47	26	10	10	14	11	20	355	426	169	132	54
21	39	21	10	10	15	11	20	328	440	218	119	49
22	40	25	10	10	15	12	20	370	460	202	107	46
23	40	23	10	10	14	12	20	450	412	244	101	44
24	37	23	10	10	14	13	20	334	377	260	95	41
25	36	22	10	10	13	11	21	267	350	285	89	41
26	35	21	10	10	13	11	23	359	332	246	87	41
27	35	18	10	10	12	11	21	400	295	208	92	39
28	34	15	10	10	11	12	20	434	312	181	97	38
29	35	16	10	10	---	10	20	388	337	162	95	37
30	36	20	10	10	---	12	21	367	349	146	86	41
31	35	---	10	10	---	12	---	308	---	137	80	---
TOTAL	1342	831	386.9	310	347	327.3	560	6033	15569	6711	4004	1835
MEAN	43.3	27.7	12.5	10.0	12.4	10.6	18.7	195	519	216	129	61.2
MAX	60	36	18	10	15	13	23	450	905	307	210	83
MIN	34	15	9.3	10	10	8.6	13	20	295	137	80	37
AC-FT	2660	1650	767	615	688	649	1110	11970	30880	13310	7940	3540
CAL YR 1990	TOTAL	42516.9	MEAN	116	MAX	934	MIN	9.3	AC-FT	84330		
WTR YR 1991	TOTAL	38256.2	MEAN	105	MAX	905	MIN	8.6	AC-FT	75880		

PLATTE RIVER BASIN

06734900 OLYMPUS TUNNEL AT LAKE ESTES, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 40°22'30", long 105°29'13", in SE¼NW¼ sec.29, T.5 N., R.72 W., Larimer County, Hydrologic Unit 10190006, at tunnel entrance at south end of Olympus Dam on Lake Estes, 1.9 mi east of Estes Park.

PERIOD OF RECORD.--September 1970 to current year.

REMARKS.--Tunnel is part of Colorado-Big Thompson project. Field data collected prior to 1974 water year available in district office. Records of discharge are estimated values. A limited historic taxonomic identification with cell counts for phytoplankton available in district office.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
NOV 19...	1220	4.3	44	5.0	10.0	17	5.0	1.1	2.4	0.3	0.7
MAY 13...	1635	544	54	10.0	9.9	19	5.9	1.1	2.3	0.2	0.8
JUL 22...	1430	448	24	21.0	6.4	9	2.6	0.5	1.6	0.2	0.4

DATE	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, 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 CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
NOV 19...	17	3.1	0.9	0.2	4.7	20	28	0.03	0.23	<0.01
MAY 13...	21	3.2	1.1	0.1	5.3	27	33	0.04	39.7	<0.01
JUL 22...	10	1.5	0.3	0.2	3.6	33	17	0.05	39.9	<0.01

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)
NOV 19...	<0.10	<0.10	0.05	0.02	0.25	0.30	0.01	<0.01	<0.01	--
MAY 13...	0.09	<0.05	0.03	0.02	0.37	0.40	0.02	0.01	0.02	0.06
JUL 22...	<0.05	<0.05	<0.01	0.02	--	0.40	0.03	0.04	<0.01	--

06734900 OLYMPUS TUNNEL AT LAKE ESTES, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CO)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 19...	1220	5	<0.5	<10	<1.0	<5	<3	<10	80
MAY 13...	1635	5	<0.5	<10	<1.0	<5	<3	<10	93
JUL 22...	1430	4	<0.5	<10	1.0	<5	<3	<10	120

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 19...	<10	<4	2	<10	<10	<1.0	27	<6	12
MAY 13...	<10	<4	8	<10	<10	<1.0	34	<6	13
JUL 22...	10	<4	8	<10	<10	<1.0	13	<6	14

06735500 BIG THOMPSON RIVER NEAR ESTES PARK, CO

LOCATION.--Lat 40°22'35", long 105°29'06", in NE¼NE¼ sec.29, T.5 N., R.72 W., Larimer County, Hydrologic Unit 10190006, on right bank 100 ft upstream from Dry Gulch, 600 ft downstream from Olympus Dam, and 2.0 mi east of Estes Park.

DRAINAGE AREA.--155 mi². Area at site used Jan. 29, 1934, to Mar. 21, 1951, 162 mi².

PERIOD OF RECORD.--July 1930 to current year. Prior to October 1933, monthly discharges only, published in WSP 1310. Published as Thompson River near Estes Park 1934-47.

REVISED RECORDS.--WDR CO-76-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry, and Parshall flume. Datum of gage is 7,422.5 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to Jan. 29, 1934, nonrecording gage on highway bridge 1.5 mi downstream at different datum. Jan. 29, 1934, to Mar. 21, 1951, water-stage recorder at site 0.4 mi downstream at datum 10.5 ft, lower.

REMARKS.--Estimated daily discharges: Dec. 21-26. Records good except for estimated daily discharges, which are fair. Low flow regulated by Lake Estes since Nov. 30, 1948. Diversion from Colorado River basin to Big Thompson River basin upstream from station through Alva B. Adams tunnel began Aug. 10, 1947 (see station 09013000 in Volume 2 for diversion during current year); since Apr. 15, 1953, this imported water has been diverted from Lake Estes through Olympus tunnel bypassing this station. Since May 17, 1955, part of the natural flow of Big Thompson River (237,800 during current year) has also been diverted through Olympus tunnel and returned to the river downstream from the station at mouth of canyon, near Drake. Small power developments and small diversions for irrigation and municipal use upstream from station.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 2,800 ft³/s, June 20, 1933, gage height, 4.0 ft, site and datum then in use, from rating curve extended above 460 ft³/s; no flow, Aug. 1 to Sept. 30, 1976 (all flow into Lake Estes diverted through Olympus tunnel after flood of July 31, 1976).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 634 ft³/s at 0030 June 2, gage height, 4.45 ft; minimum daily, 7.1 ft³/s, Nov. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	23	13	14	9.8	9.3	11	32	146	127	128	76
2	52	30	12	14	9.8	9.4	10	49	550	127	128	78
3	53	32	13	14	9.8	8.4	10	27	257	126	128	77
4	45	22	12	14	9.8	9.3	10	38	122	127	129	78
5	44	20	12	14	9.8	9.2	10	44	123	126	128	77
6	48	32	12	14	9.8	9.1	10	34	122	127	128	77
7	46	41	12	14	9.7	8.9	11	14	135	127	129	77
8	59	27	12	14	9.9	9.1	11	53	202	126	130	76
9	59	30	12	14	9.8	8.6	27	35	123	125	129	78
10	52	23	12	12	9.9	8.6	26	62	136	125	129	78
11	53	22	12	9.5	10	8.7	28	91	122	125	129	78
12	53	23	17	9.5	10	8.7	24	100	123	126	125	78
13	48	22	17	9.4	10	8.3	26	100	126	126	129	77
14	44	24	17	9.3	9.8	8.5	18	100	121	126	129	77
15	48	23	16	9.3	9.2	9.3	27	100	123	126	129	67
16	46	23	16	9.2	9.2	9.4	27	125	136	126	105	54
17	52	20	18	9.1	9.1	9.7	33	126	122	127	105	52
18	42	23	17	8.9	9.1	9.7	35	127	123	126	104	52
19	29	22	19	9.2	9.1	9.4	39	127	124	127	103	51
20	52	23	18	10	9.3	10	30	127	124	126	102	44
21	53	23	18	10	9.2	10	34	127	125	126	101	51
22	36	9.1	17	10	9.3	10	28	127	128	125	100	51
23	42	7.1	17	10	9.3	9.8	36	125	127	127	101	52
24	45	21	17	11	9.4	9.8	16	127	127	126	99	51
25	39	20	16	10	9.5	9.8	30	127	127	125	99	53
26	28	20	16	10	9.6	9.9	46	129	127	125	101	42
27	48	9.3	18	10	9.8	10	23	130	128	126	98	52
28	38	11	19	9.3	10	10	49	128	127	125	97	45
29	33	12	19	9.8	---	11	22	128	123	125	98	41
30	35	12	19	9.8	---	11	19	126	127	125	86	44
31	30	---	19	9.8	---	11	---	126	---	126	79	---
TOTAL	1404	649.5	484	341.6	269.0	293.9	726	2911	4426	3905	3505	1884
MEAN	45.3	21.6	15.6	11.0	9.61	9.48	24.2	93.9	148	126	113	62.8
MAX	59	41	19	14	10	11	49	130	550	127	130	78
MIN	28	7.1	12	8.9	9.1	8.3	10	14	121	125	79	41
AC-FT	2780	1290	960	678	534	583	1440	5770	8780	7750	6950	3740

CAL YR 1990 TOTAL 23640.5 MEAN 64.8 MAX 376 MIN 7.1 AC-FT 46890
WTR YR 1991 TOTAL 20799.0 MEAN 57.0 MAX 550 MIN 7.1 AC-FT 41250

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO

LOCATION.--Lat 40°36'00", long 105°10'06", in NW¼SW¼ sec.6, T.7 N., R.69 W., Larimer County, Hydrologic Unit 10190007, on right bank near abutment of Horsetooth Dam on tributaries to Cache la Poudre River, 4.8 mi west of city hall in Fort Collins.

RESERVOIR ELEVATIONS AND CONTENTS RECORDS

PERIOD OF RECORD.--April 1951 to current year.

GAGE.--Nonrecording gage read at irregular intervals from 1 to 10 days. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation); gage readings have been reduced to elevation's above National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth and rockfill dike and dams closing openings in subsequent valleys between hogbacks; storage began Jan. 10, 1951; dams completed July 21, 1949. Usable capacity, 143,500 acre-ft above elevations 5,320 ft, invert of channel from Spring Canyon Dam, 5,310 ft, invert of channel from Dixon Canyon Dam, 5,270 ft, trashrack sill of outlet at Soldier Canyon Dam, and below maximum water-surface elevation, 5,430 ft, 6 ft below crest of Satanka Dike. Dead storage, 7,003 acre-ft. Figures given represent usable contents. Water is diverted from Colorado River basin through Alva B. Adams tunnel for supplemental irrigation supply to Cache la Poudre River. Water-quality sampling at three sites in reservoir.

COOPERATION.--Records provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 141,600 acre-ft, July 2, 1970, elevation, 5,429.02 ft; minimum observed, 9 acre-ft, Nov. 16-30, 1977, elevation, 5,270.25 ft; no storage prior to Apr. 18, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum contents, observed, 136,400 acre-ft, May 20, 21, elevation, 5,423.31 ft; minimum, observed, 76,630 acre-ft, Oct. 18, elevation, 5,388.20 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	5,388.91	77,680	-
Oct. 31.	5,390.37	79,850	+2,170
Nov. 30.	5,392.61	83,250	+3,400
Dec. 31.	5,401.25	96,950	+13,700
CAL YR 1990.	-	-	+31,210
Jan. 31.	5,408.37	109,000	+12,050
Feb. 28.	5,413.51	118,100	+9,100
Mar. 31.	5,415.84	122,300	+4,200
Apr. 30.	5,421.10	132,200	+9,900
May 31.	5,420.88	131,700	-500
June 30.	5,420.95	131,900	+200
July 31.	5,407.56	107,600	-24,300
Aug. 31.	5,399.70	94,420	-13,180
Sept. 30.	5,395.33	87,460	-6,960
WTR YR 1991			+9,780

PLATTE RIVER BASIN

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Samples collected at various depths near north end of reservoir near Soldier Canyon Dam.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	DXYGEN, DIS- SOLVED (MG/L)
MAY						
21...	1130	0.1	72	8.0	12.5	9.4
21...	1131	5.0	72	8.0	11.0	9.4
21...	1132	10.0	73	8.1	11.0	9.4
21...	1133	20.0	72	7.9	10.5	9.2
21...	1134	25.0	72	7.9	10.0	9.2
21...	1135	30.0	72	7.8	10.0	9.2
21...	1136	40.0	71	7.7	10.0	9.1
21...	1137	50.0	72	7.7	9.5	9.0
21...	1138	60.0	72	7.5	8.0	8.8
21...	1139	70.0	73	--	8.0	8.7
21...	1140	75.0	73	--	7.5	8.6
21...	1141	80.0	73	--	7.5	8.6
21...	1142	90.0	73	--	7.5	8.6
21...	1143	100	73	--	7.0	8.7
21...	1144	110	74	--	6.5	8.5
21...	1145	120	73	--	7.0	8.4
21...	1146	125	74	--	7.0	8.3
21...	1147	130	74	--	7.0	8.1
21...	1148	140	74	--	7.0	8.0
21...	1149	150	74	--	7.0	8.0
21...	1150	160	74	--	7.0	7.9
JUL						
11...	0945	0.1	74	8.4	22.5	7.7
11...	0946	5.0	74	8.4	22.5	7.7
11...	0947	10.0	74	8.4	22.0	7.7
11...	0948	15.0	73	8.1	21.5	7.4
11...	0949	20.0	72	8.0	20.5	7.1
11...	0950	25.0	71	7.7	17.0	6.4
11...	0951	30.0	72	7.5	14.0	5.9
11...	0952	40.0	72	7.4	11.0	6.3
11...	0953	50.0	72	7.3	10.0	6.4
11...	0954	60.0	72	7.3	9.5	6.5
11...	0955	70.0	73	7.2	9.0	6.6
11...	0956	80.0	74	7.1	9.0	6.6
11...	0957	90.0	73	7.1	8.5	6.7
11...	0958	100	74	7.0	8.5	6.6
11...	0959	110	74	7.2	8.5	6.6
11...	1000	120	74	7.2	8.0	6.7
SEP						
24...	0924	0.1	79	8.0	16.5	7.1
24...	0925	5.0	79	8.0	16.5	7.0
24...	0926	10.0	79	8.0	16.5	6.9
24...	0927	15.0	79	8.0	16.5	6.8
24...	0928	20.0	79	7.9	16.5	6.7
24...	0929	25.0	79	7.9	16.5	6.7
24...	0930	30.0	79	7.9	16.5	6.6
24...	0931	40.0	79	7.9	16.5	6.5
24...	0932	50.0	79	7.7	13.5	2.7
24...	0933	60.0	79	7.6	11.5	3.2
24...	0934	70.0	79	7.6	10.5	3.5
24...	0935	80.0	79	7.6	10.5	3.7
24...	0936	90.0	79	7.6	10.0	3.7
24...	0937	100	79	7.5	9.5	3.8
24...	0938	110	80	7.7	9.5	3.6
24...	0939	120	80	7.5	9.0	3.4
24...	0940	130	80	7.5	9.0	3.2
24...	0941	135	80	7.4	9.0	3.1

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK (IN)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
MAY											
21...	1250	0.1	72	8.1	12.5	97.0	9.4	K<1	31	9.7	1.6
21...	1305	160	74	7.6	7.0	--	7.9	--	31	9.9	1.6
JUL											
11...	1030	0.1	73	8.4	22.5	79.0	7.7	K<1	30	9.5	1.4
11...	1045	120	74	7.4	8.0	--	6.7	--	30	9.7	1.5
SEP											
24...	0945	0.1	77	7.8	16.5	130	7.1	K1	31	9.9	1.6
24...	1000	135	78	7.3	9.0	--	3.1	--	30	9.6	1.5

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, 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 CONSTI- TUENTS, DIS- SOLVED (MG/L)
MAY											
21...	2.6	15	0.2	0.8	33	4.1	1.3	0.2	2.0	48	42
21...	2.6	15	0.2	0.8	33	4.0	1.3	0.1	2.2	45	42
JUL											
11...	2.6	16	0.2	0.9	31	2.3	0.2	<0.1	1.3	44	37
11...	2.7	16	0.2	0.8	32	3.1	0.2	<0.1	2.4	45	40
SEP											
24...	2.4	14	0.2	0.7	33	3.3	0.6	0.2	1.3	40	40
24...	2.4	14	0.2	0.8	33	3.5	0.4	0.2	3.1	43	42

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
MAY											
21...	<0.01	0.01	<0.01	<0.01	--	0.30	0.01	--	0.00	1.8	0.2
21...	<0.01	0.01	0.03	0.04	0.27	0.30	0.01	--	0.00	--	--
JUL											
11...	<0.01	<0.01	0.01	<0.01	0.39	0.40	0.01	--	0.01	2.0	<0.1
11...	<0.01	0.01	0.03	0.02	0.47	0.50	0.01	--	0.00	--	--
SEP											
24...	<0.01	<0.05	<0.01	<0.01	--	0.30	0.01	<0.01	<0.01	1.1	<0.1
24...	<0.01	0.12	0.01	0.01	0.29	0.30	0.05	0.02	0.02	--	--

DATE	TIME	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
MAY									
21...	1250	16	<0.5	<10	<1.0	<5	<3	<10	8
21...	1305	17	<0.5	<10	<1.0	<5	<3	<10	8
JUL									
11...	1030	18	<0.5	<10	<1.0	<5	<3	<10	5
11...	1045	18	<0.5	<10	<1.0	<5	<3	<10	7
SEP									
24...	0945	21	<0.5	10	<1.0	<5	<3	<10	7
24...	1000	16	<0.5	<10	1.0	<5	<3	<10	32

K Based on non-ideal colony count.

PLATTE RIVER BASIN

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
MAY									
21...	<10	<4	<1	<10	<10	<1.0	50	<6	5
21...	<10	<4	2	<10	<10	<1.0	48	<6	<3
JUL									
11...	<10	<4	<1	<10	<10	<1.0	42	<6	<3
11...	<10	<4	2	<10	<10	<1.0	46	<6	3
SEP									
24...	<10	<4	<1	<10	<10	<1.0	44	<6	<3
24...	<10	<4	140	<10	<10	<1.0	45	<6	<3

403147105083800 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1983 to current year.

REMARKS.--Samples collected at various depths near south end of reservoir near Spring Canyon Dam.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)
MAY						
21...	1346	0.1	70	--	17.0	10.0
21...	1347	5.0	70	--	14.0	10.3
21...	1348	10.0	70	--	13.0	10.1
21...	1349	20.0	71	--	12.0	10.1
21...	1350	25.0	70	--	12.0	10.0
21...	1351	30.0	70	--	11.5	10.2
21...	1352	40.0	71	--	11.0	10.2
21...	1353	50.0	70	--	11.0	10.2
21...	1354	60.0	70	--	11.0	10.1
21...	1355	70.0	71	--	10.5	10.1
21...	1356	75.0	71	--	10.0	10.1
21...	1357	80.0	72	--	9.5	10.0
21...	1358	90.0	72	--	9.0	10.0
21...	1359	100	73	--	8.5	10.0
21...	1400	110	73	--	8.5	10.1
21...	1401	120	73	--	8.0	10.2
21...	1402	125	73	--	8.0	10.2
21...	1403	130	73	--	8.0	10.2
21...	1404	140	73	--	7.5	10.1
21...	1405	150	73	--	7.5	10.1
JUL						
11...	1115	0.1	73	--	22.5	7.8
11...	1116	5.0	73	--	22.0	7.8
11...	1117	10.0	73	--	22.0	7.9
11...	1118	15.0	72	--	21.5	7.6
11...	1119	20.0	73	--	20.5	6.6
11...	1120	25.0	73	--	16.5	5.9
11...	1121	30.0	74	--	14.5	5.7
11...	1122	40.0	75	--	12.0	5.9
11...	1123	50.0	74	--	10.0	6.3
11...	1124	60.0	74	--	9.5	6.5
11...	1125	70.0	75	--	9.0	6.5
11...	1126	80.0	75	--	8.5	6.5
11...	1127	90.0	75	--	8.5	6.4
11...	1128	100	75	--	8.5	6.4
11...	1129	110	75	--	8.0	6.3
11...	1130	120	75	--	8.0	6.1
11...	1131	130	75	--	8.0	6.1
SEP						
24...	1026	0.1	75	7.8	17.0	7.0
24...	1027	5.0	75	7.7	16.5	7.0
24...	1028	10.0	76	7.7	16.5	6.9
24...	1029	15.0	75	7.7	16.0	6.8
24...	1030	20.0	77	7.7	16.5	6.8
24...	1031	25.0	76	7.7	16.5	6.7
24...	1032	30.0	78	7.7	16.5	6.7
24...	1033	40.0	78	7.7	16.5	6.7
24...	1034	50.0	80	7.4	14.0	2.8
24...	1035	60.0	81	7.3	11.5	2.8
24...	1036	70.0	81	7.3	10.5	3.0
24...	1037	80.0	80	7.2	9.0	3.0
24...	1038	90.0	82	7.2	8.5	2.7
24...	1039	100	82	7.2	8.5	2.3
24...	1040	110	82	7.2	8.5	1.6
24...	1041	115	82	7.2	8.5	0.8

403147105083800 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK (IN)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
MAY											
21...	1435	0.1	70	7.9	17.0	73.0	10.0	K<1	28	9.0	1.4
21...	1445	150	74	7.7	7.5	--	10.1	--	31	9.8	1.5
JUL											
11...	1145	0.1	73	8.4	22.5	68.0	7.8	K<1	30	9.5	1.4
11...	1205	130	75	7.4	8.0	--	6.1	--	30	9.7	1.5
SEP											
24...	1055	0.1	75	7.7	17.0	112	7.0	K1	31	10	1.5
24...	1110	115	82	7.2	8.5	--	0.8	--	32	10	1.6

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, 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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
MAY											
21...	2.6	16	0.2	0.7	30	4.3	1.4	0.2	2.7	44	40
21...	2.6	15	0.2	0.7	32	3.3	0.2	0.1	2.5	59	40
JUL											
11...	2.5	15	0.2	0.8	32	2.8	0.2	<0.1	1.3	38	38
11...	2.6	15	0.2	0.8	33	3.1	0.2	<0.1	2.6	--	41
SEP											
24...	2.4	14	0.2	0.7	33	3.4	2.9	0.2	1.4	40	42
24...	2.5	14	0.2	0.8	35	2.6	0.3	0.2	3.5	44	44

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
MAY											
21...	<0.01	0.01	<0.01	0.01	--	0.30	0.01	--	0.003a	2.3	0.2
21...	<0.01	0.02	0.05	0.06	0.15	0.20	0.01	--	0.003a	--	--
JUL											
11...	<0.01	<0.01	0.01	<0.01	0.59	0.60	0.01	--	0.002a	2.3	0.1
11...	<0.01	0.04	0.05	0.04	0.45	0.50	0.02	--	0.004a	--	--
SEP											
24...	<0.01	<0.05	<0.01	<0.01	--	0.20	<0.01	<0.01	<0.01	0.90	<0.1
24...	<0.01	0.19	0.05	0.04	0.25	0.30	0.05	0.03	0.03	--	--

DATE	TIME	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
MAY									
21...	1435	14	<0.5	<10	<1.0	<5	<3	<10	16
21...	1445	17	<0.5	<10	<1.0	<5	<3	<10	14
JUL									
11...	1145	19	<0.5	<10	<1.0	<5	<3	<10	5
11...	1205	17	<0.5	<10	<1.0	<5	<3	<10	22
SEP									
24...	1055	22	<0.5	<10	<1.0	<5	<3	<10	7
24...	1110	14	<0.5	<10	<1.0	<5	<3	<10	25

a Analysis based on low-level method.

K Based on non-ideal colony count.

403147105083800 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
MAY									
21...	<10	<4	2	<10	<10	<1.0	45	<6	9
21...	<10	<4	9	<10	<10	2.0	47	<6	8
JUL									
11...	<10	<4	<1	<10	<10	1.0	42	<6	<3
11...	<10	<4	7	<10	<10	<1.0	46	<6	<3
SEP									
24...	<10	<4	3	<10	<10	<1.0	43	<6	<3
24...	<10	<4	600	<10	<10	<1.0	50	<6	4

06738000 BIG THOMPSON RIVER AT MOUTH OF CANYON, NEAR DRAKE, CO

LOCATION.--Lat 40°25'18", long 105°13'34", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.3, T.5 N., R.70 W., Larimer County, Hydrologic Unit 10190006, on right bank at mouth of canyon, 400 ft upstream from Handy Ditch diversion dam, and 6.0 mi east of Drake.

DRAINAGE AREA.--305 mi².

PERIOD OF RECORD.--August 1887 to September 1892, May 1895 to September 1903, October 1926 to September 1933 (no winter records prior to October 1932, except water years 1927-28), April 1938 to September 1949, March 1951 to current year. Monthly discharge only for some periods, published in WSP 1310. Published as Big Thompson Creek at Arkins 1887-92, Big Thompson Creek near Arkins 1901-3, and as Thompson River at mouth of canyon, near Drake 1927-30, 1938-47.

REVISED RECORDS.--WSP 1310: 1891, 1927. WSP 1730: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 5,305.47 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Oct. 1, 1949, to Sept. 18, 1977, at present site, datum 8.00 ft lower, Sept. 19, 1977, to July 27, 1980, at present site, datum 7.37 ft, lower. See WSP 1710 or 1730 for history of changes prior to Oct. 1, 1949.

REMARKS.--Estimated daily discharges: Dec. 19 to Mar. 5. Records good except for estimated daily discharges, which are fair. Diversions upstream from station for irrigation. Diversions from Colorado River basin to Big Thompson River basin upstream from station through Alva B. Adams tunnel began Aug. 10, 1947 (see station 09013000 in Volume 2 for diversion during current year); since Apr. 15, 1953, this imported water has been diverted from Lake Estes through Olympus tunnel bypassing this station. Part of the natural flow of the Big Thompson River has also been diverted through Olympus tunnel since May 17, 1955, 237,800 acre-ft diverted during current year; and Dille tunnel since Apr. 20, 1959, 17,300 acre-ft, diverted during current year, and returned to the river just downstream from this station.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft³/s, July 31, 1976, gage height, 19.86 ft, from floodmarks, from slope-area measurements of peak flow; no flow at times in 1976 (all flow above station diverted through Olympus and Dille tunnels after flood of July 31, 1976), 1979-80 (all flow above station diverted through Dille tunnel).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 842 ft³/s at 0430 June 2, gage height, 3.85 ft; minimum daily, 14 ft³/s, Nov. 29, and Mar. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	DCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	47	32	20	17	18	23	38	233	135	76	87
2	72	44	22	20	17	18	22	49	765	138	80	92
3	70	47	17	20	17	18	22	50	569	140	103	77
4	64	46	21	20	16	19	21	49	371	136	97	72
5	61	46	40	20	17	19	22	57	313	134	81	71
6	62	49	35	20	17	20	22	55	314	136	82	72
7	68	38	27	20	17	18	22	44	197	132	82	71
8	77	46	25	20	18	14	20	45	146	134	79	69
9	79	45	31	20	18	17	29	56	224	142	78	72
10	77	47	32	19	18	24	34	61	267	136	77	77
11	75	42	37	17	18	23	35	68	285	126	74	77
12	74	40	33	17	18	21	35	62	288	138	72	75
13	71	40	40	16	18	18	35	56	288	129	81	66
14	67	34	30	16	18	20	35	55	275	124	67	61
15	67	33	22	16	17	19	36	61	273	122	64	59
16	68	40	22	16	17	18	35	77	266	120	67	54
17	70	39	23	16	17	21	38	64	240	129	71	50
18	66	39	23	16	17	21	42	56	223	138	84	49
19	58	40	23	17	16	27	44	60	193	148	92	48
20	63	43	21	17	16	24	44	62	175	156	94	69
21	70	36	18	17	17	22	41	60	156	138	102	78
22	66	23	16	17	17	23	42	74	190	117	98	83
23	61	27	18	17	17	19	37	100	191	141	98	85
24	63	31	19	17	17	24	42	115	140	108	96	85
25	65	39	19	17	17	22	31	80	117	108	93	67
26	67	37	22	17	17	22	45	68	109	106	95	55
27	64	31	22	17	18	24	45	71	106	95	97	57
28	65	22	22	17	18	21	45	83	119	88	104	56
29	56	14	23	17	---	23	46	98	136	84	91	54
30	53	29	23	17	---	20	36	93	136	80	90	54
31	52	---	23	17	---	23	---	102	---	74	84	---
TOTAL	2063	1134	781	550	482	640	1026	2069	7305	3832	2649	2042
MEAN	66.5	37.8	25.2	17.7	17.2	20.6	34.2	66.7	243	124	85.5	68.1
MAX	79	49	40	20	18	27	46	115	765	156	104	92
MIN	52	14	16	16	16	14	20	38	106	74	64	48
AC-FT	4090	2250	1550	1090	956	1270	2040	4100	14490	7600	5250	4050

06739210 BIG THOMPSON RIVER ABOVE BUCKHORN CREEK NEAR LOVELAND, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 40°25'02", long 105°11'23", in NW¼SW¼NW¼ sec.12, T.5 N., R.70 W., Larimer County, Hydrologic Unit 10190006, 160 ft south of Highway 34, 1 mi upstream from Buckhorn Creek.

DRAINAGE AREA.--314 mi².

PERIOD OF RECORD.--May 1987 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT										
23...	1350	2.6	355	8.8	12.5	11.8	170	48	12	--
NOV										
19...	1450	2.6	330	9.0	12.0	11.7	160	46	11	--
DEC										
18...	1400	1.5	362	8.6	6.0	11.1	170	50	12	8.0
FEB										
19...	1445	1.2	359	8.8	8.5	11.9	160	46	12	--
MAR										
12...	1050	0.88	386	--	9.0	11.7	180	49	13	--
25...	1415	0.95	370	--	14.5	8.4	160	43	12	--
MAY										
03...	1005	143	66	8.3	9.0	9.3	23	6.7	1.5	--
14...	1000	222	62	--	13.0	7.8	23	6.9	1.3	--
JUN										
19...	0845	420	30	--	14.0	8.6	11	3.3	0.7	--
JUL										
23...	0820	301	32	--	17.0	7.6	11	3.5	0.6	1.5
AUG										
13...	0810	164	39	--	16.0	7.4	16	5.1	0.8	--
SEP										
27...	0750	25	78	8.1	12.0	8.9	33	9.8	2.0	--

DATE	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
OCT										
23...	136	--	--	--	--	--	--	--	0.02	--
NOV										
19...	121	--	--	--	--	--	<0.01	0.18	0.02	--
DEC										
18...	132	47	5.0	0.5	8.1	253	<0.01	0.24	0.02	0.03
FEB										
19...	115	--	--	--	--	--	<0.01	0.38	0.01	--
MAR										
12...	127	--	--	--	--	--	<0.01	0.24	0.03	--
25...	120	--	--	--	--	--	<0.01	0.21	0.02	--
MAY										
03...	26	--	--	--	--	--	<0.01	0.05	<0.01	--
14...	25	--	--	--	--	--	<0.01	0.06	0.02	--
JUN										
19...	11	--	--	--	--	--	<0.01	0.04	0.02	--
JUL										
23...	13	1.9	0.4	0.1	3.9	21	<0.01	0.12	<0.01	0.04
AUG										
13...	16	--	--	--	--	--	<0.01	0.10	0.02	--
SEP										
27...	31	--	--	--	--	--	<0.01	0.06	0.01	--

06739210 BIG THOMPSON RIVER ABOVE BUCKHORN CREEK NEAR LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT										
23...	1350	--	--	<1	--	--	--	<1	2	130
NOV										
19...	1450	--	--	<1	--	--	--	4	1	150
DEC										
18...	1400	<10	<1	<1	<1.0	2	1	2	1	80
FEB										
19...	1445	--	--	<1	--	--	--	2	1	<10
MAR										
12...	1050	--	--	<1	--	--	--	5	2	120
25...	1415	--	--	<1	--	--	--	2	3	130
MAY										
03...	1005	--	--	<1	--	--	--	11	4	630
14...	1000	--	--	<1	--	--	--	6	3	230
JUN										
19...	0845	--	--	<1	--	--	--	7	3	340
JUL										
23...	0820	10	<1	<1	<1.0	2	<1	14	4	540
AUG										
13...	0810	--	--	<1	--	--	--	6	3	380
SEP										
27...	0750	--	--	<1	--	--	--	5	2	200

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT										
23...	<1	--	--	--	--	--	--	<0.1*	<1	--
NOV										
19...	2	--	--	--	--	--	--	0.2*	<1	--
DEC										
18...	1	1	<10	--	--	1	<1	<0.1*	<1	<3
FEB										
19...	<1	--	--	--	--	--	--	<0.1*	<1	--
MAR										
12...	3	--	--	--	--	--	--	0.7*	<1	--
25...	5	--	--	--	--	--	--	<0.1*	<1	--
MAY										
03...	5	--	--	--	--	--	--	<0.5*	<1	--
14...	2	--	--	--	--	--	--	<0.5*	<1	--
JUN										
19...	20	--	--	--	--	--	--	<0.5*	<1	--
JUL										
23...	--	3	--	0.40	<0.1	<1	<1	--	<1	15
AUG										
13...	--	--	--	--	--	--	--	--	<1	--
SEP										
27...	4	--	--	--	--	--	--	<0.2*	<1	--

* Analysis based on preliminary method.

06741480 BIG THOMPSON RIVER ABOVE LOVELAND, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 40°24'02", long 105°07'20", in SW¼NE¼ sec.16, T.5 N., R.69 W., Larimer County, Hydrologic Unit 10190006, at Wilson Avenue bridge 9 mi upstream from Greeley-Loveland Ditch and 2.5 mi west of Loveland.

DRAINAGE AREA.--525 mi², approximately.

PERIOD OF RECORD.--June 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY LAB (MG/L AS CAC03)
OCT											
24...	0935	15	777	8.3	8.5	9.8	400	120	25	--	160
NOV											
20...	0940	13	838	8.7	7.5	11.7	410	120	27	--	159
DEC											
19...	0940	9.7	923	8.4	2.0	11.2	440	130	29	18	143
FEB											
20...	0900	4.5	1050	8.0	5.0	9.4	520	150	36	--	180
MAR											
12...	1250	4.0	1060	8.3	11.0	10.4	540	150	39	--	170
26...	0900	4.1	991	8.1	8.5	9.8	490	140	34	--	167
APR											
30...	0855	47	254	8.5	8.5	9.8	100	31	6.4	--	56
MAY											
14...	1240	208	115	8.2	13.5	8.5	46	14	2.6	--	36
JUN											
19...	1150	233	84	8.0	15.5	8.0	32	9.2	2.1	--	22
JUL											
23...	1120	181	223	8.3	16.5	7.6	88	25	6.2	5.8	48
AUG											
13...	1030	237	205	8.0	17.0	8.1	77	22	5.3	--	45
SEP											
26...	1355	13	850	8.3	19.0	7.9	420	120	28	--	110

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
OCT										
24...	--	--	--	--	--	--	<0.01	0.21	<0.01	--
NOV										
20...	--	--	--	--	--	0.25	0.01	0.26	0.05	--
DEC										
19...	360	6.6	0.3	11	691	--	<0.01	0.24	0.04	0.02
FEB										
20...	--	--	--	--	--	--	<0.01	0.53	0.05	--
MAR										
12...	--	--	--	--	--	0.28	0.01	0.29	0.04	--
26...	--	--	--	--	--	--	<0.01	0.27	0.02	--
APR										
30...	--	--	--	--	--	--	<0.01	0.08	0.01	--
MAY										
14...	--	--	--	--	--	--	<0.01	0.67	0.02	--
JUN										
19...	--	--	--	--	--	--	<0.01	0.28	0.02	--
JUL										
23...	46	1.1	0.1	4.5	119	--	<0.01	0.28	<0.01	0.04
AUG										
13...	--	--	--	--	--	--	<0.01	0.08	0.01	--
SEP										
26...	--	--	--	--	--	--	<0.01	0.37	0.02	--

06741480 BIG THOMPSON RIVER ABOVE LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT 24...	0935	--	--	<1	--	--	--	8	2	200
NOV 20...	0940	--	--	<1	--	--	--	3	2	170
DEC 19...	0940	<10	<1	<1	<1.0	<1	1	3	2	140
FEB 20...	0900	--	--	<1	--	--	--	3	1	70
MAR 12...	1250	--	--	<1	--	--	--	5	1	120
26...	0900	--	--	6	--	--	--	3	2	200
APR 30...	0855	--	--	<1	--	--	--	7	2	190
MAY 14...	1240	--	--	<1	--	--	--	5	2	1100
JUN 19...	1150	--	--	<1	--	--	--	5	1	490
JUL 23...	1120	30	<1	<1	<1.0	4	<1	9	2	1800
AUG 13...	1030	--	--	<1	--	--	--	4	1	520
SEP 26...	1355	--	--	<1	--	--	--	3	1	150

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 24...	<1	--	--	--	--	--	--	<0.1*	<1	--
NOV 20...	2	--	--	--	--	--	--	<0.1*	<1	--
DEC 19...	1	<1	40	0.1	<0.1	1	2	<0.1*	<1	<3
FEB 20...	1	--	--	--	--	--	--	<0.1*	<1	--
MAR 12...	2	--	--	--	--	--	--	<0.1*	<1	--
26...	2	--	--	--	--	--	--	<0.1*	<1	--
APR 30...	1	--	--	--	--	--	--	<0.5*	<1	--
MAY 14...	1	--	--	--	--	--	--	<0.5*	<1	--
JUN 19...	11	--	--	--	--	--	--	0.7*	<1	--
JUL 23...	--	1	70	0.3	0.4	<1	<1	--	<1	18
AUG 13...	--	--	--	--	--	--	--	--	<1	--
SEP 26...	1	--	--	--	--	--	--	<0.2*	<1	--

* Analysis based on preliminary method.

06741510 BIG THOMPSON RIVER AT LOVELAND, CO

LOCATION.--Lat 40°22'43", long 105°03'38", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.24, T.5 N., R.69 W., Larimer County, Hydrologic Unit 10190006, on right bank 690 ft downstream from county road bridge C-13, 1.7 mi south of sugar refinery in Loveland, and 1.9 mi downstream from Farmers Ditch diversion.

DRAINAGE AREA.--535 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,906 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 2-23, Oct. 29 to Nov. 20, Dec. 13 to Feb. 6, and Mar. 6-10, 14-26. Records poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

COOPERATION.--City of Loveland.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,970 ft³/s, Apr. 30, 1980, gage height, 10.10 ft, from high-water mark; minimum daily, 0.80 ft³/s, May 11, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 873 ft³/s at 0715 June 2, gage height, 5.44 ft; minimum daily, 2.0 ft³/s, Jan. 29, and Apr. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	6.4	5.5	3.1	2.9	3.0	3.9	5.9	50	73	68	104
2	9.4	6.2	5.3	3.0	3.1	3.1	4.5	6.1	426	72	83	108
3	9.6	6.8	5.2	2.9	3.1	2.7	2.0	7.0	262	69	106	106
4	10	7.0	4.8	3.0	3.2	3.0	2.7	13	117	66	93	92
5	9.7	6.8	4.0	3.0	3.1	3.4	3.0	15	44	68	72	96
6	9.4	7.0	4.0	3.1	3.2	3.4	3.3	6.9	37	59	71	96
7	11	6.4	3.8	3.1	3.1	3.4	3.5	7.3	46	63	68	87
8	13	6.0	3.7	3.0	3.0	3.4	4.0	6.5	25	60	69	77
9	11	5.2	3.7	2.9	3.0	3.4	3.7	7.5	21	54	121	63
10	8.6	4.8	3.9	3.0	3.2	3.4	3.1	8.1	23	57	174	49
11	7.0	4.5	4.2	3.1	3.1	3.4	5.4	12	29	60	186	32
12	7.5	4.4	4.2	3.1	3.1	3.4	8.3	13	31	64	176	24
13	7.1	4.4	3.7	2.9	3.1	3.4	7.7	15	42	64	154	20
14	7.5	4.3	3.7	2.7	3.1	3.4	7.0	22	46	62	150	13
15	6.5	4.3	3.8	2.6	3.4	3.4	6.6	32	43	69	147	14
16	6.4	4.3	3.9	2.6	3.2	3.3	4.8	95	37	69	150	20
17	6.4	4.3	3.5	2.5	3.3	3.3	3.5	127	53	71	108	21
18	6.4	4.3	3.7	2.7	3.2	3.2	5.2	56	75	71	59	22
19	6.4	4.4	3.2	2.6	2.9	3.4	5.1	41	76	71	57	34
20	5.5	4.4	2.6	2.3	3.2	3.2	5.6	46	80	72	57	30
21	5.4	4.7	2.7	2.3	3.2	3.0	6.6	64	90	77	66	42
22	4.9	7.9	2.9	2.5	3.9	3.0	7.0	55	87	97	59	49
23	4.9	8.1	3.0	2.3	3.7	3.0	13	105	73	69	56	37
24	5.0	8.6	3.2	2.5	3.5	3.0	9.0	99	72	25	56	25
25	6.4	8.2	3.0	2.2	3.3	3.0	8.3	58	74	27	55	27
26	6.5	6.6	3.3	2.4	3.2	3.0	8.1	62	73	42	47	14
27	6.7	6.5	3.1	2.4	3.2	3.0	6.3	66	73	53	71	14
28	7.8	6.0	3.1	2.4	3.1	2.7	5.7	57	69	53	118	29
29	50	5.8	3.1	2.0	---	3.0	5.4	61	73	59	147	20
30	57	5.7	3.2	2.3	---	3.4	5.2	47	80	62	100	27
31	30	---	3.4	2.7	---	4.1	---	39	---	61	88	---
TOTAL	352.2	174.3	114.4	83.2	89.6	99.8	167.5	1255.3	2327	1939	3032	1392
MEAN	11.4	5.81	3.69	2.68	3.20	3.22	5.58	40.5	77.6	62.5	97.8	46.4
MAX	57	8.6	5.5	3.1	3.9	4.1	13	127	426	97	186	108
MIN	4.9	4.3	2.6	2.0	2.9	2.7	2.0	5.9	21	25	47	13
AC-FT	699	346	227	165	178	198	332	2490	4620	3850	6010	2760

CAL YR 1990 TOTAL 8568.4 MEAN 23.5 MAX 277 MIN 2.0 AC-FT 17000
WTR YR 1991 TOTAL 11026.3 MEAN 30.2 MAX 426 MIN 2.0 AC-FT 21870

PLATTE RIVER BASIN

06741510 BIG THOMPSON RIVER AT LOVELAND, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT										
24...	1300	4.2	1510	8.2	11.0	10.9	650	140	72	--
NOV										
21...	1220	4.6	1500	8.5	6.0	8.6	630	140	69	--
DEC										
28...	1219	3.1	1740	8.0	2.5	--	760	170	82	110
FEB										
21...	1020	3.2	1680	8.4	7.0	10.4	760	170	81	--
MAR										
13...	1140	3.4	1650	8.0	10.0	11.6	760	170	81	--
27...	0945	3.0	1590	8.4	9.0	11.4	710	160	75	--
MAY										
03...	1255	6.9	1020	8.3	13.5	12.5	430	100	44	--
15...	1120	28	351	8.0	13.0	8.2	140	36	12	--
JUN										
20...	1115	79	465	8.3	17.0	8.2	160	32	19	--
JUL										
24...	1055	24	546	8.3	18.0	8.2	210	54	18	24
AUG										
14...	1010	148	522	8.0	18.0	8.2	220	50	24	--
SEP										
27...	1155	13	1050	8.2	16.5	11.2	470	120	42	--

DATE	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
OCT										
24...	207	--	--	--	--	--	<0.01	0.40	0.02	--
NOV										
21...	197	--	--	--	--	--	<0.01	0.34	0.05	--
DEC										
28...	233	720	29	0.4	8.2	1360	<0.01	0.30	0.08	--
FEB										
21...	201	--	--	--	--	--	<0.01	0.39	0.05	--
MAR										
13...	200	--	--	--	--	--	<0.01	0.21	0.04	--
27...	194	--	--	--	--	--	<0.01	0.20	0.03	--
MAY										
03...	138	--	--	--	--	--	<0.01	0.06	0.02	--
15...	66	--	--	--	--	--	<0.01	0.05	0.02	--
JUN										
20...	49	--	--	--	--	--	<0.01	0.05	0.03	--
JUL										
24...	89	170	5.8	0.3	5.9	364	<0.01	0.18	<0.01	0.05
AUG										
14...	62	--	--	--	--	--	<0.01	0.06	0.02	--
SEP										
27...	152	--	--	--	--	--	<0.01	0.14	0.02	--

06741510 BIG THOMPSON RIVER AT LOVELAND, CO--Continued
 WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT										
24...	1300	--	--	<1	--	--	--	3	2	20
NOV										
21...	1220	--	--	1	--	--	--	<1	--	290
DEC										
28...	1219	20	<1	<1	<1.0	<1	<1	3	1	180
FEB										
21...	1020	--	--	<1	--	--	--	4	1	230
MAR										
13...	1140	--	--	<1	--	--	--	4	1	180
27...	0945	--	--	<1	--	--	--	2	2	80
MAY										
03...	1255	--	--	<1	--	--	--	5	2	290
15...	1120	--	--	<1	--	--	--	3	2	310
JUN										
20...	1115	--	--	<1	--	--	--	13	3	480
JUL										
24...	1055	--	<1	<1	<1.0	2	<1	4	2	760
AUG										
14...	1010	--	--	<1	--	--	--	7	2	730
SEP										
27...	1155	--	--	<1	--	--	--	2	1	160

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT										
24...	<1	--	--	--	--	--	--	<0.1*	<1	--
NOV										
21...	4	--	--	--	--	--	--	0.1*	<1	--
DEC										
28...	2	<1	90	0.1	<0.1	2	4	<0.1*	<1	--
FEB										
21...	1	--	--	--	--	--	--	<0.1*	<1	--
MAR										
13...	2	--	--	--	--	--	--	<0.1*	<1	--
27...	3	--	--	--	--	--	--	<0.1*	<1	--
MAY										
03...	4	--	--	--	--	--	--	<0.5*	<1	--
15...	2	--	--	--	--	--	--	<0.5*	<1	--
JUN										
20...	10	--	--	--	--	--	--	<0.5*	<1	--
JUL										
24...	3	<1	50	<0.1	<0.1	<1	<1	--	<1	9
AUG										
14...	--	--	--	--	--	--	--	--	<1	--
SEP										
27...	3	--	--	--	--	--	--	<0.2*	<1	--

* Analysis based on preliminary method.

PLATTE RIVER BASIN

06741520 BIG THOMPSON RIVER BELOW LOVELAND, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 40°23'00", long 105°01'45", in NW¼SE¼ sec.20, T.5 N., R.68 W., Larimer County, Hydrologic Unit 10190006, at county road 9 E bridge, about 0.3 mi upstream from outlet ditch and 2.0 mi southeast of Loveland.

DRAINAGE AREA.--540 mi², approximately.

PERIOD OF RECORD.--June 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY LAB (MG/L AS CAC03)
OCT 23...	1150	17	1320	8.2	12.0	9.7	500	110	54	--	166
NOV 20...	1150	15	1300	8.4	11.5	14.0	460	100	50	--	150
DEC 19...	1155	14	1280	8.2	2.0	11.7	460	100	50	99	149
FEB 20...	1107	13	1360	8.1	8.0	11.9	500	110	54	--	148
MAR 13...	0920	7.8	1420	7.8	7.0	8.8	520	110	59	--	164
26...	1045	11	1460	8.3	12.0	14.8	510	110	57	--	170
APR 30...	1050	18	1240	8.1	11.0	10.6	440	98	48	--	144
MAY 14...	1455	33	803	8.4	21.5	10.3	270	63	28	--	104
JUN 19...	1350	84	606	8.3	18.5	7.8	210	43	24	--	65
JUL 23...	1340	139	669	8.7	18.5	7.0	230	55	23	39	88
AUG 14...	0800	165	578	8.1	18.0	7.0	210	45	24	--	75
SEP 27...	1000	25	1120	8.0	15.0	9.0	450	110	43	--	145

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
OCT 23...	--	--	--	--	--	--	<0.01	0.10	<0.01	--
NOV 20...	--	--	--	--	--	7.8	0.06	7.9	0.03	--
DEC 19...	460	32	1.0	7.4	888	4.6	0.10	4.7	0.17	1.0
FEB 20...	--	--	--	--	--	7.6	0.47	8.1	0.71	--
MAR 13...	--	--	--	--	--	6.9	0.27	7.2	0.61	--
26...	--	--	--	--	--	--	0.25	--	0.36	--
APR 30...	--	--	--	--	--	--	0.53	--	0.95	--
MAY 14...	--	--	--	--	--	4.5	0.03	4.5	0.04	--
JUN 19...	--	--	--	--	--	1.1	0.06	1.2	0.33	--
JUL 23...	220	9.7	0.4	6.2	431	1.6	0.02	1.6	0.03	0.54
AUG 14...	--	--	--	--	--	0.43	0.01	0.44	0.02	--
SEP 27...	--	--	--	--	--	--	0.02	--	0.02	--

06741520 BIG THOMPSON RIVER BELOW LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT										
23...	1150	--	--	<1	--	--	--	5	4	260
NOV										
20...	1150	--	--	<1	--	--	--	5	4	210
DEC										
19...	1155	10	<1	<1	<1.0	1	<1	6	3	510
FEB										
20...	1107	--	--	<1	--	--	--	6	2	290
MAR										
13...	0920	--	--	<1	--	--	--	6	2	240
26...	1045	--	--	<1	--	--	--	3	2	200
APR										
30...	1050	--	--	<1	--	--	--	7	2	260
MAY										
14...	1455	--	--	<1	--	--	--	5	1	620
JUN										
19...	1350	--	--	<1	--	--	--	7	3	540
JUL										
23...	1340	10	<1	<1	<1.0	4	<1	6	2	1600
AUG										
14...	0800	--	--	<1	--	--	--	5	1	820
SEP										
27...	1000	--	--	<1	--	--	--	3	2	160

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT										
23...	2	--	--	--	--	--	--	<0.1*	<1	--
NOV										
20...	2	--	--	--	--	--	--	0.1*	<1	--
DEC										
19...	4	3	80	0.4	0.4	5	2	<0.1*	<1	25
FEB										
20...	2	--	--	--	--	--	--	<0.1*	<1	--
MAR										
13...	8	--	--	--	--	--	--	0.1*	<1	--
26...	1	--	--	--	--	--	--	<0.0*	<1	--
APR										
30...	4	--	--	--	--	--	--	<0.5*	<1	--
MAY										
14...	3	--	--	--	--	--	--	<0.5*	<1	--
JUN										
19...	13	--	--	--	--	--	--	<0.5*	<1	--
JUL										
23...	--	<1	80	0.1	<0.1	1	1	--	<1	18
AUG										
14...	--	--	--	--	--	--	--	--	<1	--
SEP										
27...	3	--	--	--	--	--	--	<0.2*	<1	--

* Analysis based on preliminary method.

PLATTE RIVER BASIN

06741530 BIG THOMPSON RIVER AT I-25, NEAR LOVELAND, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 40°23'51", long 104°59'32", in NW¼SW¼ sec.15, T.5 N., R.68 W., Larimer County, Hydrologic Unit 10190006, at bridge on Big Thompson River on north bound lane of Interstate Highway 25 (I-25), 1.5 mi downstream from Hillsboro Ditch, and 4.5 mi east of Loveland.

DRAINAGE AREA.--571 mi².

PERIOD OF RECORD.--April 28, 1987, to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY LAB (MG/L AS CAC03)
OCT											
23...	0920	18	1350	7.9	10.0	7.9	510	110	57	--	201
NOV											
20...	1340	22	1410	8.8	11.0	17.1	530	110	61	--	204
DEC											
28...	1437	15	1380	7.8	0.5	--	560	120	63	93	224
FEB											
20...	1319	21	1310	8.5	10.0	13.4	510	110	57	--	192
MAR											
13...	1400	22	1280	8.6	12.0	16.0	470	100	54	--	183
26...	1230	17	1350	8.3	12.5	13.6	470	100	54	--	186
APR											
30...	1230	2.8	1750	8.4	13.0	11.7	760	150	94	--	289
MAY											
15...	0850	11	927	8.1	15.0	6.4	350	77	39	--	139
JUN											
20...	0855	22	675	8.0	16.0	8.6	250	54	29	--	84
JUL											
24...	0835	44	772	8.5	17.5	7.3	280	67	27	46	121
AUG											
13...	1310	144	615	8.3	20.0	7.8	260	61	27	--	87
SEP											
26...	1100	4.4	1360	8.2	15.0	10.2	610	140	63	--	221

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
OCT										
23...	--	--	--	--	--	5.2	0.04	5.2	0.02	--
NOV										
20...	--	--	--	--	--	6.9	0.04	6.9	0.03	--
DEC										
28...	440	31	0.9	8.8	992	6.7	0.23	6.9	0.35	2.1
FEB										
20...	--	--	--	--	--	5.2	0.25	5.4	0.46	--
MAR										
13...	--	--	--	--	--	5.4	0.13	5.5	0.18	--
26...	--	--	--	--	--	--	0.23	--	0.60	--
APR										
30...	--	--	--	--	--	1.1	0.02	1.1	0.04	--
MAY										
15...	--	--	--	--	--	2.2	0.05	2.2	0.13	--
JUN										
20...	--	--	--	--	--	1.1	0.03	1.1	0.04	--
JUL										
24...	230	9.8	0.5	6.4	469	--	<0.01	1.5	0.02	0.38
AUG										
13...	--	--	--	--	--	--	<0.01	0.7	0.02	--
SEP										
26...	--	--	--	--	--	--	0.03	--	0.02	--

06741530 BIG THOMPSON RIVER AT I-25, NEAR LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CO)	CADMIUM DIS- SOLVED (UG/L AS CO)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT										
23...	0920	--	--	<1	--	--	--	7	3	210
NOV										
20...	1340	--	--	<1	--	--	--	4	3	280
DEC										
28...	1437	<10	<1	<1	<1.0	<1	<1	4	1	140
FEB										
20...	1319	--	--	<1	--	--	--	8	2	320
MAR										
13...	1400	--	--	<1	--	--	--	3	2	250
26...	1230	--	--	<1	--	--	--	2	2	260
APR										
30...	1230	--	--	<1	--	--	--	4	1	490
MAY										
15...	0850	--	--	<1	--	--	--	2	1	230
JUN										
20...	0855	--	--	<1	--	--	--	8	2	290
JUL										
24...	0835	<10	1	<1	<1.0	2	<1	5	1	850
AUG										
13...	1310	--	--	<1	--	--	--	6	1	880
SEP										
26...	1100	--	--	<1	--	--	--	4	2	170

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT										
23...	1	--	--	--	--	--	--	<0.1	<1	--
NOV										
20...	2	--	--	--	--	--	--	<0.1	<1	--
DEC										
28...	2	<1	110	<0.10	0.1	3	3	<0.1	<1	27
FEB										
20...	1	--	--	--	--	--	--	<0.5	<1	--
MAR										
13...	5	--	--	--	--	--	--	0.1	<1	--
26...	2	--	--	--	--	--	--	0.5	<1	--
APR										
30...	2	--	--	--	--	--	--	<0.5	<1	--
MAY										
15...	6	--	--	--	--	--	--	<0.5	<1	--
JUN										
20...	13	--	--	--	--	--	--	<0.5	<1	--
JUL										
24...	14	<1	70	0.10	0.2	<1	2	--	<1	10
AUG										
13...	--	--	--	--	--	--	--	--	<1	--
SEP										
26...	1	--	--	--	--	--	--	<0.2*	<1	--

* Analysis based on preliminary method.

06742500 CARTER LAKE NEAR BERTHOUD, CO

LOCATION.--Lat 40°19'28", long 105°12'41", in SE¼ sec.10, T.4 N., R.70 W., Larimer County, Hydrologic Unit 10190006, in hoist house 293 ft from right abutment of Carter Lake Dam on Dry Creek, 7.0 mi west of Berthoud, and 8.9 mi upstream from mouth. Water-quality sampling site near center of reservoir.

RESERVOIR ELEVATIONS AND CONTENTS RECORDS

PERIOD OF RECORD.--March 1954 to current year.

GAGE.--Nonrecording gage read at irregular intervals from 1 to 13 days. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation); gage readings have been reduced to elevations above National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth and rockfill dam and dikes enlarging the natural basin of Carter Lake. Storage began in February 1954. Usable capacity, 113,500 acre-ft between elevations 5,618.00 ft, trashrack sill at outlet, and 5,763.00 ft, maximum water surface, 6 ft below crest of dam. Dead storage, 3,306 acre-ft. Figures given represent usable contents. Water diverted from Colorado River basin through Alva B. Adams tunnel is pumped from Flatiron Reservoir into Carter Lake for supplemental irrigation supply to Little Thompson River and St. Vrain and Boulder Creek basins. Water above elevation 5,620 ft may be released for return to Flatiron Reservoir where pump turbines can operate in reverse to generate power and water can be used for irrigation in Big Thompson or Cache la Poudre River basins.

COOPERATION.--Records provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 109,100 acre-ft, Apr. 27-29, 1971, elevation, 5,759.12 ft; minimum observed since appreciable storage was attained, 960 acre-ft, Oct. 25, 1954, elevation, 5,621.40 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 107,300 acre-ft, Apr. 21, elevation, 5,757.62 ft; minimum contents, 49,900 acre-ft, Sept. 18, 19, elevation, 5,701.15 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	5,702.20	50,830	-
Oct. 31.	5,711.55	59,360	+8,530
Nov. 30.	5,710.68	58,540	-820
Dec. 31.	5,722.93	70,350	+11,810
CAL YR 1990.			+11,510
Jan. 31.	5,735.69	83,380	+13,030
Feb. 28.	5,747.79	96,360	+12,980
Mar. 31.	5,754.64	104,000	+7,640
Apr. 30.	5,755.68	105,100	+1,100
May 31.	5,750.17	98,980	-6,120
June 30.	5,746.85	95,330	-3,650
July 31.	5,724.91	72,320	-23,010
Aug. 31.	5,712.13	59,900	-12,420
Sept. 30.	5,706.91	55,070	-4,830
WTR YR 1991			+4,240

06742500 CARTER LAKE NEAR BERTHOUD, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1970 to current year.

REMARKS.--Samples collected at various depths near south end of reservoir.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)
MAY						
23...	1044	0.1	75	8.3	12.0	8.3
23...	1045	5.0	75	8.3	12.0	8.1
23...	1046	10.0	75	8.3	12.0	8.1
23...	1047	20.0	74	8.3	12.0	8.5
23...	1048	25.0	74	8.3	10.0	8.4
23...	1049	30.0	74	8.3	9.5	8.3
23...	1050	40.0	74	8.3	9.0	8.2
23...	1051	50.0	74	8.3	8.5	8.2
23...	1052	60.0	74	8.3	8.0	8.3
23...	1053	70.0	75	8.3	7.0	8.2
23...	1054	75.0	75	8.3	6.5	8.2
23...	1055	80.0	75	8.3	6.0	8.1
23...	1056	90.0	74	8.3	6.0	8.1
23...	1057	100	73	8.2	5.5	8.0
23...	1058	110	73	8.2	5.5	7.9
23...	1059	120	73	8.2	5.5	7.8
23...	1100	125	73	8.2	5.0	7.8
23...	1101	130	73	8.2	5.0	7.8
23...	1102	135	73	8.2	5.0	7.8
JUL						
10...	1040	0.1	74	8.3	22.5	7.1
10...	1041	5.0	74	8.3	22.0	7.1
10...	1042	10.0	73	8.2	22.0	7.1
10...	1043	15.0	73	8.2	22.0	7.0
10...	1044	20.0	72	8.4	17.5	8.5
10...	1045	25.0	72	8.3	15.5	8.6
10...	1046	30.0	74	8.2	12.5	9.0
10...	1047	40.0	74	7.8	9.0	7.9
10...	1048	50.0	74	7.6	8.5	7.4
10...	1049	60.0	74	7.5	7.5	7.2
10...	1050	70.0	75	7.4	7.0	7.0
10...	1051	80.0	75	7.4	7.0	7.1
10...	1052	90.0	75	7.3	7.0	7.0
10...	1053	100	75	7.3	6.5	7.0
10...	1054	110	75	7.2	6.5	6.8
10...	1055	120	75	7.2	6.5	6.5
SEP						
23...	1247	0.1	87	8.1	17.5	7.4
23...	1248	5.0	87	8.1	17.0	7.4
23...	1249	10.0	87	8.1	17.0	7.4
23...	1250	15.0	87	8.1	17.0	7.4
23...	1251	20.0	87	8.1	17.0	7.4
23...	1252	25.0	87	8.1	17.0	7.3
23...	1253	30.0	87	8.0	17.0	7.3
23...	1254	40.0	81	7.6	12.5	5.3
23...	1255	50.0	80	7.5	11.5	5.3
23...	1256	60.0	80	7.4	11.0	5.3
23...	1257	70.0	78	7.4	10.5	5.3
23...	1258	80.0	77	7.3	9.0	4.8
23...	1259	90.0	77	7.2	7.0	4.1
23...	1300	95.0	77	7.2	7.5	4.0

06742500 CARTER LAKE NEAR BERTHOUD, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (IN)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
MAY											
23...	1115	0.1	75	8.3	12.0	84.0	8.3	K<1	31	10	1.4
23...	1130	135	73	8.2	5.0	--	7.8	--	31	10	1.4
JUL											
10...	1140	0.1	76	8.3	22.5	76.0	7.1	K<1	33	11	1.4
10...	1155	120	75	7.2	6.5	--	6.5	--	31	10	1.4
SEP											
23...	1315	0.1	87	8.1	17.5	82.0	7.4	K1	36	12	1.5
23...	1330	95	77	7.2	7.5	--	4.0	--	31	10	1.4

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, 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 CONSTI- TUENTS, DIS- SOLVED (MG/L)
MAY											
23...	2.4	14	0.2	0.7	33	3.1	0.8	0.1	2.5	31	41
23...	2.4	14	0.2	0.7	33	3.1	0.8	0.1	3.0	39	41
JUL											
10...	2.5	14	0.2	0.9	36	2.7	0.2	<0.1	2.0	50	42
10...	2.5	15	0.2	0.8	33	2.6	0.2	<0.1	3.1	48	41
SEP											
23...	2.6	13	0.2	0.8	39	3.4	1.5	0.2	1.9	44	47
23...	2.3	14	0.2	0.8	35	3.1	0.4	0.2	3.4	40	43

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L)
MAY											
23...	0.01	<0.01	0.01	<0.01	0.39	0.4	0.01	--	<0.001a	1.0	<0.1
23...	<0.01	0.01	0.04	0.04	0.36	0.4	0.02	--	<0.001a	--	--
JUL											
10...	<0.01	<0.01	0.02	<0.01	0.38	0.4	0.01	--	0.015a	0.80	<0.1
10...	0.01	0.04	0.05	0.05	0.25	0.3	0.01	--	0.003a	--	--
SEP											
23...	<0.01	<0.05	<0.01	<0.01	--	0.3	<0.01	<0.01	<0.01	0.80	<0.1
23...	<0.01	0.09	0.01	<0.01	0.29	0.3	0.01	<0.01	<0.01	--	--

DATE	TIME	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
MAY									
23...	1115	19	<0.5	<10	<1.0	<5	<3	<10	5
23...	1130	19	<0.5	<10	<1.0	<5	<3	<10	5
JUL									
10...	1140	23	<0.5	<10	<1.0	<5	<3	<10	9
10...	1155	19	<0.5	<10	<1.0	<5	<3	<10	3
SEP									
23...	1315	29	<0.5	10	1.0	<5	<3	<10	5
23...	1330	18	<0.5	<10	<1.0	<5	<3	<10	<3

a Analysis based on low-level method.
K Based on non-ideal colony count.

06742500 CARTER LAKE NEAR BERTHOUD, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
MAY									
23...	<10	<4	<1	<10	<10	1.0	46	<6	4
23...	<10	<4	<1	<10	<10	1.0	46	<6	5
JUL									
10...	<10	<4	<1	<10	<10	<1.0	46	<6	3
10...	<10	<4	3	<10	<10	<1.0	45	<6	17
SEP									
23...	<10	<4	<1	<10	<10	<1.0	50	<6	<3
23...	<10	<4	6	<10	<10	<1.0	46	<6	4

06746095 JOE WRIGHT CREEK ABOVE JOE WRIGHT RESERVOIR, CO

LOCATION.--Lat 40°32'24", long 105°52'56", in SE¼SE¼ sec.26, T.7 N., R.76 W., Larimer County, Hydrologic Unit 10190007, on left bank 150 ft downstream from unnamed tributary and Colorado Highway 14 culvert crossing, 1.5 mi northeast of Cameron Pass, 1.5 mi southwest of Joe Wright Dam, and 8 mi east of Gould.

DRAINAGE AREA.--3.01 mi².

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 9,990 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 7, 1989, at datum 3.40 ft higher.

REMARKS.--Estimated daily discharges: Oct. 12 to May 29. Records fair except for estimated daily discharges, which are poor. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--13 years, 7.83 ft³/s; 5,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 238 ft³/s, July 7, 1983, gage height, 5.60 ft, present datum; maximum gage height, 8.81 ft present datum, May 27, 1983 (backwater from ice); minimum daily discharge, 0.20 ft³/s, Jan. 30 to Apr. 4, 1979, and Feb. 9 to Apr. 9, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge recorded, 137 ft³/s at 1530 June 14, but may have been higher during period of no gage-height record, May 9, gage height, 5.07 ft; minimum daily, 1.1 ft³/s, Feb. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	3.4	2.0	1.3	1.2	1.2	1.2	1.2	60	37	12	5.6
2	4.4	3.4	1.8	1.3	1.2	1.2	1.2	1.3	58	35	13	5.4
3	4.2	3.4	1.7	1.3	1.2	1.2	1.2	1.4	51	34	13	5.0
4	4.2	3.4	1.6	1.3	1.2	1.2	1.2	1.5	52	33	13	4.9
5	4.1	3.4	1.5	1.3	1.1	1.2	1.2	1.7	60	32	11	4.7
6	4.0	3.4	1.4	1.3	1.2	1.2	1.2	2.1	71	30	12	4.7
7	4.7	3.4	1.4	1.3	1.2	1.2	1.2	3.1	74	29	11	5.1
8	5.3	3.4	1.3	1.3	1.2	1.2	1.2	5.2	75	30	9.7	6.3
9	5.0	3.4	1.3	1.3	1.2	1.2	1.2	81	78	30	9.2	5.6
10	4.5	3.4	1.3	1.3	1.2	1.2	1.2	18	86	26	8.9	5.1
11	4.6	3.4	1.3	1.3	1.2	1.2	1.2	6.2	100	24	8.5	4.8
12	4.5	3.4	1.3	1.3	1.2	1.2	1.2	7.0	102	22	8.3	4.8
13	4.5	3.4	1.3	1.3	1.2	1.2	1.2	8.0	110	21	8.7	4.9
14	4.5	3.4	1.3	1.3	1.2	1.2	1.2	6.0	98	20	8.0	5.1
15	4.1	3.4	1.3	1.3	1.2	1.2	1.2	5.0	47	18	8.0	5.7
16	4.3	3.4	1.3	1.2	1.2	1.2	1.2	7.0	38	17	7.9	5.6
17	4.3	3.4	1.3	1.2	1.2	1.2	1.2	13	33	17	7.3	5.1
18	4.2	3.4	1.3	1.2	1.2	1.2	1.2	14	31	17	6.9	4.7
19	4.0	3.4	1.3	1.2	1.2	1.2	1.2	16	70	16	8.3	4.5
20	4.0	3.4	1.3	1.2	1.2	1.2	1.2	18	89	16	8.1	4.3
21	3.8	3.3	1.3	1.2	1.2	1.2	1.2	21	85	16	7.5	4.1
22	3.7	3.2	1.3	1.2	1.2	1.2	1.2	21	83	16	7.2	3.9
23	3.6	3.1	1.3	1.2	1.2	1.2	1.2	17	78	17	6.9	3.7
24	3.6	3.0	1.3	1.2	1.2	1.2	1.2	20	73	18	6.5	3.7
25	3.6	2.9	1.3	1.2	1.2	1.2	1.2	24	67	20	6.3	3.6
26	3.5	2.8	1.3	1.2	1.2	1.2	1.2	29	60	17	6.3	3.4
27	3.8	2.6	1.3	1.2	1.2	1.2	1.2	34	54	15	6.3	3.2
28	3.8	2.5	1.3	1.2	1.2	1.2	1.2	43	48	14	6.7	3.2
29	3.7	2.4	1.3	1.2	---	1.2	1.2	46	41	13	6.7	3.4
30	3.7	2.2	1.3	1.2	---	1.2	1.2	47	37	13	5.9	3.5
31	3.5	---	1.3	1.2	---	1.2	---	49	---	12	5.7	---
TOTAL	128.2	96.0	42.6	38.7	33.5	37.2	36.0	567.7	2009	675	264.8	137.6
MEAN	4.14	3.20	1.37	1.25	1.20	1.20	1.20	18.3	67.0	21.8	8.54	4.59
MAX	5.3	3.4	2.0	1.3	1.2	1.2	1.2	81	110	37	13	6.3
MIN	3.5	2.2	1.3	1.2	1.1	1.2	1.2	1.2	31	12	5.7	3.2
AC-FT	254	190	84	77	66	74	71	1130	3980	1340	525	273

CAL YR 1990 TOTAL 3030.82 MEAN 8.30 MAX 125 MIN .78 AC-FT 6010
WTR YR 1991 TOTAL 4066.3 MEAN 11.1 MAX 110 MIN 1.1 AC-FT 8070

06746110 JOE WRIGHT CREEK BELOW JOE WRIGHT RESERVOIR, CO

LOCATION.--Lat 40°33'43", long 105°51'48", in SE¼NE¼ sec.24, T.7 N., R.76 W., Larimer County, Hydrologic Unit 10190007, on left bank 500 ft downstream from unnamed tributary, 2,000 ft downstream from Joe Wright Dam, and 3 mi southwest of Chambers Lake.

DRAINAGE AREA.--6.90 mi².

PERIOD OF RECORD.--June 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 9,710 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 7, 1989, at datum 0.50 ft. higher.

REMARKS.--Estimated daily discharges: Nov. 3 to May 7. Records good except for estimated daily discharges, which are poor. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--13 years, 13.1 ft³/s; 9,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 284 ft³/s, Aug. 18, 1991, gage height, 2.71 ft; minimum daily, 0.17 ft³/s, Apr. 3-4, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 284 ft³/s at 1430 Aug. 18, gage height, 2.71 ft; minimum daily, 0.17 ft³/s, Apr. 3-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	.99	.70	.53	.54	.60	.19	.40	7.0	54	103	1.3
2	12	.96	.70	.53	.54	.58	.18	.40	7.9	47	88	1.3
3	12	.85	.70	.53	.54	.56	.17	.40	6.5	51	88	1.3
4	5.9	.80	.70	.53	.56	.54	.17	.40	8.0	52	90	1.2
5	.93	.76	.70	.53	.56	.52	.18	.40	7.8	49	131	1.2
6	.95	.74	.68	.53	.58	.50	.19	.40	8.7	29	193	1.2
7	1.1	.74	.66	.53	.58	.47	.19	.40	14	37	160	1.2
8	1.1	.74	.66	.53	.58	.45	.20	.57	23	50	155	1.4
9	1.1	.74	.64	.53	.58	.44	.21	1.1	23	53	153	1.3
10	1.1	.74	.64	.53	.58	.42	.22	1.5	41	45	152	1.2
11	1.0	.74	.64	.53	.58	.40	.23	1.6	83	37	152	1.2
12	1.0	.74	.64	.53	.58	.39	.24	1.4	90	36	157	1.2
13	1.0	.74	.64	.53	.60	.38	.25	1.2	115	31	173	1.2
14	.99	.74	.64	.53	.62	.36	.26	1.7	105	28	181	1.2
15	1.0	.74	.64	.53	.62	.35	.27	1.6	117	25	176	1.2
16	1.1	.74	.64	.53	.64	.34	.28	.96	130	18	170	1.2
17	.97	.74	.64	.53	.66	.33	.29	.87	58	18	165	1.2
18	.99	.74	.64	.53	.68	.32	.30	1.7	56	29	120	1.0
19	1.0	.74	.64	.53	.70	.30	.32	2.8	134	33	1.7	.99
20	.99	.74	.64	.53	.72	.29	.33	3.1	138	27	1.6	.99
21	.99	.74	.62	.53	.74	.28	.35	3.1	137	21	1.5	.99
22	1.0	.74	.62	.53	.74	.27	.36	4.0	137	24	1.5	.99
23	1.1	.74	.62	.53	.74	.26	.38	4.0	138	30	1.5	.99
24	1.1	.74	.62	.53	.74	.25	.39	3.3	123	33	1.5	.99
25	1.1	.74	.62	.53	.74	.24	.40	4.1	85	33	1.5	.99
26	1.1	.72	.60	.53	.70	.23	.45	4.7	70	33	1.5	.99
27	1.1	.70	.58	.53	.68	.22	.42	5.1	81	31	1.4	.99
28	1.1	.70	.56	.53	.62	.21	.42	5.2	81	25	1.5	.99
29	1.1	.70	.54	.53	---	.20	.42	4.9	68	23	1.4	1.1
30	1.1	.70	.53	.53	---	.20	.40	4.4	67	19	1.3	.99
31	1.0	---	.53	.53	---	.18	---	5.2	---	45	1.3	---
TOTAL	70.01	22.68	19.62	16.43	17.74	11.08	8.66	70.90	2159.9	1066	2626.2	33.99
MEAN	2.26	.76	.63	.53	.63	.36	.29	2.29	72.0	34.4	84.7	1.13
MAX	12	.99	.70	.53	.74	.60	.45	5.2	138	54	193	1.4
MIN	.93	.70	.53	.53	.54	.18	.17	.40	6.5	18	1.3	.99
AC-FT	139	45	39	33	35	22	17	141	4280	2110	5210	67

CAL YR 1990 TOTAL 6446.01 MEAN 17.7 MAX 152 MIN .30 AC-FT 12790
WTR YR 1991 TOTAL 6123.21 MEAN 16.8 MAX 193 MIN .17 AC-FT 12150

06751490 NORTH FORK CACHE LA POUDE RIVER AT LIVERMORE, CO

LOCATION.--Lat 40°47'15", long 105°15'06", in SW¼SE¼ sec.32, T.10 N., R.70 W., Larimer County, Hydrologic Unit 10190007, on left bank 60 ft downstream from bridge on Colorado State Highway 200, 2.0 mi west of Livermore, and 2.9 mi downstream from Stonewall Creek.

DRAINAGE AREA.--539 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1986 to current year. May 1929 to September 1931, May 1947 to September 1960, published as near Livermore; records are not considered equivalent.

GAGE.--Water-stage recorder. Elevation of gage is 5,715 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 2 to Mar. 9. Records good except for estimated daily discharges, which are poor. Natural flow affected by transbasin diversions, storage reservoirs, and irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft³/s, June 1, 1991, gage height, 17.53 ft; minimum daily, 2.6 ft³/s, Sept. 2, 3, 1988, Apr. 27, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,430 ft³/s at 2115 June 1, gage height, 17.53 ft; minimum daily, 3.9 ft³/s, May 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	8.1	8.6	7.0	6.1	8.8	6.1	4.2	620	114	58	37
2	30	8.1	8.5	7.0	6.2	8.4	6.2	4.3	1900	113	54	36
3	29	10	8.5	7.0	6.3	8.0	6.7	4.2	1290	116	67	34
4	29	11	8.4	6.9	6.4	7.6	7.4	5.4	1080	96	66	33
5	28	11	8.4	6.9	6.6	7.2	7.8	7.3	894	83	62	32
6	28	12	8.4	6.8	6.7	6.8	8.4	5.7	818	84	59	31
7	33	11	8.3	6.8	6.8	6.4	8.7	6.8	903	80	57	31
8	32	11	8.2	6.7	6.9	6.1	8.7	6.4	855	78	54	32
9	19	11	8.2	6.7	7.0	5.8	8.7	7.2	707	83	51	30
10	20	11	8.1	6.6	7.2	5.5	8.3	4.9	660	80	51	29
11	20	11	8.0	6.6	7.3	6.1	8.0	6.8	597	43	52	30
12	20	11	8.0	6.6	7.4	6.4	8.4	4.3	487	23	62	29
13	19	14	7.9	6.5	7.6	7.0	8.0	4.3	423	24	80	28
14	18	14	7.9	6.5	7.7	7.1	7.6	3.9	428	23	79	22
15	19	12	7.8	6.4	7.9	7.2	7.1	5.2	386	24	69	12
16	18	11	7.8	6.4	8.0	7.2	7.3	11	317	23	54	10
17	15	11	7.8	6.4	8.2	7.1	7.5	16	267	32	54	11
18	12	12	7.7	6.3	8.4	7.1	7.6	17	216	56	49	11
19	11	12	7.6	6.3	8.5	9.2	8.9	16	185	60	61	11
20	10	12	7.6	6.2	8.6	10	8.3	12	158	59	46	11
21	11	11	7.5	6.2	8.8	7.9	8.0	9.1	180	60	43	11
22	12	11	7.5	6.2	9.0	7.5	9.1	9.8	214	90	42	11
23	11	11	7.4	6.1	9.1	7.2	6.0	34	233	88	41	11
24	11	11	7.4	6.1	9.3	7.0	5.1	52	206	81	40	12
25	11	10	7.3	6.0	9.5	7.0	5.4	47	158	78	40	12
26	10	9.6	7.2	6.0	9.7	7.2	5.5	39	126	77	40	11
27	10	9.6	7.2	6.0	9.9	7.4	5.4	34	116	78	39	10
28	10	10	7.2	6.0	9.4	7.5	4.8	26	118	72	40	9.9
29	8.8	9.9	7.2	5.9	---	7.1	4.3	27	111	66	40	9.4
30	9.1	9.1	7.1	5.9	---	6.9	4.1	28	111	62	39	12
31	8.9	---	7.1	6.0	---	6.4	---	26	---	59	38	---
TOTAL	551.8	326.4	241.8	199.0	220.5	224.1	213.4	484.8	14764	2105	1627	609.3
MEAN	17.8	10.9	7.80	6.42	7.87	7.23	7.11	15.6	492	67.9	52.5	20.3
MAX	33	14	8.6	7.0	9.9	10	9.1	52	1900	116	80	37
MIN	8.8	8.1	7.1	5.9	6.1	5.5	4.1	3.9	111	23	38	9.4
AC-FT	1090	647	480	395	437	445	423	962	29280	4180	3230	1210

CAL YR 1990 TOTAL 19535.9 MEAN 53.5 MAX 429 MIN 6.1 AC-FT 38750
WTR YR 1991 TOTAL 21567.1 MEAN 59.1 MAX 1900 MIN 3.9 AC-FT 42780

06751490 NORTH FORK CACHE LA POUDE RIVER AT LIVERMORE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 19, 1986, to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT
OCT											
31...	1345	9.3	394	8.3	9.5	9.6	190	51	14	15	15
NOV											
19...	1145	12	350	8.6	9.0	11.2	150	42	11	13	16
DEC											
26...	1410	7.3	447	8.2	0.0	--	210	58	15	18	16
FEB											
27...	1350	9.9	381	8.4	0.5	11.6	170	48	12	15	16
MAR											
14...	1350	7.8	355	8.5	6.5	11.9	150	43	11	14	16
APR											
18...	1425	6.0	337	8.4	7.5	9.3	150	40	11	14	17
30...	1020	4.1	405	8.3	7.5	11.2	170	48	13	18	18
MAY											
14...	1005	3.7	420	8.4	12.0	9.7	190	51	14	16	16
JUN											
06...	1410	841	130	7.8	13.0	8.3	53	16	3.2	5.2	17
JUL											
26...	1120	77	227	--	17.0	7.8	100	30	6.5	8.2	15
AUG											
27...	1030	42	227	8.6	18.0	8.1	100	30	6.8	8.3	15

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, 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, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT											
31...	0.5	2.0	191	14	12	0.7	15	224	239	0.30	5.61
NOV											
19...	0.5	1.4	163	10	9.2	1.0	13	195	199	0.27	6.32
DEC											
26...	0.5	1.9	210	21	13	1.2	16	252	272	0.34	4.93
FEB											
27...	0.5	1.4	169	16	11	1.0	13	225	220	0.31	6.00
MAR											
14...	0.5	1.8	154	20	10	1.0	11	177	205	0.24	3.72
APR											
18...	0.5	1.5	149	19	15	1.0	9.6	178	201	0.24	2.87
30...	0.6	1.7	180	12	12	1.0	10	216	224	0.29	2.37
MAY											
14...	0.5	2.1	190	14	14	1.1	9.9	220	237	0.30	2.19
JUN											
06...	0.3	1.5	52	6.9	1.2	0.7	16	73	82	0.10	166
JUL											
26...	0.4	1.7	104	12	4.6	0.9	15	142	142	0.19	29.6
AUG											
27...	0.4	1.5	107	6.5	3.7	0.7	13	124	135	0.17	14.0

06751490 NORTH FORK CACHE LA POUDRE RIVER AT LIVERMORE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS DRTHO, DIS- SOLVED (MG/L AS P)
OCT 31...	<0.01	<0.10	<0.10	<0.01	0.02	--	0.50	--	0.02	<0.01	<0.01
NOV 19...	<0.01	<0.10	<0.10	0.05	0.04	0.15	0.20	--	<0.01	<0.01	<0.01
DEC 26...	<0.01	0.30	0.30	0.03	0.04	0.17	0.20	0.50	0.02	<0.01	<0.01
FEB 27...	0.01	0.18	0.19	0.02	0.02	0.18	0.20	0.38	0.02	0.01	<0.01
MAR 14...	0.02	0.06	0.07	0.01	0.01	--	0.30	--	0.02	0.01	0.01
APR 18...	<0.01	<0.05	<0.05	0.02	0.01	0.48	0.50	--	0.02	<0.01	<0.01
30...	<0.01	<0.05	<0.05	0.02	<0.01	0.28	0.30	--	<0.01	<0.01	<0.01
MAY 14...	<0.01	<0.05	<0.05	0.03	0.02	2.0	2.0	--	0.03	0.02	<0.01
JUN 06...	<0.01	0.19	--	0.05	0.03	0.65	0.70	0.89	0.09	0.03	0.01
JUL 26...	<0.01	0.11	0.11	<0.01	<0.01	--	0.70	0.81	0.07	0.05	<0.01
AUG 27...	<0.01	<0.05	<0.05	<0.01	0.01	--	0.50	--	0.03	<0.01	0.04

DATE	TIME	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 31...	1345	110	0.5	40	<1.0	<5	<3	<10	27
NOV 19...	1145	87	<0.5	40	<1.0	<5	<3	<10	22
DEC 26...	1410	130	<0.5	50	<1.0	<5	<3	<10	15
FEB 27...	1350	99	<0.5	40	3.0	<5	<3	<10	23
MAR 14...	1350	89	0.6	<10	<1.0	<5	<3	<10	23
APR 18...	1425	85	<0.5	40	<1.0	<5	<3	<10	40
30...	1020	110	<0.5	40	<1.0	<5	<3	<10	9
MAY 14...	1005	110	<0.5	50	<1.0	<5	<3	<10	16
JUN 06...	1410	36	<0.5	20	<1.0	<5	<3	<10	180
JUL 26...	1120	61	<0.5	30	<1.0	<5	<3	<10	170
AUG 27...	1030	61	<0.5	30	<1.0	<5	<3	<10	90

06751490 NORTH FORK CACHE LA POUDE RIVER AT LIVERMORE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 31...	<10	18	11	<10	<10	<1.0	320	<6	8
NOV 19...	<10	15	8	<10	<10	<1.0	280	<6	<3
DEC 26...	<10	18	13	<10	<10	<1.0	360	<6	16
FEB 27...	<10	14	16	<10	<10	<1.0	280	<6	8
MAR 14...	<10	14	16	<10	<10	<1.0	270	<6	13
APR 18...	<10	13	20	<10	<10	<1.0	250	<6	5
30...	<10	17	20	<10	<10	<1.0	300	<6	<3
MAY 14...	<10	17	44	<10	<10	2.0	320	<6	<3
JUN 06...	<10	<4	13	<10	<10	1.0	78	<6	4
JUL 26...	<10	7	23	<10	<10	<1.0	170	<6	20
AUG 27...	<10	7	10	<10	<10	<1.0	170	<6	7

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST, CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 31...	1345	9.3	9	0.23
NOV 19...	1145	12	--	--
DEC 26...	1410	7.3	16	0.31
FEB 27...	1350	9.9	5	0.13
MAR 14...	1350	7.8	14	0.29
APR 18...	1425	6.0	10	0.16
30...	1020	4.1	17	0.19
MAY 14...	1005	3.7	8	0.08
JUN 06...	1410	841	132	300
JUL 26...	1120	77	22	4.6
AUG 27...	1030	42	6	0.68

06752000 CACHE LA POUDBRE RIVER AT MOUTH OF CANYON, NEAR FORT COLLINS, CO

LOCATION.--Lat 40°39'52", long 105°13'26", in NW¼ sec.15, T.8 N., R.70 W., Larimer County, Hydrologic Unit 10190007, on left bank at mouth of canyon, 0.5 mi downstream from headgate of Poudre Valley Canal, 1.2 mi upstream from Lewstone Creek, and 9.3 mi northwest of courthouse in Fort Collins.

DRAINAGE AREA.--1,056 mi².

PERIOD OF RECORD.--Streamflow records, June to August 1881, May to July 1883, October 1883 to current year. Monthly discharge only for some periods, published in WSP 1310. Records for Mar. 23 to Apr. 30 and July 4 to Aug. 20, 1883, published in WSP 9, have been found to be unreliable and should not be used. Prior to 1902, published as Cache la Poudre Creek or River at or near Fort Collins. Water-quality data available, June 1962 to October 1965, October 1971 to September 1982.

REVISED RECORDS.--WSP 1310: 1885-87, 1889, 1892, 1894-96, 1934. WSP 1730: 1960, drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,220 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 3 to Mar. 14. Records good except for estimated daily discharges, which are fair. Natural flow of stream affected by transbasin and transmountain diversions (see elsewhere in this report), diversions upstream from station for irrigation of about 50,000 acres, most of which is downstream from station, 84,690 acre-ft diverted during current year, and diversions for municipal use, 13,790 acre-ft diverted during current year.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, occurred May 20, 1904; maximum discharge determined, 21,000 ft³/s, June 9, 1891 (from reports of State Engineer of Colorado), caused by failure of Chambers Lake Dam; minimum daily discharge, 1.6 ft³/s, Nov. 20, 28, 1948, caused by diversion of Poudre Valley Canal, 0.5 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,520 ft³/s at 1345 June 2, gage height, 5.33 ft; minimum daily, 5.2 ft³/s, Nov. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	47	46	6	21	17	25	13	1650	885	488	182
2	64	48	37	24	21	22	29	11	3740	768	517	178
3	58	50	25	26	20	24	32	13	2700	660	495	176
4	55	33	25	31	19	31	28	18	1770	652	533	171
5	59	39	28	33	21	32	23	26	1880	654	483	168
6	58	47	31	27	21	30	26	24	1860	634	493	158
7	61	31	27	26	21	26	28	19	1900	617	564	174
8	76	25	23	23	21	18	31	22	1790	607	539	195
9	76	42	22	19	20	19	28	18	1740	623	476	199
10	70	50	220	20	21	23	20	21	1670	641	440	193
11	69	47	179	20	20	28	22	84	1720	606	430	189
12	72	38	134	18	20	29	21	161	1900	520	435	184
13	61	35	31	19	20	19	15	183	1790	546	462	162
14	61	36	28	20	19	22	10	284	1710	497	491	126
15	60	35	12	19	21	21	13	317	1820	434	455	114
16	61	43	8	18	19	20	7.8	281	1810	400	482	118
17	63	36	10	20	24	18	12	212	1500	381	492	110
18	68	35	25	17	22	16	18	237	1370	384	480	89
19	54	34	31	18	17	24	22	477	1330	402	537	82
20	71	33	23	17	23	26	16	775	1400	399	530	76
21	64	30	20	18	23	23	17	676	1410	445	485	64
22	50	7.4	15	20	23	25	19	716	1430	457	447	60
23	54	5.2	16	18	19	24	14	1030	1310	578	350	84
24	57	26	24	10	15	22	15	913	1310	512	307	72
25	46	34	25	15	14	28	15	749	1290	532	287	60
26	41	104	27	17	13	31	16	1170	1180	555	277	56
27	40	118	18	17	11	35	18	1430	995	520	277	55
28	43	8.8	14	19	17	29	16	1500	977	475	305	55
29	40	7.8	7	20	---	25	14	1330	986	494	284	54
30	39	41	7	20	---	26	13	1280	986	461	243	64
31	43	---	8	20	---	23	---	1080	---	443	194	---
TOTAL	1803	1166.2	1146	615	546	756	583.8	15070	48924	16782	13278	3668
MEAN	58.2	38.9	37.0	19.8	19.5	24.4	19.5	486	1631	541	428	122
MAX	76	118	220	33	24	35	32	1500	3740	885	564	199
MIN	39	5.2	7.0	6.0	11	16	7.8	11	977	381	194	54
AC-FT	3580	2310	2270	1220	1080	1500	1160	29890	97040	33290	26340	7280

CAL YR 1990 TOTAL 108256.6 MEAN 297 MAX 2210 MIN 5.2 AC-FT 214700
WTR YR 1991 TOTAL 104338.0 MEAN 286 MAX 3740 MIN 5.2 AC-FT 207000

0675225B CACHE LA POUDE RIVER AT SHIELDS STREET, AT FORT COLLINS, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 40°36'11", long 105°05'43", in NE¼SE¼ sec.3, T.7 N., R.69 W., Larimer County, Hydrologic Unit 10190007, at Shields Street bridge, 0.8 mi downstream from Larimer-Weld Canal, and 1.0 mi northwest of Fort Collins.

PERIOD OF RECORD.--October 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY LAB (MG/L AS CACO3)
OCT 31...	D930	6.0	491	8.3	10.0	10.4	230	64	16	--	201
NOV 20...	1300	1.4	386	8.2	9.0	10.8	170	48	11	--	129
DEC 27...	1030	7.6	533	8.2	0.0	--	260	75	17	--	167
FEB 27...	0945	1.5	478	8.4	5.0	12.4	210	59	15	--	156
MAR 15...	D900	0.74	481	8.2	4.0	9.5	230	65	16	13	169
APR 09...	1415	0.60	480	8.3	15.0	10.4	220	60	17	--	164
MAY 01...	0905	1.2	505	8.3	7.5	10.3	200	55	15	--	143
15...	1105	0.54	429	8.3	12.5	9.2	170	46	14	--	160
JUN 19...	1300	421	80	7.8	13.0	8.3	25	7.3	1.7	2.2	24
JUL 24...	1425	12	163	8.6	18.0	8.6	67	19	4.8	--	61
AUG 27...	1405	19	157	8.8	20.5	8.5	71	20	5.2	--	62

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLD- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
OCT 31...	--	--	--	--	--	1.6	0.01	1.6	0.02	--
NOV 20...	--	--	--	--	--	--	<0.01	0.12	0.05	--
DEC 27...	--	--	--	--	--	--	<0.01	0.43	0.08	--
FEB 27...	--	--	--	--	--	0.78	0.02	0.80	0.02	--
MAR 15...	75	6.3	0.4	5.3	261	0.41	0.03	0.44	0.02	<0.01
APR 09...	--	--	--	--	--	0.26	0.01	0.27	0.02	--
MAY 01...	--	--	--	--	--	--	<0.01	0.51	0.02	--
15...	--	--	--	--	--	0.41	0.02	0.43	0.04	--
JUN 19...	5.3	1.2	0.2	8.5	31	--	<0.01	<0.01	0.02	<0.01
JUL 24...	--	--	--	--	--	--	<0.01	0.39	<0.01	--
AUG 27...	--	--	--	--	--	--	<0.01	0.03	<0.01	--

06752258 CACHE LA POUDDRE RIVER AT SHIELDS STREET, AT FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT										
31...	0930	--	--	<1	--	--	--	5	3	100
NOV										
20...	1300	--	--	<1	--	--	--	2	2	120
DEC										
27...	1030	--	--	<1	--	--	--	2	1	70
FEB										
27...	0945	--	--	<1	--	--	--	2	2	100
MAR										
15...	0900	<10	<1	<1	1.0	<1	<1	3	2	110
APR										
09...	1415	--	--	<1	--	--	--	2	2	120
MAY										
01...	0905	--	--	<1	--	--	--	3	1	110
15...	1105	--	--	<1	--	--	--	6	1	170
JUN										
19...	1300	80	<1	<1	<1.0	<1	<1	3	1	480
JUL										
24...	1425	--	--	<1	--	--	--	5	2	470
AUG										
27...	1405	--	--	<1	--	--	--	3	2	140

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT										
31...	2	--	--	--	--	--	--	<1	<0.1	--
NOV										
20...	1	--	--	--	--	--	--	<1	0.2	--
DEC										
27...	1	--	--	--	--	--	--	<1	<0.1	--
FEB										
27...	<1	--	--	--	--	--	--	<1	<0.5	--
MAR										
15...	<1	<1	50	<0.1	<0.1	<1	<1	<1	<0.5	9
APR										
09...	1	--	--	--	--	--	--	<1	<0.1	--
MAY										
01...	3	--	--	--	--	--	--	<1	<0.5	--
15...	4	--	--	--	--	--	--	<1	<0.5	--
JUN										
19...	3	<1	30	<0.1	<0.1	1	<1	<1	<0.5	8
JUL										
24...	5	--	--	--	--	--	--	<1	--	--
AUG										
27...	2	--	--	--	--	--	--	<1	--	--

06752260 CACHE LA POUDE RIVER AT FORT COLLINS, CO

LOCATION.--Lat 40°35'21", long 105°04'09", in SE¼NW¼ sec.12, T.7 N., R.69 W., Larimer County, Hydrologic Unit 10190007, on left bank 200 ft upstream from Lincoln Street Bridge in Fort Collins.

DRAINAGE AREA.--1,127 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 4,940 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 10, 1988 at site 4,300 ft upstream, at different datum. Prior to May 22, 1987, at site 300 ft downstream, at present datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by transmountain and transbasin diversions, storage reservoirs, power developments, diversion for municipal supply, diversions upstream from station for irrigation, and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft³/s, June 21, 1983, gage height, 8.31 ft, site and datum then in use; maximum gage height, 9.15 ft, June 2, 1991, present site and datum, no flow, Aug. 18, 19, and Sept. 4, 18, 19, 1987, and many days in 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,370 ft³/s at 1400 June 2, gage height, 9.15 ft; minimum daily, 0.85 ft³/s, Mar. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	5.4	5.2	14	15	4.0	2.0	2.8	721	111	23	28
2	9.3	5.8	5.1	16	16	3.6	3.3	2.8	2430	72	45	34
3	11	6.4	23	14	15	3.8	1.7	2.7	1870	50	92	23
4	10	5.5	23	14	15	3.3	1.6	4.2	847	104	95	20
5	7.5	4.9	25	14	15	3.7	1.6	2.8	1260	196	54	21
6	7.4	7.3	22	15	15	3.7	1.9	2.7	1250	242	60	20
7	8.0	5.7	24	21	15	3.5	2.2	2.9	1370	106	139	31
8	8.4	4.4	25	27	15	3.7	2.7	2.6	1370	90	64	24
9	9.5	5.1	23	25	15	3.6	2.5	2.4	1420	104	38	19
10	8.7	5.5	148	26	14	3.3	6.4	2.6	1300	77	35	23
11	8.3	7.5	188	25	15	3.6	9.1	2.2	1190	63	52	20
12	7.0	6.7	59	25	16	4.5	3.5	2.0	1350	94	95	20
13	5.6	7.1	34	26	12	4.5	3.1	2.1	1150	192	104	44
14	5.5	7.2	20	25	7.8	3.1	3.0	1.8	1020	100	97	20
15	6.6	7.2	16	23	6.7	2.8	3.4	3.4	1130	51	71	8.2
16	6.9	6.9	21	25	5.1	2.9	3.0	9.6	1040	36	85	8.3
17	4.4	6.5	19	31	5.9	2.8	2.2	2.6	713	33	100	9.7
18	8.4	5.8	17	32	4.9	3.0	3.2	2.1	484	34	57	5.7
19	8.4	4.9	14	32	4.7	3.5	3.3	7.2	325	51	77	4.0
20	9.3	6.7	15	30	5.0	1.4	4.3	118	396	107	75	2.9
21	19	5.7	21	28	5.0	1.2	7.2	94	340	108	37	2.0
22	11	7.4	17	27	5.3	1.2	4.6	109	436	191	35	1.9
23	8.2	6.0	15	19	4.1	2.1	4.5	263	298	213	31	2.5
24	7.4	5.5	15	17	3.9	1.9	2.6	104	182	18	56	1.6
25	8.2	5.4	15	16	3.8	2.0	2.5	22	122	14	35	1.6
26	6.0	5.5	14	14	4.0	2.1	3.1	244	123	20	20	2.4
27	5.9	6.2	13	14	4.3	1.9	3.3	196	197	30	17	5.2
28	5.5	5.8	14	13	4.2	1.2	2.9	224	220	72	32	3.7
29	4.5	5.9	13	12	---	.92	3.2	129	351	32	30	4.1
30	6.7	6.4	12	13	---	.85	2.8	180	245	25	28	7.0
31	5.3	---	13	14	---	.86	---	295	---	23	41	---
TOTAL	246.3	182.3	888.3	647	267.7	84.53	100.7	2039.5	25150	2659	1820	417.8
MEAN	7.95	6.08	28.7	20.9	9.56	2.73	3.36	65.8	838	85.8	58.7	13.9
MAX	19	7.5	188	32	16	4.5	9.1	295	2430	242	139	44
MIN	4.4	4.4	5.1	12	3.8	.85	1.6	1.8	122	14	17	1.6
AC-FT	489	362	1760	1280	531	168	200	4050	49890	5270	3610	829

CAL YR 1990 TOTAL 30963.7 MEAN 84.8 MAX 1420 MIN 2.6 AC-FT 61420
WTR YR 1991 TOTAL 34503.13 MEAN 94.5 MAX 2430 MIN .85 AC-FT 68440

06752260 CACHE LA POUDE RIVER AT FORT COLLINS, CO--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1987 to current year.

pH: October 1987 to current year.

WATER TEMPERATURE: October 1987 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1987. Values recorded each 30 minutes.

REMARKS.--Unpublished maximum and minimum specific conductance data for period of daily record available in district office.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum mean, 791 microsiemens, Apr. 1, 1991; minimum mean, 38 microsiemens, June 15, 1991.

pH: Maximum, 9.1 units, Aug. 11, 18 and 20, 1991; minimum 7.0 units, Dec. 3, May 18, and Sept. 3, 1991.

WATER TEMPERATURE: Maximum, 25.6°C, Aug. 26, 1991; Minimum 0.0°C many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY LAB (MG/L AS CACO3)
NOV											
01...	0945	7.1	606	8.2	10.0	11.0	280	76	21	--	219
20...	0945	6.7	592	8.2	8.0	10.8	240	66	19	--	201
DEC											
27...	1415	14	567	8.0	0.0	--	260	76	18	--	192
FEB											
26...	1315	4.0	644	8.4	7.0	12.1	260	71	21	--	195
MAR											
13...	1200	2.9	669	8.3	10.5	12.0	290	80	23	25	206
APR											
09...	1215	3.5	656	8.3	12.0	12.1	280	73	23	--	208
29...	1335	3.5	636	8.6	16.0	12.8	270	70	22	--	189
MAY											
13...	1315	2.8	668	8.3	21.0	10.3	270	71	22	--	200
JUN											
18...	1600	520	65	7.9	15.5	8.1	27	7.8	1.9	2.4	24
JUL											
25...	0855	6.6	345	8.1	16.5	7.6	140	37	11	--	113
AUG											
26...	1245	20	235	8.7	22.5	9.1	100	29	7.8	--	92

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
NOV										
01...	--	--	--	--	--	1.3	0.01	1.3	0.02	--
20...	--	--	--	--	--	0.94	0.01	0.96	0.04	--
DEC										
27...	--	--	--	--	--	--	<0.01	0.84	0.05	--
FEB										
26...	--	--	--	--	--	1.1	0.01	1.1	0.01	--
MAR										
13...	110	14	0.4	5.9	343	0.90	0.03	0.93	<0.01	<0.01
APR										
09...	--	--	--	--	--	0.53	0.02	0.55	0.02	--
29...	--	--	--	--	--	0.61	0.01	0.62	<0.01	--
MAY										
13...	--	--	--	--	--	0.60	0.01	0.61	0.03	--
JUN										
18...	5.8	1.2	0.3	8.6	40	--	<0.01	<0.01	0.01	0.01
JUL										
25...	--	--	--	--	--	--	<0.01	0.29	<0.01	--
AUG										
26...	--	--	--	--	--	--	<0.01	0.11	<0.01	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

06752260 CACHE LA POUDRE RIVER AT FORT COLLINS, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	520	614	749	574	558	649	791	677	44	---	217	250
2	527	651	769	568	543	649	641	658	83	---	226	191
3	520	646	677	595	523	646	644	671	98	---	235	212
4	525	670	587	564	513	655	680	645	85	---	248	213
5	544	663	538	565	524	652	702	580	69	---	209	196
6	548	668	572	570	524	657	710	657	63	---	215	212
7	535	679	573	557	522	660	703	654	57	---	260	228
8	494	680	587	548	520	657	664	598	57	---	178	259
9	556	709	569	527	523	664	696	641	56	---	179	248
10	539	689	476	517	519	659	672	634	53	---	220	232
11	528	667	370	504	522	664	561	655	52	140	161	245
12	542	651	391	505	525	665	589	670	46	141	222	238
13	585	637	442	499	525	660	660	679	43	185	227	181
14	589	696	494	498	570	674	666	660	42	187	226	249
15	560	702	550	503	592	671	642	645	38	154	200	312
16	555	684	517	508	605	674	644	415	41	201	188	372
17	578	691	494	479	603	667	657	515	51	202	234	369
18	571	678	501	462	611	656	639	597	72	203	186	382
19	494	---	516	444	617	657	644	624	135	211	207	414
20	516	---	552	444	619	663	654	196	92	227	227	473
21	483	---	545	447	617	716	556	93	---	203	182	518
22	452	708	567	450	575	779	608	125	---	162	229	545
23	510	690	558	460	611	745	612	122	---	174	215	539
24	545	732	548	519	627	674	626	78	---	198	225	543
25	534	732	553	550	632	683	634	196	---	213	182	593
26	565	751	555	544	644	706	636	90	---	214	238	600
27	581	763	565	526	650	688	681	83	---	216	240	531
28	598	738	566	521	648	730	678	67	---	180	194	507
29	617	754	572	533	---	770	662	66	---	210	178	510
30	592	749	574	545	---	787	667	87	---	214	204	441
31	604	---	564	550	---	786	---	52	---	215	212	---
MEAN	545	---	551	519	574	686	654	424	---	---	212	360

06752260 CACHE LA POUDE RIVER AT FORT COLLINS, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.8	8.3	8.4	7.7	7.6	7.1	---	---	---	---	---	---
2	8.6	8.2	7.9	7.6	7.5	7.1	---	---	---	---	---	---
3	8.8	8.2	8.1	7.5	8.5	7.0	---	---	---	---	---	---
4	8.9	8.2	8.1	7.6	---	---	---	---	---	---	---	---
5	8.7	8.1	7.9	7.5	---	---	---	---	---	---	---	---
6	8.7	8.1	8.0	7.6	---	---	---	---	---	---	---	---
7	8.4	8.0	7.8	7.4	---	---	---	---	---	---	---	---
8	8.7	7.9	7.8	7.3	---	---	---	---	---	---	---	---
9	8.6	8.0	7.8	7.4	---	---	---	---	---	---	---	---
10	8.5	8.0	7.9	7.4	---	---	---	---	---	---	---	---
11	8.7	8.0	8.0	7.4	---	---	---	---	---	---	---	---
12	8.5	7.8	7.8	7.3	---	---	---	---	---	---	---	---
13	8.3	7.7	7.9	7.5	---	---	---	---	---	---	---	---
14	8.2	7.7	8.0	7.5	---	---	---	---	---	---	---	---
15	8.4	7.8	7.9	7.5	---	---	---	---	---	---	8.3	8.0
16	8.2	7.8	8.0	7.5	---	---	---	---	---	---	8.4	8.0
17	8.1	7.8	8.1	7.4	---	---	---	---	---	---	8.3	8.1
18	8.2	7.7	8.1	7.5	---	---	---	---	---	---	8.4	8.1
19	8.0	7.6	---	---	---	---	---	---	---	---	8.5	7.9
20	8.0	7.6	---	---	---	---	---	---	---	---	8.5	8.2
21	8.2	7.7	---	---	---	---	---	---	---	---	8.5	8.1
22	8.0	7.6	8.5	7.6	---	---	---	---	---	---	8.4	8.1
23	8.0	7.7	7.9	7.5	---	---	---	---	---	---	8.5	7.9
24	8.2	7.7	7.9	7.4	---	---	---	---	---	---	8.4	7.9
25	8.2	7.7	7.9	7.4	---	---	---	---	---	---	8.4	7.8
26	8.1	7.7	7.9	7.4	---	---	---	---	---	---	8.5	7.7
27	8.2	7.9	8.2	7.3	---	---	---	---	---	---	8.6	7.7
28	8.1	7.8	7.6	7.2	---	---	---	---	---	---	8.3	7.5
29	8.1	7.7	7.5	7.2	---	---	---	---	---	---	8.2	7.5
30	8.2	7.9	7.7	7.1	---	---	---	---	---	---	8.6	7.5
31	8.2	7.8	---	---	---	---	---	---	---	---	8.3	7.4
MONTH	8.9	7.6	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.4	7.4	8.6	7.5	8.0	7.8	8.4	7.4	8.6	8.0	8.5	7.7
2	8.4	7.5	8.5	7.7	8.7	7.7	8.7	7.9	8.7	8.0	8.5	7.3
3	8.0	7.5	8.6	7.6	8.5	8.2	8.8	7.7	8.6	7.9	8.8	7.0
4	8.1	7.4	8.4	7.7	8.3	8.0	8.5	7.9	8.9	8.2	8.6	7.6
5	8.1	7.3	8.4	7.6	8.1	8.0	8.3	7.7	8.9	8.1	8.5	7.2
6	8.0	7.4	8.4	7.5	8.2	7.9	7.9	7.6	8.9	8.0	8.3	7.2
7	8.3	7.5	8.3	7.8	8.0	7.8	8.4	7.8	8.7	8.1	8.4	7.3
8	8.1	7.5	8.3	7.6	8.0	7.8	8.4	7.8	8.9	8.0	8.5	7.5
9	8.4	7.3	8.1	7.5	8.1	7.9	8.6	7.8	9.0	7.7	8.3	7.3
10	8.0	7.4	8.3	7.7	8.1	7.9	8.6	7.8	9.0	8.1	8.2	7.3
11	7.9	7.2	8.2	7.7	8.0	7.9	8.8	7.8	9.1	8.1	8.2	7.2
12	7.9	7.3	8.3	7.7	8.1	7.9	8.7	7.8	8.7	8.1	8.4	7.3
13	8.1	7.2	8.4	7.6	8.0	7.9	8.7	7.9	9.0	8.1	8.3	7.3
14	8.1	7.4	8.4	7.6	8.1	7.8	8.8	7.8	9.0	8.0	8.3	7.3
15	8.4	7.3	8.4	7.4	8.0	7.9	8.8	7.8	8.9	7.9	8.3	7.3
16	8.4	7.4	8.2	7.7	8.0	7.7	8.8	7.8	9.0	7.8	8.3	7.2
17	8.5	7.4	8.0	7.2	---	---	8.9	7.9	9.0	7.7	8.1	7.4
18	8.1	7.5	7.6	7.0	---	---	8.7	8.0	9.1	7.7	8.3	7.4
19	8.5	7.4	8.4	7.1	---	---	8.8	8.0	9.0	7.7	8.5	7.3
20	8.5	7.6	8.4	7.4	8.1	7.8	8.7	8.1	9.1	7.7	8.4	7.4
21	8.0	7.5	8.4	7.2	8.3	7.9	8.8	8.0	8.9	7.2	8.3	7.4
22	8.3	7.2	---	---	8.1	7.9	8.4	7.9	8.9	7.2	8.3	7.4
23	8.6	7.5	---	---	8.3	7.9	8.1	7.7	8.9	7.5	8.2	7.4
24	8.3	7.2	---	---	8.4	7.9	8.3	7.9	9.0	7.9	8.2	7.3
25	8.5	7.5	---	---	8.1	7.9	8.4	7.8	9.0	7.6	8.2	7.4
26	8.5	7.7	---	---	8.4	7.8	8.4	7.2	8.9	7.4	8.1	7.4
27	8.3	7.6	---	---	8.2	7.8	8.4	7.3	8.8	7.8	8.2	7.4
28	8.3	7.6	8.0	7.7	8.0	7.4	8.8	8.0	8.8	7.7	8.0	7.4
29	8.6	7.6	8.0	7.6	7.6	7.3	8.7	8.0	8.7	7.7	7.9	7.4
30	8.6	7.6	8.0	7.6	8.0	7.3	8.7	8.0	8.9	7.9	7.8	7.5
31	---	---	8.1	7.8	---	---	8.8	8.0	8.8	7.7	---	---
MONTH	8.6	7.2	---	---	---	---	8.9	7.2	9.1	7.2	8.8	7.0

06752260 CACHE LA POUDE RIVER AT FORT COLLINS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	20.0	13.6	10.9	8.5	4.2	1.7	.2	.0	.4	.0	9.0	1.7
2	16.0	13.2	8.9	5.2	3.0	.0	.0	.0	.7	.0	5.5	1.6
3	13.9	11.1	7.0	4.4	1.3	.0	.1	.0	.8	.0	8.8	1.2
4	16.3	11.0	8.4	3.3	1.4	.0	.2	.0	1.0	.0	10.4	3.9
5	18.0	11.4	7.2	4.0	2.9	.5	.2	.0	1.5	.0	7.5	4.6
6	17.1	12.3	6.1	3.4	3.0	.8	.2	.0	1.4	.0	8.4	1.2
7	13.0	7.1	6.5	2.5	2.8	.0	.1	.0	2.6	.0	9.1	1.9
8	11.6	6.5	7.3	2.2	2.9	.0	.1	.0	1.9	.0	8.9	1.8
9	12.3	6.7	7.9	2.9	3.6	.2	.2	.0	3.2	.0	9.5	1.0
10	14.3	7.5	9.6	4.5	4.4	.9	.2	.0	3.6	.0	10.3	2.8
11	11.1	9.1	9.8	4.9	4.0	.6	.3	.0	4.0	.0	11.8	4.2
12	13.2	8.1	10.0	4.6	3.2	1.9	.3	.0	1.6	.0	10.5	3.1
13	12.0	8.1	9.6	4.4	3.4	.0	.4	.0	3.3	.5	11.4	3.3
14	12.6	7.5	10.0	4.7	3.7	.0	.6	.0	4.8	.4	9.6	4.0
15	13.5	7.4	8.8	5.5	1.3	.0	.3	.0	6.2	.9	7.6	4.2
16	14.1	8.9	8.0	4.5	1.4	.0	.6	.0	4.2	1.8	8.1	4.0
17	12.3	6.8	9.4	5.0	2.0	.0	.2	.0	5.4	1.8	11.6	3.2
18	9.1	5.8	9.6	5.8	2.4	.1	.4	.0	5.6	1.0	12.3	3.8
19	11.0	7.0	9.7	5.6	.6	.0	.0	.0	5.3	.2	15.0	5.0
20	8.3	6.6	8.7	5.9	.0	.0	.2	.0	7.8	1.4	11.2	6.0
21	8.7	4.7	7.1	2.9	.0	.0	.1	.0	9.0	2.1	13.3	4.7
22	8.6	6.3	6.6	2.3	.0	.0	.3	.0	6.9	1.7	9.7	5.9
23	9.8	6.6	7.5	3.2	.0	.0	.1	.0	6.4	1.7	13.7	4.4
24	11.6	6.9	7.9	4.1	.1	.0	.1	.0	3.9	.6	15.5	5.4
25	12.6	7.2	9.0	4.1	.0	.0	.2	.0	4.5	.1	14.3	6.5
26	10.8	7.5	7.0	3.7	.1	.0	.2	.0	6.7	.0	12.9	6.2
27	12.6	7.6	5.0	2.1	.1	.0	.6	.0	7.8	.3	14.3	6.1
28	13.1	7.0	3.2	.7	.1	.0	.7	.0	6.5	1.2	15.5	4.5
29	13.5	7.4	3.0	.2	.0	.0	.1	.0	---	---	9.4	5.4
30	13.2	8.3	4.4	1.1	.0	.0	.2	.0	---	---	15.1	3.8
31	12.8	7.6	---	---	.1	.0	.2	.0	---	---	16.5	5.3
MONTH	20.0	4.7	10.9	.2	4.4	.0	.7	.0	9.0	.0	16.5	1.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	18.0	6.7	18.8	7.4	10.1	8.2	---	---	23.2	17.3	21.7	17.5
2	16.8	9.2	16.2	8.7	11.1	7.1	---	---	21.2	16.8	20.6	17.1
3	13.4	8.8	17.8	7.9	10.9	9.6	---	---	18.0	15.3	19.2	15.0
4	17.4	6.8	14.8	9.4	12.6	9.9	---	---	19.2	15.6	20.7	16.1
5	18.1	8.6	18.1	8.0	13.6	11.2	---	---	21.8	16.3	19.2	15.7
6	15.4	9.8	18.8	9.6	12.7	10.8	---	---	21.3	17.8	19.2	16.4
7	16.2	9.5	18.9	11.6	12.0	10.3	---	---	18.8	14.6	19.6	16.7
8	12.9	7.6	22.0	11.2	13.1	10.2	---	---	20.6	14.3	20.0	17.5
9	15.0	4.7	18.7	12.8	13.4	11.0	---	---	24.4	15.6	20.2	15.8
10	12.0	6.9	22.7	12.4	13.4	11.5	17.4	13.7	22.5	18.0	19.4	17.2
11	8.6	6.0	23.2	13.7	15.1	11.4	19.9	14.0	22.5	17.8	19.8	15.8
12	11.5	4.8	21.2	11.8	13.9	11.2	13.5	14.2	20.5	14.9	20.0	16.6
13	11.9	4.0	22.3	10.7	13.1	10.5	20.2	13.1	18.4	14.2	18.7	14.8
14	10.5	5.7	21.5	12.2	13.7	11.2	21.7	14.2	19.8	14.0	18.6	14.3
15	16.2	5.5	15.2	11.5	14.0	11.0	21.9	14.4	19.4	14.6	18.2	13.3
16	12.7	8.3	16.6	10.1	13.3	11.3	22.4	15.2	20.3	15.1	18.6	12.3
17	15.3	7.5	22.0	11.1	14.2	10.6	23.3	15.9	22.0	15.8	17.0	13.7
18	10.6	7.7	17.3	13.9	18.6	12.1	20.6	16.2	22.4	16.8	17.8	12.7
19	14.8	7.4	25.1	13.6	14.3	12.3	22.4	15.2	20.8	16.3	18.6	11.3
20	15.9	9.4	18.1	12.9	15.6	12.1	20.1	15.4	19.0	14.1	20.2	12.1
21	11.5	9.0	15.5	10.1	15.6	11.9	19.8	14.9	20.9	14.1	20.7	13.0
22	18.1	7.0	13.7	10.5	15.4	11.8	16.9	13.7	19.7	13.4	18.6	12.0
23	18.6	10.3	10.5	9.0	---	---	14.4	12.9	24.1	15.4	17.4	11.1
24	18.7	10.2	13.2	8.4	---	---	17.0	13.6	20.2	16.8	19.4	10.7
25	19.5	10.6	20.8	10.0	---	---	21.9	13.8	23.5	16.3	20.7	11.6
26	15.7	9.2	12.9	9.4	---	---	19.9	13.4	25.6	15.4	20.6	12.2
27	14.2	7.1	14.6	9.8	---	---	24.3	13.4	22.5	17.9	19.2	12.9
28	15.0	6.7	13.6	10.4	---	---	22.6	15.6	20.8	15.7	20.4	13.2
29	15.7	7.8	13.8	8.8	---	---	23.4	18.2	20.4	15.5	19.6	14.1
30	16.3	8.5	12.4	9.1	---	---	22.8	18.2	20.9	16.9	18.8	15.6
31	---	---	10.7	8.6	---	---	25.5	16.0	21.1	17.2	---	---
MONTH	13.5	4.0	25.1	7.4	---	---	---	---	25.6	13.4	21.7	10.7

06752270 CACHE LA POUDE RIVER BELOW FORT COLLINS, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 40°34'01", long 105°01'36", in NW¼NE¼ sec.20, T.7 N., R.68 W., Larimer County, Hydrologic Unit 10190007, 1.4 mi west of Interstate 25 on Prospect Street in Fort Collins.

PERIOD OF RECORD.--January 1978 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY LAE (MG/L AS CAC03)
NOV											
01...	1415	8.0	770	8.4	11.0	11.8	340	89	29	--	257
21...	0915	7.0	775	8.3	4.0	10.2	360	93	30	--	249
DEC											
28...	0915	7.1	874	8.3	0.0	--	390	100	33	--	289
FEB											
28...	0930	5.4	777	8.3	5.0	12.6	340	89	29	--	225
MAR											
15...	1230	4.0	868	8.4	7.0	14.5	390	100	35	38	239
APR											
10...	0845	4.3	785	8.3	8.0	11.4	290	71	27	--	224
MAY											
01...	1145	3.9	810	8.5	14.0	12.8	330	79	33	--	212
15...	0850	0.86	960	8.2	14.0	8.3	400	99	37	--	225
JUN											
20...	1000	560	80	7.8	13.5	8.6	36	10	2.6	3.4	30
JUL											
25...	1206	39	567	8.5	18.5	7.2	210	56	18	--	144
AUG											
28...	0845	35	490	8.0	19.0	6.5	200	52	17	--	129

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
NOV										
01...	--	--	--	--	--	1.9	0.02	1.9	0.02	--
21...	--	--	--	--	--	1.9	0.02	1.9	0.05	--
DEC										
28...	--	--	--	--	--	2.7	0.02	2.7	0.11	--
FEB										
28...	--	--	--	--	--	2.0	0.02	2.0	0.02	--
MAR										
15...	190	18	0.6	7.2	552	1.8	0.03	1.8	0.01	0.02
APR										
10...	--	--	--	--	--	1.4	0.03	1.4	0.02	--
MAY										
01...	--	--	--	--	--	0.93	0.02	0.95	<0.01	--
15...	--	--	--	--	--	0.25	0.02	0.27	0.12	--
JUN										
20...	6.9	1.3	0.2	8.0	48	--	<0.01	<0.01	0.02	0.03
JUL										
25...	--	--	--	--	--	0.71	0.11	0.82	0.67	--
AUG										
28...	--	--	--	--	--	0.77	0.22	0.99	0.79	--

PLATTE RIVER BASIN

06752270 CACHE LA POUDRE RIVER BELOW FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
NOV										
01...	1415	--	--	<1	--	--	--	3	2	440
21...	0915	--	--	<1	--	--	--	2	1	340
DEC										
28...	0915	--	--	<1	--	--	--	3	1	300
FEB										
28...	0930	--	--	<1	--	--	--	2	1	310
MAR										
15...	1230	<10	<1	<1	<1.0	<1	<1	6	1	320
APR										
10...	0845	--	--	<1	--	--	--	2	1	420
MAY										
01...	1145	--	--	<1	--	--	--	4	1	320
15...	0850	--	--	<1	--	--	--	3	1	580
JUN										
20...	1000	60	<1	<1	<1.0	<1	<1	2	1	840
JUL										
25...	1206	--	--	<1	--	--	--	7	3	560
AUG										
28...	0845	--	--	<1	--	--	--	3	2	220

DATE		LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV											
01...	2	--	--	--	--	--	--	--	<1	<0.1	--
21...	2	--	--	--	--	--	--	--	<1	<0.1	--
DEC											
28...	2	--	--	--	--	--	--	--	<1	<0.1	--
FEB											
28...	1	--	--	--	--	--	--	--	<1	<0.5	--
MAR											
15...	2	<1	60	<0.1	<0.1	<1	2	<1	<0.5	<3	
APR											
10...	3	--	--	--	--	--	--	--	<1	<0.1	--
MAY											
01...	17	--	--	--	--	--	--	--	<1	<0.5	--
15...	1	--	--	--	--	--	--	--	<1	<0.5	--
JUN											
20...	3	1	40	<0.1	<0.1	<1	<1	<1	<0.5	9	
JUL											
25...	6	--	--	--	--	--	--	--	<1	--	--
AUG											
28...	1	--	--	--	--	--	--	--	<1	--	--

06752280 CACHE LA POUDE RIVER ABOVE BOX ELDER CREEK, NEAR TIMNATH, CO

LOCATION.--Lat 40°32'56", long 105°00'28", in NW¼NE¼ sec.28, T.7 N., R.68 W., Larimer County, Hydrologic Unit 10190007, on right bank 2,100 ft upstream from Box Elder Creek, 2.0 mi upstream from Interstate Highway 25 bridge, and 3.8 mi southeast of intersection of College Avenue and Prospect Street in Fort Collins.

DRAINAGE AREA.--1,245 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,860 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 7 to Mar. 4, Mar. 25, 26, and May 30 to June 2. Records good except for estimated daily discharges and June 3-20, which are poor. Natural flow of stream affected by transmountain and transbasin diversions, storage reservoirs, power developments, diversion for municipal supply, diversions upstream from station for irrigation, and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,810 ft³/s, June 21, 1983, gage height, 8.02 ft; minimum daily, 1.0 ft³/s, Oct. 14, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 2,950 ft³/s at 1745 June 2, but may have been higher during period of no gage height record in June, gage height, 6.36 ft; minimum daily, 1.9 ft³/s, May 11.

DISCHARGE, CU81C FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	3.6	4.5	4.0	4.0	4.1	4.9	2.5	720	40	5.7	4.1
2	4.9	4.1	4.4	4.0	4.0	4.1	4.9	2.5	2400	20	7.4	4.4
3	4.7	4.4	4.1	4.0	4.1	4.1	4.8	2.5	1600	8.2	34	4.4
4	4.4	4.4	4.1	4.0	4.1	4.1	4.5	2.7	905	20	29	4.1
5	4.4	4.4	4.1	4.0	4.1	5.0	5.1	3.1	1030	59	13	4.1
6	3.8	4.8	4.1	4.0	4.1	4.4	6.0	3.1	1060	115	6.4	3.6
7	3.8	4.9	3.8	4.0	4.1	3.8	6.0	3.1	1110	42	39	4.7
8	4.6	4.9	3.8	4.0	4.1	3.9	3.5	3.1	1090	23	15	4.9
9	4.4	4.9	3.8	4.0	4.1	4.1	2.9	3.1	1080	35	7.2	4.5
10	4.4	4.9	3.8	4.0	4.1	4.1	2.8	2.6	1030	20	4.9	5.2
11	4.4	4.6	3.8	4.0	4.1	3.8	2.7	1.9	1020	10	6.2	3.8
12	4.4	4.1	3.8	4.0	4.1	4.3	2.9	2.5	1160	14	19	3.6
13	4.4	4.1	3.8	4.0	4.1	3.8	2.8	2.8	1030	80	33	12
14	4.2	4.1	3.9	4.0	4.1	3.8	3.3	3.8	962	35	32	3.8
15	4.1	4.1	4.0	4.0	4.1	4.0	3.3	4.4	985	17	17	3.6
16	4.1	4.1	4.0	4.0	4.1	4.4	3.3	5.1	926	5.3	9.8	3.4
17	3.4	4.1	4.0	4.0	4.1	4.4	3.3	6.0	704	3.8	18	3.3
18	3.3	4.1	4.0	4.0	4.1	4.4	3.1	5.0	498	4.5	9.7	3.3
19	3.3	3.8	4.0	4.0	4.1	4.4	2.0	4.3	317	5.4	15	3.1
20	3.3	3.8	4.0	4.0	4.1	4.4	2.2	4.0	372	30	14	3.0
21	3.3	3.6	4.0	4.0	4.1	4.1	2.6	3.4	301	29	5.5	2.9
22	3.3	5.8	4.0	4.0	4.1	4.2	3.1	3.3	433	69	4.1	2.9
23	3.3	4.9	4.0	4.0	4.1	4.4	2.9	2.9	310	171	4.1	2.9
24	3.5	4.9	4.0	4.0	4.1	4.4	2.9	2.9	178	13	4.0	3.2
25	3.4	4.4	4.0	4.0	4.1	5.0	2.9	2.9	116	6.8	4.3	3.2
26	3.5	4.4	4.0	4.0	4.1	5.2	3.0	3.1	75	6.9	4.1	3.3
27	3.5	4.5	4.0	4.0	4.1	5.5	3.1	6.5	173	7.4	4.1	3.3
28	3.5	4.9	4.0	4.0	4.1	4.9	2.9	6.4	156	29	6.9	3.3
29	3.5	4.9	4.0	4.0	---	4.9	2.9	26	254	7.4	6.8	3.2
30	3.5	4.9	4.0	4.0	---	4.9	2.8	102	105	5.1	4.1	5.1
31	3.3	---	4.0	4.0	---	4.9	---	250	---	5.4	5.4	---
TOTAL	120.8	133.4	123.8	124.0	114.6	135.8	103.4	477.5	22100	937.2	388.7	120.2
MEAN	3.90	4.45	3.99	4.00	4.09	4.38	3.45	15.4	737	30.2	12.5	4.01
MAX	4.9	5.8	4.5	4.0	4.1	5.5	6.0	250	2400	171	39	12
MIN	3.3	3.6	3.8	4.0	4.0	3.8	2.0	1.9	75	3.8	4.0	2.9
AC-FT	240	265	246	246	227	269	205	947	43840	1860	771	238

CAL YR 1990 TOTAL 19506.1 MEAN 53.4 MAX 1290 MIN 2.8 AC-FT 38690
WTR YR 1991 TOTAL 24879.4 MEAN 68.2 MAX 2400 MIN 1.9 AC-FT 49350

06752280 CACHE LA POUDRE RIVER ABOVE BOX ELDER CREEK NEAR TIMNATH, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	ALKA- LITY LAB (MG/L AS CACO3)
NOV											
02...	1030	4.7	2190	8.2	7.5	7.2	1000	270	91	--	239
21...	1245	3.5	2050	8.2	6.0	12.8	990	250	88	--	210
DEC											
28...	1205	4.0	2310	8.0	0.0	--	1200	310	98	--	263
FEB											
28...	1215	4.1	2120	8.1	4.0	10.4	1000	260	91	--	224
MAR											
14...	0915	3.7	2110	8.3	5.5	10.7	1100	270	98	99	210
APR											
10...	1130	2.8	1940	8.3	10.0	11.4	840	200	82	--	214
30...	1525	2.9	2030	8.3	12.5	10.8	970	240	90	--	201
MAY											
14...	1455	4.4	2450	8.1	18.0	9.1	1200	310	110	--	226
JUN											
20...	1300	487	113	7.9	16.0	8.2	47	13	3.6	4.5	32
JUL											
26...	0820	6.9	1500	8.5	18.0	5.4	680	170	63	--	179
AUG											
28...	1115	4.2	1620	8.0	23.0	8.1	750	190	67	--	186

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
NOV										
02...	--	--	--	--	--	1.5	0.03	1.5	0.07	--
21...	--	--	--	--	--	1.8	0.03	1.8	0.10	--
DEC										
28...	--	--	--	--	--	2.8	0.02	2.8	0.22	--
FEB										
28...	--	--	--	--	--	2.0	0.03	2.0	0.04	--
MAR										
14...	1100	27	0.8	5.9	1660	1.5	0.03	1.5	0.04	<0.01
APR										
10...	--	--	--	--	--	0.85	0.03	0.88	0.05	--
30...	--	--	--	--	--	1.2	0.02	1.2	<0.01	--
MAY										
14...	--	--	--	--	--	0.45	0.03	0.48	0.04	--
JUN										
20...	19	2.2	0.3	8.0	71	--	<0.01	<0.01	0.02	0.04
JUL										
26...	--	--	--	--	--	0.51	0.06	0.57	0.12	--
AUG										
28...	--	--	--	--	--	0.48	0.05	0.53	0.06	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

06752500 CACHE LA POUDRE RIVER NEAR GREELEY, CO

LOCATION.--Lat 40°25'04", long 104°38'22", in NW¼ sec.11, T.5 N., R.65 W., Weld County, Hydrologic Unit 10190007, on right bank 25 ft downstream from highway bridge, 2.9 mi east of courthouse in Greeley, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--1,877 mi².

PERIOD OF RECORD.--Streamflow records, March to October 1903, August to November 1904, January 1914 to December 1919, June 1924 to current year. Monthly discharge only for some periods, published in WSP 1310. Water-quality data available, November 1951 to September 1952, August 1954 to August 1956, December 1963 to September 1966, October 1967 to September 1968, October 1970 to September 1982.

REVISED RECORDS.--WSP 1440: 1935, 1938(M), 1942-43. WSP 1730: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 4,610 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1710 or 1730 for history of changes prior to Dec. 14, 1933.

