

Water Resources Data Colorado Water Year 1989

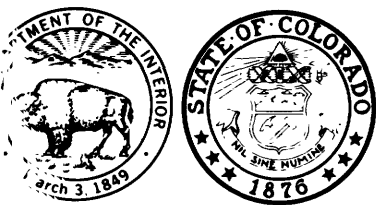
Volume 1. Missouri River Basin, Arkansas River Basin,
and Rio Grande Basin



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CO-89-1
Prepared in cooperation with the State of Colorado
and with other agencies

1988

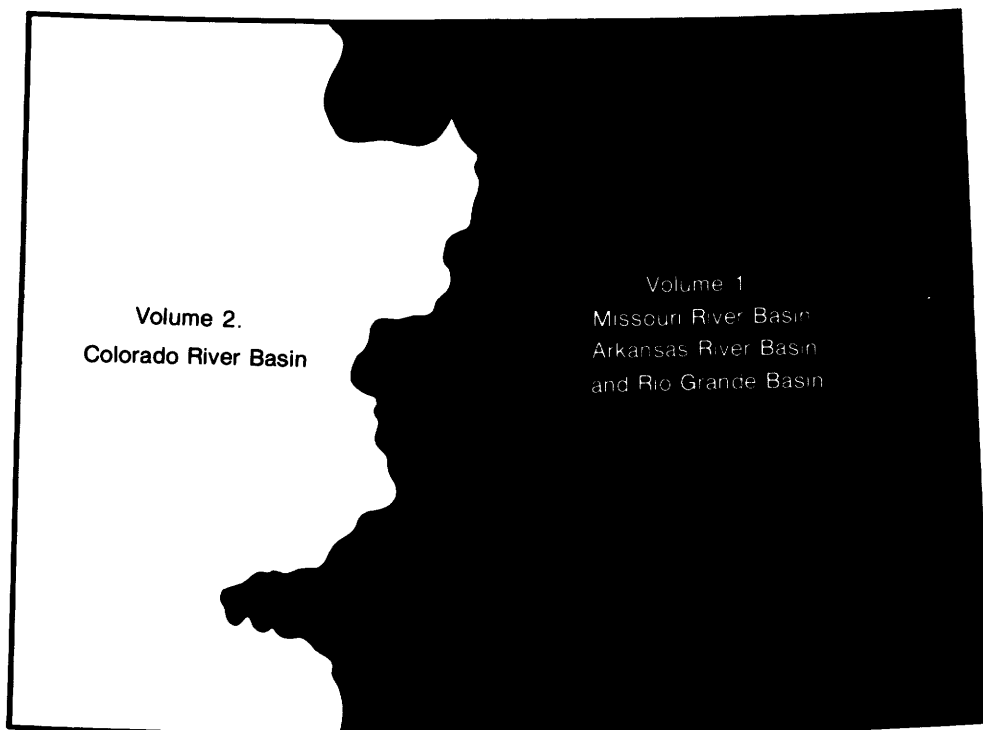
1989[illegible][illegible]



Water Resources Data Colorado Water Year 1989

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

by R.C. Ugland, B.J. Cochran, J.L. Ebling, and R.D. Steger



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CO-89-1
Prepared in cooperation with the State of Colorado
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

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

1990

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. J. Haley -	J. D. Martinez	K. G. Petty
E. J. Charbonneau	Z. D. Hill	R. M. Neam	R. L. Reed
A. C. Duncan	D. A. Johncox	G. B. O'Neill	M. A. Salay
R. L. Einarsen	R. A. Kimbrough	R. S. Parker	E. A. Trujillo
J. W. Gibbs	M. D. Klock -	W. F. Payne	L. A. Walsh
S. T. Green	J. M. Kuzmiak -	H. E. Petsch Jr.	

This report was prepared in cooperation with the State of Colorado and with other agencies under the general supervision of C. A. Pascale, District Chief, Colorado.

REPORT DOCUMENTATION PAGE		1. REPORT NO. USGS/WRD/HD-90-274	2.	3. Recipient's Accession No.
4. Title and Subtitle Water Resources Data for Colorado, Water Year 1989 Volume 1. Missouri River basin, Arkansas River basin, and Rio Grande basin.				5. Report Date March 1990
7. Author(s) R.C. Ugland, B.J. Cochran, J.L. Ebling, and R.D. Steger				6.
9. Performing Organization Name and Address U.S. Geological Survey, Water Resources Division Box 25046, Mail Stop 415 Denver Federal Center Lakewood, CO 80225				8. Performing Organization Rept. No. USGS-WDR-CO-89-1
12. Sponsoring Organization Name and Address U.S. Geological Survey, Water Resources Division Box 25046, Mail Stop 415 Denver Federal Center Lakewood, CO 80225				10. Project/Task/Work Unit No.
				11. Contract(C) or Grant(G) No. (C) (G)
13. Type of Report & Period Covered Annual--Oct. 1, 1988 to Sept. 30, 1989				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 1989 water year consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs. 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 42 crest-stage partial record stations, and 1 miscellaneous site; water quality for 100 gaging stations, 162 miscellaneous sites, and for 21 observation wells. Five pertinent stations in 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 C.A. Pascale, 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				
18. Availability Statement: No restriction on distribution. This report may be purchased from: National Technical Information Service, Springfield, VA 22161		19. Security Class (This Report) Unclassified		21. No. of Pages 407
		20. Security Class (This Page) Unclassified		22. Price

CONTENTS

	Page
Preface	III
List of gaging stations, in downstream order, for which records are published	VI
Introduction	1
Cooperation	4
Overview of Hydrologic Conditions	5
Special networks and programs	13
Explanation of the records	13
Downstream order system	13
Other records available	17
Records of surface-water quality	17
Records of ground-water quality	19
Access to WATSTORE DATA	20
Definition of terms	20
Explanation of omitted data	26
Selected references	28
Discontinued Gaging Stations	30
Discontinued Continuous Water-Quality Stations	33
Publications on techniques of water-resources investigations	34
Gaging-station records	37
Transmountain diversions	371
Transmountain diversions from Colorado River basin in Colorado	371
Discharge at partial-record stations and miscellaneous sites	373
Crest-stage partial-record stations	373
Discharge and selected water-quality data at sites on Upper Fountain Creek	377
Discharge and selected water-quality data at sites on Monument Creek	383
Supplemental Water-Quality Data for Gaging Stations	390
Quality of Ground-water	399
Index	405

ILLUSTRATIONS

	Page
Figures 1-2. Map showing:	
1. Locations of lakes and stream-gaging stations and water-quality stations in Colorado	2
2. Locations of crest-stage partial-record stations in Colorado	3
3. Comparison of monthly precipitation for water year 1989 to normal monthly precipitation for the reference period 1951-80	6
4. Comparison of monthly discharges for water year 1989 to mean monthly discharges for the reference periods indicated on the individual graphs	8
5. Comparison of range and distribution of specific conductance measured during water year 1989 to long-term values	12

TABLES

	Page
Table 1. Precipitation during water year 1989 and departures from normal precipitation (1951-80), in inches	5
2. Peak discharges for water year 1989 and for the period of record at selected gaging stations	11
3. Results of Wilcoxon-Mann-Whitney rank sum tests comparing mean specific conductance of discharge for water year 1989 with mean for the period of record at selected gaging stations	11
4. Stations with previous water year data included in this report	27

VI GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

(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)

Page

MISSOURI RIVER BASIN

Missouri River:

PLATTE RIVER BASIN

North Platte River:

06614800	Michigan River near Cameron Pass (D)	37
06620000	North Platte River near Northgate (D)	38

South Platte River:

06695000	South Platte River above Elevenmile Canyon Reservoir, near Hartsel (D)	39
06696000	South Platte River near Lake George (D)	40
06697200	French Creek near Jefferson (D)	41
06699000	Rock Creek near Jefferson (D)	42
06699005	Tarryall Creek below Rock Creek, near Jefferson (D)	43
	Reservoirs in South Platte River basin (e)	44
06701500	South Platte River below Cheesman Lake (D)	45
06706000	North Fork South Platte River below Geneva Creek, at Grant (D)	46
06708750	East Plum Creek at Castle Rock (D)	47
06709500	Plum Creek near Louviers (D)	48
06709530	Plum Creek at Titan Road, near Louviers (D)	49
06709600	Chatfield Lake near Littleton (e)	50
06710245	South Platte River at Union Avenue, at Englewood (D)	51
06710385	Bear Creek above Evergreen (D)	52
06710500	Bear Creek at Morrison (D)	53
06710605	Bear Creek above Bear Creek Lake, near Morrison (D)	54
06711040	Turkey Creek above Bear Creek Lake, near Morrison (D)	55
06711500	Bear Creek at mouth, at Sheridan (D)	56
06711565	South Platte River at Englewood (DTPCO)	57
06712000	Cherry Creek near Franktown (D)	62
06712990	Cherry Creek Lake near Denver (e)	63
06713000	Cherry Creek below Cherry Creek Lake (D)	64
06713300	Cherry Creek at Glendale (D)	65
06713500	Cherry Creek at Denver (D)	66
06714000	South Platte River at Denver (D)	67
06714215	South Platte River at 64th Avenue at Commerce City (D)	68
06719505	Clear Creek at Golden (DTC)	69
06720500	South Platte River at Henderson (Dcst)	72
06720820	Big Dry Creek at Westminster (D)	75
06721500	North St. Vrain Creek near Allens Park (D)	76
06724000	St. Vrain Creek at Lyons (D)	77
06725450	St. Vrain Creek below Longmont (D)	78

Boulder Creek:

06725500	Middle Boulder Creek (head of Boulder Creek) at Nederland (D)	79
06726900	Bummers Gulch near El Vado (D)	84
06727000	Boulder Creek near Orodell (D)	85
06727500	Fourmile Creek at Orodell (D)	86
06729500	South Boulder Creek near Eldorado Springs (D)	87
06730200	Boulder Creek at North 75th Street, near Boulder (D)	88
06730500	Boulder Creek at mouth, near Longmont (Dct)	89
06731000	St Vrain Creek at mouth, near Platteville (D)	92
06733000	Big Thompson River at Estes Park (D)	93
06734900	Olympus Tunnel at Lake Estes (ctmb)	94
06735500	Big Thompson River near Estes Park (D)	96
06737500	Horsetooth Reservoir near Fort Collins (etcmb)	97
06738000	Big Thompson River at mouth of Canyon, near Drake (D)	102
06739210	Big Thompson River above Buckhorn Creek, near Loveland (ct)	103
06741480	Big Thompson River above Loveland (ct)	105
06741510	Big Thompson River at Loveland (Dtc)	107
06741520	Big Thompson River below Loveland (ct)	110
06741530	Big Thompson River at I-25, near Loveland (ct)	112
06742500	Carter Lake near Berthoud (etcmb)	114

Cache la Poudre River:

06746095	Joe Wright Creek above Joe Wright Reservoir (D)	117
06746110	Joe Wright Creek below Joe Wright Reservoir (D)	118
06751490	North Fork Cache la Poudre River at Livermore (Dcts)	119
06752000	Cache la Poudre River at mouth of Canyon, near Fort Collins (D)	123
06752258	Cache la Poudre River at Shields Street at Fort Collins (ct)	124
06752260	Cache la Poudre River at Fort Collins (DctCPT)	126
06752270	Cache la Poudre River below Fort Collins (ct)	132
06752280	Cache la Poudre River above Box Elder Creek near Timnath (Dct)	134
06752500	Cache la Poudre River near Greeley (D)	137
06754000	South Platte River near Kersey (D)	138
06758500	South Platte River near Weldona (Dct)	139
06764000	South Platte River at Julesburg (tcmsD)	142

KANSAS RIVER BASIN

Arikaree River (head of Kansas River):

06823000	North Fork Republican River at Colorado-Nebraska State line (D)	145
----------	---	-----

Republican River (continuation of Arikaree River):

Republican River (continuation of Arkansas River):		
South Fork Republican River:		
06826000	Bonny Reservoir near Hale (e)	146

LOWER MISSISSIPPI RIVER BASIN

Mississippi River:

ARKANSAS RIVER BASIN

Arkansas River:

Lake Fork:

07082400	Turquoise Lake near Leadville (e)	147
07083000	Halfmoon Creek near Malta (Dtcms)	148
07084500	Lake Creek above Twin Lakes Reservoir (D)	152
07086000	Arkansas River at Granite (D)	154
07086500	Clear Creek above Clear Creek Reservoir (D)	155

Mississippi River--Continued

ARKANSAS RIVER BASIN--Continued

Arkansas River--Continued

Lake Fork--Continued

07087200	Arkansas River at Buena Vista (DCTot)	157
07091200	Arkansas River near Nathrop (D)	161
07093700	Arkansas River near Wellsville (D)	162
07093740	Badger Creek, Upper Station, near Howard (DsS)	163
07093775	Badger Creek, Lower Station, near Howard (DsS)	167
07094500	Arkansas River at Parkdale (DCTot)	171
07095000	Grape Creek near Westcliffe (D)	175
07096000	Arkansas River at Canon City (D)	177
07096500	Fourmile Creek near Canon City (D)	178
07097000	Arkansas River at Portland (DctmCTs)	179
07099215	Turkey Creek near Fountain (D)	184
07099230	Turkey Creek above Teller Reservoir, near Stone City (D)	185
07099233	Teller Reservoir near Stone City (e)	186
07099235	Turkey Creek near Stone City (D)	187
07099350	Pueblo Reservoir near Pueblo (e)	188
07099400	Arkansas River above Pueblo (DTCot)	189
07099700	Arkansas River at Moffat Street, at Pueblo (DCT)	193
07103700	Fountain Creek near Colorado Springs (Dctms)	196
07103747	Monument Creek at Palmer Lake (Dctms)	200
07103780	Monument Creek above North Gate Boulevard, at U.S. Air Force Academy (Dctms)	204
07103800	West Monument Creek at U.S. Air Force Academy (D)	208
07103990	Cottonwood Creek at mouth at Pikeview (D)	209
07104000	Monument Creek at Pikeview (Dctms)	210
07104905	Monument Creek at Bijou Street, at Colorado Springs (ctms)	214
07105500	Fountain Creek at Colorado Springs (Dctms)	217
07105530	Fountain Creek below Janitell Road, below Colorado Springs (ctm)	221
07105780	B Ditch Drain near Security (ct)	222
07105800	Fountain Creek at Security (Ds)	223
07105820	Clover Ditch Drain near Widefield (ct)	226
07105900	Jimmy Camp Creek at Fountain (D)	227
07105905	Fountain Creek above Little Fountain Creek, below Fountain (ctm)	228
07105924	Womack Ditch near Fort Carson (D)	229
07105928	Little Fountain Creek near Fort Carson (D)	230
07105945	Rock Creek above Fort Carson Reservation (D)	231
07105950	Rock Creek near Fort Carson (D)	232
07106000	Fountain Creek near Fountain (DCTO)	233
07106300	Fountain Creek near Pinon (D)	238
07106500	Fountain Creek at Pueblo (DctmCT)	239
07108900	St. Charles River at Vineland (D)	243
07109500	Arkansas River near Avondale (DTCtCP)	244
07116500	Huerfano River near Boone (D)	251
07117000	Arkansas River near Nepesta (D)	252
07119500	Apishapa River near Fowler (D)	255
07119700	Arkansas River at Catlin Dam, near Fowler (D)	256
Timpas Creek:		
07120620	Big Arroyo near Thatcher (DC)	258
07121500	Timpas Creek at mouth, near Swink (D)	264
07122060	Fort Lyon Canal near Casa (D)	265
07122105	Fort Lyon Canal near Cornelia (D)	267
07122200	Fort Lyon Canal near Hasty (D)	269
07122350	Fort Lyon Canal near Big Bend (D)	271
07122400	Crooked Arroyo near Swink (D)	273
07123000	Arkansas River at La Junta (D)	274
07123675	Horse Creek near Las Animas (DTC)	276
07124000	Arkansas River at Las Animas (DTCtCo)	279
07124200	Purgatoire River at Madrid (D)	283
07124300	Long Canyon Creek near Madrid (D)	284
07124400	Trinidad Lake near Trinidad (e)	285
07124410	Purgatoire River below Trinidad Lake (D)	287
07126140	Van Bremer Arroyo near Tyrone (DCTot)	288
07126200	Van Bremer Arroyo near Model (DctCT)	292
07126300	Purgatoire River near Thatcher (DTSCots)	296
Taylor Arroyo:		
07126325	Taylor Arroyo below Rock Crossing near Thatcher (DctcsSCT)	302
07126390	Lockwood Canyon Creek near Thatcher (DotCT)	308
07126415	Red Rook Canyon Creek at mouth near Thatcher (DTC)	312
07126470	Chacuao Creek at Mouth, near Timpas (DsSCT)	316
07126480	Bent Canyon Creek at Mouth, near Timpas (DS)	322
07126485	Purgatoire River at Rook Crossing, near Timpas (DctcsCTS)	326
07126500	Purgatoire River at Ninemile Dam, near Higbee (D)	332
07128500	Purgatoire River near Las Animas (DTCot)	334
07130000	John Martin Reservoir at Caddoa (e)	338
07130500	Arkansas River below John Martin Reservoir (DTCot)	339
07133000	Arkansas River at Lamar (D)	343
07134180	Arkansas River near Granada (D)	344
07137000	Frontier ditch near Coolidge, KS (D)	345
07137500	Arkansas River near Coolidge, KS (Dcmts)	346
WESTERN GULF OF MEXICO BASINS		
RIO GRANDE BASIN		
08213500	Rio Grande at Thirtymile Bridge, near Creede (D)	349
08214500	North Clear Creek below Continental Reservoir (D)	350
08217500	Rio Grande at Wagonwheel Gap (D)	351
08218500	Goose Creek at Wagonwheel Gap (D)	352
08219500	South Fork Rio Grande at South Fork (D)	353
08220000	Rio Grande near Del Norte (D)	354
Closed Basin in San Luis Valley:		
08226600	Noland Gulch Tributary Reservoir Inflow near Villa Grove (D)	355
08227400	Tracy Pit Reservoir Inflow near Saguache (D)	356

WESTERN GULF OF MEXICO BASINS--Continued

RIO GRANDE BASIN--Continued

Closed Basin in San Luis Valley--Continued

La Jara Arroyo:

La Jara Arroyo tributary:

08238350	Yellow Warbler Reservoir Inflow, near Antonito (D)	357
08238380	Turkey Reservoir Inflow near Conejos (D)	358
08238400	Bobolink Reservoir near Conejos (e)	359
08240000	Rio Grande above mouth of Trinchera Creek, near Lasasues (D)	360
Conejos River:		
08244500	Platoro Reservoir at Platoro (e)	361
08245000	Conejos River below Platoro Reservoir (D)	362
08246500	Conejos River near Mogote (D)	363
08247500	San Antonio River at Ortiz (D)	364
08248000	Los Pinos River near Ortiz (D)	365
08249000	Conejos River near Lasasues (D)	366
08251500	Rio Grande near Lobatos (Dmets)	367

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

By R. C. Ugland, B. J. Cochran, R. D. Steger, and J. L. Ebling

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".

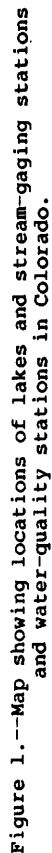
This report (Volume 1 of two volumes) includes records on both surface and ground water in the State, east of the Continental Divide. Specifically, it contains: (1) discharge records for 139 streamflow-gaging stations, and peak discharges for 37 partial-record streamflow stations; (2) stage and contents for 14 lakes and reservoirs; (3) water-quality data for 48 streamflow-gaging stations, for 2 reservoirs, for 43 ungaged stream sites, and for 14 wells. Locations of lake and streamflow-gaging stations and water-quality stations are shown in figure 1, locations of crest-stage partial-record stations are shown in figure 2. Four pertinent stations in 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 6B, 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 41, Box 25425, Denver, CO 80225.

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

Beginning with the 1971 water year, water data on streamflow, 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-89-1." 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.

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.



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:

Arkansas River Compact Administration, Jim Rodger, Secretary/Treasurer.
 Bent County Commissioners, Thomas Pointon, Chairman.
 Boulder County Public Works Department, Tim Feehan, Systems Analyst.
 Castle Pines Metro District, Paul Dannels.
 Castle Pines Northern Metro District, Paul Dannels.
 Centennial Water and Sanitation District, Rick McCloud.
 Cherokee Water and Sanitation District, F. S. Loosley, 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, Delanni Wheeler, City Manager.
 City of Colorado Springs, Jim Ringe.
 City of Englewood, Stewart Fonda, Director, Wastewater Treatment Plant.
 City of Fort Collins, G. Keith Elmund, Civil Engineer II.
 City of Glendale, Robert Taylor.
 City of Greenwood Springs, Kevin Kadlec, City Manager.
 City of Golden, Dan Hartman, Director of Public Works.
 City of Longmont, Randy Earley.
 City of Loveland, Richard Leffler.
 City of Northglenn, Kip Scott.
 City of Steamboat Springs, J. Zimmerman.
 City of Thornton, Ron Lovan, Assistant Utilities Director.
 City of Westminster, Dan Strietelmeier.
 Colorado Department of Health, Brad Beckham, Executive Director.
 Colorado Division of Mined Land Reclamation, James Pendelton, Director.
 Colorado Division of Water Resources, J. A. Danielson, State Engineer.
 Colorado River Water Conservation District, David Merritt, Secretary-Engineer.
 Colorado Springs Department of Public Utilities, J. D. Phillips, Director.
 Delta County Board of County Commissioners, David R. Erickson, Administrator.
 Denver Regional Council of Governments, Robert L. Tonsing, Chairman.
 Eagle County Board of Commissioners, James Fritze, County Manager.
 Evergreen Metropolitan District, G. C. Schulte, General Manager.
 Fountain Valley Authority, Edward Bailey.
 Garfield County, Mark Bean, Director of Administrative Services.
 Jefferson County Board of County Commissioners, Paul E. Hargrave, Director.
 Lower Fountain Water-Quality Management Association, Stuart Loosely, President.
 Metropolitan Denver Sewage Disposal District No. 1, Bob Hite, Manager.
 Moffat County, Sheila Cowash, Deputy Planner.
 Northern Colorado Water Conservancy District, L. Simpson, Secretary.
 Pikes Peak Area Council of Governments, Maurice Rahimi.
 Pitkin County Board of County Commissioners, Mark Fuller, County Development Director.
 Pueblo Board of Water Works, Alan Hamel, Executive Director.
 Pueblo County Commissioners, Solie Raso, Chairman.
 Pueblo County Department of Public Safety and Operations, Steve Douglas, Director.
 Pueblo West Metro Water District, E. M. Zamecki, Manager.
 Rio Blanco County Board of County Commissioners, Terry Lowell.
 Rio Grande Water Conservation District, Ralph Curtis, Manager.
 Southeastern Colorado Water Conservancy District, C. L. Thomson, General Manager.
 Southern Ute Indian Tribe, George Knoll, ANA/NRMP Coordinator.
 Southwestern Water Conservation District, Edward Searle, Manager.
 St. Charles Mesa Water Association, Lee Simpson, Manager.
 Town of Breckenridge, Gary Roberts, Town Manager.
 Town of Castle Rock, Phyllis Brown, Town Clerk.
 Trinchera Water Conservancy District, Charlotte Sheely, President.
 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 and Sanitation District, Bill George, General Manager.
 Upper Yampa Water Conservancy District, J. Fetcher.
 Urban Drainage and Flood Control District, L. Scott Tucker, Executive Director.
 Ute Mountain Ute Indian Tribe, Dorrance Steele.
 Vail Valley Conservation and Water Authority, David Mott.
 Yellow Jacket Water Conservancy District, F. G. Cooley, Secretary-Council.

Financial assistance was also provided by the U.S. Army, Corps of Engineers, U.S. Army; U.S. Air Force; Bureau of Land Management, Bureau of Mines, Bureau of Reclamation, National Park Service, U.S. Environmental Protection Agency, U.S. Federal Emergency Management Agency, and U.S. National Weather Service. Organizations that supplied data are acknowledged in station descriptions.

OVERVIEW OF HYDROLOGIC CONDITIONS
[East of the Continental Divide]

Prepared by Harold E. Petsch, Jr.

Precipitation

Precipitation data for water year 1989 were obtained from published reports of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Climatic 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 less than normal for October-March in all divisions except the Rio Grande Drainage Basin and was less than normal for April-September in the Arkansas and Rio Grande Drainage Basins. Precipitation was greater than normal for April-September in the Kansas and Platte Drainage Basins. For the year, the Platte and Rio Grande Drainage Basins were near normal, the Arkansas Drainage basin was 8 percent less than normal, and the and Kansas Drainage Basin was 4 percent less 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 1989 were supplemented by data obtained from the Colorado State University, Department of Atmospheric Science, Colorado Climate Center.

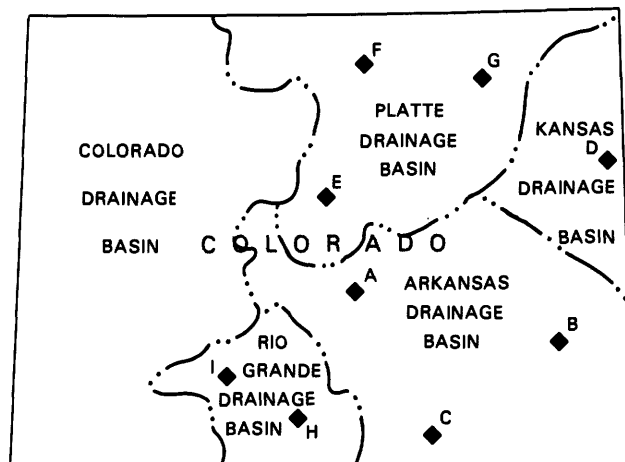
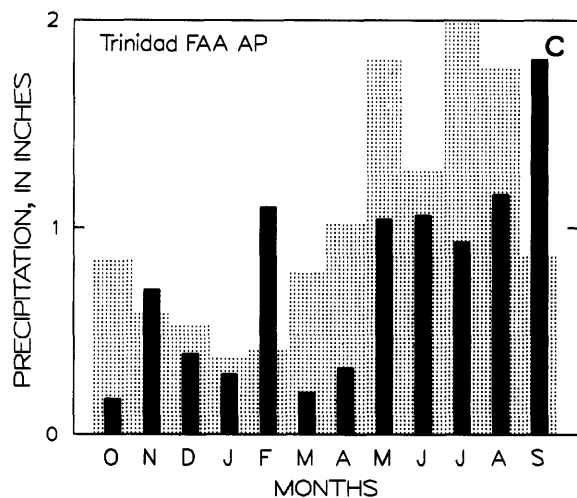
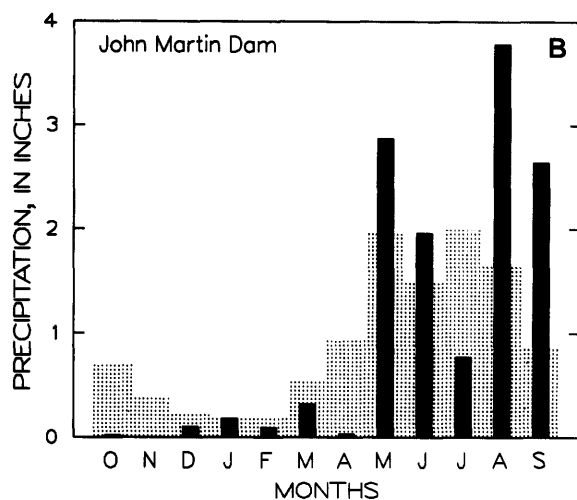
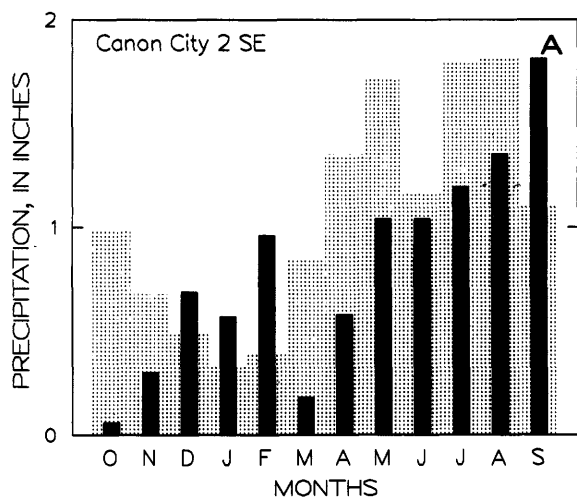
Table 1.--Precipitation during water year 1989 and departures from normal precipitation (1951-80), in inches

National Weather Service division	October-March		April-September		Water year 1989	
	Precipitation	Departure from normal	Precipitation	Departure from normal	Precipitation	Departure from normal
Arkansas Drainage Basin	2.94	-1.05	10.19	-0.08	13.13	-1.13
Kansas Drainage Basin	1.66	-1.65	13.87	1.08	15.53	-.57
Platte Drainage Basin	3.73	-.45	11.07	.24	14.80	-.21
Rio Grande Drainage Basin	4.87	.17	6.88	-.12	11.75	.05

Streamflow

Monthly mean discharges during water year 1989 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 06706000, 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 station).

In the Platte River basin, variations in monthly discharges for water year 1989 were not consistent with variations in long-term mean monthly discharges at 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). Local water-management practices, which consisted mostly of storage, release, or diversion of water as determined by daily and seasonal irrigation and municipal needs, had an effect on the magnitude and distribution of discharge at these stations. The water year 1989 mean discharge at gaging station 06701500, South Platte River below Cheesman Lake, was 17 percent greater than long-term average. The water year 1989 mean discharge at gaging station 06706000, North Fork South Platte River below Geneva Creek, at Grant, was 37 percent greater than long-term average. The water year 1989 mean discharge at gaging station 06758500, South Platte River near Weldona, was 42 percent less than long-term average.



EXPLANATION

Monthly precipitation for water year 1989

Normal monthly precipitation for reference period

WEATHER STATION—
Letter refers to accompanying graph and map

Figure 3.--Comparison of monthly precipitation for water year 1989 to normal monthly precipitation for the reference period 1951-80.

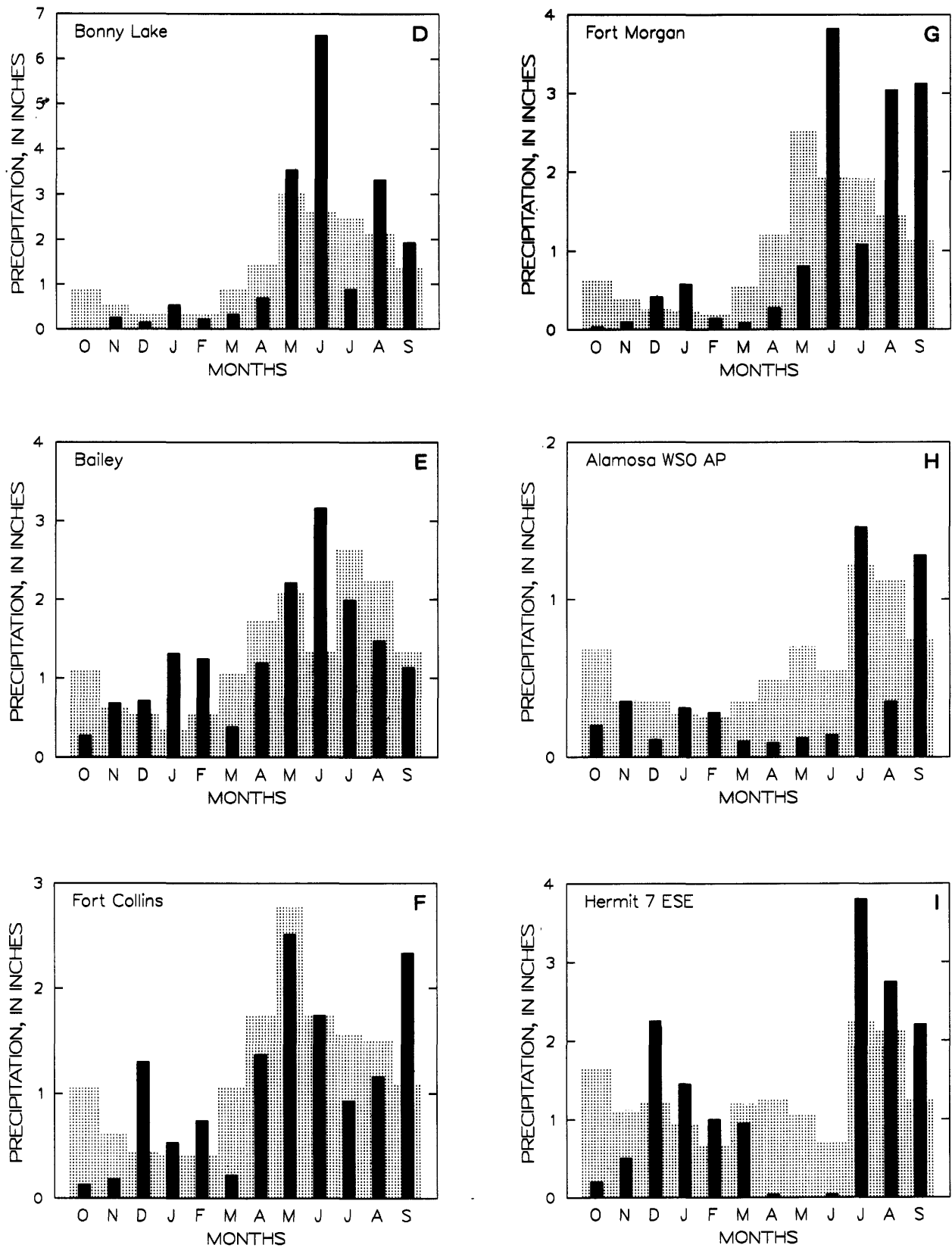
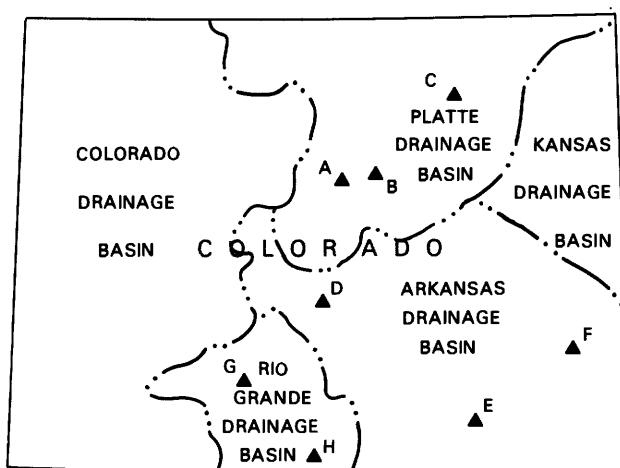
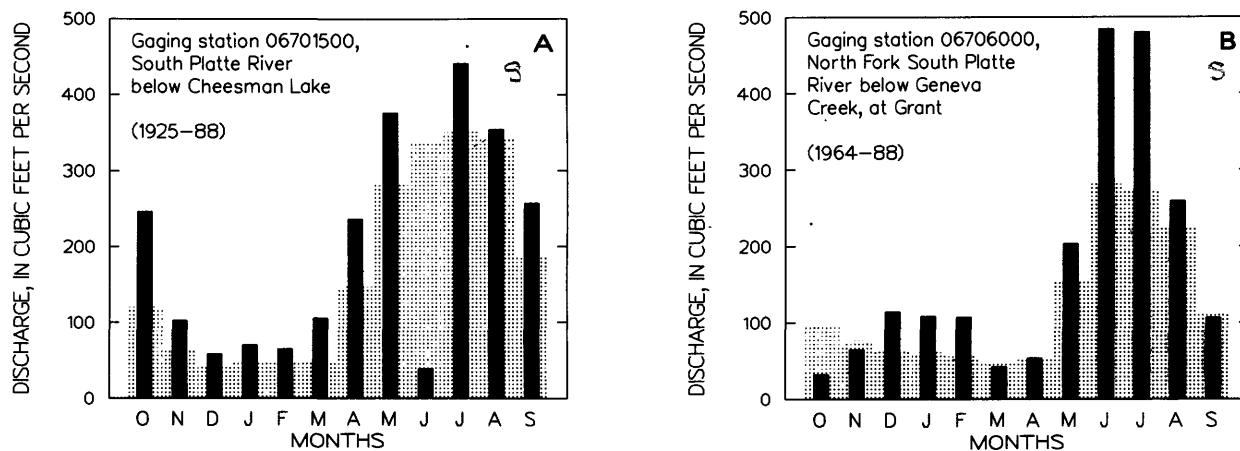


Figure 3.--(continued)



EXPLANATION

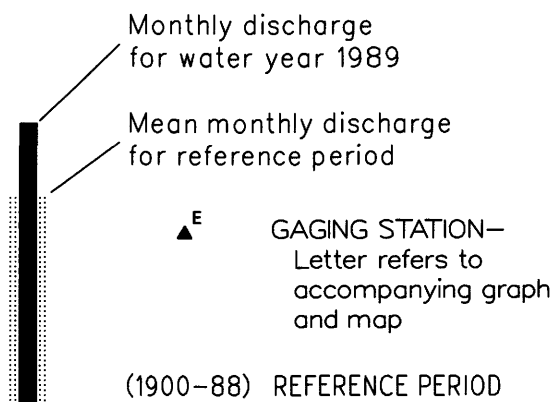


Figure 4.--Comparison of monthly discharges for water year 1989 to mean monthly discharges for the reference periods indicated on the individual graphs.

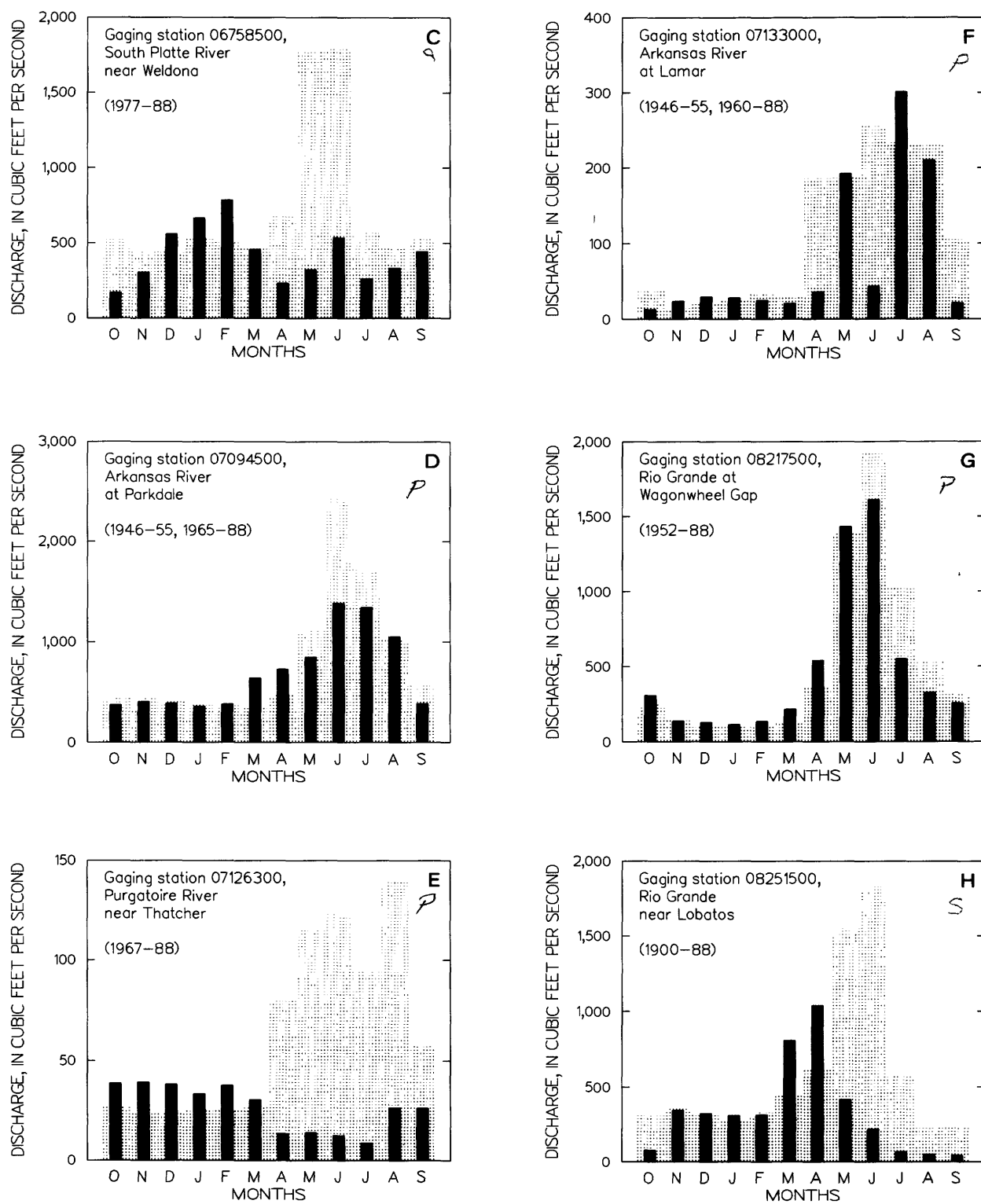


Figure 4.--(continued)

In the Arkansas River basin, variations in monthly discharges for water year 1989 were not consistent with the variations in long-term mean monthly discharges at gaging stations 07094500, Arkansas River at Parkdale (fig. 4, site D), 07126300, Purgatoire River near Thatcher (fig. 4, site E) and 07133000, Arkansas River at Lamar (fig. 4, site F). The magnitude and distribution of discharge at these stations was 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 1989 mean discharge at gaging station 07094500, Arkansas River at Parkdale, was 15 percent less than long-term average. The water year 1989 mean discharge at gaging station 07126300, Purgatoire River near Thatcher, was 58 percent less than long-term average. The water year 1989 mean discharge at gaging station 07133000, Arkansas River at Lamar, was 30 percent less than long-term average.

In the Rio Grande basin, variations in monthly discharges for water year 1989 were reasonably consistent with long-term mean monthly discharges at gaging station 08217500, Rio Grande at Wagonwheel Gap (fig. 4, site G), but were inconsistent at gaging station 08251500, Rio Grande near Lobatos (fig. 4, site H). The magnitude and distribution of discharge at these stations was 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 1989 mean discharge at gaging station 08217500, Rio Grande at Wagonwheel Gap, was 11 percent less than long-term average. The water year 1989 mean discharge at gaging station 08251500, Rio Grande near Lobatos, was 44 percent less than long-term average.

Peak discharges during water year 1989 and for the period of record for selected gaging stations are listed in table 2. Peak discharge at gaging station 06706000, North Fork South Platte River below Geneva Creek, at Grant was greater than the 75th percentile value and only 5 percent less than the previous high peak discharge that has occurred at that site since water year 1963. Peak discharges at gaging stations 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 their record highs. The peak discharge at each of the remaining selected gaging stations was less than the long term median value. At nine of the selected gaging stations, peak discharges were less than the 25th-percentile values, but were substantially greater than their record low peak discharges. The peak discharge at gaging station 07109500, Arkansas River near Avondale, was only 12 percent higher than the previous low peak discharge at that site.

Chemical Quality of Streamflow

To determine if substantial changes occurred during water year 1989 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 1989 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 1989 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 1989 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 statistic 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 the Wilcoxon-Mann-Whitney rank sum tests for the six gaging stations are listed in table 3. For each station, the tests indicate the mean specific conductance for water year 1989 and the mean specific conductance for the period of record are not statistically different.

Table 2.--Peak discharges for water year 1989 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 1989 Peak discharge		Period of record Peak discharge		Remarks on 1988 peak discharge
			Date	(ft ³ /s)	Date	(ft ³ /s)	
06620000 North Platte River near Northgate	1,431	1904, 1915-87	4/16	3,550	6/11/23	6,720	Greater than median
06696000 South Platte River near Lake George	963	1930-87	4/26	510	4/28/70	3,000	Greater than median
06701500 South Platte River below Cheesman Lake	1,752	1926-87	7/1	1,460	4/29/70	4,640	Greater than 75th percentile
06706000 North Fork South Platte River below Geneva Creek, at Grant	127	1/1964-87	7/9	578	6/29/78	825	Greater than median
06752500 Cache la Poudre River near Greeley	1,877	1903, 1916-17, 1919, 1924-87	7/8	1,540	6/14/83	6,360	Less than median
06756995 South Platte River at Masters	12,165	1977-80, 1982-87	5/21	4,880	5/2/80	15,100	Less than median
07094500 Arkansas River at Parkdale	2,548	1946-55, 1965-87	6/5	2,550	6/26/83	6,310	Less than 25th percentile
07106500 Fountain Creek at Pueblo	926	1921-22, 1924-25, 1935, 1941-65, 1971-87	8/5	1,980	6/17/65	47,000	Less than 25th percentile
07109500 Arkansas River near Avondale	6,327	1939-51, 1965-87	8/5	3,270	6/18/65	50,000	Less than 25th percentile (4th lowest)
07124000 Arkansas River at Las Animas	14,417	1939-87	4/3	522	5/20/55	44,000	Less than 25th percentile (2d lowest)
07126300 Purgatoire River near Thatcher	1,791	1965-87	8/9	2,690	6/18/65	47,700	Less than 25th percentile (4th lowest)
07128500 Purgatoire River near Las Animas	3,318	1922-31, 1949-87	5/22	1,460	5/20/55	70,000	Less than 25th percentile (2d lowest)
07133000 Arkansas River at Lamar	19,780	1913, 1915, 1919-55, 1960-87	9/15	1,750	6/5/21	130,000	Less than median
08220000 Rio Grande near Del Norte	1,320	1890-1987	6/7	3,440	10/5/11	18,000	Less than 25th percentile
08240000 Rio Grande above mouth of Trinchera Creek, near Lasasuses	5,740	1936-62, 1964-80, 1982-87	3/30	595	6/21/49	5,470	Less than median
08246500 Conejos River near Mogote	282	1903-5, 1912-87	6/7	1,490	10/5/11	9,000	Less than 25th percentile
08251500 Rio Grande near Lobatos	7,700	1900-87	4/10	848	6/8/05	13,200	Less than 25th percentile

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

Table 3.--Results of Wilcoxon-Mann-Whitney rank sum tests comparing mean specific conductance of discharge for water year 1989 with mean for the period of record at selected gaging stations

[Specific conductance, in microsiemens per centimeter at 25 degrees Celsius; A, accepted; t_R, calculated test statistic; t_{tab}, t-values from standard table]

Gaging station identification	Specific conductance						Wilcoxon-Mann-Whitney rank sum test			
	Water year 1989			Period of record			Period used (water years)	t _R	t _{tab}	Hypothesis
	Number of values	Mean	Standard deviation	Number of values	Mean	Standard deviation				
06741510 Big Thompson River at Loveland-----	12	991	469	100	775	484	1980-88	1.41	1.98	A
06752280 Cache la Poudre River above Box Elder Creek, near Timnath-----	11	1,501	428	106	1,182	741	1980-88	1.32	1.98	A
07094500 Arkansas River at Parkdale-----	12	268	78.2	104	258	73.1	1979-88	.68	1.98	A
07128500 Purgatoire River near Las Animas-----	12	3,396	1,058	157	3,070	1,400	1979-88	1.13	1.98	A
07133000 Arkansas River at Lamar-----	11	3,740	522	139	3,300	1,370	1979-88	1.25	1.98	A
08217500 Rio Grande at Wagonwheel Gap-----	11	94.1	20.8	96	94.8	32.6	1979-88	.17	1.99	A

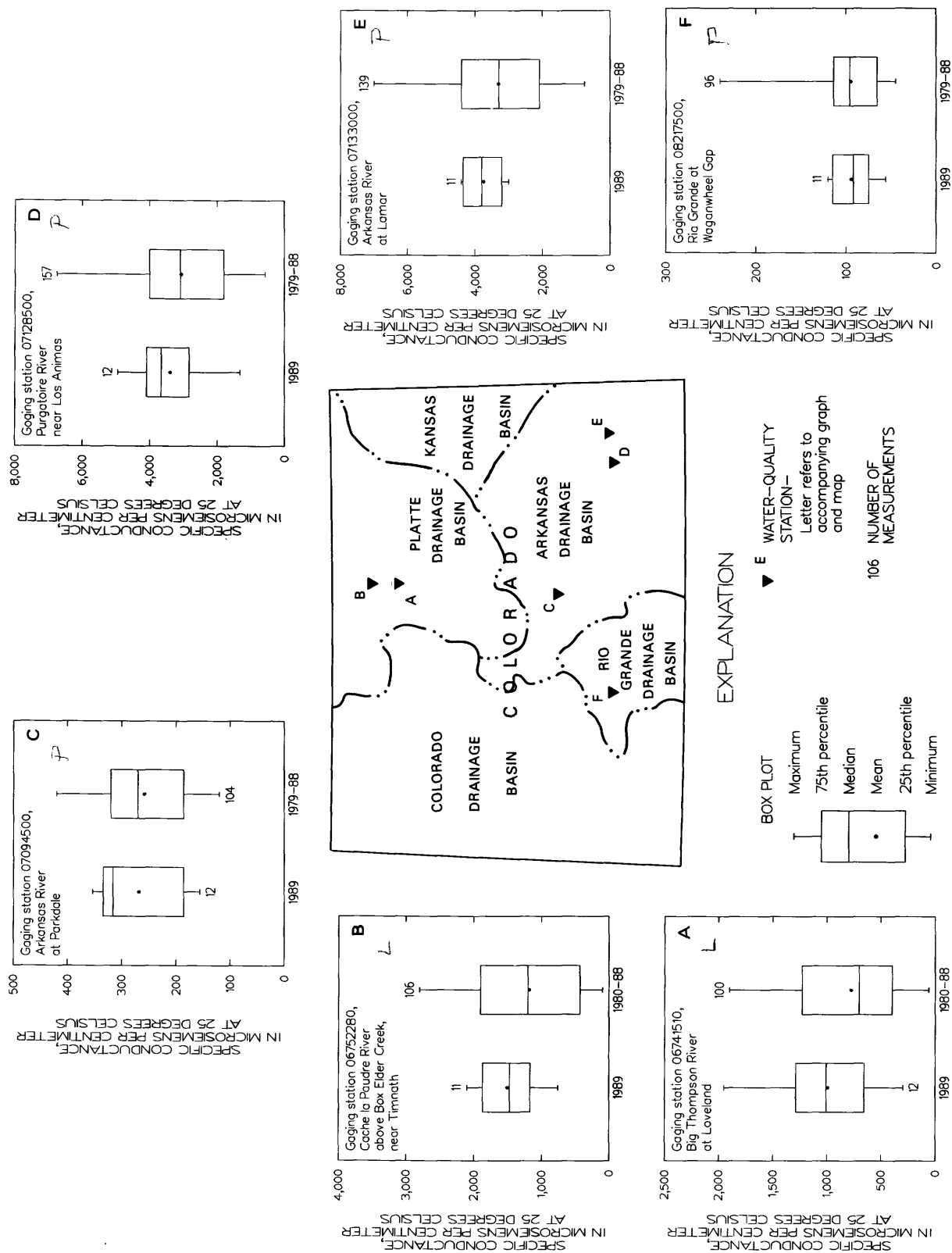


Figure 5.--Comparison of range and distribution of specific conductance measured during water year 1989 to long-term values.

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 1989 water year that began on October 1, 1988, and ended September 30, 1989. 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.

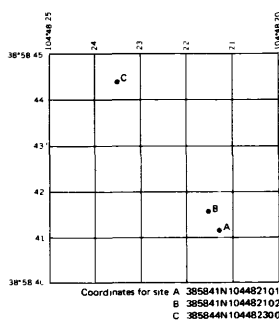
Downstream Order System

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 gage 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 records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, 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 statement 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 and, possibly, to other pertinent items. 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 to determine if the published records were ever revised after the station was discontinued. Of course, if the data 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.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month 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 are 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 National Water Data Storage and Retrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's District offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

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 $44.5^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ 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 $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ 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/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

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

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

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) x discharge (ft³/s) x 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 ($7Q_{10}$) 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 plexiglass 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 planimeted. All areas shown are those for the stage when the planimeted 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.

EXPLANATION OF OMITTED DATA

Omitted data, previous water years

Data for some stations omitted from previous water year publications are included in this report. These stations are listed in table 4.

Table 4.--Stations with previous water year data included in this reportPLATTE RIVER BASIN

06725500 Middle Boulder Creek at Nederland--1986-88, streamflow

ARKANSAS RIVER BASIN

07084500 Lake Creek above Twin Lakes Reservoir--1988, streamflow
07086500 Clear Creek above Clear Creek Reservoir--1988, streamflow
07095000 Grape Creek near Westcliffe--1988, streamflow
07103700 Fountain Creek near Colorado Springs--1987-88, suspended sediment discharge
07103747 Monument Creek at Palmer Lake--1987-88, suspended sediment discharge
07103780 Monument Creek above Northgate Boulevard, at U.S. Air Force Academy--1988, suspended sediment discharge
07104000 Monument Creek at Pikeview--1987-88, suspended sediment discharge
07104905 Monument Creek at Bijou Street, at Colorado Springs--1987-88, suspended sediment discharge
07105500 Fountain Creek at Colorado Springs--1987-88, suspended sediment discharge
07105800 Fountain Creek at Security--1987-88, suspended sediment discharge
07109500 Arkansas River near Avondale--1988, pH and dissolved oxygen
07117000 Arkansas River near Nepesta--1988, streamflow
07119700 Arkansas River at Catlin Dam near Fowler--1988, streamflow
07122060 Fort Lyon Canal near Casa--1988, streamflow
07122105 Fort Lyon Canal near Cornelia--1988, streamflow
07122200 Fort Lyon Canal near Hasty--1988, streamflow
07122350 Fort Lyon Canal near Big Bend--1988, streamflow
07123000 Arkansas River at LaJunta--1988, streamflow
07126500 Purgatoire River at Ninemile Dam near Higbee--1988, streamflow

SELECTED REFERENCES

The following publications are available for background information on the methods for collecting, analyzing, and evaluating the chemical and physical properties of surface waters:

- American Public Health Association, and others, 1980, Standard methods for the examination of water and waste water, 13th ed: American Public Health Assoc., New York, 1134 p.
- Box, George E. P., Hunter, William G., and Hunter, J. Stuart, 1978, Statistics for Experimenters: New York, John Wiley, and Sons, 653 p.
- Cain, D. L., 1984, Quality of the Arkansas River and irrigation-return flows in the lower Arkansas River Valley of Colorado: Water-Resources Investigation Report 84-4273, 91 p.
- Carter, R. W., and Davidian, Jacob, 1968, General procedures for gaging streams: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6, 13 p.
- Clarke, F. W., 1924, The composition of the river and lake waters of the United States: U.S. Geological Survey Professional Paper 135, 199 p.
- Colby, B. R., 1963, Fluvial sediments--a summary of source, transportation, deposition, and measurements of sediment discharge: U.S. Geological Survey Bulletin 1181-A, 47 p.
- Colby, B. R., and Hembree, C. H., 1955, Computations of total sediment discharge, Niobrara River near Cody, Nebraska: U.S. Geological Survey Water-Supply Paper 1357, 187 p.
- Colby, B. R., and Hubbell, D. W., 1961, Simplified methods for computing total sediment discharge with the modified Einstein procedure: U.S. Geological Survey Water-Supply Paper 1593, 17 p.
- Collins, W. D., and Howard, C. S., 1928, Quality of water of Colorado River in 1925-26: U.S. Geological Survey Water-Supply Paper 596-B, p. 33-43.
- Corbett, D. M., and others, 1942, Stream-gaging procedure, a manual describing methods and practices of the Geological Survey: U.S. Geological Survey Water-Supply Paper 888, 245 p.
- Crouch, T. M., and others, 1984, Water-Resources Appraisal of the upper Arkansas River basin from Leadville to Pueblo, Colorado: Water-Resources Investigation Report 82-4114, 123p.
- Fishman, M. J., and Bradford, W. L., 1982, A supplement to methods for the determination of inorganic substances in water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Laboratory Analysis, Chapter A1, open-file report 82-272, 136 p.
- Goerlitz, D. F., and Brown, Eugene, 1972, Methods for analysis of organic substances in water: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A3, 40 p.
- Gregg, D. O., and others, 1961, Public water supplies of Colorado (1959-60): Fort Collins, Colorado State University Agricultural Experiment Station, General Service 757, 128 p.
- Guy, H. P., 1970, Fluvial sediment concepts: U.S. Geological Survey Techniques of Water-Resources Investigation, Book 3, Chapter C1, 55 p.
- _____, 1969, Laboratory theory and methods for sediment analysis: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter C1, 57 p.
- Guy, H. P., and Norman, V. W., 1970, Field methods for measurement of fluvial sediment: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter C2, 59 p.
- Hawley, Gessner G., 1981, The condensed chemical dictionary; Van Nostrand-Reinhold Publication Corporation, New York, 10th edition, 1135 p.
- Hem, John D., 1970, Study and interpretation of the chemical characteristics of natural water, 2d ed.: U.S. Geological Survey Water-Supply Paper 1473, 363 p.
- Howard, C. W., 1955, Quality of water of the Colorado River, 1925-40: U.S. Geological Survey open-file report, 103 p.
- Iorns, W. V., and others, 1964, Water Resources of the Upper Colorado River basin--basic data: U.S. Geological Survey Professional Paper 442, 1,036 p.
- _____, 1965, Water Resources of the Upper Colorado River basin--technical report: U.S. Geological Survey Professional Paper 441, 370 p.
- Lane, E. W., and others, 1947, Reports of Subcommittee on terminology: American Geophysical Union Transaction, v. 28, p. 937.
- Langbein, W. B., and Iseri, K. T., 1960, General introduction and hydrologic definitions: U.S. Geological Survey Water-Supply Paper 1541-A, 29 p.
- Lohman, S. W., and others, 1972, Definitions of selected ground-water terms--revisions and conceptual refinements: U.S. Geological Survey Water-Supply Paper 1988, p. 2.
- McGuinness, C. L., 1963, The role of ground water in the national water situation: U.S. Geological Survey Water-Supply Paper 1800, 1121 p.
- Meinzer, O. E., 1923, The occurrence of ground water in the United States: U.S. Geological Survey Water-Supply Paper 489, 321 p.
- _____, 1923, Outline of ground-water hydrology, with definitions: U.S. Geological Survey Water-Supply Paper 494, 71 p.
- Moran, R. E., and Wentz, D. A., 1974, Effects of metal-mine drainage on water quality in selected areas of Colorado, 2 of 3, 1972-73: Colorado Water Conservation Board Circular 25, 250 p.
- Porterfield, George, 1972, Computations of fluvial-sediment discharge: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter C3, 66 p.

- Ritter, J. R., and Helley, E. J., 1969, Optical method for determining particle sizes of coarse sediment: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter C3, 33 p.
- Slack, K. V., and others, 1973, Methods for collection and analysis of aquatic biological and microbiological samples: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A4, 165 p.
- Spahr, N. E., Blakely, S. R., and Hammond, S. E., 1985, Selected Hydrologic Data for the South Platte River through Denver, Colorado: U. S. Geological Survey open file report 84-703, 225 p.
- Stabler, Herman, 1911, Some stream waters of the Western United States: U.S. Geological Survey Water-Supply Paper 274, 188 p.
- U.S. Inter-Agency Committee on Water Resources, A study of methods used in measurements and analysis of sediment loads in streams:
- Report 11, 1957, The development and calibration of visual accumulation tube: St. Anthony Falls Hydraulic Lab., Minneapolis, Minn., 109 p.
- Report 12, 1957, Some fundamentals of particle-size analysis: Washington, D. C., U.S. Government Printing Office, 55 p.
- Report AA, 1959, Federal Inter-Agency sedimentation instruments and reports: St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn., 41 p.
- Report 13, 1961, The single-stage sampler for suspended sediment: Washington, D. C., U.S. Government Printing Office, 105 p.
- Report 14, 1963, Determinations of fluvial sediment discharge: Washington, D. C., U.S. Government Printing Office 151 p.

DISCONTINUED GAGING STATIONS

The following continuous-record streamflow stations in Colorado have been discontinued or converted to partial-record stations. Daily records were collected and published for the period of record shown for each station.

Station number		Drainage area (sq mi)	Period of record (calendar years)
06611000	Colorado Creek near Spicer, CO	25.8	1950-55
06611100	Grizzly Creek near Spicer, CO	118	1976-80
06611200	Buffalo Creek near Hebron, CO	56.3	1976-80
06611300	Grizzly Creek near Hebron, CO	223	1976-80
06611500	Grizzly Creek near Walden, CO	258	1904-05, 1923, 1926-47
06611700	Little Grizzly Creek near Coalmont, CO	10.1	1967-73
06611800	Little Grizzly Creek above Coalmont, CO	35.4	1976-80
06611900	Little Grizzly Creek above Hebron, CO	52.2	1976-80
06612000	Little Grizzly Creek near Hebron, CO	98.6	1904-05, 1931-45
06612500	Roaring Fork near Walden, CO	79.1	1904-05, 1923-47
06613000	North Platte River near Walden, CO	469	1904-05, 1923-47
06614000	North Fork North Platte River near Walden, CO	160	1923-28, 1936-45
06615000	South Fork Michigan River near Gould, CO	11.4	1950-58
06615500	Michigan River near Lindland, CO	60.9	1931-41
06616000	North Fork Michigan River near Gould, CO	20.5	1950-82
06617100	Michigan River at Walden, CO	182	1904-05, 1923-47
06617500	Illinois Creek near Rand, CO	70.6	1931-40
06618000	Willow Creek near Rand, CO	55.9	1931-40
06618500	Illinois Creek at Walden, CO	259	1923-47
06619000	Michigan River near Cowdrey, CO	478	1904-05, 1937-47
06619400	Canadian River near Lindland, CO	44.0	1978-83
06619415	Bush Draw near Walden, CO	4.10	1980-83
06619420	Williams Draw near Walden, CO	3.95	1979-83
06619450	Canadian River near Brownlee, CO	158	1978-83
06619500	Canadian River at Cowdrey, CO	181	1904-05, 1929-31, 1937-47
06657500	Laramie River near Glendevy, CO	101	1904-05, 1910-82
06693980	Middle Fork South Platte River above Fairplay, CO	62.2	1978-80
06694100	Middle Fork South Platte River near Hartsel, CO	250	1978-80
06694400	South Fork South Platte River above Fairplay, CO	50.3	1978-80
06694700	Fourmile Creek near Fairplay, CO	12.0	1978-80
06696200	South Platte River at Lake George, CO	1,084	1910-11, 1929
06696980	Tarryall Creek at Upper Station near Como, CO	23.7	1978-86
06697450	Michigan Creek above Jefferson, CO	23.1	1978-86
06698000	Jefferson Creek near Jefferson, CO	11.8	1910-12, 1978-86
06698500	Tarryall Creek near Jefferson, CO	183	1910-11, 1912-17, 1977-81
06699500	Tarryall Creek near Lake George, CO	236	1910-12, 1916, 1925-55
06700000	South Platte River above Cheesman Lake, CO	1,628	1899-1901, 1924-1943
06700500	Goose Creek above Cheesman Lake, CO	86.6	1899, 1924-82
06702000	South Platte River above North Fork at South Platte, CO	2,098	1905-12
06702500	North Fork South Platte River at Grant, CO	49.0	1910-17
06705500	Geneva Creek at Grant, CO	77.5	1908-18
06706500	North Fork South Platte River at Pine, CO	374	1942-46
06707000	North Fork South Platte River at South Platte, CO	479	1909-10, 1913-82
06707500	South Platte River at South Platte, CO	2,579	1887-92, 1895-97, 1898-1982
06708000	South Platte River at Waterton, CO	2,621	1926-80
06709000	Plum Creek near Sedalia, CO	274	1942-47
06710000	South Platte River at Littleton, CO	3,069	1941-86
06711590	South Platte River at Florida Avenue, at Denver, CO	--	1981-82
06712500	Cherry Creek near Melvin, CO	360	1939-69
06714130	South Platte River at 50th Avenue at Denver, CO	3,810	1980-81
06715500	West Fork Clear Creek above Empire, CO	40.5	1942-46
06716000	West Fork Clear Creek near Empire, CO	58.2	1929-31
06716500	Clear Creek near Lawson, CO	147	1946-86
06718000	Clear Creek below Idaho Springs, CO	259	1951-55
06718500	North Clear Creek near Blackhawk, CO	52.2	1951-55
06719000	Clear Creek at Forks Creek, CO	339	1899-1912
06719500	Clear Creek near Golden, CO	399	1908-09, 1911-74
06719526	Clear Creek at Tabor Street, at Lakewood, CO	427	1981-83
06719725	Ralston Creek near Plainview, CO	36.9	1983-84
06719730	Schwartzwalder Mine Effluent near Plainview, CO	--	1983-84
06719735	Ralston Creek below Schwartzwalder Mine near Plainview, CO	38.9	1983-84
06719740	Ralston Creek above Ralston Reservoir near Golden, CO	42.7	1983-84
06720000	Clear Creek at Mouth Near Derby, CO	575	1914, 1927-82
06720330	Grange Hall Creek at Grant Park at Northglenn, CO	--	1978-79
06720415	Grange Hall Creek at Northglenn, CO	3.08	1978-81
06720417	Grange Hall Creek below Northglenn, CO	--	1981-82
06720690	Woman Creek near Plainview, CO	--	1973-74
06721000	South Platte River at Fort Lupton, CO	5,010	1906, 1929-57
06722000	North Saint Vrain Creek at Longmont Dam near Lyons, CO	106	1925-53
06722500	South Saint Vrain Creek near Ward, CO	14.4	1925-27, 1928-31, 1954-73
06722900	Middle Saint Vrain Creek near Raymond, CO	16.8	1956-58
06723000	Middle Saint Vrain Creek near Allens Park, CO	28.0	1925-30, a
06723400	South Saint Vrain Creek above Lyons, CO	81.4	1971-80
06724500	Lefthand Creek near Boulder, CO	52.0	1929-31, 1947-53, 1976-80
06725000	Lefthand Creek at Mouth at Longmont, CO	72.0	1927-42, 1953-55, 1976-79
06725100	Saint Vrain Creek near Longmont, CO	370	1964-68
06726000	North Boulder Creek at Silver Lake, CO	8.70	1913-32
06726500	North Boulder Creek near Nederland, CO	30.4	1929-31

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

DISCONTINUED GAGING STATIONS--Continued

Station number		Drainage area (sq mi)	Period of record (calendar years)
06729000	South Boulder Creek near Rollinsville, CO	42.7	1910-18, 1945-49
06729300	South Boulder Creek at Pinecliff, CO	72.7	1979-80
06730300	Coal Creek near Plainview, CO	15.1	1959-82
06731800	Boulder Brook near Estes Park, CO	3.83	1968-70
06732000	Glacier Creek near Estes Park, CO	20.8	1941-57, 1968-70
06732300	Beaver Brook near Estes Park, CO	1.49	1968-70
06732500	Fall River at Estes Park, CO	39.8	1945-53, a
06733000	Big Thompson River at Estes Park, CO	137	1946-86
06734500	Fish Creek near Estes Park, CO	15.8	1947-55
06736000	North Fork Big Thompson River at Drake, CO	85.1	1947-55
06736500	Big Thompson River below Power House near Drake, CO	278	1917-55
06740000	Dry Creek near Pinewood, CO	7.11	1950-52
06741000	Cottonwood Creek near Pinewood, CO	14.7	1947-53
06741500	Big Thompson River near Loveland, CO	505	1947-55
06742000	Little Thompson River near Berthoud, CO	100	1929-30, 1947-61
06743500	Little Thompson River at Milliken, CO	199	1951-55
06744000	Big Thompson River at Mouth near La Salle, CO	830	1914-15, 1927-82
06745000	Cache La Poudre River above Chambers Lake Outlet, CO	89.7	1929-31
06746100	Joe Wright Creek near Cameron Pass, CO	5.05	1974-78
06747500	Cache La Poudre River near Rustic, CO	198	1956-68
06748000	Cache La Poudre River near Log Cabin, CO	234	1909-11, 1929-31
06748200	Fall Creek near Rustic, CO	3.59	1960-73
06748500	South Fork Cache La Poudre near Eggers, CO	70.6	1929-31
06748510	Little Beaver Creek near Idylwilde, CO	0.88	1960-73
06748530	Little Beaver Creek near Rustic, CO	12.3	1960-73
06748600	South Fork Cache La Poudre River near Rustic, CO	92.4	1956-79
06749000	Cache La Poudre River below Elkhorn, CO	409	1946-59
06751500	North Fork Cache La Poudre River near Livermore, CO	567	1947-65
06753500	Lonetree Creek near Nunn, CO	199	1951-57
06756500	Crow Creek near Barnsville, CO	1,324	1951-57
06756995	South Platte River at Masters, CO	12,175	1976-88
06757000	South Platte River at Sublette, CO	12,170	1926-42, 1943-55
06757600	Kiowa Creek at K-79 Reservoir near Eastonville, CO	3.20	1955-65
06758000	Kiowa Creek at Elbert, CO	28.6	1955-65
06758100	West Kiowa Creek at Elbert, CO	35.9	1962-65
06758200	Kiowa Creek at Kiowa, CO	111	1955-65
06758300	Kiowa Creek at Bennett, CO	236	1960-65
06759000	Bijou Creek near Wiggins, CO	1,314	1950-56
06759100	Bijou Creek near Fort Morgan, CO	1,500	1976-87
06759500	South Platte River at Fort Morgan, CO	14,810	1943-58
06760000	South Platte River at Balzac, CO	16,852	1916-80
06760500	South Platte River near Crook, CO	19,238	1953-58
06822000	North Fork Republican River near Wray, CO	1,019	1937-46, 1951-57, 1962-64
06825000	South Fork Republican River near Idalia, CO	1,300	1950-71, 1972-81
06825500	Landsman Creek near Hale, CO	268	1950-76, 1977-81
06826500	South Fork Republican River near Hale, CO	1,825	1946-48, 1951-86
07079500	East Fork Arkansas River near Leadville, CO	50.0	1890-1903, 1910-1924
07081000	Tennessee Creek near Leadville, CO	48.0	1890-1903, 1910-1924
07081200	Arkansas River near Leadville, CO	97.2	1967-83
07082000	Lake Fork above Sugar Loaf Reservoir, CO	23.9	1946-67
07083500	Halfmoon Creek near Leadville, CO	25.2	1911-14
07083700	Arkansas River near Malta, CO	228	1964-67, 1976-84
07089000	Cottonwood Creek below Hot Springs near Buena Vista, CO	65.0	1910-23, 1949-86
07090000	Chalk Creek Upper Station near Saint Elmo, CO	48.0	1913-19
07090500	Chalk Creek near Saint Elmo, CO	83.0	1910-16
07091000	Chalk Creek near Nathrop, CO	97.0	1910, 1949-56, a
07091500	Arkansas River at Salida, CO	1,218	1895-97, 1901-03, 1909-80
07092000	South Arkansas River at Poncha, CO	140	1910-18
07093000	Poncha Creek at Poncha, CO	56.0	1910-18
07093500	South Arkansas River near Salida, CO	208	1922-23, 1929-40
07094600	South Colony Creek nr Westcliffe, CO	6.03	1974-78
07094900	Middle Taylor Creek near Westcliffe, CO	3.19	1974-78, 1984-85
07099100	Beaver Creek near Portland, CO	214	1971-81
07099200	Arkansas River near Portland, CO	4,280	1964-79
07099220	Little Turkey Creek near Fountain, CO	9.59	1978-88
07099230	Turkey Creek above Teller Reservoir near Stone City, CO	62.3	1978-88
07099235	Turkey Creek near Stone City, CO	71.5	1978-83, 1987
07099500	Arkansas River near Pueblo, CO	4,686	1885-87, 1889, 1894-1975
07103750	Monument Creek at Monument, CO	28.5	1976-77
07103900	West Monument Creek near Pikeview, CO	15.4	1957-70
07103950	Kettle Creek near Black Forest, CO	9.01	1976-86
07104500	Templeton Gap Floodway at Colorado Springs, CO	8.73	1951-81
07105780	B Ditch Drain near Security, CO	--	1981-88
07105820	Clover Ditch near Widefield, CO	--	1981-88
07105920	Little Fountain Creek above Keaton Reservoir near Fort Carson, CO	11.0	1978-88
07105940	Little Fountain Creek near Fountain, CO	26.9	1978-88
07105945	Rock Creek above Fort Carson Reservation, CO	6.79	1978-84
07105960	Rock Creek near Fountain, CO	16.9	1978-88
07107000	Saint Charles River at San Isabel, CO	16.0	1936-41
07107900	Greenhorn Creek near Rye, CO	9.56	1974-79
07108050	Greenhorn Creek near Colorado City, CO	29.6	1974-79
07108500	Saint Charles River near Pueblo, CO	467	1941-53, 1955

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

DISCONTINUED GAGING STATIONS--Continued

Station number		Drainage area (sq mi)	Period of record (calendar years)
07108800	Saint Charles River near Vineland, CO	473	1968-74
07109000	Saint Charles River at Mouth near Pueblo, CO	475	1922-25
07110000	Sixmile Creek near Avondale, CO	45.0	1922-24, 1941-46
07110500	Chico Creek near North Avondale, CO	864	1941-46
07111000	Huerfano River at Manzanares Crossing near Redwing, CO	73.0	1923-82
07111500	Huerfano River at Malachite, CO	107	1923-25
07112000	Huerfano River near Badito, CO	499	1941-46
07112500	Huerfano River at Badito, CO	532	1912, 1923-25, 1938-41, 1946-1954
07113000	Huerfano River at Huerfano, CO	717	1923-28
07113500	Huerfano River near Mustang, CO	803	1942-47
07114000	Cucharas River at Boyd Ranch near La Veta, CO	56.0	1934-82
07114500	Cucharas River near La Veta, CO	75.0	1923-34
07116000	Huerfano River below Huerfano Valley Dam near Undercliffe, CO	1,673	1939-67
07117500	Arkansas River at Nepesta, CO	9,460	1898-1902, 1904-1906, 1936
07117600	Chicosa Creek near Fowler, CO	109	1968-74
07118000	Apishapa River near Aguilar, CO	126	1939-50
07118500	Apishapa River at Aguilar, CO	149	1938-39, 1978-81
07119000	Apishapa River near White Rock, CO	737	1942-47
07121000	Timpas Creek near Rocky Ford, CO	451	1922-27, 1940-50
07122200	Fort Lyon Canal near Hasty, CO	--	1968-75
07122500	Crooked Arroyo near La Junta, CO	--	1922-25
07123500	Horse Creek near Sugar City, CO	1,080	1940-47
07124050	Middle Fork Purgatoire River at Stonewall, CO	57.1	1978-81
07124100	Molino Canyon near Weston, CO	4.23	1978-81
07124120	Sarcillo Canyon near Segundo, CO	35.3	1978-81
07124210	Mulligan Canyon near Boncarbo, CO	4.53	1978-81
07124220	Reilly Canyon at Cokedale, CO	35.1	1978-81
07124350	Carpas Canyon near Jansen, CO	4.57	1978-81
07124500	Purgatoire River at Trinidad, CO	795	1895-99, 1905-12, 1915-60, 1961-1982
07125000	Purgatoire River near Hoehne, CO	857	1954-68
07125100	Frijole Creek near Alfalfa, CO	80.0	1957-68
07125500	San Francisco Creek near Alfalfa, CO	160	1954-68
07126000	Purgatoire River near Alfalfa, CO	1,320	1905-07, 1924-28, 1951-68
07126130	Van Bremer Arroyo near Thatcher, CO	80.6	1983-85
07126320	Burke Arroyo Tributary near Thatcher, CO	4.66	1983-87
07128000	Purgatoire River at Highland Dam near Las Animas, CO	3,376	1898, 1931-55
07129500	Rule Creek near Caddoa, CO	435	1941-46
07131000	Caddoa Creek at Caddoa, CO	131	1941-46
07133050	Willow Creek near Lamar, CO	42.0	1974-77
07134000	Big Sandy Creek above Amity Canal near Korman, CO	3,396	1941-46
07134100	Big Sandy Creek near Lamar, CO	3,307	1968-82
07135000	Two Butte Creek near Holly, CO	817	1942-46
07135500	Arkansas River at Holly, CO	25,073	1894, 1901-02, 1907-53
07136000	Wild Horse Creek at Holly, CO	270	1922-35, 1938-50
07136500	Holly Drain near Holly, CO	--	1924-50
08216500	Willow Creek at Creede, CO	51.7	1951-82
08217000	Rio Grande at Wason below Creede, CO	705	1907-54
08218000	Goose Creek near Wagonwheel Gap, CO	53.6	1924-26, 1939-52
08220500	Pinos Creek near Del Norte, CO	53.0	1919-24, 1936-82
08220900	San Francisco Creek at upper station near Del Norte, CO	11.8	1967-69
08221500	Rio Grande near Monte Vista, CO	1,590	1926-80
08223000	Rio Grande at Alamosa, CO	1,710	1912-80
08223500	Rock Creek near Monte Vista, CO	32.9	1935-55, 1966-70
08224110	San Luis Creek near Poncha Pass, CO	6.57	1979-85
08224113	San Luis Creek above Villa Grove, CO	11.2	1979-85
08224200	Raspberry Creek near Villa Grove, CO	1.78	1967-70
08224500	Kerber Creek at Ashley Ranch near Villa Grove, CO	38.0	1923-26, 1936-82
08226700	Cotton Creek near Mineral Hot Springs, CO	13.6	1967-70
08227000	Saguache Creek near Saguache, CO	595	1910-12, 1914-82
08227300	Anaconda Reservoir near Villa Grove, CO	0.17	1979-85
08227500	North Crestone Creek near Crestone, CO	10.7	1936-82
08229500	Cottonwood Creek near Crestone, CO	6.77	1936, 1967-70
08230500	Carnero Creek near La Garita, CO	117	1919-82
08231000	La Garita Creek near La Garita, CO	61.0	1919-82
08234200	Mosca Creek near Mosca, CO	3.67	1967-70
08236000	Alamosa Creek above Terrace Reservoir, CO	107	1911-12, 1914-27, 1934-82
08236500	Alamosa Creek below Terrace Reservoir, CO	116	1909-55
08238000	La Jara Creek at Gallegos Ranch near Capulin, CO	98.0	1916-17, 1919-23, 1936-82
08240500	Trinchera Creek above Turners Ranch near Ft Garland, CO	45.0	1923-82
08241000	Trinchera Creek above Mountain Home Reservoir nr Ft Garland, CO	61.0	1923-55
08241500	Sangre De Cristo Creek near Ft Garland, CO	190	1916, 1923-30, 1931-82
08242500	Ute Creek near Ft Garland, CO	32.0	1916, 1923-82
08243500	Trinchera Creek below Smith Reservoir near Blanca, CO	396	1928-82
08245500	Conejos River at Platoro, CO	44.4	1936-53
08246000	Conejos River at Counsellors Cabin near Mogote, CO	211	1943-47
08248500	San Antonio River at mouth near Manassa, CO	348	1923-82
08249400	Culebra Creek near Chama, CO	72.4	1967-70
08250000	Culebra Creek at San Luis, CO	220	1927-82
08250500	Culebra Creek below San Luis, CO	255	1938-55
08252000	Rio Grande at CO-NM State Line	--	1953-82

DISCONTINUED CONTINUOUS WATER-QUALITY STATIONS

The following stations were discontinued as continuous 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.

Station number	Station name	Drainage area (sq mi)	Type of record	Period of record (water years)
06619400	Canadian River near Lindland, CO	44.0	Temp., S.C., Sed.	1978-83
06619450	Canadian River near Brownlee, CO	158	Temp., S.C., Sed.	1978-83
06710000	South Platte River at Littleton, CO	3,069	Temp. S.C.	1970-86 1984-86
06714215	South Platte River at 64th Ave. at Commerce City, CO	3,884	Temp., pH., D.O.	1987
06719725	Ralston Creek near Plainview, CO	36.9	Temp., S.C., pH., D.O.	1983-84
01719730	Schwartzwalder Mine Effluent nr Plainview, CO	--	Temp., S.C., pH., D.O.	1983-84
06719735	Ralston Creek below Schwartzwalder Mine, CO	38.9	Temp., S.C., pH., D.O.	1983-84
06719740	Ralston Creek above Ralston Res. nr Plainview, CO	42.7	Temp., S.C., pH., D.O.	1983-84
06752500	Cache La Poudre River near Greeley, CO	1,877	Temp., S.C., pH., D.O.	1975
06754000	South Platte River near Kersey, CO	8,598	Temp.	1950-53
06758000	Kiowa Creek at Elbert, CO	28.6	Sed.	1957-68, 1960-62, 1964-65
06758100	West Kiowa Creek at Elbert, CO	35.9	Sed.	1962-65
06758200	Kiowa Creek at Kiowa, CO	111	Sed.	1956-65
06763990	South Platte River at Julesburg, CO (Chan. 2)	--	Temp. S.C.	1967-73 1971-73
06822000	North Fork Republican River near Wray, CO	1,019	Temp., Sed.	1962-63
07083000	Halfmoon Creek near Malta, CO	23.6	Temp.	1967-82
07106300	Fountain Creek near Pinon, CO	849	Temp., S.C.	1976-79
07118500	Apishapa River at Aguilar, CO	149	Sed.	1979-81
07119500	Apishapa River near Fowler, CO	1,125	Temp., S.C.	1966-68
07122000	Arkansas River near La Junta, CO	--	Temp., S.C.	1966-68
07124050	Middle Fork Purgatoire River at Stonewall, CO	52.1	Temp., S.C. Sed.	1978-81 1979-81
07124100	Molino Canyon near Weston, CO	4.23	Sed.	1979-81
07124120	Sarcillo Canyon near Segundo, CO	35.3	Sed.	1980-81
07124200	Purgatoire River at Madrid, CO	550	Temp., S.C. Sed.	1979-81 1978-81
07124210	Mulligan Canyon near Boncarbo, CO	4.53	Sed.	1979-81
07124220	Reilly Canyon at Cokedale, CO	35.1	Sed.	1979-81
07124350	Carplos Canyon near Jansen, CO	100	Sed.	1979-81
07124410	Purgatoire River below Trinidad Lake, CO	672	Sed.	1977-82
07126110	Luning Arroyo Tributary near Model, CO	--	Temp., S.C.	1984
07126130	Van Bremer Arroyo near Thatcher, CO	80.6	Temp., S.C.	1985
07126320	Burke Arroyo Tributary near Thatcher, CO	4.66	Temp., S.C. Sed.	1983-86 1984-86
07128000	Purgatoire River at Highland Dam nr Las Animas, CO	3,376	S.C.	1967-68
08216500	Willow Creek at Creede, CO	35.3	Temp., S.C.	1976-77
08217500	Rio Grande at Wagonwheel Gap, CO	780	Temp., S.C.	1976-77
08224110	San Luis Creek near Poncha Pass, CO	6.57	Sed.	1981-83
08224113	San Luis Creek above Villa Grove, CO	11.2	Sed.	1981-83
08249200	Rio Grande above Culebra Creek nr Lobatos, CO	--	Temp. S.C.	1964-66 1946-66

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

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.

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. Water temperature--influential factors, field measurement, and data presentation, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-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.
- 2-E1. Application of borehole geophysics to water-resources investigations, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. General field and office procedures for indirect discharge measurements, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. Measurement of peak discharge by the slope-area method, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. Measurement of peak discharge at culverts by indirect methods, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. Measurement of peak discharge at width contractions by indirect methods, by H. J. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. Measurement of peak discharge at dams by indirect methods, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. General procedure for gaging streams, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. Stage measurements at gaging stations, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. Discharge measurements at gaging stations, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. Measurement of time of travel and dispersion in streams by dye tracing, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
- 3-A10. Discharge ratings at gaging stations, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. Measurement of discharge by moving-boat method, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 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.
- 3-A14. Use of flumes in measuring discharge, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 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.
- 3-A17. Acoustic velocity meter systems, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-B1. Aquifer-test design, observation, and data analysis, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

- 3-B2. Introduction to ground-water hydraulics, a programed test for self-instruction, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 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-B5. Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. The principle of superposition and its application in ground-water hydraulics, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.
- 3-C1. Fluvial sediment concepts, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. Field methods for measurement of fluvial sediment, by H. P. Gúy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. Computation of fluvial-sediment discharge, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. Some statistical tools in hydrology, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. Frequency curves, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. Low-flow investigations, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. Storage analyses for water supply, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. Regional analyses of streamflow characteristics, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. Computation of rate and volume of stream depletion by wells, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. Methods for determination of inorganic substances in water and fluvial sediments, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. Determination of minor elements in water by emission spectroscopy, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. Methods for analysis of organic substances in water, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
- 5-A5. Methods for determination of radioactive substances in water and fluvial sediments, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
- 5-C1. Laboratory theory and methods for sediment analysis, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 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.
- 7-C1. Finite difference model for aquifer simulation in two dimensions with results of numerical experiments, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. Computer model of two-dimensional solute transport and dispersion in ground water, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. A model for simulation of flow in singular and interconnected channels, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. Methods of measuring water levels in deep wells, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. Installation and service manual for U.S. Geological Survey manometers, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. Calibration and maintenance of vertical-axis type current meters, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

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. 3-5, 8-10, 24, 25, Nov. 28 to Dec. 5, Nov. 13, 14, 19, 20, Jan. 6-21, and May 21 to June 14. Records good except for estimated daily discharges, which are poor. No diversion upstream from station. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--16 years, 3.03 ft³/s; 2,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64 ft³/s, June 30, 1984, gage height, 3.28 ft; maximum gage height, 3.53 ft, June 18, 1974; minimum daily discharge, 0.12 ft³/s, Jan. 12, 13, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, unknown, maximum recorded gage height, 3.36 ft at 1700 June 16, discharge, 19 ft³/s; minimum daily discharge, 0.23 ft³/s, Nov. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.53	.23	.39	.37	.29	.25	.26	.55	15	8.4	2.6	.68
2	.51	.25	.39	.37	.29	.26	.26	.54	14	8.3	3.6	.66
3	.46	.25	.39	.37	.29	.26	.27	.53	12	8.0	2.9	.64
4	.44	.25	.40	.37	.31	.26	.28	.50	10	7.8	2.7	.62
5	.44	.25	.41	.37	.32	.28	.30	.49	11	7.5	2.4	.60
6	.50	.25	.41	.37	.33	.28	.32	.58	11	7.2	2.1	.60
7	.50	.26	.38	.37	.32	.28	.32	1.0	12	6.9	1.9	.60
8	.46	.30	.37	.37	.29	.27	.33	1.7	12	6.5	1.7	.65
9	.43	.32	.34	.37	.27	.28	.33	2.7	11	6.0	1.6	.74
10	.42	.36	.32	.37	.28	.28	.32	3.3	11	5.6	1.5	.77
11	.40	.40	.31	.37	.28	.29	.32	3.4	12	5.2	1.5	.73
12	.38	.41	.31	.37	.29	.27	.32	3.1	11	4.9	1.9	.83
13	.37	.40	.32	.37	.30	.28	.32	2.6	10	4.9	1.9	.91
14	.35	.43	.33	.37	.28	.29	.32	2.2	11	4.7	1.6	.96
15	.32	.43	.34	.38	.28	.30	.32	1.8	15	4.3	1.5	.91
16	.31	.43	.34	.38	.28	.28	.31	1.8	16	3.9	1.4	.83
17	.29	.44	.34	.38	.26	.28	.33	2.0	15	3.7	1.5	.78
18	.28	.44	.34	.38	.26	.29	.35	3.3	14	3.5	1.4	.74
19	.29	.42	.35	.38	.24	.28	.39	3.9	15	3.3	1.5	.72
20	.30	.41	.36	.39	.24	.28	.48	6.1	14	3.1	1.5	.74
21	.35	.39	.38	.39	.25	.29	.65	7.5	12	2.9	1.3	.77
22	.35	.39	.39	.39	.26	.29	.82	9.0	10	2.8	1.2	.76
23	.32	.39	.35	.38	.26	.29	.89	11	8.8	2.7	1.1	.74
24	.31	.39	.35	.37	.26	.28	1.0	11	8.4	2.5	1.0	.72
25	.30	.39	.37	.35	.25	.28	1.1	9.5	8.8	2.7	.94	.70
26	.28	.39	.38	.34	.24	.27	1.1	9.0	8.5	2.6	.90	.68
27	.27	.39	.39	.31	.24	.25	.92	11	8.5	2.4	.86	.67
28	.26	.39	.39	.30	.24	.24	.71	13	8.6	3.0	.82	.67
29	.26	.39	.39	.30	---	.24	.62	14	8.5	4.1	.79	.65
30	.26	.39	.39	.31	---	.24	.58	15	8.4	3.7	.76	.63
31	.24	---	.38	.29	---	.26	---	16	---	2.9	.73	---
TOTAL	11.18	10.83	11.30	11.20	7.70	8.47	14.84	168.09	342.5	146.0	49.10	21.70
MEAN	.36	.36	.36	.36	.27	.27	.49	5.42	11.4	4.71	1.58	.72
MAX	.53	.44	.41	.39	.33	.30	1.1	16	16	8.4	3.6	.96
MIN	.24	.23	.31	.29	.24	.24	.26	.49	8.4	2.4	.73	.60
AC-FT	22	21	22	22	15	17	29	333	679	290	97	43

CAL YR 1988 TOTAL 1047.77 MEAN 2.86 MAX 27 MIN .23 AC-FT 2080
WTR YR 1989 TOTAL 802.91 MEAN 2.20 MAX 16 MIN .23 AC-FT 1590

LOCATION.--Lat 40°56'15", long 106°20'16", in NE¼SW¼SE¼ sec.11, T.11 N., R.80 W., Jackson County, Hydrologic Unit 101800001, 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.

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.

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.

AVERAGE DISCHARGE.--74 years, 441 ft³/s; 319,500 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, about 1,130 ft³/s, Mar. 29, gage height, 4.10 ft, backwater from ice; maximum recorded gage height, 5.63 ft, Mar. 13, backwater from ice jam, but was probably exceeded during period of missing record. Mar. 13-18, backwater from ice jams: minimum daily discharge, 46 ft³/s, Sept. 8.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	66	121	71	73	88	448	269	359	277	314	57
2	68	70	127	70	64	93	414	232	365	248	249	57
3	68	72	132	72	54	83	383	204	381	225	223	53
4	68	77	135	75	47	75	329	204	430	209	205	48
5	67	91	135	75	53	78	308	207	460	198	189	49
6	70	95	129	71	55	87	359	202	459	173	175	50
7	70	91	123	63	57	100	484	177	453	168	168	47
8	70	96	118	55	58	128	651	165	477	163	158	46
9	66	107	108	57	61	171	633	197	510	170	152	53
10	67	109	105	60	63	227	484	252	576	186	145	69
11	70	122	112	57	65	292	462	355	586	214	134	76
12	71	114	113	53	67	375	436	380	661	210	151	91
13	70	119	114	52	64	425	419	382	814	269	215	128
14	69	122	109	53	62	375	436	359	747	282	205	132
15	69	135	101	54	65	305	473	377	590	270	174	119
16	66	100	91	55	68	258	492	397	526	221	151	106
17	60	112	94	56	71	268	556	339	496	184	130	95
18	56	116	97	58	74	287	604	283	594	174	123	88
19	55	105	99	59	77	268	641	234	526	163	117	76
20	54	85	95	61	77	251	658	203	463	153	114	77
21	60	97	90	62	75	233	664	212	407	146	130	87
22	63	103	86	62	73	246	634	234	451	136	120	98
23	61	119	83	62	71	270	626	249	461	153	113	95
24	60	142	79	62	79	307	583	253	440	275	101	91
25	60	166	82	61	86	368	565	266	403	321	86	86
26	61	153	77	61	89	460	479	275	343	451	80	81
27	61	122	71	63	86	610	442	272	314	281	78	76
28	63	99	66	64	83	740	421	243	305	246	71	71
29	65	107	65	67	---	830	343	229	281	283	68	71
30	64	114	68	69	---	620	299	250	280	374	64	70
31	66	---	70	72	---	525	---	326	---	392	61	---
TOTAL	2006	3226	3095	1932	1917	9443	14726	8227	14158	7215	4464	2343
MEAN	64.7	108	99.8	62.3	68.5	305	491	265	472	233	144	78.1
MAX	71	166	135	75	89	830	664	397	814	451	314	132
MIN	54	66	65	52	47	75	299	165	280	136	61	46
AC-FT	3980	6400	6140	3830	3800	18730	29210	16320	28080	14310	8850	4650
CAL YR 1988	TOTAL	149326	MEAN	408	MAX	3430	MIN	31	AC-FT	296200		
WTR YR 1989	TOTAL	72752	MEAN	199	MAX	830	MIN	46	AC-FT	144300		

06695000 SOUTH PLATTE RIVER ABOVE ELEVENMILE CANYON RESERVOIR, NEAR HARTSEL, CO

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.

DRAINAGE AREA.--880 mi².

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

REVISED RECORDS.--WSP 1630: 1958. WSP 1730: Drainage area.