REMARKS.--Estimated daily discharges: Apr. 13-15, June 30 to July 3, and Aug. 5-8. Records good except for estimated daily discharges, which are fair. Natural flow of stream affected by transmountain and transbasin diversions, storage reservoirs, power developments, diversion for municipal supply, diversions upstream from station for irrigation of about 250,000 acres, and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--72 years (water years 1915-19, 1925-91), 132 ft³/s; 95,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,360 ft³/s, June 14, 1983; gage height, 8.92 ft; maximum gage height, 8.95 ft, June 22, 1983; minimum daily discharge, 0.8 ft³/s, Oct. 3, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,060 ft³/s at 1330 June 3, gage height, 6.92 ft; minimum daily, 12 ft³/s, July 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	108	106	81	194	96	75	19	109	27	96	28
2	109	109	102	85	193	92	78	15	548	21	94	28
3	100	120	86	89	190	88	76	13	1850	16	109	34
4	98	111	103	91	192	91	83	47	1140	15	100	68
5	102	106	111	90	188	95	85	50	634	14	82	84
6	99	115	107	85	187	94	81	42	910	12	68	73
7	100	121	105	88	187	93	80	26	893	15	56	64
8	111	119	109	90	189	89	85	26	949	21	44	57
9	113	114	107	90	184	87	88	25	885	23	39	55
10	110	109	110	91	150	85	44	25	998	30	45	70
11	107	107	128	94	111	89	30	25	1020	24	44	75
12	100	104	131	96	108	88	34	20	1010	24	46	71
13	98	108	125	93	100	85	26	18	1100	27	50	86
14	90	114	108	96	99	86	21	19	884	25	44	64
15	92	117	99	95	98	86	14	22	757	21	41	51
16	94	115	99	96	95	84	13	38	825	19	40	50
17	94	108	108	95	92	79	13	29	717	18	45	56
18	96	104	107	97	94	81	13	17	413	16	41	54
19	99	109	99	98	94	85	21	16	170	19	43	51
20	94	112	79	104	93	84	20	16	87	19	42	51
21	101	112	96	176	94	83	27	16	71	22	35	44
22	100	104	89	204	95	82	24	16	96	101	34	40
23	102	106	81	202	91	78	21	19	223	228	44	39
24	103	107	81	181	85	75	22	28	203	241	42	38
25	100	103	82	197	88	73	26	27	100	144	42	42
26	102	106	86	185	97	82	23	28	44	101	33	42
27	97	113	89	200	98	87	20	41	39	100	32	38
28	99	110	90	193	97	84	21	32	36	100	29	38
29	98	105	85	165	---	82	23	42	35	103	32	39
30	100	109	80	172	---	77	25	42	32	98	32	52
31	105	---	80	193	---	73	---	43	---	97	25	---
TOTAL	3117	3305	3068	3912	3583	2633	1212	842	16778	1741	1549	1584
MEAN	101	110	99.0	126	128	84.9	40.4	27.2	559	56.2	50.0	52.8
MAX	113	121	131	204	194	96	88	50	1850	241	109	86
MIN	90	103	79	81	85	73	13	13	32	12	25	26
AC-FT	6180	6560	6090	7760	7110	5220	2400	1670	33280	3450	3070	3140

CAL YR 1990 TOTAL 45624 MEAN 125 MAX 1060 MIN 11 AC-FT 90500
WTR YR 1991 TOTAL 43324 MEAN 119 MAX 1850 MIN 12 AC-FT 85930

06754000 SOUTH PLATTE RIVER NEAR KERSEY, CO

LOCATION.--Lat 40°24'44", long 104°33'46", in NW¼SW¼ sec.9, T.5 N., R.64W., Weld County, Hydrologic Unit 10190003, on downstream side of bridge on State Highway 37, 1.9 mi north of railroad in Kersey, and 2.5 mi downstream from Cache la Poudre River.

DRAINAGE AREA.--9,598 mi².

PERIOD OF RECORD.--May 1901 to December 1903, March 1905 to current year. Monthly discharge only for some periods, published in WSP 1310. Published as "at Kersey" 1901-3.

REVISED RECORDS.--WSP 1310: 1902, 1906, 1935(M). WSP 1730: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 4,575.77 ft above National Geodetic Vertical Datum of 1929. See WSP 1710 or 1730 for history of changes prior to July 3, 1935.

REMARKS.--Estimated daily discharges: Dec. 20-30, Mar. 1-4, Apr. 14, 15, May 2, 30, 31, June 4, 8, 9, 23, July 13-18, 24-27, July 31 to Aug. 1, Aug 4, 5, and Aug. 13. Records fair. Natural flow of stream affected by transmountain and transbasin diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 888,000 acres, and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--71 years (water years 1902-03, 1906-74), 777 ft³/s; 562,900 acre-ft/yr, prior to completion of Chatfield Dam; 16 years (water years 1976-91), 1,265 ft³/s; 916,500 acre-ft/yr, subsequent to completion of Chatfield Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,500 ft³/s, May 8, 1973, gage height, 11.73 ft; minimum daily, 28 ft³/s, Apr. 30, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,670 ft³/s at 0100 June 3, gage height, 8.41 ft; minimum daily, 121 ft³/s, May 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	925	822	808	797	849	650	486	300	695	140	280	381
2	871	763	774	822	868	630	496	440	4140	128	230	376
3	774	752	734	870	912	600	451	259	9090	134	456	404
4	754	825	734	835	905	610	362	289	5630	192	3030	472
5	728	847	758	799	890	566	323	381	3000	176	2110	517
6	686	915	742	774	877	552	283	500	3070	165	1490	577
7	644	1090	767	774	867	585	251	436	3790	149	1450	598
8	682	1100	777	764	856	523	248	338	4810	149	1030	712
9	790	980	766	761	842	493	231	275	4040	154	779	737
10	811	967	758	760	803	488	220	214	3730	297	704	794
11	742	940	758	750	754	481	228	175	3860	700	683	775
12	723	907	750	745	752	476	354	133	3500	477	613	795
13	738	887	758	761	758	561	561	143	3530	680	540	915
14	715	860	752	783	758	633	450	151	3130	1080	450	896
15	691	847	721	756	766	620	320	121	3110	680	447	885
16	714	824	702	741	774	603	248	162	3200	400	453	848
17	689	802	728	729	746	545	262	1210	2970	280	552	813
18	706	782	730	756	736	556	248	982	2130	190	590	794
19	707	789	711	740	736	559	257	590	1370	180	514	782
20	710	792	500	730	725	544	245	470	916	192	477	740
21	783	784	440	835	715	534	252	381	574	239	424	670
22	840	747	620	862	718	542	269	357	690	484	398	632
23	800	743	710	907	710	530	279	438	1720	2380	383	579
24	759	738	710	848	695	539	264	999	982	2980	406	584
25	731	722	720	868	678	525	227	1160	485	2050	388	621
26	723	724	720	821	704	522	200	804	262	1440	356	621
27	717	767	730	844	676	528	183	696	190	1230	325	572
28	714	826	730	835	659	681	185	598	175	1140	266	495
29	740	790	740	769	---	588	181	621	155	952	326	450
30	762	766	750	756	---	536	174	820	155	668	524	516
31	874	---	762	807	---	521	---	640	---	430	429	---
TOTAL	23243	25098	22360	24599	21729	17321	8738	15083	75099	20536	21103	15551
MEAN	750	837	721	794	776	559	291	487	2503	662	681	652
MAX	925	1100	808	907	912	681	561	1210	9090	2980	3030	915
MIN	644	722	440	729	659	476	174	121	155	128	230	376
AC-FT	46100	49780	44350	48790	43100	34360	17330	29920	149000	40730	41860	38780

CAL YR 1990 TOTAL 300244 MEAN 823 MAX 3690 MIN 133 AC-FT 595500
WTR YR 1991 TOTAL 294460 MEAN 807 MAX 9090 MIN 121 AC-FT 584100

LOCATION.--Lat 40°19'19", long 103°55'17", in SW₄SW₄ sec.7, T.4 N., R.58 W., Morgan County, Hydrologic Unit 10190003, on left bank 400 ft downstream from bridge on State Highway 144, 2.8 mi southeast of Weldon, and 4.2 mi upstream from Bijou Creek.

WATER-DISCHARGE RECORDS

CAL YR 1990	TOTAL 190142	MEAN 521	MAX 1910	MIN 77	AC-FT 377100
WTR YR 1991	TOTAL 171443	MEAN 470	MAX 4320	MIN 84	AC-FT 340100

06758500 SOUTH PLATTE RIVER NEAR WELDONA, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1967 to September 1968, October 1971 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACD3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV 26...	0940	358	1590	8.30	5.0	11.4	12	130	570	140	52
APR 17...	1045	353	1620	8.40	9.5	10.8	440	920	540	130	53
JUN 12...	1105	1450	704	8.00	21.0	6.70	520	1000	230	57	22
SEP 26...	1105	87	1970	8.30	15.5	9.80	100	270	690	160	69
DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS SD4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)
NOV 26...	140	3	7.8	255	530	73	0.80	13	1130	1.55	1100
APR 17...	140	3	8.0	249	520	81	0.90	11	1120	1.47	1030
JUN 12...	56	2	4.0	117	170	26	0.60	11	428	0.58	1660
SEP 26...	170	3	8.8	278	700	93	1.2	18	1420	1.92	331
DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, ND2+ND3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMDNIA DIS-SOLVED (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)
NOV 26...	0.02	0.02	0.7	3.70	3.80	0.07	0.05	0.21	0.23	0.24	0.21
APR 17...	0.03	0.03	1.3	5.30	5.30	0.01	0.02	0.62	0.54	0.52	0.53
JUN 12...	0.03	0.04	1.2	2.00	2.00	0.06	0.02	0.57	0.34	0.41	0.35
SEP 26...	0.04	0.04	1.1	6.50	6.60	0.01	0.02	0.17	0.12	0.12	0.12

PLATTE RIVER BASIN

06758500 SOUTH PLATTE RIVER NEAR WELDONA, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 26...	41	<0.5	280	<1.0	<5	<3	<10	4	10
APR 17...	40	<0.5	300	1.0	<5	<3	<10	31	<10
JUN 12...	27	<0.5	120	<1.0	<5	<3	<10	9	<10
SEP 26...	43	<0.5	340	<1.0	<5	<3	<10	27	<10

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	LITHIUM DIS- SOLVED (UG/L AS LI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)
NOV 26...	47	<10	<10	<1.0	1500	<6	11	44	5
APR 17...	15	<10	<10	<1.0	1400	<6	12	35	4
JUN 12...	14	<10	<10	<1.0	630	<6	6	16	1
SEP 26...	27	<10	<10	<1.0	2000	<6	7	60	6

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO

LOCATION.--Lat 40°58'46", long 102°15'15", in NW¼NE¼ and NE¼SE¼ (two channels) sec.33, T.12 N., R.44 W., Sedgwick County, Hydrologic Unit 10190018, on left bank of channel 4 (left channel) 215 ft downstream from bridge, and on right bank of channel 2, 5 ft downstream from bridge on U.S. Highway 385, 0.9 mi southeast of Julesburg, 3.0 mi upstream from Colorado-Nebraska State line, and 8 mi downstream from Lodgepole Creek.

DRAINAGE AREA.--23,193 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1902 to current year. Monthly discharge only for some periods, published in WSP 1310. Published as "near Julesburg" 1903-8, 1915-16, and as "at Ovid" 1922-24.

REVISED RECORDS.--WSP 1310: 1902, 1906-7, 1948(P). WSP 1440: 1903-4. WDR CO-86-1: Drainage area.

GAGE.--Two water-stage recorders with satellite telemetry. Datum of gages is 3,446.76 ft above National Geodetic Vertical Datum of 1929. See WSP 1710 or 1730 for history of changes prior to Oct. 1, 1956. Since Oct. 1, 1956, water-stage recorders on channels nos. 2 and 4. Channel no. 2: Oct. 1, 1956, to Sept. 22, 1965, at site 300 ft downstream at present datum. Channel no. 4: Oct. 1, 1956, to Dec. 10, 1958, at site 135 ft downstream at present datum. Since May 11, 1973, supplementary water-stage recorder on channel no. 2 at bridge 800 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 19 to Feb. 18, and July 7-17. Records fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of 1,200,000 acres upstream from station, and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--89 years, 542 ft³/s; 392,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,600 ft³/s, June 20, 1965, gage height, 10.44 ft, from floodmarks in gage well; no flow, Aug. 18-20, 1902, July 25 to Aug. 7, 1903.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,150 ft³/s, June 7, gage height, 5.48 ft, maximum gage height, 5.94 ft, Feb. 6 (backwater from ice); minimum daily discharge, 31 ft³/s, Aug. 26, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	281	134	277	850	1210	453	396	102	133	81	48	37
2	271	129	330	855	1220	451	394	122	177	78	48	39
3	246	139	366	850	1160	469	396	202	197	65	47	40
4	220	139	389	835	1220	456	392	132	229	58	46	46
5	205	147	417	810	1260	445	392	119	268	51	48	58
6	187	150	440	860	1280	448	390	108	740	50	46	104
7	187	150	396	880	1140	445	369	121	1880	53	52	94
8	202	147	351	930	1080	442	335	121	1490	53	55	91
9	229	149	334	925	1010	431	285	117	1210	51	41	104
10	232	146	321	890	950	431	251	102	1110	44	39	137
11	228	142	301	860	920	435	229	86	1350	44	135	161
12	239	139	288	825	807	449	230	72	1390	44	204	249
13	194	138	275	715	745	439	220	65	1230	38	171	348
14	182	135	274	725	678	440	223	58	1500	36	139	446
15	162	128	283	735	642	451	223	53	1680	42	92	631
16	153	125	286	750	634	442	242	79	1460	43	61	668
17	138	127	289	770	603	441	344	90	1440	43	45	671
18	126	130	289	670	583	460	339	80	1420	44	38	664
19	126	130	291	460	613	459	286	80	1660	39	35	596
20	132	130	301	460	597	381	256	73	1620	37	45	590
21	126	127	306	420	562	318	244	69	1290	44	48	640
22	131	124	601	450	498	261	235	70	883	49	45	544
23	129	170	671	550	458	252	204	71	644	58	41	423
24	124	203	701	580	443	244	183	111	496	45	37	369
25	125	220	702	715	409	243	144	137	390	42	35	325
26	127	224	584	935	432	233	134	105	340	41	31	274
27	126	234	725	1000	452	253	119	105	274	44	31	201
28	129	241	770	1060	449	246	100	109	178	42	38	185
29	131	236	785	1080	---	266	94	120	128	70	41	172
30	132	248	815	1220	---	381	109	153	97	63	36	163
31	132	---	830	1160	---	404	---	133	---	53	36	---
TOTAL	5352	4781	13988	24825	22055	11969	7758	3165	26904	1545	1854	9770
MEAN	173	159	451	801	788	386	259	102	897	49.8	59.8	302
MAX	281	248	830	1220	1280	469	396	202	1880	81	204	671
MIN	124	124	274	420	409	233	94	53	97	36	31	37
AC-FT	10620	9480	27750	49240	43750	23740	15390	6280	53360	3060	3680	17990

CAL YR 1990 TOTAL 148138 MEAN 406 MAX 1530 MIN 19 AC-FT 293800
WTR YR 1991 TOTAL 133266 MEAN 365 MAX 1880 MIN 31 AC-FT 264300

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO--Continued
(Irrigation network station)
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1945 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1945 to September 1981 (discontinued).

WATER TEMPERATURES: Water years 1945-49, October 1950 to September 1981 (discontinued).

INSTRUMENTATION.--Water-quality monitor from July 1973 to September 1979.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,270 microsiemens Jan. 12, 1971; minimum daily, 348 microsiemens Aug. 15, 1968.

WATER TEMPERATURES: Maximum, 36.0°C, July 17, 19, 1977, July 16, 1978; minimum, freezing point on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
NOV 27...	1015	217	2190	8.4	0.0	17	11.8	K20	210	780
APR 17...	1450	320	2180	8.6	13.5	44	10.1	220	730	740
JUN 13...	0735	1320	1290	8.4	22.5	14	7.5	270	840	440
SEP 27...	0910	284	2140	8.3	12.5	0.50	8.8	84	240	720

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA-(A) LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	BICAR-(B) BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR-(C) BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV 27...	200	67	210	3	18	241	300	0	850	100
APR 17...	180	69	210	3	17	252	310	0	830	94
JUN 13...	110	39	110	2	9.3	177	170	26	410	53
SEP 27...	180	65	200	3	18	243	300	0	850	110

DATE	FLUO- RIDE, 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, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
NOV 27...	0.8	22	1650	1630	2.24	967	2.7	2.7	2.7	0.07
APR 17...	0.9	17	1600	1590	2.18	1380	3.1	3.1	3.1	<0.01
JUN 13...	0.7	15	864	862	1.18	3080	1.3	1.3	1.3	0.01
SEP 27...	0.8	22	1560	1600	2.12	1200	2.1	2.1	2.1	0.04

A Field total dissolved alkalinity, determined by incremental titration method.

B Field dissolved bicarbonate, determined by incremental titration method.

C Field dissolved carbonate, determined by incremental titration method.

K Based on non-ideal colony counts.

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO--Continued
(Irrigation network station)
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE		NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO2)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
NOV 27...		0.06	0.83	0.90	0.08	0.02	0.07	0.03	0.09	0.12	0.06
APR 17...		<0.01	--	1.3	--	0.02	0.07	0.08	0.25	0.20	0.08
JUN 13...		<0.01	1.3	1.3	--	0.01	0.03	0.22	0.67	0.34	0.22
SEP 27...		0.04	0.86	0.90	0.05	0.02	0.07	0.09	0.28	0.17	0.09

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 27...	1015	<10	2	<100	<10	<1.0	<1	<1	1	<10	<1
APR 17...	1450	20	3	<100	<10	<1.0	<1	<1	2	10	<1
JUN 13...	0735	10	4	33	<0.5	<1.0	<1	<3	2	5	<1
SEP 27...	0910	<10	<1	<100	<10	<1.0	<1	<1	1	<10	<1

DATE		LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 27...	60	30	<0.1	<1	3	3	<1.0	2200	5	<10	
APR 17...	60	<10	<0.1	6	2	4	<1.0	2100	8	<10	
JUN 13...	34	11	<0.1	<10	2	2	<1.0	1200	6	4	
SEP 27...	60	<10	<0.1	5	2	3	<1.0	2100	6	<10	

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	GROSS(A) 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)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
NOV 27...	55	2.5	52	20	39	19	0.11	61
APR 17...	--	--	--	--	--	--	--	--
JUN 13...	--	--	--	--	--	--	--	--
SEP 27...	--	--	--	--	--	--	--	--

Note: Radiochemical data for Sept. 27 not available at time of publication.

PLATTE RIVER BASIN

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO--Continued
 (Irrigation network station)
 (National stream-quality accounting network station)

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
NOV				
27...	1015	217	246	144
APR				
17...	1450	320	228	197
JUN				
13...	0735	1320	315	1120
SEP				
27...	0910	284	116	89

06823000 NORTH FORK REPUBLICAN RIVER AT COLORADO-NEBRASKA STATE LINE

LOCATION.--Lat 40°04'10", long 102°03'05", in sec.10, T.1 N., R.42 W., Dundy County, NE, Hydrologic Unit 10250002, on right bank 100 ft east of Colorado-Nebraska State line and 9.5 mi upstream from confluence with Arikaree River.

DRAINAGE AREA.--1,360 mi², approximately, of which about 100 mi² contribute directly to surface runoff.

PERIOD OF RECORD.--October 1930 to current year. Prior to October 1932, published as North Fork of Arikaree River at Colorado-Nebraska State line. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1240: 1947(M). WSP 1390: 1934. WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Steel-piling control since January 1965. Datum of gage is 3,336.09 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1934, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Dec. 20 to Jan. 8, and Jan. 21-31. Records good except for estimated daily discharges, which are poor. Natural flow affected by diversion in Pioneer Canal for irrigation of about 2,700 acres in Colorado and Nebraska.

AVERAGE DISCHARGE.--61 years, 46.3 ft³/s; 33,540 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft³/s, Apr. 28, 1947, gage height, 5.92 ft, from rating curve extended above 800 ft³/s, on basis of slope-area measurement of peak flow; no flow, Aug. 25, 26, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 21	0430	ice jam	*1.84	July 24	0600	*93	1.19

Minimum daily discharge, 4.2 ft³/s, July 6, 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	50	44	43	51	55	53	59	32	7.7	16	10
2	44	49	45	46	51	54	53	61	31	7.0	14	10
3	52	44	45	43	52	55	55	77	30	6.1	13	9.7
4	49	44	50	42	52	55	56	72	29	5.9	13	7.9
5	46	45	48	41	52	53	55	70	45	5.4	31	7.6
6	46	45	49	43	52	53	54	66	60	4.2	37	7.4
7	46	42	48	40	52	54	53	64	62	4.2	18	8.5
8	47	42	49	50	52	55	53	62	57	5.4	14	9.3
9	49	42	49	52	52	54	52	61	54	5.0	12	8.7
10	47	42	49	53	51	54	54	59	60	4.3	11	8.8
11	40	41	50	53	51	55	54	57	59	4.8	11	11
12	39	41	49	54	51	54	54	56	54	4.3	29	11
13	40	41	49	53	52	53	55	52	52	3.6	25	11
14	39	33	49	53	52	53	56	49	49	2.5	26	14
15	39	31	49	53	51	53	58	50	38	2.1	24	16
16	40	30	49	52	53	55	60	55	30	1.3	21	14
17	36	29	50	51	54	57	60	59	24	1.1	16	14
18	26	30	51	51	54	58	59	56	24	9.9	15	14
19	41	29	52	52	53	56	59	57	34	8.3	16	17
20	50	27	35	51	54	55	59	26	25	7.1	16	21
21	53	25	23	46	54	54	63	14	23	7.3	14	23
22	52	24	19	38	53	56	70	14	24	8.2	13	22
23	51	23	30	40	53	54	67	15	24	3.8	12	18
24	49	24	40	30	53	51	71	18	21	7.9	10	14
25	49	23	50	31	53	49	74	30	15	6.1	11	14
26	48	22	43	29	54	49	68	31	9.3	4.5	8.9	16
27	48	27	48	29	55	49	62	29	10	4.2	8.8	17
28	49	40	54	31	55	50	61	30	8.1	3.5	9.8	17
29	49	42	45	31	---	52	60	35	8.3	3.0	9.4	17
30	51	44	37	26	---	50	59	39	8.0	2.6	9.7	17
31	51	---	40	40	---	52	---	36	---	2.0	9.7	---
TOTAL	1409	1071	1388	1347	1472	1657	1767	1459	999.7	707.7	494.3	405.9
MEAN	45.5	35.7	44.8	43.5	52.6	53.5	58.9	47.1	33.3	22.8	15.9	13.5
MAX	53	50	54	54	55	58	74	77	62	7.9	3.7	2.3
MIN	26	22	19	26	51	49	52	14	8.0	4.2	8.8	7.4
AC-FT	2790	2120	2750	2670	2920	3290	3500	2890	1980	1400	980	805

CAL YR 1990 TOTAL 13120.6 MEAN 35.9 MAX 74 MIN 3.7 AC-FT 26020
WTR YR 1991 TOTAL 14177.6 MEAN 38.8 MAX 79 MIN 4.2 AC-FT 28120

06826000 BONNY RESERVOIR NEAR HALE, CO

LOCATION.--Lat 39°37'24", long 102°10'26", in SE¼SE¼ sec.9, T.5 S., R.43 W., Yuma County, Hydrologic Unit 102500C3, in stair well to outlet conduit of Bonny Dam on South Fork Republican River, 1.7 mi west of Hale, and 3.0 mi downstream from Landsman Creek.

DRAINAGE AREA.--1,820 mi², approximately.

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WSP 1710: 1955.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to Oct. 1, 1967, nonrecording gage at present site and datum.

REMARKS.--Reservoir is formed by an earthfill dam. Storage began July 6, 1950; dam completed May 4, 1951. Capacity of reservoir, 170,200 acre-ft, below elevation 3,710 ft, crest of spillway, of which 128,800 acre-ft is for flood control and 39,900 acre-ft is for irrigation. Dead storage, 1,420 acre-ft below elevation 3,635.0 ft, sill of trashrack at outlet conduit. Figures given represent total contents.

COOPERATION.--Capacity tables provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 55,030 acre-ft, May 17, 1957, elevation, 3,678.10 ft; minimum observed since appreciable contents were attained, 22,520 acre-ft, Oct. 6-14, 1952, elevation, 3,661.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 42,800 acre-ft, July 29, elevation, 3,672.71 ft; minimum, 34,300 acre-ft, Oct. 20, elevation, 3,668.35 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

3,668.3	34,200
3,672.8	43,000

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34700	34600	35000	35500	36400	37100	38100	38500	39300	39500	42200	41000
2	34800	34600	35100	35600	36400	37200	38200	38600	39300	39600	41900	40800
3	34800	34700	35000	35600	36500	37200	38200	38700	39300	39600	41500	40700
4	34700	34700	35100	35600	36500	37200	38200	38800	39300	39600	41300	40600
5	34700	34700	35100	35600	36500	37200	38300	38800	39300	39500	41300	40500
6	34600	34700	35100	35600	36500	37200	38200	38900	39600	39400	41300	40500
7	34500	34800	35200	35700	36600	37300	38200	38900	39700	39300	41300	40500
8	34600	34800	35100	35700	36600	37300	38200	38900	39700	39300	41200	40500
9	34600	34800	35200	35700	36700	37300	38200	38900	39700	39300	41200	40400
10	34600	34800	35200	35800	36700	37400	38200	38900	39800	39300	41100	40500
11	34500	34800	35200	35800	36700	37400	38200	39000	39800	39300	41000	40500
12	34500	34800	35200	35800	36800	37300	38200	39000	39800	39300	41200	40400
13	34500	34800	35300	35900	36800	37400	38200	39000	39800	39200	41200	40400
14	34500	34800	35300	35900	36800	37400	38300	38900	39800	39100	41300	40300
15	34500	34800	35300	36000	36800	37400	38300	38900	39700	39100	41500	40300
16	34500	34800	35300	36000	36900	37500	38300	38900	39800	39000	41500	40200
17	34400	34900	35300	36000	36900	37600	38300	38900	39700	39000	41400	40100
18	34400	34900	35400	36000	36900	37600	38300	38900	39900	38900	41500	40000
19	34400	34900	35300	36100	36900	37600	38300	38900	39900	39000	41500	40000
20	34400	34900	35400	36100	37000	37700	38300	38900	40000	39000	41500	39900
21	34500	34900	35300	36200	37000	37700	38400	38900	39900	38900	41500	39900
22	34500	34900	35400	36200	37000	37800	38500	38800	39900	38800	41400	39800
23	34400	34900	35400	36200	37000	37700	38400	39000	39900	40400	41400	39800
24	34500	34900	35400	36200	36900	37800	38500	39100	39900	42200	41400	39700
25	34500	34900	35400	36300	37100	37900	38500	39200	39900	42600	41300	39700
26	34500	34900	35400	36300	37100	37800	38600	39200	39800	42700	41300	39700
27	34500	35000	35400	36300	37100	38000	38600	39300	39700	42700	41200	39600
28	34500	35000	35500	36300	37100	38000	38500	39300	39700	42800	41300	39600
29	34500	35000	35400	36300	---	38000	38500	39300	39600	42800	41200	39500
30	34500	35000	35500	36400	---	38100	38500	39400	39600	42600	41100	39500
31	34500	---	35500	36400	---	38100	---	39400	---	42400	41100	---
MAX	34800	35000	35500	36400	37100	38100	38600	39400	40000	42800	42200	41000
MIN	34400	34600	35000	35500	36400	37100	38100	38500	39300	38800	41000	39500

CAL YR 1990 MAX 42200 MIN 34400
WTR YR 1991 MAX 42800 MIN 34400

07079200 LEADVILLE MINE DRAINAGE TUNNEL AT LEADVILLE, CO

LOCATION.--Lat 39°16'29", long 106°17'15", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 12, T.9 S., R.80 W., Lake County, Hydrologic Unit 11020001, on right bank 80 ft downstream from access road, 0.5 mi upstream from mouth, and 0.8 mi north of Leadville.

PERIOD OF RECORD.--May 4, 1990 to current year. Formerly published as Leadville Drain at Leadville, Co.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder with satellite telemetry and Parshall flume. Elevation of gage is 9,960 ft above National Geodetic Vertical Datum of 1929, from topographic map. May 4, 1990 to July 19, 1990, at same location on left bank, and at same datum.

REMARKS.--Estimated daily discharges: Dec. 18 to Apr. 16. Records good except for estimated daily discharges, which are fair. Flow regulated from mine drainage pond upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7.1 ft³/s, Sept. 22, 1991, gage height, 1.19 ft; minimum daily, 1.4 ft³/s, Sept. 26-27, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.1 ft³/s at 1400 Sept. 22, gage height, 1.19 ft; minimum daily, 1.4 ft³/s, Sept. 26-27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	2.7	2.7	2.7	2.7	2.9	2.3	2.2	2.2	2.6	2.3	2.5
2	2.8	2.5	2.7	2.8	2.7	2.9	2.3	2.0	2.3	2.3	2.4	2.3
3	2.8	2.3	2.7	2.8	2.7	2.9	2.3	2.3	2.3	2.3	2.5	2.0
4	2.7	2.1	2.7	2.8	2.7	2.9	2.3	2.3	2.3	2.3	2.4	1.5
5	2.7	2.3	2.8	2.8	2.7	2.8	2.3	2.3	2.3	2.2	2.4	1.9
6	2.7	2.8	2.8	2.8	2.7	2.7	2.3	2.3	2.2	2.2	2.4	2.5
7	2.8	2.7	2.7	2.8	2.7	2.7	2.3	2.3	2.3	2.3	2.3	2.5
8	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.3	2.6	2.3	2.4	2.7
9	2.7	2.8	2.7	2.7	2.7	2.7	2.2	2.3	2.5	2.3	2.3	2.0
10	2.7	2.8	2.7	2.7	2.7	2.7	2.2	2.3	2.3	2.3	2.3	2.6
11	2.7	2.8	2.7	2.7	2.7	2.6	2.2	2.3	2.2	2.3	2.3	2.5
12	2.7	2.8	2.7	2.7	2.7	2.5	2.2	2.3	2.0	2.3	2.3	2.5
13	2.7	2.9	2.7	2.7	2.7	2.5	2.2	2.2	2.1	2.1	2.0	2.5
14	2.7	2.9	2.7	2.7	2.7	2.5	2.1	2.7	2.3	2.2	1.9	2.6
15	2.7	2.8	2.7	2.7	2.7	2.6	2.1	2.2	2.2	2.3	2.4	2.9
16	2.7	2.8	2.7	2.7	2.7	2.5	2.2	2.7	2.1	2.4	2.4	2.4
17	2.8	2.8	2.7	2.7	2.7	2.5	3.2	2.4	2.5	2.4	2.4	2.5
18	2.8	2.8	2.7	2.7	2.6	2.5	3.2	2.3	2.4	2.4	2.4	2.5
19	2.8	3.1	2.7	2.7	2.6	2.5	3.3	2.3	2.2	2.4	2.4	2.5
20	2.7	2.8	2.7	2.7	2.6	2.4	3.0	2.2	2.4	2.0	2.3	2.6
21	2.8	2.7	2.7	2.7	2.6	2.4	2.6	2.2	2.4	2.3	2.3	2.6
22	2.8	2.7	2.7	2.7	2.5	2.4	2.6	2.4	2.3	2.9	2.4	2.4
23	2.8	2.7	2.7	2.7	2.6	2.4	2.4	2.6	2.3	2.4	2.3	2.4
24	2.8	2.7	2.7	2.7	2.7	2.4	2.3	2.0	2.1	2.4	2.4	2.4
25	2.8	2.7	2.7	2.6	2.8	2.4	2.4	2.4	2.0	2.3	2.6	1.6
26	2.8	2.7	2.7	2.6	2.8	2.4	2.3	2.3	2.5	2.4	2.3	1.4
27	2.8	2.7	2.7	2.6	2.9	2.4	2.3	2.2	2.6	2.3	2.6	1.4
28	2.8	2.7	2.7	2.6	2.9	2.4	2.3	2.1	2.4	2.3	2.5	1.6
29	2.3	2.7	2.7	2.6	---	2.4	2.2	2.4	1.9	2.6	2.5	1.7
30	1.7	2.7	2.7	2.6	---	2.4	2.3	2.2	2.1	2.4	2.5	1.7
31	2.0	---	2.7	2.6	---	2.3	---	2.3	---	2.4	2.4	---
TOTAL	83.0	81.2	83.9	83.6	75.5	79.3	72.2	71.3	68.3	72.6	73.3	67.2
MEAN	2.68	2.71	2.71	2.70	2.70	2.56	2.41	2.30	2.28	2.34	2.36	2.24
MAX	2.8	3.1	2.8	2.8	2.9	2.9	3.3	2.7	2.6	2.9	2.6	2.9
MIN	1.7	2.1	2.7	2.6	2.5	2.3	2.1	2.0	1.9	2.0	1.9	1.4
AC-FT	165	161	166	166	150	157	143	141	135	144	145	133

WTR YR 1991 TOTAL 911.4 MEAN 2.50 MAX 3.3 MIN 1.4 AC-FT 1810

07079200 LEADVILLE MINE DRAINAGE TUNNEL AT LEADVILLE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1990 to to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1990 to current year.

WATER TEMPERATURE: May 1990 to current year.

pH: May 1990 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance, daily mean pH, and daily mean water temperature data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,170 microsiemens, Feb. 26, 1991; minimum, 388 microsiemens, Oct. 31, 1990.

WATER TEMPERATURE: Maximum, 9.9°C, July 29, 1991; minimum, 4.9°C, Nov. 21, 1990.

pH: Maximum, 9.3 units, Mar. 25, 1991; minimum, 6.2 units, July 28, 1991.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,170 microsiemens, Feb. 26; minimum, 388 microsiemens, Oct. 31.

WATER TEMPERATURE: Maximum, 9.9°C, July 29; minimum, 4.9°C, Nov. 21.

pH: Maximum, 9.3 units, Mar. 25; minimum, 6.2 units, July 28.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	775	727	702	788	895	---	926	864	948	767	695	619
2	767	749	709	782	898	---	929	893	942	760	674	615
3	763	746	768	779	915	---	923	908	938	751	683	616
4	767	749	754	782	870	---	925	907	936	746	672	630
5	759	772	737	766	884	---	924	903	906	741	677	---
6	739	792	---	758	898	---	929	900	895	740	671	---
7	718	772	750	756	887	---	911	896	895	734	677	729
8	715	756	748	737	---	---	895	894	886	730	674	701
9	713	751	739	743	---	---	875	902	877	728	683	706
10	708	772	721	761	---	---	854	899	886	698	673	703
11	707	759	707	769	---	---	835	907	882	624	667	690
12	708	811	703	780	---	---	819	918	864	650	659	678
13	713	812	717	791	---	---	807	939	860	670	665	664
14	705	785	721	774	---	---	793	934	859	703	672	664
15	703	796	743	755	---	---	768	935	847	719	676	666
16	707	771	758	745	---	915	753	937	845	715	665	669
17	728	767	769	758	---	909	682	935	829	710	656	671
18	731	753	774	784	---	906	682	931	820	708	654	676
19	721	738	779	788	---	904	674	928	823	700	654	677
20	723	677	756	777	---	906	675	926	830	706	657	676
21	730	623	730	779	---	910	667	920	827	710	646	679
22	731	636	---	775	902	911	748	912	823	699	651	680
23	724	638	---	765	942	909	895	919	818	686	659	685
24	721	654	---	780	907	912	905	976	799	675	667	688
25	722	661	---	839	952	919	907	968	783	660	669	723
26	725	660	---	880	965	921	905	954	768	668	652	771
27	726	655	768	890	920	912	905	959	755	680	653	768
28	738	688	779	889	---	926	907	955	751	686	654	754
29	728	713	777	886	---	934	896	944	754	690	660	746
30	529	719	781	887	---	931	864	935	760	686	665	736
31	538	---	786	889	---	930	---	945	---	691	636	---
MEAN	716	730	---	795	---	---	839	924	847	704	665	---

07079200 LEADVILLE MINE DRAINAGE TUNNEL AT LEADVILLE, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.1	7.0	7.1	7.0	7.0	6.8	7.2	7.0	7.2	7.2	---	---
2	7.0	6.9	7.1	7.1	6.9	6.8	7.2	7.1	7.3	7.2	---	---
3	7.0	6.9	7.1	7.1	6.9	6.8	7.3	7.1	7.3	7.3	---	---
4	7.3	6.9	7.1	7.1	7.2	6.9	7.3	7.1	8.4	7.3	---	---
5	7.3	7.1	7.2	7.1	7.1	6.9	7.2	7.1	7.6	7.5	---	---
6	7.2	7.0	7.3	7.2	7.3	6.9	7.2	7.1	7.5	7.4	---	---
7	7.2	7.1	7.2	7.0	7.5	7.2	7.3	7.1	7.5	7.4	---	---
8	7.1	7.1	7.0	7.0	7.4	7.2	7.3	7.2	---	---	---	---
9	7.1	7.0	7.0	7.0	7.3	7.2	7.3	7.1	---	---	---	---
10	7.0	6.9	7.1	7.0	7.3	7.2	7.3	7.1	---	---	---	---
11	7.1	6.9	7.1	7.0	7.3	7.0	7.2	7.1	---	---	---	---
12	7.1	7.0	7.2	7.1	7.0	6.9	7.3	6.9	---	---	---	---
13	7.0	7.0	7.2	7.0	7.0	6.9	7.2	7.1	---	---	---	---
14	7.1	7.0	7.3	7.0	6.9	6.8	7.2	7.1	---	---	---	---
15	7.0	7.0	7.2	7.0	7.0	6.8	7.1	7.1	---	---	7.6	7.4
16	7.2	7.0	7.2	7.1	7.0	6.9	7.1	7.0	---	---	7.4	7.3
17	7.2	6.9	7.2	7.1	7.0	6.9	7.2	7.0	---	---	7.3	7.3
18	7.0	6.9	7.2	7.1	7.0	6.9	7.2	7.1	---	---	7.4	7.3
19	6.9	6.9	7.1	7.1	7.3	6.8	7.3	7.1	---	---	7.4	7.0
20	6.9	6.9	7.2	7.0	7.3	7.2	7.3	7.2	---	---	7.4	7.4
21	7.0	6.9	7.1	6.9	7.3	7.2	7.4	7.2	---	---	7.4	7.4
22	6.9	6.9	7.0	6.9	7.3	7.1	7.3	7.2	7.9	7.3	7.5	7.4
23	6.9	6.9	7.0	6.9	7.3	7.0	7.3	7.2	7.3	7.3	7.4	7.4
24	7.0	6.9	7.0	6.9	7.3	6.9	7.3	7.2	7.3	7.3	7.5	7.4
25	7.0	6.9	7.0	6.7	7.4	6.9	7.3	7.2	7.4	7.3	9.3	7.4
26	7.0	6.9	6.8	6.7	7.3	7.0	7.2	7.2	7.4	7.3	9.2	7.4
27	7.0	6.9	6.8	6.8	7.1	7.0	7.2	7.2	7.5	7.3	8.8	7.4
28	7.0	7.0	6.9	6.8	7.1	7.0	7.2	7.2	---	---	7.5	7.4
29	7.1	7.0	6.9	6.8	7.1	7.0	7.2	7.2	---	---	7.6	7.3
30	7.1	7.0	6.9	6.8	7.1	7.0	7.3	7.2	---	---	7.4	7.3
31	7.1	7.0	---	---	7.1	7.0	7.3	7.2	---	---	7.3	7.2
MONTH	7.3	6.9	7.3	6.7	7.5	6.8	7.4	6.9	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.3	7.2	6.8	6.8	7.1	6.9	7.1	7.0	7.9	7.8	7.6	7.2
2	7.3	7.2	---	6.7	7.0	6.9	7.1	7.0	8.0	7.9	8.3	7.1
3	7.3	7.1	---	---	7.1	6.9	7.1	7.0	8.0	7.9	8.7	7.2
4	7.2	7.1	---	---	7.0	6.9	7.1	7.0	8.0	7.9	8.8	7.1
5	7.2	7.0	---	---	7.2	7.0	7.1	7.0	8.0	7.7	8.8	7.3
6	7.1	7.0	---	---	7.1	7.0	7.1	7.1	8.0	7.6	8.3	6.9
7	7.1	7.0	---	---	7.1	7.0	7.1	7.0	8.0	7.5	7.6	6.9
8	7.4	7.0	---	---	7.1	7.1	7.1	7.0	8.0	7.5	7.1	6.8
9	7.5	7.0	---	---	7.1	7.0	7.2	7.0	8.0	7.8	7.6	6.8
10	7.5	7.0	---	---	7.2	7.0	7.1	7.1	8.0	7.9	7.3	6.9
11	7.1	7.0	---	---	7.3	7.0	7.1	7.0	8.0	7.9	7.2	6.8
12	7.1	7.0	---	---	7.0	7.0	7.1	7.0	8.0	7.8	6.9	6.8
13	7.0	7.0	---	---	7.1	7.0	7.2	7.1	7.9	7.8	6.9	6.7
14	7.0	7.0	---	---	7.0	7.0	7.1	7.1	7.9	7.6	7.0	6.8
15	7.1	7.0	---	---	7.0	7.0	7.2	7.1	7.8	7.7	7.2	7.0
16	7.1	7.0	---	---	7.0	7.0	7.2	7.1	7.8	7.7	7.4	7.1
17	7.2	6.9	---	---	7.0	6.9	7.2	7.1	7.8	7.5	7.9	7.2
18	7.1	6.9	---	---	7.3	7.0	7.3	7.2	8.1	7.6	7.8	7.4
19	7.2	7.0	---	---	7.1	7.0	7.6	7.2	8.2	8.0	8.6	7.5
20	7.4	7.2	---	---	7.0	7.0	7.2	7.2	8.2	8.1	8.2	7.6
21	7.7	7.4	---	---	7.1	7.0	7.2	7.2	8.3	7.7	7.6	7.5
22	---	---	---	---	7.0	7.0	7.2	7.0	8.3	8.1	7.8	7.5
23	7.7	6.8	---	---	7.0	7.0	7.9	7.1	8.4	8.2	7.6	7.6
24	7.2	6.8	7.2	7.0	7.1	7.0	7.5	6.4	8.4	8.3	8.4	7.6
25	7.2	7.0	7.0	7.0	7.0	7.0	7.7	6.5	8.5	8.3	7.8	7.6
26	7.4	7.3	7.0	6.9	7.1	7.0	7.4	6.5	8.5	8.0	7.7	7.6
27	7.4	7.2	6.9	6.9	7.1	7.0	7.6	6.6	8.5	8.2	7.8	7.6
28	7.2	7.1	7.0	6.9	7.1	7.0	7.8	6.2	8.6	8.3	7.7	7.5
29	7.1	6.8	7.0	6.9	7.1	7.0	7.9	7.3	8.5	8.3	7.6	7.4
30	6.8	6.8	7.0	6.9	7.1	7.0	7.9	7.4	9.0	8.0	7.6	7.4
31	---	---	7.1	6.9	---	---	7.9	7.8	9.1	7.5	---	---
MONTH	---	---	---	---	7.3	6.9	7.9	6.2	9.1	7.5	8.8	6.7

07079200 LEADVILLE MINE DRAINAGE TUNNEL AT LEADVILLE, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.3	7.4	7.1	6.8	7.3	6.5	7.3	6.5	7.1	6.8	---	---
2	7.7	7.4	6.9	6.7	7.1	6.6	7.3	6.5	7.1	6.8	---	---
3	7.6	7.3	6.9	6.7	7.3	6.6	7.4	6.5	7.0	6.7	---	---
4	7.8	6.9	6.9	6.8	7.5	6.6	7.1	6.8	7.1	6.7	---	---
5	7.7	7.1	6.9	6.8	7.4	6.7	7.1	6.6	7.1	6.7	---	---
6	7.8	7.2	7.3	6.8	7.2	6.5	7.3	6.5	7.1	6.8	---	---
7	7.6	7.2	7.1	6.7	7.4	6.5	7.3	6.5	7.1	6.8	---	---
8	7.5	7.2	7.0	6.8	7.2	6.6	7.0	6.5	---	---	---	---
9	7.5	7.1	6.9	6.8	7.4	6.6	7.2	6.4	---	---	---	---
10	7.9	7.0	7.1	6.8	7.4	6.6	7.3	6.5	---	---	---	---
11	7.8	7.1	7.0	6.4	7.4	6.7	7.1	6.6	---	---	---	---
12	7.6	6.9	7.4	6.9	7.2	6.7	7.3	5.1	---	---	---	---
13	7.6	7.0	7.5	6.9	7.2	6.8	7.3	6.8	---	---	---	---
14	7.7	7.0	7.7	7.0	6.9	6.5	7.1	6.6	---	---	---	---
15	7.8	7.1	7.4	5.9	7.3	6.4	7.0	6.6	---	---	7.3	---
16	7.7	7.2	7.1	5.8	7.2	6.6	7.1	6.5	---	---	7.3	6.9
17	7.5	6.8	7.7	6.1	7.1	6.6	7.2	6.5	---	---	7.2	6.8
18	7.3	6.7	7.2	6.0	6.9	6.6	7.4	6.4	---	---	7.1	5.0
19	7.1	6.9	7.5	6.4	7.2	6.5	7.3	6.6	---	---	7.1	5.0
20	7.2	6.7	7.8	6.2	6.9	6.6	7.1	6.5	---	---	7.3	5.0
21	7.1	6.4	6.7	4.9	6.8	6.4	7.1	6.4	7.1	---	7.1	6.8
22	7.3	6.7	6.5	5.9	6.9	6.3	7.2	6.4	7.2	6.9	7.2	6.9
23	7.2	6.8	6.9	6.2	6.9	5.2	6.9	6.5	7.1	6.9	7.2	6.9
24	7.3	6.8	7.1	6.2	7.1	5.1	7.1	6.1	7.1	6.7	7.6	6.9
25	7.3	6.8	7.7	6.3	7.0	5.0	6.9	6.5	6.8	6.1	7.2	7.0
26	7.3	6.9	6.8	6.2	7.1	5.6	6.9	6.2	7.2	6.0	7.3	6.9
27	7.3	6.9	6.7	5.5	7.2	6.5	7.0	6.7	7.1	6.4	7.2	6.9
28	7.3	6.9	6.9	6.3	7.2	6.5	7.0	6.7	---	---	7.1	6.8
29	7.5	6.9	7.1	5.7	7.1	6.5	7.0	6.7	---	---	7.0	6.8
30	7.8	6.8	7.2	6.6	7.1	6.4	7.0	6.6	---	---	7.2	6.7
31	7.4	7.0	---	---	7.2	6.4	7.1	6.7	---	---	7.3	6.8
MONTH	8.3	6.4	7.8	4.9	7.5	5.0	7.4	5.1	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.3	6.8	7.4	6.8	7.4	7.0	9.8	6.9	7.3	6.9	7.6	6.9
2	7.2	6.9	7.3	6.9	7.3	7.0	9.1	7.0	7.4	6.9	7.5	7.0
3	7.1	6.9	7.3	6.9	7.3	7.1	7.8	7.0	7.4	6.9	7.6	6.9
4	7.3	6.9	7.1	6.9	7.5	7.1	7.5	6.9	7.4	7.0	7.9	6.9
5	7.4	6.9	7.3	6.8	7.4	7.1	7.4	6.9	7.5	6.9	7.4	7.1
6	7.3	6.9	7.3	6.9	7.4	7.1	7.4	7.0	8.0	6.9	7.6	7.1
7	7.1	6.8	7.5	7.0	7.8	7.1	7.4	7.0	7.7	6.9	7.6	7.1
8	6.9	6.8	7.7	7.0	8.4	7.5	7.5	7.0	9.4	6.9	7.5	7.1
9	7.0	6.7	7.5	7.0	8.1	7.2	8.1	6.9	7.7	6.9	7.2	6.9
10	6.9	6.7	7.5	7.0	7.4	7.1	7.9	6.9	7.1	6.9	8.0	7.0
11	6.9	6.7	7.4	7.1	7.5	7.0	8.3	7.0	7.2	6.9	8.3	6.9
12	6.9	6.7	7.4	7.0	7.4	7.0	8.6	6.9	7.7	7.0	7.1	7.0
13	6.9	5.8	7.4	7.0	7.4	7.1	8.4	7.0	7.3	6.9	7.2	6.9
14	5.9	5.7	8.3	7.0	7.6	7.2	7.2	6.9	7.4	6.9	7.2	6.9
15	7.0	5.8	7.8	7.0	7.5	7.1	8.2	7.0	7.4	6.9	8.1	6.8
16	7.2	5.8	7.5	6.9	7.4	7.1	7.5	6.9	7.2	6.9	7.3	6.8
17	7.7	5.9	7.5	7.0	8.4	7.1	8.1	6.9	7.2	6.9	7.4	6.8
18	7.2	6.9	7.5	7.1	8.0	7.3	8.3	7.0	7.9	6.9	7.7	6.9
19	7.1	6.8	7.5	7.1	7.7	7.2	8.3	7.0	7.4	6.9	7.6	6.9
20	7.1	6.9	7.4	7.1	8.1	7.3	7.2	7.0	7.1	6.9	7.6	6.9
21	7.0	6.8	7.4	7.1	8.2	7.2	7.2	7.0	8.2	6.9	7.4	6.9
22	7.2	6.4	8.3	7.1	7.5	7.1	8.5	7.0	7.7	6.8	7.9	6.8
23	7.2	7.0	8.4	7.2	7.5	7.0	7.6	7.0	7.8	6.9	7.2	6.9
24	7.3	6.9	7.4	7.1	7.4	7.0	8.4	6.9	7.2	6.9	8.0	6.9
25	7.3	6.9	8.1	7.0	7.4	7.0	8.0	6.7	8.2	6.9	8.0	6.8
26	7.2	6.8	7.7	7.1	8.2	7.2	8.2	6.9	8.5	6.9	7.2	6.8
27	7.1	6.8	7.5	7.1	7.8	7.3	7.2	6.9	9.8	6.9	7.5	6.2
28	7.2	6.8	7.5	7.1	8.8	7.3	7.2	6.9	8.0	6.8	7.1	6.8
29	7.2	6.9	8.3	7.0	7.4	7.0	9.9	6.9	7.9	6.7	6.9	6.7
30	7.2	6.8	7.6	7.1	7.6	7.0	7.4	6.6	7.8	6.8	6.9	6.8
31	---	---	7.8	7.1	---	---	7.6	6.9	7.3	7.0	---	---
MONTH	7.7	5.7	8.4	6.8	8.8	7.0	9.9	6.6	9.8	6.7	8.3	6.2

07079300 EAST FORK ARKANSAS RIVER AT HIGHWAY 24 NEAR LEADVILLE, CO

LOCATION.--Lat 39°16'21", long 106°18'21", in NW¼NW¼ sec. 14, T.9 S., R.80 W., Lake County, Hydrologic Unit 11020001, on right bank 20 ft downstream from U.S. Highway 24, 0.35 mi downstream from Leadville Mine Drainage Tunnel, 2.2 mi upstream from mouth of Tennessee Creek, and 1.5 mi northwest of Leadville.

DRAINAGE AREA.--49.9 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 9,900 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Water year 1990, June 18. Water year 1991, Nov. 22 to Mar. 22, July 31, and Aug. 16. Records fair except for estimated daily discharges and daily discharges above 220 ft³/s, which are poor. Natural flow of stream affected by transmountain diversions (see elsewhere in this report).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 675 ft³/s, June 8, 1990, gage height, 3.94 ft, from floodmark; minimum daily, 8.0 ft³/s, Dec. 23, 1990.

- EXTREMES FOR PERIOD MAY TO SEPTEMBER, 1990.--Maximum discharge, 675 ft³/s at 1600 June 8, gage height, 3.94 ft, from floodmark; minimum daily, 19 ft³/s, Sept. 15.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 339 ft³/s at 2330 June 14, gage height 3.44 ft; minimum daily, 8.0 ft³/s, Dec. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	58	59	37	25
2	---	---	---	---	---	---	---	---	110	67	39	26
3	---	---	---	---	---	---	---	---	157	46	37	24
4	---	---	---	---	---	---	---	---	235	55	36	24
5	---	---	---	---	---	---	---	---	289	50	35	25
6	---	---	---	---	---	---	---	---	355	52	33	25
7	---	---	---	---	---	---	---	---	381	48	31	24
8	---	---	---	---	---	---	---	---	462	46	30	24
9	---	---	---	---	---	---	---	---	401	50	29	23
10	---	---	---	---	---	---	---	---	312	51	28	23
11	---	---	---	---	---	---	---	---	271	54	27	22
12	---	---	---	---	---	---	---	20	200	51	29	21
13	---	---	---	---	---	---	---	22	179	46	31	20
14	---	---	---	---	---	---	---	24	179	41	29	20
15	---	---	---	---	---	---	---	29	164	44	33	19
16	---	---	---	---	---	---	---	28	159	37	53	20
17	---	---	---	---	---	---	---	22	162	45	40	23
18	---	---	---	---	---	---	---	24	148	32	39	24
19	---	---	---	---	---	---	---	22	139	26	38	25
20	---	---	---	---	---	---	---	26	136	33	34	24
21	---	---	---	---	---	---	---	30	120	35	34	23
22	---	---	---	---	---	---	---	41	109	43	35	22
23	---	---	---	---	---	---	---	53	112	48	34	21
24	---	---	---	---	---	---	---	69	103	52	32	21
25	---	---	---	---	---	---	---	63	86	56	30	20
26	---	---	---	---	---	---	---	55	86	51	29	22
27	---	---	---	---	---	---	---	53	73	47	28	21
28	---	---	---	---	---	---	---	53	69	44	27	24
29	---	---	---	---	---	---	---	45	71	42	26	24
30	---	---	---	---	---	---	---	59	62	41	26	23
31	---	---	---	---	---	---	---	67	---	38	25	---
TOTAL	---	---	---	---	---	---	---	---	5388	1430	1014	682
MEAN	---	---	---	---	---	---	---	---	180	46.1	32.7	22.7
MAX	---	---	---	---	---	---	---	---	462	67	53	26
MIN	---	---	---	---	---	---	---	---	58	26	25	19
AC-FT	---	---	---	---	---	---	---	---	10690	2840	2010	1350

07079300 EAST FORK ARKANSAS RIVER AT HIGHWAY 24 NEAR LEADVILLE, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	18	14	11	13	9.8	9.3	13	165	147	44	29
2	24	18	13	12	13	9.5	9.5	14	132	135	44	29
3	26	18	12	13	12	9.5	9.3	15	105	131	44	28
4	24	18	13	12	12	9.8	10	17	99	120	58	26
5	23	18	13	12	13	10	10	16	127	110	49	26
6	22	15	12	12	13	9.4	11	17	159	101	47	27
7	22	15	12	12	13	9.0	11	19	156	98	51	26
8	24	16	13	11	13	8.8	10	22	170	108	44	27
9	22	16	13	11	12	9.0	10	31	218	107	41	26
10	22	16	14	11	12	9.4	9.8	40	203	94	40	27
11	22	16	13	10	12	9.5	9.6	46	220	82	38	27
12	21	15	12	10	11	9.4	9.4	48	219	76	39	27
13	21	15	12	11	10	9.0	13	47	233	81	46	27
14	21	14	11	10	10	9.3	13	53	287	68	41	28
15	21	14	11	9.6	11	9.7	10	56	258	62	39	28
16	20	14	12	9.8	10	9.7	9.5	47	259	60	38	27
17	20	14	12	10	9.8	9.8	11	44	239	60	37	26
18	20	14	11	11	9.4	9.8	11	54	233	56	35	24
19	21	14	12	12	9.4	9.8	11	75	211	53	33	24
20	21	14	12	11	9.6	10	10	85	223	52	34	23
21	21	14	11	11	11	10	11	100	204	52	36	23
22	20	13	9.0	11	11	10	12	110	206	69	33	22
23	21	14	8.0	10	10	10	12	121	190	68	31	22
24	20	15	8.2	11	9.6	9.1	12	104	177	62	30	21
25	19	16	8.2	11	9.4	9.1	13	94	167	65	29	20
26	19	14	8.4	11	9.6	9.2	13	121	155	56	30	19
27	19	13	9.0	11	9.8	9.2	12	144	143	61	34	19
28	19	14	10	11	10	10	12	149	143	52	39	19
29	18	15	9.8	11	---	9.0	12	156	156	48	35	19
30	18	14	9.5	11	---	13	12	188	161	45	32	19
31	18	---	10	12	---	12	---	161	---	44	30	---
TOTAL	651	454	348.1	342.4	308.6	300.8	328.4	2207	5618	2423	1201	735
MEAN	21.0	15.1	11.2	11.0	11.0	9.70	10.9	71.2	187	78.2	38.7	24.5
MAX	26	18	14	13	13	13	13	188	287	147	58	29
MIN	18	13	8.0	9.6	9.4	8.8	9.3	13	99	44	29	19
AC-FT	1290	901	690	679	612	597	651	4380	11140	4810	2380	1460

WTR YR 1991 TOTAL 14917.3 MEAN 40.9 MAX 287 MIN 8.0 AC-FT 29590

07079300 EAST FORK ARKANSAS RIVER AT HIGHWAY 24 NEAR LEADVILLE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1990 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1990 to current year.

WATER TEMPERATURE: May 1990 to current year.

pH: May 1990 to current year.

INSTRUMENTATION: Water-quality monitor.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance, daily mean water temperature, and daily mean pH data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 556 microsiemens, Apr. 13, 1991; minimum, 99 microsiemens, June 8, 1990.

WATER TEMPERATURE: Maximum, 17.2°C, Aug. 6, 1990; minimum, 0.0°C, many days.

pH: Maximum, 8.7 units, Mar. 27 and May 2, 1991; minimum, 7.2 units, May 22, 1991.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 556 microsiemens, Apr. 13; minimum, 103 microsiemens, June 12.

WATER TEMPERATURE: Maximum, 16.4°C, Aug. 25; minimum, 0.0°C, many days.

pH: Maximum, 8.7 units, Mar. 27 and May 2; minimum, 7.2 units, May 22.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	283	279	336	368	404	446	442	370	---	135	179	216
2	275	279	344	368	403	429	432	337	---	139	181	216
3	263	279	345	367	408	432	438	339	---	139	183	212
4	273	283	337	367	401	441	434	331	---	141	164	205
5	274	281	333	360	406	438	415	357	136	145	169	221
6	278	292	340	357	400	432	398	347	122	149	177	234
7	280	294	350	365	399	442	396	329	121	153	171	229
8	270	304	340	373	398	446	406	309	120	148	181	231
9	278	300	340	374	---	445	426	245	---	147	186	219
10	278	296	339	377	---	435	429	228	---	152	187	228
11	274	298	332	373	---	440	430	214	---	156	196	221
12	283	300	341	369	---	436	432	207	106	157	192	224
13	282	303	335	373	---	442	446	213	---	151	175	221
14	282	298	334	367	413	441	439	200	---	159	179	220
15	285	293	341	366	412	439	431	185	---	166	192	224
16	286	291	361	368	415	435	411	210	---	168	---	220
17	273	301	339	373	417	427	403	219	---	157	204	225
18	271	295	346	379	425	413	374	204	---	154	209	232
19	264	313	348	378	423	436	380	160	119	161	214	238
20	259	313	355	375	431	415	364	144	115	159	215	239
21	274	308	342	373	434	425	371	138	---	160	207	244
22	275	323	338	380	431	439	410	132	---	154	215	241
23	266	311	364	386	431	439	368	129	---	148	222	244
24	269	318	364	383	433	442	373	134	111	156	222	248
25	271	317	367	376	459	447	359	149	109	150	227	229
26	272	317	360	385	442	447	355	128	113	161	226	220
27	274	312	361	386	438	446	371	---	118	154	208	228
28	275	327	365	390	400	449	375	---	119	163	200	236
29	277	342	364	390	---	450	372	---	116	174	200	241
30	277	326	361	398	---	457	376	110	125	177	207	240
31	279	---	365	402	---	447	---	---	---	---	212	---
MEAN	275	303	348	376	---	439	402	---	---	---	---	228

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.3	7.8	8.3	7.9	7.8	7.7	8.3	8.1	8.4	8.2	8.5	8.4
2	8.1	7.8	8.2	7.9	7.8	7.7	8.2	8.1	8.4	8.2	8.5	8.4
3	8.0	7.8	8.2	8.0	7.8	7.7	8.2	8.1	8.4	8.2	8.5	8.4
4	8.4	7.7	8.2	8.0	7.8	7.7	8.2	8.1	8.4	8.3	8.6	8.4
5	8.2	8.0	8.2	8.1	7.9	7.7	8.3	8.2	8.4	8.2	8.5	8.4
6	8.3	8.0	8.2	8.1	8.4	7.7	8.3	8.2	8.4	8.2	8.5	8.3
7	8.2	8.1	8.3	8.1	8.5	8.1	8.2	8.0	8.3	8.2	8.5	8.2
8	8.3	7.9	8.1	8.0	8.5	8.0	8.2	8.0	8.3	8.3	8.5	8.2
9	8.2	7.8	8.1	7.9	8.5	8.1	8.2	8.1	---	---	8.5	8.3
10	8.2	7.9	8.1	7.9	8.5	8.1	8.2	8.1	---	---	8.5	8.4
11	8.2	7.9	8.1	7.9	8.4	8.3	8.2	8.1	---	---	8.5	8.4
12	8.3	7.8	8.1	7.8	8.5	8.1	8.2	8.1	---	---	8.6	8.4
13	8.5	7.8	8.1	7.8	---	---	8.2	8.0	---	---	8.6	8.3
14	8.5	7.9	8.5	7.9	---	---	8.2	8.1	---	---	8.4	8.3
15	8.6	8.0	8.1	7.9	---	---	8.2	8.1	---	---	8.6	8.2
16	8.6	8.1	8.1	7.8	---	---	8.2	8.0	---	---	8.5	8.3
17	8.5	7.9	8.1	7.8	---	---	8.1	8.0	---	---	8.5	8.2
18	8.5	8.2	8.2	7.8	---	---	8.1	7.9	---	---	8.5	8.2
19	8.4	8.1	8.5	7.8	---	---	8.1	7.9	---	---	8.5	8.2
20	8.3	8.1	8.2	7.9	---	---	8.1	8.0	---	---	8.5	8.2
21	8.4	8.1	8.0	7.8	---	---	8.1	7.9	8.5	8.3	8.5	8.1
22	8.4	8.0	7.9	7.7	---	---	8.0	7.9	8.5	8.3	8.6	8.3
23	8.5	8.1	7.9	7.7	---	---	8.0	7.9	8.5	8.3	8.6	8.3
24	8.3	8.0	7.9	7.7	---	---	7.9	7.9	8.5	8.3	8.5	8.1
25	8.3	7.9	8.0	7.7	---	---	8.0	7.9	8.5	8.3	8.5	8.1
26	8.3	7.9	8.0	7.7	---	---	8.3	8.0	8.5	8.3	8.5	8.0
27	8.3	7.9	7.9	7.8	---	---	8.1	8.0	8.5	8.3	8.7	8.0
28	8.3	7.9	7.9	7.7	8.3	8.1	8.2	8.1	8.5	8.3	8.5	7.9
29	8.6	7.9	7.8	7.7	8.3	8.2	8.2	8.2	---	---	8.3	7.9
30	8.4	8.0	7.8	7.7	8.3	8.1	8.4	8.2	---	---	8.4	7.9
31	8.4	7.9	---	---	8.3	8.1	8.4	8.3	---	---	8.4	7.9
MONTH	8.6	7.7	8.5	7.7	---	---	8.4	7.9	---	---	8.7	7.9
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.4	7.8	---	---	7.9	7.8	---	---	---	---	8.3	8.0
2	8.4	7.9	8.7	8.1	8.1	7.9	---	---	---	---	8.4	8.0
3	8.3	7.8	8.5	8.0	8.1	7.9	8.5	7.9	---	---	8.4	8.0
4	8.4	7.8	8.2	7.9	8.1	8.0	8.3	8.1	---	---	8.4	8.0
5	8.4	7.7	8.5	7.8	8.0	7.9	8.3	8.1	---	---	8.4	8.0
6	8.5	7.7	8.5	7.8	8.0	7.8	8.5	8.2	---	---	8.4	8.0
7	8.4	7.8	8.6	7.9	7.9	7.7	8.4	8.3	---	---	8.4	8.0
8	8.2	7.7	8.6	7.9	7.9	7.7	8.4	8.3	---	---	8.3	8.0
9	8.3	7.7	8.4	7.7	7.8	7.5	8.4	8.3	---	---	8.4	8.0
10	8.3	7.7	8.3	7.6	8.1	7.7	8.5	8.4	---	---	8.3	8.0
11	8.3	7.7	8.3	7.6	8.1	7.7	8.4	8.4	---	---	8.3	8.0
12	8.0	7.6	8.1	7.6	---	---	8.4	8.3	---	---	8.4	7.9
13	8.2	7.6	8.1	7.6	---	---	8.4	8.2	---	---	8.3	8.0
14	8.2	7.7	8.0	7.4	---	---	8.3	8.2	---	---	8.3	8.0
15	8.3	7.6	7.7	7.4	---	---	8.3	8.1	8.5	---	8.3	8.0
16	8.4	7.5	7.7	7.3	---	---	8.2	8.1	8.6	8.3	8.3	7.9
17	8.2	7.7	8.1	7.4	---	---	8.1	8.0	8.5	8.3	8.3	8.0
18	---	---	8.5	7.4	---	---	---	---	8.5	8.3	8.4	8.0
19	---	---	8.0	7.6	---	---	---	---	8.5	8.3	8.4	8.0
20	---	---	7.7	7.4	---	---	---	---	8.5	8.2	8.4	7.9
21	---	---	7.6	7.3	---	---	---	---	8.5	8.2	8.4	8.0
22	---	---	8.0	7.2	---	---	---	---	8.5	8.2	8.4	8.0
23	---	---	7.8	7.4	---	---	---	---	8.6	8.2	8.4	8.0
24	---	---	8.0	7.5	---	---	---	---	8.4	8.1	8.4	8.0
25	---	---	8.1	7.6	---	---	---	---	8.4	8.1	8.4	8.0
26	---	---	7.9	7.4	---	---	---	---	8.5	8.0	8.4	8.1
27	---	---	7.8	7.3	---	---	---	---	8.4	8.0	8.4	8.0
28	---	---	7.9	7.4	---	---	---	---	8.3	7.9	8.4	8.0
29	---	---	8.0	7.6	---	---	---	---	8.3	7.9	8.4	8.0
30	---	---	8.0	7.6	---	---	---	---	8.4	8.0	8.4	8.0
31	---	---	7.9	7.7	---	---	---	---	8.3	8.0	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	8.4	7.9

07079300 EAST FORK ARKANSAS RIVER AT HIGHWAY 24 NEAR LEAOWILLE, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11.8	4.2	6.5	1.9	1.6	.3	.5	.1	1.8	.1	3.8	.1
2	7.6	4.8	4.6	.8	.4	.3	.9	.1	2.0	.1	4.1	.6
3	5.9	3.2	4.3	.4	.4	.3	1.1	.1	2.0	.1	5.7	.5
4	10.5	1.6	4.5	.4	.4	.3	1.2	.1	2.3	.2	5.0	1.1
5	10.6	2.0	3.4	1.1	1.0	.3	1.2	.5	2.2	.1	2.2	.1
6	10.9	2.4	1.7	.4	1.2	.3	1.4	.2	2.4	.1	3.1	.1
7	7.9	3.2	3.3	.4	.9	.3	1.2	.1	2.5	.1	2.9	.1
8	7.1	2.0	1.8	.4	2.0	.3	1.2	.1	2.1	---	2.4	.1
9	7.1	.0	3.3	.4	2.2	.3	.8	.1	---	---	3.1	.1
10	8.9	.4	4.3	.4	2.2	.3	1.0	.1	---	---	4.7	.2
11	5.2	1.2	4.7	.4	2.3	.3	1.3	.1	---	---	5.4	.8
12	6.2	.0	4.7	.4	2.3	.4	1.1	.1	---	---	5.2	.2
13	7.3	.3	4.4	.4	2.2	.5	1.2	.1	---	---	4.7	.1
14	9.2	1.1	5.5	.4	2.6	.5	1.8	.5	3.3	.0	5.4	.5
15	9.0	1.7	5.0	.4	.7	.3	1.6	.2	4.2	.2	4.9	.1
16	8.1	1.6	4.6	.6	.4	.3	1.3	.1	3.8	.3	3.6	.1
17	6.9	.4	5.3	.4	1.4	.3	1.2	.1	3.4	.4	4.9	.1
18	7.6	.4	6.2	1.9	1.5	.3	1.1	.1	2.1	.1	6.5	.1
19	5.2	3.2	6.0	1.2	.9	.4	1.2	.1	2.0	.1	7.2	.1
20	3.6	.5	4.6	1.5	---	.3	1.4	.1	3.8	.2	6.6	.9
21	5.7	.4	2.4	.4	.9	---	1.1	.1	3.7	.1	3.0	.1
22	7.3	.4	1.8	.4	---	---	1.0	.1	4.0	.1	3.9	.1
23	7.4	1.3	2.1	.4	---	---	.6	.0	4.1	.1	6.4	.1
24	8.4	1.7	3.0	.4	---	---	.5	.0	3.2	.1	7.4	.1
25	8.4	1.5	3.3	.3	---	---	1.0	.1	2.6	.1	5.3	.8
26	7.5	1.5	2.5	.3	---	---	.8	.0	2.9	.1	6.5	.8
27	8.3	1.3	1.1	.4	.5	---	1.2	.1	3.0	.1	6.9	.6
28	8.4	1.6	.8	.4	.4	.1	1.0	.1	2.0	.1	6.2	.1
29	8.0	1.3	1.3	.4	.4	.1	1.1	.1	---	---	2.8	.1
30	8.0	1.6	1.9	.3	.5	.1	.9	.1	---	---	5.4	.1
31	7.3	1.5	---	---	.3	.1	1.3	.1	---	---	7.8	.1
MONTH	11.8	.0	6.5	.3	---	---	1.8	.0	---	---	7.8	.1
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.7	.2	11.6	.3	3.9	1.6	14.4	4.5	13.3	6.5	14.0	5.5
2	8.7	2.0	8.8	2.1	7.0	1.0	15.4	5.3	10.5	6.8	14.6	7.0
3	5.7	.7	9.1	1.1	6.0	1.6	14.5	5.4	10.6	6.7	14.8	5.7
4	9.1	.1	4.9	2.0	9.9	2.6	15.0	5.3	13.2	7.4	11.7	6.7
5	9.8	.8	9.3	.5	8.7	2.4	15.9	5.6	14.5	6.5	10.8	6.4
6	9.8	1.4	9.3	1.9	8.6	2.8	13.1	5.6	12.7	6.3	10.1	6.6
7	8.8	1.5	9.9	3.0	9.0	2.5	11.9	6.2	13.8	5.0	12.0	6.5
8	5.0	.9	11.7	2.6	11.5	1.7	12.3	6.6	14.3	5.3	11.4	6.3
9	8.4	.1	10.4	1.9	7.6	2.2	14.2	6.1	12.1	5.2	13.8	4.4
10	5.9	1.0	8.8	1.5	8.8	2.3	12.0	5.8	11.5	5.1	11.1	7.3
11	6.4	.4	8.9	1.7	11.3	2.1	12.1	5.7	12.5	5.6	12.1	5.0
12	4.5	.1	9.6	.1	9.5	3.0	13.1	5.7	11.7	6.7	11.0	6.2
13	3.7	.1	10.7	.0	8.3	2.9	13.1	5.8	14.2	7.1	9.0	5.1
14	5.2	.1	11.2	.1	8.7	3.4	16.1	5.5	14.4	6.6	10.2	3.6
15	8.0	.1	5.6	.8	11.2	3.2	14.0	6.4	14.1	6.7	11.0	3.5
16	8.6	.8	6.0	.3	9.1	3.6	13.8	6.9	14.3	7.0	11.6	2.4
17	10.7	1.2	11.9	1.4	10.9	2.8	13.6	6.6	15.7	6.4	12.5	3.2
18	8.2	1.0	13.5	2.2	9.5	3.3	15.1	7.6	13.5	7.5	12.9	4.8
19	7.9	.0	10.9	1.0	10.5	4.1	12.8	7.1	11.6	7.6	12.5	4.6
20	7.7	1.0	7.2	1.4	13.0	3.7	13.8	6.5	11.6	6.4	12.0	4.7
21	5.9	2.3	7.5	1.5	12.9	3.7	13.3	7.1	13.9	5.5	11.9	4.0
22	10.0	1.7	10.0	.8	11.7	5.0	10.5	7.1	13.1	6.6	12.3	3.9
23	7.6	2.2	7.4	.8	12.4	3.2	14.0	7.1	13.5	5.5	11.0	2.4
24	9.3	2.1	6.3	1.5	12.6	3.8	9.9	6.8	12.9	6.3	12.0	2.8
25	8.3	1.6	9.7	.8	12.1	3.9	11.1	6.1	16.4	6.2	12.4	3.3
26	6.3	1.1	9.7	1.2	11.4	4.1	10.2	5.1	14.1	6.5	11.5	---
27	6.0	.3	10.5	.4	10.3	3.5	14.5	4.7	15.4	6.4	11.0	3.7
28	8.6	.0	9.1	.4	13.9	5.4	15.5	5.2	11.4	6.8	10.6	3.7
29	7.5	.6	9.7	.2	12.6	5.2	14.1	6.3	15.0	5.4	9.6	4.1
30	8.8	.1	8.6	.4	14.5	5.7	14.2	6.4	14.3	6.9	9.7	4.9
31	---	---	6.5	.8	---	---	14.6	6.0	12.3	6.1	---	---
MONTH	10.7	.0	13.5	.0	14.5	1.0	16.1	4.5	16.4	5.0	14.8	---

07081200 ARKANSAS RIVER NEAR LEADVILLE, CO

LOCATION.--Lat 39°15'26", long 106°20'35", in NW¼NW¼ sec. 21, T.9 S, R.80 W., Lake County, Hydrologic Unit 11020001, on right bank, 500 ft downstream from confluence of East Fork Arkansas River and Tennessee Creek, 0.5 mi downstream from highway bridge, and 2.8 mi northwest of Leadville.

DRAINAGE AREA.--98.8 mi² (revised).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to September 1983. April 1990 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 9,730 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 19 to May 3. Records good except for estimated daily discharges, which are poor. Transmountain diversions from Colorado River Basin enters above this station (see elsewhere in this report). Small diversions upstream for irrigation and municipal use, amounts unknown.

AVERAGE DISCHARGE.--17 years (water years 1967-83, 1991), 72.0 ft³/s; 52,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,090 ft³/s, June 21, 1983, gage height, 4.30 ft; minimum daily, 7.0 ft³/s Feb. 3-20, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 551 ft³/s at 0330 June 12, gage height, 3.57 ft; minimum daily, 11 ft³/s, Dec. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	28	19	16	19	16	19	20	313	166	75	37
2	32	29	18	18	19	16	19	20	286	147	72	37
3	39	29	17	18	18	17	19	21	242	145	73	36
4	34	28	18	18	18	18	19	22	211	134	101	35
5	33	29	18	18	17	17	20	21	255	127	80	34
6	30	27	17	18	17	15	21	24	338	122	75	35
7	31	29	18	18	17	14	21	29	348	121	88	37
8	35	27	18	17	17	14	20	54	349	131	70	37
9	31	28	18	17	17	15	20	92	426	132	62	37
10	32	27	19	17	17	17	20	114	371	120	62	36
11	35	31	18	17	17	16	19	105	390	115	58	38
12	31	29	17	17	17	15	19	92	464	110	58	41
13	30	30	16	18	16	16	22	85	408	108	69	41
14	29	30	16	17	16	16	21	95	460	95	58	40
15	28	30	15	17	17	16	20	108	438	87	55	43
16	28	28	17	17	17	16	19	85	400	86	52	42
17	29	29	15	17	16	16	20	74	322	93	49	38
18	29	28	14	17	15	18	20	120	302	93	46	35
19	32	26	15	17	15	18	20	192	271	88	47	34
20	34	24	15	17	16	17	19	226	274	90	54	32
21	31	22	14	17	16	17	19	259	260	92	48	32
22	30	20	13	17	17	16	20	278	255	105	42	30
23	33	21	11	17	16	17	20	294	242	109	38	30
24	33	22	12	17	16	17	20	245	225	101	38	28
25	33	23	12	17	15	17	21	204	210	119	41	27
26	32	22	12	17	16	17	21	268	191	96	51	26
27	31	20	13	17	16	17	20	303	176	103	53	25
28	29	19	15	17	16	16	20	321	166	84	47	26
29	28	20	14	17	---	15	20	310	180	75	46	26
30	28	21	14	17	---	16	20	336	183	69	40	27
31	28	---	15	17	---	18	---	318	---	68	38	---
TOTAL	967	776	483	533	466	506	598	4735	8956	3331	1786	1022
MEAN	31.2	25.9	15.6	17.2	16.6	16.3	19.9	153	299	107	57.6	34.1
MAX	39	31	19	18	19	18	22	336	464	166	101	43
MIN	28	19	11	16	15	14	19	20	166	68	38	25
AC-FT	1920	1540	958	1060	924	1000	1190	9390	17760	6610	3540	2030

WTR YR 1991 TOTAL 24159 MEAN 66.2 MAX 464 MIN 11 AC-FT 47920

07081200 ARKANSAS RIVER NEAR LEADVILLE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1990 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1990 to current year.

WATER TEMPERATURE: May 1990 to current year.

pH: May 1990 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance, daily mean pH, and daily mean water temperature data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 355 microsiemens, Mar. 9, 1991; minimum, 56 microsiemens, May 9, 1991.

WATER TEMPERATURE: Maximum, 18.7°C, July 30, 1991; minimum, 0.0°C, many days.

pH: Maximum, 8.7 units, July 20, 1991; minimum, 6.2 units, June 11, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 355 microsiemens, Mar. 9; minimum, 56 microsiemens, May 9.

WATER TEMPERATURE: Maximum, 18.7°C, July 30; minimum, 0.0°C, on many days.

pH: Maximum, 8.7 units, July 20; minimum, 7.3 units, Aug. 25-26.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216	213	213	225	270	283	---	220	83	112	129	174
2	207	211	209	228	268	268	---	189	91	105	129	175
3	188	202	217	226	275	270	---	168	99	89	127	178
4	202	209	223	225	276	272	---	159	111	93	124	169
5	202	204	218	221	273	280	---	184	102	95	122	165
6	208	206	217	220	272	265	---	179	89	97	141	176
7	208	206	226	224	273	254	---	158	86	96	138	186
8	192	203	212	227	272	257	---	131	89	95	142	181
9	195	209	216	226	271	251	---	81	84	95	150	179
10	199	213	214	229	270	265	238	102	84	97	163	172
11	189	215	218	232	272	263	235	109	84	99	165	176
12	196	217	217	227	273	257	240	115	80	103	169	173
13	206	217	213	236	280	257	232	118	82	105	167	166
14	211	216	205	232	277	258	237	113	80	113	174	163
15	211	213	207	230	271	255	248	107	83	117	175	166
16	213	205	214	221	268	256	235	107	83	116	177	164
17	218	215	213	226	266	258	228	121	96	114	176	163
18	230	205	213	233	259	249	210	119	121	115	178	167
19	221	211	---	234	263	260	217	93	105	119	182	175
20	203	217	---	---	270	266	209	86	95	116	178	185
21	214	206	---	---	267	258	204	82	96	118	176	186
22	221	205	---	---	258	265	229	79	96	123	178	190
23	208	209	---	243	265	271	202	76	97	124	180	188
24	208	211	---	244	262	267	192	82	101	126	181	190
25	210	212	---	268	---	271	174	96	101	117	178	188
26	210	209	---	270	---	281	170	85	108	120	172	186
27	213	207	---	275	---	---	185	78	111	125	167	187
28	221	202	---	259	264	---	199	77	118	129	163	189
29	224	212	---	259	---	---	208	81	107	132	169	192
30	233	212	---	252	---	---	215	81	110	132	174	192
31	220	---	---	259	---	---	---	83	---	132	169	---
MEAN	210	210	---	---	---	---	---	115	96	112	162	178

07081200 ARKANSAS RIVER NEAR LEADVILLE, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.3	8.0	8.2	8.0	8.1	7.8	---	---	8.4	8.1	8.5	8.4
2	8.2	7.9	8.2	8.0	8.0	7.9	---	---	8.4	8.2	8.5	8.4
3	8.2	7.9	8.1	8.0	8.0	7.8	---	---	8.5	8.2	8.5	8.3
4	8.3	7.8	8.1	8.0	7.9	7.8	---	---	8.5	8.2	8.5	8.4
5	8.2	7.9	8.2	8.0	7.9	7.9	---	---	8.5	8.2	8.5	8.4
6	8.3	7.9	8.1	8.0	8.0	7.9	---	---	8.5	8.2	8.5	8.3
7	8.3	7.9	8.1	8.0	8.0	7.9	---	---	8.5	8.2	8.4	8.3
8	8.2	7.9	8.1	7.9	7.9	7.9	---	---	8.5	8.4	8.4	8.3
9	8.2	7.8	8.1	7.8	8.0	7.8	---	---	8.5	8.3	8.4	8.0
10	8.2	7.8	8.1	7.9	8.0	7.8	---	---	8.5	8.3	8.4	8.2
11	8.2	7.8	8.0	7.8	8.0	7.9	---	---	8.5	8.2	8.4	8.3
12	8.2	7.8	8.1	7.8	8.0	7.9	---	---	8.5	8.3	8.4	8.2
13	8.2	7.7	8.1	7.8	8.0	7.9	---	---	8.5	8.5	8.4	8.1
14	8.2	7.8	8.0	7.9	8.0	7.9	---	---	8.5	8.4	8.4	8.2
15	8.2	7.8	8.1	7.9	8.0	7.9	---	---	8.5	8.3	8.4	8.1
16	8.3	7.8	8.1	7.9	8.0	7.9	---	---	8.5	8.4	8.4	8.2
17	8.0	7.9	8.1	8.0	8.0	7.9	---	---	8.5	8.3	8.4	8.1
18	8.0	7.7	8.1	8.0	8.0	7.9	---	---	8.5	8.3	8.4	8.1
19	8.0	7.8	8.1	8.0	8.0	7.9	---	---	8.5	8.2	8.4	8.1
20	7.9	7.7	8.2	8.1	8.0	8.0	---	---	8.5	8.3	8.4	8.2
21	7.9	7.7	8.1	8.0	8.0	7.9	---	---	8.5	8.3	8.4	8.2
22	7.9	7.7	8.2	7.8	8.0	7.9	---	---	8.5	8.3	8.3	8.1
23	8.0	7.7	8.2	8.0	---	---	8.4	8.1	8.5	8.3	8.3	8.1
24	8.0	7.8	8.2	8.0	---	---	8.4	8.0	8.5	8.4	8.3	8.2
25	8.0	7.7	8.2	8.0	---	---	8.4	8.1	8.5	8.3	8.3	8.2
26	8.0	7.7	8.2	8.0	---	---	8.4	8.1	8.5	8.3	8.4	8.3
27	8.0	7.7	8.2	7.9	---	---	8.4	8.2	8.5	8.3	---	---
28	8.0	7.7	8.1	7.8	---	---	8.4	8.2	8.5	8.4	---	---
29	8.0	7.7	8.2	7.8	---	---	8.4	8.3	---	---	---	---
30	8.1	7.8	8.1	7.8	---	---	8.4	8.2	---	---	---	---
31	8.2	7.9	---	---	---	---	8.4	8.1	---	---	---	---
MONTH	8.3	7.7	8.2	7.8	---	---	---	---	8.5	8.1	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.6	8.2	8.0	7.9	---	---	7.9	7.5	8.3	8.1
2	---	---	8.5	8.3	8.0	7.9	---	---	8.1	7.5	8.3	8.1
3	---	---	8.4	8.1	8.0	7.9	---	---	8.1	7.7	8.3	8.1
4	---	---	8.3	8.1	8.1	8.0	---	---	8.0	7.7	8.3	8.1
5	---	---	8.4	8.2	8.1	8.0	---	---	8.0	7.6	8.2	8.1
6	---	---	8.4	8.1	8.0	7.9	---	---	8.1	7.6	8.3	8.1
7	---	---	8.3	7.9	8.0	7.8	---	---	8.0	7.7	8.3	8.1
8	---	---	8.1	7.9	8.1	7.9	---	---	8.0	7.6	8.3	8.1
9	---	---	8.1	7.9	8.0	7.9	---	---	8.1	7.7	8.3	8.1
10	8.3	8.0	8.3	7.9	8.0	7.8	---	---	8.3	7.8	8.3	8.1
11	8.1	8.0	8.4	7.9	8.0	7.7	---	---	8.1	7.7	8.4	8.1
12	8.0	8.0	8.0	7.9	7.9	7.6	---	---	8.1	7.7	8.3	8.1
13	8.1	8.0	8.1	7.9	8.0	7.8	---	---	8.0	7.7	8.3	8.1
14	8.1	7.9	8.0	7.9	7.9	7.7	---	---	8.0	7.7	8.3	8.1
15	8.0	7.8	8.0	7.9	8.0	7.7	---	---	8.0	7.7	8.4	8.1
16	8.0	7.8	8.1	7.9	7.9	7.7	---	---	8.0	7.6	8.3	8.1
17	8.0	7.9	8.2	8.0	7.9	7.8	8.0	7.9	7.9	7.5	8.1	7.8
18	8.2	8.0	8.2	8.0	7.9	7.7	8.4	7.9	7.9	7.6	7.8	7.7
19	8.3	8.2	8.0	7.9	8.0	7.9	8.5	8.3	8.0	7.6	7.8	7.7
20	8.4	8.3	7.9	7.8	8.0	7.9	8.7	7.9	7.8	7.4	7.8	7.7
21	8.5	8.4	7.9	7.7	8.2	7.9	8.6	7.8	7.7	7.4	8.2	7.7
22	8.6	8.4	7.9	7.7	8.2	8.0	8.4	8.0	7.9	7.4	8.3	8.0
23	8.5	8.3	7.8	7.7	8.2	8.0	8.5	8.2	8.0	7.5	8.3	8.0
24	8.5	8.2	7.9	7.8	8.2	8.1	8.4	8.2	7.9	7.4	8.2	8.0
25	8.4	8.2	8.0	7.9	---	---	8.4	8.0	7.9	7.3	8.2	7.9
26	8.4	8.2	8.0	7.8	---	---	8.3	7.9	7.7	7.3	8.1	7.9
27	8.4	8.1	7.9	7.8	---	---	8.1	7.7	7.9	7.4	8.1	---
28	8.5	8.1	7.9	7.8	---	---	8.0	7.5	7.9	7.5	---	---
29	8.6	8.2	8.0	7.8	---	---	7.8	7.4	8.1	7.7	---	---
30	8.6	8.3	8.0	7.9	---	---	7.9	7.4	8.6	8.1	---	---
31	---	---	8.0	7.9	---	---	8.0	7.6	8.3	8.1	---	---
MONTH	---	---	8.6	7.7	---	---	---	---	8.6	7.3	---	---

07081200 ARKANSAS RIVER NEAR LEADVILLE, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11.3	4.9	5.7	1.2	1.1	.0	.6	.0	.8	.0	1.2	.0
2	8.0	5.6	4.0	.2	.2	.0	.6	.0	.8	.0	1.4	.2
3	6.5	3.5	2.2	.0	.5	.0	.6	.0	.8	.0	2.0	.0
4	10.2	1.8	2.3	.0	1.0	.0	.4	.0	1.0	.0	2.0	.2
5	10.3	2.6	1.9	.2	.9	.0	.5	.0	.9	.0	1.0	.0
6	10.7	3.0	.6	.0	.6	.0	.5	.0	1.0	.0	1.0	.0
7	8.1	4.2	.4	.0	1.1	.0	.5	.0	1.2	.0	.9	.0
8	6.5	2.5	.4	.0	1.0	.0	.5	.0	1.1	.0	.5	.0
9	6.2	.6	.9	.0	1.1	.0	.3	.0	1.1	.0	.5	.0
10	8.0	.6	.8	.0	1.1	.0	.5	.0	1.3	.0	1.9	.0
11	6.5	1.6	1.0	.0	1.2	.0	.6	.0	1.1	.0	2.3	.3
12	6.0	.4	1.4	.0	.8	.0	.7	.0	.9	.0	2.0	.0
13	7.5	.7	1.3	.0	.8	.0	.7	.0	.3	.0	1.7	.0
14	8.4	1.7	2.6	.0	.1	.0	.4	.0	1.0	.0	2.1	.0
15	8.8	2.2	2.5	.0	.5	.0	.7	.0	1.4	.0	1.4	.0
16	7.9	2.0	2.2	.0	.6	.0	.3	.0	1.1	.0	1.6	.0
17	6.0	.9	3.0	.0	.8	.0	.2	.0	1.4	.0	2.2	.0
18	6.5	.0	4.1	.4	.2	.0	.4	.0	.9	.0	2.6	.0
19	5.5	2.6	3.6	.0	.5	.0	.7	.0	.5	.0	2.7	.0
20	2.6	.0	3.0	.3	.1	.0	.4	.0	1.4	.0	3.0	.2
21	3.0	.0	.8	.0	.1	.0	.3	.0	1.5	.0	1.0	.0
22	5.0	.0	.4	.0	.0	.0	.2	.0	1.6	.0	1.7	.0
23	5.6	.7	.9	.0	.0	.0	.2	.0	1.3	.0	2.6	.0
24	7.4	.9	.9	.0	.0	.0	.3	.0	.8	.0	3.2	.0
25	7.4	.5	1.1	.0	.2	.0	.5	.0	.8	.0	2.0	.0
26	6.8	.4	.9	.0	.2	.0	.4	.0	1.0	.0	2.8	.2
27	7.1	.2	.3	.0	.4	.0	.6	.0	1.2	.0	3.1	.0
28	7.5	.6	.2	.0	.5	.0	.6	.0	.6	.0	---	---
29	7.1	.3	.3	.0	.2	.0	.6	.0	---	---	---	---
30	7.1	.6	1.0	.0	.2	.0	.3	.0	---	---	---	---
31	6.5	.3	---	---	.5	.0	.5	.0	---	---	---	---
MONTH	11.3	.0	5.7	.0	1.2	.0	.7	.0	1.6	.0	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	9.2	.0	4.6	2.5	15.0	6.2	14.6	9.1	13.6	7.4
2	---	---	7.9	.5	7.0	1.5	16.1	6.8	12.9	8.7	15.4	7.1
3	---	---	7.5	.0	7.0	2.3	15.2	7.2	16.5	8.7	14.8	8.1
4	---	---	4.3	.5	11.5	3.6	16.1	6.5	16.7	9.8	14.1	7.0
5	---	---	7.7	.0	10.3	4.4	15.9	7.0	18.1	9.2	12.6	8.0
6	---	---	7.3	.5	9.5	4.8	13.3	7.2	14.1	9.3	12.1	7.2
7	---	---	6.0	1.1	10.1	4.0	13.0	7.8	16.6	7.5	10.7	7.7
8	---	---	6.0	.4	12.4	3.6	13.0	7.9	18.0	7.7	11.5	7.1
9	---	---	5.6	.8	8.7	4.0	14.4	7.6	14.9	7.9	10.0	6.9
10	3.1	---	7.1	.3	9.9	4.3	13.5	7.6	13.2	7.4	13.4	4.9
11	2.4	.0	7.7	.4	11.7	3.7	12.3	7.2	15.3	7.3	11.3	8.5
12	1.2	.0	8.3	.0	10.5	4.2	13.0	7.2	14.4	8.9	11.9	5.5
13	1.0	.0	9.9	.0	9.3	4.3	14.1	6.9	16.5	9.5	11.2	6.9
14	2.6	.1	9.0	.2	10.3	4.9	16.2	6.9	16.1	9.8	9.6	5.9
15	4.5	.1	4.0	1.0	12.2	5.0	15.3	8.0	15.2	8.7	10.5	4.4
16	---	---	4.4	.4	10.1	5.5	15.5	8.2	16.8	8.3	10.6	4.2
17	6.6	.2	10.2	1.2	12.0	4.3	14.1	7.5	18.0	7.9	11.2	3.1
18	5.3	.0	11.5	2.8	10.6	5.2	15.8	8.9	16.2	9.5	12.2	3.8
19	4.5	.0	8.6	1.8	10.6	5.6	15.0	9.4	14.3	9.5	12.7	5.4
20	5.5	.6	7.2	2.2	13.7	5.1	16.0	8.6	15.3	7.7	12.1	5.6
21	4.6	1.4	8.3	2.4	13.6	5.5	14.6	9.4	16.7	7.1	12.7	5.2
22	6.5	1.0	9.4	1.5	13.1	6.8	14.7	9.5	14.6	7.6	12.3	4.8
23	6.7	1.3	7.3	2.0	13.2	4.9	17.4	9.2	15.4	6.7	11.9	4.6
24	7.7	1.3	6.4	2.4	13.5	5.7	12.8	9.7	14.0	7.6	10.5	3.1
25	5.7	.2	9.7	1.7	12.7	5.6	13.7	8.7	17.1	7.9	11.4	3.3
26	4.9	.0	10.4	2.8	11.9	5.5	13.2	7.4	16.8	7.2	11.2	3.6
27	4.2	.0	10.8	2.1	10.4	4.7	16.1	7.2	17.8	8.7	10.5	4.0
28	4.6	.0	9.6	1.9	14.0	6.5	17.8	7.6	15.2	9.0	10.9	3.8
29	7.7	.0	10.4	1.6	12.9	6.6	16.3	8.5	18.5	7.5	9.4	4.1
30	7.3	.0	9.7	2.0	15.3	7.2	18.7	8.2	14.9	8.1	10.0	5.2
31	---	---	7.2	2.5	---	---	17.5	8.1	15.0	7.7	---	---
MONTH	---	---	11.5	.0	15.3	1.5	18.7	6.2	18.5	6.7	15.4	3.1

07082400 TURQUOISE LAKE NEAR LEADVILLE, CO

LOCATION.--Lat 39°15'10", long 106°22'26", in SW¼NE¼ sec.19, T.9 S., R.80 W., Lake County, Hydrologic Unit 11020001, in control house of Sugar Loaf Dam on Lake Fork, 4.0 mi west of Leadville, and 4.6 mi upstream from mouth.

DRAINAGE AREA.--28.1 mi².

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Nonrecording gage read once daily. Datum of gage is 9,754.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation); gage readings have been reduced to elevations above National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir formed by earthfill dam completed in 1909, capacity, 17,400 acre-ft. Enlargement of dam began Dec. 8, 1965, and closure was made Apr. 15, 1968. Enlarged capacity, 129,400 acre-ft at elevation 9,869.4 ft, crest of spillway. Dead storage, 2,770 acre-ft below elevation 9,765.90 ft, sill of lowest outlet. Figures given are total contents. Since Apr. 15, 1968, Turquoise Lake has been a regulatory reservoir for the Fryingpan-Arkansas project and stores water imported from the Colorado River basin through Charles H. Boustead Tunnel for irrigation, municipal water supply, and power development. It also stores water for industrial use, and water imported from the Colorado River basin through Busk-Ivanhoe tunnel for irrigation and through Homestake tunnel for municipal water supply.

COOPERATION.--Records provided by U. S. Bureau of Reclamation.

EXTREMES (at 0800 of following day) FOR PERIOD OF RECORD.--Maximum contents, 131,820 acre-ft, July 10, 1983, elevation, 9,870.73 ft; minimum since appreciable storage was attained, 14,510 acre-ft, Oct. 1, 1968, elevation, 9,782.85 ft.

EXTREMES (at 0800 of the following day) FOR CURRENT YEAR.--Maximum contents, 125,700 acre-ft, Oct. 1, elevation, 9,867.32 ft; minimum, 71,080 acre-ft, May 1, elevation, 9,834.04 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	9,867.22	125,520	-
Oct. 31.	9,866.57	124,370	-1,150
Nov. 30.	9,863.04	118,180	-6,190
Dec. 31.	9,862.27	116,840	-1,340
CAL YR 1990			+14,440
Jan. 31.	9,855.93	105,990	-10,850
Feb. 28.	9,850.07	96,220	-9,770
Mar. 31.	9,843.87	86,190	-10,030
Apr. 30.	9,834.52	71,790	-14,400
May 31.	9,842.55	84,100	+12,310
June 30.	9,864.08	119,990	+35,890
July 31.	9,866.06	123,470	+3,480
Aug. 31.	9,864.06	119,960	-3,510
Sept. 30.	9,863.72	119,360	-600
WTR YR 1991			-6,160

07083000 HALFMOON CREEK NEAR MALTA, CO
(Hydrologic bench-mark station)

LOCATION.--Lat 39°10'20", long 106°23'19", in SE¼SE¼ sec.13, T.10 S., R.81 W., Lake County, Hydrologic Unit 11020001, on right bank 1.4 mi upstream from culvert on Halfmoon Campground road, 3.3 mi upstream from mouth, and 4.3 mi southwest of Malta.

DRAINAGE AREA.--23.6 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 2121: Drainage area at site 1.4 mi downstream. WRD Colo. 1968: 1967 (M). WDR CO-79-1: 1976 (M). WDR CO-80-1: 1954 (M).

GAGE.--Water-stage recorder with satellite telemetry and concrete control since 1966. Elevation of gage is 9,830 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 19, 1966, at sites 1.4 mi downstream at different datums.

REMARKS.--Estimated daily discharges: Dec. 3 to Mar. 22. Records good except for estimated daily discharges and discharges Mar. 23 to Apr. 16, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--45 years, 29.0 ft³/s; 21,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 615 ft³/s, June 30, 1984, gage height, 3.77 ft, from rating curve extended above 300 ft³/s; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 11	2100	*223	*3.17	June 20	2100	164	2.98

Minimum daily discharge, 2.0 ft³/s, Feb. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	8.1	5.8	4.8	4.0	2.4	3.4	3.8	66	91	29	14
2	14	7.8	6.5	4.9	3.8	2.3	3.6	5.6	54	86	29	14
3	15	8.0	5.4	5.0	3.5	2.5	3.6	5.8	47	81	32	14
4	14	8.2	5.6	4.8	3.6	2.6	3.6	5.4	46	77	38	14
5	14	9.0	5.6	4.8	3.7	2.6	3.8	5.4	60	74	31	13
6	13	6.8	5.4	4.8	3.6	2.5	4.1	5.9	78	69	30	13
7	13	6.9	5.6	4.8	3.8	2.4	4.1	6.7	74	65	29	13
8	14	6.8	6.6	4.7	3.4	2.5	4.1	8.4	92	71	26	14
9	13	7.0	7.4	4.1	3.0	2.7	3.6	13	120	73	25	13
10	13	6.7	8.0	4.4	3.1	2.6	3.4	19	131	63	24	13
11	13	6.7	7.8	4.5	3.1	2.5	3.2	25	155	55	23	13
12	12	6.7	7.6	4.2	2.9	2.7	3.2	26	154	51	23	14
13	11	6.6	7.4	4.4	2.7	2.9	3.4	24	151	49	25	14
14	11	6.6	6.8	4.3	2.6	3.0	3.6	31	161	45	22	13
15	11	6.7	6.4	4.2	2.8	3.1	3.8	33	150	44	21	14
16	10	6.8	7.0	3.8	2.6	3.0	3.9	24	139	45	22	14
17	10	6.8	6.8	3.8	2.3	3.2	4.1	22	137	48	20	13
18	11	6.6	6.8	4.2	2.0	3.3	4.7	34	132	49	19	12
19	11	6.9	7.0	4.1	2.1	3.6	3.9	50	125	47	19	11
20	11	6.5	6.8	3.7	2.3	3.5	4.1	50	131	47	19	11
21	11	6.0	5.8	3.7	2.3	3.8	4.1	58	128	44	17	11
22	13	5.4	4.8	3.6	2.5	3.6	3.9	72	124	53	17	11
23	11	5.5	4.0	3.4	2.4	3.4	4.4	72	116	52	16	10
24	10	5.4	3.9	3.5	2.3	3.4	4.7	59	112	45	16	10
25	9.9	5.1	3.9	3.4	2.1	3.4	5.7	59	105	42	16	9.9
26	9.8	5.2	4.1	3.6	2.2	3.6	5.5	82	93	41	17	9.9
27	9.3	5.0	4.4	3.5	2.2	3.4	4.7	90	82	38	16	9.9
28	9.0	4.6	4.7	3.6	2.3	3.2	5.5	87	98	34	17	10
29	9.0	5.2	4.5	3.5	---	3.2	4.4	81	105	32	17	9.7
30	8.6	5.2	4.6	3.6	---	4.7	3.9	84	104	31	15	9.7
31	8.4	---	4.7	3.8	---	3.6	---	80	---	30	15	---
TOTAL	356.0	194.8	181.7	127.5	79.2	95.2	122.0	1222.0	3270	1672	685	365.1
MEAN	11.5	6.49	5.86	4.11	2.83	3.07	4.07	39.4	109	53.9	22.1	12.2
MAX	15	9.0	8.0	5.0	4.0	4.7	5.7	90	161	91	38	14
MIN	8.4	4.6	3.9	3.4	2.0	2.3	3.2	3.8	46	30	15	9.7
AC-FT	706	386	360	253	157	189	242	2420	6490	3320	1360	724

CAL YR 1990 TOTAL 9275.0 MEAN 25.4 MAX 245 MIN 3.3 AC-FT 18400
WTR YR 1991 TOTAL 8370.5 MEAN 22.9 MAX 161 MIN 2.0 AC-FT 16600

ARKANSAS RIVER BASIN

07083000 HALFMOON CREEK NEAR MALTA, CO--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: May 1967 to September 1982.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 26.0°C, Aug. 16, 1980; minimum, 0.0°C, on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT									
3D...	0940	9.1	85	8.1	0.5	0.8	9.2	K2	21
DEC									
19...	1230	7.1	102	7.8	1.0	4.4	9.5	K2	<2
FEB									
20...	1330	2.3	100	7.7	0.0	1.0	10.0	<1	K2
APR									
16...	1530	4.1	90	8.0	3.5	1.5	8.8	<1	<1
JUN									
25...	1205	89	50	7.6	8.5	1.0	7.8	<1	<1
AUG									
13...	1530	25	80	7.7	14.5	0.4	--	<1	K5

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA-(A) LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	BICAR-)(B) BONATE WATER DIS IT FIELD MG/L AS HCO3
OCT								
30...	40	10	3.7	1.4	7	0.1	0.5	40
DEC								
19...	45	11	4.2	1.7	8	0.1	0.6	47
FEB								
20...	45	11	4.3	1.9	8	0.1	0.8	48
APR								
16...	45	11	4.2	1.9	8	0.1	0.6	45
JUN								
25...	24	6.3	2.0	0.8	7	0.1	0.5	21
AUG								
13...	37	9.4	3.2	1.2	7	0.1	0.6	32

DATE	CAR-(C) BONATE WATER DIS IT FIELD MG/L AS CO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, 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 CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT								
30...	0	5.7	<0.1	<0.1	5.4	48	--	--
DEC								
19...	0	6.3	<0.1	<0.1	6.3	49	--	--
FEB								
20...	0	5.9	0.6	<0.1	6.9	62	61	0.39
APR								
16...	0	5.7	<0.1	<0.1	6.2	63	--	--
JUN								
25...	0	3.8	0.3	0.1	3.5	25	30	6.01
AUG								
13...	0	4.0	0.3	0.1	4.5	46	43	3.11

A Field total dissolved alkalinity, determined by incremental titration method.

B Field dissolved bicarbonate, determined by incremental titration method.

C Field dissolved carbonate, determined by incremental titration method.

K Based on non-ideal colony counts.

07083000 HALFMoon CREEK NEAR MALTA, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
OCT 30...	<0.01	0.10	0.02	0.01	0.20	<0.01	<0.01	<0.01
DEC 19...	<0.01	0.20	0.03	0.03	<0.20	0.03	<0.01	<0.01
FEB 20...	<0.01	0.20	0.02	<0.01	<0.20	<0.01	<0.01	0.01
APR 16...	<0.01	0.14	<0.01	<0.01	0.30	0.03	<0.01	<0.01
JUN 25...	<0.01	0.09	0.01	0.01	<0.20	0.01	<0.01	<0.01
AUG 13...	<0.01	0.10	<0.01	<0.01	<0.20	<0.01	<0.01	<0.01

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 30...	<10	<1	20	<0.5	<1	<1	<3	<1	45	<1
FEB 20...	<10	<1	22	<0.5	2	<1	<3	2	31	4
JUN 25...	10	<1	15	<0.5	2	<1	<3	<1	32	1
AUG 13...	<10	<1	22	<0.5	<1	<1	<3	<1	76	<1

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 30...	<4	5	<0.1	<10	<1	<1	<1	70	<6	<3
FEB 20...	<4	4	<0.1	<10	1	<1	<1	82	<6	16
JUN 25...	<4	3	<0.1	<10	2	<1	<1	43	<6	5
AUG 13...	<4	4	<0.1	<10	<1	<1	<1	68	<6	<3

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	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 SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
DEC 19...	1230	<0.6	4.5	1.1	<0.6	1.3	<0.6	0.09	0.10
JUN 25...	1205	<0.6	<0.6	0.7	<0.6	0.8	<0.6	0.04	0.05

ARKANSAS RIVER BASIN

07083000 HALFMOON CREEK NEAR MALTA, CO--Continued

CROSS-SECTION DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	OXYGEN, DIS- SOLVED (MG/L)
FEB						
20...	1331	2	0.0	100	7.7	9.7
20...	1332	3	0.0	97	7.8	9.7
20...	1333	4	0.0	97	7.7	9.8

MISCELLANEOUS FIELD MEASUREMENTS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
OCT					JUL				
30...	1010	9.1	85	0.5	17...	1520	46	64	11.5
MAR					AUG				
21...	1100	4.7	98	0.0	28...	1720	17	77	11.5
MAY					SEP				
22...	1340	58	50	7.0	26...	1250	11	80	8.5
JUN									
11...	1515	113	49	10.5					

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT				
30...	0940	9.1	18	0.44
DEC				
19...	1230	7.1	<1	<0.01
FEB				
20...	1330	2.3	1	<0.01
APR				
16...	1530	4.1	10	0.11
JUN				
25...	1205	89	4	0.96
AUG				
13...	1530	25	2	0.13

07083710 ARKANSAS RIVER BELOW EMPIRE GULCH NEAR MALTA, CO

LOCATION.--Lat 39°09'50", long 106°19'10", in NE¼SW¼ sec. 22, T.10 S., R.80 W., Lake County, Hydrologic Unit 11020001, at right downstream end of private road bridge, 0.1 mi downstream from Empire Gulch, 0.4 mi downstream from bridge on U.S. Highway 24, 0.6 mi upstream from Dry Union Gulch, and 4.8 mi southeast of Malta.

DRAINAGE AREA.--237 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1990 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 9,280 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 8 to Feb. 24, Apr. 6-9, May 13-22, and June 5-10. Records good except for those above 650 ft³/s and those for estimated daily discharges, which are poor. Natural flow of river affected by transmountain diversions, storage reservoirs, diversions for irrigation upstream from station (acreage unknown), and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,030 ft³/s, June 10, 1990, gage height 4.19 ft, from rating curve extended above 500 ft³/s; minimum daily discharge, 31 ft³/s Dec. 23, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 773 ft³/s at 0700 June 12, gage height, 3.71 ft, from rating curve extended above 500 ft³/s; minimum daily, 31 ft³/s, Dec. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	96	84	43	56	50	64	98	406	263	133	85
2	88	97	78	48	54	50	68	119	398	229	134	81
3	95	97	65	50	52	52	65	132	322	214	139	79
4	85	97	77	48	52	54	68	134	275	192	162	83
5	82	101	65	48	54	55	77	126	330	170	133	78
6	77	93	59	49	54	54	82	131	400	153	129	77
7	81	97	67	49	55	54	84	126	410	164	148	77
8	97	97	70	45	54	56	78	156	430	190	125	77
9	94	101	74	46	54	62	74	208	580	226	116	78
10	101	98	82	46	54	62	72	228	540	198	113	74
11	102	94	74	45	54	57	69	222	569	182	108	78
12	93	95	68	45	52	57	66	204	685	174	107	82
13	92	94	62	46	50	59	62	193	639	170	129	81
14	92	96	54	46	50	58	62	180	691	155	114	78
15	94	95	48	45	52	60	67	210	617	145	106	81
16	92	93	54	45	50	57	77	195	550	144	101	79
17	95	94	44	46	49	57	99	190	451	154	96	75
18	94	97	42	47	46	58	100	210	415	156	94	72
19	101	95	45	48	47	58	85	240	371	154	96	70
20	109	93	41	49	50	57	86	270	387	158	103	68
21	99	88	37	49	52	55	88	310	378	165	101	69
22	105	84	33	49	54	59	78	335	369	201	97	68
23	113	92	31	49	50	59	84	375	340	219	91	66
24	113	94	34	50	49	59	91	329	315	190	83	66
25	111	90	33	49	47	57	108	245	302	208	86	68
26	107	88	35	49	49	57	100	302	285	174	92	71
27	102	82	38	49	49	57	85	371	257	178	99	67
28	98	74	40	50	50	56	81	405	247	154	103	66
29	96	75	38	49	---	56	78	394	286	137	100	66
30	97	91	37	49	---	57	87	423	296	129	90	67
31	96	---	38	52	---	58	---	409	---	124	87	---
TOTAL	2980	2778	1647	1478	1439	1757	2385	7470	12541	5470	3415	2227
MEAN	96.1	92.6	53.1	47.7	51.4	56.7	79.5	241	418	176	110	74.2
MAX	113	101	84	52	56	62	108	423	691	263	162	85
MIN	77	74	31	43	46	50	62	98	247	124	83	66
AC-FT	5910	5510	3270	2930	2850	3490	4730	14820	24880	10850	6770	4420

WTR YR 1991 TOTAL 45587 MEAN 125 MAX 691 MIN 31 AC-FT 90420

07083710 ARKANSAS RIVER BELOW EMPIRE GULCH NEAR MALTA, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1990 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1990 to current year.

WATER TEMPERATURE: May 1990 to current year.

pH: May 1990 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance, daily mean pH, and daily mean water temperature data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 311 microsiemens, Sept. 5, 1990; minimum, 90 microsiemens, May 21, 1991.

WATER TEMPERATURE: Maximum, 18.9°C, Aug. 6 1990; minimum, 0.0°C, many days during the winter.

pH: Maximum, 8.8 units, Aug. 6, 1990 and Aug. 10, 1991; minimum, 7.3 units, Sept. 2, 20, 21, 1991.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 251 microsiemens, Dec. 7; minimum, 90 microsiemens, May 21.

WATER TEMPERATURE: Maximum, 18.6°C, July 30; minimum, 0.0°C, many days during the winter.

pH: Maximum, 8.8 units, Aug. 10; minimum, 7.3 units, Sept. 2, 20, 21.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	206	202	220	198	210	---	204	172	---	144	193	216
2	201	201	222	201	206	---	208	170	---	151	196	215
3	199	198	225	209	209	---	207	160	---	152	195	208
4	204	202	220	209	205	---	199	152	---	156	191	204
5	---	200	220	207	208	---	196	155	121	161	182	205
6	---	202	222	214	207	---	---	159	115	169	200	208
7	---	199	227	213	207	---	---	156	113	171	189	210
8	---	203	228	212	206	---	---	146	114	171	186	210
9	---	204	220	212	206	---	---	127	110	159	189	208
10	---	204	216	211	209	---	182	119	111	162	197	207
11	---	206	210	205	208	---	188	121	106	166	193	206
12	---	207	207	204	208	---	183	121	105	165	195	207
13	---	208	200	199	205	---	194	125	108	169	191	200
14	---	205	202	200	207	---	196	118	105	173	196	199
15	---	206	203	205	207	194	192	105	109	177	197	199
16	205	203	194	207	196	197	181	112	114	178	197	198
17	204	205	195	207	206	199	166	123	118	172	193	198
18	200	202	193	210	213	197	163	114	120	170	193	196
19	200	201	196	209	202	194	170	99	126	173	198	200
20	188	208	193	210	---	201	173	96	130	173	193	202
21	196	204	198	211	---	195	173	95	131	178	191	204
22	198	211	205	216	---	194	183	---	132	189	194	201
23	196	210	209	219	---	196	178	---	134	190	196	202
24	199	204	217	219	---	193	174	---	138	191	201	202
25	200	209	207	215	---	192	164	---	139	176	202	199
26	196	215	203	214	---	189	169	---	144	178	199	194
27	197	213	203	213	---	186	174	---	150	183	197	193
28	196	221	197	213	---	192	168	---	152	188	198	195
29	201	223	197	210	---	188	179	---	146	193	204	194
30	202	223	203	217	---	201	178	---	145	196	206	196
31	202	---	201	214	---	205	---	---	---	197	214	---
MEAN	---	207	208	210	---	---	---	---	---	173	196	203

07083710 ARKANSAS RIVER BELOW EMPIRE GULCH NEAR MALTA, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	8.3	7.7	8.4	7.4	8.0	7.5	7.9	7.6	7.7	7.6	8.0	7.9
2	8.2	7.6	7.9	7.4	7.9	7.5	7.8	7.6	7.7	7.6	8.0	7.9
3	8.3	7.6	7.9	7.4	7.8	7.4	7.9	7.6	7.7	7.6	8.0	7.8
4	8.4	7.7	8.4	7.4	7.8	7.4	8.2	7.7	7.8	7.7	7.9	7.8
5	---	---	8.4	7.6	8.1	7.4	8.2	7.8	7.7	7.7	8.0	7.8
6	---	---	8.1	7.6	8.0	7.4	8.0	7.8	7.8	7.7	8.0	7.8
7	---	---	8.0	7.5	8.3	7.8	8.2	7.8	7.8	7.7	8.1	7.8
8	---	---	7.9	7.5	8.4	8.0	8.2	7.8	7.7	7.6	8.2	7.9
9	---	---	7.9	7.5	8.2	7.9	8.2	7.8	7.6	7.6	8.1	8.0
10	---	---	7.9	7.5	8.0	7.7	8.2	7.8	7.8	7.6	8.1	8.0
11	---	---	8.0	7.5	7.9	7.6	8.3	7.8	7.8	7.7	8.2	8.1
12	---	---	8.1	7.6	8.2	7.6	8.0	7.7	7.8	7.7	8.6	8.1
13	---	---	8.2	7.6	8.2	7.6	7.9	7.7	7.8	7.8	8.3	8.2
14	---	---	8.2	7.6	8.1	7.5	7.9	7.7	7.8	7.7	8.4	8.3
15	---	---	8.3	7.7	7.9	7.4	8.0	7.8	8.4	7.7	8.6	8.2
16	8.4	7.4	8.4	7.7	---	---	7.9	7.8	8.4	7.9	8.5	8.2
17	---	---	8.3	7.6	---	---	7.9	7.8	8.2	8.0	8.7	8.2
18	8.3	7.5	8.4	7.6	---	---	7.9	7.7	8.1	7.9	8.6	8.2
19	8.3	7.5	8.4	7.7	7.7	7.5	7.8	7.7	8.0	7.9	8.6	8.1
20	8.0	7.4	8.4	7.7	8.3	7.7	7.8	7.7	8.1	7.9	8.5	8.1
21	8.2	7.5	8.4	7.7	8.2	8.0	7.8	7.6	8.1	7.9	8.5	8.1
22	8.1	7.4	8.2	7.7	8.1	7.9	7.8	7.7	8.1	7.9	8.4	8.0
23	8.1	7.4	8.3	7.8	8.0	7.8	7.7	7.7	8.0	7.8	8.4	8.0
24	8.1	7.4	8.3	7.7	7.9	7.8	7.7	7.6	8.1	7.9	8.5	8.1
25	8.2	7.5	8.3	7.7	7.8	7.7	7.6	7.6	8.0	7.9	8.5	8.1
26	8.3	7.5	8.3	7.8	7.8	7.7	7.6	7.6	8.0	7.9	8.5	8.1
27	8.2	7.5	8.3	7.7	7.8	7.6	7.6	7.5	8.0	7.9	8.5	8.1
28	8.3	7.5	8.2	7.7	7.8	7.6	7.7	7.5	8.1	8.0	8.4	8.0
29	8.3	7.5	8.1	7.6	7.8	7.6	7.7	7.7	---	---	8.4	8.1
30	8.1	7.4	8.1	7.5	7.8	7.6	7.7	7.7	---	---	8.4	8.1
31	8.3	7.4	---	---	7.8	7.5	7.7	7.6	---	---	8.4	8.1
MONTH	---	---	8.4	7.4	---	---	8.3	7.5	8.4	7.6	8.7	7.8
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	8.4	8.1	8.2	7.9	8.0	7.9	8.4	8.0	8.4	8.1	7.6	7.4
2	8.5	8.1	8.3	7.9	8.0	7.9	8.3	7.7	8.7	8.1	8.4	7.3
3	8.4	8.1	8.2	7.8	8.1	7.9	8.3	7.9	8.7	8.3	8.4	7.9
4	8.5	8.0	8.1	7.8	8.2	8.0	8.5	8.1	8.5	8.2	8.5	8.0
5	8.4	8.1	8.2	7.9	8.6	7.9	8.5	8.0	8.5	8.1	8.3	8.0
6	---	---	8.2	7.9	8.0	7.8	8.5	8.2	8.7	8.2	8.4	8.0
7	---	---	8.2	7.8	8.1	7.8	8.5	8.2	8.6	8.2	8.3	7.9
8	---	---	8.1	7.6	7.9	7.8	8.5	8.2	8.5	8.2	8.2	7.7
9	---	---	8.0	7.6	7.9	7.8	8.5	8.1	8.7	8.3	7.9	7.6
10	8.4	8.2	7.9	7.6	7.8	7.7	8.4	8.2	8.8	8.3	8.1	7.7
11	8.5	8.2	7.9	7.6	7.8	7.7	8.5	7.9	8.6	8.3	8.0	7.7
12	8.5	8.2	7.9	7.7	8.3	7.9	8.4	7.8	8.6	8.3	7.9	7.8
13	8.4	8.1	7.9	7.7	8.4	8.2	8.3	8.0	8.5	8.2	8.2	7.4
14	8.4	8.0	7.9	7.7	8.3	8.1	8.3	7.9	8.5	8.2	7.7	7.5
15	8.4	8.1	7.9	7.7	8.3	8.1	8.3	8.0	8.5	8.2	7.8	7.5
16	8.4	8.1	8.1	7.7	8.2	8.1	8.3	7.9	8.5	8.1	7.8	7.5
17	8.4	8.0	8.1	7.9	8.3	8.1	8.2	7.9	8.5	8.1	7.7	7.5
18	8.3	8.0	8.1	7.9	8.4	8.2	8.2	7.6	8.5	8.1	7.7	7.5
19	8.4	8.1	8.0	7.8	8.4	8.2	8.3	8.1	8.6	8.1	7.7	7.4
20	8.4	8.0	7.9	7.8	8.3	8.0	8.5	8.0	8.3	7.8	7.7	7.3
21	8.3	7.8	7.9	7.8	8.3	8.0	8.3	7.6	8.2	7.8	8.3	7.3
22	8.3	8.1	7.9	7.7	8.2	7.9	8.2	7.6	8.3	7.8	8.3	7.8
23	8.3	8.0	8.0	7.8	8.3	7.9	8.4	8.0	8.4	7.8	8.2	7.8
24	8.3	7.9	8.0	7.9	8.3	8.0	8.4	8.1	8.3	7.8	8.1	7.8
25	8.1	7.9	8.1	7.9	8.2	8.1	8.3	8.1	8.3	7.6	8.0	7.7
26	8.1	7.9	8.0	7.9	8.3	8.1	8.4	8.1	8.0	7.5	7.9	7.7
27	8.1	8.0	8.0	7.9	8.4	8.1	8.3	7.9	8.2	7.6	7.9	7.7
28	8.2	7.9	7.9	7.8	8.2	8.0	8.3	8.0	8.2	7.8	7.9	7.7
29	8.2	8.0	8.0	7.8	8.3	7.9	8.4	7.9	8.3	7.6	7.9	7.8
30	8.3	8.0	8.0	7.9	8.3	8.1	8.4	7.9	8.3	7.5	7.9	7.8
31	---	---	8.0	7.9	---	---	8.6	8.1	7.7	7.4	---	---
MONTH	---	---	8.3	7.6	8.6	7.7	8.6	7.6	8.8	7.4	8.5	7.3

07083710 ARKANSAS RIVER BELOW EMPIRE GULCH NEAR MALTA, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	13.1	5.5	6.3	2.0	.1	.0	.0	.0	.0	.0	3.5	.0
2	8.8	6.3	5.1	.8	.0	.0	.0	.0	.0	.0	3.4	.0
3	8.0	4.0	4.2	.0	.0	.0	.0	.0	.0	.0	4.5	.0
4	12.2	3.2	5.7	.0	.0	.0	.0	.0	.0	.0	4.1	.2
5	---	---	4.1	.7	.0	.0	.0	.0	.0	.0	1.9	.2
6	---	---	1.9	.0	.2	.0	.0	.0	.0	.0	1.9	.0
7	---	---	3.2	.0	.1	.0	.0	.0	.0	.0	1.6	.0
8	---	---	1.8	.0	.0	.0	.0	.0	.0	.0	.5	.0
9	---	---	3.1	.0	.0	.0	.0	.0	.0	.0	1.3	.0
10	---	---	5.0	.0	.3	.0	.0	.0	.0	.0	5.4	.0
11	---	---	5.0	.0	.9	.0	.0	.0	.0	.0	3.9	.0
12	---	---	4.9	.0	1.6	.0	.0	.0	.0	.0	3.0	.0
13	---	---	4.6	.0	2.6	.0	.0	.0	.0	.0	4.4	.0
14	---	---	5.6	.0	.0	.0	.0	.0	.0	.0	3.2	.0
15	---	---	5.2	.0	.0	.0	.0	.0	.8	.0	4.7	.0
16	9.8	---	4.4	.1	.0	.0	.0	.0	1.1	.0	4.4	.1
17	5.9	.1	5.7	.0	.0	.0	.0	.0	2.0	.0	5.6	.1
18	7.5	.0	5.8	1.0	.0	.0	.0	.0	.3	.0	6.0	.1
19	8.5	2.5	5.6	.4	.0	.0	.0	.0	.1	.0	4.8	.0
20	3.7	.0	3.4	1.1	.0	.0	.0	.0	1.6	.0	6.0	.1
21	5.1	.0	2.3	.0	.0	.0	.0	.0	2.3	.1	2.2	.1
22	7.0	.0	.3	.0	.0	.0	.0	.0	2.6	.0	4.1	.1
23	6.4	.1	1.1	.0	.0	.0	.0	.0	3.2	.0	6.0	.1
24	7.6	1.1	2.2	.0	.0	.0	.0	.0	2.1	.0	6.8	.1
25	8.1	1.2	3.7	.0	.0	.0	.0	.0	1.0	.0	4.9	.0
26	7.8	1.2	2.5	.0	.0	.0	.0	.0	1.8	.0	4.4	.3
27	7.8	1.1	.5	.0	.0	.0	.0	.0	2.4	.0	6.6	.1
28	8.2	1.1	.0	.0	.0	.0	.0	.0	1.6	.0	5.3	.1
29	8.0	.9	.0	.0	.0	.0	.0	.0	---	---	2.6	.1
30	8.2	1.2	.0	.0	.0	.0	.0	.0	---	---	5.3	.1
31	7.6	1.1	---	---	.0	.0	.1	.0	---	---	6.9	.1
MONTH	---	---	6.3	.0	2.6	.0	.1	.0	3.2	.0	6.9	.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	8.2	.1	11.1	.2	5.9	3.8	16.5	7.2	14.5	9.0	18.3	8.1
2	6.6	1.0	9.3	.9	7.8	3.2	17.2	8.0	12.8	8.7	17.2	8.0
3	5.1	.1	9.4	.3	8.4	3.9	16.3	8.4	16.5	8.6	15.0	8.8
4	8.2	.1	5.0	1.1	12.7	5.1	17.4	7.7	16.6	9.7	17.3	7.6
5	8.6	.1	9.1	.2	11.1	5.4	17.0	8.0	18.0	9.2	14.3	9.3
6	---	---	9.2	1.2	10.0	5.9	13.2	8.2	14.0	9.2	15.0	7.8
7	---	---	10.0	1.9	11.1	5.2	13.9	8.5	16.6	7.4	12.1	9.0
8	---	---	12.3	1.2	13.3	4.8	14.4	8.6	17.9	7.6	13.4	8.0
9	---	---	11.5	2.1	10.8	5.3	15.9	8.5	14.9	7.9	12.1	7.7
10	3.6	---	9.7	1.8	11.7	5.7	13.2	8.3	13.1	7.4	14.6	5.4
11	5.6	.1	9.9	1.9	13.6	5.2	14.8	7.8	15.2	7.3	12.7	8.9
12	3.7	.0	9.9	1.5	11.8	5.6	16.3	7.7	14.3	8.9	12.8	4.5
13	5.7	.1	11.4	1.2	11.3	5.7	16.1	7.8	16.4	9.5	12.4	7.1
14	5.4	.1	10.2	2.3	12.3	6.1	18.2	7.4	16.0	9.7	10.8	6.5
15	6.4	.1	6.5	3.0	13.1	6.2	17.6	8.5	15.1	8.7	12.1	4.7
16	9.3	.2	6.1	2.3	12.1	6.8	17.1	8.7	16.7	8.3	13.0	4.9
17	9.5	.2	11.0	2.4	14.0	5.5	16.4	8.1	18.0	7.9	13.4	3.6
18	7.2	.2	11.9	4.2	12.6	6.4	15.7	9.7	16.1	9.5	14.1	4.1
19	7.5	.2	9.7	3.5	12.5	6.9	14.9	9.4	14.2	9.4	14.4	6.5
20	8.6	1.2	7.3	3.7	15.0	6.4	15.9	8.5	15.3	7.6	13.1	5.8
21	6.9	1.7	9.1	4.1	14.9	6.6	14.5	9.3	16.6	7.0	13.7	5.6
22	7.4	1.2	9.1	3.0	15.0	7.9	14.7	9.4	14.6	7.6	14.2	5.0
23	9.5	1.6	8.2	3.6	14.8	6.0	17.3	9.2	15.2	6.6	13.6	5.0
24	9.3	1.8	7.7	3.9	15.4	6.7	12.6	9.6	14.0	7.6	12.3	3.4
25	8.8	.8	10.9	2.9	14.5	6.7	13.6	8.7	17.0	7.8	13.8	3.8
26	6.3	.5	10.3	4.2	13.6	6.7	13.2	7.4	16.8	8.5	13.3	3.9
27	6.8	.2	10.8	3.6	12.1	5.9	16.1	7.2	17.8	8.7	12.4	4.3
28	5.7	.2	10.1	3.2	14.4	7.7	17.7	7.5	15.1	9.0	11.4	4.3
29	8.0	.2	10.8	2.9	14.6	7.6	16.3	8.5	18.4	7.4	11.4	4.6
30	9.4	.2	10.7	3.3	16.7	8.4	18.6	8.2	17.8	8.1	11.6	5.7
31	---	---	7.8	3.8	---	---	17.4	8.1	18.3	8.1	---	---
MONTH	---	---	12.3	.2	16.7	3.2	18.6	7.2	18.4	6.6	18.3	3.4

07084500 LAKE CREEK ABOVE TWIN LAKES RESERVOIR, CO

LOCATION.--Lat 39°03'47", long 106°24'26", Lake County, Hydrologic Unit 11020001, on left bank 1.2 mi upstream from water line of Twin Lakes Reservoir at elevation 9,200 ft and 1.9 mi southwest of village of Twin Lakes.

DRAINAGE AREA.--75 mi².

PERIOD OF RECORD.--April 1946 to September 1962, October 1963 to current year. Monthly discharge only for some periods, published in WSP 1241, 1311, and 1731.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1711: 1951(M), 1952.

GAGE.--Water-stage recorder. Elevation of gage is 9,310 ft, from topographic map. Prior to May 20, 1950, at site 190 ft downstream, at different datum. May 20, 1950, to Apr. 7, 1953, at site 10 ft upstream, at present datum.

REMARKS.--Estimated daily discharges: Nov. 4 to Apr. 15. Records good except for estimated daily discharges, which are poor. No diversion upstream from station. Records include inflow from Roaring Fork River in Colorado River basin through Twin Lakes tunnel.

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

AVERAGE DISCHARGE.--44 years (water years 1947-62, 1964-91), 163 ft³/s; 118,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,270 ft³/s, June 15, 1978, gage height, 5.08 ft, from rating curve extended above 1,400 ft³/s; minimum daily, 5.0 ft³/s, Mar.1-31, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,530 ft³/s at 1930 June 11, gage height, 5.08 ft; minimum daily, 8.6 ft³/s, Feb. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	27	16	14	9.8	9.2	10	16	516	566	107	60
2	35	27	16	15	9.8	9.2	10	17	452	512	108	81
3	40	26	16	51	9.8	9.4	10	17	392	481	116	54
4	37	26	15	32	9.7	9.6	10	17	388	456	134	38
5	40	25	16	13	9.8	9.8	11	17	495	433	117	37
6	37	24	16	12	10	9.6	12	18	578	407	110	37
7	37	23	16	12	9.6	9.6	13	20	597	372	110	38
8	40	21	33	11	9.8	9.6	15	25	736	422	99	42
9	35	21	61	11	9.8	9.8	17	52	862	417	93	39
10	43	22	17	11	9.6	9.8	16	99	918	370	88	38
11	77	32	18	11	9.6	9.8	16	76	1020	325	82	38
12	60	65	18	11	9.4	9.8	17	105	1040	283	86	42
13	36	55	19	11	9.4	9.8	18	179	1020	226	83	45
14	34	20	19	11	9.2	9.8	19	200	1020	220	89	75
15	33	20	18	11	9.2	9.6	21	209	1020	205	77	65
16	33	21	17	10	9.0	9.4	23	186	921	198	74	64
17	31	21	16	10	9.0	9.2	19	169	910	222	57	53
18	32	21	16	10	8.8	9.2	31	155	902	216	58	39
19	34	21	16	10	8.8	9.2	46	258	816	194	57	37
20	31	69	16	10	8.6	9.0	18	371	838	182	75	36
21	30	37	16	10	8.8	9.2	18	445	862	173	70	60
22	29	20	16	10	8.8	9.2	21	550	854	191	51	57
23	31	20	15	10	9.0	9.2	41	534	810	188	48	33
24	31	19	15	9.8	9.0	9.4	27	447	748	186	46	46
25	29	19	15	9.8	9.2	9.6	23	426	686	194	53	32
26	29	19	14	9.6	9.2	9.6	18	515	596	163	66	44
27	28	38	14	9.6	9.2	9.8	19	577	480	147	60	41
28	28	68	14	9.8	9.2	10	19	687	579	133	54	42
29	27	18	14	9.6	---	10	19	649	645	124	44	39
30	26	17	14	9.8	---	9.8	17	657	624	116	42	29
31	26	---	14	9.8	---	9.8	---	627	---	111	41	---
TOTAL	1095	862	556	394.8	261.1	296.0	574	8320	22326	8433	2395	1381
MEAN	35.3	28.7	17.9	12.7	9.32	9.55	19.1	268	744	272	77.3	46.0
MAX	77	69	61	51	10	10	46	687	1040	566	134	81
MIN	26	17	14	9.6	8.6	9.0	10	16	388	111	41	29
AC-FT	2170	1710	1100	783	518	587	1140	16500	44280	16730	4750	2740

CAL YR 1990 TOTAL 51659.5 MEAN 142 MAX 1540 MIN 7.2 AC-FT 102500
WTR YR 1991 TOTAL 46893.9 MEAN 128 MAX 1040 MIN 8.6 AC-FT 93010

07086000 ARKANSAS RIVER AT GRANITE, CO

LOCATION.--Lat 39°02'34", long 106°15'55", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.31, T.11 S., R.79 W., Chaffee County, Hydrologic Unit 11020001, on right bank at Granite, 100 ft east of U.S. Highway 24, 100 ft downstream from county bridge, and 200 ft upstream from Cache Creek.

DRAINAGE AREA.--427 mi².

PERIOD OF RECORD.--April to October 1895, May to December 1897, August to September 1898, March to October 1899, April to May 1901 (gage heights and discharge measurements only in 1895, 1899, and 1901), April 1910 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1711: 1952, 1956(M).

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 8,914.86 ft above National Geodetic Vertical Datum of 1929, supplementary adjustment of 1960. Prior to Apr. 6, 1910, nonrecording gages near present site at different datums. Apr. 6, 1910, to Oct. 25, 1917, water-stage recorder or nonrecording gage at site 832 ft upstream, at different datum. Oct. 26, 1917, to Oct. 26, 1960, water-stage recorder at site 168 ft downstream, at present datum.

REMARKS.--Estimated daily discharges: Nov. 8-15, 17, Nov. 22 to Jan. 3, Jan. 9-11, 24, and Mar. 3-11. Records good except for estimated daily discharges, which are poor. Diversions upstream from station for irrigation of about 6,700 acres. Turquoise Lake and Twin Lakes Reservoir, on tributaries upstream from station, have a combined capacity of 269,700 acre-ft. Transmountain diversions from Colorado River basin to Arkansas River basin enter upstream from this station.

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

AVERAGE DISCHARGE.--81 years (water years 1911-91), 382 ft³/s; 276,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,360 ft³/s, June 28, 1957, gage height, 7.20 ft; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,830 ft³/s at 0800 June 13, gage height, 4.85 ft; minimum daily, 80 ft³/s, Mar. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	117	97	187	281	269	216	289	1010	840	476	155
2	123	123	100	220	281	199	220	281	942	774	506	155
3	139	125	103	235	277	187	220	293	832	725	512	145
4	125	121	103	227	281	118	223	301	636	655	548	142
5	121	125	102	227	281	80	289	289	648	560	467	127
6	112	121	104	227	289	81	385	293	840	465	435	102
7	110	123	103	223	289	125	390	297	1070	465	488	110
8	135	119	102	223	293	195	385	338	1110	536	440	104
9	135	121	101	250	293	193	361	476	1250	669	405	106
10	147	120	101	262	297	192	361	542	1500	690	395	104
11	149	118	103	270	293	194	356	560	1630	593	392	106
12	139	119	102	273	297	196	352	536	1740	488	319	111
13	125	118	100	277	301	196	348	566	1710	450	248	114
14	121	119	99	277	293	203	352	662	1640	435	238	108
15	121	118	98	281	293	213	348	655	1690	410	232	110
16	123	117	97	277	297	213	352	596	1690	395	223	108
17	123	117	96	277	297	216	375	542	1530	425	206	104
18	119	117	95	277	289	220	385	435	1460	440	203	93
19	127	112	125	277	297	223	343	494	1380	455	203	95
20	139	117	144	277	297	223	317	648	1250	470	203	97
21	132	110	144	277	297	223	325	781	1200	476	201	94
22	127	104	144	273	297	223	313	870	1260	506	194	91
23	144	102	144	277	301	223	317	1010	1200	530	181	91
24	142	100	144	277	297	216	325	950	1030	488	164	92
25	142	98	144	277	289	213	343	746	950	506	166	92
26	135	96	174	277	297	213	338	760	934	460	169	97
27	130	98	194	277	301	213	321	918	788	430	171	98
28	125	106	193	277	297	213	313	1150	676	385	177	95
29	121	102	188	281	---	216	313	1180	753	390	174	93
30	121	98	188	277	---	216	309	1200	878	420	166	94
31	117	---	188	277	---	216	---	1170	---	440	160	---
TOTAL	3983	3401	3920	8091	8192	6121	9795	19828	35227	15971	9062	3233
MEAN	128	113	126	261	293	197	326	640	1174	515	292	108
MAX	149	125	194	281	301	269	390	1200	1740	840	548	155
MIN	110	96	95	187	277	80	216	281	636	385	160	91
AC-FT	7900	6750	7780	16050	16250	12140	19430	39330	69870	31680	17970	6410

CAL YR 1990 TOTAL 110330 MEAN 302 MAX 2240 MIN 70 AC-FT 218800
WTR YR 1991 TOTAL 126824 MEAN 347 MAX 1740 MIN 80 AC-FT 251600

07086500 CLEAR CREEK ABOVE CLEAR CREEK RESERVOIR, CO

LOCATION.--Lat 39°01'05", long 106°16'38", in SE¼ sec.12, T.12 S., R.80 W., Chaffee County, Hydrologic Unit 11020001, on right bank 0.5 mi upstream from water line of Clear Creek Reservoir at elevation 8,875 ft, 1.5 mi downstream from unnamed tributary, and 1.9 mi southwest of Granite.

DRAINAGE AREA.--67.1 mi².

PERIOD OF RECORD.--May 1946 to current year. Monthly discharge only for some periods, published in WSP 1241, and 1311.

REVISED RECORDS.--WSP 2121: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 8,885 ft above National Geodetic Vertical Datum of 1929, from topographic map. May 7, 1946, to Apr. 20, 1954, water-stage recorder at site 133 ft upstream at different datum. Apr. 21 1954, to May 28, 1958, water-stage recorder 333 ft upstream at different datum. Datum raised 2.19 ft, Apr. 21, 1954.

REMARKS.--Estimated daily discharges: Nov. 8, 9, 12, 13, 20-25, Nov. 27 to Apr. 1, Apr. 9, 13, 14, 27, and Apr. 28. Records good except for estimated daily discharges, which are fair. Diversions for irrigation of about 250 acres upstream from station.

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

AVERAGE DISCHARGE.--45 years (water years 1947-62, 1964-91), 68.3 ft³/s; 49,270 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,300 ft³/s, June 29, 1957, maximum gage height recorded, 5.22 ft, June 10, 1990, present site and datum; minimum daily discharge, 5.0 ft³/s, many days some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 489 ft³/s at 2330 June 11, gage height, 4.56 ft; minimum daily, 7.0 ft³/s, Apr. 30, and May 1.

REVISIONS.--The maximum discharge for water year 1990 was published in error. The correct figure is, 1,120 ft³/s at 2130 June 10, gage height, 5.22 ft. This figure supersedes that published in the report for 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	29	18	14	10	10	14	7.0	170	173	62	36
2	43	29	18	15	10	11	14	15	149	162	64	35
3	46	28	17	15	10	11	12	11	129	151	68	34
4	41	25	16	14	11	11	11	7.9	116	145	85	32
5	36	29	16	14	11	11	14	7.9	151	138	71	31
6	34	26	17	13	11	10	16	9.8	192	127	66	31
7	38	25	16	13	11	9.6	18	12	183	124	85	32
8	40	24	15	12	12	9.0	15	16	231	153	70	40
9	34	24	15	12	12	9.2	13	29	272	145	64	40
10	34	25	15	11	12	9.3	13	46	272	129	61	37
11	34	23	15	11	12	9.5	11	59	325	118	58	37
12	32	23	16	11	11	10	9.8	64	345	110	56	42
13	31	23	16	12	11	9.6	9.8	65	295	103	64	42
14	31	23	15	12	11	10	9.8	73	280	96	62	41
15	30	24	15	12	11	10	8.9	81	325	91	55	43
16	30	23	14	12	10	10	8.9	65	302	87	53	43
17	30	23	14	11	10	9.6	9.8	56	276	89	50	40
18	29	23	14	11	10	9.2	11	76	285	91	47	37
19	32	22	13	11	9.0	9.0	9.8	124	264	85	48	35
20	32	21	13	10	9.0	9.4	9.8	129	260	80	47	32
21	29	20	12	10	9.0	9.6	11	124	260	82	44	31
22	28	19	12	10	9.0	9.6	9.8	156	256	94	42	30
23	30	20	12	9.0	9.0	10	13	166	233	104	40	29
24	31	21	12	10	9.0	11	12	138	230	94	38	29
25	32	21	13	9.0	9.0	12	12	124	205	114	46	28
26	30	20	13	10	9.3	14	11	167	191	94	46	27
27	29	19	13	11	9.5	14	7.9	183	159	83	46	28
28	29	18	13	11	9.8	13	7.9	216	176	75	42	28
29	29	17	14	11	---	12	8.9	202	199	70	41	28
30	29	17	14	11	---	13	7.0	207	192	66	40	26
31	28	---	14	10	---	13	---	202	---	66	38	---
TOTAL	1021	684	450	358.0	287.6	328.6	339.1	2838.6	6923	3339	1699	1024
MEAN	32.9	22.8	14.5	11.5	10.3	10.6	11.3	91.6	231	108	54.8	34.1
MAX	46	29	18	15	12	14	18	216	345	173	85	43
MIN	28	17	12	9.0	9.0	9.0	7.0	7.0	116	66	38	26
AC-FT	2030	1360	893	710	570	652	673	5630	13730	6620	3370	2030

CAL YR 1990 TOTAL 22520.5 MEAN 61.7 MAX 716 MIN 9.0 AC-FT 44670
WTR YR 1991 TOTAL 19291.9 MEAN 52.9 MAX 345 MIN 7.0 AC-FT 38270

07087200 ARKANSAS RIVER AT BUENA VISTA, CO

LOCATION (revised).--Lat 38°50'56", long 106°07'27", in NW¼NW¼ sec.9, T.14 S., R.78 W., Chaffee County, Hydrologic Unit 11020001, on right bank at northeast corner of Buena Vista city limits and 1.8 mi upstream from Cottonwood Creek.

DRAINAGE AREA.--611 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to September 1980, October 1986 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 7,920 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 3-5, and Dec. 16 to Mar. 20. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions (see elsewhere in this report), storage reservoirs, diversions upstream from station for irrigation of 7,400 acres, and return flow from irrigated areas.

AVERAGE DISCHARGE.--21 years (water years 1964-80, 1987-91), 488 ft³/s, 353,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,950 ft³/s, June 11, 1980, gage height, 6.55 ft; minimum daily, 57 ft³/s, Jan. 27, 28, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,390 ft³/s at 0730 June 13, gage height, 5.04 ft; minimum daily, 95 ft³/s, Dec. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	176	161	121	270	300	200	249	537	1300	1180	634	222
2	183	186	126	270	300	160	261	516	1200	1030	668	220
3	205	162	120	270	300	140	258	548	1070	978	683	214
4	191	162	120	270	300	120	253	553	858	901	739	211
5	182	180	122	280	300	120	308	539	830	836	663	206
6	180	179	125	280	310	140	453	540	1090	699	609	168
7	171	170	118	280	310	170	468	542	1340	673	718	171
8	189	169	118	280	310	200	465	551	1410	810	703	167
9	181	172	117	280	310	230	435	665	1600	892	614	167
10	201	173	116	280	310	240	431	742	1860	917	606	167
11	206	170	109	280	310	250	418	708	1980	841	601	162
12	196	191	116	280	310	250	411	774	2210	686	548	163
13	176	231	114	280	310	250	401	786	2210	624	431	173
14	170	232	110	280	310	250	402	920	2010	644	420	178
15	166	206	99	280	310	250	403	858	2020	670	363	177
16	161	142	98	280	310	250	410	765	2120	644	348	178
17	162	138	96	280	310	250	424	688	1930	671	316	173
18	159	141	95	280	310	250	452	589	1820	708	301	167
19	170	136	100	280	310	250	423	644	1740	710	292	161
20	180	137	110	280	310	250	371	866	1640	678	293	159
21	176	133	120	280	310	247	378	1010	1650	680	294	148
22	175	121	140	280	310	245	371	1180	1730	713	279	142
23	199	124	150	280	310	249	371	1300	1700	663	270	138
24	195	129	160	280	310	251	374	1200	1530	634	246	140
25	199	127	180	280	310	250	391	1020	1410	658	246	142
26	189	126	190	290	310	252	400	1130	1380	614	248	148
27	182	129	200	290	270	249	372	1300	1220	553	253	151
28	175	115	220	300	240	246	361	1360	1020	544	255	149
29	170	108	240	300	---	249	361	1420	1030	544	256	147
30	167	116	260	300	---	237	428	1440	1190	572	243	147
31	165	---	270	300	---	241	---	1440	---	619	232	---
TOTAL	5597	4666	4380	8740	8520	6936	11503	27131	46098	22586	13372	5056
MEAN	181	156	141	282	304	224	383	875	1537	729	431	169
MAX	206	232	270	300	310	252	468	1440	2210	1180	739	222
MIN	159	108	95	270	240	120	249	516	830	544	232	138
AC-FT	11100	9260	8690	17340	16900	13760	22820	53810	91440	44800	26520	10030

CAL YR 1990 TOTAL 144776 MEAN 397 MAX 2960 MIN 78 AC-FT 287200
WTR YR 1991 TOTAL 164585 MEAN 451 MAX 2210 MIN 95 AC-FT 326500

07087200 ARKANSAS RIVER AT BUENA VISTA, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1986 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1986 to current year.

WATER TEMPERATURE: November 1986 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and mean water temperature data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 219 microsiemens, Aug. 29, 1991; minimum, 44 microsiemens, June 10, 1990.

WATER TEMPERATURE: Maximum, 21.0°C, Aug. 5, 1988; minimum, 0.0°C, many days during winter.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 219 microsiemens, Aug. 29; minimum, 70 microsiemens, June 10.

WATER TEMPERATURE: Maximum 19.8°C, Aug. 1, 27; minimum, 0.0°C, many days during winter.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	169	187	132	96	98	116	113	77	85	---	202
2	163	163	188	130	96	111	117	118	85	91	---	---
3	163	169	198	118	96	115	118	117	86	88	---	---
4	164	172	194	114	94	114	116	116	90	90	---	---
5	164	167	184	115	95	---	119	114	90	91	---	---
6	162	167	185	116	95	---	101	116	88	97	---	170
7	162	169	191	116	96	---	105	116	84	98	107	159
8	164	168	187	117	97	---	---	116	79	100	105	167
9	169	169	185	117	97	115	98	103	78	94	107	166
10	170	168	184	106	97	115	99	99	74	90	109	157
11	164	170	184	105	96	117	97	92	75	91	112	---
12	162	169	183	104	96	115	95	96	75	98	115	---
13	167	160	182	101	96	114	94	94	75	101	131	---
14	169	159	183	103	96	113	95	89	77	99	140	160
15	170	159	195	103	95	111	95	87	77	97	147	170
16	172	176	192	104	98	110	97	85	77	98	159	166
17	170	177	188	104	98	111	97	85	78	97	168	160
18	172	177	192	104	96	111	99	91	78	95	176	160
19	170	177	190	103	95	111	---	99	79	97	184	---
20	169	176	167	105	95	112	---	92	81	100	191	---
21	167	179	160	105	96	111	---	86	81	101	194	---
22	169	182	---	104	97	110	---	82	79	107	194	---
23	172	184	---	103	98	111	---	81	79	---	199	---
24	172	181	---	---	97	112	---	79	81	---	203	---
25	173	181	---	---	94	113	---	86	83	---	202	---
26	172	180	---	---	97	113	107	90	83	---	201	---
27	171	180	---	---	98	112	105	---	85	---	203	---
28	171	190	---	---	98	112	104	---	92	---	205	---
29	170	196	132	---	---	113	104	72	91	---	212	---
30	172	187	136	---	---	111	106	73	87	---	197	---
31	172	---	133	---	---	114	---	74	---	---	186	---
MEAN	168	174	---	---	96	---	---	---	81	---	---	---

07087200 ARKANSAS RIVER AT BUENA VISTA, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.9	9.7	7.0	5.2	.0	.0	.0	.0	.0	.0	4.3	1.5
2	11.1	9.2	6.2	2.5	.0	.0	.0	.0	.0	.0	3.8	1.9
3	10.7	7.5	4.0	1.5	.0	.0	.0	.0	.0	.0	4.6	.7
4	10.9	6.1	3.2	.5	.0	.0	.0	.0	---	---	4.7	2.0
5	11.3	7.3	4.3	1.8	.0	.0	.0	.0	---	---	5.7	.0
6	11.4	7.6	2.9	.4	.0	.0	.0	.0	---	---	.0	.0
7	9.2	8.1	2.1	.0	.0	.0	.0	.0	---	---	.4	.0
8	8.3	5.2	2.3	.0	.0	.0	.0	.0	---	---	1.6	.0
9	6.9	4.0	3.0	.0	.1	.0	.0	.0	---	---	1.7	.1
10	8.1	3.9	3.7	.5	.2	.0	.0	.0	---	---	4.6	.8
11	8.3	5.5	3.7	.9	.3	.0	.0	.0	---	---	4.2	1.5
12	7.4	4.4	3.7	.9	.7	.0	.0	.0	---	---	3.0	.0
13	8.4	4.3	3.5	.8	1.5	.0	.0	.0	---	---	3.1	.0
14	9.5	5.5	4.1	1.3	1.0	.0	.0	.0	---	---	3.8	1.2
15	9.6	5.8	4.3	1.7	.0	.0	.0	.0	---	---	4.1	.7
16	9.5	6.1	4.2	2.2	.0	.0	.0	.0	---	---	3.3	1.3
17	7.3	4.7	4.6	1.7	.0	.0	.0	.0	---	---	4.5	.1
18	6.3	3.1	5.1	2.4	.0	.0	.0	.0	---	---	5.3	.9
19	8.9	5.0	5.3	2.9	.0	.0	.0	.0	---	---	4.6	1.0
20	7.2	4.0	4.6	2.9	.0	.0	.0	.0	---	---	4.3	1.0
21	4.8	1.6	3.3	.6	.0	.0	.0	.0	3.6	---	2.7	.4
22	6.1	1.9	1.2	.0	.0	.0	.0	.0	3.3	.1	3.4	.1
23	7.2	3.8	1.8	.0	.0	.0	.0	.0	3.6	.8	5.3	.1
24	7.7	4.1	2.6	.0	.0	.0	.0	.0	2.8	.4	6.1	1.3
25	7.8	4.6	2.5	.0	.0	.0	.0	.0	2.0	.1	4.8	2.4
26	7.5	4.8	2.4	.0	.0	.0	.0	.0	2.8	.1	5.1	2.8
27	7.5	4.3	1.2	.0	.0	.0	.0	.0	3.1	.1	5.2	.7
28	7.8	4.5	.2	.0	.0	.0	.0	.0	3.0	.4	4.5	.3
29	7.5	4.4	.2	.0	.0	.0	.0	.0	---	---	2.9	1.0
30	7.5	4.4	.1	.0	.0	.0	.0	.0	---	---	4.2	.1
31	7.2	4.4	---	---	.0	.0	.0	.0	---	---	6.1	.7
MONTH	12.9	1.6	7.0	.0	1.5	.0	.0	.0	---	---	6.1	.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.0	2.6	9.0	3.0	8.7	7.5	16.2	11.6	19.8	---	17.2	13.4
2	7.0	3.4	8.6	4.4	10.4	7.1	15.9	12.5	---	13.9	17.4	13.0
3	5.5	3.3	8.8	3.6	9.8	7.8	17.0	13.3	---	---	18.3	14.6
4	7.4	1.9	7.1	4.3	12.5	8.0	17.0	12.4	---	---	18.2	15.8
5	8.3	3.5	8.5	3.3	11.6	9.8	16.6	12.6	---	---	17.1	14.9
6	6.5	3.1	8.4	4.2	11.2	9.6	15.9	12.7	16.2	---	15.4	14.3
7	6.7	3.3	8.9	5.3	12.0	9.2	15.1	12.2	15.8	12.0	15.8	12.6
8	5.6	2.9	10.8	4.9	12.7	9.0	15.1	12.4	17.0	12.3	15.3	13.0
9	6.3	.9	10.4	6.6	12.0	9.6	16.3	12.6	14.7	12.4	16.6	11.9
10	5.1	2.5	9.7	6.2	12.0	9.3	15.5	13.5	15.6	11.9	15.2	13.6
11	4.8	1.9	10.2	---	13.0	8.9	15.5	12.6	15.6	12.0	16.2	11.8
12	5.1	2.0	9.4	5.2	12.0	9.7	16.0	12.3	16.1	13.0	15.0	12.4
13	5.0	.3	10.0	5.2	11.7	9.6	16.0	12.3	17.1	13.1	14.5	11.3
14	5.9	.8	9.9	5.8	12.0	9.4	17.1	11.9	17.4	13.3	14.8	3
15	7.1	1.6	8.8	6.2	13.1	9.8	16.2	12.7	16.7	13.6	15.2	11.5
16	7.8	---	7.4	5.7	12.5	10.9	16.0	13.1	16.5	13.5	15.2	10.6
17	8.4	3.2	10.2	5.6	13.7	9.8	17.0	12.6	17.7	14.2	15.8	11.3
18	6.8	3.4	11.8	7.6	13.2	10.4	17.1	14.0	18.0	15.6	16.6	13.0
19	6.7	---	10.5	7.3	12.8	10.9	16.3	13.5	17.4	13.3	16.4	12.5
20	---	---	9.0	7.4	14.0	10.3	16.1	13.5	19.2	14.8	15.8	12.0
21	---	---	10.3	7.3	13.9	10.6	16.4	13.9	18.7	14.9	---	---
22	---	---	10.2	7.0	13.2	10.6	---	13.7	15.5	15.5	---	---
23	---	---	9.5	7.8	13.9	9.7	16.7	13.4	17.6	14.7	---	---
24	---	---	9.8	7.2	13.7	9.9	---	---	18.5	15.1	14.4	---
25	8.3	---	10.7	6.6	14.0	10.5	---	---	19.0	15.3	15.6	10.9
26	7.1	3.7	11.6	8.6	13.4	10.8	---	---	19.5	15.7	16.0	11.4
27	5.4	1.7	11.7	8.0	13.6	10.3	---	---	19.8	16.1	15.4	11.7
28	6.3	1.3	11.0	7.8	14.7	11.0	---	---	19.4	16.8	16.0	11.8
29	6.6	2.3	11.6	7.6	14.8	11.5	---	---	19.6	15.6	15.4	12.1
30	7.2	2.9	11.4	7.9	15.9	12.2	---	---	18.8	15.0	14.8	12.0
31	---	---	10.2	8.3	---	---	---	---	18.2	14.2	---	---
MONTH	---	---	11.8	---	15.9	7.1	---	---	---	---	---	---

07091200 ARKANSAS RIVER NEAR NATHROP, CO

LOCATION.--Lat 38°39'08", long 106°03'02", in SE¼SW¼ sec.23, T.51 N., R.8 E., Chaffee County, Hydrologic Unit 11020001, on right bank 300 ft upstream from end of Chaffee County Road 194 in Browns Canyon, 3.7 mi downstream from Browns Creek, 6.7 mi south of Nathrop, and 9 mi north of Salida.

DRAINAGE AREA.--1,060 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to September 1982. April 1989 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 7,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 21 to Jan. 6, and July 24. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions (see elsewhere in this report), storage reservoirs, power development, diversions for irrigation of about 15,000 acres, and return flow from irrigated areas.

AVERAGE DISCHARGE.--20 years (water years 1965-82, 1990-91), 626 ft³/s; 453,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,960 ft³/s, June 12, 1980, gage height, 8.51 ft; maximum gage height, 9.94 ft, Aug. 31, 1972 (backwater from unnamed tributary); minimum daily discharge, 95 ft³/s, Feb. 25-27, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,610 ft³/s at 0430 June 13, gage height, 6.74 ft; minimum daily, 208 ft³/s, Dec. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	351	319	253	370	411	421	344	571	1440	1310	665	312
2	354	334	244	370	408	353	352	533	1320	1130	706	305
3	363	333	229	370	412	326	348	567	1180	1090	738	298
4	357	312	273	380	410	324	337	580	971	1010	827	292
5	351	332	242	380	409	236	355	571	958	962	758	289
6	345	340	240	380	408	226	501	569	1190	805	664	268
7	335	325	227	384	416	210	524	568	1450	778	789	264
8	344	324	234	382	414	284	519	569	1580	892	763	277
9	342	337	231	353	416	319	485	669	1780	1010	679	278
10	344	347	231	409	418	325	481	738	2040	1020	665	280
11	350	345	234	417	419	334	473	759	2200	971	660	284
12	349	346	240	416	418	332	460	810	2400	841	635	272
13	339	390	246	414	418	326	454	808	2460	772	513	290
14	331	392	238	413	423	327	455	945	2250	762	507	298
15	330	387	208	417	425	332	457	944	2280	792	458	289
16	328	311	229	415	426	348	458	871	2410	755	433	285
17	326	304	229	413	432	346	469	761	2210	769	406	274
18	317	304	218	411	424	347	499	689	2090	814	375	265
19	323	303	224	414	417	350	485	745	2000	824	369	260
20	352	296	247	417	423	353	433	1020	1870	803	370	256
21	352	292	245	413	430	343	436	1130	1870	795	358	242
22	347	268	235	408	432	341	428	1290	1920	788	344	231
23	381	261	235	428	430	345	436	1460	1900	777	335	229
24	374	277	235	412	435	348	435	1340	1720	780	315	229
25	373	280	240	413	427	346	432	1100	1550	788	312	228
26	366	280	260	408	425	344	445	1220	1510	739	315	231
27	356	285	270	410	418	341	418	1410	1350	670	327	228
28	342	250	290	407	416	337	407	1580	1140	635	329	226
29	338	233	300	408	---	338	407	1640	1140	610	328	228
30	329	247	330	406	---	330	431	1630	1290	615	325	227
31	325	---	360	411	---	338	---	1650	---	660	321	---
TOTAL	10714	9354	7717	12449	11760	10170	13164	29737	51469	25967	15589	7935
MEAN	346	312	249	402	420	328	439	959	1716	838	503	264
MAX	381	392	360	428	435	421	524	1650	2460	1310	827	312
MIN	317	233	208	353	408	210	337	533	958	610	312	226
AC-FT	21250	18550	15310	24690	23330	20170	26110	58980	102100	51510	30920	15740

CAL YR 1990 TOTAL 188636 MEAN 517 MAX 3300 MIN 167 AC-FT 374200
WTR YR 1991 TOTAL 206025 MEAN 564 MAX 2460 MIN 208 AC-FT 408700

07091200 ARKANSAS RIVER NEAR NATHROP, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1989 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1989 to current year.

WATER TEMPERATURE: April 1989 to current year.

pH: April 1989 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance, daily mean pH, and daily mean water temperature data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 305 microsiemens, Sept. 19, 1991; minimum, 58 microsiemens, June 11, 1989.

WATER TEMPERATURE: Maximum, 20.5°C, July 17, 1991; minimum, 0.0°C, many days during winters.

pH: Maximum, 9.1 units, March 31, May 17, 18 and July 3, 1991; minimum, 7.4 units, June 20-22, 1989, and July 20, 1991.

EXTREMES FOR CURRENT WATER YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 305 microsiemens, Sept. 19; minimum, 74 microsiemens, June 16.

WATER TEMPERATURE: Maximum, 20.5°C, July 17; minimum, 0.0°C, many days during winter.

pH: Maximum, 9.1 units, March 31, May 17, 18, and July 3; minimum, 7.4 units, July 20.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	193	194	203	158	128	118	134	134	88	92	---	222
2	192	189	203	159	129	125	132	139	96	97	126	227
3	189	186	212	154	129	138	135	138	98	99	128	226
4	191	195	212	142	129	137	136	138	106	103	130	224
5	192	192	204	141	129	148	134	138	110	104	133	224
6	194	189	201	143	127	171	133	140	105	112	134	215
7	195	190	206	143	128	178	135	138	99	116	127	219
8	193	193	206	145	128	174	144	137	92	114	126	221
9	196	189	203	145	128	138	147	135	91	109	---	220
10	198	189	202	136	128	137	146	141	86	104	---	235
11	194	189	202	131	127	138	139	143	79	99	---	233
12	192	189	201	132	127	138	118	123	76	104	---	247
13	194	185	199	130	126	137	106	115	76	110	---	260
14	198	182	199	130	127	135	106	108	79	113	---	253
15	200	183	208	131	126	133	106	106	80	110	---	235
16	202	190	205	131	128	130	108	104	77	111	---	234
17	201	196	201	132	130	130	110	104	77	111	---	241
18	202	197	204	132	129	131	111	111	79	110	---	260
19	202	197	203	132	127	129	112	118	79	112	---	297
20	197	196	200	132	126	129	116	111	81	114	---	268
21	196	196	190	133	124	130	120	102	81	114	---	246
22	197	201	191	132	118	129	121	97	81	---	---	198
23	195	205	192	128	117	129	123	96	80	---	171	197
24	195	202	190	131	117	130	126	91	82	---	174	197
25	196	199	189	129	117	131	129	97	85	---	177	196
26	196	198	182	131	115	131	130	102	85	---	179	196
27	195	196	182	130	117	130	130	99	89	---	183	196
28	195	203	168	131	117	131	130	90	97	---	217	196
29	196	211	158	128	---	130	130	85	98	---	201	196
30	196	209	161	130	---	131	130	85	94	---	183	196
31	197	---	161	128	---	131	---	84	---	---	209	---
MEAN	196	194	195	136	125	136	126	114	88	---	---	226

07091200 ARKANSAS RIVER NEAR NATHROP, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.4	8.0	8.5	8.0	8.6	8.2	8.2	8.1	8.2	8.1	---	---
2	8.3	8.0	8.4	8.1	8.6	8.2	8.2	8.1	8.4	8.1	---	---
3	8.3	8.1	8.4	8.1	8.7	8.1	8.2	8.1	8.4	8.2	---	---
4	8.4	8.0	8.4	8.1	8.7	8.2	8.2	8.1	8.4	8.2	---	---
5	8.3	8.0	8.4	8.1	8.7	8.1	8.2	8.0	8.5	8.2	---	---
6	8.2	7.9	8.4	8.2	8.5	8.1	8.2	7.9	8.5	8.1	---	---
7	8.1	7.9	8.4	8.2	8.6	8.1	8.2	8.1	8.5	8.2	---	---
8	8.1	7.9	8.4	8.2	8.5	8.1	8.2	8.1	8.5	8.2	---	---
9	8.1	7.9	8.5	8.2	8.6	8.2	8.3	8.2	8.5	8.2	---	---
10	8.1	7.9	8.5	8.2	8.6	8.2	8.2	8.1	8.5	8.2	---	---
11	8.2	7.9	8.5	8.2	8.6	8.2	8.2	8.1	8.5	8.2	---	---
12	8.2	7.9	8.4	8.1	8.4	8.1	8.2	8.1	8.5	8.1	---	---
13	8.2	7.9	8.4	8.1	8.5	8.1	8.2	8.1	8.5	8.2	---	---
14	8.2	7.9	8.5	8.1	8.4	8.1	8.2	8.1	8.6	8.2	8.4	---
15	8.2	7.9	8.5	8.2	8.5	8.1	8.2	8.1	8.5	8.2	8.4	7.9
16	8.1	7.9	8.5	8.2	8.4	8.1	8.2	8.1	8.4	8.2	8.5	7.8
17	8.2	7.9	8.5	8.2	8.5	8.1	8.2	8.1	8.5	8.2	8.5	8.0
18	8.2	7.9	8.4	8.1	8.6	8.2	8.2	8.1	8.4	8.1	8.5	8.0
19	8.2	8.0	8.4	8.1	8.6	8.2	8.2	8.1	8.3	8.1	8.5	8.0
20	8.3	8.1	8.4	8.1	8.6	8.2	8.2	8.1	8.3	8.0	8.5	8.1
21	8.3	8.1	8.4	8.1	8.3	8.1	8.3	8.1	8.5	8.2	8.5	8.1
22	8.3	8.1	8.5	8.1	8.3	8.1	8.3	8.1	8.6	8.3	8.5	8.2
23	8.3	8.1	8.5	8.2	8.2	8.1	8.2	8.1	---	---	8.6	8.1
24	8.2	8.0	8.5	8.2	8.2	8.1	8.3	8.1	---	---	8.7	8.1
25	8.2	8.0	8.5	8.2	8.3	8.1	8.3	8.1	---	---	8.8	8.1
26	8.2	7.9	8.5	8.1	8.2	8.1	8.3	8.1	---	---	8.7	8.1
27	8.2	7.9	8.5	8.1	8.3	8.0	8.3	8.1	---	---	8.8	8.1
28	8.2	8.0	8.6	8.1	8.2	8.0	8.3	8.1	---	---	8.8	8.1
29	8.3	8.0	8.6	8.1	8.1	7.9	8.2	8.1	---	---	8.6	8.1
30	8.2	8.0	8.6	8.1	8.2	8.0	8.3	8.0	---	---	9.0	8.1
31	8.3	8.0	---	---	8.1	7.9	8.3	8.1	---	---	9.1	8.1
MONTH	8.4	7.9	8.6	8.0	8.7	7.9	8.3	7.9	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.0	8.0	7.8	---	8.2	7.9	8.7	7.6	---	---	8.6	8.0
2	8.6	8.0	8.2	---	8.2	7.9	8.7	7.6	---	---	8.5	8.0
3	8.6	8.1	---	---	8.4	8.0	9.1	7.7	---	---	8.5	8.0
4	8.6	8.1	8.4	---	8.5	8.1	9.0	7.7	---	---	8.5	7.9
5	8.7	8.1	8.0	---	8.4	8.1	9.0	7.5	---	---	8.6	7.9
6	8.6	8.0	7.9	---	8.3	8.0	8.8	7.5	---	---	8.6	7.9
7	8.6	7.9	8.1	---	8.2	8.0	---	---	---	---	8.5	8.0
8	8.8	7.7	8.2	---	8.2	7.9	---	---	---	---	8.7	8.1
9	8.6	7.9	7.9	---	8.4	7.9	---	---	---	---	8.7	8.0
10	8.4	7.6	7.8	---	8.1	7.9	8.7	7.5	---	---	8.6	7.9
11	8.3	---	8.2	---	8.2	7.9	---	---	---	---	8.7	7.9
12	8.3	---	8.7	7.7	8.0	7.9	---	---	---	---	8.8	7.9
13	---	---	8.9	8.0	8.1	7.9	---	---	---	---	8.7	7.9
14	---	---	8.8	7.9	8.1	8.0	---	---	---	---	8.7	8.0
15	8.3	---	8.9	7.9	8.2	7.9	---	---	---	---	8.7	8.0
16	---	---	8.8	7.9	8.6	8.0	---	---	---	---	8.7	8.0
17	---	---	9.1	7.9	8.2	7.9	---	---	---	---	8.7	8.0
18	---	---	9.1	7.9	8.2	7.9	---	---	---	---	8.8	8.0
19	---	---	9.0	7.9	8.3	7.9	8.6	7.5	---	---	8.7	8.1
20	---	---	8.7	8.0	8.6	7.9	8.8	7.4	---	---	8.7	8.1
21	---	---	8.4	7.9	8.3	7.8	8.8	---	---	---	8.7	8.1
22	---	---	8.2	7.9	8.3	7.8	---	---	8.5	8.3	8.7	8.1
23	8.3	---	8.2	7.9	8.3	7.8	---	---	8.6	8.2	8.6	8.2
24	8.3	---	8.1	7.9	8.4	7.8	---	---	8.6	8.2	8.6	8.2
25	8.5	---	8.2	7.9	8.5	7.8	---	---	8.6	8.2	8.6	8.1
26	7.9	---	8.3	8.0	8.5	7.8	---	---	8.6	8.2	8.6	8.1
27	7.8	---	8.3	8.0	8.7	7.8	---	---	8.6	8.2	8.7	8.1
28	7.8	---	8.8	8.1	8.7	7.8	---	---	8.5	8.1	8.7	8.1
29	7.8	---	8.6	8.0	8.8	7.8	---	---	8.7	8.1	8.8	8.0
30	8.0	---	8.3	7.9	8.8	7.6	---	---	8.5	8.1	8.9	8.0
31	---	---	8.2	7.9	---	---	---	---	8.6	8.1	---	---
MONTH	---	---	---	---	8.8	7.6	---	---	---	---	8.9	7.9

07091200 ARKANSAS RIVER NEAR NATHROP, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.5	10.0	7.9	5.9	2.8	.1	.0	.0	.7	.0	6.6	1.8
2	12.0	10.2	7.2	3.5	1.5	.0	.0	.0	1.9	.0	6.2	2.9
3	11.9	8.4	5.3	3.1	.3	.0	.0	.0	2.2	.0	6.2	1.4
4	12.2	7.3	5.2	2.4	.7	.0	.0	.0	2.8	.0	6.7	2.8
5	12.5	7.4	5.6	2.3	2.7	.0	.0	.0	2.7	.0	5.2	4.4
6	12.8	7.9	4.4	2.6	1.7	.1	.0	.0	3.3	.0	6.1	2.1
7	10.7	8.6	4.0	1.3	2.0	.0	.3	.0	3.7	.0	4.5	1.0
8	9.4	7.5	3.8	.0	2.6	.0	.9	.0	3.3	.3	3.6	.0
9	9.1	4.8	5.0	1.3	3.2	.0	.1	.0	4.0	.7	4.2	.0
10	10.0	4.9	5.5	1.6	3.4	.1	.4	.0	3.2	.1	5.8	.8
11	9.2	5.7	5.7	2.3	3.3	.2	.4	.0	3.6	.0	6.8	3.4
12	9.5	6.0	5.6	2.0	3.6	1.5	.9	.0	3.0	.0	5.8	.9
13	10.1	5.2	5.4	1.9	4.0	2.1	1.9	.0	3.0	.6	6.1	.4
14	10.6	6.4	5.8	2.2	2.7	.1	1.4	.0	3.4	.1	6.4	2.0
15	11.1	6.9	6.0	2.6	.3	.0	.5	.0	4.4	.3	6.0	1.8
16	11.0	6.7	5.7	3.5	1.7	.0	1.0	.0	3.8	2.0	5.9	2.6
17	9.3	6.9	6.4	3.0	2.1	.1	1.3	.0	4.0	2.0	6.8	.8
18	7.9	4.4	6.6	3.8	1.4	.0	1.1	.0	2.6	.3	8.2	2.0
19	10.3	6.1	6.8	4.0	.7	.0	1.5	.0	2.4	.0	7.4	2.5
20	8.9	5.7	6.6	4.6	.2	.0	.6	.0	3.9	.0	6.3	3.0
21	7.2	4.0	5.1	2.9	.0	.0	.4	.0	4.5	.1	4.1	1.9
22	7.9	3.3	3.1	1.0	.0	.0	.0	.0	5.1	1.0	5.2	.8
23	8.5	4.5	4.2	.8	.0	.0	.0	.0	4.9	1.2	7.3	1.3
24	9.0	5.0	4.2	1.1	.0	.0	.0	.0	3.5	.7	8.6	2.5
25	9.5	5.4	4.4	1.3	.0	.0	.2	.0	3.4	.0	8.2	3.9
26	9.2	5.3	3.9	1.6	.0	.0	.3	.0	4.3	.0	7.6	4.2
27	9.1	5.5	3.2	1.6	.0	.0	.4	.0	4.9	.3	7.5	2.4
28	9.4	5.2	1.6	.0	.0	.0	.9	.0	4.1	1.0	7.3	1.9
29	9.3	5.3	1.2	.0	.0	.0	.4	.0	---	---	3.9	1.5
30	9.0	5.5	2.2	.0	.0	.0	.0	.0	---	---	6.6	.0
31	8.4	5.2	---	---	.0	.0	.8	.0	---	---	8.6	1.6
MONTH	13.5	3.3	7.9	.0	4.0	0	1.9	.0	5.1	.0	8.6	.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.1	3.4	10.5	4.3	9.8	9.0	17.8	13.5	20.1	---	18.5	13.4
2	8.6	5.8	10.4	6.2	11.0	8.2	18.7	14.7	18.0	15.3	18.1	14.0
3	8.5	4.8	9.6	5.3	11.9	8.8	19.1	15.3	17.0	15.6	16.9	13.4
4	10.4	3.5	8.6	6.1	14.7	8.9	19.4	14.3	18.9	15.1	16.6	14.0
5	11.9	5.1	10.7	4.5	14.7	11.1	18.8	14.5	19.4	15.5	17.1	12.7
6	10.0	6.7	10.4	5.9	13.1	11.2	19.1	14.8	17.4	14.6	15.6	13.3
7	9.4	5.9	11.6	7.2	14.0	10.6	17.1	14.3	17.5	12.4	15.2	12.2
8	7.5	4.7	13.2	6.5	13.9	10.5	17.1	14.5	17.8	13.1	14.7	11.7
9	8.4	2.1	13.1	9.0	12.9	10.8	18.8	14.4	---	---	15.9	10.3
10	6.7	4.2	12.9	8.8	13.3	10.4	17.3	14.5	---	---	15.2	13.0
11	7.5	3.6	12.9	8.1	13.9	10.1	18.1	14.1	---	---	15.7	11.2
12	6.9	3.1	11.8	7.9	13.0	11.2	19.0	14.1	---	---	14.4	12.1
13	7.2	2.0	12.4	7.4	13.1	10.4	19.3	13.8	---	---	13.7	10.8
14	7.8	2.5	12.3	8.0	13.0	10.5	19.8	13.7	---	---	14.4	9.2
15	9.2	3.5	12.4	8.5	14.4	10.7	19.2	14.9	---	---	14.4	9.7
16	10.1	5.0	9.1	7.6	13.5	11.6	18.6	15.0	---	---	14.1	8.5
17	11.2	5.7	12.7	7.4	14.9	10.6	20.5	14.3	---	---	15.0	9.0
18	10.0	5.8	14.6	9.5	14.3	11.3	19.6	16.0	---	---	14.7	10.9
19	9.4	4.5	13.2	9.9	13.8	11.9	19.3	16.0	---	---	15.2	10.7
20	11.1	5.6	10.9	9.6	15.3	11.3	19.6	15.7	---	---	15.0	10.5
21	10.4	7.2	12.5	9.0	15.7	11.9	18.6	16.0	---	---	15.4	10.1
22	10.3	5.4	12.2	8.7	14.8	12.3	---	---	17.3	---	14.4	10.2
23	9.2	6.1	11.1	8.9	15.3	11.0	---	---	17.8	12.1	13.9	9.4
24	11.1	5.1	11.4	8.5	15.2	11.7	---	---	17.7	12.2	13.9	9.5
25	11.3	6.6	12.4	7.7	15.6	11.9	---	---	18.6	12.9	14.2	8.7
26	8.8	5.7	13.2	9.4	14.6	12.2	---	---	18.8	12.9	14.8	9.1
27	7.1	2.5	13.3	9.2	15.6	11.9	---	---	19.3	13.6	14.3	9.5
28	8.3	2.0	12.3	9.0	16.9	13.3	---	---	17.5	13.7	14.4	9.6
29	9.0	3.6	13.1	8.6	17.2	13.5	---	---	18.9	12.7	13.7	9.7
30	10.1	4.3	12.3	8.9	18.1	14.1	---	---	18.8	13.9	13.8	9.7
31	---	---	11.3	9.4	---	---	---	---	19.1	14.0	---	---
MONTH	11.9	2.0	14.6	4.3	18.1	8.2	---	---	---	---	18.5	8.5

07093700 ARKANSAS RIVER NEAR WELLSVILLE, CO

LOCATION.--Lat 38°30'10", long 105°56'21", in SW¼NE¼ sec.14, T.49 N., R.9 E., Chaffee County, Hydrologic Unit 11020001, on right bank 50 ft upstream from Chaffee-Fremont County line, 2.0 mi northwest of Wellsville, 2.8 mi downstream from South Arkansas River, and 3.5 mi southeast of Salida.

DRAINAGE AREA.--1,485 mi².

PERIOD OF RECORD.--April 1961 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 6,883.4 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Estimated daily discharges: Dec. 20 to Jan. 4. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions for irrigation of about 26,000 acres, and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--30 years, 718 ft³/s; 520,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,240 ft³/s, June 12, 1980, gage height, 8.02 ft; maximum gage height, 8.12 ft, June 10, 1984; minimum daily discharge, 110 ft³/s, Jan. 12, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,550 ft³/s at 1530 June 13, gage height, 6.28 ft; minimum daily, 250 ft³/s, Dec. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	388	430	405	535	496	480	359	534	1470	1290	674	358
2	389	463	401	540	497	433	375	529	1330	1120	714	352
3	412	487	356	525	502	389	375	570	1180	1090	765	349
4	398	452	360	510	491	384	370	608	983	1000	870	339
5	381	460	389	529	492	323	375	597	915	967	827	337
6	373	481	389	488	496	285	508	556	1120	823	695	322
7	372	492	367	471	498	271	562	538	1420	782	801	311
8	339	487	377	478	498	310	561	535	1570	840	794	328
9	400	494	382	467	496	376	528	637	1720	997	728	331
10	384	500	382	507	496	381	508	725	1990	1000	698	332
11	408	502	382	532	492	388	500	743	2140	981	694	339
12	417	493	375	533	490	387	482	775	2290	854	681	331
13	400	534	393	530	491	378	472	768	2390	770	586	352
14	395	548	393	532	492	379	460	880	2180	750	571	359
15	391	546	346	522	496	382	459	887	2190	782	528	342
16	386	483	374	523	503	396	461	835	2290	739	495	336
17	388	470	384	514	505	396	475	729	2140	727	475	326
18	385	467	367	513	502	389	494	660	2020	777	448	318
19	389	460	366	522	488	389	490	658	1940	786	437	313
20	433	457	375	518	486	387	445	1010	1820	782	436	305
21	469	452	290	519	488	386	427	1190	1800	776	425	299
22	457	424	250	482	487	377	424	1280	1870	805	415	287
23	479	419	280	501	488	380	424	1480	1850	832	410	281
24	482	430	310	488	492	381	427	1430	1680	784	387	277
25	472	433	340	503	485	379	412	1120	1520	824	368	274
26	460	437	370	498	477	374	418	1210	1470	805	371	268
27	452	440	420	497	478	369	405	1400	1330	729	377	272
28	442	412	460	491	478	359	391	1580	1120	678	378	268
29	440	382	480	505	---	357	386	1670	1090	659	380	266
30	436	386	490	496	---	354	385	1630	1230	661	373	263
31	427	---	505	497	---	354	---	1670	---	690	360	---
TOTAL	12904	13921	11758	15766	13780	11573	13358	29434	50058	26100	17161	9435
MEAN	416	464	379	509	492	373	445	949	1669	842	554	314
MAX	482	548	505	540	505	480	562	1670	2390	1290	870	359
MIN	372	382	250	467	477	271	359	529	915	659	360	263
AC-FT	25600	27610	23320	31270	27330	22960	26500	58380	99290	51770	34040	18710

CAL YR 1990 TOTAL 205360 MEAN 563 MAX 3550 MIN 176 AC-FT 407300
WTR YR 1991 TOTAL 225248 MEAN 617 MAX 2390 MIN 250 AC-FT 446800

07093740 BADGER CREEK, UPPER STATION, NEAR HOWARD, CO

LOCATIONDN.--Lat 38°39'23", long 105°48'50", in NE¼NE¼ sec.24, T.51 N., R.10 E., Fremont County, Hydrologic Unit 11020001, on left bank 0.2 mi downstream from County Road 2, 0.9 mi upstream from Steer Creek, 14.2 mi north of Howard, and 14.5 mi upstream from mouth.

DRAINAGE AREA.--106 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1980 to September 1986, October 1986 to October 1988 (seasonal only), at site 1,000 ft downstream. March 1989 to current year (seasonal only). Not equivalent because of seepage at previous site.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 8,780 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 28, 1988 at site 1,000 ft downstream, at different datum.

REMARKS.--Estimated daily discharges: Oct. 29-31, Apr. 1-8, and June 21-25. Records fair except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--5 years (water years 1981-86), 5.89 ft³/s; 4,270 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,360 ft³/s, Aug. 14, 1983, gage height, 8.22 ft, result of indirect determination of peak flow; no flow, July 17-23, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft³/s, and maximum (*) during period of seasonal operation:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 12	1815	28	3.57	Aug. 26	2345	*33	*3.63

Minimum daily discharge, 0.12 ft³/s, June 26-28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	---	---	---	--	---	5.4	2.2	1.1	.27	.68	.53
2	.93	---	---	---	--	---	5.5	2.6	1.9	.33	.73	.81
3	1.1	---	---	---	--	---	5.6	2.7	1.7	.35	.80	.92
4	.84	---	---	---	--	---	5.7	2.2	1.4	.38	1.5	1.3
5	.70	---	---	---	--	---	6.1	1.9	1.1	.34	1.2	.99
6	.66	---	---	---	---	---	6.3	2.1	1.5	.18	.78	.72
7	.67	---	---	---	---	---	5.7	2.1	1.9	.23	.60	.65
8	1.0	---	---	---	---	---	5.3	2.1	1.6	.29	.46	.62
9	1.0	---	---	---	---	---	4.0	2.1	1.2	.48	.43	.52
10	1.4	---	---	---	---	---	3.8	2.0	1.0	.42	.46	.68
11	1.2	---	---	---	---	---	3.0	1.5	1.2	.43	.50	.69
12	1.0	---	---	---	---	---	2.6	1.2	1.1	.58	3.5	.60
13	.89	---	---	---	---	---	2.3	1.1	1.2	.49	1.2	.66
14	.85	---	---	---	---	---	2.1	.95	1.4	.85	.85	.72
15	.79	---	---	---	---	---	2.6	.83	1.3	.43	.65	.58
16	.76	---	---	---	---	---	4.6	.92	1.1	.35	.76	.50
17	.82	---	---	---	---	---	6.5	1.2	.78	.39	.70	.43
18	.75	---	---	---	---	---	6.0	.92	.54	.56	.52	.41
19	.88	---	---	---	---	---	4.3	.73	.47	.53	.55	.43
20	1.0	---	---	---	---	---	3.9	1.4	.42	.49	.51	.40
21	1.1	---	---	---	---	---	4.1	1.6	.37	.43	.42	.42
22	1.2	---	---	---	---	---	3.3	1.3	.32	1.1	.40	.37
23	1.5	---	---	---	---	---	3.3	.96	.32	5.2	.40	.38
24	1.4	---	---	---	---	---	4.1	2.1	.32	3.8	.35	.38
25	1.3	---	---	---	---	---	5.2	4.6	.22	3.5	.36	.39
26	1.2	---	---	---	---	---	4.0	3.2	.12	3.3	1.3	.39
27	1.2	---	---	---	---	---	2.8	2.0	.12	2.3	6.9	.40
28	1.1	---	---	---	---	---	2.4	1.4	.12	1.5	1.9	.46
29	1.1	---	---	---	---	---	2.4	1.1	.17	1.0	1.3	.49
30	1.1	---	---	---	---	---	2.2	1.0	.35	.88	.81	.51
31	1.1	---	---	---	---	---	---	.93	---	.78	.63	---
TOTAL	31.33	---	---	---	---	---	125.1	52.94	26.34	32.16	32.15	17.35
MEAN	1.01	---	---	---	---	---	4.17	1.71	.88	1.04	1.04	.58
MAX	1.5	---	---	---	---	---	6.5	4.6	1.9	5.2	6.9	1.3
MIN	.66	---	---	---	---	---	2.1	.73	.12	.18	.35	.37
AC-FT	62	---	---	---	---	---	248	105	52	64	64	34

07093740 BADGER CREEK, UPPER STATION, NEAR HOWARD, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1989 to current year (seasonal record only). February 1981 to October 1988 (seasonal record only) and at site 1,000 ft downstream, not equivalent because of seepage at previous site.

PERIOD OF DAILY RECORD.--Suspended sediment discharge March 1989 to current year (seasonal only). June 1981 to October 1988 (seasonal only) and at site 1,000 ft downstream, not equivalent because of seepage at previous site.

INSTRUMENTATION.--Pumping sediment sampler since June 1981.

REMARKS.--Records fair, except those for peak flows which are poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily, 25,800 mg/L, Aug. 20, 1982; minimum daily, 0 mg/L, many days.

SEDIMENT LOADS: Maximum daily, 15,600 tons, Aug. 14, 1983; minimum daily, 0 tons, many days.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily, 4,000 mg/L (estimated), Apr. 5; minimum daily, 15 mg/L, Sept. 27.

SEDIMENT LOADS: Maximum daily, 446 tons, July 23; minimum daily, 0.02 tons, Sept. 20, 25-27, 30.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDEO (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEO (T/DAY)
OCT				
04...	1030	0.91	37	0.09
30...	1040	0.80	41	0.09
MAR				
19...	1530	3.3	114	1.0
APR				
04...	1130	5.8	1200	19
23...	1215	3.1	587	4.9
MAY				
09...	1000	2.0	228	1.2
JUN				
04...	1355	1.4	90	0.34
25...	1410	0.15	105	0.04
JUL				
17...	0950	0.42	184	0.21
17...	1100	2.2	149	0.89
25...	1000	3.2	194	1.7
AUG				
05...	1110	1.2	113	0.37
14...	1325	0.94	122	0.31
21...	0945	0.44	75	0.09
28...	0920	1.3	125	0.44
SEP				
13...	1135	0.64	31	0.05

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

07093740 BADGER CREEK, UPPER STATION, NEAR HOWARD, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	5.4	---	11	2.2	---	2.0	1.1	---	.34
2	5.5	---	12	2.6	---	3.2	1.9	143	.73
3	5.6	---	14	2.7	---	3.6	1.7	115	.53
4	5.7	1960	30	2.2	---	2.5	1.4	86	.33
5	6.1	---	66	1.9	---	1.5	1.1	108	.32
6	6.3	---	40	2.1	---	2.0	1.5	137	.55
7	5.7	---	7.5	2.1	---	2.0	1.9	---	.92
8	5.3	---	6.2	2.1	---	1.7	1.6	146	.63
9	4.0	---	15	2.1	228	1.3	1.2	112	.36
10	3.8	---	15	2.0	155	.84	1.0	---	.23
11	3.0	---	7.7	1.5	---	.58	1.2	95	.31
12	2.6	432	3.0	1.2	135	.44	1.1	85	.25
13	2.3	376	2.3	1.1	130	.39	1.2	---	.32
14	2.1	---	2.3	.95	---	.30	1.4	120	.45
15	2.6	---	2.9	.83	104	.23	1.3	109	.38
16	4.6	516	6.4	.92	109	.27	1.1	---	.28
17	6.5	---	14	1.2	---	.40	.78	76	.16
18	6.0	---	17	.92	113	.28	.54	---	.09
19	4.3	---	11	.73	117	.23	.47	---	.08
20	3.9	---	11	1.4	---	.51	.42	---	.07
21	4.1	848	9.4	1.6	148	.64	.37	---	.06
22	3.3	613	5.5	1.3	115	.40	.32	---	.07
23	3.3	612	5.5	.96	---	.22	.32	---	.07
24	4.1	720	8.0	2.1	169	1.1	.32	---	.07
25	5.2	526	7.4	4.6	849	11	.22	105	.06
26	4.0	---	4.9	3.2	---	2.7	.12	110	.04
27	2.8	---	3.0	2.0	241	1.3	.12	---	.03
28	2.4	---	2.5	1.4	168	.64	.12	---	.03
29	2.4	---	2.3	1.1	---	.32	.17	---	.12
30	2.2	---	2.1	1.0	101	.27	.35	---	.24
31	---	---	---	.93	102	.26	---	---	---
TOTAL	125.1	---	344.9	52.94	---	43.12	26.34	---	8.12
JULY			AUGUST			SEPTEMBER			
1	.27	---	.07	.68	---	.14	.53	55	.08
2	.33	---	.10	.73	---	.22	.81	---	.26
3	.35	---	.11	.80	144	.31	.92	61	.15
4	.38	---	.14	1.5	---	.69	1.3	309	2.0
5	.34	---	.10	1.2	112	.36	.99	---	.63
6	.18	---	.03	.78	60	.13	.72	142	.28
7	.23	---	.05	.60	49	.08	.65	117	.20
8	.29	---	.08	.46	---	.06	.62	120	.20
9	.48	---	.32	.43	30	.03	.52	86	.12
10	.42	---	.17	.46	30	.04	.68	104	.19
11	.43	---	.20	.50	---	2.1	.69	---	.20
12	.58	---	.39	3.5	---	324	.60	36	.06
13	.49	---	.26	1.2	---	32	.66	32	.06
14	.85	---	5.4	.85	139	.32	.72	---	.05
15	.43	---	.19	.65	---	.07	.58	21	.03
16	.35	---	.14	.76	104	.30	.50	23	.03
17	.39	194	3.2	.70	79	.16	.43	---	.04
18	.56	254	5.7	.52	---	.06	.41	31	.03
19	.53	228	5.6	.55	48	.07	.43	23	.03
20	.49	---	.22	.51	98	.13	.40	---	.02
21	.43	---	3.5	.42	65	.07	.42	33	.04
22	1.1	944	38	.40	34	.04	.37	75	.07
23	5.2	---	445	.40	---	.05	.38	---	.07
24	3.8	---	59	.35	---	.06	.38	---	.04
25	3.5	483	29	.36	49	.05	.39	---	.02
26	3.3	---	2.6	1.3	463	31	.39	---	.02
27	2.3	---	.90	6.9	---	105	.40	15	.02
28	1.5	---	.37	1.9	712	4.8	.46	29	.04
29	1.0	---	.22	1.3	112	.39	.49	37	.05
30	.88	---	.18	.81	---	.14	.51	17	.02
31	.78	---	.15	.63	53	.09	---	---	---
TOTAL	32.16	---	601.39	32.15	---	502.96	17.35	---	5.05

07093775 BADGER CREEK, LOWER STATION, NEAR HOWARD, CO

LOCATION.--Lat 38°28'02", long 105°51'34", in SW 1/4 sec. 27, T.49 N., R.10 E., Fremont County, Hydrologic Unit 11020001, on left bank 660 ft upstream from Denver and Rio Grande Railroad bridge, 960 ft upstream from mouth, and 1.9 mi northwest of Howard.

DRAINAGE AREA.--211 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1980 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 6,780 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 19, 1983, at site 360 ft downstream, at datum 5.07 ft, lower.

REMARKS.--Estimated daily discharges: Nov. 28, Dec. 2-11, Dec. 14 to Jan. 5, Jan. 7-13, Jan. 15 to Feb. 12, Feb. 14, 15, 18-22, 24-28, and Mar. 7-10. Records good except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--10 years (water years 1982-91) 9.66 ft³/s; 7,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,470 ft³/s, July 28, 1984, gage height, 8.05 ft (from floodmark) from rating curve extended above 1,950 ft³/s; minimum daily, 0.56 ft³/s, Feb. 4, 5, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 8	1445	196	5.43	Aug. 10	1515	199	5.44
July 11	1645	*743	*6.65	Aug. 18	2245	101	5.02
July 22	1430	163	5.30				

Minimum daily discharge 3.3 ft³/s, Dec. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	7.8	6.5	6.7	5.7	7.0	8.4	9.6	11	7.4	8.1	6.4
2	6.8	8.4	6.2	7.0	6.0	7.0	9.7	10	12	7.1	9.0	6.3
3	7.2	8.7	6.0	7.0	6.0	7.2	9.8	10	12	7.4	9.1	6.8
4	6.9	8.3	6.2	6.4	6.0	7.0	9.9	9.3	11	7.5	9.9	6.6
5	6.4	8.3	6.4	6.1	5.2	7.7	12	9.1	10	7.4	9.3	7.1
6	6.3	8.5	6.4	5.6	4.8	7.6	20	9.4	11	7.2	8.6	6.6
7	6.5	8.4	6.4	6.0	4.8	7.0	23	9.4	13	7.7	8.4	6.6
8	8.9	8.2	6.3	6.0	4.8	6.5	17	9.7	11	14	7.9	6.5
9	8.5	8.5	6.5	6.4	4.8	6.5	13	9.3	10	6.6	8.6	6.1
10	8.3	8.4	6.6	5.8	4.8	6.8	14	9.6	10	6.5	14	7.5
11	7.9	8.3	6.8	5.7	4.8	6.8	13	9.0	9.7	26	7.8	6.6
12	7.4	8.2	6.9	5.9	4.8	7.6	12	8.5	10	6.6	7.9	6.4
13	7.3	7.6	6.3	6.1	5.2	7.7	11	8.2	10	4.8	12	6.3
14	7.4	7.6	6.1	5.8	5.1	7.4	11	8.1	9.5	5.1	9.7	6.3
15	7.2	7.5	5.8	5.8	5.1	7.5	11	7.8	9.3	4.6	9.5	6.1
16	6.9	7.4	5.5	5.7	5.2	7.4	15	7.6	8.6	4.8	9.0	5.6
17	7.1	7.6	5.4	5.7	5.2	7.4	18	8.6	8.5	4.6	9.2	5.6
18	6.8	7.9	5.4	5.8	5.3	7.3	17	8.3	8.0	4.5	13	5.5
19	7.2	8.1	5.3	6.8	5.5	7.3	14	8.3	7.4	4.3	20	5.6
20	8.3	8.1	5.1	7.0	5.1	7.7	14	9.7	7.5	4.3	7.5	5.5
21	7.9	8.0	4.8	6.5	5.0	7.8	13	10	7.1	4.7	7.2	5.5
22	7.8	8.4	4.3	5.8	5.2	7.8	12	9.8	6.6	11	7.1	5.5
23	7.9	8.5	3.3	5.4	6.3	7.8	12	9.2	6.4	11	7.2	5.5
24	7.9	7.9	3.5	4.5	6.4	7.8	13	15	5.9	11	6.7	5.5
25	7.8	7.7	4.5	4.5	5.0	8.4	14	14	5.8	12	6.3	5.5
26	7.8	7.8	4.7	5.0	5.7	8.6	13	13	6.8	11	6.4	5.2
27	7.8	8.1	5.0	5.2	6.4	8.6	11	12	7.6	10	10	4.9
28	7.8	8.2	5.5	5.2	6.7	8.6	10	11	7.4	8.9	8.6	5.2
29	7.8	8.2	5.5	5.0	---	8.7	9.9	9.7	7.5	8.5	8.2	5.2
30	7.8	9.1	5.4	4.5	---	8.0	9.7	9.7	7.8	8.2	7.2	5.3
31	7.8	---	5.3	5.1	---	8.3	---	10	---	8.2	6.8	---
TOTAL	231.8	243.7	173.9	180.0	150.9	234.8	390.4	302.9	268.4	252.9	280.2	179.3
MEAN	7.48	8.12	5.61	5.81	5.39	7.57	13.0	9.77	8.95	8.16	9.04	5.98
MAX	8.9	9.1	6.9	7.0	6.7	8.7	23	15	13	26	20	7.5
MIN	6.3	7.4	3.3	4.5	4.8	6.5	8.4	7.6	5.8	4.3	6.3	4.9
AC-FT	460	483	345	357	299	466	774	601	532	502	556	356

CAL YR 1990 TOTAL 2655.6 MEAN 7.28 MAX 30 MIN 3.0 AC-FT 5270
WTR YR 1991 TOTAL 2889.2 MEAN 7.92 MAX 26 MIN 3.3 AC-FT 5730

07093775 BADGER CREEK, LOWER STATION, NEAR HOWARD, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1981 to current year (seasonal record only).

PERIOD OF DAILY RECORD.--Suspended sediment discharge May 1981 to current year (seasonal record only).

INSTRUMENTATION.--Pumping sediment sampler since May 1981.

REMARKS.--Records good except those that are estimated, which are poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily, 18,200 mg/L, Apr. 18, 1987; minimum daily, 1 mg/L, Sept. 22, 1981, many days in water year 1986, Oct. 16, 1986, Oct. 19, 1989 and Oct. 3-15, 1989.

SEDIMENT LOADS: Maximum daily, 31,500 tons (estimated), July 28, 1984; minimum daily, no load Sept. 12-30, 1981.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily, 12,200 mg/L, July 11; minimum daily, 13 mg/L, Apr. 1.

SEDIMENT LOADS: Maximum daily, 6,320 tons, July 11; minimum daily, 0.28 tons, Oct. 5.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT				
05...	1025	6.6	15	0.27
11...	1100	8.2	37	0.82
NOV				
16...	0900	8.2	194	4.3
MAR				
21...	1130	7.8	10	0.21
APR				
03...	1415	9.5	16	0.41
16...	0950	15	83	3.4
MAY				
09...	1500	10	36	0.97
JUN				
06...	1300	12	109	3.5
26...	0745	5.9	65	1.0
JUL				
25...	1220	12	204	6.6
AUG				
21...	0720	6.6	97	1.7
SEP				
05...	1405	7.4	80	1.6

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

07093775 BADGER CREEK, LOWER STATION, NEAR HOWARD, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	8.4	13	.29	9.6	44	1.1	11	419	18
2	9.7	14	.37	10	63	1.7	12	---	1.9
3	9.8	16	.42	10	---	1.5	12	63	2.0
4	9.9	34	.91	9.3	41	1.0	11	52	1.5
5	12	71	2.4	9.1	42	1.0	10	---	1.4
6	20	---	37	9.4	---	1.3	11	100	3.3
7	23	867	56	9.4	46	1.2	13	99	3.5
8	17	454	21	9.7	51	1.4	11	---	3.0
9	13	---	9.8	9.3	35	.90	10	108	2.9
10	14	172	6.5	9.6	35	.91	10	111	3.0
11	13	138	4.8	9.0	31	.75	9.7	---	2.6
12	12	---	4.1	8.5	---	.69	10	88	2.4
13	11	76	2.2	8.2	30	.66	10	99	2.7
14	11	73	2.1	8.1	30	.66	9.5	---	3.2
15	11	---	4.4	7.8	---	.63	9.3	126	3.2
16	15	149	6.4	7.6	35	.72	8.6	102	2.4
17	18	154	7.5	8.6	30	.70	8.5	---	2.0
18	17	---	5.8	8.3	---	.67	8.0	88	1.9
19	14	92	3.6	8.3	20	.45	7.4	102	2.0
20	14	69	2.7	9.7	25	.65	7.5	---	2.1
21	13	---	2.2	10	---	.76	7.1	86	1.6
22	12	67	2.2	9.8	31	.82	6.6	82	1.5
23	12	78	2.7	9.2	42	1.0	6.4	---	1.3
24	13	---	2.2	15	---	46	5.9	55	.88
25	14	94	3.6	14	88	3.3	5.8	50	.78
26	13	55	1.9	13	88	3.1	6.8	66	1.2
27	11	---	1.7	12	---	2.5	7.6	58	1.2
28	10	68	1.8	11	62	1.8	7.4	38	.76
29	9.9	48	1.3	9.7	58	1.5	7.5	53	1.1
30	9.7	---	1.0	9.7	---	1.5	7.8	66	1.4
31	---	---	---	10	68	1.8	---	---	---
TOTAL	390.4	---	198.89	302.9	---	82.67	268.4	---	76.72
JULY			AUGUST			SEPTEMBER			
1	7.4	33	.66	8.1	---	2.3	6.4	96	1.7
2	7.1	---	.69	9.0	140	3.4	6.3	99	1.8
3	7.4	66	1.3	9.1	151	3.7	6.8	---	2.8
4	7.5	47	.95	9.9	---	6.7	6.6	94	1.7
5	7.4	---	1.1	9.3	238	6.0	7.1	82	1.6
6	7.2	60	1.2	8.6	205	4.8	6.6	---	1.5
7	7.7	57	1.2	8.4	---	3.8	6.6	74	1.3
8	14	12100	1940	7.9	132	2.8	6.5	50	.88
9	6.6	---	3.9	8.6	150	3.5	6.1	---	1.5
10	6.5	---	1.9	14	7680	851	7.5	239	5.9
11	26	12200	6320	7.8	---	6.0	6.6	74	1.3
12	6.6	836	17	7.9	---	3.4	6.4	---	1.0
13	4.8	148	1.9	12	---	55	6.3	55	.94
14	5.1	---	1.7	9.7	504	13	6.3	49	.83
15	4.6	108	1.3	9.5	87	2.2	6.1	---	.89
16	4.8	80	1.0	9.0	---	2.1	5.6	---	.82
17	4.6	---	.93	9.2	85	2.1	5.6	---	.73
18	4.5	80	.97	13	1880	304	5.5	---	.71
19	4.3	38	.44	20	5840	473	5.6	---	1.0
20	4.3	---	.42	7.5	---	12	5.5	65	.97
21	4.7	67	.87	7.2	95	1.8	5.5	---	.98
22	11	4220	327	7.1	---	1.3	5.5	---	.98
23	11	---	26	7.2	82	1.6	5.5	---	.98
24	11	516	16	6.7	98	1.8	5.5	---	.98
25	12	254	8.4	6.3	---	1.4	5.5	---	.98
26	11	---	7.6	6.4	38	.66	5.2	---	.59
27	10	306	8.3	10	1590	54	4.9	---	.40
28	8.9	252	6.1	8.6	---	22	5.2	---	.59
29	8.5	---	3.0	8.2	306	6.8	5.2	---	.51
30	8.2	85	1.9	7.2	204	4.0	5.3	---	.34
31	8.2	112	2.5	6.8	---	2.0	---	---	---
TOTAL	252.9	---	8706.23	280.2	---	1858.16	179.3	---	37.20

07094500 ARKANSAS RIVER AT PARKDALE, CO

LOCATION.--Lat 38°29'14", long 105°22'23", in NE¼NW¼ sec.18, T.18 S., R.71 W., Fremont County, Hydrologic Unit 11020001, on left bank at Parkdale, 100 ft upstream from Bumback Gulch, 300 ft upstream from bridge on U.S. Highway 50, and 0.9 mi upstream from Copper Gulch.

DRAINAGE AREA.--2,548 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to September 1955, October 1964 to current year. Monthly discharge only for October 1945 to May 1946, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,720 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1964, at site 600 ft downstream at different datum.

REMARKS.--No estimated daily discharges. Records good except for winter period, which is fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, diversions for irrigation of about 35,000 acres upstream from station, and return flow from irrigated areas.

AVERAGE DISCHARGE.--37 years (water years 1946-55, 1965-91), 804 ft³/s; 582,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,310 ft³/s, June 26, 1983, gage height, 7.76 ft; maximum gage height, 9.13 ft, June 9, 1985; minimum daily discharge, 200 ft³/s, Jan. 5-7, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,940 ft³/s at 2230 June 13, gage height, 5.63 ft; minimum daily, 234 ft³/s, Dec. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	455	479	440	568	520	513	399	462	1690	1420	803	407
2	448	484	438	580	529	515	404	547	1560	1300	825	399
3	489	581	394	551	555	439	417	556	1410	1220	893	404
4	479	507	387	623	549	429	412	636	1230	1150	1040	409
5	462	500	423	673	548	429	404	663	1080	1090	1060	394
6	449	545	438	635	560	352	464	611	1190	990	899	389
7	436	553	408	564	562	328	589	562	1530	875	946	367
8	466	530	419	547	558	307	603	558	1700	886	946	375
9	479	539	421	532	550	387	582	589	1770	1080	916	385
10	458	558	418	533	527	421	537	760	2130	1110	869	400
11	471	561	419	592	517	427	521	815	2350	1110	840	401
12	476	552	416	576	517	429	514	817	2500	1040	819	395
13	459	574	431	575	515	420	493	882	2830	886	777	394
14	442	616	436	575	515	419	484	914	2520	843	682	409
15	439	623	392	563	526	423	477	1010	2420	852	646	406
16	431	588	396	550	526	434	480	965	2610	843	584	395
17	427	519	428	534	526	439	483	865	2460	810	544	384
18	427	519	406	543	526	435	497	757	2210	850	517	371
19	423	516	396	543	524	429	520	713	2130	888	527	370
20	474	506	346	550	521	432	484	1010	2000	899	499	367
21	521	500	272	534	523	430	448	1320	1930	866	484	354
22	518	469	234	518	523	422	447	1370	1970	939	462	343
23	530	455	271	508	524	420	450	1550	2020	1050	455	332
24	561	460	296	512	526	422	459	1660	1860	1000	447	326
25	551	467	330	523	526	421	448	1360	1680	977	420	326
26	538	472	341	510	523	413	432	1310	1590	1000	417	320
27	521	480	398	527	522	416	436	1480	1520	917	427	314
28	509	461	462	524	512	404	417	1700	1310	818	427	306
29	496	418	508	518	---	397	407	1780	1230	784	424	302
30	490	420	515	513	---	403	409	1760	1330	763	418	299
31	487	---	546	525	---	391	---	1820	---	783	405	---
TOTAL	14812	15452	12425	17119	14850	12946	14117	31802	55760	30039	20418	11043
MEAN	478	515	401	552	530	418	471	1026	1859	969	659	368
MAX	561	623	546	673	562	515	603	1820	2830	1420	1060	409
MIN	423	418	234	508	512	307	399	462	1080	763	405	299
AC-FT	29380	30650	24640	33960	29450	25680	28000	63080	110600	59580	40500	21900

CAL YR 1990 TOTAL 236161 MEAN 647 MAX 4090 MIN 222 AC-FT 468400
WTR YR 1991 TOTAL 250783 MEAN 687 MAX 2830 MIN 234 AC-FT 497400

07094500 ARKANSAS RIVER AT PARKDALE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1981 to September 1982, November 1986 to September 1990.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1986 to current year.

WATER TEMPERATURE: November 1986 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and mean daily water temperature data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 498 microsiemens, Aug. 6, 1990; minimum, 108 microsiemens, June 10, 1987.

WATER TEMPERATURE: Maximum, 25.5°C, July 23, 1987; minimum, 0.0°C, many days during most winters.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 392 microsiemens, Dec. 21; minimum, 115 microsiemens, June 13.

WATER TEMPERATURE: Maximum 23.0°C, Aug. 27; minimum, 0.0°C, many days during winter.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	330	327	328	288	239	232	256	250	133	160	224	324
2	333	324	322	278	237	236	256	226	145	160	216	322
3	331	311	325	276	233	247	254	227	153	166	208	324
4	332	320	340	268	230	262	254	220	159	167	211	330
5	324	329	335	253	230	269	258	217	172	172	208	331
6	319	327	329	247	230	277	264	216	174	---	212	333
7	322	316	323	253	211	290	241	217	161	---	259	337
8	323	317	332	258	227	306	224	215	147	---	227	338
9	327	318	337	257	226	298	220	213	140	---	227	337
10	326	315	339	259	231	277	228	203	133	---	236	341
11	325	315	337	249	235	268	228	188	126	---	247	344
12	322	314	336	240	233	270	227	185	122	---	240	340
13	316	313	334	236	234	270	221	180	118	---	253	341
14	321	305	327	233	235	270	214	180	123	---	270	331
15	323	301	311	234	237	269	215	168	123	---	277	328
16	326	296	339	238	237	269	214	165	121	---	291	327
17	329	320	331	242	235	265	213	170	121	203	298	327
18	332	309	332	241	235	263	216	177	124	201	305	332
19	332	310	334	241	235	264	215	186	125	198	310	336
20	331	312	349	240	237	262	219	182	128	198	315	334
21	325	313	372	240	238	262	229	160	130	198	314	333
22	325	315	367	245	237	258	236	149	128	203	312	336
23	327	320	359	250	237	260	236	141	126	222	312	342
24	322	324	353	248	236	257	236	144	128	226	312	345
25	319	323	349	249	231	254	242	150	133	235	316	345
26	319	321	351	244	234	258	247	159	133	244	327	342
27	323	318	341	243	234	258	245	159	155	258	328	339
28	323	314	325	243	231	258	247	147	163	251	329	336
29	325	311	307	244	---	260	251	135	173	241	324	338
30	325	321	289	243	---	257	250	132	171	237	322	339
31	326	---	289	241	---	254	---	130	---	234	320	---
MEAN	325	316	334	249	233	265	235	180	140	---	276	335

07094500 ARKANSAS RIVER AT PARKDALE, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.7	13.4	8.9	7.3	1.2	.3	.0	.0	.7	.3	6.4	2.1
2	15.4	12.6	7.8	5.0	.6	.3	.0	.0	.8	.2	5.4	2.6
3	13.3	10.8	5.1	2.8	.3	.3	.0	.0	.9	.2	7.1	3.6
4	13.4	10.0	4.9	2.2	.4	.3	.0	.0	1.2	.2	8.2	4.7
5	14.6	10.6	5.8	3.3	.4	.4	.0	.0	1.5	.2	8.4	5.9
6	14.7	11.6	4.8	1.8	1.4	.4	.0	.0	1.6	.0	5.9	4.4
7	12.9	9.3	3.3	.8	.7	.4	.5	.0	1.8	.0	6.6	2.2
8	8.9	6.0	3.2	1.3	.9	.4	.6	.2	1.5	.1	6.0	1.4
9	9.3	4.2	4.0	1.9	1.7	.4	.4	.1	2.0	.0	---	---
10	11.1	6.7	5.2	2.7	1.9	.5	.5	.2	3.3	.8	6.9	3.1
11	11.7	8.5	5.4	3.7	2.0	.5	.5	.0	3.9	1.4	8.1	3.5
12	11.6	8.6	5.1	3.4	3.5	1.6	.5	.0	3.2	1.7	7.0	3.6
13	10.9	7.7	5.1	3.2	4.1	2.7	.5	.3	4.5	2.3	7.2	3.0
14	11.2	8.1	5.6	3.7	3.0	.4	.5	.3	4.2	1.4	5.5	2.2
15	11.6	8.1	5.8	4.2	.2	.0	.5	.2	4.9	2.1	6.8	3.1
16	12.2	8.5	5.3	4.3	.7	.0	.5	.2	4.7	3.3	5.1	3.7
17	11.0	8.4	5.7	3.6	1.1	.2	.5	.2	5.7	2.7	7.2	3.3
18	8.7	6.7	5.9	4.5	1.3	.0	.5	.1	4.3	2.9	8.7	2.6
19	10.8	6.4	5.9	4.3	.2	.0	.6	.1	3.9	.8	7.8	3.1
20	9.9	6.2	6.9	5.0	.0	.0	.6	.1	4.6	1.5	7.7	4.2
21	7.2	4.4	5.1	2.6	.2	.0	.5	.0	5.8	1.6	5.6	2.9
22	8.2	5.0	2.6	1.3	.0	.0	.1	.0	5.9	2.6	7.8	2.4
23	8.7	6.3	2.7	.9	.0	.0	.7	.0	5.2	3.3	9.4	4.0
24	8.6	6.6	3.5	1.7	.0	.0	.7	.5	3.2	1.7	10.5	4.9
25	9.7	7.1	3.3	1.8	.0	.0	.7	.4	2.9	.5	10.2	6.8
26	9.5	7.4	4.3	2.5	.0	.0	.6	.4	3.7	1.5	9.2	7.0
27	9.7	7.6	3.2	1.4	.0	.0	.8	.4	4.1	1.4	9.6	5.3
28	9.0	7.0	1.1	.2	.0	.0	.9	.4	4.6	2.1	9.7	4.8
29	9.2	7.3	.4	.2	.0	.0	.5	.3	---	---	7.3	4.9
30	9.3	7.4	1.1	.3	.0	.0	.4	.3	---	---	9.0	3.6
31	8.5	7.3	---	---	.0	.0	.8	.3	---	---	10.0	3.4
MONTH	16.7	4.2	8.9	.2	4.1	.0	.9	.0	5.9	.0	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.2	5.5	12.9	7.4	12.6	11.1	19.6	16.6	21.6	16.7	21.2	16.8
2	11.5	9.0	13.9	9.6	12.3	10.8	19.7	17.1	20.0	18.4	21.2	17.0
3	10.9	6.7	12.2	8.5	14.1	10.7	20.3	17.4	18.7	17.3	21.6	17.3
4	12.0	3.2	9.9	8.6	15.1	11.6	20.0	16.6	19.5	16.7	21.4	17.5
5	14.1	---	13.2	7.7	15.9	13.3	20.4	16.3	20.2	17.0	20.6	15.5
6	15.0	10.3	12.8	9.6	16.3	14.8	20.8	17.8	20.4	18.0	18.6	16.6
7	13.1	10.9	14.1	10.3	15.9	12.7	19.2	16.7	19.9	15.3	18.8	14.7
8	10.3	7.3	15.9	10.4	16.4	13.5	18.5	17.0	19.8	16.7	18.6	14.0
9	10.4	6.5	14.2	12.2	15.9	13.1	18.9	16.1	19.8	16.7	18.4	14.0
10	9.9	6.7	16.2	12.0	15.5	12.8	20.1	16.2	17.9	14.3	19.2	15.8
11	10.6	7.2	16.1	12.1	15.9	12.8	19.2	17.5	19.1	15.3	19.2	15.0
12	9.0	5.6	15.4	11.2	15.1	12.3	19.9	15.5	19.2	16.4	17.9	15.4
13	6.9	4.6	13.8	10.7	13.8	11.8	20.8	16.9	18.7	16.7	17.6	14.3
14	9.0	4.8	13.3	11.0	14.1	11.8	21.1	16.9	20.7	16.3	16.2	12.3
15	10.6	5.9	14.8	11.7	14.8	11.5	21.5	17.7	20.8	17.1	17.4	12.9
16	11.5	7.9	13.2	11.7	14.4	12.7	21.5	17.9	21.0	16.8	16.8	12.6
17	12.7	8.3	15.3	10.8	15.2	12.0	21.9	17.7	21.0	16.9	16.7	12.1
18	12.2	9.8	17.5	12.3	16.0	12.8	21.5	19.3	20.5	16.9	14.1	11.2
19	11.2	8.9	16.4	13.3	15.7	13.1	21.3	18.7	21.0	17.3	15.3	10.4
20	12.6	8.8	14.0	12.2	16.7	12.9	21.2	18.4	20.5	17.5	17.2	12.2
21	13.7	10.1	12.9	10.9	17.1	13.6	20.6	18.9	21.9	17.5	17.7	12.8
22	13.5	9.6	15.5	11.7	17.9	14.3	19.5	17.7	21.1	17.5	16.6	13.0
23	12.6	9.9	14.9	12.3	17.2	14.3	20.0	16.7	21.3	16.2	15.5	10.7
24	12.7	8.1	13.5	10.7	17.7	14.7	19.6	17.3	20.7	16.3	15.2	10.4
25	12.5	9.8	14.8	11.0	17.0	13.9	19.2	16.9	22.0	17.0	15.4	10.2
26	11.0	8.3	15.9	12.1	17.1	13.8	17.9	16.2	22.7	17.7	16.4	11.3
27	9.3	5.2	15.5	11.8	17.2	13.8	19.2	15.1	23.0	18.1	16.1	12.0
28	9.7	6.0	14.7	12.2	19.5	15.6	21.0	16.7	22.4	18.4	16.8	12.4
29	10.5	5.2	14.7	11.5	18.6	16.0	21.0	17.8	21.1	18.0	16.6	12.4
30	10.3	7.2	14.7	11.1	20.6	16.8	20.1	16.8	22.6	17.9	15.2	13.1
31	---	---	13.5	11.3	---	---	20.9	17.3	21.9	17.7	---	---
MONTH	15.0	---	17.5	7.4	20.6	10.7	21.9	15.1	23.0	14.3	21.6	10.2

07095000 GRAPE CREEK NEAR WESTCLIFFE, CO

LOCATION.--Lat 38°11'10", long 105°28'59", in NW¼NW¼ sec.31, T.21 S., R.72 W., Custer County, Hydrologic Unit 11020001, on left bank 0.5 mi upstream from water line of De Weese Reservoir at elevation 7,665 ft, 0.5 mi downstream from Swift Creek, and 3.6 mi northwest of Westcliffe.

DRAINAGE AREA.--320 mi².

PERIOD OF RECORD.--October 1924 to September 1961, October 1962 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1241: 1950 (M). WSP 1311: 1927 (M).

GAGE.--Water-stage recorder. Elevation of gage is 7,690 ft, from topographic map. Prior to Mar. 17, 1939, at site 30 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Oct. 21 to Feb. 21, Feb. 25 to Mar. 7, and June 25 to July 15. Records good except for estimated daily discharges, which are poor. Diversions for irrigation of about 250 acres upstream from station.

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

AVERAGE DISCHARGE.--66 years (water years 1925-61, 1963-91), 34.2 ft³/s; 24,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,460 ft³/s, Aug. 2, 1966, gage height, 8.45 ft, from rating curve extended above 320 ft³/s, on basis of slope-area measurement of peak flow; minimum daily, 0.1 ft³/s, June 19-22, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 24	2300	*394	*2.58	Aug. 5	0930	314	2.20

Minimum daily discharge, 6.0 ft³/s, July 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991.
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	36	30	16	13	27	40	18	16	6.0	64	26
2	39	38	29	15	14	28	44	15	25	8.3	58	24
3	44	36	27	15	16	27	41	12	19	9.0	89	25
4	39	35	26	15	18	27	40	12	12	10	222	24
5	37	34	25	14	19	28	40	14	11	10	252	24
6	34	33	25	14	20	28	40	14	18	9.0	180	24
7	35	32	24	14	20	28	40	12	27	8.0	144	26
8	58	31	24	13	22	28	37	12	28	9.0	110	24
9	61	31	23	14	22	28	32	11	30	30	94	20
10	72	32	25	14	22	31	32	11	36	20	101	21
11	56	33	25	14	23	34	28	11	49	30	94	21
12	43	33	24	14	24	31	28	11	47	60	94	22
13	37	34	23	14	25	31	27	11	50	80	99	24
14	31	34	22	14	25	31	25	12	94	50	149	22
15	29	35	20	13	27	32	22	11	84	40	96	21
16	28	35	19	13	27	32	20	9.8	63	31	81	21
17	24	36	18	13	27	31	18	9.8	56	29	71	19
18	22	36	18	12	28	35	16	7.4	45	24	68	18
19	31	37	17	12	28	35	16	6.9	40	20	85	18
20	52	37	17	12	28	31	16	19	39	15	79	18
21	40	38	17	13	30	30	16	44	24	15	72	17
22	39	38	16	13	27	32	16	41	22	32	65	15
23	39	39	16	13	28	34	20	39	21	126	59	14
24	38	38	16	12	27	35	32	38	17	236	52	15
25	38	38	16	12	26	32	22	37	18	225	47	14
26	37	39	16	12	26	31	18	36	16	123	43	14
27	37	39	16	12	27	30	15	34	14	125	40	14
28	36	38	15	12	27	31	21	25	12	101	36	15
29	36	35	15	11	---	30	28	18	10	82	31	15
30	36	33	15	11	---	32	24	17	8.0	70	31	14
31	36	---	16	11	---	40	---	15	---	60	27	---
TOTAL	1227	1063	635	407	666	960	814	583.9	951.0	1693.3	2733	589
MEAN	39.6	35.4	20.5	13.1	23.8	31.0	27.1	18.8	31.7	54.6	88.2	19.6
MAX	72	39	30	16	30	40	44	44	94	236	252	26
MIN	22	31	15	11	13	27	15	6.9	8.0	6.0	27	14
AC-FT	2430	2110	1260	807	1320	1900	1610	1160	1890	3360	5420	1170

CAL YR 1990 TOTAL 13809.0 MEAN 37.8 MAX 637 MIN 2.5 AC-FT 27390
WTR YR 1991 TOTAL 12322.2 MEAN 33.8 MAX 252 MIN 6.0 AC-FT 24440

07096000 ARKANSAS RIVER AT CANON CITY, CO

LOCATION.--Lat 38°26'02", long 105°15'24", in SE¼SE¼ sec.31, T.18 S., R.72 W., Fremont County, Hydrologic Unit 11020002, on right bank 800 ft upstream from Sand Creek, 0.7 mi downstream from Grape Creek, and 0.7 mi upstream from First Street Bridge in Canon City.

DRAINAGE AREA.--3,117 mi².

PERIOD OF RECORD.--January 1888 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as "near Canyon" 1900-1906.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1311: 1897-98.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 5,342.13 ft above National Geodetic Vertical Datum of 1929. See WSP 1711 or 1731 for history of changes prior to Oct. 1, 1957. Oct. 1, 1957, to Nov. 15, 1962, water-stage recorder at present site at datum 1.49 ft, higher.

REMARKS.--Estimated daily discharges: Dec. 21 to Jan. 6. Records good except for estimated daily discharges, which are poor. Diversions for irrigation of about 250 acres upstream from station. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

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

AVERAGE DISCHARGE.--103 years, 727 ft³/s, 526,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft³/s, Aug. 2, 1921, gage height, 10.7 ft, site and datum then in use, from floodmark, from rating curve extended above 5,000 ft³/s; minimum daily, 69 ft³/s, May 13, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,560 ft³/s at 2300 June 13, gage height, 7.75 ft; minimum daily, 211 ft³/s, Sept. 27, 29, 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	375	408	406	580	521	508	348	330	1390	1150	643	308
2	328	410	409	570	527	515	358	440	1290	1050	653	306
3	375	506	398	560	538	435	344	447	1160	974	717	305
4	375	448	364	640	541	421	326	496	984	911	891	311
5	351	436	410	670	536	437	312	522	822	858	953	301
6	334	484	432	640	543	359	354	463	920	768	844	292
7	318	492	404	608	552	333	481	406	1250	663	844	273
8	351	487	406	550	552	311	497	400	1420	666	823	272
9	375	517	414	559	552	373	466	418	1490	856	796	280
10	351	539	412	549	531	408	428	546	1820	890	836	292
11	363	543	414	597	517	420	418	592	2040	880	798	294
12	375	534	415	596	497	419	407	588	2170	846	747	290
13	363	551	434	596	479	406	369	673	2460	680	744	284
14	345	592	438	625	478	408	363	710	2230	639	668	298
15	334	601	388	592	484	410	363	776	2140	640	656	294
16	318	586	394	578	493	420	345	743	2310	631	600	278
17	312	526	431	557	521	429	340	662	2190	605	557	279
18	306	528	406	556	531	422	351	568	1940	653	522	294
19	306	533	391	549	516	414	376	527	1880	695	519	304
20	375	539	373	551	517	414	345	755	1770	696	470	296
21	425	548	290	545	527	406	314	1060	1660	666	477	292
22	425	492	240	526	528	399	314	1110	1700	717	451	278
23	431	451	280	500	529	388	318	1290	1750	836	431	243
24	451	442	310	504	529	381	323	1400	1590	827	431	226
25	464	447	330	518	515	383	310	1110	1390	825	400	217
26	457	444	360	500	508	377	288	1040	1300	930	403	215
27	451	459	420	523	506	379	291	1200	1220	851	369	211
28	451	430	490	524	505	365	290	1400	1030	786	346	212
29	431	376	520	510	---	358	310	1480	947	741	330	211
30	425	379	540	484	---	367	285	1440	1050	649	322	211
31	412	---	560	517	---	345	---	1490	---	636	310	---
TOTAL	11753	14728	12479	17374	14573	12410	10634	25082	47313	24215	18551	8167
MEAN	379	491	403	560	520	400	354	809	1577	781	598	272
MAX	464	601	560	670	552	515	497	1490	2460	1150	953	311
MIN	306	376	240	484	478	311	285	330	822	605	310	211
AC-FT	23310	29210	24750	34460	28910	24620	21090	49750	93850	48030	36800	16200

CAL YR 1990 TOTAL 199477 MEAN 547 MAX 3580 MIN 192 AC-FT 395700
WTR YR 1991 TOTAL 217279 MEAN 595 MAX 2460 MIN 211 AC-FT 431000

07096500 FOURMILE CREEK NEAR CANON CITY, CO

LOCATION.--Lat 38°26'11", long 105°11'27", in NE¼SW¼ sec.35, T.18 S., R.70 W., Fremont County, Hydrologic Unit 11020002, on left bank 1,000 ft downstream from railroad bridge, 0.6 mi upstream from mouth, and 2.8 mi east of courthouse in Canon City.

DRAINAGE AREA.--434 mi².

PERIOD OF RECORD.--April to October 1910 (gage heights and discharge measurements only), October 1948 to September 1953, November 1970 to current year. Published as "Oil or Fourmile Creek" in 1910 and as Oil Creek near Canon City, 1948-53.

REVISED RECORDS.--WDR CO-84-1: 1982(M), 1983 (M); WDR CO-85-1: 1984 (M).

GAGE.--Water-stage recorder with satellite telemetry. Concrete control since Oct. 1, 1974. Elevation of gage is 5,254 ft, above National Geodetic Vertical Datum of 1929 from topographic map. April to October 1910, nonrecording gage at site 1,200 ft upstream at different datum. October 1948 to September 1953, water-stage recorder at site 0.6 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 8 to Nov. 21, and Dec. 22-27. Records fair except for estimated daily discharges, which are poor. Diversions for irrigation of about 500 acres upstream from station. Water imported to basin from Arkansas River for irrigation of a few small orchards upstream from station. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--25 years (water years 1949-53, 1972-91), 28.6 ft³/s; 20,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,260 ft³/s, July 11, 1951, gage height, 9.25 ft, from floodmarks, site and datum then in use, from rating curve extended above 96 ft³/s, on basis of slope-area measurement of peak flow; no flow Sept. 3-10, 1950, Sept. 23, 1951.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s, from rating curve extended above 350 ft³/s on the basis of slope-area measurements of peak flows; and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 24	0045	391	3.54	Aug. 12	1715	*3,580	a*8.44
Aug. 9	1915	1,280	5.13	Aug. 16	1715	770	4.26
				Aug. 20	2030	681	4.08

Minimum daily discharge, 2.8 ft³/s, Mar. 19, 20.

a-From floodmarks.

07096500 FOURMILE CREEK NEAR CANON CITY, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	55	36	11	9.3	11	20	21	22	57	54	42
2	26	43	35	12	9.6	10	18	21	24	41	83	41
3	26	43	19	12	10	9.2	17	19	29	35	93	41
4	25	39	18	12	9.9	8.0	16	16	33	27	104	40
5	28	41	18	13	8.3	7.4	8.2	18	40	18	101	38
6	30	38	19	13	8.9	6.9	7.5	15	61	18	103	38
7	31	36	18	14	9.3	15	8.0	14	76	21	101	43
8	37	30	22	12	9.2	12	10	14	64	27	98	42
9	43	30	23	10	8.7	4.6	10	12	57	28	156	38
10	45	28	19	9.9	8.7	4.1	12	11	52	28	116	38
11	46	24	18	9.5	8.9	3.8	11	11	48	22	95	37
12	46	20	18	9.8	7.6	3.6	14	10	51	21	348	37
13	37	26	17	12	9.0	3.6	17	11	52	31	112	38
14	30	30	18	13	9.4	3.2	20	13	48	31	79	38
15	28	32	15	12	9.5	3.2	19	15	57	33	67	37
16	29	31	17	11	9.3	3.2	13	14	56	30	115	38
17	31	23	20	11	9.3	3.1	14	13	50	27	102	31
18	30	28	18	12	8.9	2.9	17	12	47	22	111	30
19	27	26	16	14	8.6	2.8	17	14	51	29	137	33
20	32	25	11	13	8.2	2.8	24	17	38	33	151	34
21	31	30	6.7	12	8.2	2.9	25	18	45	27	114	31
22	31	32	6.0	13	8.0	3.3	19	19	47	24	103	25
23	32	29	6.5	13	7.4	4.1	17	17	47	44	92	25
24	56	29	7.4	13	8.3	4.4	17	20	47	159	93	23
25	53	29	8.0	12	9.0	4.5	18	24	45	138	101	24
26	56	30	8.5	11	9.3	4.3	16	20	46	130	90	26
27	49	35	9.4	12	9.7	4.3	20	19	48	94	90	26
28	46	35	10	12	9.8	4.2	24	17	43	84	77	28
29	41	38	10	9.6	---	5.8	9.9	15	44	66	81	26
30	47	38	10	8.8	---	17	24	18	49	64	77	25
31	42	---	10	9.7	---	25	---	20	---	56	53	---
TOTAL	1139	973	487.5	362.3	250.3	200.2	482.6	498	1417	1465	3297	1016
MEAN	36.7	32.4	15.7	11.7	8.94	6.46	16.1	16.1	47.2	47.3	106	33.9
MAX	56	55	36	14	10	25	25	24	76	159	348	43
MIN	25	20	6.0	8.8	7.4	2.8	7.5	10	22	18	53	23
AC-FT	2260	1930	967	719	496	397	957	988	2810	2910	6540	2020

CAL YR 1990 TOTAL 10044.4 MEAN 27.5 MAX 146 MIN 2.3 AC-FT 19920
WTR YR 1991 TOTAL 11587.9 MEAN 31.7 MAX 348 MIN 2.8 AC-FT 22980

07097000 ARKANSAS RIVER AT PORTLAND, CO

LOCATION.--Lat 38°23'18", long 105°00'56", in NE¼NE¼ sec.20, T.19 S., R.68 W., Fremont County, Hydrologic Unit 11020002, on right bank at bridge on State Highway 120 at Portland and 1 mi downstream from Hardscrabble Creek.

DRAINAGE AREA.--4,024 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1939 to September 1952, October 1974 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 5,021.59 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1974, at site 400 ft downstream at datum 0.03 ft, lower.

REMARKS.--Estimated daily discharges: Dec. 20 to Jan. 7. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions upstream from station for irrigation of about 60,000 acres and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--30 years (water years 1940-52, 1975-91), 781 ft³/s; 565,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft³/s, June 5, 1949, gage height, 12.12 ft, from rating curve extended above 5,300 ft³/s; minimum daily, 71 ft³/s, Apr. 2, 1945.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,930 ft³/s at 1930 Aug. 12, gage height, 8.81 ft; minimum daily, 220 ft³/s, Sept. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	409	483	419	390	438	437	366	286	1660	1260	671	418
2	378	490	405	390	436	446	363	399	1540	1170	717	414
3	427	652	356	410	436	384	369	414	1400	1170	852	430
4	418	620	326	410	438	354	360	481	1200	1070	1030	369
5	409	605	366	405	425	359	320	543	1000	948	1110	343
6	391	641	387	415	431	301	286	482	1140	855	1050	319
7	382	661	355	410	443	264	422	419	1480	704	971	311
8	458	622	339	431	452	283	459	405	1660	749	945	301
9	484	634	347	427	454	387	459	386	1760	906	1170	313
10	460	648	343	425	438	430	418	499	2090	951	1100	332
11	445	659	344	472	431	441	416	566	2330	950	1020	340
12	454	649	351	514	430	430	416	555	2470	927	1790	331
13	496	650	360	489	433	440	383	637	2770	757	1180	319
14	521	689	365	514	430	442	365	653	2550	695	938	336
15	506	703	307	489	435	443	364	754	2350	667	890	331
16	470	707	298	484	444	453	346	748	2510	661	1030	358
17	468	635	345	470	445	463	336	674	2430	626	812	335
18	501	637	309	474	444	454	349	579	2170	658	797	338
19	479	637	264	470	434	445	368	519	2100	743	878	309
20	628	625	240	489	432	446	361	729	1990	770	791	306
21	624	574	230	465	446	446	328	1090	1840	719	728	303
22	582	512	230	466	450	435	318	1150	1870	744	673	290
23	510	459	250	432	448	432	316	1350	1900	977	614	268
24	531	455	270	460	449	436	327	1470	1760	978	598	263
25	531	450	290	460	438	421	309	1230	1580	1040	562	246
26	520	459	300	465	438	401	285	1090	1470	1230	549	248
27	525	477	320	484	436	403	279	1280	1410	937	512	238
28	525	455	340	455	438	384	273	1540	1190	836	491	229
29	504	394	360	450	---	377	279	1660	1060	772	471	220
30	484	396	370	460	---	385	270	1680	1170	700	466	224
31	483	---	380	450	---	373	---	1740	---	688	437	---
TOTAL	15003	17278	10166	14025	12292	12595	10510	26008	53850	26858	25843	9082
MEAN	484	576	328	452	439	406	350	839	1795	866	834	313
MAX	628	707	419	514	454	463	459	1740	2770	1260	1790	430
MIN	378	394	230	390	425	264	270	286	1000	626	437	220
AC-FT	29760	34270	20160	27820	24380	24980	20850	51590	106800	53270	51260	18610

CAL YR 1990 TOTAL 219041 MEAN 600 MAX 4040 MIN 131 AC-FT 434500
WTR YR 1991 TOTAL 233810 MEAN 641 MAX 2770 MIN 220 AC-FT 463800

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1979 to current year.

WATER TEMPERATURE: October 1979 to current year.

INSTRUMENTATION.--Water-quality monitor since November 1982.

REMARKS.-- Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and mean water temperature data available in district office. Specific conductance data may not be representative of the cross section at the site during flash floods.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily observed, 1,380 microsiemens, Sept. 30, 1981; minimum, 111 microsiemens, June 22, 1984.

WATER TEMPERATURES: Maximum, 26.0°C, July 27, 1987; minimum, 0.0°C, many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,170 microsiemens, July 8; minimum, 166 microsiemens, June 14.

WATER TEMPERATURES: Maximum, 25.6°C, July 17; minimum, 0.0°C, many days during the winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT									
24...	1110	544	475	8.5	9.0	10	11.0	140	100
DEC									
12...	1330	355	500	8.8	5.0	1.8	13.8	K4	K48
FEB									
27...	1430	438	367	8.0	7.5	5.0	12.5	<1	K4
APR									
16...	1130	346	432	8.6	11.0	4.2	11.6	K15	300
JUN									
28...	1015	1240	230	8.2	18.5	3.5	8.3	K44	150
AUG									
20...	1120	754	480	8.4	20.0	250	7.5	K1600	K1900

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA-(A) LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	BICAR-(B) BONATE WATER DIS IT FIELD MG/L AS HCO3
OCT									
24...	200	55	15	22	19	0.7	2.3	137	162
DEC									
12...	200	54	15	23	20	0.7	2.3	147	--
FEB									
27...	140	39	11	17	20	0.6	1.9	100	122
APR									
16...	160	44	13	22	22	0.7	2.1	101	123
JUN									
28...	95	27	6.6	9.8	18	0.4	1.3	58	70
AUG									
20...	190	53	14	24	21	0.8	3.0	124	146

(A) Field total dissolved alkalinity, determined by incremental titration method.

(B) Field dissolved bicarbonate, determined by incremental titration method.

K Based on non-ideal colony counts.

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CAR-(C) BONATE WATER DIS IT FIELD MG/L AS CO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, 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 CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT 24...	3	91	12	0.5	13	295	294	433
DEC 12...	--	95	9.4	0.6	12	299	300	287
FEB 27...	0	72	8.4	0.5	8.7	196	219	232
APR 16...	--	--	--	--	8.1	313	--	--
JUN 28...	0	49	4.6	0.4	7.9	139	142	465
AUG 20...	2	110	9.5	0.7	14	300	304	611

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
OCT 24...	<0.01	<0.10	0.02	0.02	0.40	0.03	0.03	0.02
DEC 12...	<0.01	0.20	0.04	0.05	0.70	0.06	0.04	0.03
FEB 27...	<0.01	0.07	0.05	0.03	0.40	0.04	0.03	0.03
APR 16...	<0.01	<0.05	<0.01	0.01	0.50	0.05	0.03	0.03
JUN 28...	<0.01	0.08	0.03	<0.01	0.36	0.06	0.02	<0.01
AUG 20...	<0.01	0.34	0.02	0.03	0.30	0.29	0.05	0.03

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 24...	<10	<1	59	<0.5	<1	1	<3	2	14	<1
FEB 27...	10	<1	42	0.8	<1	<1	<3	2	21	<1
JUN 28...	<10	<1	40	<0.5	<1	<1	<3	3	18	<1
AUG 20...	<10	<1	70	<0.5	<1	<1	<3	3	20	2

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 24...	18	16	<0.1	<10	1	<1	<1	520	<6	14
FEB 27...	10	17	<0.1	<10	3	<1	<1	360	<6	41
JUN 28...	8	13	<0.1	<10	1	<1	<1	260	<6	6
AUG 20...	15	7	<0.1	<10	<1	2	<1	530	<6	5

(C) Field dissolved carbonate, determined by incremental titration method.

ARKANSAS RIVER BASIN

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued

CROSS-SECTION DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	OXYGEN, DIS- SOLVED (MG/L)
FEB						
27...	1431	10	7.5	373	8.9	12.6
27...	1432	20	7.5	375	8.9	12.5
27...	1433	30	7.5	377	8.9	12.6
27...	1434	40	7.5	378	8.9	12.6
27...	1435	50	7.5	381	8.9	12.5
27...	1436	60	7.5	386	8.9	12.5
27...	1437	70	7.5	386	8.9	12.6
27...	1438	80	7.5	371	8.9	12.5
27...	1439	90	7.5	375	8.9	12.5
27...	1440	100	7.5	375	8.9	12.6
27...	1441	110	7.5	377	8.9	12.5

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					
24...	1110	544	58	85	--
DEC					
12...	1330	355	11	11	--
FEB					
27...	1430	438	28	33	--
APR					
16...	1130	346	18	17	--
JUN					
28...	1015	1240	42	141	40
AUG					
20...	1120	754	1000	2040	85

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	501	477	489	---	372	371	409	509	199	239	361	509
2	509	478	480	---	371	366	418	422	218	245	396	522
3	493	452	484	---	370	383	416	409	230	273	410	544
4	486	457	514	411	365	406	425	394	251	269	412	632
5	480	487	502	393	363	413	436	393	283	282	347	561
6	481	467	481	379	361	443	453	400	363	288	371	576
7	496	451	484	384	358	480	395	417	294	311	380	576
8	508	464	499	394	356	520	367	423	243	441	349	569
9	523	459	490	392	355	458	362	434	224	339	426	553
10	513	447	493	392	355	428	373	400	205	301	396	552
11	505	442	488	378	366	401	380	357	190	323	358	556
12	495	441	489	412	367	395	381	342	183	329	560	560
13	---	440	489	381	375	398	400	327	175	346	604	569
14	498	429	481	360	372	398	391	325	177	383	460	550
15	498	422	488	364	368	400	398	302	182	353	429	546
16	505	419	503	371	366	399	420	305	179	339	548	552
17	505	432	485	375	367	391	417	322	175	346	505	556
18	498	438	485	375	364	386	413	340	181	345	459	564
19	502	440	497	374	365	390	403	353	189	353	431	575
20	576	441	510	366	367	393	405	337	193	366	495	567
21	530	443	563	373	367	392	424	273	193	345	479	563
22	492	452	569	383	361	392	440	256	218	348	459	564
23	487	464	555	376	363	392	474	234	198	360	455	574
24	469	474	527	380	365	392	471	220	203	353	449	575
25	468	470	514	369	366	394	471	241	213	404	452	592
26	463	469	528	372	367	401	483	254	219	404	458	593
27	455	470	524	373	368	399	480	238	221	405	472	612
28	461	468	518	377	368	405	484	217	238	375	485	625
29	464	484	---	371	---	416	472	202	262	378	500	636
30	469	495	---	388	---	416	509	197	260	383	497	636
31	473	---	---	369	---	412	---	195	---	371	497	---
MEAN	---	456	---	---	365	407	426	324	219	342	448	572

ARKANSAS RIVER BASIN

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	20.0	14.9	11.2	8.9	4.5	1.7	---	.0	4.2	.2	9.2	4.4
2	17.7	15.2	9.9	6.9	2.5	.0	---	.0	4.7	.1	7.9	4.9
3	17.5	12.9	6.7	4.8	2.2	.0	---	.0	5.0	.4	10.1	4.0
4	17.3	11.8	6.7	3.6	2.9	.0	.2	.0	5.0	.3	10.8	5.6
5	17.7	12.3	8.6	4.7	4.3	.9	.2	.0	5.1	.1	11.0	7.6
6	17.2	12.8	6.1	3.6	3.4	.9	.3	.0	5.3	.5	8.1	5.5
7	14.0	11.4	5.2	2.3	4.3	.1	1.2	.0	5.3	.3	9.8	4.4
8	11.2	7.3	5.4	2.5	4.9	1.2	2.7	.3	4.4	.4	9.2	2.7
9	11.2	6.1	6.9	3.0	4.9	1.3	2.3	.0	5.6	1.3	8.9	3.1
10	13.9	7.8	8.2	4.5	5.4	1.7	3.3	.2	5.7	.5	10.1	4.3
11	14.2	9.7	8.7	5.0	5.6	2.0	3.2	.0	6.9	1.9	11.3	6.0
12	14.2	9.9	8.5	5.0	5.3	2.6	3.6	.2	5.6	2.4	10.5	5.2
13	14.0	9.5	8.3	4.7	5.1	3.7	3.6	1.4	6.3	2.7	10.3	4.7
14	13.7	9.5	8.7	5.3	4.5	1.2	3.9	.8	7.3	2.4	7.9	4.7
15	14.1	9.0	6.5	5.8	3.0	.1	3.0	.1	7.4	2.3	9.3	4.5
16	15.0	10.4	7.7	5.6	4.2	.9	3.2	.3	6.4	3.6	7.0	5.4
17	13.7	10.4	8.8	5.3	3.1	1.4	3.1	.0	7.1	4.0	10.3	4.0
18	11.4	8.2	9.0	5.8	4.1	.8	3.2	.0	7.5	4.3	12.0	5.5
19	13.7	8.7	9.1	5.8	1.4	.0	4.3	.5	7.0	2.5	11.2	5.9
20	11.7	8.1	9.8	6.1	.0	.0	2.7	.2	7.8	2.9	11.6	6.0
21	10.1	6.8	7.6	4.7	.0	.0	2.8	.0	8.6	3.1	8.1	5.6
22	11.3	6.4	5.6	3.4	.1	.0	2.5	.0	8.5	3.4	10.1	5.1
23	12.1	7.7	6.8	3.3	.1	.0	1.8	.0	7.4	4.5	11.1	4.9
24	12.0	8.0	7.7	3.8	.2	.0	2.0	.0	5.6	2.8	12.3	6.5
25	12.9	8.2	7.8	4.2	.1	.0	.8	.0	6.6	.9	12.0	7.4
26	13.2	9.1	6.8	4.1	.2	.0	1.2	.0	7.2	1.9	11.8	7.6
27	12.7	9.1	5.6	2.8	.2	.0	2.9	.0	7.8	2.4	11.7	5.9
28	13.0	8.6	4.3	1.4	.2	.0	3.6	.0	7.3	3.4	11.6	5.6
29	13.1	9.1	4.2	.3	---	.0	1.5	.0	---	---	8.8	6.3
30	13.2	9.4	4.7	1.4	---	.0	2.7	.0	---	---	11.3	4.6
31	11.4	9.1	---	---	---	.0	4.3	.1	---	---	12.7	4.8
MONTH	20.0	6.1	11.2	.3	---	.0	---	.0	8.6	.1	12.7	2.7
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.0	6.4	16.8	7.3	15.3	13.3	22.1	18.6	23.8	18.6	23.3	17.4
2	11.2	8.8	16.5	10.1	15.4	11.9	22.6	18.5	23.5	19.6	23.2	17.4
3	12.1	7.5	14.6	9.8	16.1	12.2	22.4	18.6	20.9	18.7	23.5	17.8
4	14.6	7.3	13.1	10.0	17.4	13.2	23.0	17.6	21.7	17.9	23.5	16.7
5	16.7	8.8	15.6	8.1	18.9	14.7	22.9	18.5	22.6	18.7	22.5	17.5
6	17.8	10.2	15.8	10.5	18.3	15.7	23.9	18.6	22.5	18.7	21.3	18.1
7	13.9	11.0	16.8	11.7	18.4	15.4	23.0	18.9	23.0	18.0	21.6	16.8
8	11.8	9.1	19.6	11.8	19.1	15.3	22.3	18.5	22.4	18.5	20.5	15.8
9	13.4	7.3	17.8	13.5	18.3	15.4	22.4	17.8	22.1	16.0	21.2	15.5
10	12.9	7.2	19.8	12.6	17.3	14.9	22.6	18.3	20.8	16.7	20.9	17.0
11	13.6	7.7	20.2	14.3	17.9	14.8	22.4	18.9	22.2	16.9	21.9	16.8
12	12.2	7.4	18.8	13.0	16.7	15.2	22.6	17.9	22.1	15.7	19.8	16.5
13	10.7	4.9	17.2	12.6	16.4	14.2	24.0	18.6	20.5	18.4	20.9	15.7
14	13.0	5.8	16.9	12.2	16.4	14.2	24.5	18.7	23.2	18.2	19.9	13.7
15	14.1	6.4	17.1	11.9	17.4	14.2	25.0	18.9	24.2	19.1	19.6	14.2
16	15.0	7.8	16.1	12.7	17.5	14.9	25.2	19.4	23.5	18.9	19.7	14.0
17	15.3	8.9	18.7	11.8	17.7	14.2	25.6	19.2	23.8	18.8	19.5	13.6
18	16.5	10.3	20.3	14.2	18.0	15.2	24.9	19.9	23.0	18.7	16.0	13.1
19	14.9	10.0	19.1	14.6	17.7	15.8	25.1	19.9	22.7	18.0	17.1	12.3
20	15.2	9.9	16.7	14.2	19.0	15.4	24.6	19.8	22.5	18.0	19.1	12.6
21	16.9	11.0	15.5	13.3	19.4	16.2	22.1	20.0	23.5	17.8	20.7	13.8
22	16.9	10.3	17.5	12.7	19.0	17.0	21.2	19.2	22.3	17.9	18.7	13.7
23	15.3	11.1	17.6	14.5	19.7	16.9	21.4	18.4	23.4	17.1	18.8	11.9
24	17.2	9.6	16.2	12.9	20.0	17.4	19.3	17.9	23.6	17.6	17.7	11.3
25	16.5	10.1	17.6	12.4	19.4	16.5	20.8	17.7	24.0	17.5	18.6	11.5
26	14.2	9.8	18.7	14.0	20.0	15.8	21.3	12.8	24.4	18.2	18.9	12.0
27	12.8	6.4	18.1	13.6	19.8	15.9	21.1	16.4	25.0	18.7	18.8	13.1
28	12.2	6.6	17.1	14.1	22.2	16.3	23.4	17.7	24.6	19.1	19.3	12.9
29	13.7	7.0	17.2	13.9	20.4	18.0	23.9	18.8	23.7	18.7	20.1	13.5
30	12.9	8.1	16.7	13.3	22.5	17.9	23.3	18.3	24.4	18.5	17.4	13.8
31	---	---	16.4	13.6	---	---	24.2	18.6	24.0	18.3	---	---
MONTH	17.8	4.9	20.3	7.3	22.5	11.9	25.6	12.8	25.0	15.7	23.5	11.3

07099050 BEAVER CREEK ABOVE UPPER BEAVER CEMETARY, NEAR PENROSE, CO

LOCATION.--Lat 38°33'42", long 105°01'17", in SE¼NW¼NE¼ sec.20, T.17 S., R.68 W., Fremont County, Hydrologic Unit 11020002, on left bank 40 ft upstream from bridge on Fremont County Road 132, 1 mi downstream from Barta Gulch, 1.3 mi northeast of Upper Beaver Cemetery, and 9.2 mi north of Penrose.

DRAINAGE AREA.--122 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1991 (seasonal record).

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 6,020 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Natural flow of creek affected by storage reservoirs and diversions for municipal use by the City of Colorado Springs.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge during period of seasonal operation, 515 ft³/s, Sept. 4, 1991, gage height, 6.70 ft, from floodmark, from rating curve extended above 130 ft³/s, on basis of slope-area measurement of peak flow; minimum daily, 9.7 ft³/s, Mar. 30, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 515 ft³/s at 0100 Sept. 4, gage height, 6.70 ft, from floodmark, from rating curve extended above 130 ft³/s, on basis of slope-area measurement of peak flow; minimum daily, 9.7 ft³/s, Mar. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	14	18	37	34	53	35
2	---	---	---	---	---	---	18	21	42	39	53	32
3	---	---	---	---	---	---	14	22	37	40	73	39
4	---	---	---	---	---	---	15	24	35	34	82	119
5	---	---	---	---	---	---	25	25	34	29	100	51
6	---	---	---	---	---	---	46	27	141	25	83	38
7	---	---	---	---	---	---	46	30	120	24	88	32
8	---	---	---	---	---	---	27	30	112	23	78	29
9	---	---	---	---	---	---	18	38	114	27	77	26
10	---	---	---	---	---	---	18	34	113	26	77	32
11	---	---	---	---	---	---	17	42	125	32	72	30
12	---	---	---	---	---	---	17	40	118	32	72	28
13	---	---	---	---	---	---	13	31	133	29	78	27
14	---	---	---	---	---	---	14	30	126	28	80	25
15	---	---	---	---	---	---	14	29	130	23	72	24
16	---	---	---	---	---	---	20	28	115	20	90	24
17	---	---	---	---	---	---	24	29	104	18	73	23
18	---	---	---	---	---	---	27	29	91	17	100	22
19	---	---	---	---	---	---	24	36	83	19	82	22
20	---	---	---	---	---	---	20	42	81	34	81	22
21	---	---	---	---	---	---	19	44	78	46	69	22
22	---	---	---	---	---	---	19	37	72	43	61	21
23	---	---	---	---	---	---	21	44	70	74	55	21
24	---	---	---	---	---	---	19	47	62	55	53	19
25	---	---	---	---	---	---	25	47	56	75	54	19
26	---	---	---	---	---	---	24	41	48	65	53	19
27	---	---	---	---	---	---	17	42	43	71	45	19
28	---	---	---	---	---	---	19	45	40	62	47	19
29	---	---	---	---	---	10	17	42	37	54	53	19
30	---	---	---	---	---	9.7	19	40	38	50	45	22
31	---	---	---	---	---	11	---	37	---	50	41	---
TOTAL	---	---	---	---	---	---	630	1071	2435	1198	2140	880
MEAN	---	---	---	---	---	---	21.0	34.5	81.2	38.6	69.0	25.3
MAX	---	---	---	---	---	---	46	47	141	75	100	119
MIN	---	---	---	---	---	---	13	18	34	17	41	19
AC-FT	---	---	---	---	---	---	1250	2120	4830	2380	4240	1750

07099050 BEAVER CREEK ABOVE UPPER BEAVER CEMETERY NEAR PENROSE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD--March 1991 to September 1991.

WATER-QUALITY DATA, DURING PERIOD MARCH 1991 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT
JUL 02...	1205	42	73	7.8	18.5	8.4	28	8.1	1.8	3.5	21
AUG 20...	1440	78	74	7.6	18.0	7.9	26	7.9	1.5	3.3	21
SEP 05...	1040	55	93	7.9	14.5	7.9	34	10	2.3	3.8	19
30...	1030	22	94	7.7	11.0	9.2	33	10	2.0	4.0	20

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
JUL 02...	0.3	1.1	6.0	0.4	1.8	<0.01	<0.05	<0.01	0.02	<0.01
AUG 20...	0.3	1.0	7.2	0.5	2.2	<0.01	<0.05	<0.01	0.02	<0.01
SEP 05...	0.3	1.3	7.6	0.6	2.0	<0.01	<0.05	0.02	0.03	<0.01
30...	0.3	1.2	7.9	0.8	1.9	<0.01	<0.05	0.02	0.03	<0.01

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
JUL 02...	<1	0.3	1	<1	490	60	1
AUG 20...	<1	0.4	2	2	750	110	6
SEP 05...	<1	0.2	3	1	530	130	1
30...	<1	<0.1	3	1	230	79	<1

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
JUL 02...	<0.5	50	7	2	<1	<10	<3
AUG 20...	<0.5	30	7	2	<1	<10	<3
SEP 05...	<0.5	30	9	2	<1	<10	8
30...	<0.5	20	5	6	<1	<10	5

07099050 BEAVER CREEK ABOVE UPPER BEAVER CEMETERY NEAR PENROSE, CO--Continued

WATER-QUALITY RECORDS

MISCELLANEOUS FIELD MEASUREMENTS, DURING PERIOD MARCH 1991 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
APR					JUL				
17...	1455	28	84	13.0	29...	1630	54	69	--
JUN					AUG				
07...	1210	122	78	13.5	05...	1535	95	69	19.0
10...	1450	111	76	17.0					
24...	1430	66	90	20.5					

07099060 BEAVER CREEK ABOVE HIGHWAY 115 NEAR PENROSE, CO

LOCATION.--Lat 38°29'21", long 104°59'49", in NE¼NE¼ sec.16, T.18 S., R.68 W., Fremont County, Hydrologic Unit 11020002, on left bank 300 ft downstream from Beaver Park Irrigation Company diversion dam, 1.8 mi upstream from Highway 115, and 4.7 mi north of Penrose.

DRAINAGE AREA.--138 mi².

PERIOD OF RECORD.--March to September 1991 (seasonal record).

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,560 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: June 8, 9 and Sept. 13-29. Records fair except for estimated daily discharges, those below 0.2 ft³/s, and those above 110 ft³/s, which are poor. Natural flow of creek is affected by storage reservoirs, diversions for municipal use by Colorado Springs, and diversions for irrigation, mainly by the Beaver Park Irrigation Company. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge during period of seasonal operation, 410 ft³/s, Sept. 4, 1991, gage height, 6.00 ft, from floodmark, from rating curve extended above 110 ft³/s; no flow many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period March to September, 410 ft³/s at 0100 Sept. 4, gage height, 6.00 ft, from floodmark, from rating curve extended above 110 ft³/s; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	.04	.00	.00	.00	21	25
2	---	---	---	---	---	---	8.1	.00	.05	.00	30	22
3	---	---	---	---	---	---	5.7	.00	.00	2.9	43	31
4	---	---	---	---	---	---	.02	.00	.00	.00	51	90
5	---	---	---	---	---	---	5.5	.00	.00	.00	64	19
6	---	---	---	---	---	---	18	.00	25	.00	56	11
7	---	---	---	---	---	---	17	.00	63	.00	65	5.0
8	---	---	---	---	---	---	.07	.00	96	.00	60	1.2
9	---	---	---	---	---	---	.04	5.9	93	.00	60	1.1
10	---	---	---	---	---	---	.04	3.1	94	.00	60	3.4
11	---	---	---	---	---	---	.04	8.6	118	3.7	55	1.5
12	---	---	---	---	---	---	.04	6.7	119	.80	54	1.1
13	---	---	---	---	---	---	.02	.05	130	.00	64	.60
14	---	---	---	---	---	---	.02	.02	120	.00	65	.30
15	---	---	---	---	---	---	.02	.00	120	.00	57	.20
16	---	---	---	---	---	---	.02	.00	101	.00	73	.10
17	---	---	---	---	---	---	.02	.00	87	.00	55	.00
18	---	---	---	---	---	---	.15	.00	70	.00	85	.00
19	---	---	---	---	---	---	.00	.00	63	.00	75	.00
20	---	---	---	---	---	---	.00	3.9	60	1.9	82	.00
21	---	---	---	---	---	---	.00	8.4	49	24	67	.00
22	---	---	---	---	---	---	.00	.12	43	13	58	.00
23	---	---	---	---	---	---	.00	2.9	41	35	51	.00
24	---	---	---	---	---	---	.00	5.3	36	26	47	.00
25	---	---	---	---	---	---	.00	3.3	19	44	48	.00
26	---	---	---	---	---	---	.00	.02	3.1	41	49	.00
27	---	---	---	---	---	---	.00	.02	.20	41	39	.00
28	---	---	---	---	---	---	.00	.00	.00	33	42	.00
29	---	---	---	---	---	---	.00	.00	.00	24	48	.00
30	---	---	---	---	---	16	.00	.00	.00	17	41	.00
31	---	---	---	---	---	17	---	.00	---	16	34	---
TOTAL	---	---	---	---	---	---	54.84	48.33	1550.35	323.30	1699	212.50
MEAN	---	---	---	---	---	---	1.83	1.56	51.7	10.4	54.8	7.08
MAX	---	---	---	---	---	---	18	8.6	130	44	85	90
MIN	---	---	---	---	---	---	.00	.00	.00	.00	21	.00
AC-FT	---	---	---	---	---	---	109	96	3080	641	3370	421

07099230 TURKEY CREEK ABOVE TELLER RESERVOIR, NEAR STONE CITY, CO

LOCATION.--Lat 38°27'54", long 104°49'33", in NE¼SW¼ sec.19, T.18 S., R.66 W., Pueblo County, Hydrologic Unit 11020002, on Fort Carson Military Reservation, on left bank, 0.7 mi northwest of intersection of military roads 9, and 1, 2.2 mi upstream from Teller Reservoir Dam, and 2.2 mi northeast of Stone City.

DRAINAGE AREA.--62.3 mi².

REVISED RECORDS.--WDR CO-89-1: Drainage area.

PERIOD OF RECORD.--Streamflow records, May 1978 to current year. Water-quality data available, May 1978 to September 1981. Prior to July 20, 1989, at site 0.6 mi downstream, at different datum.

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir. Elevation of gage is 5,520 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 20, 1989, at site 0.6 mi downstream, at different datum.

REMARKS.--Estimated daily discharges: Nov. 28, 29, Dec. 2-4, 7-11, 15, 16, and Dec. 19 to Jan. 3. Records poor. Diversions upstream from gage for irrigation, amount unknown.

AVERAGE DISCHARGE.--13 years, 3.56 ft³/s; 2,580 acre-ft/yr. The figure published in the 1990 report was in error; the correct figure is 12 years, 3.85 ft³/s, 2,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,640 ft³/s, Aug. 20, 1982, gage height, 11.51 ft, from rating curve extended above 100 ft³/s, on the basis of slope-area measurements at gage heights 8.04 ft, and 11.27 ft, maximum gage height, 11.88 ft, June 8, 1987, site and datum then in use; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 15	2215	*1.2	*5.17				

No flow most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY 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	.07	.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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.002	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	.00	.00	.1	.00

CAL YR 1990 TOTAL 13.35 MEAN .037 MAX 12 MIN .00 AC-FT 26
WTR YR 1991 TOTAL 0.07 MEAN .000 MAX .07 MIN .00 AC-FT .1

07099233 TELLER RESERVOIR NEAR STONE CITY, CO

LOCATION.--Lat 38°26'33", long 104°49'31", in SE¼NW¼ sec.31, T.18 S., R.66 W., in Pueblo County, Hydrologic Unit 11020002, at left upstream end of dam on Turkey Creek on Fort Carson Military Reservation, 1.4 mi upstream from Booth Gulch, and 2.0 mi east of Stone City.

DRAINAGE AREA.--71.5 mi².

PERIOD OF RECORD.--September 1978 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,453 ft above National Geodetic Datum of 1929, from topographic map.

REMARKS.--Estimated contents (at 2400): Apr. 23 and May 15. Records fair. Reservoir is formed by an earthfill dam completed around 1908. Maximum capacity of reservoir is 1,780 acre-ft at an uncontrolled spillway elevation of about 88 ft, 1980 survey. There is a controlled outlet from reservoir, however, considerable leakage occurs. Reservoir is used for recreation and for amphibious training for Fort Carson.

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 2,210 acre-ft, June 21, 1980, elevation, 90.15 ft, from capacity curve extended above 88 ft; no contents, May 1 to June 5, 1979, and May 17 to Sept. 30, 1991.

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 63 acre-ft, Oct. 1, elevation, 69.99 ft; no contents, May 17 to Sept. 30.

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	52	44	39	34	28	19	6.4	.00	.00	.00	.00
2	62	52	44	39	34	27	19	5.7	.00	.00	.00	.00
3	61	52	44	39	34	27	18	5.1	.00	.00	.00	.00
4	61	52	44	38	34	27	16	5.1	.00	.00	.00	.00
5	61	51	43	38	33	26	15	6.4	.00	.00	.00	.00
6	60	51	43	38	33	27	15	6.4	.00	.00	.00	.00
7	60	51	43	38	33	27	16	6.4	.00	.00	.00	.00
8	60	51	43	37	33	26	15	6.0	.00	.00	.00	.00
9	59	50	43	37	33	26	14	5.5	.00	.00	.00	.00
10	59	50	42	37	33	25	14	4.2	.00	.00	.00	.00
11	59	50	42	37	33	25	13	3.7	.00	.00	.00	.00
12	58	50	42	38	32	25	12	3.0	.00	.00	.00	.00
13	58	49	42	37	32	25	12	2.2	.00	.00	.00	.00
14	57	49	41	37	32	24	12	.30	.00	.00	.00	.00
15	57	48	41	37	32	24	11	.15	.00	.00	.00	.00
16	56	48	41	37	32	24	11	.08	.00	.00	.00	.00
17	56	48	41	37	32	24	9.8	.00	.00	.00	.00	.00
18	55	48	40	37	31	24	9.8	.00	.00	.00	.00	.00
19	55	47	40	37	31	23	9.6	.00	.00	.00	.00	.00
20	56	47	40	37	31	24	9.1	.00	.00	.00	.00	.00
21	55	46	40	36	30	25	8.5	.00	.00	.00	.00	.00
22	55	47	40	36	29	24	8.4	.00	.00	.00	.00	.00
23	55	46	40	36	29	24	8.2	.00	.00	.00	.00	.00
24	55	46	40	36	29	23	7.5	.00	.00	.00	.00	.00
25	54	45	39	35	29	22	6.7	.00	.00	.00	.00	.00
26	54	45	39	35	29	21	6.7	.00	.00	.00	.00	.00
27	54	45	39	35	29	21	6.2	.00	.00	.00	.00	.00
28	53	45	39	34	28	21	6.0	.00	.00	.00	.00	.00
29	53	45	39	34	---	19	5.5	.00	.00	.00	.00	.00
30	52	44	39	34	---	19	6.6	.00	.00	.00	.00	.00
31	52	---	39	34	---	19	---	.00	---	.00	.00	---
TOTAL	1765	1450	1276	1136	884	746	340.6	66.63	0.00	0.00	0.00	0.00
MEAN	57	48	41	37	32	24	11	2.1	.00	.00	.00	.00
MAX	63	52	44	39	34	28	19	6.4	.00	.00	.00	.00
MIN	52	44	39	34	28	19	5.5	.00	.00	.00	.00	.00

CAL YR 1990 TOTAL 41744 MEAN 114 MAX 176 MIN 39
WTR YR 1991 TOTAL 7664.23 MEAN 21 MAX 63 MIN .00

07099235 TURKEY CREEK NEAR STONE CITY, CO

LOCATION.--Lat 38°26'22", long 104°49'34", in SW¼SW¼ sec.31, T.18 S., R.66 W., Pueblo County, Hydrologic Unit 11020002, on Fort Carson Military Reservation, on right bank, 0.2 mi downstream from Teller Reservoir Dam, 1.1 mi upstream from military road No. 11, and 2.0 mi southeast of Stone City.

DRAINAGE AREA.--71.5 mi².

PERIOD OF RECORD.--May 1978 to November 1984; June 12, 1987 to current year.

REVISED RECORDS.--WDR CD-80-1: 1979(M).