GAGE.--Water-stage recorder 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.--Estimated daily discharges: Nov. 19 to Dec. 6, Dec. 8-13, and Dec. 15 to Mar. 10. Records good except for estimated daily discharges, which are fair. 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: 8 years, (water years 1982-89), 114 ft³/s; 82,590 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, 434 ft³/s at 1800 July 6, gage height, 2.54 ft; minimum daily, 30 ft³/s, June 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	72	65	49	44	47	113	90	155	164	405	147
2	113	71	60	48	43	51	106	38	122	172	403	146
3	112	74	59	51	43	51	103	38	56	199	403	144
4	112	75	59	54	42	50	93	38	73	244	310	141
5	113	73	59	55	42	49	83	38	92	331	205	144
6	96	76	58	54	42	48	81	37	73	429	185	164
7	42	76	57	54	42	70	67	33	33	378	175	172
8	55	76	57	54	42	81	77	43	36	356	172	173
9	77	75	56	54	42	80	80	54	33	353	197	179
10	77	75	56	54	42	79	77	56	35	294	204	172
11	101	75	56	54	42	81	70	69	35	245	239	136
12	91	76	56	54	43	84	58	99	37	245	262	86
13	88	76	56	53	44	86	69	121	124	243	277	95
14	144	76	59	53	45	95	80	136	149	248	266	104
15	142	75	56	53	45	136	81	133	30	289	254	92
16	108	75	56	53	46	137	69	110	33	287	247	77
17	117	75	56	53	46	136	66	86	34	286	242	70
18	107	75	56	49	46	153	66	44	56	245	219	64
19	110	75	57	46	46	203	66	48	75	223	193	86
20	104	75	57	44	46	209	67	46	99	223	175	137
21	105	75	57	44	46	175	89	46	121	193	173	136
22	105	75	57	44	46	134	107	47	153	199	157	141
23	104	75	57	44	46	110	108	49	165	191	118	151
24	104	75	57	44	46	124	105	48	168	192	112	151
25	104	75	57	44	46	138	116	61	168	247	124	118
26	96	74	57	44	46	139	124	99	139	333	132	99
27	81	74	57	44	46	140	122	96	146	376	128	92
28	77	74	57	44	46	142	122	96	148	400	128	60
29	70	74	52	44	---	132	107	100	149	404	135	144
30	68	74	49	44	---	125	98	125	148	402	145	142
31	72	---	49	44	---	126	---	149	---	400	148	---
TOTAL	3031	2241	1757	1523	1241	3411	2670	2273	2885	8791	6533	3763
MEAN	97.8	74.7	56.7	49.1	44.3	110	89.0	73.3	96.2	284	211	125
MAX	144	76	65	55	46	209	124	149	168	429	405	179
MIN	42	71	49	44	42	47	58	33	30	164	112	60
AC-FT	6010	4450	3490	3020	2460	6770	5300	4510	5720	17440	12960	7460
CAL YR 1988	TOTAL 34986											
WTR YR 1989	TOTAL 40119											
MEAN	95.6	74.7	56.7	49.1	44.3	110	89.0	73.3	96.2	284	211	125
MAX	445	76	65	55	46	209	124	149	168	429	405	179
MIN	14	71	49	44	42	47	58	33	30	164	112	60
AC-FT	69390	44500	34900	30200	24600	67700	53000	45100	57200	174400	129600	74600

PLATTE RIVER BASIN

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.--No estimated daily discharges. 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.--60 years, 78.4 ft³/s; 56,800 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, 387 ft³/s at 1330 Aug. 4, gage height, 3.28 ft; minimum daily, 28 ft³/s, Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	52	64	56	49	49	130	99	71	118	362	154
2	83	52	64	55	47	47	129	91	83	121	372	151
3	28	57	63	54	46	47	126	82	78	124	376	148
4	29	56	63	54	46	52	124	73	76	136	368	162
5	29	52	64	58	50	53	115	65	77	153	337	165
6	29	53	62	58	51	54	109	59	78	191	302	180
7	29	52	64	58	51	56	103	55	72	227	275	182
8	29	55	67	57	51	61	97	52	74	247	251	180
9	29	55	66	59	50	65	88	48	69	260	235	175
10	29	53	65	58	51	70	88	53	64	269	222	187
11	29	57	64	57	50	73	84	52	58	258	224	182
12	29	58	64	64	51	75	81	53	56	255	230	176
13	29	55	65	63	50	81	81	57	59	256	236	169
14	29	58	63	63	51	82	78	71	73	255	238	164
15	29	54	66	63	50	87	79	82	72	252	238	161
16	30	56	66	62	49	94	80	87	66	257	264	161
17	33	54	65	59	49	100	77	90	60	257	246	161
18	30	54	65	59	48	103	76	86	52	252	232	161
19	34	55	67	57	48	116	73	80	53	241	221	161
20	33	56	68	56	49	131	73	72	58	233	235	142
21	32	57	67	54	48	147	74	67	55	225	229	129
22	36	57	66	52	48	145	80	62	67	221	213	129
23	40	57	64	52	48	142	83	61	77	218	195	129
24	34	61	64	51	48	135	84	54	89	212	176	130
25	34	57	64	51	48	135	85	48	97	213	161	130
26	41	60	64	51	47	135	90	44	100	228	152	131
27	46	60	64	50	47	136	94	52	106	250	145	131
28	46	63	63	50	47	136	94	55	110	275	139	131
29	47	63	62	52	---	136	97	55	112	305	142	134
30	49	63	60	51	---	136	98	57	116	344	169	134
31	51	---	59	50	---	131	---	62	---	353	163	---
TOTAL	1222	1692	1992	1734	1368	3010	2770	2024	2278	7206	7348	4630
MEAN	39.4	56.4	64.3	55.9	48.9	97.1	92.3	65.3	75.9	232	237	154
MAX	147	63	68	64	51	147	130	99	116	353	376	187
MIN	28	52	59	50	46	47	73	44	52	118	139	129
AC-FT	2420	3360	3950	3440	2710	5970	5490	4010	4520	14290	14570	9180
CAL YR 1988	TOTAL 33619	MEAN 91.9	MAX 433	MIN 15	AC-FT 66680							
WTR YR 1989	TOTAL 37274	MEAN 102	MAX 376	MIN 28	AC-FT 73930							

06697200 FRENCH CREEK NEAR JEFFERSON, CO

LOCATION.--Lat 39°23'21", long 105°38'07", unsurveyed, Park County, Hydrologic Unit 10190001, on left bank 150 ft upstream from culverts under Forest Service road, 0.4 mi upstream from confluence with Michigan Creek, and 8.4 mi northwest of Jefferson.

DRAINAGE AREA.--4.63 mi².

PERIOD OF RECORD.--April 1986 to current year (irrigation season only).

GAGE.--Water-stage recorder. Elevation of gage is 10,190 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Apr. 1-24, and July 8-10. Records good except for estimated daily discharges, which are poor. No diversions upstream from station. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF SEASONAL RECORD.--Maximum discharge, 64 ft³/s, June 1, 1988, gage height, 2.34 ft; minimum daily, 1.0 ft³/s, Apr. 1-9, 1988.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 39 ft³/s at 1900 June 1, gage height, 1.94 ft; minimum daily, 1.5 ft³/s, Apr. 1-5, 11-14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	---	---	---	---	---	1.5	5.3	33	17	9.4	3.4
2	2.0	---	---	---	---	---	1.5	5.3	32	17	8.5	3.3
3	2.0	---	---	---	---	---	1.5	4.0	30	16	6.6	3.1
4	---	---	---	---	---	---	1.5	2.7	25	16	6.3	3.1
5	---	---	---	---	---	---	1.5	3.0	22	15	5.9	3.1
6	---	---	---	---	---	---	1.6	3.6	22	16	5.4	3.1
7	---	---	---	---	---	---	1.7	4.8	20	15	5.0	3.0
8	---	---	---	---	---	---	1.8	6.8	21	14	4.6	3.0
9	---	---	---	---	---	---	1.7	8.7	22	13	4.3	2.9
10	---	---	---	---	---	---	1.6	11	21	13	4.7	2.9
11	---	---	---	---	---	---	1.5	10	23	13	7.8	3.0
12	---	---	---	---	---	---	1.5	10	25	15	7.4	3.3
13	---	---	---	---	---	---	1.5	9.6	23	14	7.2	3.6
14	---	---	---	---	---	---	1.5	8.3	23	12	6.9	3.4
15	---	---	---	---	---	---	1.6	7.7	25	11	6.6	3.2
16	---	---	---	---	---	---	1.7	7.2	28	10	6.3	3.0
17	---	---	---	---	---	---	1.7	6.7	29	9.1	6.3	2.9
18	---	---	---	---	---	---	1.8	7.8	28	8.5	6.1	2.7
19	---	---	---	---	---	---	1.9	9.5	28	8.6	5.8	2.6
20	---	---	---	---	---	---	2.3	11	27	8.6	5.5	3.4
21	---	---	---	---	---	---	2.8	14	25	8.3	5.1	2.8
22	---	---	---	---	---	---	3.5	18	22	8.2	4.8	2.7
23	---	---	---	---	---	---	4.5	24	19	8.2	4.6	2.7
24	---	---	---	---	---	---	5.0	28	17	7.2	4.5	2.7
25	---	---	---	---	---	---	6.2	26	17	6.7	4.3	2.7
26	---	---	---	---	---	---	6.2	23	17	6.4	4.1	2.6
27	---	---	---	---	---	---	5.4	25	17	7.5	3.9	2.6
28	---	---	---	---	---	---	5.6	28	17	8.8	3.7	2.4
29	---	---	---	---	---	---	5.6	28	17	7.4	3.6	2.4
30	---	---	---	---	---	---	5.3	30	17	7.0	3.6	2.4
31	---	---	---	---	---	---	---	33	---	8.2	3.5	---
TOTAL	---	---	---	---	---	---	83.0	420.0	692	345.7	172.3	88.0
MEAN	---	---	---	---	---	---	2.77	13.5	23.1	11.2	5.56	2.93
MAX	---	---	---	---	---	---	6.2	33	33	17	9.4	3.6
MIN	---	---	---	---	---	---	1.5	2.7	17	6.4	3.5	2.4
AC-FT	---	---	---	---	---	---	165	833	1370	686	342	175

SOUTH PLATTE RIVER BASIN

06699000 ROCK CREEK NEAR JEFFERSON, CO

LOCATION.--Lat 35°17'29", long 105°41'43", in NE¼NE¼, Sec. 7, T.9 S., R.14 W., Park County, Hydrologic Unit 10190001, on left bank 80 ft downstream from Park County Road 77, 1,000 ft upstream from mouth and 8.5 mi southeast of Jefferson, Colorado.

DRAINAGE AREA.--45.5 mi².

PERIOD OF RECORD.--May 1986 to current year. (Irrigation season only; Apr. through Sept.)

GAGE.--Water-stage recorder. Elevation of gage is 9,037 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Apr. 1-18, and June 18-19. Records good except for estimated daily discharges, which are poor. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF SEASONAL RECORD.--Maximum discharge, 147 ft³/s, June 9, 1987, gage height, 5.56 ft; minimum daily, 1.4 ft³/s, Apr. 1, 1987.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 57 ft³/s at 0900 July 30, gage height, 4.77 ft; minimum daily, 1.8 ft³/s, Apr. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	---	---	---	---	---	2.1	6.8	18	13	19	9.7
2	6.6	---	---	---	---	---	2.0	7.2	20	13	22	9.3
3	6.5	---	---	---	---	---	1.9	7.1	19	12	18	9.2
4	---	---	---	---	---	---	1.8	7.4	23	12	17	9.0
5	---	---	---	---	---	---	1.9	7.2	27	12	16	8.8
6	---	---	---	---	---	---	2.0	7.1	22	11	16	8.8
7	---	---	---	---	---	---	2.4	7.3	20	12	16	8.7
8	---	---	---	---	---	---	2.7	7.7	26	11	15	8.7
9	---	---	---	---	---	---	2.4	8.7	27	11	15	8.7
10	---	---	---	---	---	---	2.2	12	22	11	16	8.8
11	---	---	---	---	---	---	2.2	11	21	11	22	8.7
12	---	---	---	---	---	---	2.2	10	20	18	23	9.2
13	---	---	---	---	---	---	2.3	10	24	16	21	11
14	---	---	---	---	---	---	3.0	12	20	15	18	12
15	---	---	---	---	---	---	3.9	14	18	13	18	11
16	---	---	---	---	---	---	4.9	19	16	11	17	9.6
17	---	---	---	---	---	---	6.4	16	15	10	14	8.9
18	---	---	---	---	---	---	8.3	18	14	9.7	14	8.5
19	---	---	---	---	---	---	9.4	21	14	9.3	14	8.1
20	---	---	---	---	---	---	8.6	20	13	9.2	13	9.1
21	---	---	---	---	---	---	9.3	19	13	9.3	13	8.9
22	---	---	---	---	---	---	8.7	16	22	12	13	7.9
23	---	---	---	---	---	---	8.6	17	35	19	12	7.6
24	---	---	---	---	---	---	8.7	17	38	14	12	7.2
25	---	---	---	---	---	---	8.4	17	22	15	11	7.0
26	---	---	---	---	---	---	8.0	18	17	14	11	6.8
27	---	---	---	---	---	---	8.1	18	16	12	11	6.6
28	---	---	---	---	---	---	7.0	18	15	12	11	6.6
29	---	---	---	---	---	---	7.3	17	15	18	11	6.4
30	---	---	---	---	---	---	7.0	17	14	42	10	6.3
31	---	---	---	---	---	---	---	17	---	24	9.8	---
TOTAL	---	---	---	---	---	---	153.7	420.5	606	431.5	468.8	257.1
MEAN	---	---	---	---	---	---	5.12	13.6	20.2	13.9	15.1	8.57
MAX	---	---	---	---	---	---	9.4	21	38	42	23	12
MIN	---	---	---	---	---	---	1.8	6.8	13	9.2	9.8	6.3
AC-FT	---	---	---	---	---	---	305	834	1200	856	930	510

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: Nov. 6 to Apr. 18, and June 13-15. Records good except for estimated daily discharges, which are poor. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--6 years, 53.5 ft³/s; 38,760 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)
May 16	0300	228	4.03	June 23	0430	*328	*4.55

Minimum daily discharge, 6.2 ft³/s, Feb. 13 to Mar. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	15	11	7.6	6.6	6.2	20	42	203	112	101	48
2	27	16	11	7.6	6.6	6.2	19	43	200	110	115	48
3	27	17	10	7.6	6.6	6.2	18	46	189	111	98	46
4	27	18	10	7.6	6.6	6.2	17	48	205	120	89	44
5	29	16	10	7.6	6.6	6.2	18	46	205	116	85	43
6	34	15	10	7.6	6.6	6.2	20	43	176	112	84	37
7	34	15	9.8	7.4	6.4	6.2	23	43	161	109	81	32
8	31	15	9.8	7.4	6.4	6.2	26	53	191	104	76	30
9	29	15	9.6	7.4	6.4	6.2	23	82	189	99	77	31
10	28	15	9.4	7.4	6.4	6.4	21	124	165	94	82	30
11	27	15	9.4	7.4	6.4	6.4	21	127	170	96	96	30
12	26	14	9.2	7.4	6.4	6.6	21	73	179	141	121	33
13	26	14	9.0	7.2	6.2	6.6	22	114	197	150	111	50
14	25	14	9.0	7.2	6.2	7.0	28	132	170	130	93	57
15	24	14	8.8	7.2	6.2	7.0	36	153	155	115	86	41
16	24	13	8.6	7.2	6.2	7.2	47	209	150	99	73	34
17	24	13	8.4	7.2	6.2	7.2	62	182	153	90	68	31
18	24	13	8.4	7.0	6.2	7.4	78	152	150	84	68	28
19	23	13	8.2	7.0	6.2	7.4	85	121	149	79	64	27
20	25	13	8.2	7.0	6.2	7.6	84	101	149	77	62	40
21	24	13	8.2	7.0	6.2	7.6	88	103	150	78	59	40
22	22	12	8.0	7.0	6.2	7.6	89	110	212	84	55	32
23	23	12	8.0	7.0	6.2	8.0	84	124	282	101	52	30
24	22	12	8.0	6.8	6.2	9.0	78	146	206	106	50	27
25	21	12	8.0	6.8	6.2	10	84	159	152	116	54	25
26	19	12	7.8	6.8	6.2	12	88	162	128	131	55	26
27	18	11	7.8	6.8	6.2	14	87	161	122	114	55	27
28	17	11	7.8	6.8	6.2	16	75	162	111	123	55	26
29	17	11	7.8	6.8	---	19	72	168	114	129	52	26
30	18	11	7.8	6.8	---	21	60	182	117	143	51	23
31	18	---	7.8	6.6	---	21	---	185	---	124	51	---
TOTAL	760	410	274.8	222.2	177.2	277.8	1494	3596	5100	3397	2319	1042
MEAN	24.5	13.7	8.86	7.17	6.33	8.96	49.8	116	170	110	74.8	34.7
MAX	34	18	11	7.6	6.6	21	89	209	282	150	121	57
MIN	17	11	7.8	6.6	6.2	6.2	17	42	111	77	50	23
AC-FT	1510	813	545	441	351	551	2960	7130	10120	6740	4600	2070

CAL YR 1988 TOTAL 17279.9 MEAN 47.2 MAX 367 MIN 3.0 AC-FT 34270
WTR YR 1989 TOTAL 19070.0 MEAN 52.2 MAX 282 MIN 6.2 AC-FT 37830

PLATTE RIVER BASIN

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, 102,700 acre-ft, Aug. 1-3, elevation, 8,598.42 ft; minimum observed, 96,290 acre-ft, Oct. 1, elevation, 8,596.56 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, 77,220 acre-ft, July 7, gage height, 209.88 ft; minimum observed, 56,470 acre-ft, May 29, gage height, 183.46 ft.

MONTHEND ELEVATION IN FEET AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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.....	8,596.57	96,330	-	202.39	70,940	-
Oct. 31.....	8,597.44	99,280	+2,950	190.45	61,580	-9,360
Nov. 30.....	8,597.48	99,420	+140	190.03	61,270	-310
Dec. 31.....	8,597.48	99,420	0	193.33	63,760	+2,490
CAL YR 1988....	-	-	-170	-	-	+10,520
Jan. 31.....	8,597.45	99,320	-100	193.30	63,740	-20
Feb. 28.....	8,597.42	99,210	-110	193.48	63,880	+140
Mar. 31.....	8,597.77	100,400	+1,190	199.36	68,490	+4,610
Apr. 30.....	8,597.63	99,930	-470	196.42	66,160	-2,330
May 31.....	8,597.52	99,560	-370	184.20	57,000	-9,160
June 30.....	8,597.68	100,100	+540	206.35	74,220	+17,220
July 31.....	8,598.40	102,600	+2,500	203.21	71,610	-2,610
Aug. 31.....	8,597.55	99,660	-2,940	204.03	72,290	+680
Sept. 30.....	8,596.64	96,560	-3,100	200.56	69,450	-2,840
WTR YR 1989....	-	-	+230	-	-	-1,490

a National Geodetic Vertical Datum of 1929.

45

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	362	146	30	82	63	32	153	210	31	45	27	423
2	362	146	30	82	63	33	153	269	31	44	46	450
3	362	168	30	82	63	34	153	292	30	45	313	411
4	360	181	30	82	63	34	153	311	32	45	628	341
5	357	181	31	82	63	34	167	424	31	47	649	308
6	303	183	31	82	63	35	209	512	31	60	625	307
7	189	183	31	83	63	34	241	512	31	156	532	332
8	126	181	31	83	89	34	242	456	30	356	435	346
9	123	163	31	83	108	34	242	343	31	458	377	204
10	151	119	30	82	99	82	190	203	31	571	269	149
11	226	101	41	71	58	130	147	151	32	661	219	149
12	287	101	54	65	48	132	149	203	34	626	223	151
13	308	103	54	65	48	130	149	303	38	586	186	149
14	287	103	54	66	49	131	168	303	41	535	147	124
15	277	122	54	65	50	132	176	316	41	478	149	66
16	277	134	54	65	50	132	176	257	41	500	134	50
17	277	104	54	65	65	134	222	151	42	541	86	50
18	277	87	62	65	73	132	254	152	42	601	99	88
19	274	88	84	64	73	132	271	264	44	622	328	230
20	247	87	81	64	74	132	316	515	43	591	490	285
21	216	57	81	62	73	132	402	670	44	574	512	285
22	216	35	82	63	73	132	423	706	45	541	548	285
23	216	35	81	63	73	133	431	703	45	468	525	287
24	216	35	81	63	69	137	433	701	44	445	496	287
25	216	35	81	63	62	140	382	699	45	434	496	308
26	216	35	82	63	62	140	293	564	45	469	497	368
27	192	35	82	63	41	142	262	408	45	576	497	320
28	179	35	81	63	32	148	210	351	45	692	453	265
29	179	35	81	63	---	153	148	349	45	798	346	316
30	181	31	82	63	---	153	168	269	44	731	287	377
31	162	---	82	63	---	151	---	90	---	366	340	---
TOTAL	7621	3049	1793	2170	1810	3264	7083	11657	1154	13662	10959	7711
MEAN	246	102	57.8	70.0	64.6	105	236	376	38.5	441	354	257
MAX	362	183	84	83	108	153	433	706	45	798	649	450
MIN	123	31	30	62	32	32	147	90	30	44	27	50
AC-FT	15120	6050	3560	4300	3590	6470	14050	23120	2290	27100	21740	15290
CAL YR 1988	TOTAL 65204	MEAN 178	MAX 1340	MIN 29	AC-FT 129300							
WTR YR 1989	TOTAL 71933	MEAN 197	MAX 798	MIN 27	AC-FT 142700							

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.

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.

GAGE.--Water-stage recorder 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.

AVERAGE DISCHARGE.--51 years (water years 1909-13, 1943-89), 72.4 ft³/s; 52,450 acre-ft/yr, adjusted for inflow from Harold D. Roberts tunnel since 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 786 ft³/s at 2100 May 30, gage height, 2.12 ft; minimum daily, 23 ft³/s, Nov. 4.

CAL	YR	1988	TOTAL	48157	MEAN	132	MAX	562	MIN	15	AC-FT	95520
WTR	YR	1989	TOTAL	62629	MEAN	172	MAX	691	MIN	23	AC-FT	124200

06708750 EAST PLUM CREEK AT CASTLE ROCK, CO

LOCATION.--Lat 39°23'04", long 104°51'42", in SE¼NW¼ Sec.2, T.8 S., R.67 W., Douglas County, Hydrologic Unit 10190002, on right bank, 1,600 ft upstream from unnamed tributary, at Castle Rock.

DRAINAGE AREA.--102 mi².

PERIOD OF RECORD.--August 1985 to September 1989 (discontinued).

REVISED RECORDS.--WDR CO-88-1: 1986 (M).

GAGE.--Water-stage recorder. Elevation of gage is 6,120 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 30, Dec. 17, 25-28, Jan. 8-10, 14-16, and Feb. 3-16. Records poor. Minor diversions upstream from station for irrigation. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 453 ft³/s, Sept. 11, 1985, gage height, 7.85 ft; no flow, July 8-11, 23, 24, 26, Aug. 30, 31, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 30	0830	(a)	*4.63	July 29	2245	*52	4.55
Dec. 17	0500	(a)	*4.63				

No flow, July 8-11, 23, 24, 26, Aug. 30, 31.

a-Backwater from ice.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	4.3	7.1	3.7	6.8	7.5	7.8	8.1	4.1	.16	.39	3.3
2	3.3	4.5	6.0	4.1	4.7	8.8	7.9	7.3	3.3	.11	.35	.74
3	3.3	4.8	5.4	4.4	4.7	9.4	8.4	7.1	2.4	.07	.32	.17
4	3.5	4.7	5.9	4.5	4.7	3.7	7.2	6.6	3.5	.05	.20	.11
5	3.8	4.4	5.3	8.1	4.7	6.3	6.8	5.5	2.6	.03	.18	.08
6	3.9	4.3	5.2	7.0	4.7	8.0	6.3	5.2	3.0	.03	.17	.03
7	3.8	4.2	6.1	4.7	4.7	8.2	5.6	5.0	2.3	.01	2.0	.03
8	3.9	4.2	3.8	4.7	4.7	7.1	5.1	5.2	1.9	.00	.56	5.0
9	3.8	5.1	5.6	4.7	5.0	7.9	7.5	5.6	1.8	.00	.36	2.3
10	3.8	4.4	5.8	4.7	5.2	7.5	6.3	4.9	1.8	.00	.26	1.0
11	3.7	5.8	4.9	3.7	5.2	6.0	7.6	4.4	2.5	.00	.28	1.8
12	3.5	6.0	6.4	4.4	5.2	6.6	7.3	3.7	8.9	.67	2.5	1.9
13	3.5	6.1	8.5	5.7	5.2	6.4	7.3	5.5	9.1	4.3	1.9	1.2
14	3.6	5.9	5.9	4.5	5.2	7.7	6.8	10	5.1	.95	.17	.46
15	3.7	6.4	2.6	4.5	5.2	6.4	6.3	7.7	3.3	3.7	.19	.32
16	3.8	5.7	4.3	4.7	5.2	6.5	5.9	7.8	2.5	.90	.10	.19
17	4.0	6.8	6.3	5.1	6.2	6.2	5.5	7.0	1.7	.07	.08	.17
18	4.8	7.3	6.7	5.1	5.9	5.7	5.4	5.3	1.1	.06	.08	.15
19	4.5	5.9	7.5	5.0	7.6	5.2	5.6	3.6	.81	.05	.11	.18
20	3.5	5.2	5.8	4.9	8.8	6.6	5.5	3.0	.63	.04	.14	.37
21	3.8	5.8	5.8	4.9	4.8	5.1	5.6	2.9	.93	.03	.06	.16
22	3.9	6.1	4.3	5.0	6.2	6.5	6.6	2.8	2.0	.01	.05	.15
23	3.9	6.3	4.1	5.4	8.0	6.0	6.7	2.4	1.3	.0	.04	.25
24	3.8	5.6	2.7	5.2	11	5.5	6.4	2.1	1.2	.0	.03	.14
25	3.7	5.4	2.7	5.6	14	5.3	6.3	2.1	1.1	.02	.02	.12
26	3.8	5.9	2.7	4.4	14	5.1	6.0	6.3	11	.00	.03	.12
27	3.8	5.5	2.8	4.9	12	5.3	5.7	3.5	3.4	.41	.03	.16
28	3.9	7.2	2.8	2.4	8.8	5.3	7.0	2.7	.87	.10	.03	.23
29	3.9	5.9	2.8	3.0	---	7.6	7.2	2.1	.41	9.5	.02	.15
30	4.1	6.2	3.9	6.1	---	7.5	9.0	2.2	.28	8.3	.0	.15
31	4.0	---	3.3	8.9	---	6.1	---	2.8	---	.69	.00	---
TOTAL	117.6	165.9	153.0	154.0	188.4	203.0	198.6	150.4	84.83	30.26	10.65	21.13
MEAN	3.79	5.53	4.94	4.97	6.73	6.55	6.62	4.85	2.83	.98	.34	.70
MAX	4.8	7.3	8.5	8.9	14	9.4	9.0	10	11	9.5	2.5	5.0
MIN	3.3	4.2	2.6	2.4	4.7	3.7	5.1	2.1	.28	.00	.00	.03
AC-FT	233	329	303	305	374	403	394	298	168	60	21	42
CAL YR 1988	TOTAL	6120.8	MEAN	16.7	MAX	152	MIN	1.6	AC-FT	12140		
WTR YR 1989	TOTAL	1477.77	MEAN	4.05	MAX	14	MIN	.00	AC-FT	2930		

PLATTE RIVER BASIN

06709500 PLUM CREEK NEAR LOUVIERS, CO

LOCATION.--Lat 39°29'04", long 105°00'07", in SE¼ sec.33, T.6 S., R.68 W., Douglas County, Hydrologic Unit 10190002, on downstream side of bridge on county road from U.S. Highway 85 to Louviers, 0.8 mi northeast of Louviers, 1.2 mi downstream from Indian Creek, and 7.5 mi upstream from mouth.

DRAINAGE AREA.--302 mi².

PERIOD OF RECORD.--October 1947 to current year.

REVISED RECORDS.--WSP 1730: 1958, drainage area at site 2.5 mi downstream. WSP 1918: 1957 (M). WDR CO-88-1: 1987.

GAGE.--Water-stage recorder. Elevation of gage is 5,585 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Feb. 12, 1957, at site 2.5 mi downstream, and Nov. 7, 1965, to Aug. 6, 1966, at site 2.2 mi downstream at different datums. Feb. 12, 1957, to Nov. 6, 1965, at present site at about present datum. Low-flow records are not equivalent with station 06709530 Plum Creek at Titan Road near Louviers, located at former site, because of possible undetermined losses between sites.

REMARKS.--Estimated daily discharges: Nov. 12-17, 19-22, Nov. 26 to Jan. 2, Jan. 7-27, Feb. 5 to Mar. 6, Mar. 15, 20-21, Apr. 5 to May 3. Records poor. Diversions upstream from station for irrigation. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--42 years, 34.7 ft³/s; 25,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 154,000 ft³/s, June 16, 1965, gage height, 22.4 ft, from floodmarks, by slope-area measurement of peak flow; no flow at times in 1951-52, 1956-60, 1963-64.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 30	0030	*67	*2.39				

Minimum daily, 0.13 ft³/s, July 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	9.5	4.4	14	25	14	31	22	9.7	1.3	4.3	3.7
2	6.2	9.1	4.4	13	8.0	19	20	18	9.2	.99	4.1	3.6
3	7.5	9.8	4.4	16	1.5	17	27	16	10	.77	3.5	.81
4	6.5	10	4.7	14	1.0	18	25	10	12	.63	1.6	.82
5	4.9	9.5	5.0	14	1.3	17	21	8.8	11	.53	.75	.86
6	6.0	9.5	4.5	14	1.8	17	23	7.8	12	.46	.45	1.0
7	7.0	7.3	4.7	8.4	2.5	18	19	6.7	15	.39	2.5	1.1
8	9.8	7.5	5.0	6.6	2.3	19	26	6.1	16	.34	3.5	1.9
9	11	8.1	5.4	7.0	2.3	28	30	7.1	16	.28	1.1	5.8
10	8.1	11	5.0	7.4	4.2	16	29	6.2	15	.25	.61	6.3
11	8.1	8.1	6.6	4.9	6.8	21	28	5.9	13	.22	.36	8.6
12	6.7	15	9.6	5.0	5.8	23	24	4.6	16	.27	1.1	6.7
13	7.0	15	9.0	5.6	6.6	16	23	7.7	21	.21	2.3	5.8
14	8.1	15	8.3	5.2	6.0	18	20	16	13	1.9	1.0	4.2
15	7.5	7.0	7.8	4.5	7.6	22	22	18	11	.44	1.4	3.2
16	6.7	2.8	7.6	4.8	13	15	20	13	9.2	.49	.61	2.4
17	7.5	2.9	8.0	5.4	13	13	16	15	7.7	.23	.58	1.5
18	11	3.2	9.0	5.8	13	11	16	9.6	7.4	.16	.32	.96
19	11	2.7	7.4	6.2	11	11	22	8.6	6.2	.13	.36	.78
20	9.8	2.8	6.4	5.6	9.4	19	20	7.9	4.8	.14	.55	.74
21	8.8	2.9	8.2	6.2	10	20	24	7.8	4.4	.14	.40	.99
22	11	3.0	7.4	6.5	12	16	24	8.9	7.0	.14	.32	.93
23	8.5	3.0	7.0	5.6	14	13	22	7.7	5.7	.16	.32	.90
24	11	3.0	7.0	5.0	14	18	22	6.1	5.0	.16	.29	.80
25	11	2.3	7.0	5.7	16	29	25	6.0	3.6	.14	.26	.65
26	8.5	2.5	7.4	7.0	14	25	24	14	5.8	.14	.23	.56
27	9.8	3.0	8.0	9.0	12	27	26	18	4.7	.14	.22	.45
28	11	3.3	7.4	11	11	26	24	15	2.4	.18	.20	.47
29	11	3.0	8.4	6.0	---	25	26	6.7	1.9	5.9	.21	.49
30	11	4.4	11	35	---	32	27	4.4	1.6	23	.22	.48
31	9.8	---	15	30	---	36	---	7.7	---	6.6	.21	---
TOTAL	268.8	196.2	221.0	294.4	245.1	619	706	317.3	277.3	46.83	33.87	67.49
MEAN	8.67	6.54	7.13	9.50	8.75	20.0	23.5	10.2	9.24	1.51	1.09	2.25
MAX	11	15	15	35	25	36	31	22	21	23	4.3	8.6
MIN	4.9	2.3	4.4	4.5	1.0	11	16	4.4	1.6	.13	.20	.45
AC-FT	533	389	438	584	486	1230	1400	629	550	93	67	134

CAL YR 1988 TOTAL 17272.6 MEAN 47.2 MAX 345 MIN 2.2 AC-FT 34260
WTR YR 1989 TOTAL 3293.29 MEAN 9.02 MAX 36 MIN .13 AC-FT 6530

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. Low-flow records are not equivalent with station 06709500 Plum Creek near Louviers because of possible undetermined channel losses between sites.

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

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

REMARKS.--Estimated daily discharges: Nov. 15 to Mar. 9, Mar. 19-21, and Apr. 5 to May 3. Records poor due to unstable channel conditions. Diversions upstream from station for irrigation. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--5 years, 42.1 ft³/s; 30,500 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, 1989.

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)
July 30	0300	*124	*7.37				

No flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	13	4.4	14	25	14	19	22	8.4	.56	11	.00
2	6.5	11	4.4	13	8.0	19	24	18	8.2	.00	11	.00
3	5.5	13	4.4	16	1.5	17	25	16	8.5	.00	8.1	.00
4	6.0	12	4.7	14	1.0	18	25	12	12	.00	2.7	.00
5	6.2	14	5.0	14	1.3	17	21	8.6	12	.00	.00	.00
6	11	11	4.5	14	1.8	17	23	7.3	13	.00	.00	.00
7	8.4	9.5	4.7	8.4	2.5	18	19	3.0	11	.00	10	.00
8	5.5	9.8	5.0	6.6	2.3	19	26	3.7	9.8	.00	8.5	.00
9	5.5	12	5.4	7.0	2.3	34	30	4.9	11	.00	.00	.00
10	6.8	11	5.0	7.4	4.2	29	29	4.6	12	.00	.00	.00
11	8.3	12	6.6	4.9	6.8	22	28	5.0	14	.00	.00	4.5
12	8.0	15	9.6	5.0	5.8	14	24	4.0	17	.00	.00	7.1
13	5.1	12	9.0	5.6	6.6	11	23	5.7	18	.00	.00	7.6
14	5.5	13	8.3	5.2	6.0	11	20	15	8.2	.27	.00	6.9
15	7.4	7.0	7.8	4.5	7.6	22	22	21	11	.00	.00	4.4
16	9.1	2.8	7.6	4.8	13	19	20	16	8.3	.00	.00	2.6
17	9.1	2.9	8.0	5.4	13	16	16	19	6.5	.00	.00	.21
18	9.1	3.2	9.0	5.8	13	17	16	12	4.4	.00	.00	.00
19	9.8	2.7	7.4	6.2	11	19	22	14	3.9	.00	.00	.00
20	11	2.8	6.4	5.6	9.4	20	20	10	3.0	.00	.00	.00
21	9.1	2.9	8.2	6.2	10	21	24	7.6	3.0	.00	.00	.00
22	11	3.0	7.4	6.5	12	16	24	7.0	4.7	.00	.00	.00
23	8.4	3.0	7.0	5.6	14	20	22	6.3	3.7	.00	.00	.00
24	9.8	3.0	7.0	5.0	14	20	22	5.4	3.5	.00	.00	.00
25	12	2.3	7.0	5.7	16	18	25	5.3	2.7	.00	.00	.00
26	11	2.5	7.4	7.0	14	25	24	18	4.9	.00	.00	.00
27	11	3.0	8.0	9.0	12	19	26	15	13	.00	.00	.00
28	9.1	3.3	7.4	11	11	24	24	11	7.7	.00	.00	.00
29	12	3.0	8.4	6.0	---	24	26	9.1	5.1	.00	.00	.00
30	11	4.4	11	35	---	22	27	6.9	2.9	22	.00	.00
31	12	---	15	30	---	16	---	8.1	---	13	.00	---
TOTAL	266.2	220.1	221.0	294.4	245.1	598	696	321.5	251.4	35.83	51.30	33.31
MEAN	8.59	7.34	7.13	9.50	8.75	19.3	23.2	10.4	8.38	1.16	1.65	1.11
MAX	12	15	15	35	25	34	30	22	18	22	11	7.6
MIN	5.1	2.3	4.4	4.5	1.0	11	16	3.0	2.7	.00	.00	.00
AC-FT	528	437	438	584	486	1190	1380	638	499	71	102	66
CAL YR 1988	TOTAL 16107.7	MEAN 44.0	MAX 325	MIN 2.0	AC-FT 31950							
WTR YR 1989	TOTAL 3234.14	MEAN 8.86	MAX 35	MIN .00	AC-FT 6410							

PLATTE RIVER BASIN

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, 29,450 acre-ft, Feb. 26, 27, elevation, 5,432.90 ft; minimum, 20,080 acre-ft, Nov. 17, elevation, 5,425.82 ft. .

MONTHEND ELEVATION AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	5,428.52	22,150	-
Oct. 31.	5,427.59	22,240	+90
Nov. 30.	5,426.59	21,000	-1,240
Dec. 31.	5,428.72	23,690	+2,680
CAL YR 1988.	-	-	-1,250
Jan. 31.	5,431.07	26,850	+3,170
Feb. 28.	5,432.87	29,410	+2,560
Mar. 31.	5,432.56	28,960	-450
Apr. 30.	5,428.08	22,860	-6,100
May 31.	5,429.71	25,000	+2,140
June 30.	5,430.25	25,730	+730
July 31.	5,429.35	24,520	-1,210
Aug. 31.	5,428.06	22,830	-1,690
Sept. 30.	5,427.49	22,110	-720
WTR YR 1989	-	-	-40

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 to September 30, 1989.

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

REMARKS.--Records good. Flow regulated by Chatfield Reservoir (station 06709600) 7.1 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined; minimum daily, 32 ft³/s, Apr. 12, 1989.

EXTREMES FOR CURRENT PERIOD APRIL TO SEPTEMBER.--Discharge above 350 ft³/s are not published, because of the lack of stage-discharge relationship caused by the operation of a Taintor gate located about 800 ft downstream from gage. Minimum daily discharge, 32 ft³/s, Apr. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	54	323	316	---	130
2	---	---	---	---	---	---	---	134	350	325	---	106
3	---	---	---	---	---	---	---	161	---	213	265	96
4	---	---	---	---	---	---	---	125	---	223	265	95
5	---	---	---	---	---	---	---	65	255	319	270	95
6	---	---	---	---	---	---	---	62	261	---	316	95
7	---	---	---	---	---	---	---	74	205	---	338	96
8	---	---	---	---	---	---	---	151	125	---	290	113
9	---	---	---	---	---	---	---	283	90	---	228	122
10	---	---	---	---	---	---	---	244	70	---	158	135
11	---	---	---	---	---	---	---	96	105	---	162	162
12	---	---	---	---	---	---	32	144	148	---	201	115
13	---	---	---	---	---	---	71	203	225	---	208	92
14	---	---	---	---	---	---	212	244	290	---	202	72
15	---	---	---	---	---	---	219	226	318	---	279	69
16	---	---	---	---	---	---	220	237	283	---	---	65
17	---	---	---	---	---	---	216	225	266	---	---	64
18	---	---	---	---	---	---	209	197	173	---	---	63
19	---	---	---	---	---	---	194	128	172	---	---	55
20	---	---	---	---	---	---	222	133	181	---	172	53
21	---	---	---	---	---	---	206	185	236	292	144	48
22	---	---	---	---	---	---	205	203	319	250	137	53
23	---	---	---	---	---	---	205	277	---	251	137	133
24	---	---	---	---	---	---	209	323	319	254	147	141
25	---	---	---	---	---	---	243	312	---	254	149	135
26	---	---	---	---	---	---	253	260	---	259	150	65
27	---	---	---	---	---	---	220	239	---	293	150	56
28	---	---	---	---	---	---	160	223	249	---	150	57
29	---	---	---	---	---	---	120	241	257	---	148	53
30	---	---	---	---	---	---	124	246	285	---	144	51
31	---	---	---	---	---	---	---	272	---	---	127	---
TOTAL	---	---	---	---	---	---	---	5967	---	---	---	2685
MEAN	---	---	---	---	---	---	---	192	---	---	---	89.5
MAX	---	---	---	---	---	---	---	323	---	---	---	162
MIN	---	---	---	---	---	---	---	54	---	---	---	48
AC-FT	---	---	---	---	---	---	---	11840	---	---	---	5330

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: Dec. 5 to Mar. 31, and Apr. 11-17. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by small diversions for irrigation. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 388 ft³/s, Aug. 26, 1984, gage height 3.80 ft, site then in use; minimum daily, 11 ft³/s, Nov. 12, 30, Dec. 1, 1988, Apr. 5, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 113 ft³/s at 0100 June 13, gage height, 3.10 ft; minimum daily, 11 ft³/s, Nov. 12, 30, Dec. 1, Apr. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	16	11	14	12	12	16	25	83	65	56	29
2	24	16	12	14	12	12	13	31	72	62	59	31
3	24	16	13	14	12	12	15	29	72	61	54	28
4	30	18	12	14	12	12	13	27	75	60	47	27
5	29	16	12	13	12	12	11	24	76	59	46	28
6	26	18	13	13	12	12	14	25	75	58	51	26
7	23	17	13	13	12	12	14	26	70	55	50	26
8	22	16	13	13	12	12	14	29	68	52	45	30
9	22	17	13	13	12	12	14	38	71	49	43	33
10	23	13	13	13	12	12	13	44	72	48	45	31
11	23	19	13	13	12	13	16	42	68	52	44	35
12	21	11	13	13	12	13	17	36	74	62	55	37
13	20	19	13	13	12	13	16	37	89	72	70	39
14	20	17	14	13	12	13	17	44	81	61	57	39
15	20	17	14	13	12	13	19	44	77	57	56	35
16	19	19	14	13	12	13	21	54	78	53	49	32
17	19	23	14	13	12	13	23	50	78	48	48	29
18	19	17	14	13	12	13	24	50	72	46	46	27
19	19	15	14	13	12	13	27	62	71	45	43	27
20	18	19	14	13	12	13	28	62	70	43	42	30
21	18	19	14	13	12	13	32	62	71	42	41	33
22	18	17	14	13	12	13	35	60	77	42	38	33
23	17	19	14	13	12	13	35	63	82	40	38	28
24	17	18	14	13	12	13	33	64	83	39	36	26
25	17	17	14	13	12	14	31	60	78	56	35	25
26	17	16	14	13	12	14	30	59	73	48	34	25
27	17	14	14	13	12	14	28	56	70	44	35	24
28	16	14	14	13	12	14	24	55	68	48	33	24
29	17	12	14	13	---	16	23	57	71	52	31	24
30	18	11	14	13	---	14	23	59	70	83	31	23
31	17	---	14	12	---	12	---	63	---	62	29	---
TOTAL	634	496	416	406	336	400	639	1437	2235	1664	1387	884
MEAN	20.5	16.5	13.4	13.1	12.0	12.9	21.3	46.4	74.5	53.7	44.7	29.5
MAX	30	23	14	14	12	16	35	64	89	83	70	39
MIN	16	11	11	12	12	12	11	24	68	39	29	23
AC-FT	1260	984	825	805	666	793	1270	2850	4430	3300	2750	1750
CAL YR 1988	TOTAL	13654	MEAN	37.3	MAX	132	MIN	11	AC-FT	27080		
WTR YR 1989	TOTAL	10934	MEAN	30.0	MAX	89	MIN	11	AC-FT	21690		

06710500 BEAR CREEK AT MORRISON, CO

LOCATION.--Lat 39°39'11", long 105°11'43", in SE¼SW¼ 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, 1898, 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. 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: Oct. 8, 9, Nov. 27 to Feb. 22, and Mar. 4-7. Records good except for estimated daily discharges, which are poor. Small diversions for irrigation of about 1,000 acres upstream from station. Several observations of 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.--74 years (water years 1891, 1897, 1899, 1901, 1920-89), 53.8 ft³/s; 38,980 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)
Dec. 27	0715	---	*4.87	July 30	0830	a*110	4.71

Minimum daily, 10 ft³/s, Dec. 27, 28, Jan. 12-14, Feb. 4,5.
a-Backwater from ice.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	19	17	12	12	23	28	35	85	68	56	36
2	21	19	18	12	11	22	27	49	76	65	62	37
3	20	20	17	12	11	23	28	44	72	62	56	32
4	23	21	16	13	10	20	27	38	76	60	48	31
5	23	21	16	13	10	28	25	36	73	57	45	32
6	23	20	16	13	11	27	27	37	76	56	52	31
7	22	20	15	12	11	33	27	38	71	54	52	32
8	22	21	14	11	12	37	31	38	71	48	50	41
9	22	21	14	11	13	39	34	50	76	49	48	42
10	20	19	15	11	13	38	26	55	77	44	49	38
11	19	21	16	11	13	37	34	48	71	49	45	46
12	19	23	17	10	12	37	32	43	75	60	62	49
13	19	16	17	10	12	34	32	52	100	73	78	50
14	18	25	16	10	12	35	34	60	100	61	64	51
15	19	25	15	11	12	27	32	75	94	54	62	41
16	19	19	14	12	12	27	32	66	95	51	56	38
17	18	13	15	12	12	31	34	64	89	44	56	36
18	18	20	16	12	12	27	37	71	85	41	50	33
19	18	21	16	12	12	29	42	72	81	41	49	31
20	19	20	16	11	12	28	40	71	78	39	48	33
21	19	21	15	11	13	21	43	67	81	38	47	36
22	19	22	15	11	13	27	48	68	94	37	42	38
23	19	24	15	12	19	29	49	70	94	37	41	35
24	18	25	14	12	25	28	45	71	94	35	37	32
25	18	24	13	12	27	27	42	67	94	50	36	29
26	19	19	15	11	31	29	43	68	86	45	36	28
27	19	18	10	11	30	29	41	67	82	38	40	28
28	19	17	10	12	25	27	38	64	77	41	37	25
29	21	18	11	11	---	30	37	64	77	52	34	24
30	21	18	11	11	---	30	40	66	76	93	36	23
31	20	---	11	12	---	25	---	68	---	64	33	---
TOTAL	614	610	456	357	418	904	1055	1782	2476	1606	1507	1058
MEAN	19.8	20.3	14.7	11.5	14.9	29.2	35.2	57.5	82.5	51.8	48.6	35.3
MAX	23	25	18	13	31	39	49	75	100	93	78	51
MIN	18	13	10	10	10	20	25	35	71	35	33	23
AC-FT	1220	1210	904	708	829	1790	2090	3530	4910	3190	2990	2100
CAL YR 1988	TOTAL 17331	MEAN 47.4	MAX 195	MIN 10	AC-FT 34380							
WTR YR 1989	TOTAL 12843	MEAN 35.2	MAX 100	MIN 10	AC-FT 25470							

PLATTE RIVER BASIN

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: Feb. 3-14, Mar. 21, 24-29, Mar. 31 to Apr. 10, Apr. 12-19, and May 15-25. 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 observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 603 ft³/s, May 17, 1987, gage height, 5.63 ft, present datum; minimum daily, 0.40 ft³/s, Apr. 16-17, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 157 ft³/s at 2300 Aug. 7, gage height, 4.88 ft; minimum daily, 0.40 ft³/s, Apr. 16-17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	13	3.9	17	17	21	.70	1.9	76	1.5	4.8	3.2
2	11	12	4.8	16	14	20	.60	11	29	2.0	10	7.5
3	14	14	4.7	15	14	20	.60	3.8	20	2.2	3.4	4.9
4	19	15	4.3	14	14	10	.60	2.9	32	1.5	2.9	4.6
5	21	16	4.2	17	14	17	.60	1.0	28	2.5	2.6	6.6
6	18	15	2.9	18	14	27	.60	1.1	30	3.3	3.3	5.2
7	17	15	4.9	17	14	38	.60	1.4	17	3.0	8.0	4.0
8	17	16	3.4	21	14	38	.80	1.7	18	2.0	2.4	9.8
9	16	17	2.1	22	14	43	1.0	9.2	19	3.3	2.7	4.6
10	17	15	3.7	17	14	42	.70	9.7	23	2.4	4.2	4.4
11	17	15	8.0	14	20	39	3.7	4.3	14	6.6	2.4	8.3
12	15	16	6.5	16	19	38	1.2	3.8	13	8.6	7.3	6.2
13	16	11	6.3	20	18	17	1.3	2.6	39	12	10	4.2
14	16	19	9.3	19	17	9.4	.80	19	23	3.3	3.1	2.4
15	17	19	17	17	17	3.2	.60	18	11	2.3	1.5	1.9
16	16	15	15	18	14	5.0	.40	17	2.9	1.2	1.3	2.0
17	14	9.5	16	19	16	7.2	.40	16	1.8	1.1	1.1	2.0
18	14	8.7	18	19	15	4.0	1.1	15	2.2	.91	1.0	2.3
19	13	6.3	14	19	16	8.0	1.2	14	2.2	1.0	1.0	2.4
20	14	5.7	6.1	19	16	5.2	2.6	10	1.0	1.7	.95	2.6
21	14	7.1	11	20	16	1.0	7.2	7.5	6.2	1.8	1.0	2.6
22	14	7.9	18	20	15	3.8	11	5.2	12	1.5	1.2	2.0
23	14	11	17	20	20	5.9	11	3.7	7.3	1.2	.91	1.7
24	11	13	16	16	27	1.5	7.2	3.0	4.5	2.6	1.0	1.7
25	13	11	17	12	32	.60	6.8	2.2	1.5	10	1.0	4.6
26	13	7.2	18	14	39	.60	6.3	3.2	3.5	2.4	1.1	7.5
27	14	3.1	25	13	39	.60	4.6	2.1	1.9	2.2	1.1	6.6
28	13	6.8	25	12	23	.60	3.5	3.1	1.3	3.8	1.2	1.6
29	15	6.5	23	13	---	1.5	2.4	3.3	2.7	18	1.5	2.5
30	16	2.8	23	15	---	3.2	4.8	4.8	3.1	53	1.6	5.1
31	15	---	21	16	---	1.0	---	14	---	3.2	1.2	---
TOTAL	463.2	349.6	369.1	525	522	432.30	84.90	215.5	446.1	162.11	86.76	125.0
MEAN	14.9	11.7	11.9	16.9	18.6	13.9	2.83	6.95	14.9	5.23	2.80	4.17
MAX	21	19	25	22	39	43	11	19	76	53	10	9.8
MIN	9.2	2.8	2.1	12	14	.60	.40	1.0	1.0	.91	.91	1.6
AC-FT	919	693	732	1040	1040	857	168	427	885	322	172	248

CAL YR 1988 TOTAL 12813.2 MEAN 35.0 MAX 284 MIN 2.1 AC-FT 25410
WTR YR 1989 TOTAL 3781.57 MEAN 10.4 MAX 76 MIN .40 AC-FT 7500

06711040 TURKEY CREEK ABOVE BEAR CREEK LAKE, NEAR MORRISON, CO

LOCATION.--Lat 39°38'27", long 105°09'34", in SE¼SW¼ Sec.6, T.5 S, R.69 W, Jefferson County, Hydrologic Unit 10190002, on right downstream side of bridge, 0.5 mi east of intersection of Highway 285 and Soda Creek Lake Road, 1.5 mi upstream from mouth and 1.9 mi east of Morrison.

DRAINAGE AREA.--50.6 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 5,635 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 25-30, Jan. 7-9, 11-17, and Feb. 1-10. Records good except for estimated daily discharges, which are fair. Natural flow of stream affected by Harriman Canal. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 149 ft³/s, May 5, 1987, gage height, 3.40 ft; minimum daily, 0.32 ft³/s, Apr. 19, Sept. 6, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24 ft³/s at 2000 Feb. 25, gage height, 2.18 ft; minimum daily, 0.32 ft³/s, Apr. 19, Sept. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.86	1.1	1.5	1.7	2.0	4.0	.49	.46	4.6	.63	.76	.40
2	.89	1.1	1.4	1.5	1.8	1.1	.53	.46	1.8	.60	.70	.39
3	.89	1.0	1.3	1.4	1.8	.87	.58	.50	2.1	.78	.59	.35
4	.96	1.0	1.3	1.4	1.8	.82	.65	.51	1.6	1.5	.45	.34
5	.96	1.1	1.2	1.6	1.7	.82	.49	.51	1.3	1.6	.46	.34
6	.96	1.1	1.1	1.7	1.7	.96	.40	.51	1.3	1.6	.53	.32
7	.98	1.0	1.2	1.6	1.7	2.5	.45	.52	1.3	1.6	1.7	.36
8	.98	1.0	1.2	1.6	1.7	5.5	.45	.62	1.4	1.5	.99	.47
9	1.0	1.1	1.3	1.5	1.7	6.3	.51	.77	1.3	1.4	.60	.74
10	1.0	1.0	1.5	1.4	1.7	3.5	1.6	.82	1.3	1.1	.54	1.2
11	1.1	1.1	1.6	1.3	1.7	2.8	3.6	.82	1.3	1.0	.53	1.3
12	1.1	1.1	1.8	1.3	1.6	2.4	1.6	.82	1.2	12	.72	1.5
13	1.2	1.1	1.9	1.3	1.7	4.2	1.6	.82	1.3	19	.65	1.2
14	1.3	1.1	2.0	1.3	1.6	4.3	1.1	2.0	.96	19	.59	.75
15	1.4	1.7	2.8	1.3	1.5	3.5	.46	1.3	.93	18	.53	.48
16	1.4	1.6	2.7	1.3	1.5	3.4	.38	1.7	.87	18	.56	.46
17	1.4	1.8	2.3	1.3	1.6	1.8	.33	1.3	.85	18	.52	.42
18	1.5	2.1	2.1	1.2	1.6	.73	.33	1.3	.80	19	.47	.46
19	1.5	1.8	2.1	1.3	1.9	.78	.32	1.2	.54	18	.48	.43
20	1.4	1.8	2.0	1.3	2.1	.72	.35	1.2	.41	19	.49	.38
21	1.4	1.5	2.1	1.4	2.0	.98	.37	1.2	.57	19	.46	.41
22	1.4	1.5	2.1	1.5	2.0	.84	.37	1.2	.50	19	.43	.38
23	1.4	1.7	2.1	1.6	2.6	.59	.38	1.2	.44	19	.42	.39
24	1.3	2.2	2.2	1.9	2.6	.57	.35	1.1	.44	20	.40	.37
25	1.2	2.2	2.6	1.7	4.7	.57	.33	1.1	.41	21	.40	.37
26	1.1	2.1	2.6	1.5	5.1	.57	.37	1.2	.48	20	.40	.41
27	1.1	2.6	2.6	1.5	4.1	.56	.39	1.1	.48	11	.42	.44
28	1.1	2.3	2.6	2.2	5.4	.51	.36	1.1	.53	.38	.39	.41
29	1.1	1.9	2.6	2.0	---	.54	.37	1.1	.55	.90	.36	.44
30	1.1	1.7	2.4	1.6	---	.53	.43	1.0	.57	4.1	.37	.47
31	1.1	---	2.0	1.7	---	.46	---	2.0	---	.83	.34	---
TOTAL	36.08	45.4	60.2	46.9	62.9	57.72	19.94	31.44	32.13	308.52	17.25	16.38
MEAN	1.16	1.51	1.94	1.51	2.25	1.86	.66	1.01	1.07	9.95	.56	.55
MAX	1.5	2.6	2.8	2.2	5.4	6.3	3.6	2.0	4.6	21	1.7	1.5
MIN	.86	1.0	1.1	1.2	1.5	.46	.32	.46	.41	.38	.34	.32
AC-FT	72	90	119	93	125	114	40	62	64	612	34	32
CAL YR 1988	TOTAL	4422.73	MEAN	12.1	MAX	102	MIN	.54	AC-FT	8770		
WTR YR 1989	TOTAL	734.86	MEAN	2.01	MAX	21	MIN	.32	AC-FT	1460		

LOCATION.--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.

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.

GAGE.--Water-stage recorder. 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.

AVERAGE DISCHARGE.--62 years, 43.7 ft³/s; 31,660 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 232 ft³/s at 1800 June 3, gage height, 3.68 ft; minimum daily, 6.2 ft³/s, Apr. 7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	24	13	21	29	38	11	16	92	6.7	35	7.7
2	16	23	12	21	20	34	8.8	15	51	6.7	31	8.3
3	20	23	12	20	23	34	7.4	16	51	6.7	17	7.5
4	21	23	12	20	21	25	7.0	14	53	6.3	14	9.5
5	28	24	13	23	21	23	6.3	13	42	7.5	13	8.0
6	25	24	11	23	22	27	6.5	9.0	39	6.7	14	9.1
7	25	24	12	22	24	41	6.2	8.0	35	7.1	16	6.7
8	24	25	14	19	24	44	6.4	10	32	8.0	18	15
9	23	30	13	17	24	55	13	12	37	8.7	16	18
10	22	28	11	18	23	53	11	19	33	9.5	11	31
11	23	26	12	19	22	51	11	20	29	7.6	12	40
12	22	26	14	18	28	52	11	15	31	7.6	37	36
13	22	25	15	19	27	44	11	15	34	9.8	26	47
14	23	25	14	18	26	28	10	45	42	18	22	40
15	24	32	20	18	25	20	9.4	43	35	30	27	29
16	25	29	26	19	27	17	8.4	40	25	30	26	15
17	25	24	25	21	26	16	7.9	28	18	30	14	14
18	24	20	27	21	27	16	8.2	23	14	30	13	12
19	26	18	28	21	30	15	7.9	20	13	28	13	12
20	24	16	22	21	32	21	8.8	19	13	24	13	12
21	25	15	17	22	32	15	8.5	18	16	24	13	11
22	24	16	20	22	32	12	9.9	16	18	24	12	12
23	23	19	21	22	37	12	12	15	19	24	10	13
24	22	22	22	22	43	11	13	14	15	24	10	14
25	22	24	20	23	43	9.8	12	15	13	24	9.7	13
26	23	23	21	21	47	8.5	12	28	13	27	8.0	13
27	23	20	23	19	53	7.4	11	18	11	21	8.4	12
28	23	15	21	22	47	6.9	11	14	9.5	9.2	8.4	9.8
29	23	15	20	24	---	9.6	12	13	7.6	19	7.6	9.5
30	25	14	21	24	---	8.5	23	14	7.6	27	9.1	11
31	25	---	21	25	---	8.6	---	46	---	24	7.5	---
TOTAL	716	672	553	645	835	763.3	301.6	611.0	848.7	536.1	491.7	496.1
MEAN	23.1	22.4	17.8	20.8	29.8	24.6	10.1	19.7	28.3	17.3	15.9	16.5
MAX	28	32	28	25	53	55	23	46	92	30	37	47
MIN	16	14	11	17	20	6.9	6.2	8.0	7.6	6.3	7.5	6.7
AC-FT	1420	1330	1100	1280	1660	1510	598	1210	1680	1060	975	984
CAL YR 1988	TOTAL 19835.5											
WTR YR 1989	TOTAL 7469.5											
			MEAN 54.2	MAX 487	MIN 9.5	AC-FT 39340						
			MEAN 20.5	MAX 92	MIN 6.2	AC-FT 14820						

57

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.

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. 7-9, Jan 7-9, 12-17, and Feb. 3-14. 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.--6 years, 406 ft³/s; 294,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,090 ft³/s, Aug. 20, 1984, gage height, 5.25 ft; minimum daily, 28 ft³/s, Feb. 11, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,040 ft³/s at 2200 July 29, gage height, 3.23 ft; minimum daily, 29 ft³/s, May 7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	49	37	65	59	126	136	74	481	315	788	93
2	57	42	34	51	57	124	111	132	458	344	521	84
3	64	44	40	48	56	130	100	156	587	159	303	73
4	67	77	36	43	56	144	75	114	538	168	294	73
5	78	157	38	65	54	128	69	49	301	313	304	72
6	73	163	36	47	52	130	72	33	328	552	392	70
7	78	158	36	46	50	146	93	29	238	557	464	70
8	67	158	36	45	50	153	223	102	158	385	365	103
9	67	181	36	44	49	141	235	311	122	466	262	126
10	64	173	36	45	48	141	101	290	107	424	151	160
11	64	160	38	41	47	136	71	89	110	467	158	229
12	60	160	34	42	47	135	63	113	168	473	260	142
13	80	161	38	41	46	119	83	205	269	506	273	125
14	142	154	36	40	45	62	233	370	363	597	221	100
15	142	210	39	39	44	55	230	344	401	671	351	82
16	141	171	79	38	49	87	221	309	320	606	484	68
17	141	131	50	38	45	90	219	264	292	507	466	69
18	123	58	59	37	54	90	203	213	142	517	457	63
19	60	46	58	42	68	86	179	120	130	449	420	51
20	61	47	50	42	73	103	220	116	139	372	157	53
21	59	44	38	43	63	92	195	168	223	279	120	55
22	58	48	42	45	65	86	197	192	387	215	100	56
23	52	44	41	43	83	88	189	299	439	214	99	125
24	51	49	55	44	92	88	206	366	345	214	112	141
25	51	52	39	42	133	86	278	386	575	212	107	140
26	53	44	50	48	136	82	306	352	730	229	107	72
27	47	50	65	38	137	82	263	253	571	280	109	56
28	51	39	115	55	139	80	174	220	230	357	109	51
29	53	43	90	62	---	102	112	230	241	536	104	48
30	50	44	105	65	---	100	176	250	283	641	104	49
31	48	---	52	89	---	90	---	337	---	693	86	---
TOTAL	2259	2957	1538	1473	1897	3302	5033	6486	9676	12718	8248	2699
MEAN	72.9	98.6	49.6	47.5	67.7	107	168	209	323	410	266	90.0
MAX	142	210	115	89	139	153	306	386	730	693	788	229
MIN	47	39	34	37	44	55	63	29	107	159	86	48
AC-FT	4480	5870	3050	2920	3760	6550	9980	12860	19190	25230	16360	5350
CAL YR 1988	TOTAL	87280	MEAN	238	MAX	1840	MIN	34	AC-FT	173100		
WTR YR 1989	TOTAL	58286	MEAN	160	MAX	788	MIN	29	AC-FT	115600		

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, 970 microsiemens, Nov. 19, 1987; minimum mean, 223 microsiemens, May 16, 1987.

pH: Maximum, 9.9 units, July 14, 15, 18, 1987; minimum, 6.5 units, Feb. 16 and 17, 1988.

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, 928 microsiemens, Dec. 30; minimum mean, 341 microsiemens, July 6.

pH: Maximum, 9.3 units, Aug. 23; minimum, 7.2 units, Nov. 14, 22, and Dec. 28.

WATER TEMPERATURE: Maximum, 27.2°C, July 4; minimum, 0.0°C, many days.

DISSOLVED OXYGEN: Maximum, 16.0 mg/L, Feb. 11; minimum, 4.4 mg/L, Aug. 21.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

[illegible]

06711565 SOUTH PLATTE RIVER AT ENGLEWOOD, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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

PLATTE RIVER BASIN

06711565 SOUTH PLATTE RIVER AT ENGLEWOOD, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	13.0	7.0	8.4	2.1	2.2	.0	1.9	.0	6.5	1.2
2	---	---	11.4	8.3	8.1	1.1	3.3	.0	.1	.0	6.7	2.1
3	---	---	13.2	8.2	7.3	1.1	---	---	.0	.0	3.3	.0
4	13.6	11.4	12.0	7.1	7.4	1.1	---	---	.0	.0	4.8	.0
5	14.4	10.4	11.4	6.2	7.2	1.2	---	---	.0	.0	6.6	.0
6	15.8	11.4	10.2	6.4	6.4	.3	---	---	.0	.0	8.4	.0
7	---	---	11.4	7.0	3.4	1.0	---	---	.0	.0	9.8	1.9
8	---	---	11.4	6.1	4.0	.1	---	---	.0	.0	12.1	2.6
9	15.9	9.9	11.2	7.1	4.1	.1	---	---	.0	.0	11.3	3.8
10	16.8	8.8	9.3	5.3	5.2	.3	---	---	.0	.0	11.2	3.8
11	---	---	9.2	6.0	5.1	1.1	---	---	.2	.0	11.9	4.2
12	---	---	10.4	4.2	7.3	1.0	---	---	2.9	.0	9.8	4.2
13	17.1	11.0	10.3	5.0	8.4	2.2	---	---	2.7	.0	12.8	3.2
14	17.4	10.2	11.1	6.0	5.1	2.0	---	---	2.7	.0	10.1	2.3
15	16.0	11.0	7.4	4.1	3.1	.2	---	---	5.4	.0	12.4	2.1
16	16.1	10.0	8.3	3.0	2.4	.1	---	---	4.1	.0	14.9	3.3
17	16.0	11.0	8.4	3.2	4.2	.0	---	---	2.1	.0	11.8	4.3
18	---	---	7.4	3.2	5.4	.4	---	---	6.4	.0	13.6	3.3
19	14.2	10.0	8.4	3.1	4.4	1.3	---	---	7.4	.7	10.1	4.0
20	---	---	7.4	2.0	6.0	1.0	---	---	3.7	1.7	5.6	1.7
21	---	---	8.0	2.0	6.3	1.0	---	---	7.4	.0	13.1	.7
22	12.4	9.0	6.4	2.0	4.3	.2	---	---	---	---	15.3	4.2
23	15.2	7.0	9.3	4.0	4.0	.2	---	---	---	---	14.4	4.9
24	15.1	8.1	9.2	5.1	2.3	.2	---	---	---	---	15.5	4.9
25	12.4	8.0	6.1	3.3	4.1	.1	---	---	---	---	16.9	5.8
26	14.4	7.0	5.0	1.4	3.1	.0	---	---	---	---	14.9	6.2
27	13.2	8.0	5.1	.1	1.4	.2	---	---	---	---	15.4	6.9
28	12.1	6.0	8.2	1.0	.3	.0	---	---	---	---	17.7	5.9
29	10.0	7.0	5.3	1.1	.2	.0	---	---	---	---	11.0	7.0
30	14.0	7.4	5.2	.1	.2	.0	---	---	---	---	12.7	5.2
31	14.2	7.0	---	---	1.0	.0	6.9	.9	---	---	17.0	3.8
MONTH	---	---	13.2	.1	8.4	.0	---	---	---	---	17.7	.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.0	5.4	19.0	5.5	20.0	13.4	23.9	16.3	23.1	18.7	24.6	17.6
2	14.4	4.3	16.7	10.5	19.2	14.0	24.1	16.3	22.7	18.5	26.0	16.1
3	14.1	6.4	17.5	9.7	17.6	12.0	26.1	16.4	25.0	17.3	25.2	16.2
4	12.5	4.4	17.8	9.3	15.4	13.0	27.2	16.6	24.2	17.4	25.8	15.7
5	16.0	4.2	21.7	9.1	21.7	12.3	25.5	17.0	23.3	17.5	25.8	15.8
6	18.7	7.1	22.9	10.8	20.1	14.2	23.3	17.7	22.6	17.5	24.4	16.0
7	15.2	7.8	23.7	11.8	20.0	13.8	23.7	18.1	23.0	17.4	25.7	16.2
8	12.3	7.5	21.1	14.0	21.5	13.9	24.0	16.9	24.9	17.5	18.6	15.1
9	7.9	3.6	14.7	12.7	19.9	14.1	24.4	17.8	22.7	17.6	16.2	13.7
10	14.8	1.3	16.5	12.4	20.6	13.8	24.1	17.6	26.4	17.6	20.5	13.4
11	10.2	5.9	18.3	11.9	23.9	13.9	23.3	18.1	23.6	18.5	14.1	11.4
12	15.8	4.5	22.0	12.4	20.5	14.8	20.7	18.6	21.3	18.0	11.4	7.9
13	18.4	5.5	18.1	12.1	20.3	13.8	24.3	17.7	22.8	17.6	16.4	8.6
14	15.9	7.1	14.0	9.8	20.1	13.9	23.0	17.9	23.8	16.7	19.8	9.8
15	12.7	7.4	17.4	11.3	22.3	14.2	23.1	17.8	23.4	17.0	21.5	11.1
16	15.2	8.1	16.4	12.0	20.7	15.2	23.7	18.0	21.7	17.8	22.7	12.0
17	16.4	9.1	19.7	12.2	21.9	14.9	23.8	17.7	23.0	17.5	23.4	13.9
18	16.7	8.6	22.0	13.0	26.2	14.3	23.4	17.5	22.4	18.2	23.3	13.7
19	19.5	8.8	23.5	13.4	24.0	15.6	23.9	17.0	21.6	18.0	23.4	13.8
20	17.9	10.5	24.1	12.8	23.1	15.5	24.5	17.4	24.6	16.1	21.5	15.0
21	18.5	10.3	22.0	14.7	17.8	14.3	25.1	17.2	24.3	15.3	17.4	13.4
22	19.3	11.1	23.5	13.5	22.0	14.3	24.8	16.8	24.0	16.9	20.3	11.2
23	20.2	10.9	23.0	13.9	20.7	15.9	25.1	17.1	26.4	16.2	20.4	12.4
24	19.1	10.4	21.7	14.6	22.7	15.8	24.2	17.0	24.7	16.6	20.9	12.5
25	18.9	11.9	17.8	14.7	22.4	16.6	25.3	17.4	25.6	15.9	21.4	13.0
26	19.0	11.4	20.1	12.4	19.4	16.4	25.4	16.9	25.4	16.2	22.2	12.5
27	13.3	10.7	22.1	10.7	21.7	16.5	26.0	17.9	23.8	17.3	22.7	14.1
28	12.8	9.0	23.9	10.9	22.5	15.8	25.7	18.3	25.0	16.2	23.1	14.1
29	13.2	8.2	23.8	14.9	22.3	16.4	24.5	18.5	25.5	15.8	23.2	14.0
30	9.8	5.7	17.1	14.7	24.9	15.9	20.4	18.8	25.0	16.7	22.9	13.8
31	---	---	18.2	13.6	---	---	23.3	18.4	26.0	16.2	---	---
MONTH	20.2	1.3	24.1	5.5	26.2	12.0	27.2	16.3	26.4	15.3	26.0	7.9

06711565 SOUTH PLATTE RIVER AT ENGLEWOOD, CO--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.1	6.1	12.8	6.4	13.4	9.4	12.0	9.4	13.3	10.3	11.5	7.7
2	13.8	5.7	12.2	6.5	13.9	9.4	11.9	9.1	15.2	10.3	11.2	7.4
3	13.5	5.4	13.1	6.6	13.9	9.5	---	---	13.0	10.7	11.2	7.6
4	12.3	5.6	12.7	6.8	14.4	9.5	---	---	11.7	10.0	11.1	8.6
5	12.0	6.3	10.5	8.4	14.6	9.6	---	---	11.9	9.6	11.1	8.3
6	12.5	6.3	9.9	8.2	15.1	7.7	---	---	13.0	10.2	11.2	7.8
7	11.7	6.4	10.7	8.3	11.4	7.7	---	---	13.6	10.4	11.3	7.4
8	12.6	6.1	10.1	8.3	12.5	8.8	---	---	13.5	10.9	11.7	7.4
9	13.3	6.4	10.2	8.5	11.7	8.3	---	---	14.5	10.6	12.0	7.4
10	13.4	6.2	10.2	8.0	12.0	8.3	---	---	14.8	10.6	11.9	7.5
11	13.5	5.9	9.8	8.1	12.2	8.5	---	---	16.0	10.7	12.5	7.4
12	11.8	4.5	9.9	7.9	13.1	8.2	---	---	13.3	10.8	12.7	7.7
13	12.2	4.6	10.1	7.9	13.0	7.6	---	---	13.2	11.0	12.8	6.6
14	8.8	5.3	10.1	7.7	12.5	6.9	---	---	13.6	11.0	13.1	7.0
15	8.7	5.5	10.3	8.1	10.7	7.3	---	---	14.4	10.6	13.8	6.6
16	9.2	5.6	11.0	8.6	10.2	7.6	---	---	14.1	11.0	11.9	6.5
17	8.9	5.8	10.9	8.0	10.2	7.7	---	---	14.4	11.2	11.6	6.8
18	9.4	5.6	11.3	7.9	10.5	7.6	---	---	14.8	10.7	12.4	7.1
19	10.1	5.9	11.8	8.3	10.7	7.5	---	---	14.5	10.2	12.6	7.2
20	10.7	5.9	12.0	8.6	11.5	8.0	---	---	14.0	10.5	11.3	7.5
21	10.8	6.1	12.0	8.4	12.1	8.2	---	---	15.5	10.9	12.8	7.5
22	10.6	6.4	11.7	8.9	12.1	8.7	---	---	---	---	13.2	7.1
23	11.6	6.1	12.0	8.1	12.4	9.2	---	---	---	---	13.3	7.3
24	12.8	5.6	12.2	8.3	12.6	9.7	---	---	---	---	13.1	7.2
25	12.3	6.1	12.0	9.0	12.9	9.9	---	---	---	---	13.5	7.0
26	12.7	5.9	12.5	9.3	13.1	10.3	---	---	---	---	13.4	7.4
27	13.1	6.0	12.5	10.0	13.9	10.5	---	---	---	---	13.6	7.4
28	12.9	6.8	12.6	9.0	14.2	10.0	---	---	---	---	13.6	7.2
29	12.6	6.7	12.9	9.8	13.3	9.2	---	---	---	---	13.6	7.3
30	13.4	6.4	13.1	9.7	12.9	9.3	---	---	---	---	11.5	7.7
31	13.1	6.3	---	---	12.6	9.3	13.2	9.6	---	---	12.0	7.0
MONTH	13.8	4.5	13.1	6.4	15.1	6.9	---	---	---	---	13.8	6.5
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.2	7.4	9.4	5.9	8.0	6.9	7.5	6.4	7.0	6.4	10.4	5.2
2	11.0	7.9	8.8	6.6	8.1	6.9	7.4	6.1	7.2	6.4	10.4	4.8
3	11.2	6.9	9.1	6.9	8.0	7.0	7.5	5.9	7.3	6.5	10.1	5.0
4	10.6	6.9	9.2	5.9	7.6	7.0	7.7	5.9	7.4	6.6	10.0	5.2
5	10.7	6.0	10.4	4.9	7.8	6.6	7.5	6.2	7.7	6.7	9.6	5.2
6	11.1	5.6	11.7	4.6	7.6	6.5	7.2	6.5	7.8	6.9	9.4	5.4
7	11.5	5.8	13.4	4.6	7.8	6.1	7.1	5.9	7.7	6.9	9.9	5.4
8	8.9	7.2	10.6	4.6	8.5	5.8	7.2	5.8	7.6	6.1	7.4	4.8
9	9.2	7.5	7.3	6.1	8.1	5.7	7.0	6.2	7.4	5.8	8.5	6.7
10	10.1	6.6	7.9	5.6	8.1	5.3	7.5	6.3	7.6	5.4	8.9	6.7
11	10.0	6.8	8.4	5.7	8.0	5.4	7.4	6.5	7.8	5.4	8.0	7.5
12	10.8	5.9	8.3	6.0	7.1	5.5	7.3	6.6	7.7	5.7	8.8	7.6
13	11.3	6.1	8.0	6.5	7.9	6.6	7.3	6.6	7.3	5.5	8.7	7.4
14	8.8	7.1	8.0	6.8	8.1	6.8	7.3	6.6	7.5	5.5	9.2	5.6
15	8.8	7.0	8.0	7.1	7.9	6.5	7.2	6.6	7.3	5.6	7.2	4.9
16	8.8	6.8	8.1	7.0	8.1	6.5	7.3	6.5	6.8	5.7	8.0	4.8
17	8.9	6.8	8.1	6.9	8.5	6.3	7.4	6.6	6.7	5.6	8.4	4.9
18	9.0	6.6	8.0	6.3	9.1	5.8	7.6	6.7	6.7	5.4	9.0	4.7
19	10.0	6.7	8.0	6.3	9.3	5.8	7.7	6.5	6.6	5.0	10.6	4.6
20	9.6	7.1	8.3	6.1	9.3	5.9	7.8	6.3	7.1	5.0	9.9	5.0
21	9.6	7.0	8.3	6.4	9.1	6.1	8.0	6.0	7.3	4.4	11.3	5.5
22	9.4	6.9	8.5	6.6	8.6	7.1	8.4	6.2	9.2	4.5	12.0	5.3
23	9.3	6.8	8.2	6.7	8.1	6.4	8.7	6.1	9.8	5.3	8.9	5.7
24	9.3	6.9	8.2	6.9	7.9	6.5	9.3	6.1	9.4	5.4	8.9	6.1
25	8.8	7.1	7.9	7.0	7.4	6.6	9.0	6.3	9.8	5.3	9.2	6.0
26	8.5	7.2	8.1	6.9	7.3	6.7	9.2	6.3	10.1	5.2	11.0	5.4
27	8.4	7.2	8.3	6.8	7.2	6.2	8.7	5.5	10.0	5.4	12.3	5.0
28	8.7	7.2	8.4	6.6	7.2	6.3	7.9	5.8	10.3	5.5	13.1	5.2
29	9.1	7.1	8.5	6.8	7.3	6.4	7.2	5.8	10.5	5.3	14.4	5.0
30	9.1	7.3	9.0	6.7	7.4	6.2	6.9	6.3	10.0	5.1	14.9	5.0
31	---	---	9.0	6.7	---	---	7.1	6.5	10.7	5.1	---	---
MONTH	11.5	5.6	13.4	4.6	9.3	5.3	9.3	5.5	10.7	4.4	14.9	4.6

PLATTE RIVER BASIN

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 1730: Drainage area. WDR CO-87-1: 1983-85 (P).

GAGE.--Water-stage recorder. 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: Nov. 16, Dec. 6-7, 9, 12, 16, 23-24, 27-29, Jan. 8-9, 12-13, Feb. 2-5, 10-28, Mar. 5, and Mar. 7-11. Records good except for estimated daily discharges, which are poor. Many small diversions upstream from station for irrigation of about 800 acres. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--49 years (water years 1941-89), 9.90 ft³/s; 7,170 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)
Feb. 4	0300	---	*a3.75	July 15	1800	*54	3.36

Minimum daily discharge, 1.2 ft³/s, July 23-28.

a-Backwater from ice.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	8.4	7.5	5.0	9.2	13	7.7	7.3	6.7	2.8	2.3	2.4
2	4.7	8.6	8.0	5.1	9.1	16	7.4	6.7	7.0	2.7	2.2	3.2
3	4.5	9.3	8.5	5.4	8.5	16	7.6	6.0	4.8	2.6	2.1	2.6
4	4.6	9.3	7.0	5.9	8.0	14	8.6	5.9	4.5	2.4	2.0	2.3
5	4.9	9.0	7.1	6.6	7.5	15	9.9	5.6	4.4	2.5	1.9	2.2
6	5.6	9.0	7.2	6.7	7.0	16	10	5.3	4.3	2.4	1.8	2.0
7	6.2	9.0	7.4	6.5	6.8	16	9.9	5.1	4.2	2.3	2.9	1.9
8	6.3	9.0	7.6	6.6	6.1	16	9.3	5.0	4.1	2.1	5.1	2.3
9	6.3	9.2	8.0	6.7	6.2	16	8.9	5.0	3.9	1.9	3.7	3.2
10	6.6	9.3	8.4	6.8	6.1	16	10	4.9	3.7	1.8	3.3	2.9
11	6.7	9.3	8.4	6.3	5.9	16	13	4.9	3.6	1.6	3.0	3.1
12	6.8	9.1	9.0	6.4	5.7	17	12	4.9	5.2	1.6	3.7	3.9
13	6.7	9.2	10	6.4	5.6	15	11	4.8	9.2	1.5	3.7	5.6
14	6.8	9.3	10	6.5	5.5	13	10	5.0	8.3	1.5	3.3	4.8
15	6.9	9.5	7.5	6.0	5.5	12	9.7	7.1	7.0	5.4	3.1	4.1
16	7.1	10	8.0	6.3	5.5	12	9.6	7.7	5.9	2.9	2.9	3.6
17	7.1	7.8	8.2	6.7	5.8	12	9.1	8.1	4.9	1.5	2.7	3.1
18	7.2	8.3	9.1	7.0	6.2	12	8.6	8.6	4.5	1.4	2.5	2.9
19	7.3	8.4	11	7.0	6.6	12	8.2	8.1	4.1	1.3	2.4	2.6
20	7.5	7.6	9.9	7.0	7.1	12	7.9	7.8	3.9	1.3	2.3	2.3
21	7.6	7.7	9.2	7.1	7.6	12	7.5	6.9	3.7	1.3	2.2	2.1
22	7.6	8.2	8.3	7.2	8.1	12	6.6	6.4	3.7	1.3	2.1	2.0
23	7.8	8.6	8.2	7.6	8.7	13	6.2	5.4	3.8	1.2	2.1	1.8
24	8.0	9.8	8.1	8.3	9.4	13	6.0	4.9	3.7	1.2	2.0	1.7
25	7.8	9.8	8.0	8.5	10	12	5.9	4.7	3.6	1.2	1.9	1.6
26	7.9	8.0	7.5	7.6	11	11	5.5	5.2	3.5	1.2	1.7	1.6
27	8.0	6.6	7.0	7.3	11	9.9	5.3	4.8	3.6	1.2	1.8	1.5
28	8.0	7.6	6.4	6.6	12	9.4	5.5	4.6	3.4	1.2	1.7	1.5
29	8.3	7.9	5.8	6.6	---	9.1	5.7	4.3	3.2	2.8	1.6	1.4
30	8.3	10	5.4	7.8	---	9.0	6.1	4.3	3.0	4.9	1.6	1.4
31	8.3	---	5.2	9.1	---	8.4	---	4.3	---	2.8	1.6	---
TOTAL	212.5	262.8	246.9	210.6	211.7	405.8	248.7	179.6	139.4	63.8	77.2	77.6
MEAN	6.85	8.76	7.96	6.79	7.56	13.1	8.29	5.79	4.65	2.06	2.49	2.59
MAX	8.3	10	11	9.1	12	17	13	8.6	9.2	5.4	5.1	5.6
MIN	4.5	6.6	5.2	5.0	5.5	8.4	5.3	4.3	3.0	1.2	1.6	1.4
AC-FT	421	521	490	418	420	805	493	356	276	127	153	154

CAL YR 1988 TOTAL 5349.6 MEAN 14.6 MAX 146 MIN 3.1 AC-FT 10610
WTR YR 1989 TOTAL 2336.6 MEAN 6.40 MAX 17 MIN 1.2 AC-FT 4630

06712990 CHERRY CREEK LAKE NEAR DENVER, CO

LOCATION.--Lat 39°39'03", long 104°51'13", in NW¼NE¼ sec.2, T.55 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, 14,580 acre-ft, Mar. 3, 12, 13, elevation, 5,552.04 ft; 12,840 acre-ft, Oct. 2, Nov. 4, elevation, 5,550.04 ft.

MONTHEND ELEVATION AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	5,550.05	12,850	-
Oct. 31.	5,550.06	12,860	+10
Nov. 30.	5,550.24	13,010	+150
Dec. 31.	5,550.99	13,650	+640
CAL YR 1988	-	-	+30
Jan. 31.	5,551.86	14,430	+780
Feb. 28.	5,552.02	14,570	+140
Mar. 31.	5,551.75	14,330	-240
Apr. 30.	5,551.68	14,270	-60
May 31.	5,551.51	14,120	-150
June 30.	5,550.75	13,450	-670
July 31.	5,550.46	13,200	-250
Aug. 31.	5,550.24	13,010	-190
Sept. 30.	5,550.13	12,920	-90
WTR YR 1989	-	-	+70

PLATTE RIVER BASIN

06713000 CHERRY CREEK BELOW CHERRY CREEK LAKE, CO

LOCATION.--Lat 39°39'12", long 104°51'41", 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: Jan. 1-17, and May 20 to June 29. Records good. Flow regulated by Cherry Creek Lake (see elsewhere in this report). Diversions upstream from station for irrigation of about 1,800 acres. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--39 years, 7.02 ft³/s; 5,090 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, 34 ft³/s at 1300 Oct. 17, gage height, 3.83 ft; no flow many days.

. DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	19	27	13	.00	15	.00	.00	.00
2	.00	.00	.00	.00	19	27	13	.00	15	.00	.00	.00
3	.00	.00	.00	.00	19	27	14	.00	15	.00	.00	.00
4	.00	.00	.00	.00	19	27	17	.00	15	.00	.00	.00
5	.00	.00	.00	.00	19	26	20	.00	15	.00	.00	.00
6	.00	.00	.00	.00	19	26	23	.02	15	.00	.00	.00
7	.00	.00	.00	.00	19	26	27	.43	16	.00	.00	.00
8	.00	.00	.00	.00	18	26	29	.97	16	.00	.00	.00
9	.00	.07	.00	.00	18	27	30	1.0	16	.00	.00	.00
10	.00	.00	.00	.00	18	28	31	1.9	17	.00	.00	.00
11	.00	.00	.00	.00	18	28	30	2.1	17	.00	.00	.00
12	.00	.00	.00	.00	18	28	30	2.4	17	.00	.00	.00
13	.00	.00	.00	.00	18	29	30	2.9	17	.00	.00	.00
14	.00	.00	.00	.00	18	31	30	3.6	17	.00	.00	.00
15	.00	.00	.00	.00	18	31	31	3.7	16	.00	.00	.00
16	.00	.00	.00	.00	18	30	33	3.5	16	.00	.00	.00
17	1.4	.00	.00	.00	18	31	33	7.4	16	.00	.00	.00
18	.00	.00	.00	.00	18	33	33	13	15	.00	.00	.00
19	.00	.00	.00	.00	18	32	19	13	15	.00	.00	.00
20	.00	.00	.00	.00	18	31	3.4	15	15	.00	.00	.00
21	.00	.00	.00	.00	18	30	3.6	15	15	.00	.00	.00
22	.00	.00	.00	.00	18	29	3.3	15	15	.00	.00	.00
23	.00	.00	.00	.00	18	29	3.7	15	15	.00	.00	.00
24	.00	.00	.00	.76	22	29	3.2	15	15	.00	.00	.00
25	.00	.00	.00	8.4	26	29	2.9	15	15	.00	.00	.00
26	.00	.00	.00	19	27	30	3.2	15	15	.00	.00	.00
27	.00	.00	.00	21	27	29	2.6	15	15	.00	.00	.00
28	.00	.00	.00	21	27	29	1.6	15	15	.00	.00	.00
29	.00	.00	.00	21	---	29	.39	15	5.0	.17	.00	.00
30	.00	.00	.00	21	---	19	.01	15	.00	.06	.00	.00
31	.00	---	.00	20	---	13	---	15	---	.00	.00	---
TOTAL	1.40	0.07	0.00	132.16	550	866	513.90	235.92	441.00	0.23	0.00	0.00
MEAN	.045	.002	.00	4.26	19.6	27.9	17.1	7.61	14.7	.007	.00	.00
MAX	1.4	.07	.00	21	27	33	33	15	17	.17	.00	.00
MIN	.00	.00	.00	.00	18	13	.01	.00	.00	.00	.00	.00
AC-FT	2.8	.1	.0	262	1090	1720	1020	468	875	.5	.0	.0

CAL YR 1988 TOTAL 6443.41 MEAN 17.6 MAX 170 MIN .00 AC-FT 12780
WTR YR 1989 TOTAL 2740.68 MEAN 7.51 MAX 33 MIN .00 AC-FT 5440

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: Nov. 2 to Jan. 17, Jan. 20 to Apr. 4, Apr. 10, Aug. 24-29, and Sept. 8-12. Records fair. Flow regulated by Cherry Creek Lake (see elsewhere in this report). Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

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, 2.5 ft³/s, Jan. 19, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 982 ft³/s, at 1800 June 3, gage height, 7.42 ft, minimum daily, 2.5 ft³/s, Jan. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	9.8	9.0	6.2	25	26	49	11	22	15	23	8.4
2	21	11	9.0	6.2	20	25	25	8.0	22	16	13	9.0
3	20	11	9.0	6.2	14	25	23	16	175	14	9.1	8.0
4	21	10	9.0	6.2	14	25	22	11	92	12	7.9	7.8
5	23	10	9.0	19	14	28	21	10	24	13	7.4	7.6
6	19	9.8	9.0	6.8	14	36	21	10	18	12	7.5	8.5
7	30	9.8	13	5.8	14	31	23	11	20	13	7.8	7.6
8	16	9.8	11	5.8	14	29	22	18	110	12	7.5	35
9	9.7	23	14	5.8	14	26	60	17	45	13	6.0	32
10	9.6	12	12	5.8	15	25	28	21	37	13	6.0	50
11	8.7	9.0	9.0	5.8	25	26	24	21	37	12	6.0	70
12	8.6	8.8	9.8	5.8	20	23	24	17	47	13	13	23
13	9.7	8.8	9.8	5.8	15	21	22	34	36	13	68	17
14	9.1	9.0	9.8	5.2	12	20	20	107	38	11	7.9	9.4
15	9.7	21	9.8	4.7	10	20	22	87	41	11	6.8	8.2
16	9.1	13	11	4.4	11	18	20	12	34	10	12	8.0
17	10	11	12	4.1	10	17	19	11	39	10	8.3	8.1
18	9.9	10	14	2.8	10	17	18	16	37	9.2	8.9	8.1
19	9.3	9.5	14	2.5	20	17	16	14	38	9.9	8.5	7.8
20	9.4	9.5	10	4.5	30	24	11	14	32	11	14	8.0
21	8.3	9.5	9.0	4.8	22	18	11	14	27	9.0	12	7.4
22	8.6	9.5	8.0	5.2	22	17	10	15	31	8.6	8.4	7.4
23	8.3	9.5	8.0	6.0	28	16	9.6	15	28	10	7.6	7.4
24	7.9	9.0	8.0	6.0	26	17	9.2	16	34	10	7.4	7.1
25	7.7	9.0	7.0	7.0	32	16	8.7	16	42	8.4	7.6	7.0
26	8.7	9.5	7.4	10	29	15	8.6	105	37	8.4	7.2	6.9
27	8.9	9.0	6.6	13	29	14	8.3	29	28	8.4	7.2	7.0
28	8.6	9.0	6.6	15	27	14	8.9	19	24	18	7.0	6.8
29	8.7	9.0	6.8	25	---	41	8.8	19	21	89	7.4	6.8
30	9.2	9.0	6.8	40	---	27	34	20	15	75	7.9	6.6
31	8.6	---	6.8	50	---	14	---	24	---	7.5	7.4	---
TOTAL	369.3	317.8	294.2	301.4	536	688	607.1	758.0	1231	495.4	335.7	411.9
MEAN	11.9	10.6	9.49	9.72	19.1	22.2	20.2	24.5	41.0	16.0	10.8	13.7
MAX	30	23	14	50	32	41	60	107	175	89	68	70
MIN	7.7	8.8	6.6	2.5	10	14	8.3	8.0	15	7.5	6.0	6.6
AC-FT	733	630	584	598	1060	1360	1200	1500	2440	983	666	817
CAL YR 1988	TOTAL	12292.4	MEAN	33.6	MAX	329	MIN	3.9	AC-FT	24380		
WTR YR 1989	TOTAL	6345.8	MEAN	17.4	MAX	175	MIN	2.5	AC-FT	12590		

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.

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.

GAGE.--Water-stage recorder. 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.--Estimated daily discharges: Oct. 13, 19, 25, Nov. 18 to Jan. 4, Jan. 6-27, 29, Feb. 2-10, 14-18, May 5-8, June 6-13, Sept. 18, 20-22, 25, and Sept. 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 79,000 acres and municipal use, and return flow from irrigated areas. Several observations of water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--79 years (water years 1896-1974), 344 ft³/s; 249,200 acre-ft/yr, prior to completion of Chatfield Dam; 14 years (water years 1976-89), 420 ft³/s; 304,300 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, 4,210 ft³/s at 1830 June 3, gage height. 4.45 ft; minimum daily, 81 ft³/s, Dec. 29-30, Jan. 7-8, 10.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	110	130	85	124	208	251	181	863	402	903	152
2	130	111	127	83	103	208	205	208	656	457	640	137
3	130	112	125	85	97	208	185	232	1140	268	392	132
4	128	124	124	82	98	219	158	206	869	258	370	133
5	141	197	123	103	100	222	152	151	468	375	370	130
6	135	207	123	84	104	250	152	148	468	606	462	127
7	137	213	129	81	107	254	152	146	468	693	595	128
8	125	213	117	81	107	250	293	178	463	440	468	271
9	120	292	122	82	112	234	444	406	468	558	365	203
10	120	234	105	81	139	230	222	418	468	492	255	542
11	117	228	102	82	149	226	165	199	468	540	242	303
12	112	242	101	83	140	223	151	188	465	559	455	315
13	115	242	99	83	128	214	148	343	462	572	519	193
14	155	239	92	84	122	151	310	808	462	661	312	156
15	157	356	94	84	122	141	308	641	548	744	393	137
16	157	269	98	85	123	157	316	462	431	693	548	130
17	158	242	98	87	125	167	304	369	417	573	512	128
18	156	145	99	84	130	168	311	325	265	587	502	122
19	112	139	96	84	151	169	271	225	253	521	498	115
20	107	139	90	85	160	205	310	217	239	447	227	117
21	107	137	86	86	146	173	277	261	343	366	244	116
22	105	137	84	89	152	170	275	280	491	294	182	123
23	104	135	84	89	185	166	269	364	561	295	178	162
24	102	135	82	90	193	165	276	431	433	291	187	164
25	98	134	84	92	218	160	346	495	651	286	183	155
26	101	133	84	94	222	160	391	640	884	284	180	116
27	101	132	82	94	225	159	370	393	760	332	180	112
28	105	131	82	102	222	156	276	333	357	459	179	107
29	111	131	81	105	---	242	225	328	352	890	185	105
30	109	130	81	144	---	197	417	351	396	981	173	104
31	110	---	83	179	---	160	---	650	---	763	149	---
TOTAL	3793	5389	3107	2852	4004	6012	7930	10577	15569	15687	11048	4935
MEAN	122	180	100	92.0	143	194	264	341	519	506	356	164
MAX	158	356	130	179	225	254	444	808	1140	981	903	542
MIN	98	110	81	81	97	141	148	146	239	258	149	104
AC-FT	7520	10690	6160	5660	7940	11920	15730	20980	30880	31120	21910	9790
CAL YR 1988	TOTAL 123007											
WTR YR 1989	TOTAL 90903											

PLATTE RIVER BASIN

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 1,900 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.--Estimated daily discharges: Nov. 21, 30, Jan. 26-31, Feb. 2-7, Apr. 4, 6, 7, and 14. 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. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--7 years, 426 ft³/s; 308,600 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, 4,660 ft³/s at 1800, June 3, gage height 5.78 ft; minimum daily, 3.2 ft³/s, Nov. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	6.8	6.1	121	15	89	23	73	528	301	318	83
2	7.8	8.7	7.6	113	20	88	9.1	83	357	373	131	76
3	9.1	9.1	11	117	27	152	3.4	106	896	193	248	53
4	9.2	8.4	12	115	38	218	4.5	99	285	159	249	58
5	9.1	9.6	11	194	50	224	5.8	76	24	249	274	60
6	11	10	12	126	68	195	5.3	44	17	491	349	57
7	12	11	10	118	90	128	9.0	42	13	618	490	53
8	11	11	11	111	110	121	17	99	30	322	385	197
9	10	14	10	95	110	112	123	322	22	476	282	64
10	10	12	10	26	168	107	19	351	24	406	160	190
11	9.4	8.7	10	24	194	104	11	131	14	439	146	294
12	8.1	8.8	9.6	21	164	101	9.1	111	12	458	348	80
13	7.5	10	11	19	142	98	7.6	302	14	458	521	52
14	9.4	8.8	10	17	113	68	7.4	773	14	538	246	21
15	9.8	12	11	16	115	21	12	562	28	622	260	17
16	9.3	10	10	14	70	20	13	122	14	595	302	14
17	8.9	9.4	11	14	34	19	13	20	13	472	254	12
18	9.7	13	11	14	43	18	14	61	12	495	166	12
19	9.7	9.8	79	13	69	16	17	126	10	425	162	11
20	8.4	4.4	130	12	88	19	23	115	10	353	167	13
21	9.7	7.0	117	13	49	11	15	157	9.8	280	186	16
22	13	9.0	112	13	28	8.6	38	173	12	194	110	15
23	9.8	8.0	112	13	53	8.0	136	265	46	200	108	16
24	5.3	7.8	110	14	56	7.8	173	333	74	203	116	17
25	6.7	9.5	115	16	65	8.2	259	395	285	199	115	16
26	7.5	11	110	16	74	8.0	320	564	456	200	114	16
27	18	8.5	108	16	72	6.8	305	311	384	276	117	14
28	17	5.6	103	16	86	6.4	210	248	115	367	119	13
29	12	3.2	107	15	---	27	135	246	249	957	122	11
30	12	5.0	113	15	---	15	317	277	291	886	125	16
31	11	---	114	15	---	4.9	---	623	---	355	89	---
TOTAL	310.6	270.1	1614.3	1462	2211	2029.7	2254.2	7210	4258.8	12560	6779	1567
MEAN	10.0	9.00	52.1	47.2	79.0	65.5	75.1	233	142	405	219	52.2
MAX	18	14	130	194	194	224	320	773	896	957	521	294
MIN	5.3	3.2	6.1	12	15	4.9	3.4	20	9.8	159	89	11
AC-FT	616	536	3200	2900	4390	4030	4470	14300	8450	24910	13450	3110
CAL YR 1988	TOTAL	68232.6	MEAN	186	MAX	2040	MIN	3.2	AC-FT	135300		
WTR YR 1989	TOTAL	42526.7	MEAN	117	MAX	957	MIN	3.2	AC-FT	84350		

LOCATION.--Lat 39°45'11", long 105°14'05", in NE¼NW¼ sec.33, T.3 S., R.70 W., Jefferson County, Hydrologic Unit 101900004, 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.

WATER-DISCHARGE RECORDS

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

REMARKS.--Estimated daily discharges: Dec. 10-12, Dec. 21 to Jan. 25, Jan. 27 to Feb. 21, Feb. 23 to Mar. 3, and Mar. 5-14. 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.

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, 729 ft³/s at 0500 June 20, gage height, 3.99 ft; minimum daily, 34 ft³/s, Nov. 17, and Mar. 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	55	49	54	52	61	44	94	550	494	211	72
2	80	51	44	55	49	60	43	94	535	488	210	72
3	76	53	63	55	46	56	41	90	544	469	192	67
4	72	59	57	55	43	50	36	81	544	451	172	64
5	70	51	56	55	41	54	37	74	477	444	146	64
6	74	51	57	55	40	60	39	78	478	449	140	61
7	76	61	58	55	40	60	40	86	503	421	139	63
8	74	55	63	55	41	60	49	114	473	395	143	86
9	74	54	61	55	43	60	53	187	467	364	125	80
10	74	49	60	55	45	60	39	200	454	351	129	88
11	76	55	58	55	45	60	55	217	529	366	139	91
12	75	48	57	55	45	60	44	221	523	416	188	80
13	82	53	57	55	45	60	46	234	524	400	238	90
14	73	50	47	55	45	60	50	251	506	348	197	89
15	60	53	49	55	45	53	55	227	522	319	160	94
16	57	43	59	55	45	50	59	227	579	287	155	97
17	58	34	61	55	45	51	68	205	633	259	160	94
18	55	49	50	55	45	42	79	197	585	239	153	91
19	62	39	52	55	45	45	89	231	636	228	138	86
20	72	40	44	55	45	44	94	256	648	225	130	86
21	70	40	45	55	47	36	116	314	662	219	121	97
22	69	46	45	55	51	38	138	323	605	197	109	94
23	63	59	45	55	70	37	147	386	498	194	109	91
24	60	53	45	55	70	37	163	447	458	202	114	89
25	59	48	45	55	68	40	166	461	436	228	109	85
26	58	43	46	55	66	43	161	393	428	243	120	81
27	60	44	47	55	64	42	158	414	420	203	108	80
28	58	46	48	55	63	40	133	450	437	199	97	77
29	57	55	50	55	---	43	121	548	490	253	88	75
30	59	42	51	55	---	42	108	582	500	350	83	57
31	60	---	53	55	---	34	---	573	---	254	79	---
TOTAL	2094	1479	1622	1704	1389	1538	2471	8255	15644	9955	4402	2441
MEAN	67.5	49.3	52.3	55.0	49.6	49.6	82.4	266	521	321	142	81.4
MAX	82	61	63	55	70	61	166	582	662	494	238	97
MIN	55	34	44	54	40	34	36	74	420	194	79	57
AC-FT	4150	2930	3220	3380	2760	3050	4900	16370	31030	19750	8730	4840
CAL YR 1988	TOTAL	59909	MEAN	164	MAX	960	MIN	34	AC-FT	118800		
WTR YR 1989	TOTAL	52994	MEAN	145	MAX	662	MIN	34	AC-FT	105100		

PLATTE RIVER BASIN

06719505 CLEAR CREEK AT GOLDEN, CO--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. Records for Oct. 1 - Mar. 7, Mar. 28, Apr. 17, 18 (water temperature) and Oct. 1 - Mar. 28, Apr. 12, 17, 19 (specific conductance), missing due to water-quality monitor malfunction.

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: Not determined.

WATER TEMPERATURES: Not determined.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	313	218	90	98	106	166
2	---	---	---	---	---	---	304	224	85	96	106	162
3	---	---	---	---	---	---	309	228	93	97	103	157
4	---	---	---	---	---	---	313	234	105	100	104	156
5	---	---	---	---	---	---	320	236	103	100	108	155
6	---	---	---	---	---	---	317	240	104	98	109	156
7	---	---	---	---	---	---	312	239	102	95	114	157
8	---	---	---	---	---	---	314	239	102	93	109	164
9	---	---	---	---	---	---	291	231	104	92	113	166
10	---	---	---	---	---	---	305	207	100	94	115	166
11	---	---	---	---	---	---	311	199	107	89	115	163
12	---	---	---	---	---	---	---	184	106	94	111	164
13	---	---	---	---	---	---	313	167	106	87	109	169
14	---	---	---	---	---	---	301	159	107	91	110	167
15	---	---	---	---	---	---	311	157	103	93	112	169
16	---	---	---	---	---	---	300	158	100	93	116	170
17	---	---	---	---	---	---	---	157	97	93	117	169
18	---	---	---	---	---	---	---	160	95	102	118	177
19	---	---	---	---	---	---	268	158	96	104	119	184
20	---	---	---	---	---	---	263	154	91	106	121	184
21	---	---	---	---	---	---	261	152	93	105	122	181
22	---	---	---	---	---	---	250	138	93	106	126	181
23	---	---	---	---	---	---	245	130	91	109	132	181
24	---	---	---	---	---	---	235	115	93	109	136	179
25	---	---	---	---	---	---	218	104	93	107	140	181
26	---	---	---	---	---	---	213	104	96	104	142	179
27	---	---	---	---	---	---	207	105	92	105	145	178
28	---	---	---	---	---	---	207	106	95	105	150	180
29	---	---	---	---	---	300	203	104	96	106	155	183
30	---	---	---	---	---	297	207	96	94	102	159	178
31	---	---	---	---	---	309	---	90	---	96	162	---
MEAN	---	---	---	---	---	---	---	168	98	99	123	171

06719505 CLEAR CREEK AT GOLDEN, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	---	---	---	---	---	---	---	---	---	---	2.5	1.2
9	---	---	---	---	---	---	---	---	---	---	3.0	1.5
10	---	---	---	---	---	---	---	---	---	---	3.6	1.8
11	---	---	---	---	---	---	---	---	---	---	5.3	2.9
12	---	---	---	---	---	---	---	---	---	---	5.1	3.8
13	---	---	---	---	---	---	---	---	---	---	6.1	3.6
14	---	---	---	---	---	---	---	---	---	---	5.4	3.3
15	---	---	---	---	---	---	---	---	---	---	4.9	2.6
16	---	---	---	---	---	---	---	---	---	---	6.6	3.2
17	---	---	---	---	---	---	---	---	---	---	6.4	4.8
18	---	---	---	---	---	---	---	---	---	---	6.1	4.0
19	---	---	---	---	---	---	---	---	---	---	5.9	4.2
20	---	---	---	---	---	---	---	---	---	---	5.4	3.6
21	---	---	---	---	---	---	---	---	---	---	5.7	2.3
22	---	---	---	---	---	---	---	---	---	---	7.1	4.3
23	---	---	---	---	---	---	---	---	---	---	7.3	4.9
24	---	---	---	---	---	---	---	---	---	---	8.5	5.3
25	---	---	---	---	---	---	---	---	---	---	9.3	5.8
26	---	---	---	---	---	---	---	---	---	---	9.0	6.6
27	---	---	---	---	---	---	---	---	---	---	9.6	6.7
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	7.3	4.9
30	---	---	---	---	---	---	---	---	---	---	8.5	3.4
31	---	---	---	---	---	---	---	---	---	---	8.8	2.3
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	6.3	4.2	8.9	1.5	11.9	8.1	16.4	11.5	17.4	14.7	18.1	14.6
2	8.5	2.8	11.1	6.9	11.7	7.6	16.9	11.3	17.8	14.6	19.1	13.8
3	9.6	3.9	12.5	6.7	10.6	9.0	17.0	12.2	19.0	14.3	17.7	13.5
4	8.2	2.8	11.5	5.7	9.9	8.3	18.2	12.2	18.3	14.4	18.1	12.4
5	9.2	2.4	12.7	6.1	12.7	7.4	18.6	13.1	17.2	14.0	17.1	13.3
6	12.5	5.2	13.5	7.5	12.3	9.0	16.4	13.3	16.7	13.2	17.0	12.6
7	9.9	7.4	14.5	8.4	11.7	8.8	16.8	12.4	17.5	13.3	18.4	12.6
8	8.4	6.2	14.1	9.9	11.5	8.9	15.9	12.9	18.2	13.0	15.9	12.9
9	6.2	.7	12.6	9.3	11.6	9.0	18.0	12.4	16.6	14.2	12.8	10.8
10	5.4	.7	12.6	8.6	12.2	8.5	16.3	12.5	19.4	15.1	14.0	10.7
11	6.1	3.7	11.5	8.2	14.7	9.3	16.5	13.0	17.9	15.3	11.9	8.1
12	6.7	3.1	12.5	8.1	12.4	9.8	14.9	13.3	16.3	14.6	8.0	5.8
13	11.9	5.3	11.1	7.5	11.5	8.7	16.7	11.9	16.1	14.2	9.9	5.7
14	11.3	6.3	7.8	5.7	12.9	8.5	16.6	12.8	16.8	12.6	12.4	7.3
15	9.2	6.3	9.2	5.0	14.5	8.9	17.9	13.3	18.6	13.1	13.9	8.9
16	12.4	6.8	8.9	6.7	14.9	10.2	18.6	13.6	16.4	14.1	14.6	9.2
17	---	---	11.9	6.5	14.5	10.1	17.7	12.6	17.1	13.3	15.7	10.6
18	---	---	14.7	7.8	15.0	9.5	18.3	13.7	17.1	14.0	15.7	10.9
19	13.7	8.4	13.5	9.1	15.1	10.5	19.4	13.7	16.2	13.6	16.2	11.4
20	13.4	8.7	14.2	8.1	14.8	10.5	19.5	14.2	17.2	12.3	16.0	12.9
21	12.4	8.9	12.4	9.2	13.3	8.5	20.1	14.5	16.2	11.9	13.7	10.9
22	13.6	9.3	13.9	7.9	11.6	7.7	18.0	14.0	17.5	13.5	13.3	9.4
23	14.2	8.8	14.3	8.4	11.3	8.3	18.8	14.5	17.8	13.1	14.0	10.0
24	12.3	9.0	14.0	8.7	14.0	8.7	17.0	14.8	18.2	13.4	14.6	10.0
25	12.0	9.8	11.2	7.6	15.0	10.7	18.0	13.9	18.4	12.9	14.5	10.4
26	13.8	9.1	10.8	6.1	14.3	10.6	17.2	12.4	18.0	12.4	14.7	10.4
27	9.3	6.7	13.5	6.8	14.5	10.2	18.5	13.6	18.3	14.2	15.4	11.7
28	6.5	3.9	14.5	7.8	13.8	10.5	18.3	14.0	17.8	12.8	16.1	11.9
29	5.6	3.1	13.9	8.2	14.6	11.8	18.0	14.1	18.2	12.3	15.6	11.4
30	3.9	2.1	12.9	9.3	15.7	11.3	15.1	13.1	17.1	13.6	14.5	11.1
31	---	---	11.5	8.2	---	---	17.8	12.7	18.1	13.1	---	---
MONTH	---	---	14.7	1.5	15.7	7.4	20.1	11.3	19.4	11.9	19.1	5.7

DRAINAGE AREA.--4,713 mi².

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 C0-88-1: 1986.

REMARKS.--Estimated daily discharges: Feb. 24 to Mar. 13, and Apr. 14-19. Records good except for estimated daily discharges, which are fair. 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.

AVERAGE DISCHARGE.--48 years (water years 1927-74), 366 ft³/s; 265,200 acre-ft/yr, prior to completion of Chatfield Dam; 14 years (water years 1976-89), 632 ft³/s; 457,900 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, 8,600 ft³/s at 2200 June 3, gage height, 8.89 ft; minimum daily, 117 ft³/s, Apr. 6.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157	146	211	359	359	385	157	371	1440	573	535	283
2	157	138	217	375	307	380	188	263	544	752	433	278
3	155	144	220	379	301	390	139	236	2060	598	487	259
4	163	147	234	391	340	450	125	259	1470	513	438	266
5	159	147	235	512	371	480	121	228	553	555	482	283
6	173	170	203	415	399	500	117	197	469	756	500	297
7	137	164	207	389	383	450	120	173	433	782	736	305
8	126	167	216	407	379	420	172	197	420	510	676	514
9	121	201	259	389	375	400	330	428	470	688	505	585
10	120	191	264	363	420	390	313	460	412	607	451	457
11	122	198	262	332	497	380	247	351	392	668	433	956
12	117	183	249	326	500	370	231	305	391	730	649	594
13	133	191	276	330	487	345	220	471	409	699	1060	572
14	173	192	281	327	433	308	215	1060	371	735	561	347
15	170	243	297	326	397	295	210	1210	530	805	509	299
16	167	223	288	327	367	291	210	585	524	791	527	255
17	183	201	294	331	331	294	215	355	540	691	513	230
18	173	200	341	327	329	283	203	325	536	697	422	229
19	183	194	316	325	343	281	223	403	555	645	433	222
20	185	196	357	312	395	306	224	409	538	615	407	206
21	194	226	355	327	379	284	285	461	579	584	451	197
22	184	220	337	305	339	277	263	448	638	487	371	197
23	179	226	339	305	375	276	275	506	646	472	334	187
24	170	228	337	301	410	275	295	560	562	484	341	185
25	181	218	343	305	400	268	367	629	592	492	347	174
26	150	232	337	305	395	261	410	947	738	520	342	167
27	120	221	339	308	390	281	424	603	707	555	331	160
28	124	241	341	327	380	275	368	511	418	572	338	154
29	130	234	339	320	---	274	308	496	492	1000	321	141
30	138	223	349	366	---	304	528	574	515	2690	342	142
31	165	---	363	433	---	205	---	700	---	700	294	---
TOTAL	4809	5905	9006	10844	10781	10378	7503	14721	18944	21966	14569	9141
MEAN	155	197	291	350	385	335	250	475	631	709	470	305
MAX	194	243	363	512	500	500	528	1210	2060	2690	1060	956
MIN	117	138	203	301	301	205	117	173	371	472	294	141
AC-FT	9540	11710	17860	21510	21380	20580	14880	29200	37580	43570	28900	18130
CAL YR 1988	TOTAL	180016	MEAN	492	MAX	4510	MIN	117	AC-FT	357100		
WTR YR 1989	TOTAL	138567	MEAN	380	MAX	2690	MIN	117	AC-FT	274800		

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 September 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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- TOCOC- CI, FECAL, KF AGAR (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)
NOV												
01...	1045	104	1080	7.9	13.5	5.2	8.3	300	K55	260	77	17
JAN												
24...	1050	308	1150	7.8	8.0	6.7	7.6	110	660	230	67	15
MAR												
21...	0915	347	1180	7.9	9.5	8.6	9.2	110	290	230	66	15
MAY												
17...	1145	294	984	7.7	18.0	19	5.8	1000	980	220	62	15
JUL												
12...	1130	582	686	7.6	21.5	9.2	6.8	530	410	170	50	11
SEP												
27...	1130	128	1060	7.8	21.5	3.2	11.8	350	210	220	65	15

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS- SOLVED FIELD MG/L AS HCO3	CAR- BONATE WATER DIS- SOLVED FIELD MG/L AS CO3	ALKA- LINITY WATER DIS- SOLVED FIELD 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)
NOV												
01...	110	3	8.2	250	0	205	210	82	1.2	13	663	647
JAN												
24...	130	4	10	287	0	235	180	110	0.9	12	638	683
MAR												
21...	130	4	9.8	276	0	226	170	120	1.1	11	652	678
MAY												
17...	110	3	9.0	237	0	194	170	83	1.1	12	572	569
JUL												
12...	62	2	6.1	166	0	136	130	46	0.8	8.6	408	393
SEP												
27...	110	3	9.8	260	0	213	180	88	1.2	11	629	583

DATE	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 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- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)
NOV											
01...	0.90	186	0.58	3.00	6.80	6.90	1.5	8.3	3.20	3.10	2.90
JAN											
24...	0.87	531	0.16	1.20	20.0	19.0	0.0	19	4.30	4.20	3.60
MAR											
21...	0.89	611	0.17	1.00	17.0	14.0	0.0	4.8	3.90	3.30	2.70
MAY											
17...	0.78	454	0.24	1.10	11.0	10.0	0.0	11	2.50	2.00	2.00
JUL											
12...	0.55	641	0.43	1.70	4.10	4.00	0.8	4.9	1.10	1.10	1.20
SEP											
27...	0.86	217	0.49	1.80	11.0	7.70	4.0	15	2.80	2.60	2.50

K BASED ON NON-IDEAL COLONY COUNT.

PLATTE RIVER BASIN

06720500 SOUTH PLATTE RIVER AT HENDERSON, CO--Continued

WATER-QUALITY DATA, OCTOBER 1988 TO SEPTEMBER 1989

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 01...	<10	2	36	<0.5	1	<1	<3	5	26	<5
JAN 24...	--	--	--	--	--	--	--	--	--	--
MAR 21...	10	2	37	<0.5	1	1	<3	4	75	<5
MAY 17...	20	2	47	<0.5	<1	<1	<3	3	32	<1
JUL 12...	--	--	--	--	--	--	--	--	--	--
SEP 27...	10	2	37	<0.5	<1	1	<3	4	53	<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 01...	23	330	<0.1	<10	4	4	1.0	690	<6	21
JAN 24...	--	--	--	--	--	--	--	--	--	--
MAR 21...	22	320	<0.1	20	2	3	<1.0	600	<6	33
MAY 17...	21	360	<0.1	10	6	2	<1.0	570	<6	32
JUL 12...	--	--	--	--	--	--	--	--	--	--
SEP 27...	21	330	<0.1	20	19	2	<1.0	630	<6	20

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
NOV 01...	1045	104	9	2.5
JAN 24...	1050	308	20	17
MAR 21...	0915	347	25	23
MAY 17...	1145	294	65	52
JUL 12...	1130	582	42	66
SEP 27...	1130	128	8	2.8

06720820 BIG DRY CREEK AT WESTMINSTER, CO

LOCATION.--Lat 39°54'20", long 105°02'04", NE¼SE¼ sec.6, T.2 S., R.68 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.--46.0 mi².

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

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

REMARKS.--Estimated daily discharges: Oct. 5 to Mar. 31. 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 observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 214 ft³/s, June 3, 1989, gage height, 4.17 ft; minimum daily, 0.67 ft³/s, Apr. 3, 4, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 214 ft³/s at 2100 June 3, gage height, 4.17 ft; minimum daily, 0.67 ft³/s, Apr. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.4	1.3	1.2	1.2	1.0	.72	2.6	19	43	24	7.6
2	1.5	1.4	1.2	1.2	1.2	.90	.69	1.7	8.5	43	20	7.0
3	1.5	1.4	1.2	1.2	1.2	.90	.67	2.0	62	43	16	7.4
4	1.8	1.4	1.2	1.2	1.2	.90	.67	2.0	37	44	14	10
5	1.7	1.4	1.2	1.2	1.2	.90	.72	2.0	8.9	48	14	9.1
6	1.7	1.35	1.2	1.2	1.2	.90	.70	1.7	4.9	50	17	4.2
7	1.7	1.35	1.2	1.2	1.2	.90	.80	1.8	2.5	31	32	5.9
8	1.7	1.35	1.2	1.2	1.2	.80	.92	30	2.2	26	44	23
9	1.6	1.35	1.2	1.2	1.2	.80	5.2	28	2.7	26	51	22
10	1.6	1.35	1.2	1.2	1.2	.80	2.6	16	9.7	26	49	17
11	1.6	1.35	1.2	1.2	1.2	.80	1.6	12	2.8	19	47	25
12	1.6	1.35	1.2	1.2	1.2	.78	1.2	13	2.3	16	49	18
13	1.6	1.35	1.2	1.2	1.2	.78	.97	9.8	2.4	18	61	11
14	1.6	1.3	1.2	1.2	1.2	.78	.88	49	2.0	17	47	4.3
15	1.6	1.3	1.2	1.2	1.2	.78	.88	14	1.9	18	43	3.2
16	1.6	1.3	1.2	1.2	1.2	1.6	.90	5.8	1.9	18	46	2.5
17	1.6	1.3	1.2	1.2	1.2	.78	.87	3.1	2.0	17	40	1.7
18	1.5	1.3	1.2	1.2	1.2	.78	.89	2.5	8.3	16	36	1.6
19	1.5	1.3	1.2	1.2	1.1	.78	.94	2.0	15	14	34	1.6
20	1.5	1.3	1.2	1.2	1.1	3.8	.92	2.1	8.5	15	33	1.7
21	1.5	1.3	1.2	1.2	1.1	4.8	.96	5.4	8.0	12	33	1.6
22	1.5	1.3	1.2	1.2	1.1	2.7	1.1	5.4	8.8	13	36	1.5
23	1.5	1.3	1.2	1.2	1.1	2.7	1.5	5.6	9.6	15	21	1.3
24	1.5	1.3	1.2	1.2	1.0	.78	1.6	10	9.5	12	18	1.4
25	1.5	1.3	1.2	1.2	1.0	.78	1.9	7.6	11	12	16	1.4
26	1.5	1.3	1.2	1.2	1.0	.78	2.0	21	17	11	15	1.4
27	1.5	1.3	1.2	1.2	1.0	.78	1.9	11	18	9.6	8.1	1.2
28	1.5	1.3	1.2	1.2	1.0	.78	2.0	9.7	27	9.7	13	1.4
29	1.4	1.3	1.2	1.2	---	1.5	2.0	9.7	36	23	8.2	1.6
30	1.4	1.3	1.2	1.2	---	3.4	7.0	10	41	47	13	1.6
31	1.4	---	1.2	1.2	---	.95	---	13	---	18	12	---
TOTAL	48.0	39.90	37.3	37.2	32.1	40.41	45.70	309.5	390.4	730.3	910.3	198.2
MEAN	1.55	1.33	1.20	1.20	1.15	1.30	1.52	9.98	13.0	23.6	29.4	6.61
MAX	1.8	1.4	1.3	1.2	1.2	4.8	7.0	49	62	50	61	25
MIN	1.3	1.3	1.2	1.2	1.0	.78	.67	1.7	1.9	9.6	8.1	1.2
AC-FT	95	79	74	74	64	80	91	614	774	1450	1810	393

CAL YR 1988 TOTAL 6320.26 MEAN 17.3 MAX 127 MIN .72 AC-FT 12540
WTR YR 1989 TOTAL 2819.31 MEAN 7.72 MAX 62 MIN .67 AC-FT 5590

PLATTE RIVER BASIN

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 RECORD.--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: Nov. 10-13, Nov. 15 to Dec. 6, Dec. 8 to Jan. 3, Jan. 8-12, Feb. 5, 6, 22, 27, Mar. 2, 4, 5. Records good except for estimated daily discharges, which are poor. No diversions upstream from station. Several observations of specific conductance and water temperatures were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years (water years 1926-30, 1987-89), 56.6 ft³/s; 41,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--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 23	2300	171	5.33	June 11	2200	284	5.67
May 30	2100	224	5.50	June 16	2400	*354	*5.79

Minimum daily discharge, 4.7 ft³/s, Feb. 21-22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	7.9	7.3	6.3	5.4	5.2	7.2	27	171	123	103	29
2	12	7.9	7.3	6.3	5.3	5.3	7.2	23	162	119	105	27
3	12	8.2	7.2	6.3	5.3	5.4	7.5	22	141	116	98	25
4	13	7.6	7.2	6.1	5.3	5.3	8.3	20	120	116	85	24
5	12	8.5	7.1	5.9	5.3	5.3	9.1	19	113	118	74	23
6	14	8.7	6.8	5.8	5.3	5.3	7.7	24	121	116	64	22
7	14	9.2	6.8	5.6	5.3	5.5	7.9	36	115	115	63	21
8	13	8.9	6.8	5.6	5.2	6.4	9.1	60	136	111	59	25
9	13	8.9	6.8	5.8	5.2	7.0	8.0	78	169	105	55	33
10	13	8.8	6.8	5.8	5.1	7.2	14	78	164	104	57	27
11	12	8.6	6.8	6.0	5.0	7.6	9.0	88	231	101	64	25
12	11	8.6	6.8	6.0	5.0	7.6	8.9	75	211	105	73	25
13	11	8.6	6.8	5.6	5.0	7.5	8.6	58	164	97	81	26
14	11	8.7	6.8	5.6	5.0	8.1	8.1	50	155	90	76	25
15	10	8.4	6.8	5.3	5.0	9.0	8.6	47	171	88	79	23
16	9.7	8.4	6.8	5.5	4.9	11	9.7	45	228	82	71	20
17	9.4	8.4	6.8	5.8	4.9	6.1	13	40	270	77	71	19
18	9.4	8.4	6.8	5.8	4.9	6.6	18	48	195	73	68	18
19	9.9	8.3	6.8	5.5	4.9	6.2	21	79	207	71	67	18
20	11	8.2	6.8	5.4	4.8	6.4	29	91	222	67	65	18
21	10	7.8	6.3	5.4	4.7	12	33	104	196	66	56	19
22	10	7.6	6.3	5.4	4.7	8.1	32	114	129	65	51	19
23	9.4	7.6	6.3	5.5	4.8	6.2	42	140	110	64	47	18
24	9.1	7.6	6.3	5.4	4.9	6.4	47	149	101	63	44	17
25	8.8	7.6	6.3	5.4	5.3	6.7	48	125	105	73	42	16
26	8.6	7.6	6.3	5.4	5.2	7.1	48	93	115	65	39	16
27	8.4	7.6	6.3	5.3	5.2	7.3	54	85	120	60	38	15
28	8.0	7.4	6.3	5.3	5.2	7.3	41	114	123	64	35	16
29	8.3	7.4	6.3	5.4	---	7.4	30	155	123	116	34	16
30	8.4	7.4	6.3	5.5	---	7.5	26	200	123	143	32	15
31	7.9	---	6.3	5.5	---	10	---	197	---	120	31	---
TOTAL	330.3	244.8	207.4	175.5	142.1	220.0	620.9	2484	4711	2893	1927	640
MEAN	10.7	8.16	6.69	5.66	5.07	7.10	20.7	80.1	157	93.3	62.2	21.3
MAX	14	9.2	7.3	6.3	5.4	12	54	200	270	143	105	33
MIN	7.9	7.4	6.3	5.3	4.7	5.2	7.2	19	101	60	31	15
AC-FT	655	486	411	348	282	436	1230	4930	9340	5740	3820	1270

CAL YR 1988 TOTAL 20979.1 MEAN 57.3 MAX 636 MIN 5.4 AC-FT 41610
WTR YR 1989 TOTAL 14596.0 MEAN 40.0 MAX 270 MIN 4.7 AC-FT 28950

LOCATION.--Lat 40°13'05", long 105°15'34", in NW¼NW¼ 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.

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.

GAGE.--Water-stage recorder. 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: Feb. 4-10, and July 29-30. Records good except for estimated daily discharges, which are poor. 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.

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, 998 ft³/s at 1730 June 3, gage height, 5.03 ft; minimum daily, 8.2 ft³/s. Oct. 31.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	11	19	19	17	16	25	49	285	235	228	57
2	18	11	17	19	13	15	24	54	257	227	199	57
3	18	14	17	20	14	12	22	69	327	221	188	54
4	20	15	15	19	14	11	20	60	248	216	168	51
5	19	16	15	20	14	15	20	49	168	214	155	51
6	19	17	14	19	14	14	21	43	155	210	145	48
7	18	16	18	16	15	19	19	46	137	208	143	46
8	18	17	14	17	15	29	26	55	133	196	135	65
9	20	19	18	18	15	26	32	109	176	188	121	87
10	17	18	19	19	16	28	30	135	150	183	123	75
11	15	19	18	20	16	29	35	166	158	185	123	67
12	14	19	16	16	16	30	33	151	234	194	153	63
13	14	16	17	18	17	31	29	114	340	183	173	64
14	12	20	17	18	16	30	30	128	332	170	162	58
15	12	21	26	18	16	27	29	119	335	164	161	48
16	12	19	27	18	16	26	24	122	360	154	149	44
17	14	19	29	20	16	26	32	112	452	140	143	40
18	15	22	28	19	17	24	35	113	400	122	136	35
19	16	20	28	19	18	24	33	138	370	116	127	36
20	16	20	26	17	18	25	37	158	390	114	133	54
21	16	18	21	18	17	21	54	178	373	112	119	56
22	14	22	17	17	18	25	52	189	311	110	102	51
23	15	21	17	18	20	24	59	229	263	109	99	43
24	10	21	18	17	25	23	70	251	244	105	95	39
25	11	22	20	17	29	22	86	221	238	125	88	34
26	11	20	21	14	24	22	100	182	246	122	81	29
27	11	17	18	18	22	26	94	124	234	105	78	29
28	13	19	18	17	21	23	80	131	243	102	73	29
29	13	20	19	19	---	26	75	151	244	212	67	29
30	11	19	19	19	---	26	56	210	237	476	69	28
31	8.2	---	18	22	---	21	---	277	---	318	65	---
TOTAL	460.2	548	604	565	489	716	1282	4133	8040	5536	4001	1467
MEAN	14.8	18.3	19.5	18.2	17.5	23.1	42.7	133	268	179	129	48.9
MAX	20	22	29	22	29	31	100	277	452	476	228	87
MIN	8.2	11	14	14	13	11	19	43	133	102	65	28
AC-FT	913	1090	1200	1120	970	1420	2540	8200	15950	10980	7940	2910
CAL YR 1988	TOTAL	30411.2	MEAN	83.1	MAX	516	MIN	8.2	AC-FT	60320		
WTR YR 1989	TOTAL	27841.2	MEAN	76.3	MAX	476	MIN	8.2	AC-FT	55220		

LOCATION.--Lat 40°09'30", long 105°00'48", in NW¼NW¼ sec.9, T.2 N., R.68 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.

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

REMARKS.--Estimated daily discharges: Dec. 29, 30, and Feb. 2-10 . Records good 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 observations of specific conductance and temperature are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft³/s, May 1, 1980, gage height, 6.37 ft; minimum daily, 22 ft³/s, Apr. 25, 1978, Apr. 3, 25, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1300 ft³/s at 2330 June 3, gage height, 5.29 ft; minimum daily, 23 ft³/s, Apr. 8.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	45	41	39	49	39	33	52	177	89	114	87
2	60	47	39	45	48	39	33	44	104	77	121	100
3	58	46	39	45	47	36	34	52	344	79	134	91
4	63	49	40	45	46	38	34	53	731	71	111	87
5	81	53	38	51	45	38	29	47	331	85	106	83
6	76	49	40	50	45	43	25	39	284	97	111	85
7	74	50	41	42	45	47	25	34	246	123	127	100
8	69	53	41	50	45	48	23	36	198	120	142	159
9	63	48	52	45	45	43	32	71	218	125	155	222
10	63	46	42	41	45	43	31	72	216	125	168	164
11	58	43	41	44	45	41	31	73	209	120	163	156
12	53	42	41	40	43	40	29	69	232	145	189	143
13	53	42	45	43	40	40	29	75	302	139	224	128
14	54	43	43	46	38	44	25	112	209	120	186	100
15	51	49	35	41	37	39	25	92	204	116	184	88
16	51	46	50	42	36	36	25	83	203	113	148	81
17	51	47	47	41	34	35	26	75	244	116	146	74
18	48	43	46	41	34	36	29	76	215	112	133	69
19	48	44	49	42	35	36	29	70	167	118	130	61
20	50	42	49	41	37	40	30	68	129	125	134	64
21	48	42	43	40	39	41	30	74	101	125	135	68
22	43	44	40	40	38	40	33	76	72	130	123	60
23	45	44	38	42	50	37	31	79	90	135	119	59
24	46	44	37	43	73	37	31	66	114	127	113	57
25	51	44	37	42	60	37	32	74	120	132	110	52
26	52	44	36	41	51	37	39	75	131	130	111	51
27	46	40	44	43	43	34	43	74	127	123	105	51
28	46	43	47	40	40	36	41	94	95	138	101	49
29	46	40	47	43	---	34	48	90	112	164	96	50
30	47	37	47	45	---	34	56	112	120	304	87	49
31	47	---	47	60	---	35	---	169	---	196	94	---
TOTAL	1703	1349	1322	1353	1233	1203	961	2276	6045	3919	4120	2688
MEAN	54.9	45.0	42.6	43.6	44.0	38.8	32.0	73.4	201	126	133	89.6
MAX	81	53	52	60	73	48	56	169	731	304	224	222
MIN	43	37	35	39	34	34	23	34	72	71	87	49
AC-FT	3380	2680	2620	2680	2450	2390	1910	4510	11990	7770	8170	5330
CAL YR 1988	TOTAL	26558	MEAN	72.6	MAX	331	MIN	29	AC-FT	52680		
WTR YR 1989	TOTAL	28172	MEAN	77.2	MAX	731	MIN	23	AC-FT	55880		

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 1310.

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: Water year 1986, Nov. 7-20, Dec. 1-16, Jan. 4-6, 25-27, Feb. 3-5, 7-12, 21-23, 28, Mar. 1, 11-21, and Apr. 2-5. Water year 1987, Nov. 10-12, 24, Dec. 8-12, Jan. 9-12, 18-21, Feb. 20-23, Feb. 27 to Mar. 2, Mar. 20-21, and Mar. 24-30. Water year 1988, Nov. 25-30, Dec. 12-16, 20-21, Dec. 31 to Jan. 4, Jan. 9-11, 14, 20-26, Feb. 3-4, 11-15, 18, 20-21, Mar. 3, 5-15, 18, 19, and Mar. 25 to Apr. 2. Water year 1989, Nov. 20, 21, 26-28, Dec. 9, 11-12, 20, 21, 24-30, Jan. 1-4, 7-9, 12-16, 26, 27, 29, 30, Feb. 2-4, 7, Mar. 4, 5, 16, 21, and 23. 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. Several observations of 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.--79 years, 54.6 ft³/s; 39,560 acre-ft/yr; 80 years, 54.5 ft³/s; 39,490 acre-ft/yr; 81 years, 54.4 ft³/s; 39,410 acre-ft/yr; 82 years, 54.3 ft³/s; 39,340 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 WATER YEAR 1986.--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 6	2000	*415	*3.06	No other peak greater than base discharge.			
Minimum daily, 5.1 ft ³ /s, Feb. 10-13.							

EXTREMES FOR WATER YEAR 1987.--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 9	2000	*341	*2.67				
Minimum daily, 4.7 ft ³ /s, Jan. 23							

EXTREMES FOR WATER YEAR 1988.--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 4	2100	*420	*3.00	No other peak greater than base discharge.			
Minimum daily, 4.0 ft ³ /s, Feb. 11-14.							

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 11	2200	*272	*2.45				
Minimum daily, 2.6 ft ³ /s, Jan. 18.							

PLATTE RIVER BASIN

06725500 MIDDLE BOULDER CREEK AT NEDERLAND, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	14	10	7.3	5.7	6.0	71	80	225	192	69	40
2	21	13	10	7.1	5.5	6.1	72	93	234	190	68	36
3	22	17	9.0	6.5	5.5	6.1	72	106	259	183	68	34
4	20	16	9.0	6.5	5.5	6.5	70	134	289	220	62	32
5	17	13	9.0	6.1	5.3	6.1	40	139	315	262	59	32
6	17	12	9.0	6.1	5.3	6.3	28	118	341	254	57	30
7	23	13	8.5	6.1	5.3	6.3	29	97	346	213	58	34
8	24	13	8.5	6.5	5.3	6.7	28	88	328	187	56	53
9	24	13	8.5	6.5	5.3	6.9	28	72	320	171	62	39
10	25	13	8.5	6.5	5.1	6.7	28	64	269	167	58	39
11	28	13	8.5	6.5	5.1	6.5	28	68	215	154	56	40
12	26	13	8.0	6.5	5.1	6.5	28	75	215	156	56	34
13	26	12	8.0	6.5	5.1	6.5	28	77	246	156	59	30
14	23	12	8.0	6.5	5.3	6.5	26	85	254	160	57	28
15	19	12	8.0	6.5	5.5	6.0	25	83	264	158	48	26
16	22	12	8.0	6.3	5.3	6.0	26	86	279	158	46	26
17	20	12	7.5	6.3	5.7	6.0	25	80	274	154	44	24
18	20	12	7.7	6.5	6.1	6.0	24	80	284	149	45	22
19	20	10	7.9	6.5	6.3	6.0	22	88	312	134	44	22
20	19	12	7.9	6.1	6.1	6.5	22	110	307	128	46	20
21	19	12	7.9	6.1	6.0	6.5	25	154	272	116	48	19
22	19	12	7.7	6.3	6.0	6.9	31	183	249	108	43	20
23	17	11	7.7	6.1	6.0	7.3	45	178	256	145	45	20
24	17	11	7.7	5.7	6.1	7.9	51	167	246	132	44	20
25	17	11	7.7	5.5	6.5	7.9	54	178	229	118	40	20
26	17	11	7.5	5.5	7.1	22	47	204	237	101	48	22
27	18	10	7.1	5.5	6.3	41	42	194	237	92	42	20
28	18	10	6.9	5.5	6.0	47	41	178	222	83	38	21
29	18	10	7.1	5.7	---	56	45	192	227	78	36	22
30	18	10	6.9	5.7	---	62	59	165	210	72	37	21
31	18	---	7.5	5.7	---	74	---	187	---	71	39	---
TOTAL	634	365	251.2	192.7	159.4	464.7	1160	3803	7961	4662	1578	846
MEAN	20.5	12.2	8.10	6.22	5.69	15.0	38.7	123	265	150	50.9	28.2
MAX	28	17	10	7.3	7.1	74	72	204	346	262	69	53
MIN	17	10	6.9	5.5	5.1	6.0	22	64	210	71	36	19
AC-FT	1260	724	498	382	316	922	2300	7540	15790	9250	3130	1680
CAL YR 1985	TOTAL	19046.8	MEAN	52.2	MAX	390	MIN	5.3	AC-FT	37780		
WTR YR 1986	TOTAL	22077.0	MEAN	60.5	MAX	346	MIN	5.1	AC-FT	43790		

81

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	20	9.5	5.5	5.5	5.5	7.1	134	151	108	54	19
2	22	20	9.5	5.9	5.5	5.5	7.3	145	162	93	45	19
3	24	20	9.5	6.3	5.7	5.5	7.7	114	154	90	41	18
4	23	18	9.3	7.1	5.7	5.7	8.3	95	162	83	36	20
5	21	17	9.1	6.9	5.9	6.5	8.3	97	176	77	34	18
6	21	17	9.1	6.7	5.7	7.7	8.5	104	185	71	32	17
7	22	15	9.1	6.7	5.7	8.7	8.9	118	187	65	33	15
8	23	14	9.1	6.5	5.9	8.7	10	136	210	64	31	15
9	22	12	9.0	6.5	5.7	7.7	10	160	272	59	29	14
10	22	12	9.0	6.5	5.5	7.7	11	183	264	58	29	14
11	22	13	9.0	6.5	5.5	7.5	13	185	220	53	28	13
12	21	14	8.5	6.7	5.5	7.9	14	180	206	72	28	13
13	18	15	8.5	6.7	5.5	7.7	14	220	199	66	27	12
14	21	16	8.3	6.5	5.5	7.7	12	229	180	57	26	14
15	20	15	8.1	6.1	5.5	7.5	15	244	167	50	24	20
16	20	15	7.9	5.9	5.5	7.3	24	279	165	51	24	21
17	19	14	7.7	5.9	5.5	7.9	32	289	151	53	22	28
18	17	14	6.9	5.7	5.5	7.7	39	274	143	57	20	24
19	18	14	6.9	5.7	5.5	7.5	44	234	143	50	18	18
20	24	14	6.7	5.0	5.5	7.5	45	217	136	45	17	16
21	22	14	6.3	5.0	5.5	7.5	41	194	128	43	18	15
22	18	13	5.9	4.9	5.5	7.3	41	167	124	46	26	14
23	24	12	5.7	4.7	5.1	7.3	51	165	120	47	27	14
24	23	11	6.3	5.3	5.1	7.3	66	169	110	44	34	13
25	20	11	6.1	5.5	4.9	7.3	78	147	106	44	33	12
26	20	10	5.9	5.7	5.0	7.3	82	139	108	43	28	13
27	20	11	5.9	5.7	5.0	7.3	80	128	102	45	26	12
28	19	10	6.3	5.9	5.0	7.3	85	112	97	50	25	12
29	18	10	6.1	5.9	---	7.1	110	108	116	48	25	12
30	18	9.8	6.1	5.7	---	7.1	112	108	112	56	22	12
31	20	---	6.9	5.5	---	7.1	---	120	---	66	20	---
TOTAL	644	420.8	238.2	185.1	152.9	225.3	1085.1	5194	4756	1854	882	477
MEAN	20.8	14.0	7.68	5.97	5.46	7.27	36.2	168	159	59.8	28.5	15.9
MAX	24	20	9.5	7.1	5.9	8.7	112	289	272	108	54	28
MIN	17	9.8	5.7	4.7	4.9	5.5	7.1	95	97	43	17	12
AC-FT	1280	835	472	367	303	447	2150	10300	9430	3680	1750	946
CAL YR 1986	TOTAL 22129.8											
WTR YR 1987	TOTAL 16114.4											
			MEAN	60.6	MAX 346	MIN 5.1	AC-FT 43890					
			MEAN	44.1	MAX 289	MIN 4.7	AC-FT 31960					

PLATTE RIVER BASIN

06725500 MIDDLE BOULDER CREEK AT NEDERLAND, CO--Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	14	9.1	7.0	4.7	5.1	6.5	61	176	201	58	15
2	11	13	9.3	7.0	4.9	5.1	6.5	56	171	178	50	15
3	11	13	9.1	7.0	4.9	5.1	6.9	46	225	160	48	14
4	10	12	9.1	7.0	4.7	5.1	7.1	46	310	162	47	14
5	9.8	12	9.1	6.9	4.7	5.1	7.9	51	336	178	43	14
6	10	12	8.9	6.9	4.7	5.0	8.9	64	315	160	41	13
7	15	11	8.7	7.1	4.7	4.5	13	53	315	145	40	12
8	11	12	7.1	7.1	4.7	4.5	17	48	307	139	38	12
9	10	11	8.1	7.0	4.5	4.5	14	46	315	130	35	12
10	9.8	12	9.1	7.0	4.3	4.5	15	46	307	114	32	12
11	9.1	12	8.9	7.0	4.0	4.5	15	46	297	104	29	15
12	8.7	11	8.5	7.1	4.0	4.5	20	61	297	99	28	25
13	9.3	11	8.5	6.7	4.0	4.5	29	86	266	95	25	21
14	14	12	8.0	6.5	4.0	4.5	33	120	237	97	29	24
15	14	11	8.0	6.1	4.5	4.5	34	165	237	88	30	20
16	13	9.1	8.0	5.8	4.5	4.3	37	169	234	77	27	15
17	12	9.1	7.7	5.5	4.5	4.7	42	185	242	71	30	14
18	12	9.1	7.5	5.5	4.5	4.7	41	222	256	68	29	12
19	11	12	7.5	5.5	4.5	4.7	42	227	286	74	26	10
20	8.3	13	7.5	5.0	4.5	5.1	41	162	266	75	24	12
21	8.9	12	7.5	5.0	4.5	5.7	40	126	279	59	23	11
22	9.5	11	7.5	5.0	4.5	5.7	41	108	315	56	24	10
23	9.5	11	7.7	5.0	4.3	6.1	36	97	269	54	22	10
24	9.8	10	8.1	5.0	4.1	5.7	34	108	244	47	19	9.3
25	10	10	7.9	5.0	4.1	5.7	32	136	225	48	20	8.9
26	10	9.5	7.5	5.0	4.5	5.7	31	171	232	51	24	8.5
27	9.5	9.5	7.1	4.7	5.1	6.5	30	201	232	48	20	8.5
28	9.5	9.0	7.3	4.7	4.9	7.0	31	227	284	52	19	8.7
29	9.8	9.0	7.1	4.7	5.1	7.0	35	254	266	57	17	8.7
30	13	9.0	7.1	4.7	---	6.5	46	269	229	54	17	9.8
31	14	---	7.0	4.7	---	6.5	---	227	---	54	15	---
TOTAL	333.5	331.3	249.5	184.2	130.9	162.6	792.8	3884	7970	2995	929	394.4
MEAN	10.8	11.0	8.05	5.94	4.51	5.25	26.4	125	266	96.6	30.0	13.1
MAX	15	14	9.3	7.1	5.1	7.0	46	269	336	201	58	25
MIN	8.3	9.0	7.0	4.7	4.0	4.3	6.5	46	171	47	15	8.5
AC-FT	661	657	495	365	260	323	1570	7700	15810	5940	1840	782

CAL YR 1987 TOTAL 15725.7 MEAN 43.1 MAX 289 MIN 4.7 AC-FT 31190
WTR YR 1988 TOTAL 18357.2 MEAN 50.2 MAX 336 MIN 4.0 AC-FT 36410

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	6.5	4.7	3.0	3.4	3.7	11	43	199	120	66	16
2	8.9	6.7	4.7	3.0	3.4	3.9	11	42	192	118	77	19
3	8.3	7.9	4.5	3.2	3.2	3.7	9.5	41	178	110	99	20
4	8.5	5.9	4.5	3.4	3.2	3.7	10	39	156	108	83	19
5	8.3	5.7	4.4	3.7	3.4	3.7	11	38	145	108	71	19
6	8.9	9.1	4.1	3.5	3.0	3.7	11	41	156	106	61	18
7	9.8	10	3.9	3.2	3.2	4.3	12	46	149	102	48	19
8	9.5	9.1	3.9	3.2	3.5	6.4	16	71	160	95	41	23
9	9.5	9.1	4.3	2.9	3.5	7.3	14	95	158	90	38	27
10	9.8	8.7	4.3	2.9	3.4	7.9	13	102	156	90	43	24
11	10	8.7	4.9	3.0	3.4	8.1	13	102	201	90	40	24
12	8.5	6.9	4.1	3.0	3.2	8.5	13	95	208	92	42	23
13	7.7	9.1	4.1	3.0	3.2	9.1	13	83	176	86	39	25
14	7.7	8.5	4.5	2.9	3.2	8.9	14	75	174	83	36	24
15	7.3	8.3	4.7	2.9	3.2	8.5	16	68	174	77	35	24
16	7.1	6.9	4.6	2.8	3.4	8.5	17	66	197	75	32	18
17	7.1	8.1	4.3	2.8	3.2	7.9	25	61	213	68	38	16
18	7.1	7.5	4.3	2.6	3.5	7.7	34	69	187	65	37	15
19	6.7	6.5	3.9	2.9	3.0	7.9	36	97	197	62	34	14
20	7.1	6.7	4.1	2.9	3.4	7.9	44	118	199	59	36	15
21	7.3	6.5	4.3	2.9	3.0	7.9	53	132	183	59	30	17
22	6.9	6.3	4.5	2.9	3.4	7.9	58	139	132	57	28	15
23	6.5	7.3	4.5	2.8	3.4	7.7	66	176	114	53	28	13
24	6.5	7.1	4.1	2.9	3.7	8.1	72	190	99	52	26	10
25	6.5	6.8	3.9	2.9	4.3	9.8	77	167	106	54	25	10
26	6.7	6.3	3.9	2.9	4.1	12	77	126	112	56	24	10
27	6.5	6.3	3.7	2.9	3.5	12	72	118	114	48	22	9.5
28	6.1	6.1	2.9	3.2	3.7	12	56	143	122	44	20	9.8
29	6.3	5.9	2.9	3.0	---	14	50	185	120	70	19	9.8
30	6.9	5.2	2.8	3.0	---	11	44	222	118	102	19	9.3
31	6.5	---	3.0	3.2	---	14	---	220	---	80	18	---
TOTAL	240.0	219.7	127.3	93.4	95.0	247.7	968.5	3210	4795	2479	1255	515.4
MEAN	7.74	7.32	4.11	3.01	3.39	7.99	32.3	104	160	80.0	40.5	17.2
MAX	10	10	4.9	3.7	4.3	14	77	222	213	120	99	27
MIN	6.1	5.2	2.8	2.6	3.0	3.7	9.5	38	99	44	18	9.3
AC-FT	476	436	252	185	188	491	1920	6370	9510	4920	2490	1020
CAL YR 1988	TOTAL 18029.9											
WTR YR 1989	TOTAL 14246.0											
			MEAN 49.3	MAX 336	MIN 2.8	AC-FT 35760						
			MEAN 39.0	MAX 222	MIN 2.6	AC-FT 28260						

PLATTE RIVER BASIN

06726900 BUMMERS GULCH NEAR EL VADO, CO

LOCATION.--Lat 40°00'42", long 105°20'53", in NE1/4NW1/4 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. Elevation of gage is 6,270 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 7-11, 13-16, and Jan. 2 to Feb 27. Records fair except for estimated daily discharges, which are poor. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--6 years, 0.52 ft³/s; 377 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7.8 ft³/s, Apr. 25, 1984, gage height, 2.65 ft, maximum gage height, 2.70 ft, July 7, 1988; 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)
June 9	2000	*1.6	*2.68	No other peak greater than base discharge.			
No flow, July 26, 28.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.29	.18	.21	.21	.38	.37	.45	.35	.06	.02	.02
2	.05	.29	.18	.21	.21	.40	.37	.45	.29	.05	.02	.02
3	.05	.26	.17	.21	.21	.37	.37	.41	.39	.04	.02	.02
4	.05	.17	.17	.21	.21	.38	.37	.38	.43	.04	.02	.02
5	.06	.19	.17	.21	.21	.38	.36	.37	.35	.03	.02	.01
6	.07	.21	.16	.21	.21	.48	.35	.34	.31	.02	.02	.02
7	.07	.22	.16	.21	.21	.51	.34	.32	.29	.02	.04	.04
8	.07	.21	.16	.21	.21	.50	.33	.32	.31	.02	.04	.18
9	.05	.22	.16	.21	.21	.48	.34	.38	.38	.02	.03	.12
10	.05	.22	.16	.21	.21	.51	.41	.35	.32	.01	.03	.13
11	.06	.25	.16	.21	.21	.51	.40	.32	.28	.01	.03	.24
12	.05	.26	.16	.21	.21	.49	.40	.32	.34	.03	.11	.19
13	.05	.23	.16	.21	.21	.48	.41	.33	.35	.02	.08	.17
14	.05	.18	.17	.21	.21	.44	.40	.56	.32	.02	.04	.12
15	.05	.20	.19	.21	.21	.41	.40	.51	.26	.01	.04	.07
16	.05	.19	.20	.21	.21	.40	.37	.46	.23	.01	.03	.05
17	.13	.20	.22	.21	.21	.39	.37	.42	.20	.01	.03	.04
18	.17	.20	.22	.21	.21	.37	.36	.39	.18	.01	.03	.04
19	.20	.19	.21	.21	.22	.38	.35	.36	.17	.01	.03	.04
20	.22	.19	.21	.21	.23	.37	.34	.29	.14	.01	.03	.08
21	.22	.20	.20	.21	.24	.42	.32	.31	.14	.01	.03	.07
22	.21	.20	.21	.21	.26	.43	.32	.30	.15	.01	.03	.06
23	.23	.18	.22	.21	.27	.41	.32	.28	.15	.01	.03	.05
24	.22	.18	.22	.21	.28	.40	.31	.26	.16	.01	.03	.05
25	.22	.20	.21	.21	.30	.40	.33	.25	.15	.01	.03	.04
26	.23	.18	.21	.21	.32	.40	.32	.29	.13	.00	.02	.04
27	.24	.16	.21	.21	.34	.40	.33	.27	.11	.01	.03	.04
28	.26	.21	.21	.21	.36	.37	.33	.24	.10	.00	.02	.03
29	.25	.20	.21	.21	---	.38	.36	.21	.10	.01	.02	.03
30	.26	.18	.22	.21	---	.37	.39	.25	.07	.06	.02	.03
31	.28	---	.22	.21	---	.37	---	.34	---	.02	.02	---
TOTAL	4.22	6.26	5.91	6.51	6.60	12.98	10.74	10.73	7.15	0.60	0.99	2.06
MEAN	.14	.21	.19	.21	.24	.42	.36	.35	.24	.019	.032	.069
MAX	.28	.29	.22	.21	.36	.51	.41	.56	.43	.06	.11	.24
MIN	.05	.16	.16	.21	.21	.37	.31	.21	.07	.00	.02	.01
AC-FT	8.4	12	12	13	13	26	21	21	14	1.2	2.0	4.1

CAL YR 1988 TOTAL 114.34 MEAN .31 MAX 1.6 MIN .03 AC-FT 227
WTR YR 1989 TOTAL 74.75 MEAN .20 MAX .56 MIN .00 AC-FT 148

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. 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: May 1-3. 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.--81 years (water years 1907-14, 1917-89), 87.1 ft³/s; 63,100 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, 208 ft³/s at 2030 July 30, gage height, 2.81 ft, maximum gage height, 3.09 ft at 1630 Jan. 16; minimum daily discharge, 2.6 ft³/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	11	23	49	10	8.3	17	45	168	103	120	21
2	15	11	22	42	13	6.2	12	47	155	123	116	23
3	14	11	19	39	12	16	5.0	34	155	131	127	28
4	13	31	12	30	13	6.0	21	35	140	134	154	27
5	19	17	38	3.9	9.4	8.9	4.2	43	78	127	142	18
6	14	17	34	23	7.7	7.5	4.0	37	72	121	136	18
7	12	22	34	15	6.6	7.5	17	31	93	110	117	22
8	10	18	34	18	6.8	7.2	5.2	37	104	113	99	29
9	5.8	18	46	18	7.0	9.3	19	57	124	106	83	45
10	6.2	21	23	11	5.2	10	6.8	108	102	95	76	44
11	11	18	43	13	5.6	12	5.9	110	103	128	71	49
12	13	22	42	15	6.8	13	5.1	67	114	132	76	46
13	11	22	48	16	7.2	22	17	52	110	130	78	41
14	10	23	47	14	5.9	15	7.5	46	110	108	67	38
15	10	22	53	6.3	7.0	24	6.0	33	116	110	59	34
16	11	24	46	22	7.5	12	20	34	102	104	63	27
17	3.9	19	44	12	7.9	27	9.8	27	115	88	66	22
18	9.6	24	46	11	6.5	14	12	23	121	63	65	19
19	13	25	45	12	6.7	9.2	11	37	116	79	59	16
20	12	23	50	9.5	6.4	47	8.4	52	126	105	59	14
21	12	26	45	11	6.2	21	20	71	148	108	65	14
22	12	14	49	11	6.6	11	6.4	99	141	104	52	17
23	12	26	46	11	7.6	8.9	18	110	124	107	41	19
24	11	23	52	8.9	6.2	7.5	5.7	114	113	92	39	19
25	11	19	41	9.0	5.7	19	31	95	111	80	41	17
26	11	20	44	9.7	11	24	20	71	111	79	39	14
27	11	19	38	9.9	13	8.3	17	73	124	81	36	11
28	13	28	51	11	10	10	13	84	131	74	39	4.0
29	14	24	49	9.5	---	29	31	95	106	74	39	2.8
30	14	27	51	9.7	---	13	39	144	115	173	37	2.6
31	13	---	48	11	---	5.3	---	184	---	165	32	---
TOTAL	364.5	625	1263	491.4	224.5	439.1	415.0	2095	3548	3347	2293	701.4
MEAN	11.8	20.8	40.7	15.9	8.02	14.2	13.8	67.6	118	108	74.0	23.4
MAX	19	31	53	49	13	47	39	184	168	173	154	49
MIN	3.9	11	12	3.9	5.2	5.3	4.0	23	72	63	32	2.6
AC-FT	723	1240	2510	975	445	871	823	4160	7040	6640	4550	1390

CAL YR 1988 TOTAL 21815.5 MEAN 59.6 MAX 427 MIN 3.9 AC-FT 43270
WTR YR 1989 TOTAL 15806.9 MEAN 43.3 MAX 184 MIN 2.6 AC-FT 31350

PLATTE RIVER BASIN

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, 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: Nov. 4 to Dec. 12, Dec. 15 to Mar. 6, and June 9-30. Records good except for estimated daily discharges, which are poor. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--12 years (water years 1947-53, 1983-89), 6.59 ft³/s, 4,770 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; 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, not determined, maximum gage height, 4.62 ft at 2015 June 9 (backwater from debris); minimum daily discharge, 0.03 ft³/s, Sept. 1, 3-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.46	.59	.62	.56	.47	.82	2.1	6.4	13	4.9	1.1	.03
2	.48	.60	.64	.56	.46	.84	2.0	6.9	11	4.3	.93	.04
3	.47	.48	.64	.56	.46	.86	2.0	6.8	12	3.8	.66	.03
4	.52	.48	.64	.56	.46	.86	1.8	6.2	13	3.4	.40	.03
5	.63	.48	.64	.56	.46	.86	1.7	5.8	11	2.8	.31	.03
6	.65	.50	.66	.56	.46	1.0	1.8	5.5	10	2.4	.31	.03
7	.62	.50	.66	.56	.46	1.2	1.8	5.4	9.8	2.2	.50	.05
8	.60	.50	.66	.57	.46	1.4	2.1	5.6	11	1.9	.82	.80
9	.54	.50	.66	.56	.46	1.9	2.1	6.8	15	1.7	.48	1.6
10	.56	.52	.68	.56	.47	2.2	2.1	7.2	20	1.5	.62	1.1
11	.55	.52	.68	.56	.47	2.6	2.4	7.8	16	1.5	.43	1.9
12	.55	.52	.68	.56	.47	3.1	2.2	8.5	17	2.2	1.3	1.5
13	.56	.54	.73	.56	.47	3.1	2.3	9.5	18	1.9	2.1	1.6
14	.59	.54	.60	.56	.48	3.0	2.5	12	18	1.5	1.5	1.4
15	.58	.54	.54	.56	.48	2.4	2.5	11	17	1.3	1.0	1.0
16	.59	.56	.54	.56	.50	2.3	2.3	9.9	16	1.2	.81	.71
17	.56	.56	.54	.56	.52	2.3	2.5	9.0	15	.84	1.0	.56
18	.61	.56	.56	.56	.52	2.1	2.7	9.0	14	.72	.90	.46
19	.61	.56	.56	.56	.54	2.1	2.9	8.5	12	.68	.85	.43
20	.60	.58	.56	.53	.56	2.5	3.3	8.2	11	.61	.77	.65
21	.64	.58	.56	.53	.58	2.7	3.7	8.3	10	.63	.54	.84
22	.64	.58	.56	.53	.62	2.5	4.1	8.7	9.6	.55	.39	.70
23	.69	.58	.56	.53	.64	2.2	4.7	10	8.8	.53	.45	.57
24	.66	.60	.56	.50	.66	2.2	5.2	13	8.0	.56	.33	.45
25	.66	.60	.56	.50	.70	2.1	5.9	16	7.2	.57	.27	.44
26	.67	.60	.56	.50	.74	2.1	6.1	17	6.6	.57	.31	.39
27	.63	.60	.56	.50	.76	2.2	6.6	14	6.2	.40	.33	.35
28	.63	.62	.56	.50	.80	2.1	6.5	11	5.8	.33	.25	.32
29	.63	.62	.56	.47	---	2.2	6.5	9.1	5.4	.68	.16	.25
30	.61	.62	.56	.47	---	2.1	6.5	11	5.1	2.4	.09	.36
31	.57	---	.56	.47	---	1.9	---	12	---	1.7	.05	---
TOTAL	18.36	16.63	18.65	16.68	15.13	61.74	100.9	286.1	352.5	50.27	19.96	18.62
MEAN	.59	.55	.60	.54	.54	1.99	3.36	9.23	11.7	1.62	.64	.62
MAX	.69	.62	.73	.57	.80	3.1	6.6	17	20	4.9	2.1	1.9
MIN	.46	.48	.54	.47	.46	.82	1.7	5.4	5.1	.33	.05	.03
AC-FT	36	33	37	33	30	122	200	567	699	100	40	37

CAL YR 1988 TOTAL 1865.93 MEAN 5.10 MAX 80 MIN .00 AC-FT 3700
WTR YR 1989 TOTAL 975.54 MEAN 2.67 MAX 20 MIN .03 AC-FT 1930

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. 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: Dec. 3-9, and Dec. 15 to Mar. 10. 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.--33 years (water years 1957-89), 61.8 ft³/s; 44,770 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, 364 ft³/s at 0830 June 1, gage height, 3.00 ft; minimum daily, 2.0 ft³/s, Nov. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	12	7.2	8.0	7.0	5.0	35	79	338	119	74	23
2	8.2	6.9	4.7	8.0	6.5	5.0	36	61	289	111	77	23
3	7.6	3.8	4.5	8.0	5.5	4.5	36	60	265	111	83	11
4	7.6	3.8	4.5	8.0	4.5	4.0	35	60	258	112	66	14
5	8.7	2.9	5.0	8.0	4.5	4.0	27	60	228	109	47	16
6	8.2	2.4	5.0	8.0	5.0	4.0	18	59	211	106	44	16
7	7.6	2.4	5.5	8.0	5.0	4.5	18	59	199	98	47	17
8	7.1	2.0	6.0	8.0	5.0	5.0	18	59	181	82	45	20
9	7.1	3.4	6.5	7.5	6.0	5.0	19	64	194	72	37	21
10	7.6	4.0	6.0	7.5	7.0	17	22	75	192	71	35	21
11	7.6	11	6.0	7.5	7.0	19	24	98	177	70	34	22
12	6.0	14	17	7.5	7.0	17	32	116	177	72	34	18
13	3.2	14	7.4	7.0	7.5	17	32	120	170	71	34	26
14	3.4	14	7.5	7.0	7.5	16	32	125	169	70	32	35
15	3.4	15	9.0	7.0	7.5	15	32	126	170	68	28	35
16	3.5	16	11	7.0	7.5	16	31	123	184	65	25	23
17	3.8	18	12	7.0	7.5	18	31	117	191	57	29	12
18	3.8	17	14	6.5	8.0	18	31	111	211	51	30	15
19	3.8	16	18	6.0	8.0	18	39	117	233	52	25	15
20	7.4	16	21	6.0	8.0	18	51	125	243	52	22	15
21	4.2	15	21	6.0	8.0	21	57	127	260	50	22	16
22	3.4	14	21	6.0	8.0	20	57	162	272	50	21	12
23	3.1	13	21	6.0	8.0	20	56	244	204	51	19	11
24	4.3	13	21	5.5	7.0	19	72	286	149	50	16	11
25	3.4	12	21	5.0	6.0	20	87	302	149	52	16	7.9
26	3.4	12	21	5.0	6.0	20	86	255	144	53	18	5.2
27	3.4	11	21	5.0	5.0	20	91	201	140	53	20	5.1
28	3.8	11	21	5.5	5.0	19	100	228	134	53	20	4.9
29	3.8	10	21	6.0	---	23	102	278	130	54	20	4.6
30	3.8	10	13	6.5	---	26	101	325	129	55	14	4.2
31	7.1	---	8.0	7.0	---	29	---	347	---	65	8.3	---
TOTAL	167.5	315.6	387.8	211.0	184.5	467.0	1408	4569	5991	2205	1042.3	479.9
MEAN	5.40	10.5	12.5	6.81	6.59	15.1	46.9	147	200	71.1	33.6	16.0
MAX	8.7	18	21	8.0	8.0	29	102	347	338	119	83	35
MIN	3.1	2.0	4.5	5.0	4.5	4.0	18	59	129	50	8.3	4.2
AC-FT	332	626	769	419	366	926	2790	9060	11880	4370	2070	952

CAL YR 1988 TOTAL 22588.6 MEAN 61.7 MAX 428 MIN 2.0 AC-FT 44800
WTR YR 1989 TOTAL 17428.6 MEAN 47.7 MAX 347 MIN 2.0 AC-FT 34570

06730500 BOULDER CREEK AT MOUTH NEAR LONGMONT, CO

LOCATION.--Lat 40°09'08", long 105°00'52", in NW¼SW¼ sec.9, T.2 N., R.68 W., Weld County, Hydrologic Unit 10190005, on left bank 0.6 mi upstream from mouth, 1.0 mi downstream from State Highway 254, and 4.8 mi southeast of Longmont.

DRAINAGE AREA.--439 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1927 to September 1949, May 1951 to September 1955, October 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,860 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 10, 1939, at site 0.8 mi upstream at different datum. June 10, 1939, to Sept. 30, 1949, at site 1.0 mi upstream, at different datum. May 1, 1951, to Sept. 30, 1955, at site 1.4 mi upstream, at different datum.

REMARKS.--Estimated daily discharges: Dec. 16-19, Dec. 27 to Jan. 23, and Feb. 3 to Mar. 14. Records good except for estimated daily discharges, which are poor. Natural flow of stream affected by transmountain, transbasin, and storage diversions, diversions for irrigation, water-treatment plants, and return flows from irrigated areas.

AVERAGE DISCHARGE.--37 years (water years, 1928-49, 1952-55, 1979-89), 65.6 ft³/s; 47,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,410 ft³/s, Sept. 3, 1938, gage height, 6.94 ft, site and datum then in use, from rating curve extended above 340 ft³/s, on basis of slope-area measurement of peak flow; no flow at times many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 623 ft³/s at 0330 June 4, gage height, 2.90 ft; minimum daily, 0.80 ft³/s, May 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	58	64	86	57	40	51	1.8	97	10	20	4.2
2	36	47	62	94	51	43	51	1.5	67	7.3	7.4	2.8
3	41	51	60	110	48	47	50	1.5	169	13	19	3.5
4	40	41	57	94	45	52	52	1.4	424	7.9	11	3.2
5	45	68	46	82	43	42	50	1.9	204	5.6	13	5.1
6	46	64	69	68	43	44	49	1.1	95	5.7	13	6.0
7	42	67	73	73	43	42	49	.80	91	6.6	15	5.9
8	41	64	83	62	43	42	50	2.2	53	7.3	14	33
9	40	71	93	56	46	42	53	1.9	66	8.0	16	101
10	45	70	88	64	48	42	57	2.0	51	6.2	13	71
11	40	71	64	58	52	42	53	22	38	11	14	94
12	44	63	83	52	54	42	55	36	32	25	15	58
13	46	66	89	52	51	42	55	13	44	16	24	56
14	61	70	92	54	49	42	55	57	27	12	8.3	35
15	52	80	92	56	46	43	51	47	25	11	7.4	36
16	49	77	105	50	43	43	50	3.7	17	7.0	6.3	31
17	54	68	120	62	42	43	52	1.7	11	6.6	7.1	26
18	46	62	110	52	42	47	46	1.5	7.5	6.5	8.9	28
19	55	66	100	48	44	46	37	1.2	2.5	6.5	7.8	30
20	53	61	89	48	47	48	12	6.3	2.2	5.8	5.0	27
21	47	64	92	50	49	53	2.4	12	2.6	6.0	4.8	36
22	45	63	82	48	52	49	1.8	22	3.2	6.5	2.8	33
23	44	55	86	47	54	52	1.5	5.8	7.2	5.7	3.9	31
24	45	68	79	45	58	51	1.6	8.9	9.1	5.1	5.3	28
25	45	57	75	45	51	53	4.1	29	8.8	4.9	3.5	27
26	37	58	74	43	47	52	13	63	12	3.4	4.2	30
27	19	54	84	45	47	59	4.9	31	9.1	4.0	3.6	27
28	24	55	80	46	47	50	1.6	12	22	3.6	3.3	25
29	22	63	94	54	---	49	1.4	14	39	4.5	3.0	25
30	22	60	88	52	---	65	1.8	20	16	80	3.3	26
31	24	---	94	55	---	53	---	87	---	139	3.4	---
TOTAL	1280	1882	2567	1851	1342	1460	1012.1	510.20	1652.2	447.7	286.3	944.7
MEAN	41.3	62.7	82.8	59.7	47.9	47.1	33.7	16.5	55.1	14.4	9.24	31.5
MAX	61	80	120	110	58	65	57	87	424	139	24	101
MIN	19	41	46	43	42	40	1.4	.80	2.2	3.4	2.8	2.8
AC-FT	2540	3730	5090	3670	2660	2900	2010	1010	3280	888	568	1870

CAL YR 1988 TOTAL 18319.2 MEAN 50.1 MAX 443 MIN 1.7 AC-FT 36340
WTR YR 1989 TOTAL 15235.20 MEAN 41.7 MAX 424 MIN .80 AC-FT 30220

PLATTE RIVER BASIN

06730500 BOULDER CREEK AT MOUTH NEAR LONGMONT, CO--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
NOV 02...	1330	37	810	9.0	11.0	15.5	K70	140	250	44
FEB 01...	1200	60	790	8.4	3.0	11.8	170	1100	220	42
MAR 21...	1330	48	924	8.9	11.5	17.8	K12	65	260	47
MAY 02...	1330	1.5	1150	9.2	20.5	16.0	27	88	440	73
JUL 05...	1400	6.0	790	9.3	30.5	18.3	22	K14	320	52
SEP 13...	0930	60	704	8.4	9.5	9.6	2600	K6600	230	44

DATE	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 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)
NOV 02...	33	69	2	8.7	175	140	48	1.0	4.8
FEB 01...	27	73	2	6.5	170	110	61	0.7	6.6
MAR 21...	34	80	2	12	197	150	86	0.8	6.5
MAY 02...	63	99	2	4.4	285	340	31	1.1	3.3
JUL 05...	45	65	2	3.2	183	230	22	0.9	3.2
SEP 13...	30	59	2	5.6	179	140	24	0.9	9.0

DATE	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, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
NOV 02...	--	472	0.64	47.1	--	--	--	4.10	--
FEB 01...	423	449	0.58	68.8	2.30	0.10	--	2.40	4.30
MAR 21...	536	560	0.73	69.5	2.24	0.16	--	2.40	5.90
MAY 02...	797	791	1.08	3.34	0.70	0.07	0.80	0.77	0.08
JUL 05...	551	536	0.75	8.96	0.57	0.04	--	0.61	0.02
SEP 13...	436	437	0.59	70.6	2.83	0.17	--	3.00	0.95

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
NOV 02...	--	--	--	--	2.00	--	--	2.0
FEB 01...	4.00	11	15	2.40	1.50	1.20	3.7	0.3
MAR 21...	5.90	3.9	9.8	2.70	1.30	2.20	6.7	--
MAY 02...	0.09	0.82	0.9	0.87	0.70	0.59	1.8	0.11
JUL 05...	0.03	0.68	0.7	0.25	0.25	0.20	0.6	0.05
SEP 13...	0.87	0.95	1.9	0.79	0.66	0.63	1.9	0.03

K BASED ON NON-IDEAL COLONY COUNT.

06730500 BOULDER CREEK AT MOUTH NEAR LONGMONT, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
NOV 02...	1330	--	--	--	--	--	--	--	20
FEB 01...	1200	39	<0.5	160	1	<5	<3	<10	28
MAR 21...	1330	41	<0.5	190	<1	<5	<3	<10	32
MAY 02...	1330	--	--	--	--	--	--	--	--
JUL 05...	1400	54	<0.5	200	<1	<5	<3	<10	210
SEP 13...	0930	54	<0.5	190	<1	<5	<3	<10	17

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 02...	--	--	13	--	--	--	--	--	--
FEB 01...	<10	18	110	<10	<10	<1.0	570	<6	18
MAR 21...	<10	20	74	<10	<10	<1.0	650	<6	26
MAY 02...	--	--	--	--	--	--	--	--	--
JUL 05...	10	25	21	<10	<10	<1.0	940	<6	27
SEP 13...	<10	20	27	10	<10	<1.0	680	<6	18

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.

PERIOD OF RECORD.--July 1904 to December 1906, April to December 1915, March 1927 to current year. Prior to October 1933, monthly discharge only, published in WSP 1310.

GAGE.--Water-stage recorder. Elevation of gage is 4,740 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1730 for history of changes prior to Apr. 25, 1960.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft³/s, Sept. 3, 1938, gage height, 8.93 ft, site and datum then in use, from rating curve extended above 4,700 ft³/s; minimum daily, 12 ft³/s, Apr. 23, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,900 ft³/s at 1345 June 4, gage height, 4.91 ft; minimum daily, 63 ft³/s, May 8.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	130	153	175	140	150	117	129	343	174	259	159
2	115	133	152	175	100	145	107	119	274	156	201	175
3	113	135	153	170	90	145	103	114	364	156	230	173
4	117	134	150	165	90	150	111	131	1320	153	198	166
5	128	141	140	160	100	142	106	116	786	143	202	159
6	134	150	150	155	120	139	105	99	523	140	181	163
7	131	153	160	152	125	143	89	74	428	165	207	165
8	126	155	165	146	125	153	88	63	353	171	198	288
9	122	160	160	151	130	163	106	75	335	169	211	398
10	122	160	165	147	130	147	115	111	325	160	219	343
11	120	155	160	140	177	138	107	111	301	159	215	342
12	115	155	160	134	185	135	109	149	300	213	210	305
13	111	158	170	121	165	134	105	132	380	227	328	295
14	109	160	170	132	150	134	108	196	308	205	301	232
15	114	169	170	141	145	130	108	278	284	190	306	209
16	111	165	175	138	145	130	106	184	272	192	284	193
17	112	160	180	165	145	128	105	151	282	185	266	172
18	111	150	180	150	142	126	112	123	272	164	254	160
19	113	150	180	142	143	124	111	113	226	168	243	158
20	117	151	180	139	141	123	96	107	201	172	258	152
21	113	150	170	139	142	127	87	126	170	168	245	167
22	112	154	165	139	141	128	86	138	159	174	230	161
23	109	150	165	140	142	124	89	124	151	172	219	148
24	111	152	170	140	198	125	72	94	170	170	210	145
25	116	145	175	130	242	116	85	106	165	163	200	141
26	119	145	165	120	231	125	96	159	181	172	200	138
27	113	140	160	125	191	126	106	162	194	165	220	135
28	113	140	135	125	176	123	112	141	155	170	202	134
29	115	149	160	125	---	119	113	134	199	189	183	124
30	118	148	175	120	---	121	120	135	194	331	179	123
31	120	---	180	120	---	123	---	252	---	372	165	---
TOTAL	3604	4497	5093	4421	4151	4136	3080	4146	9615	5708	7024	5823
MEAN	116	150	164	143	148	133	103	134	320	184	227	194
MAX	134	169	180	175	242	163	120	278	1320	372	328	398
MIN	104	130	135	120	90	116	72	63	151	140	165	123
AC-FT	7150	8920	10100	8770	8230	8200	6110	8220	19070	11320	13930	11550
CAL YR 1988	TOTAL	62513	MEAN	171	MAX	779	MIN	55	AC-FT	124000		
WTR YR 1989	TOTAL	61298	MEAN	168	MAX	1320	MIN	63	AC-FT	121600		

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 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: Nov. 12-13, Nov. 15 to Dec. 1, Dec. 15 to Mar. 22, Mar. 31, and Apr. 5. 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 80 acre-ft during current year.

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

AVERAGE DISCHARGE.--43 years, 126 ft³/s; 92,290 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 17	0500	*529	*3.94				

Minimum daily, 5.0 ft³/s, Feb. 4-9, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	16	14	9.0	8.0	12	18	60	390	252	217	56
2	24	17	14	9.0	7.0	12	16	58	361	252	226	54
3	24	17	13	8.0	6.0	11	16	56	337	244	210	50
4	26	18	13	8.0	5.0	10	15	52	288	238	185	48
5	27	16	12	7.0	5.0	10	15	48	272	245	169	48
6	28	18	13	7.0	5.0	12	15	52	320	247	147	45
7	29	18	13	7.0	5.0	14	17	71	289	242	137	45
8	27	19	12	7.0	5.0	16	21	133	323	236	126	53
9	26	19	11	7.0	5.0	16	22	190	327	224	123	67
10	27	21	14	7.0	6.0	16	22	191	315	222	154	57
11	25	20	12	7.0	6.0	16	21	240	394	213	159	51
12	25	20	12	6.0	5.0	16	21	206	441	207	201	57
13	24	20	12	6.0	5.0	16	21	153	383	207	205	60
14	22	19	12	6.0	6.0	16	22	138	347	194	166	58
15	22	19	12	7.0	7.0	16	22	121	350	184	156	50
16	21	18	11	7.0	9.0	17	26	126	415	174	138	43
17	20	18	12	8.0	9.0	17	31	120	467	163	126	39
18	20	17	12	8.0	9.0	17	39	129	388	154	124	37
19	21	17	11	8.0	10	17	46	206	405	149	113	36
20	22	15	13	7.0	10	17	60	214	425	146	110	40
21	22	17	12	7.0	9.0	17	74	248	389	146	101	41
22	20	17	11	8.0	9.0	17	89	247	286	150	94	39
23	19	19	11	8.0	10	18	108	335	245	146	87	37
24	18	19	11	8.0	10	17	120	343	217	139	84	34
25	18	18	10	8.0	12	18	127	295	228	139	79	32
26	18	13	10	8.0	12	20	130	221	256	135	74	32
27	18	13	10	7.0	12	20	131	199	247	125	71	31
28	17	13	9.0	8.0	12	21	101	258	254	144	67	31
29	17	14	9.0	7.0	---	21	81	357	260	322	63	31
30	18	14	9.0	8.0	---	18	68	460	253	380	60	29
31	17	---	9.0	8.0	---	18	---	441	---	265	57	---
TOTAL	687	519	359.0	231.0	219.0	499	1515	5968	9872	6284	4029	1331
MEAN	22.2	17.3	11.6	7.45	7.82	16.1	50.5	193	329	203	130	44.4
MAX	29	21	14	9.0	12	21	131	460	467	380	226	67
MIN	17	13	9.0	6.0	5.0	10	15	48	217	125	57	29
AC-FT	1360	1030	712	458	434	990	3010	11840	19580	12460	7990	2640
CAL YR 1988	TOTAL 37634.5	MEAN 103	MAX 761	MIN 8.5	AC-FT 74650							
WTR YR 1989	TOTAL 31513.0	MEAN 86.3	MAX 467	MIN 5.0	AC-FT 62510							

PLATTE RIVER BASIN

06734900 OLYMPUS TUNNEL AT LAKE ESTES, CO

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.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	COLI- FORM, TOTAL, IMMED. MEM.FIL (COLS./ 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	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 03...	1000	387	50	8.1	11.5	7.9	K18	K4	20	6.0	1.1	1.9
MAR 13...	1140	214	62	7.6	5.0	9.9	--	--	25	7.8	1.4	2.7
JUL 10...	1400	526	30	7.5	17.0	7.7	--	--	12	3.7	0.7	1.5

DATE	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)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT 03...	0.2	0.7	21	4.3	0.5	0.1	3.9	--	31	0.04	32.5
MAR 13...	0.2	1.0	26	4.5	0.7	0.2	5.3	40	40	0.05	23.1
JUL 10...	0.2	0.7	13	2.0	0.3	0.1	3.7	16	21	0.02	22.7

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- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT 03...	<0.01	<0.10	0.02	--	--	--	0.01	0.01	--	0.01	0.01
MAR 13...	<0.01	0.12	0.03	0.01	0.37	0.40	0.02	0.01	<0.01	0.02	0.01
JUL 10...	<0.01	<0.10	0.02	<0.01	0.28	0.30	0.02	--	--	0.02	--

K BASED ON NON-IDEAL COLONY COUNT.

06734900 OLYMPUS TUNNEL AT LAKE ESTES, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 03...	1000	--	--	--	--	--	--	--	46
MAR 13...	1140	8	<0.5	<10	<1	<5	<3	<10	51
JUL 10...	1400	3	<0.5	<10	<1	<5	<3	<10	61

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 03...	--	--	2	--	--	--	--	--	--
MAR 13...	<10	<4	5	<10	<10	<1.0	46	<6	10
JUL 10...	<10	<4	3	<10	<10	<1.0	20	<6	6

PLATTE RIVER BASIN

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 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: Jan. 10. Records good. 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 (272,100 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. Several observations of 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.

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, 643 ft³/s at 0530 June 20, gage height, 4.50 ft; minimum daily, 8.6 ft³/s, Jan. 20, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	75	15	12	9.9	10	18	63	130	182	268	78
2	106	15	15	12	9.7	11	16	56	132	147	289	76
3	105	16	15	12	10	11	16	52	190	149	303	73
4	29	16	16	12	8.9	11	17	49	162	146	267	71
5	29	18	17	13	11	10	22	45	130	144	228	69
6	30	15	17	15	11	10	20	43	130	156	204	65
7	32	17	16	13	11	10	21	43	128	247	198	64
8	32	17	16	12	11	10	20	63	131	245	181	61
9	31	18	16	11	11	9.5	18	104	127	245	163	60
10	30	18	16	17	9.9	17	22	103	151	242	150	66
11	30	20	16	15	10	19	20	99	133	238	152	69
12	29	18	16	14	10	22	20	103	218	237	154	71
13	27	22	14	14	10	19	20	102	191	230	172	77
14	26	20	13	14	10	20	25	105	130	227	190	80
15	25	18	13	14	10	20	21	99	127	222	198	117
16	24	21	13	14	10	19	24	115	128	215	198	143
17	22	21	13	14	10	18	25	117	127	206	195	142
18	21	19	14	14	10	18	31	116	127	196	176	134
19	21	19	14	9.3	9.8	18	40	128	128	186	160	134
20	20	19	14	8.6	9.8	18	45	127	195	172	147	121
21	22	17	13	8.6	9.8	18	59	128	130	164	138	120
22	21	14	13	9.1	9.5	18	74	128	125	159	128	118
23	20	16	20	9.4	9.1	19	137	130	124	156	125	122
24	24	17	13	9.4	9.2	19	159	129	124	158	116	94
25	78	17	12	9.6	9.2	19	171	133	126	156	111	94
26	78	17	12	9.3	9.3	19	174	159	127	157	105	92
27	78	17	12	9.3	9.2	19	181	134	126	154	101	94
28	77	17	12	9.3	9.1	19	54	132	163	150	95	94
29	75	17	12	9.5	---	19	52	134	143	150	91	99
30	74	17	12	9.9	---	19	54	133	126	196	86	79
31	75	---	12	9.9	---	18	---	131	---	246	83	---
TOTAL	1397	588	442	363.2	277.4	506.5	1576	3203	4229	5878	5172	2777
MEAN	45.1	19.6	14.3	11.7	9.91	16.3	52.5	103	141	190	167	92.6
MAX	106	75	20	17	11	22	181	159	218	247	303	143
MIN	20	14	12	8.6	8.9	9.5	16	43	124	144	83	60
AC-FT	2770	1170	877	720	550	1000	3130	6350	8390	11660	10260	5510

CAL YR 1988 TOTAL 32305.5 MEAN 88.3 MAX 629 MIN 8.3 AC-FT 64080
WTR YR 1989 TOTAL 26409.1 MEAN 72.4 MAX 303 MIN 8.6 AC-FT 52380

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. Water-quality sampling at three sites in reservoir.

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 elevations 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.

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, 127,100 acre-ft, Apr. 6, elevation, 5,418.44 ft; minimum, observed, 56,780 acre-ft, Sept. 30, elevation, 5,373.83 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	5,378.66	63,160	-
Oct. 31.	5,376.60	60,400	-2,760
Nov. 30.	5,377.79	61,990	+1,590
Dec. 31.	5,387.61	75,760	+13,770
CAL YR 1988.	-	-	-22,060
Jan. 31.	5,402.42	98,880	+23,120
Feb. 28.	5,413.48	118,000	+19,120
Mar. 31.	5,417.97	126,200	+8,200
Apr. 30.	5,416.87	124,200	-2,000
May 31.	5,409.72	111,300	-12,900
June 30.	5,408.82	109,800	-1,500
July 31.	5,385.47	72,660	-37,140
Aug. 31.	5,375.14	58,480	-14,180
Sept. 30.	5,373.83	56,780	-1,700
WTR YR 1989			-6,380

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 1988 TO SEPTEMBER 1989

						SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)			
DATE	TIME	SAM- PLING DEPTH (FEET)	TIME	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)							
MAY												
23...	0910	0.1	69	7.8	14.5	9.0						
23...	0911	5.0	68	7.8	14.5	9.0						
23...	0912	10.0	69	7.8	14.0	9.0						
23...	0913	20.0	70	7.7	12.0	9.1						
23...	0914	25.0	70	7.6	11.0	9.0						
23...	0915	30.0	70	7.5	10.5	9.0						
23...	0916	40.0	70	7.4	8.5	9.0						
23...	0917	50.0	70	7.3	7.5	9.1						
23...	0918	60.0	70	7.2	7.0	9.0						
23...	0919	70.0	70	7.2	7.0	8.9						
23...	0920	75.0	70	7.2	6.5	8.9						
23...	0921	80.0	69	7.2	6.5	8.9						
23...	0922	90.0	69	7.2	6.5	8.8						
23...	0923	100	69	7.2	6.0	8.9						
23...	0924	110	69	7.2	6.0	8.8						
23...	0925	120	69	7.3	6.0	8.8						
23...	0926	125	69	7.3	5.5	8.8						
23...	0927	130	70	7.3	5.5	8.7						
23...	0928	140	70	7.3	5.5	8.6						
23...	0929	150	70	7.3	5.5	8.5						
JUL												
19...	1010	0.1	64	7.9	22.5	7.4						
19...	1011	5.0	64	7.9	22.5	7.3						
19...	1012	10.0	65	7.9	22.5	7.3						
19...	1013	20.0	65	7.7	21.5	6.4						
19...	1014	25.0	66	7.3	20.0	5.1						
19...	1015	30.0	64	7.2	18.5	4.3						
19...	1016	40.0	64	7.2	15.0	4.4						
19...	1017	50.0	64	7.3	13.5	5.0						
19...	1018	60.0	64	7.3	12.5	5.0						
19...	1019	70.0	64	7.3	11.0	5.2						
19...	1020	75.0	64	7.4	11.0	5.0						
19...	1021	80.0	64	7.4	10.5	5.1						
19...	1022	90.0	63	7.4	10.0	5.4						
19...	1023	100	64	7.4	9.5	5.2						
19...	1024	110	64	7.4	8.5	5.6						
19...	1025	120	64	7.4	8.0	5.0						
19...	1026	125	64	7.4	8.0	5.3						
19...	1027	130	65	7.4	8.0	5.0						
SEP												
19...	1030	0.1	63	8.2	19.0	7.8						
19...	1031	5.0	63	8.2	19.0	7.8						
19...	1032	10.0	64	8.2	18.5	7.9						
19...	1033	20.0	67	7.7	18.0	6.2						
19...	1034	25.0	67	7.5	17.5	5.4						
19...	1035	30.0	67	7.4	17.5	5.0						
19...	1036	40.0	68	7.3	17.0	5.0						
19...	1037	50.0	68	7.3	17.0	5.1						
19...	1038	60.0	69	7.3	17.0	5.1						
19...	1039	70.0	69	7.3	17.0	5.1						
19...	1040	75.0	69	7.3	17.0	5.1						
19...	1041	80.0	69	7.2	17.0	4.8						
19...	1042	90.0	68	7.2	16.5	4.5						
19...	1043	100	69	7.1	16.0	3.6						
19...	1044	110	70	7.0	14.0	0.9						
19...	1045	120	73	7.0	11.5	0						
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, FECAL, 0.7 UM-MF (COLS./ 100 ML)	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)
MAY												
23...	0940	0.1	69	7.8	14.5	66.0	9.0	K<1	28	8.7	1.5	2.1
23...	0955	150	70	7.3	5.5	--	8.5	--	29	8.9	1.6	2.3
JUL												
19...	1045	0.1	64	7.9	22.5	50.0	7.4	K<1	29	9.4	1.4	2.3
19...	1100	130	65	7.4	8.0	--	5.0	--	29	9.3	1.5	2.3
SEP												
19...	1050	0.1	63	8.2	19.0	48.0	7.8	K<1	28	8.9	1.4	2.5
19...	1105	120	73	7.0	11.5	--	0	--	29	9.1	1.4	2.4

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SODIUM PERCENT	SODIUM AD-SORPTION 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)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)
MAY											
23...	14	0.2	0.70	29	4.0	0.50	0.20	3.6	48	39	<0.01
23...	14	0.2	0.70	29	4.0	0.40	0.20	3.9	39	40	<0.01
JUL											
19...	14	0.2	0.70	29	4.0	0.50	0.10	3.9	42	40	<0.01
19...	14	0.2	0.70	29	4.0	0.40	0.10	4.2	--	40	<0.01
SEP											
19...	16	0.2	0.50	28	4.0	0.50	0.10	3.8	43	39	<0.01
19...	15	0.2	0.60	29	4.0	0.50	0.10	4.8	48	41	<0.01

DATE	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, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS 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...	<0.10	<0.01	0.01	--	<0.20	<0.01	<0.01	<0.01	1.60	<0.10
23...	<0.10	0.02	0.03	--	<0.20	0.01	0.01	<0.01	--	--
JUL										
19...	<0.10	0.01	0.03	0.39	0.40	0.07	<0.01	<0.01	4.10	<0.10
19...	<0.10	0.03	0.05	0.27	0.30	0.01	<0.01	<0.01	--	--
SEP										
19...	<0.10	0.01	0.02	0.19	0.20	<0.01	<0.01	<0.01	3.40	0.10
19...	0.140	<0.01	0.02	--	<0.20	0.03	<0.01	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									
23...	0940	17	<0.5	<10	<1	<5	<3	<10	13
23...	0955	3	<0.5	<10	<1	<5	<3	<10	15
JUL									
19...	1045	20	<0.5	<10	<1	<5	<3	<10	34
19...	1100	18	<0.5	<10	<1	<5	<3	<10	17
SEP									
19...	1050	20	<0.5	<10	<1	<5	<3	<10	5
19...	1105	18	<0.5	<10	<1	<5	<3	<10	7

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	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)
MAY									
23...	<10	2	<10	<10	--	43	<6	<3	<4
23...	<10	8	<10	<10	--	45	<6	<3	<4
JUL									
19...	<10	1	<10	<10	<1.0	45	<6	12	<4
19...	<10	1	<10	<10	2.0	44	<6	17	<4
SEP									
19...	<10	7	<10	<10	<1.0	41	<6	8	<4
19...	<10	210	<10	<10	<1.0	43	<6	6	<4

PLATTE RIVER BASIN

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 1988 TO SEPTEMBER 1989

		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...	1021	0.1	67	7.6	14.0	9.6				
		23...	1022	5.0	64	7.7	13.5	9.6				
		23...	1023	10.0	64	7.6	13.0	9.4				
		23...	1024	20.0	66	7.4	11.5	9.1				
		23...	1025	25.0	66	7.3	11.0	9.0				
		23...	1026	30.0	67	7.3	11.0	9.0				
		23...	1027	40.0	67	7.2	9.5	8.8				
		23...	1028	50.0	69	7.1	7.5	8.8				
		23...	1029	60.0	70	7.0	7.0	8.7				
		23...	1030	70.0	70	7.0	6.5	8.7				
		23...	1031	75.0	70	7.0	6.5	8.7				
		23...	1032	80.0	70	7.0	6.0	8.7				
		23...	1033	90.0	69	7.0	6.0	8.6				
		23...	1034	100	70	7.0	5.5	8.6				
		23...	1035	110	69	7.0	5.5	8.5				
		23...	1036	120	69	7.0	5.5	8.5				
		23...	1037	125	69	7.1	5.5	8.5				
		23...	1038	130	70	7.1	5.0	8.4				
		23...	1039	140	70	7.1	5.0	8.3				
		23...	1040	145	70	7.1	5.0	8.1				
		JUL										
		19...	1205	0.1	63	7.6	22.5	7.2				
		19...	1206	5.0	62	7.6	22.5	7.1				
		19...	1207	10.0	63	7.5	22.0	6.5				
		19...	1208	20.0	62	7.3	21.5	6.1				
		19...	1209	25.0	60	7.1	20.5	5.9				
		19...	1210	30.0	57	7.2	19.5	5.4				
		19...	1211	40.0	60	7.1	17.0	4.5				
		19...	1212	50.0	60	7.0	14.0	4.9				
		19...	1213	60.0	62	7.3	11.5	5.2				
		19...	1214	70.0	62	7.4	10.0	5.4				
		19...	1215	75.0	63	7.4	9.5	5.3				
		19...	1216	80.0	62	7.4	8.5	5.3				
		19...	1217	90.0	62	7.4	8.0	4.9				
		19...	1218	100	63	7.4	7.5	4.7				
		19...	1219	110	63	7.4	7.5	4.4				
		19...	1220	120	63	7.4	7.5	4.2				
		SEP										
		19...	0900	0.1	67	7.9	17.5	7.8				
		19...	0901	5.0	67	7.9	17.5	7.7				
		19...	0902	10.0	68	8.0	17.5	7.5				
		19...	0903	20.0	68	8.0	17.0	7.2				
		19...	0904	25.0	69	7.9	17.0	7.2				
		19...	0905	30.0	70	7.6	16.5	6.8				
		19...	0906	40.0	71	7.5	16.5	6.0				
		19...	0907	50.0	73	7.4	16.0	5.7				
		19...	0908	60.0	70	7.4	15.0	5.0				
		19...	0909	70.0	72	7.5	8.5	2.3				
		19...	0910	75.0	72	7.4	8.0	1.7				
		19...	0911	80.0	72	7.4	7.5	1.1				
		19...	0912	90.0	73	7.4	7.5	0				
		19...	0913	100	76	7.3	7.5	0				
		19...	0914	110	82	7.3	7.0	0				
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, FECAL, 0.7 UM-MF (COLS./ 100 ML)	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)
MAY												
23...	1045	0.1	67	7.6	14.0	55.0	9.6	K1	27	8.3	1.4	2.5
23...	1100	145	70	7.1	5.0	--	8.1	--	29	9.0	1.6	2.1
JUL												
19...	1225	0.1	63	7.6	22.5	41.0	7.2	K<1	29	9.3	1.4	2.3
19...	1240	120	63	7.4	7.5	--	4.2	--	30	9.6	1.5	2.3
SEP												
19...	0920	0.1	67	7.9	17.5	53.0	7.8	K<1	29	9.1	1.4	2.4
19...	0935	110	82	7.3	7.0	--	0	--	35	11	1.7	2.6

403147105083800 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SODIUM PERCENT	SODIUM AD-SORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)
MAY											
23...	17	0.2	0.70	27	4.0	0.50	0.20	3.7	40	38	<0.01
23...	13	0.2	0.70	29	4.0	0.50	0.20	4.0	43	40	<0.01
JUL											
19...	14	0.2	0.70	29	3.0	0.50	0.10	3.9	40	39	<0.01
19...	14	0.2	0.70	30	4.0	0.50	0.10	4.4	40	41	<0.01
SEP											
19...	15	0.2	0.60	29	4.0	0.50	0.10	3.8	52	39	<0.01
19...	14	0.2	0.60	34	4.0	0.50	0.10	5.3	39	48	<0.01

DATE	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS, DIS-SOLVED (MG/L AS P)	PHOSPHOROUS, DIS-SOLVED (MG/L AS P)	PHOSPHOROUS, ORTHO, DIS-SOLVED (MG/L AS P)	CHLOROPHYTO-PLANKTON CHROMOFLUOROM (UG/L)	CHLOROPHYTO-PLANKTON CHROMOFLUOROM (UG/L)
MAY										
23...	<0.10	<0.01	<0.01	--	0.40	<0.01	<0.01	<0.01	2.10	<0.10
23...	<0.10	0.04	0.05	--	<0.20	0.02	0.01	<0.01	--	--
JUL										
19...	<0.10	0.02	<0.01	0.28	0.30	0.01	<0.01	<0.01	3.70	0.10
19...	<0.10	0.03	0.03	0.47	0.50	0.01	0.01	<0.01	--	--
SEP										
19...	<0.10	<0.01	0.02	--	<0.20	<0.01	<0.01	<0.01	3.90	<0.10
19...	0.180	0.06	0.07	0.14	0.20	0.05	<0.01	0.02	--	--

DATE	TIME	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYLLIUM, DIS-SOLVED (UG/L AS BE)	BORON, DIS-SOLVED (UG/L AS B)	CADMIUM, DIS-SOLVED (UG/L AS CD)	CHROMIUM, 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...	1045	16	<0.5	<10	<1	<5	<3	<10	21
23...	1100	18	<0.5	20	1	<5	<3	<10	21
JUL									
19...	1225	21	<0.5	<10	1	<5	<3	<10	30
19...	1240	16	<0.5	<10	<1	<5	<3	<10	16
SEP									
19...	0920	20	<0.5	<10	<1	<5	<3	<10	7
19...	0935	18	<0.5	<10	<1	<5	<3	<10	27

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGANESE, DIS-SOLVED (UG/L AS MN)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SILVER, DIS-SOLVED (UG/L AS AG)	STRONTIUM, DIS-SOLVED (UG/L AS SR)	VANADIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	LITHIUM, DIS-SOLVED (UG/L AS LI)
MAY									
23...	<10	2	<10	<10	<1.0	43	<6	<3	<4
23...	<10	22	<10	<10	--	45	<6	<3	<4
JUL									
19...	<10	2	<10	<10	<1.0	50	<6	30	<4
19...	<10	3	<10	<10	<1.0	45	<6	23	<4
SEP									
19...	<10	<1	<10	<10	<1.0	43	<6	<3	<4
19...	<10	500	<10	<10	<1.0	51	<6	6	<4

PLATTE RIVER BASIN

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

LOCATION.--Lat 40°25'18", long 105°13'34", in SW¼SW¼ 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. 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: Nov. 28 to Mar. 9. 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, 292,500 acre-ft diverted during current year, and Dille tunnel since Apr. 20, 1959, 15,880 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, 615 ft³/s at 0930 June 20, gage height, 3.48 ft; minimum daily, 14 ft³/s, Feb. 3-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	79	20	18	16	18	38	78	116	231	97	98
2	108	53	20	18	15	18	37	80	155	199	101	99
3	107	35	20	18	14	18	36	77	290	182	99	97
4	76	34	21	19	14	17	32	75	281	174	103	93
5	48	32	22	20	15	16	35	72	190	178	101	97
6	46	32	21	20	15	16	36	70	150	195	110	88
7	47	34	20	19	16	19	36	70	170	325	104	88
8	47	35	20	18	16	23	37	83	119	150	100	98
9	46	34	21	18	17	25	41	125	82	94	97	97
10	42	35	21	18	17	34	36	138	206	115	86	92
11	43	36	21	18	17	43	42	90	152	114	88	92
12	47	32	22	18	17	44	41	78	233	106	96	94
13	44	36	21	18	17	44	39	77	315	98	106	96
14	42	36	20	18	17	41	42	96	146	91	115	99
15	43	38	18	19	17	39	40	131	65	87	125	115
16	42	29	18	20	17	39	40	193	82	84	124	124
17	42	30	19	20	17	38	44	184	113	85	124	126
18	41	35	20	20	17	36	48	174	120	200	113	120
19	40	28	20	18	18	36	55	144	131	223	99	118
20	41	28	20	17	18	37	64	100	210	212	99	114
21	42	33	20	17	18	31	72	91	148	193	93	108
22	41	34	20	16	18	37	83	88	169	182	86	103
23	39	38	20	16	18	37	108	134	138	171	82	101
24	40	37	19	16	18	37	132	181	123	178	83	89
25	60	30	18	17	18	37	149	190	121	176	81	84
26	86	27	18	16	18	39	152	225	120	180	78	84
27	85	23	17	16	17	39	156	143	116	182	73	85
28	84	23	17	16	17	39	105	107	201	172	82	86
29	83	22	17	17	---	41	77	122	204	209	82	89
30	82	21	18	17	---	38	75	209	158	146	90	94
31	81	---	18	17	---	35	---	178	---	111	90	---
TOTAL	1821	1019	607	553	469	1011	1928	3803	4824	5043	3007	2968
MEAN	58.7	34.0	19.6	17.8	16.7	32.6	64.3	123	161	163	97.0	98.9
MAX	108	79	22	20	18	44	156	225	315	325	125	126
MIN	39	21	17	16	14	16	32	70	65	84	73	84
AC-FT	3610	2020	1200	1100	930	2010	3820	7540	9570	10000	5960	5890
CAL YR 1988	TOTAL 35472	MEAN 96.9	MAX 708	MIN 15	AC-FT 70360							
WTR YR 1989	TOTAL 27053	MEAN 74.1	MAX 325	MIN 14	AC-FT 53660							

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 above Buckhorn Creek.