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir since Dec. 6, 1989. Elevation of gage is 5,395 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 12, 1987, at site 0.1 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Mar. 28 to Apr. 4. Records poor. Flow regulated by Teller Reservoir 0.2 mi upstream. Gage records seepage and releases from reservoir. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3.8 ft³/s, June 3, 1982, gage height, 0.80 ft, at different datum; no flow, Sept. 17, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.05 ft³/s, Oct. 1 to Dec. 15, gage height, 2.90 ft, at different datum; minimum discharge, 0.01 ft³/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01
2	.05	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01
3	.05	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01
4	.05	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01
5	.05	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01
6	.05	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01
7	.05	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01
8	.05	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01
9	.05	.05	.05	.04	.04	.04	.04	.04	.02	.01	.01	.01
10	.05	.05	.05	.04	.04	.04	.04	.04	.02	.01	.01	.01
11	.05	.05	.05	.04	.04	.04	.04	.04	.02	.01	.01	.01
12	.05	.05	.05	.04	.04	.04	.04	.04	.02	.01	.01	.01
13	.05	.05	.05	.04	.04	.04	.04	.04	.02	.01	.01	.01
14	.05	.05	.05	.04	.04	.04	.04	.04	.02	.01	.01	.01
15	.05	.05	.05	.04	.04	.04	.04	.04	.02	.01	.01	.01
16	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
17	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
18	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
19	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
20	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
21	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
22	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
23	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
24	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
25	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
26	.05	.05	.04	.04	.04	.04	.04	.04	.02	.01	.01	.01
27	.05	.05	.04	.04	.04	.04	.04	.03	.02	.01	.01	.01
28	.05	.05	.04	.04	.04	.04	.04	.03	.02	.01	.01	.01
29	.05	.05	.04	.04	---	.04	.04	.03	.01	.01	.01	.01
30	.05	.05	.04	.04	---	.04	.04	.03	.01	.01	.01	.01
31	.05	---	.04	.04	---	.04	---	.03	---	.01	.01	---
TOTAL	1.55	1.50	1.39	1.24	1.12	1.24	1.20	1.19	0.66	0.31	0.31	0.30
MEAN	.050	.050	.045	.040	.040	.040	.040	.038	.022	.010	.010	.010
MAX	.05	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01
MIN	.05	.05	.04	.04	.04	.04	.04	.03	.01	.01	.01	.01
AC-FT	3.1	3.0	2.8	2.5	2.2	2.5	2.4	2.4	1.3	.6	.6	.6

CAL YR 1990 TOTAL 17.05 MEAN .047 MAX .09 MIN .02 AC-FT 34
WTR YR 1991 TOTAL 12.01 MEAN .033 MAX .05 MIN .01 AC-FT 24

07099350 PUEBLO RESERVOIR NEAR PUEBLO, CO

LOCATION.--Lat 38°16'15", long 104°43'30", in NE¼ sec.36, T.20 S., R.66 W., Pueblo County, Hydrologic Unit 11020002, at dam on Arkansas River, 7 mi west of Pueblo.

DRAINAGE AREA.--4,669 mi².

PERIOD OF RECORD.--January 1974 to current year.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929, (levels by U.S. Bureau of Reclamation); gage readings have been reduced to elevations above National Geodetic Vertical datum of 1929.

REMARKS.--Reservoir is formed by concrete and earthfill dam. Storage began Jan. 9, 1974; dam completed in August 1975. Capacity, 357,700 acre-ft at elevation 4,898.70 ft, crest of spillway. Dead storage, 3,730 acre-ft, below elevation 4,764.00 ft, invert of river outlet. Reservoir is terminal reservoir of the Fryingpan-Arkansas project and is used to provide flood control, municipal and industrial supplies, and to fulfill irrigation requirements in the Arkansas River valley. Figures given are total contents.

COOPERATION.--Records provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 295,480 acre-ft, Feb. 12, 1985, elevation, 4,886.94 ft; minimum since appreciable storage was attained, 22,680 acre-ft, Nov. 13, 1974, elevation, 4,790.50 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 161,490 acre-ft, Apr. 1, elevation, 4,854.52 ft; minimum, 78,380 acre-ft, Sept. 30, elevation, 4,824.47 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	4,828.60	87,890	-
Oct. 31.	4,827.64	85,620	-2,270
Nov. 30.	4,833.83	100,900	+15,280
Dec. 31.	4,839.78	116,870	+15,970
CAL YR 1990			-19,230
Jan. 31.	4,846.78	136,990	+20,120
Feb. 28.	4,851.62	152,000	+15,010
Mar. 31.	4,854.49	161,380	+9,380
Apr. 30.	4,853.78	159,030	-2,350
May 31.	4,850.08	147,110	-11,920
June 30.	4,845.78	134,020	-13,090
July 31.	4,828.42	87,460	-46,560
Aug. 31.	4,825.94	81,680	-5,780
Sept. 30.	4,824.47	78,380	-3,300
WTR YR 1991			-9,510

07099400 ARKANSAS RIVER ABOVE PUEBLO, CO

LOCATION.--Lat 38°16'17", long 104°43'06", in NE¼NE¼ sec.36, T.20 S., R.66 W., Pueblo County, Hydrologic Unit 11020002, on left bank 450 ft downstream from headgate of West Pueblo ditch, 0.4 mi downstream from Pueblo Dam, and 7 mi west of Pueblo.

DRAINAGE AREA.--4,670 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Streamflow records, October 1965 to current year. Water-quality data available, October 1965 to September 1970, Dec. 1985 to current year. Sediment data available October 1965 to September 1970.

GAGE.--Water-stage recorder. Elevation of gage is 4,740 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 23, 1967, at site 730 ft upstream at datum 1.23 ft, higher. May 24, 1974, to Feb. 24, 1975, at site 2,000 ft downstream, at different datum.

REMARKS.--Estimated daily discharge, Nov. 14. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions upstream from station for irrigation of about 88,000 acres and return flow from irrigated areas. Flow completely regulated by Pueblo Reservoir (station 07099350) since Jan. 9, 1974.

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

AVERAGE DISCHARGE.--8 years (water years 1966-73), 643 ft³/s; 465,900 acre-ft/yr, prior to completion of Pueblo Dam; 17 years (1975-91), 728 ft³/s; 527,400 acre-ft/yr, subsequent to completion of Pueblo Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s, Aug. 1, 1966, gage height, 9.4 ft, from floodmarks, present site and datum, from rating curve extended above 1,600 ft³/s, on basis of slope-area measurement of peak flow; minimum daily, 28 ft³/s, May 11, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,840 ft³/s at 2200 June 13, gage height, 5.12 ft; minimum daily, 80 ft³/s, Apr. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	335	446	110	120	193	141	278	649	2030	1530	811	436
2	431	483	110	121	193	127	328	649	1730	1560	535	388
3	569	502	110	122	193	126	353	674	1380	1490	560	303
4	504	502	110	207	226	127	387	708	1160	1570	756	418
5	427	602	110	324	272	127	399	682	959	1550	809	486
6	411	702	109	324	272	126	350	550	841	1460	908	445
7	411	747	109	268	272	124	322	549	1040	1140	912	379
8	411	749	109	211	272	124	339	507	1200	1210	872	339
9	443	734	110	210	272	124	378	482	1380	1300	928	298
10	391	716	111	210	272	124	384	446	1820	1480	1130	292
11	388	715	112	210	272	124	383	312	2190	1650	1130	275
12	395	716	114	210	272	125	364	275	2440	1660	1210	266
13	395	762	114	210	260	97	354	306	2710	1350	1950	266
14	396	547	113	212	252	161	307	324	2780	1360	1970	255
15	458	103	114	213	237	367	301	375	2380	1380	1180	249
16	496	103	114	213	228	334	308	452	2200	1360	910	250
17	529	105	113	213	229	309	299	512	2230	1440	864	260
18	555	107	112	213	230	257	300	553	2220	1490	812	257
19	461	109	114	213	230	290	275	565	2040	1520	874	249
20	415	108	124	213	208	344	105	621	1830	1560	963	236
21	415	108	131	213	200	344	105	874	1680	1540	959	230
22	553	109	131	342	201	344	103	1030	1900	1520	824	220
23	572	110	129	559	166	344	94	1220	1970	1610	642	208
24	558	111	125	558	145	345	82	1730	1860	1660	567	212
25	570	109	124	364	144	364	80	1680	1710	1590	567	209
26	569	110	122	211	162	377	91	1210	1630	1550	522	216
27	569	110	121	210	172	369	228	1240	1720	1540	411	227
28	569	113	121	210	159	357	228	1480	1830	1470	482	235
29	498	111	120	199	---	333	255	1840	1620	1340	526	238
30	458	110	120	192	---	321	509	2070	1530	1300	505	238
31	448	---	120	193	---	280	---	2110	---	1290	492	---
TOTAL	14600	10659	3606	7488	6204	7456	8289	26675	54010	45470	26581	8580
MEAN	471	355	116	242	222	241	276	860	1800	1467	857	286
MAX	572	762	131	559	272	377	509	2110	2780	1660	1970	486
MIN	335	103	109	120	144	97	80	275	841	1140	411	208
AC-FT	28960	21140	7150	14850	12310	14790	16440	52910	107100	90190	52720	17020

CAL YR 1990 TOTAL 206251 MEAN 565 MAX 3710 MIN 103 AC-FT 409100
WTR YR 1991 TOTAL 219618 MEAN 602 MAX 2780 MIN 80 AC-FT 435600

07099400 ARKANSAS RIVER ABOVE PUEBLO, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1985 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1985 to current year.

WATER TEMPERATURE: December 1985 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Daily data not published is either missing or of unacceptable quality. Daily maximum and minimum specific conductance and daily mean water temperature data are available in the district office. Specific conductance data may not be representative of the river at the site during periods of transient hydrologic conditions caused by abrupt flow changes from Pueblo Reservoir.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 814 microsiemens, Nov. 14, 1990; minimum, 223 microsiemens, July 13, 1986.

WATER TEMPERATURE: Maximum, 22.1°C, Aug. 30, 1989, Aug. 31 and Sept. 17, 1991; minimum, 1.4°C, Feb. 7, 8, 1987.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 814 microsiemens, Nov. 14; minimum, 352 microsiemens, July 7.

WATER TEMPERATURE: Maximum, 22.1°C, Aug. 31 and Sept. 17; minimum, 1.6°C, Feb. 2.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543	566	576	598	594	556	558	543	517	360	425	541
2	534	571	577	598	590	563	554	544	513	362	431	544
3	529	568	576	604	588	569	554	544	522	360	429	544
4	522	562	576	600	584	571	552	543	544	357	431	559
5	524	559	575	594	582	567	551	544	544	357	435	564
6	529	562	579	604	585	563	558	545	538	357	433	567
7	537	560	577	613	580	564	569	546	538	363	437	569
8	534	560	577	613	578	562	560	548	529	360	444	550
9	532	562	579	613	580	563	559	547	515	360	442	541
10	548	559	581	611	577	563	559	549	511	361	437	546
11	555	558	585	611	561	560	558	553	---	362	443	546
12	553	554	586	610	558	560	566	549	501	362	443	543
13	552	553	587	599	558	582	570	545	495	368	444	541
14	555	616	588	600	550	564	569	552	488	372	461	535
15	545	602	588	602	561	548	576	547	469	373	487	531
16	547	582	589	606	556	532	581	549	445	374	507	530
17	553	579	590	606	548	530	587	550	427	376	521	538
18	554	579	590	609	554	537	590	551	391	378	522	541
19	559	573	592	607	547	519	580	552	400	382	524	545
20	562	578	592	600	556	539	---	553	392	384	522	543
21	557	577	590	603	552	559	---	556	383	384	530	558
22	558	576	592	599	563	558	---	552	381	385	534	564
23	565	576	592	586	568	561	---	551	370	388	542	566
24	573	576	593	591	568	561	579	551	362	394	547	569
25	570	576	593	631	566	558	579	551	367	397	544	566
26	568	575	593	631	565	554	571	556	367	401	542	568
27	569	575	593	618	565	558	549	555	369	399	541	---
28	568	573	595	607	561	560	553	552	369	407	535	---
29	562	575	596	606	---	560	552	546	364	412	531	---
30	562	576	595	602	---	563	546	535	363	418	531	---
31	568	---	597	599	---	563	---	537	---	423	539	---
MEAN	551	572	587	606	568	557	---	548	---	379	488	---

07099400 ARKANSAS RIVER ABOVE PUEBLO, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.5	18.8	13.0	12.5	8.0	7.0	3.2	2.1	2.7	1.7	4.5	3.2
2	19.2	18.8	12.9	12.2	7.4	6.1	3.3	2.2	2.5	1.6	4.2	3.4
3	19.0	18.6	12.4	12.0	7.3	5.9	2.8	2.3	2.7	1.7	4.9	3.3
4	19.1	18.4	12.3	11.9	7.2	5.9	2.6	2.3	2.7	1.9	4.9	3.7
5	19.1	18.3	12.2	11.7	7.0	5.8	2.9	2.3	2.8	1.8	5.3	4.0
6	18.8	17.8	11.6	11.0	6.8	5.6	2.9	2.3	3.0	1.8	4.7	3.7
7	18.0	17.6	11.2	10.8	6.8	5.5	2.9	2.3	2.8	1.9	5.1	4.0
8	17.5	17.1	11.0	10.3	6.8	5.5	3.1	2.3	2.9	2.0	5.1	3.9
9	17.5	16.6	10.5	10.1	6.7	5.4	2.8	2.3	3.3	2.3	5.2	3.9
10	16.9	15.9	10.6	10.1	6.7	5.3	3.0	2.4	3.0	2.1	5.3	4.1
11	16.0	15.3	10.4	9.7	6.5	5.3	3.1	2.3	3.3	2.3	5.8	4.3
12	16.0	15.3	10.1	9.3	6.4	5.4	3.1	2.1	3.4	2.4	5.9	4.5
13	16.0	15.2	9.8	9.4	6.0	5.4	2.7	2.0	3.4	2.5	7.0	4.6
14	16.0	15.2	10.8	9.2	6.0	4.6	2.8	2.3	3.7	2.5	5.2	4.6
15	15.8	15.2	10.9	9.4	5.5	4.6	2.9	2.2	3.6	2.5	5.4	4.6
16	15.9	15.2	9.7	8.6	5.5	4.7	3.0	2.3	3.3	2.7	4.9	4.7
17	15.5	14.8	10.2	8.7	5.3	4.6	3.1	2.1	3.7	2.8	5.6	4.6
18	15.1	14.6	10.1	8.9	5.4	4.4	3.1	2.2	3.7	3.0	5.9	4.7
19	15.2	14.6	10.0	8.8	4.8	3.9	2.8	2.3	3.8	2.8	5.8	4.8
20	14.6	14.1	9.5	8.7	4.2	3.4	2.6	2.0	4.2	2.8	5.9	5.0
21	14.5	13.8	9.5	8.2	4.0	3.0	3.0	2.0	4.0	3.0	5.9	5.3
22	14.2	13.5	9.2	8.0	3.9	2.7	3.1	2.0	3.9	3.0	6.1	5.2
23	13.7	13.0	9.2	8.0	3.3	2.3	2.8	2.3	3.9	3.1	6.3	5.3
24	13.2	12.8	9.2	7.8	2.8	1.9	2.7	1.9	3.8	3.1	6.5	5.5
25	13.3	12.7	9.1	7.8	2.8	2.0	3.2	2.2	3.9	2.8	6.4	5.4
26	13.3	12.7	9.0	7.8	3.3	2.1	3.3	2.3	3.9	2.9	7.0	6.1
27	13.2	12.5	8.7	7.6	3.7	2.4	2.9	2.0	3.9	2.9	7.1	6.1
28	13.3	12.5	8.3	7.2	3.8	2.8	2.6	1.8	3.9	3.0	7.1	6.0
29	13.6	12.8	8.3	7.1	3.0	2.6	2.5	1.8	---	---	6.6	6.0
30	13.3	12.6	8.1	7.2	3.4	2.2	2.8	1.8	---	---	7.0	6.0
31	13.4	12.6	---	---	3.0	2.1	2.7	1.8	---	---	7.1	6.0
MONTH	19.5	12.5	13.0	7.1	8.0	1.9	3.3	1.8	4.2	1.6	7.1	3.2
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.2	6.0	10.1	9.3	14.1	12.3	18.2	17.4	21.4	20.5	21.9	21.0
2	6.6	6.3	10.5	9.4	13.7	12.3	18.6	17.6	21.4	20.4	21.8	20.6
3	7.5	6.4	10.4	9.6	13.6	13.0	18.3	17.7	21.0	20.6	21.5	20.3
4	7.7	6.6	10.1	9.6	13.9	13.1	18.5	17.8	21.5	20.7	20.9	19.6
5	7.9	6.7	10.5	9.7	13.7	13.0	18.8	18.2	21.6	20.8	19.9	19.0
6	8.0	6.6	10.6	9.7	14.1	13.1	18.8	18.0	21.9	20.9	19.9	18.5
7	7.2	6.6	10.6	9.8	14.2	13.0	18.9	18.1	21.8	21.1	19.5	18.1
8	7.4	6.5	10.7	9.7	14.7	14.0	19.0	18.4	21.8	21.0	21.6	18.0
9	7.8	6.6	10.6	9.8	15.1	14.2	19.1	18.4	21.8	21.1	21.5	20.8
10	8.3	6.6	10.9	9.9	15.3	14.5	19.4	18.7	22.0	21.2	21.7	21.0
11	8.7	7.4	11.4	9.9	---	---	19.6	18.9	21.7	21.1	22.0	20.8
12	8.7	7.7	11.2	9.9	---	---	19.7	19.0	21.7	21.2	21.9	21.2
13	8.9	7.7	10.9	9.8	16.2	15.3	19.8	19.2	21.5	21.1	22.0	21.1
14	9.0	7.8	11.0	9.9	16.3	15.8	20.0	19.3	21.6	21.0	22.0	21.1
15	9.6	8.1	10.8	9.9	16.3	16.0	20.0	19.5	21.4	20.7	22.0	21.4
16	9.3	8.0	10.6	9.9	16.4	15.9	20.5	19.6	21.5	20.7	22.0	21.3
17	9.3	7.9	10.8	10.1	16.3	16.0	20.6	19.9	21.6	20.8	22.1	21.1
18	9.4	8.1	10.9	10.2	16.5	16.0	20.9	20.1	21.6	20.8	21.9	21.0
19	9.3	8.1	10.8	10.1	16.8	15.9	20.8	20.1	21.5	20.8	21.8	20.6
20	---	---	10.7	10.3	16.5	16.1	21.0	20.5	21.7	20.9	21.6	20.3
21	---	---	10.9	10.2	16.9	16.1	21.4	20.5	21.7	21.0	21.0	19.6
22	---	---	11.5	10.5	17.0	16.4	21.0	20.8	21.6	20.9	19.9	19.0
23	---	---	11.1	10.3	16.9	16.6	21.4	21.0	21.5	20.8	19.9	18.5
24	---	---	11.5	10.5	17.3	16.7	21.5	21.1	21.7	21.0	19.5	18.1
25	9.5	8.0	11.5	10.6	17.2	16.6	21.6	21.1	22.0	20.8	19.2	18.0
26	10.4	8.2	11.9	10.8	17.3	16.6	21.5	21.1	22.0	21.2	18.9	17.9
27	10.6	9.2	12.0	10.9	17.6	16.8	21.5	20.9	22.0	21.1	---	---
28	10.4	8.9	12.6	11.2	17.9	17.4	21.5	20.8	22.0	21.1	---	---
29	10.2	8.9	13.3	11.1	17.9	17.0	21.4	20.5	22.0	21.4	---	---
30	9.9	9.1	13.4	12.4	17.9	17.3	21.4	20.8	22.0	21.3	---	---
31	---	---	13.6	11.7	---	---	21.5	20.9	22.1	21.1	---	---
MONTH	---	---	13.6	9.3	---	---	21.6	17.4	22.1	20.4	---	---

07099969 ARKANSAS RIVER AT ST CHARLES MESA DIVERSION AT PUEBLO, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°15'13", long 104°36'20", in SW 1/4 sec.6, T.21 S., R.64 W., Pueblo County, Hydrologic Unit 11020002, on right bank 10 ft upstream from intake of Saint Charles Mesa Water Association, 150 ft downstream from Santa Fe Avenue bridge, and 1.1 mi upstream from Fountain Creek.

DRAINAGE AREA.--4,778 mi².

PERIOD OF RECORD.--October 1988 to current year. Prior to October 1989, published as Arkansas River at Moffat Street at Pueblo (07099970).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1988 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Daily data not published is either missing or of poor quality. Daily maximum and minimum specific conductance data available in the district office. Specific conductance data is not representative of the cross section at the site. Specific conductance data representative of the cross section at the site is published as Arkansas River at Moffat Street at Pueblo (07099970) for water year 1991.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,980 microsiemens Nov. 24, 1988; minimum, 270 microsiemens July 10, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,000 microsiemens Apr. 26; minimum, 326 microsiemens July 3.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	651	692	815	806	754	765	709	629	569	467	577	649
2	635	667	865	773	754	749	713	630	580	480	573	666
3	618	675	804	775	754	776	719	628	602	479	559	664
4	616	689	826	773	757	811	696	631	624	496	568	665
5	633	686	823	711	748	802	689	616	637	462	604	648
6	629	687	826	719	746	744	707	669	581	457	623	655
7	639	687	857	728	747	774	726	685	691	477	573	649
8	644	684	846	741	734	761	717	682	666	510	578	676
9	641	682	850	741	730	762	704	692	635	548	554	677
10	652	682	833	750	725	773	707	681	587	514	548	701
11	667	681	828	751	728	810	698	697	548	494	544	711
12	664	681	801	770	721	771	671	732	528	466	568	687
13	668	684	818	769	711	755	665	722	517	490	563	707
14	652	688	833	749	711	774	677	713	507	494	540	676
15	657	---	803	745	713	676	703	696	505	573	613	661
16	652	---	814	748	728	673	690	663	466	615	628	694
17	655	---	817	744	721	680	687	653	470	593	619	678
18	656	---	828	745	713	737	686	647	428	566	624	678
19	661	---	800	748	708	736	687	644	435	547	668	689
20	649	857	790	734	718	708	748	657	446	536	676	700
21	661	857	763	729	706	690	780	643	442	540	637	702
22	666	849	767	739	711	693	773	622	433	607	626	695
23	662	834	776	692	706	682	766	609	413	634	636	704
24	676	854	775	696	742	685	806	585	422	601	636	708
25	674	838	777	705	741	710	878	587	446	582	652	712
26	675	887	787	765	731	694	893	628	454	569	658	711
27	677	810	782	748	720	667	748	633	450	549	681	714
28	678	832	780	760	727	675	715	617	432	521	659	718
29	673	826	803	745	---	710	721	586	446	551	657	720
30	677	843	810	768	---	687	654	574	449	577	641	709
31	690	---	805	763	---	699	---	573	---	590	639	---
MEAN	656	---	810	746	729	730	724	646	514	535	610	687

07099970 ARKANSAS RIVER AT MOFFAT STREET, AT PUEBLO, CO

LOCATION.--Lat 38°15'13", long 104°36'20", in SW¼NW¼ sec.6, T.21 S., R.64 W., Pueblo County, Hydrologic Unit 11020002, on right bank 10 ft upstream from intake of Saint Charles Mesa Water Association, 150 ft downstream from Santa Fe Avenue bridge, and 1.1 mi upstream from Fountain Creek.

DRAINAGE AREA.--4,778 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to current year.

REVISED RECORDS: WDR CO-90-1: 1989(M).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,653 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 15-19, and Dec. 20 to Jan. 4. Records good except for estimated daily discharges, which are poor. Records do not include diversion for municipal supply of Saint Charles Mesa Water Association. Natural flow of stream affected by storage reservoirs, power developments, transbasin and transmountain diversions, and diversions for irrigation and municipal use. Flow almost completely regulated by Pueblo Reservoir (station 07099350).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,260 ft³/s, June 12, 1990, gage height, 11.74 ft, from rating extended above 3,900 ft³/s; minimum daily, 3.6 ft³/s, Dec. 12, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,240 ft³/s at 1315 June 14, gage height, 11.18 ft; minimum daily, 27 ft³/s, Dec. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	236	341	34	42	108	81	201	610	2260	1610	889	353
2	342	392	31	43	108	63	263	581	1970	1650	445	303
3	480	418	38	44	108	64	300	608	1560	1640	547	303
4	445	409	31	100	111	61	324	675	1230	1680	704	349
5	334	480	34	211	142	63	334	681	962	1670	798	408
6	320	605	33	209	172	83	290	509	941	1550	904	381
7	313	623	29	192	174	68	248	509	1030	1160	944	288
8	327	601	30	118	175	73	277	463	1320	1260	832	244
9	354	594	29	120	176	76	321	412	1480	1380	926	186
10	300	571	33	127	174	72	329	396	1930	1590	1230	200
11	286	583	40	125	176	76	328	257	2380	1780	1260	186
12	303	584	39	129	174	82	310	188	2640	1830	1310	180
13	296	612	27	128	175	68	302	205	2970	1510	2100	175
14	297	533	37	131	168	80	265	232	3110	1440	2340	158
15	350	36	36	136	163	311	234	278	2640	1480	1310	154
16	390	36	36	136	155	292	234	386	2400	1440	878	168
17	412	36	34	137	148	276	226	439	2400	1500	832	175
18	468	36	37	138	149	209	246	469	2370	1560	762	185
19	380	36	36	134	152	232	244	507	2210	1630	827	169
20	328	37	46	136	151	302	72	538	1980	1710	945	153
21	325	36	53	134	137	298	59	823	1790	1670	940	140
22	429	38	53	117	124	295	46	1070	2010	1670	767	127
23	491	38	52	399	102	293	57	1290	2160	1750	554	110
24	453	40	47	478	74	283	36	1910	2010	1830	463	113
25	455	38	45	490	74	304	28	1950	1820	1760	459	109
26	460	30	44	163	91	335	28	1320	1750	1710	408	113
27	466	39	43	139	106	319	146	1330	1810	1720	307	127
28	467	42	42	138	99	310	164	1580	1970	1640	338	132
29	414	42	42	139	---	265	172	2020	1750	1450	436	131
30	351	40	42	142	---	277	414	2270	1620	1390	412	130
31	344	---	42	111	---	232	---	2330	---	1400	395	---
TOTAL	11616	7946	1195	4986	3866	5843	6498	26836	58473	49060	26262	5550
MEAN	375	265	38.5	161	138	188	217	866	1949	1583	847	198
MAX	491	623	53	490	176	335	414	2330	3110	1830	2340	408
MIN	236	30	27	42	74	61	28	188	941	1160	307	109
AC-FT	23040	15760	2370	9890	7670	11590	12890	53230	116000	97310	52090	11800

CAL YR 1990 TOTAL 175462.0 MEAN 481 MAX 4090 MIN 8.3 AC-FT 348000
WTR YR 1991 TOTAL 208531 MEAN 571 MAX 3110 MIN 27 AC-FT 413600

07099970 ARKANSAS RIVER AT MOFFAT STREET, AT PUEBLO, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1988 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1988 to current year.

WATER TEMPERATURE: October 1988 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Daily data not published are either missing or unrepresentative of the river for the day. Specific conductance data computed by using discharge-related coefficients, the discharge record at the site, and the daily mean specific conductance from Arkansas River at St Charles Mesa Diversion at Pueblo (07099969). Prior to October 1989, specific conductance data was not representative of the cross section at the site.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily mean, 1140 microsiemens, Dec. 31, 1989; minimum daily mean, 363 microsiemens, June 24, 1991.

WATER TEMPERATURE: Maximum, 26.3°C, Aug. 31, 1990; minimum, 0.0°C, on many days during winter.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily mean, 914 microsiemens, Nov. 26; minimum daily mean, 363 microsiemens, June 24.

WATER TEMPERATURE: Maximum, 26.1°C, Aug. 26; minimum, 0.0°C, Dec. 19, Jan. 26, 29, 30, and Feb. 1.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	573	609	831	---	694	719	631	547	---	402	502	565
2	559	580	891	---	694	719	627	548	---	---	---	586
3	538	587	804	---	694	745	633	546	---	---	---	584
4	536	599	851	---	696	779	612	549	---	427	494	585
5	557	597	839	633	681	770	606	---	554	397	525	564
6	554	598	843	640	671	---	622	582	---	393	---	570
7	562	598	891	648	672	735	639	596	601	410	499	571
8	567	595	871	682	661	723	631	593	573	---	503	595
9	558	593	884	674	657	716	620	602	546	---	---	602
10	574	593	850	682	652	734	622	592	---	---	471	624
11	587	592	828	683	655	761	614	613	---	425	468	632
12	584	592	801	701	649	725	590	651	---	401	---	618
13	588	595	851	700	640	717	585	643	---	421	---	636
14	574	---	---	682	640	728	596	635	---	425	---	608
15	578	---	811	678	642	595	626	612	---	---	---	595
16	567	---	822	681	655	592	614	577	---	529	546	625
17	570	---	833	677	649	598	611	568	---	510	539	610
18	571	---	836	678	642	656	604	563	---	487	543	603
19	575	---	808	---	637	655	605	560	---	---	581	620
20	571	866	---	678	646	623	---	572	---	461	588	630
21	582	866	---	663	642	607	749	559	---	464	554	639
22	579	849	---	680	647	610	765	---	---	---	545	632
23	576	834	---	602	650	600	---	---	---	545	553	648
24	588	854	---	606	705	603	---	---	363	517	553	651
25	586	838	---	---	704	625	913	---	384	501	567	655
26	587	914	---	688	680	611	---	---	390	---	572	654
27	589	810	---	681	662	587	---	---	387	---	599	650
28	590	832	---	692	676	594	644	---	372	448	---	653
29	586	826	---	---	---	625	649	---	384	---	572	655
30	589	843	---	699	---	605	---	---	386	496	558	645
31	607	---	---	702	---	622	---	---	---	507	556	---
MEAN	574	---	---	---	664	---	---	---	---	---	---	617

07099970 ARKANSAS RIVER AT MOFFAT STREET, AT PUEBLO, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	21.9	16.7	13.5	11.4	7.8	4.1	1.4	.3	4.5	.0	9.4	3.5
2	20.0	17.3	13.5	10.4	4.8	1.0	2.2	.6	5.0	.1	8.2	3.4
3	20.1	16.5	11.2	9.3	4.5	.6	1.9	.6	5.2	.6	10.0	2.5
4	20.9	16.5	12.8	9.7	6.3	1.5	1.4	.3	5.9	1.4	9.9	4.7
5	21.5	16.0	13.4	9.8	6.1	3.2	2.7	.4	5.1	.5	11.7	6.2
6	20.1	16.0	10.5	9.2	5.9	2.8	3.0	1.2	5.6	.7	7.4	3.5
7	16.7	15.1	11.4	9.1	6.0	1.7	3.3	1.4	5.4	.9	9.0	3.8
8	15.4	14.4	11.6	8.7	7.3	2.3	3.8	.3	5.6	1.1	9.1	2.8
9	18.1	13.5	11.5	8.5	7.5	2.6	2.7	.9	6.4	2.3	9.8	3.0
10	18.8	13.4	12.2	8.6	7.7	2.7	4.0	1.6	5.7	1.0	9.0	3.9
11	17.1	13.4	11.6	8.6	7.7	3.0	4.1	.9	6.3	1.0	11.3	5.0
12	17.6	13.0	11.4	8.1	7.9	4.4	4.2	.3	5.6	1.2	10.8	4.4
13	17.4	12.8	11.3	7.8	5.8	4.8	5.1	2.0	6.3	2.1	10.4	3.6
14	16.8	12.8	11.4	8.0	6.4	2.0	4.5	2.3	6.1	1.1	6.9	4.3
15	17.4	12.5	12.3	7.2	3.5	.6	3.3	.8	6.3	1.2	8.1	3.8
16	17.9	13.5	---	---	5.8	2.0	3.7	1.6	4.9	2.1	5.3	3.9
17	16.7	13.2	---	---	5.5	2.8	3.6	.3	5.3	2.5	9.6	3.7
18	15.6	12.3	---	---	5.6	1.3	4.0	.2	5.6	2.7	10.4	3.2
19	17.0	12.7	---	---	2.8	.0	4.3	.7	6.4	1.7	9.8	3.9
20	13.9	11.6	10.7	7.3	.4	.1	3.5	.9	8.1	1.8	9.8	4.0
21	15.2	11.3	9.6	6.0	.3	.1	3.7	.7	7.6	1.5	7.2	4.1
22	16.0	11.2	8.1	---	.3	.1	2.7	.1	7.2	1.9	9.1	4.3
23	15.5	12.1	9.7	---	.4	.1	4.0	1.1	5.5	2.3	10.6	4.0
24	14.4	11.6	9.6	2.8	.4	.2	3.4	.9	4.7	1.8	11.0	4.0
25	15.5	11.2	10.6	5.8	.4	.2	3.4	.8	6.8	.5	9.2	4.8
26	15.4	11.2	10.7	6.7	.4	.2	2.9	.0	7.1	1.7	11.0	5.6
27	14.5	11.5	7.2	4.7	.5	.2	3.6	.1	7.5	1.1	10.7	5.0
28	15.2	10.9	6.7	2.9	.6	.2	4.0	.2	5.3	1.8	10.8	4.8
29	15.3	11.6	7.1	1.8	.3	.2	2.2	.0	---	---	7.8	4.4
30	15.4	11.3	8.4	3.7	.3	.2	2.8	.0	---	---	11.1	4.3
31	14.3	11.0	---	---	.5	.2	5.1	.4	---	---	11.8	4.2
MONTH	21.9	10.9	---	---	7.9	.0	5.1	.0	8.1	.0	11.8	2.5
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	12.6	4.7	14.8	8.3	15.9	12.8	21.1	17.3	25.8	20.3	25.1	19.0
2	10.6	6.3	14.5	8.8	15.2	12.7	21.3	17.3	24.6	19.9	23.9	19.1
3	11.6	5.2	14.7	8.6	16.9	13.1	21.3	17.8	22.2	20.0	24.6	18.1
4	13.1	5.7	11.4	9.3	17.8	13.0	21.3	17.6	23.5	19.7	25.0	19.6
5	13.6	6.1	14.6	9.2	16.7	13.2	21.8	17.8	25.1	20.3	23.8	19.7
6	14.2	6.4	14.8	9.1	16.6	13.6	22.0	17.7	24.6	20.0	25.1	19.3
7	10.0	6.6	15.0	9.4	17.7	13.3	21.1	18.0	24.7	20.2	25.1	18.7
8	9.6	6.3	16.6	9.2	18.6	13.9	21.9	18.0	24.4	20.0	24.8	18.4
9	12.5	6.0	15.7	9.7	18.2	14.2	22.3	18.5	23.6	20.0	23.9	19.4
10	12.4	5.5	15.6	10.0	17.4	14.3	22.4	18.5	24.3	20.0	25.1	19.1
11	13.2	7.0	18.4	10.7	17.9	15.0	21.5	18.9	24.3	20.4	25.1	18.6
12	12.1	6.7	17.8	9.5	18.0	15.2	22.0	19.0	24.1	20.5	23.7	18.5
13	12.0	5.7	16.3	9.3	18.1	15.3	22.8	18.9	21.6	20.7	23.9	16.5
14	13.3	6.9	17.5	9.6	17.8	16.0	22.8	18.9	23.1	20.7	22.3	16.5
15	14.8	6.3	16.8	9.9	18.2	15.9	23.2	19.1	24.0	20.2	22.3	17.2
16	13.5	7.2	13.9	9.7	18.7	15.8	23.4	19.4	24.3	19.9	23.2	16.5
17	14.5	7.4	16.8	9.9	18.7	15.9	23.4	19.5	24.7	19.9	22.5	16.5
18	13.2	8.3	16.8	10.5	18.8	15.9	23.5	19.7	23.6	19.9	18.8	16.3
19	14.1	7.9	15.7	11.0	18.5	16.1	23.5	19.9	23.7	19.9	20.5	15.6
20	15.3	8.3	13.9	10.8	19.3	16.1	23.6	20.2	24.4	20.2	21.6	15.9
21	16.7	10.1	13.9	10.7	19.7	16.0	23.3	20.1	24.5	20.0	22.4	15.2
22	16.1	9.1	15.3	10.7	18.3	16.1	22.4	20.6	25.3	19.8	20.6	14.2
23	15.3	10.1	15.0	10.7	19.1	16.5	22.6	20.5	25.3	19.4	21.5	13.9
24	18.4	9.5	13.2	10.8	19.8	16.7	22.2	20.4	25.1	19.5	20.6	14.2
25	15.9	11.0	14.5	10.7	18.7	16.4	23.1	20.6	25.6	19.5	21.2	14.5
26	14.5	8.6	15.6	11.3	19.7	16.3	23.5	20.5	26.1	19.5	21.3	15.0
27	13.1	6.7	15.5	10.9	20.4	16.4	23.1	20.3	25.2	19.5	20.5	14.7
28	12.6	7.4	14.8	11.5	20.4	17.3	23.8	20.2	24.9	19.9	21.2	15.1
29	14.9	8.0	15.8	11.2	19.9	16.9	24.1	20.1	25.5	19.6	21.6	15.5
30	12.7	6.8	15.2	12.2	20.9	17.3	23.9	19.9	25.1	19.5	19.5	14.7
31	---	---	15.4	11.9	---	---	24.0	20.2	24.7	19.0	---	---
MONTH	18.4	4.7	18.4	8.3	20.9	12.7	24.1	17.3	26.1	19.0	25.1	13.9

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO

LOCATION.--Lat 38°51'17", long 104°52'39", in SE¼SW¼ sec.3, T.14 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on left bank 200 ft upstream from diversion to city of Colorado Springs, 0.5 mi east of bridge on U.S. Highway 24 near west city limits of Colorado Springs, and 1.0 mi downstream from Sutherland Creek.

DRAINAGE AREA.--103 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1958 to current year.

GAGE.--Water-stage recorder with satellite telemetry, and Parshall flume with overflow weirs. Elevation of gage is 6,110 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 17 to Jan. 8, and June 7-11. Records fair except for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation and municipal use, and at times, transbasin diversion from Beaver Creek drainage and transmountain diversions from Colorado River basin.

AVERAGE DISCHARGE.--33 years, 14.1 ft³/s; 10,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,630 ft³/s, Aug. 4, 1964, gage height, 5.27 ft, from rating curve extended above 190 ft³/s, on basis of slope-area measurements at gage heights, 3.87, 4.52, and 5.27 ft; minimum daily, 2.0 ft³/s, Jan. 24, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,320 ft³/s at 2330 Sept. 3, from rating curve extended above 175 cfs on the basis of slope-area measurements of peak flow at gage heights, 4.00, 4.25, and 6.15 ft; gage height, 6.15 ft from flood mark; minimum daily, 3.3 ft³/s, Dec. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	7.1	6.4	6.0	5.6	5.8	9.4	7.1	10	13	15	16
2	25	7.4	4.9	5.5	5.5	5.9	12	8.6	11	17	27	20
3	18	7.4	3.3	5.5	5.6	5.8	8.8	8.2	9.6	20	41	72
4	13	6.9	5.1	5.0	5.6	6.0	9.1	13	8.0	19	36	73
5	14	7.5	6.6	5.0	5.7	27	8.7	11	7.5	17	31	18
6	12	7.3	6.7	5.5	5.8	31	7.3	9.7	88	16	34	15
7	13	6.8	6.1	5.8	5.8	5.9	9.0	9.0	55	16	36	14
8	18	7.3	6.1	6.0	5.8	5.3	6.7	8.9	35	17	28	13
9	14	7.1	6.2	6.2	5.9	5.1	6.8	9.9	20	17	29	13
10	15	7.2	5.9	6.5	5.9	5.4	6.0	9.6	23	18	30	13
11	15	7.0	5.8	6.4	5.9	5.5	5.9	8.5	22	19	30	12
12	14	6.9	5.8	6.4	5.9	5.4	6.6	8.1	20	14	29	12
13	14	6.9	5.7	6.4	5.8	5.2	6.1	8.4	17	16	31	11
14	13	6.6	5.4	5.6	5.9	5.2	5.8	7.9	19	13	29	10
15	13	6.9	3.6	5.4	5.8	5.2	5.9	8.2	19	12	30	11
16	13	7.0	5.7	5.5	6.0	4.7	6.0	9.2	18	13	25	11
17	13	6.7	6.5	5.5	6.0	4.8	6.3	9.0	18	11	24	10
18	12	7.0	6.5	5.6	5.8	4.9	6.0	8.6	18	15	28	11
19	13	7.2	6.0	5.5	5.5	5.0	6.0	8.3	19	16	28	11
20	16	6.8	5.5	5.6	5.9	5.0	6.1	8.5	15	18	26	11
21	14	6.5	6.0	5.3	5.8	5.6	6.2	8.5	12	26	23	10
22	11	6.2	6.0	5.6	5.9	5.2	6.4	9.0	13	24	21	8.5
23	7.8	6.6	6.0	4.9	5.7	6.1	9.6	8.3	12	30	20	10
24	7.8	6.6	5.5	5.5	5.6	6.0	7.2	9.3	10	26	20	9.5
25	7.8	6.5	5.2	5.3	5.2	6.1	7.5	9.8	9.7	33	19	9.0
26	7.7	6.6	5.0	5.6	5.6	8.2	6.7	10	12	27	19	8.8
27	7.4	6.4	5.0	5.8	5.8	8.4	6.4	7.7	15	23	18	9.1
28	7.2	4.4	5.0	5.7	5.8	8.1	6.7	7.8	15	22	20	8.7
29	7.4	5.3	5.5	5.7	---	7.7	6.4	7.3	14	21	20	8.6
30	7.3	6.5	5.7	5.9	---	8.9	9.1	6.9	15	17	18	11
31	7.1	---	6.0	5.8	---	8.9	---	6.8	---	16	17	---
TOTAL	381.5	202.6	174.7	176.0	161.1	233.3	216.7	271.1	579.8	582	802	470.2
MEAN	12.3	6.75	5.64	5.68	5.75	7.53	7.22	8.75	19.3	18.8	25.9	15.7
MAX	25	7.5	6.7	6.5	6.0	31	12	13	88	33	41	73
MIN	7.1	4.4	3.3	4.9	5.2	4.7	5.8	6.8	7.5	11	15	8.5
AC-FT	757	402	347	349	320	463	430	538	1150	1150	1590	933

CAL YR 1990 TOTAL 3657.2 MEAN 10.0 MAX 37 MIN 3.3 AC-FT 7250
WTR YR 1991 TOTAL 4251.0 MEAN 11.6 MAX 88 MIN 3.3 AC-FT 8430

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
17...	1615	13	253	8.1	8.0	9.0	1.6	K40	600	27	5.0
NOV											
14...	1525	6.5	422	8.4	9.0	8.7	1.4	K80	K280	45	9.9
DEC											
13...	0940	5.8	443	8.4	2.0	11.0	0.8	K50	370	47	9.8
JAN											
10...	0900	6.3	405	8.3	0.0	11.4	0.4	K23	200	44	8.7
FEB											
07...	0910	5.4	464	8.4	1.0	11.3	2.2	>200	>2000	50	10
MAR											
07...	0915	2.8	503	8.6	1.0	11.8	2.0	<100	K800	54	11
APR											
11...	0955	5.8	413	8.4	5.5	9.6	0.2	K17	300	45	8.8
MAY											
16...	0855	8.4	351	8.4	8.0	9.2	0.9	430	230	38	7.6
JUN											
27...	1020	16	204	8.1	12.5	8.2	3.9	--	>2000	22	4.0
JUL											
18...	1015	10	246	8.4	15.0	8.0	1.3	520	K1600	29	5.4
AUG											
15...	0920	30	176	8.1	13.0	8.2	0.4	1300	1100	20	3.4
SEP											
05...	1215	19	222	8.0	14.0	8.3	1.0	K3100	K9900	25	4.4

DATE	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT										
17...	89	15	13	3.1	6	<0.01	0.50	<0.01	0.20	<0.01
NOV										
14...	150	19	24	2.4	106	0.03	1.0	0.08	0.40	0.03
DEC										
13...	158	27	21	1.5	<1	0.01	1.3	<0.01	<0.20	0.01
JAN										
10...	148	20	22	2.6	3	<0.01	1.3	0.04	<0.20	0.01
FEB										
07...	163	25	25	2.7	6	0.01	1.5	0.37	1.0	0.07
MAR										
07...	183	25	32	2.6	18	0.02	1.4	0.02	0.30	0.02
APR										
11...	150	16	22	2.7	46	0.01	0.99	0.02	<0.20	<0.01
MAY										
16...	125	14	19	2.7	13	<0.01	0.86	0.01	0.30	<0.01
JUN										
27...	**	11	11	2.6	24	0.01	0.54	0.46	1.4	0.10
JUL										
18...	93	9.1	11	2.7	23	0.01	0.51	0.01	0.20	<0.01
AUG										
15...	65	7.3	7.1	2.5	48	0.01	0.52	0.02	0.40	0.01
SEP										
05...	82	12	12	3.1	87	<0.01	0.54	0.02	0.30	<0.01

K Based on non-ideal colony count.

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 17...	<1	<1	1	<1	<1	3	1	.450	69
NOV 14...	<1	<1	<1	<1	<1	3	2	1400	34
DEC 13...	<1	<1	<1	<1	1	3	2	120	50
JAN 10...	<1	<1	<1	<1	<1	3	1	150	28
FEB 07...	<1	<1	<1	<1	<1	2	1	150	19
MAR 07...	<1	<1	<1	<1	<1	2	1	220	37
APR 11...	<1	<1	<1	<1	<1	2	1	320	32
MAY 16...	<1	<1	<1	<1	<1	6	1	580	34
JUN 27...	<1	<1	<1	<1	<1	3	2	1600	12
JUL 18...	<1	<1	--	<1	<1	3	1	1100	18
AUG 15...	<1	<1	<1	<1	<1	3	<1	1700	43
SEP 05...	<1	<1	1	<1	<1	4	1	3500	63

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 17...	2	1	40	30	<1	<1	<10	9
NOV 14...	5	4	90	51	2	1	40	16
DEC 13...	2	<1	50	45	<1	<1	20	14
JAN 10...	<1	<1	60	49	2	<1	20	13
FEB 07...	1	<1	50	50	3	1	<10	5
MAR 07...	2	<1	70	65	2	2	<10	3
APR 11...	1	1	80	61	3	1	10	4
MAY 16...	2	1	90	44	2	<1	<10	6
JUN 27...	5	<1	130	17	<1	<1	20	12
JUL 18...	4	<1	80	19	5	<1	<10	<3
AUG 15...	--	<1	90	14	2	<1	<10	5
SEP 05...	7	1	170	20	2	<1	20	6

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO--Continued

MISCELLANEOUS FIELD MEASUREMENTS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
OCT 1990					MAY 1991				
31...	1040	7.1	381	8.5	17...	1035	9.0	346	9.5
DEC					22...	1150	7.9	308	12.5
05...	1300	6.5	479	5.0	25...	1450	7.2	345	15.0
JAN 1991					29...	1450	7.2	345	15.0
08...	1340	6.0	444	1.5	JUL				
FEB					03...	1600	19	178	17.0
12...	1210	5.6	454	4.0	11...	1235	19	185	15.0
MAR					19...	1155	16	191	16.0
21...	1300	4.9	393	6.0	22...	1635	22	201	22.0
APR					31...	1045	16	237	14.5
18...	1005	6.1	399	7.5	AUG				
					05...	1225	33	192	15.0
					29...	1030	19	189	13.5

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					
17...	1615	13	14	0.51	--
NOV					
14...	1525	6.5	114	2.0	98
DEC					
13...	0940	5.8	8	0.13	--
JAN					
10...	0900	6.3	8	0.13	--
FEB					
07...	0910	5.4	3	0.04	--
MAR					
07...	0915	2.8	15	0.11	--
APR					
11...	0955	5.8	7	0.10	--
MAY					
16...	0855	8.4	15	0.34	--
JUN					
06...	0955	87	9980	2340	80
06...	1005	87	10800	2540	--
06...	1110	81	11600	2540	92
27...	1020	16	119	5.1	--
JUL					
03...	1610	19	98	5.0	--
11...	1245	19	112	5.7	--
18...	1015	10	42	1.1	--
22...	1600	21	350	20	--
22...	1605	21	332	19	--
AUG					
02...	1530	35	8470	800	86
05...	1150	33	406	36	--
15...	0920	30	139	11	--
SEP					
04...	1700	33	2310	206	87
05...	1215	19	113	5.8	--

07103747 MONUMENT CREEK AT PALMER LAKE, CO

LOCATION.--Lat 39°06'07", long 104°53'27", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.9, T.11 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on left bank 0.9 mi upstream from Monument Lake, 1.5 mi downstream from North Monument Creek, and 1.9 mi southeast of town of Palmer Lake.

PERIOD OF RECORD.--April 1977 to September 1980; January 1984 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
17...	0940	2.2	159	8.2	7.5	8.6	0.9	77	270	19	3.3
NOV											
14...	1000	1.0	164	8.1	7.0	9.0	0.6	K4	58	21	3.7
DEC											
12...	1115	0.63	166	8.3	5.0	10.4	0.8	<1	47	20	3.7
JAN											
09...	1035	0.30	180	7.9	0.0	10.8	0.6	K2	80	22	3.9
FEB											
06...	1030	0.22	183	8.0	2.5	10.2	1.0	K1	35	23	4.1
MAR											
06...	0955	E0.26	162	8.2	2.0	10.4	0.2	<1	24	21	3.8
APR											
10...	0955	3.0	132	7.8	6.5	9.1	0.4	K5	K120	16	2.8
MAY											
15...	1010	3.9	105	8.0	10.5	8.6	0.8	K1	76	13	1.9
JUN											
26...	0920	7.2	108	7.8	12.5	8.2	2.1	--	330	13	2.1
JUL											
17...	1055	1.7	135	8.1	22.0	7.0	1.0	K13	57	18	2.9
AUG											
14...	1055	3.4	124	8.2	18.0	7.5	0.6	K11	77	16	2.4
SEP											
04...	1015	2.3	158	8.1	17.5	7.6	0.6	<1	160	21	3.7

DATE	ALKA- LINIT LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- ROE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDEO (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT										
17...	60	9.5	2.6	1.8	1	<0.01	<0.10	0.01	<0.20	<0.01
NOV										
14...	61	11	2.7	1.7	3	<0.01	<0.10	0.04	0.40	0.01
DEC										
12...	62	13	3.8	1.8	<1	0.01	<0.10	<0.01	<0.20	<0.01
JAN										
09...	66	13	4.3	1.7	4	<0.01	<0.10	0.02	<0.20	<0.01
FEB										
06...	69	11	2.9	1.0	20	<0.01	<0.10	<0.01	<0.20	<0.01
MAR										
06...	61	12	4.0	1.6	<1	0.01	<0.05	0.02	0.30	<0.01
APR										
10...	47	12	2.7	1.8	18	0.01	<0.05	0.01	<0.20	<0.01
MAY										
15...	37	9.2	2.3	1.7	7	<0.01	<0.05	0.01	0.30	<0.01
JUN										
26...	38	8.1	0.6	1.6	16	<0.01	<0.05	0.03	0.46	0.02
JUL										
17...	56	6.6	1.0	1.7	<1	<0.01	<0.05	<0.01	0.20	<0.01
AUG										
14...	52	5.9	1.6	1.5	12	<0.01	<0.05	0.01	0.20	0.01
SEP										
04...	68	7.3	2.0	1.8	<1	<0.01	<0.05	0.02	0.30	<0.01

E Estimated.

K Based on non-ideal colony count.

07103747 MONUMENT CREEK AT PALMER LAKE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS- (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 17...	<1	<1	1	<1	<1	3	1	480	150
NOV 14...	<1	<1	<1	<1	<1	1	1	310	130
DEC 12...	<1	<1	<1	<1	1	2	1	210	86
JAN 09...	<1	<1	2	<1	<1	2	1	450	50
FEB 06...	<1	<1	1	<1	<1	1	<1	1200	12
MAR 06...	<1	<1	2	<1	<1	1	<1	210	31
APR 10...	<1	<1	<1	<1	<1	2	1	450	79
MAY 15...	<1	<1	<1	<1	<1	5	<1	230	81
JUN 26...	<1	<1	<1	<1	<1	2	1	820	54
JUL 17...	<1	<1	**	<1	<1	1	<1	410	250
AUG 14...	<1	<1	<1	<1	<1	1	<1	490	53
SEP 04...	<1	<1	<1	<1	<1	3	1	520	190

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 17...	2	1	70	49	2	<1	20	22
NOV 14...	<1	<1	60	54	<1	<1	10	4
DEC 12...	1	1	60	54	<1	1	<10	<3
JAN 09...	1	1	60	59	8	2	<10	8
FEB 06...	2	<1	90	57	1	<1	<10	9
MAR 06...	1	<1	40	28	1	<1	<10	4
APR 10...	2	1	30	13	1	1	10	14
MAY 15...	2	<1	20	13	4	<1	<10	9
JUN 26...	2	<1	80	51	<1	<1	20	21
JUL 17...	5	1	60	46	10	1	<10	4
AUG 14...	2	<1	60	43	<1	<1	<10	7
SEP 04...	<1	2	90	91	1	<1	10	**

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07103780 MONUMENT CREEK ABOVE NORTH GATE BOULEVARD, AT U.S. AIR FORCE ACADEMY, CO

LOCATION.--Lat 39°01'52", long 104°50'52", in SW¼SW¼ sec.1, T.12 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on right bank, at U.S. Air Force Academy, 50 ft upstream from Denver and Rio Grande Western Railroad bridge, 0.8 mi upstream from North Gate Boulevard, and 1.5 mi downstream from Beaver Creek.

DRAINAGE AREA.--81.7 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,640 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 15-30, Jan. 26-28, Feb. 10, 11, and July 17 to Aug. 7. Records fair except for estimated daily discharges, which are poor. Storage and diversions upstream from station for municipal supply of Monument and Palmer Lake.

AVERAGE DISCHARGE.--6 years, 9.60 ft³/s; 6,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 372 ft³/s, Apr. 30, 1985, gage height, 6.05 ft; minimum daily, 0.58 ft³/s, Oct. 15, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 166 ft³/s at 0500 June 7, gage height, 4.90 ft; minimum daily, 1.5 ft³/s, Feb. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	6.1	3.5	3.0	2.2	1.8	3.1	10	11	4.5	11	5.7
2	3.0	6.2	3.8	2.9	2.3	1.8	4.2	9.9	15	4.4	15	6.2
3	5.2	8.2	4.5	2.8	2.1	1.7	4.1	11	13	4.2	25	6.3
4	2.7	9.9	3.9	2.6	2.1	1.7	5.5	18	20	4.1	17	13
5	2.8	10	3.4	2.6	1.8	2.0	4.9	21	19	3.8	18	6.7
6	2.3	11	3.6	2.5	1.8	2.2	5.3	18	87	3.2	15	5.6
7	2.4	9.6	3.8	2.5	1.8	2.3	7.9	17	149	3.8	13	5.3
8	3.7	11	4.0	2.5	1.6	2.1	15	19	104	4.4	11	5.8
9	4.0	10	3.7	2.5	5.3	2.0	18	19	72	4.3	7.5	4.9
10	3.6	12	3.7	2.2	11	2.1	16	19	57	5.6	7.4	5.0
11	5.6	9.5	3.5	2.2	12	2.0	8.7	19	69	6.1	7.5	4.7
12	18	4.9	3.4	2.5	9.7	2.0	10	19	53	5.2	8.2	4.8
13	15	4.7	3.4	2.5	1.7	1.7	9.6	18	41	5.4	8.6	4.7
14	3.9	4.8	3.4	2.4	2.0	1.8	9.8	20	41	5.5	8.5	4.4
15	3.8	4.4	3.2	2.0	1.8	1.9	9.0	20	41	4.7	8.8	4.2
16	3.7	3.9	3.0	2.0	1.6	1.7	9.0	20	33	4.5	14	4.2
17	3.6	5.7	2.7	2.1	1.5	1.6	8.6	21	30	4.0	17	3.9
18	3.3	3.9	2.6	2.1	1.7	1.7	9.9	19	29	4.8	18	4.0
19	3.5	4.0	2.5	2.1	1.8	1.7	11	19	30	7.0	13	3.7
20	5.2	4.2	2.4	2.1	1.6	1.7	13	17	27	10	7.2	3.4
21	8.0	6.3	2.1	1.9	1.7	1.6	17	18	26	7.0	6.2	2.9
22	21	5.2	1.9	2.1	1.9	1.8	25	17	26	6.2	6.2	2.6
23	20	4.0	2.0	1.8	1.7	6.5	17	18	24	5.8	5.8	2.6
24	14	4.9	2.2	1.8	1.7	9.3	20	16	24	5.5	5.4	2.6
25	3.6	3.9	2.5	1.6	1.9	2.0	17	12	18	7.5	5.1	2.4
26	3.4	4.8	2.6	1.7	1.8	1.8	20	9.9	11	9.0	5.0	2.3
27	3.3	3.8	2.7	1.8	1.8	2.0	14	8.5	9.9	8.0	5.5	2.2
28	4.2	3.5	2.8	1.7	1.8	1.9	13	8.4	5.3	7.6	5.7	2.1
29	4.0	3.6	2.9	1.6	---	2.9	12	7.5	5.1	7.2	6.4	1.5
30	3.9	3.5	2.9	1.7	---	3.2	13	6.9	4.1	7.0	5.7	1.5
31	6.4	---	2.9	1.9	---	3.2	---	6.7	---	7.0	5.7	---
TOTAL	189.5	187.5	95.5	67.7	81.7	73.7	350.6	482.8	1094.4	177.3	313.4	130.0
MEAN	6.11	6.25	3.08	2.18	2.92	2.38	11.7	15.6	36.5	5.72	10.1	4.33
MAX	21	12	4.5	3.0	12	9.3	25	21	149	10	25	13
MIN	1.9	3.5	1.9	1.6	1.5	1.6	3.1	6.7	4.1	3.2	5.0	1.9
AC-FT	376	372	189	134	162	146	695	958	2170	352	622	258

CAL YR 1990 TOTAL 2237.03 MEAN 6.13 MAX 41 MIN .90 AC-FT 4440
WTR YR 1991 TOTAL 3244.1 MEAN 8.89 MAX 149 MIN 1.5 AC-FT 6430

07103780 MONUMENT CREEK ABOVE NORTH GATE BOULEVARD, AT U.S. AIR FORCE ACADEMY, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1984 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 17...	1120	3.4	293	8.3	8.0	9.7	0.9	K13	K68	28	4.4
NOV 14...	1115	5.1	288	8.4	6.5	10.4	1.1	K3	K16	28	4.7
DEC 12...	1315	3.2	330	8.3	3.0	10.5	1.2	K6	25	31	5.1
JAN 09...	1225	2.6	383	8.0	0.0	11.4	1.0	K6	K4	32	5.4
FEB 06...	1230	2.6	378	8.0	0.5	11.0	2.2	20	K11	33	5.7
MAR 06...	1140	2.2	342	8.2	2.0	10.7	1.0	<1	40	30	5.2
APR 10...	1140	16	220	8.3	8.0	9.6	1.4	K1	200	24	3.8
MAY 15...	1140	18	159	8.4	14.0	8.1	1.3	K12	150	19	3.3
JUN 26...	1110	11	149	8.1	17.0	7.8	1.9	--	91	17	2.6
JUL 17...	1330	45	201	8.7	26.0	7.0	1.6	44	100	21	3.6
AUG 14...	1245	6.6	204	8.7	22.0	7.9	1.0	63	37	23	3.5
SEP 04...	1225	11	162	7.9	19.0	7.3	2.7	K1600	>400	16	2.8

DATE	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT 17...	73	26	15	1.4	17	0.02	2.4	0.03	0.50	1.1
NOV 14...	71	29	17	1.6	11	0.04	2.0	0.06	0.60	1.5
DEC 12...	79	36	20	0.8	5	0.02	1.4	0.07	0.40	1.7
JAN 09...	88	41	25	1.0	7	0.01	0.50	1.5	1.8	0.44
FEB 06...	85	39	28	1.0	9	0.02	1.1	0.58	1.1	2.5
MAR 06...	83	41	25	1.0	14	0.02	1.0	0.13	0.60	1.8
APR 10...	66	17	12	1.5	22	0.01	0.60	0.03	0.40	0.52
MAY 15...	52	14	7.1	1.5	13	0.01	0.24	0.02	0.50	0.39
JUN 26...	47	14	5.5	1.6	25	0.02	0.24	0.06	0.50	0.42
JUL 17...	66	15	9.5	1.6	14	0.02	0.17	0.02	0.30	1.0
AUG 14...	69	13	9.6	1.5	17	0.02	0.30	0.03	0.50	0.83
SEP 04...	51	12	10	1.0	**	<0.01	0.28	0.06	0.70	0.30

K Based on non-ideal colony count.

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07103780 MONUMENT CREEK ABOVE NORTH GATE BOULEVARD, AT U.S. AIR FORCE ACADEMY, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 17...	<1	2	2	6	6	3	3	620	26
NOV 14...	<1	<1	<1	<1	<1	2	2	440	73
DEC 12...	<1	<1	1	<1	4	3	3	390	92
JAN 09...	<1	<1	1	<1	<1	4	1	570	80
FEB 06...	<1	<1	<1	<1	<1	3	2	690	190
MAR 06...	<1	<1	1	<1	<1	2	2	630	74
APR 10...	<1	<1	<1	<1	<1	2	1	710	31
MAY 15...	<1	<1	<1	1	<1	2	1	650	120
JUN 26...	<1	<1	<1	<1	<1	3	1	1000	19
JUL 17...	<1	<1	**	<1	<1	2	<1	670	59
AUG 14...	<1	<1	<1	<1	<1	2	<1	680	51
SEP 04...	<1	<1	**	<1	<1	4	2	**	47

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 17...	1	<1	70	52	4	2	<10	8
NOV 14...	1	1	80	54	1	2	10	4
DEC 12...	<1	<1	70	58	2	2	<10	8
JAN 09...	2	1	120	100	5	3	20	10
FEB 06...	2	<1	110	91	4	4	<10	9
MAR 06...	3	<1	110	74	4	2	<10	11
APR 10...	2	1	90	44	6	<1	10	9
MAY 15...	2	1	60	38	3	<1	<10	6
JUN 26...	3	<1	160	100	1	<1	<10	6
JUL 17...	4	<1	70	45	9	2	<10	<3
AUG 14...	3	<1	70	50	2	2	<10	5
SEP 04...	**	<1	**	62	3	2	**	10

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07103780 MONUMENT CREEK ABOVE NORTH GATE BOULEVARD, AT U.S. AIR FORCE ACADEMY, CO--Continued

MISCELLANEOUS FIELD MEASUREMENTS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
OCT					APR				
01...	1525	1.9	359	19.0	17...	1155	8.4	235	9.0
NOV					MAY				
01...	1100	5.5	276	8.5	22...	1020	17	164	15.0
DEC					JUL				
04...	1140	4.1	344	1.0	03...	1440	4.1	218	25.5
JAN					12...	1310	5.6	206	24.0
07...	1235	2.4	369	0.5	AUG				
FEB					06...	1015	15	154	18.5
12...	1030	13	224	1.0					
MAR									
21...	1120	1.6	318	6.0					

07103800 WEST MONUMENT CREEK AT U.S. AIR FORCE ACADEMY, CO

LOCATION.--Lat 38°58'14", long 104°54'08", in SW¼SW¼ sec.28, T.12 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on left bank 500 ft upstream from diversion to city of Colorado Springs water-treatment plant, 2.7 mi south of U.S. Air Force Academy chapel, and 4.4 mi upstream from mouth.

DRAINAGE AREA.--14.9 mi².

PERIOD OF RECORD.--May 1970 to current year.

GAGE.--Water-stage recorder with satellite telemetry and concrete control. Elevation of gage is 7,180 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 22, 27-29, Dec. 1-4, 15, 16, 20-25, and Dec. 30 to Jan. 7. Records fair except for estimated daily discharges and for Dec. 1 to Mar. 31, which are poor. Natural flow of stream affected by trans-mountain diversions from Colorado River basin, storage reservoirs, and operation of water-supply system. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--21 years, 1.79 ft³/s; 1,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80 ft³/s, May 8, 1980, gage height, 2.73 ft, from rating curve extended above 34 ft³/s; maximum gage height, 3.88 ft, Dec. 22, 1983 (backwater from ice); no flow many days in 1976, and 1991.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23 ft³/s at 2330 May 5, gage height, 2.00 ft; no flow, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	2.9	1.3	1.4	.01	.00	.02	3.4	1.3	.80	.07	.13
2	5.4	2.9	1.3	1.4	.01	.00	.09	.66	1.2	.76	.56	.14
3	13	2.9	1.3	1.3	.00	.00	.13	.48	1.2	.75	2.1	.27
4	9.9	3.0	1.4	1.2	.00	.00	.11	.43	1.1	.71	2.1	3.0
5	7.5	3.0	1.3	1.1	.00	.00	.14	12	.97	.65	1.4	1.8
6	6.4	3.2	1.3	1.0	.00	.00	.27	6.7	7.5	.59	1.2	1.5
7	4.8	3.2	1.3	.98	.00	.00	.31	1.3	8.3	.60	1.1	1.2
8	3.6	3.2	1.4	.86	.00	.00	.20	1.3	7.9	.67	1.0	.94
9	3.7	3.2	1.4	.86	.85	.00	.12	1.5	7.3	.72	.93	.81
10	3.6	3.2	1.3	.79	.09	.00	.11	1.5	6.7	.78	.86	.82
11	3.6	3.1	1.3	.79	.01	.00	.10	1.6	5.8	.84	.79	.71
12	3.6	3.1	1.4	.86	.00	.00	.09	1.6	4.3	.73	.86	.65
13	3.5	2.7	1.5	.93	.00	.00	.06	1.5	3.9	.65	.93	.57
14	3.5	2.1	1.5	.93	.00	.00	.05	1.5	3.4	.60	.87	.50
15	3.5	2.0	1.3	1.0	.00	.00	.06	1.5	3.0	.48	.69	.45
16	3.5	2.0	1.3	1.2	.00	.00	.08	1.5	3.3	.33	.63	.45
17	3.3	2.0	1.6	1.2	.00	.00	.10	1.3	2.7	.21	.56	.39
18	3.3	2.0	1.7	1.2	.00	.00	.12	1.2	2.3	.16	.55	.37
19	3.3	2.0	1.7	1.2	.00	.00	.09	1.2	2.2	.19	.54	.40
20	3.3	2.0	1.6	1.2	.00	.00	.10	1.1	2.0	.35	.50	.33
21	3.3	1.9	1.3	1.2	.00	.00	.13	1.1	1.7	.56	.43	.27
22	3.3	1.9	1.2	1.2	.00	.00	.11	1.1	1.7	.43	.41	.24
23	3.3	1.9	1.2	1.2	.00	.00	.17	1.2	1.5	.53	.34	.23
24	3.3	1.9	1.3	1.2	.00	.00	.17	1.5	1.4	.48	.50	.21
25	3.3	1.9	1.4	.79	.00	.00	.17	1.4	1.2	.56	.45	.20
26	3.2	1.9	1.4	.14	.01	.00	.15	1.3	1.1	.65	.31	.18
27	3.2	1.6	1.4	.05	.01	.00	.09	1.2	1.0	.48	.28	.16
28	3.2	1.5	1.4	.02	.01	.00	.10	1.1	.97	.33	.24	.15
29	3.1	1.5	1.3	.02	---	.00	.09	1.0	.93	.19	.28	.14
30	3.0	1.5	1.3	.02	---	.01	.14	.96	.87	.10	.20	.34
31	3.0	---	1.3	.02	---	.01	---	.95	---	.08	.16	---
TOTAL	127.85	71.2	42.7	27.26	1.00	0.02	3.67	56.08	88.74	15.96	21.84	17.55
MEAN	4.12	2.37	1.38	.88	.036	.001	.12	1.81	2.96	.51	.70	.58
MAX	13	3.2	1.7	1.4	.85	.01	.31	12	8.3	.84	2.1	3.0
MIN	.35	1.5	1.2	.02	.00	.00	.02	.43	.87	.08	.07	.13
AC-FT	254	141	85	54	2.0	.04	7.3	111	176	32	43	35

CAL YR 1990 TOTAL 453.48 MEAN 1.24 MAX 13 MIN .01 AC-FT 899
WTR YR 1991 TOTAL 473.87 MEAN 1.30 MAX 13 MIN .00 AC-FT 940

07103990 COTTONWOOD CREEK AT MOUTH AT PIKEVIEW, CO

LOCATION.--Lat 38°55'41", long 104°38'35", in SW¼SW¼ sec.8, T.13 S, R.67 W., El Paso County, Hydrologic Unit 11020003, on left bank 70 ft upstream from Vincent Drive bridge, 0.3 mi south of Woodman Valley Road, and 0.3 mi upstream from mouth.

DRAINAGE AREA.--18.7 mi².

PERIOD OF RECORD.--December 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,265 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 28-31, Dec. 5, 6, 21-25, 27-30, Dec. 31 to Jan. 4, Jan. 6, 7, 11-13, Jan. 23 to Feb. 3, Mar. 23-28, May 15, 16, May 25 to June 1, June 4, Aug. 11-30 and Sept. 22-27. Records poor. Natural flow of stream affected by runoff from industrial and residential areas of northeast Colorado Springs. Several measurements of water temperature and specific conductance were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--5 years (1987-91), 5.19 ft³/s, 3,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 830 ft³/s, Aug. 21, 1986, gage height, 7.68 ft, from rating curve extended above 60 ft³/s, on basis of contracted-opening measurement of peak flow; minimum daily, 0.01 ft³/s, July 10-11, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 790 ft³/s at 1515 Sept. 2, gage height, 6.72 ft, from rating curve extended above 60 ft³/s, on basis of contracted-opening measurement of peak flow; minimum daily, 1.3 ft³/s, Apr. 11, and May 29-31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	4.2	5.2	2.8	2.8	2.5	1.7	12	1.4	7.8	4.6	3.7
2	49	4.4	5.0	2.5	2.9	2.2	9.7	11	2.7	5.3	39	37
3	7.1	8.3	5.6	2.2	2.8	2.5	10	11	3.3	13	64	4.3
4	3.2	8.6	7.8	2.0	2.7	2.3	2.5	28	1.6	4.7	8.9	6.4
5	5.0	8.7	5.0	1.9	2.5	2.3	1.9	31	1.5	4.4	9.8	4.4
6	5.2	6.8	4.5	2.5	3.0	5.9	1.9	13	125	4.0	7.4	4.6
7	6.6	7.3	6.3	2.8	2.9	2.5	1.8	12	9.7	2.8	3.2	3.9
8	16	6.2	6.8	2.4	3.3	2.8	4.4	11	6.5	8.6	21	2.6
9	7.2	7.5	5.7	2.4	3.0	2.8	1.9	11	4.3	6.4	8.1	16
10	5.0	8.2	5.7	2.3	3.0	3.3	1.4	10	9.7	28	5.3	9.0
11	6.1	8.4	5.5	2.8	3.3	3.1	1.3	9.3	5.0	51	4.8	5.0
12	6.8	7.8	5.6	3.2	3.2	2.7	2.5	8.2	6.7	8.7	4.4	5.8
13	6.3	7.9	5.2	3.0	3.1	2.9	1.6	4.8	4.5	5.9	4.0	4.3
14	6.1	8.0	4.3	2.8	2.8	2.8	1.6	2.2	3.0	4.7	4.0	3.8
15	5.4	6.5	4.7	3.2	3.2	2.9	1.4	1.9	3.5	3.4	4.3	3.4
16	5.5	6.2	6.5	3.3	3.3	3.2	1.4	1.7	4.0	3.3	4.2	3.8
17	4.5	5.7	6.0	3.3	3.1	3.0	2.0	1.6	4.1	3.4	3.9	3.8
18	5.1	5.3	6.5	2.8	3.0	2.5	8.7	1.7	4.0	9.6	3.7	4.2
19	4.7	4.8	5.4	3.6	3.2	2.8	3.4	1.7	4.5	3.2	3.4	4.0
20	14	3.8	4.0	3.4	3.1	2.6	3.4	2.1	4.9	40	3.3	4.1
21	3.9	4.3	3.6	3.6	3.0	2.3	6.9	1.9	4.9	9.5	3.2	3.9
22	3.8	5.4	3.2	3.9	3.0	4.2	4.4	7.8	8.1	10	3.2	3.5
23	3.9	5.6	2.9	3.8	2.8	2.2	7.2	3.3	4.9	10	7.0	3.2
24	3.8	5.5	2.6	3.2	2.1	1.9	4.7	2.2	3.3	7.3	5.0	2.9
25	4.0	5.7	2.4	2.9	2.9	1.8	3.9	1.6	4.0	28	4.0	2.6
26	3.9	5.6	2.2	2.6	2.3	1.8	4.1	1.5	4.0	6.6	3.6	2.4
27	3.8	5.6	2.5	2.4	2.4	1.7	4.2	1.4	4.7	3.9	3.2	2.4
28	3.6	5.4	2.9	2.3	2.3	1.9	7.0	1.4	5.1	3.3	30	2.4
29	3.4	5.2	2.4	2.3	---	2.9	7.1	1.3	5.2	3.1	7.0	2.8
30	3.3	6.1	2.0	2.5	---	2.9	29	1.3	5.8	3.1	5.5	11
31	3.5	---	2.4	2.7	---	1.7	---	1.3	---	2.7	4.8	---
TOTAL	213.9	189.0	140.4	87.4	81.0	82.9	143.0	210.2	259.9	305.7	287.8	173.2
MEAN	6.90	6.30	4.53	2.82	2.89	2.67	4.77	6.78	8.66	9.86	9.28	5.77
MAX	49	8.7	7.8	3.9	3.3	5.9	29	31	125	51	64	39
MIN	3.2	3.8	2.0	1.9	2.1	1.7	1.3	1.3	1.4	2.7	3.2	2.4
AC-FT	424	375	278	173	161	164	284	417	516	606	571	344

CAL YR 1990 TOTAL 2321.17 MEAN 6.36 MAX 85 MIN .85 AC-FT 4600
WTR YR 1991 TOTAL 2174.4 MEAN 5.96 MAX 125 MIN 1.3 AC-FT 4310

07104000 MONUMENT CREEK AT PIKEVIEW, CO

LOCATION.--Lat 38°55'04", long 104°49'05", in NW¼SE¼ sec.18, T.13 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on right bank 0.1 mi west of U.S. Interstate Highway I-25, 0.9 mi downstream from Cottonwood Creek, and 1.3 mi downstream from Woodmen Valley Road.

DRAINAGE AREA.--204 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to September 1949, January 1976 to current year.

REVISED RECORDS.--WDR CO-90-1: 1989 (M).

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 6,203.26 ft above National Geodetic Vertical Datum of 1929. September 1938 to October 1949, nonrecording gage at present site at datum 0.10 ft lower.

REMARKS.--Estimated daily discharges: Dec. 21 to Feb. 6, May 5-14, 18-21, 23-29, June 2-5, 11-13, 17-25, and July 6-11. Records fair except for estimated daily discharges and those above 200 ft³/s, which are poor. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, municipal use and return flow from irrigation, and sewage-effluent discharge.

AVERAGE DISCHARGE.--26 years (water years 1939-49, 1977-91), 28.2 ft³/s; 20,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,750 ft³/s, Aug. 5, 1981, gage height, 7.48 ft, from rating curve extended above 100 ft³/s, on basis of slope-area measurement of peak flow; no flow, July 24, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1935, reached a stage of about 14 ft, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 564 ft³/s at 1800 July 20, gage height, 4.79 ft from floodmark, from rating curve extended above 100 ft³/s, on basis of a slope-area measurement of peak flow; minimum daily, 11 ft³/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	30	25	18	20	23	23	12	24	22	27	30
2	84	31	21	17	23	16	34	13	26	21	55	33
3	59	35	19	16	27	15	31	17	28	26	78	31
4	51	32	22	15	30	18	30	25	22	21	47	42
5	49	32	21	14	29	17	29	38	17	16	47	37
6	51	33	29	13	26	17	27	35	203	14	45	36
7	52	31	29	12	25	13	31	31	167	13	41	36
8	63	31	28	12	26	13	35	29	146	18	47	35
9	55	31	27	14	27	16	37	32	123	24	37	34
10	52	32	29	16	39	15	35	35	111	33	32	35
11	49	32	28	18	45	16	35	36	103	50	30	31
12	47	31	29	18	47	16	35	36	98	28	29	32
13	54	32	26	18	35	17	35	36	92	18	30	30
14	44	28	26	19	32	17	35	36	84	14	28	28
15	42	29	17	18	31	16	36	32	78	12	29	27
16	45	30	24	16	32	17	35	31	66	11	29	26
17	44	30	29	15	33	17	33	30	60	11	32	26
18	40	31	30	14	32	20	36	31	57	16	32	26
19	35	33	30	12	27	16	34	34	53	19	33	26
20	52	34	29	11	28	16	36	35	50	41	28	25
21	43	33	20	11	26	16	38	35	52	27	27	24
22	46	32	16	11	27	18	34	35	54	23	28	23
23	45	33	13	11	27	22	31	33	52	23	31	23
24	44	33	11	12	20	25	29	30	45	22	30	23
25	37	30	11	12	19	22	25	28	37	35	29	23
26	34	28	12	13	21	21	23	26	31	35	27	22
27	32	30	14	15	22	22	19	25	28	32	27	21
28	29	33	15	17	27	24	18	24	23	29	47	19
29	30	32	16	17	---	25	17	24	21	27	29	18
30	32	28	17	17	---	27	22	23	20	27	28	21
31	31	---	18	17	---	23	---	23	---	25	29	---
TOTAL	1420	940	681	459	803	576	918	910	1971	733	1088	843
MEAN	45.8	31.3	22.0	14.8	28.7	18.6	30.6	29.4	65.7	23.6	35.1	28.1
MAX	84	35	30	19	47	27	38	38	203	50	78	42
MIN	29	28	11	11	19	13	17	12	17	11	27	18
AC-FT	2820	1860	1350	910	1590	1140	1820	1800	3910	1450	2160	1670

CAL YR 1990 TOTAL 9640.5 MEAN 26.4 MAX 154 MIN 8.0 AC-FT 19120
WTR YR 1991 TOTAL 11342 MEAN 31.1 MAX 203 MIN 11 AC-FT 22500

07104000 MONUMENT CREEK AT PIKEVIEW, CO--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 17...	1300	49	425	8.3	12.5	8.5	0.7	K13	160	53	6.8
NOV 14...	1240	27	439	8.6	11.0	9.0	0.7	K13	K16	55	7.4
DEC 12...	1445	30	436	8.8	5.0	10.0	1.0	K10	K40	53	7.1
JAN 09...	1345	31	458	8.3	0.0	11.2	1.0	K74	67	56	7.2
FEB 06...	1420	15	429	8.4	6.0	9.7	1.6	55	96	53	7.0
MAR 06...	1340	26	558	8.3	5.0	9.6	>18	K2500	K28000	40	4.8
APR 10...	1325	38	324	8.5	10.5	8.2	0.7	<33	K100	38	5.3
MAY 15...	1310	32	251	8.5	12.0	8.2	1.9	K20	360	30	4.6
JUN 26...	1455	31	261	8.4	21.5	6.8	1.1	--	120	32	4.3
JUL 17...	1435	11	360	8.7	28.5	6.8	1.4	K200	280	44	5.8
AUG 14...	1400	28	381	8.6	25.5	5.8	0.7	350	620	49	6.2
SEP 04...	1430	39	308	8.4	22.0	6.6	2.5	K720	K2100	35	4.5

DATE	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT 17...	116	55	16	1.1	92	0.02	1.8	0.03	0.30	0.12
NOV 14...	113	69	18	1.0	67	0.02	1.9	0.06	0.60	0.15
DEC 12...	110	67	16	0.5	381	0.01	1.9	<0.01	<0.20	0.13
JAN 09...	118	67	18	0.8	178	0.06	2.2	0.18	0.30	0.21
FEB 06...	121	60	17	1.4	403	0.02	1.9	0.06	0.60	0.21
MAR 06...	124	50	72	0.8	**	**	1.5	0.16	1.1	0.09
APR 10...	92	43	16	1.8	92	0.03	1.0	0.04	0.20	0.24
MAY 15...	77	27	8.7	2.1	39	0.01	0.47	0.02	0.35	0.21
JUN 26...	83	37	10	2.0	58	0.01	0.62	0.03	1.3	0.18
JUL 17...	109	47	12	2.0	75	0.02	0.81	0.01	0.30	0.16
AUG 14...	115	55	12	1.9	68	0.02	1.2	0.02	0.40	0.10
SEP 04...	91	35	16	1.6	263	<0.01	0.90	0.02	0.50	0.18

K Based on non-ideal colony count.

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

ARKANSAS RIVER BASIN

07104000 MONUMENT CREEK AT PIKEVIEW, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 17...	<1	<1	2	<1	<1	4	1	2600	7
NOV 14...	<1	<1	1	<1	<1	3	1	1300	17
DEC 12...	<1	<1	5	<1	<1	8	1	4200	7
JAN 09...	<1	<1	2	<1	<1	6	2	3500	6
FEB 06...	<1	<1	4	<1	<1	7	1	7900	6
MAR 06...	2	<1	31	<1	<1	52	2	270	30
APR 10...	<1	<1	<1	<1	<1	4	1	2100	6
MAY 15...	<1	<1	<1	<1	<1	4	<1	1500	24
JUN 26...	<1	<1	<1	<1	<1	3	1	1400	25
JUL 17...	<1	<1	**	<1	<1	2	<1	1100	8
AUG 14...	<1	<1	<1	<1	<1	3	<1	1500	6
SEP 04...	<1	<1	2	<1	<1	6	2	5200	40

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 17...	3	<1	70	15	3	1	20	8
NOV 14...	2	<1	70	26	<1	<1	20	7
DEC 12...	10	<1	140	23	5	1	20	<3
JAN 09...	6	<1	110	39	3	1	20	5
FEB 06...	11	<1	200	31	5	2	50	4
MAR 06...	120	<1	1400	28	36	1	580	<3
APR 10...	4	1	80	23	6	1	20	8
MAY 15...	3	1	80	22	4	<1	<10	9
JUN 26...	4	<1	90	27	<1	<1	<10	<3
JUL 17...	8	<1	40	5	8	2	<10	<3
AUG 14...	**	<1	50	7	3	2	<10	7
SEP 04...	8	1	230	16	4	2	40	6

07104000 MONUMENT CREEK AT PIKEVIEW, CO--Continued

MISCELLANEOUS FIELD MEASUREMENTS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
NOV					MAY				
01...	1235	27	404	10.0	14...	1355	39	248	16.0
DEC					21...	1550	37	253	18.0
05...	1105	21	446	2.5	29...	1340	25	294	21.5
JAN					JUL				
03...	1300	16	449	0.0	03...	1155	20	344	22.0
FEB					05...	1115	17	363	21.0
11...	1510	55	320	5.0	11...	1535	23	327	23.0
MAR					12...	1025	29	334	19.5
15...	1500	18	409	5.0	19...	1325	18	367	27.5
APR					22...	1510	22	354	21.0
17...	1525	30	333	17.5	AUG				
					02...	1425	26	104	20.0
					05...	1415	42	309	24.0

07104905 MONUMENT CREEK AT BIJOU STREET, AT COLORADO SPRINGS, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°50'14", long 104°49'44", in NW¼NW¼ sec.18, T.14 S., R.66 W., El Paso County, Hydrologic Unit 11020003 at bridge on Bijou Street in Colorado Springs.

PERIOD OF RECORD.--December 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	DXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
17...	1455	22	620	8.5	14.5	8.2	1.0	3600	K11000	73	12
NOV											
14...	1420	24	631	8.5	13.5	8.3	1.7	2100	1900	77	14
DEC											
12...	1715	20	650	8.5	3.0	10.2	1.6	K30000	K23000	77	13
JAN											
09...	1430	5.9	737	8.3	0.0	11.0	1.0	>2000	K5300	86	15
FEB											
06...	1620	22	570	8.4	0.0	11.7	3.0	22000	11000	66	11
MAR											
06...	1615	75	637	8.3	5.5	9.7	>18	K70000	K50000	62	10
APR											
10...	1520	26	485	8.5	13.5	7.8	1.0	K5000	K500	54	9.2
MAY											
15...	1515	55	359	8.2	18.0	7.4	11	8600	7400	40	6.9
JUN											
26...	1610	32	378	8.5	23.0	6.6	1.0	--	K300	46	7.5
JUL											
17...	1615	13	531	8.6	31.0	6.0	0.9	270	K180	70	11
AUG											
14...	1430	26	568	8.5	28.5	6.0	0.5	510	320	70	11
SEP											
04...	1605	46	416	8.4	21.0	6.8	1.9	2300	K3600	48	7.9

DATE	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT										
17...	147	110	20	1.2	146	0.03	2.9	0.04	0.50	0.13
NOV										
14...	143	140	22	1.3	83	0.02	3.1	0.09	0.50	0.14
DEC										
12...	147	150	21	1.4	164	0.02	3.0	0.04	0.20	0.09
JAN										
09...	164	160	26	1.1	63	0.02	3.7	0.09	0.30	0.12
FEB										
06...	127	110	18	1.3	528	0.02	2.9	0.05	0.70	0.15
MAR										
06...	131	120	52	1.2	2490	0.06	2.7	0.17	1.6	0.13
APR										
10...	115	95	22	1.7	165	0.02	1.9	0.02	0.60	0.18
MAY										
15...	97	57	12	2.0	261	0.05	1.2	0.18	1.1	0.20
JUN										
26...	96	77	12	2.0	76	0.02	1.3	0.03	1.5	0.15
JUL										
17...	138	120	17	1.9	53	0.02	2.1	<0.01	0.60	0.12
AUG										
14...	142	120	17	1.7	90	0.02	2.3	0.02	0.40	0.08
SEP										
04...	113	81	16	1.8	366	<0.01	1.3	0.02	0.50	0.06

K Based on non-ideal colony count.

07104905 MONUMENT CREEK AT BIJOU STREET, AT COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS- (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 17...	<1	<1.0	4	<1	<1	6	1	3900	6
NOV 14...	<1	<1.0	<1	<1	<1	4	1	2300	12
DEC 12...	<1	<1.0	2	<1	<1	6	2	3000	9
JAN 09...	<1	1.0	2	<1	<1	5	1	1600	6
FEB 06...	<1	1.0	8	<1	<1	14	1	1200	5
MAR 06...	2	<1.0	28	<1	<1	23	1	270	49
APR 10...	<1	<1.0	2	<1	<1	5	1	3800	6
MAY 15...	<1	<1.0	2	<1	<1	10	3	200	25
JUN 26...	<1	<1.0	<1	<1	<1	4	2	2100	15
JUL 17...	<1	<1.0	**	<1	<1	7	<1	1200	8
AUG 14...	<1	<1.0	<1	<1	1	4	1	2400	8
SEP 04...	<1	<1.0	7	<1	<1	13	2	13000	16

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 17...	7	<1	70	1	2	1	10	9
NOV 14...	3	<1	70	2	1	<1	30	7
DEC 12...	6	<1	80	2	3	2	20	5
JAN 09...	3	<1	40	4	5	<1	20	4
FEB 06...	15	<1	250	5	10	1	70	5
MAR 06...	64	1	980	13	34	2	300	8
APR 10...	5	<1	100	1	4	1	30	6
MAY 15...	18	<1	250	5	9	3	220	10
JUN 26...	5	1	50	1	1	1	<10	<3
JUL 17...	8	<1	40	<1	18	2	<10	4
AUG 14...	**	<1	60	<1	3	<1	10	7
SEP 04...	18	<1	480	<1	12	1	120	6

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO

LOCATION.--Lat 38°48'59", long 104°49'20", in NE¼SW¼ sec.19, T.14 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on left bank 31 ft upstream from bridge on Nevada Ave. in Colorado Springs, 100 ft downstream from mouth of Cheyenne Creek, and 1.3 mi downstream from Monument Creek.

DRAINAGE AREA.--392 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1921 to September 1924, January 1976 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,900 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1972, nonrecording gage at same site at different datum.

REMARKS.--Estimated daily discharges: Dec. 20-25, 29, 30, and Jan. 23-27. Records fair except for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation and municipal use, return flow from irrigated areas and discharges from sewage treatment plants.

AVERAGE DISCHARGE.--18 years (water years 1922-24, 1977-91), 59.8 ft³/s; 43,330 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,000 ft³/s, July 29, 1978, gage height, 7.15 ft, from rating curve extended above 2,400 ft³/s; minimum daily, 2.0 ft³/s, Aug. 19, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,910 ft³/s at 0630 June 6, gage height, 6.71 ft, from rating curve extended on basis of slope-area measurement of peak flow; minimum daily, 16 ft³/s, July 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	35	33	32	35	23	30	44	43	35	54	35
2	217	37	29	32	29	22	62	41	58	56	348	60
3	81	44	26	33	26	21	51	38	66	51	605	48
4	46	41	35	24	26	21	38	93	40	47	234	315
5	34	42	35	31	24	23	30	123	39	27	181	108
6	29	41	29	30	28	39	30	72	993	29	164	96
7	33	40	29	32	22	24	33	59	226	30	138	85
8	83	42	30	35	19	23	49	55	189	40	260	63
9	45	42	30	29	22	25	40	54	164	58	138	65
10	43	41	30	30	25	26	34	55	181	90	88	85
11	38	40	31	31	31	25	32	54	173	167	77	58
12	38	39	31	28	28	27	40	54	166	59	87	51
13	41	37	31	28	20	26	32	50	144	45	85	45
14	35	37	30	26	19	26	34	49	127	30	74	38
15	32	35	25	25	19	25	32	52	122	23	76	34
16	31	34	34	27	20	27	30	55	110	25	67	36
17	31	32	36	26	19	26	29	58	99	16	71	37
18	33	34	34	37	18	29	42	52	85	41	65	38
19	32	33	28	45	17	26	38	50	91	52	71	37
20	78	33	22	32	19	23	38	59	86	225	61	38
21	42	33	19	29	18	25	41	49	80	107	45	36
22	42	33	19	26	20	23	46	53	112	101	44	34
23	41	34	19	26	19	20	71	56	78	92	55	34
24	41	34	24	30	19	29	44	51	72	77	42	35
25	34	31	22	27	21	23	43	49	57	222	40	32
26	31	30	21	25	21	20	46	47	51	103	38	28
27	32	32	25	30	22	20	43	42	56	68	32	30
28	32	26	29	37	22	22	42	40	50	60	162	33
29	32	27	25	29	---	33	41	38	37	52	78	34
30	30	33	29	24	---	32	90	33	39	47	43	53
31	33	---	33	32	---	35	---	34	---	46	34	---
TOTAL	1417	1072	873	928	628	789	1251	1659	3834	2121	3557	1721
MEAN	45.7	35.7	28.2	29.9	22.4	25.5	41.7	53.5	128	68.4	115	57.4
MAX	217	44	36	45	35	39	90	123	993	225	605	315
MIN	27	26	19	24	17	20	29	33	37	16	32	28
AC-FT	2810	2130	1730	1840	1250	1560	2480	3290	7600	4210	7060	3410

CAL YR 1990 TOTAL 16407 MEAN 45.0 MAX 779 MIN 11 AC-FT 32540
WTR YR 1991 TOTAL 19850 MEAN 54.4 MAX 993 MIN 16 AC-FT 39370

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 18...	0855	32	461	8.4	5.5	9.9	1.4	K24000	K28000	49	9.8
NOV 15...	0905	35	603	8.3	6.5	10.2	1.6	K15000	17000	65	14
DEC 13...	1120	31	705	8.4	2.5	10.9	1.1	K64000	K66000	80	16
JAN 10...	1045	26	770	8.2	3.0	10.7	1.0	K25000	6800	85	18
FEB 07...	1050	21	721	8.4	6.0	10.1	1.4	5800	4200	76	16
MAR 07...	1115	22	685	8.3	5.5	9.9	0.8	K1000	K1300	73	14
APR 11...	1030	34	543	8.3	11.0	8.6	0.3	K4100	660	57	12
MAY 16...	1100	55	390	8.3	13.0	9.5	0.9	5000	760	42	8.5
JUN 27...	1145	65	402	8.3	22.0	7.7	--	--	1200	45	9.0
JUL 18...	1145	16	679	8.4	27.0	6.6	2.0	K1100	400	75	15
AUG 15...	1045	74	293	8.2	19.5	6.8	0.9	K2200	3000	33	6.4
SEP 05...	1350	104	330	8.2	23.5	-6.9	1.4	K600	840	37	6.7

DATE	ALKA- LINIT LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SULFIDE TOTAL (MG/L AS S)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT 18...	107	74	14	2.3	--	80	0.03	1.7	0.05	0.50	0.07
NOV 15...	129	140	21	1.9	<0.5	63	0.02	2.5	0.08	<0.20	0.10
DEC 13...	154	140	19	1.3	--	133	0.01	1.0	0.05	0.30	0.06
JAN 10...	164	170	29	1.3	--	44	0.02	3.3	0.08	0.30	0.06
FEB 07...	156	150	25	1.7	--	94	0.02	3.2	0.05	0.80	0.12
MAR 07...	144	150	34	1.7	--	166	0.03	2.5	0.03	0.30	0.11
APR 11...	121	120	18	2.1	--	140	0.02	1.8	0.01	0.30	0.11
MAY 16...	92	69	12	2.5	<0.5	96	0.02	1.2	0.03	0.60	0.11
JUN 27...	102	82	14	2.4	--	82	0.02	1.3	0.06	0.60	0.11
JUL 18...	151	160	23	1.9	--	75	0.02	1.9	<0.01	0.40	0.09
AUG 15...	73	53	10	2.8	--	60	0.01	0.95	0.03	0.20	0.04
SEP 05...	83	71	11	3.1	--	292	<0.01	0.94	0.02	0.40	0.02

K BASED ON NON-IDEAL COLONY COUNT.

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT 18...	--	--	--	--	<1	<1	3	<1	<1	4	3
NOV 15...	<1	<1	80	70	<1	<1	<1	<1	<1	3	1
DEC 13...	--	--	--	--	<1	<1	<1	<1	1	4	2
JAN 10...	--	--	--	--	<1	<1	<1	<1	<1	5	1
FEB 07...	--	--	--	--	<1	2	3	<1	<1	6	2
MAR 07...	--	--	--	--	<1	<1	5	<1	<1	8	1
APR 11...	--	--	--	--	<1	<1	1	<1	<1	4	1
MAY 16...	1	<1	--	60	<1	<1	<1	<1	<1	6	1
JUN 27...	--	--	--	--	<1	<1	<1	<1	<1	5	2
JUL 18...	--	--	--	--	<1	<1	**	<1	<1	4	<1
AUG 15...	--	--	--	--	<1	<1	1	<1	<1	4	<1
SEP 05...	--	--	--	--	<1	<1	4	<1	<1	6	2

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT 18...	3100	11	3	<1	90	17	3	1	20	9	--
NOV 15...	1600	9	3	<1	80	19	1	1	30	15	<0.01
DEC 13...	2400	7	6	<1	90	24	3	1	20	14	--
JAN 10...	1300	5	3	<1	70	31	4	2	20	6	--
FEB 07...	4400	5	7	<1	130	19	7	1	30	6	--
MAR 07...	4800	<3	8	2	140	18	6	<1	20	<3	--
APR 11...	2600	6	4	<1	80	8	3	1	20	7	--
MAY 16...	2800	9	5	1	100	6	6	<1	10	10	<0.01
JUN 27...	2500	10	8	<1	110	5	<1	2	20	16	--
JUL 18...	1500	4	6	<1	60	10	8	1	<10	4	--
AUG 15...	1900	19	**	<1	80	8	4	<1	30	25	--
SEP 05...	12000	26	**	2	**	9	6	<1	**	6	--

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO--Continued

MISCELLANEOUS FIELD MEASUREMENTS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
OCT					JUN				
04...	1055	49	486	12.0	04...	1215	46	450	19.5
NOV					06...	1300	404	252	15.5
06...	1130	42	610	8.0	10...	1125	149	308	17.5
21...	1045	32	610	3.5	24...	1330	66	372	27.0
DEC					JUL				
06...	1140	27	680	1.5	11...	1615	42	475	20.0
JAN					16...	1135	34	560	23.5
03...	1150	32	770	0.0	23...	1155	91	345	18.0
FEB					AUG				
05...	1115	26	760	1.0	07...	1355	134	298	19.5
MAR					14...	1405	81	392	22.0
04...	1130	21	735	8.5	SEP				
20...	1010	20	710	7.0	04...	1140	141	312	16.5
APR					17...	1055	39	580	14.0
17...	1300	30	570	15.5					
MAY									
08...	1005	60	458	11.5					

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					
18...	0855	32	129	11	--
NOV					
15...	0905	35	93	8.8	--
DEC					
13...	1120	31	183	15	--
JAN					
10...	1045	26	73	5.1	--
FEB					
07...	1050	21	247	14	67
MAR					
07...	1115	22	261	16	--
APR					
11...	1030	34	167	15	--
MAY					
16...	1100	55	198	29	--
JUN					
06...	1255	347	4900	4590	71
27...	1145	65	166	29	--
JUL					
18...	1145	16	101	4.4	--
22...	1530	84	309	70	--
AUG					
02...	1640	2170	6570	38500	69
15...	1045	74	124	25	--
SEP					
04...	1640	148	1990	795	69
05...	1350	104	462	130	--

07105530 FOUNTAIN CREEK BELOW JANITELL ROAD BELOW COLORADO SPRINGS, CO

LOCATION.--Lat 38°48'11", long 104°47'43", in NE¼SE¼ sec.29, T.14 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on right bank at upstream side of bridge on Janitell Road below Colorado Springs.

DRAINAGE AREA.--413 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,840 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 10, 1990 at site 500 ft upstream, at datum 2.00 ft, higher.

REMARKS.--Estimated daily discharges: Jan. 7-10. Records fair except for estimated daily discharges, and those for June 6-10, which are poor. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation and municipal use, return flow from irrigated areas, and flows from sewage treatment plants.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,480 ft³/s, May 29, 1990, gage height, 9.02 ft, from floodmarks and rating curve extended above 2,240 ft³/s; minimum daily, 32 ft³/s, Nov. 21, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,210 ft³/s at 0600 June 6, gage height, 7.65 ft, from floodmarks and rating curve extended above 2,240 ft³/s; minimum daily, 41 ft³/s, Dec. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	67	79	79	74	77	77	73	70	58	107	52
2	143	67	73	80	74	73	106	72	81	68	396	86
3	75	73	49	77	76	78	96	70	106	69	504	92
4	52	74	48	70	76	77	79	137	73	59	217	259
5	48	64	57	74	73	78	77	163	78	57	183	140
6	46	59	46	73	79	97	77	100	792	55	160	113
7	52	69	43	70	75	78	82	83	314	59	159	99
8	95	82	46	72	74	81	99	83	240	73	294	94
9	61	85	52	72	78	81	86	79	216	80	145	98
10	65	88	44	70	80	79	76	89	203	91	130	125
11	71	87	43	68	87	79	77	84	183	138	134	95
12	73	87	51	70	87	78	89	78	184	82	133	88
13	72	80	44	75	79	77	82	78	166	70	124	82
14	69	91	42	71	74	75	86	73	151	61	118	72
15	75	93	41	69	76	75	78	76	149	63	125	75
16	70	79	53	72	76	78	75	83	146	68	121	73
17	70	86	61	68	74	74	79	88	128	60	119	70
18	70	90	75	73	73	75	104	89	113	81	114	67
19	68	89	68	74	70	73	99	92	106	80	117	64
20	104	90	62	74	72	69	107	104	98	213	107	60
21	71	86	63	75	72	73	105	82	89	140	88	54
22	81	82	71	69	74	76	114	95	110	117	86	60
23	75	80	76	73	75	73	155	99	68	114	83	85
24	75	78	79	75	73	80	122	87	63	100	69	78
25	72	73	78	73	75	76	117	83	58	184	62	85
26	74	74	77	71	75	71	113	90	53	158	60	81
27	72	76	80	76	77	67	109	80	58	139	55	80
28	68	69	84	77	77	68	109	86	63	130	107	82
29	70	68	82	71	---	78	89	78	54	124	78	84
30	64	78	78	70	---	79	135	67	55	120	58	109
31	64	---	79	74	---	76	---	65	---	116	49	---
TOTAL	2223	2364	1924	2255	2125	2369	2899	2706	4268	3027	4302	2702
MEAN	71.7	78.8	62.1	72.7	75.9	76.4	96.6	87.3	142	97.6	139	90.1
MAX	143	93	84	80	87	97	155	163	792	213	504	259
MIN	46	59	41	68	70	67	75	65	53	55	49	52
AC-FT	4410	4690	3820	4470	4210	4700	5750	5370	8470	6000	8530	5360

CAL YR 1990 TOTAL 31177 MEAN 85.4 MAX 786 MIN 35 AC-FT 61840
WTR YR 1991 TOTAL 33164 MEAN 90.9 MAX 792 MIN 41 AC-FT 65780

07105530 FOUNTAIN CREEK BELOW JANITELL ROAD, BELOW COLORADO SPRINGS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1975 to June 1976, May 1979 to September 1979, December 1979 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1990 to current year.

WATER TEMPERATURE: October 1990 to current year.

pH: October 1990 to current year.

DISSOLVED OXYGEN: October 1990 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance, daily mean water temperature, pH, and dissolved oxygen data available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,190 microsiemens, Mar. 28, 1991; minimum, 125 microsiemens, Aug. 8, 1991.

WATER TEMPERATURE: Maximum, 24.7°C, June 24, 1991; minimum, 2.6°C, Feb. 12, 1991.

pH: Maximum, 8.2 units, on many days; minimum, 7.0 units, Mar. 28, 1991.

DISSOLVED OXYGEN: Maximum, 11.3 mg/l, May 5, 1991; minimum, 4.4 mg/l, Mar. 28, 1991.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,190 microsiemens, Mar. 28; minimum, 125 microsiemens, Aug. 8.

WATER TEMPERATURE: Maximum, 24.7°C, June 24; minimum, 2.6°C, Feb. 12.

pH: Maximum, 8.2 units, on several days; minimum, 7.0 units, Mar. 28.

DISSOLVED OXYGEN: Maximum, 11.3 mg/l, May 5; minimum, 4.4 mg/l, Mar. 28.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT											
18...	1115	84	766	8.0	11.0	8.1	19	K9000	7400	53	15
NOV											
15...	1020	114	793	7.8	12.5	7.7	21	2200	1000	50	15
DEC											
13...	1300	50	863	7.9	9.0	8.5	32	K17000	K19000	59	17
JAN											
10...	1230	138	850	7.7	9.0	8.4	30	4900	K1100	54	16
FEB											
07...	1235	86	850	7.8	10.0	8.4	17	K600	K300	52	15
MAR											
07...	1250	94	838	7.9	11.0	8.2	18	K45000	K23000	53	15
APR											
11...	1210	90	769	7.8	13.0	7.1	15	K1100	K500	47	13
MAY											
16...	1240	95	619	7.9	14.0	7.8	14	1800	440	43	12
JUN											
27...	1320	69	619	7.9	22.5	6.3	17	--	1000	45	12
JUL											
18...	1330	69	840	7.8	23.0	6.0	27	K330	K300	53	15
AUG											
15...	1225	140	523	7.9	19.0	6.8	5.2	K1200	1200	43	11
SEP											
05...	1450	140	503	8.0	20.0	7.0	9.9	1400	5600	39	10

K Based on non-ideal colony count.

07105530 FOUNTAIN CREEK BELOW JANITELL ROAD, BELOW COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	ALKA- LITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SULFIDE TOTAL (MG/L AS S)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDEO (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT											
18...	108	130	36	1.8	--	82	0.67	2.6	5.9	8.8	2.4
NOV											
15...	85	130	45	1.9	<0.5	50	0.39	1.7	9.7	11	3.5
DEC											
13...	100	160	44	1.5	--	48	0.83	3.0	8.3	14	3.0
JAN											
10...	110	160	51	1.5	--	47	0.42	2.0	0.02	11	3.3
FEB											
07...	119	180	59	2.0	--	41	0.29	1.8	10	18	3.4
MAR											
07...	102	170	37	1.8	--	130	0.33	1.7	9.8	11	3.4
APR											
11...	99	170	44	1.8	--	51	1.0	2.6	7.3	10	3.1
MAY											
16...	81	110	31	2.1	**	95	0.16	1.0	5.5	8.1	1.8
JUN											
27...	89	130	40	2.2	--	128	0.35	1.4	5.5	5.6	1.7
JUL											
18...	94	190	48	1.8	--	77	0.78	1.9	8.5	13	2.7
AUG											
15...	89	110	**	2.4	--	76	0.18	1.2	3.1	4.4	1.2
SEP											
05...	83	100	22	**	--	197	**	0.95	3.2	5.2	1.1

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT											
18...	--	--	--	--	<1	<1	4	<1	1	8	5
NOV											
15...	<1	<1	220	200	<1	<1	<1	1	<1	15	6
DEC											
13...	--	--	--	--	<1	1	1	1	<1	8	5
JAN											
10...	--	--	--	--	<1	<1	<1	<1	<1	11	9
FEB											
07...	--	--	--	--	<1	1	3	3	<1	12	10
MAR											
07...	--	--	--	--	<1	<1	2	2	<1	10	4
APR											
11...	--	--	--	--	<1	1	2	2	<1	7	5
MAY											
16...	2	1	--	140	<1	<1	<1	<1	<1	10	4
JUN											
27...	--	--	--	--	<1	<1	3	1	<1	11	4
JUL											
18...	--	--	--	--	<1	<1	**	<1	<1	12	3
AUG											
15...	--	--	--	--	<1	<1	<1	<1	<1	6	3
SEP											
05...	--	--	--	--	<1	<1.0	3	<1	<1	8	3

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07105530 FOUNTAIN CREEK BELOW JANITELL ROAD, BELOW COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT 18...	1900	39	3	2	110	59	4	7	30	28	--
NOV 15...	960	48	2	1	130	79	4	4	60	42	<0.01
DEC 13...	920	54	4	1	110	83	4	4	40	42	--
JAN 10...	760	78	3	1	140	92	3	3	60	46	--
FEB 07...	880	60	3	<1	110	85	4	4	50	47	--
MAR 07...	3300	46	10	1	150	77	6	3	60	30	--
APR 11...	1200	42	3	2	100	65	4	3	40	35	--
MAY 16...	2000	40	6	1	110	52	6	2	30	25	<0.01
JUN 27...	3600	22	20	<1	180	54	5	3	50	16	--
JUL 18...	1900	34	7	<1	120	84	12	4	40	33	--
AUG 15...	2300	28	**	<1	100	**	3	2	40	26	--
SEP 05...	8900	46	**	2	**	**	4	1	80	18	--

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	766	835	768	779	710	631	689	722	548	695
2	---	700	781	828	783	790	647	677	615	636	390	598
3	---	716	819	786	769	787	646	683	495	686	243	583
4	621	713	774	797	760	794	664	550	588	679	349	380
5	690	---	760	778	783	803	706	400	597	738	348	465
6	707	---	798	761	753	785	715	539	225	777	341	529
7	667	---	803	757	757	770	709	599	---	754	322	570
8	472	---	797	773	772	768	639	605	---	741	304	601
9	573	694	777	789	766	779	640	598	---	760	361	596
10	596	705	772	776	739	774	698	600	---	714	419	502
11	631	---	784	751	683	783	713	593	350	423	458	585
12	619	---	774	763	693	794	686	571	360	532	448	650
13	576	---	771	732	736	779	699	586	387	---	459	640
14	604	---	778	737	777	770	695	581	357	---	499	651
15	622	---	799	761	803	764	698	569	349	---	489	680
16	670	---	756	756	810	766	705	535	390	---	468	651
17	679	---	726	793	801	764	699	547	415	---	510	700
18	666	---	747	775	799	761	667	573	449	736	507	713
19	693	682	762	761	789	790	658	588	449	579	485	738
20	519	701	802	788	792	807	671	559	442	499	506	730
21	606	730	822	800	787	778	669	636	473	369	552	758
22	618	751	801	807	790	803	609	632	431	411	578	772
23	609	747	748	785	795	798	552	565	485	435	565	787
24	---	756	715	774	787	740	634	582	509	452	612	743
25	681	781	716	768	791	735	637	585	571	405	665	731
26	695	803	707	791	786	765	638	617	618	422	675	745
27	701	784	719	760	788	781	643	665	616	459	665	801
28	690	763	854	740	781	759	657	650	654	469	545	795
29	701	788	820	764	---	733	642	646	743	500	453	748
30	722	761	761	801	---	719	477	698	701	547	618	667
31	---	---	787	770	---	714	---	717	---	580	713	---
MEAN	---	---	774	776	773	772	661	599	---	---	487	660

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07105530 FOUNTAIN CREEK BELOW JANITELL ROAD, BELOW COLORADO SPRINGS, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.1	7.9	8.2	7.8	7.8	7.5	7.7	7.4	8.0	7.5	7.8	7.5
2	8.2	7.9	8.1	7.8	7.8	7.5	7.6	7.4	7.9	7.6	7.7	7.4
3	8.1	7.9	7.9	7.8	7.8	7.4	7.6	7.4	8.0	7.6	7.6	7.4
4	8.2	8.0	8.1	7.7	7.8	7.6	7.7	7.4	8.0	7.6	7.6	7.3
5	8.1	7.9	8.1	7.7	7.8	7.4	7.7	7.4	8.0	7.6	7.6	7.4
6	8.1	7.9	8.1	7.7	7.8	7.5	7.7	7.4	8.0	7.6	7.6	7.3
7	8.0	7.8	8.1	7.7	7.9	7.6	7.7	7.4	8.0	7.5	7.5	7.3
8	8.1	7.8	7.9	7.7	7.9	7.6	7.7	7.4	7.9	7.6	7.4	7.1
9	8.0	7.8	8.0	7.8	7.9	7.5	7.7	7.4	7.9	7.6	7.4	7.1
10	8.0	7.9	8.0	7.8	7.9	7.5	7.8	7.4	7.9	7.6	7.4	7.2
11	8.0	7.7	8.0	7.9	7.9	7.6	7.8	7.3	7.8	7.5	7.5	7.2
12	7.9	7.7	8.0	7.9	7.9	7.5	7.7	7.3	7.8	7.6	7.5	7.2
13	8.0	7.8	8.0	7.8	7.9	7.6	7.7	7.3	7.8	7.6	7.5	7.2
14	7.9	7.8	---	---	7.9	7.6	7.8	7.3	7.9	7.6	7.6	7.3
15	8.1	7.7	---	---	7.9	7.6	7.8	7.3	7.9	7.6	7.6	7.3
16	7.8	7.6	---	---	7.8	7.6	7.8	7.4	7.8	7.6	7.6	7.3
17	7.8	7.7	---	---	7.8	7.5	7.9	7.3	7.8	7.6	7.6	7.3
18	7.9	7.7	---	---	7.7	7.4	7.7	7.4	7.9	7.6	7.5	7.2
19	7.9	7.6	7.9	7.5	7.8	7.5	7.8	7.4	7.8	7.5	7.3	7.2
20	7.9	7.6	7.8	7.5	7.8	7.4	7.9	7.5	7.8	7.6	7.3	7.2
21	7.9	7.6	7.7	7.5	7.7	7.4	8.0	7.5	7.9	7.6	7.4	7.2
22	---	---	7.7	7.4	7.7	7.4	8.0	7.6	7.8	7.6	7.6	7.4
23	---	---	7.7	7.4	7.7	7.4	8.0	7.6	7.8	7.6	7.6	7.3
24	---	---	7.7	7.4	7.7	7.4	8.1	7.7	7.8	7.5	7.7	7.4
25	---	7.6	7.8	7.5	7.7	7.4	8.1	7.7	7.8	7.6	7.6	7.4
26	8.0	7.7	7.8	7.4	7.7	7.5	8.0	7.7	7.8	7.6	7.5	7.1
27	8.0	7.6	7.8	7.5	7.7	7.4	8.1	7.7	7.9	7.6	7.3	7.1
28	8.0	7.6	7.7	7.4	7.7	7.4	8.0	7.6	7.9	7.5	7.2	7.0
29	8.1	7.7	7.7	7.4	7.7	7.5	7.9	7.6	---	---	7.2	7.1
30	8.0	7.7	7.8	7.4	7.7	7.5	8.0	7.6	---	---	7.3	7.1
31	8.2	7.9	---	---	7.7	7.5	8.0	7.5	---	---	7.3	7.1
MONTH	---	---	---	---	7.9	7.4	8.1	7.3	8.0	7.5	7.8	7.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.3	7.2	7.6	7.5	7.9	7.7	7.8	7.6	8.1	7.9	7.8	7.6
2	7.5	7.2	7.8	7.5	7.9	7.7	7.9	7.7	8.1	7.8	7.8	7.5
3	7.7	7.2	7.9	7.6	7.8	7.6	8.1	7.8	8.0	7.8	7.8	7.6
4	7.7	7.5	7.8	7.5	7.8	7.6	8.0	7.8	8.0	7.8	8.1	7.7
5	7.8	7.5	7.7	7.5	7.7	7.5	8.0	7.8	7.9	7.6	7.9	7.6
6	7.8	7.6	7.7	7.4	---	---	8.0	7.7	7.9	7.7	7.8	7.7
7	7.8	7.6	7.7	7.5	---	---	7.9	7.7	8.1	7.8	7.9	7.8
8	7.8	7.6	7.6	7.4	---	---	7.9	7.7	8.1	7.8	7.9	7.6
9	7.9	7.5	7.6	7.4	---	---	7.9	7.7	8.0	7.8	7.9	7.7
10	7.8	7.5	7.7	7.2	8.1	8.0	8.1	7.8	8.0	7.8	7.8	7.7
11	7.8	7.5	7.5	7.2	8.2	7.9	7.9	7.8	7.9	7.7	7.9	7.8
12	7.8	7.5	7.5	7.4	8.1	7.8	7.9	7.8	7.8	7.7	7.9	7.7
13	7.8	7.5	7.7	7.2	7.9	7.8	7.9	7.7	7.8	7.7	7.9	7.8
14	7.6	7.4	7.8	7.6	8.0	7.8	7.7	7.6	7.8	7.6	7.9	7.8
15	7.6	7.4	8.0	7.5	8.0	7.9	7.7	7.5	7.8	7.6	7.9	7.7
16	7.7	7.4	8.0	7.6	7.9	7.7	7.7	7.5	7.9	7.6	7.9	7.6
17	7.6	7.4	8.0	7.8	7.9	7.8	7.7	7.5	8.0	7.6	7.9	7.7
18	7.6	7.4	8.1	7.8	8.1	7.8	7.9	7.6	8.0	7.7	8.0	7.8
19	7.6	7.4	8.1	7.9	7.9	7.6	7.9	7.7	7.8	7.7	8.0	7.8
20	7.6	7.4	8.1	7.9	7.9	7.7	8.2	7.6	7.8	7.7	8.0	7.9
21	7.6	7.4	8.1	7.9	7.9	7.7	7.9	7.7	7.8	7.7	8.0	7.7
22	7.6	7.4	8.0	7.7	7.9	7.6	7.9	7.6	8.0	7.7	7.9	7.6
23	7.5	7.3	8.0	7.9	7.9	7.8	8.1	7.9	8.0	7.8	7.7	7.4
24	7.5	7.3	8.1	7.9	8.0	7.8	8.0	7.9	8.0	7.8	7.8	7.6
25	7.6	7.3	8.0	7.8	7.9	7.6	8.2	7.8	8.0	7.8	7.8	7.6
26	7.6	7.4	8.0	7.7	7.9	7.7	8.0	7.7	7.9	7.7	7.9	7.6
27	7.6	7.4	8.0	7.7	7.9	7.7	8.0	7.8	8.0	7.8	7.9	7.6
28	7.6	7.4	7.9	7.6	7.8	7.5	8.0	7.8	7.9	7.5	7.9	7.6
29	7.7	7.4	7.9	7.6	7.9	7.6	7.9	7.8	7.8	7.5	7.9	7.7
30	7.7	7.3	7.9	7.6	7.8	7.6	8.0	7.9	7.9	7.7	7.9	7.8
31	---	---	7.9	7.7	---	---	8.1	7.9	8.0	7.8	---	---
MONTH	7.9	7.2	8.1	7.2	---	---	8.2	7.5	8.1	7.5	8.1	7.4

07105530 FOUNTAIN CREEK BELOW JANITELL ROAD, BELOW COLORADO SPRINGS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	19.2	6.3	12.8	8.1	9.6	4.7	9.5	5.5	8.3	4.9	12.6	5.9
2	17.0	10.8	11.7	6.2	8.5	3.8	9.4	5.3	9.2	4.5	11.7	6.0
3	15.0	8.9	9.0	4.2	9.4	4.3	7.4	4.2	9.5	4.2	12.5	5.4
4	17.5	9.3	11.1	3.9	8.9	3.8	7.9	4.8	9.8	4.4	12.8	6.8
5	18.6	10.4	12.2	4.6	8.9	4.0	8.2	4.4	9.9	4.0	13.6	8.1
6	17.5	11.3	8.8	5.1	9.1	---	8.5	4.3	9.5	4.3	9.2	5.9
7	13.7	9.2	8.7	3.5	10.3	4.1	8.3	4.4	10.2	4.5	11.6	4.5
8	7.8	3.4	10.5	4.1	10.6	4.1	8.3	4.6	9.6	4.5	11.5	4.1
9	12.4	4.0	11.1	3.8	10.7	4.1	8.2	4.9	10.5	5.0	11.6	3.5
10	14.2	5.7	12.8	5.6	11.3	4.6	8.7	4.6	10.0	4.8	13.3	5.1
11	13.3	7.3	13.0	5.8	11.2	4.3	8.2	4.7	10.0	3.1	14.1	7.1
12	14.3	8.7	13.2	5.6	10.3	5.7	8.4	4.7	9.4	2.6	13.0	4.8
13	15.1	6.6	12.7	6.1	8.7	5.3	8.6	4.6	9.2	4.5	12.9	4.6
14	14.0	7.3	13.5	6.9	9.9	5.8	8.7	4.9	10.2	3.4	10.6	4.9
15	15.6	6.5	13.9	7.3	9.6	3.5	8.3	4.6	10.7	4.1	9.5	5.4
16	16.4	8.8	12.0	8.3	9.5	5.1	8.2	4.4	9.5	5.5	9.8	5.8
17	13.9	8.7	13.2	7.5	8.7	4.1	9.6	3.9	10.4	5.7	12.7	4.6
18	12.2	5.9	12.7	7.2	9.3	3.9	7.8	4.3	9.6	3.8	13.7	5.3
19	15.8	7.9	13.3	7.3	8.3	3.1	8.3	3.8	10.5	3.0	13.5	6.2
20	11.6	5.7	12.9	7.6	8.4	1.1	7.6	3.3	11.4	4.1	13.6	6.6
21	11.8	4.0	11.8	6.8	7.8	4.6	6.9	3.6	12.0	4.5	11.7	5.5
22	13.5	5.3	11.2	5.3	7.2	4.1	7.9	4.7	11.1	5.1	13.2	6.6
23	13.2	6.8	11.9	5.3	7.3	4.0	6.8	3.7	11.0	5.5	13.7	6.4
24	---	---	13.1	6.8	7.8	4.1	7.2	4.4	8.9	5.1	14.6	5.6
25	14.5	---	13.2	6.4	7.6	4.6	6.9	4.2	10.3	4.4	13.8	7.4
26	15.0	7.7	12.0	7.2	7.9	4.2	7.1	4.7	10.6	3.2	14.5	7.6
27	14.2	8.9	9.7	5.3	8.5	4.7	7.6	4.4	11.2	3.1	13.7	7.2
28	14.9	7.3	10.0	4.2	8.9	5.1	7.6	4.2	10.1	4.3	13.7	6.1
29	15.3	7.9	10.8	4.6	7.3	4.3	6.6	3.2	---	---	11.3	6.6
30	15.4	8.8	10.7	4.9	7.8	4.2	7.6	4.4	---	---	13.7	4.5
31	15.0	8.2	---	---	8.9	5.0	7.9	4.5	---	---	14.6	5.7
MONTH	---	---	13.9	3.5	11.3	---	9.6	3.2	12.0	2.6	14.6	3.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	15.7	6.5	17.0	5.4	19.1	13.9	22.5	16.2	24.3	16.0	21.9	15.4
2	11.4	8.3	16.9	8.1	19.3	12.0	22.0	16.1	21.6	15.6	21.1	14.7
3	13.5	6.2	16.8	6.9	18.0	11.0	22.7	15.9	18.9	15.9	21.9	15.1
4	16.0	6.6	13.8	5.1	20.4	12.0	24.2	15.9	16.6	14.2	18.5	12.4
5	17.0	7.8	15.7	3.5	21.0	13.8	23.4	16.2	20.8	13.1	20.0	12.5
6	17.6	9.4	16.6	6.8	---	---	23.6	16.5	20.9	13.7	18.7	14.3
7	14.5	10.1	16.3	9.5	---	---	20.5	17.0	20.0	12.5	20.5	13.9
8	12.8	6.4	19.4	8.4	---	---	20.5	16.6	19.7	12.6	20.6	13.3
9	14.9	4.7	18.1	10.3	---	---	22.5	16.3	18.4	13.2	20.3	13.2
10	14.2	6.3	20.2	9.9	---	---	23.1	16.8	19.6	11.9	18.4	15.1
11	14.7	8.1	20.1	12.6	---	---	21.0	17.0	20.7	12.8	21.2	13.9
12	12.9	5.5	19.7	9.7	---	---	23.1	15.4	18.4	14.6	19.2	14.6
13	12.6	4.6	18.2	9.2	---	---	23.0	15.9	17.3	14.5	20.6	14.0
14	14.3	6.9	18.7	9.7	17.3	12.9	22.4	16.4	21.8	14.2	20.2	12.5
15	16.8	6.6	17.6	10.1	20.8	12.4	21.6	16.6	20.5	14.2	19.8	13.3
16	15.9	7.5	15.4	10.0	18.8	12.8	22.4	17.4	21.8	14.5	19.5	12.6
17	16.5	8.5	19.4	9.1	22.1	11.5	24.1	17.6	22.9	14.5	19.8	12.3
18	16.1	9.9	20.2	12.3	23.3	13.0	23.6	18.3	21.6	14.7	15.4	12.6
19	15.0	8.4	20.8	12.6	22.1	14.5	22.5	17.8	18.8	14.7	18.2	10.7
20	12.6	9.2	17.5	12.6	23.9	13.3	24.6	16.6	20.0	13.7	19.6	11.6
21	14.9	9.7	20.2	12.2	23.0	14.1	21.9	15.6	21.4	13.9	20.3	12.2
22	14.5	7.8	21.0	12.5	23.1	15.6	19.2	16.0	21.5	14.2	18.4	11.3
23	14.3	7.3	20.3	12.9	23.0	15.5	19.0	15.4	22.6	14.2	18.8	10.9
24	15.9	8.5	17.6	11.7	24.7	16.6	17.0	14.7	22.8	14.3	18.1	10.6
25	16.5	8.7	20.8	11.4	23.4	14.4	19.3	14.1	23.1	15.3	18.9	11.4
26	14.0	8.1	21.2	12.4	22.8	14.7	18.4	13.0	23.2	15.9	19.4	12.0
27	13.9	5.0	21.2	12.8	23.6	14.5	20.0	12.6	23.7	16.1	18.9	13.5
28	14.4	6.0	21.1	13.2	22.7	15.8	22.0	13.9	22.8	16.0	18.7	13.2
29	14.6	7.1	21.4	12.8	22.0	15.9	22.4	14.7	21.3	14.7	19.1	12.4
30	11.3	4.5	20.3	12.6	23.0	16.7	20.6	14.8	23.4	15.1	16.3	13.6
31	---	---	20.8	13.4	---	---	22.0	15.9	23.0	15.6	---	---
MONTH	17.6	4.5	21.4	3.5	---	---	24.6	12.6	24.3	11.9	21.9	10.6

07105530 FOUNTAIN CREEK BELOW JANITELL ROAD, BELOW COLORADO SPRINGS, CO--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	---	---	8.2	7.3	9.3	7.9	8.6	7.4	9.9	8.7	8.6	7.1
2	---	---	9.1	7.6	9.4	8.1	9.3	8.1	9.9	8.3	8.7	7.4
3	---	---	9.5	8.5	9.1	7.7	9.6	8.5	10.0	8.2	9.0	7.2
4	8.0	6.7	9.2	7.3	9.3	8.0	9.8	8.6	9.9	8.1	8.4	7.1
5	7.7	6.3	9.1	7.6	9.2	8.1	9.9	8.6	9.8	7.7	8.0	7.1
6	7.2	6.4	9.4	8.1	9.1	8.3	10.1	8.7	9.8	8.1	8.9	7.5
7	7.5	6.8	9.5	7.9	9.6	7.5	10.0	8.7	9.8	8.1	9.5	7.3
8	9.5	8.0	9.3	7.8	8.9	7.5	10.1	8.8	9.8	8.1	9.5	7.8
9	9.3	7.7	9.5	7.6	9.7	7.8	9.8	8.6	9.7	8.1	9.7	7.7
10	9.0	7.5	9.0	7.2	9.3	7.8	9.9	8.4	9.7	8.4	9.2	7.2
11	8.8	7.9	8.9	7.2	9.5	7.8	9.5	8.2	10.5	8.5	8.5	6.9
12	8.8	7.8	8.9	7.0	9.1	8.0	9.4	8.2	10.4	8.6	8.8	7.0
13	9.4	7.5	8.5	7.0	9.1	8.2	9.5	8.2	9.8	8.4	8.6	6.7
14	9.2	7.6	---	---	8.9	8.0	9.5	8.4	10.0	8.5	8.2	6.7
15	9.4	7.2	---	---	9.3	7.9	9.5	8.3	10.0	8.0	7.9	6.9
16	8.4	6.9	---	---	9.0	7.9	9.8	8.7	9.5	7.8	7.7	6.5
17	8.5	7.4	---	---	9.1	7.9	9.9	8.3	9.1	7.6	8.1	6.3
18	9.3	7.8	---	---	9.0	7.7	10.8	8.5	9.6	7.7	8.6	6.7
19	---	---	---	---	9.6	8.0	9.9	8.4	9.6	7.7	8.9	6.2
20	---	---	8.9	6.8	9.8	7.8	10.2	8.6	9.3	7.6	8.7	6.8
21	---	---	8.9	6.5	8.3	7.6	10.2	8.5	9.4	7.5	10.7	7.1
22	---	---	9.4	7.8	8.6	7.5	9.4	8.5	9.9	7.8	8.8	7.3
23	---	---	9.5	7.8	8.7	8.3	10.0	8.6	9.7	7.9	9.1	7.2
24	---	---	9.2	7.5	9.3	8.0	9.7	8.7	9.8	8.4	9.6	7.2
25	---	---	9.1	7.5	9.2	7.9	9.8	8.9	9.5	8.3	8.5	6.6
26	9.2	7.5	8.7	7.5	9.2	7.9	9.5	8.9	9.9	8.1	7.4	5.9
27	8.7	7.6	9.3	8.2	8.8	7.5	9.7	8.8	9.7	7.7	7.3	5.6
28	8.6	7.1	9.6	8.2	8.9	7.2	9.8	8.8	9.5	7.5	7.1	4.4
29	8.3	6.9	9.5	7.9	8.7	7.0	10.0	8.6	---	---	8.6	5.7
30	8.2	6.6	9.1	7.7	9.1	7.8	9.7	8.6	---	---	8.5	6.5
31	8.4	7.1	---	---	9.1	7.4	10.0	8.7	---	---	8.4	5.8
MONTH	---	---	---	---	9.8	7.0	10.8	7.4	10.5	7.5	10.7	4.4
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	8.2	4.9	10.0	7.5	7.6	6.5	7.1	5.8	7.6	6.4	9.0	6.3
2	9.4	6.4	9.4	7.7	8.2	6.7	7.2	6.2	8.2	6.9	8.7	6.3
3	9.3	7.7	9.6	7.5	8.4	7.0	6.9	6.0	---	---	7.2	6.1
4	9.4	7.2	10.8	8.1	8.0	6.6	7.0	5.9	---	---	8.6	7.4
5	9.0	7.2	11.3	7.9	7.7	6.4	6.9	5.9	---	---	8.4	6.9
6	8.7	6.9	9.9	7.6	---	---	6.6	5.9	---	---	7.9	7.1
7	8.2	7.2	8.9	7.6	---	---	6.7	6.1	---	---	7.9	6.8
8	8.9	7.5	9.2	6.9	---	---	6.9	6.2	8.7	7.4	7.8	6.6
9	9.4	7.4	8.6	6.7	---	---	7.3	5.8	8.1	7.2	7.9	6.6
10	9.1	7.3	8.1	6.3	---	---	7.3	5.7	8.4	7.0	7.6	7.0
11	8.6	7.0	7.7	6.6	8.4	6.7	7.4	5.2	8.1	6.9	7.7	6.5
12	9.4	7.7	8.3	6.6	8.1	7.0	7.4	6.1	7.8	7.2	7.4	6.2
13	9.8	7.8	8.3	6.6	7.8	6.8	7.3	5.3	7.9	7.3	7.3	6.2
14	9.2	7.3	8.3	6.9	8.1	7.4	7.4	5.5	7.9	6.5	7.4	6.1
15	9.1	7.2	8.3	6.9	8.3	6.9	7.2	5.8	7.8	6.7	7.1	6.2
16	9.0	7.3	8.5	7.0	8.4	7.1	7.0	6.0	7.8	6.6	7.6	6.1
17	8.6	6.9	8.6	6.9	8.6	6.6	6.7	5.6	8.6	6.5	7.3	6.0
18	8.8	7.3	8.1	6.7	8.3	6.6	6.7	5.6	7.8	6.6	7.4	6.3
19	9.0	6.9	8.0	6.6	8.0	6.7	6.9	6.0	7.8	6.9	7.5	6.3
20	8.7	7.6	8.0	7.1	8.1	6.5	8.0	5.6	7.8	6.7	8.7	6.2
21	8.5	7.1	7.8	6.7	8.0	6.5	7.8	6.5	7.6	6.4	8.5	5.8
22	9.0	7.5	7.7	6.2	7.7	6.4	7.6	6.7	7.6	6.3	9.1	6.1
23	9.7	7.7	7.6	6.6	7.6	6.4	7.7	7.1	7.8	6.6	7.4	6.1
24	8.9	7.4	8.1	6.9	7.2	6.1	7.8	7.4	7.7	6.3	7.7	6.3
25	8.9	7.1	8.3	6.7	7.5	6.0	8.2	6.8	7.6	6.5	7.5	6.2
26	8.8	7.3	8.1	6.5	7.3	6.3	8.3	7.2	7.3	6.0	7.4	6.0
27	9.7	7.6	8.0	6.6	7.5	6.2	8.3	6.8	7.1	5.8	7.1	6.1
28	9.4	7.5	7.8	6.4	7.2	5.9	8.0	6.5	7.6	5.8	7.3	6.2
29	9.0	7.4	7.8	6.6	6.9	6.2	7.9	6.3	7.8	6.8	7.5	6.2
30	10.0	8.3	7.7	6.5	6.8	6.1	7.7	6.6	7.5	6.2	7.5	6.4
31	---	---	7.5	6.6	---	---	7.6	6.6	8.6	6.1	---	---
MONTH	10.0	4.9	11.3	6.2	---	---	8.3	5.2	---	---	9.1	5.8

07105533 FOUNTAIN CREEK AT CIRCLE DRIVE BELOW COLORADO SPRINGS, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°47'49", long 104°47'06", in SE¼SW¼ sec.28, T.14 S., R.66 W., El Paso County, Hydrologic Unit 11020003, approximately 100 ft downstream from Circle Drive below Colorado Springs.