DRAINAGE AREA.--314 mi².

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 CA CO3)	HARD- NESS NONCARB TOTAL MG/L AS CA CO3	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 CA CO3)
OCT												
04...	1430	17	90	8.5	11.5	8.5	38	1	11	2.6	--	37
NOV												
02...	1200	153	59	8.4	9.5	9.2	23	0	7.1	1.4	--	25
DEC												
05...	1335	1.4	320	8.7	8.0	13.3	150	30	42	11	6.5	120
JAN												
10...	1200	1.2	330	8.5	5.0	11.4	180	61	50	13	--	118
FEB												
14...	0900	0.9	380	8.2	3.0	11.1	190	50	53	14	--	140
MAR												
14...	0930	1.5	370	8.4	4.0	11.6	190	48	53	14	--	142
APR												
17...	1315	1.2	340	8.2	12.0	10.6	160	44	46	12	--	121
MAY												
03...	1445	60	65	8.0	15.5	8.7	24	0	7.4	1.4	--	24
JUN												
13...	1030	644	32	7.5	12.5	9.1	12	1	3.8	0.7	--	11
JUL												
11...	1100	198	33	7.6	18.0	7.6	13	0	4.1	0.74	1.6	13
AUG												
22...	0935	144	56	7.8	16.0	8.0	23	0	7.0	1.3	--	24
SEP												
13...	0830	29	81	8.4	11.5	8.7	34	1	10	2.1	--	33

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, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	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- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT											
04...	--	--	--	--	--	--	<0.01	0.07	<0.01	--	--
NOV											
02...	--	--	--	--	--	--	<0.01	0.02	0.01	--	--
DEC											
05...	46	2.4	0.4	7.6	189	201	<0.01	0.23	<0.01	0.02	0.02
JAN											
10...	--	--	--	--	--	--	<0.01	0.46	0.02	--	--
FEB											
14...	--	--	--	--	--	--	<0.01	0.40	<0.01	--	--
MAR											
14...	--	--	--	--	--	--	<0.01	0.28	--	--	--
APR											
17...	--	--	--	--	--	--	<0.01	0.21	0.02	--	--
MAY											
03...	--	--	--	--	--	--	<0.01	0.03	0.02	--	--
JUN											
13...	--	--	--	--	--	--	<0.01	0.10	<0.01	--	--
JUL											
11...	2.0	0.4	0.1	4.0	21	19	<0.01	0.07	<0.01	0.02	0.02
AUG											
22...	--	--	--	--	--	--	<0.01	0.07	0.03	--	--
SEP											
13...	--	--	--	--	--	--	<0.01	0.13	0.03	--	--

PLATTE RIVER BASIN

06739210 BIG THOMPSON RIVER ABOVE BUCKHORN CREEK NEAR LOVELAND, CO

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 04...	1430	--	--	<1	--	--	--	6	4	200
NOV 02...	1200	--	--	1	--	--	--	--	120	190
DEC 05...	1335	<10	<1	1	1	<1	<1	2	5	150
JAN 10...	1200	--	--	<1	--	--	--	2	1	120
FEB 14...	0900	--	--	<1	--	--	--	3	6	70
MAR 14...	0930	--	--	1	--	--	--	3	1	150
APR 17...	1315	--	--	<1	--	--	--	5	5	160
MAY 03...	1445	--	--	<1	--	--	--	9	6	190
JUN 13...	1030	--	--	<1	--	--	--	6	3	1300
JUL 11...	1100	20	<1	<1	<1	2	<1	3	2	290
AUG 22...	0935	--	--	<1	--	--	--	3	3	260
SEP 13...	0830	--	--	<1	--	--	--	3	1	290

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 04...	<5	--	--	--	--	--	--	0.6	--	--
NOV 02...	<5	--	--	--	--	--	--	0.3	--	--
DEC 05...	<5	<5	20	<0.1	<0.1	5	1	<0.5	--	6
JAN 10...	<5	--	--	--	--	--	--	0.2	--	--
FEB 14...	<5	--	--	--	--	--	--	<0.1	<1	--
MAR 14...	7	--	--	--	--	--	--	<0.1	1	--
APR 17...	<5	--	--	--	--	--	--	0.6	<1	--
MAY 03...	1	--	--	--	--	--	--	0.5	<1	--
JUN 13...	7	--	--	--	--	--	--	0.8	<1	--
JUL 11...	1	1	20	<0.1	0.1	1	<1	0.3	1	5
AUG 22...	1	--	--	--	--	--	--	0.2	<1	--
SEP 13...	3	--	--	--	--	--	--	<0.1	<1	--

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 1988 TO SEPTEMBER 1989

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 CA CO3)	HARD- NESS NON CARB TOTAL MG/L AS CA CO3	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 CA CO3)
OCT												
05...	1030	15	500	8.4	10.0	11.0	240	140	67	17	--	102
31...	1400	153	100	8.4	11.0	9.2	40	12	12	2.5	--	28
DEC												
06...	0910	1.7	--	7.8	3.0	9.7	570	400	160	41	31	165
JAN												
10...	1345	2.2	1140	8.2	5.0	11.4	590	440	160	47	--	156
FEB												
14...	1115	1.6	1120	8.1	4.5	11.1	620	450	170	47	--	168
MAR												
14...	1115	3.1	895	8.4	7.5	11.8	460	300	130	33	--	159
APR												
18...	0845	2.9	990	8.1	9.5	9.2	530	380	150	37	--	147
MAY												
08...	0920	17	540	8.4	16.0	10.6	270	160	80	18	--	117
JUN												
13...	0750	76	118	8.1	12.5	8.7	53	24	16	3.2	--	29
JUL												
11...	0745	203	200	7.9	17.0	7.7	88	43	25	6.2	5.9	45
AUG												
22...	0735	176	223	8.0	16.0	7.9	97	42	28	6.5	--	55
SEP												
12...	1235	51	345	8.36	11.0	9.2	170	93	51	11	--	80

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, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	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- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT												
05...	--	--	--	--	--	--	--	<0.01	0.16	0.01	--	--
31...	--	--	--	--	--	--	--	<0.01	0.06	<0.01	--	--
DEC												
06...	460	8.6	0.4	7.8	809	857	0.36	0.01	0.37	0.04	0.02	0.02
JAN												
10...	--	--	--	--	--	--	--	<0.01	0.38	0.07	--	--
FEB												
14...	--	--	--	--	--	--	--	<0.01	0.41	0.05	--	--
MAR												
14...	--	--	--	--	--	--	--	<0.01	0.21	0.04	--	--
APR												
18...	--	--	--	--	--	--	--	<0.01	0.13	0.03	--	--
MAY												
08...	--	--	--	--	--	--	3.05	0.15	3.20	0.24	--	--
JUN												
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
11...	52	1.0	0.2	4.9	122	125	--	<0.01	0.06	<0.01	0.03	0.03
AUG												
22...	--	--	--	--	--	--	--	<0.01	0.08	0.01	--	--
SEP												
12...	--	--	--	--	--	--	--	<0.01	0.30	0.02	--	--

PLATTE RIVER BASIN

06741480 BIG THOMPSON RIVER ABOVE LOVELAND, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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										
05...	1030	--	--	<1	--	--	--	5	3	80
31...	1400	--	--	1	--	--	--	5	2	220
DEC										
06...	0910	<10	<1	<1	4	2	2	3	1	400
JAN										
10...	1345	--	--	<1	--	--	--	3	2	180
FEB										
14...	1115	--	--	<1	--	--	--	2	3	110
MAR										
14...	1115	--	--	1	--	--	--	--	--	120
APR										
18...	0845	--	--	<1	--	--	--	4	3	200
MAY										
08...	0920	--	--	<1	--	--	--	5	8	40
JUN										
13...	0750	--	--	<1	--	--	--	9	4	570
JUL										
11...	0745	<10	<1	<1	<1	3	1	6	6	1700
AUG										
22...	0735	--	--	<1	--	--	--	7	3	1500
SEP										
12...	1235	--	--	<1	--	--	--	4	1	230

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										
05...	<5	--	--	--	--	--	--	0.6	--	--
31...	6	--	--	--	--	--	--	<0.1	--	--
DEC										
06...	<5	<5	40	<0.1	<0.1	4	6	<0.5	--	15
JAN										
10...	5	--	--	--	--	--	--	<0.1	--	--
FEB										
14...	<5	--	--	--	--	--	--	<0.1	<1	--
MAR										
14...	<5	--	--	--	--	--	--	<0.1	1	--
APR										
18...	<5	--	--	--	--	--	--	0.7	1	--
MAY										
08...	<1	--	--	--	--	--	--	1.1	<1	--
JUN										
13...	2	--	--	--	--	--	--	1.2	<1	--
JUL										
11...	2	2	30	<0.1	<0.1	3	1	0.3	<1	<3
AUG										
22...	3	--	--	--	--	--	--	0.3	1	--
SEP										
12...	3	--	--	--	--	--	--	0.3	<1	--

06741510 BIG THOMPSON RIVER AT LOVELAND, CO

LOCATION.--Lat 40°22'43", long 105°03'38", in SE¼SE¼ 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: Dec. 8 to Mar. 6. 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, 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, 1,070 ft³/s at 2000 June 3, gage height, 5.58 ft; minimum daily, 3.8 ft³/s, Nov. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	5.4	5.7	5.6	5.9	6.2	11	18	64	57	24	81
2	5.4	5.2	5.5	5.6	5.9	6.2	10	18	78	57	10	84
3	5.7	4.9	5.3	5.6	5.9	6.2	10	19	204	60	8.9	74
4	7.0	4.7	5.3	5.6	5.9	6.4	10	21	134	60	17	71
5	13	4.5	5.4	5.6	5.9	6.6	9.8	20	11	58	56	74
6	9.4	4.5	5.8	5.6	6.0	6.6	6.8	17	5.9	68	71	75
7	11	4.4	6.7	5.6	6.0	6.6	5.8	15	5.2	72	120	75
8	12	4.3	5.9	5.6	6.0	7.2	6.3	24	5.0	43	165	85
9	11	4.4	5.8	5.6	6.0	7.3	7.6	40	4.9	35	154	93
10	11	4.5	5.7	5.6	6.0	7.2	6.6	73	4.9	63	154	58
11	10	5.1	5.6	5.6	6.0	8.7	6.5	63	5.1	68	168	38
12	7.4	4.9	5.6	5.6	6.0	8.7	6.4	55	5.1	67	190	28
13	6.8	5.0	5.6	5.6	6.0	8.7	6.9	67	5.4	62	192	18
14	6.6	5.0	5.6	5.6	6.1	10	6.2	90	5.0	50	183	15
15	7.4	4.6	5.6	5.6	6.2	17	6.2	88	4.4	50	146	14
16	6.5	4.4	5.6	5.6	6.2	17	6.1	76	4.4	47	90	12
17	7.0	4.4	5.6	5.6	6.2	16	6.1	31	4.1	54	87	12
18	7.6	4.3	5.6	5.7	6.2	16	6.1	88	4.0	79	83	12
19	7.9	3.9	5.6	5.7	6.2	15	5.9	193	21	70	88	12
20	6.3	3.8	5.6	5.7	6.2	15	7.4	120	75	67	88	13
21	5.9	4.1	5.6	5.7	6.2	15	7.2	47	66	62	91	13
22	5.8	5.4	5.6	5.7	6.2	16	7.8	52	81	59	96	16
23	5.8	5.9	5.6	5.8	6.2	15	8.3	74	85	59	91	18
24	6.1	5.3	5.6	5.8	6.2	11	8.8	65	74	54	88	17
25	6.9	4.8	5.6	5.8	6.2	6.6	36	52	70	53	84	15
26	5.6	4.9	5.6	5.8	6.2	6.1	88	71	72	49	82	14
27	5.5	4.9	5.6	5.8	6.2	6.0	92	48	86	51	87	14
28	5.5	5.3	5.6	5.9	6.2	5.7	60	48	83	53	82	13
29	5.1	5.9	5.6	5.9	---	5.8	39	62	87	115	82	12
30	5.1	6.0	5.6	5.9	---	5.4	17	85	81	103	81	11
31	5.3	---	5.6	5.9	---	7.1	---	90	---	55	77	---
TOTAL	228.4	144.7	174.7	176.3	170.4	298.3	511.8	1830	1435.4	1900	3035.9	1087
MEAN	7.37	4.82	5.64	5.69	6.09	9.62	17.1	59.0	47.8	61.3	97.9	36.2
MAX	13	6.0	6.7	5.9	6.2	17	92	193	204	115	192	93
MIN	5.1	3.8	5.3	5.6	5.9	5.4	5.8	15	4.0	35	8.9	11
AC-FT	453	287	347	350	338	592	1020	3630	2850	3770	6020	2160

CAL YR 1988 TOTAL 10861.8 MEAN 29.7 MAX 156 MIN 3.6 AC-FT 21540
WTR YR 1989 TOTAL 10992.9 MEAN 30.1 MAX 204 MIN 3.8 AC-FT 21800

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 1988 TO SEPTEMBER 1989

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)	HARD- NESS NON CARB 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												
06...	0900	9.2	750	8.0	11.5	8.6	350	210	85	33	--	139
NOV												
02...	0845	5.3	875	7.9	9.5	7.2	420	270	96	44	--	150
DEC												
06...	1200	5.0	1190	--	5.0	11.6	580	410	140	57	65	177
JAN												
11...	1345	5.5	1140	8.5	4.0	11.8	560	400	140	51	--	162
FEB												
15...	1230	6.2	1440	8.5	4.5	11.6	700	510	160	72	--	183
MAR												
15...	1115	17	1950	8.3	8.0	11.0	900	720	180	110	--	184
APR												
19...	1355	6.2	1180	8.7	18.5	12.3	530	390	130	50	--	146
MAY												
04...	1135	21	700	8.5	13.5	9.7	370	240	99	29	--	132
JUN												
14...	1115	5.2	1320	8.4	16.5	11.4	590	420	130	64	--	169
JUL												
12...	1130	73	415	8.5	22.0	8.5	180	110	43	17	19	63
AUG												
23...	1145	86	295	8.8	18.0	9.3	120	60	33	9.6	--	62
SEP												
13...	1210	22	640	8.2	11.5	10.4	300	180	77	26	--	117

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, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	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- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT												
06...	--	--	--	--	--	--	--	<0.01	0.25	0.04	--	--
NOV												
02...	--	--	--	--	--	--	0.27	0.01	0.28	0.05	--	--
DEC												
06...	530	13	0.5	6.7	921	971	0.52	0.01	0.53	0.05	0.03	0.03
JAN												
11...	--	--	--	--	--	--	0.45	0.02	0.47	0.09	--	--
FEB												
15...	--	--	--	--	--	--	0.66	0.01	0.67	0.09	--	--
MAR												
15...	--	--	--	--	--	--	0.34	0.01	0.35	0.37	--	--
APR												
19...	--	--	--	--	--	--	--	<0.01	0.07	0.03	--	--
MAY												
04...	--	--	--	--	--	--	--	<0.01	0.06	0.02	--	--
JUN												
14...	--	--	--	--	--	--	--	<0.01	0.19	0.03	--	--
JUL												
12...	150	2.7	0.2	5.0	275	288	--	<0.01	0.05	<0.01	0.01	0.01
AUG												
23...	--	--	--	--	--	--	--	<0.01	0.03	0.01	--	--
SEP												
13...	--	--	--	--	--	--	--	<0.01	0.26	0.03	--	--

06741510 BIG THOMPSON RIVER AT LOVELAND, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 06...	0900	--	--	<1	--	--	--	2	3	190
NOV 02...	0845	--	--	1	--	--	--	2	3	250
DEC 06...	1200	<10	<1	<1	--	1	<1	3	2	150
JAN 11...	1345	--	--	<1	--	--	--	5	2	280
FEB 15...	1230	--	--	<1	--	--	--	5	3	280
MAR 15...	1115	--	--	1	--	--	--	3	1	520
APR 19...	1355	--	--	<1	--	--	--	6	3	370
MAY 04...	1135	--	--	<1	--	--	--	5	2	180
JUN 14...	1115	--	--	<1	--	--	--	2	1	190
JUL 12...	1130	<10	<1	<1	<1	4	2	5	1	2500
AUG 23...	1145	--	--	<1	--	--	--	<10	3	1300
SEP 13...	1210	--	--	<1	--	--	--	3	1	230

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 06...	<5	--	--	--	--	--	0.6	--	--	--
NOV 02...	6	--	--	--	--	--	<0.1	--	--	--
DEC 06...	<5	<5	40	<0.1	<0.1	5	5	<0.5	--	11
JAN 11...	<5	--	--	--	--	--	--	<0.1	--	--
FEB 15...	<5	--	--	--	--	--	--	<0.1	<1	--
MAR 15...	<5	--	--	--	--	--	--	<0.1	<1	--
APR 19...	<5	--	--	--	--	--	--	<0.5	<1	--
MAY 04...	2	--	--	--	--	--	--	0.8	<1	--
JUN 14...	1	--	--	--	--	--	--	<0.1	<1	--
JUL 12...	2	<1	60	<0.1	<0.1	<1	2	0.1	1	<3
AUG 23...	2	--	--	--	--	--	--	0.4	<1	--
SEP 13...	1	--	--	--	--	--	--	<0.1	<1	--

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 1988 TO SEPTEMBER 1989

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)	HARD- NESS NONCARB 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												
05...	1345	24	--	8.7	13.5	11.8	440	310	110	41	--	137
31...	1215	17	900	8.6	12.5	11.9	380	250	83	41	--	131
DEC												
06...	1400	18	1020	8.5	9.0	14.1	420	280	97	42	80	134
JAN												
11...	1140	17	1100	8.1	4.0	9.6	440	280	100	46	--	161
FEB												
14...	1250	16	1060	8.2	7.0	9.6	440	300	100	45	--	135
MAR												
14...	1340	17	1160	8.1	11.0	11.0	440	290	100	45	--	149
APR												
18...	1035	16	1140	8.5	11.5	13.4	480	330	110	49	--	146
MAY												
04...	0940	31	790	8.1	12.0	7.7	360	230	92	31	--	128
JUN												
14...	0915	14	1320	8.0	15.0	7.8	510	360	110	58	--	156
JUL												
12...	0930	74	510	8.2	23.0	8.5	210	130	48	21	31	75
AUG												
22...	1235	125	390	8.6	19.0	10.6	160	80	39	14	--	75
SEP												
12...	1005	54	660	8.0	11.5	8.2	280	170	70	26	--	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, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	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- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT												
05...	--	--	--	--	--	--	6.48	0.02	6.50	0.02	--	--
31...	--	--	--	--	--	--	6.19	0.21	6.40	0.59	--	--
DEC												
06...	380	22	0.7	5.9	746	776	8.36	0.24	8.60	0.18	3.40	3.4
JAN												
11...	--	--	--	--	--	--	4.02	0.28	4.30	2.30	--	--
FEB												
14...	--	--	--	--	--	--	3.70	1.00	4.70	5.90	--	--
MAR												
14...	--	--	--	--	--	--	5.03	0.37	5.40	3.50	--	--
APR												
18...	--	--	--	--	--	--	4.89	0.11	5.00	0.04	--	--
MAY												
04...	--	--	--	--	--	--	2.73	0.07	2.80	0.08	--	--
JUN												
14...	--	--	--	--	--	--	4.96	0.14	5.10	0.05	--	--
JUL												
12...	180	6.0	0.3	5.8	343	349	1.28	0.02	1.30	<0.01	0.55	0.55
AUG												
22...	--	--	--	--	--	--	0.15	0.06	0.21	0.02	--	--
SEP												
12...	--	--	--	--	--	--	1.73	0.17	1.90	0.23	--	--

06741520 BIG THOMPSON RIVER BELOW LOVELAND, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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										
05...	1345	--	--	<1	--	--	--	4	4	130
31...	1215	--	--	2	--	--	--	6	2	90
DEC										
06...	1400	<10	<1	<1	--	2	1	6	5	340
JAN										
11...	1140	--	--	<1	--	--	--	9	5	520
FEB										
14...	1250	--	--	<1	--	--	--	11	6	400
MAR										
14...	1340	--	--	1	--	--	--	6	3	190
APR										
18...	1035	--	--	<1	--	--	--	7	5	390
MAY										
04...	0940	--	--	<1	--	--	--	11	3	250
JUN										
14...	0915	--	--	<1	--	--	--	5	3	140
JUL										
12...	0930	<10	<1	<1	<1	3	1	6	2	1300
AUG										
22...	1235	--	--	<1	--	--	--	11	6	920
SEP										
12...	1005	--	--	<1	--	--	--	7	3	320

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										
05...	<5	--	--	--	--	--	--	0.3	--	--
31...	<5	--	--	--	--	--	--	<0.1	--	--
DEC										
06...	<5	<5	20	<0.1	<0.1	10	3	<0.5	--	29
JAN										
11...	<5	--	--	--	--	--	--	<0.1	--	--
FEB										
14...	<5	--	--	--	--	--	--	<0.1	1	--
MAR										
14...	<5	--	--	--	--	--	--	<0.1	1	--
APR										
18...	<5	--	--	--	--	--	--	<0.5	<1	--
MAY										
04...	2	--	--	--	--	--	--	0.3	<1	--
JUN										
14...	3	--	--	--	--	--	--	0.7	<1	--
JUL										
12...	2	<1	50	<0.1	<0.1	1	2	0.3	1	6
AUG										
22...	3	--	--	--	--	--	--	<0.1	<1	--
SEP										
12...	3	--	--	--	--	--	--	0.2	<1	--

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, 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 1988 TO SEPTEMBER 1989

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)	HARD- NESS NONCARB 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												
05...	1540	22	1150	8.8	13.5	12.1	540	370	130	53	--	171
31...	1000	5.2	1250	8.2	9.5	10.1	540	360	110	65	--	185
DEC												
07...	0945	5.6	1320	8.2	4.5	9.9	570	370	120	65	95	196
JAN												
11...	0925	5.9	1420	8.3	3.0	9.0	640	400	130	77	--	240
FEB												
15...	1000	4.3	1580	8.1	3.5	9.2	690	430	140	83	--	267
MAR												
15...	0900	19	1400	8.1	5.5	9.6	590	390	130	64	--	194
APR												
19...	1035	12	1280	8.2	13.0	10.8	510	340	110	57	--	168
MAY												
08...	1130	4.0	1280	8.2	17.0	9.9	590	400	130	65	--	191
JUN												
13...	1310	24	1220	8.9	19.5	12.4	480	320	100	56	--	157
JUL												
11...	1320	71	515	8.7	23.0	9.7	210	120	50	20	31	85
AUG												
23...	0925	40	515	8.1	17.0	8.3	200	100	47	19	--	93
SEP												
13...	1015	9.4	1100	8.1	11.0	7.9	500	320	110	55	--	184

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, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	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- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT												
05...	--	--	--	--	--	--	3.68	0.02	3.70	0.03	--	--
31...	--	--	--	--	--	--	5.58	0.12	5.70	0.04	--	--
DEC												
07...	560	21	0.9	4.8	1010	1040	5.82	0.08	5.90	0.10	2.20	2.2
JAN												
11...	--	--	--	--	--	--	3.23	0.07	3.30	1.50	--	--
FEB												
15...	--	--	--	--	--	--	2.15	0.25	2.40	1.60	--	--
MAR												
15...	--	--	--	--	--	--	2.87	0.13	3.00	1.90	--	--
APR												
19...	--	--	--	--	--	--	5.43	0.27	5.70	0.31	--	--
MAY												
08...	--	--	--	--	--	--	--	<0.01	0.051	0.04	--	--
JUN												
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
11...	160	5.2	0.3	5.0	326	339	0.85	0.01	0.86	<0.01	0.33	0.33
AUG												
23...	--	--	--	--	--	--	0.64	0.04	0.68	0.02	--	--
SEP												
13...	--	--	--	--	--	--	3.11	0.19	3.30	0.38	--	--

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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										
05...	1540	--	--	<1	--	--	--	5	4	130
31...	1000	--	--	1	--	--	--	3	2	120
DEC										
07...	0945	<10	<1	<1	--	2	<1	4	3	230
JAN										
11...	0925	--	--	<1	--	--	--	9	3	670
FEB										
15...	1000	--	--	1	--	--	--	5	3	510
MAR										
15...	0900	--	--	1	--	--	--	5	2	410
APR										
19...	1035	--	--	<1	--	--	--	7	--	530
MAY										
08...	1130	--	--	<1	--	--	--	5	3	250
JUN										
13...	1310	--	--	<1	--	--	--	8	3	270
JUL										
11...	1320	<10	<1	<1	<1	4	2	6	7	1900
AUG										
23...	0925	--	--	<1	--	--	--	6	2	1200
SEP										
13...	1015	--	--	<1	--	--	--	4	2	320

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										
05...	<5	--	--	--	--	--	--	0.2	--	--
31...	<5	--	--	--	--	--	--	<0.1	--	--
DEC										
07...	<5	<5	40	<0.1	<0.1	7	3	<0.5	--	20
JAN										
11...	<5	--	--	--	--	--	--	0.1	--	--
FEB										
15...	<5	--	--	--	--	--	--	<0.1	<1	--
MAR										
15...	<5	--	--	--	--	--	--	<0.1	<1	--
APR										
19...	<5	--	--	--	--	--	--	<0.5	<1	--
MAY										
08...	3	--	--	--	--	--	--	0.9	<1	--
JUN										
13...	3	--	--	--	--	--	--	0.8	<1	--
JUL										
11...	3	1	50	<0.1	<0.1	3	2	0.3	<1	7
AUG										
23...	2	--	--	--	--	--	--	0.2	2	--
SEP										
13...	1	--	--	--	--	--	--	<0.1	<1	--

PLATTE RIVER BASIN

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, 109,000 acre-ft, Dec. 21, 22, elevation, 5,759.08 ft; minimum contents, 24,040 acre-ft, Sept. 13, elevation, 5,668.30 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	5,733.40	80,990	--
Oct. 31.	5,738.00	85,810	+4,820
Nov. 30.	5,751.74	100,700	+14,890
Dec. 31.	5,758.84	108,700	+8,000
CAL YR 1988.			+36,060
Jan. 31.	5,758.16	108,000	-700
Feb. 28.	5,757.76	107,500	-500
Mar. 31.	5,757.14	106,800	-700
Apr. 30.	5,753.50	102,700	-4,100
May 31.	5,736.84	84,590	-18,110
June 30.	5,728.82	76,280	-8,310
July 31.	5,702.42	51,030	-25,250
Aug. 31.	5,677.72	30,780	-20,250
Sept. 30.	5,680.85	33,140	+2,360
WTR YR 1989			-47,850

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 1988 TO SEPTEMBER 1989

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						
22...	1318	0.1	72	7.4	15.0	8.5
22...	1319	5.0	71	7.4	14.5	8.5
22...	1320	10.0	71	7.4	14.5	8.5
22...	1321	20.0	71	7.6	11.0	9.2
22...	1322	25.0	71	7.6	10.5	9.2
22...	1323	30.0	71	7.5	8.0	9.5
22...	1324	40.0	70	7.3	6.5	9.3
22...	1325	50.0	70	7.1	5.5	9.2
22...	1326	60.0	70	7.1	5.5	9.0
22...	1327	70.0	69	7.0	5.0	9.0
22...	1328	75.0	69	7.0	5.0	9.0
22...	1329	80.0	68	7.1	5.0	8.9
22...	1330	90.0	68	7.0	4.5	8.8
22...	1331	100	68	7.1	4.5	8.8
22...	1332	110	68	7.1	4.5	8.6
22...	1333	120	68	7.1	4.5	8.3
22...	1334	125	68	7.1	4.5	8.3
22...	1335	130	69	7.1	4.5	8.2
JUL						
18...	1115	0.1	78	7.6	23.0	6.7
18...	1116	5.0	77	7.6	22.5	6.6
18...	1117	10.0	78	7.7	22.5	6.3
18...	1118	20.0	79	7.8	22.5	6.7
18...	1119	25.0	75	7.8	19.5	7.0
18...	1120	30.0	69	8.0	14.5	7.2
18...	1121	40.0	61	7.9	12.0	6.6
18...	1122	50.0	60	7.8	11.0	6.7
18...	1123	60.0	59	7.8	10.5	6.5
18...	1124	70.0	59	7.7	10.0	6.6
18...	1125	75.0	61	7.7	10.0	6.7
18...	1126	80.0	60	7.7	9.5	6.6
18...	1127	90.0	59	7.7	8.5	6.4
18...	1128	100	60	7.7	7.0	5.9
SEP						
18...	1225	0.1	73	7.7	17.5	7.1
18...	1226	5.0	73	7.8	17.5	7.1
18...	1227	10.0	73	7.8	17.0	7.2
18...	1228	20.0	73	7.9	17.0	7.1
18...	1229	25.0	73	7.9	17.0	7.0
18...	1230	30.0	71	7.6	16.0	5.9
18...	1231	40.0	69	7.6	16.0	5.5
18...	1232	50.0	66	7.6	15.5	5.2
18...	1233	55.0	66	7.5	15.5	5.1

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, FECAL, 0.7 UM-MF (COLS./ 100 ML)	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)
MAY												
22...	1340	0.1	72	7.4	15.0	86.0	8.5	<1	30	9.8	1.3	1.9
22...	1355	130	69	7.1	4.5	--	8.2	--	30	9.6	1.4	1.9
JUL												
18...	1150	0.1	78	7.6	23.0	49.0	6.7	<1	35	12	1.3	2.1
18...	1205	100	60	7.7	7.0	--	5.9	--	30	9.9	1.3	2.0
SEP												
18...	1245	0.1	73	7.7	17.5	47.0	--	K3	33	11	1.3	2.3
18...	1300	55.0	66	7.5	15.5	--	--	--	30	10	1.3	2.3

K BASED ON NON-IDEAL COLONY COUNT.

PLATTE RIVER BASIN

06742500 CARTER LAKE NEAR BERTHOUD, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	SODIUM PERCENT	SODIUM AD-SORPTION RATIO	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)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)
MAY											
22...	12	0.2	0.60	31	3.0	0.40	0.20	1.6	42	37	<0.01
22...	12	0.2	0.60	30	3.0	0.40	0.20	2.1	47	37	<0.01
JUL											
18...	12	0.2	0.60	35	3.0	0.40	0.10	1.8	36	42	<0.01
18...	13	0.2	0.70	30	3.0	0.30	0.10	2.4	33	38	<0.01
SEP											
18...	13	0.2	0.60	35	<1.0	0.50	0.10	2.9	44	--	<0.01
18...	14	0.2	0.60	33	3.0	0.40	0.20	3.3	36	41	<0.01

DATE	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, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHOROUS TOTAL (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS ORGANIC TOTAL (MG/L AS P)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)
MAY											
22...	<0.10	<0.01	<0.01	--	0.20	0.01	<0.01	<0.01	0.01	0.40	<0.10
22...	<0.10	0.02	0.03	0.38	0.40	0.01	<0.01	<0.01	0.01	--	--
JUL											
18...	<0.10	0.01	0.01	0.29	0.30	<0.01	<0.01	<0.01	--	0.60	<0.10
18...	<0.10	0.02	0.04	0.38	0.40	<0.01	<0.01	<0.01	--	--	--
SEP											
18...	<0.10	0.02	0.02	0.28	0.30	<0.01	<0.01	<0.01	--	2.90	0.20
18...	<0.10	0.03	0.04	--	<0.20	0.02	<0.01	<0.01	0.02	--	--

DATE	TIME	BARIUM, DIS-SOLVED (UG/L AS BA) (01 05)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01 10)	BORON, DIS-SOLVED (UG/L AS B) (01 20)	CADMIUM DIS-SOLVED (UG/L AS CD) (01 25)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01 30)	COBALT, DIS-SOLVED (UG/L AS CO) (01 35)	COPPER, DIS-SOLVED (UG/L AS CU) (01 40)	IRON, DIS-SOLVED (UG/L AS FE) (01 46)
MAY									
22...	1340	25	<0.5	10	<1	<5	<3	<10	7
22...	1355	22	<0.5	<10	<1	<5	<3	<10	8
JUL									
18...	1150	30	<0.5	20	<1	<5	<3	<10	8
18...	1205	22	<0.5	<10	<1	<5	<3	<10	14
SEP									
18...	1245	30	<0.5	<10	<1	<5	<3	<10	8
18...	1300	26	<0.5	<10	<1	<5	<3	<10	10

DATE	LEAD, DIS-SOLVED (UG/L AS PB) (01 49)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01 56)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01 60)	NICKEL, DIS-SOLVED (UG/L AS NI) (01 65)	SILVER, DIS-SOLVED (UG/L AS AG) (01 75)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01 80)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01 85)	ZINC, DIS-SOLVED (UG/L AS ZN) (01 90)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
MAY									
22...	<10	1	<10	<10	7.0	39	<6	<3	<4
22...	20	1	<10	<10	10	38	<6	<3	<4
JUL									
18...	<10	1	<10	<10	<1.0	43	<6	10	<4
18...	<10	2	<10	<10	<1.0	40	<6	16	<4
SEP									
18...	<10	10	<10	<10	<1.0	42	<6	<3	<4
18...	<10	32	<10	<10	<1.0	41	<6	7	<4

LOCATION.--Lat 40°32'24", long 105°52'56", in SE¼SE¼ sec.26, T.7 N., R.76 W., Larimer County, Hydrologic Unit 101900007, 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.

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. 18 to May 1, May 9-12, 18, and Aug. 22 to Sept. 14. Records good except for estimated daily discharges, which are poor. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

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, 52 ft³/s at 1700 May 28, gage height, 4.53 ft; maximum gage height, 6.19 ft at 0200 May 11 (backwater from ice); minimum daily discharge, 0.30 ft³/s, Feb. 14-18.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	.68	.66	.60	.37	.36	.49	.66	35	10	11	5.4
2	1.9	.65	.66	.58	.37	.36	.49	.51	36	9.1	16	5.3
3	1.9	.65	.66	.58	.36	.37	.49	.64	36	8.4	12	5.2
4	1.8	.65	.66	.56	.36	.37	.49	1.1	35	7.8	11	5.1
5	1.9	.65	.66	.56	.35	.38	.49	1.6	35	7.1	10	5.0
6	2.0	.65	.66	.56	.35	.38	.49	3.4	35	6.6	9.2	4.9
7	1.9	.65	.66	.54	.34	.39	.49	5.5	38	6.3	9.1	4.8
8	1.8	.65	.66	.54	.34	.39	.49	7.2	41	6.0	8.7	4.7
9	1.8	.65	.66	.52	.33	.40	.49	11	41	5.5	8.3	4.6
10	1.9	.65	.66	.52	.33	.40	.50	16	32	6.0	7.8	4.6
11	1.7	.65	.66	.50	.32	.41	.50	17	24	5.6	7.4	4.8
12	1.7	.65	.66	.50	.32	.41	.50	16	25	5.3	9.7	5.0
13	1.7	.65	.66	.49	.31	.42	.50	13	25	4.9	8.4	4.8
14	1.6	.65	.66	.49	.30	.42	.50	12	24	4.5	7.5	4.0
15	1.6	.65	.66	.48	.30	.43	.50	11	25	4.0	6.9	4.1
16	1.6	.65	.66	.47	.30	.44	.54	10	27	3.8	6.7	4.3
17	1.5	.65	.66	.47	.30	.45	.78	11	28	3.6	7.1	4.0
18	1.4	.65	.66	.46	.30	.45	1.1	15	25	3.5	6.4	3.8
19	1.3	.65	.66	.45	.31	.45	1.5	24	25	3.4	9.0	3.7
20	1.2	.65	.66	.45	.31	.47	1.8	24	25	3.3	7.0	3.9
21	1.2	.65	.66	.44	.32	.47	2.0	25	22	3.2	6.6	3.8
22	1.1	.65	.66	.43	.32	.47	2.1	27	19	3.1	6.5	3.6
23	1.0	.65	.66	.42	.33	.48	2.3	32	17	3.1	6.4	3.6
24	.95	.65	.66	.41	.33	.48	2.4	35	15	5.7	6.3	3.5
25	.91	.65	.64	.41	.34	.48	2.6	32	14	12	6.1	3.3
26	.88	.65	.64	.40	.34	.48	2.7	30	14	11	6.0	3.1
27	.85	.65	.62	.40	.35	.48	2.7	33	13	9.4	5.9	3.1
28	.81	.65	.62	.39	.35	.48	2.5	38	12	9.9	5.8	3.0
29	.78	.65	.62	.39	---	.48	1.6	36	12	14	5.7	2.9
30	.75	.66	.60	.38	---	.48	1.0	39	11	12	5.6	2.9
31	.72	---	.60	.38	---	.48	---	37	---	11	5.5	---
TOTAL	44.15	19.54	20.18	14.77	9.25	13.41	35.03	564.61	766	209.1	245.6	124.8
MEAN	1.42	.65	.65	.48	.33	.43	1.17	18.2	25.5	6.75	7.92	4.16
MAX	2.0	.68	.66	.60	.37	.48	2.7	39	41	14	16	5.4
MIN	.72	.65	.60	.38	.30	.36	.49	.51	11	3.1	5.5	2.9
AC-FT	88	39	40	29	18	27	69	1120	1520	415	487	248
CAL YR 1988	TOTAL	4207.05	MEAN	11.5	MAX	116	MIN	.48	AC-FT	8340		
WTR YR 1989	TOTAL	2066.44	MEAN	5.66	MAX	41	MIN	.30	AC-FT	4100		

LOCATION.--Lat 40°33'43", long 105°52'09", in SE¼NE¼ sec.24, T.7 N., R.76 W., Larimer County, Hydrologic Unit 101900007, on left bank 500 ft downstream from unnamed tributary, 2,000 ft downstream from Joe Wright Dam, and 3 mi southwest of Chambers Lake.

PERIOD OF RECORD.--June 1978 to current year.

REMARKS.--Estimated daily discharges: Nov. 3 to Apr. 19. Records good except for estimated daily discharges, which are poor. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 181 ft³/s, June 9, 1988, gage height, 2.32 ft; maximum gage height, 2.46 ft, June 30, 1978; minimum daily discharge, 0.22 ft³/s, Apr. 14, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 89 ft³/s at 1130 Sept. 20, gage height, 1.93 ft; minimum daily, 0.30 ft³/s, Feb. 13-17.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.56	.52	.49	.40	.33	.33	.40	.98	79	3.9	1.6	50
2	.55	.44	.48	.39	.33	.33	.40	.82	60	3.7	2.0	50
3	.55	.60	.48	.39	.32	.33	.40	.63	35	3.6	1.7	50
4	.55	.59	.48	.39	.32	.33	.40	.54	27	3.4	1.6	50
5	.55	.59	.47	.39	.32	.33	.40	20	28	3.3	1.6	51
6	.59	.58	.47	.38	.32	.34	.40	22	29	3.0	1.6	53
7	.63	.58	.47	.38	.32	.34	.40	9.1	46	3.0	1.6	52
8	.63	.57	.46	.38	.31	.34	.40	12	61	3.0	1.5	55
9	.62	.57	.46	.38	.31	.34	.40	18	55	2.8	1.5	58
10	.61	.56	.46	.38	.31	.34	.41	27	37	2.8	1.5	57
11	.63	.56	.45	.37	.31	.34	.41	21	45	2.8	1.5	60
12	.63	.56	.45	.37	.31	.34	.41	16	28	2.7	1.6	62
13	.62	.55	.45	.37	.30	.34	.41	16	5.7	2.6	1.5	62
14	.55	.55	.44	.37	.30	.35	.41	14	5.6	2.5	1.4	58
15	.55	.55	.44	.36	.30	.35	.41	13	5.6	2.4	1.3	51
16	.55	.54	.44	.36	.30	.35	.41	13	5.6	2.3	1.3	51
17	.55	.54	.44	.36	.30	.35	.45	13	5.6	2.2	1.3	50
18	.55	.54	.43	.36	.31	.35	.50	14	5.5	2.2	1.3	51
19	.57	.53	.43	.35	.31	.35	.59	15	5.4	2.1	1.4	54
20	.50	.53	.43	.35	.31	.35	.86	15	34	2.0	1.4	41
21	.48	.52	.42	.35	.32	.36	1.1	15	51	1.9	1.3	.92
22	.48	.52	.42	.35	.32	.36	1.2	23	51	1.9	1.3	.87
23	.48	.52	.42	.35	.32	.36	1.2	43	50	1.9	1.2	.79
24	.48	.51	.42	.34	.32	.36	1.3	58	29	1.9	1.2	.79
25	.48	.51	.42	.34	.32	.37	1.4	52	17	2.0	25	.79
26	.47	.50	.41	.34	.33	.37	1.4	30	13	1.8	58	.79
27	.47	.50	.41	.34	.33	.37	1.2	22	4.4	1.7	62	.79
28	.47	.50	.41	.34	.33	.38	1.1	23	4.2	1.8	56	.74
29	.42	.50	.40	.33	---	.40	1.0	27	4.1	2.4	55	.63
30	.42	.49	.40	.33	---	.40	.99	54	3.9	1.9	53	.63
31	.49	---	.40	.33	---	.40	---	74	---	1.7	51	---
TOTAL	16.68	16.12	13.65	11.22	8.83	10.95	20.76	682.07	830.6	77.2	395.2	1073.74
MEAN	.54	.54	.44	.36	.32	.35	.69	22.0	27.7	2.49	12.7	35.8
MAX	.63	.60	.49	.40	.33	.40	1.4	74	79	3.9	62	62
MIN	.42	.44	.40	.33	.30	.33	.40	.54	3.9	1.7	1.2	.63
AC-FT	33	32	27	22	18	22	41	1350	1650	153	784	2130
CAL YR 1988	TOTAL 7387.08		MEAN 20.2	MAX 168	MIN .40	AC-FT 14650						
WTR YR 1989	TOTAL 3157.02		MEAN 8.65	MAX 79	MIN .30	AC-FT 6260						

LOCATION.--Lat 40°47'15", long 105°15'06", in SW¼SE¼ sec.32, T.10 N., R.70 W., Larimer County, Hydrologic Unit 101900007, on left bank 60 ft downstream from bridge on Colorado State Highway 200, 2.0 mi west of Livermore. 2.9 mi downstream from Stonewall Creek.

WATER-DISCHARGE RECORDS

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: Oct. 31 to Nov. 3, Nov. 16 to Dec. 6, Dec. 15 to Feb. 26, and Mar. 4-6. 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, 532 ft³/s, Aug. 12, 1989, gage height, 9.96 ft; minimum daily, 2.6 ft³/s, Sept. 2, 3, 1988, Apr. 27, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 532 ft³/s at 1700 Aug. 12, gage height, 9.96 ft; minimum daily, 2.6 ft³/s, Apr. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	7.0	7.0	6.0	5.6	8.6	12	5.5	28	6.7	3.9	4.0
2	5.4	8.2	7.0	5.8	5.4	5.4	12	6.5	29	5.2	3.7	4.9
3	5.3	10	7.0	5.8	5.4	4.6	10	5.0	30	5.2	3.7	4.6
4	5.0	10	7.0	5.8	5.4	6.0	4.8	6.2	43	5.3	3.1	4.5
5	5.0	11	7.0	5.8	5.4	7.0	3.6	8.9	55	6.4	3.3	4.1
6	4.9	10	7.0	5.8	5.4	7.4	3.5	19	48	8.0	2.9	4.1
7	4.8	11	7.1	5.8	5.4	8.3	3.4	20	37	7.7	3.1	3.9
8	4.8	8.5	6.9	5.8	5.4	7.2	3.7	18	29	6.6	3.1	5.2
9	4.5	7.9	7.5	5.6	5.4	7.2	5.8	7.4	26	4.7	2.9	9.3
10	4.5	7.9	6.9	5.6	5.6	7.0	6.8	8.3	28	4.9	3.0	6.6
11	4.2	8.2	6.4	5.6	5.6	7.7	5.0	8.9	28	5.5	3.1	6.8
12	4.1	8.2	7.4	5.6	5.6	9.4	6.4	5.8	19	5.7	56	10
13	4.0	7.9	7.2	5.6	5.6	12	8.9	5.9	19	6.2	21	12
14	3.9	8.4	6.6	5.6	5.8	14	9.4	15	19	6.4	10	12
15	4.3	8.7	6.6	5.6	5.8	12	6.8	23	23	4.8	8.4	12
16	4.6	8.6	6.4	5.6	5.8	12	6.2	13	23	4.7	6.4	9.8
17	4.5	8.4	6.4	5.6	5.8	11	5.4	13	20	4.4	5.4	9.6
18	4.5	8.2	6.4	5.6	6.0	8.5	5.7	11	14	4.3	5.4	8.0
19	4.3	8.0	6.4	5.6	6.0	9.2	5.8	7.5	10	4.6	5.4	8.3
20	4.5	7.8	6.4	5.6	6.0	8.7	6.8	6.8	8.8	4.8	7.0	8.3
21	4.4	7.6	6.2	5.6	6.2	6.8	4.9	6.7	7.1	4.8	5.1	9.6
22	4.9	7.4	6.2	5.6	6.6	9.9	4.4	6.6	9.5	5.1	5.2	9.1
23	5.4	7.4	6.2	5.6	8.6	9.0	3.9	6.6	7.0	4.9	5.7	7.9
24	6.2	7.4	6.2	5.6	11	8.7	3.8	6.3	7.0	4.4	6.0	7.9
25	5.9	7.4	6.2	5.6	10	8.7	3.8	6.7	8.0	5.0	5.8	7.0
26	5.4	7.2	6.2	5.6	9.8	9.0	3.7	8.1	8.9	5.2	5.6	6.2
27	5.4	7.2	6.0	5.6	9.4	10	2.6	7.7	8.6	4.8	4.9	5.5
28	5.1	7.2	6.0	5.6	7.9	12	3.4	8.2	7.9	3.6	4.8	5.4
29	5.0	7.2	6.0	5.6	---	11	3.7	9.2	7.8	3.9	4.3	5.7
30	4.9	7.0	6.0	5.6	---	12	5.5	17	7.2	4.2	4.2	5.8
31	5.2	---	6.0	5.6	---	11	---	22	---	4.0	3.9	---
TOTAL	150.3	246.9	203.8	175.4	181.9	281.3	171.7	319.8	615.8	162.0	216.3	218.1
MEAN	4.85	8.23	6.57	5.66	6.50	9.07	5.72	10.3	20.5	5.23	6.98	7.27
MAX	6.2	11	7.5	6.0	11	14	12	23	55	8.0	56	12
MIN	3.9	7.0	6.0	5.6	5.4	4.6	2.6	5.0	7.0	3.6	2.9	3.9
AC-FT	298	490	404	348	361	558	341	634	1220	321	429	433
CAL YR 1988	TOTAL	14566.9	MEAN	39.8	MAX	474	MIN	2.6	AC-FT	28890		
WTR YR 1989	TOTAL	2943.3	MEAN	8.06	MAX	56	MIN	2.6	AC-FT	5840		

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 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS) B	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	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											
05...	1055	5.1	520	8.3	8.0	10.1	88	230	62	19	--
NOV											
03...	1055	10	330	8.2	7.5	9.5	100	160	45	12	--
DEC											
07...	1045	7.0	360	8.2	0.5	11.6	K13	170	46	13	--
JAN											
10...	1455	5.6	450	8.3	0.0	11.9	--	190	51	15	15
FEB											
24...	1055	11	370	8.3	0.0	10.6	--	150	36	14	11
MAR											
22...	1505	9.7	260	8.4	11.0	10.8	--	100	28	7.8	11
APR											
13...	1045	10	380	8.5	7.0	9.8	--	130	37	9.0	14
MAY											
12...	1025	6.3	400	8.2	12.5	8.4	--	170	48	13	14
JUN											
08...	1055	30	270	8.5	16.0	10.2	--	120	36	8.3	12
JUL											
12...	1450	6.2	420	8.2	18.5	8.1	--	200	54	15	18
AUG											
24...	1410	6.1	430	8.3	22.0	7.6	--	210	57	16	17
SEP											
13...	1325	12	379	8.5	12.0	8.9	--	170	44	14	13

DATE	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 SI02)	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)
OCT											
05...	--	--	--	--	16	8.5	--	--	276	--	--
NOV											
03...	--	--	--	--	11	4.8	--	--	189	--	--
DEC											
07...	--	--	--	--	12	7.0	--	--	194	--	--
JAN											
10...	15	0.5	1.6	192	16	9.4	0.80	14	216	239	0.29
FEB											
24...	13	0.4	11	148	27	11	0.60	12	206	215	0.28
MAR											
22...	19	0.5	1.4	98	14	6.9	0.70	12	137	142	0.19
APR											
13...	19	0.6	2.1	138	17	13	0.90	11	202	189	0.27
MAY											
12...	15	0.5	2.2	185	12	8.0	1.0	9.2	207	219	0.28
JUN											
08...	17	0.5	1.4	126	10	5.5	0.80	15	166	165	0.23
JUL											
12...	16	0.6	1.9	210	11	7.9	1.0	17	236	252	0.32
AUG											
24...	15	0.5	1.9	214	11	10	1.0	15	260	258	0.35
SEP											
13...	14	0.5	3.2	174	10	7.7	0.80	15	203	213	0.28

K BASED ON NON-IDEAL COLONY COUNT.

06751490 NORTH FORK CACHE LA POUDE RIVER AT LIVERMORE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	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)	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- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)
OCT 05...	--	--	<0.10	--	<0.01	--	--	0.50	0.02	--	--
NOV 03...	--	<0.01	<0.10	<0.10	<0.02	<0.01	--	0.40	0.02	--	--
DEC 07...	--	<0.01	<0.10	<0.10	<0.01	<0.01	--	0.40	<0.01	--	--
JAN 10...	3.30	<0.01	--	0.16	0.02	0.02	0.18	0.20	0.01	<0.01	<0.01
FEB 24...	6.01	0.02	--	0.43	0.70	0.68	2.9	3.60	0.37	0.29	0.20
MAR 22...	3.61	<0.01	--	0.12	0.02	0.03	0.58	0.60	0.02	0.01	0.03
APR 13...	5.56	0.01	--	0.32	0.03	0.03	0.37	0.40	0.08	0.07	0.06
MAY 12...	3.54	<0.01	--	<0.10	0.02	<0.01	0.38	0.40	0.05	0.02	<0.01
JUN 08...	13.5	<0.01	--	<0.10	0.02	0.02	0.48	0.50	0.04	0.02	0.01
JUL 12...	3.96	<0.01	--	<0.10	0.02	0.02	0.38	0.40	0.03	0.04	0.02
AUG 24...	4.29	<0.01	--	<0.10	0.01	0.01	0.39	0.40	0.03	0.02	0.03
SEP 13...	6.80	<0.01	--	<0.10	0.03	0.01	0.47	0.50	0.05	0.03	0.02

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	CYANIDE DIS- SOLVED (MG/L AS CN)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 05...	1055	1	--	--	--	<1	<1	<10	110	25
NOV 03...	1055	1	30	<0.01	--	2	1	<10	110	46
DEC 07...	1045	<1	30	<0.01	--	<1	2	<10	160	23
JAN 10...	1455	--	30	--	100	3	6	<10	--	24
FEB 24...	1055	--	30	--	95	<1	<5	10	--	150
MAR 22...	1505	--	30	--	58	1	<5	<10	--	47
APR 13...	1045	--	40	--	72	<1	<5	10	--	26
MAY 12...	1025	--	50	--	100	3	<5	<10	--	20
JUN 08...	1055	--	30	--	72	<1	<5	<10	--	43
JUL 12...	1450	--	60	--	110	<1	6	<10	--	14
AUG 24...	1410	--	140	--	120	<1	<5	<10	--	5
SEP 13...	1325	--	50	--	97	<1	<5	<10	--	92

PLATTE RIVER BASIN

06751490 NORTH FORK CACHE LA POUDE RIVER AT LIVERMORE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	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)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 05...	<5	20	13	--	--	1	<1	<1.0	--	7
NOV 03...	<5	20	8	<0.1	--	2	<1	<1.0	--	5
DEC 07...	<5	20	10	<0.1	--	1	<1	<1.0	--	7
JAN 10...	10	--	9	--	<10	<10	--	4.0	320	6
FEB 24...	10	--	26	--	<10	<10	--	2.0	230	8
MAR 22...	<10	--	10	--	<10	<10	--	2.0	190	7
APR 13...	<10	--	17	--	<10	<10	--	2.0	230	<3
MAY 12...	<10	--	40	--	<10	<10	--	<1.0	320	<3
JUN 08...	<10	--	22	--	<10	10	--	<1.0	230	<3
JUL 12...	<10	--	16	--	<10	<10	--	2.0	400	17
AUG 24...	10	--	18	--	10	<10	--	1.0	390	<3
SEP 13...	<10	--	13	--	<10	<10	--	<1.0	290	3

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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...	1055	5.1	7	0.10
NOV 03...	1055	10	6	0.17
DEC 07...	1045	7.0	7	0.13
JAN 10...	1455	5.6	3	0.05
FEB 24...	1055	11	29	0.85
MAR 22...	1505	9.7	4	0.11
APR 13...	1045	10	5	0.14
MAY 12...	1025	6.3	5	0.08
JUN 08...	1055	30	11	0.90
JUL 12...	1450	6.2	17	0.29
AUG 24...	1410	6.1	13	0.21
SEP 13...	1325	12	60	2.0

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	29	31	24	19	15	38	129	1120	619	201	172
2	34	29	30	28	20	16	39	136	928	545	195	98
3	31	28	28	23	17	19	36	118	952	505	194	93
4	29	29	27	22	17	18	36	112	842	492	164	78
5	30	32	23	22	19	15	32	51	550	443	174	66
6	30	30	21	22	20	15	249	5.1	547	414	305	55
7	29	29	26	16	22	21	305	17	557	401	295	53
8	30	33	25	18	21	23	45	139	636	385	262	62
9	28	35	16	19	19	23	53	286	568	364	236	126
10	27	36	21	19	19	21	40	420	627	343	231	148
11	26	29	24	20	20	16	36	540	707	311	210	84
12	25	32	22	20	20	18	30	509	759	287	275	38
13	24	23	21	22	19	20	26	341	699	273	478	52
14	23	38	22	16	18	18	33	271	540	252	411	61
15	26	32	22	15	18	14	24	208	398	231	336	62
16	23	20	20	15	17	24	23	250	410	274	253	27
17	17	5.0	19	16	17	20	29	254	653	239	193	22
18	16	4.0	19	13	18	22	40	259	864	227	169	19
19	27	14	22	20	18	25	50	454	1010	224	165	18
20	32	20	22	19	19	28	56	566	1180	224	208	19
21	34	19	21	22	19	31	72	696	1190	230	203	67
22	35	24	18	26	19	34	86	664	994	232	180	82
23	33	33	17	24	18	38	118	857	819	249	153	66
24	32	21	19	23	20	43	148	1050	706	248	209	58
25	31	20	21	24	20	38	168	1050	658	288	245	53
26	31	20	20	25	20	42	197	832	683	303	239	61
27	30	15	18	25	17	47	224	723	735	290	230	49
28	30	214	10	21	20	40	205	827	745	282	242	46
29	30	238	13	19	---	42	168	1060	736	373	256	34
30	29	33	13	22	---	43	144	1340	659	572	244	29
31	28	---	17	20	---	39	---	1370	---	336	223	---
TOTAL	882	1164.0	648	640	530	828	2750	15534.1	22472	10456	7379	1898
MEAN	28.5	38.8	20.9	20.6	18.9	26.7	91.7	501	749	337	238	63.3
MAX	35	238	31	28	22	47	305	1370	1190	619	478	172
MIN	16	4.0	10	13	17	14	23	5.1	398	224	153	18
AC-FT	1750	2310	1290	1270	1050	1640	5450	30810	44570	20740	14640	3760
CAL YR 1988	TOTAL 98112.0		MEAN 268	MAX 2390	MIN 4.0	AC-FT 194600						
WTR YR 1989	TOTAL 65181.1		MEAN 179	MAX 1370	MIN 4.0	AC-FT 129300						

PLATTE RIVER BASIN

06752258 CACHE LA POUFRE 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 1988 TO SEPTEMBER 1989

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)	HARD- NESS NONCARB 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 04...	0955	7.8	420	8.0	12.0	8.4	210	43	62	14	--	170
NOV 03...	1455	3.1	490	8.4	12.0	9.4	240	42	67	17	--	196
DEC 07...	1505	3.1	460	8.1	0.5	11.4	190	29	52	14	--	159
JAN 11...	1235	1.7	540	8.2	1.5	11.2	220	31	63	16	--	193
FEB 23...	1440	1.4	520	8.3	7.0	11.3	240	49	66	19	17	194
MAR 21...	1455	1.8	505	8.5	10.0	12.8	230	43	63	18	--	189
APR 11...	1450	1.7	470	8.4	12.5	9.6	210	29	56	17	--	181
MAY 10...	1530	11	118	--	13.0	9.5	44	1	13	2.8	--	43
JUN 06...	1545	124	79	8.1	15.5	7.9	30	1	8.9	1.9	--	29
JUL 12...	1055	143	104	8.2	14.0	8.2	40	1	12	2.4	2.9	39
AUG 25...	1315	36	133	8.3	19.5	7.1	57	8	17	3.5	--	49
SEP 14...	1455	4.9	--	8.3	17.0	10.2	180	34	52	12	--	146

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, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	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- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT 04...	--	--	--	--	--	--	--	--	0.87	--	--	--
NOV 03...	--	--	--	--	--	--	2.79	0.01	2.80	<0.01	--	--
DEC 07...	--	--	--	--	--	--	0.98	0.01	0.99	0.02	--	--
JAN 11...	--	--	--	--	--	--	--	<0.01	1.70	0.02	--	--
FEB 23...	65	4.9	0.6	8.7	300	295	--	<0.01	0.52	0.02	<0.01	--
MAR 21...	--	--	--	--	--	--	--	<0.01	1.20	0.03	--	--
APR 11...	--	--	--	--	--	--	--	<0.01	1.00	0.02	--	--
MAY 10...	--	--	--	--	--	--	--	<0.01	0.14	<0.01	--	--
JUN 06...	--	--	--	--	--	--	--	<0.01	0.04	0.04	--	--
JUL 12...	7.0	0.9	0.2	5.0	54	56	--	<0.01	0.10	0.02	0.01	0.01
AUG 25...	--	--	--	--	--	--	--	<0.01	0.12	0.01	--	--
SEP 14...	--	--	--	--	--	--	0.92	0.01	0.93	0.02	--	--

06752258 CACHE LA POUDRE RIVER AT SHIELDS STREET, AT FORT COLLINS, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 04...	0955	--	--	<1	--	--	--	4	3	270
NOV 03...	1455	--	--	1	--	--	--	3	1	360
DEC 07...	1505	--	--	<1	--	--	--	2	--	180
JAN 11...	1235	--	--	<1	--	--	--	2	5	220
FEB 23...	1440	<10	<1	<1	<1	2	2	5	5	120
MAR 21...	1455	--	--	1	--	--	--	4	4	190
APR 11...	1450	--	--	<1	--	--	--	7	8	110
MAY 10...	1530	--	--	<1	--	--	--	4	--	200
JUN 06...	1545	--	--	<1	--	--	--	6	7	170
JUL 12...	1055	10	<1	<1	<1	<1	1	7	5	370
AUG 25...	1315	--	--	<1	--	--	--	6	2	220
SEP 14...	1455	--	--	<1	--	--	--	5	2	380

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 04...	<5	--	--	--	--	--	--	--	0.4	--
NOV 03...	<5	--	--	--	--	--	--	--	0.1	--
DEC 07...	<5	--	--	--	--	--	--	--	<0.5	--
JAN 11...	<5	--	--	--	--	--	--	--	0.1	--
FEB 23...	<5	<5	20	<0.1	--	5	<1	<1	0.1	6
MAR 21...	<5	--	--	--	--	--	--	<1	0.1	--
APR 11...	<5	--	--	--	--	--	--	1	<0.5	--
MAY 10...	1	--	--	--	--	--	--	<1	0.6	--
JUN 06...	3	--	--	--	--	--	--	<1	0.1	--
JUL 12...	3	<1	10	<0.1	<0.1	<1	<1	<1	0.5	3
AUG 25...	1	--	--	--	--	--	--	<1	0.4	--
SEP 14...	2	--	--	--	--	--	--	<1	0.5	--

PLATTE RIVER BASIN

06752260 CACHE LA POUDRE RIVER AT FORT COLLINS, CO

LOCATION.--(revised) Lat 40°35'20", long 105°10'29", in NE¼SW¼ 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. 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.--Estimated daily discharges: Nov. 8-10, June 4, 6, and July 2-11. Records fair except for estimated daily discharges, 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, 6,660 ft³/s, June 21, 1983, gage height, 8.31 ft; maximum gage height, 8.84 ft, Aug. 1, 1976, from floodmarks, site and datum then in use; no flow, Aug. 18, 19, and Sept. 4, 18, 19, 1987, and many days in 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 720 ft³/s at 0600 May 30, gage height, 5.23 ft; minimum daily, 0.74 ft³/s, Mar. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	3.8	6.4	2.6	7.6	6.4	1.1	2.1	412	250	34	51
2	6.3	3.8	7.0	2.8	2.9	4.9	1.1	63	371	230	40	63
3	6.5	3.8	6.7	4.3	2.6	4.4	1.1	71	317	215	40	52
4	6.4	3.8	6.7	5.4	2.5	4.6	1.4	85	350	200	61	43
5	4.6	3.1	6.4	4.7	2.4	5.5	2.0	96	90	185	38	34
6	4.7	2.7	5.7	4.1	2.5	5.7	2.6	80	30	175	23	22
7	4.5	2.9	6.5	3.9	2.4	7.3	1.7	73	12	160	50	16
8	4.8	3.3	5.3	3.5	3.4	9.9	4.3	129	36	150	51	31
9	5.4	3.9	4.8	3.0	3.7	5.5	5.0	143	11	140	20	59
10	5.8	4.5	5.5	3.2	4.9	5.8	3.3	59	55	130	23	88
11	5.2	5.1	5.5	2.8	7.5	4.7	2.7	20	69	120	35	85
12	5.3	4.7	6.2	2.9	4.4	5.1	2.2	60	67	113	50	47
13	5.4	4.9	6.5	2.9	3.0	4.3	3.5	182	77	112	192	38
14	5.8	5.5	5.6	3.7	2.9	6.2	3.7	232	150	115	32	6.2
15	5.5	7.0	4.9	4.1	2.9	7.8	3.8	188	232	103	5.1	4.7
16	3.6	6.4	4.1	3.7	2.9	5.3	3.7	146	194	87	6.3	4.6
17	4.4	5.3	3.9	3.2	3.5	5.5	3.8	111	145	51	38	4.6
18	3.8	5.3	4.1	3.4	4.2	4.5	3.6	90	125	42	47	1.6
19	3.8	5.2	4.7	3.8	6.2	4.5	3.6	132	117	40	56	4.2
20	3.8	5.7	4.9	3.9	2.6	4.5	3.7	117	93	58	69	9.1
21	3.8	4.9	4.0	3.8	2.4	4.1	3.5	142	136	76	63	6.4
22	4.3	4.8	3.1	3.5	2.5	4.0	3.9	161	161	89	28	4.0
23	4.7	5.2	2.9	6.1	3.2	3.9	3.4	282	217	87	3.1	5.9
24	4.7	6.9	3.2	6.9	3.3	3.2	7.7	384	153	73	10	3.5
25	4.7	5.2	4.0	3.8	5.4	1.8	3.3	399	86	102	20	4.1
26	4.4	5.8	3.4	3.4	6.2	2.5	1.9	259	71	110	34	3.4
27	2.3	5.9	2.3	3.2	6.1	1.5	2.5	236	230	78	21	2.1
28	1.8	6.6	2.1	3.2	5.1	.95	2.3	243	241	75	10	3.7
29	3.6	14	2.3	3.1	---	.74	2.9	383	264	115	24	8.0
30	3.4	6.5	2.2	4.1	---	.78	3.0	492	229	135	20	4.1
31	3.6	---	2.1	7.5	---	.84	---	485	---	44	5.0	---
TOTAL	143.2	156.5	143.0	120.5	109.2	136.71	92.3	554.5.1	4741	3660	1148.5	709.2
MEAN	4.62	5.22	4.61	3.89	3.90	4.41	3.08	179	158	118	37.0	23.6
MAX	6.5	14	7.0	7.5	7.6	9.9	7.7	492	412	250	192	88
MIN	1.8	2.7	2.1	2.6	2.4	.74	1.1	2.1	11	40	3.1	1.6
AC-FT	284	310	284	239	217	271	183	11000	9400	7260	2280	1410
CAL YR 1988	TOTAL	17984.56	MEAN	49.1	MAX	1010	MIN	.00	AC-FT	35670		
WTR YR 1989	TOTAL	16705.21	MEAN	45.8	MAX	492	MIN	.74	AC-FT	33130		

06752260 CACHE LA POUDRE 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: Not determined.

pH: Not determined.

WATER TEMPERATURE: Not determined.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 CA CO3)	HARD- NESS NONCARB TOTAL (MG/L AS CA CO3)	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 CA CO3)
OCT												
03...	1125	6.5	470	8.1	14.0	9.2	220	16	62	16	--	205
NOV												
02...	1205	3.8	575	7.9	10.0	9.3	240	34	65	18	--	203
DEC												
06...	1355	5.7	610	8.1	4.5	11.6	270	60	75	21	--	214
JAN												
11...	1005	2.7	650	8.1	1.0	11.2	290	59	77	23	--	228
FEB												
14...	1255	3.0	825	8.3	3.0	11.0	310	83	84	25	51	230
MAR												
21...	1105	4.6	605	8.4	9.5	13.0	260	56	68	22	--	205
APR												
11...	1245	2.7	625	8.2	9.5	10.6	270	62	69	23	--	205
MAY												
10...	1155	101	116	8.3	11.0	9.6	43	1	13	2.6	--	42
JUN												
06...	1255	2.2	375	8.3	19.5	10.6	160	34	44	12	--	126
JUL												
11...	1415	110	105	8.3	17.5	8.3	40	2	12	2.5	3.4	38
AUG												
24...	0955	7.9	278	8.3	18.5	9.8	110	19	32	8.1	--	94
SEP												
14...	1000	5.9	--	8.3	13.0	12.0	140	24	41	10	--	120

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, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	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- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT												
03...	--	--	--	--	--	--	--	<0.01	0.39	0.04	--	--
NOV												
02...	--	--	--	--	--	--	0.92	0.02	0.94	<0.01	--	--
DEC												
06...	--	--	--	--	--	--	1.78	0.02	1.80	0.03	--	--
JAN												
11...	--	--	--	--	--	--	1.59	0.01	1.60	0.04	--	--
FEB												
14...	110	52	0.5	10	471	485	--	0.01	--	0.10	0.02	0.02
MAR												
21...	--	--	--	--	--	--	--	<0.01	0.85	0.05	--	--
APR												
11...	--	--	--	--	--	--	0.83	0.01	0.84	0.02	--	--
MAY												
10...	--	--	--	--	--	--	--	<0.01	0.04	<0.01	--	--
JUN												
06...	--	--	--	--	--	--	0.75	0.02	0.77	0.03	--	--
JUL												
11...	8.0	1.2	0.2	5.1	56	53	--	<0.01	0.06	0.02	0.01	0.01
AUG												
24...	--	--	--	--	--	--	--	<0.01	0.33	0.01	--	--
SEP												
14...	--	--	--	--	--	--	0.56	0.01	0.57	0.01	--	--

PLATTE RIVER BASIN

06752260 CACHE LA POUDRE RIVER AT FORT COLLINS, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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										
03...	1125	--	--	<1	--	--	--	4	5	200
NOV										
02...	1205	--	--	1	--	--	--	4	4	200
DEC										
06...	1355	--	--	<1	--	--	--	2	5	180
JAN										
11...	1005	--	--	<1	--	--	--	4	4	180
FEB										
14...	1255	<10	<1	<1	1	1	1	3	3	280
MAR										
21...	1105	--	--	1	--	--	--	5	--	220
APR										
11...	1245	--	--	<1	--	--	--	6	8	200
MAY										
10...	1155	--	--	<1	--	--	--	5	8	260
JUN										
06...	1255	--	--	<1	--	--	--	4	--	140
JUL										
11...	1415	10	<1	<1	<1	1	2	5	6	140
AUG										
24...	0955	--	--	<1	--	--	--	6	2	210
SEP										
14...	1000	--	--	<1	--	--	--	2	3	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)	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										
03...	<5	--	--	--	--	--	--	0.3	--	--
NOV										
02...	<5	--	--	--	--	--	--	0.2	--	--
DEC										
06...	<5	--	--	--	--	--	--	<0.5	--	--
JAN										
11...	<5	--	--	--	--	--	--	<0.1	--	--
FEB										
14...	<5	<5	50	<0.1	<0.1	4	1	<0.1	--	4
MAR										
21...	<5	--	--	--	--	--	--	0.2	<1	--
APR										
11...	<5	--	--	--	--	--	--	<0.5	<1	--
MAY										
10...	2	--	--	--	--	--	--	1	<1	--
JUN										
06...	2	--	--	--	--	--	--	0.5	<1	--
JUL										
11...	1	<1	<10	<0.1	<0.1	<1	<1	0.8	<1	7
AUG										
24...	1	--	--	--	--	--	--	0.4	<1	--
SEP										
14...	1	--	--	--	--	--	--	0.5	<1	--

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989[illegible]

06752260 CACHE LA POUDRE RIVER AT FORT COLLINS, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.90	7.60	8.08	7.78	7.30	6.90	8.50	8.30	9.20	7.80	8.50	7.50
2	7.90	7.60	8.60	7.78	7.50	6.90	8.50	8.30	9.10	7.90	8.70	7.60
3	7.90	7.70	8.71	8.10	7.30	7.00	8.50	8.00	9.00	7.60	8.70	7.90
4	8.10	7.80	8.62	8.11	7.40	7.00	8.60	7.70	9.50	8.00	8.60	7.90
5	8.10	7.80	8.54	8.03	7.90	7.10	8.50	8.30	9.30	8.00	8.60	7.80
6	8.20	7.70	8.45	7.94	---	---	8.50	7.70	8.90	7.50	8.70	7.60
7	8.10	7.70	8.66	7.95	---	---	8.50	7.70	9.10	7.90	8.40	7.50
8	8.20	7.60	8.67	7.97	---	---	8.20	7.60	9.20	7.60	7.90	7.60
9	8.10	7.80	8.09	7.88	---	---	8.50	7.60	8.80	7.40	8.50	7.70
10	8.10	7.80	8.50	7.60	---	---	8.50	8.10	9.00	7.20	9.20	7.80
11	8.30	7.90	8.70	7.40	---	---	8.50	7.90	9.10	7.60	8.50	7.80
12	8.32	7.82	8.80	7.50	---	---	8.40	5.90	8.70	7.70	9.10	7.80
13	8.33	7.82	8.40	7.50	---	---	6.20	6.00	8.20	7.90	8.90	7.50
14	8.44	7.84	7.90	7.40	---	---	6.40	6.10	8.20	7.50	8.70	7.60
15	8.36	7.85	8.50	7.40	---	---	6.60	6.30	8.40	7.20	8.62	7.51
16	8.37	7.86	8.40	7.40	8.30	7.40	6.90	6.60	8.40	7.30	8.44	7.43
17	8.48	7.87	8.50	7.40	8.50	7.50	7.70	6.80	8.80	7.50	8.26	7.25
18	8.50	7.89	8.50	7.30	8.40	8.10	7.80	7.20	8.80	7.90	8.08	7.27
19	8.41	7.90	8.40	7.30	8.50	8.20	7.90	7.50	8.90	7.90	8.12	7.20
20	8.43	7.82	8.50	7.20	8.60	8.30	9.10	7.50	9.20	8.00	8.23	1.03
21	8.34	7.83	8.00	7.10	8.60	8.30	---	---	9.20	7.80	8.15	1.24
22	8.55	7.84	8.10	7.10	8.70	8.30	9.20	8.00	8.80	7.60	---	---
23	8.37	7.86	7.70	7.00	8.80	8.20	9.30	8.00	9.00	7.30	8.18	7.37
24	8.48	7.78	7.40	7.00	8.70	8.20	9.20	8.00	8.60	7.20	8.10	7.29
25	8.00	7.79	7.40	6.90	8.60	8.00	9.00	7.90	9.00	7.60	8.22	7.31
26	8.01	7.70	7.50	6.90	8.60	8.30	9.20	7.80	8.80	7.80	8.04	7.23
27	8.32	7.71	7.70	7.00	8.60	8.40	9.40	7.80	8.70	7.70	7.96	7.25
28	8.24	7.73	7.80	7.00	8.50	8.30	9.10	7.90	8.90	7.50	8.08	7.27
29	8.35	7.84	7.50	6.90	8.60	8.30	9.10	7.80	8.60	7.40	8.30	7.40
30	8.27	7.95	7.30	6.90	8.50	8.20	8.70	7.80	8.80	7.40	8.24	7.43
31	---	---	7.20	6.90	---	---	8.80	7.80	8.80	7.40	---	---
MONTH	8.55	7.60	8.80	6.90	---	---	---	---	9.50	7.20	---	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

PLATTE RIVER BASIN

131

06752260 CACHE LA POUDRE RIVER AT FORT COLLINS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	16.9	6.6	13.3	9.9	20.7	13.8	22.6	16.9	21.4	17.3
2	---	---	13.4	10.3	14.5	10.0	21.3	13.7	21.5	17.1	21.2	17.0
3	13.8	5.7	15.0	9.9	11.8	9.9	18.7	12.4	21.0	16.2	21.6	17.5
4	10.5	4.4	13.4	9.1	10.3	9.2	19.1	12.5	21.0	16.6	21.3	17.1
5	---	---	16.0	9.1	16.4	8.9	19.5	12.7	22.0	16.7	21.6	18.1
6	17.8	6.8	15.7	9.4	19.7	13.5	17.3	12.7	21.4	17.0	21.8	16.5
7	17.6	8.5	15.4	11.2	---	---	18.7	12.4	19.5	14.2	23.2	17.9
8	11.1	7.6	14.4	9.9	---	---	19.3	13.8	20.8	14.1	20.3	15.5
9	9.1	3.8	11.4	8.9	---	---	21.6	13.9	22.2	15.5	15.2	13.3
10	12.6	2.3	13.4	8.0	---	---	18.4	12.4	22.5	16.3	17.3	12.9
11	14.5	6.1	16.3	10.3	---	---	18.4	12.5	20.7	15.8	14.7	11.4
12	17.2	5.6	20.3	11.1	---	---	17.9	13.1	19.9	17.9	11.3	9.3
13	17.6	6.7	12.3	8.5	---	---	18.7	12.5	21.8	15.8	15.4	10.4
14	15.8	8.5	9.3	7.5	---	---	18.9	12.3	20.3	15.3	19.3	11.0
15	13.6	8.5	13.2	6.6	---	---	21.1	14.4	23.7	15.3	21.0	11.9
16	17.5	9.5	13.2	7.9	18.0	13.3	20.6	15.5	21.6	16.5	21.1	12.7
17	15.8	10.1	14.4	7.7	20.5	12.4	20.8	15.4	20.9	14.2	21.9	13.8
18	17.1	8.2	16.2	8.6	19.2	12.7	21.5	13.1	20.5	15.2	23.3	14.1
19	20.0	9.1	15.1	9.2	19.4	13.2	21.1	14.5	19.4	15.8	22.8	14.6
20	21.3	11.4	15.3	8.9	17.0	13.6	21.0	13.4	19.7	16.2	20.8	---
21	21.8	12.0	13.3	9.7	14.6	11.4	20.5	13.3	20.4	14.6	18.6	---
22	20.5	13.5	14.8	8.3	15.5	10.3	20.9	15.9	21.4	15.3	20.3	12.2
23	22.1	12.4	14.2	9.5	13.8	11.0	21.4	16.0	25.5	15.3	19.0	13.0
24	21.6	8.9	14.1	9.8	15.7	11.4	18.3	13.5	24.9	16.6	20.2	12.1
25	17.2	10.1	12.9	9.6	19.5	12.3	19.6	13.1	23.6	15.7	20.9	13.1
26	22.1	12.6	13.7	8.7	16.7	12.8	19.8	13.1	21.9	16.6	19.9	12.8
27	14.4	10.0	14.2	8.6	17.8	11.6	20.6	13.3	22.9	17.5	20.0	14.2
28	14.2	7.8	16.4	9.8	17.4	12.0	21.0	14.5	23.2	16.2	21.8	14.0
29	12.7	7.2	15.8	11.1	17.4	12.8	20.0	16.3	22.2	15.9	20.6	14.9
30	10.6	7.5	13.0	9.4	20.6	12.9	16.6	14.6	22.4	16.1	20.8	14.2
31	---	---	12.1	9.1	---	---	23.1	13.9	24.5	15.8	---	---
MONTH	---	---	20.3	6.6	---	---	23.1	12.3	25.5	14.1	23.3	---

PLATTE RIVER BASIN

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 1988 TO SEPTEMBER 1989

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)	HARD- NESS NON CARB 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												
03...	1505	24	650	8.7	18.0	14.8	250	49	66	21	--	203
NOV												
02...	1505	5.2	770	8.5	12.5	12.8	350	110	86	32	--	241
DEC												
08...	1205	3.7	766	8.2	1.5	12.0	360	83	95	29	--	274
JAN												
11...	1535	4.2	792	8.2	1.0	12.8	360	87	93	30	--	269
FEB												
23...	1135	6.0	750	8.2	4.0	12.2	310	89	83	25	43	222
MAR												
23...	0905	5.6	775	8.4	8.0	9.2	330	90	85	29	--	242
APR												
12...	0955	5.0	683	8.3	7.5	10.8	290	79	75	24	--	207
MAY												
11...	0955	14	430	7.9	12.0	9.5	150	33	41	12	--	119
JUN												
07...	1005	28	380	8.3	15.0	8.4	160	37	44	13	--	127
JUL												
13...	1005	104	205	8.2	16.0	9.1	71	12	20	5.2	10	59
AUG												
25...	0835	29	542	8.1	17.5	7.2	220	67	57	18	--	150
SEP												
15...	0945	17	597	8.2	14.0	9.0	250	59	66	20	--	189

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, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	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- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT												
03...	--	--	--	--	--	--	--	--	--	0.05	--	--
NOV												
02...	--	--	--	--	--	--	3.37	0.03	3.40	0.01	--	--
DEC												
08...	--	--	--	--	--	--	2.56	0.04	2.60	0.28	--	--
JAN												
11...	--	--	--	--	--	--	2.78	0.02	2.80	0.11	--	--
FEB												
23...	110	33	0.6	10	448	440	--	<0.01	2.30	0.02	0.04	0.04
MAR												
23...	--	--	--	--	--	--	1.68	0.02	1.70	0.06	--	--
APR												
12...	--	--	--	--	--	--	1.98	0.02	2.00	0.06	--	--
MAY												
11...	--	--	--	--	--	--	0.25	0.04	0.29	0.02	--	--
JUN												
07...	--	--	--	--	--	--	0.69	0.02	0.71	0.01	--	--
JUL												
13...	22	6.5	0.3	5.5	107	107	0.38	0.02	0.40	0.05	0.09	0.09
AUG												
25...	--	--	--	--	--	--	1.49	0.11	1.60	0.14	--	--
SEP												
15...	--	--	--	--	--	--	2.06	0.14	2.20	0.05	--	--

06752270 CACHE LA POUDRE RIVER BELOW FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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										
03...	1505	--	--	<1	--	--	--	7	5	130
NOV										
02...	1505	--	--	1	--	--	--	2	1	180
DEC										
08...	1205	--	--	<1	--	--	--	3	6	790
JAN										
11...	1535	--	--	<1	--	--	--	2	2	340
FEB										
23...	1135	10	<1	<1	<1	3	2	4	2	690
MAR										
23...	0905	--	--	1	--	--	--	5	4	570
APR										
12...	0955	--	--	<1	--	--	--	5	9	540
MAY										
11...	0955	--	--	<1	--	--	--	5	8	340
JUN										
07...	1005	--	--	2	--	--	--	5	2	380
JUL										
13...	1005	<10	<1	<1	<1	<1	2	7	8	180
AUG										
25...	0835	--	--	<1	--	--	--	6	9	210
SEP										
15...	0945	--	--	<1	--	--	--	4	3	230

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										
03...	<5	--	--	--	--	--	--	--	0.4	--
NOV										
02...	<5	--	--	--	--	--	--	--	0.2	--
DEC										
08...	<5	--	--	--	--	--	--	--	<0.5	--
JAN										
11...	<5	--	--	--	--	--	--	--	<0.1	--
FEB										
23...	<5	<5	60	--	--	2	2	<1	<0.1	10
MAR										
23...	<5	--	--	--	--	--	--	<1	<0.1	--
APR										
12...	<5	--	--	--	--	--	--	<1	0.6	--
MAY										
11...	4	--	--	--	--	--	--	<1	<0.1	--
JUN										
07...	5	--	--	--	--	--	--	<1	0.7	--
JUL										
13...	2	1	10	<0.1	<0.1	--	<1	<1	0.5	4
AUG										
25...	2	--	--	--	--	--	--	<1	0.3	--
SEP										
15...	2	--	--	--	--	--	--	<1	0.5	--

PLATTE RIVER BASIN

06752280 CACHE LA POUFRE 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 left 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: Nov. 13 to Dec. 8, Dec. 28 to Jan. 12, Jan 29 to Feb. 13, Mar. 4-17, June 3-7, and Aug. 21-25. Records good except for estimated daily discharges, 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, 1.6 ft³/s, Sept. 29, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 409 ft³/s at 1100 May 31, gage height, 3.83 ft; minimum daily, 2.5 ft³/s, Oct. 1, 2, 8-13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	3.4	6.4	4.4	6.0	8.0	7.3	10	245	102	4.9	3.8
2	2.5	3.5	6.4	4.4	6.0	7.0	7.3	25	232	89	4.1	4.1
3	2.6	4.1	6.4	4.4	6.6	6.7	7.3	42	170	80	4.2	3.8
4	2.8	4.3	6.4	4.4	6.6	7.0	7.3	45	110	53	4.1	3.7
5	2.9	3.9	6.4	4.4	6.6	7.0	7.3	51	70	35	4.1	3.5
6	2.9	3.8	6.6	4.9	6.6	7.0	6.7	50	47	14	4.4	3.5
7	2.6	3.9	7.0	4.9	6.6	7.0	6.7	29	32	20	4.4	3.3
8	2.5	3.8	7.1	4.9	6.6	7.0	6.4	21	24	30	4.4	6.0
9	2.5	3.5	6.7	4.9	6.6	7.0	8.7	40	12	22	4.9	12
10	2.5	3.7	6.1	4.9	6.6	7.0	11	20	8.7	11	4.9	8.0
11	2.5	4.4	5.8	4.9	7.6	7.0	9.5	6.6	8.7	8.0	4.9	11
12	2.5	5.2	6.0	5.0	8.0	7.0	8.0	6.1	9.4	7.3	5.5	8.0
13	2.5	5.8	5.5	4.9	8.0	7.0	8.0	35	9.8	6.1	60	6.7
14	2.7	5.8	4.9	4.9	8.0	7.0	7.3	105	69	6.0	16	6.1
15	2.9	5.8	4.9	4.4	8.0	7.0	6.1	59	235	6.7	6.7	5.6
16	3.1	5.8	4.9	4.4	7.3	7.0	6.4	12	156	6.7	5.5	5.5
17	3.4	5.8	5.2	4.4	7.3	7.0	6.7	7.4	96	4.4	4.9	5.8
18	5.4	5.8	5.5	5.4	7.7	6.7	6.7	5.2	83	4.1	4.9	4.4
19	6.0	5.8	5.5	5.5	8.0	7.3	7.3	4.4	93	3.8	4.9	4.4
20	5.5	5.8	4.9	5.5	8.0	8.3	7.3	4.6	71	3.5	6.0	4.2
21	5.5	5.8	4.9	5.5	7.3	9.1	6.7	19	103	3.5	6.5	4.4
22	5.2	5.8	4.9	5.5	7.3	9.4	6.7	45	89	3.5	5.8	4.9
23	5.5	5.8	4.6	5.5	8.7	9.4	7.0	122	84	3.5	5.5	5.7
24	5.5	5.8	4.4	5.5	11	9.4	6.1	158	59	3.7	5.4	4.9
25	4.4	5.8	4.4	5.5	13	9.1	21	201	16	3.8	5.2	4.9
26	4.4	6.4	4.4	6.0	16	8.0	14	119	11	4.1	4.4	4.9
27	3.8	6.4	4.4	6.0	13	8.0	8.8	89	95	3.3	4.1	4.2
28	3.8	6.4	4.4	6.0	10	8.0	8.0	95	123	3.3	4.2	4.1
29	3.5	6.4	4.4	6.0	---	8.0	9.4	187	113	5.2	3.8	4.4
30	3.3	6.4	4.4	6.0	---	7.7	11	297	100	46	3.5	4.2
31	3.3	---	4.4	6.0	---	7.3	---	319	---	7.4	3.5	---
TOTAL	111.0	154.9	168.2	159.3	229.0	235.4	248.0	2229.3	2574.6	599.9	215.6	160.0
MEAN	3.58	5.16	5.43	5.14	8.18	7.59	8.27	71.9	85.8	19.4	6.95	5.33
MAX	6.0	6.4	7.1	6.0	16	9.4	21	319	245	102	60	12
MIN	2.5	3.4	4.4	4.4	6.0	6.7	6.1	4.4	8.7	3.3	3.5	3.3
AC-FT	220	307	334	316	454	467	492	4420	5110	1190	428	317

CAL YR 1988 TOTAL 12344.8 MEAN 33.7 MAX 984 MIN 2.5 AC-FT 24490
WTR YR 1989 TOTAL 7085.2 MEAN 19.4 MAX 319 MIN 2.5 AC-FT 14050

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 1988 TO SEPTEMBER 1989

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)	HARD- NESS NONCARB TOTAL (MG/L AS CA CO3)	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 CA CO3)
OCT												
04...	1445	2.9	2000	7.9	12.5	8.7	950	740	230	91	--	212
NOV												
04...	1050	4.6	2100	7.9	9.0	9.1	1100	880	290	92	--	228
DEC												
08...	0945	7.1	1610	8.0	2.0	11.8	780	530	200	68	--	250
JAN												
12...	1015	5.3	1880	8.1	1.0	11.8	860	600	220	75	--	264
FEB												
14...	1555	7.7	1480	8.1	1.0	9.8	690	460	180	58	85	231
MAR												
22...	1015	9.1	1410	8.3	8.5	11.0	640	420	160	58	--	221
APR												
12...	1355	8.2	1170	8.3	10.5	11.6	490	300	120	46	--	194
MAY												
11...	1425	6.0	1230	--	17.0	11.2	560	410	140	50	--	142
JUN												
07...	1455	32	755	8.3	19.0	8.2	340	200	87	29	--	135
JUL												
13...	1305	6.3	1050	8.0	22.0	7.1	440	320	110	39	48	112
AUG												
25...	1050	5.2	1850	8.0	19.5	6.9	1000	850	270	90	--	196
SEP												
15...	1225	5.5	2080	8.2	14.0	6.7	1100	950	280	92	--	127

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, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	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- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
OCT												
04...	--	--	--	--	--	--	--	--	1.60	--	--	--
NOV												
04...	--	--	--	--	--	--	3.33	0.07	3.40	0.18	--	--
DEC												
08...	--	--	--	--	--	--	2.46	0.04	2.50	0.17	--	--
JAN												
12...	--	--	--	--	--	--	2.88	0.02	2.90	0.15	--	--
FEB												
14...	550	58	0.6	11	1090	1110	2.35	0.05	2.40	0.35	0.04	0.04
MAR												
22...	--	--	--	--	--	--	1.58	0.02	1.60	0.08	--	--
APR												
12...	--	--	--	--	--	--	1.18	0.02	1.20	0.04	--	--
MAY												
11...	--	--	--	--	--	--	0.68	0.02	0.70	0.10	--	--
JUN												
07...	--	--	--	--	--	--	0.60	0.02	0.62	0.04	--	--
JUL												
13...	390	12	0.6	7.0	675	697	0.31	0.02	0.33	0.10	0.03	0.03
AUG												
25...	--	--	--	--	--	--	1.16	0.04	1.20	0.12	--	--
SEP												
15...	--	--	--	--	--	--	1.76	0.04	1.80	0.11	--	--

PLATTE RIVER BASIN

06752280 CACHE LA POUDRE RIVER ABOVE BOX ELDER CREEK NEAR TIMMATH, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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										
04...	1445	--	--	<1	--	--	--	5	4	300
NOV										
04...	1050	--	--	1	--	--	--	3	<1	160
DEC										
08...	0945	--	--	<1	--	--	--	2	5	130
JAN										
12...	1015	--	--	<1	--	--	--	5	3	160
FEB										
14...	1555	<10	<1	1	<1	2	2	2	6	300
MAR										
22...	1015	--	--	<1	--	--	--	2	5	150
APR										
12...	1355	--	--	<1	--	--	--	4	4	260
MAY										
11...	1425	--	--	<1	--	--	--	3	3	430
JUN										
07...	1455	--	--	1	--	--	--	3	4	340
JUL										
13...	1305	<10	1	<1	--	<1	1	9	2	320
AUG										
25...	1050	--	--	<1	--	--	--	5	1	380
SEP										
15...	1225	--	--	<1	--	--	--	2	1	350

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										
04...	<5	--	--	--	--	--	--	--	0.1	--
NOV										
04...	<5	--	--	--	--	--	--	--	<0.1	--
DEC										
08...	<5	--	--	--	--	--	--	--	<0.5	--
JAN										
12...	<5	--	--	--	--	--	--	--	<0.1	--
FEB										
14...	<5	<5	110	<0.1	<0.1	4	6	--	<0.1	19
MAR										
22...	<5	--	--	--	--	--	--	<1	<0.1	--
APR										
12...	<5	--	--	--	--	--	--	2	<0.5	--
MAY										
11...	1	--	--	--	--	--	--	<1	0.5	--
JUN										
07...	2	--	--	--	--	--	--	<1	<0.1	--
JUL										
13...	3	<1	120	<0.1	<0.1	1	3	<1	0.1	10
AUG										
25...	1	--	--	--	--	--	--	<1	<0.1	--
SEP										
15...	<1	--	--	--	--	--	--	<1	<0.1	--

06752500 CACHE LA POUDE 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. 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: Mar. 24 to Apr. 13, Apr. 24, 25, Sept. 5-8, June 1, 2, 21, and 22. 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.--70 years (water years 1915-19, 1925-89), 133 ft³/s; 96,360 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, 1,080 ft³/s at 1920 July 29, gage height, 4.83 ft; minimum daily, 9.5 ft³/s, July 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	84	109	84	89	127	85	13	54	10	129	76
2	78	94	109	87	81	119	83	12	35	11	64	70
3	80	96	104	90	81	110	82	14	57	10	62	68
4	75	94	101	94	80	103	82	10	574	9.5	52	64
5	75	98	102	101	77	107	82	10	467	10	39	53
6	75	77	103	106	79	112	81	10	326	12	41	53
7	85	76	109	94	77	117	84	9.9	270	15	68	52
8	89	111	101	89	84	126	82	11	170	16	71	85
9	83	104	94	92	81	164	80	12	153	14	51	79
10	85	102	100	97	84	144	78	13	121	10	40	79
11	84	108	91	96	87	122	77	15	101	9.6	37	72
12	91	108	91	91	92	114	74	17	82	11	39	86
13	93	99	100	89	156	111	72	15	73	12	47	83
14	94	100	103	89	210	111	71	23	77	18	70	90
15	96	113	97	85	203	107	69	36	150	18	66	92
16	93	111	87	87	193	106	68	25	223	16	51	87
17	96	111	93	91	207	102	76	20	127	13	42	75
18	98	109	87	92	208	97	72	15	87	11	45	72
19	97	102	94	92	212	94	71	19	51	13	40	72
20	96	99	96	93	218	93	77	21	26	13	50	76
21	95	100	93	91	211	96	55	17	17	15	49	79
22	89	104	96	87	221	94	49	23	14	15	58	81
23	89	104	91	90	216	91	42	19	13	14	78	82
24	90	103	89	92	229	88	34	17	13	12	59	76
25	91	98	88	93	254	88	24	16	12	16	58	82
26	94	98	87	88	265	87	27	18	12	15	76	76
27	95	102	78	89	247	88	23	21	11	17	126	82
28	93	103	90	89	158	86	19	20	10	22	125	72
29	88	106	88	84	---	88	16	18	9.7	234	123	69
30	82	101	86	92	---	86	15	24	9.6	408	104	62
31	82	---	85	95	---	85	---	34	---	214	93	---
TOTAL	2735	3015	2942	2829	4400	3263	1850	547.9	3345.3	1234.1	2053	2245
MEAN	88.2	100	94.9	91.3	157	105	61.7	17.7	112	39.8	66.2	74.8
MAX	98	113	109	106	265	164	85	36	574	408	129	92
MIN	75	76	78	84	77	85	15	9.9	9.6	9.5	37	52
AC-FT	5420	5980	5840	5610	8730	6470	3670	1090	6640	2450	4070	4450

CAL YR 1988 TOTAL 33728.8 MEAN 92.2 MAX 918 MIN 8.0 AC-FT 66900
WTR YR 1989 TOTAL 30459.3 MEAN 83.5 MAX 574 MIN 9.5 AC-FT 60420

PLATTE RIVER BASIN

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. 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: Feb. 3-14, and Sept. 8-9. Records good except for estimated daily discharges, which are 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. Several observations of 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.--71 years (water years 1902-03, 1906-74), 777 ft³/s; 562,900 acre-ft/yr, prior to completion of Chatfield Dam; 14 years (water years 1976-89), 1,331 ft³/s; 964,300 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, 7,230 ft³/s at 1800 June 4, gage height, 8.08 ft; minimum daily, 118 ft³/s, July 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	458	595	675	918	998	1050	515	322	790	131	1080	552
2	443	641	675	924	922	968	486	394	1180	128	616	521
3	438	639	659	916	722	923	455	293	768	144	456	517
4	435	622	648	950	650	860	449	240	5010	147	376	493
5	444	627	655	981	650	963	443	204	3480	129	342	458
6	458	633	656	1120	650	996	435	172	1790	118	327	432
7	458	650	654	1010	650	1040	404	156	1270	119	342	424
8	462	683	663	910	650	1060	354	135	1000	143	443	486
9	441	687	664	894	1000	1150	406	127	930	136	504	1200
10	444	700	730	909	1310	1060	452	136	862	120	396	1570
11	445	720	767	885	1310	986	520	244	734	136	337	1300
12	444	710	774	863	1430	928	446	285	647	140	324	1880
13	430	704	819	820	1520	897	406	243	630	179	401	1560
14	429	699	861	835	1450	888	362	326	673	228	869	1380
15	449	724	867	840	1240	849	361	1050	598	222	608	984
16	436	730	809	815	1010	810	344	1280	727	258	502	836
17	425	753	831	834	990	786	337	864	720	266	452	737
18	426	721	841	858	956	773	344	581	657	220	464	678
19	426	700	846	831	945	775	358	485	562	185	432	638
20	446	693	870	830	986	762	346	502	420	165	427	629
21	456	690	897	824	1040	787	275	426	338	163	409	640
22	446	701	902	812	1060	791	217	366	309	166	388	644
23	438	696	880	810	1010	771	213	363	294	164	372	629
24	441	687	878	824	1100	740	199	330	301	158	328	617
25	454	681	870	836	1340	707	185	289	289	165	296	593
26	479	672	891	822	1490	692	171	335	249	178	329	554
27	469	664	845	827	1360	681	188	591	264	179	633	520
28	457	663	837	862	1180	646	255	518	241	186	710	490
29	471	673	830	828	---	606	328	385	168	1240	678	472
30	531	673	899	854	---	566	289	376	139	2290	621	447
31	546	---	919	913	---	562	---	452	---	2430	608	---
TOTAL	14025	20431	24612	27155	29619	26073	10543	12470	26040	10633	15070	22881
MEAN	452	681	794	876	1058	841	351	402	868	343	486	763
MAX	546	753	919	1120	1520	1150	520	1280	5010	2430	1080	1880
MIN	425	595	648	810	650	562	171	127	139	118	296	424
AC-FT	27820	40520	48820	53860	58750	51720	20910	24730	51650	21090	29890	45380
CAL YR 1988	TOTAL	295775	MEAN	808	MAX	5940	MIN	138	AC-FT	586700		
WTR YR 1989	TOTAL	239552	MEAN	656	MAX	5010	MIN	118	AC-FT	475200		

06758500 SOUTH PLATTE RIVER NEAR WELDONA, CO

LOCATION.--Lat 40°19'19", long 103°55'17", in SW¼SW¼ 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 Weldona, and 4.2 mi upstream from Bijou Creek.

DRAINAGE AREA.--13,245 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WSP 1710: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,307.80 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Feb. 2-21, and Mar. 6. Records good except for estimated daily discharges, which are fair. Natural flow of stream affected by transmountain and transbasin diversions, storage reservoirs, power developments, 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.--22 years (water years 1953-74), 572 ft³/s; 414,400 acre-ft/yr, prior to completion of Chatfield Dam. 13 years (water years 1976-89), 969 ft³/s; 702,000 acre-ft/yr, subsequent to completion of Chatfield Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,800 ft³/s, May 8, 1973, gage height, 11.68 ft, from rating curve extended above 16,000 ft³/s; minimum daily, 39 ft³/s, May 19, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,000 ft³/s at 1300 June 5, gage height, 7.00 ft; minimum daily, 90 ft³/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	198	315	422	888	410	512	228	287	432	172	773	443
2	170	340	372	954	470	408	197	285	606	162	272	349
3	167	365	325	1030	430	324	114	378	807	160	116	271
4	164	222	307	1060	640	343	147	283	1050	149	138	274
5	167	192	302	1030	570	738	149	224	3070	149	238	253
6	164	182	300	923	570	867	140	189	1650	162	225	243
7	169	181	288	916	560	881	155	155	782	167	240	259
8	166	189	257	836	550	874	138	133	517	179	302	515
9	162	206	254	839	540	818	205	127	506	192	232	740
10	163	271	339	844	900	832	208	226	587	201	285	1120
11	158	338	377	751	1200	671	169	226	570	190	277	939
12	151	326	387	671	1220	496	180	280	528	220	250	858
13	163	316	398	695	1370	435	185	382	482	293	329	1100
14	157	312	502	751	1480	401	327	330	457	299	408	966
15	166	312	523	777	1410	385	436	444	447	342	560	847
16	164	316	491	790	1200	390	452	664	347	362	349	603
17	160	320	539	738	970	382	419	425	400	392	255	423
18	161	343	647	635	950	328	396	229	383	335	225	314
19	158	334	732	578	870	323	314	362	295	277	254	315
20	157	316	846	539	830	324	256	372	229	218	227	308
21	164	298	846	475	800	321	240	317	208	203	223	287
22	179	312	853	428	671	323	206	385	169	187	171	332
23	171	321	798	377	550	322	203	388	197	179	221	339
24	169	337	794	374	468	306	203	343	236	182	274	302
25	167	348	806	397	474	296	202	299	244	228	338	252
26	178	347	825	407	591	289	198	284	227	221	368	215
27	192	340	832	397	667	404	198	308	163	225	602	174
28	192	368	797	397	611	441	202	528	113	227	851	113
29	190	383	770	402	---	327	235	496	147	221	696	91
30	189	407	647	377	---	252	320	329	211	665	370	90
31	226	---	797	377	---	188	---	344	---	993	307	---
TOTAL	5302	9157	17373	20653	21972	14201	7022	10022	16060	8152	10376	13335
MEAN	171	305	560	666	785	458	234	323	535	263	335	444
MAX	226	407	853	1060	1480	881	452	664	3070	993	851	1120
MIN	151	181	254	374	410	188	114	127	113	149	116	90
AC-FT	10520	18160	34460	40970	43580	28170	13930	19880	31860	16170	20580	26450
CAL YR 1988	TOTAL 193633	MEAN 529	MAX 4820	MIN 56	AC-FT 384100							
WTR YR 1989	TOTAL 153625	MEAN 421	MAX 3070	MIN 90	AC-FT 304700							

PLATTE RIVER BASIN

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 1988 TO SEPTEMBER 1989

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)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
NOV 07...	1145	184	1710	8.4	9.0	11.8	--	--	590	140
MAR 07...	1145	978	1430	8.1	6.0	10.3	K50	570	470	110
JUN 20...	1045	226	1390	8.3	22.0	8.1	57	54	490	120
SEP 25...	1200	211	1580	8.3	17.5	12.4	K30	44	570	130

DATE	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 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)
NOV 07...	59	140	3	7.1	264	580	73	0.9	15
MAR 07...	47	130	3	7.8	213	390	81	1.0	13
JUN 20...	46	120	2	6.8	223	450	65	1.0	12
SEP 25...	58	140	3	7.7	240	530	67	1.1	13

DATE	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)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC 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)
NOV 07...	1190	1.62	592	--	--	--	4.30	--	--
MAR 07...	938	1.33	2580	0.07	4.83	5.5	4.90	2.90	2.90
JUN 20...	970	1.39	622	0.02	2.78	0.7	2.80	0.04	0.03
SEP 25...	1110	1.60	672	0.02	4.08	0.7	4.10	0.02	0.03

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)
NOV 07...	--	--	--	0.26	--	--	0.26
MAR 07...	2.60	3.00	1.70	1.00	1.70	0.99	0.01
JUN 20...	0.66	0.98	0.44	0.34	0.44	0.32	0.02
SEP 25...	0.68	0.89	0.35	0.32	0.35	0.29	0.03

K BASED ON NON-IDEAL COLONY COUNT.

141

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	MANGANESE, DIS-SOLVED (UG/L AS MN)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SILVER, DIS-SOLVED (UG/L AS AG)	STRONTIUM, DIS-SOLVED (UG/L AS SR)	VANADIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)	LITHIUM DIS-SOLVED (UG/L AS LI)	SELENIUM, DIS-SOLVED (UG/L AS SE)
NOV 07...	16	--	--	--	--	--	--	--	--
MAR 07...	22	<10	<10	1.0	1300	<6	24	31	3
JUN 20...	13	<10	<10	<1.0	1300	<6	22	37	5
SEP 25...	8	<10	<10	<1.0	1600	<6	16	42	4

[illegible]

PLATTE RIVER BASIN

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., Sedgewick 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. 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: Oct. 1 to Dec. 19, Dec. 27 to Jan. 4, Feb. 3-9, Apr. 6-12, and May 25 to June 8. 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 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.--87 years, 546 ft³/s; 395,600 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, not determined; minimum daily, 14 ft³/s, July 27-28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

[illegible]

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 micromhos Jan. 12, 1971; minimum daily, 348 micromhos 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 1988 TO SEPTEMBER 1989

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- TOCOC- CI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
NOV 08...	0930	75	2150	8.5	6.5	4.3	12.4	K28	K20	840	220
MAR 08...	0745	1000	1940	8.3	0.0	5.8	11.6	K8	150	700	180
JUN 21...	0945	24	2060	8.4	15.5	1.5	9.6	89	120	700	180
SEP 26...	1030	281	2160	8.2	15.0	17	9.3	72	120	720	180

DATE	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- LITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS- SOLVED FIELD (MGL AS HCO3)	CAR- BONATE WATER DIS- SOLVED FIELD (MGL 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)
NOV 08...	69	210	3	24	229	255	12	890	100	0.60
MAR 08...	61	180	3	11	259	316	0	690	89	0.80
JUN 21...	61	200	3	17	217	167	48	800	97	0.80
SEP 26...	64	210	4	18	212	259	0	850	100	0.60

DATE	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, NITRATE 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)
NOV 08...	22	1670	1700	2.27	338	2.16	2.20	0.07	0.07	0.53
MAR 08...	21	1470	1410	2.00	3970	4.87	4.90	0.31	0.31	0.89
JUN 21...	24	1580	1570	2.15	101	1.46	1.50	0.06	0.05	0.44
SEP 26...	21	1640	1580	2.23	1240	1.58	1.60	0.04	0.04	1.3

DATE	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, NITRITE DIS- SOLVED (MG/L AS NO2)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P)
NOV 08...	0.60	0.09	0.04	0.13	0.03	0.02	0.09	0.06	0.05	0.06
MAR 08...	1.2	0.40	0.03	0.10	0.32	0.03	0.98	0.38	0.35	0.38
JUN 21...	0.50	0.06	0.04	0.13	0.08	--	0.25	0.09	0.07	0.09
SEP 26...	1.3	0.05	0.02	0.07	0.03	0.01	0.09	0.07	0.04	0.07

K BASED ON NON-IDEAL COLONY COUNT.

PLATTE RIVER BASIN

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO--Continued
(Irrigation network station)
(National stream-quality accounting network station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	3	<100	<10	<1	<1	<1	2	10	<5
MAR 08...	<10	2	49	<0.5	<1	1	<3	3	6	<5
JUN 21...	<10	3	100	<10	<1	2	<1	1	20	1
SEP 26...	70	2	99	<1	<2	1	<6	2	<6	<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...	50	20	<0.1	4	<1	3	1.0	2000	4	10
MAR 08...	57	8	0.1	<10	1	3	<1.0	1800	<6	16
JUN 21...	70	50	<0.1	3	2	3	<1.0	1900	6	10
SEP 26...	62	9	0.1	20	2	2	<1.0	2100	<12	15

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	GROSS 226, DIS- SOLVED, RADON METHOD (PCI/L)	RADIUM URANIUM NATURAL DIS- SOLVED (UG/L AS U)
NOV 08...	56	0.6	43	4.4	28	4.3	0.09	40
MAR 08...	--	--	--	--	--	--	--	--
JUN 21...	38	2.8	27	9.4	21	7.8	0.10	30
SEP 26...	--	--	--	--	--	--	--	--

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
NOV 08...	0930	75	34	6.9
MAR 08...	0745	1000	--	--
JUN 21...	0945	24	--	--
SEP 26...	1030	281	99	75

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. 29-31, Jan. 5-9, 13-14, 16, Feb. 1-10, and Feb. 12 to Mar. 1. 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.--59 years, 46.6 ft³/s; 33,760 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)
Feb. 3	1230	ice jam	*2.55	June 9	1545	*76	1.14

Minimum daily discharge, 6.2 ft³/s, July 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	56	37	52	56	54	55	22	20	18	8.5	17
2	32	39	37	52	56	53	55	22	24	18	9.0	17
3	31	21	38	52	54	53	54	21	24	18	12	17
4	31	15	36	53	49	49	54	20	27	14	9.6	18
5	31	15	37	52	48	50	55	20	29	10	10	23
6	33	16	38	50	52	54	54	16	33	9.6	9.5	24
7	34	20	38	52	56	54	54	12	44	8.3	8.5	24
8	33	21	39	54	66	54	55	9.5	45	7.7	8.4	25
9	32	17	45	56	66	53	55	7.6	64	7.5	10	24
10	31	18	53	52	62	54	56	16	61	7.6	11	22
11	31	18	55	52	58	55	57	7.1	51	7.8	11	23
12	31	21	56	52	54	55	56	7.6	45	6.2	16	29
13	33	21	54	52	54	55	55	11	42	9.2	15	38
14	32	21	53	54	52	55	54	8.6	42	9.0	16	45
15	32	22	54	53	54	54	54	6.3	41	8.3	24	43
16	33	23	53	54	56	55	53	7.8	41	11	21	42
17	32	31	53	52	54	56	54	16	39	10	18	41
18	32	30	54	52	52	55	53	25	38	9.9	17	40
19	32	29	54	52	54	56	52	25	37	8.6	15	41
20	31	29	54	52	52	57	50	19	30	7.8	15	41
21	31	29	53	52	54	56	52	20	15	7.8	14	42
22	29	29	52	52	58	56	50	21	9.7	8.0	12	42
23	28	31	52	52	56	56	48	18	9.0	6.8	8.7	36
24	30	32	53	52	62	55	47	17	10	6.2	28	35
25	29	32	53	53	66	55	32	17	15	7.9	22	36
26	27	33	53	53	68	55	24	16	16	7.9	22	34
27	40	33	58	53	60	55	23	11	15	7.5	20	33
28	53	33	55	54	56	55	23	11	17	7.0	20	33
29	55	37	52	54	---	55	23	10	11	7.2	20	31
30	57	37	54	54	---	55	23	9.4	14	8.8	21	30
31	57	---	58	56	---	54	---	19	---	9.2	19	---
TOTAL	1074	809	1531	1635	1585	1688	1430	468.9	908.7	290.8	471.2	946
MEAN	34.6	27.0	49.4	52.7	56.6	54.5	47.7	15.1	30.3	9.38	15.2	31.5
MAX	57	56	58	56	68	57	57	25	64	18	28	45
MIN	27	15	36	50	48	49	23	6.3	9.0	6.2	8.4	17
AC-FT	2130	1600	3040	3240	3140	3350	2840	930	1800	577	935	1880

CAL YR 1988	TOTAL 12922.8	MEAN 35.3	MAX 96	MIN 5.8	AC-FT 25630
WTR YR 1989	TOTAL 12837.6	MEAN 35.2	MAX 68	MIN 6.2	AC-FT 25460

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, 128,380 acre-ft, Aug. 20, elevation, 9,868.83 ft; minimum, 81,090 acre-ft, May 8, elevation, 9,840.63 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	9,868.58	127,930	-
Oct. 31.	9,867.47	125,960	-1,970
Nov. 30.	9,865.36	122,240	-3,720
Dec. 31.	9,864.23	120,250	-1,990
CAL YR 1988			+2,230
Jan. 31.	9,863.40	118,800	-1,450
Feb. 28.	9,856.65	107,210	-11,590
Mar. 31.	9,846.46	90,340	-16,870
Apr. 30.	9,842.09	83,380	-6,960
May 31.	9,851.39	98,400	+15,020
June 30.	9,864.27	120,320	+21,920
July 31.	9,867.84	126,620	+6,300
Aug. 31.	9,868.38	127,580	+960
Sept. 30.	9,866.33	123,940	-3,640
WTR YR 1989			-350

ARKANSAS RIVER BASIN

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, 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). WRD CO-79-1: 1976 (M). WRD CO-80-1: 1954 (M).

GAGE.--Water-stage recorder and concrete control. 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. 17 to Mar. 6, Mar. 24-28, and July 4, 7-8, 11-20. Records good except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--43 years, 29.2 ft³/s; 21,160 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 16	2100	*191	*3.11	June 18	2030	162	3.00

Minimum daily discharge, 2.6 ft³/s, Feb. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	6.1	4.9	3.5	3.0	4.4	4.9	15	96	89	93	17
2	9.9	6.1	5.0	3.4	3.0	4.5	5.1	13	96	88	96	16
3	9.2	6.2	5.2	3.4	3.0	4.8	4.4	13	89	86	77	15
4	9.2	5.5	5.1	3.4	3.0	4.6	4.4	13	70	84	68	15
5	10	6.0	4.9	3.3	2.9	4.9	4.8	12	69	86	60	14
6	11	7.1	5.3	3.2	2.6	5.1	5.6	14	82	83	53	14
7	10	6.6	5.7	2.9	2.7	4.6	6.0	19	83	76	49	14
8	9.8	6.2	5.6	2.8	2.8	4.7	7.2	32	89	70	45	14
9	9.3	6.1	4.4	2.8	2.9	4.7	7.2	42	79	66	42	14
10	9.3	6.6	4.4	2.9	3.0	5.1	6.4	47	74	68	42	14
11	9.2	7.0	4.6	2.9	3.1	5.2	6.4	45	79	80	48	15
12	8.9	5.6	4.6	3.0	3.2	4.9	6.0	42	85	100	47	16
13	8.5	6.5	4.9	3.0	3.2	5.0	6.1	38	73	80	44	19
14	8.3	6.3	4.9	3.0	3.2	4.4	6.9	38	76	66	41	16
15	8.2	5.3	5.1	2.9	3.2	4.6	7.8	32	96	60	37	16
16	7.6	5.0	4.5	3.0	3.2	4.9	8.8	29	131	55	36	15
17	7.6	5.9	4.5	3.0	3.3	5.5	10	26	133	51	33	14
18	7.6	5.2	4.4	3.0	3.4	4.9	11	27	123	49	36	14
19	7.6	4.7	4.3	3.1	3.5	5.5	13	37	135	47	33	13
20	7.6	5.1	4.3	3.1	3.5	6.0	17	51	131	45	32	18
21	7.5	5.4	4.2	3.1	3.5	6.7	26	63	119	44	29	16
22	7.1	5.2	4.0	3.2	3.6	6.7	30	70	83	45	26	15
23	6.9	4.5	3.9	3.2	3.8	6.1	28	89	72	53	26	14
24	6.9	4.5	3.9	3.1	3.9	6.0	32	89	68	64	26	14
25	6.8	4.2	3.8	3.1	4.1	5.8	33	77	79	76	24	13
26	6.7	4.1	3.8	3.1	4.2	5.8	32	61	78	65	22	13
27	6.5	4.1	3.7	3.1	4.3	5.6	26	69	84	60	21	13
28	6.4	4.4	3.7	3.1	4.3	5.4	22	88	89	61	21	13
29	6.2	4.5	3.6	3.0	---	5.1	19	108	92	68	20	12
30	6.3	4.9	3.6	3.0	---	4.5	16	113	91	71	19	12
31	6.2	---	3.5	3.0	---	4.8	---	101	---	67	18	---
TOTAL	252.3	164.9	138.3	95.6	93.4	160.8	413.0	1513	2744	2103	1264	438
MEAN	8.14	5.50	4.46	3.08	3.34	5.19	13.8	48.8	91.5	67.8	40.8	14.6
MAX	11	7.1	5.7	3.5	4.3	6.7	33	113	135	100	96	19
MIN	6.2	4.1	3.5	2.8	2.6	4.4	4.4	12	68	44	18	12
AC-FT	500	327	274	190	185	319	819	3000	5440	4170	2510	869

CAL YR 1988 TOTAL 7704.2 MEAN 21.0 MAX 157 MIN 2.0 AC-FT 15280
WTR YR 1989 TOTAL 9380.3 MEAN 25.7 MAX 135 MIN 2.6 AC-FT 18610

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 1988 TO SEPTEMBER 1989

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)	HARD- NESS TOTAL (MG/L AS CACO3)
OCT 13...	1350	8.8	96	8.1	6.0	1.3	8.1	K1	<1	42
DEC 08...	1245	5.6	95	8.2	0.0	0.40	10.0	--	--	45
FEB 23...	1300	3.8	103	8.1	0.5	0.60	--	<1	35	46
APR 20...	1455	17	82	8.1	10.5	1.1	7.3	<1	40	36
JUN 14...	1400	67	--	8.0	10.0	0.60	9.0	K1	K1	28
AUG 23...	1400	26	83	8.0	13.0	0.20	7.4	<1	<2	38

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY TOTAL FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 13...	10	4.1	1.5	0.80	37	46	6.3	0.40	0.10
DEC 08...	11	4.3	1.6	0.90	30	37	6.3	0.30	0.10
FEB 23...	11	4.4	1.9	0.80	55	68	6.6	0.40	0.10
APR 20...	8.8	3.4	1.4	0.70	36	44	5.1	0.40	0.10
JUN 14...	7.2	2.4	1.0	0.40	23	27	4.0	0.50	0.10
AUG 23...	9.6	3.3	1.2	0.60	41	50	5.0	0.20	0.10

DATE	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)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)
OCT 13...	5.6	53	54	0.13	0.01	0.01	0.20	0.01	0.01
DEC 08...	6.6	69	57	0.15	<0.01	--	<0.20	<0.01	<0.01
FEB 23...	7.2	63	60	0.15	0.05	0.06	0.20	0.03	0.01
APR 20...	5.2	51	46	0.11	<0.01	--	0.30	0.01	<0.01
JUN 14...	4.2	40	35	0.12	<0.01	--	0.90	0.02	0.01
AUG 23...	4.8	51	47	0.12	0.02	0.03	<0.20	<0.01	<0.01

K BASED ON NON-IDEAL COLONY COUNT.

ARKANSAS RIVER BASIN

07083000 HALFMOON CREEK NEAR MALTA, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 13...	<10	<1	22	<0.5	<1	1	<3	2	59	<5
DEC 08...	<10	<1	25	<0.5	<1	<1	<3	3	38	<5
FEB 23...	10	<1	23	<0.5	<1	<1	<3	1	58	<5
APR 20...	--	--	--	--	--	--	--	--	--	--
JUN 14...	20	<1	17	<0.5	2	<1	<3	1	39	3
AUG 23...	10	<1	21	<0.5	<1	<1	<3	1	61	<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 13...	<4	4	<0.1	<10	1	<1	<1.0	76	<6	10
DEC 08...	<4	6	<0.1	<10	2	<1	<1.0	83	<6	12
FEB 23...	<4	6	<0.1	<10	1	<1	<1.0	85	<6	15
APR 20...	--	--	--	--	--	--	--	--	--	--
JUN 14...	<4	4	<0.1	<10	<1	<1	<1.0	52	<6	10
AUG 23...	<4	5	0.1	<10	<1	<1	<1.0	67	<6	16

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 08...	1245	<0.4	<0.4	0.9	0.8	1.0	0.7	0.04	0.08
JUN 14...	1400	<0.4	<0.4	<0.4	<0.4	0.4	<0.4	0.07	0.35

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
DEC 08...	1245	5.6	5	0.08
FEB 23...	1300	3.8	1	0.01
APR 20...	1455	17	10	0.46
JUN 14...	1400	67	7	1.3

07083000 HALFMOON CREEK NEAR MALTA, CO--Continued

CROSS SECTION ANALYSES, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	TEMPER- ATURE WATER (DEG C)	PH (STAND- ARD UNITS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	OXYGEN, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)
JUN							
14...	1401	2.00	11.0	7.9	58	9.1	7
14...	1402	4.00	11.0	7.9	58	9.1	7
14...	1403	6.00	11.0	7.9	58	9.0	7
14...	1404	8.00	11.0	8.0	58	9.0	7
14...	1405	10.0	11.0	7.9	58	8.9	7
14...	1406	12.0	11.0	7.9	58	8.9	7
14...	1407	14.0	11.0	7.9	59	8.9	7
14...	1408	16.0	11.0	7.9	59	8.8	7
14...	1409	18.0	11.0	8.1	59	8.9	7
14...	1410	20.0	11.0	8.1	60	9.0	7
14...	1411	22.0	11.0	8.4	60	9.1	7

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, water year 1988: Nov. 8 to Apr. 12, and Aug. 7-16. Records good except for estimated daily discharges, which are poor. Estimated daily discharges, water year 1989: Nov. 12, and Nov. 15 to Apr. 7. Records good except for estimated daily discharges, which are fair. 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.--41 years (water years 1947-62, 1964-88), 165 ft³/s; 120,000 acre-ft/yr; 42 years (water years 1947-62, 1964-89), 164 ft³/s; 118,800 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 WATER YEAR 1988.--Maximum discharge, 1,390 ft³/s at 2200 June 6, gage height, 3.98 ft; minimum daily, 7.8 ft³/s, Feb. 26, 27.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,300 ft³/s at 2300 June 16, gage height, 5.27 ft; minimum daily, 8.0 ft³/s, Jan. 12, and Feb. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	26	15	10	10	8.2	8.4	55	322	455	65	32
2	38	28	14	10	10	8.2	8.4	52	302	395	60	31
3	35	29	14	10	9.8	8.4	8.7	53	515	310	59	28
4	28	27	14	10	9.6	8.4	9.2	52	846	283	56	27
5	28	26	14	10	9.4	8.4	9.6	61	1050	283	54	26
6	27	31	14	11	9.2	8.6	10	65	1040	264	56	25
7	26	28	14	11	9.2	8.8	11	64	1060	246	54	24
8	27	29	13	11	9.4	9.0	12	59	1000	228	52	24
9	26	30	12	11	9.4	8.8	12	69	964	202	52	23
10	25	29	12	11	9.4	9.0	12	76	937	168	50	24
11	24	22	12	11	9.4	9.4	12	80	854	193	50	40
12	24	21	12	11	9.6	9.6	12	91	778	174	49	42
13	26	20	12	11	9.6	9.4	14	190	645	153	49	44
14	28	20	12	11	9.6	10	16	275	370	152	48	42
15	29	19	11	11	9.6	10	16	410	425	168	47	38
16	28	20	11	10	9.6	10	20	515	584	122	46	38
17	24	20	10	10	9.2	10	22	624	578	109	48	36
18	25	19	10	10	8.8	9.6	20	597	491	96	55	35
19	26	18	10	10	8.6	9.2	27	503	584	90	48	31
20	22	17	10	9.8	8.4	9.0	31	334	770	90	44	32
21	25	17	10	9.6	8.4	9.0	40	250	878	90	46	32
22	26	16	10	9.4	8.2	9.2	38	187	680	88	50	32
23	25	16	10	9.2	8.4	9.2	38	165	688	79	44	29
24	29	16	10	9.2	8.2	9.0	38	218	725	76	40	28
25	31	16	10	9.4	8.0	8.0	40	290	659	66	38	27
26	28	16	10	9.6	7.8	8.6	38	370	597	65	37	33
27	27	16	10	9.8	7.8	8.6	38	497	467	69	36	25
28	23	15	10	10	8.0	8.6	35	659	525	65	35	24
29	26	15	10	10	8.0	8.4	39	762	710	59	32	22
30	27	15	10	10	---	8.4	46	792	558	56	32	24
31	25	---	10	10	---	8.4	---	455	---	69	32	---
TOTAL	840	637	356	316.0	260.6	278.2	681.3	8870	20602	4963	1464	918
MEAN	27.1	21.2	11.5	10.2	8.99	8.97	22.7	286	687	160	47.2	30.6
MAX	38	31	15	11	10	10	46	792	1060	455	65	44
MIN	22	15	10	9.2	7.8	8.2	8.4	52	302	56	32	22
AC-FT	1670	1260	706	627	517	552	1350	17590	40860	9840	2900	1820

CAL YR 1987 TOTAL 43854 MEAN 120 MAX 1180 MIN 10 AC-FT 86980
WTR YR 1988 TOTAL 40186.1 MEAN 110 MAX 1060 MIN 7.8 AC-FT 79710 .

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	13	11	10	12	13	15	96	678	450	228	37
2	22	16	10	10	13	13	14	105	671	431	240	36
3	22	20	10	12	12	12	15	95	626	408	231	35
4	21	16	10	10	11	10	14	72	510	390	213	35
5	23	14	10	13	9.5	9.5	15	57	465	378	196	35
6	25	15	10	12	9.0	11	15	81	557	370	180	33
7	24	16	12	10	8.0	12	16	96	590	338	167	33
8	24	14	9.5	10	8.5	15	17	120	657	318	139	35
9	24	11	10	10	12	14	18	210	557	296	126	35
10	20	10	10	12	13	14	17	314	502	282	132	34
11	22	13	11	11	12	14	17	408	535	264	128	35
12	21	10	11	8.0	12	14	17	362	574	292	132	38
13	21	14	11	8.5	10	13	16	312	520	275	155	41
14	20	15	12	11	10	12	19	292	505	258	165	39
15	19	12	11	10	11	12	22	228	579	234	152	38
16	16	10	10	10	10	12	27	196	859	216	143	36
17	16	10	9.5	11	11	14	31	186	1010	186	136	35
18	16	9.5	10	9.5	13	13	37	194	846	162	136	34
19	16	9.5	11	10	13	15	44	250	910	146	122	34
20	16	9.5	11	11	13	13	70	354	870	126	105	45
21	16	9.5	9.5	10	12	11	139	572	727	157	89	41
22	17	12	11	10	11	14	150	624	495	178	98	38
23	19	14	11	10	14	13	165	738	404	160	80	35
24	18	13	9.5	10	13	14	191	787	346	191	56	34
25	17	12	11	11	15	13	194	681	435	231	53	33
26	15	11	11	9.0	14	14	210	548	495	225	49	33
27	17	10	9.0	9.5	13	14	191	559	460	196	46	31
28	16	10	8.5	11	12	13	148	679	470	183	44	30
29	16	12	9.0	10	---	15	137	863	480	222	46	30
30	19	11	9.5	11	---	17	120	927	465	213	39	30
31	16	---	10	12	---	13	---	738	---	199	39	---
TOTAL	598	372.0	319.0	322.5	327.0	406.5	2101	11744	17798	7975	3865	1058
MEAN	19.3	12.4	10.3	10.4	11.7	13.1	70.0	379	593	257	125	35.3
MAX	25	20	12	13	15	17	210	927	1010	450	240	45
MIN	15	9.5	8.5	8.0	8.0	9.5	14	57	346	126	39	30
AC-FT	1190	738	633	640	649	806	4170	23290	35300	15820	7670	2100
CAL YR 1988	TOTAL 39642.1											
WTR YR 1989	TOTAL 46886.0											
		MEAN	108	MAX	1060	MIN	7.8	AC-FT	78630			
			128	MAX	1010		8.0	AC-FT	93000			

ARKANSAS RIVER BASIN

07086000 ARKANSAS RIVER AT GRANITE, CO

LOCATION.--Lat 39°02'34", long 106°15'55", in SE¼SW¼ 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. 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. 19 to Feb. 19, Feb. 21, 22, 24, July 26-28, and Aug. 28-30. Records good except for estimated daily discharges, which are fair. 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.--79 years (water years 1911-89), 384 ft³/s; 278,200 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, not determined; minimum daily, 74 ft³/s, Feb. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	98	100	96	98	76	408	450	1070	930	1140	164
2	96	102	96	96	100	79	396	295	939	912	1300	162
3	96	102	96	100	98	248	396	205	858	894	1280	160
4	95	109	96	98	90	320	385	205	660	876	1180	160
5	98	109	96	100	82	282	390	282	498	858	1100	152
6	102	112	96	98	80	258	426	286	524	858	1060	136
7	103	112	98	94	76	266	450	300	580	894	903	131
8	103	111	88	94	78	270	492	340	650	948	759	127
9	98	123	92	96	90	274	498	432	709	930	786	116
10	96	120	92	100	92	350	462	628	595	867	777	116
11	98	129	94	98	88	402	462	957	548	804	804	138
12	102	123	94	80	88	396	462	1140	705	1000	849	179
13	100	125	94	82	84	402	517	984	818	1180	822	205
14	98	131	94	94	86	396	612	705	731	1150	840	190
15	96	148	94	92	88	380	628	723	687	1110	903	176
16	95	134	92	92	84	390	628	669	948	1060	921	168
17	95	127	92	94	86	390	636	366	1250	966	822	165
18	95	120	94	86	92	385	669	250	1280	822	705	157
19	95	110	84	90	92	390	759	408	1320	696	636	145
20	96	110	90	94	90	390	768	545	1240	714	620	162
21	96	110	86	90	85	380	822	705	1140	795	588	150
22	96	120	86	90	75	456	886	840	1000	822	588	148
23	96	110	84	90	84	510	822	975	732	813	596	145
24	95	105	88	90	82	517	750	1030	588	966	524	143
25	93	100	90	94	85	531	741	1020	531	1240	462	150
26	92	98	90	84	85	531	822	660	604	1500	450	162
27	95	96	86	86	81	456	714	474	636	1300	450	168
28	95	96	86	94	74	420	588	524	580	1150	440	165
29	96	105	88	88	---	420	580	879	620	1160	300	165
30	96	100	94	94	---	408	588	1220	831	1190	160	165
31	95	---	96	98	---	402	---	1280	---	1080	155	---
TOTAL	3000	3395	2846	2872	2413	11375	17757	19777	23872	30485	22920	4670
MEAN	96.8	113	91.8	92.6	86.2	367	592	638	796	983	739	156
MAX	103	148	100	100	100	531	886	1280	1320	1500	1300	205
MIN	92	96	84	80	74	76	385	205	498	696	155	116
AC-FT	5950	6730	5650	5700	4790	22560	35220	39230	47350	60470	45460	9260
CAL YR 1988	TOTAL	93636	MEAN	256	MAX	1470	MIN	72	AC-FT	185700		
WTR YR 1989	TOTAL	145382	MEAN	398	MAX	1500	MIN	74	AC-FT	288400		

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: Water Year 1988, Nov. 16 to Apr. 8. Water Year 1989, Nov. 12, and Nov. 16 to Mar. 24. 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.--42 years (water years 1947-62, 1964-88), 68.8 ft³/s; 49,850 acre-ft/yr; 43 years (water years 1947-62, 1964-89), 68.5 ft³/s; 49,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,300 ft³/s, June 29, 1957, maximum gage height recorded, 4.71 ft, May 30, 1989, present site and datum; minimum daily discharge, 5.0 ft³/s, many days some years.

EXTREMES FOR WATER YEAR 1988.--Maximum discharge, 447 ft³/s at 0130 June 29, gage height, 4.51 ft; minimum daily, 9.0 ft³/s, Mar. 14, 15.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 416 ft³/s at 0030 June 17, gage height, 4.44 ft, maximum gage height, 4.71 ft at 0130 May 30; minimum daily discharge, 8.9 ft³/s, Apr. 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	24	15	12	12	11	10	29	120	167	68	38
2	28	25	15	12	12	11	10	26	136	153	87	38
3	28	24	15	12	12	11	10	22	212	140	66	36
4	26	23	16	12	12	11	10	24	272	131	58	34
5	25	22	16	12	12	10	11	25	300	129	52	32
6	25	24	16	11	12	10	11	28	280	120	52	31
7	26	24	16	11	12	10	10	25	325	112	53	29
8	25	22	15	11	12	10	10	25	320	104	47	28
9	25	19	15	11	12	10	9.8	23	300	100	47	26
10	25	19	16	11	12	10	9.8	24	305	92	43	29
11	24	20	15	11	12	10	11	25	300	91	41	43
12	24	18	14	12	12	9.8	14	31	268	81	43	50
13	25	20	14	12	12	9.4	18	44	244	80	42	47
14	29	22	14	12	12	9.0	21	68	189	80	40	44
15	28	20	13	12	12	9.0	20	92	202	78	38	41
16	25	17	13	12	12	9.4	22	116	209	73	41	37
17	24	17	14	11	12	9.4	22	122	205	70	70	36
18	25	16	14	11	12	9.6	20	120	202	64	71	35
19	24	16	14	11	11	9.6	22	120	226	62	61	34
20	23	15	14	12	10	9.8	22	94	237	58	52	32
21	23	15	14	12	10	9.8	24	76	237	53	48	32
22	23	16	14	11	10	10	23	68	226	51	51	34
23	23	16	13	11	11	10	21	62	216	50	48	32
24	24	16	13	11	11	10	20	73	223	47	46	31
25	26	17	13	11	11	11	19	104	212	43	44	30
26	25	17	13	11	11	11	16	120	192	41	43	30
27	24	17	12	11	11	11	18	136	170	56	43	29
28	24	16	12	12	11	12	19	159	176	52	43	26
29	24	16	12	12	11	11	19	199	290	52	40	26
30	24	16	12	12	---	11	22	199	195	52	40	25
31	24	---	12	12	---	10	---	136	---	66	37	---
TOTAL	777	569	434	357	334	315.8	494.6	2415	6989	2548	1555	1015
MEAN	25.1	19.0	14.0	11.5	11.5	10.2	16.5	77.9	233	82.2	50.2	33.8
MAX	29	25	16	12	12	12	24	199	325	167	87	50
MIN	23	15	12	11	10	9.0	9.8	22	120	41	37	25
AC-FT	1540	1130	861	708	662	626	981	4790	13860	5050	3080	2010

CAL YR 1987 TOTAL 26147 MEAN 71.6 MAX 526 MIN 10 AC-FT 51860
WTR YR 1988 TOTAL 17803.4 MEAN 48.6 MAX 325 MIN 9.0 AC-FT 35310

07086500 CLEAR CREEK ABOVE CLEAR CREEK RESERVOIR, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	16	15	12	13	9.8	11	37	244	179	127	35
2	26	16	14	12	13	9.8	9.8	36	240	179	112	34
3	26	16	14	13	13	9.4	9.8	36	219	173	104	32
4	25	16	14	13	13	9.2	8.9	35	183	173	91	31
5	25	15	14	13	12	9.0	9.8	32	183	170	81	31
6	24	15	14	13	12	9.4	13	35	212	165	76	31
7	24	15	16	12	11	10	15	43	209	153	70	31
8	24	15	13	12	10	11	18	53	226	148	65	32
9	24	18	14	12	11	12	22	75	195	136	64	36
10	23	16	14	12	12	12	19	94	183	134	66	34
11	24	16	15	12	12	12	16	92	189	122	68	32
12	23	13	15	12	12	11	15	89	226	156	76	38
13	23	16	15	11	12	11	13	83	200	156	73	43
14	23	16	15	11	12	11	15	85	202	131	70	37
15	22	16	15	11	11	11	16	78	240	116	64	36
16	21	14	14	11	10	10	21	70	325	106	58	35
17	20	14	14	11	11	11	22	66	320	98	58	34
18	18	13	14	11	10	11	26	65	300	94	64	32
19	21	13	15	11	10	10	31	81	305	91	61	31
20	21	13	15	12	10	10	37	112	268	87	58	55
21	20	13	14	12	9.8	10	50	145	244	83	53	58
22	20	14	15	12	9.8	10	53	148	186	83	50	48
23	19	16	15	12	9.6	11	58	189	165	94	47	43
24	19	16	14	12	9.6	11	64	212	156	114	46	40
25	18	15	14	12	9.8	11	64	205	176	110	42	38
26	18	14	14	11	9.8	11	64	159	179	108	42	37
27	18	14	14	11	9.8	11	58	170	176	106	40	35
28	18	14	13	12	9.6	11	50	209	183	100	38	34
29	18	15	13	12	---	13	43	260	189	127	37	34
30	18	15	13	12	---	11	42	300	183	112	36	34
31	16	---	13	12	---	9.8	---	264	---	100	35	---
TOTAL	665	448	441	367	307.8	329.4	894.3	3558	6506	3904	1972	1101
MEAN	21.5	14.9	14.2	11.8	11.0	10.6	29.8	115	217	126	63.6	36.7
MAX	26	18	16	13	13	13	64	300	325	179	127	58
MIN	16	13	13	11	9.6	9.0	8.9	32	156	83	35	31
AC-FT	1320	889	875	728	611	653	1770	7060	12900	7740	3910	2180
CAL YR 1988	TOTAL 17577.4											
WTR YR 1989	TOTAL 20493.5											
			MEAN 48.0	MAX 325	MIN 9.0	AC-FT 34860						
			MEAN 56.1	MAX 325	MIN 8.9	AC-FT 40650						

157

LOCATION.--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 1.1 mi upstream from Cottonwood Creek.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Elevation of gage is 7,920 ft above National Geodetic Vertical Datum of 1929, from topographic map.

AVERAGE DISCHARGE.--19 years (water years 1964-80, 1987-89), 495 ft³/s, 358,600 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,750 ft³/s at 0930 May 31, gage height, 4.17 ft; minimum daily, 90 ft³/s, Feb. 5-6.

[illegible]

ARKANSAS RIVER BASIN

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.

REMARKS.--There was no specific conductance record Sept. 7-11 and no water temperature record Oct. 27-30. Daily maximum and minimum specific conductance data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 215 microsiemens Feb. 8, 1989; minimum, 67 microsiemens May 31, 1989.

WATER TEMPERATURE: Maximum, 21.0°C Aug. 5, 1988; minimum, 0.0°C many days during winter.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 215 microsiemens Feb. 8; minimum, 67 microsiemens May 31.

WATER TEMPERATURE: Maximum 18.4°C July 5, 19; minimum, 0.0°C many days during winter.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT									
13...	1015	150	180	8.2	7.0	9.1	--	<0.10	0.02
NOV									
16...	1415	143	174	8.4	1.5	10.4	--	<0.10	0.02
DEC									
07...	1645	120	188	8.6	0.0	11.0	--	0.20	0.03
JAN									
26...	1130	104	202	8.4	0.0	11.3	113	0.20	<0.01
FEB									
22...	1710	101	203	8.5	1.5	--	--	0.20	0.02
MAR									
29...	1305	464	113	7.7	6.0	9.6	72	<0.10	0.05
APR									
26...	1220	830	95	8.2	8.0	8.9	65	<0.10	0.03
MAY									
25...	1105	1270	90	8.2	9.5	8.6	56	<0.10	0.01
JUL									
20...	1630	1000	90	8.0	17.5	7.1	68	<0.10	0.01
AUG									
24...	1100	691	96	8.1	13.0	8.3	54	<0.10	<0.01
SEP									
14...	1430	248	145	8.3	10.5	8.5	93	<0.10	0.03
29...	1300	229	138	8.3	12.0	8.3	83	<0.10	0.02

07087200 ARKANSAS RIVER AT BUENA VISTA, CO--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	186	178	200	203	200	105	93	84	83	85	142
2	173	178	179	198	204	197	102	109	87	83	83	141
3	174	178	180	195	208	193	102	118	87	82	82	140
4	176	181	186	193	209	109	99	149	88	81	82	141
5	179	181	189	191	210	105	102	120	96	81	81	142
6	176	179	189	191	211	106	105	117	98	81	81	144
7	176	179	186	196	212	106	108	117	94	84	82	---
8	176	180	185	201	213	109	111	116	92	84	85	---
9	176	177	188	202	211	113	113	113	92	84	83	---
10	177	180	187	198	209	116	109	103	93	84	83	---
11	177	175	187	197	209	112	109	93	96	86	87	---
12	176	179	187	204	206	110	108	85	92	91	89	140
13	174	179	182	205	206	108	106	85	91	89	87	139
14	174	181	178	202	206	111	98	93	91	83	87	141
15	175	176	182	199	206	103	99	101	91	83	84	142
16	176	171	186	199	208	102	100	96	86	83	83	142
17	177	166	185	195	206	106	100	104	81	82	83	142
18	177	175	186	195	203	101	100	135	77	85	88	141
19	177	183	184	193	205	104	100	120	73	87	90	141
20	181	185	185	196	207	103	98	101	77	88	91	142
21	180	183	192	197	210	100	100	94	79	85	93	147
22	179	175	189	198	211	99	95	90	81	84	95	139
23	179	170	188	198	210	94	92	87	85	85	94	140
24	180	174	192	200	212	97	94	88	89	88	97	147
25	180	179	191	200	211	97	101	87	92	85	103	148
26	181	181	189	206	198	98	92	92	91	84	103	141
27	181	185	193	206	197	98	89	98	88	80	102	139
28	182	186	199	206	200	106	94	101	90	80	104	137
29	181	177	204	206	---	108	92	91	89	86	131	137
30	182	186	200	205	---	104	92	80	86	89	141	137
31	183	---	202	202	---	102	---	77	---	87	150	---
MEAN	178	179	188	199	207	113	100	102	88	84	94	---
MAX	183	186	204	206	213	200	113	149	98	91	150	---
MIN	173	166	178	191	197	94	89	77	73	80	81	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11.7	7.2	7.0	4.1	.2	.0	.0	.0	1.9	.3	3.1	.1
2	12.1	7.9	6.9	3.5	.2	.0	.0	.0	.3	.0	2.2	.0
3	11.2	7.9	7.6	4.6	.3	.0	.0	.0	.0	.0	1.7	.0
4	10.6	8.0	5.8	2.8	.3	.0	.0	.0	.0	.0	.4	.0
5	11.3	8.0	3.7	1.1	.3	.0	.1	.0	.0	.0	.3	.0
6	9.9	8.6	5.2	1.5	.3	.0	.0	.0	.1	.0	1.2	.0
7	10.9	8.4	6.3	3.5	.2	.0	.0	.0	.1	.0	2.6	.0
8	11.0	7.4	6.1	3.1	.2	.0	.0	.0	.1	.0	3.7	1.1
9	8.9	6.0	6.0	3.6	.1	.0	.0	.0	.1	.0	5.3	1.1
10	9.0	4.6	4.0	2.3	.2	.0	.0	.0	.1	.0	4.5	1.0
11	10.2	6.1	4.5	2.2	.1	.0	.0	.0	.2	.0	5.1	.8
12	10.4	6.5	2.9	.4	.3	.0	.0	.0	.2	.0	4.9	1.1
13	10.9	7.6	4.6	1.2	.9	.0	.0	.0	.2	.0	5.6	1.0
14	10.1	7.3	5.5	2.7	.9	.0	.0	.0	.4	.0	2.8	.4
15	10.8	7.2	4.4	1.0	.2	.0	.0	.0	.3	.0	4.0	.4
16	11.0	7.0	1.4	.0	.1	.0	.0	.0	.2	.0	5.3	.6
17	11.2	7.4	1.2	.0	.1	.0	.0	.0	.6	.0	4.2	2.3
18	11.0	7.5	.6	.0	.1	.0	.0	.0	1.4	.0	6.0	1.2
19	9.9	7.3	.4	.0	.0	.0	.1	.0	2.3	.1	5.9	2.2
20	9.5	5.6	.4	.0	.1	.0	.0	.0	2.0	.2	3.5	1.6
21	9.4	6.0	.4	.0	.0	.0	.1	.0	1.3	.0	5.0	.1
22	9.2	6.0	.3	.0	.1	.0	.1	.0	1.2	.0	6.5	1.2
23	8.9	5.5	.3	.0	.0	.0	.1	.0	3.2	.0	6.6	2.2
24	9.3	6.0	.4	.0	.0	.0	.1	.0	3.4	.0	6.4	2.1
25	7.5	5.8	.2	.0	.0	.0	.2	.0	4.0	.2	6.7	2.1
26	8.1	4.5	.1	.0	.1	.0	.0	.0	3.5	.2	5.7	2.6
27	---	---	.1	.0	.0	.0	.2	.0	3.1	.0	6.3	2.8
28	---	---	.0	.0	.0	.0	.1	.0	4.6	.0	7.2	2.2
29	---	---	.2	.0	.0	.0	.3	.0	---	---	6.1	3.0
30	---	5.7	.2	.0	.0	.0	.7	.0	---	---	3.2	1.5
31	7.8	4.7	---	---	.0	.0	1.2	.0	---	---	6.7	.3
MONTH	---	---	7.6	.0	.9	.0	1.2	.0	4.6	.0	7.2	.0

07087200 ARKANSAS RIVER AT BUENA VISTA, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	4.4	2.9	9.2	3.9	12.9	10.1	16.5	11.9	16.9	14.4	15.8	11.5
2	5.1	1.7	9.7	5.5	12.7	9.6	16.7	11.6	17.3	14.7	17.4	13.1
3	4.8	2.3	10.6	6.4	11.3	9.3	17.4	12.6	17.1	14.0	16.2	12.3
4	4.9	1.2	10.2	6.0	11.7	8.4	18.1	13.3	17.4	14.4	15.5	12.0
5	6.9	1.2	10.7	4.9	13.5	8.3	18.4	13.6	16.6	13.6	15.5	11.7
6	7.5	2.2	11.9	6.6	13.4	9.7	17.2	14.0	16.8	13.5	15.7	11.4
7	8.2	3.5	12.2	7.7	13.1	8.9	17.8	13.1	17.5	14.1	16.0	11.3
8	8.1	3.8	13.1	8.8	11.8	10.1	17.6	13.8	17.1	13.3	15.1	11.7
9	6.6	2.9	12.6	9.7	11.5	9.5	17.5	12.9	16.7	13.8	14.4	9.7
10	6.1	.6	11.6	9.3	12.0	9.5	15.5	12.8	17.8	14.4	13.4	10.9
11	4.9	2.9	10.6	7.6	12.7	9.2	17.0	13.0	17.0	14.6	12.6	10.0
12	5.6	2.8	10.4	6.9	11.2	9.6	15.4	13.8	16.1	14.0	10.4	9.4
13	7.6	2.3	10.3	6.2	12.9	8.7	17.3	13.4	16.1	14.0	11.7	8.3
14	7.6	3.0	8.3	6.3	14.1	10.1	16.4	13.9	16.9	12.4	12.0	7.7
15	8.5	3.8	10.0	6.2	14.9	9.9	17.0	13.4	17.6	13.6	12.8	8.4
16	8.5	4.5	9.4	6.8	14.6	10.5	18.2	14.3	16.7	13.5	13.2	8.9
17	9.2	4.4	10.4	6.7	14.6	10.8	18.0	13.5	16.0	13.3	13.4	9.7
18	9.7	4.7	13.1	7.6	14.9	10.7	18.1	13.5	17.2	13.2	15.3	10.8
19	8.5	4.5	13.6	9.5	14.5	11.5	18.4	14.1	15.9	13.6	13.7	10.7
20	9.9	4.6	13.4	8.6	14.5	11.4	18.0	14.3	15.7	12.2	13.8	11.3
21	8.5	5.7	13.0	9.8	13.2	10.9	17.0	14.1	15.6	12.3	13.7	9.6
22	9.5	5.4	13.6	8.6	13.5	9.5	16.6	14.0	16.4	13.7	13.6	10.2
23	9.7	5.0	13.3	9.4	12.5	9.6	16.7	14.7	17.5	13.6	13.3	9.2
24	9.5	4.9	13.1	9.5	14.2	10.0	16.6	14.5	15.6	12.7	13.3	9.3
25	9.5	5.7	11.6	8.5	14.7	10.6	16.5	14.5	16.0	11.9	13.5	9.4
26	9.1	5.4	12.7	8.1	14.5	10.6	16.0	13.9	15.5	11.6	13.6	9.9
27	7.7	4.8	12.7	8.7	15.1	10.3	17.1	14.0	16.1	13.2	14.1	10.2
28*	6.0	3.4	13.5	9.1	15.3	10.9	17.8	14.7	15.9	12.1	13.5	10.2
29	6.3	3.2	13.4	9.1	15.6	12.0	16.5	14.2	15.9	11.4	14.2	10.9
30	7.5	3.7	13.0	10.0	16.1	11.9	16.7	14.2	14.7	12.2	13.5	10.0
31	---	---	12.9	9.1	---	---	18.3	14.5	16.4	11.7	---	---
MONTH	9.9	.6	13.6	3.9	16.1	8.3	18.4	11.6	17.8	11.4	17.4	7.7

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.

PERIOD OF RECORD.--October 1964 to September 1982. April to September 1989.

GAGE.--Water-stage recorder. Elevation of gage is 7,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: May 4, and Sept. 6. Records good. 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.--18 years (water years 1965-82), 635 ft³/s; 460,100 acre-ft/yr. This figure supersedes that published in the report for 1982.

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 PERIOD.--April to September: Maximum discharge, 1,800 ft³/s at 0200 May 31, gage height, 6.12 ft, and at 0500 June 18, gage height, 6.12 ft; minimum daily, 283 ft³/s, Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	693	1590	1240	1470	369
2	---	---	---	---	---	---	---	498	1460	1220	1570	371
3	---	---	---	---	---	---	---	426	1430	1210	1540	361
4	---	---	---	---	---	---	---	320	1260	1180	1430	350
5	---	---	---	---	---	---	---	390	1120	1160	1320	342
6	---	---	---	---	---	---	---	387	1050	1150	1260	314
7	---	---	---	---	---	---	---	405	1120	1150	1180	297
8	---	---	---	---	---	---	---	601	436	1190	1200	300
9	---	---	---	---	---	---	---	620	525	1220	1180	293
10	---	---	---	---	---	---	---	605	718	1140	1030	284
11	---	---	---	---	---	---	---	595	888	1050	1100	283
12	---	---	---	---	---	---	---	587	1030	1150	1200	369
13	---	---	---	---	---	---	---	582	992	1320	1430	443
14	---	---	---	---	---	---	---	706	869	1230	1410	397
15	---	---	---	---	---	---	---	726	759	1130	1050	357
16	---	---	---	---	---	---	---	733	831	1410	1280	350
17	---	---	---	---	---	---	---	735	647	1730	1220	343
18	---	---	---	---	---	---	---	758	385	1750	1110	336
19	---	---	---	---	---	---	---	805	481	1710	1010	328
20	---	---	---	---	---	---	---	859	659	1670	979	366
21	---	---	---	---	---	---	---	849	835	1570	1040	369
22	---	---	---	---	---	---	---	956	974	1450	1080	389
23	---	---	---	---	---	---	---	938	1150	1170	1140	384
24	---	---	---	---	---	---	---	920	1300	1040	1280	335
25	---	---	---	---	---	---	---	861	1390	952	1460	329
26	---	---	---	---	---	---	---	892	1140	971	1650	350
27	---	---	---	---	---	---	---	909	955	1060	1600	355
28	---	---	---	---	---	---	---	741	947	990	1530	355
29	---	---	---	---	---	---	---	724	1290	1000	1400	343
30	---	---	---	---	---	---	---	707	1730	1110	1520	341
31	---	---	---	---	---	---	---	---	1760	---	1460	---
TOTAL	---	---	---	---	---	---	---	25810	38043	39049	29617	10403
MEAN	---	---	---	---	---	---	---	833	1268	1260	955	347
MAX	---	---	---	---	---	---	---	1760	1750	1650	1570	443
MIN	---	---	---	---	---	---	---	320	952	979	331	283
AC-FT	---	---	---	---	---	---	---	51190	75460	77450	58750	20630

ARKANSAS RIVER BASIN

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. Datum of gage is 6,883.4 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Estimated daily discharges: Nov. 27, 28, Dec. 28, 29, Jan. 8-15, 27-30, Feb. 3-10, May 25, 26, July 27-31, and Aug. 1-3. Records good except for estimated daily discharges, which are fair. 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.--28 years, 728 ft³/s; 527,400 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, 2,630 ft³/s at 1830 July 12, gage height, 6.18 ft; minimum daily, 140 ft³/s, Feb. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	288	290	384	338	304	280	567	670	1550	1180	1410	345
2	301	308	388	339	302	289	559	495	1400	1160	1400	351
3	304	310	380	341	220	289	558	409	1390	1150	1400	341
4	284	303	372	336	160	420	541	295	1250	1130	1350	335
5	280	305	366	341	150	462	513	329	1110	1110	1250	335
6	314	299	368	341	150	478	522	351	1000	1100	1200	317
7	328	310	381	316	140	507	540	363	1100	1100	1190	292
8	329	314	379	250	150	546	577	390	1170	1140	993	289
9	322	316	358	270	180	550	604	475	1210	1120	984	290
10	323	327	365	320	280	559	594	668	1130	1090	1030	279
11	323	330	360	330	365	651	580	824	1030	1050	1030	272
12	319	350	358	260	350	647	585	996	1110	1210	1100	353
13	302	343	375	220	311	634	577	971	1300	1420	1060	457
14	311	358	370	240	298	640	674	836	1220	1360	1020	431
15	313	371	381	270	290	603	703	731	1100	1270	1040	370
16	305	374	351	289	286	608	714	820	1310	1200	1040	358
17	300	361	347	296	290	625	727	670	1660	1160	1030	352
18	297	377	355	295	294	619	748	408	1710	1070	920	338
19	295	369	362	299	296	621	788	435	1650	970	867	321
20	284	362	348	294	291	624	849	585	1620	917	835	372
21	292	363	342	293	271	602	834	722	1510	989	813	377
22	307	367	353	291	265	607	933	910	1430	1020	766	376
23	308	379	346	297	277	700	919	1050	1150	1100	779	383
24	313	400	332	300	289	702	895	1230	1020	1190	764	347
25	315	403	352	306	302	699	832	1340	912	1360	665	327
26	307	379	360	288	327	703	852	1170	908	1580	643	336
27	303	350	318	270	316	681	880	920	1010	1550	630	346
28	299	360	280	290	286	590	725	892	944	1520	617	347
29	307	396	300	260	---	595	708	1190	949	1480	443	339
30	307	387	317	280	---	587	685	1670	1030	1440	368	333
31	307	---	336	300	---	559	---	1720	---	1410	329	---
TOTAL	9487	10461	10984	9160	7440	17677	20783	24535	36883	37546	28966	10309
MEAN	306	349	354	295	266	570	693	791	1229	1211	934	344
MAX	329	403	388	341	365	703	933	1720	1710	1580	1410	457
MIN	280	290	280	220	140	280	513	295	908	917	329	272
AC-FT	18820	20750	21790	18170	14760	35060	41220	48670	73160	74470	57450	20450
CAL YR 1988	TOTAL	188169	MEAN	514	MAX	2200	MIN	229	AC-FT	373200		
WTR YR 1989	TOTAL	224231	MEAN	614	MAX	1720	MIN	140	AC-FT	444800		

07093740 BADGER CREEK, UPPER STATION, NEAR HOWARD, CO

LOCATION.--Lat 38°39'22", long 105°48'50", in SE1/4 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. 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: May 29 to June 2, and July 2-11. Records good 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 (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 12	1915	*260	*4.45				
No flow, July 17-23.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	---	---	---	---	---	3.8	2.5	.16	.23	.18	.02
2	4.3	---	---	---	---	---	3.4	2.2	.18	.16	.10	.02
3	4.3	---	---	---	---	---	3.2	1.9	.24	.08	.08	.01
4	4.3	---	---	---	---	---	3.1	1.8	.60	.08	.10	.01
5	4.4	---	---	---	---	---	2.5	1.8	1.9	.10	.10	.02
6	4.5	---	---	---	---	---	3.1	1.4	1.4	.10	.24	.02
7	4.5	---	---	---	---	---	3.4	1.1	1.2	.10	.50	.01
8	---	---	---	---	---	---	4.1	1.0	2.4	.10	.27	.06
9	---	---	---	---	---	---	3.9	1.0	2.6	.10	.20	.07
10	---	---	---	---	---	---	2.6	1.3	2.1	.10	.17	.06
11	---	---	---	---	---	---	3.2	1.3	1.8	.10	.16	.07
12	---	---	---	---	---	---	3.3	1.1	3.3	.16	.18	.11
13	---	---	---	---	---	---	3.2	1.3	4.5	2.6	.18	.12
14	---	---	---	---	---	---	5.4	1.3	2.2	.33	.18	.15
15	---	---	---	---	---	---	8.3	1.7	1.5	.06	.14	.11
16	---	---	---	---	---	---	8.0	1.6	1.1	.01	.11	.11
17	---	---	---	---	---	---	8.5	1.5	.86	.00	.11	.10
18	---	---	---	---	---	---	7.9	1.2	.57	.00	.18	.09
19	---	---	---	---	---	---	7.9	.81	.49	.00	.12	.08
20	---	---	---	---	---	---	6.3	.61	.50	.00	.10	.14
21	---	---	---	---	---	---	4.8	.45	.48	.00	.11	.21
22	---	---	---	---	---	---	4.2	.33	1.1	.00	.10	.13
23	---	---	---	---	---	---	3.8	.26	1.1	.00	.10	.13
24	---	---	---	---	---	5.9	3.5	.20	.80	.05	.07	.13
25	---	---	---	---	---	5.7	3.0	.20	.51	.10	.05	.11
26	---	---	---	---	---	4.8	2.9	.21	.40	.13	.05	.10
27	---	---	---	---	---	4.2	3.3	.23	.33	.19	.06	.10
28	---	---	---	---	---	4.2	2.7	.21	.24	.07	.07	.12
29	---	---	---	---	---	4.2	2.6	.18	.27	.27	.05	.12
30	---	---	---	---	---	3.2	3.1	.16	.32	.79	.05	.13
31	---	---	---	---	---	3.3	---	.14	---	.45	.04	---
TOTAL	---	---	---	---	---	---	129.0	30.99	35.15	22.30	4.15	2.66
MEAN	---	---	---	---	---	---	4.30	1.00	1.17	.72	.13	.089
MAX	---	---	---	---	---	---	8.5	2.5	4.5	.16	.50	.21
MIN	---	---	---	---	---	---	2.5	.14	.16	.00	.04	.01
AC-FT	---	---	---	---	---	---	256	61	70	44	8.2	5.3

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 good except those that are estimated, 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 (est) many days.

SEDIMENT LOADS: Maximum daily, 15,600 tons Aug. 14, 1983; minimum daily, 0 ton many days.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily, 7,140 mg/l(est) July 12; minimum daily, 0 mg/L (est) many days.

SEDIMENT LOADS: Maximum daily, 2,510 tons July 12; minimum daily, 0 tons many days.

SUSPENDED SEDIMENT DISCHARGE. WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST.- CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE SUS- PENDED (T/DAY)
MAR				
24...	1430	8.4	1470	33
31...	1210	4.4	1320	16
APR				
06...	1300	4.1	732	8.1
14...	1140	3.6	574	5.6
26...	1625	2.3	126	0.78
MAY				
11...	0925	1.4	106	0.40
11...	1105	1.4	105	0.40
JUL				
14...	1500	0.21	73	0.04

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

07093740 BADGER CREEK, UPPER STATION, NEAR HOWARD, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
JANUARY			FEBRUARY			MARCH			
1	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	5.9	1000	16
25	---	---	---	---	---	---	5.7	1640	27
26	---	---	---	---	---	---	4.8	2020	28
27	---	---	---	---	---	---	4.2	1310	15
28	---	---	---	---	---	---	4.2	1960	25
29	---	---	---	---	---	---	4.2	1610	19
30	---	---	---	---	---	---	3.2	1270	11
31	---	---	---	---	---	---	3.3	1010	10
TOTAL	---	---	---	---	---	---	---	---	---
APRIL			MAY			JUNE			
1	3.8	900	9.2	2.5	225	1.5	.16	---	.01
2	3.4	955	9.1	2.2	650	3.9	.18	---	.01
3	3.2	450	3.9	1.9	700	3.6	.24	---	.01
4	3.1	591	5.5	1.8	200	.97	.60	---	.10
5	2.5	940	7.2	1.8	---	.73	1.9	---	.51
6	3.1	800	6.7	1.4	---	.38	1.4	---	.38
7	3.4	600	5.5	1.1	---	.30	1.2	---	.32
8	4.1	900	10	1.0	---	.27	2.4	---	.97
9	3.9	950	10	1.0	---	.27	2.6	---	1.0
10	2.6	724	6.2	1.3	---	.35	2.1	---	.57
11	3.2	450	3.9	1.3	110	.39	1.8	---	.49
12	3.3	400	3.6	1.1	---	.30	3.3	---	1.3
13	3.2	400	3.5	1.3	---	.35	4.5	---	2.4
14	5.4	600	8.7	1.3	---	.35	2.2	---	.59
15	8.3	500	11	1.7	---	.46	1.5	---	.40
16	8.0	375	8.1	1.6	---	.43	1.1	---	.30
17	8.5	450	10	1.5	---	.40	.86	---	.23
18	7.9	---	11	1.2	---	.32	.57	---	.15
19	7.9	---	11	.81	---	.17	.49	---	.13
20	6.3	---	7.6	.61	---	.08	.50	---	.14
21	4.8	---	5.2	.45	---	.06	.48	---	.13
22	4.2	---	2.8	.33	---	.03	1.1	---	.30
23	3.8	---	2.0	.26	---	.02	1.1	---	.30
24	3.5	---	1.9	.20	---	.01	.80	---	.16
25	3.0	---	1.2	.20	---	.01	.51	---	.07
26	2.9	150	1.2	.21	---	.01	.40	---	.05
27	3.3	120	1.1	.23	---	.01	.33	---	.04
28	2.7	90	.66	.21	---	.01	.24	---	.03
29	2.6	88	.62	.18	---	.01	.27	---	.04
30	3.1	150	1.2	.16	---	.01	.32	---	.04
31	---	---	---	.14	---	.01	---	---	---
TOTAL	129.0	---	169.58	30.99	---	15.71	35.15	---	11.17

ARKANSAS RIVER BASIN

07093740 BADGER CREEK, UPPER STATION, NEAR HOWARD, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
JULY			AUGUST			SEPTEMBER			
1	.23	---	.03	.18	---	---	.02	---	---
2	.16	---	.01	.10	---	---	.02	---	---
3	.08	---	---	.08	---	---	.01	---	---
4	.08	---	---	.10	---	---	.01	---	---
5	.10	---	---	.10	---	---	.02	---	---
6	.10	---	---	.24	---	.01	.02	---	---
7	.10	---	---	.50	---	.03	.01	---	---
8	.10	---	---	.27	---	.01	.06	---	---
9	.10	---	---	.20	---	.01	.07	---	---
10	.10	---	---	.17	---	---	.06	---	---
11	.10	---	---	.16	---	---	.07	---	---
12	16	---	2510	.18	---	---	.11	---	---
13	2.6	---	5.3	.18	---	---	.12	---	---
14	.33	73	.06	.18	---	---	.15	---	---
15	.06	---	---	.14	---	---	.11	---	---
16	.01	---	---	.11	---	---	.11	---	---
17	.00	---	---	.11	---	---	.10	---	---
18	.00	---	---	.18	---	---	.09	---	---
19	.00	---	---	.12	---	---	.08	---	---
20	.00	---	---	.10	---	---	.14	---	---
21	.00	---	---	.11	---	---	.21	---	.01
22	.00	---	---	.10	---	---	.13	---	---
23	.00	---	---	.10	---	---	.13	---	---
24	.05	---	---	.07	---	---	.13	---	---
25	.10	---	---	.05	---	---	.11	---	---
26	.13	---	---	.05	---	---	.10	---	---
27	.19	---	.01	.06	---	---	.10	---	---
28	.07	---	---	.07	---	---	.12	---	---
29	.27	---	.01	.05	---	---	.12	---	---
30	.79	---	.11	.05	---	---	.13	---	---
31	.45	---	.02	.04	---	---	---	---	---
TOTAL	22.30	---	---	4.15	---	---	2.66	---	---

LOCATION.--Lat 38°28'02", long 105°51'34", in SW¼SW¼ 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.

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s, and maximum (*):

Minimum daily discharge, 1.5 ft³/s, Feb. 6-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	7.0	3.4	4.0	3.7	7.8	10	8.3	7.2	5.8	7.5	4.6
2	5.3	7.0	3.4	5.0	3.8	7.8	10	8.4	7.6	5.2	6.1	4.3
3	5.4	7.4	4.0	5.5	2.8	7.5	11	8.3	8.1	4.9	5.9	4.3
4	5.9	7.4	3.6	5.5	2.5	7.2	9.9	8.4	8.5	4.7	5.5	4.6
5	6.0	7.4	3.4	5.5	2.0	7.1	9.6	8.1	8.5	4.9	5.2	4.8
6	6.4	7.4	4.0	5.5	1.5	7.0	9.8	8.1	8.0	4.6	5.7	4.6
7	6.6	7.4	4.5	5.0	1.5	6.7	10	8.1	7.6	4.6	6.7	4.6
8	6.7	7.4	3.5	3.5	1.5	7.1	11	8.1	9.1	4.3	6.5	4.5
9	6.8	7.8	3.8	3.5	2.0	8.9	12	7.9	9.9	4.4	5.9	4.6
10	6.6	7.8	4.0	4.0	3.0	13	11	8.3	9.1	4.3	5.9	4.6
11	6.2	7.8	4.0	4.6	5.0	22	12	8.8	8.2	4.5	8.1	4.6
12	6.6	7.8	4.1	3.8	5.0	25	11	8.9	8.4	6.2	6.5	4.6
13	6.6	7.8	4.4	2.5	4.0	23	10	8.5	13	24	6.6	6.4
14	7.0	7.8	4.9	1.6	4.5	24	9.9	9.2	10	8.4	6.9	5.3
15	7.0	7.8	4.3	2.1	5.0	19	9.9	9.5	8.7	6.5	6.7	4.6
16	7.0	7.0	3.5	3.0	4.5	18	10	9.8	8.1	5.8	5.1	4.6
17	7.0	7.0	3.0	4.0	5.2	16	9.7	9.9	7.6	5.3	4.9	4.5
18	7.0	7.0	3.4	5.0	5.6	17	9.4	9.7	6.9	5.2	5.1	4.6
19	7.0	6.5	4.0	6.0	5.9	15	9.8	8.5	6.9	5.2	5.2	4.3
20	7.0	5.6	4.5	7.0	6.1	16	10	8.2	6.8	5.1	5.1	6.5
21	7.0	4.5	5.0	5.8	7.0	14	9.6	8.1	6.5	5.2	5.2	5.8
22	7.0	5.2	5.0	5.4	7.0	13	9.3	8.0	6.9	5.2	4.9	4.8
23	7.0	6.0	4.5	5.2	7.8	13	8.9	8.0	7.2	5.3	4.9	4.4
24	7.0	5.4	4.0	5.0	7.9	14	8.0	8.0	7.2	5.6	4.6	4.6
25	7.0	5.0	4.0	5.0	7.8	14	7.9	7.8	6.5	7.1	4.6	4.6
26	7.0	4.3	5.0	4.0	8.4	14	7.8	7.8	6.0	6.2	4.6	4.6
27	7.0	3.0	3.2	3.0	8.4	13	7.8	7.9	5.9	6.0	4.6	4.5
28	7.0	3.5	2.3	2.6	8.0	11	8.1	7.6	6.0	5.5	4.6	4.5
29	7.0	4.0	2.0	3.0	---	13	8.4	7.4	5.9	5.8	4.6	4.5
30	7.0	5.0	2.5	3.7	---	12	8.5	7.3	5.7	10	4.4	4.3
31	7.0	---	3.0	3.7	---	9.5	---	7.2	---	10	4.5	---
TOTAL	206.4	192.0	118.2	133.0	137.4	415.6	290.3	258.1	232.0	195.8	172.6	142.1
MEAN	6.66	6.40	3.81	4.29	4.91	13.4	9.68	8.33	7.73	6.32	5.57	4.74
MAX	7.0	7.8	5.0	7.0	8.4	25	12	9.9	13	24	8.1	6.5
MIN	5.3	3.0	2.0	1.6	1.5	6.7	7.8	7.2	5.7	4.3	4.4	4.3
AC-FT	409	381	234	264	273	824	576	512	460	388	342	282
CAL YR 1988	TOTAL 3233.9 MEAN 8.86 MAX 25 MIN 2.0 AC-FT 6410											
WTR YR 1989	TOTAL 2493.5 MEAN 6.83 MAX 25 MIN 1.5 AC-FT 4950											

ARKANSAS RIVER BASIN

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, and Oct. 19, 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, 1,250 mg/L July 13; minimum daily, 1 mg/L Oct. 19.

SEDIMENT LOADS: Maximum daily, 116 tons July 13; minimum daily, 0.02 tons Oct. 19.

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT				
27...	1340	7.0	3	0.06
MAR				
28...	1340	11	25	0.74
30...	1415	8.6	12	0.28
APR				
07...	0810	11	24	0.71
19...	1140	11	17	0.50
MAY				
10...	1340	8.3	21	0.47
JUN				
13...	1255	14	395	15
JUL				
14...	1130	8.6	270	6.3
AUG				
25...	1215	5.1	22	0.30

07093775 BADGER CREEK, LOWER STATION, NEAR HOWARD, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	5.3	---	.50	7.0	---	---	3.4	---	---
2	5.3	---	.43	7.0	---	---	3.4	---	---
3	5.4	---	.44	7.4	---	---	4.0	---	---
4	5.9	---	.48	7.4	---	---	3.6	---	---
5	6.0	---	.45	7.4	---	---	3.4	---	---
6	6.4	---	.40	7.4	---	---	4.0	---	---
7	6.6	---	.40	7.4	---	---	4.5	---	---
8	6.7	---	.45	7.4	---	---	3.5	---	---
9	6.8	---	.46	7.8	---	---	3.8	---	---
10	6.6	---	.30	7.8	---	---	4.0	---	---
11	6.2	---	.20	7.8	---	---	4.0	---	---
12	6.6	8	.14	7.8	---	---	4.1	---	---
13	6.6	---	.14	7.8	---	---	4.4	---	---
14	7.0	7	.13	7.8	---	---	4.9	---	---
15	7.0	---	.07	7.8	---	---	4.3	---	---
16	7.0	2	.04	7.0	---	---	3.5	---	---
17	7.0	2	.04	7.0	---	---	3.0	---	---
18	7.0	---	.03	7.0	---	---	3.4	---	---
19	7.0	1	.02	6.5	---	---	4.0	---	---
20	7.0	2	.04	5.6	---	---	4.5	---	---
21	7.0	---	.04	4.5	---	---	5.0	---	---
22	7.0	2	.04	5.2	---	---	5.0	---	---
23	7.0	2	.04	6.0	---	---	4.5	---	---
24	7.0	---	.05	5.4	---	---	4.0	---	---
25	7.0	2	.04	5.0	---	---	4.0	---	---
26	7.0	2	.04	4.3	---	---	5.0	---	---
27	7.0	4	.08	3.0	---	---	3.2	---	---
28	7.0	---	.08	3.5	---	---	2.3	---	---
29	7.0	---	.08	4.0	---	---	2.0	---	---
30	7.0	---	.08	5.0	---	---	2.5	---	---
31	7.0	---	.08	---	---	---	3.0	---	---
TOTAL	206.4	---	5.81	190.4	---	---	109.7	---	---
JANUARY			FEBRUARY			MARCH			
1	4.0	---	---	3.7	---	---	7.8	---	---
2	5.0	---	---	3.8	---	---	7.8	---	---
3	5.5	---	---	2.8	---	---	7.5	---	---
4	5.5	---	---	2.5	---	---	7.2	---	---
5	5.5	---	---	2.0	---	---	7.1	---	---
6	5.5	---	---	1.5	---	---	7.0	---	---
7	5.0	---	---	1.5	---	---	6.7	---	---
8	3.5	---	---	1.5	---	---	7.1	---	---
9	3.5	---	---	2.0	---	---	8.9	---	---
10	4.0	---	---	3.0	---	---	13	---	---
11	4.6	---	---	5.0	---	---	22	---	---
12	3.8	---	---	5.0	---	---	25	---	---
13	2.5	---	---	4.0	---	---	23	---	---
14	1.6	---	---	4.5	---	---	24	---	---
15	2.1	---	---	5.0	---	---	19	---	---
16	3.0	---	---	4.5	---	---	18	---	---
17	4.0	---	---	5.2	---	---	16	---	---
18	5.0	---	---	5.6	---	---	17	---	---
19	6.0	---	---	5.9	---	---	15	---	---
20	7.0	---	---	6.1	---	---	16	---	---
21	5.8	---	---	7.0	---	---	14	---	---
22	5.4	---	---	7.0	---	---	13	---	---
23	5.2	---	---	7.8	---	---	13	---	---
24	5.0	---	---	7.9	---	---	14	---	---
25	5.0	---	---	7.8	---	---	14	---	---
26	4.0	---	---	8.4	---	---	14	---	---
27	3.0	---	---	8.4	---	---	13	---	---
28	2.6	---	---	8.0	---	---	11	---	---
29	3.0	---	---	---	---	---	13	---	---
30	3.7	---	---	---	---	---	12	---	---
31	3.7	---	---	---	---	---	9.5	---	---
TOTAL	140.6	---	---	167.2	---	---	415.6	---	---

ARKANSAS RIVER BASIN

07093775 BADGER CREEK, LOWER STATION, NEAR HOWARD, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	10	---	.59	8.3	---	.22	7.2	---	.39
2	10	---	.59	8.4	---	.23	7.6	---	.41
3	11	---	.65	8.3	---	.22	8.1	---	.87
4	9.9	---	.59	8.4	---	.23	8.5	---	.92
5	9.6	---	.57	8.1	---	.33	8.5	---	.92
6	9.8	---	.58	8.1	---	.33	8.0	---	1.1
7	10	22	.59	8.1	---	.33	7.6	---	1.0
8	11	22	.65	8.1	---	.33	9.1	---	4.9
9	12	31	1.0	7.9	---	.38	9.9	---	2.7
10	11	18	.53	8.3	22	.49	9.1	---	2.4
11	12	20	.65	8.8	---	.48	8.2	---	2.2
12	11	36	1.1	8.9	---	.48	8.4	---	2.3
13	10	12	.32	8.5	---	.46	13	520	18
14	9.9	18	.48	9.2	---	.50	10	---	9.4
15	9.9	13	.35	9.5	---	.51	8.7	---	2.3
16	10	15	.40	9.8	---	.53	8.1	---	2.2
17	9.7	20	.52	9.9	---	.53	7.6	---	2.0
18	9.4	24	.61	9.7	---	.52	6.9	---	1.9
19	9.8	21	.56	8.5	---	.46	6.9	---	1.9
20	10	20	.54	8.2	---	.44	6.8	---	1.8
21	9.6	15	.39	8.1	---	.44	6.5	---	.88
22	9.3	---	.25	8.0	---	.43	6.9	---	.93
23	8.9	---	.24	8.0	---	.43	7.2	---	.97
24	8.0	---	.22	8.0	---	.43	7.2	---	.97
25	7.9	---	.21	7.8	---	.42	6.5	---	.88
26	7.8	---	.21	7.8	---	.42	6.0	---	.32
27	7.8	---	.21	7.9	---	.43	5.9	---	.32
28	8.1	---	.22	7.6	---	.41	6.0	---	.32
29	8.4	---	.23	7.4	---	.40	5.9	---	.32
30	8.5	---	.23	7.3	---	.39	5.7	---	.31
31	---	---	---	7.2	---	.39	---	---	---
TOTAL	290.3	---	14.28	258.1	---	12.65	232.0	---	65.83
JULY			AUGUST			SEPTEMBER			
1	5.8	---	.31	7.5	---	3.0	4.6	---	.30
2	5.2	---	.28	6.1	---	1.6	4.3	---	.23
3	4.9	---	.26	5.9	---	1.6	4.3	---	.23
4	4.7	---	.25	5.5	---	.74	4.6	---	.25
5	4.9	---	.26	5.2	---	.70	4.8	---	.26
6	4.6	---	.25	5.7	---	.77	4.6	---	.25
7	4.6	---	.25	6.7	---	.90	4.6	---	.25
8	4.3	---	.23	6.5	---	.88	4.5	---	.24
9	4.4	---	.24	5.9	---	.80	4.6	---	.25
10	4.3	---	.23	5.9	---	.80	4.6	---	.25
11	4.5	---	.24	8.1	954	74	4.6	---	.25
12	6.2	543	23	6.5	---	1.8	4.6	---	.25
13	24	1250	116	6.6	---	1.8	6.4	---	2.6
14	8.4	360	8.2	6.9	346	13	5.3	---	1.4
15	6.5	---	1.8	6.7	---	2.7	4.6	---	1.2
16	5.8	---	1.6	5.1	---	1.4	4.6	---	.62
17	5.3	---	.72	4.9	---	1.3	4.5	---	.61
18	5.2	---	.70	5.1	---	1.4	4.6	---	.62
19	5.2	---	.70	5.2	---	1.4	4.3	---	.58
20	5.1	---	.69	5.1	---	.69	6.5	---	3.5
21	5.2	---	.70	5.2	---	.70	5.8	---	2.3
22	5.2	---	.70	4.9	---	.66	4.8	---	1.3
23	5.3	---	.72	4.9	---	.66	4.4	---	.59
24	5.6	---	1.5	4.6	---	.37	4.6	---	.25
25	7.1	327	12	4.6	24	.30	4.6	---	.25
26	6.2	---	1.7	4.6	---	.30	4.6	---	.25
27	6.0	---	1.6	4.6	---	.30	4.5	---	.12
28	5.5	---	.74	4.6	---	.30	4.5	---	.12
29	5.8	---	.78	4.6	---	.30	4.5	---	.12
30	10	204	6.8	4.4	---	.28	4.3	---	.06
31	10	---	5.4	4.5	---	.29	---	---	---
TOTAL	195.8	---	188.85	172.6	---	115.74	142.1	---	19.50

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.

WATER DISCHARGE RECORDS

REVISED RECORDS.--WSP 1117: Drainage area.

REMARKS.--Estimated daily discharges: Dec. 27-30, Jan. 8-9, 13-14, and Feb. 3-9. Records good except for estimated daily discharges, which are 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.

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, 2,220 ft³/s at 0130 July 13, gage height, 5.05 ft; minimum daily, 280 ft³/s, Feb. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	354	375	434	376	380	370	604	699	1750	1260	1510	350
2	334	358	434	375	366	379	612	611	1550	1290	1610	379
3	368	386	422	375	360	394	602	457	1540	1280	1650	365
4	354	364	414	385	330	392	590	370	1460	1270	1560	352
5	351	359	404	385	300	543	552	284	1320	1250	1430	359
6	356	360	420	385	290	549	550	356	1150	1220	1370	346
7	412	362	419	353	280	601	555	352	1170	1210	1330	318
8	407	372	419	320	300	656	577	374	1300	1240	1170	301
9	400	379	386	350	370	694	626	414	1370	1250	1080	313
10	390	383	390	369	468	708	634	606	1320	1220	1070	310
11	389	382	392	384	480	737	617	830	1210	1180	1130	295
12	388	401	385	366	460	771	618	1040	1220	1210	1200	328
13	376	393	411	310	428	737	615	1090	1440	1620	1220	473
14	375	401	401	330	362	719	648	984	1420	1550	1150	521
15	385	421	414	361	355	672	739	880	1290	1450	1140	434
16	378	435	372	354	348	656	751	848	1340	1370	1150	392
17	368	404	372	368	352	666	767	816	1730	1330	1130	384
18	360	424	372	362	366	664	780	583	1860	1240	1060	370
19	358	430	400	358	396	655	812	419	1820	1130	980	358
20	358	406	400	358	404	673	884	538	1800	1050	923	422
21	347	408	368	354	386	641	883	722	1680	1060	896	474
22	372	413	372	348	368	648	959	941	1630	1170	863	429
23	377	430	365	350	371	702	1000	1120	1410	1200	842	439
24	376	450	349	350	388	762	946	1320	1230	1280	843	428
25	380	471	375	354	391	761	897	1470	1090	1500	776	386
26	370	444	387	347	463	764	868	1380	1040	1700	716	381
27	370	415	350	332	482	754	906	1110	1110	1740	692	400
28	362	424	330	345	405	691	831	1000	1100	1660	679	405
29	368	431	340	333	---	641	726	1160	1060	1520	594	402
30	376	428	350	350	---	646	704	1670	1110	1560	425	392
31	380	---	353	365	---	614	---	1840	---	1610	381	---
TOTAL	11539	12109	12000	11052	10649	19860	21853	26284	41520	41620	32570	11506
MEAN	372	404	387	357	380	641	728	848	1384	1343	1051	384
MAX	412	471	434	385	482	771	1000	1840	1860	1740	1650	521
MIN	334	358	330	310	280	370	550	284	1040	1050	381	295
AC-FT	22890	24020	23800	21920	21120	39390	43350	52130	82350	82550	64600	22820
CAL YR 1988	TOTAL 216293											
WTR YR 1989	TOTAL 252562											
	MEAN 591	MEAN 692		MAX 2400	MIN 308	AC-FT 429000						
				MAX 1860	MIN 280	AC-FT 501000						

ARKANSAS RIVER BASIN

07094500 ARKANSAS RIVER AT PARKDALE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1981 to September 1982, 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.

REMARKS.--There was no specific conductance record Feb. 4-5. Records are good. Daily maximum and minimum specific conductance data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 468 microsiemens Apr. 24, 1987; 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, 393 microsiemens Oct. 23; minimum, 136 microsiemens June 1.