PERIOD OF RECORD.--October 1989 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARO UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 18...	1330	72	782	8.2	13.5	7.7	20	1500	2500	54	16
NOV 15...	1255	93	815	7.8	14.5	7.6	26	830	540	55	17
DEC 13...	1515	54	880	8.0	8.5	8.7	34	K9600	K5000	61	18
JAN 10...	1445	97	861	7.9	8.5	8.6	26	1600	1100	58	17
FEB 07...	1430	81	868	7.9	11.0	8.6	18	K100	K300	55	22
MAR 07...	1450	85	848	8.0	11.0	8.5	18	>2000	K7200	54	16
APR 11...	1415	86	771	7.9	15.0	7.6	13	K330	K220	49	14
MAY 16...	1430	84	644	8.0	16.0	7.9	12	450	370	45	13
JUN 27...	1505	85	692	7.9	24.0	6.2	2.4	--	80	50	15
JUL 18...	1450	75	845	7.9	24.5	5.8	36	390	270	53	15
AUG 15...	1350	122	727	8.0	21.0	6.2	9.8	660	220	56	18
SEP 06...	1000	117	--	7.9	17.0	7.0	4.8	1100	270	64	20

DATE	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT 18...	110	150	38	1.9	66	0.59	2.9	5.1	7.7	2.4
NOV 15...	102	180	40	1.7	42	0.41	2.2	8.8	10	3.2
DEC 13...	99	180	38	1.5	47	0.80	3.2	8.6	11	2.9
JAN 10...	91	160	48	1.6	48	0.38	2.0	0.01	13	3.0
FEB 07...	88	170	56	2.0	49	0.29	1.9	10	20	3.4
MAR 07...	100	150	43	1.7	202	0.31	1.6	10	12	3.2
APR 11...	90	170	44	1.8	50	0.94	2.6	8.0	9.8	3.1
MAY 16...	85	120	29	2.1	80	0.18	1.4	5.5	7.0	1.5
JUN 27...	91	130	34	1.7	81	0.43	2.0	5.8	8.1	1.8
JUL 18...	101	200	48	1.8	69	0.86	2.0	7.6	9.8	2.6
AUG 15...	108	180	22	2.0	106	0.31	2.2	4.2	6.2	1.5
SEP 06...	135	230	31	2.2	115	0.22	4.2	0.16	0.90	1.1

K Based on non-ideal colony count.

ARKANSAS RIVER BASIN

07105533 FOUNTAIN CREEK AT CIRCLE DRIVE BELOW COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 18...	<1	<1	3	<1	<1	8	3	1500	28
NOV 15...	<1	<1	3	1	<1	7	6	810	40
DEC 13...	<1	<1	3	<1	<1	8	5	910	46
JAN 10...	<1	1	<1	<1	<1	11	7	840	61
FEB 07...	<1	<1	3	2	<1	12	8	1200	24
MAR 07...	<1	1	5	<1	<1	13	4	3500	45
APR 11...	<1	1	1	1	<1	7	4	1200	33
MAY 16...	<1	<1	<1	<1	<1	9	5	2200	27
JUN 27...	1	<1	2	<1	<1	8	4	1900	22
JUL 18...	<1	<1	**	<1	<1	12	4	1500	30
AUG 15...	<1	<1	1	<1	<1	7	3	3000	20
SEP 06...	<1	<1	3	<1	<1	7	3	4400	28

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 18...	3	1	100	58	3	3	30	22
NOV 15...	2	1	120	82	3	3	50	34
DEC 13...	4	1	110	84	1	2	40	37
JAN 10...	3	1	150	94	4	3	60	42
FEB 07...	3	<1	120	90	4	3	50	20
MAR 07...	9	1	190	83	7	3	50	25
APR 11...	3	1	100	68	4	3	40	35
MAY 16...	4	2	120	48	5	2	30	22
JUN 27...	10	<1	120	52	8	2	40	20
JUL 18...	6	<1	120	100	13	4	20	40
AUG 15...	**	1	90	22	4	2	40	27
SEP 06...	11	<1	170	19	5	2	40	13

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07105800 FOUNTAIN CREEK AT SECURITY, CO

LOCATION.--Lat 38°43'46", long 104°44'00", in NE¼SW¼ sec.24, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on left bank on upstream side of Carson Road bridge, 0.9 mi southwest of South Security School, 3.5 mi northeast of Fountain, and 5.5 mi upstream from Jimmy Camp Creek.

DRAINAGE AREA.--495 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year.

REVISED RECORDS.--WDR CO-85-1: 1984 (M).

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,640 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 26, 1966, at site 1,040 ft upstream at datum 6.00 ft higher. Oct. 26, 1966, to July 18, 1972, at site 980 ft upstream at datum 6.00 ft higher, July 19, 1972, to Feb. 20 1980, at site 980 ft downstream at datum 6.00 ft lower. Feb. 21, 1980 to June 30, 1986 at present site at datum 3.00 ft lower.

REMARKS.--Estimated daily discharges: Dec. 20-26. Records fair except for estimated daily discharges and daily discharges above 1,000 ft³/s, which are poor. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation of about 5,100 acres and municipal use, return flow from irrigated areas and flows from sewage treatment plants.

AVERAGE DISCHARGE.--27 years, 85.4 ft³/s; 61,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft³/s, July 24, 1965, gage height, 11.30 ft, site and datum then in use, from floodmarks, from rating curve extended above 2,900 ft³/s, on basis of slope-area measurement of peak flow; minimum daily, 1.9 ft³/s, Mar. 1, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,020 ft³/s at 0600 June 6, gage height, 6.06 ft, from rating curve based on slope-area measurements of peak flow; minimum daily, 39 ft³/s, Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	71	96	90	100	89	89	94	61	67	100	54
2	342	74	90	94	102	84	135	77	73	84	594	79
3	88	88	81	92	104	85	115	68	119	73	959	132
4	55	84	77	87	105	85	111	117	77	88	239	245
5	44	86	62	91	96	88	94	254	75	67	198	131
6	40	76	55	88	96	104	87	130	1380	63	214	100
7	39	82	53	90	92	91	90	105	291	63	196	87
8	110	116	54	91	89	88	120	88	209	73	370	84
9	58	128	59	85	92	83	98	82	199	87	236	85
10	55	122	54	87	91	87	90	79	203	68	174	110
11	52	118	50	90	102	89	90	88	195	159	140	85
12	56	111	55	91	98	84	101	81	193	99	208	74
13	57	102	60	94	92	82	96	82	176	71	146	82
14	56	103	58	91	85	81	97	79	157	58	139	70
15	59	100	53	89	85	81	94	80	148	61	146	70
16	53	94	64	90	86	85	88	81	140	60	175	74
17	50	94	72	95	86	84	88	84	132	54	150	71
18	51	94	90	103	83	87	117	76	119	71	130	71
19	49	100	85	101	83	86	130	76	103	109	125	69
20	119	99	75	101	85	79	115	94	101	375	117	67
21	62	100	60	101	90	82	107	73	97	156	107	64
22	66	95	65	97	90	78	116	74	119	143	97	61
23	66	91	65	99	87	77	207	99	96	117	91	85
24	64	95	75	105	82	79	128	77	92	95	89	84
25	62	90	70	102	81	80	132	72	82	208	72	85
26	65	88	80	97	82	72	125	76	75	146	63	82
27	64	91	88	101	83	69	117	73	78	122	62	78
28	65	88	90	103	85	70	119	71	81	102	137	80
29	69	87	86	99	---	78	104	73	68	99	118	83
30	70	97	84	93	---	92	182	57	66	98	66	103
31	67	---	87	99	---	89	---	55	---	95	54	---
TOTAL	2226	2864	2193	2936	2532	2588	3382	2715	5005	3231	5712	2645
MEAN	71.8	95.5	70.7	94.7	90.4	83.5	113	87.6	167	104	184	88.2
MAX	342	128	96	105	105	104	207	254	1380	375	959	245
MIN	39	71	50	85	81	69	87	55	61	54	54	54
AC-FT	4420	5680	4350	5820	5020	5130	6710	5390	9930	6410	11330	5250

CAL YR 1990 TOTAL 37483 MEAN 103 MAX 1080 MIN 39 AC-FT 74350
WTR YR 1991 TOTAL 38029 MEAN 104 MAX 1380 MIN 39 AC-FT 75430

07105800 FOUNTAIN CREEK AT SECURITY, CO--continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1984 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1990 to current year.

WATER TEMPERATURE: October 1990 to current year.

pH: October 1990 to current year.

DISSOLVED OXYGEN: October 1990 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance data and daily mean water temperature, pH and dissolved oxygen data available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,240 microsiemens, Dec. 28, 1990; minimum, 163 microsiemens, Aug. 3, 1991.

pH: Maximum, 8.4 units, Nov. 20-21, Jan. 20; minimum 6.9 units, Nov. 7, 1990.

WATER TEMPERATURE: Maximum, 29.8°C, July 17, 1991; minimum, 0.0°C, on many days during winter months.

DISSOLVED OXYGEN: Maximum, 10.2 mg/L, Jan. 20, May 5, 1991; minimum, 3.6 mg/L, July 4, 1991.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,240 microsiemens, Dec. 28; minimum, 163 microsiemens, Aug. 3.

pH: Maximum, 8.4 units, Nov. 20-21, Jan. 20; minimum, 6.9 units, Nov. 7.

WATER TEMPERATURE: Maximum, 29.8°C, July 17; minimum, 0.0°C, on many days during winter months.

DISSOLVED OXYGEN: Maximum, 10.2 mg/L, Jan. 20, May 5; minimum, 3.6 mg/L, July 4.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV					
21...	1325	115	218	68	--
DEC					
04...	1335	74	213	43	--
13...	0845	46	98	12	--
JAN					
07...	1205	93	272	68	--
FEB					
05...	1320	110	310	92	--
MAR					
04...	1405	100	154	42	--
APR					
10...	1030	74	164	33	--
MAY					
08...	1245	94	340	86	--
JUN					
04...	1440	89	252	61	--
06...	1100	850	6940	15900	55
10...	1400	208	687	386	--
JUL					
15...	1220	55	182	27	--
22...	1445	124	1150	385	--
22...	1450	136	1380	507	--
AUG					
02...	1735	3460	16000	149000	58
02...	1805	3410	14300	132000	56
02...	1925	2170	10600	62100	50
03...	1825	1830	7270	35900	46
14...	1240	162	1060	464	--
SEP					
17...	1150	80	181	39	--

07105800 FOUNTAIN CREEK AT SECURITY, CO--continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	846	904	872	808	766	633	769	---	608	---
2	---	---	861	905	884	810	666	793	690	752	419	---
3	598	---	908	879	868	686	729	707	570	791	265	553
4	622	---	904	886	855	739	738	563	593	683	305	304
5	614	---	836	863	882	765	858	323	629	814	324	291
6	---	---	861	848	847	752	854	475	354	888	297	541
7	---	---	937	837	865	850	869	650	408	912	370	583
8	---	827	931	861	857	859	806	666	456	889	407	591
9	---	794	898	882	867	878	736	723	421	759	465	637
10	---	809	881	869	840	860	779	736	440	---	574	565
11	745	792	890	778	782	854	800	697	451	438	---	624
12	---	788	---	808	785	867	792	697	480	---	---	643
13	---	820	---	775	822	832	788	696	510	---	497	674
14	---	828	---	782	867	863	786	721	508	---	---	717
15	---	830	930	793	859	861	793	725	492	---	540	739
16	---	779	901	834	875	903	816	691	510	808	594	745
17	---	862	846	846	858	907	806	660	525	839	672	789
18	770	850	853	877	847	890	760	656	560	802	644	836
19	727	842	838	849	839	934	582	614	567	654	642	853
20	468	872	840	827	864	945	617	503	549	632	---	874
21	---	866	831	845	826	873	620	569	582	481	---	884
22	---	833	827	823	774	888	577	630	544	541	---	875
23	---	---	812	---	764	873	475	655	588	628	---	855
24	---	---	796	---	774	813	662	678	624	664	---	804
25	771	---	819	825	840	792	716	663	666	586	---	804
26	---	---	790	818	873	807	672	673	---	563	---	833
27	---	---	823	849	963	812	647	726	714	644	---	867
28	---	---	936	834	889	812	661	724	728	531	---	899
29	---	888	995	818	---	813	629	737	---	588	526	888
30	---	858	883	822	---	776	503	798	---	648	---	813
31	---	---	868	844	---	771	---	804	---	650	---	---
MEAN	---	---	---	---	848	835	717	664	---	---	---	---

07105800 FOUNTAIN CREEK AT SECURITY, CO--continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.9	7.7	8.0	7.7	8.0	7.8	7.7	7.5	8.2	8.1	---	---
2	7.9	7.1	8.0	7.9	8.0	7.9	7.9	7.5	8.2	8.1	---	---
3	7.9	7.6	8.0	7.9	---	---	7.8	7.6	8.1	8.0	---	---
4	7.9	7.7	8.1	7.8	---	---	7.9	7.8	8.1	8.0	---	---
5	8.0	7.7	7.8	7.4	---	---	8.0	7.9	8.1	8.0	---	---
6	7.9	7.6	7.5	7.2	8.2	8.1	7.9	7.5	8.0	7.9	---	---
7	7.9	7.7	8.0	6.9	8.2	8.0	7.9	7.5	8.1	7.9	8.1	7.9
8	7.9	7.5	8.1	7.9	8.2	8.1	7.7	7.4	8.2	7.9	8.1	7.9
9	7.9	7.7	8.2	8.0	8.3	8.1	7.6	7.4	8.2	7.9	8.1	7.9
10	7.9	7.7	---	---	---	---	8.3	7.5	8.1	7.9	8.0	7.9
11	7.9	7.8	---	---	---	---	8.2	8.0	8.1	8.0	8.0	7.9
12	8.0	7.8	---	---	---	---	8.2	8.0	8.1	7.9	8.0	7.9
13	7.9	7.6	---	---	---	---	8.1	8.0	8.1	8.0	8.0	7.9
14	7.7	7.5	---	---	---	---	8.1	8.0	8.2	8.0	8.0	7.9
15	7.7	7.4	---	---	8.0	7.8	8.2	8.0	8.1	7.9	8.1	8.0
16	7.9	7.5	---	---	7.9	7.7	8.1	8.0	8.1	8.1	8.1	8.0
17	7.9	7.6	---	---	7.9	7.8	8.1	8.0	8.1	8.0	8.0	7.9
18	7.9	7.6	---	---	7.9	7.7	8.3	8.2	8.1	7.8	8.1	7.9
19	8.0	7.7	8.2	8.0	7.9	7.8	8.3	8.2	8.1	7.8	8.0	7.9
20	7.8	7.5	8.4	8.1	7.9	7.9	8.4	8.2	8.1	7.9	8.0	7.9
21	7.9	7.7	8.4	7.9	7.9	7.9	---	---	8.1	8.0	8.1	7.9
22	---	---	8.3	8.0	8.0	7.9	---	---	8.1	7.9	8.0	7.9
23	---	---	8.2	7.9	8.0	7.9	---	---	8.0	7.9	8.0	7.9
24	---	---	8.2	7.7	8.0	7.9	---	---	8.1	8.0	8.0	7.9
25	8.1	7.7	8.1	7.8	8.1	7.9	8.2	8.1	8.1	8.0	8.0	7.9
26	8.1	7.8	8.1	7.8	8.1	8.0	8.2	7.9	8.1	8.0	8.0	7.9
27	8.0	7.7	8.2	7.8	8.3	7.9	8.1	7.9	8.1	7.9	8.1	7.9
28	8.0	7.7	7.9	7.6	8.3	7.6	8.2	8.1	8.1	7.9	8.1	7.9
29	7.9	7.7	8.1	7.7	7.8	7.6	8.1	7.9	---	---	8.1	8.0
30	7.9	7.7	7.9	7.7	7.8	7.5	8.1	7.9	---	---	8.1	8.0
31	7.8	7.7	---	---	7.6	7.5	8.2	7.9	---	---	8.1	8.0
MONTH	---	---	---	---	---	---	---	---	8.2	7.8	---	---
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.1	7.9	7.8	7.6	8.0	7.6	---	---	7.9	7.6	7.8	7.6
2	8.1	7.7	8.1	7.7	7.9	7.6	7.9	7.8	8.1	7.6	7.9	7.6
3	8.1	7.9	8.3	7.9	7.6	7.5	7.9	7.7	8.0	7.6	7.8	7.6
4	8.0	7.8	8.1	7.5	7.8	7.6	7.9	7.6	8.2	7.9	7.9	7.7
5	7.9	7.8	8.1	7.3	7.7	7.5	7.9	7.7	8.2	7.8	7.9	7.7
6	7.9	7.7	7.9	7.7	8.2	7.5	7.9	7.7	8.0	7.7	7.9	7.7
7	7.8	7.7	7.8	7.7	7.8	7.4	8.0	7.7	8.0	7.9	7.9	7.7
8	7.8	7.5	7.8	7.6	7.9	7.7	8.0	7.6	8.1	7.6	7.9	7.7
9	8.0	7.6	7.6	7.5	7.9	7.7	7.8	7.7	8.0	7.7	7.9	7.6
10	7.9	7.8	7.6	7.4	7.9	7.7	7.9	7.7	8.0	7.9	7.6	7.5
11	7.9	7.7	7.5	7.4	7.8	7.7	7.7	7.6	8.1	7.9	7.7	7.6
12	7.9	7.7	7.6	7.4	7.8	7.7	7.9	7.6	8.0	7.7	7.8	7.7
13	7.9	7.8	7.6	7.4	7.9	7.7	8.0	7.8	8.0	7.7	7.8	7.7
14	7.8	7.7	7.6	7.4	7.8	7.7	8.0	7.9	8.0	7.8	7.9	7.6
15	7.8	7.7	7.6	7.3	7.8	7.6	8.0	7.8	8.0	7.7	8.0	7.7
16	7.9	7.7	7.5	7.4	7.8	7.6	8.0	7.8	7.9	7.7	7.9	7.7
17	7.9	7.7	7.6	7.4	7.7	7.6	8.1	7.8	8.0	7.6	7.9	7.7
18	8.0	7.5	7.6	7.4	7.8	7.4	7.9	7.6	8.0	7.8	8.0	7.9
19	7.7	7.6	7.6	7.4	7.7	7.5	7.9	7.6	7.9	7.7	8.0	7.8
20	7.8	7.7	7.7	7.4	7.7	7.5	8.1	7.7	7.9	7.7	7.9	7.5
21	7.8	7.7	7.8	7.5	7.8	7.6	7.9	7.6	7.9	7.7	7.9	7.7
22	7.8	7.7	8.0	7.5	7.8	7.2	7.9	7.7	7.9	7.7	8.0	7.7
23	7.7	7.3	7.9	7.6	7.7	7.6	7.9	7.8	7.9	7.8	7.9	7.6
24	7.8	7.6	8.0	7.7	7.7	7.6	8.0	7.8	7.9	7.8	7.8	7.6
25	7.8	7.7	8.0	7.8	7.8	7.6	7.9	7.6	8.0	7.8	7.7	7.3
26	7.8	7.7	8.0	7.7	7.9	7.6	7.9	7.5	8.0	7.7	7.7	7.4
27	7.8	7.7	8.2	7.7	7.8	7.6	7.9	7.7	8.0	7.7	7.8	7.5
28	7.7	7.6	8.2	7.7	---	---	7.8	7.7	7.9	7.6	7.8	7.6
29	7.7	7.6	8.3	7.6	---	---	7.8	7.6	7.8	7.5	7.7	7.5
30	7.7	7.0	7.9	7.6	---	---	7.8	7.6	7.9	7.7	7.6	7.3
31	---	---	7.9	7.7	---	---	7.9	7.8	7.9	7.7	---	---
MONTH	8.1	7.0	8.3	7.3	---	---	---	---	8.2	7.5	8.0	7.3

07105800 FOUNTAIN CREEK AT SECURITY, CO--continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	21.2	12.5	12.4	8.4	7.9	4.0	9.0	2.0	9.8	2.3	12.5	4.8
2	17.0	11.6	10.8	4.7	4.9	1.4	8.9	2.4	10.2	2.2	11.8	5.0
3	16.2	9.3	7.3	3.6	6.9	.0	5.3	2.6	10.1	2.4	13.8	3.7
4	19.6	9.3	10.9	3.6	9.1	1.0	5.5	1.9	11.0	3.4	13.7	5.6
5	20.1	9.7	12.6	4.5	9.5	2.3	7.3	1.9	11.1	2.2	14.1	7.6
6	18.9	9.8	7.0	3.0	6.9	1.9	7.8	.9	9.8	3.1	8.5	5.4
7	11.3	8.7	6.9	2.1	8.5	.8	8.2	.9	11.0	2.5	12.5	4.0
8	7.8	4.5	9.9	2.9	9.3	1.4	8.4	2.1	9.8	2.9	12.5	2.8
9	13.8	4.0	10.8	3.3	9.5	2.2	6.7	1.5	11.3	3.9	11.9	2.4
10	16.1	5.8	12.9	5.1	10.5	2.7	8.7	1.9	10.9	2.7	14.9	4.2
11	13.4	7.4	12.8	5.7	10.6	2.9	8.9	2.0	11.5	2.3	14.7	6.3
12	15.9	8.6	13.9	5.4	8.2	3.8	9.0	1.5	10.3	2.3	14.1	4.1
13	16.8	7.1	13.5	5.4	5.6	4.2	8.1	3.6	8.6	3.6	14.4	3.6
14	14.8	7.4	14.5	6.1	7.3	4.1	8.4	3.7	11.4	2.3	9.6	4.4
15	16.6	7.0	14.3	6.4	6.0	.0	8.2	1.9	11.2	2.4	8.4	4.8
16	17.8	8.3	10.8	7.2	8.0	2.1	7.8	3.0	8.5	4.9	8.1	4.8
17	14.6	7.3	13.1	6.3	6.2	3.2	8.6	1.1	9.2	5.1	13.9	3.2
18	12.6	5.4	12.1	6.5	8.2	1.8	8.2	1.5	9.5	3.0	15.5	4.4
19	16.4	7.3	13.3	6.6	3.6	.4	8.8	1.9	10.9	1.9	14.7	5.3
20	10.7	5.7	12.0	6.8	.0	.0	6.2	.3	12.5	2.8	15.4	5.7
21	12.2	3.9	11.0	5.5	.0	.0	5.5	1.6	13.2	3.3	11.0	5.4
22	14.8	5.3	9.6	3.6	.0	.0	7.8	.4	11.0	4.1	14.2	5.5
23	14.2	7.2	11.5	4.2	2.2	.0	5.4	1.4	11.1	4.5	15.6	4.7
24	13.6	7.0	13.0	5.9	5.2	.0	---	1.8	6.3	3.8	15.9	5.3
25	15.8	6.5	13.0	5.0	3.9	.0	4.9	.0	10.6	1.5	14.7	6.7
26	16.0	7.2	11.4	5.5	5.9	.0	6.4	.0	11.1	1.9	15.5	6.2
27	15.0	8.1	8.1	3.8	7.2	.0	6.9	1.1	12.0	1.8	14.7	6.2
28	16.4	6.7	8.1	1.7	8.6	1.5	8.6	.5	8.9	3.1	16.0	5.6
29	16.5	7.4	11.0	1.1	2.5	.0	5.2	.0	---	---	10.5	3.9
30	16.6	8.2	11.4	3.7	5.5	.0	8.6	.0	---	---	15.2	3.8
31	14.5	7.9	---	---	8.2	.5	9.5	1.7	---	---	16.4	5.3
MONTH	21.2	3.9	14.5	1.1	10.6	.0	---	.0	13.2	1.5	16.4	2.4
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	17.9	6.3	18.9	5.5	21.7	13.4	27.3	16.1	27.7	16.7	24.7	15.2
2	10.7	7.4	18.5	8.0	21.1	12.0	27.9	16.2	25.0	16.8	25.4	15.0
3	14.5	6.2	19.0	7.0	18.9	11.6	27.7	16.0	19.6	17.1	23.8	15.4
4	17.8	6.4	14.6	6.0	23.0	12.0	28.6	15.8	18.4	15.8	21.9	13.6
5	19.8	7.8	16.8	4.2	21.8	14.0	27.3	15.3	24.1	14.8	22.9	13.4
6	20.8	8.9	17.0	7.7	19.3	14.5	27.2	15.7	23.6	15.8	20.2	12.2
7	14.8	9.4	17.2	10.1	18.5	12.9	24.5	16.4	23.3	14.6	23.4	14.1
8	12.1	8.2	21.2	8.8	21.9	13.1	22.7	16.0	22.0	14.5	22.9	13.6
9	16.1	5.8	19.1	10.8	20.2	13.0	26.2	16.5	20.8	14.7	23.1	13.2
10	15.0	5.9	21.7	10.5	22.0	13.3	26.5	16.5	22.5	13.5	20.0	15.0
11	16.2	7.6	22.2	12.8	22.4	12.5	22.9	17.7	23.5	13.9	22.9	13.7
12	13.0	5.8	22.2	9.9	19.1	13.3	27.7	15.9	20.6	16.3	19.2	14.0
13	11.9	3.9	20.0	9.8	20.0	12.5	27.4	16.2	18.7	16.0	21.7	13.2
14	17.4	6.3	20.2	10.2	18.7	14.1	27.9	16.1	25.2	15.7	22.5	11.2
15	18.5	6.1	17.8	10.3	22.0	13.6	29.3	16.1	23.5	14.9	21.5	11.6
16	17.1	7.1	---	10.0	20.3	13.8	28.5	16.8	25.2	15.6	21.0	11.5
17	18.6	7.9	21.1	10.0	24.7	12.4	29.8	17.2	25.6	15.2	21.7	11.0
18	18.9	9.2	23.0	13.2	25.8	13.6	28.3	17.7	24.1	15.7	13.6	11.0
19	14.2	7.9	22.4	12.9	23.8	15.5	28.7	18.2	20.8	15.6	19.9	9.5
20	12.4	8.5	18.9	13.0	24.7	14.2	27.9	16.4	23.0	14.4	22.1	10.8
21	15.6	9.2	21.6	12.7	25.7	14.8	23.5	16.5	25.6	14.4	23.1	11.3
22	16.0	7.8	23.3	12.9	23.4	16.4	19.7	17.2	25.1	14.7	20.4	8.7
23	13.9	7.5	21.2	13.3	25.3	16.4	19.7	16.0	25.6	14.5	21.0	9.9
24	19.8	8.1	18.5	12.2	26.5	17.8	17.6	15.0	25.5	14.7	20.5	9.8
25	17.8	9.0	23.8	11.5	24.3	14.7	21.9	14.7	26.5	15.3	21.3	10.4
26	12.9	8.0	24.2	12.5	23.0	14.8	20.8	14.5	27.6	15.2	21.9	11.1
27	14.2	4.9	24.5	12.7	26.6	14.7	22.6	13.5	27.8	16.4	20.4	12.0
28	15.5	5.2	24.4	13.3	27.1	15.5	25.3	15.0	26.1	15.9	20.8	11.6
29	15.7	7.0	24.5	12.9	25.8	15.3	26.2	15.7	24.0	15.7	21.6	11.8
30	11.8	4.7	23.9	12.1	28.7	15.9	24.2	15.6	26.6	15.2	17.5	12.8
31	---	---	24.4	13.1	---	---	24.7	16.5	26.2	15.4	---	---
MONTH	20.8	3.9	---	4.2	28.7	11.6	29.8	13.5	27.8	13.5	25.4	8.7

07105800 FOUNTAIN CREEK AT SECURITY, CO--continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	6.5	5.1	7.7	5.6	9.0	7.5	8.7	6.7	9.7	7.6	8.5	6.5
2	8.8	5.6	8.4	6.8	9.5	8.2	8.8	6.8	9.7	7.4	8.6	6.8
3	8.1	6.4	8.8	8.0	10.0	7.7	8.9	7.7	9.6	7.4	8.9	6.4
4	8.0	6.0	9.1	7.0	9.8	7.2	8.9	7.6	9.5	7.2	8.3	6.4
5	7.8	5.8	8.7	6.4	9.2	7.1	8.8	7.3	9.8	7.1	7.9	6.4
6	7.6	5.8	9.4	7.8	9.5	7.8	9.2	7.3	9.4	7.5	8.7	7.3
7	7.9	7.2	9.7	8.3	9.7	7.4	9.3	7.2	9.5	7.1	8.8	6.5
8	9.4	7.9	9.5	7.1	9.5	7.1	9.1	7.2	9.4	7.3	9.1	6.6
9	9.3	6.8	9.3	6.9	9.7	7.6	9.5	7.7	9.1	6.9	9.4	6.7
10	8.5	6.3	8.6	6.3	9.3	7.2	9.3	7.3	9.3	7.0	8.6	5.9
11	8.2	6.9	8.4	6.2	9.3	7.1	9.4	7.4	9.7	6.9	8.0	6.0
12	7.9	6.4	8.6	6.1	9.1	7.9	9.8	7.3	9.6	7.2	8.8	6.3
13	7.8	6.2	8.5	6.2	9.1	8.4	9.1	7.6	9.1	7.5	9.1	6.4
14	---	---	8.2	5.9	9.4	7.6	8.9	7.3	9.5	6.9	9.0	7.4
15	---	---	8.1	5.9	9.9	8.2	9.5	7.4	9.6	6.9	9.1	7.8
16	---	---	8.0	6.7	9.2	7.2	9.3	7.7	8.5	7.0	9.1	7.8
17	8.5	6.0	8.0	5.9	8.9	7.7	9.9	7.5	8.4	6.9	9.3	6.7
18	9.0	7.3	7.9	6.1	9.2	7.0	9.8	7.5	9.3	7.1	9.1	6.5
19	8.0	6.0	7.8	5.9	9.5	8.1	9.5	7.4	9.8	6.3	8.9	6.3
20	8.8	7.0	7.9	6.2	9.4	7.6	10.2	8.1	9.1	6.0	8.5	6.1
21	8.7	6.2	8.3	6.5	8.5	6.2	9.6	8.1	9.3	6.6	9.0	7.0
22	---	---	9.0	6.7	9.0	6.1	9.7	7.5	9.1	7.0	8.6	6.2
23	---	---	8.9	6.3	9.7	8.5	9.4	8.0	8.9	7.1	8.9	5.5
24	---	---	8.3	5.8	9.7	8.0	---	---	9.1	8.2	8.3	5.1
25	8.5	5.6	8.6	5.7	9.7	8.5	10.1	8.4	9.7	7.2	7.9	5.3
26	---	---	7.9	6.0	9.8	7.9	10.1	8.1	9.8	7.2	7.9	5.3
27	---	---	9.0	7.1	9.6	7.2	9.6	7.9	9.7	6.9	8.4	6.3
28	---	---	9.8	7.1	8.8	6.8	9.9	7.5	9.2	7.3	8.6	5.9
29	---	---	10.0	6.8	9.6	8.5	10.0	8.6	---	---	8.8	7.2
30	---	---	9.0	6.5	9.5	7.7	9.9	7.7	---	---	9.4	6.1
31	---	---	---	---	9.4	7.0	9.7	7.6	---	---	9.1	6.5
MONTH	---	---	10.0	5.6	10.0	6.1	---	---	9.8	6.0	9.4	5.1
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	8.9	6.2	9.0	6.1	6.6	4.9	6.9	4.4	5.9	4.5	---	---
2	8.2	6.3	8.1	5.9	6.7	4.8	6.7	4.1	7.2	4.8	6.1	5.1
3	8.8	6.7	8.4	6.0	6.5	5.0	6.2	4.4	---	---	6.2	4.9
4	8.5	5.8	9.5	6.7	6.9	4.6	5.5	3.6	---	---	6.8	5.6
5	8.3	5.6	10.2	6.1	6.0	4.4	6.7	4.6	---	---	7.0	5.3
6	8.0	5.4	8.2	6.1	7.9	5.0	5.8	4.6	---	---	6.9	5.6
7	7.7	6.3	7.6	6.1	8.3	7.1	5.8	5.3	---	---	6.6	5.0
8	8.2	7.2	7.9	5.5	---	---	7.1	5.3	7.5	---	6.5	4.9
9	9.3	6.8	7.4	5.8	---	---	6.2	4.3	---	---	6.7	4.9
10	8.9	6.5	7.4	5.3	---	---	5.3	4.1	---	---	6.2	5.2
11	8.2	6.3	6.8	5.2	---	---	6.1	4.9	---	---	6.3	4.7
12	8.9	6.9	7.5	5.0	---	---	6.1	4.3	---	---	5.9	4.6
13	9.4	7.2	7.6	5.2	---	---	7.1	4.3	---	---	6.2	4.7
14	8.6	6.1	7.6	5.4	7.3	6.1	7.0	5.6	---	---	---	---
15	8.6	5.9	---	---	7.5	5.7	6.9	4.5	---	---	---	---
16	8.4	6.3	7.6	5.1	7.4	6.1	6.2	4.8	---	---	6.2	4.8
17	8.1	5.8	7.7	5.5	7.8	5.5	6.2	5.0	---	---	6.3	5.1
18	7.7	5.8	7.2	5.2	7.1	5.0	6.4	4.9	---	---	7.1	6.2
19	7.8	6.4	6.9	5.0	7.2	5.2	6.0	4.6	---	---	6.9	5.3
20	7.9	6.8	7.0	5.5	7.4	4.9	7.3	4.6	6.8	5.2	6.4	5.0
21	7.6	6.2	6.9	5.2	6.6	5.0	7.1	5.7	6.6	4.9	6.4	4.7
22	8.1	6.2	7.1	4.4	6.9	5.0	6.7	6.2	6.9	5.0	6.5	4.5
23	8.5	6.3	6.0	4.9	6.7	5.1	7.0	6.2	6.6	4.9	---	---
24	7.8	5.3	6.8	5.1	6.4	4.7	7.1	6.5	6.5	4.8	---	---
25	7.7	6.0	6.7	4.9	6.8	4.8	8.1	5.9	6.4	4.8	---	---
26	8.2	7.0	6.7	4.8	6.5	5.0	7.6	6.1	5.9	4.7	---	---
27	9.3	6.8	6.7	4.6	6.2	4.6	7.4	5.7	5.9	4.6	6.5	5.1
28	9.1	6.4	6.5	4.7	5.7	4.3	7.0	5.4	6.5	4.5	6.9	4.9
29	8.5	6.4	6.2	4.4	7.3	4.7	6.6	5.1	6.9	5.2	6.2	4.5
30	9.5	7.0	6.2	5.0	7.2	4.5	6.4	5.1	6.6	4.6	6.0	4.8
31	---	---	6.5	4.7	---	---	6.0	4.8	6.7	4.5	---	---
MONTH	9.5	5.3	---	---	---	---	8.1	3.6	---	---	---	---

07105900 JIMMY CAMP CREEK AT FOUNTAIN, CO

LOCATION.--Lat 38°41'04", long 104°41'17", in NW¼SE¼ sec.5, T.16 S., R.65 W., El Paso County, Hydrologic Unit 11020003, on right bank at downstream side of bridge on county road, 1,000 ft east of Fountain, and 1.5 mi upstream from mouth. Prior to Aug. 14, 1991, at site 110 ft upstream.

DRAINAGE AREA.--65.6 mi².

PERIOD OF RECORD.--January 1976 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,530 ft above National Geodetic Vertical Datum of 1929, from topographic map. January 1976 to Sept. 3, 1986 at datum 4.0 ft, higher. Prior to Aug. 14, 1991, at site 110 ft upstream, at same datum.

REMARKS.--Estimated daily discharges: Dec. 15, 19-25, and Jan. 20 to Feb. 4. Records fair except for estimated daily discharges, and those above 50 ft³/s, which are poor. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--15 years, 2.25 ft³/s; 1,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,600 ft³/s, July 28, 1985, gage height, 6.25 ft, from floodmark, from rating curve extended above 1,300 ft³/s, on basis of slope-area measurement of peak flow; no flow, Apr. 12-13, 15, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 107 ft³/s at 1915 Aug. 6, gage height, 7.00 ft; minimum daily, 0.38 ft³/s, June 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	2.0	1.3	1.6	1.3	.85	1.4	1.2	.63	1.4	4.8	.61
2	1.6	1.9	1.1	1.5	1.3	.85	1.4	1.0	.54	1.9	5.0	.54
3	1.2	1.7	2.9	1.4	1.3	.85	1.4	1.0	.62	2.5	9.6	.53
4	1.1	1.7	1.5	1.5	1.3	.85	1.4	2.0	.50	1.7	19	.60
5	1.0	1.9	1.0	1.5	1.3	.85	1.4	2.2	.46	1.4	10	.58
6	.92	1.8	1.0	1.5	1.1	.90	1.3	1.8	6.4	1.3	13	.50
7	.91	1.6	.92	1.5	1.3	.91	1.3	1.6	4.0	1.0	9.7	.45
8	1.0	1.4	.96	1.5	1.3	.98	1.4	1.6	3.6	1.2	3.2	.46
9	1.2	1.6	.95	1.5	1.3	.91	1.4	1.8	2.2	1.2	3.4	.56
10	1.5	1.8	.96	1.4	1.2	.85	1.2	1.6	1.1	1.5	2.7	.72
11	1.5	1.7	.97	1.4	1.2	.87	1.3	1.2	.66	1.5	1.9	.60
12	1.3	1.6	.88	1.5	1.1	.87	1.5	1.2	.53	1.5	1.9	.63
13	1.2	1.7	.91	1.6	1.1	.91	1.5	1.2	.52	3.6	2.0	.68
14	1.2	1.8	.90	1.5	1.1	.91	1.6	1.1	.65	3.5	1.9	.70
15	1.3	1.7	1.0	1.4	1.0	.91	1.6	1.1	.56	1.6	1.6	.70
16	1.7	1.6	.95	1.4	.95	1.0	1.6	1.5	.50	.78	1.5	.84
17	1.4	1.6	.93	1.6	.91	1.1	1.4	1.9	.44	.60	1.4	.97
18	1.7	1.5	.76	1.7	.89	1.2	1.4	1.6	.38	.47	1.2	.96
19	1.5	1.6	.70	1.3	.95	1.1	1.3	1.4	.45	.57	1.4	.99
20	2.0	1.6	.70	1.2	.85	1.1	1.2	1.3	.61	.94	1.2	.88
21	1.5	1.5	.68	1.3	.84	1.2	1.2	2.0	.54	1.1	1.0	.77
22	2.1	1.4	.65	1.2	.85	1.2	1.2	1.9	.93	9.3	.83	.75
23	2.3	1.4	.65	1.2	.85	1.2	2.4	2.2	.94	5.5	.81	.64
24	2.0	1.5	.70	1.2	.85	1.2	1.5	2.7	.92	3.7	1.8	.73
25	1.7	1.5	.60	1.2	.85	2.1	1.4	3.6	.91	3.3	1.1	.79
26	1.7	1.5	.53	1.2	.85	1.3	1.4	5.0	.91	3.1	1.2	.96
27	1.7	1.4	.58	1.2	.85	1.2	1.3	5.3	.85	2.8	1.0	1.1
28	1.8	1.2	.70	1.3	.85	1.1	1.2	3.3	.81	2.7	1.0	.96
29	1.7	1.6	.67	1.3	---	1.1	1.1	1.2	.83	2.6	1.4	.94
30	1.7	1.3	.90	1.3	---	1.2	1.7	.74	.81	2.7	1.4	.91
31	1.9	---	1.2	1.3	---	1.4	---	.62	---	3.5	.79	---
TOTAL	46.63	48.1	29.15	43.2	29.54	32.97	42.4	57.86	33.80	70.46	108.73	22.05
MEAN	1.50	1.60	.94	1.39	1.05	1.06	1.41	1.87	1.13	2.27	3.51	.73
MAX	2.3	2.0	2.9	1.7	1.3	2.1	2.4	5.3	6.4	9.3	19	1.1
MIN	.91	1.2	.53	1.2	.84	.85	1.1	.62	.38	.47	.79	.45
AC-FT	92	95	58	86	59	65	84	115	67	140	216	44

CAL YR 1990 TOTAL 438.70 MEAN 1.20 MAX 14 MIN .00 AC-FT 870
WTR YR 1991 TOTAL 564.89 MEAN 1.55 MAX 19 MIN .38 AC-FT 1120

07105905 FOUNTAIN CREEK ABOVE LITTLE FOUNTAIN CREEK, BELOW FOUNTAIN, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°37'50", long 104°40'50", in SW¼NW¼ sec.2B, T.16 S., R.65 W., El Paso County, Hydrologic Unit 11020003, approximately 1 mi upstream from mouth of Little Fountain Creek below Fountain.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCEI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 18...	1530	58	1110	8.1	13.0	7.1	6.9	K100	K120	85	27
NOV 15...	1500	97	976	8.0	14.0	6.8	12	K130	K120	74	24
DEC 14...	1045	72	1110	8.1	5.5	8.8	26	K2200	560	85	28
JAN 11...	1115	86	1020	8.1	4.0	9.4	E27	K160	K120	75	24
FEB 08...	1105	90	1010	8.0	6.0	8.4	21	90	110	74	23
MAR 08...	1015	93	974	8.0	6.0	9.0	>26	120	220	71	22
APR 12...	1125	41	1070	7.8	12.0	6.4	14	80	120	80	25
MAY 17...	1225	58	955	7.8	21.0	6.3	6.3	160	92	76	24
JUN 28...	1300	50	951	7.9	26.0	5.8	3.6	120	130	75	23
JUL 19...	1015	79	771	7.8	21.0	6.2	9.0	>600	K5600	62	19
AUG 16...	1040	132	739	7.9	20.0	6.2	6.4	2800	3300	61	20
SEP 06...	1245	82	816	7.9	21.5	7.3	16	K670	B40	**	13

DATE	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SULFIDE TOTAL (MG/L AS S)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT 18...	172	300	54	1.9	--	66	0.20	7.0	0.29	1.5	1.3
NOV 15...	144	210	49	1.7	<0.5	76	0.29	6.5	1.3	2.2	1.9
DEC 14...	188	270	41	1.4	--	49	0.11	5.6	2.5	3.4	1.8
JAN 11...	139	240	50	1.4	--	54	0.07	4.3	1.1	4.0	2.1
FEB 08...	136	240	57	1.7	--	64	0.08	4.5	4.3	7.2	2.0
MAR 08...	135	240	42	1.7	--	134	0.08	3.8	5.3	7.4	2.4
APR 12...	152	300	49	1.7	--	58	0.14	5.0	2.2	3.7	1.8
MAY 17...	146	250	41	1.9	**	71	0.17	5.0	0.18	1.4	1.4
JUN 28...	148	240	41	1.7	--	47	0.15	5.2	0.10	1.7	1.3
JUL 19...	125	210	36	1.5	--	554	0.20	3.8	0.03	1.8	1.1
AUG 16...	125	200	27	1.7	--	212	0.12	3.7	0.04	0.70	0.93
SEP 06...	**	150	26	2.6	--	203	0.11	1.3	5.0	7.3	1.7

E Estimated.

K Based on non-ideal colony count.

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07105905 FOUNTAIN CREEK ABOVE LITTLE FOUNTAIN CREEK, BELOW FOUNTAIN, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT 18...	--	--	--	--	<1	<1	3	<1	<1	7	3
NOV 15...	2	1	210	200	<1	<1	<1	<1	<1	7	4
DEC 14...	--	--	--	--	<1	<1	<1	<1	<1	7	4
JAN 11...	--	--	--	--	<1	2	<1	<1	<1	8	4
FEB 08...	--	--	--	--	<1	<1	2	1	<1	8	4
MAR 08...	--	--	--	--	<1	<1	4	<1	<1	9	4
APR 12...	--	--	--	--	<1	<1	<1	<1	<1	5	2
MAY 17...	2	2	**	**	<1	<1	<1	<1	<1	10	3
JUN 28...	--	--	--	--	<1	<1	1	<1	<1	7	3
JUL 19...	--	--	--	--	<1	<1	**	<1	<1	16	2
AUG 16...	--	--	--	--	<1	<1	6	<1	1	10	2
SEP 06...	--	--	--	--	<1	<1	3	<1	<1	8	3

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT 18...	2300	12	3	1	100	31	4	4	20	14	--
NOV 15...	2300	15	3	<1	180	75	4	3	40	17	<0.01
DEC 14...	1600	23	5	<1	190	120	5	3	30	23	--
JAN 11...	1700	38	3	1	210	120	6	5	40	30	--
FEB 08...	2400	42	3	1	190	130	5	4	30	10	--
MAR 08...	3200	32	6	1	230	130	6	4	40	23	--
APR 12...	1200	13	3	<1	200	160	6	3	20	18	--
MAY 17...	1700	24	5	<1	110	64	7	3	20	23	<0.01
JUN 28...	1600	13	9	<1	70	24	4	3	30	23	--
JUL 19...	11000	25	30	<1	330	27	22	4	80	16	--
AUG 16...	7300	7	**	<1	190	14	8	3	50	10	--
SEP 06...	9000	**	21	<1	360	39	5	3	90	29	--

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07105924 WOMACK DITCH NEAR FORT CARSON, CO

LOCATION.--Lat 38°40'52", long 104°51'20", in NW¼SE¼ sec.2, T.16 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on left side of diversion pipe, 300 ft downstream from Keaton Reservoir, 0.5 mi upstream from State Highway 115, and 4.7 mi southwest of Fort Carson.

PERIOD OF RECORD.--June 1978 to February 1991 (discontinued).

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 6,400 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 24 to Jan. 1. Records fair. Gage is on controlled pipe diversion from Keaton Reservoir, which delivers appropriated water rights to Fort Carson and the City of Fountain. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--12 years (water years 1979-90), 1.22 ft³/s; 884 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4.8 ft³/s, June 3, 4, 9-15, 1979; no flow, Mar. 21-24, Sept. 7, 8, 1980, Dec. 18-31, 1981, Jan. 8, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during period October to February, 1.9 ft³/s, Oct. 13-17; minimum daily, 0.57 ft³/s, Jan. 8-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.4	.66	1.0	.80	---	---	---	---	---	---	---
2	1.7	1.6	.66	1.0	.80	---	---	---	---	---	---	---
3	1.7	1.8	.66	1.0	.80	---	---	---	---	---	---	---
4	1.8	1.8	.66	1.0	.80	---	---	---	---	---	---	---
5	1.8	1.8	.66	1.0	---	---	---	---	---	---	---	---
6	1.8	1.8	.66	1.0	---	---	---	---	---	---	---	---
7	1.8	1.8	.74	.74	---	---	---	---	---	---	---	---
8	1.8	1.6	.80	.57	---	---	---	---	---	---	---	---
9	1.8	1.5	.80	.57	---	---	---	---	---	---	---	---
10	1.5	1.5	.90	.57	---	---	---	---	---	---	---	---
11	1.8	1.5	.96	.72	---	---	---	---	---	---	---	---
12	1.6	1.5	.96	.81	---	---	---	---	---	---	---	---
13	1.9	1.5	.96	.80	---	---	---	---	---	---	---	---
14	1.9	1.5	1.1	.80	---	---	---	---	---	---	---	---
15	1.9	1.5	1.1	.80	---	---	---	---	---	---	---	---
16	1.9	1.6	1.1	.80	---	---	---	---	---	---	---	---
17	1.9	1.6	1.1	.80	---	---	---	---	---	---	---	---
18	1.6	1.6	1.1	.80	---	---	---	---	---	---	---	---
19	1.7	1.6	1.1	.80	---	---	---	---	---	---	---	---
20	1.5	1.6	1.1	.80	---	---	---	---	---	---	---	---
21	1.5	1.6	.92	.80	---	---	---	---	---	---	---	---
22	1.6	1.6	.92	.80	---	---	---	---	---	---	---	---
23	1.7	1.6	1.0	.80	---	---	---	---	---	---	---	---
24	1.7	1.6	1.0	.80	---	---	---	---	---	---	---	---
25	1.7	1.6	1.0	.80	---	---	---	---	---	---	---	---
26	1.7	1.4	1.0	.80	---	---	---	---	---	---	---	---
27	1.7	1.3	1.0	.80	---	---	---	---	---	---	---	---
28	1.7	1.3	1.0	.80	---	---	---	---	---	---	---	---
29	1.7	1.3	1.0	.80	---	---	---	---	---	---	---	---
30	1.7	.88	1.0	.80	---	---	---	---	---	---	---	---
31	1.7	---	1.0	.80	---	---	---	---	---	---	---	---
TOTAL	53.4	46.28	28.62	25.18	---	---	---	---	---	---	---	---
MEAN	1.72	1.54	.92	.81	---	---	---	---	---	---	---	---
MAX	1.9	1.8	1.1	1.0	---	---	---	---	---	---	---	---
MIN	1.5	.88	.66	.57	---	---	---	---	---	---	---	---
AC-FT	106	92	57	50	---	---	---	---	---	---	---	---

CAL YR 1990 TOTAL 544.93 MEAN 1.49 MAX 3.3 MIN .40 AC-FT 1080

07105945 ROCK CREEK ABOVE FORT CARSON RESERVATION, CO

LOCATION.--Lat 38°42'27", long 104°50'46", in NW¼NW¼ sec.36, T.15 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on right bank 20 ft upstream from county road bridge, 0.6 mi northwest of Rock Creek Park, 1.2 mi upstream from State Highway 115, and 3.2 mi southwest of Ft. Carson.

DRAINAGE AREA.--6.79 mi².

PERIOD OF RECORD.--Streamflow records, May 1978 to current year. Water-quality data available, May to September 1978.

REVISED RECORDS.--WDR CO-85-1: 1982.

GAGE.--Water-stage recorder. Elevation of gage is 6,390 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 3-19. Records fair except for estimated daily discharges, and those above 40 ft³/s, which are poor. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--13 years, 2.47 ft³/s; 1,790 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 276 ft³/s, July 28, 1982, gage height, 4.73 ft, from rating curve extended above 60 ft³/s; no flow many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 6	0645	12	2.21	Aug. 3	2300	35	2.46
July 20	2030	27	2.39	Aug. 15	2015	11	2.16
July 25	1630	12	2.21	Sept. 4	0145	*105	*2.83

Minimum daily discharge, 0.10 ft³/s, July 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.66	.49	.32	.24	.29	.35	.51	1.2	.59	.47	2.4	1.7
2	.67	.51	.29	.29	.31	.35	.76	1.4	.62	.61	2.9	1.7
3	.77	.51	.24	.30	.32	.35	.69	1.4	.69	.56	11	1.7
4	.63	.47	.33	.29	.32	.35	.71	1.7	.59	.47	25	47
5	.54	.51	.33	.29	.33	.35	.68	2.2	.55	.38	19	23
6	.50	.52	.30	.29	.33	.35	.66	2.5	6.7	.32	14	14
7	.49	.46	.32	.29	.33	.35	.69	2.8	5.8	.30	11	9.0
8	.64	.49	.31	.30	.35	.35	.74	2.8	5.6	.37	8.1	6.8
9	.61	.48	.30	.30	.35	.35	.70	2.8	5.7	.37	7.1	6.0
10	.67	.44	.30	.30	.35	.35	.69	2.6	5.0	.37	6.2	5.9
11	.70	.43	.32	.30	.35	.35	.64	2.5	4.5	.44	5.0	5.0
12	.69	.41	.32	.31	.35	.35	.67	2.3	4.0	.41	4.6	4.4
13	.65	.41	.32	.32	.35	.35	.68	2.2	3.4	.33	4.5	3.9
14	.62	.40	.31	.32	.35	.35	.66	2.0	3.0	.29	3.9	3.5
15	.60	.40	.28	.33	.35	.35	.63	1.9	2.6	.23	4.3	3.1
16	.56	.39	.32	.35	.35	.40	.60	1.8	2.3	.15	6.1	2.9
17	.57	.35	.30	.35	.37	.50	.58	1.6	2.0	.10	5.9	2.7
18	.55	.35	.31	.35	.36	.45	.61	1.5	1.7	.26	5.3	2.9
19	.51	.35	.30	.35	.37	.40	.64	1.4	1.5	.59	5.2	2.9
20	.73	.36	.38	.36	.36	.38	.68	1.3	1.4	4.2	5.3	2.7
21	.62	.41	.31	.35	.35	.38	.66	1.2	1.2	6.4	4.7	2.5
22	.64	.40	.23	.38	.35	.38	.66	1.1	1.4	3.7	4.2	2.2
23	.68	.40	.24	.36	.35	.40	1.1	1.1	1.2	3.6	3.7	2.1
24	.67	.38	.18	.35	.34	.40	.98	1.1	1.1	3.6	3.3	2.0
25	.68	.37	.20	.33	.36	.42	1.0	1.0	.90	5.4	3.0	1.9
26	.64	.33	.21	.35	.36	.41	1.0	.91	.79	6.5	2.7	1.6
27	.62	.31	.20	.32	.37	.43	.98	.84	.71	5.2	2.5	1.5
28	.58	.23	.25	.30	.35	.43	1.0	.77	.64	4.3	2.4	1.5
29	.56	.28	.27	.30	---	.45	1.1	.68	.59	3.6	2.2	1.4
30	.53	.33	.22	.32	---	.45	1.2	.62	.53	3.0	2.0	1.5
31	.51	---	.21	.29	---	.49	---	.59	---	2.7	1.9	---
TOTAL	19.09	12.17	8.72	9.88	9.67	12.02	22.90	49.81	67.30	59.22	189.4	169.0
MEAN	.62	.41	.28	.32	.35	.39	.76	1.61	2.24	1.91	6.11	5.63
MAX	.77	.52	.38	.38	.37	.50	1.2	2.8	6.7	6.5	25	47
MIN	.49	.23	.18	.24	.29	.35	.51	.59	.53	.10	1.9	1.4
AC-FT	38	24	17	20	19	24	45	99	133	117	376	335

CAL YR 1990 TOTAL 624.22 MEAN 1.71 MAX 35 MIN .07 AC-FT 1240
WTR YR 1991 TOTAL 629.18 MEAN 1.72 MAX 47 MIN .10 AC-FT 1250

07105950 ROCK CREEK NEAR FORT CARSON, CO

LOCATION.--Lat 38°41'49", long 104°49'39", in SW¼SW¼ sec.31, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on left bank at Fort Carson Girl Scout Camp, 0.2 mi downstream from bridge on State Highway 115 and 2.9 mi southwest of Fort Carson.

DRAINAGE AREA.--7.79 mi².

PERIOD OF RECORD.--Streamflow records, May 1978 to current year. Water quality data available, May 1978 to September 1981.

GAGE.--Water-stage recorder. Elevation of gage is 6,150 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: July 21 to Aug. 9. Records fair except for estimated daily discharges and daily discharges above 30 ft³/s, which are poor. Some diversions upstream from station for irrigation and other uses, amounts unknown. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--13 years, 1.71 ft³/s; 1,240 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 353 ft³/s, July 28, 1982, gage height, 6.09 ft, from floodmark, from rating curve extended above 50 ft³/s; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 48 ft³/s at 0230 Sept. 4, gage height, 4.36 ft; no flow most of time.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY 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	.06	.40	.35
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.35	.31
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	1.0	.28
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	12	27
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.0	15
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.0	8.2
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.0	4.8
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.0	2.5
9	.00	.00	.00	.00	.00	.00	.00	.00	.26	.00	2.7	1.8
10	.00	.00	.00	.00	.00	.00	.00	.00	.84	.00	2.3	2.0
11	.00	.00	.00	.00	.00	.00	.00	.00	.80	.00	1.4	1.2
12	.00	.00	.00	.00	.00	.00	.00	.00	.71	.00	1.1	.57
13	.00	.00	.00	.00	.00	.00	.00	.00	.69	.00	1.2	.34
14	.00	.00	.00	.00	.00	.00	.00	.00	.60	.00	.82	.29
15	.00	.00	.00	.00	.00	.00	.00	.00	.56	.00	.75	.33
16	.00	.00	.00	.00	.00	.00	.00	.00	.51	.00	2.0	.31
17	.00	.00	.00	.00	.00	.00	.00	.00	.46	.00	1.9	.29
18	.00	.00	.00	.00	.00	.00	.00	.00	.43	.00	1.4	.30
19	.00	.00	.00	.00	.00	.00	.00	.00	.50	.00	1.3	.28
20	.00	.00	.00	.00	.00	.00	.00	.00	.47	.41	1.4	.27
21	.00	.00	.00	.00	.00	.00	.00	.00	.42	2.0	1.1	.26
22	.00	.00	.00	.00	.00	.00	.00	.00	.48	1.0	.87	.24
23	.00	.00	.00	.00	.00	.00	.00	.00	.43	.50	.68	.23
24	.00	.00	.00	.00	.00	.00	.00	.00	.37	.50	.62	.22
25	.00	.00	.00	.00	.00	.00	.00	.00	.33	.60	.52	.20
26	.00	.00	.00	.00	.00	.00	.00	.00	.25	2.5	.51	.17
27	.00	.00	.00	.00	.00	.00	.00	.00	.20	1.5	.47	.15
28	.00	.00	.00	.00	.00	.00	.00	.00	.15	.70	.45	.13
29	.00	.00	.00	.00	---	.00	.00	.00	.11	.50	.46	.11
30	.00	.00	.00	.00	---	.00	.00	.00	.10	.50	.42	.10
31	.00	---	.00	.00	---	.00	---	.00	---	.40	.38	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.67	11.34	59.50	68.23
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.32	.37	1.92	2.27
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.84	2.5	12	27
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.35	.10
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	19	22	118	135

CAL YR 1990 TOTAL 244.40 MEAN .67 MAX 23 MIN .00 AC-FT 485
WTR YR 1991 TOTAL 148.74 MEAN .41 MAX 27 MIN .00 AC-FT 295

07106000 FOUNTAIN CREEK NEAR FOUNTAIN, CO

LOCATION (REVISED).--Lat 38°36'09", long 104°40'10", in SW¼NE¼ sec.4, T.17 S., R.65 W., El Paso County, Hydrologic Unit 11020003, at left upstream end of Old Pueblo Road bridge, 200 ft downstream from Denver & Rio Grande Railroad bridge, 0.90 mi downstream from Little Fountain Creek, and 5.6 mi south of Fountain.

DRAINAGE AREA.--681 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1938 to March 1, 1940 (monthly records only), March 2, 1940 to September 1954; July 2, 1985 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,355 ft above National Geodetic Vertical Datum of 1929, from topographic map. Sept. 18, 1938 to Mar. 1, 1940, nonrecording gage, and Mar. 2, 1940 to Sept. 30, 1954, recording gage, both at different datum and at site 200 ft downstream. July 2, 1985 to Sept. 2, 1987, recording gage at site 500 ft downstream, at different datum. Sept. 3, 1987 to Mar. 13, 1990, recording gage at site 1,100 ft upstream at different datums.

REMARKS.--Estimated daily discharges: Dec. 13 to Jan. 24. Records fair except those above about 4,000 ft³/s, and estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, municipal use, and return flows from irrigation and sewage effluent discharges.

AVERAGE DISCHARGE.--22 years (water years 1938-54, 1985-91) 70.2 ft³/s, 50,860 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,100 ft³/s, May 28, 1940, gage height, 9.19 ft, at different datum, from rating curve extended above 3,000 ft³/s, on basis of slope-area measurement of peak flow; no flow, Sept. 24, 30, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 14.4 ft, at different datum, May 30, 1935, but was probably exceeded by the flood of June 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,440 ft³/s at 0730 June 6, gage height, 8.40 ft, from rating curve extended above 3,200 ft³/s, minimum daily, 30 ft³/s, July 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	86	103	90	103	100	65	105	46	32	91	62
2	349	78	96	100	113	93	91	63	57	47	679	67
3	281	97	91	110	102	102	87	51	94	39	1260	101
4	59	85	94	110	107	98	96	66	67	76	450	238
5	58	122	83	105	105	94	68	391	73	47	270	89
6	61	77	80	95	93	122	54	99	1200	31	258	66
7	55	98	68	95	109	130	53	86	319	30	224	56
8	153	111	63	100	108	104	90	82	198	52	342	56
9	77	116	70	95	109	106	71	91	202	69	425	72
10	84	117	71	100	106	120	57	91	181	51	205	104
11	81	114	67	105	116	123	54	96	213	144	150	64
12	78	122	64	115	115	124	65	80	151	153	222	48
13	60	115	66	122	116	129	60	78	144	81	185	55
14	62	116	70	122	93	100	65	82	125	34	140	49
15	68	117	75	110	101	93	61	82	128	32	143	46
16	58	109	85	110	102	111	58	77	121	64	196	53
17	64	108	95	110	119	89	66	77	122	56	143	46
18	61	114	95	120	119	103	66	68	99	46	135	46
19	62	113	80	130	91	98	117	67	89	88	127	47
20	182	110	70	110	88	114	79	75	96	360	114	48
21	97	112	65	90	93	114	80	63	89	240	95	45
22	78	119	70	95	101	109	85	60	108	112	91	42
23	89	103	70	105	106	89	242	93	86	118	104	65
24	78	101	80	105	99	103	96	80	72	93	111	61
25	72	104	75	97	101	90	96	64	56	262	97	64
26	68	105	80	85	101	93	94	53	52	248	97	62
27	68	102	85	100	89	70	88	60	53	143	107	58
28	82	95	95	99	99	71	91	63	56	125	138	57
29	83	89	90	107	---	61	89	72	51	123	251	65
30	80	98	80	92	---	73	222	49	44	115	81	81
31	67	---	80	101	---	67	---	46	---	102	58	---
TOTAL	2877	3153	2456	3230	2904	3093	2606	2610	4392	3213	6989	2713
MEAN	92.8	105	79.2	104	104	99.8	86.9	84.2	146	104	225	67.1
MAX	349	122	103	130	119	130	242	391	1200	360	1260	238
MIN	55	77	63	85	88	61	53	46	44	30	58	42
AC-FT	5710	6250	4870	6410	5760	6130	5170	5180	8710	6370	13860	3390

CAL YR 1990 TOTAL 43691 MEAN 120 MAX 1170 MIN 11 AC-FT 86660
WTR YR 1991 TOTAL 39536 MEAN 108 MAX 1260 MIN 30 AC-FT 78420

07106000 FOUNTAIN CREEK NEAR FOUNTAIN, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1987 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1987 to current year.

WATER TEMPERATURE: November 1987 to current year.

pH: November 1987 to current year.

DISSOLVED OXYGEN: November 1987 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and mean water temperature, pH and dissolved oxygen data available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,560 microsiemens, Mar. 13, 1988; minimum, 141 microsiemens, Aug. 8, 1991.

pH: Maximum, 8.5 units, July 15, Sept. 4, 1991; minimum 7.3 units, Apr. 2, 8, July 20, 1991.

WATER TEMPERATURE: Maximum, 31.8°C, July 9, 1990; minimum, 0.0°C, on many days during winter months.

DISSOLVED OXYGEN: Maximum, 12.6 mg/L, Dec. 20, 1987; minimum, 4.0 mg/L, Apr. 13, July 27, 1988.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,190 microsiemens, May 30, July 17-18; minimum, 141 microsiemens, Aug. 8.

pH: Maximum, 8.5 units, July 15, Sept. 4; minimum, 7.3 units, Apr. 2, 8, July 20.

WATER TEMPERATURE: Maximum, 30.6°C, July 17, 20; minimum, 0.0°C, on many days during winter months.

DISSOLVED OXYGEN: Maximum, 10.7 mg/L, Dec. 15, 18, and Jan. 25; minimum, 4.9 mg/L, Aug. 27.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1010	1020	994	---	982	953	926	---	1100	---	---	---
2	897	---	985	---	1000	953	---	1100	1000	---	---	---
3	608	---	1010	---	---	950	---	848	788	1010	---	---
4	936	1030	1020	---	---	944	---	759	800	---	---	408
5	1010	979	1030	---	---	962	931	---	850	---	---	---
6	1050	---	1040	---	---	923	953	---	---	---	---	---
7	1060	---	1100	---	---	938	989	---	392	---	---	859
8	807	966	1110	---	985	965	---	---	---	---	564	917
9	878	939	1090	1040	993	946	---	965	---	---	---	913
10	950	950	1060	1010	971	937	---	941	---	819	---	---
11	944	954	1080	992	905	942	1010	831	---	342	---	---
12	961	---	1100	1010	898	956	999	---	---	298	---	---
13	967	---	1070	---	912	963	972	---	---	---	---	---
14	960	---	1090	1030	933	938	980	---	---	---	---	---
15	963	---	---	975	967	950	990	---	---	---	---	---
16	1000	---	1100	989	---	951	---	---	---	---	---	---
17	1010	---	1050	1000	---	977	---	918	---	---	---	---
18	1020	---	1040	1000	---	934	---	952	769	1100	---	---
19	1020	977	---	990	---	942	---	---	713	---	---	1040
20	---	---	---	971	---	985	957	---	708	721	---	1040
21	---	---	---	1040	---	966	964	917	682	---	---	1050
22	---	---	---	992	995	978	948	953	---	---	---	1070
23	---	---	---	987	1010	938	---	857	---	---	---	988
24	---	---	---	995	---	923	926	863	---	861	856	971
25	1000	---	---	1020	---	950	904	888	---	798	914	967
26	1000	---	---	1020	957	944	906	950	---	609	925	994
27	1010	---	---	989	970	972	912	941	---	684	786	1030
28	---	---	---	979	967	983	910	976	---	---	738	1050
29	1020	---	---	---	---	969	916	994	---	---	---	1020
30	1020	1000	---	1010	---	922	---	1070	---	---	---	957
31	1020	---	---	996	---	917	---	1090	---	---	---	---
MEAN	---	---	---	---	---	951	---	---	---	---	---	---

07106000 FOUNTAIN CREEK NEAR FOUNTAIN, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	---	---	12.6	8.5	8.5	.0	.0	.0	---	---	13.1	2.4
2	---	---	12.3	5.0	4.9	.0	.2	.0	---	---	11.4	3.1
3	---	---	8.0	3.9	5.1	.0	---	---	---	---	14.1	1.0
4	21.7	9.6	12.1	4.6	8.0	.0	---	---	---	---	12.1	3.4
5	20.4	9.9	13.0	5.6	8.9	.0	---	---	---	---	13.1	6.0
6	20.1	10.4	6.9	4.1	7.4	.0	---	---	---	---	11.1	3.0
7	11.9	9.2	8.2	4.8	7.9	.0	---	---	---	---	11.4	3.0
8	9.2	6.4	9.3	4.0	9.3	.0	---	---	9.3	1.3	12.4	1.0
9	15.4	6.0	10.8	3.5	9.1	.0	3.8	---	11.6	2.9	12.4	.0
10	17.7	8.4	13.3	4.3	10.3	.0	7.1	.2	10.7	1.0	14.1	2.0
11	16.5	7.6	13.6	4.2	10.6	.0	7.3	.2	11.5	1.2	14.4	4.1
12	16.8	5.6	14.7	5.7	8.0	.0	7.7	.0	9.0	1.1	14.1	3.0
13	17.7	6.5	13.6	5.5	4.8	3.7	6.8	1.5	7.9	2.0	14.1	1.1
14	16.6	5.6	14.6	5.3	7.4	.0	7.6	2.4	10.9	.4	8.4	2.1
15	18.6	7.8	14.0	5.5	4.6	.0	7.2	.0	11.0	.6	8.4	3.0
16	17.9	8.2	10.2	6.1	7.5	.0	6.4	1.5	---	---	6.4	3.0
17	14.7	7.5	13.5	5.9	6.2	.0	7.4	.0	---	---	14.0	1.0
18	13.1	7.2	12.4	5.7	6.2	.0	7.1	.0	---	---	16.1	2.0
19	17.2	8.0	12.8	6.0	.3	.0	8.1	.0	---	---	15.4	3.0
20	11.2	6.2	10.9	6.0	.1	.0	4.7	.0	---	---	15.0	3.0
21	13.9	5.9	10.3	3.9	.0	.0	4.5	.0	12.9	---	10.6	3.1
22	16.4	5.8	9.7	3.1	.1	.0	5.5	.0	10.1	2.0	12.4	4.0
23	15.6	7.3	11.6	3.8	.3	.0	6.3	.0	9.6	2.5	15.4	2.0
24	15.1	5.2	13.2	3.3	1.4	.0	4.7	.0	6.0	.9	16.4	3.0
25	16.8	6.2	12.5	5.1	1.5	.0	3.6	.0	10.1	.0	15.1	5.0
26	16.2	6.9	11.4	3.2	1.2	.0	4.1	.0	11.1	.0	17.1	4.0
27	16.0	8.0	8.7	.0	1.4	.0	5.6	.0	11.4	.0	15.1	4.0
28	16.8	6.7	7.6	.0	1.5	.0	6.6	.0	7.6	1.4	16.0	3.0
29	17.6	6.9	9.0	.0	.0	.0	2.4	.0	---	---	10.1	2.0
30	17.1	7.7	10.2	.0	.1	.0	6.1	.0	---	---	15.1	.0
31	14.6	7.3	---	---	3.5	.0	8.6	.0	---	---	17.1	3.0
MONTH	---	---	14.7	.0	10.6	.0	---	---	---	---	17.1	.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	19.1	4.0	---	5.0	24.5	13.0	27.8	15.5	28.0	16.5	25.9	14.4
2	10.1	6.4	19.2	---	22.9	11.6	29.1	16.5	27.6	17.1	26.5	14.8
3	17.0	4.0	20.3	6.0	21.1	11.8	29.6	16.5	19.2	17.5	24.3	15.8
4	18.4	5.0	17.0	5.9	27.2	11.3	29.9	16.0	21.3	16.5	21.8	14.7
5	20.4	6.1	17.5	5.3	23.6	13.7	29.2	16.0	25.8	16.2	23.9	14.3
6	21.0	7.0	19.5	7.4	17.7	14.7	28.4	16.0	25.5	16.9	21.6	15.8
7	14.4	8.0	18.7	9.6	19.7	13.5	27.6	16.4	26.5	15.6	24.2	14.5
8	15.1	7.0	22.9	8.3	23.6	13.7	27.8	16.3	25.7	15.7	23.4	13.8
9	17.4	4.0	20.9	10.7	22.8	15.0	29.6	16.6	25.0	16.2	24.4	13.4
10	16.4	4.0	23.0	10.4	24.1	14.4	28.5	16.4	25.2	14.6	23.2	16.3
11	16.4	6.0	24.0	12.4	24.7	14.4	26.1	18.0	26.7	15.0	25.3	14.7
12	16.0	4.0	22.8	9.5	23.6	15.1	28.5	16.1	24.1	17.5	20.3	14.8
13	16.0	1.4	22.5	9.4	23.7	13.5	29.1	16.2	18.9	16.8	23.5	13.8
14	17.1	4.0	22.4	9.7	22.5	15.0	28.0	16.1	26.8	16.2	24.0	12.1
15	18.1	4.0	21.4	9.8	24.1	14.5	29.4	15.8	26.8	16.0	22.3	12.6
16	18.4	5.1	18.1	9.6	24.3	14.4	29.8	16.7	27.5	16.4	22.3	11.6
17	20.0	6.0	24.5	9.6	26.3	13.2	30.6	17.1	27.5	15.9	23.2	11.7
18	20.0	9.0	24.8	13.2	27.0	14.1	30.4	17.6	26.3	16.5	---	12.1
19	18.0	7.0	23.7	12.6	25.4	15.5	30.4	18.3	23.7	16.4	20.5	10.9
20	13.4	8.0	20.5	12.6	27.0	14.4	30.6	17.2	24.9	15.2	22.4	10.3
21	18.1	8.0	22.3	12.4	27.3	14.7	25.0	17.4	27.7	15.1	23.7	11.1
22	17.4	6.0	26.4	12.4	21.8	16.6	22.7	17.8	25.4	15.5	21.1	10.8
23	14.1	8.0	23.7	12.9	26.8	16.2	22.7	16.7	26.0	14.9	21.8	8.8
24	22.1	6.1	20.4	12.0	28.7	17.6	21.3	15.6	27.0	15.1	20.8	8.8
25	19.4	8.0	25.8	10.9	26.2	14.4	24.4	15.5	28.2	15.6	21.8	9.6
26	14.1	6.1	26.4	12.0	22.7	14.2	25.0	15.5	28.5	16.0	22.3	10.3
27	17.1	3.1	26.4	12.5	27.9	14.1	24.5	13.8	28.7	16.9	21.4	11.1
28	15.1	4.0	25.4	13.3	28.4	16.1	28.2	15.4	27.5	17.0	21.8	10.7
29	17.1	5.0	26.1	12.4	25.6	15.9	28.6	16.2	25.7	16.7	22.6	11.2
30	17.0	3.1	25.6	11.7	28.2	16.2	25.8	15.7	27.5	15.9	18.2	12.3
31	---	---	26.5	12.5	---	---	27.5	16.1	26.1	15.6	---	---
MONTH	22.1	1.4	---	---	28.7	11.3	30.6	13.8	28.7	14.6	---	8.8

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OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	8.9	8.2	9.6	8.4	---	---	10.5	8.2	9.3	6.4
2	---	---	9.4	8.2	10.4	8.8	---	---	10.4	7.9	9.0	7.2
3	---	---	9.9	8.7	10.4	8.2	---	---	10.2	8.2	9.8	6.1
4	8.7	6.8	9.9	7.9	10.5	7.6	---	---	9.7	7.8	8.8	6.4
5	8.7	6.9	9.4	7.5	10.1	8.0	---	---	10.2	8.2	7.8	6.4
6	8.4	6.9	9.9	8.7	10.2	8.7	---	---	9.8	7.9	8.8	6.8
7	8.8	8.2	10.2	8.7	10.5	8.3	---	---	9.5	7.8	8.5	6.8
8	9.5	8.7	10.2	8.5	10.4	8.1	---	---	10.1	8.0	9.4	6.4
9	9.8	7.6	10.6	8.3	9.6	---	---	---	9.6	7.6	9.7	6.6
10	9.4	7.4	10.0	7.8	10.1	8.0	10.1	8.3	10.2	7.6	8.9	5.7
11	9.0	7.5	9.7	7.7	10.1	8.0	10.2	8.4	9.8	7.7	8.0	5.6
12	9.1	7.4	9.8	7.6	9.9	---	10.2	8.0	10.1	7.7	8.5	5.7
13	9.1	7.3	9.6	7.6	9.5	---	9.5	8.0	9.5	7.8	9.0	5.6
14	9.1	7.7	9.5	7.3	10.5	8.4	9.1	7.9	9.5	7.7	8.6	6.4
15	9.2	7.3	9.4	7.4	10.7	8.6	9.9	7.9	10.3	7.6	8.6	7.0
16	9.0	7.5	9.4	8.4	10.6	8.6	9.6	7.9	9.0	7.5	8.2	7.2
17	8.9	7.9	9.5	7.6	10.4	9.0	10.3	8.6	8.8	7.3	8.9	---
18	9.6	8.1	9.2	7.6	10.7	---	10.2	8.4	9.2	7.4	8.1	---
19	9.5	7.9	9.2	7.4	10.2	8.0	10.1	8.2	9.9	8.0	7.4	---
20	9.9	8.9	9.0	7.8	---	---	10.3	9.1	9.6	7.6	7.8	---
21	10.5	8.2	9.7	8.1	---	---	10.4	9.2	---	---	---	---
22	10.2	7.8	10.3	8.2	---	---	10.1	8.5	9.6	7.7	8.2	6.1
23	9.6	8.0	9.5	7.8	---	---	10.6	9.0	9.4	7.8	9.1	5.9
24	9.7	8.3	---	---	---	---	10.5	9.1	10.1	---	8.7	5.5
25	9.8	7.7	---	---	---	---	10.7	8.2	10.1	---	8.2	5.7
26	9.7	7.5	---	---	---	---	10.4	---	10.4	7.4	8.4	5.4
27	9.2	7.6	---	---	---	---	10.3	7.9	10.4	7.3	7.6	5.5
28	9.4	8.0	---	---	---	---	10.4	---	9.8	8.0	8.5	5.8
29	9.3	7.6	---	---	---	---	10.4	---	---	---	9.4	6.8
30	9.2	7.6	10.0	7.7	---	---	10.2	---	---	---	9.7	5.9
31	9.3	7.8	---	---	---	---	10.5	---	---	---	9.2	5.7
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.0	5.5	9.0	6.6	8.3	7.0	7.0	5.9	7.1	5.8	7.3	5.6
2	7.7	5.8	8.5	7.1	7.7	6.6	6.8	5.7	---	---	7.5	5.7
3	8.8	6.0	9.2	6.9	7.6	6.2	---	---	---	---	7.4	5.8
4	8.6	5.6	9.4	7.4	8.0	5.9	---	---	---	---	7.6	6.8
5	---	---	9.4	7.4	7.3	5.7	---	---	---	---	7.5	6.2
6	---	---	8.7	6.9	8.4	6.1	---	---	---	---	6.9	6.2
7	---	---	7.9	6.4	8.2	---	---	---	---	---	7.4	6.2
8	---	---	8.1	6.4	---	---	---	---	---	---	7.4	6.0
9	8.8	6.0	7.5	6.5	---	---	---	---	---	---	7.5	6.0
10	8.4	---	7.8	6.6	---	---	---	---	---	---	7.0	6.3
11	---	---	7.3	6.4	---	---	---	---	---	---	7.3	6.1
12	8.4	5.6	8.1	6.7	---	---	---	---	---	---	7.5	6.8
13	8.9	---	8.5	6.8	7.1	5.9	---	---	---	---	7.6	6.4
14	8.2	---	8.1	6.5	7.3	6.3	---	---	---	---	7.9	6.4
15	---	---	8.5	6.4	7.4	6.1	---	---	---	---	7.9	6.6
16	---	---	8.4	6.9	7.4	5.9	---	---	---	---	7.9	6.5
17	---	---	8.4	6.9	7.4	6.0	---	---	7.6	6.1	8.1	6.7
18	---	---	8.7	7.1	7.4	6.1	7.6	5.4	7.5	6.2	---	---
19	---	---	8.2	6.8	7.5	6.2	6.8	5.0	7.2	6.6	8.0	6.8
20	---	---	8.7	6.8	7.6	6.1	6.6	---	7.6	6.3	8.2	6.7
21	---	---	8.8	6.6	7.6	6.0	6.9	---	7.3	5.4	8.0	6.6
22	---	---	9.0	6.8	7.2	6.0	6.7	---	7.6	5.9	8.3	7.1
23	---	---	---	---	7.0	5.8	7.2	---	7.2	5.7	8.5	6.5
24	---	---	---	---	6.9	5.6	7.3	6.6	7.6	6.4	8.4	6.6
25	---	---	8.4	6.7	7.3	6.0	7.3	5.9	7.3	5.9	8.1	6.4
26	8.4	6.8	8.4	6.6	7.3	6.2	6.8	5.7	7.1	5.5	8.0	6.4
27	9.3	6.4	---	---	7.2	5.7	7.2	5.7	6.7	4.9	7.9	6.5
28	9.2	6.4	---	---	6.9	5.6	7.0	5.6	6.8	5.3	8.0	6.4
29	8.6	6.0	---	---	6.6	5.7	7.1	5.7	7.2	5.9	7.7	6.2
30	9.2	6.0	---	---	6.8	5.8	7.2	5.8	7.0	5.2	7.4	6.2
31	---	---	8.5	6.7	---	---	7.3	5.8	6.9	5.6	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07106300 FOUNTAIN CREEK NEAR PINON, CO

LOCATION.--Lat 38°26'50", long 104°35'28", in NE¼NE¼ sec.31, T.18 S., R.64 W., Pueblo County, Hydrologic Unit 11020003, near left bank on downstream side of county road bridge, 1.2 mi northeast of Pinon, and 3.2 mi upstream from Steele Hollow Creek.

DRAINAGE AREA.--849 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1973 to current year.

REVISED RECORDS.--WDR CO-80-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 5,005 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 23, 1976, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 20-31, and Jan. 2. Records fair except for estimated daily discharges, and discharges above about 1,000 ft³/s, which are poor. Natural flow of stream affected by storage reservoirs, power developments, transbasin and transmountain diversions municipal use, diversions upstream from station for irrigation of about 10,000 acres and municipal use, and return flow from irrigated areas. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--18 years, 95.7 ft³/s; 69,330 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/s, May 8, 1980, gage height, 7.05 ft, from rating curve extended above 7,300 ft³/s; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,880 ft³/s at 1000 June 6, gage height, 4.90 ft; minimum daily, 5.6 ft³/s, July 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	71	112	110	98	100	86	132	12	26	69	26
2	59	85	108	120	101	96	87	33	17	22	235	24
3	441	107	82	112	106	97	121	26	50	16	821	70
4	78	110	87	91	108	103	99	25	55	34	520	261
5	45	116	71	93	101	105	68	295	31	20	179	131
6	51	99	77	107	106	114	53	100	1200	10	174	98
7	56	86	65	108	116	141	43	83	496	6.3	221	70
8	116	117	62	99	107	103	53	68	289	6.7	143	47
9	99	130	65	115	110	101	68	64	228	34	508	40
10	57	130	71	112	111	102	51	58	163	12	205	77
11	56	130	75	108	117	99	42	70	205	97	127	77
12	56	133	74	113	122	94	45	62	158	161	116	42
13	53	126	84	149	117	91	51	62	152	69	229	32
14	57	115	84	128	99	92	62	63	127	35	112	25
15	63	114	69	116	103	87	50	50	128	14	100	20
16	48	104	75	126	104	99	43	59	122	5.6	161	23
17	58	107	87	114	102	100	29	57	135	10	140	18
18	56	106	111	118	93	93	32	48	102	8.8	110	14
19	51	110	105	115	96	95	87	47	78	49	110	20
20	96	110	85	122	94	94	76	37	96	59	98	22
21	60	102	70	107	93	88	87	35	98	368	81	22
22	53	115	70	117	95	89	73	22	105	122	70	13
23	64	123	75	105	91	86	195	39	123	138	78	18
24	69	128	80	105	91	80	92	50	81	78	79	29
25	64	121	75	107	88	93	84	36	57	83	68	27
26	56	124	90	105	97	61	71	26	49	312	64	25
27	58	121	95	111	93	63	67	29	42	130	69	28
28	55	111	95	119	97	57	60	28	43	99	57	34
29	62	105	85	103	---	59	57	29	45	89	228	43
30	60	115	85	98	---	84	112	23	37	76	63	54
31	56	---	95	93	---	88	---	16	---	67	30	---
TOTAL	2296	3371	2564	3446	2853	2854	2144	1772	4524	2257.4	5265	1430
MEAN	74.1	112	82.7	111	102	92.1	71.5	57.2	151	72.8	170	47.7
MAX	441	133	112	149	122	141	195	295	1200	368	821	261
MIN	43	71	62	91	88	57	29	16	12	5.6	30	13
AC-FT	4550	6690	5090	6840	5660	5660	4250	3510	8970	4480	10440	2840

CAL YR 1990 TOTAL 35334.8 MEAN 96.8 MAX 840 MIN 4.4 AC-FT 70090
WTR YR 1991 TOTAL 34776.4 MEAN 95.3 MAX 1200 MIN 5.6 AC-FT 68980

07106300 FOUNTAIN CREEK NEAR PINON, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD---July 1976 to December 1983, December 1990 to September 1991.

WATER-QUALITY DATA, DURING PERIOD DECEMBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, UM-MF (COLS./100 ML)	STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS-SOLVED (MG/L AS CA)
DEC 14...	1230	97	1220	8.4	6.0	9.8	9.2	200	210	97
MAR 08...	1230	104	1090	8.2	9.5	9.1	E28	K40	200	83
JUN 28...	1410	46	1130	8.4	29.0	6.0	1.9	200	170	96
SEP 06...	1435	101	888	8.3	22.0	6.9	3.9	1800	K2400	74

DATE	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	ALKALINITY LAB (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITROGEN, NITRITE (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS ORTHO TOTAL (MG/L AS P)
DEC 14...	31	187	330	46	1.7	126	0.11	5.8	0.37	1.1	1.3
MAR 08...	25	**	290	58	1.8	260	0.10	5.4	1.7	3.7	1.8
JUN 28...	28	190	340	51	**	83	0.02	3.1	0.04	1.3	0.94
SEP 06...	23	**	270	36	**	411	0.04	3.2	0.05	0.80	0.76

DATE	TIME	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	CHROMIUM, HEXAVALENT, DIS-SOLVED (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)
DEC 14...	1230	<1	<1	1	<1	<1	8	3	3400
MAR 08...	1230	<1	<1	6	<1	<1	15	3	7600
JUN 28...	1410	<1	<1	2	<1	<1	5	3	2200
SEP 06...	1435	<1	<1	8	<1	<1	15	3	13000

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS-SOLVED (UG/L AS MN)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC 14...	14	7	<1	150	17	5	3	30	19
MAR 08...	31	14	<1	280	50	11	4	60	15
JUN 28...	8	9	<1	90	13	6	4	20	10
SEP 06...	15	**	<1	**	11	11	3	**	10

E Estimated.

K Based on non-ideal colony count.

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

07106300 FOUNTAIN CREEK NEAR PINON, CO--Continued

MISCELLANEOUS FIELD MEASUREMENTS, DURING PERIOD DECEMBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
OCT 1990					JUN 1991				
05...	1120	52	1150	15.0	03...	1405	57	1100	24.0
NOV					07...	1240	379	675	19.0
01...	1255	82	1170	10.5	11...	1405	187	740	24.0
14...	1005	120	1070	6.5	24...	1525	70	1010	28.5
DEC					JUL				
03...	1120	105	1110	0.0	03...	0940	26	1170	21.0
12...	0955	72	1200	3.0	08...	1155	6.7	1390	24.0
JAN 1991					12...	1555	113	760	27.0
02...	1305	142	1130	0.0	16...	1415	14	1220	32.5
14...	0950	121	1080	0.0	24...	1215	86	935	18.5
FEB					26...	1205	225	605	21.5
21...	1155	107	1080	7.0	AUG				
MAR					06...	1150	258	630	22.5
20...	1225	110	1100	11.0	09...	1155	396	480	20.5
APR					12...	1145	120	930	24.0
03...	1215	103	970	14.0	22...	1245	82	1000	25.5
17...	1105	30	1200	12.0	SEP				
MAY					06...	1130	110	860	20.0
03...	1140	32	1200	16.5	16...	1335	39	1100	22.5
08...	1520	72	1090	23.5	25...	1235	38	1150	20.0
21...	1125	47	1090	18.0					
23...	1430	48	1110	25.0					

07106500 FOUNTAIN CREEK AT PUEBLO, CO

LOCATION.--Lat 38°17'16", long 104°36'02", in SE¼SW¼ sec.19, T.20 S., R.64 W., Pueblo County, Hydrologic Unit 11020003, on left bank at upstream side of bridge on U.S. Highway 50 at Pueblo and 2.6 mi upstream from mouth.

DRAINAGE AREA.--926 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1922 to September 1925, October 1940 to September 1965, February 1971 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WDR CO-79-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 4,705 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1711 or 1731 for history of changes prior to Oct. 1, 1940, and WSP 1921 for changes prior to Sept. 30, 1965. Feb. 1, 1971, to Sept. 30, 1976, water-stage recorder at site 1.4 mi upstream at datum 4,725.30 ft, National Geodetic Vertical Datum of 1929 (unadjusted).

REMARKS.--Estimated daily discharges: Dec. 20 to Jan. 9. Records fair except for estimated daily discharges and Jan. 25 to Feb. 21, which are poor. Natural flow of stream affected by storage reservoirs, power developments, transbasin and transmountain diversions for municipal use, diversions for irrigation of about 14,000 acres upstream from station and municipal use, and return flow from irrigated areas.

AVERAGE DISCHARGE.--48 years (water years 1923-25, 1941-65, 1972-91), 72.8 ft³/s; 52,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,000 ft³/s, June 17, 1965, gage height, 19.0 ft, from floodmarks, site and datum then in use, from rating curve extended above 400 ft³/s, on basis of contracted-opening measurement of peak flow; no flow at times many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903, that of June 17, 1965. Flood of June 4, 1921, reached a discharge of 34,000 ft³/s, by slope-area measurement. Flood of May 30, 1935, reached a discharge of 35,000 ft³/s, by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,220 ft³/s at 1600 June 6, gage height, 6.31 ft; minimum daily, 8.9 ft³/s, July 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	77	129	108	116	139	66	195	13	13	60	37
2	54	84	132	120	125	113	56	72	14	31	63	43
3	325	86	133	120	132	119	101	46	25	51	1050	72
4	87	102	118	108	137	121	98	52	49	34	840	265
5	66	107	120	100	127	123	70	374	38	42	238	163
6	58	100	108	115	121	121	59	201	937	19	396	100
7	53	96	103	130	113	132	50	121	485	10	226	59
8	67	109	97	132	118	116	48	102	353	17	119	37
9	126	128	100	128	114	108	67	92	221	27	531	30
10	83	153	111	140	113	87	41	66	180	22	189	47
11	66	139	94	131	97	83	34	60	219	105	130	88
12	77	130	77	114	129	76	56	60	178	167	118	48
13	76	128	83	143	120	78	56	44	167	74	227	43
14	67	113	102	148	106	82	70	54	140	46	153	29
15	68	114	95	133	109	92	60	58	127	22	117	17
16	65	108	82	137	100	107	41	69	134	8.9	186	29
17	64	110	108	131	111	110	47	65	144	14	160	35
18	61	114	124	129	109	117	44	56	111	30	166	20
19	63	117	144	140	121	121	78	48	84	35	150	28
20	79	123	90	150	123	109	91	47	95	54	99	26
21	105	138	70	135	120	99	88	49	82	514	89	28
22	85	138	70	131	130	126	63	56	77	194	78	26
23	77	133	75	106	131	112	133	35	113	201	80	17
24	76	138	80	108	129	106	136	83	72	110	80	36
25	79	133	75	120	134	105	95	79	51	94	65	37
26	74	135	80	120	138	73	81	68	45	252	60	23
27	68	150	90	97	134	77	72	52	40	122	74	27
28	63	141	95	83	145	71	70	50	41	98	66	30
29	65	153	90	83	---	51	86	30	35	95	272	33
30	75	132	85	89	---	57	82	26	24	73	101	48
31	75	---	85	105	---	77	---	17	---	62	42	---
TOTAL	2503	3629	3045	3734	3402	3108	2139	2427	4294	2636.9	6225	1521
MEAN	80.7	121	98.2	120	121	100	71.3	78.3	143	85.1	201	50.7
MAX	325	153	144	150	145	139	136	374	937	514	1050	265
MIN	53	77	70	83	97	51	34	17	13	8.9	42	17
AC-FT	4960	7200	6040	7410	6750	6160	4240	4810	8520	5230	12350	3720

CAL YR 1990 TOTAL 36008.7 MEAN 98.7 MAX 1020 MIN 3.4 AC-FT 71420
WTR YR 1991 TOTAL 38663.9 MEAN 106 MAX 1050 MIN 8.9 AC-FT 76690

07106500 FOUNTAIN CREEK AT PUEBLO, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1981 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1985 to current year.

WATER TEMPERATURE: December 1985 to current year.

INSTRUMENTATION.--Water-quality monitor since December 1985.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and daily mean water temperature data are available in district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 3,460 microsiemens, July 7, 1989; minimum, 203 microsiemens, June 6, 1991.

WATER TEMPERATURE: Maximum, 33.1°C, July 17, 1991; minimum, 0.0°C, many days during the winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 2,080 microsiemens, July 3, 4; minimum, 203 microsiemens, June 6.

WATER TEMPERATURE: Maximum, 33.1°C, July 17; minimum, 0.0°C, many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT								
18...	1715	67	1420	8.5	13.0	8.3	2.0	K30
NOV								
15...	1625	113	1260	8.4	12.0	8.4	4.6	K50
DEC								
14...	1350	125	1410	8.5	7.0	10.2	4.5	90
JAN								
11...	1300	142	1250	8.4	4.0	10.9	E20	K140
FEB								
08...	1315	130	1240	8.3	8.0	9.8	20	260
MAR								
08...	1340	114	1240	8.4	11.5	8.9	E15	67
APR								
12...	1320	52	1380	8.5	12.0	8.6	2.1	70
MAY								
17...	1450	64	1370	8.5	25.5	7.2	2.8	70
JUN								
28...	1525	42	1440	8.5	30.0	6.4	0.6	58
JUL								
19...	1600	39	1380	8.4	32.0	5.9	4.5	K5900
AUG								
16...	1535	226	996	8.4	27.5	6.3	3.9	2000
SEP								
06...	1545	104	1020	8.4	23.0	6.9	2.4	2700

E Estimated.

K Based on non-ideal colony count.

07106500 FOUNTAIN CREEK AT PUEBLO, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)
OCT 18...	K180	145	0.03	5.0	0.02	0.70	0.80
NOV 15...	K220	192	0.10	6.7	0.13	1.2	1.3
DEC 14...	160	105	0.06	6.7	0.06	0.60	1.0
JAN 11...	800	690	0.07	6.0	1.7	2.4	1.4
FEB 08...	K52	246	0.06	6.4	0.91	2.9	1.5
MAR 08...	160	250	0.08	7.6	0.18	1.4	1.5
APR 12...	140	164	0.02	5.0	0.03	1.0	0.86
MAY 17...	200	140	0.02	5.0	0.02	1.1	0.81
JUN 28...	240	42	0.02	4.2	0.03	2.9	0.65
JUL 19...	K12000	2000	0.03	2.8	0.03	1.5	0.45
AUG 16...	6900	1290	0.05	3.7	0.02	0.60	0.71
SEP 06...	4700	954	**	3.5	<0.01	0.60	0.54

K Based on non-ideal colony count.

NOTE: ** Indicates analysis pending at time of publication, data available in district office.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	963	1390	1310	---	1310	1260	1310	1060	1670	1600	1360	1200
2	988	1390	1250	---	1300	1250	1300	1300	1630	1630	1330	1270
3	882	1400	1210	1330	1320	1260	1220	1320	1550	1730	541	---
4	1230	1370	1250	1350	1330	1260	1230	1350	1370	1720	535	---
5	1460	1390	1310	1360	1330	1270	1230	1090	1440	1550	768	---
6	1500	1410	1310	1310	1350	1220	1250	1210	1060	1710	903	1050
7	1560	1440	1300	1300	1350	---	1290	1390	757	1830	826	1180
8	1420	1390	1350	1290	1360	---	1310	1470	739	1880	863	1320
9	1050	1330	1350	1210	1370	---	1290	1480	909	1740	622	1390
10	1220	1320	1320	1230	1330	---	1360	1420	940	1640	897	1370
11	1290	1320	1350	1220	1290	---	1390	1420	---	1660	1020	1230
12	1330	1310	1360	1220	1240	---	1420	1420	969	1010	1110	1440
13	1350	1310	1350	1200	1220	---	1410	1430	976	1180	930	1540
14	1330	1290	1350	1180	1230	---	1400	1420	999	1410	1070	1580
15	1360	1250	1370	1220	1250	---	1390	1430	1000	---	1140	1590
16	1380	1250	1370	1230	1200	1250	1400	1440	1010	---	1080	1550
17	1420	1250	1340	1170	1200	1260	1450	1410	984	1730	1000	1530
18	1410	1240	1270	1240	1200	1280	1470	1410	1000	1610	1070	1540
19	1450	1260	1180	1210	1200	1280	1390	1430	960	1430	1170	1510
20	1400	1250	1270	1210	1200	1270	1320	1480	977	1230	1110	1520
21	1150	---	---	1200	1250	1290	1330	1460	952	712	1120	---
22	1260	---	---	1210	1270	1290	1350	1500	1020	922	1170	---
23	1290	---	---	1200	1270	1270	1270	1530	---	935	1180	---
24	1310	---	---	1220	1270	1280	1190	1380	---	1110	1170	1410
25	1330	---	---	1190	1280	1260	1330	1440	1310	1210	1190	1400
26	1360	1310	---	1330	1240	1260	1350	1490	1330	823	1210	1410
27	1370	1310	1220	1290	1250	1300	1340	1520	1350	946	1190	1350
28	1380	1290	1290	1280	1260	1340	1370	1530	1410	---	1210	1310
29	1380	1310	1500	1310	---	1340	1340	1520	1460	1160	956	1260
30	1380	1360	---	1350	---	1320	1370	1570	1480	1240	975	1190
31	1410	---	---	1320	---	1300	---	1660	---	1290	---	---
MEAN	1310	---	---	---	1270	---	1340	1420	---	---	---	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	23.2	12.9	12.8	8.1	7.3	1.7	2.0	.0	6.2	.0	13.2	2.8
2	19.1	12.4	13.5	5.6	2.9	.0	.9	.0	7.9	.0	10.6	3.1
3	17.0	8.4	7.0	3.4	1.9	.0	2.0	.3	7.1	.0	13.0	1.0
4	21.0	10.0	11.1	3.1	4.9	.0	1.5	.4	9.8	1.1	12.8	4.0
5	22.2	9.9	12.7	3.9	5.4	.1	1.6	.1	9.0	.0	14.3	6.2
6	20.6	10.4	6.2	2.3	6.3	.0	.9	.2	9.1	.0	9.9	1.3
7	13.3	10.1	8.5	1.2	5.5	.0	.8	.0	9.5	.0	12.1	3.3
8	10.1	7.3	8.4	.3	7.8	.0	1.8	.0	9.2	.3	12.2	.7
9	14.6	4.4	9.9	1.0	8.1	.0	1.9	.0	11.4	2.4	12.6	.6
10	17.9	5.8	12.2	2.7	8.1	.1	4.1	.0	10.1	.0	12.3	1.8
11	16.5	7.3	12.6	3.8	8.9	.4	4.3	.0	10.6	.1	15.0	4.2
12	17.7	7.3	12.8	3.5	7.8	2.3	5.2	.0	8.2	.1	14.8	3.4
13	17.5	6.8	12.3	3.6	5.0	3.4	5.4	.0	9.0	1.8	13.7	1.3
14	16.8	7.2	13.1	4.0	6.4	.0	5.0	.7	9.8	.0	7.9	3.3
15	17.7	6.4	12.9	4.9	2.4	.0	3.9	.0	9.9	.0	11.7	2.3
16	18.8	7.7	9.5	5.0	5.8	.0	5.0	.0	6.0	2.0	5.8	2.8
17	17.0	7.9	12.0	3.6	6.0	.1	3.7	.0	8.2	2.3	13.7	1.5
18	12.6	4.9	11.5	4.0	5.1	.0	4.6	.0	7.1	2.3	15.4	1.7
19	17.8	6.3	11.0	4.1	.4	.0	4.6	.0	9.9	.0	15.3	3.1
20	11.6	6.2	10.7	4.9	1.3	.0	4.1	.0	11.8	.0	14.3	3.9
21	12.7	3.8	9.8	3.4	1.6	.4	3.5	.0	12.1	.1	9.3	2.3
22	15.5	4.4	8.2	1.3	1.4	.0	2.4	.0	11.7	1.2	13.5	3.5
23	15.4	6.6	9.6	1.3	2.4	1.4	4.5	.0	8.5	1.5	15.9	2.5
24	14.7	7.2	11.4	3.7	2.1	.6	2.7	.0	6.0	.4	16.5	2.7
25	16.8	6.2	11.1	3.8	1.8	.0	1.7	.0	8.7	.0	13.6	4.9
26	17.3	6.6	10.9	4.5	2.4	.2	.5	.0	10.1	.0	14.9	5.2
27	15.8	7.9	9.6	1.9	2.6	.0	3.0	.0	11.1	.0	15.2	4.0
28	16.8	6.0	5.6	.0	2.0	.0	4.2	.0	7.3	.3	15.1	3.5
29	16.9	6.9	5.9	.0	1.9	.3	.3	.0	---	---	9.2	2.6
30	16.8	7.5	8.0	.1	1.1	.0	2.2	.0	---	---	14.7	2.3
31	13.4	8.0	---	---	1.6	.1	6.4	.0	---	---	16.8	2.4
MONTH	23.2	3.8	13.5	.0	8.9	.0	6.4	.0	12.1	.0	16.8	.6
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	18.1	3.2	21.1	6.8	23.5	13.4	24.7	17.8	32.2	17.3	28.0	14.4
2	10.1	6.3	20.8	7.9	20.8	10.9	21.7	17.7	29.6	17.0	29.6	15.0
3	16.6	3.5	22.3	6.6	26.6	10.1	30.8	---	22.0	15.0	26.4	15.6
4	18.7	4.4	14.3	9.0	27.7	11.8	32.1	15.7	23.4	18.0	22.8	16.3
5	21.0	6.1	17.3	7.4	24.8	13.4	31.6	16.3	28.0	17.8	23.9	15.1
6	22.2	7.0	20.5	8.3	20.5	14.9	31.4	16.8	26.2	17.4	23.3	16.3
7	14.3	7.4	21.1	10.1	23.6	12.1	26.6	18.2	25.6	17.2	27.5	14.0
8	14.1	6.9	24.5	9.0	---	---	30.9	18.1	27.7	15.7	26.9	13.9
9	18.9	4.3	23.6	10.6	---	---	31.0	18.7	23.3	17.8	26.7	14.0
10	17.1	4.1	---	---	24.5	---	30.2	18.0	26.7	16.4	26.3	17.0
11	16.5	6.1	25.2	12.4	---	---	25.8	18.3	28.4	16.5	27.7	15.9
12	16.5	4.8	24.6	9.5	26.8	---	27.7	17.5	29.0	19.2	22.0	15.5
13	15.0	2.0	22.5	9.5	26.3	12.3	29.8	16.4	---	---	26.4	12.5
14	18.1	5.5	24.4	9.7	24.0	16.0	30.5	16.4	---	---	24.4	12.6
15	17.8	4.5	22.2	10.1	26.1	15.7	29.6	16.6	29.8	---	23.7	12.1
16	14.6	6.8	---	---	26.8	9.7	---	---	27.8	16.3	25.6	13.0
17	18.4	7.2	25.5	---	27.2	11.5	33.1	---	28.7	17.5	25.3	12.1
18	16.7	9.6	---	---	---	---	32.7	18.1	25.7	16.1	16.0	12.7
19	18.4	8.1	---	---	---	---	32.8	18.5	26.4	16.8	21.3	12.1
20	17.7	8.8	21.0	---	---	---	31.2	16.7	28.4	16.6	22.5	11.1
21	18.2	9.1	22.2	12.9	---	---	23.5	18.8	29.0	16.8	25.0	11.7
22	16.9	8.1	24.9	10.5	---	---	23.8	16.0	29.4	11.4	22.8	11.2
23	18.1	9.2	22.1	10.5	---	---	25.1	17.8	28.3	15.6	23.2	9.7
24	21.7	7.8	22.9	11.1	---	---	22.1	16.6	28.8	14.7	22.1	8.5
25	17.3	8.5	26.0	9.7	24.5	---	25.9	16.2	29.3	15.9	23.7	9.1
26	16.5	6.7	25.6	11.5	22.0	14.0	24.9	16.0	29.9	16.5	23.9	10.2
27	15.5	3.5	27.4	12.1	24.8	15.8	23.7	14.4	30.6	16.8	22.9	8.9
28	14.9	5.1	24.0	12.4	24.8	18.2	29.7	16.0	30.3	16.1	23.0	10.5
29	17.9	5.4	24.5	12.2	23.7	18.2	31.0	17.0	25.0	15.9	22.7	10.2
30	16.4	3.3	---	---	22.3	18.2	30.4	16.0	28.8	16.4	20.4	13.2
31	---	---	26.2	13.7	---	---	30.7	16.9	27.6	16.9	---	---
MONTH	22.2	2.0	---	---	---	---	---	---	---	---	29.6	8.5

07108900 ST. CHARLES RIVER AT VINELAND, CO

LOCATION.--Lat 38°14'44", long 104°29'09", in NE¼SW¼ sec.6, T.21 S., R.63 W., Pueblo County, Hydrologic Unit 11020002, on right bank at right downstream end of downstream bridge on U.S. Highway 50C, 1.6 mi west of Vineland, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--474 mi².

PERIOD OF RECORD.--October 1978 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 4,581.58 ft above National Geodetic Vertical Datum of 1929, (Colorado Division of Highways benchmark).

REMARKS.--Estimated daily discharges: Dec. 21 to Jan. 10, Jan. 26 to Feb. 4. Records fair except those above 1,000 ft³/s, which are poor. Natural flow of stream affected by diversions upstream from station for irrigation of about 8,500 acres, and for industrial uses, and return flow from land irrigated by Bessemer Ditch. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--13 years, 39.5 ft³/s; 28,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,560 ft³/s, Aug. 11, 1982, gage height, 12.70 ft, from rating curve extended above 1,800 ft³/s; minimum daily, 0.25 ft³/s, Apr. 25, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1901, 56,000 ft³/s, at a site 5.0 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,480 ft³/s, at 2315 July 19, gage height, 9.49 ft from floodmark, from rating extended above 1,800 ft³/s; minimum daily, 4.1 ft³/s, Apr. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	24	19	19	14	9.0	6.3	6.9	4.6	5.1	5.6	21
2	21	25	18	18	14	8.4	6.4	5.2	5.0	5.7	5.5	20
3	20	27	15	17	13	8.3	6.4	4.8	5.4	5.7	8.0	23
4	17	28	16	16	12	8.1	7.2	4.4	5.0	17	510	46
5	16	24	17	17	11	7.9	7.7	5.0	4.2	8.4	186	20
6	16	26	18	16	11	8.5	7.3	5.5	210	5.5	42	23
7	13	27	15	15	11	8.9	6.9	5.0	69	5.1	24	20
8	13	24	17	16	11	8.8	7.0	6.1	34	22	19	17
9	14	26	20	14	10	8.3	6.3	4.2	14	8.2	19	13
10	16	26	24	16	10	8.0	6.3	5.4	12	5.3	63	14
11	16	24	22	17	9.6	7.9	5.4	5.2	11	4.6	50	13
12	16	24	19	16	9.6	7.3	4.7	5.7	10	4.9	62	12
13	17	25	19	18	8.9	6.7	4.8	7.6	8.5	6.1	108	13
14	15	27	18	18	11	7.1	5.1	4.8	8.3	7.5	48	12
15	15	27	16	16	9.5	13	4.3	4.7	7.6	6.2	58	11
16	15	26	17	17	9.6	16	5.5	5.6	7.2	5.5	185	14
17	14	25	21	15	10	25	4.1	6.7	7.1	4.8	197	12
18	13	25	18	15	9.4	20	4.5	6.2	7.1	4.3	50	11
19	13	25	16	16	8.7	6.9	4.7	5.6	5.8	289	57	11
20	15	25	14	17	7.1	7.0	4.4	6.1	24	142	116	10
21	22	24	13	14	8.4	6.5	4.7	6.4	8.3	61	69	10
22	18	25	11	15	8.4	6.7	4.7	7.7	7.7	61	49	9.6
23	17	24	12	15	8.9	6.4	11	7.2	8.1	16	44	9.8
24	19	23	13	16	9.1	6.2	5.1	10	6.8	50	40	10
25	23	24	13	14	8.8	6.0	4.7	10	6.4	59	37	8.8
26	23	24	12	13	9.3	6.0	5.1	8.1	5.8	23	36	9.2
27	24	23	14	14	8.7	5.8	5.7	5.8	5.4	19	34	8.2
28	25	22	16	14	8.6	6.3	6.2	5.4	5.4	11	32	7.7
29	26	18	15	12	---	6.7	6.8	5.9	5.0	8.8	30	7.6
30	25	18	16	13	---	6.2	5.6	5.8	5.2	12	27	7.6
31	25	---	18	14	---	6.2	---	4.9	---	6.4	23	---
TOTAL	570	735	512	483	280.6	270.1	174.9	187.9	523.9	890.1	2234.1	424.5
MEAN	18.4	24.5	16.5	15.6	10.0	8.71	5.83	6.06	17.5	28.7	72.1	14.1
MAX	28	28	24	19	14	25	11	10	210	289	510	46
MIN	13	18	11	12	7.1	5.8	4.1	4.2	4.2	4.3	5.5	7.6
AC-FT	1130	1460	1020	958	557	536	347	373	1040	1770	4430	842

CAL YR 1990 TOTAL 7229.6 MEAN 19.8 MAX 1040 MIN 2.9 AC-FT 14340
WTR YR 1991 TOTAL 7286.1 MEAN 20.0 MAX 510 MIN 4.1 AC-FT 14450

07109500 ARKANSAS RIVER NEAR AVONDALE, CO

LOCATION.--Lat 38°14'53", long 104°23'55", in NE¼SW¼ sec.1, T.21 S., R.63 W., Pueblo County, Hydrologic Unit 11020002, on right bank 15 ft downstream from bridge on Sixmile Rd., 0.3 mi upstream from Sixmile Creek, and 2.6 mi west of Avondale.

DRAINAGE AREA.--6,327 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1939 to September 1951, February 1965 to current year.

REVISED RECORDS.--WSP 1087: 1942. WSP 1311: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 4,509.53 ft above National Geodetic Vertical Datum of 1929. Prior to February 1965, at site 550 ft downstream at datum 1.37 ft, lower.

REMARKS.--Estimated daily discharges: Dec. 19 to Jan. 3. Records good except for estimated daily discharges, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation of about 123,000 acres and municipal use, and return flow from irrigated areas. Flow partly regulated by Pueblo Reservoir (station 07099350) since Jan. 9, 1974.

AVERAGE DISCHARGE.--20 years (water years 1940-51, 1966-73), 867 ft³/s; 628,100 acre-ft/yr, prior to completion of Pueblo Dam; 17 years (water years 1975-91), 948 ft³/s; 686,800 acre-ft/yr, subsequent to completion of Pueblo Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 50,000 ft³/s, June 18, 1965, gage height, 9.77 ft, from rating curve extended above 6,700 ft³/s, on basis of records for station near Pueblo and indirect measurements of peak flow on Fountain Creek at Pueblo, Chico Creek near North Avondale, and Arkansas River near North Avondale; minimum daily, 50 ft³/s, Apr. 2, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,940 ft³/s at 2400 June 6, gage height, 3.95 ft; minimum daily, 222 ft³/s, Apr. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	462	621	312	340	377	318	407	919	2250	1690	1240	599
2	535	662	304	330	380	300	456	832	2070	1700	675	534
3	862	741	300	320	370	290	509	777	1670	1760	1300	467
4	781	709	277	358	371	289	541	835	1330	1730	2250	841
5	600	739	281	815	417	288	559	983	1170	1810	1450	781
6	545	866	279	842	423	324	524	842	1750	1640	1480	703
7	534	945	275	848	430	326	445	739	1940	1390	1370	563
8	552	941	274	699	428	314	450	719	1770	1320	1160	499
9	654	948	273	619	425	314	512	652	1680	1470	1490	415
10	583	912	279	498	424	305	520	644	1980	1630	1680	423
11	541	937	284	483	426	296	512	535	2510	1830	1530	438
12	562	958	281	476	433	300	496	423	2760	2080	1430	390
13	566	964	284	472	431	308	487	420	3050	1730	2160	380
14	544	1010	288	470	415	283	478	452	3300	1470	2770	353
15	570	425	281	455	406	490	425	464	2950	1530	1720	323
16	642	347	281	441	386	538	432	568	2610	1480	1280	340
17	619	338	288	446	387	555	410	635	2640	1520	1480	350
18	697	340	299	437	388	485	417	655	2570	1600	1140	359
19	660	367	290	435	388	454	436	689	2400	1650	1250	339
20	588	367	270	428	386	526	346	704	2210	2050	1300	335
21	655	358	250	412	365	528	252	848	1970	2040	1290	313
22	660	340	250	400	357	525	239	1140	2030	1940	1130	299
23	786	332	250	678	347	517	222	1210	2340	1940	907	273
24	714	330	260	698	310	500	328	1660	2190	2000	748	278
25	724	327	290	665	316	519	233	2100	1980	1950	741	292
26	722	315	330	404	316	536	225	1390	1880	2010	708	289
27	728	318	340	392	336	521	305	1290	1840	1990	628	299
28	726	323	340	395	332	514	375	1440	2100	1870	566	319
29	712	319	310	395	---	466	393	1890	1920	1630	798	314
30	640	308	300	372	---	479	520	2170	1710	1490	722	318
31	643	---	330	367	---	453	---	2330	---	1490	663	---
TOTAL	19807	17407	8950	15390	10770	12861	12454	30955	64570	53430	39056	12426
MEAN	639	580	289	496	385	415	415	999	2152	1724	1260	414
MAX	862	1010	340	848	433	555	559	2330	3300	2080	2770	841
MIN	462	308	250	320	310	283	222	420	1170	1320	566	273
AC-FT	39290	34530	17750	30530	21360	25510	24700	61400	128100	106000	77470	24650

CAL YR 1990 TOTAL 279882 MEAN 767 MAX 4010 MIN 250 AC-FT 555100
WTR YR 1991 TOTAL 298076 MEAN 817 MAX 3300 MIN 222 AC-FT 591200

07109500 ARKANSAS RIVER NEAR AVONDALE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to October 1976, April 1979 to September 1980, December 1985 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1979 to September 1980, December 1985 to current year.

WATER TEMPERATURE: July 1979 to September 1980, December 1985 to current year.

pH: July 1979 to September 1980, August 1988 to current year.

DISSOLVED OXYGEN: July 1979 to September 1980, August 1988 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Water-quality data prior to December 1985 published in other reports. Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance, daily mean pH, daily mean water temperature, and daily mean dissolved oxygen data available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,380 microsiemens, Jan.24-25, 1980; minimum, 246 microsiemens, June 16, 1980.

WATER TEMPERATURE: Maximum, 31.5°C, Aug. 6, 1980; minimum, 0.0°C, many days during winters.

pH: Maximum, 9.1 units, Dec. 3, 1989; minimum, 7.4 units, May 13, 1980 and Aug. 16, 1989.

DISSOLVED OXYGEN: Maximum, 13.0 mg/L, Jan. 21, 1990 and Dec.15, 1990; minimum, 4.2 mg/L, Aug. 17, 1991.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,310 microsiemens, Nov. 24-25; minimum, 366 microsiemens, July 6.

WATER TEMPERATURE: Maximum, 27.4°C, Aug. 28; minimum, 0.0°C, many days during winter.

pH: Maximum, 9.0 units, Sept. 25-27; minimum, 7.5 units, many days.

DISSOLVED OXYGEN: Maximum, 13.0 mg/L, Dec. 15; minimum, 4.2 mg/L, Aug. 17.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	755	794	1120	1100	1030	1070	943	---	591	426	545	731
2	752	762	1090	1070	1020	1060	895	---	594	424	631	752
3	673	709	1070	1080	1030	1100	881	714	609	456	619	797
4	689	716	1100	1080	1030	1130	875	705	637	444	582	686
5	777	751	1070	924	967	1130	887	722	638	430	582	688
6	754	675	1070	914	950	1030	902	734	659	413	671	729
7	717	647	1070	914	923	1050	917	765	699	436	590	760
8	703	664	1110	996	945	1080	858	772	652	461	606	773
9	724	689	1120	984	977	1060	1140	783	641	471	572	---
10	754	729	1140	987	960	1070	1180	784	607	446	603	---
11	776	738	1150	1010	964	1090	890	822	577	429	570	---
12	767	747	1150	1020	949	1070	894	899	560	465	574	---
13	798	749	1140	1020	934	1060	850	893	549	459	560	---
14	768	753	1160	995	946	1090	917	767	534	469	521	871
15	797	1020	1130	985	939	883	893	755	536	453	579	860
16	758	1080	1170	995	964	852	947	723	511	454	652	875
17	717	1110	1150	984	959	856	958	746	520	436	704	880
18	688	1130	1140	997	957	907	947	752	470	445	607	860
19	735	1130	1100	1020	953	921	931	726	---	458	576	879
20	738	1140	1110	982	972	889	985	726	---	481	---	840
21	756	1150	1140	976	1000	858	1060	698	---	474	---	844
22	771	1140	1090	1010	988	874	947	659	---	548	---	848
23	712	1150	1080	832	979	885	967	646	---	505	708	887
24	720	1190	1080	798	1020	892	971	634	---	507	725	920
25	765	1170	1070	800	1040	896	1010	625	---	487	704	935
26	780	1170	1100	931	1040	879	---	639	---	503	714	956
27	755	1120	1110	971	1010	862	---	636	446	513	741	945
28	769	1110	1100	992	1000	854	---	627	418	526	770	927
29	784	1120	1070	944	---	859	---	606	427	522	700	933
30	819	1150	1100	944	---	852	---	601	433	531	702	948
31	796	---	1110	1030	---	888	---	594	---	524	714	---
MEAN	751	940	1110	977	980	968	---	---	---	471	---	---

ARKANSAS RIVER BASIN

07109500 ARKANSAS RIVER NEAR AVONDALE, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.1	8.0	8.2	7.9	8.2	7.8	7.8	7.8	7.9	7.8	8.1	---
2	8.1	8.0	8.3	7.8	8.1	7.9	7.8	7.8	7.9	7.8	---	---
3	8.2	7.9	8.2	7.8	8.1	7.9	7.9	7.8	7.9	7.8	---	---
4	8.2	8.1	8.2	7.9	8.2	7.9	7.9	7.8	7.9	7.8	---	---
5	8.2	8.1	8.2	7.9	8.1	7.9	7.9	7.8	7.9	7.8	---	---
6	8.2	8.0	8.1	7.8	8.1	7.9	8.0	7.9	7.9	7.8	---	---
7	8.3	8.1	8.2	7.9	8.2	7.8	8.0	7.9	7.9	7.8	---	---
8	8.2	8.1	8.1	7.9	8.0	7.7	7.9	7.8	7.9	7.8	8.2	---
9	8.2	8.1	8.1	7.9	8.1	7.7	7.9	7.8	7.9	7.7	8.3	7.9
10	8.2	8.0	8.1	7.9	8.1	7.7	7.9	7.8	8.0	7.8	8.2	7.7
11	8.2	8.1	8.1	7.9	8.0	7.7	7.9	7.7	7.9	7.7	8.3	7.6
12	8.2	8.1	8.1	7.9	8.1	7.6	7.9	7.7	7.9	7.7	8.4	8.1
13	8.2	8.1	8.1	7.8	8.0	7.7	7.9	7.8	7.9	7.7	8.5	8.0
14	8.3	8.1	8.0	7.8	8.1	7.7	7.8	7.8	7.9	7.7	8.4	8.0
15	8.3	8.1	7.9	7.7	8.0	7.8	7.9	7.8	8.1	7.7	8.2	8.1
16	8.2	8.0	8.1	7.7	8.1	7.7	7.9	7.8	8.1	7.9	8.2	8.1
17	8.3	8.0	8.0	7.9	8.1	7.7	8.0	7.9	8.1	7.9	8.3	8.1
18	8.3	8.0	8.1	7.9	8.1	7.8	8.1	7.8	8.1	7.9	8.3	8.1
19	8.3	8.0	8.1	7.8	8.0	7.8	7.9	7.9	8.0	7.7	8.3	8.0
20	8.2	8.0	8.1	7.8	8.0	7.9	8.0	7.9	8.1	7.7	8.3	8.1
21	8.2	8.0	8.2	7.8	8.0	7.9	7.9	7.9	8.1	7.7	8.4	8.1
22	8.2	8.0	8.2	7.9	7.9	7.6	7.9	7.9	8.1	7.7	8.4	8.1
23	8.2	7.9	8.2	7.9	7.9	7.8	8.0	7.9	8.0	7.6	8.4	8.1
24	8.2	8.0	8.2	7.9	7.9	7.8	8.0	7.9	8.0	7.6	8.5	8.1
25	8.2	8.0	8.2	7.8	7.9	7.8	8.0	7.9	7.9	7.5	8.5	8.0
26	8.3	7.9	8.2	7.8	7.9	7.8	7.9	7.9	7.9	7.5	8.5	8.0
27	8.3	8.0	8.2	7.8	7.9	7.8	8.0	7.8	7.9	7.5	8.4	7.9
28	8.3	7.9	8.2	7.9	7.8	7.8	8.0	7.9	7.9	7.6	8.5	7.9
29	8.3	7.9	8.2	7.9	7.9	7.8	8.0	7.9	---	---	8.5	7.9
30	8.3	7.9	8.2	7.9	7.8	7.7	8.0	7.9	---	---	8.6	8.0
31	8.2	7.8	---	---	7.8	7.8	8.0	7.8	---	---	8.6	7.9
MONTH	8.3	7.8	8.3	7.7	8.2	7.6	8.1	7.7	8.1	7.5	---	---
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.7	7.9	8.2	8.0	8.6	8.3	8.2	7.8	8.2	7.7	8.4	8.0
2	8.3	7.8	8.3	8.1	8.5	8.3	8.3	7.8	8.2	7.8	8.4	8.1
3	8.4	7.8	8.3	7.9	8.6	8.2	8.3	7.8	8.2	7.7	8.5	8.0
4	8.3	7.9	8.3	8.0	8.6	8.2	8.3	7.8	7.9	7.5	8.4	7.9
5	8.3	7.8	8.3	8.1	8.5	8.2	8.3	7.8	8.1	7.7	8.2	8.0
6	8.4	7.8	8.2	8.1	8.6	7.7	8.3	7.8	8.1	7.7	8.2	8.0
7	8.3	7.9	8.3	8.0	8.4	7.7	8.1	7.7	8.3	7.9	8.2	8.0
8	8.4	7.7	8.3	8.1	8.5	8.1	8.2	7.7	8.2	7.9	8.3	8.1
9	8.5	7.7	8.3	8.1	8.6	8.2	8.2	7.6	8.1	7.8	8.3	8.0
10	8.6	8.0	8.3	8.0	8.5	8.1	8.3	7.7	8.2	7.8	8.3	8.0
11	8.3	7.8	8.4	8.0	8.4	8.1	---	---	8.2	7.7	8.3	8.0
12	8.4	7.7	8.4	8.0	8.4	8.1	---	---	8.1	7.7	8.3	8.1
13	8.4	7.7	8.4	8.0	8.5	8.1	---	---	7.9	7.6	8.4	8.0
14	8.6	7.8	8.4	7.9	8.3	8.1	---	---	8.0	7.8	8.5	8.0
15	8.5	7.7	8.3	7.8	8.3	8.1	---	---	8.1	7.9	8.6	8.0
16	8.5	7.7	8.2	7.8	8.2	8.0	---	---	8.2	7.9	8.5	7.9
17	8.6	7.7	8.4	7.8	8.2	8.0	---	---	8.2	7.8	8.6	7.9
18	8.6	7.8	8.4	7.9	8.1	7.9	---	---	8.2	7.9	8.5	8.0
19	8.5	7.6	8.4	8.0	8.2	7.9	8.3	---	8.1	7.8	8.6	8.0
20	8.4	7.6	8.2	8.0	8.1	8.0	8.3	7.7	8.2	7.8	8.7	8.0
21	8.5	7.7	8.2	7.9	8.1	7.9	8.2	7.7	8.3	7.8	8.8	8.1
22	8.4	7.5	8.2	7.9	8.1	7.9	7.9	7.6	8.3	7.9	8.8	8.1
23	7.9	7.6	8.2	8.0	8.0	7.9	8.0	7.7	8.2	7.9	8.8	8.0
24	7.8	7.5	8.3	7.9	8.2	7.9	7.9	7.7	8.1	7.7	8.7	7.8
25	8.0	7.6	8.4	8.2	8.1	7.9	7.9	7.7	8.1	7.7	9.0	7.9
26	8.2	7.6	8.5	8.3	8.1	7.9	7.8	7.5	8.1	7.8	9.0	8.1
27	8.0	7.8	8.6	8.3	8.1	7.9	7.9	7.5	8.1	7.7	9.0	8.0
28	8.3	7.9	8.6	8.3	8.2	7.8	8.1	7.7	8.2	7.8	8.9	8.0
29	8.4	7.9	8.7	8.4	8.1	7.8	8.1	7.8	8.2	7.9	8.9	8.0
30	8.3	7.9	8.7	8.4	8.2	7.9	8.1	7.7	8.2	7.8	8.7	8.0
31	---	---	8.6	8.4	---	---	8.2	7.6	8.2	8.0	---	---
MONTH	8.7	7.5	8.7	7.8	8.6	7.7	---	---	8.3	7.5	9.0	7.8

07109500 ARKANSAS RIVER NEAR AVONDALE, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	21.9	16.5	12.6	10.5	6.9	4.0	.0	.0	5.2	.9	10.7	4.8
2	19.7	17.0	12.5	9.6	4.1	1.1	.8	.0	5.9	1.2	9.2	5.0
3	17.8	14.8	9.0	7.8	2.9	.1	1.7	.4	6.4	1.6	11.2	3.2
4	20.3	14.3	11.2	7.3	4.4	.0	1.9	.4	7.5	2.9	11.5	6.0
5	21.2	14.8	12.4	7.5	4.7	1.4	2.7	.0	6.4	2.0	13.0	7.9
6	19.9	15.2	10.2	6.9	5.7	2.6	2.5	.8	6.9	2.1	8.8	5.4
7	16.6	13.6	9.8	6.4	5.4	.8	3.1	1.2	7.0	2.4	10.8	5.4
8	13.6	11.9	9.8	6.3	6.6	1.7	4.0	.1	6.8	2.7	11.0	4.1
9	15.0	9.9	10.5	6.4	6.8	2.3	2.2	1.0	8.4	4.2	11.0	4.2
10	17.0	11.0	11.4	6.9	7.1	2.6	4.1	1.6	7.3	2.9	10.3	5.0
11	16.3	12.1	11.6	7.3	7.5	2.9	4.3	1.1	7.8	2.7	12.4	6.6
12	16.6	11.4	11.4	7.3	7.5	4.3	4.2	.2	6.7	2.9	12.6	5.6
13	16.8	11.5	11.1	7.0	6.1	5.2	5.5	2.5	7.1	3.8	12.2	4.9
14	15.9	11.5	11.5	7.1	6.2	2.9	4.9	3.4	7.4	2.4	7.9	5.3
15	16.7	10.8	12.0	7.5	3.6	.4	3.9	1.6	7.6	2.7	9.2	4.6
16	17.6	11.8	10.1	7.7	5.8	2.0	4.5	2.5	6.2	3.9	6.8	4.1
17	16.2	12.1	10.4	6.6	5.9	3.4	3.8	.7	6.7	3.8	10.9	4.3
18	14.0	10.0	10.8	6.8	5.4	1.5	4.2	.5	6.6	4.4	12.0	5.1
19	15.7	10.7	10.4	6.8	3.0	.0	5.3	1.0	7.6	2.7	11.7	6.1
20	14.2	10.0	10.5	7.3	.0	.0	4.1	1.6	9.1	2.7	11.3	6.1
21	13.0	8.3	9.2	6.7	.0	.0	4.0	.9	9.2	3.3	8.3	5.4
22	14.7	8.8	8.2	4.2	.0	.0	1.9	.0	9.0	3.8	11.2	5.3
23	14.7	10.7	9.0	4.0	.0	.0	3.2	.2	6.8	4.3	12.0	5.2
24	13.6	10.3	10.3	5.7	.1	.0	2.3	.0	6.0	3.2	12.7	5.8
25	14.9	9.8	10.4	5.5	.1	.0	2.3	.0	7.5	1.2	11.1	7.2
26	15.1	10.0	10.3	6.8	.1	.0	1.4	.0	8.8	2.8	13.0	6.7
27	14.4	10.8	7.9	4.8	.0	.0	2.9	.0	8.6	2.5	13.0	6.3
28	14.8	9.6	6.0	2.4	.1	.0	3.9	.2	6.7	3.4	11.9	6.5
29	15.2	10.2	6.0	1.3	.0	.0	1.9	.0	---	---	9.0	5.8
30	15.3	10.5	7.3	2.7	.0	.0	2.1	.0	---	---	12.2	4.6
31	13.8	10.2	---	---	.0	.0	5.4	.1	---	---	13.5	6.0
MONTH	21.9	8.3	12.6	1.3	7.5	.0	5.5	.0	9.2	.9	13.5	3.2
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	15.1	7.1	16.2	8.4	18.4	13.5	23.4	17.5	27.0	20.3	25.4	18.9
2	11.8	8.1	16.0	10.0	17.0	13.6	23.2	17.7	26.0	21.2	26.2	19.3
3	13.4	6.3	16.2	9.3	19.1	13.1	23.4	18.1	22.5	20.3	24.8	20.2
4	15.2	7.5	12.6	9.9	20.5	13.2	24.0	17.3	23.0	18.7	25.4	18.7
5	16.2	8.6	15.8	9.4	17.9	13.8	24.0	17.8	25.6	20.5	27.0	19.1
6	16.9	9.2	16.1	10.0	18.5	14.5	24.2	18.0	25.3	19.3	22.8	19.4
7	13.1	10.3	16.9	10.9	20.1	14.3	22.2	18.5	25.7	20.0	25.5	19.0
8	11.8	8.4	18.8	10.9	20.6	14.9	23.7	18.3	25.0	20.3	25.7	18.4
9	15.6	8.6	18.4	12.1	20.7	15.2	24.6	19.0	22.9	19.8	24.7	18.7
10	14.9	8.7	18.0	12.3	20.9	15.2	24.7	18.6	24.8	19.1	25.0	19.6
11	15.3	8.7	20.4	13.5	20.6	15.5	23.1	19.1	25.8	20.0	25.5	19.3
12	13.6	8.2	21.3	12.4	20.0	15.5	24.0	19.0	25.8	20.8	21.8	19.4
13	13.2	6.2	19.6	12.8	20.1	15.6	24.9	18.8	22.0	20.6	24.4	18.2
14	15.3	8.8	20.6	12.6	19.3	16.2	25.0	18.7	24.6	20.4	23.0	16.6
15	16.9	8.2	18.6	13.3	20.5	16.2	25.3	18.9	25.5	20.1	22.6	16.2
16	16.0	9.9	16.0	12.0	20.2	16.0	25.7	19.5	25.3	20.0	23.6	16.4
17	17.3	10.3	19.9	12.0	21.6	15.9	26.0	19.5	25.4	19.0	23.3	16.8
18	16.8	11.6	20.2	13.2	21.0	16.1	25.8	19.8	24.2	20.3	18.7	15.8
19	17.2	10.9	19.0	13.5	20.1	16.3	26.5	20.2	24.7	19.5	20.3	15.1
20	17.7	10.6	15.9	14.2	22.8	16.5	25.8	17.3	25.8	20.0	21.2	14.6
21	18.9	12.1	17.0	12.3	22.5	16.2	23.8	20.2	25.8	20.1	23.3	15.4
22	19.0	10.3	18.5	11.7	19.6	16.9	22.5	20.7	25.0	20.0	21.3	14.9
23	16.3	12.7	17.5	11.8	21.6	16.8	23.9	20.3	25.9	19.3	21.9	13.6
24	19.6	9.5	15.7	11.9	22.2	17.2	22.4	19.7	26.4	19.6	20.6	13.2
25	16.9	12.3	16.9	11.3	20.5	16.9	23.4	20.1	26.4	19.8	21.7	13.6
26	15.8	9.9	18.6	11.9	21.6	17.0	23.9	19.8	26.5	19.9	22.3	14.2
27	14.2	6.4	18.5	11.9	22.7	16.8	23.5	19.6	27.2	20.4	21.5	14.9
28	12.8	8.4	17.4	12.0	23.2	17.5	25.5	19.9	27.4	20.9	22.0	14.5
29	16.3	8.9	18.0	12.0	21.4	17.9	25.8	20.0	24.6	20.1	22.6	15.0
30	14.4	8.3	18.2	12.2	23.9	17.9	25.9	19.7	26.2	20.1	19.8	16.0
31	---	---	17.2	12.7	---	---	26.0	20.0	25.8	19.8	---	---
MONTH	19.6	6.2	21.3	8.4	23.9	13.1	26.5	17.3	27.4	18.7	27.0	13.2

07109500 ARKANSAS RIVER NEAR AVONDALE, CO--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.5	6.4	10.2	7.8	11.2	8.7	---	---	11.0	9.4	10.7	7.2
2	7.3	6.5	---	---	11.2	8.9	---	---	10.9	8.9	10.3	7.5
3	7.4	6.5	---	---	11.8	9.5	---	---	10.6	8.9	10.7	7.4
4	7.9	6.8	---	---	11.9	9.5	---	---	10.3	8.5	10.8	7.2
5	7.9	6.6	---	---	11.6	9.3	---	---	11.0	9.1	10.4	7.1
6	8.0	6.7	---	---	11.7	9.7	---	---	11.2	9.3	10.9	7.4
7	8.7	7.3	---	---	11.7	9.1	---	---	11.1	9.0	10.8	7.9
8	8.9	8.0	---	---	11.5	8.8	---	---	11.1	9.3	10.5	7.6
9	9.2	8.2	---	---	11.7	8.8	---	---	10.9	8.9	10.4	---
10	9.2	8.0	9.4	7.7	11.8	8.8	---	---	11.5	9.3	10.3	---
11	9.3	8.1	9.5	7.9	11.6	8.6	---	---	11.4	9.0	---	---
12	10.2	8.1	9.7	8.0	11.5	8.8	10.9	9.4	11.0	9.1	10.5	---
13	10.1	8.7	9.9	8.3	11.0	9.0	10.4	8.9	11.1	9.2	10.5	---
14	10.5	8.9	9.8	8.5	12.4	9.3	9.9	9.1	11.6	9.3	10.6	7.7
15	10.6	8.7	10.1	7.5	13.0	10.8	10.8	9.1	11.3	8.9	9.7	7.9
16	10.4	8.5	9.9	7.5	12.1	8.9	10.1	9.4	10.8	9.0	10.0	8.1
17	11.0	8.5	9.8	7.8	11.2	8.8	11.4	9.5	10.7	8.7	10.2	8.0
18	10.9	9.2	9.9	8.0	11.2	9.5	11.5	9.6	10.7	8.9	10.4	7.7
19	10.8	8.7	9.9	8.1	11.4	9.4	11.2	9.4	10.9	8.5	10.4	7.7
20	11.0	8.7	9.8	8.0	11.2	8.6	11.5	10.0	11.4	8.5	10.5	7.9
21	10.8	9.4	10.3	8.1	---	---	11.8	10.6	11.4	8.5	10.9	8.7
22	11.2	9.1	10.9	8.8	---	---	11.3	9.9	11.3	8.3	11.0	8.6
23	10.7	9.1	11.0	8.5	---	---	11.5	10.2	10.9	8.4	11.6	7.9
24	11.3	9.3	10.7	8.2	---	---	11.7	10.5	11.0	8.7	11.7	8.0
25	11.2	9.2	10.9	8.2	---	---	12.3	11.0	11.3	8.4	11.5	8.0
26	10.4	7.2	10.8	8.0	---	---	11.7	10.3	10.4	7.5	11.2	7.7
27	9.4	7.2	10.4	8.3	---	---	11.7	10.1	10.0	7.3	11.7	7.8
28	9.7	7.4	10.7	8.4	---	---	12.0	10.7	10.0	7.6	12.0	8.0
29	9.9	7.4	11.0	8.4	---	---	12.1	10.9	---	---	11.7	7.9
30	10.0	7.4	11.0	8.3	---	---	11.7	10.7	---	---	12.1	7.7
31	10.1	7.5	---	---	---	---	11.3	9.5	---	---	12.3	7.4
MONTH	11.3	6.4	---	---	---	---	---	---	11.6	7.3	---	---
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.4	6.7	9.4	7.5	8.6	7.4	8.2	6.5	7.2	5.4	8.1	6.3
2	10.0	6.7	9.6	7.8	8.6	7.6	8.1	6.5	6.7	5.4	8.0	6.0
3	11.3	7.0	10.0	7.8	8.6	7.3	7.8	6.2	6.7	5.9	7.8	5.9
4	10.5	6.9	10.1	7.9	8.4	7.3	8.1	6.5	7.0	6.3	7.1	5.0
5	10.1	6.8	10.0	7.6	8.6	7.3	8.1	6.5	7.1	6.2	7.2	6.0
6	10.3	6.7	9.5	7.7	8.0	6.5	8.4	6.4	7.3	6.1	7.3	6.3
7	10.2	6.9	9.6	7.6	8.3	7.0	8.2	6.5	7.3	6.0	7.4	6.2
8	10.5	7.6	9.9	7.4	8.2	7.1	8.2	6.1	7.4	6.3	8.0	6.3
9	11.0	7.7	9.7	7.5	8.1	7.2	7.9	5.6	7.3	6.5	8.0	6.3
10	10.9	7.4	9.7	7.5	8.2	7.2	8.2	6.2	7.2	6.2	7.7	6.0
11	10.4	7.4	9.9	6.7	8.2	7.0	8.2	6.3	7.2	6.2	7.8	5.9
12	10.7	7.5	10.0	6.9	8.1	7.2	7.9	6.5	7.1	6.3	8.0	6.4
13	11.4	7.8	10.0	6.6	8.1	7.1	8.0	6.7	7.0	5.9	8.3	6.2
14	11.8	7.7	10.3	7.0	8.2	7.3	8.0	6.7	7.1	6.3	8.8	6.0
15	11.8	7.3	10.4	6.9	8.3	7.2	8.1	6.2	7.0	6.1	8.1	5.2
16	11.9	7.3	10.7	7.3	8.1	7.0	8.0	6.4	6.9	5.8	9.1	5.7
17	11.6	6.8	10.2	6.6	8.1	6.8	8.1	6.5	6.8	4.2	9.2	5.7
18	12.0	6.7	10.4	6.7	8.1	6.8	8.2	6.1	6.9	6.1	---	---
19	11.4	6.1	10.4	7.0	8.0	7.1	8.0	6.0	6.8	6.1	9.9	---
20	10.0	5.7	---	---	8.0	6.8	6.8	4.8	6.9	5.8	9.8	5.7
21	9.4	5.7	10.1	6.9	7.9	6.7	7.1	6.1	6.9	6.0	9.6	5.7
22	9.5	6.1	8.9	7.1	7.9	6.9	6.9	6.0	7.0	6.0	---	---
23	---	---	9.4	7.2	8.0	6.9	6.9	6.4	7.3	5.9	---	---
24	7.4	---	8.7	7.6	7.9	6.9	7.0	6.5	7.2	5.9	---	---
25	7.5	5.0	8.9	7.4	8.3	6.9	7.1	6.3	7.3	6.1	---	---
26	8.8	5.2	8.5	7.3	8.4	6.7	7.0	6.1	7.6	5.9	12.6	6.2
27	8.8	6.2	8.5	7.1	8.2	6.6	7.2	6.3	7.6	5.8	11.9	6.1
28	9.9	6.7	8.5	7.5	8.0	6.5	7.2	6.2	7.6	5.9	11.5	5.9
29	10.0	6.7	8.6	7.6	8.3	6.6	7.2	6.1	8.3	5.5	11.4	5.9
30	10.3	6.8	8.6	7.7	8.1	6.4	7.3	6.0	7.5	5.8	10.7	6.0
31	---	---	8.5	7.6	---	---	7.2	6.0	7.8	6.3	---	---
MONTH	---	---	---	---	8.6	6.4	8.4	4.8	8.3	4.2	---	---

07116500 HUERFANO RIVER NEAR BOONE, CO

LOCATION.--Lat 38°13'30", long 104°15'37", in NE¼NE¼ sec.18, T.21 S., R.61 W., Pueblo County, Hydrologic Unit 11020006, at right upstream end of bridge on U.S. Highway 50, 0.8 mi upstream from mouth, and 1.6 mi south of Boone.