WATER TEMPERATURE: Maximum 21.6°C July 5, 20; minimum, 0.0°C many days during winter.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	OXYGEN, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT								
14...	1120	385	353	8.4	8.4	--	<0.10	0.02
NOV								
17...	1110	400	324	8.9	11.1	--	<0.10	<0.01
DEC								
09...	1215	365	318	8.5	12.2	--	0.30	0.03
JAN								
20...	1400	328	314	8.6	11.9	193	0.30	0.04
MAR								
01...	1345	377	338	8.4	10.5	199	0.10	0.02
31...	1150	613	221	8.7	10.0	129	<0.10	0.05
APR								
28...	1100	793	156	8.5	9.4	93	<0.10	0.03
MAY								
24...	1200	1320	159	8.3	8.6	94	0.10	0.02
JUL								
19...	1400	1110	186	8.2	7.9	96	0.10	0.01
AUG								
16...	1100	1150	188	8.0	8.0	109	<0.10	<0.01
SEP								
13...	1300	480	320	8.3	9.4	179	0.10	0.07
27...	1115	400	338	8.5	8.8	181	<0.10	0.02

07094500 ARKANSAS RIVER AT PARKDALE, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	351	336	310	323	316	341	230	186	140	176	174	290
2	352	340	308	315	318	340	229	190	147	166	167	298
3	355	338	309	311	339	336	229	216	151	166	162	298
4	339	334	308	307	356	331	224	240	158	165	161	298
5	324	336	301	302	---	292	223	266	174	167	163	302
6	327	338	316	298	---	250	222	278	188	169	167	305
7	326	337	314	307	329	249	224	264	186	170	169	309
8	319	335	314	331	338	257	222	256	180	171	173	314
9	320	331	315	347	343	291	219	252	183	172	184	317
10	325	332	317	339	328	304	215	235	183	174	184	322
11	327	329	316	316	311	311	217	206	186	180	185	322
12	327	329	315	312	302	289	208	186	194	186	189	323
13	327	324	311	322	304	278	213	171	187	206	214	318
14	334	325	308	336	314	273	216	171	181	203	197	295
15	336	321	290	333	318	270	199	186	183	194	198	299
16	337	319	291	326	321	272	191	199	183	192	194	310
17	343	317	319	319	320	267	191	194	163	187	193	308
18	348	317	325	313	320	256	189	214	148	189	196	309
19	353	310	316	310	317	253	187	253	148	195	203	308
20	356	314	316	308	310	247	179	262	148	197	210	310
21	358	316	319	308	306	247	173	231	151	197	213	320
22	359	316	322	309	308	249	173	202	155	196	215	316
23	356	315	322	309	316	242	165	181	167	195	220	312
24	351	309	324	308	316	229	162	165	182	195	221	308
25	351	300	324	307	335	225	158	158	192	192	220	315
26	352	279	312	311	335	225	171	156	196	177	227	323
27	350	298	321	322	332	225	167	171	192	167	232	326
28	341	311	340	325	339	228	167	184	184	164	235	325
29	341	311	350	322	---	237	183	182	189	165	240	328
30	338	312	348	323	---	238	185	155	187	171	258	330
31	336	---	339	318	---	234	---	140	---	172	278	---
MEAN	341	321	317	317	---	267	198	205	174	181	201	312
MAX	359	340	350	347	---	341	230	278	196	206	278	330
MIN	319	279	290	298	---	225	158	140	140	164	161	290

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	12.9	9.7	8.9	6.5	.4	.3	.5	.4	1.1	.0	6.4	2.4
2	14.0	10.0	9.6	6.6	.6	.3	.6	.4	.2	.0	7.5	3.2
3	14.3	11.2	9.5	6.7	.4	.2	.6	.4	.1	.0	5.6	1.8
4	13.2	10.6	9.4	6.7	.2	.2	.5	.4	.2	.0	1.9	.1
5	13.3	9.9	7.6	5.3	.2	.2	.8	.4	.0	.0	2.3	.1
6	12.5	10.8	7.2	4.7	.2	.1	.8	.4	.0	.0	4.5	.5
7	12.8	10.3	8.1	5.5	.1	.1	.6	.4	.0	.0	8.0	3.6
8	13.9	10.5	7.4	5.1	.1	.0	.5	.4	.0	.0	9.5	5.1
9	12.1	9.8	8.6	6.4	.2	.0	.6	.4	.1	.0	10.1	5.5
10	11.7	8.1	6.8	5.0	.2	.0	.5	.4	.1	.0	10.4	5.9
11	12.0	8.3	6.9	4.1	.3	.0	.4	.4	.1	.0	10.0	6.2
12	12.2	8.5	6.0	4.2	.3	.1	.4	.4	.1	.0	9.1	6.7
13	13.1	9.5	6.5	3.6	.6	.1	.5	.4	.1	.0	9.1	5.7
14	13.1	9.7	7.7	5.5	1.8	.5	.5	.5	.1	.0	7.7	5.2
15	13.2	10.0	7.1	5.0	.5	.1	.5	.5	.2	.0	6.9	3.8
16	12.7	9.6	4.6	2.4	.5	.2	.5	.5	.3	.0	8.8	4.1
17	13.3	10.0	3.5	1.3	.4	.2	.5	.5	.3	.0	9.0	6.5
18	13.3	10.3	2.8	1.7	.4	.2	.5	.5	.3	.0	8.5	5.4
19	12.9	9.7	2.8	.9	.6	.2	.5	.5	.8	.0	9.4	6.0
20	12.0	8.9	1.7	.8	.6	.3	.5	.5	.7	.0	8.0	4.0
21	11.9	8.8	1.0	.8	.5	.3	.5	.4	1.9	.0	7.1	2.5
22	11.3	8.6	1.7	.8	.5	.3	.5	.3	1.8	.0	9.7	4.8
23	11.0	7.8	3.7	.9	.5	.3	.4	.2	2.4	.0	10.1	6.6
24	11.0	7.6	4.4	3.1	.5	.3	.4	.1	3.5	.0	10.2	6.6
25	9.6	8.1	2.6	.6	.5	.3	.1	.1	7.2	3.2	10.7	7.1
26	9.4	6.2	.6	.6	.6	.3	.2	.0	7.8	4.0	10.9	8.0
27	9.6	7.0	.6	.5	.5	.3	.0	.0	7.3	3.9	10.3	6.9
28	8.0	5.8	.5	.5	.5	.3	.1	.0	5.2	3.4	11.3	7.2
29	8.7	6.2	.5	.4	.6	.3	.1	.0	---	---	9.8	7.9
30	8.6	6.8	.4	.4	.6	.4	.4	.0	---	---	9.0	6.7
31	9.7	6.8	---	---	.6	.4	.7	.0	---	---	10.2	6.1
MONTH	14.3	5.8	9.6	.4	1.8	.0	.8	.0	7.8	.0	11.3	.1

ARKANSAS RIVER BASIN

07094500 ARKANSAS RIVER AT PARKDALE, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.4	7.2	11.0	7.0	15.8	12.9	19.9	16.9	21.2	18.7	20.0	16.2
2	10.5	6.8	12.6	9.6	16.5	13.0	19.6	15.8	20.3	17.8	21.5	17.1
3	10.2	8.0	14.5	10.6	14.6	12.4	20.4	17.0	19.8	17.1	20.9	17.3
4	10.6	7.9	14.3	10.9	13.2	11.0	21.4	17.9	19.8	17.2	19.7	16.7
5	10.6	6.1	16.3	10.6	16.0	11.5	21.6	18.5	20.3	17.5	20.2	15.8
6	11.5	8.2	16.8	12.2	17.2	13.5	21.4	18.3	19.2	16.6	19.0	16.0
7	13.6	9.6	17.0	12.6	15.9	13.4	20.5	17.2	19.3	16.4	20.1	15.6
8	12.0	9.7	18.2	14.1	15.6	14.3	20.8	17.4	20.0	16.9	19.9	16.8
9	10.2	4.2	16.2	13.7	14.7	13.0	20.4	17.5	18.7	16.8	16.6	14.7
10	8.3	2.7	15.4	12.8	16.1	12.5	19.1	16.9	20.0	17.7	18.5	14.6
11	7.9	6.2	14.3	12.2	16.3	13.2	18.9	16.8	19.4	17.8	15.2	11.2
12	7.6	5.6	15.0	11.7	15.4	13.8	19.2	17.0	19.1	17.4	11.1	9.3
13	9.9	4.7	13.4	11.2	15.4	12.7	20.1	15.9	18.4	16.8	11.9	8.5
14	12.0	7.3	12.2	10.3	16.3	13.6	21.0	18.1	19.0	15.6	14.1	10.0
15	11.8	9.1	12.7	10.5	18.3	14.5	19.8	17.5	19.5	16.8	15.8	11.1
16	12.1	9.4	12.8	10.5	17.1	15.6	20.9	17.8	19.4	16.7	16.9	12.6
17	12.8	10.1	13.2	10.9	18.4	14.5	20.4	17.4	19.4	16.4	17.2	13.3
18	13.4	10.2	16.7	11.3	18.2	14.8	20.3	17.4	19.5	16.4	18.5	14.3
19	12.7	10.7	18.8	13.6	17.7	15.3	21.0	17.7	19.0	16.3	16.4	14.3
20	14.1	10.6	18.7	14.0	19.1	14.6	21.6	18.2	19.4	15.8	18.6	14.7
21	14.1	11.6	18.6	15.9	16.4	13.3	20.7	17.8	18.9	14.4	16.0	13.3
22	13.2	11.2	17.3	14.7	13.3	11.4	19.5	17.7	18.3	15.7	17.0	13.6
23	14.2	10.9	17.3	13.9	16.0	12.2	19.1	17.0	19.4	15.7	15.8	12.6
24	14.2	10.9	17.4	14.1	18.4	13.8	18.7	17.5	19.5	16.6	16.3	12.2
25	14.4	11.3	15.7	13.3	19.1	15.7	19.1	16.7	19.0	15.5	16.8	13.0
26	14.1	11.0	14.6	11.2	18.9	15.8	19.0	16.5	18.8	14.8	16.7	13.0
27	12.1	10.1	15.9	12.1	18.9	15.4	19.8	16.1	18.6	16.3	17.1	13.6
28	10.1	8.5	17.2	13.9	18.4	15.8	20.2	17.9	17.9	15.5	17.5	14.2
29	8.9	7.0	18.1	14.5	19.2	16.5	18.7	17.4	19.4	15.3	17.7	14.5
30	8.5	6.6	16.9	14.3	20.3	16.8	18.9	16.8	19.7	16.0	17.6	14.1
31	---	---	15.8	13.2	---	---	20.1	17.3	20.6	16.6	---	---
MONTH	14.4	2.7	18.8	7.0	20.3	11.0	21.6	15.8	21.2	14.4	21.5	8.5

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 September 1984. Monthly discharge only for some periods, published in WSP 1311. *current year*

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: Water year 1988, Nov. 11-24, Nov. 26 to Dec. 4, Dec. 6 to Feb. 19, Feb. 22 to Mar. 26, Mar. 30 to Apr. 6, and Apr. 14-20. Estimated daily discharges for current year, Nov. 20-23, and Nov. 25 to Mar. 21. 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.--63 years (water years 1925-61, 1963-88), 34.5 ft³/s; 25,000 acre-ft/yr; 64 years (water years 1925-61, 1963-89), 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 WATER YEAR 1988.--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 30	0700	*453	*2.50	Aug. 4	2330	314	2.12

Minimum daily discharge, 6.4 ft³/s, May 15, 16.

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)
Dec. 28	0330	---	*1.56	Mar. 22	2000	*144	1.43

Minimum daily discharge, 3.6 ft³/s, July 9-10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	19	26	15	19	26	28	17	22	183	91	25
2	18	20	26	13	22	27	30	19	18	106	91	40
3	17	20	27	16	19	23	49	20	14	84	82	37
4	16	18	29	17	14	25	46	18	12	70	118	34
5	17	19	29	19	11	25	48	17	34	56	156	26
6	17	21	28	14	15	28	59	18	151	54	82	26
7	18	21	28	15	16	27	55	16	108	54	74	21
8	18	20	27	18	22	21	50	15	86	67	64	18
9	18	19	25	16	21	27	40	14	77	50	55	16
10	16	19	24	16	19	26	36	12	74	58	46	15
11	14	20	24	23	16	22	32	16	72	65	39	16
12	14	19	23	19	16	21	31	12	84	46	34	25
13	15	18	22	16	17	16	28	12	74	37	29	44
14	18	19	18	19	15	17	24	7.4	60	28	25	51
15	19	17	14	24	16	23	23	6.4	58	21	21	39
16	17	16	15	24	21	18	26	6.4	58	19	20	34
17	17	15	18	17	18	17	27	6.9	44	18	32	31
18	18	17	22	18	14	18	25	12	35	18	34	27
19	18	18	21	14	21	26	36	21	37	19	31	26
20	17	18	19	12	16	36	45	88	39	22	26	26
21	17	18	19	13	14	42	36	81	34	19	21	25
22	18	19	22	14	15	46	32	50	31	14	20	26
23	18	21	24	19	14	43	29	32	40	12	21	25
24	17	24	17	17	16	50	28	25	43	10	21	26
25	21	25	13	16	18	52	27	26	38	9.8	20	19
26	20	22	12	17	19	52	24	28	52	11	18	18
27	19	21	14	20	20	52	22	28	123	13	22	18
28	19	22	17	21	23	43	22	34	103	23	29	15
29	19	23	19	27	25	35	22	37	108	41	34	14
30	19	24	21	28	---	29	20	26	320	41	26	13
31	19	---	21	21	---	25	---	27	---	58	25	---
TOTAL	545	592	664	558	512	938	1000	748.1	2049	1326.8	1407	776
MEAN	17.6	19.7	21.4	18.0	17.7	30.3	33.3	24.1	68.3	42.8	45.4	25.9
MAX	21	25	29	28	25	52	59	88	320	183	156	51
MIN	14	15	12	12	11	16	20	6.4	12	9.8	18	13
AC-FT	1080	1170	1320	1110	1020	1860	1980	1480	4060	2630	2790	1540

CAL YR 1987 TOTAL 35905.5 MEAN 98.4 MAX 1000 MIN 4.0 AC-FT 71220
WTR YR 1988 TOTAL 11115.9 MEAN 30.4 MAX 320 MIN 6.4 AC-FT 22050

ARKANSAS RIVER BASIN

07095000 GRAPE CREEK NEAR WESTCLIFFE, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	15	24	17	14	22	43	11	12	5.2	32	4.7
2	13	15	22	17	14	25	41	11	13	4.7	40	5.2
3	12	15	22	17	10	22	44	11	12	4.2	26	5.2
4	12	14	21	15	8.5	17	37	11	19	4.2	17	5.4
5	12	14	21	20	8.5	14	34	11	50	3.9	13	5.8
6	14	15	21	13	9.0	20	32	7.1	28	4.2	13	6.4
7	15	15	20	11	8.0	35	30	6.9	17	4.2	11	6.4
8	15	14	18	11	8.5	45	29	6.9	25	4.2	11	6.4
9	14	17	19	13	10	50	30	6.9	27	3.6	9.8	6.9
10	15	20	20	14	13	50	29	12	28	3.6	9.8	6.9
11	15	19	21	9.0	13	50	37	24	21	4.7	12	7.4
12	15	17	20	8.0	13	50	44	17	38	5.8	16	16
13	16	17	23	9.5	11	50	47	15	64	8.0	25	21
14	17	17	25	9.5	11	55	44	13	94	8.3	18	16
15	16	22	22	9.5	10	45	35	13	54	8.0	17	8.9
16	15	20	19	10	11	50	30	13	37	8.0	14	8.9
17	14	21	19	10	12	60	29	30	29	6.9	12	7.4
18	13	21	21	11	12	55	30	24	17	6.4	13	6.4
19	14	20	25	10	15	65	31	14	16	6.4	13	7.4
20	14	18	21	11	14	60	35	8.9	16	5.8	14	16
21	14	18	18	11	13	65	28	8.0	13	5.8	12	13
22	14	20	19	11	13	91	25	7.4	12	5.8	11	12
23	14	24	19	12	13	85	20	7.4	15	6.4	11	13
24	14	27	16	11	13	70	19	8.9	14	6.9	6.4	12
25	16	22	18	9.5	25	63	19	12	9.8	8.0	5.2	12
26	16	19	18	10	24	59	15	14	8.0	8.3	4.7	12
27	17	17	13	12	24	55	14	14	8.0	9.8	5.8	12
28	15	19	12	9.0	22	54	15	14	6.9	8.9	5.8	12
29	15	20	14	10	---	54	15	14	5.8	8.9	5.8	12
30	15	19	13	11	---	49	13	11	5.4	15	5.8	12
31	16	---	14	12	---	41	---	9.8	---	27	5.2	---
TOTAL	450	551	598	364.0	372.5	1526	894	387.2	714.9	221.1	415.3	296.7
MEAN	14.5	18.4	19.3	11.7	13.3	49.2	29.8	12.5	23.8	7.13	13.4	9.89
MAX	17	27	25	20	25	91	47	30	94	27	40	21
MIN	12	14	12	8.0	8.0	14	13	6.9	5.4	3.6	4.7	4.7
AC-FT	893	1090	1190	722	739	3030	1770	768	1420	439	824	589

CAL YR 1988 TOTAL 10913.9 MEAN 29.8 MAX 320 MIN 6.4 AC-FT 21650
WTR YR 1989 TOTAL 6790.7 MEAN 18.6 MAX 94 MIN 3.6 AC-FT 13470

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. 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: Feb. 4-11. 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.--101 years, 730 ft³/s, 528,900 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, 2,060 ft³/s at 0330 July 13, gage height, 7.23 ft; minimum daily, 180 ft³/s, Feb. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230	255	387	369	301	363	639	592	1590	1080	1310	230
2	221	237	393	375	306	369	639	540	1400	1120	1410	245
3	237	260	381	363	275	387	600	405	1350	1110	1450	237
4	240	265	381	357	220	369	570	340	1300	1090	1360	230
5	237	265	375	357	190	498	526	237	1150	1070	1250	234
6	240	270	375	363	190	526	519	255	986	1050	1180	227
7	275	270	381	334	180	592	519	255	986	1040	1140	214
8	275	275	387	245	220	655	533	270	1100	1060	1010	208
9	270	285	363	234	210	743	585	296	1190	1080	905	208
10	270	285	357	351	260	914	592	438	1140	1080	896	211
11	260	285	363	375	300	950	563	663	1030	995	950	208
12	260	296	357	357	320	1000	570	835	1030	1020	1010	224
13	250	301	369	270	387	959	570	896	1240	1440	1100	318
14	245	296	375	275	340	968	592	835	1250	1380	1010	369
15	255	323	381	328	323	835	679	735	1110	1290	995	306
16	255	340	357	318	328	767	687	695	1150	1200	995	265
17	240	323	345	323	328	767	695	751	1530	1150	995	255
18	240	312	345	318	323	759	703	526	1710	1070	932	250
19	240	312	363	306	357	727	727	340	1680	959	835	237
20	237	301	369	301	357	743	801	381	1660	869	775	280
21	230	323	345	296	312	687	809	512	1550	869	743	328
22	240	328	345	290	285	695	852	735	1500	968	703	296
23	245	340	340	290	296	759	887	905	1300	995	679	296
24	245	363	334	296	334	818	835	1100	1080	1090	679	280
25	250	375	351	290	357	818	792	1260	932	1300	615	245
26	250	357	363	290	431	809	751	1180	869	1510	555	240
27	245	357	318	280	464	801	801	932	923	1610	533	255
28	245	375	270	275	393	743	743	809	923	1540	519	260
29	250	393	260	285	---	687	631	941	887	1340	470	260
30	250	393	280	280	---	687	608	1420	932	1360	296	250
31	255	---	340	296	---	655	---	1660	---	1420	250	---
TOTAL	7682	9360	10950	9687	8587	22050	20018	21739	36478	36155	27550	7666
MEAN	248	312	353	312	307	711	667	701	1216	1166	889	256
MAX	275	393	393	375	464	1000	887	1660	1710	1610	1450	369
MIN	221	237	260	234	180	363	519	237	869	869	250	208
AC-FT	15240	18570	21720	19210	17030	43740	39710	43120	72350	71710	54650	15210

CAL YR 1988 TOTAL 189552 MEAN 518 MAX 2350 MIN 221 AC-FT 376000
WTR YR 1989 TOTAL 217922 MEAN 597 MAX 1710 MIN 180 AC-FT 432200

ARKANSAS RIVER BASIN

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. 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.--No estimated daily discharges. Records fair except for June 7 to Aug. 22, 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 observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--23 years (water years 1949-53, 1972-89), 28.7 ft³/s; 20,790 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, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 12	2130	*104	*2.70				

Minimum daily, 1.5 ft³/s, Mar. 24, 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	21	8.7	3.7	2.9	13	2.1	15	12	14	5.1	11
2	17	19	8.8	3.8	2.9	13	5.5	9.5	11	13	5.7	11
3	13	24	9.3	3.9	2.4	14	6.0	7.0	9.9	12	7.2	12
4	15	28	7.2	3.9	2.4	11	6.9	7.0	9.3	10	9.1	11
5	17	34	5.8	4.1	2.4	11	6.3	7.0	6.1	10	9.5	10
6	18	28	5.8	4.5	2.4	13	6.1	9.0	6.1	9.9	10	9.5
7	16	26	5.4	4.2	3.6	13	4.4	11	6.6	9.5	12	9.5
8	14	18	5.4	3.6	3.6	13	3.0	11	9.3	7.5	15	10
9	14	15	6.2	5.5	3.8	13	4.4	11	12	11	15	11
10	17	21	7.3	7.5	5.5	10	6.1	11	12	8.7	14	11
11	22	23	6.8	6.2	8.8	8.0	8.1	9.2	13	8.7	13	13
12	30	24	6.4	4.2	8.1	7.9	7.2	8.7	17	8.9	21	18
13	25	27	5.5	4.2	6.6	7.4	4.6	9.4	19	8.1	26	23
14	20	20	5.4	4.1	5.6	5.9	3.7	13	17	7.6	20	19
15	20	17	5.4	3.8	4.7	5.2	5.5	14	16	7.8	15	18
16	21	29	5.5	4.2	5.9	5.7	7.0	16	13	9.2	13	17
17	22	29	5.8	5.4	7.4	3.2	8.0	8.5	14	8.1	10	16
18	24	25	5.7	5.5	7.2	3.3	6.9	6.6	10	8.4	8.4	14
19	24	18	5.8	5.2	7.4	3.3	8.1	6.2	11	7.2	9.7	12
20	21	17	5.4	4.9	7.8	1.7	9.1	8.3	10	7.7	8.7	17
21	16	17	5.1	4.6	7.7	1.9	8.7	14	12	7.9	9.2	11
22	16	16	5.2	4.5	7.2	2.0	7.8	9.8	14	6.4	8.9	10
23	16	17	4.0	4.7	7.1	2.4	9.6	7.4	14	13	8.2	12
24	20	16	3.5	4.8	7.1	1.5	11	7.2	19	6.8	9.8	11
25	22	16	4.2	5.0	7.0	1.6	11	8.6	15	6.5	10	10
26	26	23	5.2	4.7	8.9	1.5	9.5	11	12	6.2	9.6	11
27	28	21	3.3	4.0	11	1.8	9.4	10	12	5.4	12	11
28	24	6.4	3.6	3.6	13	1.8	13	11	10	4.8	9.7	11
29	20	7.7	3.3	3.2	---	1.6	17	10	11	7.7	9.0	11
30	19	8.7	3.3	3.2	---	1.7	16	9.7	12	6.8	8.2	12
31	20	---	3.5	3.1	---	1.9	---	10	---	6.4	9.2	---
TOTAL	613	611.8	171.8	137.8	170.4	195.3	232.0	307.1	365.3	265.2	351.2	383.0
MEAN	19.8	20.4	5.54	4.45	6.09	6.30	7.73	9.91	12.2	8.55	11.3	12.8
MAX	30	34	9.3	7.5	13	14	17	16	19	14	26	23
MIN	13	6.4	3.3	3.1	2.4	1.5	2.1	6.2	6.1	4.8	5.1	9.5
AC-FT	1220	1210	341	273	338	387	460	609	725	526	697	760

CAL YR 1988 TOTAL 6270.4 MEAN 17.1 MAX 50 MIN 3.3 AC-FT 12440
WTR YR 1989 TOTAL 3803.9 MEAN 10.4 MAX 34 MIN 1.5 AC-FT 7550

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. 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. 9, 10, 17, 18, 29, and Feb. 2-11. Records good except for estimated daily discharges, which are fair. 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.--28 years (water years 1940-52, 1975-89), 794 ft³/s; 575,300 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, 4,030 ft³/s at 1800 Aug. 9, gage height, 6.17 ft; minimum daily, 167 ft³/s, Jan. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	294	284	349	317	401	339	578	732	1610	1070	1460	219
2	280	267	350	306	400	345	572	676	1430	1140	1550	240
3	295	299	345	303	360	369	529	484	1380	1110	1600	239
4	300	323	338	314	340	333	530	419	1340	1090	1510	218
5	311	340	329	310	330	465	501	321	1180	1070	1430	230
6	330	345	325	314	330	507	493	321	999	1050	1290	211
7	369	347	349	291	300	558	483	326	1010	1040	1260	196
8	387	326	347	208	310	613	494	321	1140	1060	1120	178
9	396	325	330	167	340	712	534	310	1260	1080	1180	196
10	404	324	320	295	450	865	555	440	1240	1080	980	218
11	419	325	325	358	490	915	535	658	1100	1020	1020	222
12	388	337	321	327	511	955	546	850	1080	1050	1090	291
13	362	338	328	275	464	917	566	927	1300	1490	1200	368
14	378	335	341	237	404	935	559	910	1320	1460	1070	415
15	369	362	343	355	392	830	660	813	1190	1340	1040	355
16	370	385	315	436	382	741	738	754	1180	1240	1040	304
17	372	373	300	427	396	728	803	798	1540	1180	1010	286
18	382	349	310	395	367	723	797	566	1710	1090	945	270
19	396	352	328	404	326	704	818	351	1680	968	832	252
20	396	331	323	413	326	745	890	391	1680	878	774	308
21	369	331	298	386	300	695	910	539	1580	878	728	361
22	306	332	302	396	268	681	945	748	1520	987	703	333
23	287	344	302	391	278	734	989	917	1330	1060	646	326
24	283	358	297	402	307	802	945	1100	1100	1160	655	326
25	289	390	314	400	313	796	916	1260	918	1350	592	268
26	286	372	314	392	391	792	849	1230	845	1560	511	258
27	279	341	291	355	445	775	899	989	887	1680	484	271
28	273	347	240	382	381	722	878	848	923	1590	483	276
29	273	355	205	373	---	631	785	936	895	1540	440	278
30	279	351	245	398	---	627	769	1410	920	1450	317	265
31	282	---	278	391	---	607	---	1650	---	1530	246	---
TOTAL	10404	10188	9702	10718	10302	21161	21066	22995	37287	37291	29206	8178
MEAN	336	340	313	346	368	683	702	742	1243	1203	942	273
MAX	419	390	350	436	511	955	989	1650	1710	1680	1600	415
MIN	273	267	205	167	268	333	483	310	845	878	246	178
AC-FT	20640	20210	19240	21260	20430	41970	41780	45610	73960	73970	57930	16220

CAL YR 1988 TOTAL 198671 MEAN 543 MAX 2290 MIN 205 AC-FT 394100
WTR YR 1989 TOTAL 228498 MEAN 626 MAX 1710 MIN 167 AC-FT 453200

ARKANSAS RIVER BASIN

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.--There was no minimum temperature record Nov. 27-30, Dec. 1, 4-12, 15-21, Feb. 17, 24, Mar. 7-10, Sept. 1, and no maximum temperature record Feb. 17, 20, 24, 27, Mar. 2-3, 7-9, and Sept. 1. No conductance record Mar. 25 to Apr. 6, and Aug. 30 to Sept. 1. Daily maximum and minimum specific conductance data available in district office.

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, 951 microsiemens Feb. 6; minimum, 196 microsiemens, June 18-19.

WATER TEMPERATURES: Maximum, 24.8°C Sept. 2; minimum, 0.0°C, many days during the winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	HARD- NESS TOTAL (MG/L AS CACO3)
OCT 18...	1200	360	514	8.9	15.5	4.5	12.9	130	100	230
DEC 21...	1230	364	547	8.6	2.0	2.4	13.3	K12	K17	220
FEB 28...	1130	364	519	8.4	5.0	12	11.2	91	K2000	220
APR 26...	1245	858	292	8.5	15.0	12	9.6	1700	6500	110
JUN 29...	1030	897	294	8.5	21.0	2.3	9.0	100	120	120
AUG 23...	1400	631	337	8.9	21.0	4.4	9.0	220	140	140

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY TOTAL FIELD (MG/L AS CACO3)	CAR- BONATE DIS- SOLVED FIELD (MG/L AS CO3)	BICAR- BONATE DIS- SOLVED FIELD (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 18...	62	19	28	2.8	164	8	184	110	10	0.5
DEC 21...	58	19	26	2.1	144	5	166	120	9.3	0.6
FEB 28...	57	19	27	3.3	140	4	164	110	10	0.6
APR 26...	29	8.9	14	1.6	68	3	78	64	4.8	0.3
JUN 29...	33	8.4	12	1.7	79	1	94	53	4.8	0.3
AUG 23...	38	10	16	1.8	95	5	106	70	5.2	0.4

DATE	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)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)
OCT 18...	11	335	340	<0.10	0.02	0.03	0.4	0.05	0.04
DEC 21...	12	344	336	0.36	0.02	0.03	0.4	0.07	0.06
FEB 28...	13	334	327	0.30	0.03	0.04	0.5	0.06	0.06
APR 26...	7.1	169	172	0.11	0.02	0.03	0.3	0.13	0.05
JUN 29...	8.3	190	170	<0.10	<0.01	--	0.3	0.04	0.02
AUG 23...	9.4	200	209	<0.10	<0.01	--	0.3	0.06	0.03

K BASED ON NON-IDEAL COLONY COUNT.

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 18...	20	1	61	<0.5	<1	<1	<3	1	28	<5
DEC 21...	--	--	--	--	--	--	--	--	--	--
FEB 28...	20	<1	63	<0.5	<1	1	<3	2	35	<5
APR 26...	--	--	--	--	--	--	--	--	--	--
JUN 29...	20	<1	37	<0.5	<1	<1	<3	5	18	1
AUG 23...	<10	<1	45	<0.5	<1	1	<3	1	20	<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 18...	23	19	<0.1	<10	<1	1	<1.0	570	<6	12
DEC 21...	--	--	--	--	--	--	--	--	--	--
FEB 28...	20	26	0.5	<10	<1	2	1.0	530	<6	8
APR 26...	--	--	--	--	--	--	--	--	--	--
JUN 29...	10	11	<0.1	<10	1	<1	<1.0	290	<6	12
AUG 23...	11	13	<0.1	<10	<1	<1	<1.0	370	<6	13

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	DIS- CHARGE, SUS- PENDED (MG/L)	SEDIMENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 18...	1200	360	17	17	--
DEC 21...	1230	364	16	16	25
FEB 28...	1130	364	49	48	18
APR 26...	1245	858	49	114	28
JUN 29...	1030	897	38	92	--
AUG 23...	1400	631	21	36	--

ARKANSAS RIVER BASIN

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued

WATER-QUALITY CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	TEMPER- ATURE WATER (DEG C)	PH (STAND- ARD UNITS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	OXYGEN, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)
OCT							
18...	1201	5.00	15.5	9.00	512	12.7	15
18...	1202	15.0	15.5	9.00	500	13.0	18
18...	1203	25.0	15.5	9.00	500	13.0	88
18...	1204	35.0	15.5	9.00	503	12.9	17
18...	1205	45.0	15.5	9.00	505	12.8	25
18...	1206	55.0	15.5	9.00	513	12.7	36
18...	1207	65.0	15.5	9.00	513	12.8	20
18...	1208	75.0	15.5	9.00	510	12.8	23
18...	1209	85.0	15.5	9.00	509	12.9	15
18...	1210	95.0	15.5	9.00	514	13.0	45
18...	1211	105	15.5	9.00	518	13.0	6
AUG							
23...	1330	22.0	21.0	8.90	347	9.4	16
23...	1331	33.0	21.0	8.80	347	9.0	21
23...	1332	45.0	21.0	8.80	344	8.9	24
23...	1333	55.0	21.0	8.80	340	8.9	29
23...	1334	65.0	21.0	8.90	338	9.0	21
23...	1335	75.0	21.0	8.80	333	9.0	23
23...	1336	84.0	21.0	8.90	332	9.0	22
23...	1337	94.0	21.0	8.90	330	9.1	19
23...	1338	103	21.0	8.90	329	9.1	19
23...	1339	113	21.0	8.80	329	9.1	18

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	566	575	493	532	492	570	---	335	207	258	247	---
2	573	589	484	526	497	573	---	334	223	237	235	514
3	579	597	486	532	516	571	---	390	229	239	231	504
4	585	586	491	534	601	562	---	435	234	242	228	504
5	592	570	502	519	725	521	---	506	259	244	244	532
6	596	546	511	515	793	476	---	532	285	246	246	545
7	591	538	515	521	621	451	348	523	290	246	261	542
8	580	547	514	577	529	431	344	514	275	244	272	549
9	573	548	532	628	525	400	338	513	267	237	364	560
10	566	529	533	539	465	368	338	469	294	234	316	559
11	561	531	543	523	504	365	350	382	278	248	301	606
12	571	522	542	482	497	347	353	312	291	262	318	618
13	551	510	538	488	465	346	347	279	279	270	343	558
14	551	506	522	537	501	346	359	305	261	246	302	476
15	536	503	518	473	508	342	324	330	265	235	299	468
16	524	492	550	436	520	347	323	367	266	234	285	483
17	518	506	535	434	521	343	307	344	234	238	275	482
18	511	511	536	502	525	338	306	366	204	244	277	499
19	514	509	547	511	527	348	299	462	200	258	301	511
20	523	509	540	495	524	347	293	463	208	271	326	509
21	521	512	557	497	551	346	286	394	212	280	324	478
22	530	507	543	506	569	342	285	331	222	266	320	484
23	527	507	542	500	585	337	276	287	237	268	343	487
24	535	491	542	516	569	319	286	256	265	257	342	479
25	565	474	520	495	580	---	287	240	285	239	349	497
26	577	473	533	493	541	---	287	248	299	233	362	522
27	570	475	537	532	520	---	287	278	293	213	376	526
28	570	478	564	511	552	---	285	307	280	213	381	513
29	560	484	599	501	---	---	324	302	288	320	383	519
30	561	480	586	494	---	---	325	247	283	250	---	520
31	563	---	574	502	---	---	---	209	---	235	---	---
MEAN	556	520	533	511	547	---	---	363	257	249	---	---
MAX	596	597	599	628	793	---	---	532	299	320	---	---
MIN	511	473	484	434	465	---	---	209	200	213	---	---

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.1	12.1	12.4	8.3	4.9	---	.4	.0	2.8	.5	7.2	2.1
2	17.6	11.3	13.3	8.5	4.8	1.0	2.5	.0	1.1	.0	---	2.5
3	17.6	12.0	12.6	8.7	4.7	1.0	3.3	.0	.0	.0	---	1.9
4	14.8	12.2	11.2	8.5	4.3	---	3.1	.7	.0	.0	4.0	.0
5	15.5	11.5	10.5	6.7	4.3	---	4.9	1.5	.0	.0	2.9	.0
6	15.4	11.9	10.5	5.9	3.7	---	4.2	.6	.0	.0	4.5	.0
7	14.6	12.3	10.5	6.9	1.9	---	2.5	.0	.0	.0	---	---
8	17.3	11.7	9.8	5.9	2.0	---	.1	.0	.0	.0	---	---
9	15.1	11.1	11.2	8.1	2.6	---	.3	.0	.0	.0	---	---
10	15.7	10.5	10.1	6.8	3.2	---	2.1	.0	.0	.0	10.8	---
11	15.7	10.2	8.7	5.8	3.3	---	.2	.0	.0	.0	10.6	7.2
12	16.0	10.5	9.2	5.5	3.7	---	.0	.0	1.9	.0	10.2	7.4
13	16.1	11.1	10.0	5.6	5.3	1.5	.0	.0	3.0	.0	11.0	6.6
14	16.5	11.4	10.0	5.7	3.5	1.0	.0	.0	3.8	.0	8.3	5.4
15	16.8	12.2	8.6	6.0	2.7	---	.2	.0	3.9	.0	8.5	3.9
16	16.2	11.0	7.2	4.1	1.7	---	.5	.0	4.0	.0	10.0	4.6
17	16.8	11.8	6.5	2.5	1.8	---	1.8	.0	---	---	11.4	7.1
18	16.3	12.1	5.1	2.6	3.1	---	3.5	.0	4.9	.0	10.2	5.9
19	15.7	11.4	6.1	2.7	3.1	---	3.8	.0	4.2	.2	10.9	6.4
20	15.5	10.8	4.5	1.5	3.4	---	3.9	.0	---	.4	8.8	4.8
21	15.1	10.3	4.8	1.0	3.4	---	4.4	.0	5.6	.0	9.2	3.0
22	14.0	10.3	5.6	1.3	2.1	.0	4.2	.0	5.6	.0	11.5	5.6
23	13.8	9.4	6.4	2.9	1.5	.0	4.4	.1	6.9	.1	12.0	7.3
24	14.1	8.7	7.8	3.8	1.6	.0	3.3	.0	---	---	12.6	7.4
25	12.6	8.8	4.8	3.4	.6	.0	2.3	.9	10.0	1.4	13.3	7.9
26	13.6	7.8	4.0	1.2	1.9	.0	3.9	.0	10.0	2.0	12.8	8.9
27	12.4	8.1	2.8	---	.3	.0	3.1	.0	---	2.4	12.9	8.6
28	10.0	6.6	3.9	---	.0	.0	2.6	.9	5.8	3.1	13.6	8.3
29	11.5	6.7	3.4	---	.0	.0	4.2	.0	---	---	11.9	8.8
30	12.8	8.2	3.6	---	.0	.0	5.7	.3	---	---	12.1	7.7
31	12.7	8.0	---	---	.5	.0	6.2	1.1	---	---	12.7	6.0
MONTH	17.6	6.6	13.3	---	5.3	---	6.2	.0	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.4	8.0	13.8	7.1	17.4	14.7	23.1	18.8	22.6	19.6	---	---
2	12.8	7.1	13.8	9.7	17.6	14.9	22.4	18.1	22.2	19.4	24.8	17.8
3	12.1	8.8	17.2	10.0	16.0	13.5	23.2	18.2	22.2	18.6	22.7	18.0
4	12.3	8.0	16.3	11.2	15.0	12.8	23.8	18.9	21.8	18.7	22.5	17.6
5	13.3	6.9	18.9	10.1	18.3	12.8	24.4	19.6	21.8	19.0	23.5	16.8
6	15.6	8.5	19.5	11.7	19.7	14.8	24.0	19.6	20.7	18.3	23.0	17.1
7	15.6	9.6	20.1	12.9	19.2	15.0	23.3	18.8	21.3	18.2	23.7	17.0
8	13.5	10.6	21.2	14.5	18.6	15.4	23.3	18.4	22.5	17.5	22.0	17.6
9	10.4	4.7	16.4	13.8	18.0	14.7	23.1	18.6	21.7	18.0	17.9	15.5
10	9.5	3.0	16.7	12.6	18.2	14.1	22.3	18.3	23.5	18.1	20.0	14.4
11	9.1	6.2	16.8	13.2	18.4	14.8	22.4	18.2	22.7	19.0	16.7	13.0
12	9.3	5.9	18.0	13.0	18.0	15.3	21.3	18.4	21.5	18.7	12.7	10.0
13	12.9	5.3	15.6	12.6	17.9	14.5	21.7	18.3	20.5	18.4	13.9	9.8
14	13.9	7.4	13.1	10.8	16.5	14.8	21.7	19.3	21.4	17.0	16.9	10.0
15	14.4	8.9	14.6	11.5	20.4	15.2	22.4	18.7	22.4	17.8	19.2	12.1
16	16.2	10.3	15.1	11.6	20.5	16.2	23.2	18.8	21.9	17.9	20.1	13.1
17	14.9	10.9	15.6	11.6	20.0	16.1	22.8	19.1	22.3	17.6	20.8	14.1
18	16.3	10.5	19.4	12.2	20.0	16.5	23.0	19.0	20.8	17.9	21.3	14.5
19	16.1	10.9	20.9	13.5	19.6	17.2	23.6	18.6	22.2	17.3	18.8	14.7
20	16.9	11.4	22.4	14.6	18.2	16.6	23.3	19.1	21.5	17.5	20.9	15.9
21	17.7	12.5	22.0	16.7	17.9	14.4	23.2	19.2	21.2	16.6	19.4	14.6
22	16.0	12.4	21.3	15.8	14.9	13.1	22.8	18.6	21.3	17.6	19.6	14.5
23	17.1	10.9	20.4	15.4	17.7	12.7	22.0	18.2	22.5	16.8	18.6	13.7
24	17.1	12.1	19.5	15.5	20.7	15.1	21.0	18.3	22.7	17.6	19.3	12.4
25	17.4	12.4	18.4	15.1	22.2	16.9	21.5	17.9	22.5	16.7	19.8	13.3
26	17.1	11.9	14.9	11.5	22.1	16.8	20.0	18.0	22.3	16.1	19.7	13.5
27	14.9	11.4	18.8	11.3	22.2	16.6	21.4	17.6	20.9	17.7	20.0	14.2
28	11.6	9.2	20.7	14.5	20.7	17.4	22.9	19.1	21.1	16.7	20.9	14.6
29	10.1	7.7	20.7	15.1	22.0	17.4	21.8	18.3	21.8	16.3	20.7	14.9
30	9.5	7.7	19.6	16.0	23.0	17.6	21.6	17.9	23.2	16.5	20.8	14.8
31	---	---	17.8	15.5	---	---	21.9	18.5	23.7	17.2	---	---
MONTH	17.7	3.0	22.4	7.1	23.0	12.7	24.4	17.6	23.7	16.1	---	---

ARKANSAS RIVER BASIN

07099215 TURKEY CREEK NEAR FOUNTAIN, CO

LOCATION.--Lat 38°36'42", long 104°53'39", in NW¼SE¼ sec.33, T.16 S., R.67 W., El Paso County, Hydrologic Unit 1120002, on Fort Carson Military Reservation, on right bank 100 ft downstream from State Highway 115 bridge, 0.7 m downstream from Turkey Canyon, 0.8 mi upstream from Turkey Creek Ranch, and 9.4 mi southwest of Fountain.

DRAINAGE AREA.--13.0 mi².

PERIOD OF RECORD.--Streamflow records, May 1978 to current year. Water-Quality data available, May 1978 to September 1982.

REVISED RECORDS.--WDR CO-80-1: 1978 (M), 1979 (M).

GAGE.--Water-stage recorder. Elevation of gage is 6,420 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: June 27 to July 11, and Sept. 13-30. Records fair except those for previous discharges above 150 ft³/s, which are poor. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 1.72 ft³/s; 1,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,020 ft³/s, July 28, 1982, gage height, 4.70 ft, from rating curve extended above 140 ft³/s; no flow many days some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 12	1545	*89	*3.19	June 13	1345	17	2.70

No flow most of time.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.04	.13	.05	.02	.00	.00
2	.00	.00	.00	.00	.00	.00	.02	.12	.07	.01	.00	.00
3	.00	.00	.00	.00	.00	.00	.05	.09	.10	.01	.00	.00
4	.00	.00	.00	.00	.00	.00	.05	.04	.20	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.02	.03	.16	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.01	.02	.09	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.01	.01	.10	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.08	.03	.17	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.05	.06	.52	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.08	.01	.48	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.06	.01	.29	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.04	.02	3.8	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.03	.02	5.4	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.03	.00	2.8	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.02	.00	1.8	.01	.00	.00
16	.00	.00	.00	.00	.00	.00	.01	.42	1.1	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.01	1.5	.83	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.03	1.4	.65	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.02	.96	.43	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.01	.70	.36	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.55	.27	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.43	.36	.00	.00	.00
23	.00	.00	.00	.00	.01	.00	.00	.30	.34	.00	.00	.00
24	.00	.00	.00	.00	.01	.00	.00	.27	.23	.00	.00	.00
25	.00	.00	.00	.00	.00	.04	.00	.20	.16	.00	.00	.00
26	.00	.00	.00	.00	.00	.03	.00	.27	.11	.00	.00	.00
27	.00	.00	.00	.00	.00	.02	.00	.27	.08	.00	.00	.00
28	.00	.00	.00	.00	.00	.02	.00	.17	.06	.00	.00	.00
29	.00	.00	.00	.00	---	.04	.06	.10	.04	.00	.00	.00
30	.00	.00	.00	.00	---	.04	.08	.05	.03	.00	.00	.00
31	.00	---	.00	.00	---	.02	---	.03	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.02	0.21	0.81	8.21	21.08	0.05	0.00	0.00
MEAN	.00	.00	.00	.00	.001	.007	.027	.26	.70	.002	.00	.00
MAX	.00	.00	.00	.00	.01	.04	.08	1.5	5.4	.02	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
AC-FT	.0	.0	.0	.0	.04	.4	1.6	16	42	.1	.0	.0

CAL YR 1988	TOTAL 18.85	MEAN .05	MAX .94	MIN .00	AC-FT 37
WTR YR 1989	TOTAL 30.38	MEAN .08	MAX 5.4	MIN .00	AC-FT 60

07099230 TURKEY CREEK ABOVE TELLER RESERVOIR, NEAR STONE CITY, CO

LOCATION (REVISED).--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).

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: July 25 to Aug. 3. Records poor. Diversions upstream from gage for irrigation, amount unknown.

AVERAGE DISCHARGE.--11 years, 4.20 ft³/s; 3,040 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. 7	0015	*114	7.47	No other peaks greater than base discharge.			
No flow many days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	11	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.9	.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	17.90	0.00
MEAN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.58	.00
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	11	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	36	.0
CAL YR 1988	TOTAL	109.11	MEAN	.30	MAX	8.0	MIN	.00	AC-FT	216		
WTR YR 1989	TOTAL	17.90	MEAN	.05	MAX	11	MIN	.00	AC-FT	36		

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. Elevation of gage is 5,453 ft above National Geodetic Datum of 1929, from topographic map.

REMARKS.--Estimated contents (at 2400): June 29 to Aug. 24. Records good except for estimated contents, which are poor. Reservoir is formed by an earthfill dam completed in about 1908. Maximum capacity of reservoir is 1,780 acre-ft at an uncontrolled spillway elevation of about 88 ft, 1980 survey. There is no 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.

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 573 acre-ft, Oct. 1, elevation, 79.08 ft; minimum contents, 204 acre-ft, Sept. 30, elevation, 72.98 ft.

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	573	516	471	452	432	426	399	359	325	292	306	223
2	571	513	470	452	430	428	399	358	323	290	302	222
3	570	511	469	450	429	426	397	356	321	289	299	221
4	565	506	468	451	431	424	396	356	320	287	296	220
5	564	506	467	451	434	422	395	354	320	286	292	219
6	562	505	466	450	436	424	394	352	318	284	289	218
7	562	503	467	450	436	424	392	352	317	281	286	216
8	561	502	466	447	435	424	390	350	316	279	282	216
9	558	500	465	447	436	423	388	348	315	276	278	216
10	556	498	464	447	435	422	387	348	315	274	275	216
11	555	497	463	448	433	422	385	346	315	271	272	215
12	553	496	463	448	432	422	384	344	316	268	268	218
13	550	495	464	448	431	420	384	346	315	266	265	218
14	548	493	463	448	430	418	382	345	314	264	262	218
15	547	489	464	447	429	417	382	344	313	261	258	217
16	545	488	462	447	427	416	381	344	313	259	254	216
17	542	487	461	445	428	414	378	344	311	298	251	215
18	540	485	463	443	426	414	378	344	310	296	247	214
19	538	483	462	441	425	413	376	342	309	293	244	213
20	536	482	460	441	426	411	375	342	307	290	240	213
21	534	480	462	440	426	410	374	340	309	288	237	211
22	533	479	462	439	426	410	371	339	305	286	235	210
23	530	479	460	438	428	409	370	337	303	283	234	209
24	528	477	459	438	428	408	367	335	302	280	233	209
25	526	477	459	438	430	407	366	333	301	278	231	207
26	526	476	458	438	430	405	363	332	299	275	230	207
27	522	474	456	437	430	405	361	332	299	272	229	206
28	521	473	456	437	426	404	359	331	297	270	228	205
29	519	472	455	438	---	403	360	329	296	267	227	204
30	518	471	454	435	---	401	359	328	294	265	226	204
31	516	---	454	434	---	400	---	325	---	310	225	---
TOTAL	16869	14713	14333	13765	12045	12872	11392	10635	9318	8678	8001	6416
MEAN	544	490	462	444	430	415	380	343	311	280	258	214
MAX	573	516	471	452	436	428	399	359	325	310	306	223
MIN	516	471	454	434	425	400	359	325	294	259	225	204

CAL YR 1988 TOTAL 284878 MEAN 778 MAX 1050 MIN 454
WTR YR 1989 TOTAL 139037 MEAN 381 MAX 573 MIN 204

LOCATION.--Lat 38°26'27", long 104°49'31", in SE1/4 sec. 31, T. 18 S., R. 66 W., Pueblo County, Hydrologic Unit 11020002, on Fort Carson Military Reservation, on left bank, 0.6 mi downstream from Teller Reservoir Dam 0.5 mi upstream from military road No. 11, and 2.1 mi southeast of Stone City.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 5,400 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 12, 1987, at site 0.5 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 1-9, and Dec. 24 to Feb. 22. Records poor. Flow regulated by Teller Reservoir 0.6 mi upstream. Gage records seepage from reservoir. Several observations 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, 1981, gage height, 0.80 ft, at different datum; no flow, Sept. 17, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.19 ft³/s, many days, gage height, 3.46 ft, at different datum; no flow, Sept. 17.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.17	.15	.07	.07	.08	.08	.09	.06	.02	.03	.03
2	.10	.17	.13	.07	.06	.08	.08	.10	.06	.02	.03	.03
3	.10	.17	.13	.07	.06	.08	.08	.10	.06	.02	.02	.03
4	.10	.17	.11	.07	.06	.08	.08	.10	.06	.02	.02	.03
5	.10	.18	.10	.07	.06	.08	.09	.10	.07	.02	.02	.03
6	.11	.19	.09	.07	.06	.08	.08	.10	.06	.02	.02	.03
7	.11	.18	.08	.07	.06	.08	.09	.10	.08	.01	.02	.03
8	.11	.17	.08	.07	.06	.08	.10	.10	.07	.02	.03	.04
9	.12	.19	.08	.07	.06	.08	.10	.10	.06	.02	.03	.04
10	.12	.19	.08	.07	.07	.09	.08	.10	.07	.02	.03	.05
11	.13	.19	.08	.07	.07	.09	.08	.10	.07	.02	.03	.05
12	.12	.19	.08	.07	.08	.08	.08	.10	.07	.02	.03	.04
13	.13	.18	.08	.07	.08	.08	.08	.10	.07	.02	.03	.05
14	.13	.18	.07	.07	.09	.08	.09	.10	.06	.03	.03	.04
15	.13	.18	.07	.07	.10	.08	.08	.10	.06	.02	.03	.03
16	.13	.19	.07	.07	.10	.08	.08	.10	.05	.02	.03	.02
17	.13	.18	.07	.07	.10	.08	.08	.10	.04	.01	.03	.00
18	.15	.19	.07	.07	.10	.08	.08	.10	.04	.02	.03	.01
19	.16	.19	.07	.07	.10	.08	.09	.10	.04	.02	.03	.03
20	.16	.18	.07	.07	.10	.08	.09	.10	.04	.02	.05	.03
21	.18	.19	.07	.07	.10	.08	.08	.10	.03	.02	.04	.03
22	.19	.19	.07	.07	.10	.08	.09	.09	.03	.02	.05	.03
23	.19	.19	.07	.07	.10	.08	.10	.08	.03	.01	.04	.03
24	.15	.19	.07	.07	.10	.08	.10	.08	.03	.02	.03	.03
25	.16	.18	.07	.07	.10	.08	.10	.08	.03	.02	.03	.03
26	.16	.19	.07	.07	.10	.08	.10	.08	.03	.02	.03	.03
27	.16	.19	.07	.07	.09	.08	.10	.08	.03	.02	.03	.03
28	.14	.19	.07	.07	.08	.08	.10	.08	.03	.02	.04	.03
29	.17	.19	.07	.07	---	.08	.08	.08	.03	.03	.03	.03
30	.17	.19	.07	.07	---	.08	.09	.07	.03	.03	.03	.03
31	.16	---	.07	.07	---	.08	---	.06	---	.03	.03	---
TOTAL	4.27	5.52	2.53	2.17	2.31	2.50	2.63	2.87	1.49	0.63	0.95	0.94
MEAN	.14	.18	.082	.070	.082	.081	.088	.093	.050	.020	.031	.031
MAX	.19	.19	.15	.07	.10	.09	.10	.10	.08	.03	.05	.05
MIN	.10	.17	.07	.07	.06	.08	.08	.06	.03	.01	.02	.00
AC-FT	8.5	11	5.0	4.3	4.6	5.0	5.2	5.7	3.0	1.2	1.9	1.9
CAL YR 1988	TOTAL 99.13		MEAN .27	MAX .72	MIN .07	AC-FT 197						
WTR YR 1989	TOTAL 28.81		MEAN .079	MAX .19	MIN .00	AC-FT 57						

ARKANSAS RIVER BASIN

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, 203,430 acre-ft, Apr. 4, elevation, 4,866.14 ft; minimum, 113,490 acre-ft, Sept. 30, elevation, 4,838.55 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	4,851.24	150,780	-
Oct. 31.	4,850.78	149,320	-1,460
Nov. 30.	4,853.68	158,700	+9,380
Dec. 31.	4,857.64	172,120	+13,420
CAL YR 1988			-83,540
Jan. 31.	4,862.05	187,920	+15,800
Feb. 28.	4,863.61	193,740	+5,820
Mar. 31.	4,866.10	203,270	+9,530
Apr. 30.	4,863.93	194,950	-8,320
May 31.	4,862.82	190,780	-4,170
June 30.	4,860.97	183,970	-6,810
July 31.	4,846.95	137,510	-46,460
Aug. 31.	4,839.78	116,870	-20,640
Sept. 30.	4,838.55	113,490	-3,380
WTR YR 1989			-37,290

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	234	220	110	110	118	290	578	430	1450	1410	1820	332
2	234	212	110	110	225	291	576	408	1290	1440	1740	326
3	234	219	110	111	260	339	511	379	1130	1610	1770	331
4	240	243	110	111	260	365	469	377	1140	1740	1770	325
5	251	253	110	111	260	365	499	392	1070	2020	1780	321
6	264	253	110	112	260	302	587	346	904	2020	1720	275
7	286	271	111	112	256	283	605	311	742	2030	1680	236
8	315	309	111	112	191	343	645	306	720	2030	1560	224
9	328	329	111	112	122	424	599	264	871	1970	1380	213
10	314	313	111	112	200	569	658	286	1050	1960	1350	188
11	335	301	111	112	329	627	679	479	1030	1890	1380	153
12	356	301	112	112	329	627	674	659	938	1770	1350	199
13	321	302	111	112	356	598	724	806	973	1970	1180	225
14	313	267	112	112	356	605	791	904	1150	1910	1130	268
15	330	100	112	112	344	652	860	880	1100	1670	1190	306
16	335	99	112	112	345	561	826	698	874	1620	1170	315
17	312	99	112	112	345	730	813	656	1070	1460	1070	280
18	300	100	112	114	345	930	880	595	1400	1370	956	237
19	303	100	112	114	345	921	860	427	1510	1180	866	203
20	306	100	110	114	345	599	794	332	1530	995	782	200
21	314	100	109	114	345	432	762	414	1440	992	751	241
22	320	100	108	114	297	485	733	559	1340	1260	695	292
23	322	100	110	114	268	469	767	730	1310	1410	553	308
24	289	100	110	116	281	503	783	925	1210	1820	514	307
25	264	100	110	116	288	613	784	1110	990	2060	536	282
26	251	100	110	116	289	656	774	1130	861	2130	478	239
27	222	101	110	117	290	551	772	926	806	2190	438	222
28	204	100	110	118	289	377	740	701	1160	2180	469	215
29	197	100	110	118	---	458	641	657	1390	2150	492	209
30	198	109	110	118	---	533	432	970	1400	2030	466	208
31	211	---	110	118	---	578	---	1310	---	1960	392	---
TOTAL	8703	5401	3427	3518	7938	16076	20816	19367	33849	54247	33428	7680
MEAN	281	180	111	113	283	519	694	625	1128	1750	1078	256
MAX	356	329	112	118	356	930	880	1310	1530	2190	1820	332
MIN	197	99	108	110	118	283	432	264	720	992	392	153
AC-FT	17260	10710	6800	6980	15750	31890	41290	38410	67140	107600	66300	15230
CAL YR 1988	TOTAL 206339											
WTR YR 1989	TOTAL 214450											
	MEAN 564											
	MAX 588											
	2020											
	MIN 99											
	AC-FT 409300											
	MAX 2190											
	MIN 99											
	AC-FT 425400											

ARKANSAS RIVER BASIN

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 poor quality. Daily maximum and minimum specific conductance data available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 726 microsiemens May 5, 1986; minimum, 223 microsiemens July 13, 1986.

WATER TEMPERATURE: Maximum, 22.1°C Aug. 30, 1989; minimum, 1.4°C Feb. 7-8, 1989.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 695 microsiemens Nov. 14; minimum, 363 microsiemens Aug. 11.

WATER TEMPERATURE: Maximum, 22.1°C Aug. 30; minimum, 1.4°C Feb. 7-8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	OXYGEN, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
NOV								
22...	1330	100	603	8.50	10.2	--	0.30	<0.01
DEC								
21...	1030	109	606	8.20	11.3	428	0.20	0.04
JAN								
26...	1310	118	620	8.30	12.0	411	0.30	0.03
FEB								
28...	0940	292	635	8.50	12.4	433	0.40	0.06
MAR								
24...	1210	532	603	8.50	11.2	411	0.27	0.03
APR								
26...	1030	778	585	8.40	11.0	372	0.30	0.08
MAY								
31...	1620	1440	557	8.20	10.2	365	0.30	0.13
JUN								
15...	1345	1190	562	8.30	9.9	348	0.20	0.08
JUL								
28...	1130	2180	430	8.20	8.7	245	0.20	0.03
AUG								
22...	1145	736	402	8.20	7.8	246	0.20	0.03
SEP								
28...	1315	210	452	8.20	9.4	279	0.30	0.02

07099400 ARKANSAS RIVER ABOVE PUEBLO, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	578	576	611	620	645	638	596	577	549	468	384	406
2	570	574	611	621	625	641	591	579	549	463	383	406
3	539	576	613	620	620	637	591	578	549	456	383	406
4	540	573	615	621	619	635	593	578	548	450	386	408
5	545	575	617	622	619	636	591	578	548	446	383	409
6	548	575	619	621	620	642	585	579	545	444	382	414
7	547	576	625	622	640	642	584	579	545	444	375	419
8	540	576	626	623	647	631	590	581	545	444	379	421
9	545	580	620	623	648	630	588	582	544	442	378	425
10	550	587	613	622	640	630	582	580	540	441	380	431
11	546	584	619	625	618	630	581	572	540	440	375	432
12	550	585	613	623	624	629	581	565	539	441	376	423
13	556	585	617	624	622	622	580	570	538	439	380	424
14	554	598	629	626	627	613	576	567	535	437	382	441
15	557	629	617	626	633	617	575	566	534	436	389	461
16	557	614	616	627	635	621	576	570	536	436	395	469
17	561	611	613	626	641	614	576	568	531	435	398	476
18	557	612	612	628	638	608	573	570	522	431	398	475
19	553	614	611	631	640	606	570	575	515	434	400	482
20	550	611	610	634	642	627	572	575	507	434	398	477
21	554	607	614	636	643	621	576	571	504	431	400	468
22	556	606	611	632	650	612	575	566	502	425	399	460
23	556	610	605	633	651	607	574	563	498	423	402	457
24	561	613	605	635	648	601	572	562	495	416	399	447
25	563	611	605	640	646	603	573	560	498	415	398	449
26	562	613	607	637	645	603	572	559	496	409	400	454
27	567	615	608	637	644	605	572	561	495	406	401	450
28	571	615	613	638	643	613	574	561	484	397	399	452
29	572	612	622	634	---	608	575	562	474	394	400	457
30	571	610	620	635	---	604	579	557	470	386	401	455
31	570	---	620	637	---	597	---	554	---	387	403	---
MEAN	556	597	615	628	636	620	580	570	522	431	391	442
MAX	578	629	629	640	651	642	596	582	549	468	403	482
MIN	539	573	605	620	618	597	570	554	470	386	375	406

WTR YR 1989 MEAN 548 MAX 651 MIN 375

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.2	17.7	14.4	13.5	8.7	7.5	4.0	2.9	2.8	2.2	3.1	2.4
2	18.4	17.6	14.4	13.5	8.5	7.2	4.0	2.9	2.7	2.1	3.1	2.4
3	18.3	17.4	14.3	13.6	8.1	6.7	3.9	3.2	2.4	2.0	2.8	2.5
4	17.4	17.1	14.0	13.3	7.6	6.6	3.6	3.1	2.1	1.7	3.1	2.5
5	17.7	17.0	13.9	13.1	7.6	6.3	4.3	3.1	2.1	1.7	3.4	2.6
6	17.5	16.8	13.7	13.0	7.3	6.2	3.9	3.1	2.3	1.5	3.6	2.6
7	17.3	16.8	13.5	12.7	6.5	6.0	3.5	2.7	2.6	1.4	3.8	2.9
8	17.4	16.6	13.0	12.6	6.7	6.0	3.3	2.3	2.5	1.4	4.0	3.2
9	17.1	16.5	13.1	12.5	7.0	5.9	3.3	2.3	2.7	1.6	4.0	3.4
10	17.0	16.3	12.8	12.3	6.9	6.0	3.4	2.4	3.1	1.8	4.0	3.4
11	17.0	16.2	12.6	12.1	6.7	5.9	3.2	2.5	2.7	2.1	4.1	3.6
12	16.9	16.1	12.5	11.9	6.7	5.8	3.1	2.0	2.6	2.0	4.2	3.7
13	16.8	16.0	12.4	11.6	6.8	5.8	2.9	1.9	2.6	2.0	4.6	3.9
14	16.7	16.1	12.1	11.4	6.6	5.6	2.8	1.6	2.7	2.1	4.9	4.3
15	16.7	15.9	11.7	10.8	5.9	5.3	2.7	1.7	2.7	2.1	4.8	4.2
16	16.6	15.8	11.6	10.6	6.1	5.2	2.5	1.7	2.7	2.1	5.0	4.4
17	16.6	15.9	11.5	10.4	6.2	5.2	3.0	1.8	2.6	2.1	5.7	4.7
18	16.5	15.8	11.1	10.3	6.0	5.2	2.9	2.0	2.7	2.2	5.3	4.8
19	16.4	15.7	11.0	9.9	6.0	5.0	3.2	2.2	2.6	2.2	5.4	4.9
20	16.3	15.6	10.8	9.7	5.8	5.0	3.2	2.0	2.5	2.2	5.5	5.0
21	16.2	15.4	10.5	9.4	5.5	4.8	3.1	2.1	2.9	2.1	5.8	5.0
22	15.7	15.3	10.4	9.0	5.1	4.2	3.3	2.0	2.9	2.1	5.7	5.1
23	15.8	15.1	9.9	9.2	4.9	4.2	3.2	2.1	3.0	2.2	6.2	5.5
24	15.7	14.5	9.9	8.9	4.8	4.0	2.9	2.3	3.0	2.3	6.2	5.3
25	14.9	14.4	9.4	8.9	4.7	4.0	2.8	2.4	3.0	2.3	5.9	5.3
26	15.0	14.1	9.6	8.4	4.6	3.7	3.2	2.3	3.0	2.3	6.1	5.4
27	14.6	14.0	9.2	7.9	4.3	3.5	3.0	2.2	2.9	2.3	6.3	5.5
28	14.4	13.8	9.3	7.9	4.2	3.3	2.6	2.1	2.6	2.4	6.3	5.4
29	14.3	13.7	8.8	7.7	4.0	2.9	2.9	1.9	---	---	6.2	5.4
30	14.3	13.6	8.7	7.7	4.2	3.1	3.3	2.1	---	---	6.3	5.5
31	14.2	13.5	---	---	3.9	3.0	3.5	2.3	---	---	6.9	5.9
MONTH	18.4	13.5	14.4	7.7	8.7	2.9	4.3	1.6	3.1	1.4	6.9	2.4

07099400 ARKANSAS RIVER ABOVE PUEBLO, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

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 September 1989.

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.--No estimated daily discharges. Records good except those for discharges above 3,000 ft³/s, which are fair. 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). Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,020 ft³/s, July 14, 1989, gage height, 11.65 ft, from rating extended above 1,740 ft³/s, on basis of control geometry; minimum daily, 4.7 ft³/s, Nov. 29, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,020 ft³/s at 0015 July 14, gage height, 11.65 ft; minimum daily, 4.7 ft³/s, Nov. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	128	11	10	13	175	457	322	1320	1230	1820	192
2	138	124	11	10	72	175	457	297	1180	1250	1670	191
3	132	122	22	12	138	208	398	236	967	1430	1700	199
4	150	145	20	13	139	246	340	238	1010	1580	1690	192
5	156	156	13	13	139	246	365	241	941	2000	1750	183
6	161	150	9.2	19	138	211	435	222	783	1980	1710	161
7	181	163	15	17	138	164	447	175	618	2030	1680	118
8	200	202	28	16	138	219	535	152	570	2010	1550	97
9	216	227	29	21	138	299	488	136	699	1950	1290	93
10	199	214	29	18	137	447	538	125	908	1900	1230	70
11	208	198	30	18	178	543	574	292	924	1810	1240	56
12	233	196	27	24	210	538	554	502	812	1700	1350	101
13	208	194	29	17	229	517	584	652	814	1970	1140	140
14	195	190	28	18	244	507	646	813	981	2060	1000	158
15	216	27	32	16	219	559	730	811	964	1550	1070	196
16	219	14	29	17	221	482	720	629	713	1440	1130	205
17	198	20	25	18	220	603	675	561	865	1260	980	174
18	189	22	21	17	213	866	757	522	1230	1110	843	119
19	188	23	19	17	215	851	737	342	1360	950	742	75
20	187	23	12	19	220	552	643	206	1370	755	676	79
21	177	14	11	17	219	297	637	260	1310	726	618	110
22	180	5.5	9.4	18	188	361	613	393	1190	991	564	159
23	182	5.4	5.8	26	150	357	660	556	1150	1170	433	187
24	168	7.5	5.6	20	163	369	660	740	1050	1620	354	187
25	175	16	8.8	20	173	474	651	943	841	2050	398	148
26	163	14	10	18	175	525	658	1030	677	2160	352	115
27	133	15	11	19	173	465	649	838	595	2260	312	85
28	140	9.4	8.3	18	169	232	634	585	859	2250	317	88
29	132	4.7	8.7	11	---	324	608	480	1200	2250	347	70
30	123	6.6	9.0	14	---	402	357	790	1210	2100	325	78
31	121	---	10	7.8	---	456	---	1130	---	1980	259	---
TOTAL	5412	2636.1	536.8	518.8	4769	12670	17207	15219	29111	51522	30540	4026
MEAN	175	87.9	17.3	16.7	170	409	574	491	970	1662	985	134
MAX	233	227	32	26	244	866	757	1130	1370	2260	1820	205
MIN	121	4.7	5.6	7.8	13	164	340	125	570	726	259	56
AC-FT	10730	5230	1060	1030	9460	25130	34130	30190	57740	102200	60580	7990

WTR YR 1989 TOTAL 174167.7 MEAN 477 MAX 2260 MIN 4.7 AC-FT 345500

ARKANSAS RIVER BASIN

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 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.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1980 microsiemens Nov. 24, 1988; minimum, 358 microsiemens Aug. 16, 1989.

WATER TEMPERATURE: Maximum, 25.6°C Sept. 2, 1989; minimum, 0.0°C Feb. 3-4, 1989.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1980 microsiemens Nov. 24; minimum, 358 microsiemens Aug. 16.

WATER TEMPERATURE: Maximum, 25.6°C Sept. 2; minimum, 0.0°C Feb. 3-4.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1020	848	997	769	732	743	661	566	467	541
2	---	766	1020	1070	828	770	737	734	669	561	471	541
3	---	785	920	1060	766	747	728	736	691	546	470	541
4	---	---	905	993	773	742	735	734	687	528	465	541
5	678	---	928	1190	750	745	737	723	717	504	456	551
6	---	---	1060	1020	748	775	735	728	734	505	451	557
7	665	761	944	1040	797	808	745	761	739	511	441	572
8	682	725	878	887	933	774	731	764	737	516	469	578
9	679	713	889	969	---	765	728	773	716	520	479	575
10	665	729	871	925	886	752	731	820	694	521	481	598
11	674	739	849	915	739	734	710	747	684	522	476	595
12	681	746	860	901	734	729	704	711	716	516	487	569
13	676	756	872	870	734	735	713	719	728	514	494	578
14	---	743	837	857	725	729	726	699	712	520	502	593
15	---	---	814	875	735	706	723	721	707	530	503	615
16	701	---	862	915	736	707	717	774	716	547	491	620
17	687	---	889	1040	731	715	740	750	693	546	518	631
18	688	---	911	955	741	696	743	762	642	556	523	646
19	707	904	973	955	742	697	736	742	633	556	519	657
20	728	907	974	938	734	709	734	763	610	559	514	659
21	691	---	1020	1040	746	728	728	770	600	555	515	644
22	697	---	1230	1010	760	719	729	756	604	548	506	620
23	708	1540	1120	924	794	716	730	759	609	542	510	591
24	695	1360	1150	854	793	713	737	736	602	509	527	597
25	---	932	995	---	797	720	721	714	618	483	517	602
26	726	930	1220	885	778	717	708	701	642	476	525	613
27	---	910	910	904	771	738	711	716	656	474	531	623
28	740	1110	916	959	763	773	707	711	624	461	532	620
29	772	1590	873	954	---	741	730	727	583	459	530	618
30	---	1470	875	932	---	744	735	720	576	455	533	629
31	---	---	860	---	---	735	---	678	---	462	533	---
MEAN	---	---	950	---	---	737	727	738	667	518	498	597
MAX	---	---	1230	---	---	808	745	820	739	566	533	659
MIN	---	---	814	---	---	696	704	678	576	455	441	541

07099970 ARKANSAS RIVER AT MOFFAT STREET, AT PUEBLO, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	14.9	10.2	8.2	2.5	2.8	.5	6.1	.7	5.8	1.6
2	---	---	15.1	11.0	8.2	3.3	4.6	.7	.8	.1	6.4	1.5
3	---	---	14.9	10.8	8.2	3.2	3.6	1.3	.2	.0	4.0	.9
4	14.4	---	13.7	11.3	7.0	2.4	4.0	1.9	.2	.0	5.0	.1
5	18.0	13.6	13.8	9.9	6.4	1.9	6.1	2.5	.2	.1	6.1	.2
6	18.0	14.2	13.9	9.5	6.4	1.9	6.4	2.1	.2	.1	6.7	.6
7	17.0	14.2	13.3	10.5	4.9	2.1	4.5	.5	.3	.2	8.4	1.8
8	19.0	13.7	12.4	9.5	4.8	2.0	1.5	.2	.5	.1	9.0	2.7
9	17.6	13.3	13.5	11.2	5.9	1.1	1.8	.5	---	---	8.9	2.9
10	18.8	13.4	12.8	10.1	6.2	2.0	4.4	.8	.8	.2	8.5	3.2
11	18.6	13.2	12.1	9.4	5.6	2.3	3.1	.9	4.0	.2	7.6	3.4
12	18.8	13.3	12.6	8.9	6.1	1.6	2.2	.4	5.3	1.8	7.8	3.5
13	18.3	13.7	13.2	9.2	8.2	3.2	1.1	.2	4.5	.6	8.7	3.3
14	18.5	13.5	12.4	9.2	6.4	3.8	1.4	.3	4.9	.9	8.0	3.4
15	18.6	14.0	11.0	6.1	3.7	1.1	2.1	.3	5.1	1.1	7.8	2.8
16	18.2	13.4	8.9	3.5	3.3	.3	2.9	.3	5.2	.5	9.2	3.1
17	18.4	13.7	9.1	4.2	5.0	.5	5.2	1.7	3.3	.9	8.9	4.1
18	17.9	13.8	8.5	5.0	6.0	1.3	5.6	1.3	5.5	1.6	7.8	3.8
19	17.1	13.2	9.8	5.4	5.7	2.8	5.5	1.2	4.4	1.9	8.5	4.0
20	17.7	12.6	8.5	3.7	5.1	1.7	5.4	.9	3.8	2.2	5.3	3.4
21	17.5	12.6	7.7	3.4	5.2	1.3	6.4	1.7	6.0	1.3	9.8	2.7
22	15.9	12.5	8.0	4.2	4.1	1.7	6.7	2.3	6.3	1.0	9.3	3.9
23	16.4	12.2	10.4	6.3	3.3	.7	5.7	1.5	7.7	1.6	10.7	4.1
24	16.7	11.8	10.6	7.2	4.2	.9	3.5	1.7	7.5	2.0	10.5	4.4
25	15.1	11.9	8.0	4.6	3.6	.5	---	---	8.2	2.1	10.2	4.4
26	16.4	11.2	6.9	4.7	4.2	.8	---	---	7.5	2.1	10.0	4.6
27	14.7	11.4	5.8	2.9	1.6	.0	3.6	.6	6.4	1.6	10.8	4.8
28	12.8	10.1	7.5	1.7	1.4	.5	3.5	1.1	3.4	1.8	11.8	4.6
29	13.9	10.1	7.1	3.7	1.0	.3	5.9	.6	---	---	10.2	4.6
30	15.5	10.8	6.8	3.2	1.2	.4	8.1	1.3	---	---	8.2	4.7
31	15.3	10.7	---	---	1.7	.4	8.9	3.5	---	---	10.8	4.5
MONTH	---	---	15.1	1.7	8.2	.0	---	---	---	---	11.8	.1
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.4	5.0	13.7	7.2	14.3	10.7	19.7	15.5	23.2	20.2	24.3	18.7
2	11.3	5.0	14.4	7.8	15.6	10.9	19.9	15.6	23.2	20.0	25.6	19.4
3	10.7	6.2	15.1	7.9	12.9	11.0	19.7	15.8	23.2	19.8	24.5	18.8
4	11.6	5.8	13.6	8.1	13.4	11.1	20.1	16.1	22.8	20.0	23.5	18.5
5	12.0	5.1	15.8	7.5	16.4	11.2	20.0	16.4	23.1	20.0	24.9	18.8
6	12.5	6.2	16.2	7.9	17.5	11.5	19.8	16.5	23.1	20.0	24.2	18.5
7	13.2	6.4	16.3	8.2	16.8	11.8	19.8	16.6	23.1	20.0	24.7	18.1
8	10.2	7.1	17.2	9.3	15.9	12.1	19.9	16.6	23.5	19.9	23.6	18.5
9	6.9	5.7	12.8	9.9	16.5	11.7	20.0	16.6	23.6	20.2	20.7	17.0
10	11.2	5.6	15.5	9.2	16.6	11.7	20.3	16.9	23.5	20.4	23.0	16.7
11	8.5	6.6	12.6	8.9	16.0	12.2	20.5	17.1	23.9	20.2	18.2	14.1
12	9.6	6.5	14.5	9.0	16.0	12.3	20.0	17.5	22.7	19.8	15.5	12.7
13	12.4	6.3	12.7	8.5	16.5	12.6	20.4	17.3	23.0	20.2	18.6	13.8
14	12.6	6.6	12.6	9.3	15.3	12.6	20.7	17.7	24.0	19.8	21.9	14.7
15	11.5	6.7	11.7	9.4	17.5	12.6	21.3	17.5	24.0	20.1	22.3	15.4
16	12.3	7.2	13.7	9.1	17.6	12.5	21.5	17.9	23.7	17.3	22.1	15.6
17	11.9	7.4	12.8	8.7	17.8	12.5	21.6	17.8	24.5	19.9	22.4	15.8
18	12.4	7.2	15.9	9.3	17.9	13.1	21.9	17.5	23.7	20.3	23.3	15.9
19	12.7	7.3	16.8	9.1	17.6	13.7	22.3	17.9	24.0	19.9	20.4	15.8
20	13.5	7.7	18.2	9.6	16.7	13.7	22.7	17.5	24.5	20.0	22.6	17.0
21	13.0	7.6	16.4	10.1	16.4	13.9	22.4	17.2	24.9	19.4	21.3	15.4
22	10.4	7.7	16.7	9.4	16.9	13.8	22.0	17.4	23.7	19.8	20.7	16.0
23	13.2	7.5	16.3	9.6	18.0	14.1	21.6	18.2	24.8	19.1	19.8	14.9
24	13.0	7.4	15.5	9.7	19.4	14.5	20.5	18.4	23.4	18.9	21.5	14.6
25	13.5	7.8	14.6	9.9	20.1	14.3	21.8	19.0	24.7	18.7	21.3	15.4
26	13.3	7.5	11.6	9.9	19.8	14.4	22.1	19.3	24.8	18.8	21.5	15.2
27	12.2	7.9	15.7	9.6	20.2	14.0	22.4	19.2	23.7	19.2	21.6	15.5
28	10.6	7.3	16.7	10.6	19.3	14.5	22.5	19.8	23.5	19.1	22.5	15.6
29	10.7	7.6	16.8	10.1	19.6	15.2	22.6	19.9	24.6	19.0	22.1	16.2
30	8.5	7.9	15.9	10.6	19.9	15.2	22.3	19.9	24.9	19.1	22.3	15.6
31	---	---	14.6	10.7	---	---	22.8	20.2	25.1	19.1	---	---
MONTH	13.5	5.0	18.2	7.2	20.2	10.7	22.8	15.5	25.1	17.3	25.6	12.7

LOCATION.--Lat 38°51'17", long 104°52'39", in SE&SW¼ sec.3, T.14 S., R.67 W., El Paso County, Hydrologic Unit 1020003, 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 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. 17-22, Dec. 25 to Jan. 7, Jan. 9-17, and Feb. 2-21. Records good 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.--31 years, 14.4 ft³/s; 10,430 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, 170 ft³/s at 2045 July 13, gage height, 3.22 ft; minimum daily, 3.8 ft³/s, July 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	9.4	8.2	6.0	7.8	8.3	10	6.3	5.0	3.9	14	5.3
2	5.9	9.3	8.5	6.0	6.0	8.6	9.4	6.7	5.2	4.0	12	5.8
3	5.7	9.1	8.0	6.2	5.5	8.0	9.7	6.4	5.9	5.0	12	5.5
4	6.0	9.3	7.4	6.4	5.0	9.4	8.5	6.8	6.8	4.4	10	5.7
5	6.7	8.6	7.0	7.0	5.0	14	8.4	5.5	5.8	3.8	11	5.3
6	6.1	9.0	6.9	6.4	5.5	13	8.4	5.2	6.4	4.6	14	5.4
7	5.4	9.2	7.2	6.0	5.8	12	9.8	4.8	5.4	6.7	14	5.3
8	5.0	9.5	7.3	6.5	6.2	12	19	5.3	4.7	11	13	7.3
9	4.7	9.4	8.5	7.0	6.5	12	11	5.4	9.3	9.4	9.2	11
10	4.7	8.8	8.2	7.4	7.0	13	8.9	6.1	8.7	9.6	8.7	8.5
11	4.7	9.7	8.5	8.0	7.0	12	10	5.6	8.8	9.7	7.0	10
12	4.3	9.7	9.0	8.2	6.4	12	9.3	5.0	21	23	8.9	17
13	3.9	9.8	10	9.0	6.0	11	9.2	6.6	15	14	13	12
14	3.9	10	10	10	6.0	9.3	8.7	15	9.5	9.4	9.0	10
15	4.5	9.0	8.6	9.0	6.0	8.8	8.1	8.8	7.5	8.3	7.5	8.9
16	5.1	6.4	7.4	9.5	7.0	9.5	8.3	7.8	5.7	8.4	5.3	8.8
17	5.4	6.7	7.0	10	7.5	9.7	11	7.4	4.3	7.1	5.1	8.3
18	5.9	9.0	6.6	9.4	8.0	9.2	10	7.0	4.7	6.5	5.4	7.7
19	5.4	9.2	6.2	8.5	8.5	10	10	6.3	4.3	5.8	5.3	7.0
20	5.2	7.0	6.0	10	9.0	10	5.7	5.9	4.2	5.3	6.5	12
21	5.9	7.3	6.0	9.5	9.0	9.2	5.1	5.5	4.4	4.4	6.0	9.2
22	6.2	8.9	6.0	9.2	8.7	10	8.6	5.3	6.5	4.3	5.8	8.4
23	5.6	11	5.9	9.1	9.5	10	6.6	5.0	5.5	4.4	4.8	8.2
24	6.5	11	5.8	9.3	8.5	9.8	9.4	4.6	5.9	4.8	4.4	7.8
25	6.2	10	5.4	9.3	9.1	13	7.4	6.0	4.6	5.1	4.2	7.2
26	6.4	8.4	5.2	9.2	9.3	11	6.3	8.9	5.8	4.8	4.2	7.5
27	7.0	6.5	5.2	10	8.9	10	5.6	7.7	6.0	4.9	4.6	7.5
28	6.4	7.4	5.3	8.7	7.7	9.5	5.7	5.8	4.7	5.3	5.0	7.0
29	6.4	8.4	5.6	8.8	---	10	6.8	4.9	4.7	11	4.9	6.8
30	6.3	7.2	5.8	8.5	---	9.1	7.2	5.0	4.5	20	7.5	7.1
31	7.1	---	6.0	8.4	---	8.1	---	4.8	---	13	5.4	---
TOTAL	174.4	264.2	218.7	256.5	202.4	321.5	262.1	197.4	200.8	241.9	247.7	243.5
MEAN	5.63	8.81	7.05	8.27	7.23	10.4	8.74	6.37	6.69	7.80	7.99	8.12
MAX	7.1	11	10	10	9.5	14	19	15	21	23	14	17
MIN	3.9	6.4	5.2	6.0	5.0	8.0	5.1	4.6	4.2	3.8	4.2	5.3
AC-FT	346	524	434	509	401	638	520	392	398	480	491	483
CAL YR 1988	TOTAL 3439.6		MEAN 9.40	MAX 40	MIN 3.9	AC-FT 6820						
WTR YR 1989	TOTAL 2831.1		MEAN 7.76	MAX 23	MIN 3.8	AC-FT 5620						

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1974 to current year.

REMARKS.--Periodic sediment data for the 1987-88 water year previously unpublished are published in this report.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
OCT									
19...	1030	5.8	400	8.4	8.5	9.1	1.4	K200	270
NOV									
16...	1030	6.4	467	8.3	1.0	11.0	1.1	68	150
DEC									
07...	1210	7.2	336	8.2	2.0	10.9	1.6	86	200
JAN									
18...	1040	9.4	332	7.9	0.0	11.8	0.5	K10	520
FEB									
22...	1140	8.7	307	7.9	2.0	10.9	1.0	370	200
MAR									
29...	1000	10	292	8.2	7.0	9.6	1.2	K1500	>2000
APR									
19...	1000	10	358	8.3	9.5	9.5	0.6	K450	560
MAY									
17...	0930	7.4	366	8.2	8.5	8.8	1.0	K1300	>2000
JUN									
14...	0935	15	301	8.2	10.5	8.7	0.9	3500	1900
JUL									
19...	0915	5.0	407	8.3	16.0	7.6	<0.5	3600	1500
AUG									
23...	0915	5.1	479	8.3	13.0	7.8	0.6	1200	3900
SEP									
20...	0930	12	236	8.0	13.0	7.9	3.3	3200	K3400

DATE	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT								
19...	126	19	16	<1	<0.01	0.40	0.70	1
NOV								
16...	170	20	19	9	<0.01	0.30	0.80	<1
DEC								
07...	127	19	18	11	<0.01	0.20	1.30	<1
JAN								
18...	120	16	14	14	0.01	<0.20	1.00	<1
FEB								
22...	104	15	17	92	0.04	0.50	0.90	<1
MAR								
29...	105	15	13	10	0.04	0.30	0.70	<1
APR								
19...	134	15	17	6	0.03	0.20	0.70	1
MAY								
17...	128	18	18	49	0.02	0.40	0.80	<1
JUN								
14...	107	16	16	89	0.02	0.30	0.80	<1
JUL								
19...	158	18	20	5	0.02	<0.20	0.80	<1
AUG								
23...	177	20	22	18	0.02	<0.20	0.90	<1
SEP								
20...	92	11	10	17	0.03	0.60	0.50	<1

K BASED ON NON-IDEAL COUNT

ARKANSAS RIVER BASIN

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT								
19...	<1	3	360	80	<5	50	40	20
NOV								
16...	<1	6	480	70	<5	80	50	10
DEC								
07...	<1	3	210	40	<5	50	40	10
JAN								
18...	<1	1	630	20	<5	70	40	<10
FEB								
22...	<1	3	4200	5	<5	170	41	30
MAR								
29...	<1	1	670	31	<5	80	42	<10
APR								
19...	<1	4	290	44	<5	60	49	10
MAY								
17...	<1	6	2300	11	5	130	35	30
JUN								
14...	<1	5	900	29	3	180	23	40
JUL								
19...	<1	3	810	26	3	80	36	20
AUG								
23...	<1	6	810	14	3	80	38	10
SEP								
20...	1	7	12000	84	35	500	10	110

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DISCHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM
OCT						
15...	1320	12	31	1.0	--	--
NOV						
05...	1430	10	216	5.8	--	--
13...	1450	14	227	8.6	--	--
DEC						
17...	1110	14	24	0.91	--	--
JAN						
21...	1325	11	51	1.5	--	--
FEB						
18...	1100	38	876	90	82	--
MAR						
18...	0900	12	59	1.9	91	--
APR						
04...	1645	9.0	166	4.0	--	--
12...	1310	30	562	46	73	--
22...	1215	20	102	5.5	75	--
28...	1245	25	298	20	41	--
29...	1100	24	157	10	--	67
MAY						
06...	0935	35	946	89	83	--
27...	1130	24	239	15	42	--
JUN						
24...	1445	57	182	28	33	--
29...	1600	126	4770	1620	68	--
JUL						
15...	1200	26	45	3.2	--	--
29...	1015	13	142	5.0	--	--
AUG						
19...	1100	10	34	0.92	--	--
SEP						
16...	1000	12	102	3.3	76	--

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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					
21...	1045	9.8	30	0.79	--
NOV					
04...	1245	9.5	11	0.28	--
18...	1050	7.9	27	0.58	54
DEC					
16...	0920	E7.5	10	0.0	--
JAN					
20...	1030	7.3	5	0.10	--
FEB					
14...	1630	9.6	23	0.60	--
24...	1215	6.4	65	1.1	86
MAR					
23...	1025	E9.5	43	0.0	89
APR					
20...	1015	14	17	0.64	81
MAY					
18...	1015	9.2	35	0.87	80
JUN					
15...	1010	13	31	1.1	78
JUL					
27...	1015	7.6	44	0.90	68
AUG					
24...	1125	E8.0	55	0.0	52

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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					
19...	1030	5.8	3	0.05	--
NOV					
16...	1030	6.4	35	0.60	53
DEC					
07...	1210	7.2	10	0.19	63
JAN					
18...	1040	9.4	30	0.76	70
MAR					
29...	1000	10	30	0.81	74
APR					
19...	1000	10	10	0.27	41
MAY					
17...	0930	7.4	74	1.5	--
JUN					
14...	0935	15	127	5.1	90
JUL					
19...	0915	5.0	27	0.36	77
AUG					
23...	0915	5.1	52	0.72	56
SEP					
20...	0930	12	931	30	55

E ESTIMATED

ARKANSAS RIVER BASIN

07103747 MONUMENT CREEK AT PALMER LAKE, CO

LOCATION.--Lat 39°06'07", long 104°53'27", in SE¹/₄SE¹/₄ 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.

DRAINAGE AREA.--25.9 mi².

WATER-DISCHARGE RECORDS

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

GAGE---Water-stage recorder. Elevation of gage is 6,950 ft above National Geodetic Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 7 to Feb. 12, and Feb. 16-23. Records fair except for estimated daily discharges, which are poor. Storage and diversions upstream from station for municipal supply of Palmer Lake.

AVERAGE DISCHARGE.--12 years (water years 1978-89), 6.98 ft³/s; 5,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 216 ft³/s, Aug. 2, 1981, from rating curve extended above 130 ft³/s, gage height, 2.07 ft, from floodmark; minimum daily, 0.10 ft³/s, many days in 1978-79.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7.3 ft³/s at 0415 Sept. 15, gage height, 1.23 ft; minimum daily, 0.20 ft³/s, Feb. 4, Aug. 22-24, 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.93	.88	.45	.40	1.6	2.9	2.0	1.3	.41	.26	.21
2	1.3	.94	.83	.47	.30	1.4	2.9	2.5	.93	.41	.24	.22
3	1.1	.87	.82	.47	.22	1.6	3.8	2.5	.94	.41	.22	.22
4	1.3	.87	.75	.50	.20	2.1	3.3	2.3	1.2	.40	.22	.23
5	1.3	.87	.65	.48	.22	1.9	2.5	1.9	1.3	.38	.22	.24
6	1.2	.85	.58	.45	.30	1.5	2.4	1.6	1.0	.36	.21	.24
7	1.2	.78	.56	.40	.40	1.3	2.8	1.5	.93	.33	.22	.24
8	1.2	.74	.54	.35	.40	1.4	3.1	1.5	.77	.30	.22	.28
9	1.2	.83	.50	.35	.40	2.1	3.1	1.6	.70	.28	.23	.30
10	1.1	.95	.52	.40	.45	2.8	2.7	1.7	.92	.28	.21	.74
11	1.1	.98	.54	.45	.43	3.0	2.9	1.6	1.8	.27	.22	1.4
12	.93	1.0	.54	.35	.40	3.1	2.5	1.5	2.5	.27	.23	1.7
13	.92	1.0	.54	.35	.38	3.0	2.3	1.5	3.6	.27	.23	1.6
14	.95	1.1	.55	.37	.38	2.9	2.1	3.1	3.1	.34	.23	3.1
15	.94	1.2	.50	.39	.34	2.4	2.2	3.8	2.4	.32	.22	7.0
16	.98	1.1	.54	.40	.30	2.4	2.3	3.1	1.6	.29	.23	6.2
17	1.1	.98	.60	.42	.35	2.6	2.6	2.8	1.1	.29	.24	1.6
18	1.2	.98	.65	.43	.33	2.7	2.6	2.3	.89	.27	.23	1.2
19	1.3	.99	.65	.43	.40	2.9	2.6	1.9	.63	.27	.24	.98
20	1.4	.98	.65	.43	.50	3.0	2.4	1.7	.54	.26	.23	.82
21	1.3	.93	.65	.43	.50	2.8	2.4	1.6	.51	.26	.21	.64
22	1.3	.88	.60	.42	.50	2.9	2.5	1.4	.53	.25	.20	.59
23	1.3	.95	.55	.40	.80	3.0	2.3	1.2	.46	.26	.20	.56
24	1.2	.92	.50	.40	1.0	2.8	2.3	1.2	.59	.25	.20	.54
25	1.2	1.0	.45	.40	1.1	2.8	2.0	1.2	.64	.24	.22	.53
26	1.1	1.1	.40	.40	1.2	2.9	1.9	1.4	.62	.24	.21	.51
27	1.1	1.1	.40	.41	1.1	2.9	1.9	1.4	.55	.23	.22	.49
28	1.1	1.0	.40	.42	1.4	2.9	1.8	1.3	.53	.22	.22	.47
29	1.0	.96	.40	.45	---	3.3	2.0	.96	.47	.24	.21	.45
30	1.0	.92	.40	.40	---	3.1	2.1	.89	.43	.24	.21	.43
31	.98	---	.42	.50	---	2.6	---	.93	---	.23	.20	---
TOTAL	35.40	28.70	17.56	12.97	14.70	77.7	75.2	55.88	33.48	9.07	6.85	33.73
MEAN	1.14	.96	.57	.42	.52	2.51	2.51	1.80	1.12	.29	.22	1.12
MAX	1.4	1.2	.88	.50	1.4	3.3	3.8	3.8	3.6	.41	.26	7.0
MIN	.92	.74	.40	.35	.20	1.3	1.8	.89	.43	.22	.20	.21
AC-FT	70	57	35	26	29	154	149	111	66	18	14	67
CAL YR 1988	TOTAL 1813.69											
WTR YR 1989	TOTAL 401.24											
			MEAN 4.96	MAX 41	MIN .40	AC-FT 3600						
			MEAN 1.10	MAX 7.0	MIN .20	AC-FT 796						

07103747 MONUMENT CREEK AT PALMER LAKE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1977 to September 1980; January 1984 to current year.

REMARKS.--Periodic sediment data for the 1987-88 water years are published in this report.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
OCT 20...	1045	1.4	200	8.0	11.5	8.2	0.5	K17	66
NOV 17...	1055	0.87	--	8.0	5.0	9.0	0.4	K8	96
DEC 08...	1115	0.54	--	8.0	1.0	11.6	--	K3	K28
JAN 19...	1025	0.43	--	7.9	1.5	11.1	0.4	K1	K30
FEB 23...	1020	0.34	--	7.7	3.0	10.5	0.2	K1	K24
MAR 30...	1030	3.1	133	7.9	8.0	8.9	0.8	K3	40
APR 20...	1020	2.1	139	7.9	13.0	7.9	0.4	K1	23
MAY 18...	0945	2.3	138	7.8	13.5	8.2	E0.3	K14	190
JUN 15...	0940	2.4	134	7.6	15.5	7.5	0.7	59	K300
JUL 20...	0925	0.29	--	7.6	19.0	8.0	<0.5	K240	340
AUG 24...	0930	0.20	231	8.2	17.0	7.4	0.1	24	260
SEP 21...	0900	0.64	202	7.7	14.0	7.5	E0.1	20	90

DATE	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT 20...	86	9.6	4.3	9	<0.01	<0.20	<0.10	<1
NOV 17...	72	10	3.5	5	0.01	0.20	<0.10	1
DEC 08...	69	11	3.6	10	<0.01	<0.20	<0.10	<1
JAN 19...	67	13	3.8	5	0.01	0.30	<0.10	<1
FEB 23...	63	13	4.1	47	0.04	0.30	<0.10	<1
MAR 30...	48	12	2.6	7	0.04	<0.20	<0.10	1
APR 20...	48	9.7	2.5	17	0.02	<0.20	<0.10	<1
MAY 18...	51	9.0	2.5	<1	<0.01	<0.20	<0.10	<1
JUN 15...	55	7.0	2.1	3	0.01	0.20	<0.10	<1
JUL 20...	93	4.0	3.6	<1	<0.01	0.20	<0.10	<1
AUG 24...	93	12	4.1	<1	<0.01	<0.20	<0.10	<1
SEP 21...	63	--	3.0	<1	0.01	0.20	<0.10	<1

E ESTIMATED

K BASED ON NON-IDEAL COLONY COUNT

ARKANSAS RIVER BASIN

07103747 MONUMENT CREEK AT PALMER LAKE, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT 20...	<1	2	650	180	<5	170	70	10
NOV 17...	<1	5	640	120	<5	120	50	<10
DEC 08...	<1	4	440	100	<5	90	50	10
JAN 19...	<1	14	370	70	<5	60	40	10
FEB 23...	<1	1	1300	50	<5	70	46	<10
MAR 30...	<1	<1	690	100	<5	40	25	<10
APR 20...	1	3	680	130	<5	50	22	<10
MAY 18...	1	3	580	170	3	40	20	<10
JUN 15...	1	1	480	160	1	40	21	<10
JUL 20...	<1	2	340	90	1	200	140	10
AUG 24...	<1	3	310	97	1	130	110	<10
SEP 21...	<1	2	220	68	2	90	86	<10

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
OCT 15...	0810	1.3	2	0.01
NOV 13...	0810	1.0	22	0.06
DEC 18...	0915	E1.1	12	0.0
JAN 21...	0820	E0.90	16	0.0
FEB 19...	0945	E1.2	15	0.0
MAR 19...	0915	5.6	26	0.39
APR 23...	1015	33	16	1.4
24...	1420	36	21	2.0
MAY 07...	1050	168	443	201
08...	0915	144	291	113
28...	1045	20	6	0.32
JUN 24...	0830	6.9	7	0.13
JUL 30...	1015	1.9	3	0.01
AUG 20...	0945	0.83	13	0.03
SEP 17...	1025	1.4	8	0.03

E ESTIMATED

07103747 MONUMENT CREEK AT PALMER LAKE, CO--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT				
22...	0945	<1.4	15	0.0
NOV				
19...	1000	2.2	8	0.05
DEC				
17...	0955	1.5	5	0.02
JAN				
21...	1015	80.88	10	0.0
MAR				
24...	1120	4.7	91	1.2
APR				
21...	1030	22	35	2.1
MAY				
19...	1110	13	33	1.2
JUN				
16...	1035	10	14	0.38
JUL				
28...	1035	0.69	19	0.03
AUG				
25...	1105	0.65	23	0.04

E ESTIMATED

ARKANSAS RIVER BASIN

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 Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 26-27, 29, Dec. 28 to Jan. 2, Jan. 5-6, 8-19, Jan. 24 to Feb. 8, Mar. 2-3, and July 15-16. Records fair except for estimated daily discharges, which are poor. Storage and diversions upstream from station for municipal supply of Monument and Palmer Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 372 ft³/s, Apr. 30, 1985, gage height, 6.05 ft; minimum daily, 0.62 ft³/s, Aug. 27, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24 ft³/s at 0915 June 16, gage height, 4.20 ft; minimum daily, 0.62 ft³/s, Aug. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	1.9	3.0	3.9	4.2	3.5	12	6.8	1.8	1.5	.95	.64
2	4.1	1.8	3.6	3.8	3.8	3.4	14	5.0	1.8	1.5	1.1	.73
3	2.3	1.9	3.3	3.7	3.2	3.3	11	5.1	2.0	1.5	1.0	.67
4	1.9	1.8	3.3	3.4	3.0	4.3	9.3	5.3	2.1	1.5	.87	.73
5	1.9	1.9	3.2	3.6	2.8	4.8	5.7	4.9	2.0	1.4	.75	.74
6	1.9	2.2	3.5	3.6	2.7	5.2	5.9	4.7	2.0	1.4	.76	.76
7	1.9	3.0	2.8	3.2	2.7	4.5	3.8	3.5	2.5	1.4	2.0	.78
8	1.9	3.1	2.1	3.3	2.8	3.1	3.4	7.8	1.9	1.2	1.3	1.1
9	1.8	3.6	2.3	3.4	3.2	3.6	4.0	15	2.1	1.0	1.0	2.0
10	1.9	3.5	1.8	3.5	4.5	4.8	4.3	15	3.8	.73	.94	1.4
11	1.9	3.4	1.9	3.6	4.4	5.4	4.8	11	7.7	.87	.85	1.7
12	1.9	3.1	3.0	3.8	4.1	5.0	6.8	4.7	7.3	1.0	.97	1.8
13	1.8	2.8	3.6	3.9	4.0	6.0	7.1	4.3	16	1.1	.98	1.8
14	1.9	3.1	5.0	4.0	3.9	10	7.0	8.0	19	.81	.89	1.4
15	2.6	4.0	5.9	4.0	3.8	18	7.0	9.6	17	.80	.87	1.6
16	3.9	6.9	8.2	4.0	3.8	17	7.4	6.6	13	.80	.95	1.2
17	4.3	5.6	6.5	4.0	3.8	18	6.7	6.9	4.2	.85	.94	1.2
18	4.2	4.7	6.2	4.0	4.0	15	7.1	5.5	2.9	.92	.90	1.2
19	4.3	4.6	5.1	4.0	4.3	9.2	7.1	4.8	2.8	.92	.89	1.1
20	3.8	4.9	4.8	4.0	4.5	5.1	7.0	4.3	2.8	.86	.88	1.4
21	1.8	4.9	5.0	4.2	4.3	3.8	7.5	4.2	2.6	.79	.82	1.3
22	1.7	6.4	4.3	4.3	4.0	5.9	7.7	6.3	2.9	.79	.77	1.2
23	1.7	3.9	5.7	4.4	4.2	4.4	7.6	13	2.9	.79	.83	1.1
24	1.8	3.3	5.6	4.5	4.8	4.3	7.6	11	2.4	.83	.71	1.2
25	1.8	2.8	8.1	4.1	5.0	4.8	6.5	9.6	1.8	.91	.65	1.1
26	1.8	2.6	5.4	3.5	4.9	5.6	5.9	4.6	1.5	.88	.63	1.1
27	1.8	2.5	2.8	3.8	4.3	4.3	6.3	3.3	1.5	.92	.62	1.0
28	1.8	2.5	2.8	4.2	4.0	3.1	6.0	3.9	1.5	.84	.81	1.0
29	1.8	3.2	3.4	4.5	---	5.6	6.7	3.8	1.5	.91	.73	1.0
30	1.8	3.0	3.7	4.5	---	12	8.0	3.1	1.5	1.6	.71	.96
31	1.9	---	3.9	4.5	---	9.6	---	2.2	---	1.0	.70	---
TOTAL	73.9	102.9	129.8	121.2	109.0	212.6	211.2	203.8	134.8	32.32	27.77	34.91
MEAN	2.38	3.43	4.19	3.91	3.89	6.86	7.04	6.57	4.49	1.04	.90	1.16
MAX	4.3	6.9	8.2	4.5	5.0	18	14	15	19	1.6	2.0	2.0
MIN	1.7	1.8	1.8	3.2	2.7	3.1	3.4	2.2	1.5	.73	.62	.64
AC-FT	147	204	257	240	216	422	419	404	267	64	55	69

CAL YR 1988 TOTAL 4171.3 MEAN 11.4 MAX 67 MIN 1.4 AC-FT 8270
WTR YR 1989 TOTAL 1394.20 MEAN 3.82 MAX 19 MIN .62 AC-FT 2770

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.