DRAINAGE AREA.--1,875 mi².

PERIOD OF RECORD.--January 1922 to September 1925 (monthly and annual discharge only, published in WSP 1311 as near Nepesta), October 1979 to current year.

GAGE.--Water-stage recorder with satellite telemetry and crest-stage gages. Datum of gage is 4,443.75 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 6, 21-27, June 5, July 2, 9, 26, 27. Records poor. Natural flow of stream affected by diversions for irrigation of about 48,000 acres, and return flow from irrigated areas. Several measurements of water temperature and specific conductance were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--15 years (water years 1923-25, 1980-91), 39.4 ft³/s; 28,550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft³/s, Aug. 1, 1923, gage height, 9.4 ft, datum then in use, from rating curve extended above 1,200 ft³/s, on the basis of slope-area measurement of peak flow; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,790 ft³/s at 0715 Aug. 20, gage height, 10.25 ft from floodmark; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	9.0	.80	.46	1.6	.95	2.6	2.4	.26	.00	.00	.00
2	.00	8.7	.74	.42	1.8	.75	3.1	2.0	2.3	1.0	.00	.00
3	.00	11	.72	.41	2.2	1.0	3.0	1.7	2.5	.00	.00	.00
4	.00	7.9	.70	.41	4.0	.96	2.5	1.8	.28	.00	.00	73
5	.00	9.5	.90	.43	5.0	1.1	2.0	2.3	1.2	.00	170	3.9
6	.00	13	.79	.42	6.2	1.8	1.7	2.0	1.6	.00	107	.00
7	.00	17	.86	.44	3.6	1.9	1.6	1.9	1.9	.00	18	.00
8	.00	14	.90	.46	4.4	1.6	1.3	1.9	.43	.00	.18	.00
9	.00	11	.88	.43	4.7	2.2	1.2	1.8	.00	3.6	.09	.00
10	.00	9.9	.94	.45	5.0	1.9	1.6	1.8	.00	.00	.00	.00
11	.00	3.7	.92	.54	2.9	1.6	9.7	1.6	.00	.00	.00	.00
12	.00	2.2	.96	.70	2.5	1.3	5.7	1.4	.00	.00	.00	.00
13	.00	1.7	.87	.78	2.2	1.2	1.7	1.3	.00	.00	65	.00
14	.00	1.5	.86	.78	3.2	1.2	1.5	1.5	.00	.00	6.1	.00
15	.00	1.2	.80	.70	3.5	1.4	1.9	1.2	.25	.00	.73	.00
16	.00	.94	.78	.66	3.1	2.5	3.3	.99	.01	.00	.53	.00
17	.00	1.2	.76	.66	3.3	2.9	2.5	1.1	.00	.00	37	.00
18	3.4	.97	.84	.72	2.7	1.8	1.9	.65	.00	.00	.95	.00
19	.36	.87	.74	.70	2.4	3.2	2.6	.46	.00	.00	321	.00
20	5.4	.73	.62	.60	1.8	2.7	2.1	1.3	.00	.00	436	.00
21	12	.54	.50	.52	2.7	2.6	1.9	.84	.00	.00	64	.00
22	9.0	.70	.45	.49	2.5	11	1.9	.51	.00	.00	9.2	.00
23	3.0	.94	.38	.50	2.3	5.9	2.7	.90	.00	.00	2.0	.00
24	4.3	.88	.40	.52	1.9	1.6	2.6	1.7	.00	.00	.75	.00
25	4.7	.93	.38	.50	2.9	3.8	1.8	1.3	.00	.00	.34	.00
26	5.4	.76	.36	.56	1.7	2.0	1.9	.62	.00	3.4	.09	.00
27	4.8	.63	.39	.62	1.8	3.2	1.9	.08	.00	.10	.00	.00
28	6.4	.60	.43	.64	1.1	2.3	2.2	1.2	.00	.00	.00	.00
29	6.6	.58	.39	.60	---	1.5	2.1	1.9	.00	.00	.00	.00
30	4.0	.70	.40	.90	---	3.3	2.5	1.1	.00	.00	.00	.00
31	6.4	---	.45	1.4	---	4.0	---	.42	---	.00	.00	---
TOTAL	75.76	133.27	20.91	18.42	83.0	75.16	75.0	41.67	10.73	8.10	1238.96	76.90
MEAN	2.44	4.44	.67	.59	2.96	2.42	2.50	1.34	.36	.26	40.0	2.56
MAX	12	17	.96	1.4	6.2	11	9.7	2.4	2.5	3.6	436	73
MIN	.00	.54	.36	.41	1.1	.75	1.2	.08	.00	.00	.00	.00
AC-FT	150	264	41	37	165	149	149	83	21	16	2460	153

CAL YR 1990 TOTAL 2467.31 MEAN 6.76 MAX 721 MIN .00 AC-FT 4890
WTR YR 1991 TOTAL 1857.88 MEAN 5.09 MAX 436 MIN .00 AC-FT 3690

07117000 ARKANSAS RIVER NEAR NEPESTA, CO

LOCATION.--Lat 38°11'03", long 104°10'22", in SW¼SW¼ sec.25, T.21 S., R.61 W., Pueblo County, Hydrologic Unit 110200005, on right bank 0.7 mi upstream from headgate of Oxford Farmers Co. canal, 1.9 mi northwest of Nepesta, 2.7 mi upstream from Kramer Creek, and 6.6 mi downstream from Huerfano River.

DRAINAGE AREA.--9,345 mi², of which 54 mi² is probably noncontributing.

PERIOD OF RECORD.--April to October 1903, April to November 1912, October 1913 to September 1984. Monthly discharge only for some periods, published in WSP 1311. Records originally published for October 1933 to June 1936 did not include diversions to Oxford Farmers Co. canal, but monthly figures only for this period have been adjusted for diversion, and published in WSP 1311.

Records for river below Oxford Farmers Co. canal (diversion to canal not included), published as "at Nepesta" September 1897 to October 1903 (irrigation seasons only), April to October 1904, June 1906 to September 1908 (irrigation seasons only), September 1909 to December 1910, February to September 1911 (gage heights and discharge measurements only), October 1913 to November 1912, March to August 1913 (discharge measurements only), October 1913 to September 1936. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1341: Drainage area, WDR CO-79-1: 1965.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 4,385 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 5, 1921, nonrecording gages or water-stage recorders at various sites within 4.5 mi upstream and 3.0 mi downstream at different datums. June 5, 1921, to Apr. 4, 1966, water-stage recorders at sites on river or river and canal within 0.7 mi downstream at various datums.

REMARKS.--Estimated daily discharges: Nov. 2-6, Dec. 3, 4, 15, and Dec. 19 to Jan. 16. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation of about 230,000 acres, and return flow from irrigated areas. Flow partly regulated by Pueblo Reservoir (station 07099350) since Jan. 9, 1974.

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

AVERAGE DISCHARGE.--60 Years (water years 1914-73), 684 ft³/s, 495,600 acre-ft/yr, prior to completion of Pueblo Dam; 17 years (water years 1975-91), 784 ft³/s, 568,000 acre-ft/yr, subsequent to completion of Pueblo Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180,000 ft³/s, June 4, 1921, gage height not determined, by slope-area measurement of peak flow at a point 8 mi upstream; no flow at times in 1902, 1910, 1931, and 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,680 ft³/s at 0430 Sept. 4, gage height, 3.55 ft, maximum gage height, 3.59 ft at 1215 Aug. 4; minimum daily discharge, 33 ft³/s, Nov. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	386	469	92	114	345	170	292	250	1670	1310	1180	326
2	358	453	110	115	344	144	271	260	1730	1320	598	272
3	538	554	119	118	329	130	312	207	1460	1430	828	293
4	696	624	102	245	308	128	388	223	1130	1320	1700	1250
5	492	624	102	540	326	112	419	307	941	1470	1350	658
6	409	638	100	580	369	125	395	377	953	1310	1490	579
7	389	614	105	580	372	147	314	204	1840	1160	923	491
8	371	590	90	480	374	141	293	206	1570	930	729	403
9	432	607	96	445	402	146	334	151	1460	1070	873	338
10	488	577	94	440	422	156	380	110	1530	1160	1310	284
11	445	524	101	440	404	166	375	197	2000	1420	1090	275
12	450	500	100	445	386	164	352	253	2010	1750	919	275
13	470	520	109	450	398	158	311	228	1850	1530	1330	272
14	450	543	118	435	414	165	316	241	2130	1130	1980	240
15	447	415	115	425	406	205	264	228	2120	949	1530	205
16	515	196	113	410	391	356	252	255	1330	848	1180	207
17	499	182	102	413	386	394	244	326	1600	833	1300	206
18	515	176	106	396	373	383	254	367	1910	952	933	198
19	506	165	110	370	357	362	298	425	2010	978	1210	203
20	431	77	114	371	345	372	269	473	1990	1440	1360	176
21	449	52	124	356	315	402	160	552	1750	1480	1140	178
22	472	45	127	325	325	404	139	819	1640	1450	1000	175
23	628	43	125	479	323	376	128	870	1750	1570	805	172
24	595	38	125	593	297	348	176	1150	1660	1810	620	173
25	617	34	120	609	296	355	138	1770	1410	1760	576	160
26	630	33	118	446	320	355	120	1220	1260	1720	551	157
27	626	34	116	393	286	345	118	790	1160	1690	487	173
28	602	36	116	401	186	332	188	849	1400	1680	400	177
29	592	47	115	388	---	314	208	1210	1350	1400	324	181
30	521	89	112	342	---	297	216	1490	1200	1220	438	182
31	492	---	114	339	---	287	---	1710	---	1240	368	---
TOTAL	15511	9499	3410	12483	9799	7939	7924	17718	47814	41330	30522	8879
MEAN	500	317	110	403	350	256	264	572	1594	1333	985	296
MAX	696	638	127	609	422	404	419	1770	2130	1810	1980	1250
MIN	358	33	90	114	186	112	118	110	941	833	324	157
AC-FT	30770	18840	6760	24760	19440	15750	15720	35140	94840	81980	60540	17610
CAL YR 1990	TOTAL	198814	MEAN	545	MAX	2910	MIN	33	AC-FT	394300		
WTR YR 1991	TOTAL	212828	MEAN	583	MAX	2130	MIN	33	AC-FT	422100		

07119500 APISHAPA RIVER NEAR FOWLER, CO

LOCATION.--Lat 38°05'28", long 103°58'52", in SE¼NW¼ sec.35, T.22 S., R.59 W., Otero County, Hydrologic Unit 11020007, near right bank on downstream side of county highway bridge, 3.5 mi southeast of Fowler, and 5.4 mi upstream from mouth.

DRAINAGE AREA.--1,125 mi².

PERIOD OF RECORD.--Streamflow records, April 1922 to September 1925, May 1939 to current year. Monthly discharge only for some periods, published in WSP 1311. Water-quality data available, November 1963 to September 1967, January to April 1969.

REVISED RECORDS.--WSP 957: 1939, 1941. WSP 1117: Drainage area. WSP 1241: 1923(M). WRD Colo. 1974: 1973(M).

GAGE.--Water-stage recorder with satellite telemetry and crest-stage gages. Datum of gage is 4,317.05 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 29, 1923, at site 3 mi downstream at different datum. Aug. 29, 1923, to Sept. 30, 1925, at present site at different datum. May 27, 1939 to July 30, 1940, at present site at different datum. July 30, 1940 to Sept. 30, 1985, at datum 2.0 ft, higher.

REMARKS.--No estimated daily discharges. Records fair. Waste water from Oxford Farmers Co., and Rocky Ford Highline canals enters river upstream from station. Diversions upstream from station for irrigation of about 4,700 acres. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--55 years, 28.3 ft³/s; 20,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 83,000 ft³/s, Aug. 22, 1923, by slope-area measurement 2 mi upstream from present site, caused by failure of Apishapa Dam 31 mi upstream; no flow Feb. 5, 1951.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*).

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 2	1230	*5,620	*13.34	No other peak greater than base discharge.			

Minimum daily, 1.7 ft³/s, May 1, 3, 5, 10, and 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	15	4.9	3.3	2.5	2.5	2.2	1.7	4.9	3.3	3.3	4.2
2	7.3	19	4.5	3.3	2.5	2.3	2.1	1.9	4.8	949	3.5	3.4
3	7.2	26	4.3	3.3	2.5	2.3	2.1	1.7	5.6	69	6.1	3.6
4	9.4	25	4.4	3.3	2.5	2.3	3.1	1.8	7.0	23	8.8	7.2
5	11	26	4.0	3.3	2.4	2.4	2.4	1.7	8.5	15	10	13
6	16	25	3.7	3.3	2.5	2.5	2.2	3.0	14	7.5	62	6.6
7	15	28	3.7	3.3	2.4	2.5	2.0	2.1	15	7.0	22	3.5
8	18	23	3.6	3.3	2.4	2.3	2.0	1.9	20	65	10	3.2
9	12	24	3.7	3.3	2.4	2.4	2.3	1.8	19	108	6.1	5.3
10	10	16	4.0	3.3	2.3	2.4	2.5	1.7	11	38	6.7	5.2
11	13	17	3.7	3.0	2.3	2.4	2.2	1.7	20	17	6.5	4.6
12	18	17	3.8	2.9	2.3	2.7	2.7	5.0	16	10	60	3.9
13	15	17	3.7	2.9	2.3	2.6	2.4	1.8	17	6.8	39	4.1
14	12	17	3.7	3.1	2.3	2.4	2.3	2.4	15	8.9	21	3.7
15	17	6.7	3.7	2.9	2.3	6.1	2.1	2.0	11	8.9	17	3.6
16	13	6.5	3.7	2.9	2.8	18	2.4	2.1	13	4.5	9.2	4.0
17	10	5.2	3.7	2.9	2.4	5.5	1.9	2.0	19	4.7	13	6.2
18	16	5.0	3.7	2.7	2.4	5.3	2.3	2.1	18	4.3	9.2	6.6
19	17	5.4	3.7	2.7	2.4	7.2	2.1	2.0	15	4.8	49	5.5
20	15	4.8	3.5	2.7	2.3	18	3.0	2.0	13	4.0	167	4.1
21	14	4.6	3.6	2.7	2.4	9.6	2.5	2.3	8.7	15	76	4.6
22	11	4.5	3.6	2.7	2.5	6.7	2.3	2.5	9.4	12	28	3.6
23	14	4.7	3.6	2.7	2.3	6.2	2.0	2.4	12	9.3	13	3.6
24	11	5.4	3.5	2.7	2.3	6.8	2.3	2.5	12	7.3	11	3.7
25	12	4.4	3.4	2.7	2.3	4.3	1.8	2.8	9.2	9.8	9.3	5.5
26	12	4.5	3.5	2.7	2.3	2.0	2.3	3.4	6.2	7.9	4.6	5.8
27	10	4.5	3.4	2.5	2.3	39	2.0	3.2	5.9	8.7	7.0	5.5
28	6.0	4.5	3.5	2.5	2.4	3.1	2.6	3.4	4.8	35	7.8	4.0
29	15	5.1	3.5	2.5	---	3.6	2.9	3.6	6.1	17	6.2	4.7
30	14	4.8	3.3	2.5	---	5.1	2.2	4.6	6.5	7.4	5.9	4.4
31	14	---	3.3	2.5	---	6.4	---	5.0	---	4.8	5.2	---
TOTAL	397.9	375.6	115.9	90.4	67.0	186.9	69.2	78.1	347.6	1492.9	703.4	146.9
MEAN	12.8	12.5	3.74	2.92	2.39	6.03	2.31	2.52	11.6	48.2	22.7	4.90
MAX	18	28	4.9	3.3	2.8	39	3.1	5.0	20	949	167	13
MIN	6.0	4.4	3.3	2.5	2.3	2.0	1.8	1.7	4.8	3.3	3.3	3.2
AC-FT	789	745	230	179	133	371	137	155	689	2960	1400	291

CAL YR 1990 TOTAL 8880.3 MEAN 24.3 MAX 1920 MIN 1.7 AC-FT 17610
WTR YR 1991 TOTAL 4071.8 MEAN 11.2 MAX 949 MIN 1.7 AC-FT 8080

07119700 ARKANSAS RIVER AT CATLIN DAM, NEAR FOWLER, CO

LOCATION.--Lat 38°07'33", long 103°54'41", in NW¼NW¼ sec.21, T.22 S., R.58 W., Otero County, Hydrologic Unit 11020005, 600 ft downstream from gage on Catlin Canal, on right bank 2.2 mi downstream from diversior dam for Catlin Canal, 2.3 mi downstream from Apishapa River, and 6.0 mi east of Fowler.

DRAINAGE AREA.--10,901 mi², of which 54 mi² is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorders with satellite telemetry on river and on Catlin Canal. Datum of river gage is 4,245.92 ft above National Geodetic Vertical Datum of 1929. Datum of canal gage is 4,257.87 ft above National Geodetic Vertical Datum of 1929. Prior to May 13, 1971, river gage at site 2.2 mi upstream at datum 24.08 ft, higher, and canal gage at site 1.7 mi upstream at datum 3.26 ft, higher.

REMARKS.--Estimated daily discharges: Dec. 20 to Jan. 8. Records fair except for estimated daily discharges, which are poor. Discharge computed by combining discharge of river below canal with that of Catlin Canal. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Flow partly regulated by Pueblo Reservoir (station 07099350) since Jan. 9, 1974. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

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

AVERAGE DISCHARGE.--9 years (water years 1965-73), 636 ft³/s, 460,800 acre-ft/yr, prior to completion of Pueblo Dam; 17 years (water years 1975-91), 748 ft³/s; 541,900 acre-ft/yr, subsequent to completion of Pueblo Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,200 ft³/s, June 18, 1965, gage height, 7.95 ft, site and datum then in use, from rating curve extended above 13,000 ft³/s; on basis of flow-over-dam computation of peak flow; minimum daily, 30 ft³/s, Sept. 12, 1974, Aug. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,780 ft³/s at 1430 July 2, gage height, 6.37 ft; minimum daily, 45 ft³/s, Mar. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	455	540	146	200	340	142	291	219	1540	1280	1060	325
2	365	529	157	200	348	123	296	264	1610	2250	750	268
3	401	633	153	250	366	102	311	255	1500	1460	521	244
4	720	679	145	290	364	87	352	230	1140	1290	1140	995
5	605	675	137	340	357	52	389	252	932	1240	1190	686
6	434	722	135	450	406	45	402	342	815	1210	1360	573
7	391	687	126	540	458	59	391	283	1460	1090	997	564
8	384	700	123	550	480	68	332	201	1320	915	750	449
9	433	678	109	497	461	76	309	191	1320	1170	667	386
10	555	684	108	483	440	79	341	105	1450	1150	1100	353
11	505	641	113	483	431	83	338	91	1870	1330	937	328
12	442	614	118	461	428	69	345	192	2090	1620	861	345
13	448	609	134	489	448	79	338	256	1870	1630	1310	296
14	459	601	136	517	452	89	324	225	2060	1220	1570	276
15	447	502	129	519	466	118	314	237	2210	1010	1410	242
16	462	287	120	507	466	289	268	238	1390	872	1280	238
17	522	208	118	464	465	388	268	325	1130	827	1080	227
18	505	187	111	467	430	429	265	392	1730	857	929	227
19	596	177	120	488	434	387	270	381	1880	897	1120	241
20	642	162	120	476	411	352	284	415	1960	1160	1360	228
21	553	112	110	443	409	355	239	465	1740	1070	1340	218
22	588	98	110	365	388	369	144	594	1520	1320	1020	202
23	605	89	120	409	376	357	107	778	1620	1160	867	180
24	697	83	120	626	361	338	100	881	1560	1480	687	168
25	631	82	140	625	298	318	204	1430	1350	1490	576	169
26	646	82	140	550	254	405	109	1290	1150	1390	592	159
27	653	83	160	363	238	433	95	777	1060	1570	543	159
28	678	97	150	359	215	414	138	657	1130	1480	482	165
29	655	107	150	354	---	412	193	886	1300	1220	356	190
30	634	122	180	331	---	370	220	1280	1100	1010	385	194
31	548	---	195	337	---	335	---	1490	---	1060	388	---
TOTAL	16659	11470	4133	13433	10990	7222	7977	15622	44807	38728	28628	9295
MEAN	537	382	133	433	392	233	266	504	1494	1249	923	310
MAX	720	722	195	626	480	433	402	1490	2210	2250	1570	995
MIN	365	82	108	200	215	45	95	91	815	827	356	159
AC-FT	33040	22750	8200	26640	21800	14320	15820	30990	88870	76820	56780	18440

CAL R 1990 TOTAL 214186 MEAN 587 MAX 3420 MIN 82 AC-FT 424800
WTR YR 1991 TOTAL 208964 MEAN 573 MAX 2250 MIN 45 AC-FT 414500

07119700 ARKANSAS RIVER AT CATLIN DAM NEAR FDWLER, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1990 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1990 to current year.

WATER TEMPERATURE: May 1990 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and daily mean water temperature data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,800 microsiemens, Apr. 27, 1991; minimum, 264 microsiemens, June 8, 1990.

WATER TEMPERATURE: Maximum, 30.0°C, Aug. 31, 1990; minimum, 0.0°C, many days during the winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,800 microsiemens, Apr. 27; minimum, 480 microsiemens, Aug. 6.

WATER TEMPERATURE: Maximum, 28.8°C, July 17; minimum, 0.0°C, many days during winter.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1070	1040	---	1330	---	1460	1120	1160	655	541	533	1030
2	1060	1050	---	1300	---	1510	1130	1040	651	653	574	---
3	1040	1010	---	1280	---	1570	1130	1010	658	560	618	1140
4	955	1020	---	1280	---	1600	1090	1040	697	554	574	918
5	893	1030	---	1280	1270	1710	1050	1000	738	554	519	830
6	980	1020	---	1220	1260	1740	1020	950	745	542	570	896
7	1000	990	---	1100	---	1720	1030	972	743	556	771	906
8	996	954	---	1080	1160	1640	1080	1080	777	627	739	975
9	985	949	---	1130	1150	1630	1090	1100	733	670	745	1040
10	1000	941	---	1150	1150	1640	1050	1350	701	647	690	1050
11	989	955	1550	1150	1140	1620	1030	1520	682	584	712	1130
12	1040	952	1550	1160	1150	1600	1050	1250	637	541	700	1120
13	1040	949	---	1150	1150	1660	1050	1080	625	573	691	1190
14	1030	952	1530	1130	1120	1600	1060	1150	612	579	664	1230
15	1050	939	1550	1130	1150	1460	1060	1120	599	616	632	1300
16	1040	---	1520	1140	1150	1290	1110	1060	622	597	678	1300
17	983	---	1510	1170	1160	1000	1120	948	620	613	778	1320
18	986	---	1530	1170	1170	1030	1130	892	601	594	838	1410
19	961	---	1530	---	1160	1070	---	893	573	584	852	1430
20	947	---	---	1180	1160	1140	---	862	554	615	901	1360
21	1030	---	---	1200	1160	1070	---	853	578	619	828	1310
22	1050	---	---	1240	1180	1030	---	833	564	621	813	1380
23	1040	---	---	1210	1190	1060	1440	771	559	622	821	1400
24	954	---	---	1070	1190	1080	1540	739	549	602	881	1360
25	988	---	1550	1010	1220	1110	1340	702	540	604	937	1330
26	985	---	1470	1020	1270	1070	1410	687	567	589	932	1300
27	979	---	1420	1160	1280	1070	1660	743	572	609	968	1280
28	963	---	1380	1200	1350	1040	1510	757	569	663	993	1240
29	986	---	1360	---	---	1050	1260	728	546	640	1040	1250
30	977	---	1370	---	---	1060	1170	684	4110	638	1040	1230
31	1030	---	1370	---	---	1100	---	678	---	524	999	---
MEAN	1000	---	---	---	---	1340	---	957	746	598	775	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	21.3	16.0	12.5	10.1	7.6	2.5	.4	.0	4.8	.1	14.5	4.1
2	19.2	16.0	11.2	6.4	3.4	.0	.2	.0	5.4	.3	10.2	3.4
3	18.6	12.8	6.2	5.3	2.2	.0	.1	.0	6.3	1.3	15.2	1.6
4	18.3	13.1	8.6	4.9	4.2	.0	.1	.0	8.0	3.3	14.7	5.1
5	19.8	14.0	9.5	5.3	4.5	.0	.2	.0	7.6	2.6	16.6	7.4
6	18.9	13.7	8.0	4.6	6.1	1.4	.1	.0	7.6	2.1	10.5	5.6
7	14.6	11.1	5.5	3.0	5.9	.0	.1	.0	7.9	2.5	12.2	4.2
8	10.9	8.3	6.4	2.9	7.3	.0	.1	.0	7.4	2.9	14.8	1.8
9	13.3	6.3	7.8	3.6	7.8	.1	.1	.0	9.1	3.9	15.4	2.7
10	14.7	8.5	9.3	5.3	8.3	.9	.2	.0	8.5	3.0	14.7	4.5
11	15.1	10.4	10.3	6.2	8.8	1.1	.2	.0	8.7	2.7	16.0	5.6
12	15.8	9.2	10.6	6.5	8.3	3.0	.2	.0	6.7	3.0	14.9	4.3
13	16.4	9.8	10.5	6.7	6.7	4.2	.3	.0	6.9	3.1	12.8	4.0
14	15.0	10.1	10.7	6.5	6.8	.7	.2	.0	7.8	2.1	7.9	3.8
15	15.9	8.6	10.7	7.3	2.7	.0	.2	.0	8.3	2.5	8.7	2.7
16	16.9	10.8	10.5	7.0	6.2	.0	.3	.0	7.7	3.6	7.0	3.3
17	14.6	11.2	11.2	5.7	6.5	1.4	.5	.0	7.5	4.6	10.0	2.0
18	12.7	8.1	11.4	5.3	5.5	.0	1.7	.0	8.2	4.0	12.7	5.5
19	14.2	9.2	10.8	5.4	1.4	.0	4.3	.1	7.8	1.6	12.4	6.6
20	12.8	7.6	10.6	6.3	.1	.0	1.6	.0	9.4	2.2	11.8	5.8
21	11.6	5.7	10.8	5.0	.2	.0	2.0	.0	10.2	3.5	9.5	6.0
22	13.1	7.4	10.0	2.6	.3	.0	2.1	.0	10.6	4.1	11.9	5.6
23	14.2	9.5	10.9	2.5	.2	.0	2.0	.0	7.7	5.0	13.7	6.3
24	13.5	10.1	12.4	3.5	.4	.0	.6	.0	5.7	2.5	15.3	6.8
25	14.2	9.3	12.4	3.7	.4	.0	.7	.0	7.4	.0	14.0	9.8
26	14.7	9.9	12.4	5.7	.4	.0	.4	.0	10.4	2.0	15.0	7.6
27	14.4	11.0	8.6	2.5	.3	.0	1.0	.0	13.1	2.0	14.0	6.7
28	14.3	9.7	7.2	.0	.3	.0	2.1	.0	7.7	4.1	13.2	7.5
29	14.7	10.0	7.4	.0	.0	.0	1.0	.0	---	---	9.3	5.5
30	14.8	10.3	9.0	.7	.2	.0	1.8	.1	---	---	12.2	2.9
31	14.7	10.2	---	---	.3	.0	2.9	.1	---	---	14.9	6.3
MONTH	21.3	5.7	12.5	.0	8.8	.0	4.3	.0	13.1	.0	16.6	1.6
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.9	7.9	20.1	9.1	20.4	16.4	26.0	21.5	27.2	22.1	28.7	17.9
2	13.0	9.0	18.5	11.6	19.4	16.6	23.5	10.6	27.7	22.3	28.3	16.4
3	15.4	7.0	18.7	10.6	20.5	15.4	25.5	20.5	23.0	20.1	24.5	18.4
4	17.8	9.6	14.3	10.9	22.8	17.0	26.0	20.8	21.9	19.9	22.6	18.9
5	19.4	11.0	19.9	9.6	21.9	18.3	26.6	21.3	26.2	19.9	24.3	18.1
6	20.1	12.4	19.4	12.1	21.1	16.9	27.0	21.8	25.8	21.3	21.4	18.8
7	16.8	12.3	20.0	12.4	21.1	16.8	26.1	22.2	26.3	20.2	24.0	18.0
8	12.9	9.3	23.0	12.6	22.5	18.0	25.7	21.1	26.6	21.4	25.1	17.3
9	16.4	7.4	23.9	14.1	23.0	18.1	27.1	21.4	25.9	21.2	24.3	17.8
10	16.0	8.0	20.2	15.5	23.4	18.9	26.7	22.0	23.9	20.2	24.1	18.6
11	16.6	8.7	22.4	15.0	23.0	19.2	24.9	21.9	25.9	20.4	25.5	18.4
12	13.6	9.1	22.3	12.9	23.3	19.0	24.4	20.5	26.9	21.7	21.4	18.9
13	14.9	6.9	20.8	13.7	23.2	18.2	25.2	20.5	22.4	18.8	23.1	16.7
14	17.3	9.1	23.2	13.8	21.3	18.4	26.2	20.6	24.0	19.5	23.0	15.5
15	17.8	9.0	22.1	13.9	21.7	18.1	27.4	21.4	26.3	21.3	21.9	14.7
16	15.3	10.0	17.1	13.3	22.3	18.2	28.2	22.0	25.8	21.7	22.8	15.0
17	16.9	9.0	23.1	12.4	24.3	17.7	28.8	22.6	26.0	21.3	22.8	14.9
18	17.5	11.3	24.0	14.9	22.1	13.9	28.7	22.9	25.6	21.5	17.2	14.6
19	18.1	11.2	23.0	16.3	14.4	13.8	28.4	22.7	24.3	20.7	18.6	14.4
20	19.3	10.2	20.5	16.6	14.6	13.7	26.9	22.8	25.5	20.5	20.6	13.5
21	19.6	11.0	20.6	16.2	24.3	19.2	25.9	21.7	26.1	21.1	22.6	13.9
22	20.6	8.9	22.3	15.3	22.2	19.8	24.2	21.4	26.1	21.5	19.1	13.6
23	20.7	11.8	21.4	16.7	22.3	18.4	22.6	20.1	26.6	20.7	20.9	13.1
24	19.0	11.4	19.9	16.2	24.3	20.1	21.6	19.6	27.3	20.9	20.7	11.2
25	19.6	13.4	19.4	14.8	22.7	19.4	22.5	18.8	27.4	20.8	21.5	11.1
26	14.0	9.6	21.7	16.0	22.7	17.9	24.6	19.2	27.5	21.0	21.9	12.2
27	13.5	6.9	22.9	16.7	24.8	19.0	23.6	19.7	28.3	21.3	20.8	13.4
28	11.7	7.8	20.5	17.1	25.4	20.4	25.4	20.7	28.7	20.9	21.9	13.4
29	18.1	6.8	21.6	15.9	22.8	20.5	25.9	21.3	28.4	19.0	23.3	14.2
30	15.4	9.2	20.4	16.8	26.7	19.7	26.6	20.5	26.3	16.5	21.0	15.1
31	---	---	20.7	16.1	---	---	26.7	21.7	25.9	19.0	---	---
MONTH	20.7	6.8	24.0	9.1	26.7	13.7	28.8	10.6	28.7	16.5	28.7	11.1
YEAR	28.8	.0										

07121500 TIMPAS CREEK AT MOUTH, NEAR SWINK, CO

LOCATION.--Lat 38°00'11", long 103°39'20", in NW¼SW¼ sec.35, T.23 S., R.56 W., Otero County, Hydrologic Unit 11020005, on left bank 40 ft shoreward, 125 ft upstream from left end of 20th Rd. Bridge, 1.7 mi southwest of Swink, and 2.9 mi upstream from mouth.

DRAINAGE AREA.--496 mi².

PERIOD OF RECORD.--January 1922 to September 1925, March 1968 to current year.

REVISED RECORDS.--WDR CD 76-1: 1975.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 4,120 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 29, 1975, at site 140 ft downstream at datum 0.13 ft lower.

REMARKS.--Estimated daily discharges: Dec. 21-24, 30. Records good. Natural flow of stream affected by minor diversions upstream from station for irrigation, water imported from Arkansas River and Crooked Arroyo for irrigation upstream from station, and return flow from irrigated areas. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--26 years (water years 1923-25, 1969-91), 64.7 ft³/s; 46,880 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,300 ft³/s, July 10, 1978, gage height, 21.11 ft, from floodmark, from rating curve extended above 250 ft³/s, on basis of contracted-opening measurement of peak flow; minimum daily, 3.3 ft³/s, Aug. 7, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1922, 21,400 ft³/s, June 17, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,700 ft³/s at 1130 July 8, gage height, 11.02 ft; minimum daily, 12 ft³/s, Jan. 13, 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	105	23	16	19	36	153	36	31	41	34	38
2	124	106	22	15	19	41	40	36	29	151	34	46
3	124	104	22	15	20	51	35	36	27	113	38	41
4	117	114	22	15	21	56	33	34	26	84	45	45
5	111	170	21	15	22	64	34	42	27	67	45	92
6	106	147	21	15	22	60	36	45	36	45	65	98
7	93	139	20	14	22	32	40	42	43	47	79	112
8	95	128	20	14	23	32	47	32	85	697	50	118
9	96	130	20	13	23	29	42	29	64	89	41	114
10	112	134	20	14	23	30	44	30	48	64	35	103
11	131	130	19	13	24	31	49	27	44	47	42	90
12	123	117	20	13	24	40	46	28	47	46	48	83
13	119	113	19	12	25	35	43	38	61	45	48	79
14	116	111	18	13	26	34	42	39	66	51	43	78
15	131	81	18	13	27	46	45	30	62	57	64	82
16	110	41	18	13	28	41	46	46	59	51	75	96
17	105	36	19	12	28	44	43	29	54	40	331	86
18	107	33	19	13	28	58	44	37	48	37	118	70
19	106	31	19	14	29	115	48	37	55	39	113	69
20	133	31	18	14	28	101	39	36	51	37	116	62
21	166	31	18	15	27	69	43	39	41	39	71	43
22	138	30	17	14	28	59	36	41	60	46	54	41
23	131	29	17	15	33	65	29	37	67	46	66	61
24	162	28	16	15	48	48	27	31	50	42	66	44
25	130	27	16	15	56	43	31	31	47	39	62	46
26	109	27	16	16	50	38	32	34	41	40	45	43
27	115	26	16	16	50	45	29	32	43	40	44	35
28	117	25	17	17	33	39	36	32	33	37	52	28
29	109	24	16	17	---	48	33	30	37	51	44	26
30	101	24	16	17	---	170	31	34	37	39	40	30
31	109	---	16	18	---	188	---	37	---	34	39	---
TOTAL	3649	2272	579	451	806	1788	1276	1087	1419	2301	2047	1999
MEAN	118	75.7	18.7	14.5	28.8	57.7	42.5	35.1	47.3	74.2	66.0	66.6
MAX	166	170	23	18	56	188	153	46	85	697	331	118
MIN	93	24	16	12	19	29	27	27	26	34	34	26
AC-FT	7240	4510	1150	895	1600	3550	2530	2160	2810	4560	4060	3970

CAL YR 1990 TOTAL 20543 MEAN 56.3 MAX 340 MIN 11 AC-FT 40750
WTR YR 1991 TOTAL 19674 MEAN 53.9 MAX 697 MIN 12 AC-FT 39020

LOCATION.--Lat 38°02'08", long 103°28'18", in SE¼ NE¼ sec.20, T.23 S., R.54 W., Otero County, Hydrologic Unit 11020005, on right bank 75 ft upstream from County Road 33, 1.9 mi north of Casa, 5.3 mi northeast of La Junta, and 7.4 mi downstream from headgate.

GAGE.--Water-stage recorder. Elevation of gage is 4,055 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good except for daily discharges below 100 ft³/s, which are poor. Canal diverts from left bank of Arkansas River in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.29, T. 23 S., R. 55 W., for irrigation and offstream storage.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during period October to November 1990, 662 ft³/s, Nov. 5; no flow many days.

[illegible]

LOCATION.--Lat 38°08'39", long 102°57'30", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.7, T.22 S., R.49 W., Bent County, Hydrologic Unit 11020009, on left bank 35 ft downstream from County Road 24 bridge, 2.1 mi north of Hasty, and 50 mi downstream of headgate.

GAGE.--Water-stage recorder. Elevation of gage is 3,955 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair except those below discharges of 20 ft³/s, which are poor. Canal diverts from left bank of Arkansas River in SW¹/₄ sec. 29, T. 23 S., R. 55 W., for irrigation and offstream storage.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during the period October to November, 490 ft³/s, Nov. 7; no flow Nov. 21-28.

[illegible]

07122400 CROOKED ARROYO NEAR SWINK, CO

LOCATION.--Lat 37°58'56", long 103°35'52", in SW¼SW¼ sec.5, T.24 S., R.55 W., Otero County, Hydrologic Unit 11020005, on right bank 54 ft downstream from bridge on State Highway 10, 2.0 mi upstream from mouth, and 2.8 mi southeast of Swink.

DRAINAGE AREA.--108 mi².

PERIOD OF RECORD.--February 1968 to current year.

REVISED RECORDS.--WOR CO-76-1: 1975.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 4,100 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Mar. 19-22. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by minor diversions upstream from station for irrigation, water exported upstream from station to Timpas Creek, water imported from Arkansas River for irrigation upstream from station, and return flow from irrigated areas. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--23 years, 11.6 ft³/s; 8,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,200 ft³/s, Aug. 7, 1971, gage height, 7.91 ft, from rating curve extended above 87 ft³/s; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55 ft³/s at 1315 Mar. 30, gage height, 2.55 ft, from rating curve extended above 50 ft³/s, on basis of slope-area measurements of peak flow; minimum daily, 1.9 ft³/s, Feb. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	14	3.7	2.5	2.4	3.5	6.2	20	4.0	9.0	6.1	15
2	10	14	3.7	2.4	2.4	3.1	15	13	3.4	7.2	6.2	16
3	11	21	3.7	2.4	2.4	2.1	7.0	14	4.7	11	5.7	15
4	14	32	3.5	2.4	2.4	2.4	3.4	7.0	5.2	9.6	12	29
5	16	14	3.5	2.3	2.4	3.8	5.6	11	3.5	7.0	19	21
6	18	6.9	3.4	2.2	2.5	3.9	9.7	13	7.5	6.2	18	20
7	17	9.1	3.3	2.2	2.7	3.5	9.4	9.5	29	5.7	10	20
8	17	12	3.5	2.2	3.1	2.9	8.6	5.4	18	7.4	13	24
9	20	12	3.3	2.2	3.5	3.7	11	8.1	16	11	10	24
10	22	12	3.3	2.2	3.1	2.4	4.2	6.2	15	12	7.3	18
11	22	12	3.3	2.1	3.0	2.8	3.1	3.9	6.7	11	13	12
12	17	11	3.5	2.1	3.0	3.1	4.0	3.6	11	10	15	13
13	12	10	3.2	2.2	2.8	3.6	6.0	8.1	7.9	5.6	17	15
14	12	17	4.0	2.7	2.6	4.7	6.1	6.8	7.2	4.8	18	18
15	12	12	4.1	2.4	2.4	4.3	4.4	3.4	9.3	4.9	20	17
16	13	3.7	3.6	2.4	2.4	3.2	5.1	3.0	14	4.9	12	15
17	12	3.2	3.4	2.5	2.3	2.9	3.3	4.0	16	4.7	11	12
18	9.6	3.2	3.2	2.6	2.2	2.6	4.0	8.2	12	6.6	16	11
19	6.5	3.5	3.4	3.1	2.1	2.2	4.4	7.6	7.4	7.1	19	12
20	8.3	3.7	3.6	3.6	2.3	15	4.9	6.5	7.2	5.2	11	12
21	8.0	3.4	3.4	3.3	2.1	10	9.0	6.5	6.2	6.8	24	21
22	11	3.4	3.3	2.9	2.0	15	5.5	6.2	8.6	9.2	21	27
23	35	3.6	3.0	2.7	2.0	8.0	4.0	6.3	20	7.5	13	19
24	14	3.5	2.7	2.7	1.9	4.9	3.9	6.6	23	12	9.7	11
25	6.7	3.7	2.7	2.7	1.9	3.1	3.2	9.4	10	16	8.4	6.3
26	23	3.9	2.7	2.7	2.1	4.4	4.3	11	7.7	14	20	5.1
27	9.7	3.9	2.6	2.6	2.5	13	3.4	13	6.3	14	18	4.8
28	8.3	3.8	2.6	2.5	4.3	13	3.2	5.8	6.8	15	12	4.6
29	11	3.7	2.5	2.5	---	8.6	12	6.6	8.1	15	14	4.4
30	14	3.7	2.5	2.4	---	27	24	5.6	11	10	15	4.2
31	15	---	2.3	2.4	---	2.4	---	4.2	---	7.3	14	---
TOTAL	442.1	262.9	100.5	78.1	70.8	204.9	197.9	243.7	312.7	277.7	428.4	446.4
MEAN	14.3	8.76	3.24	2.52	2.53	6.61	6.60	7.86	10.4	8.96	13.8	14.9
MAX	35	32	4.1	3.6	4.3	27	24	20	29	16	24	29
MIN	6.5	3.2	2.3	2.1	1.9	2.1	3.1	3.2	3.4	4.7	5.7	4.2
AC-FT	877	521	199	155	140	406	393	483	620	551	850	885

CAL YR 1990 TOTAL 3361.8 MEAN 9.21 MAX 45 MIN 1.4 AC-FT 6670
WTR YR 1991 TOTAL 3066.1 MEAN 8.40 MAX 35 MIN 1.9 AC-FT 6080

07123000 ARKANSAS RIVER AT LA JUNTA, CO

LOCATION.--Lat 37°59'26", long 103°31'55", in SE¼NE¼ sec.2, T.24 S., R.55 W., Otero County, Hydrologic Unit 11020005, on right bank at upstream side of bridge on State Highway 109 in La Junta, 450 ft upstream from King Arroyo.

DRAINAGE AREA.--12,210 mi², of which 115 mi² is probably noncontributing.

PERIOD OF RECORD.--May to August 1889, September 1893 to December 1895 (gage heights, discharge measurements, and flood data only), April to October 1903, June to November 1908 (gage heights and discharge measurements only), April 1912 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as "near La Junta" in 1903.

REVISED RECORDS.--WSP 1341: Drainage area. WSP 1731: 1922.

GAGE.--Water-stage recorder with satellite telemetry, and nonrecording gage read twice daily. Datum of gage is 4,039.60 ft above National Geodetic Vertical Datum of 1929. See WSP 1711 or 1731 for history of changes prior to June 13, 1940. June 13, 1940, to June 6, 1967, water-stage recorder at site 300 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Dec. 19 to Jan. 15, and Jan. 26-28. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 400,000 acres, and return flow from irrigated areas. Flow partly regulated by Pueblo Reservoir (station 07099350) since Jan. 9, 1974. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--61 Years (water years 1913-73), 244 ft³/s; 176,800 acre-ft/yr, prior to completion of Pueblo Dam; 17 years (water years 1975-91), 260 ft³/s; 188,400; subsequent to completion of Pueblo Dam.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 200,000 ft³/s, June 4, 1921, gage height, 18.4 ft, site and datum then in use, from rating curve extended above 15,000 ft³/s, on basis of slope-area measurement of peak flow; no flow, Jan. 20-23, Mar. 20-22, 1915.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,960 ft³/s at 2300 July 2, gage height, 9.51 ft; minimum daily, 23 ft³/s, May 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	393	57	110	90	203	219	51	44	630	455	287	155
2	318	43	109	85	199	182	64	31	606	719	283	122
3	244	44	90	80	141	169	49	36	716	1100	322	135
4	266	52	89	80	113	158	36	44	604	655	329	145
5	442	38	110	90	110	140	45	35	603	535	358	414
6	397	24	109	90	110	123	64	37	621	707	135	429
7	287	27	97	90	130	113	63	34	607	605	232	392
8	250	28	105	90	140	101	53	32	663	848	452	372
9	250	29	117	100	137	92	53	37	614	443	433	275
10	316	26	114	110	146	94	43	30	597	424	227	226
11	398	25	113	115	156	94	47	23	671	250	109	187
12	348	25	112	120	159	98	55	23	890	431	263	151
13	308	26	108	120	162	99	47	49	769	634	416	152
14	310	37	104	120	265	88	51	38	700	596	399	126
15	320	462	99	82	312	61	43	29	914	393	586	116
16	307	224	102	75	314	36	48	31	843	243	482	139
17	328	173	107	72	301	32	45	35	580	105	521	119
18	405	150	87	72	322	25	37	49	594	64	424	95
19	421	135	100	72	314	31	48	43	647	95	370	89
20	446	127	80	66	313	58	39	61	739	150	479	93
21	487	117	52	68	305	32	38	89	764	442	597	76
22	454	111	60	70	285	50	65	118	653	520	409	74
23	434	108	65	92	291	57	42	97	671	570	488	71
24	432	116	70	75	274	51	30	138	678	546	494	64
25	418	115	70	80	217	43	29	211	592	578	496	68
26	423	118	70	85	217	37	32	415	615	517	413	102
27	411	106	80	120	195	56	26	441	604	532	393	99
28	438	103	85	155	188	61	26	442	597	485	356	90
29	448	96	85	195	---	60	31	443	607	438	284	92
30	417	110	95	195	---	81	44	542	562	429	181	66
31	196	---	90	191	---	65	---	578	---	338	150	---

TOTAL	11312	2852	2884	3145	6019	2606	1344	4255	19951	14847	11368	4734
MEAN	365	95.1	93.0	101	215	84.1	44.8	137	665	479	367	158
MAX	487	462	117	195	322	219	65	578	914	1100	597	429
MIN	196	24	52	66	110	25	26	23	562	64	109	64
AC-FT	22440	5660	5720	6240	11940	5170	2670	8440	39570	29450	22550	9390

CAL YR 1990 TOTAL 84048 MEAN 230 MAX 1980 MIN 22 AC-FT 166700
WTR YR 1991 TOTAL 85317 MEAN 234 MAX 1100 MIN 23 AC-FT 169200

07123675 HORSE CREEK NEAR LAS ANIMAS, CO

LOCATION.--Lat 38°05'06", long 103°21'12", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.33, T.22 S., R.53 W., Bent County, Hydrologic Unit 11020008, 15 ft right of right upstream end of box culverts on State Highway 194, 3.2 mi upstream of mouth, 3.4 mi downstream from Fort Lyon Canal Aqueduct, and 7.5 mi west of Las Animas.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 3,975 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 20-27, 30, 31, and Jan. 30. Records fair except for estimated daily discharges, which are poor. Natural flow of stream affected by seepage and sluicing from Fort Lyon Canal. There is some irrigation upstream, however, amounts are unknown.

AVERAGE DISCHARGE.--12 years, 14.1 ft³/s; 10,220 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,210 ft³/s, (revised), July 15, 1989, gage height, 6.61 ft, from rating curve extended above 240 ft³/s, on the basis of culvert and flow-over-road measurement of peak flow; no flow many days in 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18 ft³/s at 1730 Aug. 6, gage height, 2.00 ft; minimum daily, 1.6 ft³/s, Sept. 2.

REVISIONS.--The maximum discharge for water year 1989 has been revised to 1,210 ft³/s, July 15, 1989, gage height, 6.61 ft; this figure supersedes that published in the report for 1989.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	3.9	4.4	4.1	4.9	6.5	9.1	4.6	5.9	3.5	2.9	1.7
2	4.0	4.1	4.3	4.0	5.3	6.2	8.2	4.8	4.6	5.4	3.8	1.6
3	3.6	5.0	3.7	4.0	6.1	6.3	7.2	3.9	3.6	4.5	7.2	3.1
4	3.3	5.3	3.6	3.8	6.9	6.3	6.5	4.0	3.2	3.5	6.8	4.1
5	3.2	6.2	3.8	3.7	7.4	6.2	6.0	4.9	2.7	2.9	5.8	2.6
6	3.0	6.8	4.1	3.7	7.8	5.7	5.8	5.2	4.3	2.4	13	2.4
7	2.7	6.6	4.1	4.2	8.2	6.2	5.5	5.9	6.2	2.0	15	2.3
8	3.3	6.0	4.2	4.5	8.3	6.0	5.6	5.1	6.4	2.4	6.9	2.1
9	3.9	6.1	4.4	5.2	8.4	5.5	6.4	4.7	5.3	4.6	4.9	1.8
10	5.7	5.9	4.6	4.9	8.2	5.5	6.2	4.7	4.5	3.9	4.3	2.2
11	5.1	5.5	4.8	5.1	8.0	5.4	5.3	4.7	4.5	5.7	4.0	2.2
12	3.2	5.4	4.8	5.2	7.7	4.5	5.0	4.5	4.2	6.2	4.0	2.2
13	3.1	5.2	5.0	5.0	7.6	4.2	5.2	4.3	3.8	3.5	5.6	2.3
14	3.2	5.2	5.2	5.9	7.6	4.1	5.9	4.3	3.8	3.3	8.6	2.1
15	3.1	5.1	4.5	7.5	7.5	4.6	4.3	4.3	4.0	2.9	7.3	2.1
16	3.2	6.3	4.5	7.1	7.6	5.7	4.1	4.5	3.8	2.8	6.9	2.5
17	3.1	5.3	5.2	7.0	7.6	7.9	4.1	4.9	3.6	2.6	9.2	3.0
18	3.0	5.0	4.9	7.1	7.5	8.8	4.5	5.6	3.0	4.0	7.8	4.3
19	3.1	5.0	4.5	7.2	7.4	8.0	5.1	5.8	2.8	7.1	5.1	3.1
20	3.7	5.0	3.6	6.8	7.2	6.8	4.3	5.5	2.6	6.4	4.7	2.9
21	4.6	4.9	3.5	6.0	7.0	6.1	4.1	5.5	2.4	3.2	8.6	2.8
22	4.1	4.4	3.4	5.9	6.8	6.1	3.7	5.4	6.5	3.7	8.5	2.6
23	4.1	4.4	3.3	5.8	6.6	6.5	3.7	7.4	12	4.5	5.3	2.7
24	4.0	4.7	3.2	5.8	6.4	6.8	4.0	7.3	9.8	3.8	3.5	2.5
25	3.9	4.3	3.2	5.3	6.1	6.7	5.0	4.4	5.5	4.2	2.7	2.6
26	4.0	4.4	3.2	4.8	6.2	5.8	5.1	4.1	3.3	4.8	2.3	3.0
27	4.0	4.5	4.0	4.8	6.3	5.2	3.4	3.5	2.6	6.2	2.0	3.5
28	4.1	4.5	4.9	4.9	6.4	4.7	3.1	3.2	2.1	6.6	1.8	2.7
29	4.0	4.0	4.6	4.9	---	4.3	3.3	3.0	2.0	6.2	1.8	2.8
30	3.8	4.3	4.5	4.7	---	5.7	3.5	2.7	2.7	7.1	1.7	2.7
31	3.8	---	4.3	4.7	---	8.5	---	3.4	---	3.8	1.7	---
TOTAL	114.7	153.3	130.3	163.6	199.0	186.8	153.2	146.1	131.7	133.7	173.7	78.5
MEAN	3.70	5.11	4.20	5.28	7.11	6.03	5.11	4.71	4.39	4.31	5.60	2.62
MAX	5.7	6.8	5.2	7.5	8.4	8.8	9.1	7.4	12	7.1	15	4.3
MIN	2.7	3.9	3.2	3.7	4.9	4.1	3.1	2.7	2.0	2.0	1.7	1.6
AC-FT	228	304	258	325	395	371	304	290	261	265	345	156

CAL YR 1990 TOTAL 1876.28 MEAN 5.14 MAX 49 MIN .94 AC-FT 3720
WTR YR 1991 TOTAL 1764.6 MEAN 4.83 MAX 15 MIN 1.6 AC-FT 3500

07123675 HORSE CREEK NEAR LAS ANIMAS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1987 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1987 to current year.

WATER TEMPERATURE: December 1987 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and mean water temperature data are available in district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 9,330 microsiemens, May 1, 1988; minimum, 796 microsiemens, July 21, 1990.

WATER TEMPERATURE: Maximum, 33.3°C, July 10, 1989; minimum, 0.0°C, many days during most winters.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,610 microsiemens, June 7; minimum, 1,710 microsiemens, July 12.

WATER TEMPERATURE: Maximum, 33.2°C, July 18; minimum, 0.0°C, many days during winter.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4480	4290	4270	3650	4540	4450	5350	4740	2310	2090	2740	2830
2	4370	4310	4200	3690	4440	4470	5260	4540	2680	2230	2600	2850
3	4220	4440	4130	3560	4450	4390	5200	4190	2900	2930	2350	2640
4	4170	4540	4190	3500	4390	4340	4970	4070	2780	3160	2660	2600
5	4110	4540	4310	3520	4290	4420	4770	4590	3040	3200	3130	2920
6	4070	4570	4410	3900	4290	4580	4600	4550	3110	3150	2420	2850
7	4060	4560	4230	4630	4210	4650	4480	4150	4700	2950	2210	2890
8	3840	4510	4300	4860	4140	4620	4340	4220	5330	2800	2720	2930
9	3940	4620	4260	5060	4150	4600	4910	4290	4550	2430	3080	2920
10	3390	4600	4260	4810	4160	4580	5000	4130	4100	2770	3230	2900
11	3600	4530	4290	4770	4210	4560	4690	4030	3790	2520	3220	3000
12	4140	4470	4380	4970	4300	4530	4460	3920	3520	2430	3080	2900
13	4130	4410	4360	5020	4360	4500	4260	3820	3400	2880	3540	2890
14	4130	4370	4370	5010	4370	4490	4110	3830	3330	2810	4640	2870
15	4130	4320	4250	5150	4360	4570	4410	3800	3340	2840	4170	2850
16	4170	3940	4350	5350	4350	4710	4350	3730	3360	2930	3590	2840
17	4170	3990	4310	5190	4330	4790	4320	3790	3320	2930	2850	2850
18	4120	4220	4400	5200	4290	4890	4310	4130	3250	2600	2900	2590
19	4110	4230	4450	5160	4350	4840	4670	3930	3220	2190	3300	2870
20	4230	4340	4170	5020	4440	4680	4790	3680	2880	2410	3470	2910
21	5050	4350	3850	4920	4440	4560	4620	3610	2700	2800	2660	2910
22	4610	4300	3730	4870	4420	4550	4490	3890	2590	2600	2550	2930
23	4430	4280	3550	4830	4370	4650	4400	3850	4200	2710	2980	2960
24	4320	4290	3450	4730	4360	4620	4340	3660	4600	2900	3170	2990
25	4260	4300	3420	4690	4320	4530	4040	4020	4210	2780	3170	3020
26	4200	4280	3400	4600	4400	4430	3980	3520	3680	2530	3140	2880
27	4150	4340	3360	4560	4470	4160	4100	3290	3400	2320	3070	2760
28	4040	4320	3400	4490	4460	4250	4070	3430	3120	2270	2960	2940
29	4090	4230	3800	4510	---	4310	4210	3660	3000	2150	2930	2990
30	4200	4280	3670	4550	---	4440	4370	3590	2660	2120	2920	2950
31	4300	---	3610	4600	---	5080	---	3180	---	2650	2870	---
MEAN	4170	4360	4040	4620	4340	4560	4530	3930	3440	2650	3040	2870

07123675 HORSE CREEK NEAR LAS ANIMAS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.8	14.8	14.5	10.0	8.8	4.4	7.2	1.1	8.5	.7	14.2	5.1
2	19.3	13.8	14.4	3.6	6.2	2.9	4.2	1.7	7.2	.7	10.5	3.8
3	19.8	11.9	8.6	3.8	7.5	1.6	4.9	2.6	7.7	.7	13.7	2.2
4	21.4	10.9	11.3	6.0	8.9	2.0	4.9	2.7	7.6	1.7	13.3	4.8
5	22.1	11.4	11.1	4.8	8.2	3.3	7.5	2.2	6.8	.6	16.3	7.6
6	20.5	11.4	6.7	4.5	8.3	3.2	5.4	3.7	7.1	.7	10.2	5.6
7	15.9	10.6	8.6	4.2	8.8	2.1	5.9	3.4	6.9	.9	11.4	4.3
8	10.9	8.7	9.9	4.1	9.2	2.5	7.8	2.6	7.5	1.1	12.8	2.4
9	15.9	6.7	11.2	4.5	9.3	2.8	5.5	2.9	8.6	2.5	13.7	2.9
10	16.7	6.8	12.1	5.7	9.4	2.7	5.7	2.9	7.6	1.5	14.4	5.4
11	16.8	8.8	13.0	6.3	9.4	2.8	7.1	2.0	8.4	1.6	15.6	6.1
12	17.0	8.3	13.2	6.5	8.5	3.7	7.1	1.0	6.5	2.2	13.4	4.8
13	18.1	9.0	13.3	6.6	8.5	4.4	7.3	2.2	7.8	2.1	13.1	3.7
14	16.8	8.9	13.3	6.3	8.3	3.0	6.2	3.1	9.5	2.2	8.2	4.5
15	18.1	8.3	13.8	6.8	6.3	1.1	5.7	1.6	9.6	2.0	10.2	3.8
16	18.3	9.7	11.7	7.5	9.1	4.0	6.5	1.8	9.6	3.0	7.0	4.2
17	15.4	9.1	11.4	7.5	7.9	3.5	6.0	.7	8.8	4.3	12.4	3.6
18	15.2	6.7	12.3	6.6	7.6	2.3	6.2	.8	8.5	3.3	13.7	5.8
19	18.1	8.6	12.4	6.9	4.1	1.0	6.5	.8	9.5	1.2	13.9	6.8
20	12.9	8.2	12.2	7.5	2.5	.2	5.4	.8	11.5	1.7	15.2	4.9
21	13.5	6.3	11.7	7.1	1.5	.2	5.8	.5	12.0	2.9	13.9	4.8
22	15.4	6.5	10.8	5.1	2.1	.4	5.1	.1	11.9	3.1	14.0	5.6
23	16.2	8.7	11.7	5.0	3.6	.4	6.1	1.4	9.5	4.8	16.6	4.5
24	15.5	8.8	12.5	5.5	4.8	.6	5.0	.7	8.0	2.8	17.5	5.5
25	16.8	8.9	12.2	5.3	5.7	1.5	4.7	.7	9.9	.5	15.7	7.1
26	17.0	8.9	12.4	7.0	6.3	2.0	5.1	.3	11.4	2.2	15.4	6.7
27	15.8	9.4	8.7	4.4	6.4	.2	5.9	.6	12.1	2.2	17.7	5.8
28	16.6	8.2	8.0	3.5	9.3	2.3	6.6	.5	8.5	2.8	15.2	5.4
29	16.5	8.5	8.9	2.1	2.3	.0	4.0	.0	---	---	10.6	2.1
30	16.5	8.5	9.5	3.4	1.9	.0	6.4	.0	---	---	15.5	1.2
31	16.2	8.7	---	---	6.5	.0	8.1	.2	---	---	16.5	3.9
MONTH	22.8	6.3	14.5	2.1	9.4	.0	8.1	.0	12.1	.5	17.7	1.2
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	18.2	5.9	21.5	6.4	26.8	14.6	29.4	16.7	---	---	26.6	15.3
2	13.4	8.5	22.7	10.2	25.7	14.4	31.1	17.7	---	---	28.6	16.7
3	18.6	6.6	22.4	9.2	26.1	12.8	30.2	17.5	---	---	24.9	18.9
4	20.8	8.0	14.5	9.8	28.6	13.7	31.5	16.4	---	---	26.0	17.6
5	21.9	8.1	21.2	8.3	26.9	13.9	32.7	16.2	26.6	---	25.6	15.2
6	22.7	8.8	21.7	9.0	24.5	13.9	33.1	16.6	---	---	22.6	15.8
7	20.9	8.3	21.1	11.0	26.7	13.3	30.5	17.2	25.8	---	26.4	16.1
8	18.8	7.6	23.6	9.9	28.4	14.8	30.8	17.8	26.1	---	25.9	14.3
9	19.7	6.2	24.7	11.7	28.5	15.5	31.2	18.2	---	---	26.6	14.2
10	19.2	6.5	21.1	14.3	28.9	14.9	30.4	17.1	27.0	---	24.6	16.5
11	19.5	7.2	25.1	13.5	27.6	14.2	29.3	18.0	---	---	27.8	15.7
12	18.5	7.3	24.9	12.5	29.9	14.2	27.3	17.4	---	---	23.4	15.7
13	18.8	4.8	23.0	10.5	29.6	14.7	28.6	16.1	---	17.0	24.6	15.0
14	19.9	7.2	25.3	11.7	22.3	15.5	26.9	15.8	27.1	17.2	24.7	13.4
15	20.0	6.4	25.1	12.3	27.3	14.7	25.9	16.0	27.8	16.7	23.5	12.2
16	18.1	7.7	21.0	11.4	28.4	14.5	31.5	16.1	28.4	17.2	23.6	13.1
17	19.3	7.5	25.3	10.7	30.3	14.2	31.9	16.7	28.5	17.7	23.8	12.8
18	18.8	9.9	25.4	13.0	30.0	15.9	33.2	17.4	26.1	17.8	16.1	12.7
19	19.5	9.3	26.0	14.6	26.4	13.0	31.9	19.4	26.9	17.1	17.8	12.0
20	18.6	9.0	23.2	14.6	24.6	15.0	31.9	19.6	28.2	16.3	21.9	10.6
21	20.6	8.0	22.9	14.1	30.9	15.4	31.1	17.9	28.1	17.5	23.3	11.5
22	20.3	7.8	26.8	13.6	24.1	16.0	25.0	17.7	27.7	17.0	20.9	11.5
23	16.3	10.5	25.3	13.8	26.0	16.4	24.8	17.6	28.7	16.1	22.8	10.2
24	22.2	9.4	21.1	13.4	28.4	17.3	23.4	15.9	29.1	15.4	20.9	9.7
25	20.7	9.9	26.4	11.8	27.2	15.0	25.9	15.6	29.6	16.1	21.9	9.9
26	18.1	8.5	27.0	13.0	23.8	13.3	29.2	16.0	29.7	16.1	22.5	10.5
27	18.1	5.7	26.4	13.8	31.9	15.4	29.0	15.9	29.7	16.0	21.7	11.5
28	13.2	6.7	20.7	12.9	31.7	17.1	30.1	17.1	30.5	16.0	22.1	11.8
29	20.7	7.0	27.4	12.9	30.6	17.2	---	---	29.7	17.0	23.3	12.4
30	17.3	8.1	25.8	12.1	30.0	17.0	29.8	16.7	29.1	15.7	21.6	13.7
31	---	---	28.2	13.0	---	---	29.9	17.0	27.8	15.7	---	---
MONTH	22.7	4.8	28.2	6.4	31.9	12.8	---	---	---	---	28.6	9.7

07124000 ARKANSAS RIVER AT LAS ANIMAS, CO

LOCATION.--Lat 38°04'51", long 103°13'09", in SE¼NE¼ sec.3, T.23 S., R.52 W., Bent County, Hydrologic Unit 11020009, on right bank at upstream side of bridge on U.S. Highway 50, 1.1 mi north of courthouse in Las Animas, and 4.2 mi upstream from Purgatoire River.

DRAINAGE AREA.--14,417 mi², of which 441 mi² are probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to November 1898 (gage heights only), August to November 1909 (gage heights and discharge measurements only), May 1939 to current year.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 3,883.97 ft above National Geodetic Vertical Datum of 1929. May 13 to Nov. 12, 1898, and Aug. 1 to Nov. 10, 1909, nonrecording gages near present site at different datums. May 23, 1939, to Apr. 27, 1967, water-stage recorder at site 0.4 mi downstream at datum 9.00 ft, lower.

REMARKS.--Estimated daily discharges: Dec. 19 to Jan. 13, and Jan. 27-30. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 412,000 acres, and return flow from irrigated areas. Flow partly regulated by Pueblo Reservoir (station 07099350) since Jan. 9, 1974.

AVERAGE DISCHARGE.--34 years (water years 1940-73), 203 ft³/s; 147,100 acre-ft/yr, prior to completion of Pueblo Dam; 17 years (water years 1975-91), 249 ft³/s; 180,400 acre-ft/yr, subsequent to completion of Pueblo Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,000 ft³/s, May 20, 1955, gage height, 15.03 ft, site and datum then in use, from rating curve extended above 24,000 ft³/s, on basis of slope-area measurement of peak flow; minimum daily, 0.9 ft³/s, July 31, Aug. 1, 3, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft³/s at 1330 July 3, gage height, 6.42 ft; minimum daily, 17 ft³/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	385	136	118	105	229	208	25	22	504	374	257	116
2	318	94	118	110	210	244	23	20	497	432	246	102
3	266	96	116	115	196	203	22	19	498	804	275	80
4	226	94	120	120	156	189	21	18	549	587	310	158
5	299	94	124	120	140	178	21	26	472	496	366	117
6	418	90	125	125	135	161	21	35	514	485	135	332
7	318	79	119	130	130	144	21	34	536	530	88	318
8	261	74	114	140	148	129	21	29	520	495	241	308
9	259	70	111	145	161	123	22	23	482	532	471	284
10	264	62	112	150	161	127	21	20	512	319	266	217
11	321	58	111	160	174	125	21	17	500	236	83	181
12	351	54	113	160	185	121	23	17	543	191	46	148
13	287	54	117	160	172	118	21	17	660	378	251	120
14	261	59	121	156	184	118	21	17	525	442	358	118
15	291	201	113	145	326	93	21	17	633	403	414	103
16	317	292	111	136	366	63	21	17	756	247	396	97
17	283	203	111	128	364	50	19	18	488	138	448	102
18	302	184	112	124	362	41	17	17	431	70	383	86
19	337	178	100	124	354	32	18	18	443	48	322	74
20	393	170	90	124	345	29	17	17	580	48	332	64
21	403	151	90	124	336	29	18	17	555	79	427	61
22	390	134	92	124	327	30	17	42	604	252	413	54
23	351	132	95	131	312	28	26	62	551	427	343	44
24	365	137	98	137	300	28	32	47	525	399	462	43
25	361	143	100	120	261	26	24	79	520	488	462	37
26	334	144	110	119	235	23	24	157	478	410	380	34
27	321	136	110	140	223	23	22	309	477	406	309	45
28	333	133	110	150	191	23	21	369	449	443	285	51
29	358	126	105	130	---	23	21	378	464	357	248	46
30	337	118	100	150	---	26	21	396	475	331	192	44
31	317	---	105	181	---	28	---	454	---	308	134	---
TOTAL	10027	3696	3391	4183	6683	2783	643	2728	15741	11155	9343	3583
MEAN	323	123	109	135	239	89.8	21.4	88.0	525	360	301	115
MAX	418	292	125	181	366	244	32	454	756	804	471	332
MIN	226	54	90	105	130	23	17	17	431	48	46	34
AC-FT	19890	7330	6730	8300	13260	5520	1280	5410	31220	22130	18530	7110

CAL YR 1990 TOTAL 74151 MEAN 203 MAX 1200 MIN 22 AC-FT 147100
WTR YR 1991 TOTAL 73956 MEAN 203 MAX 804 MIN 17 AC-FT 146700

07124000 ARKANSAS RIVER AT LAS ANIMAS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1985 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1985 to current year.

WATER TEMPERATURE: December 1985 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and mean water temperature data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 7,950 microsiemens, Jan. 22, 1986; minimum, 310 microsiemens, July 21, 1990.

WATER TEMPERATURE: Maximum, 34.5°C, Aug. 18, 1986; minimum, 0.0°C, many days during most winters.

EXTREMES FOR PERIOD CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 3,920 microsiemens, May 14; minimum, 854 microsiemens Aug. 21.

WATER TEMPERATURE: Maximum, 34.4°C, July 20; minimum, 0.0°C, many days during winter.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1480	2050	2650	---	---	2250	---	3500	1120	---	1400	---
2	1480	2440	2690	---	---	1940	3510	3610	1100	1020	1400	---
3	1580	2360	2700	---	---	2120	3510	3610	1110	1030	1350	---
4	1610	2400	2710	---	---	2180	3480	3580	1040	1050	1360	1980
5	1570	2380	2740	---	---	2270	---	3270	1030	990	1460	2060
6	---	2410	2720	---	2700	2330	---	3210	1090	1030	1960	1390
7	---	---	2750	---	2730	2440	---	3360	1160	951	2390	1360
8	---	2860	2750	---	2490	2480	---	3550	1240	1000	1500	1510
9	1650	2860	2700	---	2200	2570	3620	3590	1150	1080	1230	1510
10	1660	2870	2660	---	2260	2580	3630	3600	1090	1260	1450	1680
11	1570	2890	2690	---	2260	---	3570	3690	1180	1380	2350	1860
12	1490	2850	2730	---	2260	---	3420	3700	1120	---	3050	2020
13	1530	2830	2730	2450	2280	---	3540	3680	1020	---	1430	2120
14	1550	2870	2730	2420	2260	---	3530	3740	---	---	1180	2110
15	1640	2300	2710	2450	---	---	3540	3780	---	1180	1170	2190
16	1660	1550	2660	2560	---	---	3610	3730	---	1440	1100	2290
17	1600	2060	2700	2770	---	---	3710	3680	---	1790	1100	2340
18	1520	2260	2670	2810	---	---	3720	3670	---	2260	1220	2560
19	1470	2360	2710	2820	---	---	3720	3620	1110	3320	1380	2710
20	---	2420	---	2790	1760	3740	3780	3590	971	3070	1460	2770
21	---	2440	---	2800	1740	3630	3770	3610	947	2450	1260	2780
22	---	---	---	2800	1760	3580	3730	3030	959	1120	---	2960
23	1540	2580	---	2790	1770	3580	3630	2210	1040	1070	---	3090
24	1530	2610	---	---	1780	3550	3460	2370	1070	1150	1330	3010
25	1530	2600	---	---	1850	3580	3590	1760	1040	1070	1370	3210
26	1540	2610	---	---	1950	3580	3640	1320	1060	1100	1490	3230
27	1540	2630	---	---	2050	3620	3610	1110	1050	1140	1610	2700
28	1540	2620	---	---	2220	3610	3600	1120	1040	1120	1620	2690
29	1490	2560	---	---	---	---	3600	1270	961	1220	---	2800
30	1520	---	---	---	---	---	3550	1340	---	1240	---	2760
31	1530	---	---	---	---	---	---	1270	---	1290	---	---
MEAN	---	---	---	---	---	---	---	2970	---	---	---	---

07124000 ARKANSAS RIVER AT LAS ANIMAS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	21.4	16.1	14.3	10.4	6.9	2.9	.0	.0	4.3	.0	12.4	5.3
2	19.4	17.2	---	---	3.5	.5	.0	.0	4.8	.0	8.6	5.1
3	19.1	14.7	---	---	3.2	.0	.0	.0	6.6	.6	10.6	3.1
4	19.9	13.1	---	---	4.2	.0	.0	.0	8.9	2.7	12.0	5.9
5	20.0	13.6	---	---	4.2	.1	.0	.0	8.9	2.0	14.5	8.6
6	17.9	13.2	---	---	5.3	1.5	.0	.0	9.3	1.9	9.8	6.7
7	15.4	11.6	---	---	5.3	.0	.0	.0	9.7	2.6	9.6	5.1
8	12.0	7.1	10.1	---	6.1	.1	.0	.0	9.9	2.8	11.0	2.7
9	11.6	6.5	12.2	3.5	6.6	.7	.0	.0	10.5	4.8	12.5	3.9
10	13.5	6.1	13.3	4.9	6.9	1.0	.0	.0	9.9	3.7	13.4	6.2
11	13.7	9.8	15.1	5.7	7.1	1.3	.0	.0	10.1	3.3	14.7	7.4
12	14.0	9.6	15.4	6.1	6.6	2.5	.0	.0	7.2	3.6	11.9	5.0
13	14.8	10.0	15.5	6.4	6.3	3.3	.8	.0	8.7	3.1	12.4	4.7
14	14.5	10.3	15.2	5.7	6.7	1.9	2.8	.3	9.6	3.3	7.4	4.0
15	14.4	9.7	14.0	6.5	3.2	.0	3.4	.0	7.9	3.5	9.7	2.6
16	14.9	10.6	10.6	8.1	5.6	.7	5.0	.9	8.5	4.3	5.3	2.4
17	13.4	10.1	9.3	6.8	6.0	2.3	5.2	.1	8.4	5.5	---	---
18	12.0	8.2	10.2	5.5	5.1	.3	6.1	.2	7.5	4.5	---	---
19	13.5	8.8	10.3	6.2	2.1	.0	6.3	.4	7.0	2.6	15.8	---
20	12.5	7.8	10.6	6.8	.0	.0	5.2	.9	8.5	2.7	15.1	3.3
21	9.6	4.7	10.4	6.5	.0	.0	5.3	.1	9.6	4.4	17.4	3.6
22	11.2	6.3	9.1	4.0	.0	.0	4.5	.0	10.0	5.2	15.2	5.0
23	12.9	8.2	9.5	3.7	.0	.0	5.6	.1	8.1	6.2	19.1	3.3
24	12.9	9.6	10.5	4.3	.0	.0	4.4	.0	6.7	3.1	19.7	4.6
25	13.7	9.7	10.4	4.5	.0	.0	3.7	.0	6.1	.7	15.7	6.2
26	14.3	10.1	10.8	6.6	.0	.0	4.5	.0	8.6	2.4	15.1	5.7
27	14.1	11.0	6.9	3.2	.0	.0	.0	.0	9.9	3.3	19.1	4.5
28	13.9	9.8	5.8	1.3	.0	.0	.2	.0	8.0	3.9	17.0	4.5
29	14.2	10.3	5.5	.0	.0	.0	.0	.0	---	---	11.3	2.3
30	14.3	10.5	6.4	.6	.0	.0	2.4	.0	---	---	17.7	.0
31	14.3	10.6	---	---	.0	.0	4.4	.0	---	---	19.7	3.2
MONTH	21.4	4.7	---	---	7.1	.0	6.3	.0	10.5	.0	---	---
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	22.2	4.7	25.8	6.1	23.7	19.0	28.0	21.7	29.8	22.4	25.3	18.8
2	15.9	8.4	25.8	9.6	24.8	18.8	27.4	20.1	29.6	23.6	29.0	18.3
3	21.3	6.7	26.2	8.8	25.5	20.0	24.9	22.2	24.6	21.5	25.6	19.9
4	23.2	8.0	15.8	8.8	25.3	19.9	26.5	21.2	24.0	20.5	23.6	18.8
5	---	---	23.8	7.3	24.6	20.5	---	---	26.6	20.9	26.5	17.5
6	---	---	26.1	9.2	23.0	19.4	---	---	28.7	20.7	22.3	19.7
7	---	---	25.4	11.0	24.1	18.8	---	---	30.3	17.8	23.9	19.2
8	---	---	28.0	9.7	26.5	20.8	---	---	27.7	21.6	23.4	18.2
9	22.4	---	29.6	11.8	26.3	21.5	28.1	23.3	25.2	22.5	24.4	18.7
10	21.8	5.6	26.1	14.9	26.4	21.7	28.1	22.2	27.6	21.1	23.9	19.6
11	20.6	6.4	30.0	14.0	26.5	21.6	28.7	22.8	30.3	19.8	26.9	19.1
12	20.9	7.0	28.9	12.2	26.7	21.8	28.0	21.4	29.7	19.0	25.0	19.3
13	20.9	3.9	29.4	11.8	---	---	26.5	21.5	21.3	20.0	25.3	17.9
14	22.2	7.0	29.4	12.8	---	---	26.4	21.2	25.5	19.4	24.4	16.5
15	22.8	5.4	29.4	12.3	---	---	27.6	21.9	26.4	21.0	23.7	14.6
16	19.8	7.2	24.8	11.2	---	---	30.2	21.9	27.1	22.1	24.0	14.8
17	21.3	6.8	29.3	10.4	---	---	32.3	21.8	27.1	22.5	23.7	14.8
18	21.2	9.5	28.8	13.0	26.6	---	33.3	20.4	25.9	22.7	16.6	12.9
19	21.3	8.7	29.5	14.6	24.5	20.6	32.6	---	26.5	21.9	17.1	11.7
20	21.2	8.0	27.0	14.7	24.5	20.1	34.4	19.3	27.2	21.5	23.0	10.1
21	22.8	6.6	27.9	14.3	25.8	20.9	32.7	20.1	27.7	22.3	24.0	11.9
22	23.4	6.9	29.4	13.8	24.0	20.7	25.8	23.0	26.9	22.4	21.9	12.0
23	17.5	10.6	28.3	15.9	23.7	19.3	24.3	21.6	26.7	21.2	24.6	10.2
24	24.7	9.7	24.5	14.5	25.8	20.3	22.6	20.1	26.9	21.9	22.5	9.6
25	24.1	9.7	28.6	14.1	24.3	20.7	23.1	19.1	27.4	22.4	23.7	9.8
26	19.1	8.3	28.2	18.4	24.7	19.8	25.1	19.7	27.8	22.1	25.4	10.6
27	21.8	4.7	25.4	18.9	26.0	20.2	26.5	20.9	27.7	22.1	22.7	11.8
28	13.6	6.1	21.5	18.7	25.6	21.5	27.0	22.1	27.8	21.9	24.2	12.7
29	22.6	6.4	24.6	17.1	25.5	21.6	27.2	22.0	25.3	22.1	25.7	13.2
30	19.5	7.6	24.7	18.4	26.3	21.6	27.6	21.0	24.1	21.6	22.2	13.6
31	---	---	24.1	18.2	---	---	28.3	22.5	25.1	20.7	---	---
MONTH	---	---	30.0	6.1	---	---	---	---	30.3	17.8	29.0	9.6

07124200 PURGATOIRE RIVER AT MADRID, CO

LOCATION.--Lat 37°07'46", long 104°38'20", in SW¼NE¼ sec.35, T.33 S., R.65 W., Las Animas County, Hydrologic Unit 11020010, on left bank 7D ft downstream from county bridge, 0.3 mi northeast of Madrid, and 1.0 mi downstream from Burro Canyon.

DRAINAGE AREA.--505 mi².

PERIOD OF RECORD.--Streamflow records, March 1972 to current year. Water-quality data available October 1978 to September 1981.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 6,261.61 ft above National Geodetic Vertical Datum of 1929 (U.S. Army, Corps of Engineers bench mark).

REMARKS.--Estimated daily discharges: Dec. 5-12, 16-17, Dec. 19 to Jan. 7, Jan. 19-20, 24-28, Mar. 25 to Apr. 12, July 22-23, and 25. Records good except for estimated daily discharges, which are poor. Diversions for irrigation of about 6,000 acres upstream from station. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--19 years, 67.9 ft³/s; 49,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft³/s, July 20, 1976, gage height, 12.80 ft, from floodmarks, from rating curve extended above 300 ft³/s, on basis of drift-timed measurement and slope-area measurements of peak flow; minimum daily, 3.0 ft³/s, Feb. 23 to Mar. 2, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s, and maximum (*), from rating extended above 300 ft³/s, on basis of drift-timed measurement and slope-area measurements of peak flow:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 21	1915	1,310	4.26	Aug. 8	1715	1,570	4.64
July 11	1615	2,140	5.07	Aug. 11	2030	1,760	4.78
July 24	1945	2,400	5.31	Aug. 17	2300	*3,450	*6.26
Aug. 4	1900	1,810	4.75	Aug. 19	1930	1,210	4.38
Aug. 6	1445	2,050	4.99				

Minimum daily discharge, 14 ft³/s, Dec. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	34	33	20	27	21	22	35	144	125	148	113
2	47	36	27	21	25	20	23	32	133	128	145	111
3	47	49	21	21	26	19	24	32	120	139	270	124
4	44	39	25	20	26	19	25	35	103	128	804	174
5	42	41	32	21	23	19	27	37	109	104	414	145
6	41	47	26	22	24	20	28	35	141	96	473	138
7	40	44	23	22	24	18	29	36	147	83	339	130
8	47	40	27	24	23	18	30	39	137	93	342	114
9	51	42	32	25	26	19	31	43	145	115	234	163
10	50	42	30	25	26	18	31	60	153	88	280	199
11	49	40	26	23	30	19	30	77	165	211	324	124
12	46	39	24	18	24	17	30	87	155	131	239	112
13	45	37	21	21	22	18	31	85	149	103	298	137
14	42	35	19	24	22	18	31	79	176	92	406	117
15	41	34	15	20	20	16	29	89	208	83	386	105
16	40	34	15	18	21	19	27	88	204	83	348	98
17	39	34	15	19	20	18	25	87	186	87	483	92
18	38	34	15	20	18	18	26	81	184	76	370	82
19	38	32	17	21	20	18	30	100	187	87	396	86
20	46	31	16	21	20	18	33	155	192	95	242	77
21	44	31	15	20	20	18	34	153	291	101	208	68
22	45	26	14	19	20	16	37	153	170	179	195	62
23	48	27	14	17	19	18	41	154	173	245	174	61
24	44	33	15	20	22	18	43	149	151	744	168	59
25	42	30	18	22	18	18	38	139	137	509	170	58
26	40	32	19	21	21	18	36	142	132	289	182	58
27	38	30	21	20	21	18	36	160	127	234	184	55
28	38	26	22	20	21	18	42	165	130	195	187	55
29	36	28	20	20	---	19	39	155	135	169	148	56
30	35	38	18	20	---	20	40	151	126	166	143	56
31	35	---	19	24	---	21	---	144	---	151	125	---
TOTAL	1328	1065	654	649	629	572	948	2977	4710	5129	8825	3029
MEAN	42.8	35.5	21.1	20.9	22.5	18.5	31.6	96.0	157	165	285	101
MAX	51	49	33	25	30	21	43	165	291	744	804	199
MIN	35	26	14	17	18	16	22	32	103	76	125	55
AC-FT	2630	2110	1300	1290	1250	1130	1880	5900	9340	10170	17500	6010

CAL YR 1990 TOTAL 16681 MEAN 45.7 MAX 334 MIN 10 AC-FT 33090
WTR YR 1991 TOTAL 30515 MEAN 83.6 MAX 804 MIN 14 AC-FT 60530

07124400 TRINIDAD LAKE NEAR TRINIDAD, CO

LOCATION.--Lat 37°08'27", long 104°33'03", in NE¼SW¼ sec.27, T.33 S., R.64 W., Las Animas County, Hydrologic Unit 11020010, in valve house near center of dam on Purgatoire River and 3.2 mi southwest of courthouse in Trinidad.

DRAINAGE AREA.--672 mi².

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

REVISED RECORDS.--WDR CO-78-1: 1977(M). WDR CO-83-1: 1981-82 (contents). WDR CO-89-1: 1988 (contents).

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 6,073.64 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army, Corps of Engineers).

REMARKS.--No estimated daily contents. Records good. Reservoir is formed by a rock and earthfill dam completed in 1977. Storage began Aug. 19, 1977. Reservoir area-capacity tables were revised beginning Nov. 1, 1987 after a resurvey by the Corp of Engineers. Total capacity, 185,000 acre-ft, at elevation 6,284.99 ft. Elevation of high crest of spillway, 6,258 ft, with capacity of 121,400 acre-ft. Elevation of notch crest in spillway is 6,243.0 ft, capacity, 93,600 acre-ft. Permanent pool is 4,500 acre-ft at elevation 6,143.1 ft. Elevation of outlet invert is 6,095.0 ft. Reservoir is used for flood control, storage for irrigation, and to help control sedimentation. Figures given are total contents.

COOPERATION.--Capacity tables provided by U.S. Army, Corps of Engineers.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 61,800 acre-ft, Apr. 26, 1983, elevation, 6,222.66 ft; no contents prior to Aug. 19, 1977.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 14,200 acre-ft, Apr. 15, elevation, 6,167.29 ft; minimum contents, 5,920 acre-ft, Oct. 1, elevation, 6,147.86 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

6,145.0	5,010	6,170.0	15,600
6,150.0	6,690	6,175.0	18,500
6,155.0	8,670	6,180.0	21,700
6,160.0	10,800	6,185.0	25,300
6,165.0	13,100	6,190.0	29,300

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5920	8410	10300	11400	12500	13200	14000	11100	6920	6210	6040	5990
2	6020	8510	10300	11400	12500	13100	14000	10900	6960	6200	6000	6010
3	6120	8610	10300	11500	12600	13100	14000	10800	6950	6260	6310	6060
4	6210	8700	10300	11500	12600	13200	14000	10700	6880	6270	7680	6210
5	6290	8800	10400	11600	12600	13200	14000	10500	6880	6170	7710	6160
6	6370	8900	10400	11600	12700	13200	14100	10400	7020	6150	7190	6030
7	6440	8980	10500	11600	12700	13300	14100	10300	7100	6180	6310	6020
8	6460	9070	10500	11700	12800	13300	14200	10100	7080	6240	6220	6060
9	6470	9170	10500	11700	12700	13300	14200	9730	6990	6360	6270	6260
10	6550	9270	10600	11700	12700	13300	14200	9440	6900	6170	6280	6590
11	6640	9350	10600	11800	12700	13400	14200	9160	6900	6420	6350	6710
12	6740	9440	10700	11800	12800	13400	14200	8890	6920	6440	6050	6920
13	6840	9520	10800	11900	12800	13400	14200	8640	6890	6200	6160	7150
14	6920	9600	10800	11900	12800	13400	14200	8340	6930	6140	6900	7340
15	7000	9670	10800	11900	12900	13400	14200	8020	7080	6160	6690	7480
16	7080	9730	10900	12000	12900	13500	14200	7700	7080	6170	5980	7620
17	7140	9800	10900	12000	12900	13500	14200	7400	6920	6190	6150	7750
18	7220	9870	11000	12000	12900	13500	14200	7320	6880	6120	6430	7890
19	7290	9940	11000	12100	13000	13600	14100	7410	6890	6090	6330	8060
20	7400	10000	11000	12100	13000	13600	14000	7570	6880	6140	6150	8240
21	7490	10100	11000	12100	13000	13600	13900	7590	7080	6240	6150	8400
22	7590	10100	11000	12100	13100	13700	13800	7430	6850	6580	6130	8520
23	7700	10100	11100	12200	13100	13700	13500	7170	6520	6640	6050	8650
24	7790	10100	11100	12200	13100	13700	13200	6900	6300	7260	6020	8780
25	7880	10000	11100	12300	13200	13800	12900	6820	6160	7240	6060	8900
26	7970	10000	11100	12300	13200	13800	12500	6860	6240	6260	6120	9030
27	8050	10100	11200	12300	13200	13800	12100	6920	6290	5970	6230	9150
28	8120	10100	11200	12400	13200	13800	11800	6960	6310	6030	6100	9270
29	8190	10200	11300	12400	---	13900	11600	6910	6310	6080	6060	9390
30	8260	10200	11300	12400	---	13900	11300	6860	6260	6110	6020	9490
31	8340	---	11300	12500	---	14000	---	6860	---	6090	5980	---
MAX	8340	10200	11300	12500	13200	14000	14200	11100	7100	7260	7710	9490
MIN	5920	8410	10300	11400	12500	13100	11300	6820	6160	5970	5980	5990

CAL YR 1990 MAX 12900 MIN 4640
WTR YR 1991 MAX 14200 MIN 5920

07124410 PURGATOIRE RIVER BELOW TRINIDAD LAKE, CO

LOCATION.--Lat 37°08'37", long 104°32'49", in SW¼NE¼ sec.27, T.33 S., R.64 W., Las Animas County, Hydrologic Unit 11020010, on left bank at toe of dam and 3.0 mi southwest of court house in Trinidad.

DRAINAGE AREA.--672 mi².

PERIOD OF RECORD.--Streamflow records, December 1976 to current year. Water-quality data available, March 1977 to September 1984.

GAGE.--Water-stage recorder with satellite telemetry, and concrete control. Datum of gage is 6,073.64 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army, Corps of Engineers). Auxillary gage is water-stage recorder in shelter about 1,000 ft downstream.

REMARKS.--No estimated daily discharges. Records good except those below 0.5 ft³/s, which are poor. Natural flow of stream affected by diversions upstream from station for irrigation of about 6,000 acres. Flow since Aug. 19, 1977, completely regulated by Trinidad Lake (station 07124400) immediately upstream. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--14 years (water years 1978-91), 76.5 ft³/s; 55,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 963 ft³/s, Sept. 10, 1981, gage height, 7.89 ft; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 788 ft³/s at 1145 Aug. 6 and 1000 Aug. 7, gage height, 7.64 ft; no flow many days

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	.00	.18	.03	.03	38	5.0	132	124	145	119	89
2	2.7	.00	.18	.04	.03	38	12	115	120	130	110	78
3	2.8	.00	.19	.05	.02	13	21	90	132	122	107	78
4	2.2	.00	.22	.04	.02	.17	22	98	139	136	166	89
5	2.8	.00	.22	.05	.02	.11	19	106	108	143	527	146
6	2.7	.00	.22	.06	.01	.11	19	78	92	100	736	162
7	2.6	.00	.24	.06	.01	.10	14	98	132	72	743	104
8	31	.00	.22	.06	15	.08	15	145	155	68	385	78
9	45	.00	.20	.04	33	.07	20	165	190	96	255	79
10	17	.00	.14	.04	33	.06	22	187	210	174	286	156
11	2.0	.00	.08	.04	12	.04	22	196	181	120	286	94
12	1.2	.00	.06	.04	.18	.05	22	203	165	161	359	42
13	2.0	.00	.06	.04	.18	.05	22	206	177	208	237	42
14	2.0	.00	.05	.04	.18	.06	22	216	178	119	186	43
15	1.7	.00	.04	.04	.18	.06	27	230	186	74	482	43
16	1.9	.00	.04	.04	.18	.06	29	233	262	74	610	38
17	1.9	.00	.04	.04	.18	.06	29	233	294	80	325	31
18	.79	.00	.04	3.7	.18	.06	29	118	230	94	331	15
19	.22	.00	.05	5.7	.18	.06	55	78	210	89	464	7.0
20	.22	.00	.06	5.5	.18	.06	77	109	231	82	361	7.4
21	.24	.01	.05	5.3	.18	.06	89	171	238	82	230	7.5
22	.22	.02	.04	1.7	.18	.06	93	254	351	122	212	7.9
23	.22	26	.04	.18	.18	.06	156	284	364	278	210	7.3
24	.20	40	.04	.18	.15	.06	202	282	281	469	171	5.8
25	.15	40	.04	.13	.14	.25	210	190	224	624	136	5.5
26	.08	27	.04	.06	.14	.36	208	131	117	660	127	5.3
27	.06	.36	.04	.05	.14	.33	206	140	117	314	141	4.4
28	.06	.33	.04	.04	25	.32	195	166	127	139	149	4.9
29	.07	.28	.04	.04	---	.23	166	182	146	117	147	6.4
30	.04	.19	.04	.03	---	.22	140	173	155	111	132	7.0
31	.00	---	.04	.03	---	.22	---	144	---	119	115	---
TOTAL	126.67	134.19	2.98	23.39	120.87	92.43	2168.0	5153	5636	5322	8845	1483.4
MEAN	4.09	4.47	.096	.75	4.32	2.98	72.3	166	188	172	285	49.4
MAX	45	40	.24	5.7	33	38	210	284	364	660	743	162
MIN	.00	.00	.04	.03	.01	.04	5.0	78	92	68	107	4.4
AC-FT	251	266	5.9	46	240	183	4300	10220	11180	10560	17540	2940

CAL YR 1990 TOTAL 15894.12 MEAN 43.5 MAX 473 MIN .00 AC-FT 31530
WTR YR 1991 TOTAL 29107.93 MEAN 79.7 MAX 743 MIN .00 AC-FT 57740

07126140 VAN BREMER ARROYO NEAR TYRONE, CO

LOCATION.--Lat 37°23'58", long 104°06'55", in SW¼SW¼, sec.27, T.30 S., R. 60 W., Las Animas County, Hydrologic Unit 11020010, on left bank, on Pinon Canyon Army Maneuver Site, 200 ft downstream from military road at gas line crossing near Brown Sheep Camp, 6 mi southeast of Tyrone, and 11 mi upstream from mouth.

DRAINAGE AREA.--132 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1985 to current year.

GAGE.--Water-stage recorder with satellite telemetry and crest-stage gage. Elevation of gage is 5,310 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Natural flow affected by return flow from irrigation and storage in a small channel reservoir upstream.

AVERAGE DISCHARGE.--6 years, 1.03 ft³/s; 746 acre-ft/yr

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 511 ft³/s, Aug. 23, 1986, gage height, 10.02 ft, from rating curve extended above 45 ft³/s, on basis of flow through culvert computation; no flow many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36 ft³/s at 2000 July 7, gage height, 5.36 ft; no flow most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY 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	.47	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.2	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.60	.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	.32	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.77	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.88	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.95	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.7	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.88	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.70	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	3.87	13.91	0.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.001	.12	.45	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.02	3.2	1.7	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.04	7.7	28	.00

CAL YR 1990 TOTAL 116.94 MEAN .32 MAX 47 MIN .00 AC-FT 232
WTR YR 1991 TOTAL 17.80 MEAN .049 MAX 3.2 MIN .00 AC-FT 35

WATER-QUALITY RECORDS

WATER TEMPERATURE: Maximum, 28.0°C, July 8; minimum, 14.1°C, July 7.

[illegible]

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

07126200 VAN BREMER ARROYO NEAR MODEL, CO

LOCATION.--Lat 37°20'45", long 103°57'27", in sec.13, T.31 S., R.59 W., Las Animas County, Hydrologic Unit 11020010, on right bank 3 mi upstream from mouth, 16 mi east of Model, and 33 mi northeast of Trinidad.

DRAINAGE AREA.--175 mi² of which 11.8 mi² is noncontributing.

WATER-DISCHARGE RECORDS

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

REVISIONS.--WDR CO-84-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry and crest-stage gage. Elevation of gage is 4,960 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--25 years, 2.13 ft³/s; 1,540 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,240 ft³/s, May 26, 1967, gage height, 9.4 ft, from floodmarks, from rating curve extended above 65 ft³/s, on basis of slope-area measurement of peak flow; maximum gage height, 9.98 ft, Aug. 9, 1979 from floodmark; no flow, June 7-13, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft³/s, from rating extended above 65 ft³/s on basis of slope-area measurement of peak flow; and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 4	0030	*3.1	*0.58				

Minimum daily, 0.03 ft³/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN.	JUL	AUG	SEP
1	.08	.08	.12	.20	.15	.14	.22	.12	.08	.04	.05	.04
2	.08	.16	.12	.17	.17	.14	.17	.12	.08	.04	.06	.04
3	.10	.48	.12	.17	.17	.14	.17	.10	.08	.04	.18	.04
4	.10	.28	.12	.15	.19	.12	.20	.08	.08	.05	1.2	.04
5	.08	.21	.12	.14	.15	.10	.17	.10	.09	.06	.30	.04
6	.08	.20	.13	.14	.21	.08	.14	.12	.31	.06	.18	.03
7	.08	.18	.14	.14	.17	.08	.14	.10	.21	.06	.09	.03
8	.08	.17	.14	.15	.17	.08	.14	.10	.11	.11	.07	.03
9	.08	.18	.14	.17	.16	.06	.11	.10	.08	.10	.06	.03
10	.08	.19	.15	.17	.16	.10	.10	.08	.08	.07	.06	.09
11	.08	.18	.17	.15	.14	.10	.09	.08	.24	.06	.04	.08
12	.07	.17	.18	.14	.13	.08	.09	.08	.12	.06	.04	.03
13	.08	.17	.20	.19	.15	.08	.09	.08	.08	.04	.04	.04
14	.10	.16	.17	.17	.13	.06	.10	.08	.06	.04	.04	.05
15	.10	.14	.17	.20	.12	.04	.09	.08	.07	.04	.04	.04
16	.10	.14	.18	.20	.13	.08	.09	.09	.08	.04	.04	.03
17	.10	.14	.23	.20	.14	.12	.10	.14	.06	.04	.04	.03
18	.10	.14	.23	.17	.12	.10	.08	.13	.06	.04	.04	.03
19	.13	.14	.22	.18	.14	.12	.09	.08	.06	.04	.05	.03
20	.28	.14	.20	.17	.15	.12	.10	.08	.06	.04	.06	.03
21	.23	.14	.17	.19	.09	.08	.10	.08	.06	.04	.06	.03
22	.15	.14	.15	.17	.11	.16	.10	.08	.06	.05	.06	.03
23	.14	.14	.14	.16	.12	.20	.10	.08	.07	.12	.06	.03
24	.12	.14	.14	.14	.13	.13	.10	.08	.06	.09	.06	.03
25	.12	.14	.14	.13	.14	.12	.10	.08	.06	.07	.06	.04
26	.10	.14	.14	.12	.16	.12	.08	.08	.06	.04	.06	.04
27	.11	.14	.14	.13	.17	.11	.08	.08	.05	.04	.06	.05
28	.10	.14	.19	.17	.14	.12	.08	.08	.04	.04	.06	.06
29	.11	.12	.18	.14	---	.12	.09	.08	.04	.04	.05	.06
30	.10	.12	.17	.17	---	.36	.10	.08	.04	.04	.04	.06
31	.10	---	.18	.13	---	.27	---	.08	---	.04	.04	---
TOTAL	3.36	5.01	4.99	5.02	4.11	3.73	3.41	2.82	2.63	1.68	3.29	1.23
MEAN	.11	.17	.16	.16	.15	.12	.11	.091	.088	.054	.11	.041
MAX	.28	.48	.23	.20	.21	.36	.22	.14	.31	.12	1.2	.09
MIN	.07	.08	.12	.12	.09	.04	.08	.08	.04	.04	.04	.03
AC-FT	6.7	9.9	9.9	10	8.2	7.4	6.8	5.6	5.2	3.3	6.5	2.4

CAL YR 1990 TOTAL 146.00 MEAN .40 MAX 30 MIN .04 AC-FT 290
WTR YR 1991 TOTAL 41.28 MEAN .11 MAX 1.2 MIN .03 AC-FT 82

07126200 VAN BREMER ARROYO NEAR MODEL, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1983 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1983 to current year.

WATER TEMPERATURE: January 1983 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Records good. Daily maximum and minimum specific conductance and daily mean water temperature data are available in district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 8,860 microsiemens, May 13, 1987; minimum, 130 microsiemens, Aug. 22, 1984.

WATER TEMPERATURE: Maximum, 34.0°C, June 15, 28, 1986; minimum, 0.0°C, many days during the winter in most years.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 2,240 microsiemens, Dec. 29; minimum, 1,440 microsiemens, Aug. 4.

WATER TEMPERATURE: Maximum, 31.0°C, July 17; minimum, 0.5°C, Mar. 30.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1890	1920	1980	2180	2020	1940	1960	2100	2000	1920	1960	1890
2	1880	1910	1990	2150	2020	1940	1940	2110	1990	1910	1960	1910
3	1870	1810	2010	2120	2020	1920	1950	2090	1980	1920	1920	1900
4	1870	1750	2020	2090	1970	1920	1920	2060	2000	1920	1670	1900
5	1860	1800	2030	2070	1930	1910	1930	2040	1990	1940	1580	1910
6	1860	1830	2020	2040	1900	1920	1940	2080	1960	1950	1670	1920
7	1860	1860	2040	2030	1870	1920	1940	2070	2010	1920	1740	1940
8	1850	1870	2020	2020	1840	1940	1940	2070	2050	1940	1750	1970
9	1860	1890	2020	2030	1820	1940	1930	2070	2020	2000	1750	1960
10	1870	1920	2000	2020	1790	1950	1950	2070	1970	2010	1770	1940
11	1880	1960	1990	2020	1770	1980	1960	2070	1860	2000	1780	1990
12	1890	1960	2020	2020	1760	1980	1960	2060	1890	1980	1790	1980
13	1900	1970	1990	2020	1760	1980	1950	2040	1900	1970	---	1970
14	1910	1910	1970	1990	1760	2000	1970	2050	1900	1980	1810	1980
15	1910	1910	2020	1990	1770	1980	1990	2040	1900	1980	1820	1950
16	1910	1900	1970	1940	1770	1980	1990	2020	1900	1970	1830	1940
17	1910	1900	1960	1950	1780	2000	2000	2080	1910	1980	1840	1930
18	1900	1920	1970	1920	1780	2000	2000	2080	1910	1970	1850	1930
19	1900	1900	1970	1920	1790	1990	2000	2060	1900	1950	1860	1920
20	1860	1910	2010	1930	1810	1990	2010	2020	1900	1940	1860	1940
21	1840	1920	2040	1920	1830	1960	2000	2010	1910	1940	1890	1950
22	1880	1930	2070	1930	1830	1970	2030	2060	1910	1910	1890	1930
23	1900	1960	2080	1920	1860	1930	2090	2050	1910	1960	1890	1930
24	1900	1940	2100	1940	1860	1990	2100	2050	1920	2030	1890	1930
25	1890	1940	2090	2010	1870	1970	2110	2060	1940	2030	1900	1920
26	1880	1930	2110	2030	1900	2000	2110	2060	1950	2030	1890	1920
27	1890	1990	2150	2010	1920	2020	2090	2050	1940	2010	1890	1930
28	1890	1990	2160	2020	1920	2010	2080	2040	1930	2000	1900	1930
29	1900	1950	2220	2020	---	2000	2100	2020	1900	1980	1900	1950
30	1920	1940	2200	2050	---	1900	2100	2010	1900	1980	1910	1940
31	1900	---	2190	2010	---	1920	---	2020	---	1980	1900	---
MEAN	1880	1910	2050	2010	1850	1960	2000	2060	1940	1970	---	1940

07126200 VAN BREMER ARROYO NEAR MODEL, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.8	15.6	12.7	10.1	8.1	3.5	3.4	1.9	7.5	3.5	12.0	5.1
2	19.4	15.7	13.9	6.2	5.8	2.0	3.7	2.3	7.0	3.7	11.4	5.5
3	21.0	13.5	6.5	5.0	6.3	2.5	3.2	2.5	8.6	3.5	13.6	4.7
4	21.9	12.9	9.3	3.7	6.2	3.8	3.3	2.4	8.5	3.9	11.5	6.6
5	21.5	13.0	10.4	3.5	6.1	4.1	3.9	2.4	8.6	4.0	14.6	7.4
6	21.3	12.9	6.3	3.9	6.0	4.2	4.0	2.8	8.5	4.1	10.4	6.1
7	18.0	12.9	7.3	3.3	6.2	3.5	4.6	2.7	9.6	4.5	7.8	4.6
8	13.5	9.3	9.5	2.7	7.5	4.1	5.0	3.0	9.9	4.6	11.5	4.1
9	15.6	7.5	10.4	3.4	8.0	3.7	4.1	3.2	9.7	4.8	12.2	4.6
10	17.9	8.3	11.8	4.8	8.0	3.4	4.9	3.0	10.0	4.6	13.9	5.3
11	17.4	9.8	12.2	5.4	8.5	4.0	5.3	3.2	10.5	4.2	14.7	6.6
12	17.4	9.2	12.9	5.6	8.1	4.8	5.9	3.2	7.9	4.2	13.4	5.6
13	18.0	9.5	12.8	6.0	8.5	4.7	6.1	3.4	9.9	4.3	13.3	4.7
14	16.4	9.5	13.0	5.7	7.7	3.5	5.0	3.8	10.5	4.3	8.1	4.4
15	18.8	9.5	12.7	6.7	5.6	4.0	5.4	3.4	10.6	4.5	13.2	3.8
16	18.3	10.1	10.9	7.2	7.8	4.3	6.3	3.6	9.1	5.0	9.6	5.4
17	16.2	10.4	10.7	7.0	6.5	4.5	6.1	3.3	10.0	6.0	13.9	4.2
18	15.8	7.7	11.6	6.1	7.0	4.0	6.4	3.5	7.8	5.1	15.2	5.5
19	17.5	9.8	10.1	6.6	6.2	2.5	7.4	3.5	9.9	4.4	13.0	7.0
20	13.6	7.7	11.2	7.1	3.6	2.4	5.4	3.2	10.7	3.9	14.4	4.8
21	13.6	6.0	11.2	6.7	3.3	2.4	5.9	3.5	12.0	4.1	10.9	6.0
22	15.6	6.4	9.8	5.1	2.9	2.2	5.7	3.1	12.3	4.2	11.0	2.6
23	15.9	8.3	10.4	4.6	2.9	2.1	5.9	3.3	8.1	5.4	14.2	5.1
24	15.8	8.6	11.1	4.9	2.8	2.2	5.9	3.5	8.8	3.5	16.3	6.8
25	17.0	8.6	10.6	4.9	3.1	2.2	4.8	3.0	8.9	3.5	17.0	8.8
26	17.2	9.1	11.2	6.9	3.1	2.4	5.3	2.6	10.6	4.1	13.3	7.7
27	15.9	9.6	8.5	5.0	3.3	2.3	5.9	2.8	11.8	4.5	16.3	4.5
28	17.1	8.6	7.1	4.6	4.5	2.5	6.3	2.9	8.2	5.1	12.7	6.3
29	16.6	9.1	7.1	4.3	3.1	2.2	4.1	2.6	---	---	9.4	.6
30	16.9	9.3	7.3	3.8	2.8	2.1	5.1	2.5	---	---	11.0	.5
31	16.0	9.2	---	---	3.2	2.1	6.2	3.0	---	---	15.2	4.3
MONTH	22.8	6.0	13.9	2.7	8.5	2.0	7.4	1.9	12.3	3.5	17.0	.5
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	17.2	6.8	18.7	7.9	24.1	15.2	29.1	18.2	28.8	18.9	26.4	16.9
2	11.2	8.0	21.0	10.1	21.4	13.8	27.4	19.1	26.6	20.5	26.7	17.3
3	16.6	6.5	21.2	10.2	23.4	13.7	28.0	18.5	24.1	20.0	23.3	---
4	20.1	8.6	15.6	11.3	26.3	14.6	29.1	18.0	23.6	19.2	25.1	17.5
5	21.7	10.1	22.0	10.4	22.5	16.4	28.8	18.4	30.5	18.8	25.3	17.1
6	22.5	11.0	22.4	10.9	21.8	16.1	28.4	18.7	28.0	19.5	19.8	17.3
7	20.2	11.3	21.0	12.7	27.5	13.0	28.2	19.0	29.3	18.5	25.5	16.6
8	17.7	10.3	24.6	11.9	27.2	16.8	28.4	19.2	27.4	19.2	24.8	15.7
9	19.6	8.9	21.8	12.8	28.0	15.7	27.4	19.8	25.5	18.7	24.1	16.1
10	17.5	8.9	21.6	14.6	27.6	16.5	28.4	19.0	28.6	17.7	23.6	17.5
11	17.0	9.1	23.2	15.1	26.0	17.7	26.8	18.7	29.1	18.7	26.8	17.4
12	16.5	9.3	25.0	13.1	29.1	17.0	25.0	18.6	28.7	20.2	21.4	17.8
13	14.6	6.6	21.3	12.6	29.3	17.5	25.1	17.8	---	---	23.7	16.7
14	17.7	7.5	23.8	12.7	20.6	17.7	26.8	17.2	29.2	18.0	24.5	15.0
15	20.8	7.9	23.9	13.3	26.5	16.5	27.2	18.4	29.3	18.8	22.8	14.7
16	16.7	10.1	20.6	12.8	24.6	16.9	29.0	18.7	29.1	19.3	21.8	14.5
17	19.2	9.0	25.3	13.0	28.1	16.0	31.0	19.5	28.9	19.2	23.8	14.2
18	19.4	11.0	23.9	14.5	28.1	16.9	28.4	20.1	28.5	19.6	17.4	13.2
19	20.9	11.1	24.9	15.4	24.3	16.7	30.4	20.4	27.9	19.5	17.0	12.4
20	20.2	10.0	20.9	15.6	25.8	16.7	29.4	19.2	28.5	18.7	23.0	12.2
21	19.9	10.6	19.8	15.1	27.7	17.3	29.5	19.7	28.0	17.0	22.9	14.0
22	19.6	10.4	25.5	13.3	25.7	17.9	26.7	20.6	27.9	18.3	20.6	13.5
23	18.7	11.5	22.6	15.1	26.5	17.8	23.8	19.4	27.6	18.1	21.6	11.9
24	21.0	11.0	20.8	14.7	25.5	18.0	24.5	18.2	28.2	18.1	20.1	10.9
25	19.7	11.3	26.6	13.4	25.3	16.5	26.4	17.4	28.8	18.5	20.8	11.4
26	16.9	9.9	26.2	15.0	25.7	16.4	27.4	17.9	28.7	18.5	22.3	12.2
27	16.4	6.9	25.6	15.3	27.5	16.9	27.6	17.2	29.4	18.9	21.2	13.8
28	12.3	7.2	22.3	15.4	25.2	17.7	28.7	18.0	26.7	19.0	22.4	13.2
29	17.8	7.4	26.3	15.7	25.1	18.2	27.1	18.9	27.7	18.6	22.7	13.8
30	16.5	9.2	23.6	13.9	28.1	18.6	29.1	17.9	26.3	18.1	18.2	14.5
31	---	---	24.3	13.9	---	---	29.3	19.8	25.9	18.1	---	---
MONTH	22.5	6.5	26.6	7.9	29.3	13.0	31.0	17.2	---	---	26.8	---

07126300 PURGATOIRE RIVER NEAR THATCHER, CO

LOCATION.--Lat 37°21'30", long 103°53'44", in sec.10, T.31 S., R.58 W., Las Animas County, Hydrologic Unit 11020010, on right bank 250 ft downstream from county road bridge at gas line crossing, 1.2 mi downstream from Van Bremer Arroyo, and 18 mi southeast of Thatcher.

DRAINAGE AREA.--1,791 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR CO-84-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 4,790 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 2-10, 13, 23-31, and Aug. 4-7. Records good except for estimated daily discharges, which are poor. Diversions upstream from station for irrigation of about 30,000 acres. Peak flows regulated to some extent by Trinidad Dam, 52 mi upstream, since January 1975.

AVERAGE DISCHARGE.--10 years (water years 1967-76), 37.9 ft³/s; 27,460 acre-ft/yr, prior to completion of Trinidad Dam; 15 years (water years 1977-91), 73.6 ft³/s; 53,320 acre-ft/yr, subsequent to completion of Trinidad Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,400 ft³/s, July 3, 1981, gage height, 22.0 ft, from rating curve extended above 2,100 ft³/s, on the basis of two slope-area measurements of peak flow; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of July 22, 1954, and May 19, 1955, reached stages of 26.7 and 25.2 ft, respectively, from floodmarks. Flood of June 18, 1965, reached a stage of 23.5 ft, from floodmarks, discharge, 47,700 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,820 ft³/s at 1015 Aug. 4, gage height, 8.12 ft; Minimum daily, 0.12 ft³/s, June 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	21	18	21	22	22	24	9.9	.45	30	9.3	10
2	31	22	17	23	24	22	22	8.2	.36	29	8.6	9.4
3	25	33	14	24	24	20	21	6.1	.26	31	13	7.3
4	23	41	13	23	25	19	22	5.4	.12	40	1160	5.2
5	21	37	14	22	25	18	51	5.4	.90	40	710	5.4
6	19	43	16	22	25	19	55	15	1.9	47	400	7.5
7	17	42	18	22	25	19	56	19	6.9	44	350	7.0
8	16	35	20	23	24	19	34	13	9.6	39	314	7.7
9	17	32	20	23	24	19	23	9.2	10	22	202	9.5
10	17	33	20	23	27	19	13	7.0	19	19	74	83
11	16	33	20	23	24	18	13	6.5	198	45	51	91
12	16	35	20	22	21	17	12	6.1	90	122	49	68
13	19	33	20	22	20	17	12	5.8	34	30	116	74
14	18	31	20	24	22	17	12	5.2	19	25	67	69
15	17	27	17	25	21	16	12	4.7	13	12	44	63
16	18	24	18	24	21	16	12	4.2	14	8.7	207	60
17	17	23	19	22	21	16	12	4.0	14	8.5	259	57
18	18	22	20	21	22	16	9.1	2.8	16	6.9	132	49
19	19	22	19	22	22	16	6.9	2.3	12	4.0	46	46
20	21	22	16	21	21	16	6.2	2.2	24	2.6	121	36
21	40	21	13	19	20	15	5.5	2.3	34	2.1	257	31
22	35	20	11	17	19	15	5.2	5.9	29	82	139	27
23	28	19	11	16	18	15	5.2	7.0	50	160	47	24
24	25	19	11	18	18	15	5.2	11	24	101	31	24
25	23	18	11	21	18	15	5.2	9.5	37	30	32	22
26	23	16	12	18	19	13	4.9	5.9	29	143	27	21
27	22	15	14	20	22	12	4.4	3.6	27	209	25	21
28	22	15	15	21	23	12	4.0	2.3	30	108	23	21
29	21	19	17	23	---	12	4.2	1.5	22	32	20	21
30	21	18	19	19	---	18	4.3	1.1	13	18	18	19
31	21	---	20	18	---	22	---	.68	---	13	11	---
TOTAL	692	791	513	662	617	525	476.3	192.78	778.49	1503.8	4962.9	995.0
MEAN	22.3	26.4	16.5	21.4	22.0	16.9	15.9	6.22	25.9	48.5	160	33.2
MAX	46	43	20	25	27	22	56	19	198	209	1160	91
MIN	16	15	11	16	18	12	4.0	.68	.12	2.1	8.6	5.2
AC-FT	1370	1570	1020	1310	1220	1040	945	382	1540	2980	9840	1970

CAL YR 1990 TOTAL 13399.70 MEAN 36.7 MAX 1330 MIN .00 AC-FT 26580
WTR YR 1991 TOTAL 12709.27 MEAN 34.8 MAX 1160 MIN .12 AC-FT 25210

07126300 PURGATOIRE RIVER NEAR THATCHER, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1982 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1982 to current year.

WATER TEMPERATURE: December 1982 to current year.

SUSPENDED SEDIMENT DISCHARGE: May 1983 to current year.

INSTRUMENTATION.--Water-quality monitor since December 1983 with satellite telemetry. Pumping-sediment sampler since May 1983.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and daily mean water temperature data are available in the district office.

EXTREMES FOR PERIOD OF RECORD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 5,850 microsiemens, July 16, 1989 and July 8, 1991; minimum, 340 microsiemens, Aug. 4, 1987.

WATER TEMPERATURE: Maximum, 32.1°C, June 25, 1990; minimum 0.0°C, on many days during the winter months.

SEDIMENT CONCENTRATION: Maximum daily, 49,600 mg/L, June 9, 1986; minimum daily, 3 mg/L, Apr. 29, 1989.

SEDIMENT LOAD: Maximum daily, 250,000 tons, June 6, 1983; minimum daily, 0.00 tons, June 26 to July 4, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,850 microsiemens, July 8; minimum, 526 microsiemens, July 12.

WATER TEMPERATURE: Maximum, 29.1°C, July 19; minimum, 0.0°C, on many days during the winter months.

SEDIMENT CONCENTRATION: Maximum daily, 17,500 mg/L, July 24; minimum daily, 24 mg/L, Apr. 2-3.