REMARKS.--Periodic sediment data for the 1987-88 water years are published in this report.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
OCT									
20...	1240	3.8	260	8.4	10.5	10.4	2.0	K4	72
NOV									
17...	1255	5.6	286	8.3	3.0	10.8	4.7	K12	87
DEC									
08...	1310	2.1	347	8.0	0.0	11.2	E4.6	K6	K24
JAN									
19...	1245	3.5	373	7.9	0.0	11.4	8.4	K4	140
FEB									
23...	1215	3.8	304	8.0	1.0	11.0	>6.2	58	190
MAR									
30...	1230	12	236	8.3	7.0	10.0	4.5	K40	240
APR									
20...	1210	7.0	238	8.3	15.0	9.4	5.8	K1	87
MAY									
18...	1135	5.5	265	8.3	16.0	8.5	E0.4	37	27
JUN									
15...	1135	17	203	7.9	17.0	7.5	5.6	72	K200
JUL									
20...	1040	0.86	377	8.3	20.5	8.1	4.8	K150	290
AUG									
24...	1045	0.71	392	7.9	18.0	7.6	2.6	67	140
SEP									
21...	1030	1.5	400	8.1	8.0	8.1	E2.0	240	190

DATE	ALKA- LINEITY LAB (MG/L AS CA CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT								
20...	80	21	13	44	0.13	1.0	0.90	<1
NOV								
17...	77	29	16	17	0.11	1.6	1.80	<1
DEC								
08...	92	37	19	7	3.00	4.4	1.20	<1
JAN								
19...	92	33	20	9	1.60	7.8	0.50	<1
FEB								
23...	61	28	15	31	4.80	5.9	0.30	<1
MAR								
30...	64	17	10	36	2.10	2.5	0.40	<1
APR								
20...	64	16	9.5	8	0.97	1.7	0.80	<1
MAY								
18...	67	19	12	9	0.59	1.9	1.80	<1
JUN								
15...	64	13	8.0	14	0.62	1.1	0.70	<1
JUL								
20...	116	20	26	11	0.06	2.4	0.60	<1
AUG								
24...	113	21	31	26	0.05	0.70	0.10	<1
SEP								
21...	112	24	31	8	0.04	0.60	0.50	<1

E ESTIMATED
K BASED ON NON-IDEAL COUNT

07103780 MONUMENT CREEK ABOVE NORTH GATE BOULEVARD, AT U.S. AIR FORCE ACADEMY, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT 20...	<1	4	450	80	<5	60	30	20
NOV 17...	<1	7	680	70	<5	100	40	10
DEC 08...	<1	6	560	70	<5	110	70	10
JAN 19...	<1	7	480	90	<5	140	130	<10
FEB 23...	<1	6	880	180	<5	200	140	10
MAR 30...	<1	6	660	83	<5	130	100	<10
APR 20...	<1	4	600	120	<5	110	70	<10
MAY 18...	1	3	880	130	1	120	80	<10
JUN 15...	1	3	950	53	2	100	52	<10
JUL 20...	<1	4	1700	65	3	260	140	10
AUG 24...	<1	<1	1900	110	<1	210	130	<10
SEP 21...	<1	3	1100	110	2	110	75	10

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DISCHARGE, 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	SED. SUSP. FALL DIAM. % FINER THAN .062 MM
OCT 15...	0930	3.0	8	0.06	--	--
NOV 05...	1020	4.1	27	0.30	--	--
NOV 13...	1000	E3.0	56	0.0	--	--
DEC 18...	1110	E9.0	7	0.0	--	--
JAN 21...	0940	E2.3	9	0.0	--	--
FEB 19...	1215	4.5	22	0.27	--	--
MAR 13...	1540	18	209	10	74	--
MAR 19...	1045	17	23	1.1	96	--
APR 04...	1600	13	68	2.4	--	--
APR 23...	1200	47	258	33	49	--
APR 27...	1130	33	92	8.2	88	--
APR 30...	1230	33	151	13	--	93
MAY 08...	1130	213	1640	943	39	--
MAY 28...	1415	45	159	19	37	--
JUN 24...	1030	15	26	1.1	--	--
JUL 14...	1050	5.0	22	0.30	--	--
JUL 30...	1130	1.9	7	0.04	--	--
AUG 20...	1130	2.3	23	0.14	--	--
SEP 17...	1145	4.4	11	0.13	--	--

E ESTIMATED

07103780 MONUMENT CREEK ABOVE NORTH GATE BOULEVARD, AT U.S. AIR FORCE ACADEMY, CO--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					
22...	1115	4.2	18	0.20	39
NOV					
04...	0930	16	22	0.95	--
19...	1130	E5.0	50	0.0	--
DEC					
17...	1155	E5.5	55	0.0	--
JAN					
21...	1230	E5.0	4	0.0	--
FEB					
25...	1300	8.0	26	0.56	--
MAR					
24...	1315	15	213	8.6	89
APR					
21...	1230	47	114	14	85
MAY					
19...	1320	31	52	4.4	59
JUN					
16...	1240	21	41	2.3	75
JUL					
28...	1240	2.3	46	0.29	--
AUG					
25...	1300	2.8	12	0.09	--

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
OCT				
20...	1240	3.8	21	0.22
NOV				
17...	1255	5.6	32	0.48
DEC				
08...	1310	2.1	57	0.32
JAN				
19...	1245	3.5	45	0.43

E ESTIMATED

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 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. 20-23, Nov. 25 to Feb. 15, and Feb. 21 to Mar. 7. Records fair except those for estimated daily discharges, 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 observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--19 years, 1.87 ft³/s; 1,350 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.1 ft³/s at 2045 June 12, gage height, 1.44 ft, maximum gage height, 2.77 ft at 0845 Jan. 2 (backwater from ice); minimum daily discharge, 0.03 ft³/s, Feb. 5-6, and Sept. 3-7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.14	.07	.06	.06	.05	.15	.17	.15	.24	.18	.04
2	.14	.14	.07	.06	.05	.04	.17	.18	.14	.20	.18	.04
3	.14	.14	.08	.07	.04	.04	.21	.15	.15	.17	.16	.03
4	.17	.12	.08	.07	.04	.04	.13	.12	.20	.16	.11	.03
5	.20	.11	.08	.07	.03	.04	.10	.09	.20	.13	.11	.03
6	.18	.11	.08	.07	.03	.04	.10	.08	.31	.11	.11	.03
7	.18	.13	.08	.07	.04	.05	.13	.06	.21	.09	.16	.03
8	.16	.14	.07	.07	.04	.05	.14	.06	.16	.07	.13	.07
9	.16	.17	.06	.06	.05	.12	.11	.08	.38	.06	.15	.12
10	.17	.14	.05	.06	.05	.19	.10	.08	.78	.06	.13	.12
11	.16	.17	.05	.06	.06	.20	.11	.07	.54	.07	.11	.19
12	.15	.15	.05	.05	.06	.19	.10	.06	1.1	.24	.17	.20
13	.16	.14	.05	.05	.06	.18	.08	.10	2.1	.39	.20	.39
14	.17	.14	.06	.05	.06	.14	.08	.91	1.6	.54	.13	1.0
15	.17	.14	.06	.05	.05	.10	.08	1.1	1.3	.27	.11	.19
16	.17	.11	.06	.06	.05	.10	.08	.92	1.1	.22	.10	.13
17	.17	.10	.06	.07	.05	.10	.09	1.1	.97	.19	.10	.10
18	.17	.10	.05	.07	.05	.09	.10	.75	.85	.18	.10	.10
19	.18	.10	.05	.07	.04	.11	.10	.51	.75	.16	.16	.09
20	.19	.11	.05	.07	.04	.11	.10	.41	.66	.14	.20	.19
21	.16	.12	.05	.07	.05	.09	.09	.35	.60	.14	.12	.14
22	.13	.08	.05	.07	.05	.10	.09	.29	.69	.13	.11	.12
23	.14	.07	.04	.06	.05	.10	.09	.25	.63	.11	.09	.11
24	.14	.06	.04	.05	.06	.10	.08	.66	.67	.12	.08	.11
25	.12	.06	.04	.05	.06	.09	.08	.23	.53	.11	.07	.11
26	.14	.06	.04	.05	.06	.09	.08	.36	.54	.11	.06	.11
27	.14	.05	.04	.05	.05	.10	.09	.29	.42	.09	.07	.10
28	.15	.05	.04	.06	.05	.09	.09	.23	.36	.09	.06	.10
29	.14	.06	.05	.06	---	.14	.12	.17	.33	.23	.05	.11
30	.14	.06	.05	.07	---	.11	.14	.16	.28	.37	.04	.10
31	.14	---	.05	.07	---	.09	---	.15	---	.22	.04	---
TOTAL	4.84	3.27	1.75	1.92	1.38	3.08	3.21	10.14	18.70	5.41	3.59	4.23
MEAN	.16	.11	.056	.062	.049	.099	.11	.33	.62	.17	.12	.14
MAX	.20	.17	.08	.07	.06	.20	.21	1.1	2.1	.54	.20	1.0
MIN	.11	.05	.04	.05	.03	.04	.08	.06	.14	.06	.04	.03
AC-FT	9.6	6.5	3.5	3.8	2.7	6.1	6.4	20	37	11	7.1	8.4

CAL YR 1988 TOTAL 151.35 MEAN .41 MAX 2.8 MIN .04 AC-FT 300
WTR YR 1989 TOTAL 61.52 MEAN .17 MAX 2.1 MIN .03 AC-FT 122

07103990 COTTONWOOD CREEK AT MOUTH AT PIKEVIEW, CO

LOCATION.--Lat 38°55'41", long 104°38'35", in SW¼SW¼ sec.8, T. 13S, R.67W., 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: Nov. 26 to Dec. 9, Dec. 13 to Mar. 1, and Mar. 5. Records are poor. Natural flow of stream affected by storage reservoirs and runoff from industrial and residential areas of northeast Colorado Springs. Discharge and selected water-quality data for a synoptic sampling are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 830 ft³/s, Aug. 21, 1986, gage height, 7.68 ft, from rating curve extended above about 60 ft³/s, on basis of computation of peak flow at width contraction; minimum daily, 0.01 ft³/s, July 10-11, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 696 ft³/s, at 1530 Aug. 16, gage height, 6.45 ft, from flood-mark; minimum daily, 0.01 ft³/s, July 10-11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	4.1	3.4	3.0	4.0	4.5	4.0	2.4	1.8	1.2	2.6	2.3
2	3.2	4.2	3.6	3.1	3.0	4.0	2.8	2.1	1.2	1.2	5.8	1.3
3	3.1	4.3	3.8	3.3	2.4	4.0	4.6	1.9	1.5	.80	2.9	1.4
4	3.0	3.2	4.0	3.3	2.2	3.3	2.6	2.0	1.1	.53	3.1	1.4
5	3.2	3.2	4.1	3.2	2.0	3.2	3.5	1.8	2.5	.38	3.6	1.5
6	3.0	2.9	4.0	3.2	2.1	3.9	4.5	2.0	1.9	.26	3.5	2.7
7	3.0	2.8	3.8	2.6	2.4	4.1	5.1	1.2	1.4	.12	32	3.2
8	3.2	2.9	3.6	2.7	3.0	5.4	5.6	1.5	.57	.04	3.1	8.9
9	3.2	3.1	4.0	2.9	4.0	4.7	5.3	2.2	15	.02	2.4	4.4
10	3.0	3.0	3.6	3.0	5.0	4.8	5.0	1.7	2.8	.01	2.3	6.9
11	3.3	2.8	3.3	2.6	4.8	4.4	5.1	2.7	1.4	.01	1.9	13
12	3.0	3.1	4.1	2.4	4.5	3.9	4.5	1.8	34	12	35	7.8
13	3.1	3.2	4.6	2.4	4.0	4.2	4.6	2.3	3.0	48	1.7	5.1
14	3.8	3.2	5.0	2.7	4.0	4.5	4.1	12	1.9	20	3.3	3.6
15	4.1	3.2	4.8	3.2	4.0	5.8	2.6	1.4	2.6	2.8	1.5	3.5
16	4.6	3.2	4.5	3.3	4.1	6.9	3.0	12	1.9	2.9	39	3.4
17	4.9	3.2	4.8	3.3	4.3	7.7	2.9	4.1	1.8	2.1	3.6	3.2
18	3.6	3.4	4.5	3.4	4.5	9.9	2.3	1.4	2.5	2.4	3.8	3.3
19	3.9	3.5	4.2	3.7	4.6	11	1.8	1.7	2.8	1.9	12	3.1
20	4.0	3.6	4.0	4.0	4.6	5.6	1.7	1.6	2.8	2.1	2.1	5.8
21	4.2	3.5	4.0	4.0	4.7	6.4	.96	1.2	1.9	1.6	1.3	2.5
22	4.5	3.7	3.7	4.0	4.9	5.5	1.5	1.1	4.6	1.3	7.2	2.6
23	5.0	3.8	3.4	3.4	5.2	3.4	.71	1.3	3.3	1.4	1.9	2.2
24	5.1	3.9	3.0	3.0	5.4	3.1	2.3	2.1	4.0	1.4	2.2	2.9
25	5.5	3.9	2.8	3.1	5.4	3.8	4.0	7.9	2.4	1.4	1.6	2.7
26	5.7	3.7	2.6	3.4	4.7	4.5	2.9	10	2.3	1.6	2.7	2.3
27	5.4	3.6	2.5	3.8	4.2	4.1	1.1	3.7	2.2	2.5	5.3	3.3
28	5.2	3.4	2.6	4.2	4.0	5.6	1.6	3.4	1.9	2.2	2.5	3.1
29	4.5	3.3	2.7	4.5	---	5.7	3.2	3.0	1.1	18	3.1	3.2
30	4.5	3.2	2.8	4.8	---	2.4	5.5	2.9	1.1	2.8	1.9	3.1
31	4.1	---	2.9	5.0	---	2.8	---	2.0	---	3.1	1.9	---
TOTAL	123.2	102.1	114.7	104.5	112.0	153.1	99.37	98.4	109.27	136.07	196.8	113.7
MEAN	3.97	3.40	3.70	3.37	4.00	4.94	3.31	3.17	3.64	4.39	6.35	3.79
MAX	5.7	4.3	5.0	5.0	5.4	11	5.6	12	34	48	39	13
MIN	3.0	2.8	2.5	2.4	2.0	2.4	.71	1.1	.57	.01	1.3	1.3
AC-FT	244	203	228	207	222	304	197	195	217	270	390	226

CAL YR 1988 TOTAL 1755.1 MEAN 4.80 MAX 49 MIN 1.8 AC-FT 3480
WTR YR 1989 TOTAL 1463.21 MEAN 4.01 MAX 48 MIN .01 AC-FT 2900

ARKANSAS RIVER BASIN

07104000 MONUMENT CREEK AT PIKEVIEW, CO

LOCATION.--Lat 38°55'04", long 104°49'05", in NW¼ sec.18, T.13 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on right bank at downstream side of abandoned bridge at northeast edge of Pikeview, 600 ft upstream from unnamed tributary, 1,200 ft upstream from bridge on U.S. Interstate Highway I-25, and 0.7 mi downstream from Dry Creek.

DRAINAGE AREA.--204 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to September 1949, January 1976 to current year.

GAGE.--Water-stage recorder. 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. 14 to Mar. 9, Aug. 12-13, and Sept. 1-7. Records fair except for estimated daily discharges and those above 400 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.--24 years (water years 1939-49, 1977-89), 28.4 ft³/s; 20,580 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, 2,870 ft³/s at about 1630 Aug. 12, gage height, 7.50 ft, from flood mark, and from rating curve extended above 250 ft³/s, on basis of three slope-area measurements of peak flow; minimum daily, 4.3 ft³/s, July 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	14	18	10	10	14	23	22	9.1	6.0	8.5	17
2	12	14	20	10	9.0	14	29	15	6.8	6.0	30	15
3	12	13	18	11	8.0	12	26	21	8.4	5.4	13	15
4	11	14	14	11	7.5	13	28	19	11	4.4	13	12
5	12	14	15	11	7.0	15	29	19	7.2	4.9	18	12
6	12	13	18	9.0	7.5	16	27	18	9.8	4.6	14	12
7	10	14	19	8.0	8.5	17	25	16	6.8	4.3	114	13
8	11	15	19	8.5	10	16	26	19	7.8	4.4	11	68
9	12	16	19	9.5	12	15	27	21	28	6.1	11	29
10	12	16	19	9.5	14	14	18	21	5.5	6.7	12	41
11	12	17	16	9.0	14	17	16	36	7.9	5.2	9.9	68
12	11	18	15	8.5	13	16	18	37	87	54	380	30
13	9.8	18	15	9.5	12	17	19	26	11	77	32	25
14	11	19	14	9.5	11	17	19	55	13	57	16	18
15	11	18	12	9.5	11	21	27	37	14	21	14	12
16	12	18	12	9.5	12	21	22	49	14	13	74	13
17	13	18	11	10	13	23	18	46	11	20	13	12
18	14	19	12	11	14	19	18	35	9.0	19	14	11
19	14	19	13	12	15	23	21	35	9.1	14	37	11
20	15	19	12	13	14	17	16	35	7.5	12	13	36
21	13	20	11	14	13	15	20	34	13	11	18	11
22	14	20	11	15	12	15	17	32	13	15	34	11
23	13	20	11	14	13	14	20	29	13	16	19	15
24	14	21	11	13	14	12	17	26	12	15	30	18
25	14	21	10	12	14	12	17	28	8.8	13	14	11
26	15	20	9.5	12	14	13	16	30	10	13	17	9.0
27	15	17	9.0	14	14	13	22	25	9.7	12	31	9.3
28	13	18	9.0	16	13	14	25	13	7.9	7.7	14	19
29	14	18	9.0	17	---	21	21	15	7.4	60	13	12
30	15	16	9.0	17	---	24	30	9.1	6.3	9.0	23	10
31	14	---	9.5	11	---	20	---	9.3	---	9.1	17	---
TOTAL	392.8	517	420.0	354.0	329.5	510	657	832.4	385.0	525.8	1077.4	595.3
MEAN	12.7	17.2	13.5	11.4	11.8	16.5	21.9	26.9	12.8	17.0	34.8	19.8
MAX	15	21	20	17	15	24	30	55	87	77	380	68
MIN	9.8	13	9.0	8.0	7.0	12	16	9.1	5.5	4.3	8.5	9.0
AC-FT	779	1030	833	702	654	1010	1300	1650	764	1040	2140	1180
CAL YR 1988	TOTAL	8587.5	MEAN	23.5	MAX	121	MIN	7.1	AC-FT	17030		
WTR YR 1989	TOTAL	6596.2	MEAN	18.1	MAX	380	MIN	4.3	AC-FT	13090		

07104000 MONUMENT CREEK AT PIKEVIEW, CO--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Periodic sediment data for water year 1987-88 are published in this report.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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, UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT									
20...	1430	15	407	8.3	16.0	7.5	2.8	K60	450
NOV									
17...	1440	18	421	8.3	5.0	9.6	2.3	K30	290
DEC									
08...	1500	19	455	8.3	0.0	11.4	E0.7	K35	210
JAN									
19...	1430	12	441	8.2	1.0	11.1	2.8	K53	410
FEB									
23...	1350	13	402	8.2	6.0	9.3	7.5	K13	530
MAR									
30...	1400	24	367	8.2	8.5	8.8	>5.1	K33	210
APR									
20...	1345	16	364	8.4	21.0	7.0	1.6	K5	200
MAY									
18...	1350	35	388	8.2	23.5	6.2	E0.3	28	360
JUN									
14...	1445	13	316	8.2	22.5	6.5	2.2	75	380
JUL									
20...	1230	12	500	8.3	28.0	5.9	0.5	K710	680
AUG									
24...	1240	30	529	8.3	22.5	6.4	0.4	K270	340
SEP									
21...	1215	12	515	8.3	16.0	7.0	E0.3	180	460

DATE	ALKA- LINEITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT								
20...	109	60	16	170	0.03	1.1	2.40	<1
NOV								
17...	116	63	15	126	0.02	1.4	2.20	1
DEC								
08...	119	67	19	107	0.31	1.1	2.70	<1
JAN								
19...	113	68	17	812	0.87	1.4	2.40	<1
FEB								
23...	97	62	18	1180	1.00	1.3	1.90	<1
MAR								
30...	91	54	16	20	1.10	1.4	1.50	<1
APR								
20...	92	53	14	69	0.02	0.20	1.30	<1
MAY								
18...	97	57	14	129	0.02	0.40	1.50	<1
JUN								
14...	89	40	11	130	0.07	0.40	1.20	<1
JUL								
20...	140	87	17	108	0.02	0.50	1.50	<1
AUG								
24...	146	85	17	170	0.01	0.20	1.60	<1
SEP								
21...	141	81	18	144	0.02	0.30	1.60	<1

E ESTIMATED
K BASED ON NON-IDEAL COUNT

ARKANSAS RIVER BASIN

07104000 MONUMENT CREEK AT PIKEVIEW, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	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)
OCT 20...	<1	8	5800	<10	7	200	10	50
NOV 17...	<1	9	4300	<10	<5	180	<10	40
DEC 08...	<1	6	2600	<10	<5	100	10	30
JAN 19...	<1	15	9000	20	16	280	20	80
FEB 23...	<1	18	14000	6	25	410	29	110
MAR 30...	<1	8	4300	9	6	140	16	30
APR 20...	<1	4	1300	21	<5	60	6	10
MAY 18...	1	9	2600	150	6	90	13	20
JUN 14...	1	4	3100	8	5	90	4	30
JUL 20...	<1	6	3000	14	5	80	12	20
AUG 24...	<1	6	3800	5	5	90	6	30
SEP 21...	1	7	2600	6	5	30	6	30

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	SED. SUSP. FALL DIAM. % FINER THAN .062 MM
OCT 15...	1040	20	228	12	44	--
NOV 05...	1300	20	374	20	49	--
13...	1130	E16	474	0.0	45	--
DEC 18...	1355	E17	356	0.0	54	--
JAN 21...	1100	E14	62	0.0	--	--
FEB 19...	1345	E13	377	0.0	63	--
APR 04...	1620	54	807	118	74	--
23...	1415	69	481	90	72	--
27...	1350	79	482	103	52	--
29...	1445	72	449	87	--	76
MAY 28...	1415	105	392	111	54	--
JUN 24...	1145	50	282	38	78	--
JUL 14...	1400	30	188	15	47	--
30...	1245	21	19	1.1	--	--
AUG 20...	1245	22	596	35	89	--
SEP 17...	1325	18	237	12	59	--

E ESTIMATED

07104000 MONUMENT CREEK AT PIKEVIEW, CO--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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					
22...	1300	18	278	14	62
NOV					
04...	1130	34	462	42	30
19...	1315	23	624	39	40
DEC					
17...	1325	E27	259	0.0	25
JAN					
21...	1515	E14	98	0.0	--
FEB					
25...	1520	12	1760	57	68
MAR					
24...	1500	18	628	31	69
APR					
21...	1410	76	844	173	60
MAY					
19...	1455	68	2660	488	64
20...	1335	96	1720	446	44
JUN					
16...	1400	28	218	16	--
JUL					
28...	1415	11	119	3.5	--
AUG					
25...	1440	14	209	7.9	63

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

OCT					
04...	1720	E10	467	0.0	61
20...	1430	11	431	13	64
NOV					
17...	1440	2.9	880	6.9	30
JAN					
19...	1430	9.5	985	25	--

E ESTIMATED

ARKANSAS RIVER BASIN

07104905 MONUMENT CREEK AT BIJOU STREET, AT COLORADO SPRINGS, CO

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.

REMARKS.--Periodic sediment data for water years 1987-88 are published in this report.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
OCT									
20...	1430	23	601	8.6	17.0	8.2	4.8	170	1100
NOV									
17...	1200	18	688	7.7	3.0	11.2	2.2	K10	290
DEC									
08...	1300	16	765	8.4	0.0	13.4	E1.5	330	K1100
JAN									
19...	1315	18	713	8.1	0.0	12.0	1.9	K13	300
FEB									
23...	1300	24	567	8.0	0.5	11.2	11	3500	E10000
MAR									
30...	1115	26	535	8.3	10.5	10.0	8.1	K280	100
APR									
20...	1245	17	586	8.4	22.0	7.1	1.0	K5	120
MAY									
18...	1530	16	535	8.3	26.5	6.0	1.2	K170	510
JUN									
15...	1500	35	441	8.3	27.0	6.3	2.7	K1700	2000
JUL									
20...	1345	8.1	770	8.4	31.0	6.2	0.7	350	K130
AUG									
24...	1430	13	740	8.4	22.0	6.6	0.3	960	780
SEP									
21...	1415	16	709	8.4	18.5	7.2	E0.2	K300	K760

DATE	ALKA- LITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT								
20...	146	120	18	404	0.02	0.50	2.80	<1
NOV								
17...	150	130	20	202	0.03	1.0	2.90	1
DEC								
08...	169	160	29	130	0.08	0.90	4.30	<1
JAN								
19...	150	150	23	140	0.43	1.3	4.30	<1
FEB								
23...	116	110	24	818	0.41	1.4	2.60	<1
MAR								
30...	114	100	23	128	0.34	1.0	2.20	1
APR								
20...	129	130	19	104	0.03	0.70	2.00	<1
MAY								
18...	123	110	16	370	0.02	0.90	2.00	<1
JUN								
15...	109	84	14	318	0.02	0.40	1.10	<1
JUL								
20...	166	210	22	28	0.03	0.80	2.20	<1
AUG								
24...	169	170	20	153	0.01	0.30	2.00	<1
SEP								
21...	165	160	20	104	0.02	0.30	2.10	<1

E ESTIMATED

K BASED ON NON-IDEAL COLONY COUNT

07104905 MONUMENT CREEK AT BIJOU STREET, AT COLORADO SPRINGS, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT 20...	<1	14	8000	<10	12	250	<10	60
NOV 17...	<1	9	3800	<10	9	140	<10	80
DEC 08...	1	15	3100	--	<5	100	--	40
JAN 19...	<1	21	3300	<10	8	80	<10	70
FEB 23...	<1	20	15000	15	31	370	16	150
MAR 30...	<1	14	9700	8	11	230	5	80
APR 20...	<1	6	3500	9	<5	90	4	<10
MAY 18...	1	9	2700	20	8	60	<10	20
JUN 15...	1	10	8500	4	13	170	3	60
JUL 20...	<1	4	1700	44	3	40	5	20
AUG 24...	1	8	4200	5	6	80	2	20
SEP 21...	<1	5	2400	<3	3	10	2	20

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DA Y)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM
OCT 15...	1150	19	177	9.1	--	--
NOV 13...	1320	26	607	43	58	--
DEC 18...	1605	16	397	17	67	--
JAN 21...	1230	13	109	3.8	--	--
FEB 19...	1545	32	1070	92	55	--
MAR 19...	1555	139	3130	1170	58	--
APR 04...	1745	51	1040	143	59	--
23...	1615	74	758	151	65	--
30...	1500	77	482	100	--	66
MAY 28...	1615	77	373	78	77	--
JUL 30...	1430	16	93	4.0	--	--
AUG 20...	1435	14	129	4.9	--	--
SEP 17...	1510	47	1820	231	77	--

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

OCT 22...	1500	24	391	25	69
NOV 19...	1510	32	740	64	43
DEC 17...	1535	26	396	28	34
FEB 25...	1345	25	1910	129	66
APR 21...	1615	--	828	0.0	59
MAY 19...	1545	222	5820	3490	36
JUN 16...	1430	45	439	53	79
JUL 28...	1430	11	105	3.1	--
AUG 25...	1330	17	123	5.6	--

ARKANSAS RIVER BASIN

07104905 MONUMENT CREEK AT BIJOU STREET, AT COLORADO SPRINGS, CO--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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					
04...	1530	36	409	40	35
20...	1430	23	185	11	75
NOV					
17...	1200	18	282	14	75
DEC					
08...	1300	16	326	14	57
JAN					
19...	1315	18	473	23	79
FEB					
23...	1300	24	750	49	84

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. 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: Jan. 28, Feb. 2-13, and Mar. 5-6. Records good 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.--16 years (water years 1922-24, 1977-89), 61.4 ft³/s; 44,480 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, 2,390 ft³/s at 1815 Aug. 12, gage height, 5.62 ft, from rating curve extended on basis of slope-area measurement of peak flow; minimum daily, 8.3 ft³/s, July 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	32	22	29	20	27	43	19	25	14	43	19
2	22	27	23	25	17	21	27	18	32	12	63	24
3	21	27	20	30	14	18	40	16	57	14	40	18
4	17	26	18	31	10	16	24	15	65	14	26	12
5	23	26	20	31	10	20	20	16	29	14	30	11
6	24	27	22	28	10	22	21	15	29	8.3	31	12
7	21	27	20	20	11	24	18	16	28	12	254	15
8	22	28	24	13	12	23	23	16	26	17	56	83
9	18	33	29	20	13	28	16	21	126	14	36	51
10	18	28	28	24	15	29	16	21	51	18	29	28
11	18	32	26	25	18	30	20	18	38	18	24	109
12	15	29	26	20	22	30	22	13	242	203	307	66
13	18	28	33	19	25	28	22	18	116	159	60	35
14	17	28	29	24	25	26	22	149	67	174	29	19
15	21	26	22	23	26	29	19	50	52	56	29	18
16	22	21	21	25	24	30	18	71	46	41	134	20
17	21	22	31	31	31	29	17	96	29	31	43	19
18	19	23	32	31	36	29	15	39	26	27	19	18
19	23	21	31	30	51	29	18	35	19	21	40	15
20	26	18	27	27	35	27	14	35	13	25	28	54
21	25	19	25	27	31	21	16	39	9.5	26	21	24
22	25	23	22	25	29	24	20	37	25	25	29	20
23	23	26	19	26	39	22	17	37	15	23	22	21
24	27	25	18	24	34	22	18	38	20	26	18	23
25	24	23	23	27	29	26	16	63	13	15	16	22
26	27	20	26	24	26	26	16	95	45	20	24	22
27	29	14	16	21	31	23	18	29	19	22	52	21
28	27	22	13	20	27	21	18	24	12	20	18	21
29	25	20	19	21	---	51	34	25	12	252	17	19
30	24	18	24	30	---	33	44	26	15	74	20	19
31	25	---	26	28	---	26	---	25	---	33	15	---
TOTAL	688	739	735	779	671	810	652	1135	1301.5	1428.3	1573	858
MEAN	22.2	24.6	23.7	25.1	24.0	26.1	21.7	36.6	43.4	46.1	50.7	28.6
MAX	29	33	33	31	51	51	44	149	242	252	307	109
MIN	15	14	13	13	10	16	14	13	9.5	8.3	15	11
AC-FT	1360	1470	1460	1550	1330	1610	1290	2250	2580	2830	3120	1700

CAL YR 1988 TOTAL 15162 MEAN 41.4 MAX 417 MIN 11 AC-FT 30070
WTR YR 1989 TOTAL 11369.8 MEAN 31.2 MAX 307 MIN 8.3 AC-FT 22550

ARKANSAS RIVER BASIN

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Periodic sediment data for water years 1987-88 are published in this report.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
OCT									
20...	1430	15	407	8.3	16.0	7.5	2.8	K60	450
NOV									
17...	1440	18	421	8.3	5.0	9.6	2.3	K30	290
DEC									
08...	1500	19	455	8.3	0.0	11.4	E0.7	K35	210
JAN									
19...	1430	12	441	8.2	1.0	11.1	2.8	K53	410
FEB									
23...	1350	13	402	8.2	6.0	9.3	7.5	K13	530
MAR									
30...	1400	24	367	8.2	8.5	8.8	>5.1	K33	210
APR									
20...	1345	16	364	8.4	21.0	7.0	1.6	K5	200
MAY									
18...	1350	35	388	8.2	23.5	6.2	E0.3	28	360
JUN									
14...	1445	13	316	8.2	22.5	6.5	2.2	75	380
JUL									
20...	1230	12	500	8.3	28.0	5.9	0.5	K710	680
AUG									
24...	1240	30	529	8.3	22.5	6.4	0.4	K270	340
SEP									
21...	1215	12	515	8.3	16.0	7.0	E0.3	180	460

DATE	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT								
20...	109	60	16	170	0.03	1.1	2.40	<1
NOV								
17...	116	63	15	126	0.02	1.4	2.20	1
DEC								
08...	119	67	19	107	0.31	1.1	2.70	<1
JAN								
19...	113	68	17	812	0.87	1.4	2.40	<1
FEB								
23...	97	62	18	1180	1.00	1.3	1.90	<1
MAR								
30...	91	54	16	20	1.10	1.4	1.50	<1
APR								
20...	92	53	14	69	0.02	0.20	1.30	<1
MAY								
18...	97	57	14	129	0.02	0.40	1.50	<1
JUN								
14...	89	40	11	130	0.07	0.40	1.20	<1
JUL								
20...	140	87	17	108	0.02	0.50	1.50	<1
AUG								
24...	146	85	17	170	0.01	0.20	1.60	<1
SEP								
21...	141	81	18	144	0.02	0.30	1.60	<1

E ESTIMATED
K BASED ON NON-IDEAL COUNT

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS-SOLVED (UG/L AS MN)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT 20...	<1	8	5800	<10	7	200	10	50
NOV 17...	<1	9	4300	<10	<5	180	<10	40
DEC 08...	<1	6	2600	<10	<5	100	10	30
JAN 19...	<1	15	9000	20	16	280	20	80
FEB 23...	<1	18	14000	6	25	410	29	110
MAR 30...	<1	8	4300	9	6	140	16	30
APR 20...	<1	4	1300	21	<5	60	6	10
MAY 18...	1	9	2600	150	6	90	13	20
JUN 14...	1	4	3100	8	5	90	4	30
JUL 20...	<1	6	3000	14	5	80	12	20
AUG 24...	<1	6	3800	5	5	90	6	30
SEP 21...	1	7	2600	6	5	30	6	30

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUSPENDED (MG/L)	SEDI-MENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM
OCT 15...	1040	20	228	12	44	--
NOV 05...	1300	20	374	20	49	--
NOV 13...	1130	E16	474	0.0	45	--
DEC 18...	1355	E17	356	0.0	54	--
JAN 21...	1100	E14	62	0.0	--	--
FEB 19...	1345	E13	377	0.0	63	--
APR 04...	1620	54	807	118	74	--
APR 23...	1415	69	481	90	72	--
APR 27...	1350	79	482	103	52	--
APR 29...	1445	72	449	87	--	76
MAY 28...	1415	105	392	111	54	--
JUN 24...	1145	50	282	38	78	--
JUL 14...	1400	30	188	15	47	--
JUL 30...	1245	21	19	1.1	--	--
AUG 20...	1245	22	596	35	89	--
SEP 17...	1325	18	237	12	59	--

E ESTIMATED

ARKANSAS RIVER BASIN

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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					
22...	1300	18	278	14	62
NOV					
04...	1130	34	462	42	30
19...	1315	23	624	39	40
DEC					
17...	1325	E27	259	0.0	25
JAN					
21...	1515	E14	98	0.0	--
FEB					
25...	1520	12	1760	57	68
MAR					
24...	1500	18	628	31	69
APR					
21...	1410	76	844	173	60
MAY					
19...	1455	68	2660	488	64
20...	1335	96	1720	446	44
JUN					
16...	1400	28	218	16	--
JUL					
28...	1415	11	119	3.5	--
AUG					
25...	1440	14	209	7.9	63

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

OCT					
04...	1720	E10	467	0.0	61
20...	1430	11	431	13	64
NOV					
17...	1440	2.9	880	6.9	30
JAN					
19...	1430	9.5	985	25	--

E ESTIMATED

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, approximately 200 ft downstream from Janitell Road below Colorado Springs.

PERIOD OF RECORD.--April 1975 to June 1976, May 1979 to September 1979, December 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)
OCT										
19...	1145	80	889	7.7	15.0	9.3	E16	190	290	43
NOV										
16...	1015	55	860	7.6	9.5	9.0	14	K1500	380	27
DEC										
07...	1015	51	897	7.7	8.0	8.4	14	100	400	42
JAN										
18...	1100	99	874	7.8	8.0	10.2	15	250	570	141
FEB										
22...	1115	96	830	7.7	8.0	11.3	E17	140	580	62
MAR										
29...	1000	92	792	7.7	13.0	8.4	10	K26	200	55
APR										
19...	1030	85	830	7.7	14.5	7.8	16	K60	130	63
MAY										
17...	1330	100	601	7.9	15.5	7.4	12	1100	5400	249
JUN										
14...	1305	100	657	7.9	17.0	7.3	6.3	840	1100	65
JUL										
19...	1230	100	898	7.6	24.0	6.2	9.3	K6300	620	9
AUG										
23...	1315	90	878	7.6	22.5	6.5	13	600	410	34
SEP										
20...	1330	110	788	7.8	21.5	6.8	13	K2300	K2500	5

DATE	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	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)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT										
19...	12.0	13	2.10	1	2	13	1100	--	<5	180
NOV										
16...	12.0	13	1.40	1	2	15	470	--	12	110
DEC										
07...	13.0	16	1.60	<1	2	7	810	--	5	90
JAN										
18...	12.0	14	1.50	<1	2	9	3200	--	21	100
FEB										
22...	11.0	13	1.30	<1	3	9	1500	--	12	90
MAR										
29...	7.90	12	1.10	<1	3	17	1400	--	5	210
APR										
19...	13.0	14	0.90	<1	5	14	2100	--	11	90
MAY										
17...	4.90	6.1	1.10	<1	2	17	8200	55	21	90
JUN										
14...	6.30	11	1.20	<1	1	10	6600	--	13	70
JUL										
19...	7.90	12	2.10	<1	2	13	1600	--	10	100
AUG										
23...	6.40	14	0.90	<1	2	11	1300	--	5	50
SEP										
20...	6.00	6.4	2.30	<1	1	9	4600	--	11	70

E ESTIMATED

K BASED ON NON-IDEAL COUNT

ARKANSAS RIVER BASIN

07105780 B DITCH DRAIN NEAR SECURITY, CO

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1981 to October 1988 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT 20...	1245	0.07	7440	8.2	15.0	10.6	2.0	9	0.07	1.6	52.0

LOCATION.--Lat 38°43'46", long 104°44'00", in SW¼ 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.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WDR CO-85-1: 1984 (M).

GAGE.--Water-stage recorder. 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: Feb. 4-12, and May 18-24. Records good except those above 500 ft³/s, which are fair, and estimated daily discharges, 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.

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, 2,500 ft³/s at 2200 July 13, gage height, 6.18 ft, from rating curve based on slope-area measurements of peak flow; minimum daily, 25 ft³/s, Dec. 29, Jan. 8-9.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	60	45	45	69	81	97	74	81	40	77	55
2	60	61	59	42	56	75	92	69	90	36	92	55
3	60	76	45	45	54	72	100	67	152	42	77	56
4	59	74	45	42	50	71	78	66	206	44	50	52
5	61	75	39	41	50	72	71	66	88	41	48	56
6	63	77	41	39	50	77	71	63	90	35	55	55
7	69	75	40	31	55	75	67	64	82	43	379	57
8	66	75	43	25	56	71	67	60	76	41	110	249
9	61	95	50	25	58	74	68	66	248	32	70	157
10	63	78	52	30	60	75	66	72	120	37	74	117
11	61	87	39	32	65	78	67	63	84	37	72	189
12	55	87	40	69	70	79	68	60	303	256	248	153
13	52	81	47	67	75	77	73	75	197	266	134	117
14	49	79	43	79	70	76	54	251	123	294	82	73
15	51	65	40	76	71	75	59	138	103	139	90	67
16	57	43	40	72	72	78	49	169	108	112	223	57
17	57	37	53	73	71	81	50	235	88	77	102	64
18	55	35	60	70	76	80	49	60	75	61	68	67
19	57	35	54	71	86	79	57	45	65	53	60	64
20	64	37	45	70	107	83	60	60	58	58	108	132
21	61	39	37	69	84	72	59	65	57	53	61	87
22	59	52	36	71	71	72	64	60	99	47	81	88
23	59	44	32	71	100	70	59	55	82	48	66	81
24	61	49	34	68	96	69	61	60	92	51	60	75
25	60	64	36	72	86	70	57	59	79	52	66	76
26	58	42	43	66	80	70	54	190	144	50	109	71
27	56	44	42	63	82	70	58	75	61	48	205	66
28	57	46	26	64	82	69	57	73	51	52	52	72
29	57	48	25	65	---	111	84	93	47	269	60	73
30	56	46	39	76	---	107	127	77	42	122	57	63
31	57	---	47	80	---	72	---	75	---	75	59	---
TOTAL	1818	1806	1317	1809	2002	2381	2043	2705	3191	2611	3095	2644
MEAN	58.6	60.2	42.5	58.4	71.5	76.8	68.1	87.3	106	84.2	99.8	88.1
MAX	69	95	60	80	107	111	127	251	303	294	379	249
MIN	49	35	25	25	50	69	49	45	42	32	48	52
AC-FT	3610	3580	2610	3590	3970	4720	4050	5370	6330	5180	6140	5240
CAL YR 1988	TOTAL 33869	MEAN 92.5	MAX 677	MIN 25	AC-FT 67180							
WTR YR 1989	TOTAL 27422	MEAN 75.1	MAX 379	MIN 25	AC-FT 54390							

ARKANSAS RIVER BASIN

07105800 FOUNTAIN CREEK AT SECURITY, CO--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Periodic sediment data for the 1987-88 water years are published in this report.

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	SED. SUSP. FALL DIAM. % FINER THAN .062 MM
OCT						
08...	1000	40	62	6.7	61	--
NOV						
06...	1320	79	566	121	82	--
DEC						
02...	1530	76	179	37	--	--
18...	1415	141	147	56	61	--
JAN						
22...	1430	76	103	21	74	--
FEB						
19...	1345	99	480	128	76	--
APR						
04...	1705	140	759	287	42	--
09...	1215	140	779	294	66	--
28...	1015	150	492	199	45	--
MAY						
01...	1330	180	494	240	--	57
20...	1115	195	1210	637	68	--
JUN						
08...	1840	2970	22700	182000	--	69
08...	1940	2810	20300	154000	63	--
08...	2030	2070	18200	102000	67	--
08...	2125	1480	15100	60300	61	--
25...	1550	146	262	103	55	--
JUL						
15...	1545	116	172	54	60	--
AUG						
20...	1245	59	200	32	64	--
26...	1750	582	3730	5860	--	69
28...	1515	1350	8460	30800	--	64
SEP						
18...	1500	103	455	127	55	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	SED. SUSP. FALL DIAM. % FINER THAN .062 MM
OCT						
22...	1310	120	299	97	62	--
NOV						
04...	1520	124	332	111	61	--
19...	1500	111	373	112	31	--
DEC						
17...	1345	87	163	38	45	--
JAN						
20...	1010	65	89	16	82	--
FEB						
24...	1200	103	389	108	73	--
MAR						
24...	1505	114	387	119	67	--
APR						
20...	1135	120	412	133	74	--
JUN						
15...	0945	150	2150	871	--	89
15...	1140	128	1580	546	95	--
AUG						
09...	1605	3000	16800	136000	--	67
09...	1710	2520	14000	95300	--	70
09...	1915	911	6380	15700	--	74
25...	0930	76	335	69	40	--
SEP						
07...	1430	59	164	26	76	--

07105800 FOUNTAIN CREEK AT SECURITY, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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					
20...	1100	37	80	8.1	73
NOV					
02...	1530	72	101	20	52
16...	1120	32	56	4.8	88
DEC					
07...	1115	29	67	5.2	81
MAR					
29...	1100	54	88	13	81
APR					
19...	1110	43	110	13	36
JUN					
14...	0820	95	421	108	71
JUL					
19...	0815	48	112	15	64
AUG					
23...	1425	72	432	84	69
SEP					
20...	0830	79	235	50	48

ARKANSAS RIVER BASIN

07105820 CLOVER DITCH DRAIN NEAR WIDEFIELD, CO

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1981 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT 20...	1145	4.3	1410	8.1	14.5	8.8	13	5	2.40
NOV 17...	1015	4.4	1400	--	8.0	9.8	31	29	10.0
JAN 19...	1045	4.2	--	8.0	7.5	10.2	23	22	1.60
APR 20...	1045	2.2	1660	8.5	17.5	11.4	10	8	7.10
JUL 20...	1510	3.9	1390	7.9	27.5	5.9	15	2	6.00

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	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)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT 20...	3.5	7.00	--	--	--	--	--	--	--
NOV 17...	12	7.20	1	<1	8	560	220	11	40
JAN 19...	13	5.50	<1	2	11	550	78	<5	40
APR 20...	8.1	7.60	<1	1	8	330	50	<5	20
JUL 20...	8.2	5.40	1	<1	11	340	42	3	30

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.

DRAINAGE AREA.--65.6 mi².

PERIOD OF RECORD.--January 1976 to current year.

GAGE.--Water-stage recorder. 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.

REMARKS.--Estimated daily discharges: Dec. 28 to Jan. 3, Feb. 2-9, and Mar. 3-5. Records fair due to unstable channel conditions, except for estimated daily discharges, and those from 50 to 1,000 ft³/s, which are poor. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--13 years, 2.38 ft³/s; 1,720 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; minimum daily, 0.20 ft³/s, July 18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 668 ft³/s at 0515 Aug. 27, gage height, 7.62 ft; minimum daily, 0.50 ft³/s, July 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	3.5	1.2	1.0	1.4	1.4	1.1	.93	1.1	.52	1.1	1.1
2	1.1	3.0	1.2	1.1	1.3	1.3	1.0	.97	1.1	.53	.90	1.1
3	1.1	3.0	1.2	1.1	1.1	1.2	.99	.97	1.3	.51	.84	1.0
4	1.2	2.8	1.4	1.1	1.0	1.3	.86	.94	.94	.51	.80	1.0
5	1.1	2.3	1.2	1.1	.90	1.5	.86	.98	.88	.51	.80	1.1
6	1.0	2.4	1.2	1.1	.90	1.3	.86	.91	.90	.51	1.1	1.1
7	.95	2.4	1.2	1.1	1.0	1.2	.85	.96	.87	.52	3.0	1.0
8	.91	2.0	1.1	1.1	1.2	1.2	.82	.94	.71	.51	1.8	1.1
9	.90	2.6	1.2	1.1	1.4	1.2	.81	.97	.85	.50	1.4	2.0
10	.92	2.0	1.1	1.2	1.4	1.2	.83	.98	.66	.52	1.0	1.8
11	.83	1.9	1.2	1.1	1.5	1.2	.83	.90	.79	.53	.91	1.7
12	.80	2.0	1.1	1.1	1.3	1.2	.83	.89	5.0	.62	.92	1.7
13	.74	2.4	1.1	1.1	1.4	1.2	.83	.95	1.2	.73	.85	1.7
14	.75	1.6	1.1	1.1	1.4	1.3	.81	.95	1.0	3.3	.96	1.7
15	.74	1.5	1.2	1.1	1.3	1.3	.82	1.0	.90	5.4	1.1	1.8
16	.74	1.5	1.1	1.2	1.5	1.2	.84	1.3	.81	1.2	1.4	1.7
17	2.0	1.4	1.1	1.1	1.7	1.1	1.3	1.1	.83	1.0	1.6	1.6
18	1.0	1.4	1.1	1.1	1.7	1.1	.99	1.2	.83	.94	8.0	1.5
19	1.1	1.4	1.1	1.1	1.6	1.1	1.0	1.1	.87	.87	1.3	1.4
20	1.2	1.5	1.1	1.1	1.5	1.1	.99	.96	.93	.80	1.1	1.3
21	1.5	1.5	1.1	1.1	1.5	1.1	1.0	.96	.90	.78	.96	1.2
22	2.0	1.3	1.1	1.2	1.6	1.1	.97	.89	.93	.78	1.1	1.1
23	2.7	1.4	1.1	1.2	1.6	1.0	.95	.85	.76	.80	1.2	1.1
24	2.8	1.5	1.1	1.2	1.7	1.1	.98	.84	.75	.80	1.2	1.1
25	3.3	1.3	1.1	1.2	2.0	1.0	.96	.87	.68	.85	1.1	1.0
26	3.5	1.3	1.1	1.2	1.7	1.1	1.0	.87	.61	.81	1.1	.96
27	4.2	1.3	1.0	1.3	1.5	1.0	.93	.92	.62	.80	4.4	.96
28	4.5	1.4	1.0	1.3	1.4	.96	.95	.97	.56	.78	1.4	.95
29	3.7	1.2	1.0	1.3	---	1.2	.90	.97	.55	.87	1.2	.91
30	3.2	1.2	1.0	1.3	---	1.1	1.1	.93	.54	.68	1.2	.91
31	3.4	---	1.0	1.4	---	1.1	---	.98	---	1.3	1.1	---
TOTAL	54.98	56.0	34.8	35.8	39.50	36.36	27.96	29.95	29.37	29.78	86.44	48.49
MEAN	1.77	1.87	1.12	1.15	1.41	1.17	.93	.97	.98	.96	2.79	1.62
MAX	4.5	3.5	1.4	1.4	2.0	1.5	1.3	1.3	5.0	5.4	4.4	1.1
MIN	.74	1.2	1.0	1.0	.90	.96	.81	.84	.54	.50	.80	.91
AC-FT	109	111	69	71	78	72	55	59	58	59	171	96

CAL YR 1988 TOTAL 578.13 MEAN 1.58 MAX 53 MIN .68 AC-FT 1150
WTR YR 1989 TOTAL 509.43 MEAN 1.40 MAX 44 MIN .50 AC-FT 1010

ARKANSAS RIVER BASIN

07105905 FOUNTAIN CREEK ABOVE LITTLE FOUNTAIN CREEK, BELOW FOUNTAIN, CO

LOCATION.--Lat 38°37'50", long 104°40'50", in SW¼NW¼ sec.28, 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 1988 TO SEPTEMBER 1989

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)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)
OCT										
19...	1400	55	1170	7.7	16.0	6.4	E12	120	100	53
NOV										
16...	1400	67	1130	8.0	8.5	8.1	15	K500	110	72
DEC										
07...	1300	66	1190	7.9	4.0	8.8	13	K70	K70	48
JAN										
18...	1400	98	1090	7.8	7.0	8.6	20	K140	K190	88
FEB										
22...	1400	95	1060	8.0	9.5	8.8	E18	230	240	95
MAR										
29...	1300	87	1060	7.8	14.0	6.4	23	K24	180	9
APR										
19...	1300	22	1320	7.8	19.0	5.1	4.5	K3	120	9
MAY										
17...	1405	112	796	7.9	17.0	7.2	6.6	4200	4200	395
JUN										
14...	1445	100	945	7.9	21.0	5.8	7.5	K340	1200	364
JUL										
19...	1400	35	1110	7.8	28.5	5.8	4.5	1500	470	71
AUG										
23...	1515	40	1180	7.8	26.0	4.7	6.0	K180	500	59
SEP										
20...	1600	171	805	7.7	22.5	5.0	18	K5500	K5600	215

DATE	NITRO- GEN,AM- MONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	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)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT									
19...	1.20	2.0	5.10	<1	<1	10	1700	<5	40
NOV									
16...	3.20	5.1	4.00	1	<1	13	1200	10	60
DEC									
07...	3.40	4.8	4.60	1	<1	10	1500	5	60
JAN									
18...	5.90	7.4	4.10	<1	1	10	2600	6	60
FEB									
22...	5.40	6.4	3.60	<1	<1	7	2700	<5	60
MAR									
29...	3.90	5.2	4.50	<1	2	8	1400	<5	50
APR									
19...	1.90	2.9	2.90	<1	1	6	420	<5	30
MAY									
17...	0.23	1.5	2.70	<1	1	15	15000	23	90
JUN									
14...	0.56	1.0	3.70	<1	<1	14	14000	22	100
JUL									
19...	0.91	1.8	4.40	<1	<1	10	4000	10	60
AUG									
23...	0.36	1.0	3.60	<1	<1	8	2300	4	30
SEP									
20...	0.38	1.7	4.60	1	1	15	38000	94	270

E ESTIMATED

K BASED ON NON-IDEAL COUNT

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 current year.

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: Oct. 15 to Nov. 8, Dec. 16-22, Feb. 17-28, and Mar. 21 to Apr. 9. Records good except those for estimated daily discharges and those above 2.5 ft³/s, which are fair. Gage is on controlled pipe diversion from Keaton Reservoir, which delivers appropriated water rights to Fort Carson and the City of Fountain. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 1.21 ft³/s; 877 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, 3.2 ft³/s, Mar. 13; minimum daily, 0.01 ft³/s, July 25-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.44	.47	.94	.64	.55	1.4	1.4	.93	1.3	.16	1.6	.16
2	.44	.47	1.2	.64	.55	1.4	1.4	.77	.90	.13	1.6	.17
3	.44	.47	1.2	.61	.55	1.4	1.4	.77	.81	.12	1.6	.17
4	.44	.47	1.2	.60	.55	1.4	1.4	.77	1.1	.13	1.4	.16
5	.44	.47	1.2	.55	.59	1.4	1.4	.77	1.6	.14	1.3	.19
6	.44	.47	1.2	.51	.60	1.4	1.4	.77	1.6	.12	1.3	.19
7	.44	.47	1.2	.51	.60	1.3	1.4	.77	1.6	.14	1.3	.19
8	.44	.47	1.2	.51	.60	1.2	1.4	.79	1.6	.14	1.3	.13
9	.44	.47	.83	.51	.60	1.2	1.4	.81	.93	.15	1.3	.10
10	.44	.47	.68	.51	.60	1.5	1.4	.81	.44	.16	1.3	.10
11	.47	.47	.68	.51	.60	1.6	1.2	.96	1.1	.16	1.3	.45
12	.47	.47	.68	.51	.60	1.6	.94	1.1	1.6	.16	1.3	.70
13	.47	.47	.68	.51	.60	3.2	.85	1.1	1.8	.16	1.3	.70
14	.46	.47	.68	.51	.60	2.7	.85	1.1	2.0	.28	1.3	.71
15	.46	.47	.68	.51	.60	2.5	.85	1.3	1.9	.34	1.3	.72
16	.46	.47	.60	.51	.60	2.1	.85	1.5	2.0	.34	1.2	.71
17	.46	.47	.55	.51	.60	1.5	.85	2.2	2.0	.34	1.2	.72
18	.46	.47	.55	.51	.60	1.5	.85	2.3	2.1	.34	1.2	.35
19	.46	.47	.55	.51	.60	1.5	.85	2.2	2.2	.34	1.2	.10
20	.46	.47	.47	.51	.60	1.3	.85	2.3	2.2	.27	1.1	.12
21	.46	.47	.47	.51	.60	1.4	.96	2.4	2.1	.12	1.1	.12
22	.46	.47	.47	.51	.60	1.4	1.0	2.5	2.0	.05	.60	.51
23	.46	.47	.47	.52	.60	1.4	1.0	2.5	2.0	.02	.28	.72
24	.46	.49	.53	.55	.60	1.4	1.0	2.5	2.0	.02	.49	.72
25	.46	.51	.60	.55	.60	1.4	1.0	2.0	2.0	.01	.68	.27
26	.46	.51	.60	.55	.60	1.4	1.0	1.5	1.8	.01	.68	.16
27	.46	.51	.60	.55	.60	1.4	1.0	1.5	.90	.01	.68	.28
28	.46	.51	.60	.55	.90	1.4	1.0	1.5	.40	.01	.58	.28
29	.46	.52	.64	.55	---	1.4	1.1	1.5	.30	.01	.51	.28
30	.46	.53	.64	.55	---	1.4	1.1	1.5	.27	.01	.31	.28
31	.46	---	.64	.55	---	1.4	---	1.5	---	.83	.18	---
TOTAL	14.09	14.39	23.23	16.63	16.89	48.5	33.10	44.92	44.55	5.22	32.49	10.46
MEAN	.45	.48	.75	.54	.60	1.56	1.10	1.45	1.48	.17	1.05	.35
MAX	.47	.53	1.2	.64	.90	3.2	1.4	2.5	2.2	.83	1.6	.72
MIN	.44	.47	.47	.51	.55	1.2	.85	.77	.27	.01	.18	.10
AC-FT	28	29	46	33	34	96	66	89	88	10	64	21

CAL YR 1988 TOTAL 342.59 MEAN .94 MAX 2.9 MIN .37 AC-FT 680
WTR YR 1989 TOTAL 304.47 MEAN .83 MAX 3.2 MIN .01 AC-FT 604

ARKANSAS RIVER BASIN

07105928 LITTLE FOUNTAIN CREEK NEAR FORT CARSON, CO

LOCATION.--Lat 38°40'49", long 104°51'08", in SW¼SE¼ sec.2, T.16 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on right bank 0.3 mi downstream from Keaton Reservoir, 0.4 mi upstream from State Highway 115, 1.2 mi upstream from Deadman Canyon and 4.8 mi southwest of Fort Carson.

DRAINAGE AREA.--11.8 mi².

PERIOD OF RECORD.--Streamflow records, May 1978 to current year. Water-quality data available, May to September 1978.

REVISED RECORDS.--WDR CO-80-1: 1979.

GAGE.--Water-stage recorder. Elevation of gage is 6,360 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Jan. 31 to Feb. 18. Records good except for estimated daily discharges, which are poor. Womack Ditch diverts about 5.0 ft³/s from Keaton Reservoir upstream. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 4.10 ft³/s; 2,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 224 ft³/s, Oct. 4, 1984, gage height, 5.04 ft, from rating curve extended above 80 ft³/s; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.4 ft³/s at 2315 May 16, gage height, 2.42 ft; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.05	.25	.00	.00	.19	.00	.00	.09	.21	1.5	.01
2	.00	.10	.12	.00	.00	.19	.02	.00	.06	.12	.94	.10
3	.00	.10	.08	.00	.00	.16	.38	.44	.23	.08	.78	.13
4	.00	.10	.04	.00	.00	.15	.65	.68	.68	.07	.54	.09
5	.00	.07	.03	.00	.00	.15	.45	.65	.45	.04	.59	.08
6	.01	.05	.02	.00	.00	.15	.12	.55	.15	.02	.54	.07
7	.12	.08	.01	.00	.00	.15	.06	.45	.09	.02	.64	.05
8	.13	.16	.02	.00	.00	.12	.04	.39	.06	.01	.65	.05
9	.07	.25	.00	.00	.00	.09	.03	.31	.05	.00	.62	.29
10	.04	.33	.00	.00	.00	.13	.02	.30	.52	.00	.72	.83
11	.04	.32	.00	.00	.01	.23	.01	.21	1.2	.00	.68	.65
12	.04	.26	.00	.00	.01	.25	.00	.13	1.5	.00	.72	.44
13	.05	.27	.00	.00	.02	.18	.00	.06	3.0	.16	.72	.47
14	.05	.24	.00	.00	.02	.12	.00	.09	2.4	.22	.64	.35
15	.04	.21	.00	.00	.03	.08	.00	1.8	2.2	.20	.48	.20
16	.04	.20	.00	.00	.04	.05	.00	1.9	1.9	.19	.41	.13
17	.10	.15	.00	.00	.04	.04	.00	3.7	1.6	.11	.35	.08
18	.06	.17	.00	.00	.05	.03	.00	2.5	1.2	.05	.26	.05
19	.08	.21	.00	.00	.05	.03	.00	2.2	.90	.03	.16	.03
20	.10	.14	.00	.00	.05	.03	.02	1.8	.61	.02	.11	.20
21	.10	.17	.00	.00	.06	.03	.05	1.5	.36	.02	.06	.44
22	.11	.17	.00	.00	.07	.01	.04	1.2	.24	.01	.04	.37
23	.10	.23	.00	.00	.09	.02	.02	.70	.17	.00	.04	.11
24	.07	.41	.00	.00	.09	.02	.00	.33	.13	.00	.04	.06
25	.08	.32	.00	.00	.11	.02	.00	.17	.07	.00	.03	.02
26	.10	.29	.00	.00	.13	.01	.00	.95	.04	.00	.04	.02
27	.10	.13	.00	.00	.17	.01	.00	.85	.03	.00	.04	.02
28	.07	.20	.00	.00	.19	.00	.00	.51	.03	.00	.03	.03
29	.06	.33	.00	.00	---	.01	.00	.23	.03	.00	.03	.07
30	.06	.26	.00	.00	---	.00	.00	.15	.05	.97	.02	.07
31	.05	---	.00	.00	---	.00	---	.11	---	2.5	.02	---
TOTAL	1.87	5.97	0.57	0.00	1.23	2.65	1.91	24.86	20.04	5.05	12.44	5.51
MEAN	.060	.20	.018	.00	.044	.085	.064	.80	.67	.16	.40	.18
MAX	.13	.41	.25	.00	.19	.25	.65	3.7	3.0	2.5	1.5	.83
MIN	.00	.05	.00	.00	.00	.00	.00	.00	.03	.00	.02	.01
AC-FT	3.7	12	1.1	.0	2.4	5.3	3.8	49	40	10	25	11

CAL YR 1988 TOTAL 174.73 MEAN .48 MAX 5.2 MIN .00 AC-FT 347
WTR YR 1989 TOTAL 82.10 MEAN .22 MAX 3.7 MIN .00 AC-FT 163

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: Nov. 28 to Dec. 1, Dec. 8-9, Dec. 16 to Jan. 13, Feb. 2-13, 28, and June 5 to July 12. Records fair except for estimated daily discharges, and those above 60 ft³/s, which are poor. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 2.62 ft³/s; 1,900 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)
May 16	2330	*15	*2.21	No other peak greater than base discharge.			
No flow many days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.05	.12	.18	.28	.44	.63	.47	.53	.23	.36	.00
2	.02	.04	.14	.18	.24	.45	.64	.64	.50	.21	.24	.00
3	.02	.04	.11	.18	.21	.52	.64	.69	.55	.20	.17	.00
4	.05	.04	.13	.18	.18	.52	.64	.69	.73	.18	.08	.00
5	.09	.05	.14	.17	.16	.46	.59	.63	.75	.16	.06	.00
6	.10	.06	.14	.16	.18	.41	.55	.57	.65	.14	.07	.00
7	.10	.06	.12	.14	.20	.44	.51	.50	.55	.11	.34	.00
8	.08	.07	.16	.14	.23	.59	.51	.46	.48	.10	.43	.00
9	.05	.17	.18	.14	.26	.83	.53	.48	.44	.08	.21	.00
10	.04	.18	.18	.18	.29	1.0	.53	.49	.50	.07	.22	.24
11	.03	.16	.15	.20	.30	1.2	.62	.43	1.2	.08	.21	.24
12	.02	.15	.14	.18	.29	1.2	.56	.37	3.0	.15	.25	.70
13	.02	.14	.14	.18	.29	1.1	.51	.41	2.0	.10	.26	.77
14	.01	.11	.13	.19	.29	1.1	.50	1.1	1.0	.04	.14	.62
15	.01	.13	.14	.17	.29	.88	.47	1.7	.80	.18	.10	.44
16	.01	.12	.14	.19	.29	.84	.43	3.1	.65	.23	.11	.32
17	.01	.12	.15	.16	.30	.83	.40	8.5	.56	.07	.09	.21
18	.02	.12	.18	.18	.32	.77	.39	3.7	.48	.02	.09	.12
19	.03	.14	.18	.18	.32	.73	.38	2.4	.42	.01	.04	.07
20	.03	.10	.18	.18	.31	.73	.36	1.8	.38	.01	.03	.12
21	.04	.12	.16	.18	.31	.70	.35	1.5	.35	.00	.02	.09
22	.04	.12	.15	.18	.40	.72	.33	1.4	.31	.00	.00	.08
23	.04	.10	.14	.20	.49	.69	.32	1.2	.29	.00	.12	.08
24	.04	.10	.13	.20	.61	.69	.31	1.1	.27	.00	.03	.07
25	.04	.10	.12	.20	.63	.66	.30	.97	.25	.00	.01	.05
26	.05	.12	.12	.21	.55	.64	.29	1.0	.23	.00	.06	.04
27	.05	.12	.12	.25	.51	.62	.27	.88	.22	.00	.21	.04
28	.05	.12	.12	.24	.46	.60	.27	.78	.21	.00	.04	.03
29	.05	.11	.12	.24	---	.66	.34	.68	.20	.01	.01	.03
30	.05	.11	.14	.25	---	.70	.44	.61	.25	.51	.00	.02
31	.05	---	.16	.27	---	.61	---	.57	---	.52	.00	---
TOTAL	1.26	3.17	4.43	5.88	9.19	22.33	13.61	39.82	18.75	3.41	4.00	4.38
MEAN	.041	.11	.14	.19	.33	.72	.45	1.28	.62	.11	.13	.15
MAX	.10	.18	.18	.27	.63	1.2	.64	8.5	3.0	.52	.43	.77
MIN	.01	.04	.11	.14	.16	.41	.27	.37	.20	.00	.00	.00
AC-FT	2.5	6.3	8.8	12	18	44	27	79	37	6.8	7.9	8.7

CAL YR 1988 TOTAL 160.07 MEAN .44 MAX 5.6 MIN .00 AC-FT 317
WTR YR 1989 TOTAL 130.23 MEAN .36 MAX 8.5 MIN .00 AC-FT 258

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.--No estimated daily discharges. Records good. Some diversions upstream from station for irrigation and other uses, amounts unknown.

AVERAGE DISCHARGE.--11 years, 1.92 ft³/s; 1,390 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.--No flow for the year.

CAL YR 1988 TOTAL 5.10 MEAN .014 MAX .22 MIN .00 AC-FT 10

LOCATION.--Lat 38°36'14", long 104°40'20", in SW¼NE¼ Sec.4, T.17 S., R.65 W., El Paso County, Hydrologic Unit 11020003, on right bank, 900 ft upstream from Denver & Rio Grande Railroad bridge, 0.70 mi downstream from Little Fountain Creek and 5.5 mi south of Fountain.

DRAINAGE AREA ---681 mi².

PERIOD OF RECORD.--September 1938 to March 1, 1940 (monthly records only), March 2, 1940 to September 1954;
July 2, 1985 to current year.

REMARKS.--Estimated daily discharges: Feb. 3-13. Records good except those above about 500 ft³/s, which are fair, 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. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

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 FOR CURRENT YEAR.--Maximum discharge, 2,740 ft³/s at 0030 July 14, gage height, 7.21 ft, from rating curve extended above 1,100 ft³/s, on the basis of two slope-area measurements of peak flow; minimum daily, 17 ft³/s, Apr. 18.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	60	60	59	107	128	99	75	29	33	42	36
2	53	60	83	57	90	131	147	60	34	34	51	32
3	54	72	65	63	70	119	122	56	30	35	100	35
4	41	75	67	62	65	95	113	49	218	36	50	33
5	44	72	61	69	60	106	93	38	53	38	43	39
6	46	74	60	71	55	118	88	31	58	40	50	39
7	53	78	56	60	55	118	83	31	47	40	402	50
8	45	76	55	43	55	106	78	34	35	44	172	286
9	48	97	51	49	60	104	79	41	97	37	59	222
10	51	82	64	53	70	103	75	42	214	47	61	84
11	58	97	62	49	80	100	76	33	81	53	55	178
12	43	106	58	63	85	99	75	32	155	93	205	110
13	37	102	65	67	90	94	79	42	324	211	204	101
14	23	110	63	79	95	90	65	163	135	640	44	50
15	25	97	60	82	95	88	58	151	100	206	44	39
16	30	75	51	85	95	95	52	49	105	174	238	31
17	43	62	61	94	98	96	41	387	90	93	173	33
18	55	61	67	94	101	91	17	38	78	51	102	36
19	55	59	69	93	114	93	23	24	66	47	63	30
20	42	58	63	96	142	99	35	19	45	44	91	78
21	39	61	58	100	128	85	35	40	39	40	69	62
22	37	70	55	99	104	85	45	50	57	32	77	60
23	38	62	51	100	133	83	37	45	48	32	83	55
24	50	74	47	96	155	80	33	44	50	37	67	58
25	45	82	49	100	144	82	23	43	44	42	64	58
26	38	59	54	103	142	84	21	139	51	47	66	51
27	42	60	51	99	136	82	25	53	74	51	391	42
28	44	63	45	104	133	83	28	39	22	47	51	70
29	43	61	49	99	---	92	43	47	24	261	39	68
30	48	63	59	117	---	167	115	37	25	247	34	74
31	57	---	61	117	---	99	---	33	---	55	44	---
TOTAL	1377	2228	1820	2522	2757	3095	1903	1965	2428	2887	3234	2140
MEAN	44.4	74.3	58.7	81.4	98.5	99.8	63.4	63.4	80.9	93.1	104	71.3
MAX	58	110	83	117	155	167	147	387	324	640	402	286
MIN	23	58	45	43	55	80	17	19	22	32	34	30
AC-FT	2730	4420	3610	5000	5470	6140	3770	3900	4820	5730	6410	4240
CAL YR 1988	TOTAL 36928		MEAN 101	MAX 965	MIN 12	AC-FT 73250						
WTR YR 1989	TOTAL 28356		MEAN 77.7	MAX 640	MIN 17	AC-FT 56240						

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 poor quality. Daily maximum and minimum specific conductance data available in the district office. Temperature and pH data are considered good, specific conductance are considered fair and dissolved oxygen data are considered poor

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,560 microsiemens, Mar. 13, 1988; minimum, 290 microsiemens, Aug. 4, 1988.

pH: Maximum, 8.4 units, on many days; minimum 7.4 units, May 19, June 10, 1988.

WATER TEMPERATURE: Maximum, 31.1°C, July 2, 1989; 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, 1,380 microsiemens, Apr. 18; minimum, 300 microsiemens, June 12.

pH: Maximum, 8.4 units, on many days; minimum, 7.5 units, on many days.

WATER TEMPERATURE: Maximum, 31.1°C, July 2; minimum, 0.0°C, on many days during winter months.

DISSOLVED OXYGEN: Maximum, 11.9 mg/L, Jan. 22, Mar. 5; minimum, 4.3 mg/L, Apr. 25 and June 18-19.

SPECIFIC CONDUCTANCE, <MICROSIEMENS/CM AT 25 DEG. C>, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1140	1130	1140	1120	1030	1020	---	960	1140	1150	1090	1220
2	1120	1120	1070	1160	1090	1110	---	1040	1130	1150	1050	---
3	1110	1080	1140	1150	1190	1060	---	1070	1120	1140	900	---
4	1130	1080	1130	1150	1200	1080	---	1080	720	1150	1030	---
5	1140	1080	1150	1150	---	1050	980	1090	1030	1140	1080	---
6	1120	1070	1160	1160	---	1000	1000	1120	1010	1120	1040	1160
7	1080	1060	1170	1180	---	980	1010	1130	1050	1110	670	1040
8	1110	1080	1180	1260	---	990	1010	1140	1060	1080	820	---
9	1120	1040	1210	1260	---	---	1000	1120	990	1080	1050	---
10	1120	---	1190	1190	---	---	1030	1060	810	1060	1110	---
11	1100	---	1160	1170	---	---	1030	1090	1040	1040	1120	---
12	1150	---	1170	1080	---	---	1020	1110	850	950	1010	---
13	1160	---	1130	1080	1170	1010	1000	1110	690	710	---	---
14	1230	---	1150	1060	1150	1010	1020	800	880	---	1100	1040
15	1230	1040	1160	1060	1120	---	1030	730	950	---	1110	1100
16	1200	1090	1170	1040	1070	---	1060	1040	940	---	---	1150
17	1130	1120	1160	1060	1050	---	---	690	1010	---	---	1170
18	1100	1130	1150	1040	1040	---	1350	1100	1040	1130	---	1130
19	1140	1150	1150	1040	1010	---	1270	1260	1090	1120	1090	1100
20	1140	1150	1160	1050	930	---	1060	1320	1130	1070	960	988
21	---	1140	1160	1060	960	---	1080	1170	1150	1110	1040	1020
22	---	1110	1170	1040	1010	1030	1050	1130	1080	1140	1140	1050
23	---	1130	1160	1020	990	1010	1050	1160	---	1190	1050	1080
24	---	1120	1150	1030	940	1030	1040	1140	---	1170	1140	1070
25	---	1070	1180	1030	980	1030	1090	1120	---	1180	1170	1090
26	---	1130	1120	1090	1000	1010	1120	790	---	1190	1180	1110
27	---	1150	1160	1100	1020	1010	1090	1130	---	1180	---	1130
28	---	1120	1110	1060	990	1010	1070	1270	1120	1170	1220	1070
29	---	1140	1160	1100	---	1000	1050	1160	1150	1040	1210	1060
30	---	1140	1180	1060	---	---	840	1160	1160	680	1240	1070
31	1150	---	1120	1050	---	---	---	1130	---	980	1190	---
MEAN	---	---	1150	1100	---	---	---	1080	---	---	---	---
MAX	---	---	1210	1260	---	---	---	1320	---	---	---	---
MIN	---	---	1070	1020	---	---	---	690	---	---	---	---

07106000 FOUNTAIN CREEK NEAR FOUNTAIN, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.00	7.80	8.20	8.00	8.40	8.00	8.00	7.90	8.20	8.10	8.10	7.90
2	8.00	7.80	8.20	8.00	8.40	8.00	8.00	7.90	8.20	7.60	8.10	7.90
3	8.00	7.80	8.20	8.00	8.30	7.90	7.90	7.80	7.90	7.60	8.10	8.00
4	8.00	7.80	8.20	7.90	8.40	8.10	8.00	7.80	8.20	7.70	8.10	8.00
5	8.00	7.90	8.20	8.10	8.30	8.20	7.90	7.80	8.00	7.70	8.10	7.60
6	8.00	7.80	8.20	8.10	8.40	8.30	7.90	7.80	8.10	8.00	8.20	7.90
7	7.90	7.80	8.20	8.10	8.40	8.30	8.00	7.90	8.10	8.00	8.10	7.70
8	8.00	7.80	8.20	8.10	8.40	8.40	8.00	7.90	8.00	7.90	8.00	7.80
9	7.90	7.80	8.10	7.90	8.40	8.30	7.90	7.80	8.30	8.10	7.90	7.70
10	7.80	7.70	---	---	8.40	8.30	8.00	7.90	8.10	7.90	---	---
11	7.80	7.60	---	---	8.40	8.40	8.00	7.90	8.10	7.80	---	---
12	8.00	7.70	---	---	8.40	8.30	8.00	7.90	8.10	7.70	---	---
13	8.00	7.90	---	---	8.40	8.30	8.10	7.90	8.20	8.00	8.00	7.90
14	8.10	7.90	8.20	---	8.40	8.30	8.20	8.10	8.20	7.80	8.10	7.90
15	8.10	7.90	8.30	8.10	8.40	8.30	8.20	8.10	8.20	8.00	8.10	7.90
16	8.10	7.80	8.30	8.20	8.40	8.30	8.20	8.10	8.20	8.00	8.10	7.80
17	8.00	7.70	8.30	8.20	8.40	8.30	8.20	8.00	8.20	8.10	8.00	7.80
18	7.90	7.70	8.30	8.20	8.40	8.30	8.10	8.00	8.20	8.00	8.00	7.80
19	8.00	7.80	8.30	8.20	8.30	8.30	8.10	8.00	8.10	8.00	8.00	7.70
20	8.00	7.60	8.30	8.20	8.40	8.30	8.20	8.00	8.10	8.00	8.00	7.80
21	---	---	8.30	8.20	8.40	8.30	8.20	8.00	8.00	7.80	8.10	7.70
22	---	---	8.30	8.20	8.40	8.40	8.20	8.00	8.00	7.90	8.00	7.80
23	---	---	8.30	8.00	8.40	8.30	8.20	8.00	8.00	7.80	8.00	7.80
24	---	---	8.30	8.10	8.40	8.30	8.20	8.10	7.90	7.70	8.00	7.80
25	---	---	8.20	8.00	8.40	8.30	8.20	7.90	8.00	7.80	8.00	7.80
26	---	---	8.20	8.00	8.40	8.40	8.20	8.00	8.00	7.80	8.00	7.80
27	---	---	8.20	7.90	8.40	8.30	8.20	8.10	8.00	7.80	7.90	7.70
28	---	---	8.20	7.90	8.40	8.20	8.20	8.10	8.00	7.90	7.90	7.70
29	---	---	8.30	8.10	8.30	8.10	8.20	8.00	---	---	---	---
30	---	---	8.40	8.00	8.20	8.10	8.20	8.00	---	---	---	---
31	---	---	---	---	8.10	8.10	8.20	8.00	---	---	---	---
MONTH	---	---	---	---	8.40	7.90	8.20	7.80	8.30	7.60	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	7.90	7.70	8.20	7.60	8.00	7.90	7.90	7.70	7.90	7.80
2	---	---	7.90	7.80	7.80	7.50	8.00	7.90	7.80	7.70	---	---
3	---	---	7.90	7.80	8.00	7.50	8.20	8.00	7.80	7.70	---	---
4	---	---	7.90	7.80	7.90	7.80	8.20	8.00	7.80	7.60	---	---
5	---	---	7.90	7.70	8.00	7.80	8.20	7.90	7.70	7.60	---	---
6	7.80	7.70	7.90	7.80	7.90	7.60	8.20	7.90	7.80	7.70	8.00	7.80
7	7.90	7.80	7.90	7.80	7.80	7.70	8.10	7.80	7.80	7.50	7.90	7.80
8	8.00	7.90	7.80	7.70	7.80	7.70	7.90	7.70	7.80	7.60	---	---
9	8.00	7.90	7.90	7.70	7.80	7.50	8.10	7.70	7.80	7.70	---	---
10	8.10	7.90	7.90	7.80	7.80	7.50	7.90	7.60	7.80	7.60	---	---
11	8.00	7.90	7.90	7.70	7.80	7.60	8.00	7.80	7.90	7.80	8.00	7.90
12	8.00	7.80	7.80	7.70	8.00	7.60	8.00	7.60	7.80	7.50	8.00	7.90
13	8.00	7.80	7.80	7.70	7.90	7.70	8.10	7.80	8.00	7.60	8.00	7.90
14	7.90	7.80	7.90	7.70	7.90	7.80	---	---	8.00	7.60	8.00	7.80
15	8.00	7.80	7.80	7.70	7.90	7.80	---	---	---	---	8.00	7.80
16	7.90	7.80	8.00	7.80	7.90	7.70	---	---	---	---	8.00	7.70
17	8.00	7.80	7.90	7.80	7.90	7.80	---	---	8.00	7.70	8.00	7.90
18	8.10	8.00	8.10	7.80	7.80	7.70	7.90	7.80	7.90	7.80	8.00	7.90
19	8.00	7.90	8.10	8.00	7.90	7.70	8.00	7.80	7.90	7.80	8.00	7.90
20	7.90	7.80	8.10	8.00	7.90	7.80	8.00	7.90	7.90	7.70	8.00	7.80
21	8.00	7.80	8.10	7.80	7.90	7.80	8.10	8.00	7.80	7.70	8.00	7.90
22	8.00	7.80	8.00	7.80	7.90	7.70	8.20	8.00	8.00	7.80	8.00	7.80
23	8.00	7.60	8.00	7.80	7.90	7.70	8.20	8.00	8.00	7.80	7.90	7.70
24	8.00	7.70	8.00	7.80	7.90	7.80	8.10	8.00	8.00	7.80	7.90	7.60
25	8.00	7.90	7.90	7.80	7.90	7.80	8.20	8.00	8.00	7.90	7.90	7.70
26	7.90	7.70	7.90	7.60	8.00	7.70	8.10	7.90	8.00	7.80	7.90	7.70
27	8.00	7.60	8.00	7.80	7.90	7.80	8.10	7.90	7.90	7.80	7.90	7.60
28	8.00	7.60	---	---	8.20	7.80	8.10	7.90	8.10	7.90	7.90	7.80
29	7.90	7.60	---	---	7.90	7.80	8.00	7.60	8.10	8.00	7.90	7.70
30	7.80	7.70	8.10	7.90	8.00	7.70	7.90	7.60	8.00	7.90	7.90	7.80
31	---	---	8.00	7.80	---	---	7.90	7.80	8.00	7.80	---	---
MONTH	---	---	---	---	8.20	7.50	---	---	---	---	---	---

ARKANSAS RIVER BASIN

07106000 FOUNTAIN CREEK NEAR FOUNTAIN, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.1	9.6	15.1	5.1	8.1	.1	5.5	.0	4.7	.0	10.2	.7
2	18.9	8.2	15.4	6.2	8.5	.7	6.0	.0	1.1	.0	12.0	2.5
3	18.2	9.6	15.4	6.5	8.1	1.0	5.3	.0	.0	.0	8.5	.0
4	11.4	8.5	12.6	6.2	7.9	.0	5.7	.3	.3	.0	7.3	.0
5	17.2	8.0	13.6	4.2	8.4	.0	8.9	2.5	.3	.0	8.8	.0
6	16.5	9.0	13.5	4.4	7.4	.3	7.1	1.2	.0	.0	10.6	.0
7	15.7	9.3	13.0	5.9	3.4	.5	4.0	.0	.0	.0	13.7	2.4
8	19.4	7.5	11.2	4.0	4.2	.0	2.2	.0	.0	.0	15.7	4.5
9	18.1	7.5	11.1	6.6	5.7	.0	2.7	.0	.0	.0	17.6	6.5
10	19.9	7.3	---	---	5.9	.0	6.3	.0	3.5	.0	18.2	6.5
11	19.6	7.6	---	---	4.8	.0	2.4	.0	9.3	1.2	---	---
12	20.0	7.8	---	---	7.0	.0	2.1	.0	8.0	1.6	---	---
13	20.3	8.4	---	---	9.8	1.0	1.9	.0	7.5	.0	16.6	---
14	20.7	8.2	11.2	---	5.7	.2	5.4	.0	8.6	.5	13.5	4.8
15	21.1	9.3	7.6	2.4	1.8	.0	4.7	.0	7.6	.7	13.4	2.0
16	20.5	8.1	8.0	.5	4.0	.0	6.2	.0	9.0	.0	15.6	3.3
17	20.4	8.5	8.2	1.2	5.2	.0	8.9	.0	5.3	.4	14.3	5.6
18	19.6	8.9	5.2	1.4	6.3	.0	8.0	.0	9.7	1.1	12.1	3.7
19	17.7	8.8	8.2	1.4	6.4	.7	8.5	.4	7.3	2.2	15.4	4.8
20	15.8	7.0	6.8	.0	6.0	.0	8.2	.0	7.1	2.5	8.3	2.2
21	---	---	8.1	.0	5.8	.0	9.2	.0	10.2	.3	14.4	.7
22	---	---	7.1	.4	4.3	.0	9.5	.1	10.1	.3	14.7	4.4
23	---	---	9.0	1.9	3.6	.0	8.4	.7	12.3	1.6	17.2	5.5
24	---	---	9.7	4.4	3.0	.0	5.6	1.3	13.2	2.5	17.8	5.3
25	---	---	5.6	3.0	3.7	.0	5.7	1.8	14.4	3.4	18.1	5.5
26	16.5	---	5.4	1.1	4.8	.0	8.4	1.4	12.8	3.9	17.7	6.6
27	---	---	6.0	.0	1.8	.0	6.0	.0	10.8	3.0	17.6	6.6
28	---	---	---	---	1.3	.0	3.6	.1	4.9	.9	19.2	6.0
29	---	---	---	---	1.4	.0	8.5	.0	---	---	16.0	6.7
30	---	---	6.2	---	2.3	.0	11.0	1.2	---	---	13.1	6.1
31	---	---	---	---	4.1	.0	11.0	2.2	---	---	16.8	3.0
MONTH	---	---	---	---	9.8	.0	11.0	.0	14.4	.0	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.4	6.2	19.6	5.8	24.3	13.3	30.6	16.3	29.2	17.8	26.1	15.0
2	15.7	5.7	19.2	8.9	25.1	13.3	31.1	18.2	28.7	17.3	---	---
3	12.6	7.8	19.7	8.7	19.9	12.4	27.1	17.8	28.9	16.6	---	---
4	13.6	6.8	17.9	9.2	14.4	11.7	29.5	15.9	28.4	16.9	---	---
5	18.7	3.7	23.5	7.5	25.2	11.6	30.7	16.5	27.2	17.3	---	---
6	21.1	6.6	23.8	9.4	23.6	13.1	29.6	17.0	24.7	15.8	25.7	---
7	18.2	7.6	25.9	10.4	24.2	12.5	28.8	15.5	23.2	16.1	25.7	14.7
8	12.0	7.6	24.9	12.7	23.0	13.7	28.3	15.3	27.2	15.5	21.7	14.9
9	7.6	3.1	15.8	12.5	22.5	13.5	27.8	14.9	24.6	16.2	16.7	14.2
10	14.4	.5	20.4	10.3	24.3	12.5	28.6	15.7	28.1	16.3	21.8	11.3
11	12.8	5.3	21.6	10.8	23.4	12.3	28.5	15.9	27.9	17.8	14.8	10.1
12	15.0	4.3	23.4	10.6	21.8	13.3	24.2	17.6	25.7	17.4	11.8	9.7
13	18.4	4.1	17.9	8.6	19.6	13.2	28.3	16.4	23.0	16.0	14.2	9.2
14	19.1	5.7	15.2	11.4	22.4	12.8	---	---	26.5	12.3	21.7	8.5
15	18.7	5.7	15.2	10.5	26.1	11.8	---	---	26.2	15.3	23.1	10.2
16	21.7	8.7	18.3	10.6	25.7	13.4	---	---	25.8	14.2	23.2	11.7
17	18.7	9.5	16.6	10.2	26.7	12.9	---	---	26.4	10.9	22.5	12.8
18	21.5	8.3	24.6	9.9	27.7	13.5	28.9	---	25.5	15.5	23.9	12.7
19	22.9	7.4	23.9	11.1	28.1	14.8	29.5	16.9	26.5	14.9	22.9	13.0
20	22.7	10.2	24.9	11.4	22.8	14.4	29.7	17.1	26.0	15.2	23.1	13.8
21	23.9	10.0	23.4	13.5	22.0	12.1	28.4	16.2	26.8	14.0	21.2	11.6
22	19.6	10.9	25.2	11.6	21.7	11.3	28.8	15.8	24.8	15.1	20.6	12.5
23	23.5	9.3	25.0	12.2	25.7	12.7	27.8	16.7	26.6	11.9	19.4	10.8
24	22.5	9.6	25.3	12.6	27.8	15.3	22.3	17.2	26.8	15.1	22.1	9.6
25	23.8	10.2	23.9	13.1	27.6	14.5	28.7	15.8	26.4	11.6	22.3	11.8
26	21.5	9.7	15.3	11.5	27.3	15.2	29.0	15.8	26.7	14.1	22.1	11.3
27	19.5	7.9	---	---	27.8	13.9	29.9	16.2	21.4	15.1	22.5	12.4
28	18.9	6.1	---	---	25.6	15.2	29.8	16.6	24.4	14.7	22.6	13.3
29	10.2	7.0	---	---	27.9	15.8	27.2	17.3	26.7	14.2	22.4	13.0
30	12.0	5.1	25.5	---	28.6	15.0	23.6	16.3	26.5	14.4	22.5	12.7
31	---	---	20.5	13.6	---	---	26.9	17.3	26.6	14.7	---	---
MONTH	23.9	.5	---	---	28.6	11.3	---	---	29.2	10.9	---	---

07106000 FOUNTAIN CREEK NEAR FOUNTAIN, CO--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.6	6.7	---	---	10.6	8.0	10.3	8.4	10.2	8.6	10.6	6.5
2	7.9	6.7	---	---	10.6	7.8	10.6	7.9	10.5	9.0	8.8	5.2
3	7.6	6.7	---	---	10.0	7.9	11.4	9.2	---	---	10.7	5.9
4	7.8	6.9	9.1	7.3	10.3	7.9	10.4	8.5	---	---	11.3	8.1
5	8.2	6.5	9.2	7.3	10.6	7.7	9.4	7.8	---	---	11.9	8.1
6	7.6	6.9	9.6	7.5	9.4	7.6	10.0	8.7	---	---	11.8	7.2
7	7.5	6.3	9.4	8.2	9.4	8.6	10.9	9.6	---	---	10.2	6.3
8	8.1	6.7	10.3	6.5	9.7	8.6	---	---	---	---	9.3	6.1
9	8.3	6.9	---	---	10.3	8.2	---	---	---	---	8.5	5.6
10	8.7	7.3	---	---	9.8	8.2	11.6	9.0	10.7	---	7.8	5.2
11	8.6	7.0	---	---	9.8	8.6	11.3	10.1	11.0	8.2	---	---
12	8.9	7.4	---	---	9.9	8.3	11.7	9.1	10.8	8.3	---	---
13	8.3	6.9	---	---	9.7	7.6	11.5	9.5	11.3	8.5	---	6.4
14	9.1	7.3	---	---	9.8	8.4	10.6	8.4	11.2	8.3	9.0	6.1
15	8.9	7.0	11.3	7.3	10.3	9.5	11.3	9.5	10.3	8.6	10.2	6.2
16	8.9	6.8	10.9	8.2	10.1	9.1	11.1	8.9	10.8	7.9	9.3	6.0
17	8.0	6.4	9.6	7.5	10.1	8.8	11.6	8.0	10.7	8.7	7.9	5.8
18	8.3	6.6	9.9	7.8	10.1	8.3	11.8	8.6	10.6	7.8	8.0	5.6
19	8.0	6.7	9.8	7.6	9.6	8.4	10.9	8.0	9.3	6.9	7.2	4.7
20	---	---	10.3	7.3	10.0	8.3	11.2	8.8	9.5	7.5	8.5	5.7
21	---	---	10.3	7.2	9.9	8.3	11.7	8.5	10.2	7.2	8.7	5.1
22	---	---	10.4	7.9	9.8	8.9	11.9	8.8	10.2	7.5	7.2	5.7
23	---	---	10.3	8.4	9.9	8.3	11.7	8.7	9.8	6.4	8.0	5.4
24	---	---	9.6	8.1	10.0	8.7	11.5	9.7	9.2	6.6	8.5	5.1
25	---	---	10.1	9.0	10.1	8.7	11.4	9.2	8.9	5.7	8.1	4.9
26	---	---	10.2	8.8	10.1	9.1	10.9	7.9	8.5	5.9	7.9	5.0
27	---	---	10.8	9.0	10.6	---	11.2	8.5	9.4	6.5	8.4	5.9
28	---	---	10.4	7.5	---	---	10.8	9.0	10.9	8.4	7.6	4.9
29	---	---	10.4	8.1	---	---	10.9	8.1	---	---	7.4	4.9
30	---	---	10.5	8.4	11.7	8.9	9.9	7.1	---	---	7.2	5.2
31	---	---	---	---	11.2	7.9	9.7	7.2	---	---	8.0	4.8
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.7	5.7	---	---	9.3	6.0	7.7	6.1	6.5	5.2	6.7	5.8
2	7.5	5.1	7.0	5.3	7.8	5.4	7.5	6.1	6.5	5.2	---	---
3	7.6	6.0	7.9	5.6	9.1	5.6	7.6	6.6	6.5	5.3	---	---
4	7.2	6.3	7.8	5.2	7.6	6.5	7.7	5.4	6.6	5.1	---	---
5	8.7	5.3	7.9	5.0	7.1	5.3	7.7	6.1	6.6	5.3	---	---
6	7.7	5.2	7.5	5.2	7.3	5.4	7.8	6.3	6.8	5.7	6.3	5.6
7	7.7	5.1	7.5	5.2	7.0	5.5	8.0	6.4	6.7	6.1	6.6	5.6
8	7.1	5.8	6.9	5.3	7.0	5.2	7.9	6.3	6.8	5.6	6.8	5.7
9	7.9	6.6	7.1	6.0	6.9	5.4	7.2	5.5	6.9	5.6	6.7	6.1
10	9.3	6.6	7.2	5.4	7.3	5.4	6.8	5.1	6.8	5.5	6.7	5.8
11	8.9	6.2	7.1	5.6	---	---	6.2	5.4	6.6	5.5	7.8	6.3
12	9.4	6.1	7.1	5.4	7.4	---	6.5	5.0	6.6	5.5	8.2	7.6
13	---	---	7.7	5.4	7.2	5.8	6.6	5.5	7.3	6.1	7.9	7.1
14	---	---	6.7	5.8	7.7	6.3	---	---	---	---	8.0	5.6
15	---	---	7.1	6.0	7.8	5.7	---	---	---	---	7.7	5.7
16	---	---	7.3	6.7	7.3	5.3	---	---	6.7	---	7.4	5.6
17	---	---	7.9	6.6	7.3	5.0	---	---	6.7	5.6	6.9	5.9
18	---	---	8.1	5.4	6.2	4.3	6.3	4.8	6.5	5.7	7.0	5.8
19	7.2	5.0	9.5	6.8	7.3	4.3	6.8	5.2	6.8	5.6	6.9	5.5
20	6.5	4.4	9.7	5.9	7.1	5.6	6.7	5.1	6.5	5.7	6.9	5.6
21	6.5	4.5	7.3	5.9	7.9	6.4	7.0	5.8	6.4	5.6	7.2	5.9
22	6.2	5.0	7.5	5.7	8.3	6.3	7.0	6.0	6.4	5.6	7.0	5.8
23	6.4	4.6	7.5	5.9	7.6	5.7	6.9	6.0	6.4	5.6	7.2	5.9
24	6.4	4.6	7.1	5.9	7.1	5.0	6.6	5.9	6.3	5.7	7.2	5.9
25	6.2	4.3	6.9	5.7	7.1	5.4	6.7	5.9	6.5	5.6	7.5	6.2
26	6.3	4.8	7.0	6.0	8.9	4.8	6.5	5.0	6.6	5.7	7.7	5.8
27	---	---	6.6	4.9	7.2	5.7	6.2	5.3	6.4	5.7	7.6	5.7
28	---	---	6.9	5.8	8.6	6.5	6.1	4.9	6.7	5.7	7.3	5.8
29	---	---	7.0	5.3	7.6	6.2	6.4	5.0	6.7	5.8	7.4	5.8
30	---	---	8.6	5.8	7.9	6.2	6.7	6.0	6.8	5.6	7.3	5.9
31	---	---	9.0	6.4	---	---	6.5	5.2	6.8	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 11020002, 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.