SEDIMENT LOAD: Maximum daily, 88,500 tons, Aug. 4; minimum daily, 0.07 tons, June 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO
NOV 15...	1400	27	3600	8.0	8.0	10.9	1700	300	220	290	3
DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (MG/L AS CAC03)	SULFATE DIS-SOLVED (MG/L AS S04)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)
NOV 15...	5.7	211	1900	45	0.3	7.4	3190	2890	4.34	233	36
DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	
NOV 15...	<1	1	2	640	<10	1	80	50	10	<0.01	

07126300 PURGATOIRE RIVER NEAR THATCHER, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV					
15...	1400	27	158	12	--
DEC					
26...	1630	12	51	1.7	--
JAN					
24...	1415	21	31	1.8	--
FEB					
20...	1245	20	52	2.8	--
APR					
24...	1630	5.3	26	0.37	--
MAY					
24...	1315	14	84	3.2	--
JUN					
20...	1545	29	231	18	--
JUL					
15...	1530	12	68	2.2	--
25...	1435	25	12700	857	100
AUG					
15...	1500	45	4460	542	100
SEP					
23...	1530	24	184	12	--

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1680	3060	3420	3530	3280	3160	---	3440	4040	1390	1090	2270
2	1870	3050	3570	3470	3170	3180	---	3280	4160	1430	1220	2320
3	2060	2880	3670	3330	3210	3240	---	2940	4260	1590	1390	2330
4	2160	2920	3670	3280	3100	3290	---	2930	4350	1120	1330	2330
5	2330	2810	3470	3290	2990	3300	3240	2950	4430	1100	1150	2350
6	2500	2770	3230	3250	2950	3300	2420	2970	4490	1110	1260	2390
7	2590	2930	3270	3190	2910	3330	2280	3440	4440	1330	924	2400
8	2670	3110	3460	3160	2870	3400	2090	3330	4370	2730	735	2430
9	2720	3000	3390	3190	2850	3450	1660	3440	4380	4700	703	2510
10	2780	3050	3330	3210	2800	3480	2070	3940	3510	1780	910	2650
11	2820	3200	3340	3220	2810	3380	1820	4200	2380	1210	1530	2330
12	2850	3270	3290	3280	2900	3270	2070	4190	1470	750	1620	1750
13	2880	3300	3240	3290	2960	3250	2290	3940	1780	741	1740	1990
14	2890	3350	3240	3270	3000	3240	2500	3710	1840	1280	1890	1820
15	2900	3420	3260	3280	3020	3260	2590	3580	1890	1470	1590	1700
16	2990	3450	3220	3300	3070	3260	2850	3460	1900	1890	1770	1680
17	3120	3440	3220	3270	3110	3260	3080	3180	2000	2050	638	1660
18	3160	3390	3250	3280	3120	3330	3320	2980	2050	2110	879	1650
19	3020	3360	3310	3260	3120	3320	3380	3000	2320	2040	954	1650
20	2880	3370	3400	3250	3160	3330	3440	3010	2690	2000	1180	1750
21	2840	3360	3480	3290	3190	3330	3590	3040	2740	2020	1060	1820
22	2810	3350	3590	3320	3210	3270	3690	3300	2410	1590	1030	1880
23	2730	3370	3690	3360	3240	3230	3730	3730	1580	1540	887	2070
24	2570	3350	3840	3300	3210	3340	3790	3480	1570	1680	1080	2410
25	2720	3340	3790	3320	3170	3420	3830	3560	1460	2430	1450	2560
26	2840	3340	3840	3490	3190	3390	3800	3180	1280	2150	2000	2600
27	3020	3340	4020	3650	3200	3380	3750	3050	1660	702	2350	2540
28	3020	3400	4030	3600	3160	---	3720	3150	1340	683	2470	2510
29	3080	3360	3930	3460	---	---	3560	3370	1310	756	2360	2520
30	3080	3310	3790	3320	---	---	3470	3650	1390	818	2320	2580
31	3060	---	3640	3340	---	---	---	3890	---	954	2350	---
MEAN	2730	3220	3510	3320	3070	---	---	3400	2650	1590	1410	2180

07126300 PURGATOIRE RIVER NEAR THATCHER, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.4	16.2	11.8	10.5	3.1	1.1	.1	.0	.4	.0	8.1	4.3
2	18.0	16.4	11.6	7.1	1.7	.3	.1	.1	.4	.0	7.7	5.1
3	18.1	14.8	6.9	4.2	.8	.0	.1	.1	.5	.0	9.0	4.3
4	18.6	14.6	6.3	3.8	1.0	.0	.1	.1	.6	.0	8.7	6.1
5	18.8	14.9	6.4	3.4	.7	.0	.1	.0	.6	.0	11.1	7.2
6	18.5	14.8	4.9	2.9	.9	.1	.2	.1	.7	.0	9.6	7.1
7	16.8	14.3	3.9	2.2	.7	.0	.2	.0	.9	.0	6.9	4.6
8	14.6	10.1	4.7	1.8	.9	.0	.2	.0	1.0	.0	7.5	2.8
9	12.3	8.6	5.1	2.4	1.1	.0	.1	.0	1.7	.0	8.4	4.1
10	13.5	9.3	6.1	3.1	1.2	.0	.2	.0	1.7	.0	9.3	5.0
11	13.9	10.6	6.9	4.1	1.5	.0	.2	.0	2.5	.0	11.1	7.0
12	13.7	10.2	7.4	4.6	1.9	.0	.2	.0	1.9	.2	10.2	6.8
13	14.5	10.7	7.8	4.9	3.2	1.2	.3	.0	3.2	.2	9.6	5.3
14	14.2	11.2	8.1	5.3	3.2	1.0	.1	.0	4.2	.6	8.0	5.3
15	14.5	10.5	8.4	5.7	1.6	.1	.2	.0	4.8	1.0	8.5	3.8
16	15.0	11.6	7.8	6.0	2.7	.1	.2	.0	4.8	2.4	7.3	4.9
17	13.9	11.9	7.6	5.9	2.5	1.3	.2	.0	5.9	3.4	9.4	4.5
18	12.5	9.5	8.1	5.4	2.0	.1	.2	.0	5.1	3.1	10.9	5.8
19	14.1	10.5	7.3	5.7	1.5	.0	.3	.0	5.1	1.4	10.7	7.5
20	13.7	8.3	8.5	6.1	.2	.1	.2	.0	6.5	2.1	10.5	6.3
21	10.0	6.8	8.2	6.1	.2	.1	.2	.0	7.3	3.2	8.7	6.9
22	10.6	7.1	6.8	4.5	.2	.1	.2	.0	7.7	3.9	8.3	4.1
23	11.4	8.3	6.4	3.7	.2	.1	.2	.0	6.6	5.1	10.7	5.7
24	11.4	8.6	6.7	3.7	.2	.1	.2	.0	5.3	2.6	12.2	7.1
25	12.5	8.8	6.2	3.8	.2	.1	.1	.0	5.1	1.1	13.5	9.6
26	13.2	9.6	7.2	4.9	.2	.1	.2	.0	6.3	2.2	11.9	9.2
27	13.0	10.3	6.2	3.8	.1	.0	.2	.0	7.3	3.0	12.1	6.8
28	12.8	9.3	3.7	2.0	.3	.0	.3	.0	5.7	3.9	---	---
29	13.3	9.9	2.9	.6	.2	.1	.2	.0	---	---	---	---
30	13.3	10.1	2.7	.6	.1	.0	.2	.0	---	---	---	---
31	12.7	10.1	---	---	.1	.0	.3	.0	---	---	---	---
MONTH	19.4	6.8	11.8	.6	3.2	.0	.3	.0	7.7	.0	---	---
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	15.5	9.4	24.3	18.1	26.8	21.3	28.0	22.5	25.0	20.7
2	---	---	17.6	11.7	21.4	17.2	25.6	21.8	25.4	23.1	25.0	20.8
3	---	---	17.9	13.2	23.3	16.5	25.7	21.4	24.2	22.0	23.2	21.3
4	---	---	15.3	13.3	24.0	17.3	26.5	21.3	22.0	18.0	24.3	20.0
5	17.0	11.9	17.4	11.9	23.0	19.8	27.7	21.4	22.7	18.3	24.8	20.6
6	17.7	12.5	18.5	13.4	22.2	18.9	26.1	21.9	23.1	19.9	22.4	19.4
7	16.7	12.8	19.1	14.5	23.8	17.3	26.3	21.2	23.2	20.5	22.4	18.4
8	14.9	12.4	20.7	14.7	24.7	20.1	25.8	21.9	23.3	20.6	23.1	18.8
9	15.4	10.4	19.6	15.5	24.6	19.5	25.9	22.2	22.7	20.0	22.4	19.2
10	14.5	10.3	20.8	16.5	24.8	19.6	26.2	21.4	23.8	19.5	22.2	19.4
11	13.9	10.5	21.8	17.5	22.5	18.2	25.3	21.4	25.3	20.3	21.1	18.0
12	13.4	10.2	22.2	16.5	22.4	17.0	22.5	17.5	25.4	21.9	20.3	18.7
13	---	---	20.3	16.8	24.7	18.9	22.2	17.8	23.0	21.1	21.2	18.3
14	14.4	9.1	21.1	15.8	22.5	19.8	24.5	18.9	24.0	19.7	21.1	17.5
15	15.9	10.2	20.8	16.5	23.4	18.7	25.5	20.0	24.9	20.6	20.3	16.8
16	14.8	12.2	---	---	22.9	19.7	26.8	20.9	24.7	21.6	19.8	16.4
17	15.7	11.0	---	---	25.0	19.2	28.7	22.9	24.4	20.9	20.2	16.2
18	16.9	12.7	22.1	17.5	25.5	20.5	27.2	23.3	24.5	21.3	18.1	15.1
19	17.4	13.2	23.1	18.8	23.6	20.5	29.1	23.3	25.2	21.2	15.9	13.9
20	17.1	13.1	---	---	23.8	18.8	28.5	24.4	25.4	21.2	18.2	13.2
21	16.9	12.7	19.2	17.2	24.9	20.0	28.9	23.5	24.4	21.1	19.6	15.4
22	17.1	12.3	---	---	24.4	20.3	24.8	22.0	23.7	20.3	18.5	15.6
23	17.1	13.7	20.5	17.6	24.0	20.2	22.6	20.1	24.5	20.2	20.0	14.1
24	18.5	13.4	19.7	17.0	24.6	20.4	21.1	19.0	25.5	20.9	18.0	13.5
25	17.7	14.1	---	---	23.7	19.1	23.3	18.5	25.9	21.1	18.2	13.7
26	15.1	12.3	23.8	18.7	23.9	18.5	22.9	19.5	26.5	21.2	19.2	14.4
27	14.0	10.6	23.8	19.0	25.3	19.1	22.7	19.6	27.3	21.9	19.2	15.6
28	12.6	9.7	21.5	19.0	23.9	20.1	24.5	19.6	26.2	22.0	19.7	15.5
29	13.7	9.1	24.8	18.2	24.0	19.8	24.6	20.5	26.0	21.6	19.9	15.7
30	12.6	10.1	22.1	18.0	26.3	20.8	26.4	20.2	25.3	21.4	18.2	16.4
31	---	---	24.1	17.2	---	---	26.8	22.2	25.1	21.1	---	---
MONTH	---	---	---	---	26.3	16.5	29.1	17.5	28.0	18.0	25.0	13.2

07126300 PURGATOIRE RIVER NEAR THATCHER, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	46	---	149	21	---	8.8	18	---	4.9
2	31	---	42	22	130	7.7	17	---	4.6
3	25	350	24	33	145	13	14	---	3.8
4	23	400	25	41	---	17	13	---	3.5
5	21	---	20	37	---	15	14	---	3.8
6	19	290	15	43	---	17	16	---	4.3
7	17	250	11	42	---	17	18	---	4.9
8	16	---	10	35	---	14	20	---	5.4
9	17	290	13	32	---	13	20	---	5.4
10	17	250	11	33	---	13	20	---	5.4
11	16	---	10	33	---	13	20	---	5.4
12	16	250	11	35	---	14	20	---	5.4
13	19	235	12	33	---	13	20	---	5.4
14	18	---	11	31	---	13	20	---	5.4
15	17	230	11	27	158	12	17	---	2.3
16	18	220	11	24	---	9.7	18	---	2.4
17	17	---	9.4	23	---	9.3	19	---	2.6
18	18	200	9.7	22	---	8.9	20	---	2.7
19	19	200	10	22	---	8.9	19	---	2.6
20	21	---	12	22	---	8.9	16	---	2.2
21	40	250	27	21	---	5.7	13	---	1.8
22	35	210	20	20	---	5.4	11	---	1.5
23	28	---	19	19	---	5.1	11	---	1.5
24	25	310	21	19	---	5.1	11	---	1.5
25	23	285	18	18	---	4.9	11	---	1.5
26	23	---	19	15	---	4.3	12	51	1.7
27	22	400	24	15	---	4.0	14	---	1.9
28	22	350	21	15	---	4.0	15	---	2.0
29	21	---	16	13	---	5.1	17	---	2.3
30	21	225	13	18	---	4.9	19	---	2.6
31	21	190	11	---	---	---	20	---	2.7
TOTAL	692	---	636.1	791	---	294.7	513	---	103.4
JANUARY			FEBRUARY			MARCH			
1	21	---	2.8	22	---	2.4	22	---	3.0
2	23	---	3.1	24	---	2.6	22	---	3.0
3	24	---	3.2	24	---	2.6	20	---	2.7
4	23	---	3.1	25	---	2.7	19	---	2.6
5	22	---	3.0	25	---	2.7	18	---	2.4
6	22	---	3.0	25	---	2.7	19	---	2.6
7	22	---	3.0	25	---	2.7	19	---	2.6
8	23	---	3.1	24	---	2.6	19	---	2.6
9	23	---	3.1	24	---	2.6	19	---	2.6
10	23	---	3.1	27	---	3.6	19	---	2.6
11	23	---	3.1	24	---	3.2	18	---	2.4
12	22	---	3.0	21	---	2.8	17	---	2.3
13	22	---	3.0	20	---	2.7	17	---	2.3
14	24	---	3.2	22	---	3.0	17	---	2.3
15	25	---	3.4	21	---	2.8	16	---	2.2
16	24	---	3.2	21	---	2.8	16	---	2.2
17	22	---	2.4	21	---	2.8	16	---	2.2
18	21	---	2.3	22	---	3.0	16	---	2.2
19	22	---	2.4	22	---	3.0	16	---	2.2
20	21	---	2.3	21	52	2.9	16	---	2.2
21	19	---	1.5	20	---	2.7	15	---	2.0
22	17	---	1.4	19	---	2.6	15	---	2.0
23	16	---	1.3	18	---	2.4	15	---	2.0
24	18	31	1.5	18	---	2.4	15	---	2.0
25	21	---	1.7	18	---	2.4	15	---	2.0
26	18	---	1.5	19	---	2.6	13	---	1.8
27	20	---	1.6	22	---	3.0	12	---	1.6
28	21	---	1.7	23	---	3.1	12	45	1.5
29	23	---	1.9	---	---	---	12	---	1.4
30	19	---	1.5	---	---	---	18	---	2.0
31	18	---	1.5	---	---	---	22	40	2.4
TOTAL	662	---	75.9	617	---	77.4	525	---	69.9

07126300 PURGATOIRE RIVER NEAR THATCHER, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	24	32	2.1	9.9	70	1.9	.45	180	.22
2	22	---	1.4	8.2	60	1.3	.36	---	.18
3	21	24	1.4	6.1	---	.82	.26	208	.15
4	22	34	2.1	5.4	40	.58	.12	222	.07
5	51	91	14	5.4	60	.87	.90	---	.58
6	55	149	22	15	---	4.5	1.9	235	1.2
7	56	140	21	19	90	4.6	6.9	200	3.7
8	34	133	12	13	75	2.6	9.6	---	5.3
9	23	---	6.2	9.2	---	1.8	10	220	5.9
10	13	63	2.2	7.0	70	1.3	19	170	8.7
11	13	55	1.9	6.5	50	.88	198	3740	3320
12	12	---	1.6	6.1	---	.74	90	6330	1560
13	12	32	1.0	5.8	53	.83	34	3000	275
14	12	38	1.2	5.2	60	.84	19	---	31
15	12	---	1.2	4.7	---	.99	13	265	9.3
16	12	32	1.0	4.2	95	1.1	14	220	8.3
17	12	34	1.1	4.0	90	.97	14	---	7.2
18	9.1	---	.88	2.8	---	.76	16	175	7.6
19	6.9	38	.71	2.3	120	.75	12	175	5.7
20	6.2	44	.74	2.2	90	.53	24	210	14
21	5.5	---	.65	2.3	---	.47	34	300	28
22	5.2	43	.60	5.9	60	.96	29	280	22
23	5.2	40	.56	7.0	80	1.5	50	---	39
24	5.2	32	.45	11	85	2.5	24	220	14
25	5.2	40	.56	9.5	150	3.8	37	240	24
26	4.9	44	.58	5.9	168	2.7	29	---	16
27	4.4	---	.63	3.6	---	1.6	27	205	15
28	4.0	66	.71	2.3	160	.99	30	200	16
29	4.2	88	1.0	1.5	190	.77	22	---	8.9
30	4.3	---	.81	1.1	---	.56	13	---	4.4
31	---	---	---	.68	170	.31	---	---	---
TOTAL	476.3	---	102.28	192.78	---	44.82	778.49	---	5451.40
JULY			AUGUST			SEPTEMBER			
1	30	190	16	9.3	---	5.0	10	---	6.1
2	29	---	11	8.6	163	3.8	9.4	215	5.5
3	31	150	13	13	500	18	7.3	220	4.3
4	40	155	17	1160	16800	88500	5.2	---	3.2
5	40	---	18	710	9920	20100	5.4	---	3.2
6	47	160	20	400	---	8540	7.5	170	3.4
7	44	260	31	350	---	3780	7.0	---	2.8
8	39	---	33	314	---	1140	7.7	190	4.0
9	22	250	15	202	1260	734	9.5	170	4.4
10	19	180	9.2	74	700	140	83	826	438
11	45	130	16	51	800	110	91	9080	2100
12	122	3550	1220	49	---	146	68	---	1220
13	30	---	40	116	2000	1190	74	1500	300
14	25	168	11	67	5250	886	69	690	129
15	12	70	2.3	44	4300	507	63	---	73
16	8.7	---	1.2	207	2690	1890	60	380	62
17	8.5	63	1.4	259	1400	979	57	290	45
18	6.9	56	1.0	132	800	285	49	---	30
19	4.0	---	.49	46	---	68	46	205	25
20	2.6	42	.29	121	1400	1250	36	208	20
21	2.1	34	.20	257	3610	2940	31	---	17
22	82	2050	818	139	5430	1710	27	180	13
23	160	3110	1750	47	---	266	24	185	12
24	101	17500	5860	31	825	69	24	---	19
25	30	13300	1090	32	560	48	22	330	20
26	143	11800	4150	27	---	28	21	265	15
27	209	5170	3040	25	330	22	21	---	14
28	108	3400	991	23	300	19	21	240	14
29	32	---	130	20	---	13	20	195	11
30	18	600	29	18	210	10	19	---	11
31	13	300	11	11	210	6.2	---	---	---
TOTAL	1503.8	---	19346.08	4962.9	---	135403.0	995.0	---	4624.9

07126325 TAYLOR ARROYO BELOW ROCK CROSSING, NEAR THATCHER, CO

LOCATION.--Lat 37°25'26", long 103°55'09", in SE½SE¼ sec.17, T.30 S., R.58 W., Las Animas County, Hydrologic Unit 11020010, on left bank 5 mi upstream from mouth, 1.6 mi southeast of Rock Crossing, and 13.5 mi southeast of Thatcher.

DRAINAGE AREA.--48.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1983 to current year.

GAGE.--Water-stage recorder with satellite telemetry, and crest-stage gage. Elevation of gage is 4,982 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good except for those above discharges of 400 ft³/s, which are poor.

AVERAGE DISCHARGE.--8 Years, 0.20 ft³/s; 145 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,820 ft³/s, July 31, 1989, gage height, 10.96 ft, from rating extended to peak flow on the basis of slope-conveyance; no flow most of the time.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5.0 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 11	0330	*149	*5.54	No other peak greater than base discharge.			
No flow most of time.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY 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	.30	.00
3	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.86	.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	17	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.13	.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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	17.13	0.00	1.20	0.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.57	.000	.039	.000
MAX	.00	.01	.00	.00	.00	.00	.00	.00	17	.00	.86	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.02	.00	.00	.00	.00	.00	.00	34	.00	2.4	.00

CAL YR 1990 TOTAL 40.87 MEAN .11 MAX 23 MIN .00 AC-FT 81
WTR YR 1991 TOTAL 18.34 MEAN .050 MAX 17 MIN .00 AC-FT 36

07126325 TAYLOR ARROYO BELOW ROCK CROSSING NEAR THATCHER, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1983 to current year.

PERIOD OF DAILY RECORD.--March 1983 to current year.

INSTRUMENTATION.--Water-quality monitor since March 1983. Pumping sediment sampler since Aug. 5, 1983.

REMARKS.--Estimated daily sediment load and concentrations; Nov. 3. Maximum and minimum specific conductance and water temperature are published only for the period of flow during the day that was recorded.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,520 microsiemens, Aug. 20, 1984; minimum, 81 microsiemens, July 20, 1990.

WATER TEMPERATURE: Maximum, 32.0°C, Aug. 11, 1987; minimum, 0.0°C, Apr. 2, 1988.

SEDIMENT CONCENTRATIONS: Maximum daily, 15,300 mg/L, Aug. 22, 1984; no flow most of time.

SEDIMENT LOAD: Maximum daily, 4,910 tons, Aug. 9, 1987; no flow most of time.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,020 microsiemens, June 12; minimum, 108 microsiemens, Aug. 2.

WATER TEMPERATURE: Maximum, 27.0°C, June 12; minimum, 4.0°C, Nov. 3.

SEDIMENT CONCENTRATIONS: Maximum daily, 1,600 mg/L, June 11; no flow most of time.

SEDIMENT LOAD: Maximum daily, 160 tons, June 11; no flow most of time.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
JUN 11...	1715	2.0	780	4.2

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

[illegible]

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

07126325 TAYLOR ARROYO BELOW ROCK CROSSING NEAR THATCHER, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	.00	---	---	.00	---	---	.00	---	---
2	.00	---	---	.00	---	---	.00	---	---
3	.00	---	---	.01	---	.00	.00	---	---
4	.00	---	---	.00	---	---	.00	---	---
5	.00	---	---	.00	---	---	.00	---	---
6	.00	---	---	.00	---	---	.00	---	---
7	.00	---	---	.00	---	---	.00	---	---
8	.00	---	---	.00	---	---	.00	---	---
9	.00	---	---	.00	---	---	.00	---	---
10	.00	---	---	.00	---	---	.00	---	---
11	.00	---	---	.00	---	---	.00	---	---
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	.00	---	---	.00	---	---
17	.00	---	---	.00	---	---	.00	---	---
18	.00	---	---	.00	---	---	.00	---	---
19	.00	---	---	.00	---	---	.00	---	---
20	.00	---	---	.00	---	---	.00	---	---
21	.00	---	---	.00	---	---	.00	---	---
22	.00	---	---	.00	---	---	.00	---	---
23	.00	---	---	.00	---	---	.00	---	---
24	.00	---	---	.00	---	---	.00	---	---
25	.00	---	---	.00	---	---	.00	---	---
26	.00	---	---	.00	---	---	.00	---	---
27	.00	---	---	.00	---	---	.00	---	---
28	.00	---	---	.00	---	---	.00	---	---
29	.00	---	---	.00	---	---	.00	---	---
30	.00	---	---	.00	---	---	.00	---	---
31	.00	---	---	---	---	---	.00	---	---
TOTAL	0.00	---	---	0.01	---	---	0.00	---	---
JANUARY			FEBRUARY			MARCH			
1	.00	---	---	.00	---	---	.00	---	---
2	.00	---	---	.00	---	---	.00	---	---
3	.00	---	---	.00	---	---	.00	---	---
4	.00	---	---	.00	---	---	.00	---	---
5	.00	---	---	.00	---	---	.00	---	---
6	.00	---	---	.00	---	---	.00	---	---
7	.00	---	---	.00	---	---	.00	---	---
8	.00	---	---	.00	---	---	.00	---	---
9	.00	---	---	.00	---	---	.00	---	---
10	.00	---	---	.00	---	---	.00	---	---
11	.00	---	---	.00	---	---	.00	---	---
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	.00	---	---	.00	---	---
17	.00	---	---	.00	---	---	.00	---	---
18	.00	---	---	.00	---	---	.00	---	---
19	.00	---	---	.00	---	---	.00	---	---
20	.00	---	---	.00	---	---	.00	---	---
21	.00	---	---	.00	---	---	.00	---	---
22	.00	---	---	.00	---	---	.00	---	---
23	.00	---	---	.00	---	---	.00	---	---
24	.00	---	---	.00	---	---	.00	---	---
25	.00	---	---	.00	---	---	.00	---	---
26	.00	---	---	.00	---	---	.00	---	---
27	.00	---	---	.00	---	---	.00	---	---
28	.00	---	---	.00	---	---	.00	---	---
29	.00	---	---	---	---	---	.00	---	---
30	.00	---	---	---	---	---	.00	---	---
31	.00	---	---	---	---	---	.00	---	---
TOTAL	0.00	---	---	0.00	---	---	0.00	---	---

07126325 TAYLOR ARROYO BELOW ROCK CROSSING NEAR THATCHER, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	.00	---	---	.00	---	---	.00	---	---
2	.00	---	---	.00	---	---	.00	---	---
3	.00	---	---	.00	---	---	.00	---	---
4	.00	---	---	.00	---	---	.00	---	---
5	.00	---	---	.00	---	---	.00	---	---
6	.00	---	---	.00	---	---	.00	---	---
7	.00	---	---	.00	---	---	.00	---	---
8	.00	---	---	.00	---	---	.00	---	---
9	.00	---	---	.00	---	---	.00	---	---
10	.00	---	---	.00	---	---	.00	---	---
11	.00	---	---	.00	---	---	17	1600	160
12	.00	---	---	.00	---	---	.13	110	.04
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	.00	---	---	.00	---	---
17	.00	---	---	.00	---	---	.00	---	---
18	.00	---	---	.00	---	---	.00	---	---
19	.00	---	---	.00	---	---	.00	---	---
20	.00	---	---	.00	---	---	.00	---	---
21	.00	---	---	.00	---	---	.00	---	---
22	.00	---	---	.00	---	---	.00	---	---
23	.00	---	---	.00	---	---	.00	---	---
24	.00	---	---	.00	---	---	.00	---	---
25	.00	---	---	.00	---	---	.00	---	---
26	.00	---	---	.00	---	---	.00	---	---
27	.00	---	---	.00	---	---	.00	---	---
28	.00	---	---	.00	---	---	.00	---	---
29	.00	---	---	.00	---	---	.00	---	---
30	.00	---	---	.00	---	---	.00	---	---
31	---	---	---	.00	---	---	---	---	---
TOTAL	0.00	---	---	0.00	---	---	17.13	---	---
JULY			AUGUST			SEPTEMBER			
1	.00	---	---	.00	---	---	.00	---	---
2	.00	---	---	.30	43	.13	.00	---	---
3	.00	---	---	.04	52	.01	.00	---	---
4	.00	---	---	.86	20	.09	.00	---	---
5	.00	---	---	.00	---	---	.00	---	---
6	.00	---	---	.00	---	---	.00	---	---
7	.00	---	---	.00	---	---	.00	---	---
8	.00	---	---	.00	---	---	.00	---	---
9	.00	---	---	.00	---	---	.00	---	---
10	.00	---	---	.00	---	---	.00	---	---
11	.00	---	---	.00	---	---	.00	---	---
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	.00	---	---	.00	---	---
17	.00	---	---	.00	---	---	.00	---	---
18	.00	---	---	.00	---	---	.00	---	---
19	.00	---	---	.00	---	---	.00	---	---
20	.00	---	---	.00	---	---	.00	---	---
21	.00	---	---	.00	---	---	.00	---	---
22	.00	---	---	.00	---	---	.00	---	---
23	.00	---	---	.00	---	---	.00	---	---
24	.00	---	---	.00	---	---	.00	---	---
25	.00	---	---	.00	---	---	.00	---	---
26	.00	---	---	.00	---	---	.00	---	---
27	.00	---	---	.00	---	---	.00	---	---
28	.00	---	---	.00	---	---	.00	---	---
29	.00	---	---	.00	---	---	.00	---	---
30	.00	---	---	.00	---	---	.00	---	---
31	.00	---	---	.00	---	---	---	---	---
TOTAL	0.00	---	---	1.20	---	---	0.00	---	---

07126390 LOCKWOOD CANYON CREEK NEAR THATCHER, CO

LOCATION.--Lat 37°29'37", long 103°49'47", in SE¼NW¼ sec.30, T29 S., R.57 W., Las Animas County, Hydrologic Unit 11020010, on right bank 0.6 mi downstream from Sharp Ranch, 5.3 mi upstream from mouth, and 16 mi southeast of Thatcher.

DRAINAGE AREA.--41.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1983 to current year. Low-flow records not equivalent prior to May 3, 1989, because of undetermined flow loss between sites.

REVISED RECORDS.--WDR CO-86-1: 1983, 1984.

GAGE.--Water-stage recorder with satellite telemetry, and crest-stage gage. Elevation of gage is 4,815 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 3, 1989, at site 1,000 ft upstream, at different datum.

REMARKS.--Records are good.

AVERAGE DISCHARGE.--5 years (water years 1984-88), 0.17 ft³/s; 123 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,070 ft³/s, May 22, 1987, gage height, 10.39 ft, from floodmark, site and datum then in use, from rating curve extended above 5 ft³/s, on the basis of slope-area measurements at gage heights of 9.42 ft, and 10.39 ft; no flow many days.

EXTREMES FOR CURRENT YEAR.--No flow for current year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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 1990 TOTAL 19.22 MEAN .053 MAX 7.5 MIN .00 AC-FT 38
WTR YR 1991 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

07126390 LOCKWOOD CANYON CREEK NEAR THATCHER, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1989 to current year. June 1983 to April 1989 at site 1,000 ft. upstream.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1989 to current year. June 1983 to April 1989 at site 1,000 ft. upstream.

WATER TEMPERATURE: May 1989 to current year. June 1983 to April 1989 at site 1,000 ft. upstream.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Maximum and minimum specific conductance and water temperature are published only for the period of flow during the day that was recorded. No flow for current year.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 3,830 microsiemens Dec. 6, 21, 1986, site then in use; minimum, 175 microsiemens July 28, 1990.

WATER TEMPERATURE: Maximum, 30.5°C, July 9-10, 1983 site then in use; minimum, 0.0°C, on many days during the winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: No flow for current year.

WATER TEMPERATURE: No flow for current year.

07126470 CHACUACO CREEK AT MOUTH NEAR TIMPAS, CO

LOCATION.--Lat 37°32'38", long 103°37'54", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.1, T.28 S., R.56 W., Las Animas County, Hydrologic Unit 11020010, at Red Rocks Ranch, 1.5 mi upstream of mouth, 3.3 mi upstream from Bent Canyon Creek, and 21 mi southeast of Timpas.

DRAINAGE AREA.--424 mi²

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1983 to current year.

REVISED RECORDS.--WDR CO-85-1: 1984(M).

GAGE.--Water-stage recorder with satellite telemetry, and crest-stage gage. Elevation of gage is 4,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--8 years, 1.27 ft³/s; 920 acre-ft/yr.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of May 19, 1955, and June 17, 1965, reached discharges of 3,170 ft³/s, and 38,900 ft³/s, respectively, at a different site, from slope-area measurements of peak flows.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,470 ft³/s, Aug. 13, 1989, gage height, 10.15 ft from rating extended to peak flow on the basis of a slope-area measurement; no flow most of the time.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 8	2115	57	4.50	Aug. 9	0545	566	b6.66
July 7	2030	*a2,460	*b10.14	Aug. 9	1015	226	5.51
July 22	0630	472	6.41	Aug. 10	2015	2,020	b9.46
July 23	0230	190	5.34	Aug. 16	2300	186	5.32
Aug. 9	0030	447	6.33				

a From rating extended to peak flow on the basis of a slope-area measurement.

b From floodmark.

No flow most of time.

07126470 CHACUACO CREEK AT MOUTH NEAR TIMPAS, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY 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	119	1.3	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	3.9	7.2	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	2.0	2.7	172	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	5.7	.88	115	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	16	.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	7.4	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	15	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.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	108	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	63	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	17	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.73	318.98	326.83	0.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.39	10.3	10.5	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	5.7	119	172	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	23	633	648	.00

CAL YR 1990 TOTAL 452.25 MEAN 1.24 MAX 114 MIN .00 AC-FT 897
WTR YR 1991 TOTAL 657.54 MEAN 1.80 MAX 172 MIN .00 AC-FT 1300

07126470 CHACAUCO CREEK AT MOUTH NEAR TIMPAS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1983 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1983 to current year.

WATER TEMPERATURE: June 1983 to current year.

SUSPENDED SEDIMENT: June 1983 to current year.

INSTRUMENTATION.--Water-quality monitor since June 1983. Automatic pumping sediment sampler since June 1983.

REMARKS.--Estimated daily load and concentrations: July 6, 12, 21, 23, 25, and Aug. 1, 6, 12, 16. Daily data that are not published are either missing, of unacceptable quality, or during periods of no flow. Maximum and minimum specific conductance and water temperature are published only for the period of flow during the day that was recorded.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,510 microsiemens, June 10, 1989; minimum, 105 microsiemens, July 20, 1990.

WATER TEMPERATURE: Maximum, 32.8°C, July 11, 1990; minimum, 4.0°C, Oct. 4, 1984.

SEDIMENT CONCENTRATIONS: Maximum daily, 7,860 mg/l, May 2, 1986; minimum daily no flow most of time.

SEDIMENT LOADS: Maximum daily, 14,900 tons, May 2, 1986; minimum daily, no flow most of time.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,250 microsiemens, July 22; minimum, 310 microsiemens, July 7.

WATER TEMPERATURE: Maximum, 28.3°C, Aug. 17; minimum, 12.8°C, June 9 and Aug. 10.

SEDIMENT CONCENTRATIONS: Maximum daily, 7,610 mg/l, Aug. 9; minimum daily, no flow most of time.

SEDIMENT LOADS: Maximum daily, 5,900 tons, Aug. 9; minimum daily, no flow most of time.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
JUL 10...	1200	0.12	126	0.04

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

07126470 CHACAUCO CREEK AT MOUTH NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	.00	---	---	.00	---	---	.00	---	---
2	.00	---	---	.00	---	---	.00	---	---
3	.00	---	---	.00	---	---	.00	---	---
4	.00	---	---	.00	---	---	.00	---	---
5	.00	---	---	.00	---	---	.00	---	---
6	.00	---	---	.00	---	---	.00	---	---
7	.00	---	---	.00	---	---	.00	---	---
8	.00	---	---	.00	---	---	.00	---	---
9	.00	---	---	.00	---	---	.00	---	---
10	.00	---	---	.00	---	---	.00	---	---
11	.00	---	---	.00	---	---	.00	---	---
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	.00	---	---	.00	---	---
17	.00	---	---	.00	---	---	.00	---	---
18	.00	---	---	.00	---	---	.00	---	---
19	.00	---	---	.00	---	---	.00	---	---
20	.00	---	---	.00	---	---	.00	---	---
21	.00	---	---	.00	---	---	.00	---	---
22	.00	---	---	.00	---	---	.00	---	---
23	.00	---	---	.00	---	---	.00	---	---
24	.00	---	---	.00	---	---	.00	---	---
25	.00	---	---	.00	---	---	.00	---	---
26	.00	---	---	.00	---	---	.00	---	---
27	.00	---	---	.00	---	---	.00	---	---
28	.00	---	---	.00	---	---	.00	---	---
29	.00	---	---	.00	---	---	.00	---	---
30	.00	---	---	.00	---	---	.00	---	---
31	.00	---	---	.00	---	---	.00	---	---
TOTAL	0.00	---	---	0.00	---	---	0.00	---	---
JANUARY			FEBRUARY			MARCH			
1	.00	---	---	.00	---	---	.00	---	---
2	.00	---	---	.00	---	---	.00	---	---
3	.00	---	---	.00	---	---	.00	---	---
4	.00	---	---	.00	---	---	.00	---	---
5	.00	---	---	.00	---	---	.00	---	---
6	.00	---	---	.00	---	---	.00	---	---
7	.00	---	---	.00	---	---	.00	---	---
8	.00	---	---	.00	---	---	.00	---	---
9	.00	---	---	.00	---	---	.00	---	---
10	.00	---	---	.00	---	---	.00	---	---
11	.00	---	---	.00	---	---	.00	---	---
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	.00	---	---	.00	---	---
17	.00	---	---	.00	---	---	.00	---	---
18	.00	---	---	.00	---	---	.00	---	---
19	.00	---	---	.00	---	---	.00	---	---
20	.00	---	---	.00	---	---	.00	---	---
21	.00	---	---	.00	---	---	.00	---	---
22	.00	---	---	.00	---	---	.00	---	---
23	.00	---	---	.00	---	---	.00	---	---
24	.00	---	---	.00	---	---	.00	---	---
25	.00	---	---	.00	---	---	.00	---	---
26	.00	---	---	.00	---	---	.00	---	---
27	.00	---	---	.00	---	---	.00	---	---
28	.00	---	---	.00	---	---	.00	---	---
29	.00	---	---	.00	---	---	.00	---	---
30	.00	---	---	.00	---	---	.00	---	---
31	.00	---	---	.00	---	---	.00	---	---

07126470 CHACAUCO CREEK AT MOUTH NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TDNS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	.00	---	---	.00	---	---	.00	---	---
2	.00	---	---	.00	---	---	.00	---	---
3	.00	---	---	.00	---	---	.00	---	---
4	.00	---	---	.00	---	---	.00	---	---
5	.00	---	---	.00	---	---	.00	---	---
6	.00	---	---	.00	---	---	.00	---	---
7	.00	---	---	.00	---	---	.00	---	---
8	.00	---	---	.00	---	---	3.9	203	20
9	.00	---	---	.00	---	---	2.0	---	3.2
10	.00	---	---	.00	---	---	5.7	231	8.4
11	.00	---	---	.00	---	---	.13	---	.02
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	.00	---	---	.00	---	---
17	.00	---	---	.00	---	---	.00	---	---
18	.00	---	---	.00	---	---	.00	---	---
19	.00	---	---	.00	---	---	.00	---	---
20	.00	---	---	.00	---	---	.00	---	---
21	.00	---	---	.00	---	---	.00	---	---
22	.00	---	---	.00	---	---	.00	---	---
23	.00	---	---	.00	---	---	.00	---	---
24	.00	---	---	.00	---	---	.00	---	---
25	.00	---	---	.00	---	---	.00	---	---
26	.00	---	---	.00	---	---	.00	---	---
27	.00	---	---	.00	---	---	.00	---	---
28	.00	---	---	.00	---	---	.00	---	---
29	.00	---	---	.00	---	---	.00	---	---
30	.00	---	---	.00	---	---	.00	---	---
31	---	---	---	.00	---	---	---	---	---
TOTAL	0.00	---	---	0.00	---	---	11.73	---	---
JULY			AUGUST			SEPTEMBER			
1	.00	---	---	.00	---	---	.00	---	---
2	.00	---	---	.00	---	---	.00	---	---
3	.00	---	---	.00	---	---	.00	---	---
4	.00	---	---	.00	---	---	.00	---	---
5	.00	---	---	.00	---	---	.00	---	---
6	.00	---	---	.00	---	---	.00	---	---
7	119	3150	7480	1.3	---	2.2	.00	---	---
8	7.2	---	58	.00	---	---	.00	---	---
9	2.7	456	25	172	6670	4950	.00	---	---
10	.88	246	2.6	115	---	5410	.00	---	---
11	.00	---	---	16	---	140	.00	---	---
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	7.4	262	90	.00	---	---
17	.00	---	---	15	750	66	.00	---	---
18	.00	---	---	.13	---	.04	.00	---	---
19	.00	---	---	.00	---	---	.00	---	---
20	.00	---	---	.00	---	---	.00	---	---
21	.00	---	---	.00	---	---	.00	---	---
22	108	1990	1090	.00	---	---	.00	---	---
23	63	1170	308	.00	---	---	.00	---	---
24	17	719	38	.00	---	---	.00	---	---
25	1.2	---	1.1	.00	---	---	.00	---	---
26	.00	---	---	.00	---	---	.00	---	---
27	.00	---	---	.00	---	---	.00	---	---
28	.00	---	---	.00	---	---	.00	---	---
29	.00	---	---	.00	---	---	.00	---	---
30	.00	---	---	.00	---	---	.00	---	---
31	.00	---	---	.00	---	---	---	---	---

LOCATION.--Lat 37°37'10", long 103°35'32" in NE¼ sec.10, T.28 S., R.55 W., Las Animas County, Hydrologic Unit 11020010, on left bank at Rock Crossing, 2.1 mi upstream from Minnie Canyon, 2.4 mi downstream from Beaty Canyon, and 17 mi southeast of Timpas.

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,030 ft³/s at 2345 Aug. 10, gage height, 10.83 ft; minimum daily, 0.58 ft³/s June 5.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	18	18	18	13	25	21	7.4	2.3	17	16	14
2	43	19	17	18	15	25	23	6.5	1.5	15	12	8.8
3	30	27	17	18	18	24	27	6.6	.90	28	10	7.6
4	23	28	18	19	18	24	27	8.8	.71	27	269	7.0
5	20	37	18	19	18	21	24	8.2	.58	32	565	6.1
6	18	35	17	20	19	20	42	7.5	.70	36	123	4.2
7	17	39	17	20	24	21	52	7.2	.96	126	342	3.3
8	15	41	17	20	26	22	54	12	1.7	203	289	2.5
9	14	33	17	20	26	22	40	13	5.1	41	479	3.4
10	15	29	19	21	30	21	28	9.8	4.3	27	246	3.9
11	16	29	18	18	27	19	21	8.5	8.0	15	272	50
12	15	29	18	18	27	19	16	6.8	169	52	59	74
13	14	31	18	19	27	18	15	5.9	80	68	57	64
14	14	31	17	20	25	18	15	5.3	37	29	119	69
15	16	28	17	19	25	18	15	5.1	26	27	67	65
16	16	27	16	18	24	18	15	5.0	17	17	48	61
17	14	25	15	17	24	18	16	4.5	13	11	353	58
18	15	24	15	16	24	18	15	4.3	13	7.8	200	56
19	15	24	16	16	24	19	17	4.1	12	4.9	97	50
20	18	23	13	18	23	19	14	4.0	14	4.6	53	45
21	20	22	10	19	23	18	12	3.7	11	3.7	170	36
22	35	22	10	16	22	21	9.9	3.2	26	98	191	31
23	35	21	11	17	22	23	9.4	2.7	28	147	103	28
24	27	21	12	17	22	20	9.4	2.6	42	138	50	25
25	23	21	13	15	22	18	9.1	2.4	28	98	36	23
26	22	20	14	15	22	16	7.8	3.8	25	37	32	23
27	21	19	14	14	23	15	7.6	6.1	27	137	28	21
28	20	18	15	14	23	14	7.8	5.0	22	192	24	20
29	20	17	15	13	---	15	7.9	4.1	26	88	22	20
30	19	17	15	13	---	19	7.6	3.4	22	41	19	18
31	18	---	17	14	---	22	---	2.6	---	25	17	---
TOTAL	686	775	484	539	636	610	585.5	180.1	664.75	1793.0	4368	897.8
MEAN	22.1	25.8	15.6	17.4	22.7	19.7	19.5	5.81	22.2	57.8	141	29.9
MAX	78	41	19	21	30	25	54	13	169	203	565	74
MIN	14	17	10	13	13	14	7.6	2.4	.58	3.7	10	2.5
AC-FT	1360	1540	960	1070	1260	1210	1160	357	1320	3560	8660	1780

CAL YR 1990	TOTAL 14569.68	MEAN 39.9	MAX 1010	MIN .00	AC-FT 28900
WTR YR 1991	TOTAL 12219.15	MEAN 33.5	MAX 565	MIN .5B	AC-FT 24240

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1982 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1983 to current year.

WATER TEMPERATURE: July 1983 to current year.

SUSPENDED SEDIMENT: August 1983 to current year.

INSTRUMENTATION.--Water-quality monitor since July 1983. Automatic pumping sediment sampler since August 1983.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and daily mean water temperature data are available in district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 5,590 microsiemens, July 13, 1991; minimum, 202 microsiemens, Aug. 11, 1991.

WATER TEMPERATURE: Maximum, 36.8°C, June 27, 1990; minimum 0.0°C, on many days during the winter in most years.

SEDIMENT CONCENTRATIONS: Maximum daily, 54,900 mg/L, Aug. 16, 1986; minimum daily, 5 mg/L, Mar. 22, 1986, and Feb. 10, 1989.

SEDIMENT LOADS: Maximum daily, 152,000 tons, May 23, 1985; minimum daily, 0.0 tons (estimated), July 11, 12, 1989 and June 26 to July 9, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,590 microsiemens, July 13; minimum, 202 microsiemens, Aug. 11.

WATER TEMPERATURE: Maximum, 33.1°C, July 19, 20; minimum, 0.0°C, many days during the winter months.

SEDIMENT CONCENTRATION: Maximum daily, 24,700 mg/L, Aug. 5; minimum daily, 18 mg/L, Jan. 25.

SEDIMENT LOAD: Maximum daily, 48,500 tons, Aug. 5; minimum daily, 0.03 tons, June 5.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
		POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, 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 CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER OAY)
NOV 15...	1015	28	3180	8.4	7.5	10.2	1400	280	170	250	3
DATE											
NOV 15...	5.1	180	1700	34	0.5	8.2	2530	2560	3.44	191	63
DATE											
NOV 15...		<1	1	4	1500	<10	2	60	30	20	<0.01

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT				
31...	1145	18	166	8.1
NOV				
15...	1015	28	180	14
DEC				
27...	1645	15	36	1.5
JAN				
25...	1430	35	18	1.7
FEB				
21...	1535	24	28	1.8
MAR				
27...	1645	15	27	1.1
APR				
23...	1515	9.2	35	0.87
MAY				
23...	1420	2.6	56	0.39
JUN				
14...	1315	36	215	21
JUL				
09...	1220	47	255	32
31...	1430	22	375	22
AUG				
14...	1330	168	1240	562
29...	1230	23	194	12
SEP				
24...	1430	24	161	10

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2490	2600	3310	3850	3330	3110	3120	2690	3810	1640	748	1430
2	2110	---	3300	3820	3430	3120	2970	2830	3850	1450	837	1660
3	1910	---	3340	3910	3480	3120	3170	2930	3890	1330	898	1840
4	1900	2770	3350	4000	3330	3110	3190	2990	3950	1540	991	2020
5	1940	2710	3320	3910	3160	3080	3160	3010	3960	1490	1130	2230
6	1960	2820	3330	3710	3100	3040	3050	3120	3890	1370	1070	2300
7	2110	2830	3360	3540	3040	3030	3260	3230	3800	1330	1220	2350
8	2430	2840	3260	3450	2950	3000	3140	3330	3870	763	904	2400
9	2430	2810	3330	3360	2980	3010	3150	3650	3900	775	592	2450
10	2410	2720	3470	3250	2940	3030	2590	3910	3850	1130	584	2420
11	2440	2710	3550	3260	2880	3080	2520	4030	3270	1110	---	2380
12	2430	2800	3490	3210	2860	3100	2330	4010	3220	1200	---	2240
13	2380	2930	3260	3130	2870	3080	2300	3950	3270	1200	---	2500
14	2480	2980	3190	3040	2860	3050	2550	3850	1470	1420	1380	2430
15	2700	2940	3360	3040	2860	3010	2960	3790	1410	1550	---	1900
16	2810	3030	3330	3040	2860	2990	2950	3730	1370	1700	1940	1950
17	2890	3170	3250	3060	2850	3000	2730	3700	1400	1300	---	1960
18	2960	3200	3240	3100	2910	3050	2170	3670	1510	1060	---	1680
19	2940	3220	3210	3080	2930	3060	1990	3540	1640	976	661	1670
20	2760	3230	3310	3060	2930	3010	2210	3470	1780	946	---	1650
21	2750	3300	3440	3140	3000	2930	2410	3420	1950	936	---	1640
22	2800	3340	3530	3210	3030	2800	2370	3440	1960	889	---	1630
23	2840	3360	3600	3190	3060	2810	2340	3460	1950	666	741	1630
24	2970	3360	3600	3150	3090	2950	2390	3450	2010	1150	902	1620
25	2820	3340	3660	3230	3080	2990	2490	3460	2450	1080	1270	1670
26	2770	3280	3670	3290	3100	3040	2550	3460	2740	1480	1450	1750
27	2760	3300	3730	3280	3100	3240	2650	3450	2590	1370	1010	1830
28	2750	3320	3690	3310	3120	3270	2720	3570	2160	1400	996	1860
29	2730	3300	3730	3360	---	3280	2750	3750	1610	855	1100	1920
30	2740	3280	3780	3470	---	3050	2780	3780	1560	763	1120	2000
31	2610	---	3790	3350	---	3100	---	3780	---	740	1240	---
MEAN	2550	---	3440	3350	3040	3050	2700	3500	2640	1250	---	1970

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	21.0	16.6	12.5	10.3	5.2	1.7	.1	.0	.5	.0	11.0	4.8
2	19.1	16.6	12.3	9.3	3.3	.3	.1	.0	.3	.0	10.1	5.6
3	18.7	14.5	4.8	---	1.4	.0	.0	.0	.6	.0	11.5	4.0
4	20.0	13.4	7.7	2.9	1.7	.0	.0	.0	1.5	.0	11.8	6.1
5	20.7	14.1	8.0	3.7	1.8	.0	.1	.0	3.7	.0	14.1	8.4
6	19.9	14.4	5.9	2.3	3.0	.0	.0	.0	5.1	.0	10.4	7.0
7	16.5	13.0	4.6	1.6	2.3	.0	.1	.0	6.1	.6	8.2	4.8
8	13.9	9.3	6.0	1.6	3.8	.0	.1	.0	6.5	1.2	9.7	2.4
9	14.0	7.4	6.9	2.6	4.1	.0	.1	.0	8.0	3.0	11.2	3.6
10	15.5	8.3	8.6	3.8	4.3	.1	.2	.0	7.9	2.2	12.2	5.4
11	15.7	10.6	9.6	4.9	4.7	.2	.2	.0	8.4	2.3	13.4	6.7
12	15.5	9.3	9.9	5.2	4.6	1.0	.2	.0	6.1	2.9	11.6	5.8
13	16.7	10.1	10.2	5.7	6.1	2.9	.2	.0	7.2	2.1	11.6	4.6
14	15.7	10.5	10.5	6.1	5.1	1.4	.2	.0	7.7	2.0	8.1	5.5
15	16.8	10.1	10.8	6.5	1.9	.0	.3	.0	8.2	1.8	11.4	4.2
16	17.3	11.5	9.2	6.7	4.3	.0	.2	.0	8.6	3.9	8.0	5.2
17	14.7	10.9	8.8	6.3	4.1	1.5	.4	.0	8.6	5.3	12.1	3.6
18	13.5	8.2	9.0	4.9	3.1	.0	.4	.0	7.0	3.9	14.2	6.2
19	15.9	9.8	8.6	5.5	2.5	.0	.6	.0	7.3	1.3	13.3	7.6
20	13.7	7.4	9.6	5.9	.0	.0	.3	.0	9.5	2.2	12.7	5.9
21	11.0	5.2	9.3	5.9	.0	.0	.2	.0	10.1	3.3	11.5	8.8
22	12.2	6.4	8.0	4.0	.0	.0	.2	.0	10.0	3.9	11.2	3.8
23	13.4	8.4	8.1	3.4	.0	.0	.3	.0	7.6	5.1	14.3	5.9
24	13.7	8.9	8.8	3.8	.1	.0	.3	.0	6.9	2.9	15.9	7.8
25	14.8	8.9	8.8	4.4	.1	.0	.1	.0	7.1	.4	16.3	10.5
26	15.5	9.4	9.4	6.1	.1	.0	.2	.0	9.4	2.9	13.5	8.4
27	14.6	10.0	6.6	3.3	.1	.0	.2	.0	10.3	3.5	14.1	6.0
28	14.9	9.2	4.6	.9	.2	.0	.3	.0	7.3	4.5	13.6	8.3
29	15.5	10.0	4.0	.0	.0	.0	.1	.0	---	---	9.8	6.9
30	15.3	9.9	4.3	.8	.0	.0	.2	.0	---	---	11.4	1.9
31	15.0	9.9	---	---	.1	.0	.3	.0	---	---	14.8	5.7
MONTH	21.0	5.2	12.5	---	6.1	.0	.6	.0	10.3	.0	16.3	1.9
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	17.1	8.3	19.8	9.1	27.7	16.7	29.8	22.1	29.9	22.3	---	20.1
2	13.4	9.4	21.7	12.0	27.1	15.6	29.4	21.5	28.6	22.9	27.5	20.3
3	16.0	8.3	21.8	13.2	27.3	15.9	30.0	22.1	25.2	21.7	---	21.9
4	19.1	10.7	16.5	13.4	29.7	16.6	30.3	22.2	26.2	20.7	25.1	19.5
5	20.7	12.2	19.8	11.2	27.6	18.0	30.4	22.3	23.5	19.0	26.6	---
6	21.1	13.0	21.1	12.3	27.3	17.2	29.7	21.6	24.1	20.3	22.3	20.2
7	20.0	14.0	22.9	14.6	30.3	15.9	29.0	15.7	24.7	20.2	25.8	18.3
8	17.5	12.9	23.8	14.7	31.1	18.7	25.7	15.7	24.9	20.6	26.3	17.5
9	18.0	10.7	22.9	15.7	28.3	19.2	28.1	22.2	22.7	17.7	26.2	18.4
10	17.5	11.1	24.2	16.8	29.8	19.0	---	22.5	25.9	20.4	23.9	20.1
11	16.7	10.6	25.1	17.3	28.7	21.0	29.0	22.5	---	11.1	25.1	19.1
12	16.8	10.6	26.0	16.8	26.7	21.5	28.4	22.6	---	20.5	22.7	20.3
13	14.9	7.5	---	16.5	27.3	20.4	26.6	21.3	22.3	20.9	24.0	19.4
14	17.6	9.5	24.3	15.2	22.8	20.3	27.8	20.7	25.9	19.8	22.4	17.8
15	19.3	10.6	24.8	15.9	26.3	18.9	28.2	20.8	---	21.1	21.5	17.0
16	16.0	12.5	21.4	15.4	27.0	20.2	30.0	20.5	---	22.0	21.6	16.4
17	17.1	10.8	---	14.3	29.3	20.0	31.5	22.5	---	20.5	22.2	16.5
18	18.8	12.9	---	16.6	29.4	20.9	32.4	22.6	---	22.5	18.2	15.4
19	19.2	12.5	26.5	17.5	25.9	20.4	33.1	23.7	---	21.9	16.4	14.3
20	19.8	13.3	24.5	18.4	26.6	18.5	33.1	24.0	---	21.6	19.5	12.9
21	20.6	13.0	22.5	16.8	29.5	19.8	30.9	23.3	---	22.1	21.6	15.5
22	20.9	12.1	26.2	15.1	27.0	20.9	24.5	20.9	---	21.7	19.4	15.3
23	19.6	14.5	25.8	17.6	27.8	20.9	24.1	19.3	---	20.9	20.4	13.9
24	22.4	13.6	24.6	17.3	27.2	20.7	22.5	19.9	26.6	21.2	18.8	13.1
25	20.5	15.1	27.7	16.3	26.1	20.1	24.9	19.5	27.1	21.5	19.4	13.4
26	---	11.6	28.1	18.4	26.6	18.3	26.7	19.8	---	21.1	20.5	14.0
27	16.7	8.5	27.8	18.7	28.3	19.2	25.6	20.2	---	21.5	20.4	15.7
28	12.6	7.2	24.8	18.6	26.4	20.3	26.2	21.0	---	21.9	21.5	15.7
29	17.4	8.5	27.8	17.8	28.0	20.2	26.5	21.3	---	21.8	21.7	16.0
30	15.3	10.3	24.0	16.5	29.6	21.2	28.1	20.2	---	21.1	19.8	16.7
31	---	---	27.2	16.3	---	---	29.1	22.0	25.9	20.9	---	---
MONTH	---	7.2	---	9.1	31.1	15.6	---	15.7	---	11.1	---	---

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	78	7500	1580	18	---	7.3	18	---	4.9
2	43	---	639	19	---	7.7	17	---	4.6
3	30	1400	113	27	---	11	17	---	4.6
4	23	---	58	28	---	11	18	---	4.9
5	20	---	45	37	---	20	18	---	4.9
6	18	---	35	35	---	19	17	---	3.4
7	17	---	28	39	---	21	17	---	3.4
8	15	---	22	41	---	22	17	---	3.4
9	14	535	20	33	---	18	17	---	3.4
10	15	---	20	29	---	16	19	---	3.8
11	16	---	17	29	---	16	18	---	3.6
12	15	---	17	29	---	16	18	---	3.6
13	14	---	15	31	---	16	18	---	3.6
14	14	---	15	31	---	16	17	---	3.4
15	16	---	13	28	180	14	17	---	3.4
16	16	---	13	27	---	13	16	---	2.2
17	14	---	11	25	---	10	15	---	2.0
18	15	---	10	24	---	9.7	15	---	2.0
19	15	---	8.0	24	---	9.7	16	---	2.2
20	18	---	7.0	23	---	9.3	13	---	1.8
21	20	---	7.5	22	---	8.9	10	---	1.1
22	35	85	8.0	22	---	8.9	10	---	1.1
23	35	---	9.0	21	---	5.7	11	---	1.2
24	27	---	10	21	---	5.7	12	---	1.3
25	23	---	11	21	---	5.7	13	---	1.4
26	22	---	10	20	---	5.4	14	---	1.5
27	21	---	9.0	19	---	5.1	14	36	1.4
28	20	---	8.0	18	---	4.9	15	---	1.6
29	20	---	8.0	17	---	4.6	15	---	1.6
30	19	---	8.0	17	---	4.6	15	---	1.6
31	18	166	8.1	---	---	---	17	---	1.8
TOTAL	686	---	2782.6	775	---	342.2	484	---	84.7
JANUARY			FEBRUARY			MARCH			
1	18	---	1.5	13	---	.70	25	---	2.0
2	18	---	1.5	15	---	.81	25	---	2.0
3	18	---	1.5	18	---	.97	24	---	1.9
4	19	---	1.5	18	---	.97	24	---	1.9
5	19	---	1.5	18	---	.97	21	---	1.7
6	20	---	1.6	19	---	1.0	20	---	1.6
7	20	---	1.6	24	---	1.6	21	---	1.7
8	20	---	1.6	26	---	2.1	22	---	1.8
9	20	---	1.6	26	---	2.1	22	---	1.8
10	21	---	1.7	30	---	2.4	21	---	1.7
11	18	---	.97	27	---	2.2	19	---	1.7
12	18	---	.97	27	---	2.2	19	---	1.7
13	19	---	1.0	27	---	2.2	18	---	1.6
14	20	---	1.1	25	---	2.0	18	---	1.6
15	19	---	1.0	25	---	2.0	18	---	1.6
16	18	---	.97	24	---	1.9	18	---	1.6
17	17	---	.92	24	---	1.9	18	---	1.6
18	16	---	.86	24	---	1.9	18	---	1.6
19	16	---	.86	24	---	1.9	19	---	1.7
20	18	---	.97	23	---	1.9	19	---	1.7
21	19	---	1.0	23	28	1.7	18	---	1.6
22	16	---	.86	22	---	1.8	21	---	2.0
23	17	---	.92	22	---	1.8	23	---	2.2
24	17	---	.92	22	---	1.8	20	---	1.9
25	15	18	.73	22	---	1.8	18	---	1.7
26	15	---	.81	22	---	1.8	16	---	1.6
27	14	---	.76	23	---	1.9	15	28	1.1
28	14	---	.76	23	---	1.9	14	---	1.0
29	13	---	.70	---	---	---	15	---	1.2
30	13	---	.70	---	---	---	19	53	2.7
31	14	---	.70	---	---	---	22	---	5.6
TOTAL	539	---	34.08	636	---	48.22	610	---	57.1

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	21	---	7.3	7.4	---	1.0	2.3	---	.34
2	23	112	7.0	6.5	---	.88	1.5	---	.18
3	27	78	5.7	6.6	---	.94	.90	---	.08
4	27	---	4.6	8.8	---	1.6	.71	---	.04
5	24	36	2.3	8.2	62	1.4	.58	---	.03
6	42	108	13	7.5	64	1.3	.70	---	.04
7	52	---	22	7.2	---	1.5	.96	---	.09
8	54	95	14	12	110	3.6	1.7	---	.20
9	40	48	5.2	13	104	3.6	5.1	---	.83
10	28	---	2.3	9.8	---	2.8	4.3	---	.74
11	21	---	1.7	8.5	116	2.7	8.0	60	1.3
12	16	---	1.3	6.8	82	1.5	169	1400	857
13	15	---	1.9	5.9	---	1.1	80	600	130
14	15	---	2.1	5.3	85	1.2	37	247	25
15	15	---	2.1	5.1	79	1.1	26	---	15
16	15	---	2.0	5.0	---	1.1	17	195	9.0
17	16	48	2.1	4.5	96	1.2	13	119	4.2
18	15	44	1.8	4.3	85	.99	13	---	3.5
19	17	---	4.1	4.1	---	.75	12	90	2.9
20	14	86	3.2	4.0	---	.67	14	81	3.1
21	12	80	2.6	3.7	---	.60	11	---	2.3
22	9.9	---	1.8	3.2	---	.50	26	92	6.5
23	9.4	44	1.1	2.7	55	.40	28	79	6.0
24	9.4	42	1.1	2.6	---	.39	42	---	9.2
25	9.1	---	1.2	2.4	---	.36	28	54	4.1
26	7.8	66	1.4	3.8	---	.85	25	74	5.0
27	7.6	62	1.3	6.1	104	1.7	27	---	11
28	7.8	---	.86	5.0	---	1.2	22	142	8.4
29	7.9	35	.75	4.1	---	.85	26	100	7.0
30	7.6	42	.86	3.4	---	.61	22	---	4.5
31	---	---	---	2.6	---	.39	---	---	---
TOTAL	585.5	---	118.67	180.1	---	38.78	664.75	---	1117.57
JULY			AUGUST			SEPTEMBER			
1	17	71	3.3	16	248	11	14	---	6.2
2	15	69	2.8	12	---	4.4	8.8	170	4.0
3	28	---	7.4	10	63	1.7	7.6	190	3.9
4	27	78	5.7	269	6790	28300	7.0	---	3.4
5	32	69	6.0	565	24700	48500	6.1	165	2.7
6	36	---	7.8	123	7990	2850	4.2	---	1.7
7	126	521	1600	342	7160	7530	3.3	---	1.2
8	203	1870	2400	289	---	1950	2.5	---	.88
9	41	256	28	479	2330	3450	3.4	---	1.5
10	27	163	12	246	1780	3090	3.9	---	1.6
11	15	171	6.9	272	2640	3540	50	1260	331
12	52	286	72	59	---	143	74	735	147
13	68	380	70	57	---	139	64	---	102
14	29	200	16	119	1140	453	69	336	63
15	27	---	12	67	630	114	65	200	35
16	17	140	6.4	48	810	105	61	---	31
17	11	145	4.3	353	5130	5130	58	138	22
18	7.8	---	3.1	200	2530	1380	56	---	21
19	4.9	---	1.7	97	800	210	50	---	20
20	4.6	---	1.5	53	---	86	45	---	18
21	3.7	---	1.1	170	1520	1110	36	---	15
22	98	1260	641	191	1160	636	31	---	13
23	147	1420	653	103	---	250	28	---	12
24	138	717	274	50	---	108	25	162	11
25	98	392	111	36	---	68	23	---	9.2
26	37	350	35	32	---	52	23	148	9.2
27	137	4540	1910	28	---	38	21	150	8.5
28	192	8960	4620	24	---	23	20	---	8.1
29	88	1420	337	22	195	12	20	---	8.1
30	41	---	80	19	190	9.7	18	---	7.3
31	25	405	27	17	170	7.8	---	---	---
TOTAL	1793.0	---	12956.0	4368	---	109301.6	897.8	---	918.48

07126500 PURGATOIRE RIVER AT NINEMILE DAM, NEAR HIGBEE, CO

LOCATION.--Lat 37°42'53", long 103°30'38", in NW¼ sec.7, T.27 S., R.54 W., Otero County, Hydrologic Unit 11020010, on left bank at Ninemile Dam, 4 mi southwest of Higbee, and 5.5 mi upstream from Smith Canyon. Prior to Apr. 21, 1978 gage located 850 ft, upstream.

DRAINAGE AREA.--2,752 mi².

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1311: 1934 (M), 1936 (M), 1941-42 (M), 1948-49 (M). WSP 1731: 1929 (M).

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 4,240.59 ft above National Geodetic Vertical Datum of 1929, supplementary adjustment of 1960. See WSP 1711 or 1731 for history of changes prior to Dec. 6, 1956. Dec. 6, 1956 to Apr. 20, 1978, at site 850 ft, upstream.

REMARKS.--No estimated daily discharges. Records fair. Diversions for irrigation of about 32,000 acres above station. Discharge computed by combining discharge of river below Ninemile Dam and Ninemile canal.

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

AVERAGE DISCHARGE.--52 years (water years 1925-76), 94.5 ft³/s; 68,470 acre-ft/yr, prior to completion of Trinidad Dam; 15 years (water years 1977-91), 71.8 ft³/s; 59,920 acre-ft/yr, subsequent to completion of Trinidad Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 105,000 ft³/s, estimated, June 18, 1965, gage height, 19.6 ft, from floodmarks; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,460 ft³/s at 0245 July 2, gage height, 4.68 ft; no flow several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	9.7	12	6.1	21	18	24	5.2	1.7	9.3	14	9.6
2	18	11	14	4.1	22	26	26	5.8	.00	123	8.9	7.8
3	17	12	7.3	4.4	25	25	30	5.1	.00	16	7.3	5.0
4	18	11	6.5	9.5	27	22	28	5.6	.00	21	56	5.3
5	19	17	7.8	10	28	18	28	12	.00	24	640	3.9
6	19	20	6.9	10	30	15	38	7.9	.00	38	104	2.9
7	17	17	9.4	10	28	15	58	7.9	.93	44	283	4.4
8	15	28	13	10	32	14	60	6.7	.00	330	263	3.7
9	15	18	6.0	10	35	21	51	14	.00	35	429	3.5
10	17	9.7	7.7	10	37	20	41	12	.00	28	173	4.1
11	18	11	7.6	8.7	31	19	32	11	.82	14	315	9.2
12	19	13	9.0	8.2	20	21	21	12	106	8.8	62	49
13	19	7.8	9.8	11	22	22	19	8.2	50	81	39	38
14	17	9.5	9.7	11	19	19	20	7.0	30	33	87	44
15	19	9.6	11	10	19	20	21	6.5	15	21	56	40
16	22	8.5	11	13	24	18	14	5.8	9.8	16	47	30
17	17	11	10	10	22	9.9	15	5.4	4.0	9.6	225	32
18	17	8.2	8.8	12	17	20	14	5.1	.75	6.2	137	28
19	16	8.2	6.9	11	17	23	16	4.7	2.7	4.1	78	28
20	15	9.9	8.4	13	31	19	12	4.3	3.7	4.5	45	23
21	17	11	8.2	10	31	19	12	3.5	3.7	3.0	92	22
22	22	12	8.0	12	32	17	9.2	3.5	4.7	42	150	14
23	21	11	8.0	13	32	27	7.9	3.0	15	83	88	13
24	8.5	11	8.0	13	32	25	9.1	2.5	19	124	38	10
25	9.7	11	8.0	12	30	21	8.4	2.1	23	79	25	9.5
26	11	8.8	8.0	12	27	16	6.6	1.8	9.2	43	19	10
27	10	8.2	8.0	13	27	13	7.0	1.3	16	66	19	9.1
28	11	9.5	11	13	25	11	7.0	3.2	11	165	16	8.8
29	9.1	15	10	12	---	16	6.5	3.3	10	103	14	7.9
30	10	13	8.1	13	---	23	5.6	3.0	13	45	12	7.5
31	10	---	6.6	21	---	25	---	2.6	---	18	9.8	---
TOTAL	527.3	360.6	274.7	336.0	743	597.9	647.3	182.0	350.00	1637.5	3552.0	483.2
MEAN	17.0	12.0	8.86	10.8	26.5	19.3	21.6	5.87	11.7	52.8	115	16.1
MAX	54	28	14	21	37	27	60	14	106	330	640	49
MIN	8.5	7.8	6.0	4.1	17	9.9	5.6	1.3	.00	3.0	7.3	2.9
AC-FT	1050	715	545	666	1470	1190	1280	361	694	3250	7050	958

CAL YR 1990 TOTAL 12307.20 MEAN 33.7 MAX 961 MIN .00 AC-FT 24410
WTR YR 1991 TOTAL 9691.50 MEAN 26.6 MAX 640 MIN .00 AC-FT 19220

07128500 PURGATOIRE RIVER NEAR LAS ANIMAS, CO

LOCATION.--Lat 38°02'02", long 103°12'00", in NE¼SW¼ sec.23, T.23 S., R.52 W., Bent County, Hydrologic Unit 11020010, on right bank at downstream side of bridge on State Highway 101, 2.3 mi southeast of courthouse in Las Animas, and 4.5 mi upstream from mouth.

DRAINAGE AREA.--3,318 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to September 1889, July to October 1909 (gage heights and discharge measurements only), January 1922 to September 1931, July 1948 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as Purgatoire Creek at Las Animas in 1889 and as Purgatory River near Las Animas in 1909.

REVISED RECORDS.--WSP 1241: 1927(M); WDR CO-84-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 3,871.84 ft above National Geodetic Vertical Datum of 1929. See WSP 1731 for history of changes prior to Oct. 1, 1955. Oct. 1, 1955, to July 11, 1966, at datum 3.00 ft, higher. Supplementary water-stage recorder at site 1.6 mi downstream at different datum July 12 to Nov. 17, 1966. Nov. 18, 1966 to May 4, 1982 at datum 3.1 ft, higher.

REMARKS.--Estimated daily discharges: Nov. 30 to Dec. 3, Dec. 16-31, Jan. 13 to Feb. 9, and June 22-26. Records good except for Oct. 1 to July 19 (other than estimated daily discharges), which are fair. Estimated daily discharges are poor. Flow regulated to some extent since January 1975 by Trinidad Lake near Trinidad, upstream. Divisions for irrigation of about 36,000 acres upstream from station.

AVERAGE DISCHARGE.--37 years (water years 1923-31, 1949-76), 116 ft³/s; 84,040 acre-ft/yr, prior to completion of Trinidad Lake; 14 years (water years 1978-91), 65.2 ft³/s; 47,240 acre-ft/yr, subsequent to completion of Trinidad Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,000 ft³/s, May 20, 1955, gage height, 20.00 ft, different datum, from rating curve extended above 38,000 ft³/s; no flow at times in 1924-25, 1927, 1949, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Greatest flood since at least 1860 occurred Oct. 1, 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,150 ft³/s at 1400 July 2, gage height, 6.67 ft; minimum daily, 1.5 ft³/s, May 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	25	20	25	29	16	11	11	11	23	15	11
2	51	40	21	24	32	12	9.7	6.7	16	352	13	7.9
3	19	36	20	24	31	14	11	3.7	11	203	17	6.0
4	15	48	17	24	30	25	11	3.0	11	50	15	21
5	13	53	20	24	30	32	9.2	4.5	15	27	140	12
6	18	52	31	25	29	31	8.3	6.1	23	13	270	6.1
7	16	52	21	25	28	31	6.6	5.3	41	5.4	82	5.8
8	25	46	21	26	30	28	8.5	5.0	35	58	203	5.4
9	28	45	18	27	31	27	11	4.6	34	123	209	5.8
10	24	44	21	25	33	28	10	7.4	26	34	357	6.7
11	18	39	17	24	32	27	9.0	3.0	15	22	231	6.3
12	15	32	21	26	31	28	8.2	2.1	17	18	219	5.8
13	15	31	19	27	30	25	5.6	11	41	13	91	5.9
14	16	31	26	28	28	17	5.3	9.7	48	6.9	48	17
15	20	27	21	30	28	21	5.1	7.3	37	2.5	58	19
16	18	22	19	31	26	45	5.0	5.4	34	3.1	47	21
17	23	22	17	33	27	34	5.4	2.4	54	3.9	50	20
18	27	18	16	31	27	34	5.7	1.5	38	3.6	199	20
19	23	23	15	29	26	22	7.5	2.7	41	3.1	154	20
20	21	20	14	30	26	19	6.4	2.9	27	3.8	88	20
21	17	18	11	32	25	14	5.9	4.1	19	5.2	40	17
22	11	17	10	35	25	11	4.1	4.0	14	2.6	66	13
23	13	17	11	32	22	9.7	4.2	4.1	10	3.8	124	10
24	16	18	13	30	18	5.8	6.0	5.0	7.0	34	75	7.7
25	15	18	15	35	15	4.7	3.9	8.6	5.0	78	33	6.1
26	9.5	18	17	32	17	5.3	2.7	6.3	3.6	47	20	4.1
27	9.0	17	19	30	22	11	1.9	4.2	3.6	113	14	3.2
28	12	17	22	29	15	7.7	1.9	7.4	3.6	80	9.1	3.6
29	13	18	23	30	---	8.4	3.0	5.2	3.2	106	6.7	3.2
30	15	20	21	30	---	9.7	4.0	5.5	27	60	10	2.0
31	23	---	24	30	---	13	---	7.9	---	25	10	---
TOTAL	591.5	884	581	883	743	616.3	197.1	167.6	671.0	1522.9	2913.8	312.6
MEAN	19.1	29.5	18.7	28.5	26.5	19.9	6.57	5.41	22.4	49.1	94.0	10.4
MAX	51	53	31	35	33	45	11	11	54	352	357	21
MIN	9.0	17	10	24	15	4.7	1.9	1.5	3.2	2.5	6.7	2.0
AC-FT	1170	1750	1150	1750	1470	1220	391	332	1330	3020	5780	620

CAL YR 1990 TOTAL 12545.9 MEAN 34.4 MAX 1730 MIN 2.3 AC-FT 24880
WTR YR 1991 TOTAL 10083.8 MEAN 27.6 MAX 357 MIN 1.5 AC-FT 20000

07128500 PURGATOIRE RIVER NEAR LAS ANIMAS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1985 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1985 to current year.

WATER TEMPERATURE: December 1985 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and daily mean water temperature data available in district office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 6,320 microsiemens, July 31, 1989; minimum, 365 microsiemens, July 21, 1990.

WATER TEMPERATURE: maximum, 34.0°C, July 23, 29, 1987; minimum, 0.0°C, many days during winter months.

EXTREMES FOR CURRENT YEAR.

SPECIFIC CONDUCTANCE: Maximum, 5,550 microsiemens, May 13; minimum, 380 microsiemens, Aug. 6.

WATER TEMPERATURE: Maximum, 32.7°C, July 6, 20; minimum, 0.0°C, many days during winter.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4240	3060	4090	---	3900	4230	3880	4970	4930	3830	1890	2490
2	3240	2830	4050	---	3870	4240	4180	4650	4740	2050	2170	4160
3	2970	3160	4080	---	3680	4220	4320	4950	4630	756	2490	4020
4	3270	3040	4120	---	3610	4090	4250	4990	4750	1000	2930	3320
5	2980	3030	4090	---	3510	4220	4350	4930	4490	1350	2430	1660
6	3140	2930	3890	---	3380	4240	4360	5050	4490	---	412	2320
7	3100	3030	3870	---	3330	3840	4400	5100	4630	---	566	2770
8	2790	2870	3880	---	3410	3810	4650	5000	3820	---	622	3170
9	2430	2910	3880	---	3520	3830	4730	4900	3530	974	694	3460
10	---	2950	3860	---	3500	3880	4560	4930	3760	1250	678	3680
11	2480	2990	3860	4220	3410	3900	4360	4670	4150	1810	619	3970
12	2550	3080	3960	4190	3430	3930	4300	4940	4150	2260	577	4130
13	2770	3090	3990	4040	3490	4020	4480	5440	4170	2700	867	4230
14	2920	3180	3960	3840	3550	4140	4610	5390	2860	2970	1060	---
15	3120	3370	4000	3710	3550	3930	4740	5320	2570	3020	1020	3130
16	3320	3600	4050	3570	3590	2900	4830	5260	2820	2860	1090	3120
17	3920	3640	3970	3490	3620	3020	4880	5260	3260	3270	1650	---
18	3920	3660	3970	3460	3610	3000	4910	5200	2780	3290	1960	3230
19	3630	3650	3930	3430	3630	2980	4890	5180	2850	3550	1510	2660
20	3570	3640	4090	3340	3570	3040	4920	5250	3410	3710	1940	2320
21	3360	3750	4310	3370	3550	3210	4930	5250	3160	3620	1220	2660
22	3400	3770	4460	3430	3570	3560	4920	5190	3730	3740	1340	2700
23	3080	3810	4590	3460	3660	3520	4940	5120	2850	3770	1070	2610
24	2910	3900	4790	3500	3780	3810	4920	5110	2760	3370	1570	2830
25	3130	3920	4870	3590	3910	4400	4820	5090	4010	1180	2500	3260
26	2720	4050	4890	3730	4050	4580	4940	4830	4930	1030	2500	3490
27	2820	4210	4890	3770	3820	3980	5020	4520	5120	1460	2560	3650
28	2850	4220	4800	3880	3880	3950	5050	4940	4920	603	2910	3890
29	2830	4240	4830	3960	---	4420	5080	4770	4640	1580	3310	4380
30	2910	4230	4820	4020	---	4210	5020	4970	4450	2430	2990	4420
31	2900	---	4690	3940	---	4200	---	4880	---	2210	2320	---
MEAN	---	3460	4240	---	3620	3850	4670	5030	3910	---	1660	---

07128500 PURGATOIRE RIVER NEAR LAS ANIMAS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	25.2	17.3	12.9	9.8	6.0	2.3	.0	.0	3.7	.0	13.3	5.8
2	20.7	16.9	12.6	5.5	3.1	.5	.0	.0	3.0	.0	9.1	5.0
3	19.6	14.0	6.4	4.8	3.1	.0	.0	.0	4.1	.0	12.5	3.1
4	20.4	12.4	8.4	4.0	3.9	.0	.0	.0	5.4	.3	11.3	6.4
5	22.0	12.0	8.1	2.9	3.2	.0	.0	.0	5.6	.0	14.3	8.5
6	20.2	13.3	5.3	3.1	3.5	.4	.0	.0	6.0	.0	10.9	7.0
7	16.0	11.7	4.8	2.3	3.7	.0	.0	.0	6.1	.4	8.9	5.3
8	11.5	8.6	5.6	1.5	4.3	.0	.3	.0	6.8	1.0	9.6	2.8
9	14.0	6.4	7.1	2.2	4.7	.0	.3	.0	8.8	4.3	10.9	4.1
10	15.7	6.9	8.5	3.6	4.2	.0	.2	.0	8.0	3.0	11.8	5.9
11	15.1	8.3	9.8	4.6	5.4	.1	1.4	.0	8.5	2.8	13.4	7.3
12	16.0	8.1	10.3	5.2	5.4	1.4	1.5	.0	5.9	3.1	10.6	5.4
13	17.6	8.6	10.5	5.2	6.4	2.9	2.2	.0	7.1	2.5	10.9	4.0
14	16.2	9.4	10.5	5.2	6.1	2.5	2.0	.0	8.4	3.0	7.1	3.9
15	17.6	9.0	11.7	5.6	2.6	.0	2.1	.0	8.4	2.9	10.0	2.1
16	18.1	10.2	10.0	6.8	4.6	.2	3.5	.0	9.6	3.9	4.6	3.2
17	14.9	10.5	8.8	6.0	4.5	2.1	1.7	.0	8.3	5.6	9.5	2.2
18	14.1	7.6	10.0	4.7	3.5	.0	2.6	.0	8.0	4.6	12.6	4.7
19	16.3	9.2	8.1	5.2	1.9	.0	3.0	.0	7.3	1.6	12.3	5.9
20	14.1	8.4	9.2	5.3	.0	.0	2.5	.0	9.1	2.1	13.0	5.5
21	12.9	6.2	9.9	5.8	.0	.0	1.9	.0	10.3	3.7	12.4	5.9
22	14.8	7.0	8.7	3.9	.0	.0	1.2	.0	10.2	4.3	11.0	6.2
23	15.0	8.8	9.0	3.7	.0	.0	2.4	.0	8.0	5.5	14.8	5.1
24	14.4	8.8	10.0	4.2	.0	.0	2.1	.0	7.1	2.9	16.3	6.4
25	15.3	9.0	9.9	4.2	.0	.0	1.5	.0	8.2	.8	15.4	8.3
26	16.2	7.5	10.5	5.9	.0	.0	1.1	.0	10.1	2.8	14.9	8.0
27	14.3	9.6	7.0	2.9	.0	.0	1.5	.0	10.1	3.3	14.5	6.2
28	15.6	8.4	5.9	1.8	.0	.0	2.5	.0	8.3	4.1	13.8	7.0
29	14.7	8.2	5.9	.3	.0	.0	.8	.0	---	---	9.9	5.5
30	15.5	8.6	5.4	.7	.0	.0	.8	.0	---	---	13.1	2.7
31	14.9	8.8	---	---	.0	.0	2.2	.0	---	---	15.7	6.1
MONTH	25.2	6.2	12.9	.3	6.4	.0	3.5	.0	10.3	.0	16.3	2.1
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	18.0	7.2	20.3	8.4	25.9	17.9	30.9	20.1	32.4	22.1	25.6	18.5
2	14.0	10.1	20.8	10.8	24.6	16.7	24.7	19.8	31.5	22.7	28.6	19.6
3	17.8	9.1	21.7	11.8	26.3	16.3	27.0	19.6	24.3	20.7	26.0	21.1
4	20.3	10.8	15.7	11.8	28.9	17.1	29.4	20.4	25.7	19.6	26.1	20.1
5	21.2	11.3	19.3	9.7	26.8	18.0	30.2	21.6	30.1	20.0	27.2	19.0
6	22.5	11.7	21.5	10.9	24.4	17.5	32.7	21.6	25.7	24.2	23.7	19.0
7	19.9	11.9	22.0	13.0	26.5	16.7	---	---	24.7	22.5	26.8	18.5
8	17.3	11.0	24.4	12.5	29.0	18.6	---	---	24.5	22.9	26.6	17.1
9	18.5	9.3	24.5	14.8	29.2	19.3	28.6	21.6	24.5	23.2	27.9	17.2
10	18.0	10.2	23.1	16.4	28.8	19.8	30.4	21.3	25.4	23.4	25.2	19.3
11	17.1	10.1	25.3	16.0	28.3	19.4	29.6	21.3	25.4	22.3	28.6	18.9
12	17.6	9.5	25.1	15.5	29.7	18.5	28.1	21.6	24.6	19.8	25.0	19.1
13	17.5	7.4	24.0	15.9	29.5	19.8	29.2	19.8	20.9	19.7	27.0	18.4
14	19.1	9.4	24.4	15.7	23.1	19.7	29.0	19.4	24.5	20.1	24.1	17.6
15	19.5	8.9	25.1	16.0	27.3	17.8	27.8	18.2	25.1	21.6	23.1	17.3
16	17.6	10.2	21.2	15.4	28.8	18.2	28.6	19.9	29.1	22.9	23.1	16.9
17	18.9	10.3	25.6	13.9	28.9	18.6	30.2	20.4	28.9	21.7	23.0	16.3
18	18.9	11.4	25.6	16.0	29.5	19.6	31.1	20.8	27.4	22.8	18.5	13.0
19	20.0	11.6	26.4	17.1	26.2	19.4	31.0	21.4	27.2	22.5	15.6	12.6
20	18.6	10.9	24.0	17.9	26.9	18.4	32.7	21.5	28.6	21.6	19.2	11.4
21	18.7	9.8	23.6	17.2	30.0	18.8	30.6	21.3	29.6	21.6	21.6	14.4
22	20.4	10.2	27.3	15.9	27.1	20.2	27.3	21.5	30.2	21.6	20.4	15.6
23	17.4	13.3	26.4	17.7	26.9	18.5	26.2	19.0	27.8	22.2	21.7	13.7
24	22.4	12.1	23.0	16.2	29.9	19.2	21.2	17.9	29.3	22.1	20.3	12.5
25	20.3	12.6	27.1	15.4	26.4	18.4	24.6	19.0	29.3	21.2	21.1	12.3
26	17.7	11.2	27.9	17.4	27.1	17.5	26.5	19.1	29.4	20.5	23.2	13.3
27	17.8	8.0	27.5	17.3	30.2	18.5	28.0	19.6	29.9	21.1	22.4	13.6
28	13.3	8.8	22.2	17.2	28.0	19.9	26.6	19.4	30.2	20.5	22.6	14.5
29	19.5	8.2	27.6	15.6	31.1	19.8	27.2	21.8	29.7	21.0	24.5	15.2
30	15.4	8.7	25.9	16.2	31.1	20.7	29.2	21.4	27.0	19.3	21.5	15.0
31	---	---	27.2	16.1	---	---	29.5	21.9	24.1	19.6	---	---
MONTH	22.5	7.2	27.9	8.4	31.1	16.3	---	---	32.4	19.3	28.6	11.4

07130000 JOHN MARTIN RESERVOIR AT CADDOA, CO

LOCATION.--Lat 38°04'05", long 102°56'13", in NE¼NW¼ sec.8, T.23 S., R.49 W., Bent County, Hydrologic Unit 11020009, at dam on Arkansas River at Caddoa, 3.2 mi southeast of Hasty, and 58 mi upstream from Colorado-Kansas State line.

DRAINAGE AREA.--18,915 mi², of which 785 mi² is probably noncontributing.

PERIOD OF RECORD.--January 1943 to current year. Month-end contents only prior to November 1943, published in WS² 1311.

GAGE.--Water-stage recorder with satellite telemetry for elevations above 3,784 ft, and nonrecording gage read once daily for those below. Datum of gage is 3,760.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Corps of Engineers); gage readings have been reduced to elevations below National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated contents: Aug. 5-7. Records good. Reservoir is formed by concrete and earthfill dam. Storage began while dam was under construction prior to 1943, and record of contents began Jan. 1, 1943. Capacity (based on 1986 resurvey used from Feb. 1, 1988) 608,200 acre-ft, at elevation 3,870.00 ft, top of spillway gates, of which 345,300 acre-ft between elevations 3778.22 ft, elevation of no contents, and 3851.58 ft, is reserved for flood control. Contents table shown is from the latest survey of 1986. No dead storage. Figures given represent total contents.

COOPERATION.--Capacity tables provided by U.S. Army, Corps of Engineers.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 429,600 acre-ft, Aug. 25, 1965, elevation, 3,856.16 ft; no contents at times many years.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 70,300 acre-ft, Mar. 31, elevation, 3,815.86 ft; minimum contents, 9,330 acre-ft, Sept. 27, elevation, 3,795.49 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

3,785.0	196	3,820.0	88,900
3,790.0	2,400	3,830.0	148,000
3,795.0	8,510	3,840.0	227,000
3,800.0	18,500	3,850.0	327,000
3,810.0	47,600	3,860.0	453,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18700	18400	29100	37200	47900	62800	70100	43000	34600	20500	11600	10300
2	18600	18900	29400	37500	48500	63400	69600	42600	34600	22200	11800	10400
3	18400	19300	29700	37700	49100	63900	68700	42000	34600	22900	11800	10400
4	18200	19600	30000	38000	49500	64600	67700	42000	34500	22600	11800	10500
5	18100	19900	30200	38200	49900	64800	66800	41600	34200	21600	11700	10300
6	18300	20200	30600	38400	50300	65200	65700	41200	34400	20600	11500	9980
7	18300	20500	30900	38900	50600	65600	64700	40900	34400	19700	11100	9940
8	18500	20900	31200	39200	51000	65900	63800	40500	34200	19200	10800	9840
9	18400	21200	31500	39500	51500	66300	62700	39900	33900	18800	11000	9850
10	18200	21400	31900	39800	51900	66600	61600	39500	33800	17600	11500	9980
11	18100	21700	32300	40200	52300	66900	60300	39300	33600	16700	11300	10000
12	18100	22000	32500	40500	52700	67100	59300	39300	33400	15500	11300	9980
13	18000	22300	32800	40900	53100	67300	58000	39200	33300	15000	11200	9850
14	17900	22500	33200	41300	53500	67600	56900	38900	33300	14900	11100	9750
15	17900	22700	33500	41700	54100	68000	55800	38900	33200	14600	11100	9730
16	17900	23400	33800	42200	54800	68400	54700	38700	33400	14100	11000	9660
17	17800	24000	34200	42600	55500	68600	53700	38500	33400	13400	10800	9570
18	17900	24500	34400	42900	56200	68800	52800	38300	33200	13000	11000	9590
19	17900	24900	34700	43300	56800	69100	51600	38300	33000	12800	11000	9570
20	18100	25400	34800	43600	57600	69100	50700	38300	33100	12600	11100	9560
21	18300	25800	34900	43900	58200	69200	49800	38100	32600	12500	10900	9560
22	18400	26100	35000	44200	58800	69200	48900	38100	31700	12400	10700	9510
23	18400	26400	35300	44500	59500	69300	48100	37900	30800	12300	10500	9470
24	18300	26800	35500	44900	60100	69500	47500	37700	29700	12300	10600	9420
25	18300	27200	35700	45100	60700	69500	46700	36800	28600	12200	10600	9370
26	18100	27400	35900	45400	61300	69600	46000	36300	27300	12100	10500	9350
27	18000	27800	36100	45900	61800	69500	45400	35700	26000	12200	10300	9330
28	17900	28100	36400	46500	62500	69600	44800	35300	24600	12400	10200	9370
29	17900	28500	36600	46900	---	69900	44000	35000	23200	12400	10200	9380
30	17800	28800	36800	46900	---	70200	43600	35000	21700	12200	10300	9350
31	17900	---	37000	47400	---	70300	---	34900	---	12000	10300	---
MEAN	18100	23600	33400	42100	54600	67600	56000	38800	31700	15600	11000	9760
MAX	18700	28800	37000	47400	62500	70300	70100	43000	34600	22900	11800	10500
MIN	17800	18400	29100	37200	47900	62800	43600	34900	21700	12000	10200	9330

CAL YR 1990 MEAN 44200 MAX 74200 MIN 17800
WTR YR 1991 MEAN 33400 MAX 70300 MIN 9330

07130500 ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, CO

LOCATION.--Lat 38°03'59", long 102°55'55", in NW¼NE¼ sec.8, T.23 S., R.49 W., Bent County, Hydrologic Unit 11020009, on right bank 0.2 mi downstream from John Martin Dam, 2.6 mi upstream from Caddoa Creek, and 3.5 mi southeast of Hasty.

DRAINAGE AREA.--18,915 mi², of which 785 mi² is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1938 to current year. Published as "at Caddoa" prior to October 1947.

REVISED RECORDS.--WSP 1241: 1942(M). WSP 1341: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry, and concrete control. Datum of gage is 3,737.40 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 22, 1940, at site 3 mi upstream at datum 22.83 ft, higher. Feb. 22, 1940, to Feb. 4, 1943, at site 700 ft upstream, at datum 3.64 ft, higher. Feb. 5, 1943, to Apr. 8, 1975, at site 1.5 mi downstream at datum approximately 27.5 ft, lower.

REMARKS.--Estimated daily discharges: Dec. 24-26, Jan. 14, 15, and Jan. 20-26. Records good except for Nov. 1 to Mar. 31, which are poor. Storage diversions upstream from station for irrigation of about 438,000 acres and for flood control. Flow completely regulated by John Martin Dam (station 07130000) 0.2 mi upstream since Oct. 1948.

AVERAGE DISCHARGE.--5 years (water years 1939-43), 628 ft³/s, unadjusted; 455,000 acre-ft/yr, during construction of John Martin Dam: 43 years (water years 1949-91), 253 ft³/s; 183,300 acre-ft/yr, adjusted for storage in John Martin Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s, Apr. 24, 1942, gage height, 10.46 ft, site and datum then in use, from rating curve extended above 12,000 ft³/s, on basis of flow-over-dam and critical-depth measurement of peak flow; no flow at times in 1945-47; minimum daily prior to construction of John Martin Reservoir, 5 ft³/s, July 16, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,180 ft³/s at 1000 June 21, gage height, 3.94 ft; minimum daily, 1.8 ft³/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	325	3.7	2.9	2.2	7.6	3.9	143	258	427	1010	457	89
2	399	2.8	2.8	2.2	4.1	4.1	364	245	427	922	313	89
3	398	3.1	2.6	2.2	5.2	3.9	467	225	443	815	284	97
4	316	2.8	2.7	2.2	6.1	3.8	492	210	476	928	322	103
5	265	2.5	2.8	2.2	5.9	3.9	513	210	505	951	404	310
6	265	2.5	2.8	2.2	5.4	3.8	542	219	514	964	522	363
7	265	2.6	2.8	2.2	4.4	3.7	540	216	544	957	521	321
8	265	2.7	2.8	2.2	4.1	3.6	547	225	559	855	459	317
9	325	2.7	2.8	2.2	4.1	3.6	551	236	561	976	430	285
10	375	2.8	2.8	2.3	4.1	3.7	554	233	562	915	430	218
11	370	2.9	2.8	2.5	8.4	3.5	560	127	565	840	434	193
12	339	3.1	2.8	2.5	4.4	2.9	567	51	568	865	434	193
13	324	3.0	2.8	2.5	4.4	3.2	569	58	615	599	424	192
14	323	2.0	2.8	2.3	4.6	10	566	88	591	483	419	170
15	313	2.1	2.8	2.1	4.7	8.8	566	105	563	507	420	156
16	313	2.2	2.8	2.0	4.6	3.1	563	111	561	524	463	144
17	305	2.3	2.8	1.8	5.0	3.1	524	91	564	515	451	137
18	255	2.5	2.8	1.8	4.9	9.3	497	74	486	331	430	105
19	276	2.5	2.8	1.8	5.0	13	493	74	442	164	429	91
20	307	2.4	2.8	1.8	4.5	9.1	492	64	448	133	431	91
21	308	2.6	2.8	1.8	4.5	9.3	490	54	802	130	488	90
22	341	2.7	2.8	1.8	4.5	8.5	436	53	989	225	528	89
23	377	3.0	2.8	1.9	4.5	8.2	389	71	990	404	478	78
24	386	3.1	2.6	1.8	4.4	8.2	383	201	1060	458	449	69
25	387	3.1	2.4	1.8	4.1	8.2	376	372	1050	507	449	67
26	387	3.0	2.2	2.0	4.1	7.9	373	415	1040	483	450	55
27	387	2.8	2.0	2.2	3.8	5.4	329	414	1090	448	377	46
28	387	2.8	2.0	2.2	3.8	3.5	330	438	1110	448	313	46
29	386	2.8	2.0	2.1	---	3.7	320	377	1110	454	272	46
30	386	2.9	2.0	2.1	---	3.7	301	333	1120	458	197	63
31	302	---	2.1	6.7	---	3.4	---	393	---	458	118	---
TOTAL	10357	82.0	81.5	69.6	135.2	174.0	13837	6241	20782	18727	12596	4313
MEAN	334	2.73	2.63	2.25	4.83	5.61	461	201	693	604	406	144
MAX	399	3.7	2.9	6.7	8.4	13	569	438	1120	1010	528	363
MIN	255	2.0	2.0	1.8	3.8	2.9	143	51	427	130	118	46
AC-FT	20540	163	162	138	268	345	27450	12380	41220	37140	24980	8550

CAL YR 1990 TOTAL 88741.1 MEAN 243 MAX 1130 MIN 1.4 AC-FT 176000
WTR YR 1991 TOTAL 87395.3 MEAN 239 MAX 1120 MIN 1.8 AC-FT 173300

07130500 ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1985 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1985 to current year.

WATER TEMPERATURE: December 1985 to current year.

INSTRUMENTATION.--Water-quality monitor with satellite telemetry.

REMARKS.--Daily data that are not published are either missing or of unacceptable quality. Daily maximum and minimum specific conductance and mean water temperature data are available in district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 3,540 microsiemens, Feb. 26, 1986; minimum, 1,180 microsiemens, July 31 to Aug. 1, 1987.

WATER TEMPERATURE: Maximum, 27.9°C, June 10, 1989; minimum, 0.0°C, many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 3,190 microsiemens, Feb. 5; minimum, 1,320 microsiemens, Aug. 2.

WATER TEMPERATURE: Maximum, 26.1°C, July 21; minimum, 0.0°C, Dec. 25-28.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1770	---	2420	---	2980	3070	2440	2530	2650	1760	1380	1460
2	1760	---	2450	---	3030	3050	2410	2530	2640	1750	1360	1460
3	1760	---	2450	---	3040	3030	2440	2570	2620	1740	1350	1470
4	1770	---	2500	2570	3040	3030	2430	2560	2580	1680	1360	1480
5	1770	---	2460	2640	3140	3030	2420	2550	2580	1680	1360	1540
6	1770	2000	2470	2630	3100	2990	2410	2560	2550	1610	1350	1580
7	1760	2030	2530	2640	3110	2950	2400	2560	2540	1540	1360	1590
8	1770	2050	2530	2650	3120	2930	2400	2560	2530	1500	1380	1570
9	1760	2090	2490	2650	3120	2880	2390	2560	2500	1470	1380	1550
10	1790	2100	2500	2630	3120	2880	2390	2560	2450	1450	1410	1540
11	1810	2110	2550	---	3130	2850	2400	2580	2410	1430	1390	1550
12	1810	2130	2580	---	3130	2790	2410	2600	2400	1400	1370	1560
13	1780	2160	2580	---	3130	2780	2410	2600	2370	1390	1360	1560
14	1780	2190	2570	---	3130	2760	2420	2600	2280	1400	1360	1560
15	1790	2210	2610	---	3130	2650	2430	2600	2200	1430	1360	1580
16	1800	2220	2610	2640	3130	2640	2440	2600	2150	1420	1360	1610
17	1790	2250	2540	2720	3130	2650	2450	2600	2130	1430	1370	1630
18	1780	2260	2570	2760	3130	2650	2460	2610	2160	1440	1370	1630
19	1830	2280	2620	2770	3130	2590	2470	2610	2160	1450	1380	1680
20	1810	2290	2600	2750	3130	2570	2480	2610	2140	1470	1380	1740
21	1780	2310	2660	2800	3130	2550	2480	2630	2130	1460	1380	1770
22	1800	2330	2700	2860	3120	2550	2500	2670	2070	1430	1380	1780
23	1840	2340	2720	2820	3120	2540	2520	2680	2070	1440	1390	1810
24	1820	2360	2740	2840	3110	2530	2520	2680	2030	1450	1390	1810
25	1810	2370	---	2920	3110	2520	2510	2680	1940	1450	1390	1840
26	1800	2380	---	3000	3090	2510	2520	2680	1850	1440	1410	1860
27	1820	2380	---	2990	3080	2510	2520	2670	1850	1410	1410	1890
28	1800	2400	---	3000	3070	2510	2520	2670	1840	1420	1420	1890
29	1810	2420	---	2950	---	2480	2520	2660	1800	1430	1450	1900
30	1810	2420	---	2880	---	2460	2540	2660	1770	1400	1470	1930
31	1790	---	---	2990	---	2460	---	2660	---	1380	1450	---
MEAN	1790	---	---	---	3100	2720	2450	2610	2250	1490	1380	1660

07130500 ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	18.7	18.1	13.3	10.4	5.0	3.6	.7	.1	3.9	2.7	12.5	5.7
2	19.3	18.1	11.3	8.0	4.4	1.7	.4	.1	4.3	2.3	7.9	5.7
3	18.5	17.3	8.5	7.0	2.6	1.0	.4	.1	6.3	3.1	10.8	4.7
4	17.6	17.1	8.3	6.3	2.7	.7	.4	.1	6.5	3.8	10.7	5.6
5	18.2	16.9	8.5	5.7	4.1	1.0	.6	.1	5.8	3.3	11.2	7.3
6	17.7	16.6	7.2	5.2	3.4	1.6	.6	.2	6.4	3.0	9.8	7.3
7	16.6	15.9	7.1	4.5	2.8	1.0	.9	.2	7.6	3.3	8.8	6.2
8	15.9	14.4	6.5	4.6	3.2	1.2	1.0	.2	7.8	3.8	10.9	5.0
9	14.5	13.8	8.0	4.7	3.6	2.2	.9	.3	8.0	5.1	11.5	5.8
10	14.4	13.6	8.5	5.4	5.2	2.1	---	---	8.0	4.1	11.8	6.2
11	13.9	12.8	9.0	5.7	5.4	2.2	---	---	8.2	4.1	12.2	7.6
12	13.1	12.5	10.0	6.2	4.6	3.0	---	---	7.0	4.2	9.8	6.4
13	13.1	12.6	9.5	6.7	4.3	2.9	---	---	8.1	3.9	11.4	5.3
14	12.7	12.0	11.1	6.2	4.1	1.2	---	---	9.0	4.2	7.8	5.6
15	12.4	11.8	10.3	6.6	4.2	1.0	---	---	8.5	4.7	9.0	5.3
16	12.7	11.7	10.0	7.6	4.5	2.1	2.9	1.5	9.2	4.3	6.6	5.0
17	12.7	11.9	8.8	6.6	5.0	2.7	2.6	1.5	9.0	5.9	12.2	4.4
18	12.1	11.5	8.7	5.7	3.9	1.9	2.4	1.3	8.5	5.3	10.9	5.6
19	12.4	11.3	9.3	6.5	2.8	1.3	2.9	1.4	9.1	4.0	10.0	6.3
20	12.5	11.0	9.1	6.7	1.4	.4	2.8	1.9	9.5	4.1	10.7	6.0
21	11.1	10.4	9.7	7.2	.9	.4	2.5	1.6	10.3	4.6	11.6	6.9
22	10.9	10.4	7.6	5.5	1.1	.3	2.3	1.0	10.3	5.0	9.7	7.1
23	11.1	10.1	8.7	5.6	1.0	.2	2.3	1.2	7.5	5.4	12.6	6.4
24	10.8	10.1	10.3	5.4	.6	.1	2.3	1.6	7.4	5.4	12.6	7.2
25	11.0	10.2	10.0	5.6	.5	.0	2.3	.8	9.1	4.1	12.5	8.0
26	11.4	10.5	8.7	6.8	.5	.0	1.6	.7	9.9	4.7	12.2	8.1
27	11.8	10.9	6.9	4.4	.4	.0	1.3	.6	10.5	4.2	14.9	7.5
28	11.3	10.9	5.1	2.9	.4	.0	2.4	.8	8.3	4.7	13.0	7.8
29	11.8	10.9	4.8	2.8	.8	.1	2.1	.8	---	---	10.7	7.3
30	12.1	11.5	6.0	2.7	.5	.1	1.5	.6	---	---	13.6	6.4
31	11.9	11.0	---	---	.6	.1	3.4	.6	---	---	15.4	6.4
MONTH	19.3	10.1	13.3	2.7	5.4	.0	---	---	10.5	2.3	15.4	4.4
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	17.2	7.7	12.9	11.6	19.8	18.7	22.4	21.7	24.5	23.4	24.2	22.5
2	9.1	8.1	13.7	11.8	20.1	19.5	22.2	21.6	25.7	24.3	24.1	22.4
3	9.2	8.6	14.0	12.8	20.4	19.5	23.0	21.7	24.5	24.0	23.8	22.5
4	9.9	8.9	13.0	12.5	20.4	19.5	23.5	22.2	24.1	23.3	23.7	22.6
5	10.6	9.2	13.3	12.2	20.1	19.5	23.3	22.8	23.8	22.7	23.2	22.3
6	10.4	9.9	13.3	12.0	19.9	19.4	23.9	22.9	23.8	22.7	23.2	22.1
7	10.5	9.9	13.4	12.1	20.4	19.6	26.0	23.3	24.5	23.6	22.4	21.6
8	10.9	10.0	13.9	12.3	20.3	19.7	25.3	24.1	24.3	23.3	22.5	21.6
9	11.4	10.6	14.6	12.7	20.4	19.7	24.9	23.7	24.2	23.5	22.1	21.1
10	11.4	10.2	16.4	14.3	20.9	20.0	25.2	24.3	24.8	23.6	21.4	20.7
11	11.9	11.1	18.4	15.8	21.1	20.2	25.3	24.1	24.2	23.2	22.4	21.0
12	11.7	11.2	19.4	16.5	21.4	20.4	25.2	24.3	24.0	23.2	22.3	21.3
13	11.6	11.0	18.9	16.3	22.0	20.6	24.4	23.7	23.3	22.6	22.5	21.5
14	11.7	10.9	18.3	16.3	22.4	21.6	24.5	23.5	22.6	21.9	23.0	21.5
15	11.9	11.0	18.8	16.9	22.9	22.1	24.5	23.1	22.8	21.9	21.5	20.0
16	11.9	11.1	19.1	17.0	22.9	22.1	23.9	23.1	22.9	21.7	20.4	19.5
17	11.7	11.2	20.2	17.7	23.5	22.3	24.6	23.6	23.7	22.8	20.9	19.6
18	11.7	11.3	19.6	17.4	22.9	22.2	25.2	24.1	23.4	22.7	20.0	18.1
19	11.9	11.4	20.1	17.8	23.1	22.3	25.9	24.1	23.7	22.7	18.0	15.7
20	12.0	11.3	19.9	18.4	23.2	22.6	26.0	24.3	23.8	23.0	16.0	14.6
21	12.4	11.5	20.5	17.9	22.9	22.4	26.1	24.3	24.7	23.2	16.3	14.5
22	12.9	12.0	21.2	18.0	22.4	22.0	25.9	24.9	24.2	23.5	16.6	15.1
23	12.8	12.2	20.6	18.3	22.4	21.8	25.0	23.9	24.3	23.4	16.8	15.1
24	12.9	12.2	19.7	18.6	22.8	22.2	23.9	22.7	23.9	23.3	16.4	14.9
25	13.4	12.3	19.9	19.0	22.6	22.1	23.2	22.5	24.6	23.8	16.4	14.7
26	13.7	12.8	19.8	18.9	22.1	21.1	23.1	22.3	24.1	23.5	17.0	14.9
27	13.4	12.5	19.9	18.9	21.6	20.6	22.7	21.9	24.8	23.4	17.3	14.7
28	13.1	12.4	20.0	19.0	23.0	21.4	22.8	21.8	24.1	23.1	17.4	15.0
29	12.9	12.0	20.3	19.3	22.6	21.9	23.6	22.0	24.5	23.2	17.8	15.1
30	12.2	11.5	20.1	19.1	22.5	22.0	24.4	23.1	24.5	23.2	17.1	15.9
31	---	---	19.8	19.0	---	---	24.2	23.0	24.4	22.9	---	---
MONTH	17.2	7.7	21.2	11.6	23.5	18.7	26.1	21.6	25.7	21.7	24.2	14.5

07133000 ARKANSAS RIVER AT LAMAR, CO

LOCATION.--Lat 38°06'21", long 102°37'05", in NE¼SE¼ sec.30, T.22 S., R.46 W., Prowers County, Hydrologic Unit 11020009, on left bank at left upstream end of upstream bridge on U.S. Highways 50 and 287, and 1.3 mi north of courthouse in Lamar.

DRAINAGE AREA.--19,780 mi², of which 950 mi² is probably noncontributing.

PERIOD OF RECORD.--Streamflow records, May 1913 to September 1955, April 1959 to current year. Monthly discharge only for some periods, published in WSP 1311. Water-quality data available, November 1963 to September 1965, September 1969 to August 1972.

REVISED RECORDS.--WSP 1341: 1921(M), 1945-46(M), drainage area; WDR CO-86-1: 1985 (daily discharges).

GAGE.--Water-stage recorder. Datum of gage is 3,602.23 ft above National Geodetic Vertical Datum of 1929. See WSP 1731 for history of changes prior to Apr. 4, 1959. Apr. 4, 1959, to Mar. 26, 1968, at site 450 ft upstream at datum 2.42 ft higher. Mar. 27, 1968 to Nov. 17, 1982 at datum 4.00 ft lower. Prior to Mar. 18, 1987, at site 75 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 20 to Jan. 2, Jan 21, 22, 26, 27, 29-31, Mar. 5-10, 12-17, 21-23, and May 26 to June 25. Records good except for daily discharges above 600 ft³/s, which are fair, and for estimated daily discharges, which are poor. Flow regulated by John Martin Reservoir (station 07130000) 21 mi upstream since Oct. 1948. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 487,000 acres, and return flow from irrigated areas. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--30 years (water years 1914-43), 298 ft³/s; 215,900 acre-ft/yr, prior to and during construction of John Martin Dam, 39 years (water years 1949-55, 1960-91), 109 ft³/s, unadjusted; 78,970 acre-ft/yr, subsequent to completion of John Martin Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft³/s, June 5, 1921, gage height, 14.55 ft, datum then in use, from rating curve extended above 10,000 ft³/s; maximum gage height, 16.48 ft, June 18, 1965, datum then in use, from floodmarks; no flow at times in 1913-15, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,530 ft³/s at 1630 June 30, gage height, 8.45 ft; minimum daily, 3.4 ft³/s, Oct. 4-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	42	25	22	21	5.1	8.0	9.9	5.0	674	18	21
2	4.7	43	25	20	23	6.1	12	9.5	7.0	532	18	16
3	3.5	43	25	20	24	6.8	15	9.2	10	535	24	15
4	3.4	40	26	20	22	7.3	11	9.8	7.5	493	26	134
5	3.4	35	26	24	22	7.2	14	8.9	6.0	511	15	24
6	3.4	31	25	23	22	6.0	24	8.4	15	525	12	16
7	3.7	29	25	22	21	5.5	23	8.1	50	514	13	22
8	3.7	28	26	24	21	5.2	27	8.1	20	527	10	16
9	3.7	26	25	24	21	6.0	40	13	6.0	544	10	15
10	3.7	29	25	24	21	6.7	44	9.9	5.0	517	10	24
11	3.7	30	27	24	20	7.6	49	7.4	5.5	507	10	13
12	3.7	30	28	24	21	6.5	56	13	6.0	562	22	12
13	3.9	30	27	23	23	6.0	60	6.4	7.0	456	83	11
14	5.1	30	27	24	21	5.5	67	6.3	8.0	139	18	11
15	5.1	29	26	25	21	5.0	68	6.1	10	65	14	13
16	4.8	29	27	23	22	5.0	68	6.3	250	26	14	11
17	4.4	29	27	22	22	6.0	68	6.3	70	19	16	11
18	4.0	31	27	22	22	6.6	65	5.8	30	17	12	8.6
19	4.0	28	27	22	19	6.6	57	5.2	20	15	13	7.8
20	4.8	27	21	22	18	5.1	55	6.2	10	18	55	7.6
21	4.8	26	18	23	10	4.8	55	5.7	100	14	20	7.5
22	4.7	26	17	22	7.4	4.5	53	5.2	400	11	17	7.8
23	4.9	25	18	21	7.2	4.5	43	5.3	430	10	13	7.6
24	5.1	26	20	21	6.6	4.9	39	4.9	450	22	14	8.9
25	5.1	26	21	22	5.3	6.1	30	4.9	480	12	13	11
26	5.3	26	20	22	5.4	4.4	25	4.8	510	12	13	10
27	5.5	26	22	23	5.3	4.9	26	4.7	563	9.7	13	9.5
28	6.2	26	24	23	5.1	5.2	20	5.0	645	8.4	11	8.9
29	6.6	26	21	20	---	7.4	12	4.8	654	7.4	9.8	8.3
30	4.8	25	19	21	---	7.6	11	4.8	985	6.5	12	21
31	4.4	---	19	22	---	7.4	---	4.8	---	7.7	15	---
TOTAL	139.2	897	736	694	479.3	183.5	1145.0	218.7	5765.0	7316.7	563.8	509.5
MEAN	4.49	29.9	23.7	22.4	17.1	5.92	38.2	7.05	192	236	18.2	17.0
MAX	6.6	43	28	25	24	7.6	68	13	985	674	83	134
MIN	3.4	25	17	20	5.1	4.4	8.0	4.7	5.0	6.5	9.8	7.5
AC-FT	276	1780	1460	1380	951	364	2270	434	11430	14510	1120	1010

CAL YR 1990 TOTAL 18439.3 MEAN 50.5 MAX 686 MIN 2.0 AC-FT 36570
WTR YR 1991 TOTAL 18647.7 MEAN 51.1 MAX 985 MIN 3.4 AC-FT 36990

07134180 ARKANSAS RIVER NEAR GRANADA, CO

LOCATION.--Lat 38°05'44", long 102°18'37", in SE¼NE¼ sec.36, T.22 S., R.44 W., Prowers County, Hydrologic Unit 11020009, on left bank at upstream side at end of bridge on U.S. Highway 385, 1.2 mi downstream from headgate of Buffalo Canal, and 2.3 mi north of Granada.

DRAINAGE AREA.--23,707 mi².

PERIOD OF RECORD.--January 1899 to December 1901, gage heights only at different site and datum, August to October 1903, December 1980 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 3,480 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 21, 22, and Dec. 30. Records good except for estimated daily discharges, which are fair. Flow regulated by John Martin Reservoir (station 07130000) 38 mi upstream since October 1948. Natural flow of stream affected by transmountain diversion, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 500,000 acres, and return flow from irrigated areas. Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--10 years (water years 1982-91), 200 ft³/s; 144,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3,460 ft³/s, May 26, 1987, gage height, 11.78 ft, from rating curve extended above 2,700 ft³/s; minimum daily, 2.7 ft³/s, Aug. 17-19, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 900 ft³/s at 0215 July 1, gage height, 8.25 ft; minimum daily, 2.8 ft³/s, Oct. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	21	90	92	77	70	7.7	10	4.1	678	11	9.9
2	15	47	89	89	80	67	8.6	29	4.1	499	12	11
3	16	73	83	87	83	67	8.5	32	5.2	431	14	11
4	16	92	85	85	81	66	10	33	7.6	419	23	10
5	18	95	85	84	82	71	12	31	7.2	393	24	23
6	20	94	85	85	83	69	8.4	29	4.6	407	9.8	8.8
7	9.4	91	84	85	82	64	8.7	28	21	397	8.6	7.7
8	2.9	91	84	87	83	54	7.4	25	30	403	7.9	7.3
9	2.8	88	84	86	84	46	8.4	24	14	404	8.1	7.1
10	2.9	87	88	89	82	43	8.5	26	4.0	414	8.2	7.1
11	3.1	86	91	89	80	42	7.8	27	3.7	371	8.3	7.0
12	3.1	86	91	88	81	40	9.4	24	3.9	419	7.4	6.9
13	3.2	87	92	89	82	42	8.0	19	4.7	455	16	6.8
14	3.3	86	95	91	80	41	10	13	5.4	270	12	6.5
15	3.4	86	92	94	79	42	9.5	4.8	5.4	151	7.8	6.2
16	12	87	92	94	80	46	7.0	4.4	8.5	67	10	6.2
17	22	88	97	90	80	50	5.7	4.2	121	48	14	6.3
18	24	90	98	89	77	52	5.3	4.1	20	31	18	6.3
19	24	91	93	88	76	48	5.5	4.3	5.4	21	15	6.1
20	26	90	72	87	77	45	4.6	4.3	4.7	16	16	6.0
21	29	85	70	82	76	41	5.3	4.3	3.8	13	13	5.9
22	27	83	70	82	73	40	5.0	5.1	71	12	8.3	5.9
23	26	84	72	82	73	24	4.7	5.0	296	8.6	8.2	6.2
24	25	86	78	83	71	6.7	4.7	4.3	333	8.6	8.3	5.7
25	26	87	80	82	70	5.6	4.6	4.2	400	8.2	8.6	5.6
26	22	90	83	79	71	5.0	4.5	4.2	392	7.9	8.8	5.5
27	20	91	86	79	67	4.9	4.4	3.9	402	7.5	9.5	5.3
28	21	91	91	78	68	5.1	5.2	4.3	457	7.8	9.9	5.2
29	20	91	79	77	---	5.5	4.2	3.9	488	8.0	10	6.4
30	22	91	74	72	---	8.1	4.1	3.9	564	8.9	10	7.9
31	20	---	75	75	---	8.0	---	3.9	---	10	10	---
TOTAL	494.6	2535	2628	2639	2178	1218.9	207.7	423.1	3691.3	6394.5	355.7	226.8
MEAN	16.0	84.5	84.8	85.1	77.8	39.3	6.92	13.6	123	206	11.5	7.56
MAX	29	95	98	94	84	71	12	33	564	678	24	23
MIN	2.8	21	70	72	67	4.9	4.1	3.9	3.7	7.5	7.4	5.2
AC-FT	981	5030	5210	5230	4320	2420	412	839	7320	12680	706	450

CAL YR 1990 TOTAL 24877.8 MEAN 68.2 MAX 473 MIN 2.7 AC-FT 49350
WTR YR 1991 TOTAL 22992.6 MEAN 63.0 MAX 678 MIN 2.8 AC-FT 45610

07137000 FRONTIER DITCH NEAR COOLIDGE, KS

LOCATION.--Lat 38°02'18", long 102°02'19", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.21, T.23 S., R.43 W., Hamilton County, Kans., Hydrologic Unit 11030001, on left bank 0.3 mi east of Colorado-Kansas State line, 0.5 mi downstream from Holly drain diversion, 1.5 mi west of Coolidge, and 2.3 mi downstream from diversion from Arkansas River.

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WSP 1731; 1951.

GAGE.--Water-stage recorders and Parshall flume. Datum of gage is 3,353.14 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. This ditch diverts water from Arkansas River in Colorado for use in Kansas. These records and records for Arkansas River near Coolidge (station 07137500) represent total flow of Arkansas River at the Colorado-Kansas State line.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 84 ft³/s, Aug. 1, 1975; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	33	.00	.00	.00	.00	.00	.00	22	38	.00	.00
2	.00	32	.00	.00	.00	.00	.00	.00	23	36	.00	.00
3	.00	23	.00	.00	.00	.00	.00	.00	26	39	.00	.00
4	.00	.86	.00	.00	.00	.00	.00	.00	24	35	.00	.00
5	.00	.50	.00	.00	.00	.00	.00	.00	35	41	.00	19
6	.00	.27	.00	.00	.00	.00	.00	.00	33	49	.00	33
7	.00	.00	.00	.00	.00	.00	.00	19	.07	50	.00	24
8	.00	9.7	.00	.00	.00	.00	.00	29	.00	49	.00	25
9	.00	18	.00	.00	.00	.00	.00	23	.00	50	.00	27
10	17	10	.00	.00	.00	.00	.00	22	.00	44	.00	29
11	35	2.7	.00	.00	.00	.00	.00	21	21	42	.00	30
12	30	12	.00	.00	.00	.00	.00	22	40	51	12	31
13	27	21	.00	.00	.00	.00	.00	25	46	48	32	22
14	14	21	.00	.00	.00	.00	.00	19	37	41	14	17
15	17	21	.00	.00	.00	.00	19	22	24	27	.15	16
16	31	17	.00	.00	.00	.00	42	25	26	29	.00	18
17	22	6.9	.00	.00	.00	.00	56	27	25	45	.00	21
18	11	.63	.00	.00	.00	.00	58	26	38	38	.00	19
19	.00	.30	.00	.00	.00	.00	63	26	21	27	.00	18
20	.00	.00	.00	.00	.00	.00	62	26	18	19	.00	19
21	.00	.00	.00	.00	.00	.00	60	24	15	13	.00	18
22	3.1	.00	.00	.00	.00	.00	43	20	4.8	20	.00	17
23	12	.00	.00	.00	.00	.00	41	19	.00	25	.00	16
24	16	.00	.00	.00	.00	.00	39	8.4	.00	25	.00	18
25	18	.00	.00	.00	.00	.00	36	.17	6.6	30	.00	19
26	19	.00	.00	.00	.00	.00	37	.00	29	22	.00	16
27	15	.00	.00	.00	.00	.00	34	.00	32	.43	.00	18
28	26	.00	.00	.00	.00	.00	30	.00	44	.00	.00	18
29	31	.00	.00	.00	---	.00	17	6.3	59	.00	.00	18
30	28	.00	.00	.00	---	.00	.00	20	59	.00	.00	19
31	24	---	.00	.00	---	.00	---	20	---	.00	.00	---
TOTAL	396.29	229.86	0.00	0.00	0.00	0.00	637.00	449.87	708.47	933.43	58.15	545.00
MEAN	12.8	7.66	.000	.000	.000	.000	21.2	14.5	23.6	30.1	1.88	18.2
MAX	35	33	.00	.00	.00	.00	63	29	59	51	32	33
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	786	456	.00	.00	.00	.00	1260	892	1410	1850	115	1080

CAL YR 1990 TOTAL 4661.98 MEAN 12.8 MAX 53 MIN .00 AC-FT 9250
WTR YR 1991 TOTAL 3958.07 MEAN 10.8 MAX 63 MIN .00 AC-FT 7850

LOCATION.--Lat 38°01'34", long 102°00'41", in NW 1/4 NW 1/4 sec.26, T.23 S., R.43 W., Hamilton County, KS, Hydrologic Unit 11030001, on right bank at downstream side of bridge, 1.0 mi south of Coolidge, and 1.9 mi downstream from Colorado-Kansas State line.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1341: 1903, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,330.84 ft above National Geodetic Vertical Datum of 1929. May 5 to Oct. 31, 1903, nonrecording gage, and Mar. 1 to May 31, 1921, water-stage recorder at present site at different datums. Oct. 1, 1950, to Mar. 31, 1966, water-stage recorder at site 0.3 mi upstream at datum 3.00 ft, higher.

REMARKS.--Estimated daily discharges: Dec. 21 to Jan. 6. Records good except for estimated daily discharges, which are poor. Combined flow of river and Frontier Ditch (station 07137000) represents entire flow that enters Kansas. Flow regulated by John Martin Reservoir (station 07130000) since Oct. 1948. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation of about 500,000 acres, and return flow from irrigated areas.

AVERAGE DISCHARGE.--41 years (water years 1951-91), 200 ft³/s; 144,900 acre-ft/yr, subsequent to completion of John Martin Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 158,000 ft³/s, June 17, 1965, gage height, 14.8 ft, present site and datum, from floodmarks, from rating curve extended above 13,000 ft³/s, on basis of slope-area measurement of peak flow; no flow for many days in 1903, 1954, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 727 ft³/s, July 1, gage height, 4.50 ft; minimum daily, 18 ft³/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	83	112	e120	123	122	65	101	22	594	50	51
2	56	80	111	e125	127	119	64	94	23	513	51	55
3	56	123	106	e128	129	118	63	114	25	473	57	48
4	67	135	105	e130	129	120	72	100	33	449	104	42
5	73	132	110	e130	130	122	115	102	27	390	251	33
6	66	133	112	e135	132	118	82	91	115	380	158	32
7	52	124	113	133	132	117	60	58	123	384	109	31
8	52	100	113	136	132	112	93	43	112	390	105	30
9	56	89	114	134	133	104	76	46	90	404	96	26
10	44	96	116	134	134	100	72	43	74	411	81	22
11	39	109	126	136	132	95	74	45	49	389	77	34
12	60	96	125	141	131	91	89	50	28	507	102	39
13	68	85	125	146	135	89	97	44	35	457	144	39
14	82	85	117	156	133	90	101	35	48	407	132	37
15	74	85	112	149	131	92	85	32	45	286	130	28
16	76	92	115	145	133	95	60	27	51	227	108	27
17	56	108	123	142	134	99	47	31	144	148	94	28
18	69	121	124	139	129	97	47	26	138	125	99	28
19	85	120	121	139	121	97	47	22	94	111	113	31
20	80	123	105	137	126	94	41	21	74	99	103	36
21	84	118	e110	133	128	92	52	24	61	90	110	37
22	96	110	e120	132	126	90	62	25	62	82	103	28
23	76	109	e120	132	125	89	50	32	245	91	86	27
24	55	110	e125	130	124	90	52	51	309	79	69	24
25	55	109	e125	130	121	87	46	77	316	73	61	28
26	86	111	e125	127	121	96	47	44	323	71	55	35
27	86	111	e120	127	121	98	48	42	329	78	48	28
28	77	109	e120	128	121	95	58	45	345	69	50	27
29	81	108	e120	123	---	80	104	44	383	70	62	20
30	76	113	e120	119	---	74	112	25	416	58	60	18
31	78	---	e120	122	---	70	---	27	---	56	57	---
TOTAL	2122	3227	3630	4138	3593	3052	2081	1561	4139	7961	2925	999
MEAN	68.5	108	117	133	128	98.5	69.4	50.4	138	257	94.4	32.3
MAX	96	135	126	156	135	122	115	114	416	594	251	55
MIN	39	80	105	119	121	70	41	21	22	56	48	18
AC-FT	4210	6400	7200	8210	7130	6050	4130	3100	8210	15790	5800	1920
CAL YR 1990	TOTAL 40252	MEAN 110	MAX 461	MIN 15	AC-FT 79840							
WTR YR 1991	TOTAL 39398	MEAN 108	MAX 594	MIN 18	AC-FT 78150							

ARKANSAS RIVER BASIN

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-68, 1970-73, 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1963 to September 1968, January 1976 to September 1981.

WATER TEMPERATURES: November 1963 to September 1968, January 1976 to September 1981.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	BARO-METRIC PRES-SURE (MM OF HG)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCHI, FECAL, KF AGAR (COLS. PER 100 ML)
NOV 08...	1235	116	4910	7.8	6.0	11.2	709	42	400
MAR 14...	1150	88	5290	8.1	9.0	9.6	656	36	1200
JUL 11...	1015	381	2440	8.2	24.5	6.8	665	K120	600
SEP 10...	1145	22	4100	8.1	20.0	6.8	681	190	1800

DATE	TUR-BID-ITY (NTU)	HARD-NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS TOT IT (MG/L AS CaCO3)	BICAR-BONATE WATER DIS IT (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)
NOV 08...	50	1600	350	170	510	6	10	297	352	2200	160
MAR 14...	78	1500	280	200	590	7	12	308	376	2100	130
JUL 11...	55	750	170	78	210	3	7.3	153	187	870	59
SEP 10...	5.3	1600	350	180	550	6	13	265	323	2400	170

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, TOTAL (MG/L AS NO3)
NOV 08...	0.60	16	3840	5.22	1200	--	2.20	2.20	0.06	0.08	12
MAR 14...	0.90	17	4300	5.85	1030	--	2.60	2.60	--	0.03	15
JUL 11...	0.70	13	1630	2.22	1680	2.1	0.980	0.990	0.03	0.04	13
SEP 10...	1.2	18	4100	5.58	242	--	1.30	1.30	0.08	0.06	8.4

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

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS--Continued
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N03)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N02)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	
NOV 08...	9.7	0.03	0.050	0.060	0.40	--	2.6	2.18	2.19	0.020	0.010
MAR 14...	11	0.10	<0.010	0.020	0.70	--	3.3	2.58	2.57	0.020	0.030
JUL 11...	4.2	0.10	0.020	0.030	2.0	1.1	3.0	0.940	0.960	0.040	0.030
SEP 10...	5.6	0.13	0.060	0.050	0.60	--	1.9	1.26	1.26	0.040	0.040

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHATE, ORTHOPHOS- PHATE, TOTAL (MG/L AS P04)	PHOS- PHATE, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P04)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .052 MM
NOV 08...	0.35	--	--	0.06	0.080	0.010	<0.010	0.020	--	--	--
MAR 14...	--	--	0.06	0.06	0.180	0.010	0.020	0.020	245	59	78
JUL 11...	2.0	1.1	0.09	0.12	0.200	0.070	0.030	0.040	239	246	92
SEP 10...	0.54	--	--	--	0.070	0.030	<0.010	<0.010	104	6.1	84

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 08...	<10	<1	<100	<10	<1.0	<1	<1	1	<10	<1
MAR 14...	<10	<1	<100	<10	<1.0	<1	2	1	10	<1
JUL 11...	20	1	<100	<10	<1.0	<1	4	2	20	<1
SEP 10...	<10	<1	<100	<10	4.0	1	<1	5	60	<1

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 08...	170	20	0.2	1	3	17	1.0	5700	7	<10
MAR 14...	180	40	0.2	7	2	25	<1.0	6500	12	<10
JUL 11...	80	10	<0.1	7	2	8	<1.0	3000	4	<10
SEP 10...	160	100	<0.1	4	2	18	<1.0	5000	8	<10

RIO GRANDE BASIN

08213500 RIO GRANDE AT THIRTYMILE BRIDGE, NEAR CREEDE, CO

LOCATION.--Lat 37°43'29", long 107°15'18", in NE¼ sec.13, T.40 N., R.4 W., Hinsdale County, Hydrologic Unit 13010001, on right bank 70 ft downstream from bridge, 500 ft upstream from Squaw Creek, 0.8 mi downstream from Rio Grande Reservoir, and 20 mi southwest of Creede.

DRAINAGE AREA.--163 mi².

PERIOD OF RECORD.--June 1909 to September 1923, May 1925 to current year. No winter records 1910, 1926. Monthly discharge only for some periods, published in WSP 1312.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 9,300 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1712 or 1732 for history of changes prior to Oct. 1, 1934.

REMARKS.--Estimated daily discharges: Oct. 31 to Apr. 18. Records good except for estimated daily discharges, which are fair. Flow regulated by Rio Grande Reservoir, capacity, 51,110 acre-ft, since 1912. Natural flow of stream affected by transmountain diversions from Colorado River basin to drainage area upstream from station through Weminuche Pass and Pine River-Weminuche Pass ditches. No known diversions upstream from station.

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

AVERAGE DISCHARGE.--78 years (water years 1911-23, 1927-91), 214 ft³/s; 155,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,500 ft³/s, June 28, 1927, gage height, 7.03 ft, present datum, from rating curve extended above 1,200 ft³/s; minimum daily, 0.10 ft³/s, Nov. 2-4, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,050 ft³/s at 0815 June 9, gage height, 4.34 ft; minimum daily, 0.90 ft³/s, Nov. 1-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	.90	1.6	2.7	3.7	4.6	5.7	86	1160	930	62	50
2	214	.90	1.7	2.7	3.7	4.7	5.7	86	831	849	62	50
3	214	.90	1.7	2.7	3.8	4.7	5.7	86	584	604	62	50
4	211	.90	1.7	2.8	3.8	4.7	5.8	100	274	423	62	50
5	211	.90	1.8	2.8	3.8	4.8	5.8	151	225	417	63	50
6	206	.90	1.8	2.8	3.9	4.8	5.8	191	775	413	65	61
7	199	.90	1.8	2.9	3.9	4.8	5.9	238	1180	411	83	196
8	201	.90	1.9	2.9	3.9	4.9	5.9	289	1620	440	102	266
9	201	.90	1.9	2.9	4.0	4.9	5.9	406	1950	455	126	264
10	196	.90	1.9	3.0	4.0	4.9	6.0	532	1230	452	138	263
11	192	1.0	2.0	3.0	4.0	5.0	6.0	568	856	444	135	263
12	183	1.0	2.0	3.0	4.1	5.0	6.0	452	1020	437	111	265
13	172	1.0	2.0	3.1	4.1	5.0	6.0	437	1020	431	88	266
14	163	1.1	2.1	3.1	4.1	5.1	6.0	604	996	423	82	266
15	153	1.1	2.1	3.1	4.2	5.1	6.0	713	996	415	55	266
16	144	1.1	2.1	3.2	4.2	5.1	6.0	745	988	408	56	263
17	135	1.2	2.2	3.2	4.2	5.2	6.0	746	906	398	56	257
18	122	1.2	2.2	3.2	4.3	5.2	99	844	943	390	55	140
19	131	1.2	2.2	3.3	4.3	5.2	162	1010	982	369	73	104
20	144	1.3	2.3	3.3	4.3	5.3	162	1140	889	306	82	144
21	116	1.3	2.3	3.3	4.4	5.3	162	1160	704	301	83	172
22	122	1.3	2.3	3.4	4.4	5.3	162	1010	562	295	83	196
23	124	1.4	2.4	3.4	4.4	5.4	207	712	692	290	83	207
24	154	1.4	2.4	3.4	4.5	5.4	227	401	926	286	71	137
25	139	1.4	2.4	3.5	4.5	5.4	229	274	980	277	66	97
26	136	1.5	2.5	3.5	4.5	5.5	229	313	968	267	66	97
27	130	1.5	2.5	3.5	4.6	5.5	229	417	1090	258	66	97
28	128	1.5	2.5	3.6	4.6	5.5	184	604	1150	247	58	98
29	125	1.6	2.6	3.6	---	5.6	160	859	1130	234	50	99
30	119	1.6	2.6	3.6	---	5.6	115	1050	1110	153	50	99
31	66	---	2.6	3.7	---	5.6	---	1410	---	80	50	---
TOTAL	4950	34.70	66.1	98.2	116.2	159.1	2427.2	17634	28737	12103	2344	4833
MEAN	160	1.16	2.13	3.17	4.15	5.13	80.9	569	958	390	75.6	161
MAX	214	1.6	2.6	3.7	4.6	5.6	229	1410	1950	930	138	266
MIN	66	.90	1.6	2.7	3.7	4.6	5.7	86	225	80	50	50
AC-FT	9820	69	131	195	230	316	4810	34980	57000	24010	4650	9590

CAL YR 1990 TOTAL 61358.22 MEAN 168 MAX 1510 MIN .81 AC-FT 121700
WTR YR 1991 TOTAL 73502.50 MEAN 201 MAX 1950 MIN .90 AC-FT 145800

D8214500 NORTH CLEAR CREEK BELOW CONTINENTAL RESERVOIR, CO

LOCATION (revised).--Lat 37°53'18", long 107°12'10", in NE¼SW¼ sec.21, T.42 N., R.3 W., Hinsdale County, Hydrologic Unit 13010001, on left bank 100 ft downstream from bridge, 1,000 ft downstream from Continental Reservoir, and 15 mi west of Creede.

DRAINAGE AREA.--51.7 mi².

PERIOD OF RECORD.--May 1929 to current year. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1960, published as Clear Creek below Continental Reservoir.

REVISED RECORDS.--WSP 1008: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 10,200 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 2, 1951, at site 150 ft upstream, at different datum.

REMARKS.--Estimated daily discharges: Nov. 7 to May 15, and June 16 to July 5. Records good except for estimated daily discharges, which are fair. Flow regulated by Continental Reservoir, capacity, 26,720 acre-ft. No diversion upstream from station.

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

AVERAGE DISCHARGE.--62 years, 30.6 ft³/s; 22,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 362 ft³/s, May 8, 1952, gage height, 3.66 ft, from rating curve extended above 120 ft³/s; no flow, June 22, 23, 1935, Sept. 25-27, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 262 ft³/s at 1145 June 8, gage height, 2.45 ft; minimum daily, 0.05 ft³/s, several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	.05	.12	.14	.17	.19	.21	.24	99	19	23	43
2	57	.05	.12	.15	.17	.19	.21	.24	88	19	24	50
3	31	.15	.12	.15	.17	.19	.21	.24	85	19	23	51
4	27	.15	.12	.15	.17	.19	.21	.24	53	13	25	51
5	26	.15	.13	.15	.17	.19	.22	.24	77	14	26	51
6	23	.15	.13	.15	.17	.19	.22	.24	166	25	28	51
7	23	.11	.13	.15	.17	.19	.22	.24	247	23	30	50
8	30	.11	.13	.15	.17	.19	.22	.24	257	25	27	50
9	26	.11	.13	.15	.17	.19	.22	.24	255	28	26	50
10	23	.11	.13	.15	.17	.20	.22	.24	212	29	26	49
11	23	.11	.13	.15	.17	.20	.22	.24	93	29	21	47
12	22	.11	.13	.15	.18	.20	.22	.24	11	29	17	47
13	21	.11	.13	.15	.18	.20	.22	94	41	30	17	50
14	19	.11	.13	.15	.18	.20	.22	197	137	33	17	50
15	19	.11	.13	.15	.18	.20	.22	225	239	50	17	50
16	19	.11	.13	.16	.18	.20	.22	223	243	46	17	50
17	8.1	.11	.13	.16	.18	.20	.22	225	185	32	16	50
18	.15	.11	.13	.16	.18	.20	.23	208	125	23	15	50
19	.15	.11	.14	.16	.18	.20	.23	158	92	20	14	49
20	.15	.11	.14	.16	.18	.20	.23	47	60	20	15	46
21	.15	.12	.14	.16	.18	.20	.23	16	59	26	14	46
22	.15	.12	.14	.16	.18	.20	.23	67	50	60	14	46
23	.15	.12	.14	.16	.18	.21	.23	138	41	82	14	45
24	.15	.12	.14	.16	.18	.21	.23	144	53	60	14	84
25	.05	.12	.14	.16	.19	.21	.23	112	65	52	13	112
26	.05	.12	.14	.16	.19	.21	.23	82	65	52	12	142
27	.05	.12	.14	.16	.19	.21	.23	97	65	50	12	188
28	.05	.12	.14	.16	.19	.21	.23	117	65	34	12	220
29	.05	.12	.14	.16	---	.21	.23	117	42	27	20	227
30	.05	.12	.14	.17	---	.21	.24	117	19	18	41	222
31	.05	---	.14	.17	---	.21	---	119	---	19	41	---
TOTAL	534.50	3.44	4.12	4.82	4.97	6.20	6.70	2505.88	3289	1006	631	2317
MEAN	17.2	.11	.13	.16	.18	.20	.22	80.8	110	32.5	20.4	77.2
MAX	136	.15	.14	.17	.19	.21	.24	225	257	82	41	227
MIN	.05	.05	.12	.14	.17	.19	.21	.24	11	13	12	43
AC-FT	1060	6.8	8.2	9.6	9.9	12	13	4970	6520	2000	1250	4600

CAL YR 1990 TOTAL 8748.50 MEAN 24.0 MAX 212 MIN .00 AC-FT 17350
WTR YR 1991 TOTAL 10313.63 MEAN 28.3 MAX 257 MIN .05 AC-FT 20460

08217500 RIO GRANDE AT WAGONWHEEL GAP, CO

LOCATION.--Lat 37°46'01", long 106°49'51", in NW¼NE¼ sec.35, T.41 N., R.1 E., Mineral County, Hydrologic Unit 13010001, on right bank 250 ft upstream from private bridge, 0.4 mi upstream from Goose Creek, and 0.4 mi west of town of Wagonwheel Gap.

DRAINAGE AREA.--780 mi².

PERIOD OF RECORD.--May 1951 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 8,431 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 29 to Mar. 28. Records good except for estimated daily discharges, which are poor. Flow regulated by Santa Maria, Rio Grande, and Continental Reservoirs, combined capacity, 121,400 acre-ft. Diversions upstream from station for irrigation. Transmountain diversions to drainage area upstream from station from Colorado River basin (see elsewhere in this report). Several measurements of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--40 years, 539 ft³/s; 390,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,190 ft³/s, June 9, 1985, gage height, 6.10 ft; minimum daily, 46 ft³/s, Dec. 9, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,030 ft³/s at 0430 June 9, gage height, 4.41 ft; minimum daily, 97 ft³/s, Dec. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	553	280	123	101	104	129	129	436	2440	1460	368	278
2	783	237	125	104	105	130	159	535	2010	1280	373	278
3	704	241	129	106	106	132	175	526	1670	1200	392	291
4	644	219	132	110	107	133	226	558	1300	964	423	295
5	600	198	137	114	108	130	304	617	1180	905	421	294
6	567	220	143	117	109	120	456	797	1550	881	418	346
7	545	182	149	120	109	110	606	870	2190	824	518	693
8	595	154	152	120	110	108	580	1240	2600	845	489	911
9	558	175	155	120	110	110	396	1760	2940	911	451	747
10	540	203	158	118	111	112	423	1970	2650	892	470	704
11	527	203	159	117	112	112	365	1800	1980	829	459	802
12	505	199	159	116	113	110	298	1570	1940	930	446	832
13	483	199	161	114	116	108	242	1620	2000	902	420	814
14	465	202	164	112	118	108	239	1950	2010	898	385	781
15	444	198	165	112	120	109	266	2050	2100	864	370	713
16	430	205	160	111	122	111	306	1920	2040	856	365	658
17	416	207	154	111	123	112	362	1920	2040	845	345	617
18	386	210	154	110	124	113	432	2190	1970	777	331	585
19	396	202	157	109	123	112	674	2390	1980	766	337	440
20	453	220	160	108	120	113	696	2470	1910	720	347	424
21	406	174	160	107	117	112	856	2540	1670	744	342	454
22	380	128	154	107	117	112	897	2410	1330	757	333	455
23	407	144	142	107	117	112	871	2140	1240	814	330	466
24	390	158	130	106	118	113	813	1860	1390	737	335	449
25	403	155	120	106	119	112	817	1590	1520	744	322	366
26	393	164	112	106	121	112	755	1670	1460	683	330	340
27	385	141	106	105	124	112	660	1940	1480	665	337	338
28	378	128	99	104	128	112	626	2060	1600	608	315	332
29	374	122	97	103	---	116	522	2210	1590	561	311	330
30	402	122	99	102	---	116	496	2380	1570	541	283	330
31	397	---	100	102	---	116	---	2500	---	426	279	---
TOTAL	14909	5590	4315	3405	3231	3567	14647	52489	55350	25829	11645	15363
MEAN	481	186	139	110	115	115	488	1693	1845	833	376	512
MAX	783	280	165	120	128	133	897	2540	2940	1460	518	911
MIN	374	122	97	101	104	108	129	436	1180	426	279	278
AC-FT	29570	11090	8560	6750	6410	7080	29050	104100	109800	51230	23100	30470

CAL YR 1990 TOTAL 190525 MEAN 522 MAX 3320 MIN 72 AC-FT 377900
WTR YR 1991 TOTAL 210340 MEAN 576 MAX 2940 MIN 97 AC-FT 417200

08218500 GOOSE CREEK AT WAGONWHEEL GAP, CO

LOCATION.--Lat 37°45'07", long 106°49'46", in SW¼SE¼ sec.35, T.41 N., R.1 E., Mineral County, Hydrologic Unit 13010001, on left bank 0.2 mi downstream from Pierce Creek, 1.0 mi upstream from mouth, 1.0 mi south of Wagonwheel Gap, and 8.8 mi southeast of Creede.

DRAINAGE AREA.--90 mi², approximately.

PERIOD OF RECORD.--June 1954 to September 1991 (discontinued).

REVISED RECORDS.--WSP 1712: 1955, 1956(M).

GAGE.--Water-stage recorder. Elevation of gage is 8,460 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 8 to Apr. 30. Records good except for estimated daily discharges, which are fair. Several small diversions upstream from station for irrigation. Lake Humphreys, capacity, 842 acre-ft, with a fixed spillway and no gates has slight effect on flow.

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

AVERAGE DISCHARGE.--37 years, 62.5 ft³/s; 45,280 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 879 ft³/s, Sept. 14, 1970, gage height, 4.52 ft, from recorded range in stage, from rating curve extended above 480 ft³/s; minimum daily, 4.5 ft³/s, Jan. 6, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1927 exceeded all other observed floods at this location, including those of October 1911 and June 18, 1949. Flood of October 1911 probably exceeded that of June 18, 1949, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 27	2330	*345	*3.61	No other peak greater than base discharge.			
Minimum daily, 11 ft ³ /s, Dec. 23.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	35	22	17	16	22	40	54	242	108	40	24
2	52	36	19	17	16	20	44	61	232	99	52	24
3	61	30	17	17	16	18	44	64	190	90	49	29
4	63	29	19	22	16	20	47	72	175	83	66	26
5	61	29	20	20	15	24	54	68	208	76	52	26
6	49	29	21	18	15	20	66	81	225	68	51	52
7	41	28	20	16	17	17	78	87	214	70	49	74
8	48	30	20	16	18	15	76	116	242	83	44	77
9	52	35	22	17	17	15	68	169	242	76	45	61
10	51	36	22	16	15	21	68	157	218	70	45	56
11	45	36	22	16	16	21	62	149	225	63	41	56
12	42	37	28	17	19	20	52	146	250	59	42	83
13	41	37	26	20	21	19	50	157	246	56	42	77
14	37	38	18	21	21	22	47	178	253	52	42	68
15	37	38	15	17	20	21	47	169	236	49	39	59
16	36	40	23	16	24	24	54	146	222	48	39	52
17	31	40	21	16	21	22	70	144	228	48	35	49
18	31	39	18	16	17	24	86	178	222	46	34	46
19	35	39	18	17	15	25	90	250	208	46	42	45
20	37	41	23	16	18	25	100	276	194	48	35	46
21	35	32	19	17	18	25	140	284	187	66	31	46
22	35	28	13	15	18	29	110	253	175	58	29	40
23	35	28	11	15	20	27	100	242	163	56	31	37
24	35	29	12	14	20	33	90	232	155	49	30	35
25	35	29	15	15	16	33	96	232	144	51	31	34
26	35	30	15	15	16	32	88	253	133	46	35	32
27	35	21	15	17	16	29	76	292	116	45	34	30
28	35	17	17	15	21	27	64	292	126	41	29	30
29	34	17	24	16	---	30	58	288	118	41	30	31
30	34	20	17	15	---	32	54	284	118	42	26	30
31	34	---	16	15	---	36	---	260	---	40	25	---
TOTAL	1286	953	588	517	498	748	2119	5634	5907	1873	1215	1375
MEAN	41.5	31.8	19.0	16.7	17.8	24.1	70.6	182	197	60.4	39.2	45.8
MAX	63	41	28	22	24	36	140	292	253	108	66	83
MIN	31	17	11	14	15	15	40	54	116	40	25	24
AC-FT	2550	1890	1170	1030	988	1480	4200	11180	11720	3720	2410	2730

CAL YR 1990 TOTAL 19604.6 MEAN 53.7 MAX 358 MIN 9.6 AC-FT 38890
WTR YR 1991 TOTAL 22713 MEAN 62.2 MAX 292 MIN 11 AC-FT 45050

08219500 SOUTH FORK RIO GRANDE AT SOUTH FORK, CO

LOCATION (REVISED).--Lat $37^{\circ}39'25''$, long $106^{\circ}38'55''$, in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.3, T.39 N., R.3 E., Rio Grande County, Hydrologic Unit 13010001, on left bank near U.S. Highway 160, 0.1 mi downstream from Church Creek, 0.9 mi southwest of village of South Fork, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--216 mi².

PERIOD OF RECORD.--August 1910 to September 1922, May 1936 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 898: 1911(M). WSP 1312: 1912, 1944(M). WSP 1632: 1956-58(P).

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 8,221.79 ft above National Geodetic Vertical Datum of 1929. Aug. 9, 1910, to Mar. 28, 1915, nonrecording gage, and Mar. 29, 1915, to Sept. 30, 1922, water-stage recorder, at bridges 1 mi downstream at different datums.

REMARKS.--Estimated daily discharges: Nov. 29 to Mar. 16. Records good except for estimated daily discharges, which are fair. Transmountain diversions from Colorado River basin to drainage area upstream from station through Treasure Pass ditch. Natural flow of stream affected by a few small diversions for irrigation, slight regulation by Beaver Creek Reservoir, capacity, 4,760 acre-ft, and several smaller storage reservoirs.

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

AVERAGE DISCHARGE.--67 years (water years 1911-22, 1937-91), 214 ft³/s; 154,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft³/s, Oct. 5, 1911, gage height, 9.7 ft, from floodmarks, present site and datum, from rating curve extended above 1,500 ft³/s; minimum daily, 10 ft³/s, Jan. 6, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, exceeded all other observed floods at this location since at least 1873. Flood of June 29, 1927, reached a stage about 1 ft lower than that of Oct. 5, 1911, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 26	2215	*1,610	*5.10	No other peak greater than base discharge.			

Minimum daily, 36 ft³/s, Jan. 24, 30, 31, Feb. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	90	76	46	38	64	92	211	1030	289	97	70
2	201	115	70	47	37	62	102	244	963	250	130	67
3	199	138	64	46	37	60	105	259	801	230	154	70
4	161	126	68	54	38	64	119	277	752	214	173	64
5	142	125	72	50	36	70	162	271	817	200	158	69
6	127	104	73	48	37	64	235	316	850	183	143	106
7	123	77	72	45	39	60	313	348	817	172	153	178
8	187	79	72	44	41	56	304	443	854	183	131	186
9	152	81	76	46	40	54	264	718	918	169	126	138
10	143	80	76	44	38	66	266	900	858	157	131	129
11	141	81	76	44	40	66	243	1020	840	138	117	135
12	130	83	80	46	46	64	199	980	832	128	111	230
13	120	83	78	50	50	58	182	1000	850	120	104	233
14	113	84	66	52	52	60	159	1110	920	117	107	196
15	108	85	60	47	50	56	163	1070	840	106	109	173
16	103	84	70	42	58	58	210	918	755	98	155	156
17	98	82	66	42	56	58	285	855	748	105	119	149
18	91	82	62	42	50	65	344	1110	727	99	110	136
19	101	80	62	44	46	73	359	1280	693	98	146	125
20	122	82	68	41	50	80	395	1360	646	104	121	120
21	102	76	62	43	50	70	479	1410	596	115	106	116
22	101	79	45	38	52	62	433	1310	536	181	98	106
23	108	83	38	38	56	61	398	1330	476	164	102	99
24	104	79	39	36	56	68	358	1230	427	159	99	94
25	108	76	44	37	52	71	379	1230	391	163	94	91
26	108	80	43	37	50	68	351	1370	359	153	88	87
27	106	79	44	40	52	69	290	1440	328	144	81	84
28	105	72	46	37	62	68	258	1390	330	122	73	85
29	101	65	54	38	---	65	231	1330	320	108	71	90
30	97	72	46	36	---	67	215	1260	340	104	70	84
31	94	---	43	36	---	73	---	1140	---	96	75	---
TOTAL	3869	2602	1911	1336	1309	2000	7893	29130	20614	4669	3552	3666
MEAN	125	86.7	61.6	43.1	46.7	64.5	263	940	687	151	115	122
MAX	201	138	80	54	62	80	479	1440	1030	289	173	233
MIN	91	65	38	36	36	54	92	211	320	96	70	64
AC-FT	7670	5160	3790	2650	2600	3970	15660	57780	40890	9260	7050	7270
CAL YR 1990	TOTAL	58011	MEAN	159	MAX	1200	MIN	22	AC-FT	115100		
WTR YR 1991	TOTAL	82551	MEAN	226	MAX	1440	MIN	36	AC-FT	163700		

08220000 RIO GRANDE NEAR DEL NORTE, CO

LOCATION.--Lat 37°41'22", long 106°27'38", in NW¼ sec.29, T.40 N., R.5 E., Rio Grande County, Hydrologic Unit 13010001, on right bank 20 ft downstream from county highway bridge, 6.0 mi west of Del Norte, and 5.0 mi upstream from Pinos Creek.

DRAINAGE AREA.--1,320 mi², approximately.

PERIOD OF RECORD.--June 1889 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 763: Drainage area. WSP 1312: 1889, 1901, 1913-14.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 7,980.25 ft above National Geodetic Vertical Datum of 1929. Prior to May 16, 1908, nonrecording gage at site 4 mi downstream at different datum. May 16, 1908, to Nov. 8, 1910, nonrecording gages on bridge at present site and datum.

REMARKS.--Estimated daily discharges: Nov. 23, and Nov. 28 to Mar. 9. Records good except for estimated daily discharges, which are fair. Small diversions upstream from station for irrigation. Flow regulated by Beaver Creek Reservoir since 1910, Santa Maria Reservoir since 1912, Rio Grande Reservoir since 1912, and Continental Reservoir since 1925, combined capacity, 126,100 acre-ft, and by several smaller reservoirs. Transmountain diversions to drainage area upstream from station from Colorado River basin (see elsewhere in this report).

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

AVERAGE DISCHARGE.--102 years, 905 ft³/s; 655,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s, Oct. 5, 1911, gage height, 6.80 ft, from rating curve extended above 12,900 ft³/s; minimum daily, 69 ft³/s, Aug. 21, 1902.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1873, that of Oct. 5, 1911, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,760 ft³/s at 0430 May 21, gage height, 4.19 ft; minimum daily, 140 ft³/s, Dec. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	813	514	220	170	170	240	273	741	4010	1910	505	324
2	983	444	190	180	170	240	347	860	3380	1640	533	315
3	1030	477	180	190	170	240	362	905	2830	1560	589	337
4	924	434	200	200	190	250	380	955	2310	1250	665	334
5	857	406	210	190	180	260	513	945	2170	1150	622	334
6	803	408	220	190	180	230	741	1190	2480	1090	593	395
7	750	359	210	190	190	210	1030	1280	3260	1010	722	794
8	856	309	210	160	190	200	1080	1650	3730	1040	666	1080
9	834	311	230	170	190	200	817	2670	4340	1080	626	891
10	790	343	230	170	180	220	835	3170	4130	1070	648	815
11	764	343	240	190	190	220	778	3230	3160	956	625	910
12	729	336	260	180	210	205	620	2840	3040	1040	607	1040
13	698	339	250	190	220	207	520	2810	3160	1010	577	1050
14	667	340	200	200	190	224	485	3320	3270	993	538	975
15	635	350	170	190	200	212	494	3440	3290	951	512	886
16	613	351	210	180	220	224	574	3140	3120	943	575	817
17	589	350	200	180	210	192	739	2950	3120	946	497	765
18	557	355	180	180	200	214	911	3510	2990	888	459	726
19	555	340	180	170	190	231	1120	4050	2970	877	523	621
20	674	358	220	160	200	238	1220	4330	2860	853	508	572
21	613	337	190	170	210	223	1480	4540	2590	864	472	589
22	555	265	170	150	220	207	1490	4300	2110	967	440	572
23	585	250	150	150	220	201	1410	4010	1860	984	443	581
24	569	300	140	150	200	223	1290	3570	1960	920	432	563
25	596	301	160	160	180	251	1330	3180	2070	940	414	484
26	583	316	160	160	200	256	1260	3380	1970	871	416	433
27	568	315	160	180	210	217	1060	3750	1860	845	430	425
28	557	212	170	170	220	218	1000	3840	2030	763	391	426
29	555	182	200	160	---	214	875	3940	2010	709	373	428
30	569	205	160	160	---	208	812	4090	2040	684	342	410
31	577	---	160	170	---	224	---	4080	---	580	335	---
TOTAL	21448	10150	6030	5410	5500	6899	25846	90666	84120	31384	16078	18892
MEAN	692	338	195	175	196	223	862	2925	2804	1012	519	630
MAX	1030	514	260	200	220	260	1490	4540	4340	1910	722	1080
MIN	555	182	140	150	170	192	273	741	1860	580	335	315
AC-FT	42540	20130	11960	10730	10910	13680	51270	179800	166900	62250	31890	37470

CAL YR 1990 TOTAL 265165 MEAN 726 MAX 4850 MIN 86 AC-FT 526000
WTR YR 1991 TOTAL 322423 MEAN 883 MAX 4540 MIN 140 AC-FT 639500

LOCATION.--Lat 37°28'53", long 105°52'46", in SE¼NE¼ sec.4, T.37 N., R.10 E., Alamosa County, Hydrologic Unit 13010002, on right bank 0.2 mi northwest of city limits of Alamosa and 9 mi upstream from Alamosa Creek.

PERIOD OF RECORD.--May 1912 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 928: Drainage area. WSP 1312: 1936(M). WSP 1732: 1951.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 7,532.66 ft National Geodetic Vertical Datum of 1929. Prior to Apr. 7, 1915, nonrecording gages, and Apr. 7, 1915, to Nov. 5, 1935, water-stage recorder, at railroad and highway bridges in Alamosa 1.0 to 2.5 mi downstream at different datums. Nov. 6, 1935, to June 30, 1942, water-stage recorder at present site at datum 1.00 ft, higher.

REMARKS.--Estimated daily discharges: Oct. 29, 30, Nov. 29, Dec. 7 to Mar. 17, June 25, and Aug. 10-12. Records good except for estimated daily discharges, 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.--79 years, 260 ft³/s; 188,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s, July 1, 1927, gage height, 8.37 ft, site and datum then in use; maximum gage height, 10.62 ft June 20, 1949; minimum daily discharge, 1.0 ft³/s May 19, 1950.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1911 with a stage of 0.2 ft lower than that of July 1, 1927, from floodmarks, probably exceeded that of July 1, 1927; and is probably the greatest since at least 1884, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,200 ft³/s at 1030 Apr. 9, gage height, 4.84 ft; minimum daily, 16 ft³/s, Sept. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	235	45	148	175	160	225	292	96	428	202	104	27
2	168	55	127	185	165	280	334	86	765	127	86	25
3	261	76	112	175	165	270	414	82	793	72	88	23
4	270	115	122	180	165	255	438	90	612	52	146	22
5	111	119	159	185	160	255	455	106	335	63	188	20
6	76	97	179	195	170	260	560	120	324	47	169	17
7	60	76	195	195	170	265	752	154	536	81	112	16
8	51	80	210	190	170	240	1020	191	687	61	92	28
9	49	152	240	190	170	245	1160	225	641	58	92	201
10	88	219	250	170	170	245	1010	458	861	85	90	226
11	157	260	275	180	175	255	979	405	792	106	87	193
12	184	307	225	180	175	285	937	226	260	75	84	150
13	177	341	200	190	175	295	803	85	199	79	82	252
14	150	287	245	190	195	280	687	78	366	77	69	369
15	124	214	205	180	205	310	605	194	367	70	62	255
16	111	183	155	185	195	285	282	136	270	57	54	121
17	126	168	145	180	205	306	166	39	181	44	51	103
18	123	169	165	185	210	291	158	56	181	76	48	143
19	103	172	135	180	210	304	209	142	175	131	48	180
20	94	117	145	185	215	313	178	272	193	143	46	169
21	126	77	155	180	205	319	144	368	154	154	44	130
22	298	71	170	170	205	300	215	529	93	156	44	141
23	307	79	170	165	175	275	160	528	44	246	40	150
24	115	97	150	155	240	268	93	515	46	246	36	127
25	90	151	140	150	230	279	100	519	176	189	37	111
26	72	164	150	150	215	313	202	478	199	179	37	91
27	63	143	170	160	215	330	154	460	133	178	37	72
28	56	120	160	165	225	287	140	438	97	156	42	64
29	52	165	145	170	---	281	133	405	173	160	49	62
30	50	138	175	165	---	282	113	364	211	140	34	59
31	42	---	195	160	---	279	---	394	---	113	30	---
TOTAL	3989	4457	5417	5465	5335	8677	12893	8239	10292	3623	2228	3547
MEAN	129	149	175	176	191	280	430	266	343	117	71.9	118
MAX	307	341	275	195	240	330	1160	529	861	246	188	369
MIN	42	45	112	150	160	225	93	39	44	44	30	16
AC-FT	7910	8840	10740	10840	10580	17210	25570	16340	20410	7190	4420	7040
CAL YR 1990	TOTAL	58853	MEAN	161	MAX	1040	MIN	25	AC-FT	116700		
WTR YR 1991	TOTAL	74162	MEAN	203	MAX	1160	MIN	16	AC-FT	147100		

CLOSED BASIN IN SAN LUIS VALLEY, CO

08227000 SAGUACHE CREEK NEAR SAGUACHE, CO

LOCATION.--Lat 38°09'48", long 106°17'24", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.10, T.45 N., R.6 E., Saguache County, Hydrologic Unit 13010004, on left bank 0.2 mi downstream from Middle Creek and 10 mi northwest of Saguache.

DRAINAGE AREA.--595 mi².

PERIOD OF RECORD.--August 1920 to September 1912, June 1914 to current year. Monthly discharge only for some periods, published in WSP 1312

REVISED RECORDS.--WSP 1242: 1948-49. WSP 1312: 1912, 1934(M), 1942(M). WSP 1923: 1951.

GAGE.--Water-stage recorder with satellite telemetry. Altitude of gage is about 8,030 ft, from topographic map. Prior to Apr. 9, 1934, at sites 0.8 mi downstream at different datums. Apr. 10, 1934, to Nov. 20, 1966, at present site at datum 1.00 ft higher.

REMARKS.--Estimated daily discharges: Oct. 29, 30, Nov. 26, 27, Nov. 29 to Mar. 4, Mar. 7-10, and Mar. 22. Records good except for estimated daily discharges, which are fair. Natural flow of stream affected by transmountain diversions from Colorado River basin to drainage area above station through Tarbell ditch (see elsewhere in this report), and diversions above station for irrigation.

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

AVERAGE DISCHARGE.--79 years (water years 1911-12, 1915-91), 68.4 ft³/s, 49,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 790 ft³/s Aug. 3, 1964, gage height, 3.85 ft, present datum, from rating curve extended above 83 ft³/s; maximum gage height, 3.94 ft, May 20, 1970; minimum daily discharge, 7.0 ft³/s, Jan. 7, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 210 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 20	2200	*195	*2.53				

Minimum daily, 20 ft³/s, Dec. 22-24, Jan. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	47	27	23	23	27	39	47	145	74	55	37
2	61	48	27	23	24	28	51	56	138	70	61	35
3	68	55	26	23	24	29	56	67	140	65	66	38
4	60	50	25	26	25	28	61	65	130	57	88	39
5	54	48	26	25	24	30	71	59	121	52	76	39
6	51	48	28	23	25	28	101	62	145	51	65	40
7	50	46	26	23	26	26	116	71	160	54	81	48
8	68	36	26	23	27	27	88	83	148	61	78	56
9	66	45	28	23	26	27	53	120	141	78	65	50
10	58	46	27	23	25	30	47	130	140	78	67	44
11	56	46	28	24	25	32	44	125	143	70	60	48
12	54	44	31	25	26	28	38	117	144	72	60	50
13	53	45	32	29	29	27	29	109	152	73	60	54
14	50	44	27	26	29	27	30	120	155	64	60	50
15	50	45	24	25	26	25	36	130	169	55	54	44
16	49	48	29	24	28	26	41	118	152	52	54	40
17	49	47	28	25	28	26	59	107	136	57	49	38
18	47	49	27	24	25	25	81	108	125	60	45	35
19	48	44	26	23	25	29	78	138	118	62	49	35
20	60	47	28	23	28	32	80	179	112	63	46	35
21	57	40	22	21	27	25	94	189	108	69	42	36
22	49	27	20	21	27	26	86	180	100	96	40	33
23	59	26	20	20	28	28	77	162	92	112	40	32
24	57	32	20	21	26	34	65	156	86	102	38	32
25	55	33	22	21	25	35	66	138	80	103	40	31
26	54	31	22	21	25	39	76	150	72	84	44	31
27	52	27	22	24	25	31	59	161	71	75	44	32
28	50	24	22	21	26	28	51	165	67	64	50	31
29	49	24	24	22	---	27	48	164	66	58	59	33
30	48	26	22	24	---	28	44	158	73	56	43	35
31	47	---	21	24	---	28	---	154	---	57	41	---
TOTAL	1689	1218	783	723	727	886	1865	3788	3629	2144	1720	1181
MEAN	54.5	40.6	25.3	23.3	26.0	28.6	62.2	122	121	69.2	55.5	39.4
MAX	68	55	32	29	29	39	116	189	169	112	88	56
MIN	47	24	20	20	23	25	29	47	66	51	38	31
AC-FT	3350	2420	1550	1430	1440	1760	3700	7510	7200	4250	3410	2340

CAL YR 1990 TOTAL 19560 MEAN 53.6 MAX 256 MIN 12 AC-FT 38800

08240000 RIO GRANDE ABOVE MOUTH OF TRINCHERA CREEK, NEAR LASAUSES, CO

LOCATION.--Lat 37°18'58", long 105°44'32", in sec.35, T.36 N., R.11 E., Conejos County, Hydrologic Unit 1301D002, on right bank 0.2 mi upstream from Trinchera Creek, 3.2 mi north of Lasasues, and 13 mi southeast of Alamosa.

DRAINAGE AREA.--5,740 mi², approximately, includes 2,940 mi² in closed basin in northern part of San Luis Valley, CO.

PERIOD OF RECORD.--May 1936 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 7,500 ft, estimated from nearby level lines.

REMARKS.--Estimated daily discharges: Dec. 2 to Mar. 12, and Aug. 24 to Sept. 2. Records good except for estimated daily discharges, 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.--55 years, 268 ft³/s; 194,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,470 ft³/s, June 21, 1949, gage height, 9.50 ft, from rating curve extended above 3,600 ft³/s; minimum daily, 0.4 ft³/s, July 4, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,070 ft³/s at 0445 Apr. 10, gage height, 4.62 ft; minimum daily, 63 ft³/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	140	122	174	210	200	280	323	175	435	299	137	80
2	118	137	170	210	200	275	329	154	534	262	127	75
3	111	160	180	225	205	350	358	146	792	218	121	71
4	156	177	225	205	205	325	400	145	760	171	126	71
5	132	203	210	210	205	310	433	148	564	153	156	72
6	93	201	220	215	195	305	467	160	379	146	170	69
7	79	188	230	225	200	305	565	169	452	132	157	68
8	73	176	240	230	205	305	763	192	639	141	135	66
9	70	190	255	230	205	295	972	212	672	136	125	67
10	84	271	285	225	200	305	1060	317	702	128	124	177
11	114	334	310	210	200	305	959	436	840	136	114	185
12	140	371	320	220	210	320	956	375	634	152	111	181
13	152	377	240	225	215	350	886	259	330	139	109	168
14	149	364	195	225	210	366	743	202	368	142	110	241
15	145	311	255	230	235	347	635	198	449	136	97	263
16	139	270	200	215	240	388	468	265	459	130	88	186
17	135	264	155	215	240	344	275	202	395	120	94	145
18	143	263	155	210	250	352	224	153	382	117	97	128
19	141	262	155	225	245	337	243	207	369	129	93	147
20	141	258	120	225	255	342	248	457	385	155	92	151
21	142	205	145	225	265	350	253	480	377	159	89	135
22	183	184	160	220	255	359	250	638	334	167	88	123
23	290	180	160	210	245	349	266	692	262	179	89	125
24	214	184	175	200	190	338	232	591	216	205	85	121
25	154	214	160	195	280	334	184	549	205	214	80	108
26	141	241	160	185	270	350	181	572	281	184	80	96
27	132	242	180	190	255	373	220	520	278	184	85	83
28	129	218	195	200	270	368	211	494	240	172	75	70
29	125	207	185	210	---	346	201	501	223	166	75	65
30	122	192	160	205	---	337	199	471	271	162	75	63
31	121	---	200	205	---	330	---	421	---	150	70	---
TOTAL	4208	6966	6174	6630	6350	10340	13504	10501	13227	5084	3274	3600
MEAN	136	232	199	214	227	334	450	339	441	164	106	120
MAX	290	377	320	230	280	388	1060	692	840	299	170	263
MIN	70	122	120	185	190	275	181	145	205	117	70	63
AC-FT	8350	13820	12250	13150	12600	20510	26790	20830	26240	10080	6490	7140

CAL YR 1990 TOTAL 69597 MEAN 191 MAX 1090 MIN 25 AC-FT 138000
WTR YR 1991 TOTAL 89858 MEAN 246 MAX 1060 MIN 63 AC-FT 178200

08244500 PLATORO RESERVOIR AT PLATORO, CO

LOCATION.--Lat 37°21'07", long 106°32'38", Conejos County, Hydrologic Unit 13010005, on right bank in valvehouse, 400 ft downstream from Platoro Dam on Conejos River and 0.7 mi west of Platoro.

DRAINAGE AREA.--40 mi², approximately.

PERIOD OF RECORD.--November 1951 to current year.

REVISED RECORDS.--WDR CO-85-1: 1984.

GAGE.--Nonrecording gage. Datum of gage is 9,911.5 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation); gage readings have been reduced to elevations above NGVD. Prior to June 9, 1955, nonrecording gage at present site and datum. June 9, 1955 to Sept. 30, 1959, water-stage recorder in gate chamber at dam for elevations above 9,921.0 ft, at same datum.

REMARKS.--Reservoir is formed by an earth and rockfill dam and dikes. Dam completed Dec. 9, 1951; storage began Nov. 7, 1951. Capacity of reservoir (based on revised capacity table put in use Jan. 1, 1975), 59,570 acre-ft, between elevations 9,911.5 ft, sill of trashrack at outlet, and 10,034.0 ft, crest of spillway. No dead storage. Reservoir is used for irrigation and flood control. Figures given are usable contents.

COOPERATION.--Records provided by U.S. Bureau of Reclamation, and State of Colorado, Division of Water Resources.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 61,420 acre-ft, June 9, 11, 1958, elevation, 10,035.5 ft; no contents for long periods in 1952-56.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 36,600 acre-ft, July 1, elevation, 10,007.6 ft; minimum contents, 6,780 acre-ft, Oct. 30, elevation, 9,955.0 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	9,960.2	8,850	-
Oct. 31.	9,955.2	6,860	-1,990
Nov. 30.	9,959.0	8,350	+1,490
Dec. 31.	9,961.1	9,240	+890
CAL YR 1990			-8,920
Jan. 31.	9,962.3	9,740	+500
Feb. 28.	9,963.0	10,060	+320
Mar. 31.	9,964.5	10,690	+630
Apr. 30.	9,968.2	12,360	+1,670
May 31.	9,983.7	20,410	+8,050
June 30.	10,007.4	36,490	+16,080
July 31.	9,996.3	28,360	-8,130
Aug. 31.	9,988.6	23,350	-5,010
Sept. 30.	9,981.6	19,260	-4,090
WTR YR 1991			+10,410

08245000 CONEJOS RIVER BELOW PLATORO RESERVOIR, CO

LOCATION.--Lat 37°21'18", long 106°32'37", Conejos County, Hydrologic Unit 13010005, on left bank 1,100 ft downstream from valvehouse for Platoro Reservoir and 0.7 mi northwest of Platoro.

DRAINAGE AREA.--40 mi², approximately.

PERIOD OF RECORD.--May 1952 to current year.

GAGE.--Water-stage recorder with satellite telemetry, and concrete control. Datum of gage is 9,866.60 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Estimated daily discharges: Oct. 1-3, Nov. 7 to Apr. 18, Sept. 20, and Sept. 30. Records good except for estimated daily discharges, which are fair. No diversion upstream from station. Flow completely regulated by Platoro Reservoir (station 08244500).

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

AVERAGE DISCHARGE.--39 years, 93.0 ft³/s; 67,380 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,160 ft³/s, Nov. 1, 1957, gage height, 4.02 ft; maximum gage height, 4.29 ft, June 15, 1958; no flow Oct. 16-20, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, is the greatest since at least 1854, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 696 ft³/s at 1015 June 9, gage height, 3.29 ft; minimum daily, 3.2 ft³/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	15	3.2	3.2	3.2	3.2	3.2	86	105	334	212	96
2	142	9.4	3.2	3.2	3.2	3.2	3.2	86	106	398	223	95
3	142	9.3	3.2	3.2	3.2	3.2	3.2	68	106	311	238	96
4	152	9.6	3.2	3.2	3.2	3.2	3.2	40	106	226	238	96
5	171	9.7	3.2	3.2	3.2	3.2	3.2	41	163	237	260	96
6	176	9.7	3.2	3.2	3.2	3.2	3.2	56	233	246	295	84
7	176	9.8	3.2	3.2	3.2	3.2	3.2	69	271	246	294	69
8	177	9.8	3.2	3.2	3.2	3.2	3.2	109	305	246	267	68
9	135	5.9	3.2	3.2	3.2	3.2	3.2	164	576	289	182	98
10	88	4.0	3.2	3.2	3.2	3.2	3.2	193	536	346	149	124
11	88	4.0	3.2	3.2	3.2	3.2	3.2	193	459	300	150	128
12	88	4.0	3.2	3.2	3.2	3.2	3.2	193	343	219	178	147
13	88	4.0	3.2	3.2	3.2	3.2	3.2	193	80	247	216	157
14	88	4.0	3.2	3.2	3.2	3.2	3.2	349	41	247	204	166
15	89	3.4	3.2	3.2	3.2	3.2	3.2	573	43	248	189	166
16	81	3.2	3.2	3.2	3.2	3.2	3.2	629	43	237	170	178
17	64	3.2	3.2	3.2	3.2	3.2	3.2	523	44	224	159	202
18	54	3.2	3.2	3.2	3.2	3.2	3.2	419	44	224	155	200
19	46	3.2	3.2	3.2	3.2	3.2	21	420	44	234	117	204
20	42	3.2	3.2	3.2	3.2	3.2	60	422	44	242	97	177
21	42	3.2	3.2	3.2	3.2	3.2	60	423	108	242	105	112
22	42	3.2	3.2	3.2	3.2	3.2	60	375	257	286	89	112
23	43	3.2	3.2	3.2	3.2	3.2	81	192	307	340	81	112
24	43	3.2	3.2	3.2	3.2	3.2	106	97	243	341	65	124
25	73	3.2	3.2	3.2	3.2	3.2	108	98	244	286	65	140
26	146	3.2	3.2	3.2	3.2	3.2	94	99	297	178	64	148
27	185	3.2	3.2	3.2	3.2	3.2	87	99	243	140	83	171
28	112	3.2	3.2	3.2	3.2	3.2	87	102	243	140	105	189
29	61	3.2	3.2	3.2	---	3.2	86	103	260	152	107	189
30	33	3.2	3.2	3.2	---	3.2	86	103	261	196	106	132
31	18	---	3.2	3.2	---	3.2	---	103	---	220	96	---
TOTAL	2977	159.6	99.2	99.2	89.6	99.2	993.6	6620	6155	7822	4959	4076
MEAN	96.0	5.32	3.20	3.20	3.20	3.20	33.1	214	205	252	160	136
MAX	185	15	3.2	3.2	3.2	3.2	108	629	576	398	295	204
MIN	18	3.2	3.2	3.2	3.2	3.2	3.2	40	41	140	64	68
AC-FT	5900	317	197	197	178	197	1970	13130	12210	15510	9840	8080

CAL YR 1990 TOTAL 30560.1 MEAN 83.7 MAX 676 MIN 3.2 AC-FT 60620
WTR YR 1991 TOTAL 34149.4 MEAN 93.6 MAX 629 MIN 3.2 AC-FT 67740

08246500 CONEJOS RIVER NEAR MOGOTE, CO

LOCATION.--Lat 37°03'14", long 106°11'13", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.34, T.33 N., R.7 E., Conejos County, Hydrologic Unit 13010005, on left bank 75 ft downstream from bridge on State Highway 174, 0.4 mi downstream from Fox Creek, 5.3 mi west of Mogote, and 10 mi west of Antonito.

DRAINAGE AREA.--282 mi².

PERIOD OF RECORD.--April 1903 to October 1905, October 1911 to current year. Monthly discharge only for some periods, published in WSP 1312. Records for March 1900 at site 5.5 mi upstream and May 1905 to September 1911 (some missing periods most years) at site 3.2 mi upstream not equivalent to present site due to inflow.

REVISED RECORDS.--WSP 898: 1911(M). WSP 1312: 1903-5, 1913. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 8,273.69 ft, Colorado State Highway datum. Apr. 17, 1903, to Oct. 31, 1905, nonrecording gage 400 ft downstream, at different datum. Oct. 5, 1911, to early 1915, nonrecording gage, and from early 1915 to Oct. 1, 1988, water-stage recorder at site 100 ft upstream, at datum 2.15 ft, lower. Since Oct. 1, 1988, at present site and datum.

REMARKS.--Estimated daily discharges: Nov. 9, and Nov. 30 to Feb. 19, and Mar. 7-9. Records good except for estimated daily discharges, which are fair. Diversions for irrigation of about 500 acres of hay meadows upstream from station. Some regulation by Platoro Reservoir (station 08244500).

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

AVERAGE DISCHARGE.--82 years, 333 ft³/s; 241,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,000 ft³/s, Oct. 5, 1911, gage height, 8.50 ft, from floodmarks, present site and datum, from rating curve extended above 3,100 ft³/s; minimum daily determined, 10 ft³/s, July 18, 1904.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1854, that of Oct. 5, 1911, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,930 ft³/s at 0515 May 21, gage height, 5.18 ft; minimum daily, 39 ft³/s, Jan. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	207	121	58	52	43	61	77	362	1030	684	369	188
2	264	124	56	52	43	53	100	405	995	729	365	186
3	287	122	45	54	45	53	123	437	811	702	475	181
4	266	106	48	60	47	60	144	400	700	527	530	180
5	273	100	52	58	45	73	207	382	846	494	540	185
6	280	106	56	58	47	58	296	431	1060	507	595	283
7	283	95	52	54	50	55	421	512	1010	478	642	253
8	341	83	54	56	49	54	409	618	1190	476	530	244
9	313	90	54	52	48	56	316	944	1380	499	426	204
10	239	94	54	50	46	62	392	1110	1540	556	347	231
11	216	90	54	45	49	65	338	1240	1440	546	316	250
12	203	90	58	43	52	55	269	1250	1450	414	309	370
13	194	88	60	50	49	61	211	1200	1170	413	369	411
14	187	85	56	52	49	66	190	1350	1200	401	405	365
15	183	84	41	45	52	73	197	1640	1020	389	455	327
16	177	82	52	43	58	65	256	1600	884	381	376	302
17	162	81	50	42	56	59	354	1500	845	364	336	310
18	145	78	47	43	54	65	446	1500	829	378	307	315
19	148	76	44	43	52	76	460	1720	786	386	343	289
20	193	79	56	42	55	72	539	1750	742	374	252	328
21	151	66	50	40	57	68	653	1840	705	397	243	242
22	149	62	44	40	57	67	654	1710	792	489	224	212
23	160	69	40	40	59	64	640	1660	851	560	234	204
24	155	76	40	39	58	67	663	1260	796	654	205	197
25	152	72	42	40	59	75	702	1250	650	591	199	212
26	192	80	42	40	54	83	648	1400	755	514	191	214
27	271	66	42	41	55	67	507	1500	671	367	192	225
28	277	50	46	41	58	67	445	1450	654	300	208	259
29	182	45	60	42	---	65	397	1390	689	278	207	269
30	164	55	56	41	---	69	377	1290	733	297	211	265
31	134	---	52	42	---	65	---	1170	---	340	201	---
TOTAL	6548	2515	1561	1440	1446	1999	11431	36271	28224	14485	10602	7701
MEAN	211	83.8	50.4	46.5	51.6	64.5	381	1170	941	467	342	257
MAX	341	124	60	60	59	83	702	1840	1540	729	642	411
MIN	134	45	40	39	43	53	77	362	650	278	191	180
AC-FT	12990	4990	3100	2860	2870	3970	22670	71940	55980	28730	21030	15270

CAL YR 1990 TOTAL 82338 MEAN 226 MAX 1530 MIN 25 AC-FT 163300
WTR YR 1991 TOTAL 124223 MEAN 340 MAX 1840 MIN 39 AC-FT 246400

08247500 SAN ANTONIO RIVER AT ORTIZ, CO

LOCATION.--Lat 36°59'35", long 106°02'17", in NE¼SE¼ sec.24, T.32 N., R.8 E., Rio Arriba County, New Mexico, Hydrologic Unit 13010005, on left bank 800 ft south of Colorado-New Mexico State line, 0.4 mi southeast of Ortiz, and 0.4 mi upstream from Los Pinos River.

DRAINAGE AREA.--110 mi², approximately.

PERIOD OF RECORD.--April 1919 to October 1920, October 1924 to current year (no winter records prior to 1941). Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1732: 1951. WSP 1923: 1927 (monthly runoff).

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 7,970 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 7, 1926, nonrecording gage at various locations near present site, at different datums. Apr. 7, 1926, to June 24, 1954, water-stage recorder at site 200 ft downstream, at present datum.

REMARKS.--Estimated daily discharges: Nov. 2-16, 21, 22, Nov. 24 to Mar. 25, Mar. 27 to Apr. 1, and Sept. 28-30. Records good except for estimated daily discharges, which are fair. A few small diversions upstream from station for irrigation.

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

AVERAGE DISCHARGE.--51 years (1940-91), 25.6 ft³/s; 18,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,750 ft³/s, Apr. 15, 1937, gage height, 5.38 ft, from rating curve extended above 1,100 ft³/s; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, is the greatest since at least 1854, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 330 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 6	2200	*994	*4.92	No other peak greater than base discharge.			

No flow, July 15-20.

RIO GRANDE BASIN

08247500 SAN ANTONIO RIVER AT ORTIZ, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	4.0	4.5	2.0	1.5	3.5	70	76	35	1.3	1.6	.91
2	4.0	4.3	3.5	2.0	1.5	3.0	91	96	31	1.9	1.3	.67
3	2.5	5.8	2.0	2.0	2.0	2.5	118	130	29	1.1	9.1	.65
4	2.2	5.4	2.0	3.5	2.5	3.5	187	139	26	.62	22	.42
5	1.9	5.8	2.0	3.5	2.0	6.0	284	131	24	.45	15	.45
6	1.5	5.4	3.0	3.5	2.0	4.5	425	157	22	.97	7.1	.51
7	1.2	3.0	2.0	3.0	3.0	3.5	460	181	22	.63	23	5.8
8	5.1	3.0	2.0	3.5	3.0	3.0	338	206	19	.30	6.4	4.7
9	10	4.3	2.0	3.0	2.5	4.0	192	284	16	.10	3.7	2.9
10	6.2	4.0	2.0	3.0	2.0	8.0	176	255	16	.26	2.6	2.2
11	4.1	4.3	2.0	2.5	2.5	11	158	267	15	.25	2.4	1.9
12	2.9	4.3	2.5	2.5	3.0	10	142	223	15	.25	2.0	2.3
13	2.4	4.3	3.0	3.0	2.5	10	90	166	18	.16	2.1	3.0
14	2.1	4.3	2.5	3.0	2.5	10	76	154	16	.06	3.4	4.5
15	2.0	4.6	2.0	2.5	3.0	11	87	135	17	.00	4.2	2.8
16	1.8	4.6	2.5	2.5	3.5	10	154	114	15	.00	3.5	2.0
17	1.7	4.4	2.0	2.0	3.0	11	205	104	11	.00	3.8	1.6
18	1.5	4.2	2.0	2.5	2.5	12	237	99	9.1	.00	2.9	1.4
19	1.7	3.8	1.5	2.5	1.5	13	233	93	7.1	.00	2.6	1.4
20	4.7	3.6	2.5	3.0	2.0	13	222	104	6.5	.00	2.3	1.3
21	13	3.2	2.0	3.0	2.5	12	306	153	6.3	.30	1.6	1.7
22	8.1	2.0	1.0	2.5	3.0	13	277	123	4.7	.70	1.4	1.8
23	7.1	2.5	1.0	2.0	3.0	18	260	117	3.9	1.7	1.2	1.7
24	7.7	3.6	1.0	1.5	3.0	26	250	97	3.1	9.7	.86	1.4
25	7.2	3.6	1.0	1.5	2.0	48	271	82	2.5	10	2.5	1.4
26	6.6	3.6	1.0	1.5	2.0	46	221	71	2.0	8.6	1.6	1.4
27	6.5	2.8	1.0	1.5	2.0	37	139	63	1.5	6.3	1.5	2.0
28	5.4	2.0	1.5	1.5	2.5	33	109	56	1.1	3.7	3.4	2.2
29	5.1	2.5	3.0	2.5	---	33	88	50	.97	2.1	3.9	2.0
30	5.0	3.5	2.0	1.5	---	33	84	44	1.3	1.5	2.0	2.2
31	4.5	---	1.5	2.0	---	37	---	39	---	1.1	1.3	---
TOTAL	141.9	116.7	63.5	76.0	68.0	488.5	5950	4009	397.07	54.05	142.26	59.22
MEAN	4.58	3.89	2.05	2.45	2.43	15.8	198	129	13.2	1.74	4.59	1.97
MAX	13	5.8	4.5	3.5	3.5	48	460	284	35	10	23	5.8
MIN	1.2	2.0	1.0	1.5	1.5	2.5	70	39	.97	.00	.86	.43
AC-FT	281	231	126	151	135	969	11800	7950	788	107	282	117

CAL YR 1990 TOTAL 2957.94 MEAN 8.10 MAX 102 MIN .00 AC-FT 5870

WTR YR 1991 TOTAL 11566.20 MEAN 31.7 MAX 460 MIN .00 AC-FT 22940

08248000 LOS PINOS RIVER NEAR ORTIZ, CO

LOCATION.--Lat 36°58'56", long 106°04'23", on line between secs.26, and 27, T.32 N., R.8 E., Rio Arriba County, New Mexico, Hydrologic Unit 13010005, on left bank 0.9 mi south of Colorado-New Mexico State line, 2.1 mi southwest of Ortiz, and 2.9 mi upstream from mouth.

DRAINAGE AREA.--167 mi².

PERIOD OF RECORD.--January 1915 to December 1920, October 1924 to current year. Monthly discharge only for some periods, published in WSP 1312.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 8,040 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Apr. 15, 1955, at site 350 ft upstream at datum 2.52 ft, higher.

REMARKS.--Estimated daily discharges: Nov. 8-10, Nov. 22 to Mar. 24, and Mar. 27-31. Records good except for estimated daily discharges, which are fair. Diversions upstream from station for irrigation.

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

AVERAGE DISCHARGE.--72 years, 119 ft³/s; 86,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,160 ft³/s, May 12, 1941, gage height, 5.77 ft, site and datum then in use, from rating curve extended above 1,600 ft³/s; minimum observed, 4.0, ft³/s, Dec. 17, 1945 (discharge measurement), minimum daily discharge, 4.0 ft³/s, Dec. 11-14, 17, 22, 30-31, 1989, and Jan. 4-6, 1990, but may have been less during periods of no gage-height record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, is the greatest since at least 1854, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 11	0015	*1,470	*5.69	May 23	0630	1,150	5.28

Minimum daily discharge, 12 ft³/s, Jan. 30, Feb. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	46	33	23	12	24	41	234	446	119	70	25
2	30	50	29	24	12	23	49	299	421	103	54	25
3	33	55	24	25	13	22	61	363	379	93	67	22
4	29	46	25	29	15	24	79	376	332	93	101	22
5	24	42	26	29	14	26	113	377	353	86	110	26
6	21	43	26	29	14	24	196	470	366	87	88	76
7	21	36	24	28	16	22	269	548	341	72	90	82
8	46	37	25	30	16	22	262	706	339	68	64	61
9	47	38	25	27	15	23	206	943	342	68	54	45
10	35	40	25	27	14	27	262	1010	326	60	50	41
11	31	41	24	26	15	28	267	1170	370	53	47	41
12	28	39	24	26	16	27	244	1060	335	52	52	59
13	25	37	24	27	15	26	184	954	427	48	48	77
14	24	38	24	28	15	26	161	992	463	42	62	54
15	22	37	23	27	16	27	180	883	398	38	66	44
16	21	36	24	27	18	29	263	720	341	33	79	39
17	20	37	23	26	17	25	370	692	301	61	57	36
18	19	34	23	26	16	27	454	782	277	41	45	33
19	20	34	22	26	14	28	477	823	265	46	44	31
20	48	37	25	27	15	29	537	810	252	42	42	31
21	43	29	24	24	17	27	647	912	227	39	39	31
22	38	28	20	19	18	29	635	851	204	62	38	29
23	40	29	19	18	18	26	603	913	182	114	38	27
24	40	34	18	13	18	30	623	739	163	101	35	25
25	42	35	20	14	16	35	674	679	151	104	39	24
26	46	34	20	14	16	34	566	675	144	133	35	23
27	50	30	20	14	16	26	415	674	134	91	32	22
28	51	26	22	13	18	26	333	628	128	66	39	23
29	51	26	25	14	---	26	277	590	122	57	30	24
30	50	30	24	12	---	26	249	542	150	57	28	24
31	46	---	22	13	---	29	---	493	---	50	27	---
TOTAL	1074	1104	732	705	435	823	9697	21908	8679	2179	1670	1122
MEAN	34.6	36.8	23.6	22.7	15.5	26.5	323	707	289	70.3	53.9	37.4
MAX	51	55	33	30	18	35	674	1170	463	133	110	82
MIN	19	26	18	12	12	22	41	234	122	33	27	22
AC-FT	2130	2190	1450	1400	863	1630	19230	43450	17210	4320	3310	2230

CAL YR 1990 TOTAL 22166.0 MEAN 60.7 MAX 403 MIN 4.0 AC-FT 43970
WTR YR 1991 TOTAL 50128 MEAN 137 MAX 1170 MIN 12 AC-FT 59400

08249000 CONEJOS RIVER NEAR LASAUSES, CO

LOCATION.--Lat 37°18'01", long 105°44'47", in SW¼SW¼ sec.2, and SE¼NE¼ sec.10 (two channels), T.35 N., R.11 E., Conejos County, Hydrologic Unit 13010005, on left bank of main channel 125 ft downstream from bridge on State Highway 158 and on left bank of secondary channel 230 ft upstream from bridge on State Highway 158, 1.0 mi upstream from mouth, 2.1 mi north of Lasasues, and 13 mi southeast of Alamosa.

DRAINAGE AREA.--887 mi².

PERIOD OF RECORD.--March 1921 to current year. Monthly discharge only for some periods, published in WSP 1312. Prior to Oct. 1, 1966, published as "near La Sausues."

REVISED RECORDS.--WSP 1312: 1934(M).

GAGE.--Two water-stage recorders with satellite telemetry. Datum of gage on main (north) channel is 7,495.02 ft above National Geodetic Vertical Datum of 1929, and on secondary (south) channel is 7,496.89 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Main channel: See WSP 1732 for history of changes prior to Oct. 1, 1937. South channel: Prior to Oct. 23, 1934, at bridge 230 ft downstream at datum 0.56 ft, lower; Oct. 23, 1934, to May 3, 1936, at site 250 ft downstream, and May 4, 1936, to Oct. 13, 1965, at site 280 ft downstream, at datum 1.00 ft, lower.

REMARKS.--Estimated daily discharges: Nov. 29, Dec. 2-5, 7, 8, 15, Dec. 18 to Jan. 7, Jan. 13, 23-25, and Jan. 29. Records good except for estimated daily discharges, which are fair. Diversions for irrigation of about 75,000 acres upstream from station.

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

AVERAGE DISCHARGE.--70 years, 186 ft³/s; 134,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,890 ft³/s, May 15, 1941; no flow at times some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 5, 1911, is the greatest since at least 1854, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,540 ft³/s, May 22; minimum daily, 24 ft³/s, Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	135	51	39	58	108	127	256	413	334	107	37
2	25	136	49	41	59	114	170	272	499	272	112	29
3	65	154	47	42	58	103	196	360	471	269	116	32
4	74	152	45	66	58	109	257	424	392	190	175	42
5	71	141	44	64	58	124	347	426	317	132	265	45
6	78	134	44	64	60	129	488	424	360	135	303	45
7	79	137	44	62	60	121	719	490	504	193	372	125
8	114	121	45	64	62	107	896	452	479	188	362	143
9	156	109	49	61	65	105	806	532	526	199	252	137
10	175	117	51	62	66	108	702	899	578	183	180	118
11	133	120	53	64	69	118	772	1040	499	192	127	117
12	118	119	66	64	71	111	694	1250	351	182	112	124
13	107	118	74	61	75	111	572	1080	298	121	106	247
14	98	112	71	61	78	111	424	879	294	129	122	276
15	91	91	50	61	82	110	372	923	303	136	146	227
16	86	75	56	65	86	119	300	1100	246	109	162	188
17	83	74	57	66	93	113	406	869	175	68	135	153
18	73	75	52	65	93	106	575	772	123	72	100	140
19	72	73	40	61	92	110	685	875	86	68	88	115
20	87	73	58	60	89	109	673	1130	67	72	116	118
21	115	74	48	60	88	118	688	1280	56	70	88	136
22	89	68	32	57	90	109	832	1540	47	91	72	97
23	93	61	29	56	96	105	682	1270	54	151	61	83
24	96	61	27	62	98	105	546	939	106	220	73	81
25	70	70	30	64	102	112	533	636	152	290	63	63
26	53	74	30	70	101	134	650	514	173	300	64	63
27	48	71	30	64	101	141	525	469	174	242	64	54
28	52	61	34	62	102	123	357	427	193	141	54	49
29	56	51	52	56	---	122	268	405	260	96	54	47
30	60	50	42	62	---	125	240	390	332	77	54	43
31	113	---	38	60	---	125	---	368	---	85	47	---
TOTAL	2654	2907	1438	1866	2210	3565	15502	22691	8528	5007	4152	3174
MEAN	85.6	96.9	46.4	60.2	78.9	115	517	732	284	162	134	106
MAX	175	154	74	70	102	141	896	1540	578	334	372	276
MIN	24	50	27	39	58	103	127	256	47	68	47	29
AC-FT	5260	5770	2850	3700	4380	7070	30750	45010	16920	9930	8240	6300

CAL YR 1990 TOTAL 15874.93 MEAN 43.5 MAX 745 MIN .00 AC-FT 31490
WTR YR 1991 TOTAL 73694 MEAN 202 MAX 1540 MIN 24 AC-FT 146200

08251500 RIO GRANDE NEAR LOBATOS, CO

LOCATION (REVISED).--Lat 37°04'43", long 105°45'23", in NE¼NW¼ sec.27, T.33 N., R.11 E., Conejos County, Hydrologic Unit 13010002, on right bank at highway bridge, 5.7 mi north of Colorado-New Mexico State line, 8 mi downstream from Culebra Creek, 11 mi east of Lobatos, and 14 mi east of Antonito.

DRAINAGE AREA.--7,700 mi², approximately, includes 2,940 mi² 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" 1902-4.

REVISED RECORDS.--WSP 1312: 1919 (monthly runoff). WSP 210: Drainage area. WDR CO-78-1: 1976.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 7,427.63 ft above National Geodetic Vertical Datum of 1929. Prior to 1910, nonrecording gages at same site and datum.

REMARKS.--Estimated daily discharges: Nov. 1-5, 8, 9, and Nov. 28 to Feb. 28. Records good except for estimated daily discharges, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals and diversion 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 ft³/s; 612,900 acre-ft/yr, includes period of extensive development for irrigation: 61 years (water years 1931-91), 449 ft³/s; 325,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 13,200 ft³/s, June 8, 1905, gage height, 9.1 ft, from rating curve extended above 8,000 ft³/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, 2,130 ft³/s at 0715 May 23, gage height, 3.63 ft; minimum daily, 53 ft³/s, Sept. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	238	220	250	280	390	463	466	812	649	224	82
2	205	264	160	260	275	410	466	427	945	567	232	68
3	182	302	150	260	275	410	546	457	1190	507	212	55
4	222	337	240	275	280	475	596	551	1200	426	249	53
5	276	368	285	285	280	455	715	575	988	297	356	65
6	214	375	270	290	280	460	832	560	786	264	435	68
7	181	345	280	295	270	450	1040	631	865	284	501	66
8	171	315	290	300	280	440	1440	668	1030	310	541	171
9	202	306	300	310	285	425	1660	661	1190	332	434	162
10	241	364	320	305	290	415	1630	962	1240	318	357	190
11	262	451	350	300	285	430	1640	1290	1330	302	279	291
12	280	506	380	290	290	440	1580	1500	1210	329	226	291
13	295	528	400	300	300	445	1470	1350	759	295	230	325
14	293	516	330	300	310	450	1190	1080	659	244	206	466
15	276	475	280	300	310	450	1020	1060	805	269	228	519
16	266	390	320	305	335	495	833	1210	785	248	245	443
17	252	368	270	295	345	483	664	1150	678	200	232	336
18	248	361	225	295	355	455	719	904	577	163	208	273
19	247	363	220	290	365	452	838	961	525	162	179	266
20	256	360	210	300	355	470	910	1360	498	189	175	266
21	267	328	195	300	365	479	879	1610	490	217	184	279
22	278	274	210	300	375	490	999	1890	451	233	148	252
23	351	249	200	290	365	466	996	2010	388	293	132	215
24	399	243	200	280	360	455	853	1630	345	392	129	209
25	292	259	210	275	310	452	731	1290	366	488	136	193
26	223	308	200	275	400	481	798	1120	437	516	124	157
27	198	328	200	270	390	537	816	1030	493	481	125	146
28	183	310	220	270	375	520	652	960	453	389	128	123
29	181	258	240	275	---	490	541	912	464	286	94	108
30	174	226	245	280	---	475	472	899	560	242	95	98
31	191	---	210	280	---	471	---	812	---	222	95	---
TOTAL	7368	10315	7830	8900	8985	14216	27989	31986	22519	10114	7139	6236
MEAN	238	344	253	287	321	459	933	1032	751	326	230	208
MAX	399	528	400	310	400	537	1660	2010	1330	649	541	519
MIN	62	226	150	250	270	390	463	427	345	162	94	53
AC-FT	14610	20460	15530	17650	17820	28200	55520	63440	44670	20060	14160	12370

CAL YR 1990 TOTAL 88514 MEAN 243 MAX 1790 MIN 28 AC-FT 175600
WTR YR 1991 TOTAL 163597 MEAN 448 MAX 2010 MIN 53 AC-FT 324500

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1975 to September 1981.

WATER TEMPERATURES: October 1975 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1040 microsiemens, Sept. 17, 18, 1977; minimum, 89 microsiemens, May 9, 1979.

WATER TEMPERATURE. Maximum, 30.0°C, July 17, 1977; minimum, 0.0°C, on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT									
17...	1000	254	237	8.4	10.0	7.0	9.2	22	68
DEC									
19...	1300	248	212	8.4	0.0	4.0	--	K2	53
FEB									
21...	0830	290	243	8.1	0.0	3.0	10.3	<1	55
APR									
25...	1130	768	185	8.3	10.0	22	8.8	K15	68
JUN									
21...	0900	522	490	8.4	17.0	5.2	7.7	21	K16
AUG									
20...	1300	168	238	8.8	23.0	6.5	8.8	K9	K2

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA-(A) LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	BICAR-(B) BONATE WATER DIS IT FIELD MG/L AS HCO3
OCT									
17...	66	20	3.9	26	44	1	4.9	92	108
DEC									
19...	75	23	4.3	15	29	0.8	2.8	78	95
FEB									
21...	68	21	3.7	21	39	1	3.6	77	94
APR									
25...	52	16	3.0	11	30	0.7	2.4	48	59
JUN									
21...	150	45	9.0	36	33	1	6.1	107	131
AUG									
20...	75	23	4.3	20	35	1	3.7	84	102

DATE	CAR-(C) BONATE WATER DIS IT FIELD MG/L AS CO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT								
17...	2	20	8.9	0.3	25	162	164	111
DEC								
19...	0	24	4.4	0.2	29	147	150	98.4
FEB								
21...	0	29	6.1	0.3	25	159	156	124
APR								
25...	0	26	3.4	0.1	21	122	112	253
JUN								
21...	0	110	12	0.4	23	331	307	467
AUG								
20...	0	27	6.4	0.3	24	149	159	67.6

A Field total dissolved alkalinity, determined by incremental titration method.

B Field dissolved bicarbonate, determined by incremental titration method.

C Field dissolved carbonate, determined by incremental titration method.

K Based on non-ideal colony counts.

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
OCT 17...	<0.01	<0.10	<0.01	<0.01	0.50	0.10	0.03	0.02
DEC 19...	0.01	0.10	0.03	0.04	<0.20	0.09	0.06	0.06
FEB 21...	<0.01	<0.10	<0.01	<0.01	0.50	0.05	0.03	0.03
APR 25...	<0.01	<0.05	0.02	<0.01	0.70	0.18	0.06	0.03
JUN 21...	<0.01	<0.05	0.04	0.03	0.90	0.12	0.07	0.06
AUG 20...	<0.01	<0.05	<0.01	<0.01	0.40	0.10	0.06	0.04

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 17...	<10	3	23	<0.5	<1	<1	<3	1	38	<1
FEB 21...	<10	1	24	<0.5	<1	<1	<3	3	56	<1
JUN 21...	<10	3	50	<0.5	<1	<1	<3	2	80	<1
AUG 20...	<10	3	24	<0.5	<1	<1	<3	1	30	<1

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 17...	5	6	<0.1	<10	1	<1	<1	170	<6	3
FEB 21...	6	22	<0.1	<10	<1	<1	<1	160	<6	6
JUN 21...	10	24	<0.1	<10	1	<1	<1	400	<6	14
AUG 20...	5	10	<0.1	<10	<1	<1	<1	180	<6	6

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	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 SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
DEC 19...	1300	1.7	0.8	3.3	<0.6	4.0	<0.6	0.10	0.99
JUN 21...	0900	2.7	<0.6	42	0.8	56	0.8	0.04	1.2

RIO GRANDE BASIN

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

CROSS-SECTION DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	OXYGEN, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDE (MG/L)
APR							
25...	1131	29	10.5	129	8.1	8.8	83
25...	1132	49	10.5	126	8.0	8.8	95
25...	1133	59	10.0	127	8.0	8.8	86
25...	1134	69	10.0	128	8.0	8.8	85
25...	1135	79	10.0	127	8.0	8.8	97
25...	1136	89	10.0	126	7.9	8.8	90
25...	1137	99	10.0	127	7.9	8.8	115
25...	1138	109	10.0	128	7.9	8.8	117
25...	1139	119	10.0	128	7.9	8.8	95
25...	1140	129	10.0	130	7.8	8.8	88
25...	1141	139	10.5	133	7.8	8.8	87
25...	1142	149	10.5	138	7.7	8.8	80
JUN							
21...	0901	30	17.5	491	8.3	8.0	52
21...	0902	50	17.0	491	8.2	7.7	46
21...	0903	60	17.0	490	8.2	7.7	34
21...	0904	70	17.0	490	8.2	7.6	50
21...	0905	80	17.0	487	8.2	7.6	36
21...	0906	90	17.0	490	8.2	7.6	--
21...	0907	100	17.0	490	8.2	7.7	42
21...	0908	110	17.0	490	8.2	7.7	63
21...	0909	120	17.0	490	8.2	7.8	53
21...	0910	140	17.5	487	8.3	7.9	51
AUG							
20...	1301	31	23.5	238	8.8	9.1	23
20...	1302	41	23.0	238	8.8	8.9	11
20...	1303	51	23.0	239	8.7	8.7	13
20...	1304	61	22.5	239	8.7	8.6	12
20...	1305	71	22.5	239	8.7	8.6	17
20...	1306	81	22.5	239	8.7	8.7	18
20...	1307	91	22.5	238	8.7	8.7	15
20...	1308	101	22.5	238	8.7	8.7	16
20...	1309	111	23.0	238	8.7	8.9	19
20...	1310	121	23.5	237	8.8	9.5	15

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					
17...	1000	254	29	20	--
DEC					
19...	1300	248	11	7.4	--
FEB					
21...	0830	290	7	5.5	66
APR					
25...	1130	768	85	176	85
AUG					
20...	1300	168	18	8.2	--

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN IN COLORADO

There are 24 tunnels or ditches, all of which are equipped with water-stage recorders and Parshall flumes or sharp-crested weirs. Records provided by Colorado Division of Water Resources. The locations and diversions of 8 selected diversions are given in the following list.

TO PLATTE RIVER BASIN

09010000 Grand River Ditch diverts water from tributaries of Colorado River to La Poudre Pass Creek (tributary to Cache la Poudre River) in NW $\frac{1}{4}$ sec.21, T.6 N., R.75 W., in Platte River basin. Two collection ditches beginning at headgates located in sec.28, T.5 N., R.76 W., and sec.29, T.6 N., R.75 W., intercept all tributaries upstream on each side of the Colorado River and converge at La Poudre Pass.

REVISIONS (WATER YEARS).--WSP 1313: 1912-27.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09010000	0	0	0	0	0	0	0	1,740	10,480	4,780	1,330	87

Water year 1991, 18,410

09013000 Alva B. Adams Tunnel diverts water from Grand Lake and Shadow Mountain Lake in NW $\frac{1}{4}$ sec.9, T.3 N., R.75 W., in Colorado River basin, to Lake Estes (Big Thompson River) in sec.30, T.5 N., R.72 W., in Platte River basin. For daily discharge, see elsewhere in this report.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09013000	15,880	4,930	28,630	27,520	24,660	14,410	20,800	13,720	3,790	13,710	12,270	18,690

Water year 1991, 199,000

09021500 Berthoud Pass Ditch diverts water from tributaries of Fraser River between headgate in sec.33, T.2 S., R.75 W., and Berthoud Pass, in Colorado River basin, to Hoop Creek (tributary to West Fork Clear Creek) in sec.10, T.3 S., R.75 W., in Platte River basin.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09021500	0	0	0	0	0	0	0	0	169	265	138	38

Water year 1991, 624

09050590 Harold D. Roberts Tunnel diverts water from Dillon Reservoir (Blue River) in sec.18, T.5 S., R.77 W., in Blue River basin, to North Fork South Platte River (tributary to South Platte River) in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.4, T.7 S., R.74 W., in Platte River basin. Figures include a small amount of ground-water inflow between Dillon Reservoir and east portal of tunnel.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09050590	0	3,500	6,610	6,390	5,240	5,170	3,830	1,050	10,180	18,190	3,040	2,830

Water year 1991, 66,040

TO ARKANSAS RIVER BASIN

09042000 Hoosier Pass Tunnel diverts water from tributaries of Blue River in Colorado River basin to Montgomery Reservoir (Middle Fork South Platte River) in sec.14, T.8 S., R.78 W., in Platte River basin; this water is again diverted to South Catamount Creek (tributary to Catamount Creek) in SE $\frac{1}{4}$ sec.14, T.13 S., R.69 W., in the Arkansas River basin. Collection conduits extending from the right bank of Crystal Creek (tributary to Spruce Creek) in sec.14, T.7 S., R.78 W., right bank of Spruce Creek in sec.23, T.7 S., R.78 W., right bank of McCullough Gulch in sec.26, T.7 S., R.78 W., right bank of Monte Cristo Creek in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.2, T.8 S., R.78 W., left bank of Bemrose Creek in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.6, T.8 S., R.77 W., and intercepting intermediate tributaries, transport diversions to north portal of the tunnel.

REVISIONS (WATER YEARS).--WDR CO-86-1, WDR CO-86-2: 1984, 1985.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09042000	0	0	0	0	0	0	0	1,320	4,600	3,410	1,830	1,200

Water year 1991, 12,360

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN IN COLORADO--Continued

TO ARKANSAS RIVER BASIN--Continued

09063700 Homestake Tunnel diverts water from Homestake Lake (Middle Fork Homestake Creek), in sec.17, T.8 S., R.81 W., in Eagle River basin, to Lake Fork in sec.9, T.9 S., R.81 W., in Arkansas River basin. Water is imported to Homestake Lake from tributaries of Homestake Creek by collection conduits that extend from right bank of French Creek in sec.28, T.7 S., R.81 W., and left bank of East Fork Homestake Creek in sec.9, T.8 S., R.81 W., and intercept intermediate tributaries.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09063700	200	0	0	0	0	0	0	0	0	180	207	51

Water year 1991, 638

09077160 Charles H. Bousted Tunnel diverts water from the main stem and tributaries of Fryingpan River (tributary to Roaring Fork River), in Colorado River basin, to Lake Fork in sec.10, T.9 S., R.81 W., in Arkansas River basin. Water is transported to west portal of tunnel (at lat 39°14'44", long 106°31'47"), by a series of collection conduits extending between headgates on right bank of Sawyer Creek at lat 39°15'58", long 106°38'19" and right bank of Fryingpan River at lat 39°14'40", long 106°31'49", and intercepting intermediate tributaries.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09077160	141	137	141	119	124	125	99	14,380	36,600	8,790	392	92

Water year 1991, 61,130

09077500 Busk-Ivanhoe Tunnel diverts water from Ivanhoe Lake (Ivanhoe Creek), tributary to Fryingpan River in sec.13, T.9 S., R.82 W., in Roaring Fork River basin, to Busk Creek (tributary to Lake Fork) in sec.20, T.9 S., R.81 W., in Arkansas River basin.

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09077500	83	0	0	0	0	0	0	1,310	3,230	748	178	107

Water year 1991, 5,660

TRANSMOUNTAIN DIVERSIONS NO LONGER PUBLISHED

Following is a list of Transmountain Diversions no longer being published in this report. Diversions, in acre-feet, for these sites are available from the State of Colorado, Division of Water Resources.

TO PLATTE RIVER BASIN	TO ARKANSAS RIVER BASIN	TO RIO GRANDE BASIN
09012000 Eureka Ditch	09061500 Columbine Ditch	09118200 Tarbell Ditch
09022500 Moffat Water Tunnel	09062000 Ewing Ditch	09121000 Tabor Ditch
		09341000 Treasure Pass Ditch
09046000 Boreas Pass Ditch	09062500 Wurtz Ditch	09347000 Don LaFont Ditches 1&2
09047300 Vidler Tunnel	09073000 Twin Lakes Tunnel	09348000 Williams Cr-Squaw Pass Ditch
	09115000 Larkspur Ditch	09351000 Pine River-Weminuche Pass Ditch
		09351500 Weminuche Pass Ditch

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 flood-flow 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 crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

CREST-STAGE PARTIAL-RECORD STATIONS

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device that will register the peak stage occurring between inspections of the gage. 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 water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1991 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
PLATTE RIVER BASIN								
Deer Creek near Littleton, CO (06708500)	Lat 39°32'56", long 105°07'59", in NE¼NE¼ sec.8, T.6 S., R.69 W., Jefferson County, 70 ft upstream from county bridge over Deer Creek, 7.5 mi southwest of Littleton. Drainage area is 26.2 mi ² .	1942-46, 1978-91	3-30-91	5.61	193	a1980	6.22	320
Lee Gulch at Littleton, CO (06709740)	Lat 39°35'47", long 105°00'57", in SW¼SW¼ sec.21, T.5 S., R.68W., Arapahoe County, on right bank 30 ft upstream from culvert under Prince St., and 0.6 mi upstream from mouth in Littleton. Drainage area not determined.	1980-91	6- 1-91	10.44	21	a1983	16.00	444
Dutch Creek at Platte Canyon Drive, near Littleton, CO (06709910)	Lat 39°36'01", long 105°02'28", in NW¼SE¼ sec.19, T.5 S., R.69 W., Arapahoe County, on left bank 150 ft down- stream from bridge on Platte Canyon Road. Drainage area not determined.	1985-91	6- 1-91	11.51	1,090	6- 1-91	11.51	1,090
Littles Creek at Littleton, CO (06709995)	Lat 39°36'44", long 105°01'09", in SE¼SE¼ sec.17, T.5 S., R.68 W., Arapahoe County, 50 ft upstream from Rapp St., and 150 ft south of W. Alamo St. in Littleton. REVISED RECORDS.--WDR CO-89-1: 1988. Drainage area not determined.	1985-91	6- 1-91	12.30	300	7-29-90	13.01	503
Cub Creek at Evergreen, CO (06710400)	Lat 39°37'50", long 105°19'16", in NW¼SE¼ sec.10, T.5 S., R.71 W., Jefferson County, 0.1 mi upstream from confluence with Bear Creek. Drainage area is 22.2 mi ² .	1978-91	6- 1-91	46.47	45	a1980	b7.41	244

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS--Continued

Station name and number	Location and drainage area	Period of record	Water year 1991 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
PLATTE RIVER BASIN--Continued								
Mt. Vernon Creek near Morrison, CO (06710600)	Lat 39°40'49", long 105°11'50", in NW¼NW¼ sec.26, T.4 S., R.70 W., Jefferson County, 1.9 mi north of Morrison. Drainage area is 7.58 mi ²	1978-91	7- 9-90 7-22-91	8.81 9.09	66 1990 REVISED 121	7-22-91	9.09	121
Parmalee Gulch at mouth at Indian Hills, CO (06710990)	Lat 39°36'57", long 105°13'54", in NW¼SE¼ sec.16, T.5 S., R.70 W., Jefferson County, 20 ft upstream from box type culvert beneath U.S. Highway 285. Drainage area is 5.80 mi ² .	1978-91	8- 4-91	8.82	10	a1984	9.62	10^
Turkey Creek near Morrison, CO (06711000)	Lat 39°37'22", long 105°11'13", in NE¼NE¼ sec.14, T.5 S., R.70 W., Jefferson County, 2.2 mi southwest of Morrison. Drainage area is 48.0 mi ² .	1942-53, 1969, 1978-91	6- 6-91	39.98	125	5- 7-69	c	2,73^
Weaver Creek near Lakewood, CO (06711305)	Lat 39°38'13", long 105°07'47", in NE¼NE¼ sec.8, T.5 S., R.69 W., Jefferson County, 500 ft upstream from Simms St., and 700 ft south of West Quincy Ave. Drainage area not determined.	1982-91	6- 2-91	12.50	305	6- 2-91	12.50	30^
Little Dry Creek near Arapahoe Road, CO (06711515)	Lat 39°35'38", long 104°54'23", in NE¼NE¼ sec.29, T.5 S., R.67 W., Arapahoe County, on right bank, 800 ft downstream from Quebec St. (formerly published as Inflow to Holly Reservoir, 1985-86). Drainage area not determined.	1985-91	9- 4-91	8.90	258	a1985	10.52	80^
Willow Creek at Dry Creek Road, near Englewood, CO (06711535)	Lat 39°34'49", long 104°54'42", in NW¼NE¼ sec.32, T.5 S., R.67 W., Arapahoe County, on left bank, upstream wingwall of bridge on Dry Creek Road over Willow Creek. Drainage area not determined.	1985-91	7- 8-91 9- 4-91	8.58 8.58	522 522	a1985	14.28	3,47^
Little Dry Creek above Englewood, CO (06711555)	Lat 39°38'56", long 104°58'40", in SW¼NW¼ sec.2, T.5 S., R.68 W., Arapahoe County, 40 ft above Clarkson St. bridge, and 800 ft south of Hampton Ave., in Cherry Hills Village. Drainage area not determined.	1982-91	7- 8-91	12.54	369	a1983	15.64	1,06^
Harvard Gulch at Colorado Blvd. at Denver, CO (06711570)	Lat 39°40'08", long 104°56'32", in SE¼SE¼ sec.25, T.4 S., R.67 W., Denver County, on left bank, 100 ft upstream from S. Jackson St., and 400 ft north of E. Yale Ave. Drainage area not determined.	1979-91	7-20-91	12.50	309	8- 4-88	14.02	597
Harvard Gulch below University Blvd. at Denver, CO (06711572)	Lat 39°40'10", long 104°57'33", in SE¼SE¼ sec.26, T.4 S., R.68 W., Denver County, 200 ft downstream from University Blvd., and 600 ft north of East Yale Ave., in Denver. Drainage area not determined.	1979-91	7-20-91	13.67	a	a1983	13.75	780

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS--Continued

Station name and number	Location and drainage area	Period of record	Water year 1991 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
PLATTE RIVER BASIN--Continued								
Harvard Gulch at Harvard Park at Denver, CO (06711575)	Lat 39°40'21", long 104°58'35", in NW¼SW¼ sec.26, T.4 S., R.68 W., Denver County, on left bank, 200 ft north of E. Harvard Ave. and 300 ft west of S. Ogden St., directly north of Porter Hospital. Drainage area not determined.	1979-91	7-20-91	14.55	471	a1981	15.61	785
Sanderson Gulch tributary at Lakewood, CO (06711600)	Lat 39°41'19", long 105°04'54", in NE¼NW¼ sec.23, T.4 S., R.68 W., Jefferson County, 300 ft upstream from S. Wadsworth Blvd., 300 ft south of W. Florida Ave. in Lakewood. Drainage area is 0.38 mi ² .	1969-91	6- 1-91	12.48	41	6- 6-77	4.91	422
Sanderson Gulch at Mouth at Navajo St. at Denver, CO (06711609)	Lat 39°41'33", long 105°00'12", in SW¼NE¼ sec.21, T.4 S., R.68 W., Denver County, 200 ft south of Louisiana Ave., at Navajo St. Drainage area not determined.	1985-91	6- 1-91	11.87	501	6- 1-91	11.87	501
Weir Gulch upstream from 1st Avenue, at Denver, CO (06711618)	Lat 39°43'03", long 105°02'30", in NW¼SE¼ sec.7, T.4 S., R.68 W., Denver County, 250 ft upstream from 1st Ave., in Denver. Drainage area not determined.	1985-91	8- 1-91	11.91	523	8- 1-91	11.91	523
Dry Gulch at Denver, CO (06711770)	Lat 39°44'03", long 105°02'20", in SW¼NE¼ sec.6, T.4 S., R.68 W., Denver County, 800 ft upstream from confluence with Lakewood Gulch, north of West 10th Ave., at Perry St., in Denver. Drainage area not determined.	1980-91	5- 1-91	14.32	322	a1981	16.00	445
Lakewood Gulch at Denver, CO (06711780)	Lat 39°44'06", long 105°01'54", in SW¼NW¼ sec.5, T.4 S., R.68 W., Denver County, 2,000 ft downstream from confluence with Dry Gulch, near intersection of Knox Ct., and West 12th Ave., in Denver. Drainage area not determined.	1980-91	6- 1-91	14.56	583	a1984	17.24	930
Sloans Lake, south Tributary at Denver, CO (06711820)	Lat 39°44'44", long 105°03'28", in NW¼SE¼ sec.36, T.3 S., R.69 W., Jefferson County, 50 ft south of 18th Ave., at Depew St. REVISED RECORDS.--WDR CO-90-1: 1985-89. Drainage area not determined.	1985-91	6- 1-91	4.00	451	6- 1-91	4.00	451
Westerly Creek at Aurora, CO (06714260)	Lat 39°44'43", long 104°52'48", in NW¼SW¼ sec.34, T.3 S., R.67 W., Adams County, 50 ft upstream from footbridge, 800 ft upstream from Montview Blvd., and 100 ft east of Boston St., in Aurora. REVISED RECORDS.--WDR CO-90-1: 1983-85, 1987-88. Drainage area not determined.	1982-91	6- 6-91	13.54	911	a1983	14.45	1,530

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS--Continued

Station name and number	Location and drainage area	Period of record	Water year 1991 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
PLATTE RIVER BASIN--Continued								
Sand Creek tributary at Denver, CO (06714310)	Lat 39°47'07", long 104°50'31", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.13, T.3 S., R.67 W., Denver County, in median of Andrews Drive Parkway, 50 ft downstream from Troy St. in Denver. Drainage area is 0.29 mi ² .	1971-91	8- 3-91	13.78	428	a1985	c	870
Lena Gulch at Upper Site, at Golden, CO (06719535)	Lat 39°43'21", long 105°11'46", in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.11, T.4.S., R.70 W., Jefferson County, 60 ft north of US 40, and 2,200 ft southwest of US 6, in Golden. Drainage area not determined.	1985-91	7-22-91	11.86	a	a1987	10.92	373
Lena Gulch at Lakewood, CO (06719560)	Lat 39°44'27", long 105°08'49", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.3S., R.69 W., Jefferson County, on right bank 200 ft north of West 15th Drive at Arbutus. Prior to July 6, 1988, at site approx. 500 ft downstream, (formerly published as Lena Gulch at Alkire at Golden, CO, 1986-87). Drainage area is approximately 9.0 mi ² .	1974-79, 1986-91	6- 1-91	13.59	514	7-20-75	14.41	641
Hidden Lake Outflow at 65th Ave. nr Arvada, CO (06719775)	Lat 39°48'53", long 105°02'03", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.6, T.3 S., R.68 W., Adams County, 30 ft downstream from 65th Ave. at Lowell Blvd. May 1985 to Aug. 1987 at site 200 ft downstream. Drainage area not determined.	1985-91	7-22-91	2.50	22	7-22-91	2.50	22
Little Dry Creek at Westminster, CO (06719840)	Lat 39°49'34", long 105°02'25", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.6, T.3 S., R.68 W., Adams County, 400 ft downstream from 72nd Ave. in Westminster. REVISED RECORDS.--WDR CO-89-1: 1986. Drainage area not determined.	1982-91	6- 1-91	13.09	1,280	6- 1-91	13.09	1,270
Fourmile Creek near Crisman, CO (06727400)	Lat 40°02'44", long 105°22'02", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.17, T.1 N., R.71 W., Boulder county, on right bank 0.65 mile below junction of Gold Run Road. Drainage area not determined.	1985-91	6- 1-91 6- 3-91	unknown 11.45	a b145	6- 3-91	11.45	b145
Sunshine Creek at Boulder, CO (06728011)	Lat 40°01'15", long 105°17'47", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.25, T.1N., R.71 W., Boulder County, on right bank 0.2 mile past Hospital at Open Space Park, 125 ft upstream from footbridge. REVISED RECORDS.--WDR CO-90-1: 1989. Drainage area not determined.	1986-91	6- 1-91	2.79	a	6- 9-89	2.12	22
Middle Fork St. Vrain Creek near Allens Park, Co (06723000)	Lat 40°10'07", long 105°26'27", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.3, T.2 N., R.72 W., Boulder County, 1.4 mi northeast from Raymond. REVISED RECORDS.--WDR CO-89-1: 1983-87. Drainage area is 28.0 mi ² .	1925-30, 1978-91	6- 1-91	97.48	717	6-12-90	97.31	832

MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS--Continued

Station name and number	Location and drainage area	Period of record	Water year 1991 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (ft ³ /s)
PLATTE RIVER BASIN--Continued								
Fall River at Estes Park, CO (06732500)	Lat 40°22'40", long 105°31'56", in NW¼NW¼ sec.25, T.5 N., R.73 W., Larimer County, 100 ft upstream from State bridge 34 and 0.7 mi upstream from mouth. Destroyed by flood, 7-82. Drainage area is 39.5 mi ² .	1947-53, 1978-91	6- 1-91	97.42	217	7-15-82	b11.10	6,550
Cedar Creek at Cedar Cove, CO (06736650)	Lat 40°25'08", long 105°15'53", NW¼NW¼ sec.8, T.5 N., R.70 W., Larimer County, 0.2 mi north of Cedar Cove and 4.1 mi south-east of Drake. Drainage area is 18.9 mi ² .	1978-91	5-16-91	86.26	19	a1980	b13.80	1,590
ARKANSAS RIVER BASIN								
Chalk Creek near Nathrop, CO (07091000)	Lat 38°44'01", long 106°09'34", in SE¼NW¼ sec.19, T.15 S., R.78 W., Chaffee County, 4 mi west of Nathrop. Drainage area is 97.0 mi ² .	1910, 1949-56, 1978-91	6-13-91	3.07	900	a1986	3.55	1,400
Badger Creek above Cals Fork Gulch near Howard, CO (07093705)	Lat 38°45'25", long 105°50'52", in NW¼SW¼ sec.12, T.15 S., R.76 W., Park County, 1.0 mi upstream from Cals Fork Gulch, and 21 mi north of Howard. Drainage area is 18.0 mi ² .	1986-1991	a1987 7-29-88	6.34 5.45	183 54	a1987	6.34	183
St. Charles River at Burnt Mill, CO (07107500)	Lat 38°03'06", long 104°47'35", in NE¼NE¼ sec.17, T.23 S., R.66 W., Pueblo County, 5.9 mi downstream from North St. Charles River. Drainage area is 166 mi ² .	1923-33, 1978-91	7-19-91	5.27	2,280	7-22-25	22.13	21,800
Big Arroyo near Thatcher, CO (07120620)	Lat 37°33'17", long 104°01'15", in NW¼NW¼ sec.4, T.29 S., R.59 W., Las Animas County, 2.4 mi from U.S. Route 350, 4.8 mi east of Thatcher, and 3.2 mi upstream from mouth. Drainage area is 15.5 mi ² .	1983-90 d	7-22-91	3.38	54	7-28-85	4.86	1,500
Red Rock Canyon Creek at mouth, near Thatcher, CO (07126415)	Lat 37°30'54", long 103°43'25", in NW¼SE¼ sec.18, T.29 S., R.56 W., Las Animas County, 200 ft downstream from Welsh Canyon, 0.3 mi upstream from mouth, and 21 mi east of Thatcher. Drainage area is 48.8 mi ² .	1983-90 d	8-17-91	6.10	40	5-22-87	10.09	1,530
Bent Canyon Creek at mouth near Timpas, CO (07126480)	Lat 37°35'19", long 103°38'51", in SE¼SE¼ sec.23, T.28 S., R.65 W., Las Animas County 0.5 mi upstream from mouth, 0.6 mi southwest of Rourke Ranch house, 0.9 mi upstream from Iron Canyon, and 17 mi southeast of Timpas. Drainage area is 56.2 mi ² .	1983-90 d	7-7-91	6.18	166	8-21-84	12.56	2,640

a Month or day of occurrence is unknown or not exact.

b At different datum.

c Not determined.

d Previously operated as a continuous-record gaging station.

SUMMARY OF FLOOD DISCHARGES

PLATTE RIVER BASIN

The following is the peak flow at a site near Livermore, CO for a flood which occurred as the result of severe local thunderstorms during June 1, 1991. The peak flow was computed using the slope-area method. The results are considered to be fair.

Lat	Long	Site	Drainage area (mi ²)	Discharge (ft ³ /s)
404933	1051431	Stonewall Creek near Livermore, CO	--	4,650

ARKANSAS RIVER BASIN

The following table contains peak flows at selected sites in the Canon City area for floods which occurred as the result of severe local thunderstorms during August 12, 1991. Peak flows were computed using the slope-area method, but because the required field data was partial and of poor quality, the results are considered to be estimates, and of poor accuracy.

Lat	Long	Site	Drainage area (mi ²)	Discharge (ft ³ /s)
382655	1051044	Unnamed Arroyo below Fourmile Creek near Canon City, CO	--	1,620
382750	1051331	Northeast Canon City Drainage Basin Creek at Canon City, CO	--	350
382752	1051311	Orchard Avenue Drainage Basin Creek at Canon City, CO	--	642

Listed below are partial-record sites established to monitor seepage from Teller Reservoir on Fort Carson Military Reservation.

DISCHARGE MEASUREMENTS MADE AT PARTIAL-RECORD SITES DURING WATER YEAR 1991

Station no.	Stream	Tributary to	Location	Date	Discharge (ft ³ /s)
ARKANSAS RIVER BASIN					
3826261044943	Teller Reservoir Seepage No. 1 near Stone City Co.	Turkey Creek	Lat 38°26'26", long 104°49'43",	10-03-90	0.002
			in NW¼SW¼ sec.31, T.18 S.,	11-14-90	0.002
			Pueblo County, at right	02-22-91	0.002
			downstream toe of Teller Dam	05-21-91	0.002
3826281044940	Teller Reservoir Seepage No. 2 near Stone City, Co.	Turkey Creek	Lat 38°26'28", long 104°49'40"	10-03-90	0.02
			in NW¼SE¼ sec.36, T.18 S.,	11-14-90	0.02
			Pueblo County, 500 ft	02-22-91	0.008
			downstream of right toe of Teller Dam.	05-21-91	0.006

SUPPLEMENTAL WATER-QUALITY DATA FOR GAGING STATIONS

MISCELLANEOUS STATION ANALYSES

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
06614800 MICHIGAN RIVER NEAR CAMERON PASS, CO (LAT 40 29 46N LONG 105 51 52W)									
OCT 1990					MAY 1991				
29...	1400	0.960	55	1.0	29...	1025	12.3	--	1.5
NOV					JUN				
15...	1215	0.730	52	2.5	13...	1345	24.9	31	1.5
JAN 1991					JUL				
15...	1310	0.160	52	0.0	17...	1030	4.54	--	3.5
APR					AUG				
05...	1050	0.410	52	1.5	29...	1405	1.49	48	13.5
26...	1230	0.300	52	1.5					
06699005 TARRYALL CREEK BELOW ROCK CREEK NEAR JEFFERSON, CO (LAT 39 17 13N LONG 105 41 43W)									
OCT 1990					MAY 1991				
23...	0950	30.5	146	1.0	31...	0935	77.0	205	6.5
NOV					JUL				
19...	1110	25.0	176	0.5	11...	1020	77.5	137	14.0
JAN 1991					11...	1100	77.5	137	14.0
02...	1310	3.44	156	0.0	AUG				
MAR					26...	1130	39.0	111	14.0
18...	1320	11.4	161	0.0					
APR									
30...	1125	17.9	183	4.0					
06709000 PLUM CREEK NEAR SEDALIA, CO. (LAT 39 26 19N LONG 104 58 56W)									
OCT 1990					MAR 1991				
26...	1230	8.33	413	15.0	29...	1130	14.5	403	6.0
NOV					MAY				
23...	1140	11.7	447	8.0	06...	1210	40	314	16.0
DEC					16...	1323	57	293	14.0
26...	1035	4.39	446	0.0	SEP				
FEB 1991					13...	1030	2.96	444	17.5
25...	1215	8.0	380	0.0					
06709530 PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO (LAT 39 30 27N LONG 105 01 23W)									
OCT 1990					JUN 1991				
16...	0940	3.27	419	4.5	14...	1116	71.3	240	23.0
NOV					20...	1110	31.8	268	19.5
23...	1350	12.2	459	9.0	25...	1105	22.4	292	20.0
FEB 1991					JUL				
25...	1440	8.79	408	0.5	02...	0900	2.92	324	18.0
MAR					09...	0950	1.15	373	22.0
29...	1325	15.0	423	4.0	24...	1000	16.0	372	18.5
MAY					25...	0855	14.5	145	--
06...	1400	40.2	348	21.0	AUG				
16...	1520	60.1	307	19.0	07...	0930	26.3	360	18.0
					12...	1430	9.14	369	23.0
06710245 SOUTH PLATTE RIVER AT UNION AVE AT ENGLEWOOD, CO (LAT 39 37 52N LONG 105 00 50W)									
NOV 1990					MAY 1991				
05...	1150	197	415	10.0	10...	1055	48.0	504	17.5
29...	1330	28.2	742	6.0	JUL				
MAR 1991					18...	1350	49.0	502	27.0
21...	1415	11.6	1060	14.0					
APR									
16...	1415	132	432	12.5					

MISCELLANEOUS STATION ANALYSES

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
06710385 BEAR CREEK ABOVE EVERGREEN, CO (LAT 39 37 58N LONG 105 19 59W)									
OCT 1990					MAY 1991				
19...	1155	30.9	60	4.5	09...	1400	40.1	62	8.5
NOV					JUN				
20...	1415	24.9	--	2.0	20...	1140	112	53	11.5
DEC					AUG				
21...	0805	12.7	--	0.0	01...	1320	65.6	49	14.0
JAN 1991					05...	1403	103	53	13.5
30...	1040	12.4	77	0.0	SEP				
FEB					25...	1520	40.1	54	9.5
25...	1027	8.60	76	0.5					
APR									
01...	1310	15.8	84	8.5					
06710605 BEAR CREEK ABOVE BEAR CREEK LAKE NEAR MORRISON, CO (LAT 39 39 08N LONG 105 10 23W)									
OCT 1990					MAY 1991				
18...	1440	17.0	138	6.5	06...	1330	22.2	190	13.5
JAN 1991					JUN				
30...	1413	10.6	327	0.5	20...	1510	93.6	--	--
FEB					JUL				
25...	1201	11.3	283	0.5	12...	0830	51.4	92	16.0
MAR					AUG				
28...	1318	4.01	250	11.0	02...	1500	47.9	87	18.0
06712000 CHERRY CREEK NEAR FRANKTOWN, CO (LAT 39 21 21N LONG 104 45 46W)									
OCT 1990					JUN 1991				
26...	1016	4.96	217	5.0	20...	1450	3.18	250	22.0
NOV					JUL				
23...	0915	4.84	212	1.0	09...	1410	1.74	260	23.0
FEB 1991					AUG				
25...	1011	8.04	214	0.0	07...	1310	4.16	254	21.5
MAR					SEP				
29...	0925	8.51	218	4.0	13...	1355	2.33	206	15.0
MAY									
06...	1005	6.56	235	10.0					
16...	1002	4.48	224	9.0					
06713000 CHERRY CREEK BELOW CHERRY CREEK LAKE, CO (LAT 39 39 12N LONG 104 51 41W)									
OCT 1990					JUN 1991				
25...	1145	10.7	786	10.5	14...	1145	23.1	902	20.0
NOV					28...	1055	3.66	900	24.0
15...	1405	18.2	720	6.5	JUL				
APR 1991					01...	1214	6.75	906	23.0
23...	1600	14.7	892	12.0	08...	1110	18.1	895	22.5
MAY					17...	1025	8.37	874	23.0
01...	0939	11.3	902	10.0	AUG				
					08...	1015	14.9	886	22.0
06713300 CHERRY CREEK AT GLENDALE, CO (LAT 39 42 22N LONG 104 56 15W)									
OCT 1990					MAY 1991				
22...	1125	11.8	1190	11.5	15...	1110	5.26	1430	14.0
NOV					21...	1530	345	913	17.0
19...	1410	7.10	1380	12.0	JUN				
DEC					19...	1010	12.8	1140	17.5
19...	1110	6.53	1380	2.0	JUL				
JAN 1991					17...	1345	14.7	1110	27.5
15...	1125	4.62	1500	5.0	AUG				
FEB					14...	1125	28.9	1030	21.5
20...	1110	2.80	1560	10.0	SEP				
MAR					18...	1235	14.0	1220	13.0
20...	1040	2.14	1540	12.0					
APR									
17...	1110	3.21	1550	15.0					

MISCELLANEOUS STATION ANALYSES

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
06713500 CHERRY CREEK AT DENVER, CO (LAT 39 44 58N LONG 105 00 08W)									
OCT 1990					APR 1991				
24...	1210	20.0	967	14.5	16...	1045	7.1	1210	12.5
NOV					MAY				
19...	1035	13.8	1210	11.0	14...	1100	10.2	1100	17.0
DEC					JUN				
17...	1220	13.5	1320	10.0	20...	1015	17.4	1050	19.0
JAN 1991					JUL				
14...	1155	11.0	1320	10.0	18...	1110	21.6	1020	23.0
FEB					AUG				
19...	1145	8.68	1280	10.5	12...	1205	35.5	986	19.0
MAR					SEP				
19...	1040	8.37	1250	13.0	20...	1135	22.7	1160	--
06714215 SOUTH PLATTE RIVER AT 64TH STREET AT COMMERCE CITY, CO (LAT 39 48 44N LONG 104 57 28W)									
OCT 1990					JUN 1991				
02...	1355	19.2	980	17.0	10...	1415	33.0	914	21.5
31...	0925	8.33	1250	13.5	JUL				
NOV					05...	1515	394	639	26.0
20...	1250	7.53	210	13.0	AUG				
DEC					19...	1145	256	877	20.5
26...	1335	11.8	1490	6.0	SEP				
APR 1991					20...	1230	8.94	1730	21.0
09...	1020	21.4	1510	12.5					
MAY									
22...	1430	282	578	19.0					
06720820 BIG DRY CREEK AT WESTMINSTER, CO (LAT 39 54 20N LONG 105 02 04W)									
NOV 1990					JUL 1991				
01...	1210	1.68	1460	9.0	08...	1130	27.0	471	23.0
DEC					AUG				
28...	1335	0.61	2750	0.0	13...	0950	20.8	499	17.5
MAR 1991					SEP				
21...	1310	1.12	--	10.5	27...	1435	12.8	496	18.5
MAY									
02...	1310	3.61	1170	17.5					
17...	1510	49.0	--	19.0					
31...	1220	33.9	407	16.5					
06721500 NORTH ST. VRAIN CREEK NEAR ALLENS PARK, CO (LAT 40 13 07N LONG 105 31 57W)									
OCT 1990					APR 1991				
25...	1147	19.5	22	6.0	29...	1337	9.93	27	7.0
NOV					MAY				
19...	1017	12.7	24	2.0	13...	1355	57	21	8.0
DEC					JUN				
18...	1140	7.95	26	0.0	18...	1045	243	15	7.0
FEB 1991					JUL				
19...	0945	4.42	29	0.0	22...	1145	76.0	16	12.0
MAR					AUG				
25...	1005	9.48	27	--	12...	1250	60.4	18	11.0
06725450 ST. VRAIN CREEK BELOW LONGMONT, CO (LAT 40 09 29N LONG 105 00 53W)									
OCT 1990					MAY 1991				
30...	1115	42.0	1320	13.5	17...	1300	54.6	1280	19.5
DEC					30...	1340	94.1	900	21.0
28...	1145	20.2	1320	0.0	JUL				
MAR 1991					01...	1440	114	1540	24.5
18...	1620	32.7	1580	15.0	AUG				
APR					21...	1015	146	1170	18.5
22...	1615	45.6	880	19.5	SEP				
					19...	1015	120	1530	14.0

MISCELLANEOUS STATION ANALYSES

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
06726900 BUMMERS GULCH NEAR EL VADO, CO (LAT 40 00 42N LONG 105 20 53W)									
OCT 1990					MAY 1991				
31...	1438	0.260	519	9.5	13...	1100	0.290	482	10.5
31...	1500	0.260	519	9.5	28...	1225	0.570	355	13.5
JAN 1991					JUL				
01...	1500	0.220	490	1.5	02...	1530	0.410	551	14.5
MAR					AUG				
20...	1045	0.320	284	5.5	08...	1100	0.790	537	14.5
APR					SEP				
15...	1210	0.360	463	6.5	16...	1245	0.280	709	9.5
06727500 FOURMILE CREEK AT ORODELL, CO (LAT 40 01 06N LONG 105 19 33W)									
OCT 1990					MAY 1991				
31...	1315	1.22	276	9.5	13...	1400	10.1	118	13.0
31...	1350	1.22	276	9.5	28...	1450	24.1	86	11.5
JAN 1991					JUL				
01...	1335	0.850	300	0.0	03...	1025	4.92	258	14.5
MAR					AUG				
20...	1445	0.970	428	10.0	08...	1220	5.23	392	15.5
APR					SEP				
15...	1400	2.22	284	11.0	16...	1515	1.41	455	13.5
06730200 BOULDER CREEK AT NORTH 75TH STREET NEAR BOULDER, CO (LAT 40 03 06N LONG 105 10 42W)									
OCT 1990					MAY 1991				
31...	1130	34.6	785	18.5	15...	1130	50.3	854	17.5
JAN 1991					29...	1500	131	613	17.0
01...	1130	46.3	--	6.5	JUL				
MAR					02...	1250	194	768	21.0
18...	1225	30.7	770	15.0	AUG				
APR					22...	1440	118	992	22.0
22...	1300	36.0	652	17.5	SEP				
					19...	1500	53.9	716	18.5
06746095 JOE WRIGHT CREEK ABOVE JOE WRIGHT RESERVOIR, CO (LAT 40 32 24N LONG 105 52 56W)									
OCT 1990					APR 1991				
30...	1020	3.59	66	0.5	04...	1505	1.25	80	0.0
NOV					25...	1555	1.17	83	0.5
15...	1500	3.35	68	0.5	MAY				
DEC					29...	1200	45.8	--	1.5
14...	1450	1.32	50	0.0	JUL				
FEB 1991					17...	1230	16.8	--	4.0
21...	1420	1.21	99	0.0	AUG				
					29...	0935	6.99	56	6.5
06746110 JOE WRIGHT CREEK BELOW JOE WRIGHT RESERVOIR, CO (LAT 40 33 43N LONG 105 52 09W)									
OCT 1990					MAY 1991				
30...	1055	0.950	46	0.5	16...	0920	1.01	54	0.5
NOV					29...	1415	5.18	--	2.0
16...	0855	0.740	44	0.5	JUN				
JAN 1991					13...	1050	118	43	3.5
15...	1540	0.530	29	0.0	JUL				
FEB					17...	1415	18.1	--	4.5
21...	1205	0.740	70	0.0	AUG				
APR					29...	1115	1.29	40	6.0
04...	1310	0.170	58	1.0					
25...	1335	0.400	61	1.0					

MISCELLANEOUS STATION ANALYSES

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07093740 BADGER CREEK, UPPER STATION, NEAR HOWARD, CO (LAT 38 39 25N LONG 105 48 45W)									
OCT 1990					JUL 1991				
04...	1350	0.85	416	16.0	17...	1140	0.41	393	23.5
30...	1300	1.4	431	1.5	25...	1040	3.2	423	14.0
MAR 1991					AUG				
19...	1530	3.3	--	0.0	21...	1100	0.46	420	16.5
APR 1991					28...	1025	1.2	413	14.0
23...	1330	3.6	376	12.5	SEP				
MAY					13...	1210	0.66	422	13.0
09...	1230	2.0	408	11.5					
JUN									
04...	1610	1.3	409	19.5					
25...	1400	0.15	--	20.0					
07096000 ARKANSAS RIVER AT CANON CITY, CO. (LAT 38 26 02N LONG 105 15 24W)									
NOV 1990					MAY 1991				
01...	1645	405	315	9.0	16...	1115	800	179	13.0
JAN 1991					JUN				
17...	1430	519	222	0.0	20...	1130	1780	137	15.0
MAR					JUL				
27...	0815	387	276	5.0	18...	1245	663	206	21.5
APR					AUG				
25...	1655	296	238	13.0	15...	1300	655	270	19.0
07096500 FOURMILE CREEK NEAR CANON CITY, CO (LAT 38 26 11N LONG 105 11 27W)									
OCT 1990					MAY 1991				
03...	1050	26	858	14.0	21...	1500	15	1560	16.5
NOV					JUN				
05...	1215	45	903	9.0	13...	1215	54	762	18.0
DEC					JUL				
07...	1530	15	1230	7.0	18...	0945	24	1080	18.0
JAN 1991					24...	1245	105	590	16.5
03...	1040	12	1290	--	AUG				
FEB					13...	1155	107	820	19.5
01...	1200	9.4	1340	6.0	21...	1345	112	582	21.5
22...	1015	7.6	1320	7.5					
MAR									
19...	1320	2.7	2040	13.0					
07099060 BEAVER CREEK ABOVE HIGHWAY 115 NEAR PENROSE, CO (LAT 38 29 21N LONG 104 59 49W)									
MAY 1991					JUL 1991				
10...	1400	5.9	118	10.5	29...	1350	24	93	--
JUN					31...	1120	18	98	19.0
07...	1545	102	95	16.5	AUG				
10...	1240	94	95	15.5	05...	1150	72	87	20.0
18...	1515	72	88	19.0	15...	1450	55	85	20.5
25...	1145	18	90	16.0	SEP				
					05...	1415	18	134	18.0
07099235 TURKEY CREEK NEAR STONE CITY, CO (LAT 38 26 27N LONG 104 49 31W)									
NOV 1990					MAY 1991				
14...	1400	0.05	1300	7.5	21...	1245	0.04	1380	16.5
JAN 1991					JUL				
03...	1515	0.04	1300	--	18...	1355	0.01	1330	25.0
FEB					SEP				
22...	1520	0.04	1280	7.0	18...	1435	0.01	1350	14.0
APR									
05...	1545	0.04	1230	14.0					

MISCELLANEOUS STATION ANALYSES

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
07103800 WEST MONUMENT CREEK AT AIR FORCE ACADEMY, CO (LAT 38 58 14N LONG 104 54 08W)									
OCT 1990					MAY 1991				
31...	1255	2.9	84	7.5	21...	1245	1.1	79	9.0
DEC					JUL				
04...	1345	1.7	86	1.0	02...	1505	0.70	90	14.0
JAN 1991					31...	1255	0.08	98	15.5
03...	1425	1.5	98	0.0	AUG				
FEB					29...	1215	0.27	95	14.0
11...	1225	0.01	91	1.0					
APR									
17...	1010	0.09	88	3.5					
07103990 COTTONWOOD CREEK AT MOUTH, AT PIKEVIEW, CO (LAT 38 55 41N LONG 104 38 35W)									
OCT 1990					MAY 1991				
01...	1410	4.2	604	21.0	14...	1535	2.3	575	19.5
31...	1525	3.8	629	14.0	21...	1410	2.3	558	24.5
DEC					JUL				
04...	1550	8.0	589	1.0	03...	1325	3.2	551	28.0
JAN 1991					12...	1130	6.1	489	25.5
07...	1410	5.2	607	0.0	19...	1435	2.9	543	26.0
FEB					22...	1400	6.0	545	25.0
11...	1350	6.5	613	10.5	31...	1455	2.7	547	28.5
MAR					AUG				
15...	1335	3.3	637	5.0	05...	1540	4.5	539	26.0
APR					SEP				
17...	1335	3.0	598	20.0	05...	1010	4.9	564	16.5
07105900 JIMMY CAMP CREEK AT FOUNTAIN, CO (LAT 38 41 04N LONG 104 41 17W)									
OCT 1990					MAY 1991				
24...	1535	2.0	2600	13.5	23...	1415	2.0	2400	23.5
NOV					JUN				
26...	1030	1.6	3050	6.5	25...	1430	0.73	2900	27.0
JAN 1991					JUL				
02...	1005	1.5	3150	2.5	16...	1030	1.0	2880	20.0
FEB					AUG				
05...	1315	1.3	2680	12.0	08...	1435	2.8	2370	25.0
MAR					14...	1400	1.8	2460	26.0
20...	1115	1.2	2950	15.5	SEP				
APR					17...	1335	1.1	2690	21.5
26...	1025	1.3	2950	12.5					
07105924 WOMACK DITCH NEAR FORT CARSON, CO (LAT 38 40 52N LONG 104 51 20W)									
OCT 1990					JAN 1991				
01...	1155	1.7	105	13.5	02...	1345	1.0	118	2.5
24...	1340	1.7	98	7.0	FEB				
NOV					05...	1015	0.80	122	1.5
26...	1330	1.3	104	4.0					
07105945 ROCK CREEK ABOVE FORT CARSON RESERVATION, CO (LAT 38 42 26N LONG 104 50 47W)									
OCT 1990					MAY 1991				
01...	1030	0.69	165	12.0	23...	1325	1.1	102	13.5
24...	1245	0.67	154	7.0	JUN				
NOV					18...	1540	1.6	114	17.5
26...	1430	0.34	153	6.0	JUL				
JAN 1991					16...	1210	0.16	147	18.0
02...	1505	0.31	150	0.5	AUG				
FEB					09...	1340	6.6	112	14.0
05...	1205	0.35	142	1.0	SEP				
MAR					04...	1420	35	96	14.0
20...	1310	0.38	158	6.5	16...	1210	3.1	115	10.5
APR									
25...	1415	1.0	137	10.5					

MISCELLANEOUS STATION ANALYSES

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07105950 ROCK CREEK NEAR FORT CARSON, CO (LAT 38 41 49N LONG 104 49 39W)									
JUN 1991					SEP 1991				
18...	1430	0.39	220	14.5	04...	1525	24	101	14.5
AUG					16...	1115	0.29	212	14.0
09...	1205	2.5	162	16.5					
07106300 FOUNTAIN CREEK NEAR PINON, CO (LAT 38 26 50N LONG 104 35 28W)									
OCT 1990					JUN 1991				
05...	1120	52	1150	15.0	03...	1405	57	1100	24.0
NOV					07...	1240	379	675	19.0
01...	1255	82	1170	10.5	11...	1405	187	740	24.0
14...	1005	120	1070	6.5	24...	1525	70	1010	28.5
DEC					JUL				
03...	1120	105	1110	0.0	03...	0940	26	1170	21.0
12...	0955	72	1200	3.0	08...	1155	6.7	1390	24.0
JAN 1991					12...	1555	113	760	27.0
02...	1305	142	1130	0.0	16...	1415	14	1220	32.5
14...	0950	121	1080	0.0	24...	1215	86	935	18.5
FEB					26...	1205	225	605	21.5
21...	1155	107	1080	7.0	AUG				
MAR					06...	1150	258	630	22.5
20...	1225	110	1100	11.0	09...	1155	396	480	20.5
APR					12...	1145	120	930	24.0
03...	1215	103	970	14.0	22...	1245	82	1000	25.5
17...	1105	30	1200	12.0	SEP				
MAY					06...	1130	110	860	20.0
03...	1140	32	1200	16.5	16...	1335	39	1100	22.5
08...	1520	72	1090	23.5	25...	1235	38	1150	20.0
21...	1125	47	1090	18.0					
23...	1430	48	1110	25.0					
07108900 ST. CHARLES RIVER AT VINELAND, CO (LAT 38 14 44N LONG 104 29 09W)									
OCT 1990					MAY 1991				
05...	1130	18	1560	16.0	24...	1300	13	2350	19.5
25...	1340	24	1340	13.0	JUN				
NOV					07...	1540	28	1390	20.5
08...	1550	24	1420	7.5	10...	1515	13	2100	26.0
DEC					14...	1400	10	2380	25.0
10...	1500	22	1380	6.0	JUL				
JAN 1991					09...	1540	7.3	1920	30.0
02...	1515	18	--	0.0	10...	1325	5.1	1970	27.5
FEB					SEP				
20...	1000	8.1	2190	4.0	17...	1430	13	1920	21.5
APR									
03...	1205	6.5	2470	14.5					
07116500 HUERFANO RIVER NEAR BOONE, CO (LAT 38 13 33N LONG 104 15 40W)									
OCT 1990					APR 1991				
25...	1200	5.0	2340	16.0	03...	1015	3.9	5260	13.5
NOV					22...	1245	2.2	5630	24.5
08...	1400	13	1450	10.0	MAY				
20...	1135	1.1	5350	11.5	23...	1500	1.4	6710	25.5
DEC					JUL				
06...	1105	0.79	5500	0.5	09...	1400	58	1290	22.5
FEB 1991					AUG				
06...	1420	7.7	3450	10.0	06...	1230	248	1080	24.5
20...	1200	2.8	5190	10.5	07...	1420	21	1480	31.0
MAR					21...	1005	59	1200	20.0
21...	1030	2.4	5620	10.0					

MISCELLANEOUS STATION ANALYSES

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07119500 APISHAPA RIVER NEAR FOWLER, CO (LAT 38 05 28N LONG 103 58 52W)									
OCT 1990					MAY 1991				
02...	1355	5.3	2420	17.5	23...	1245	2.3	2940	22.0
NOV					JUN				
08...	1100	21	1420	5.5	05...	1335	9.1	1800	24.0
DEC					JUL				
05...	1420	4.3	2900	7.5	02...	1555	738	893	14.5
JAN 1991					09...	1315	146	1270	24.5
02...	1105	3.3	3000	3.0	10...	1515	28	1520	26.5
FEB					12...	1500	9.0	1990	25.5
20...	1435	2.2	2940	11.5	SEP				
MAR					27...	1530	5.8	2410	19.5
20...	1350	18	1290	12.0					
07119700 ARKANSAS RIVER AT CATLIN DAM, NEAR FOWLER, CO. (LAT 38 07 33N LONG 103 54 41W)									
OCT 1990					JUN 1991				
23...	1315	738	1080	13.0	11...	1430	1850	676	23.0
DEC					JUL				
18...	0945	465	1510	0.0	23...	1600	948	594	23.0
MAR 1991					AUG				
28...	1630	112	1020	13.5	16...	1130	1480	636	23.0
APR					SEP				
16...	1340	109	1210	13.0	04...	1445	1420	719	21.0
MAY									
21...	1110	222	902	18.0					
07121500 TIMPAS CREEK AT MOUTH NEAR SWINK, CO (LAT 38 00 10N LONG 103 39 18W)									
OCT 1990					APR 1991				
24...	1430	161	1450	12.0	25...	1045	34	2480	15.0
NOV					MAY				
15...	1400	69	1880	11.0	23...	1230	34	1800	20.0
DEC					JUN				
14...	1330	18	3100	9.5	20...	1110	46	1690	20.0
JAN 1991					JUL				
18...	1240	14	3200	8.5	11...	1335	43	1980	23.0
FEB					AUG				
22...	1145	27	2220	8.5	20...	1010	141	1240	20.0
MAR									
20...	1435	98	1410	11.0					
07122400 CROOKED ARROYO NEAR SWINK, CO (LAT 37 58 56N LONG 103 35 52W)									
OCT 1990					APR 1991				
22...	1635	5.1	2820	16.0	25...	1255	3.4	3150	16.0
NOV					MAY				
15...	1200	14	1680	10.0	23...	1040	8.2	1760	17.0
DEC					JUN				
14...	1515	3.8	2850	10.0	20...	1310	6.0	2290	21.0
JAN 1991					JUL				
18...	1500	2.6	3310	8.0	25...	1330	13	1730	20.0
FEB					AUG				
22...	1245	2.0	3310	9.0	22...	1225	22	1360	22.0
MAR									
20...	1235	19	1430	9.5					
07123000 ARKANSAS RIVER AT LA JUNTA, CO. (LAT 37 59 26N LONG 103 31 55W)									
OCT 1990					MAY 1991				
24...	0930	474	1420	9.5	21...	1330	100	1970	23.5
DEC					JUN				
18...	1110	113	2570	3.0	12...	0945	1020	978	21.5
MAR 1991					JUL				
29...	0735	74.9	2150	5.0	24...	0940	511	999	19.5
APR					AUG				
17...	0810	40	2580	7.5	16...	1420	417	944	26.0

MISCELLANEOUS STATION ANALYSES

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
07124200 PURGATOIRE RIVER AT MADRID, CO (LAT 37 07 46N LONG 104 38 20W)									
NOV 1990					MAY 1991				
05...	1315	38	--	8.5	31...	1140	160	222	15.0
JAN 1991					JUL				
15...	1345	20	339	0.0	16...	1225	76	336	--
FEB					23...	1520	222	333	19.5
12...	1445	24	368	--	26...	1255	247	306	17.0
MAR					AUG				
14...	1245	19	413	5.5	22...	1255	183	320	19.0
APR					SEP				
10...	1640	32	341	14.5	20...	1115	80	332	12.5
07124410 PURGATOIRE RIVER BELOW TRINIDAD LAKE, CO (LAT 37 08 37N LONG 104 32 49W)									
MAY 1991					SEP 1991				
08...	1350	157	404	11.0	20...	1340	7.8	339	15.0
07133000 ARKANSAS RIVER AT LAMAR, CO (LAT 38 06 24N LONG 102 37 04W)									
OCT 1990					APR 1991				
24...	1140	5.2	3430	14.0	23...	1640	33	3350	18.0
NOV					MAY				
13...	1710	30	3870	13.0	21...	1645	5.5	3880	24.0
DEC					JUN				
11...	1655	25	4260	8.0	26...	1100	507	2040	21.0
JAN 1991					JUL				
16...	1020	23	4320	3.5	24...	1050	24	2650	18.0
FEB					AUG				
27...	1250	5.2	4170	12.0	21...	1220	18	3260	25.5
MAR									
26...	1655	4.0	3930	15.0					
07134180 ARKANSAS RIVER NEAR GRANADA, CO (LAT 38 05 44N LONG 102 18 37W)									
OCT 1990					APR 1991				
24...	0940	26	4470	11.5	24...	0845	4.7	4900	11.5
NOV					MAY				
14...	0920	87	4120	8.0	22...	0830	4.8	5040	15.5
DEC					JUN				
12...	0845	90	4230	4.0	26...	0835	381	2230	20.5
JAN 1991					JUL				
16...	0830	93	4100	3.0	24...	0815	9.0	4700	16.0
FEB					AUG				
27...	1020	67	4270	7.0	21...	0920	16	3480	21.0
MAR									
27...	0900	4.4	5040	9.5					
08217500 RIO GRANDE AT WAGONWHEEL GAP, CO (LAT 37 46 01N LONG 106 49 51W)									
NOV 1990					MAY 1991				
15...	1345	175	95	0.5	21...	1410	2530	58	6.5
DEC					JUN				
12...	1455	159	--	1.5	19...	1605	1990	47	10.0
JAN 1991					AUG				
24...	1300	106	116	0.0	02...	0915	356	82	13.0
FEB					SEP				
27...	1225	124	122	0.0	05...	1000	295	90	13.0
APR									
02...	1530	162	105	6.5					
24...	1300	789	98	5.5					

EL PASO COUNTY

384056104415601 - SC01606505CCB - FOUNTAIN NO. 3

LOCATION.--Lat 38°40'56", long 104°41'56" in NW¼SW¼SW¼ sec.5, T.16 S., R.65 W., El Paso County, Hydrologic Unit 11020003

AQUIFER.--Fountain Creek Alluvial Aquifer.

WELL CHARACTERISTICS.--Municipal well, diameter 16 in, depth 53 ft, screened 38 to 53 ft.

PERIOD OF RECORD.--March 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1045	1050	7.6	13.0	<0.01	1.0	0.03	0.02
FEB 13...	0935	995	7.4	13.0	<0.01	1.1	0.01	0.01
MAY 09...	0930	1010	7.3	12.5	<0.01	1.6	0.03	0.02
AUG 08...	0915	1130	7.0	12.5	--	--	--	--

384108104420701 - SC01606506DAA - FOUNTAIN NO. 2

LOCATION.--Lat 38°41'08", long 104°42'07", NE¼NE¼SE¼ sec.6, T.16 S., R.65 W., in El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Fountain Creek Alluvial Aquifer.

WELL CHARACTERISTICS.--Municipal well, diameter 16 in, depth 57 ft, screened 42 to 57 ft.

PERIOD OF RECORD.--March 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1100	1170	7.6	12.5	<0.01	3.2	0.03	0.01
FEB 13...	0950	1240	7.3	12.5	<0.01	2.9	<0.01	0.02
MAY 09...	0945	1240	7.2	12.5	<0.01	3.5	0.01	0.02
AUG 08...	0935	1260	7.0	12.0	--	--	--	--

EL PASO COUNTY

384313104431801 - SC01506625AAD - WIDEFIELD NO. 14.

LOCATION.--Lat 38°43'13", long 104°43'18", in SE¼NE¼NE¼ sec.25, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widefield Aquifer of Fountain Creek Alluvium.

WELL CHARACTERISTICS.--Municipal well, diameter 18 in, depth 48 ft, screened 37 to 48 ft.

PERIOD OF RECORD.--January 1982 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1140	1410	7.4	14.0	0.03	11	0.03	0.03
FEB 13...	1020	1370	7.4	14.0	<0.01	11	<0.01	0.03
MAY 09...	1020	1310	7.4	13.5	<0.01	9.8	0.01	0.04
AUG 09...	1105	1160	7.3	13.0	--	--	--	--

384318104475301 - SC01506629AAB1 - GOLF COURSE NO. 19

LOCATION.--Lat 38°43'18", long 104°47'53", in NW¼NE¼NE¼ sec.29, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on Fort Carson Military Reservation.

AQUIFER.--Piney Creek Alluvium.

WELL CHARACTERISTICS.--Observation well, diameter 2 in, depth 13.8 ft, screened 9.5 to 13.5 ft.

PERIOD OF RECORD.--April to October 1981; September 1986 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
SEP 25...	1300	3.43	2480	7.3	14.0	0.01	2.4	0.02	0.30

EL PASO COUNTY

384328104481101 - SC01506620CDD1 - GOLF COURSE NO. 14

LOCATION.--Lat 38°43'28", long 104°48'11", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.20, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on Fort Carson Military Reservation.

AQUIFER.--Piney Creek Alluvium.

WELL CHARACTERISTICS.--Observation well, diameter 2 in, depth 12.2 ft, screened 8 to 12 ft.

PERIOD OF RECORD.--April 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
SEP 25...	1235	7.72	4840	7.2	14.0	0.03	3.3	0.03	0.90

384331104473401 - SC01506621CCB - GOLF COURSE NO. 22

LOCATION.--Lat 38°43'31", long 104°47'34", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.21, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on Fort Carson Military Reservation.

AQUIFER.--Piney Creek Alluvium.

WELL CHARACTERISTICS.--Observation well, diameter 2 in, depth 18.2 ft, screened 14 to 18 ft.

PERIOD OF RECORD.--September 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
SEP 25...	1315	6.83	2490	7.5	15.0	0.02	4.1	0.02	0.70

EL PASO COUNTY

384407104434801 - SC01506624BAD1 WIDEFIELD NO. 4.

LOCATION.--Lat 38°44'07", long 104°43'48", in SE¼NE¼NE¼ sec.24, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widefield Aquifer of Fountain Creek Alluvium.

WELL CHARACTERISTICS.--Municipal well, diameter 16 in, depth 71 ft, screened 41 to 71 ft.

DATUM.--Elevation of land surface is 5,685 ft above National Geodetic Vertical Datum of 1929, from topographic map.

PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1230	676	7.3	13.5	0.03	7.2	0.02	0.01
FEB 13...	1100	673	7.2	13.0	<0.01	6.4	<0.01	0.02
MAY 09...	1100	693	7.2	13.0	<0.01	6.9	0.01	0.02
AUG 09...	1015	696	7.1	13.5	--	--	--	--

384458104442601 - SC01506614AAD - SECURITY NO. 2.

LOCATION.--Lat 38°44'58", long 104°44'26", in SE¼NE¼NE¼ sec.14, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widefield Aquifer of Fountain Creek Alluvium.

WELL CHARACTERISTICS.--Municipal well, diameter 24 in, depth 78 ft, screened 43 to 78 ft.

DATUM.--Elevation of land-surface is 5,270 ft above National Geodetic Vertical Datum of 1929, from topographic map.

PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1315	583	7.1	13.5	<0.01	8.9	0.02	<0.01
FEB 13...	1145	566	7.1	13.5	<0.01	8.2	<0.01	0.02
MAY 09...	1140	534	7.1	14.0	<0.01	8.3	0.01	0.02
AUG 08...	1339	500	7.1	13.5	--	--	--	--

EL PASO COUNTY

384535104450801 - SC01506611BCD2 VENETUCCI NO. 3.

LOCATION.--Lat 38°45'35", long 104°45'08", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.11, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widefield Aquifer of Fountain Creek Alluvium.

WELL CHARACTERISTICS.--Irrigation well, diameter 24 in, depth 80 ft, screening unknown.

PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1410	425	7.3	13.5	<0.01	8.9	0.02	0.05
FEB 13...	1240	429	7.2	13.0	<0.01	8.6	<0.01	0.05
MAY 09...	1225	417	7.2	13.0	<0.01	8.9	0.01	0.05
AUG 06...	1405	430	7.0	13.5	--	--	--	--

384610104453501 - SC01506603DDB SECURITY NO. 14.

LOCATION.--Lat 38°46'10", long 104°45'35", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.14, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widefield Aquifer of Fountain Creek Alluvium.

WELL CHARACTERISTICS.--Municipal well, diameter 24 in, depth 80 ft, screened 39 to 80 ft.

DATUM.--Elevation of land-surface is 5,780 ft above National Geodetic Vertical Datum of 1929, from topographic map.

PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1345	640	7.7	13.5	<0.01	7.0	0.02	0.05
FEB 13...	1205	636	7.6	13.5	<0.01	6.8	<0.01	0.05
MAY 09...	1200	634	7.5	14.0	<0.01	6.8	0.01	0.05
AUG 08...	1447	644	7.3	13.5	--	--	--	--

EL PASO COUNTY

384617104455901 - SC01506603CAD STRATMOOR HILLS NO. 4.

LOCATION.--Lat 38°46'17", long 104°45'59", in SE¼NE¼SW¼ sec.3, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widfield Aquifer of Fountain Creek Alluvium.

WELL CHARACTERISTICS.--Municipal well, diameter 16 in, depth 49 ft, screened 29 to 49 ft.

DATUM.--Elevation of land surface is 5,760 ft above National Geodetic Vertical Datum of 1929, from topographic map.

PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1440	963	7.3	13.5	<0.01	6.5	0.02	0.01
FEB 13...	1310	987	7.2	13.0	<0.01	7.1	<0.01	0.02
MAY 09...	1255	928	7.3	13.0	<0.01	7.1	0.02	0.02
AUG 08...	0828	887	6.9	13.0	--	--	--	--

384639104461401 - SC01506603BAC1 - MARS GAS

LOCATION.--Lat 38°46'39", long 104°46'14", in SW¼NE¼NW¼ sec.3, T.15 S., R.66 W., El Paso County, Hydrologic Unit 1102003

AQUIFER.--Fountain Creek Alluvial Aquifer.

WELL CHARACTERISTICS.--Commercial well, diameter 6 in, depth 85 ft, screened 50 to 85 ft.

DATUM.--Elevation of land surface is 5,820 ft above National Geodetic Vertical Datum of 1929, from topographic map.

PERIOD OF RECORD.--March 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1510	981	7.3	13.0	<0.01	8.9	0.02	<0.01
FEB 13...	1335	905	7.2	12.5	0.02	6.2	<0.01	0.01
MAY 09...	1320	902	7.2	13.0	<0.01	7.5	0.02	0.02
AUG 08...	1020	1010	6.9	13.0	--	--	--	--

EL PASO COUNTY

384718104463701 - SC01406633DAA - BARNES WELL

LOCATION.--Lat 38°47'18", long 104°46'37", in NE¼NE¼SE¼ sec.33, T.14 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Fountain Creek Alluvial Aquifer.

WELL CHARACTERISTICS.--Domestic well, diameter 6 in, depth 72 ft, screening unknown.

PERIOD OF RECORD.--March 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1540	1330	7.4	13.5	<0.01	13.0	0.03	<0.01
FEB 13...	1405	1240	7.3	13.0	0.07	11.0	<0.01	0.02
MAY 09...	1340	1300	7.3	13.5	<0.01	12.0	0.02	0.02
AUG 08...	1045	1340	7.4	14.0	--	--	--	--

385323104224001 - SC01306230ACC1

LOCATION.--Lat 38°53'23", long 104°22'40", in SW¼SW¼NE¼ sec.30, T.13 S., R.62 W., El Paso County, Hydrologic Unit 11020004.

AQUIFER.--Black Squirrel Alluvial Aquifer.

WELL CHARACTERISTICS.--Public-supply well, diameter 16 in, depth 176 ft, screened 116 to 176 ft.

DATUM.--Elevation of land surface is 6,160 ft above National Geodetic Vertical Datum of 1929, from topographic map

PERIOD OF RECORD.--February 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV 13...	1645	408	7.4	12.5	<0.01	7.0	0.02	0.03
FEB 13...	1515	412	7.3	12.0	<0.01	7.6	<0.01	0.04
MAY 09...	1505	402	7.2	12.5	<0.01	7.8	0.02	0.04
AUG 16...	1350	402	7.2	12.5	<0.01	7.3	<0.01	0.04

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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).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1 2.54×10^{-2}	millimeters (mm) meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3 4.047×10^{-1} 4.047×10^{-3}	square meters (m ²) square hectometers (hm ²) square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0 3.785×10^0 3.785×10^{-3}	liters (L) cubic decimeters (dm ³) cubic meters (m ³)
million gallons	3.785×10^3 3.785×10^{-3}	cubic meters (m ³) cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1 2.832×10^{-1}	cubic decimeters (dm ³) cubic meters (m ³)
cfs-days	2.447×10^3 2.447×10^{-3}	cubic meters (m ³) cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3 1.233×10^{-3} 1.233×10^{-6}	cubic meters (m ³) cubic hectometers (hm ³) cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1 2.832×10^1 2.832×10^{-2}	liters per second (L/s) cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2} 6.309×10^{-2}	liters per second (L/s) cubic decimeters per second (dm ³ /s)
million gallons per day	6.309×10^{-5} 4.381×10^1 4.381×10^{-2}	cubic meters per second (m ³ /s) cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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