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

REVISED RECORDS.--WDR CO-80-1: Drainage area.

GAGE.--Water-stage recorder. 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. 17-18, 28-30, Jan. 9, 12-14, and Feb. 2-13. Records good 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 observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--16 years, 96.4 ft³/s; 69,840 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, 1,490 ft³/s at 0145 June 13, gage height, 3.84 ft; minimum daily, 0.49 ft³/s, July 25-26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	31	47	71	74	104	67	82	2.3	.65	14	20
2	26	32	62	69	70	101	121	37	1.4	4.7	7.4	19
3	27	34	57	70	60	90	73	28	2.9	4.4	36	20
4	26	38	56	69	55	86	105	25	227	5.3	17	14
5	23	41	46	54	52	89	77	22	51	3.5	14	15
6	28	48	48	52	50	90	74	19	45	1.5	12	18
7	31	49	50	55	50	93	77	15	35	1.8	142	28
8	39	53	54	53	50	80	71	12	26	4.7	254	109
9	35	56	58	50	52	94	66	8.6	19	4.1	39	228
10	29	66	64	52	60	88	62	17	241	3.6	26	71
11	32	60	70	58	70	97	61	19	50	9.6	19	118
12	28	78	68	54	75	101	66	17	46	20	26	119
13	24	79	59	55	80	92	71	12	475	220	221	112
14	18	80	60	60	86	70	64	55	120	348	45	42
15	15	80	52	66	83	73	51	174	73	175	18	30
16	15	53	51	64	97	79	57	31	66	189	19	22
17	19	55	50	71	91	73	48	306	64	52	195	23
18	25	51	55	86	79	80	20	54	39	24	91	17
19	32	50	65	83	86	82	17	12	31	10	44	29
20	28	50	74	85	111	78	22	6.3	21	4.6	49	36
21	22	57	59	77	119	63	22	5.8	16	2.4	32	60
22	24	58	52	81	87	66	30	11	16	.79	16	53
23	24	65	48	79	92	63	38	10	22	.60	32	33
24	24	71	48	80	128	60	34	4.6	13	.55	15	31
25	24	66	48	77	119	60	23	4.1	14	.49	18	26
26	26	61	52	94	111	56	16	68	7.7	.49	19	27
27	26	51	56	81	105	59	17	46	93	7.6	224	20
28	25	60	50	83	111	59	23	11	18	4.3	51	26
29	25	56	46	77	---	57	42	5.4	4.8	7.2	27	34
30	22	56	50	77	---	133	81	9.3	1.2	246	17	31
31	27	---	56	76	---	69	---	9.3	---	51	22	---
TOTAL	795	1685	1711	2159	2303	2485	1596	1136.4	1841.3	1407.87	1761.4	1431
MEAN	25.6	56.2	55.2	69.6	82.2	80.2	53.2	36.7	61.4	45.4	56.8	47.7
MAX	39	80	74	94	128	133	121	306	475	348	254	228
MIN	15	31	46	50	50	56	16	4.1	1.2	.49	7.4	14
AC-FT	1580	3340	3390	4280	4570	4930	3170	2250	3650	2790	3490	2840

CAL YR 1988 TOTAL 24510.75 MEAN 67.0 MAX 950 MIN .85 AC-FT 48620
WTR YR 1989 TOTAL 20311.97 MEAN 55.6 MAX 475 MIN .49 AC-FT 40290

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.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WDR CO-79-1: Drainage area.

REMARKS.--Estimated daily discharges: Dec. 16, 28-31, Jan. 8-9, 13-15, and Feb. 2-15. Records good except for estimated daily discharges, 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.--46 years (water years 1923-25, 1941-65, 1972-89), 71.8 ft³/s; 52,020 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, 1,060 ft³/s at 0500 June 13, gage height, 5.17 ft; maximum gage height, 6.28 ft at 0600 Feb. 9 (backwater from ice); minimum daily discharge, .01 ft³/s, July 9-11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	37	62	57	87	102	76	79	7.0	5.5	23	11
2	28	41	65	57	80	106	109	63	5.3	1.3	9.4	11
3	27	38	69	59	70	94	84	43	3.4	2.4	19	11
4	29	35	69	63	60	89	97	37	106	1.3	16	9.7
5	35	43	67	67	55	94	80	36	60	.51	7.0	9.5
6	30	42	70	71	50	104	72	25	29	2.2	7.0	10
7	32	47	72	68	50	111	71	20	27	.35	89	7.9
8	50	49	68	62	50	105	64	14	27	.04	223	9.2
9	45	54	67	64	55	102	61	11	23	.01	44	204
10	42	63	72	53	70	98	65	12	168	.01	32	52
11	36	60	74	55	80	97	60	15	66	.01	28	54
12	31	66	73	57	90	99	63	16	59	.27	63	107
13	27	74	75	60	95	101	58	15	395	134	168	111
14	24	85	80	65	100	97	60	34	145	316	63	67
15	17	92	81	70	110	91	51	205	87	114	36	47
16	16	87	76	71	120	95	53	83	74	133	30	26
17	15	80	77	76	122	96	49	276	73	57	148	19
18	17	77	80	79	108	92	37	83	52	32	87	19
19	26	74	78	80	116	93	27	34	43	15	48	19
20	35	64	78	77	141	90	21	20	40	8.4	35	21
21	25	65	71	76	150	92	29	15	22	7.4	33	42
22	26	63	69	76	123	87	30	14	17	5.8	21	36
23	25	65	66	77	119	86	36	13	18	2.6	19	31
24	24	64	67	76	156	82	34	10	15	2.4	14	33
25	18	68	68	82	143	79	31	7.8	13	3.6	10	29
26	19	74	73	87	138	80	26	15	13	1.3	7.6	29
27	22	73	77	81	121	77	20	60	58	1.0	156	28
28	29	73	64	78	110	77	22	35	25	.29	65	25
29	36	71	60	78	---	76	32	15	12	.34	28	28
30	31	69	58	81	---	123	50	8.1	8.4	157	17	28
31	34	---	58	89	---	84	---	5.6	---	56	8.9	---
TOTAL	881	1893	2184	2192	2769	2899	1568	1319.5	1691.1	1061.03	1554.9	1134.3
MEAN	28.4	63.1	70.5	70.7	98.9	93.5	52.3	42.6	56.4	34.2	50.2	37.8
MAX	50	92	81	89	156	123	109	276	395	316	223	204
MIN	15	35	58	53	50	76	20	5.6	3.4	.01	7.0	7.9
AC-FT	1750	3750	4330	4350	5490	5750	3110	2620	3350	2100	3080	2250
CAL YR 1988	TOTAL 27438.4			MEAN 75.0	MAX 901	MIN 2.9	AC-FT 54420					
WTR YR 1989	TOTAL 21146.83			MEAN 57.9	MAX 395	MIN .01	AC-FT 41940					

ARKANSAS RIVER BASIN

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 poor quality. Daily maximum and minimum specific conductance available in district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 3,460 microsiemens July 7, 1989; minimum, 440 microsiemens June 5 and Sept. 22, 1986.

WATER TEMPERATURE: Maximum, 33.0°C Aug. 5, 1986 and July 30, 1987; minimum, 0.0°C many days during the winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 3,460 microsiemens, July 7; minimum, 560 microsiemens June 13.

WATER TEMPERATURE: Maximum, 32.7°C July 4; minimum, 0.0°C many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
OCT							
20...	0900	35	1520	7.8	6.0	11.0	2.4
NOV							
17...	0830	80	1450	8.1	0.5	12.8	7.5
DEC							
08...	1015	68	1360	8.2	0.5	12.2	K4.2
JAN							
18...	1600	79	1250	8.2	6.5	10.8	>26
FEB							
23...	1000	119	1240	8.2	3.5	12.8	16
MAR							
29...	1430	76	1210	8.3	15.5	8.1	4.0
APR							
20...	0900	20	1600	8.3	12.0	8.7	1.8
MAY							
17...	1740	276	835	8.2	16.5	7.6	22
JUN							
14...	1650	149	954	8.3	22.0	7.0	3.6
JUL							
19...	1600	15	1540	8.2	31.5	6.1	<0.5
AUG							
23...	1545	19	1450	8.3	28.0	5.8	9.1
SEP							
20...	1740	23	1640	8.5	23.0	7.0	0.7

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT						
20...	230	560	95	0.03	0.2	5.4
NOV						
17...	170	580	272	0.40	2.2	5.6
DEC						
08...	K73	230	226	0.37	1.7	5.0
JAN						
18...	K120	810	736	1.60	3.4	5.4
FEB						
23...	200	440	456	1.20	3.2	5.6
MAR						
29...	K36	K160	7	0.07	0.8	6.1
APR						
20...	K4	84	17	0.06	0.9	6.1
MAY						
17...	>6000	>10000	8950	0.04	1.2	2.9
JUN						
14...	2000	8500	1320	0.03	0.4	3.5
JUL						
19...	1900	1600	19	0.05	0.8	3.9
AUG						
23...	4200	9600	228	0.01	0.4	3.7
SEP						
20...	K230	K500	71	0.04	0.4	3.9

K BASED ON NON-IDEAL COLONY COUNT
E ESTIMATED

07106500 FOUNTAIN CREEK AT PUEBLO, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1490	1470	1370	1350	1200	1150	1150	1100	1780	1870	1480	---
2	1490	1430	1360	1360	1270	1200	1070	1290	1790	2070	---	---
3	1500	1450	1330	1340	---	1220	1100	1380	1800	2100	1460	---
4	1500	1420	1350	1330	---	1260	1060	1440	1250	2180	1430	---
5	1520	1410	1370	1330	---	1260	1120	1480	1170	2400	---	---
6	1530	1410	1370	1330	---	1230	1170	1520	1410	2780	---	1650
7	1500	1390	1340	1330	---	1180	1190	1560	1450	3070	---	1790
8	1470	1360	1340	1440	---	1180	1200	1590	1480	---	970	1660
9	1490	1360	1370	1430	---	1190	1190	1640	1480	---	---	---
10	1510	1330	1380	1390	1370	1180	1200	1650	960	---	1390	---
11	1490	1340	1380	1370	1240	1180	1220	1580	1150	---	---	---
12	1490	1300	1380	1370	1250	1170	1220	1550	1260	---	---	---
13	1510	1270	1360	1410	1210	1170	1220	1550	740	1030	920	1090
14	1540	1260	1340	1340	---	1180	1210	1450	940	830	1160	1200
15	1560	1240	1300	1290	---	1180	1260	900	1150	---	1200	1360
16	1590	1280	1370	1300	---	1180	1260	1170	1220	1070	1250	1480
17	1570	1330	1390	1260	1210	1160	1290	960	1230	1290	---	1540
18	1540	1360	1400	1250	1210	1150	1320	1100	1310	---	---	1560
19	1490	1360	1370	1250	1190	1150	1490	1360	1350	---	---	1580
20	1490	1370	1350	1250	1120	1140	1550	1430	1360	1680	---	1580
21	1520	1370	1360	1240	1110	1160	1460	---	1490	---	---	1350
22	1540	1360	1380	1240	1160	1170	1450	1650	1520	---	1450	1360
23	1530	1310	1390	1230	1190	1170	1410	1660	1500	---	1470	1440
24	1530	1300	1400	1220	1120	1190	1420	1690	1430	2170	1490	1480
25	1520	1330	1390	1210	1130	1200	1460	1710	1490	---	1600	1490
26	1520	1300	1380	1230	1150	1190	1530	1700	1480	---	1660	1480
27	1530	1360	1430	1250	1170	1190	1580	1200	1190	2640	1060	1520
28	1520	1350	1450	1250	1150	1180	1540	1500	1400	2980	---	1520
29	1520	1340	1460	1250	---	1180	1420	---	1550	---	1390	1460
30	1520	1350	1440	1230	---	1080	1280	1700	1730	940	1440	1450
31	1520	---	1380	1210	---	1120	---	1750	---	1330	1830	---
MEAN	1520	1350	1380	1300	---	1180	1300	---	1370	---	---	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.4	10.9	15.6	4.5	8.5	.0	3.0	.0	3.9	.0	7.7	.4
2	21.7	8.5	16.4	6.1	8.5	.0	4.2	.0	.0	.0	11.0	.3
3	21.8	9.6	15.5	6.1	7.6	.0	4.5	.0	.0	.0	7.4	.0
4	12.9	9.4	13.2	6.1	6.2	.0	4.3	.0	.0	.0	3.7	.0
5	18.2	8.7	13.3	3.6	7.0	.0	8.4	1.6	.0	.0	7.2	.1
6	19.2	10.4	13.0	3.3	6.8	.0	6.9	.0	.0	.0	9.6	.1
7	17.1	10.4	12.9	5.3	2.0	.1	3.6	.0	.0	.0	13.6	1.3
8	20.6	7.8	9.5	3.5	3.1	.0	.0	.0	.0	.0	16.6	4.3
9	18.6	7.5	13.1	6.7	3.7	.0	1.6	.0	.0	.0	19.1	6.1
10	20.4	7.2	11.4	3.9	4.4	.0	6.0	.0	.0	.0	19.0	6.8
11	20.2	7.6	9.8	3.4	4.8	.0	2.8	.0	.0	.0	17.5	8.1
12	20.7	7.6	10.5	2.2	4.7	.0	1.2	.0	.0	.0	17.4	7.7
13	20.3	9.1	12.2	3.1	8.5	.0	.0	.0	.0	.0	19.0	7.1
14	21.0	8.4	11.2	3.8	5.9	1.3	.0	.0	.4	.0	15.1	5.2
15	21.5	9.7	7.2	2.3	1.2	.0	.2	.0	4.6	.0	14.5	2.0
16	21.1	7.9	7.5	.0	.8	.0	2.9	.0	5.4	.0	17.4	3.0
17	21.2	9.4	8.5	.0	2.5	.0	6.6	.0	2.6	.0	16.8	6.5
18	20.2	9.9	6.4	.3	3.5	.0	6.2	.0	7.2	.0	15.5	3.8
19	18.4	8.5	8.7	1.4	4.7	.0	6.9	.0	5.3	1.4	16.9	4.7
20	19.4	7.0	6.6	.0	4.8	.0	6.2	.0	4.6	1.7	9.0	2.9
21	19.2	7.4	7.2	.0	3.1	.0	7.2	.0	8.3	.1	14.7	.7
22	14.7	6.9	8.2	.0	3.7	.0	7.2	.0	8.9	.0	17.0	4.5
23	17.3	5.8	10.0	2.6	4.0	.0	6.9	.0	11.7	1.1	19.7	6.0
24	17.9	5.9	10.4	3.9	2.0	.0	3.9	.0	12.0	3.0	19.8	6.6
25	14.8	6.4	5.2	2.6	2.8	.0	3.8	.8	13.6	3.4	20.1	6.3
26	17.6	5.0	6.4	1.8	4.3	.0	6.6	.0	12.9	4.0	19.5	6.7
27	15.3	6.4	5.2	.0	.0	.0	4.2	.0	10.4	2.2	20.4	7.4
28	10.2	4.1	8.1	.0	.3	.0	3.5	.0	4.6	1.2	21.5	7.1
29	12.9	3.8	6.7	.1	.5	.0	6.5	.0	---	---	18.3	7.4
30	16.1	5.5	5.6	.0	.0	.0	9.4	.0	---	---	13.5	6.1
31	16.1	5.1	---	---	.8	.0	10.8	1.5	---	---	19.2	3.5
MONTH	21.8	3.8	16.4	.0	8.5	.0	10.8	.0	13.6	.0	21.5	.0

ARKANSAS RIVER BASIN

07106500 FOUNTAIN CREEK AT PUEBLO, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	17.2	6.9	19.2	5.3	23.8	14.6	30.6	16.7	32.5	---	---	---
2	17.7	5.7	22.5	8.2	20.8	14.6	30.0	18.1	---	---	---	---
3	18.6	6.3	22.4	8.2	16.8	15.5	28.8	17.6	31.5	17.7	---	---
4	17.8	5.3	20.4	9.1	15.2	12.2	32.7	15.8	29.1	17.8	---	---
5	18.0	4.3	24.2	7.4	26.4	10.3	32.0	16.1	---	---	---	---
6	20.3	6.4	24.5	8.7	27.3	13.0	28.0	16.7	---	---	19.5	---
7	21.0	7.5	26.8	9.5	25.2	13.2	27.0	15.8	23.9	17.0	25.0	---
8	15.0	7.4	27.9	11.9	25.9	13.9	---	---	24.0	16.0	25.0	---
9	7.1	2.6	18.2	12.6	27.1	13.5	---	---	---	---	18.3	13.6
10	14.3	.4	24.3	10.5	23.6	12.3	---	---	28.6	18.5	20.6	13.2
11	9.5	4.4	19.5	11.2	24.1	12.5	---	---	20.9	18.5	15.7	10.0
12	11.2	3.4	23.2	10.6	23.1	12.8	---	---	21.2	18.6	11.1	8.6
13	19.1	2.9	21.5	8.6	20.1	13.9	29.1	15.9	23.2	17.4	15.1	7.9
14	20.9	4.7	20.2	10.8	22.1	13.4	25.4	18.5	28.4	14.9	22.7	7.3
15	18.4	5.7	15.4	11.0	26.9	12.2	28.5	17.5	20.2	19.2	25.7	9.5
16	20.1	8.2	19.1	10.6	25.3	13.4	28.5	16.8	21.6	18.6	26.3	11.0
17	17.0	9.0	15.6	9.1	28.1	13.2	26.4	16.8	26.6	14.7	26.3	11.7
18	16.6	10.2	25.8	10.4	29.0	13.3	---	---	25.9	16.4	27.7	12.8
19	23.5	7.4	24.5	11.3	28.7	14.9	---	---	27.7	15.3	22.5	13.1
20	26.1	8.9	18.7	12.5	24.9	14.9	26.2	---	27.1	15.7	26.3	14.4
21	25.0	9.8	16.4	14.9	22.6	12.7	---	---	29.8	14.5	24.1	11.4
22	17.1	10.6	26.6	15.0	23.0	11.8	---	---	28.1	16.6	22.9	13.0
23	24.5	8.3	25.3	12.3	26.8	12.9	---	---	29.3	14.2	22.0	10.4
24	24.4	8.4	25.4	12.7	18.6	16.1	23.5	---	27.6	15.3	25.3	8.9
25	24.6	10.1	20.2	13.7	26.2	16.9	---	---	29.9	13.3	24.5	10.9
26	23.6	8.9	17.1	12.4	20.0	16.5	---	---	27.9	14.1	24.4	10.7
27	21.7	8.1	27.4	9.6	29.0	14.2	---	---	22.6	16.2	25.2	11.5
28	15.1	5.6	18.3	13.2	31.3	15.8	---	---	23.1	15.3	26.8	11.7
29	13.5	6.6	---	---	31.2	16.1	---	---	27.3	17.6	25.2	12.7
30	8.6	6.5	25.5	---	30.4	16.0	25.5	17.2	25.8	---	25.9	11.7
31	---	---	25.6	14.7	---	---	29.1	18.8	23.5	---	---	---
MONTH	26.1	.4	---	---	31.3	10.3	---	---	---	---	---	---

[illegible]

ARKANSAS RIVER BASIN

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. 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. 29 to Jan. 4 and Feb. 4-13. Records good except for periods of estimated daily discharge, 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: 15 years (water years 1975-89), 973 ft³/s; 704,900 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, 3,260 ft³/s at 0515 July 14, gage height, 3.48 ft; minimum daily, 251 ft³/s, Dec. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	312	320	271	265	311	554	761	615	1490	1370	2050	462
2	315	326	272	265	316	544	782	584	1480	1380	1830	411
3	309	316	269	270	352	573	758	497	1180	1480	1810	395
4	318	341	273	275	450	634	684	465	1250	1600	1820	394
5	340	368	273	283	450	605	677	474	1280	1870	1800	391
6	331	361	273	292	450	605	719	444	1070	1950	1830	384
7	355	366	271	286	400	513	760	377	901	1970	1780	324
8	381	402	275	260	350	591	815	346	749	1960	1990	300
9	395	450	277	256	350	718	779	340	830	1960	1660	472
10	399	448	274	262	400	771	783	289	1170	1900	1450	359
11	382	418	276	263	500	882	870	391	1340	1910	1430	304
12	426	417	273	266	550	870	840	648	1140	1800	1420	396
13	421	425	271	266	600	850	859	777	1340	2190	1650	479
14	384	428	272	285	620	789	913	1040	1360	2700	1260	427
15	397	342	277	297	563	823	987	1290	1340	2190	1220	439
16	395	277	271	294	545	833	1010	1230	1060	1830	1220	429
17	384	270	271	297	529	781	907	977	1020	1700	1410	396
18	361	271	272	306	524	1100	982	946	1330	1410	1170	346
19	376	273	274	304	527	1120	974	675	1530	1330	1010	292
20	394	272	271	304	555	974	882	504	1580	1070	902	278
21	390	274	272	302	584	631	872	425	1560	972	810	307
22	390	275	272	301	554	638	826	500	1380	1050	753	383
23	391	274	262	303	471	650	853	645	1360	1300	652	404
24	380	274	256	312	501	630	883	845	1340	1540	533	405
25	346	272	251	310	526	708	882	1050	1210	2050	602	376
26	351	270	260	306	535	810	884	1190	999	2170	574	348
27	325	272	260	306	587	784	863	1150	875	2250	582	304
28	311	272	261	309	575	579	844	888	855	2290	609	307
29	312	273	260	291	---	587	865	687	1290	2290	567	286
30	296	264	260	291	---	704	668	840	1330	2350	554	278
31	284	---	260	307	---	790	---	1160	---	2230	516	---
TOTAL	11151	9811	8330	8934	13675	22641	25182	22289	36639	56062	37464	11076
MEAN	360	327	269	288	488	730	839	719	1221	1808	1209	369
MAX	426	450	277	312	620	1120	1010	1290	1580	2700	2050	479
MIN	284	264	251	256	311	513	668	289	749	972	516	278
AC-FT	22120	19460	16520	17720	27120	44910	49950	44210	72670	111200	74310	21970
CAL YR 1988	TOTAL 263359		MEAN 720		MAX 2530		MIN 251		AC-FT 522400			
WTR YR 1989	TOTAL 263254		MEAN 721		MAX 2700		MIN 251		AC-FT 522200			

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. Records for water temperature and pH are good. Records for specific conductance are good from Oct. 1 to mid-June, fair for the remainder of the water year. Dissolved oxygen record is poor. Daily maximum and minimum specific conductance 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, 8.9 units Sept. 25, 1989; minimum, 7.4 units May 13, 1980 and Aug. 16, 1989.

DISSOLVED OXYGEN: Maximum, 12.1 mg/L, Dec. 27, 1988 and Feb. 7, 1989; minimum, 5.0 mg/L, Sept. 10, 1988.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,250 microsiemens Dec. 28; minimum, 400 microsiemens July 14.

WATER TEMPERATURE: Maximum, 27.1°C Sept. 2; minimum, 0.0°C, many days during winter.

pH: Maximum, 8.9 units Sept. 25; minimum, 7.4 units Aug. 16.

DISSOLVED OXYGEN: Maximum, 12.1 mg/L, Dec. 27, Feb. 7; minimum, 5.1 mg/L July 14.

EXTREMES FOR AUGUST 1988 TO SEPTEMBER 1988.--

pH: Maximum, 8.4 units, many days; minimum, 7.9 units, many days.

DISSOLVED OXYGEN: Maximum, 8.6 mg/L, Sept. 29; minimum, 5.0 mg/L, Sept. 10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	OXYGEN, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
OCT								
20...	1330	398	862	8.2	8.6	--	1.20	0.02
NOV								
16...	1300	268	1100	8.1	9.4	--	2.60	0.31
DEC								
13...	1200	274	1160	8.0	10.2	--	2.60	0.40
JAN								
11...	1115	250	1130	8.0	10.0	777	2.80	0.54
FEB								
16...	1600	551	925	7.9	9.4	629	2.20	0.59
MAR								
14...	1500	786	818	8.3	9.7	601	1.30	0.05
APR								
18...	1100	978	732	8.1	9.3	492	0.80	0.05

ARKANSAS RIVER BASIN

07109500 ARKANSAS RIVER NEAR AVONDALE, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	OXYGEN, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
MAY 18...	1400	929	748	8.1	7.7	481	1.00	0.07
JUN 20...	1230	1620	602	8.4	7.9	391	0.40	0.50
JUL 19...	1000	1390	538	8.3	7.3	343	0.50	0.04
AUG 22...	1200	777	571	8.2	6.7	359	0.70	0.02
SEP 20...	1215	261	928	8.2	7.6	648	1.80	0.04

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	880	931	1150	1130	1150	937	773	817	627	535	460	675
2	879	924	1110	1120	1140	954	773	804	624	517	455	690
3	887	940	1120	1130	1010	952	787	819	636	519	---	665
4	886	924	1110	1130	---	883	820	818	650	518	---	670
5	878	899	1100	1130	---	892	812	800	658	504	---	665
6	879	907	1100	1120	880	919	780	782	660	490	---	679
7	858	916	1080	1110	908	982	778	814	685	497	451	695
8	840	890	1080	1130	1030	920	768	831	696	496	---	770
9	825	857	1080	1140	1170	829	769	847	685	488	---	755
10	823	865	1090	1100	1130	820	761	888	666	491	---	847
11	834	883	1110	1110	990	794	750	797	660	488	---	898
12	811	889	1110	1110	---	797	754	710	682	495	520	842
13	797	894	1100	1110	---	806	740	682	675	608	586	843
14	826	890	1110	1080	---	806	720	680	672	550	559	852
15	800	999	1100	1100	---	793	709	730	663	540	500	805
16	796	1080	1090	1090	934	790	708	758	680	570	505	760
17	797	1120	1110	1100	933	808	726	751	---	550	546	790
18	827	1120	1120	1100	937	737	705	735	---	550	560	835
19	844	1120	1130	1100	935	733	690	777	---	560	550	865
20	850	1120	1140	1110	923	761	699	821	587	555	575	892
21	843	1120	1140	1100	918	842	701	828	595	550	570	895
22	830	1130	1140	1100	926	829	719	751	597	514	560	820
23	823	1130	1150	1090	983	816	717	703	602	487	585	795
24	838	1110	1170	1080	979	819	708	674	592	482	625	770
25	865	1150	1160	1080	960	790	707	639	601	470	605	768
26	875	1140	1150	1090	975	758	695	634	620	466	610	808
27	887	1140	1160	1100	958	776	682	658	640	465	635	860
28	910	1130	1170	1090	933	847	685	670	625	450	640	840
29	920	1140	1110	1090	---	845	703	686	553	445	645	863
30	936	1170	1120	1090	---	822	771	640	539	467	625	890
31	950	---	1170	1080	---	778	---	633	---	455	635	---
MEAN	855	1020	1120	1100	---	833	737	748	---	509	---	793

07109500 ARKANSAS RIVER NEAR AVONDALE, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.4	14.7	14.6	9.0	7.2	1.8	4.4	.0	5.8	.0	6.3	2.2
2	19.7	12.8	15.2	9.7	7.6	2.8	4.8	.0	1.0	.0	7.3	2.7
3	20.3	13.6	14.8	10.1	7.1	2.7	4.7	1.1	.0	.0	5.8	1.4
4	16.0	12.3	13.6	10.1	6.4	1.9	4.8	1.2	.0	.0	3.0	.0
5	16.7	11.7	13.0	8.5	6.4	1.6	7.0	2.9	.0	.0	4.9	.0
6	17.0	12.9	12.7	8.2	6.4	1.8	6.0	2.0	.0	.0	6.4	.5
7	15.5	13.1	12.7	9.3	3.7	2.2	4.4	.9	.0	.0	9.8	3.3
8	18.4	12.0	11.5	8.0	4.3	1.6	1.6	.0	.0	.0	11.4	5.1
9	17.1	12.2	12.6	9.8	5.0	1.0	2.3	.0	.0	.0	12.0	6.5
10	18.2	12.0	11.8	8.8	5.3	1.2	5.7	.5	.0	.0	12.1	6.0
11	18.2	12.3	10.2	8.0	5.5	1.4	3.7	1.1	3.0	.2	10.3	5.6
12	18.5	12.5	11.1	7.0	5.2	1.2	3.8	.1	5.6	1.5	10.1	5.5
13	18.1	12.9	11.8	7.6	7.1	2.2	.4	.0	4.7	1.1	10.9	5.5
14	18.5	12.8	10.7	7.9	6.0	3.6	2.6	.0	4.7	1.3	9.6	5.0
15	18.9	13.6	9.6	5.4	3.7	1.4	3.1	.0	5.8	1.9	9.1	3.2
16	18.0	12.7	7.8	3.5	3.4	.0	3.7	.0	5.0	1.9	10.5	3.7
17	18.7	13.0	8.0	3.5	3.8	.0	6.2	.3	3.1	1.3	11.9	6.0
18	18.1	13.3	7.2	3.8	4.6	.4	5.9	1.0	5.6	1.7	9.3	4.2
19	16.5	12.8	8.4	4.4	5.3	2.0	6.3	1.3	4.1	2.7	9.7	4.4
20	17.3	11.6	7.9	2.8	5.3	2.3	6.0	1.3	4.4	3.2	7.4	3.8
21	17.3	12.0	7.3	2.4	5.3	1.4	6.9	1.2	6.6	2.0	9.7	2.2
22	15.3	11.9	7.4	2.7	4.1	1.2	7.0	1.5	6.8	2.1	10.9	4.9
23	15.9	10.9	9.6	4.5	4.1	.1	6.2	1.6	8.9	3.2	12.2	5.7
24	16.1	10.8	9.8	6.2	3.6	.2	4.2	2.4	9.4	4.5	12.5	6.4
25	14.3	11.0	7.2	5.4	4.8	.3	5.2	2.5	10.3	4.9	12.9	6.1
26	15.6	9.8	7.1	4.7	4.4	1.2	5.7	1.1	9.6	5.5	11.9	5.9
27	14.4	10.6	6.3	2.7	2.1	.0	4.3	.7	7.8	4.0	12.6	6.2
28	11.5	8.6	7.3	2.1	1.0	.0	4.2	1.9	5.6	2.6	14.2	6.9
29	12.5	8.3	6.5	2.6	1.8	.0	5.5	.0	---	---	11.6	7.5
30	14.6	9.3	5.8	1.0	3.9	.0	7.6	1.8	---	---	10.5	7.2
31	15.0	9.4	---	---	4.3	.0	8.9	3.1	---	---	12.0	4.5
MONTH	20.3	8.3	15.2	1.0	7.6	.0	8.9	.0	10.3	.0	14.2	.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	10.7	6.7	14.7	7.7	16.4	11.5	22.8	16.2	24.8	19.8	25.4	19.4
2	12.5	5.8	16.3	9.8	17.2	11.7	22.9	16.7	25.3	19.7	27.1	20.2
3	12.3	7.3	17.0	10.5	14.2	12.1	22.1	16.2	25.0	19.6	26.0	19.6
4	12.7	7.1	15.8	11.3	14.3	11.8	23.1	16.7	24.6	20.0	23.6	18.4
5	13.5	6.1	18.6	10.3	18.5	11.0	22.9	16.8	23.7	20.3	26.1	19.0
6	15.0	7.5	18.8	11.2	19.4	12.3	22.6	16.8	24.2	19.7	24.9	18.9
7	15.1	8.4	20.6	12.3	18.5	13.0	22.5	16.7	23.3	19.5	25.9	18.3
8	12.6	8.5	21.6	14.0	18.0	13.6	22.7	16.6	23.4	19.2	24.2	19.1
9	9.0	5.3	16.0	13.6	18.8	13.2	22.5	16.4	24.6	19.8	19.5	17.1
10	11.6	4.4	19.5	12.3	18.1	12.7	22.6	17.0	25.1	20.0	22.1	15.9
11	9.0	6.5	16.5	13.2	18.0	12.4	22.3	17.2	24.9	20.3	17.7	13.7
12	10.2	6.0	18.0	11.3	17.2	13.1	21.4	17.7	23.6	20.5	13.5	11.7
13	13.7	6.1	15.7	10.0	17.6	13.6	23.1	17.4	22.8	20.0	15.9	11.8
14	13.9	6.9	14.0	10.6	17.3	13.3	22.4	18.4	24.9	19.1	20.4	12.5
15	13.5	7.3	12.6	10.8	19.8	12.9	22.9	17.8	25.3	19.7	22.3	14.6
16	14.9	8.2	13.8	10.0	18.6	13.6	23.9	17.8	24.2	20.0	22.6	15.9
17	13.9	8.8	13.7	10.3	---	---	23.7	18.0	24.1	18.5	22.8	15.9
18	14.8	8.0	18.3	10.7	---	---	23.8	18.2	24.7	19.9	24.4	16.3
19	15.4	8.2	18.8	11.9	---	---	24.3	18.3	25.0	19.8	21.7	17.0
20	15.6	9.0	21.2	13.7	18.8	14.8	24.6	18.3	25.3	19.8	24.6	17.4
21	16.2	9.3	21.5	15.0	17.8	14.9	24.3	17.9	25.7	19.0	22.4	16.2
22	12.9	9.6	21.0	13.1	18.2	13.6	23.9	17.8	24.9	19.7	21.6	16.7
23	15.9	8.7	20.5	12.0	19.9	14.1	23.7	18.3	25.2	19.1	20.1	14.9
24	16.3	8.7	19.5	11.8	22.0	15.1	21.9	18.4	24.1	19.3	21.7	14.1
25	16.5	9.5	17.3	11.6	21.4	15.1	23.7	18.8	25.0	18.0	21.9	15.5
26	16.3	8.9	13.5	10.9	22.4	15.5	23.9	18.9	25.5	18.9	22.1	15.2
27	14.3	9.1	18.2	10.2	22.9	15.3	24.3	19.2	23.8	19.6	22.7	15.8
28	12.7	8.2	18.8	12.8	23.4	16.5	24.7	19.4	23.7	19.1	23.4	16.1
29	11.4	8.4	19.4	12.7	21.3	15.9	24.6	19.7	25.2	18.8	23.6	17.0
30	10.0	8.8	19.3	12.7	22.9	15.8	23.0	19.6	25.9	18.8	23.8	15.9
31	---	---	17.9	12.5	---	---	24.2	19.9	26.2	19.2	---	---
MONTH	16.5	4.4	21.6	7.7	---	---	24.7	16.2	26.2	18.0	27.1	11.7

ARKANSAS RIVER BASIN

07109500 ARKANSAS RIVER NEAR AVONDALE, CO--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	8.10	8.00
4	---	---	---	---	---	---	---	---	---	---	8.20	8.00
5	---	---	---	---	---	---	---	---	---	---	8.20	7.90
6	---	---	---	---	---	---	---	---	---	---	8.20	7.90
7	---	---	---	---	---	---	---	---	---	---	8.30	8.00
8	---	---	---	---	---	---	---	---	---	---	8.40	8.00
9	---	---	---	---	---	---	---	---	---	---	8.40	8.00
10	---	---	---	---	---	---	---	---	---	---	8.40	8.00
11	---	---	---	---	---	---	---	---	---	---	8.40	7.90
12	---	---	---	---	---	---	---	---	---	---	8.30	7.90
13	---	---	---	---	---	---	---	---	---	---	8.10	7.90
14	---	---	---	---	---	---	---	---	---	---	8.10	7.90
15	---	---	---	---	---	---	---	---	---	---	8.10	8.00
16	---	---	---	---	---	---	---	---	---	---	8.20	8.00
17	---	---	---	---	---	---	---	---	---	---	8.10	7.90
18	---	---	---	---	---	---	---	---	---	---	8.10	7.90
19	---	---	---	---	---	---	---	---	---	---	8.20	7.90
20	---	---	---	---	---	---	---	---	---	---	8.20	7.90
21	---	---	---	---	---	---	---	---	---	---	8.10	7.90
22	---	---	---	---	---	---	---	---	---	---	8.20	7.90
23	---	---	---	---	---	---	---	---	---	---	8.40	7.90
24	---	---	---	---	---	---	---	---	---	---	8.40	8.00
25	---	---	---	---	---	---	---	---	---	---	8.40	8.00
26	---	---	---	---	---	---	---	---	---	---	8.40	8.00
27	---	---	---	---	---	---	---	---	---	---	8.40	7.90
28	---	---	---	---	---	---	---	---	---	---	8.40	7.90
29	---	---	---	---	---	---	---	---	---	---	8.40	7.90
30	---	---	---	---	---	---	---	---	---	---	8.40	7.90
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.40	7.90	8.60	8.00	8.30	8.10	8.30	8.10	8.10	7.80	8.10	8.00
2	8.40	7.90	8.60	8.00	8.40	8.00	8.30	8.10	8.00	7.80	8.10	8.00
3	8.40	7.90	8.60	8.00	8.40	8.10	8.30	8.10	7.90	7.70	8.20	8.00
4	8.40	8.00	8.60	8.00	8.40	8.00	8.30	8.10	7.90	7.70	8.20	8.10
5	8.40	8.00	8.60	8.10	8.40	8.00	8.30	8.10	---	---	8.30	8.00
6	8.40	8.00	8.60	8.10	8.40	8.00	8.40	8.10	---	---	8.10	8.00
7	8.40	8.00	8.60	8.10	8.20	7.90	8.40	8.10	---	---	8.00	7.90
8	8.40	8.00	8.40	8.10	8.40	7.90	8.40	8.10	---	---	8.10	8.00
9	8.40	8.00	8.30	8.10	8.40	8.00	8.30	8.10	7.90	7.80	8.10	8.00
10	8.40	8.00	8.40	8.10	8.50	8.00	8.30	8.10	7.90	7.80	8.10	8.00
11	8.30	8.00	8.40	8.20	8.40	8.10	8.40	8.10	7.90	7.80	8.10	7.90
12	8.40	8.00	8.40	8.20	8.40	8.10	8.40	8.20	7.90	7.80	8.20	8.10
13	8.40	8.10	8.40	8.10	8.40	8.10	8.30	8.20	7.90	7.80	8.20	8.10
14	8.40	8.00	8.40	8.10	8.50	8.10	8.30	8.20	7.90	7.90	8.20	8.10
15	8.50	8.10	8.30	7.90	8.40	8.20	8.30	8.20	7.90	7.90	8.20	8.20
16	8.50	8.00	8.30	8.10	8.50	8.20	8.30	8.00	8.00	7.90	8.20	8.00
17	8.50	8.00	8.30	8.20	8.40	8.20	8.20	8.10	---	---	8.20	8.00
18	8.40	8.00	8.30	8.20	8.40	8.20	8.20	8.10	---	---	8.20	8.20
19	8.30	7.90	8.40	8.20	8.40	8.10	8.20	8.10	8.40	8.20	8.20	8.10
20	8.40	7.80	8.40	8.20	8.40	8.10	8.20	8.10	8.30	8.10	8.20	8.00
21	8.40	8.10	8.40	8.20	8.40	8.10	8.20	8.00	8.10	8.00	8.10	7.90
22	8.50	8.00	8.30	8.10	8.50	8.10	8.20	8.00	8.10	8.00	8.10	7.90
23	8.50	8.00	8.30	8.10	8.50	8.20	8.20	8.00	8.10	8.00	8.10	7.90
24	8.50	8.00	8.40	8.10	8.50	8.20	8.40	7.90	8.10	8.00	8.10	7.90
25	8.50	8.00	8.40	8.10	8.50	8.20	8.10	7.90	8.10	8.00	8.10	7.90
26	8.60	8.00	8.40	8.10	8.50	8.20	8.20	8.00	8.10	8.00	8.20	7.90
27	8.60	8.00	8.40	8.20	8.50	8.20	8.20	8.00	8.10	8.00	8.20	8.00
28	8.50	8.00	8.20	8.00	8.40	8.20	8.20	7.90	8.10	8.00	8.10	7.80
29	8.60	8.00	8.30	8.00	8.40	8.10	8.20	8.00	---	---	8.10	7.90
30	8.60	8.10	8.30	8.10	8.40	8.10	8.10	7.90	---	---	8.10	7.80
31	8.60	8.00	---	---	8.40	8.00	8.00	7.80	---	---	8.10	7.90
MONTH	8.60	7.80	8.60	7.90	8.50	7.90	8.40	7.80	---	---	8.30	7.80

PH (STANDARD UNITS), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.10	7.90	8.20	8.10	8.40	8.10	8.60	8.20	8.30	7.60	8.50	7.80
2	8.10	7.90	8.30	8.10	8.40	8.10	8.60	8.20	8.30	7.80	8.40	8.00
3	8.00	7.90	8.30	8.00	8.40	8.10	8.50	8.20	8.40	7.80	8.40	7.90
4	8.00	7.90	8.20	7.90	8.30	8.20	8.60	8.20	8.40	8.00	8.50	8.00
5	8.10	7.90	8.30	8.00	8.50	8.20	8.50	8.20	8.30	8.00	8.70	7.90
6	8.10	7.80	8.30	7.90	8.50	8.00	8.50	8.10	8.40	7.90	8.80	8.00
7	8.10	7.80	8.20	7.80	8.40	8.10	8.50	8.10	8.40	7.90	8.70	7.90
8	8.10	7.90	8.20	7.80	8.50	8.10	8.60	8.10	8.30	7.90	8.70	8.10
9	8.10	8.00	8.30	7.90	8.40	8.20	8.60	8.00	8.40	8.00	8.30	7.80
10	8.10	7.90	8.30	7.90	8.30	8.00	8.50	8.00	8.40	8.00	8.50	7.90
11	8.10	7.90	8.30	7.80	8.40	8.00	8.60	7.90	8.50	8.20	8.50	8.10
12	8.10	8.00	8.40	7.90	8.40	8.00	8.50	7.80	8.30	8.10	8.50	7.90
13	8.10	7.80	8.40	8.10	8.40	8.00	8.30	7.90	8.30	8.20	8.40	8.30
14	8.10	7.80	8.30	8.00	8.40	8.20	8.30	8.00	8.20	8.00	8.50	8.20
15	8.10	7.80	8.20	8.10	8.40	8.20	8.40	8.00	8.00	7.50	8.50	8.00
16	8.10	7.90	8.20	8.00	8.40	8.10	8.40	8.00	8.10	7.40	8.50	8.10
17	8.20	7.90	8.20	8.00	---	---	8.40	8.10	8.30	8.10	8.60	8.00
18	8.20	7.90	8.20	8.10	---	---	8.50	8.00	8.00	7.80	8.50	8.00
19	8.20	7.90	8.20	8.10	---	---	8.50	8.20	8.10	7.70	8.30	7.90
20	8.10	7.80	8.10	8.00	8.40	8.20	8.50	8.10	8.20	7.90	8.80	7.90
21	8.20	7.90	8.20	8.00	8.40	8.10	8.60	8.10	8.40	7.90	8.80	8.20
22	8.10	7.90	8.30	8.10	8.40	8.20	8.60	8.10	8.60	7.90	8.80	8.30
23	8.20	7.90	8.30	8.00	8.50	8.20	8.60	8.10	8.60	8.10	8.70	8.10
24	8.20	7.80	8.40	8.10	8.50	8.20	8.30	8.00	8.60	8.20	8.80	8.20
25	8.20	7.80	8.40	8.10	8.50	8.20	8.30	7.80	8.70	8.20	8.90	8.30
26	8.20	7.80	8.30	8.10	8.40	8.10	8.40	8.00	8.60	8.10	8.80	8.10
27	8.20	7.90	8.30	8.00	8.40	8.10	8.40	7.90	8.50	7.90	8.80	8.10
28	8.20	7.80	8.40	8.10	8.50	8.20	8.40	8.00	8.40	8.10	8.80	8.00
29	8.20	7.90	8.30	8.10	8.50	8.00	8.40	8.00	8.50	8.00	8.70	8.00
30	8.20	8.10	8.40	8.10	8.50	8.10	8.20	7.90	8.60	8.00	8.70	8.00
31	---	---	8.30	8.10	---	---	8.30	8.00	8.60	8.00	---	---
MONTH	8.20	7.80	8.40	7.80	---	---	8.60	7.80	8.70	7.40	8.90	7.80

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

ARKANSAS RIVER BASIN

07109500 ARKANSAS RIVER NEAR AVONDALE, CO--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	8.9	6.2	11.2	8.8	11.9	9.4	10.3	7.3	10.0	8.6
2	---	---	8.8	6.1	11.0	8.9	11.9	9.7	11.2	9.3	9.9	8.0
3	---	---	9.0	6.5	11.3	9.2	11.3	9.4	10.4	9.3	10.0	8.0
4	---	---	9.2	6.5	11.4	9.3	10.6	8.6	10.5	7.1	10.9	9.7
5	---	---	9.3	6.6	11.4	9.2	10.2	8.2	11.0	7.0	11.0	9.0
6	---	---	9.1	6.2	11.5	9.3	10.5	8.3	11.3	10.2	10.6	8.1
7	8.8	6.1	9.0	6.4	11.0	9.3	10.8	8.7	12.1	10.4	9.5	7.5
8	8.8	5.9	9.1	6.9	11.5	9.9	11.4	9.6	11.1	9.8	9.4	7.8
9	8.3	5.6	8.2	6.9	11.4	9.0	11.1	9.4	10.8	9.4	9.0	7.8
10	8.4	5.6	8.5	7.0	11.3	9.0	10.8	8.9	10.5	8.5	9.5	8.0
11	8.0	5.7	9.0	7.3	11.0	9.1	10.6	9.2	10.8	8.9	9.7	8.1
12	8.5	6.3	9.4	7.6	11.3	8.9	11.1	9.2	---	---	9.7	8.2
13	8.8	6.4	9.4	7.7	11.3	8.9	10.8	9.5	---	---	9.6	7.9
14	9.0	6.5	9.6	8.0	11.1	8.9	10.8	9.1	---	---	9.8	8.1
15	9.2	6.8	9.1	8.0	11.6	8.9	10.8	9.3	---	---	10.4	8.7
16	9.4	6.9	9.6	8.3	12.0	9.7	10.5	8.6	11.5	8.8	10.2	7.7
17	9.5	7.0	9.7	8.5	12.0	9.3	10.2	8.5	10.2	9.0	9.4	7.7
18	9.3	7.0	9.8	8.4	11.4	9.0	10.5	8.7	9.9	8.4	10.2	8.6
19	9.4	7.0	9.8	8.7	10.8	8.8	10.2	8.7	9.5	8.5	10.0	8.3
20	8.9	6.3	10.5	8.7	10.7	8.6	10.6	8.6	9.3	8.6	10.2	8.8
21	8.7	6.3	10.4	8.9	10.9	8.4	10.5	8.5	9.7	8.2	9.9	7.4
22	8.7	6.4	10.7	8.7	11.4	8.5	10.3	8.4	9.9	8.0	9.6	7.9
23	8.9	6.4	10.2	8.3	11.3	8.6	10.4	8.4	9.4	7.7	9.8	7.8
24	9.0	6.1	10.1	8.2	11.8	8.7	10.2	8.3	9.4	7.5	9.8	7.9
25	8.7	6.1	10.3	8.2	11.5	8.6	9.4	8.1	9.3	7.5	10.2	8.2
26	9.4	6.2	10.1	8.7	11.3	8.7	10.0	8.0	9.6	7.8	10.3	8.4
27	9.0	6.5	10.9	8.8	12.1	8.6	10.0	8.2	9.7	8.3	10.4	7.8
28	9.1	6.5	10.8	8.4	11.6	8.7	10.1	8.1	10.2	8.7	9.5	6.7
29	9.0	6.4	10.9	8.6	11.5	9.2	10.5	8.3	---	---	9.5	6.7
30	8.9	6.0	11.1	9.2	11.6	9.3	10.3	7.7	---	---	9.8	7.4
31	9.0	5.9	---	---	11.7	9.2	9.6	7.1	---	---	9.7	7.8
MONTH	---	---	11.1	6.1	12.1	8.4	11.9	7.1	---	---	11.0	6.7
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.6	7.9	8.6	6.6	8.0	7.3	7.7	6.5	6.8	5.7	7.2	5.7
2	9.9	7.7	8.8	6.5	7.9	7.0	8.1	6.7	6.6	5.9	7.2	5.6
3	9.6	7.8	8.8	6.2	7.9	7.0	8.3	6.7	7.0	6.3	7.9	5.9
4	9.2	7.4	8.6	6.1	8.3	7.3	7.7	6.5	6.9	6.2	8.2	6.1
5	9.5	7.6	9.3	6.3	8.0	7.0	7.3	6.7	6.9	6.3	8.4	6.2
6	9.6	7.7	9.5	5.8	8.0	6.7	7.5	6.8	7.0	6.4	8.4	6.0
7	9.8	7.4	8.9	5.6	8.0	6.7	7.5	6.8	7.2	6.2	8.0	5.8
8	10.1	7.5	8.6	5.3	7.9	6.7	7.5	6.8	6.8	6.1	7.9	5.4
9	10.6	8.4	8.9	5.4	8.2	6.6	7.5	6.8	6.7	6.1	7.0	5.3
10	11.2	8.9	9.0	5.2	8.1	6.6	7.5	6.5	6.7	6.0	7.4	7.0
11	10.8	9.1	9.2	5.2	7.7	6.4	7.5	6.6	6.6	6.0	7.3	6.9
12	10.9	8.9	8.5	6.1	7.8	7.1	7.4	5.7	6.7	5.6	7.3	6.9
13	10.1	7.7	8.2	6.1	7.5	6.7	6.7	5.5	6.5	5.7	7.7	6.0
14	9.8	7.6	7.1	6.1	7.8	7.0	6.6	5.1	6.3	5.5	6.7	5.8
15	9.7	7.7	7.1	6.2	7.8	6.9	6.9	6.1	6.7	6.0	7.0	6.1
16	9.5	7.6	7.6	5.7	7.7	6.8	7.1	6.2	6.9	5.5	7.8	6.6
17	9.3	7.6	7.6	6.5	---	---	7.0	6.1	6.8	5.8	7.9	6.8
18	9.3	7.5	7.5	6.2	---	---	7.0	6.3	6.5	5.8	7.9	6.9
19	9.4	7.4	7.7	6.0	---	---	7.3	6.2	6.7	6.0	7.9	7.2
20	9.1	7.2	7.2	5.4	7.8	7.2	6.9	6.2	6.7	5.8	7.8	6.2
21	9.5	7.3	7.3	5.3	8.0	7.1	7.0	6.1	6.7	5.7	8.4	6.1
22	9.3	7.1	7.7	5.9	8.1	7.4	7.0	6.1	7.2	5.7	8.6	6.4
23	9.7	7.0	7.9	6.0	8.2	7.1	7.1	6.3	6.8	5.8	8.8	6.6
24	9.4	7.1	7.8	6.3	8.0	6.8	7.0	6.3	6.6	5.7	9.2	6.9
25	9.4	6.9	7.8	6.6	8.0	6.7	6.9	6.5	7.2	5.9	9.1	6.6
26	9.5	7.0	8.2	7.2	8.0	6.5	6.8	6.4	7.5	5.8	9.2	7.4
27	9.5	7.4	8.0	6.7	8.2	6.4	7.0	6.4	7.7	5.4	9.8	7.2
28	9.9	7.7	8.0	6.4	7.7	6.5	6.8	6.1	6.9	5.7	10.2	7.2
29	9.7	7.4	8.0	6.3	8.1	6.9	6.9	6.1	6.8	5.7	9.8	7.0
30	8.9	7.5	8.1	6.3	8.0	6.6	6.5	6.0	6.9	5.7	10.2	7.4
31	---	---	8.2	6.9	---	---	6.6	6.2	7.2	5.7	---	---
MONTH	11.2	6.9	9.5	5.2	---	---	8.3	5.1	7.7	5.4	10.2	5.3

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. Datum of gage is 4,443.75 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 8 to Nov. 6, Nov. 20 to March 16, and Aug. 13-15. Records poor. Natural flow of stream affected by diversions for irrigation of about 48,000 acres, and return flow from irrigated areas. Several observations of water temperature and specific conductance were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--13 years (water years 1923-25, 1980-89), 44.6 ft³/s; 32,310 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, 147 ft³/s at 2330 May 15, gage height, 9.23 ft; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	9.5	1.2	3.5	8.0	27	2.4	2.9	.00	.00	.00	.00
2	.00	6.7	1.2	3.4	7.0	18	3.9	2.5	.00	.00	.00	.00
3	.00	7.8	1.1	3.6	6.0	20	2.9	2.2	.00	.00	.00	.00
4	.00	7.2	1.1	3.8	5.4	16	2.7	2.1	.00	.00	.00	.00
5	.00	7.2	1.1	3.6	4.9	13	2.5	1.9	.00	.00	.00	.00
6	.00	14	1.1	4.1	5.2	11	2.3	1.8	.35	.00	.00	.00
7	.00	24	1.1	3.0	5.4	13	2.3	1.9	.00	.00	.00	.00
8	.03	25	1.1	2.7	5.2	14	2.1	1.9	.00	.00	.00	.00
9	.04	17	1.2	3.3	6.0	10	2.0	1.7	.00	.00	.00	.00
10	.05	11	1.0	4.0	11	9.0	2.5	2.1	.39	.00	.00	.00
11	.05	11	1.2	3.5	20	11	3.2	1.9	26	.00	.00	.00
12	.04	9.8	1.5	3.3	35	12	3.5	1.7	20	.00	.00	.00
13	.04	14	3.0	3.1	43	14	2.5	1.6	15	.00	10	.00
14	.05	14	2.5	3.7	39	11	2.3	6.9	15	.00	1.2	.00
15	.05	13	2.0	3.5	41	6.0	2.2	15	14	.00	.10	.00
16	.07	8.1	1.8	4.3	39	4.2	2.3	19	14	.00	.00	.00
17	.09	7.9	2.0	4.7	37	2.8	2.0	12	12	.00	.00	.00
18	.07	5.8	2.5	5.0	35	2.2	2.0	18	4.5	.00	.00	.00
19	.05	5.0	3.0	4.9	33	2.4	2.2	9.6	1.9	.00	.00	.00
20	.06	3.3	3.2	4.6	30	2.1	2.2	5.2	.00	.00	.00	.00
21	.05	3.2	3.4	5.4	35	2.9	2.1	4.9	.00	.00	.00	.00
22	.06	1.9	3.3	5.8	39	11	2.0	4.3	.00	.00	.00	.00
23	.06	1.6	2.8	6.2	50	6.2	2.0	3.9	.00	.00	.00	.00
24	.10	1.3	2.6	5.8	52	3.6	1.7	2.0	.00	.00	.00	.00
25	.18	1.2	3.2	5.2	64	3.3	1.8	.16	.00	.00	.00	.00
26	.20	1.1	3.4	5.4	60	2.5	2.0	2.5	.00	.00	.00	.00
27	.18	1.1	3.0	6.0	54	2.5	1.9	4.5	.00	.00	.00	.00
28	.40	1.1	2.3	6.6	42	2.5	2.0	1.9	.00	.00	.00	.00
29	1.0	1.2	2.4	7.3	---	2.8	4.1	.21	.00	.00	.00	.00
30	2.8	1.1	2.8	8.5	---	3.2	2.7	.00	.00	.00	.00	.00
31	7.3	---	3.2	9.4	---	2.7	---	.00	---	.00	.00	---
TOTAL	13.02	236.1	66.3	147.2	812.1	261.9	72.3	136.27	123.14	0.00	11.30	0.00
MEAN	.42	7.87	2.14	4.75	29.0	8.45	2.41	4.40	4.10	.00	.36	.00
MAX	7.3	25	3.4	9.4	64	27	4.1	19	26	.00	10	.00
MIN	.00	1.1	1.0	2.7	4.9	2.1	1.7	.00	.00	.00	.00	.00
AC-FT	26	468	132	292	1610	519	143	270	244	.0	22	.0

CAL YR 1988 TOTAL 7052.22 MEAN 19.3 MAX 255 MIN .00 AC-FT 13990
WTR YR 1989 TOTAL 1879.63 MEAN 5.15 MAX 64 MIN .00 AC-FT 3730

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. 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: Water year 1988, Oct. 16, 17, 22-25, Dec. 15-17, Dec. 26 to Feb. 12, Feb. 14, 15, May 20-24, June 10-12, Aug. 29 to Sept. 5, and Sept. 15-17. Records good except for estimated daily discharges, which are poor. Estimated daily discharges for current year: Nov. 16-22, Jan. 13-15, and Feb. 2-16. 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 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; 14 years (water years 1975-88), 835 ft³/s, 605,000 acre-ft/yr; 15 years (water years 1975-89), 815 ft³/s, 590,500 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 WATER YEAR 1988.--Maximum discharge, 3,290 ft³/s at 0730 July 8, gage height, 8.76 ft; minimum daily, 107 ft³/s, Feb. 28, 29.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,380 ft³/s at 1115 July 14, gage height, 4.07 ft; minimum daily, 66 ft³/s, Mar. 8.

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

[illegible]

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230	207	290	260	284	176	489	398	1360	1200	1760	259
2	236	275	290	265	220	89	490	396	1240	1170	1740	216
3	230	272	294	275	210	84	528	318	873	1230	1700	209
4	224	289	301	285	200	159	446	288	771	1390	1700	199
5	248	320	298	315	200	149	425	298	864	1420	1680	201
6	255	311	301	300	200	137	434	295	944	1360	1720	198
7	254	275	300	290	180	87	512	256	839	1350	1620	176
8	285	297	300	245	190	66	498	220	698	1330	1840	135
9	302	382	313	230	200	135	492	180	712	1310	1480	184
10	302	428	308	265	240	273	459	189	962	1210	1240	285
11	275	406	304	265	340	506	533	255	1260	1190	1240	192
12	283	329	310	280	380	545	533	446	890	1110	1280	220
13	312	356	318	270	420	540	561	589	926	1510	1560	338
14	284	356	319	280	460	524	617	822	848	2180	1150	347
15	267	433	313	300	500	691	498	1100	873	1290	840	347
16	275	315	302	285	520	707	519	1150	834	1400	728	332
17	258	315	300	295	531	561	460	260	667	1590	960	280
18	231	310	285	308	505	845	492	536	1140	1260	752	222
19	236	310	300	315	424	922	533	596	1240	1220	599	188
20	251	305	336	330	422	916	526	410	1230	915	489	156
21	275	305	295	352	453	593	466	320	1300	778	369	150
22	255	300	260	336	434	565	422	369	1200	822	306	199
23	253	303	245	319	290	523	410	492	1200	1100	253	238
24	256	288	270	343	270	455	386	668	1190	1200	363	225
25	216	280	255	354	325	474	410	890	1040	1400	404	217
26	206	280	255	357	318	492	392	1100	815	1420	404	194
27	195	273	245	350	392	515	358	1120	675	1530	358	170
28	173	260	240	353	169	450	347	822	631	1580	475	154
29	174	269	275	332	---	356	380	589	1070	1590	390	150
30	173	270	265	308	---	377	380	638	1160	1760	365	138
31	168	---	270	336	---	504	---	917	---	1710	318	---
TOTAL	7582	9319	8957	9398	9277	13416	13996	16927	29452	41525	30083	6519
MEAN	245	311	289	303	331	433	467	546	982	1340	970	217
MAX	312	433	336	357	531	922	617	1150	1360	2180	1840	347
MIN	168	207	240	230	169	66	347	180	631	778	253	135
AC-FT	15040	18480	17770	18640	18400	26610	27760	33570	58420	82360	59670	12930
CAL YR 1988	TOTAL 191574											
WTR YR 1989	TOTAL 196451											
	MEAN 523	MEAN 538	MEAN 538	MAX 2250	MAX 2180	MIN 107	MIN 66	AC-FT 380000	AC-FT 389700			

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. 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.--Estimated daily discharges: Feb. 3-8, Feb. 21 to Apr. 5, and July 8-12. Records good except for estimated daily discharges, which are poor. 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 observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--53 years, 28.7 ft³/s; 20,790 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 14	0415	*752	*5.92				

Minimum daily, 2.5 ft³/s, Feb. 7-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	12	3.9	3.6	3.1	13	11	2.6	18	4.8	4.6	5.3
2	4.8	14	3.9	3.6	3.0	15	11	2.6	23	3.8	4.1	4.8
3	4.2	12	3.9	3.7	2.8	35	12	2.8	59	3.6	4.8	6.1
4	3.9	11	3.9	3.7	2.6	20	14	4.4	45	3.9	3.8	5.8
5	4.0	11	3.9	3.6	2.6	15	13	3.4	18	4.6	6.1	5.4
6	4.8	21	3.9	3.5	2.6	13	13	3.0	29	4.5	5.2	4.7
7	4.0	22	3.9	3.4	2.5	15	11	3.7	25	4.9	5.9	6.0
8	6.1	23	3.8	3.3	2.5	39	7.4	3.7	27	4.5	10	6.3
9	6.3	24	3.7	3.3	2.6	98	6.1	3.2	23	3.7	7.7	6.6
10	7.4	23	3.7	3.5	2.8	45	8.3	3.3	21	2.6	7.9	7.5
11	7.2	25	3.7	3.5	2.8	33	12	3.2	24	2.6	9.5	7.3
12	6.4	22	3.7	3.1	2.8	28	13	3.5	24	18	30	9.9
13	6.6	25	3.9	3.1	2.8	24	4.0	3.5	27	33	188	8.1
14	6.2	25	3.8	3.3	2.7	22	8.4	3.9	24	119	52	4.8
15	6.2	6.4	3.9	3.2	2.6	20	6.6	8.1	27	25	16	5.4
16	9.1	4.8	3.6	3.2	2.6	18	5.5	18	24	38	9.4	5.7
17	11	4.1	3.7	3.3	2.6	15	5.1	31	23	16	12	5.6
18	9.3	3.9	3.9	3.3	2.8	14	5.3	16	23	8.3	9.4	5.0
19	5.3	4.0	4.0	3.3	3.3	14	3.0	19	18	6.6	3.6	5.8
20	6.4	3.9	3.8	3.3	3.5	18	3.5	16	13	8.9	4.2	6.4
21	5.4	3.7	3.5	3.3	3.4	22	3.4	16	11	8.7	3.9	5.8
22	6.4	4.0	3.6	3.2	3.4	15	4.0	13	10	8.9	5.9	3.5
23	5.9	4.1	3.5	3.3	4.1	17	3.3	3.9	11	7.6	4.4	4.1
24	9.4	4.2	3.4	3.1	4.6	15	3.7	9.4	12	3.2	6.6	3.5
25	8.7	4.0	3.5	3.2	4.8	11	3.0	18	11	3.1	4.0	3.8
26	8.8	4.0	3.6	3.3	10	12	3.2	21	58	3.4	5.6	3.5
27	6.2	3.9	3.3	3.4	29	14	3.2	21	34	4.3	6.1	4.4
28	5.7	4.0	3.4	3.5	27	12	3.5	17	11	5.0	5.5	4.8
29	7.4	4.0	3.6	3.4	---	11	3.8	15	4.3	5.4	4.6	4.7
30	13	3.9	3.5	3.6	---	12	3.8	18	7.8	5.9	4.8	3.8
31	17	---	3.7	3.3	---	12	---	19	---	5.7	5.5	---
TOTAL	216.9	336.9	115.1	104.4	141.9	667	208.1	326.2	685.1	377.5	451.1	164.4
MEAN	7.00	11.2	3.71	3.37	5.07	21.5	6.94	10.5	22.8	12.2	14.6	5.48
MAX	17	25	4.0	3.7	29	98	14	31	59	119	188	9.9
MIN	3.8	3.7	3.3	3.1	2.5	11	3.0	2.6	4.3	2.6	3.6	3.5
AC-FT	430	668	228	207	281	1320	413	647	1360	749	895	326

CAL YR 1988 TOTAL 3070.2 MEAN 8.39 MAX 40 MIN 2.9 AC-FT 6090
WTR YR 1989 TOTAL 3794.6 MEAN 10.4 MAX 188 MIN 2.5 AC-FT 7530

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 diversion 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.

PERIOD OF RECORD.--October 1964 to September 1984.

GAGE.--Water-stage recorders 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: Water year 1988, Dec. 14-18, Dec. 25 to Jan. 28, Feb. 1-14, 16, Mar. 20-27, Apr. 1-6, May 30, 31, July 17, and July 28 to Aug. 3. Water year 1989, Nov. 15, 16, 20-24, Feb. 3-9, 13, 23-28, Mar. 4, 5, 7-23, Apr. 9, 10, 17, May 8, 11-14, 20-23, June 14, 15, and June 3 to July 18. Records good for water year 1988, except for estimated daily discharges, which are poor. Records fair for water year 1989, 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.

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; 14 years (water years 1975-88), 789 ft³/s; 571,600 acre-ft/yr; 15 years (water years 1975-89), 772 ft³/s; 559,300 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 WATER YEAR 1988.--Maximum discharge, 2,230 ft³/s at 1700 July 8, gage height, not determined; minimum daily, 148 ft³/s, Mar. 9.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,680 ft³/s at 1830 July 14, gage height, not determined; minimum daily, 138 ft³/s, Sept. 9.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	313	478	402	330	820	200	594	231	728	1870	1320	327
2	300	503	402	310	750	188	692	245	604	1830	1410	336
3	274	506	410	320	750	188	581	344	439	1430	1450	410
4	273	488	433	310	640	171	511	405	612	1080	1430	382
5	281	492	438	360	630	170	439	363	698	899	1480	345
6	279	513	446	330	520	158	391	352	791	1100	1610	318
7	253	549	433	280	490	158	537	298	1210	1510	644	242
8	257	530	424	330	620	149	815	286	1280	1710	318	239
9	251	513	424	350	620	148	763	296	981	1180	329	294
10	248	511	436	420	630	219	662	327	915	1210	605	283
11	269	504	430	620	640	226	655	301	1070	1460	638	202
12	279	505	445	600	690	218	743	304	1080	1080	373	211
13	289	508	438	470	740	206	738	282	898	985	372	224
14	303	496	410	600	750	172	708	320	820	831	508	289
15	328	553	340	700	702	243	681	272	935	775	512	525
16	407	464	360	760	690	452	694	285	1010	508	574	408
17	374	422	390	660	677	390	648	446	747	241	568	361
18	406	415	410	760	657	460	680	700	525	369	534	304
19	401	484	420	700	571	467	709	629	625	310	668	279
20	411	523	446	560	432	482	702	807	688	405	736	331
21	442	522	446	560	342	462	588	949	686	550	705	307
22	451	460	328	660	289	492	503	945	677	560	635	301
23	448	374	470	700	262	512	435	600	888	476	560	312
24	451	386	540	680	238	501	360	479	1040	420	579	310
25	426	392	490	620	229	470	357	364	1160	411	505	284
26	414	410	420	720	218	471	346	368	992	472	513	257
27	426	433	310	720	208	440	348	365	1020	1080	387	242
28	452	415	400	820	205	376	275	540	1040	1240	383	239
29	467	392	320	909	176	390	283	681	962	1180	426	246
30	474	402	350	846	---	422	279	831	1180	1280	421	255
31	470	---	330	825	---	450	---	973	---	1520	324	---
TOTAL	11117	14143	12741	17830	15186	10051	16717	14588	26301	29972	21517	9063
MEAN	359	471	411	575	524	324	557	471	877	967	694	302
MAX	474	553	540	909	820	512	815	973	1280	1870	1610	525
MIN	248	374	310	280	176	148	275	231	439	241	318	202
AC-FT	22050	28050	25270	35370	30120	19940	33160	28940	52170	59450	42680	17980
CAL YR 1987	TOTAL	404722	MEAN	1109	MAX	6100	MIN	189	AC-FT	802800		

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

[illegible]

07120620 BIG ARROYO NEAR THATCHER, CO

LOCATION.--Lat 37°33'17", long 104°01'15", in NW¼NW¼ sec.4, T.29 S., R.59 W., Las Animas County, Hydrologic Unit 11020005, on left bank 2.4 mi from U.S. Route 350, 4.8 mi east of Thatcher, and 3.2 mi upstream from mouth.

DRAINAGE AREA.--15.5 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 5,288 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good.

AVERAGE DISCHARGE.--6 years, 0.06 ft³/s; 43 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,500 ft³/s, July 28, 1985, gage height, 4.86 ft, from rating curve extended above about 1,100 ft³/s; no flow most of the time.

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)
May 16	1600	115	a3.50	Sept. 5	0115	13	a3.04
July 12	1715	*372	*a3.89				

No flow most of time.
a-From floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.69
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	8.5	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.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	.03	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	4.0	.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	4.00	0.00	8.54	0.00	0.69
MEAN	.00	.00	.00	.00	.00	.00	.00	.13	.00	.28	.00	.023
MAX	.00	.00	.00	.00	.00	.00	.00	4.0	.00	8.5	.00	.69
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	.0	.0	.0	.0	.0	.0	7.9	.0	17	.0	1.4

CAL YR 1988 TOTAL 8.06 MEAN .02 MAX 3.3 MIN .00 AC-FT 16
WTR YR 1989 TOTAL 13.23 MEAN .04 MAX 8.5 MIN .00 AC-FT 26

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT DISCHARGE: July 1983 to current year.

REMARKS.--Daily data not published are either missing, of poor quality or during periods of no flow. Maximum and minimum specific conductance and water temperature are published only for periods of recorded flow.

SEDIMENT LOADS: Maximum daily, 3,760 tons Aug. 1, 1983; minimum daily, no flow most time.

SEDIMENT LOADS: Maximum daily, 159 tons July 12; no flow most of time.

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

[illegible]

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

[illegible]

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

[illegible]

07120620 BIG ARROYO NEAR THATCHER, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	15.7	14.5
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	17.5	16.2	---	---	---	---
13	---	---	---	---	---	---	17.0	17.0	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	19.5	15.7	---	---	---	---
16	---	---	6.5	.2	---	---	---	---	---	---	---	---
17	---	---	5.2	5.2	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	15.0	15.0
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DISCHARGE DAY	MEAN TRATION (CFS)	MEAN CONCEN- DISCHARGE (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN TRATION (CFS)	MEAN CONCEN- DISCHARGE (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN TRATION (CFS)	MEAN CONCEN- DISCHARGE (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	---	---

07120620 BIG ARROYO NEAR THATCHER, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DISCHARGE DAY	MEAN TRATION (CFS)	MEAN CONCEN- DISCHARGE (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN TRATION (CFS)	MEAN CONCEN- DISCHARGE (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN TRATION (CFS)	MEAN CONCEN- DISCHARGE (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
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	---	---
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	---	---	.00	---	---
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	4.0	2650	145	.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	---	---	4.00	---	---	0.00	---	---

07120620 BIG ARROYO NEAR THATCHER, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DISCHARGE DAY	MEAN TRATION (CFS)	MEAN CONCEN- DISCHARGE (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN TRATION (CFS)	MEAN CONCEN- DISCHARGE (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN TRATION (CFS)	MEAN CONCEN- DISCHARGE (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.00	---	---	.00	---	---	.00	---	---
2	.00	---	---	.00	---	---	.00	---	---
3	.00	---	---	.00	---	---	.00	---	---
4	.00	---	---	.00	---	---	.00	---	---
5	.00	---	---	.00	---	---	.69	1350	10
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	8.5	1460	159	.00	---	---	.00	---	---
13	.01	57	.01	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.03	424	.23	.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	8.54	---	---	0.00	---	---	0.69	---	---
YEAR	13.23		314.24						

ARKANSAS RIVER BASIN

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 CO 76-1: 1975.

GAGE.--Water-stage recorder. 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: May 31 to June 2. 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 observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--24 years (water years 1923-25, 1969-89), 65.7 ft³/s; 47,600 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, 1,850 ft³/s at 0500 May 17, gage height, 9.00 ft; minimum daily, 8.6 ft³/s, Mar. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	71	18	16	13	34	23	62	57	39	42	46
2	61	73	18	16	13	11	28	65	58	39	41	46
3	52	82	18	18	12	9.8	33	62	80	36	42	50
4	43	100	18	18	13	9.3	27	59	173	33	40	41
5	44	98	18	18	13	8.6	27	47	87	33	45	49
6	49	96	20	17	13	8.7	25	39	76	31	49	36
7	48	92	32	16	12	9.6	26	31	138	29	58	41
8	65	88	32	15	12	9.1	29	36	106	30	85	39
9	65	82	32	14	12	23	32	32	88	28	59	37
10	66	89	33	15	12	39	33	27	125	32	50	40
11	70	104	34	15	12	38	32	28	107	30	50	52
12	67	105	25	15	12	31	34	32	128	32	59	63
13	64	105	21	14	12	34	38	40	143	36	73	53
14	60	102	19	14	12	52	43	111	148	157	77	71
15	57	89	17	14	12	71	43	211	149	121	78	78
16	59	72	16	14	12	108	40	319	159	66	75	40
17	55	38	16	14	12	78	35	521	129	58	69	55
18	48	31	16	14	12	78	34	129	114	61	56	72
19	48	26	16	14	12	71	40	124	86	54	62	58
20	67	24	16	14	12	74	38	112	52	59	68	56
21	71	23	16	14	12	66	41	83	56	59	58	55
22	67	22	16	14	12	36	43	81	51	52	47	58
23	72	22	16	14	12	29	51	74	46	40	41	55
24	76	21	16	14	12	28	53	65	42	40	39	61
25	72	21	16	14	11	20	45	59	43	49	41	59
26	67	21	16	14	11	23	41	62	49	50	48	55
27	67	21	16	14	11	21	43	56	43	50	46	50
28	73	19	16	13	16	23	44	48	37	48	42	52
29	77	19	16	13	---	26	53	48	35	45	38	52
30	81	18	16	13	---	27	60	41	37	44	37	55
31	75	---	16	13	---	22	---	52	---	42	45	---
TOTAL	1947	1774	611	455	342	1118.1	1134	2756	2642	1523	1660	1575
MEAN	62.8	59.1	19.7	14.7	12.2	36.1	37.8	88.9	88.1	49.1	53.5	52.5
MAX	81	105	34	18	16	108	60	521	173	157	85	78
MIN	43	18	16	13	11	8.6	23	27	35	28	37	36
AC-FT	3860	3520	1210	902	678	2220	2250	5470	5240	3020	3290	3120
CAL YR 1988	TOTAL	21602	MEAN	59.0	MAX	194	MIN	11	AC-FT	42850		
WTR YR 1989	TOTAL	17537.1	MEAN	48.0	MAX	521	MIN	8.6	AC-FT	34780		

07122060 FORT LYON CANAL NEAR CASA, CO

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.

PERIOD OF RECORD.--May 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,055 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Aug. 14-22, 1988, and March 16-20, 1989. Records good except for estimated daily discharges and daily discharges below 100 ft³/s, which are poor. Canal diverts from left bank of Arkansas River in SW¼SW¼ sec.29, T. 23 S., R. 55 W., for irrigation and offstream storage.

EXTREMES FOR PERIOD MAY TO SEPTEMBER 1988.--Maximum daily discharge, 977 ft³/s, July 12; minimum daily, 114 ft³/s, Sept. 1.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 817 ft³/s, July 14; no flow many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	608	594	797	114
2	---	---	---	---	---	---	---	---	434	764	744	138
3	---	---	---	---	---	---	---	---	482	777	678	150
4	---	---	---	---	---	---	---	---	448	659	782	151
5	---	---	---	---	---	---	---	---	442	485	685	148
6	---	---	---	---	---	---	---	---	501	335	880	149
7	---	---	---	---	---	---	---	---	552	690	729	150
8	---	---	---	---	---	---	---	---	748	952	308	133
9	---	---	---	---	---	---	---	---	779	908	177	133
10	---	---	---	---	---	---	---	---	655	685	163	141
11	---	---	---	---	---	---	---	---	555	847	308	152
12	---	---	---	---	---	---	---	---	699	977	311	147
13	---	---	---	---	---	---	---	---	737	810	191	135
14	---	---	---	---	---	---	---	---	572	830	160	139
15	---	---	---	---	---	---	---	---	712	784	210	166
16	---	---	---	---	---	---	---	---	744	825	150	391
17	---	---	---	---	---	---	---	---	687	539	170	315
18	---	---	---	---	---	---	---	---	503	178	150	272
19	---	---	---	---	---	---	---	---	444	140	140	186
20	---	---	---	---	---	---	---	---	706	141	150	137
21	---	---	---	---	---	---	---	---	619	147	140	139
22	---	---	---	---	---	---	---	---	530	144	135	141
23	---	---	---	---	---	---	---	---	615	138	134	147
24	---	---	---	---	---	---	---	---	769	133	139	150
25	---	---	---	---	---	---	---	---	551	775	133	150
26	---	---	---	---	---	---	---	432	772	138	146	147
27	---	---	---	---	---	---	---	479	713	277	143	150
28	---	---	---	---	---	---	---	301	663	756	148	153
29	---	---	---	---	---	---	---	345	639	645	145	161
30	---	---	---	---	---	---	---	457	655	646	145	158
31	---	---	---	---	---	---	---	603	---	702	127	---
TOTAL	---	---	---	---	---	---	---	---	18758	16777	9418	4943
MEAN	---	---	---	---	---	---	---	---	625	541	304	165
MAX	---	---	---	---	---	---	---	---	779	977	880	391
MIN	---	---	---	---	---	---	---	---	434	131	127	114
AC-FT	---	---	---	---	---	---	---	---	37210	33280	18680	9800

ARKANSAS RIVER BASIN

07122060 FORT LYON CANAL NEAR CASA, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	190	.00	.00	.00	.00	202	154	525	490	669	102
2	155	178	.00	.00	.00	.00	183	152	728	486	610	121
3	150	193	.00	.00	.00	.00	170	155	684	505	593	128
4	155	228	.00	.00	.00	.00	179	130	681	519	572	120
5	160	224	.00	.00	.00	.00	178	116	477	523	590	128
6	160	238	.00	.00	.00	.00	130	136	433	520	621	117
7	157	255	.00	.00	.00	.00	100	146	711	504	680	104
8	159	261	.00	.00	.00	.00	134	146	646	515	698	101
9	157	252	.00	.00	.00	.00	218	144	465	509	660	120
10	158	274	.00	.00	.00	.00	197	156	591	492	615	118
11	151	345	.00	.00	.00	.00	159	155	644	468	524	141
12	150	366	.00	.00	.00	.00	163	149	755	506	554	152
13	148	362	.00	.00	.00	.00	180	145	676	520	716	153
14	151	361	.00	.00	.00	.00	168	162	578	817	607	143
15	142	411	.00	.00	.00	218	136	223	521	442	453	141
16	135	285	.00	.00	.00	460	109	747	612	177	179	129
17	144	17	.00	.00	.00	510	116	748	688	187	131	117
18	149	.00	.00	.00	.00	410	136	488	509	325	130	123
19	150	.00	.00	.00	.00	490	156	353	671	151	121	139
20	149	.00	.00	.00	.00	380	159	542	693	157	119	142
21	144	.00	.00	.00	.00	363	151	432	604	289	129	141
22	144	.00	.00	.00	.00	213	155	315	598	333	129	143
23	140	.00	.00	.00	.00	217	150	243	615	546	128	137
24	140	.00	.00	.00	.00	286	151	285	492	598	130	148
25	139	.00	.00	.00	.00	237	140	360	454	606	132	145
26	141	.00	.00	.00	.00	247	116	526	294	590	131	143
27	140	.00	.00	.00	.00	244	129	736	160	576	131	144
28	143	.00	.00	.00	.00	248	149	708	131	549	131	145
29	144	.00	.00	.00	---	196	154	611	133	566	132	141
30	143	.00	.00	.00	---	184	155	483	308	598	128	132
31	180	---	.00	.00	---	201	---	352	---	635	114	---
TOTAL	4633	4440.00	0.00	0.00	0.00	5104.00	4623	10198	16077	14699	11257	3958
MEAN	149	148	.00	.00	.00	165	154	329	536	474	363	132
MAX	180	411	.00	.00	.00	510	218	748	755	817	716	153
MIN	135	.00	.00	.00	.00	.00	100	116	131	151	114	101
AC-FT	9190	8810	.0	.0	.0	10120	9170	20230	31890	29160	22330	7850

WTR YR 1989 TOTAL 74989.00 MEAN 205 MAX 817 MIN .00 AC-FT 148700

07122105 FORT LYON CANAL NEAR CORNELIA, CO

LOCATION.--Lat 38°06'25", long 103°14'55", in SW¼NW¼ sec.28, T.22 S., R.52 W., Bent County, Hydrologic Unit 11020009, on right bank 0.2 mi downstream from County Road 9 bridge, 2.4 mi northeast of Cornelia, 3.2 mi northwest of Las Animas, and 30 mi downstream from headgate.

PERIOD OF RECORD.--May 1988 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 4,005 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 SW¼SW¼ sec.29, T. 23 S., R. 55 W., for irrigation and offstream storage.

EXTREMES FOR PERIOD MAY TO SEPTEMBER 1988.--Maximum daily discharge, 936 ft³/s, Aug. 7, 1988; minimum daily, 144 ft³/s, Sept. 1.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 839 ft³/s, May 17; no flow many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	668	490	796	144
2	---	---	---	---	---	---	---	---	508	405	812	226
3	---	---	---	---	---	---	---	---	346	641	588	361
4	---	---	---	---	---	---	---	---	211	750	478	380
5	---	---	---	---	---	---	---	---	298	659	648	403
6	---	---	---	---	---	---	---	---	478	621	756	398
7	---	---	---	---	---	---	---	---	481	657	936	404
8	---	---	---	---	---	---	---	---	680	739	504	381
9	---	---	---	---	---	---	---	---	794	793	598	375
10	---	---	---	---	---	---	---	---	593	840	493	374
11	---	---	---	---	---	---	---	---	354	695	497	383
12	---	---	---	---	---	---	---	---	498	767	420	276
13	---	---	---	---	---	---	---	---	749	737	575	165
14	---	---	---	---	---	---	---	---	657	860	515	238
15	---	---	---	---	---	---	---	---	634	831	555	361
16	---	---	---	---	---	---	---	---	721	842	519	485
17	---	---	---	---	---	---	---	---	492	684	505	626
18	---	---	---	---	---	---	---	---	403	517	534	547
19	---	---	---	---	---	---	---	---	420	579	404	484
20	---	---	---	---	---	---	---	---	590	711	164	267
21	---	---	---	---	---	---	---	---	705	721	182	161
22	---	---	---	---	---	---	---	---	558	707	393	236
23	---	---	---	---	---	---	---	---	547	588	381	349
24	---	---	---	---	---	---	---	---	596	460	380	351
25	---	---	---	---	---	---	---	---	494	537	387	350
26	---	---	---	---	---	---	---	509	627	687	390	327
27	---	---	---	---	---	---	---	463	803	696	386	314
28	---	---	---	---	---	---	---	397	636	666	387	292
29	---	---	---	---	---	---	---	306	681	615	382	271
30	---	---	---	---	---	---	---	391	647	413	384	177
31	---	---	---	---	---	---	---	528	---	549	249	---
TOTAL	---	---	---	---	---	---	---	---	16869	20457	15198	10106
MEAN	---	---	---	---	---	---	---	---	562	660	490	337
MAX	---	---	---	---	---	---	---	---	803	860	936	626
MIN	---	---	---	---	---	---	---	---	211	405	164	144
AC-FT	---	---	---	---	---	---	---	---	33460	40580	30150	20050

ARKANSAS RIVER BASIN

07122105 FORT LYON CANAL NEAR CORNELIA, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	182	.00	.00	.00	.00	461	462	386	326	691	65
2	158	168	.00	.00	.00	.00	449	463	620	196	583	124
3	199	164	.00	.00	.00	.00	470	469	660	299	542	228
4	200	201	.00	.00	.00	.00	487	325	452	457	310	231
5	197	218	.00	.00	.00	.00	515	204	404	469	333	238
6	195	220	.00	.00	.00	.00	402	300	399	472	570	248
7	187	237	.00	.00	.00	.00	224	406	534	471	596	223
8	184	245	.00	.00	.00	.00	262	425	698	447	709	211
9	179	185	.00	.00	.00	.00	461	434	430	482	590	211
10	174	136	.00	.00	.00	.00	474	461	320	332	578	195
11	166	233	.00	.00	.00	.00	455	466	473	169	280	194
12	160	339	.00	.00	.00	.00	449	451	686	292	384	212
13	154	348	.00	.00	.00	.00	508	433	703	462	580	204
14	156	353	.00	.00	.00	.00	499	351	516	528	775	190
15	114	371	.00	.00	.00	4.6	391	270	409	144	482	182
16	48	377	.00	.00	.00	312	218	543	388	211	487	132
17	55	171	.00	.00	.00	435	250	839	692	550	442	73
18	125	.00	.00	.00	.00	296	386	551	545	686	364	74
19	127	.00	.00	.00	.00	269	393	296	519	490	242	112
20	132	.00	.00	.00	.00	399	452	390	588	319	256	129
21	130	.00	.00	.00	.00	413	473	505	388	425	354	154
22	128	.00	.00	.00	.00	321	476	361	417	468	346	147
23	131	.00	.00	.00	.00	349	475	288	579	496	313	144
24	128	.00	.00	.00	.00	297	472	251	535	556	288	146
25	128	.00	.00	.00	.00	253	411	310	416	580	288	143
26	125	.00	.00	.00	.00	225	221	413	347	571	289	138
27	124	.00	.00	.00	.00	239	246	644	213	519	289	134
28	125	.00	.00	.00	.00	244	406	642	110	280	287	136
29	124	.00	.00	.00	---	183	411	469	111	297	284	134
30	123	.00	.00	.00	---	253	446	409	119	544	283	122
31	131	---	.00	.00	---	449	---	359	---	581	176	---
TOTAL	4410	4148.00	0.00	0.00	0.00	4941.60	12243	13190	13657	13119	12991	4874
MEAN	142	138	.00	.00	.00	159	408	425	455	423	419	162
MAX	200	377	.00	.00	.00	449	515	839	703	686	775	248
MIN	48	.00	.00	.00	.00	.00	218	204	110	144	176	65
AC-FT	8750	8230	.0	.0	.0	9800	24280	26160	27090	26020	25770	9670

WTR YR 1989 TOTAL 83573.60 MEAN 229 MAX 839 MIN .00 AC-FT 165800

07122200 FORT LYON CANAL NEAR HASTY, CO

LOCATION.--Lat 38°08'39", long 102°57'30", in SW¼SW¼ 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.

PERIOD OF RECORD.--October 1968 to September 1975. May 1988 to current year.

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 100 ft³/s, which are poor. Canal diverts from left bank of Arkansas River in SW¼SW¼ sec.29, T. 23 S., R. 55 W., for irrigation and offstream storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 969 ft³/s, May 27, 1970; no flow many days.

EXTREMES FOR PERIOD MAY TO SEPTEMBER 1988.--Maximum daily discharge, 705 ft³/s, July 15; no flow, Sept. 14.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 609 ft³/s, June 13; no flow many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	475	475	368	103
2	---	---	---	---	---	---	---	---	498	24	559	18
3	---	---	---	---	---	---	---	---	328	112	607	15
4	---	---	---	---	---	---	---	---	59	555	391	113
5	---	---	---	---	---	---	---	---	25	538	358	277
6	---	---	---	---	---	---	---	---	210	549	230	335
7	---	---	---	---	---	---	---	---	329	535	528	339
8	---	---	---	---	---	---	---	---	429	430	562	338
9	---	---	---	---	---	---	---	---	595	301	430	321
10	---	---	---	---	---	---	---	---	595	534	496	321
11	---	---	---	---	---	---	---	---	248	565	365	324
12	---	---	---	---	---	---	---	---	9.5	499	143	280
13	---	---	---	---	---	---	---	---	335	334	105	39
14	---	---	---	---	---	---	---	---	531	430	339	.00
15	---	---	---	---	---	---	---	---	468	705	426	121
16	---	---	---	---	---	---	---	---	586	684	469	176
17	---	---	---	---	---	---	---	---	480	652	418	492
18	---	---	---	---	---	---	---	---	112	286	444	469
19	---	---	---	---	---	---	---	---	34	146	421	430
20	---	---	---	---	---	---	---	---	302	383	192	323
21	---	---	---	---	---	---	---	---	580	585	19	127
22	---	---	---	---	---	---	---	---	523	598	5.4	12
23	---	---	---	---	---	---	---	---	454	510	125	77
24	---	---	---	---	---	---	---	---	517	169	206	130
25	---	---	---	---	---	---	---	213	431	103	318	244
26	---	---	---	---	---	---	---	393	395	425	322	297
27	---	---	---	---	---	---	---	155	317	580	338	279
28	---	---	---	---	---	---	---	135	294	532	333	268
29	---	---	---	---	---	---	---	188	539	574	332	254
30	---	---	---	---	---	---	---	284	543	261	329	201
31	---	---	---	---	---	---	---	366	---	183	297	---
TOTAL	---	---	---	---	---	---	---	---	11241.5	13257	10475.4	6723.00
MEAN	---	---	---	---	---	---	---	---	375	428	338	224
MAX	---	---	---	---	---	---	---	---	595	705	607	492
MIN	---	---	---	---	---	---	---	---	9.5	24	5.4	.00
AC-FT	---	---	---	---	---	---	---	---	22300	26300	20780	13340

ARKANSAS RIVER BASIN

07122200 FORT LYON CANAL NEAR HASTY, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	148	.00	.00	.00	.00	214	379	298	101	519	156
2	16	154	.00	.00	.00	.00	338	382	384	6.2	557	63
3	39	143	.00	.00	.00	.00	388	389	518	12	503	7.8
4	39	164	.00	.00	.00	.00	386	370	332	241	376	1.0
5	141	198	.00	.00	.00	.00	406	153	164	329	149	53
6	172	197	.00	.00	.00	.00	402	6.3	228	414	100	170
7	163	210	.00	.00	.00	.00	234	87	322	417	271	186
8	161	221	.00	.00	.00	.00	136	197	454	404	523	192
9	162	178	.00	.00	.00	.00	39	321	493	417	580	183
10	160	54	.00	.00	.00	.00	149	357	215	376	540	187
11	155	36	.00	.00	.00	.00	334	373	86	45	339	205
12	145	138	.00	.00	.00	.00	352	373	284	5.5	159	180
13	141	181	.00	.00	.00	.00	371	360	609	185	123	185
14	137	277	.00	.00	.00	.00	397	404	488	252	359	179
15	137	312	.00	.00	.00	.00	381	183	236	323	484	165
16	57	353	.00	.00	.00	34	234	87	165	216	474	155
17	1.4	227	.00	.00	.00	272	115	453	389	439	396	94
18	.00	69	.00	.00	.00	93	17	426	479	512	357	19
19	.30	14	.00	.00	.00	21	104	337	423	527	269	2.1
20	22	1.3	.00	.00	.00	290	298	226	508	274	74	.32
21	11	.91	.00	.00	.00	315	358	406	125	21	31	.02
22	3.2	.30	.00	.00	.00	280	371	273	49	132	145	.24
23	41	.00	.00	.00	.00	282	369	70	420	331	215	2.5
24	43	.00	.00	.00	.00	269	373	62	471	464	248	67
25	85	.00	.00	.00	.00	231	374	223	379	504	252	81
26	98	.00	.00	.00	.00	187	185	322	383	503	249	123
27	108	.00	.00	.00	.00	207	8.2	447	258	491	245	124
28	108	.00	.00	.00	.00	212	94	586	131	235	236	116
29	108	.00	.00	.00	---	171	230	423	102	11	221	114
30	108	.00	.00	.00	---	28	307	81	110	151	204	106
31	108	---	.00	.00	---	55	---	136	---	400	193	---
TOTAL	2708.90	3276.51	0.00	0.00	0.00	2947.00	7964.2	8892.3	9503	8738.7	9391	3116.98
MEAN	87.4	109	.00	.00	.00	95.1	265	287	317	282	303	104
MAX	172	353	.00	.00	.00	315	406	586	609	527	580	205
MIN	.00	.00	.00	.00	.00	.00	8.2	6.3	49	5.5	31	.02
AC-FT	5370	6500	.0	.0	.0	5850	15800	17640	18850	17330	18630	6180

WTR YR 1989 TOTAL 56538.59 MEAN 155 MAX 609 MIN .00 AC-FT 112100

07122350 FORT LYON CANAL NEAR BIG BEND, CO

LOCATION.--Lat 38°15'29", long 102°46'42", in SW¼NW¼ sec.2, T.21 S., R.48 W., Bent County, Hydrologic Unit 11020009, on right bank 0.1 mi downstream from County Road 34 bridge, 4.1 mi north of Big Bend, 14 mi northwest of Lamar, and 76 mi downstream from headgate.

PERIOD OF RECORD.--May 1988 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Elevation of gage is 3,900 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good except those below discharges of 100 ft³/s, which are poor. Canal diverts from left bank of Arkansas River in SW¼SW¼ sec.29, T. 23 S., R. 55 W., for irrigation and offstream storage.

EXTREMES FOR PERIOD MAY TO SEPTEMBER 1988.--Maximum daily discharge, 560 ft³/s, July 17, 1988; no flow many days.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 548 ft³/s, July 19; no flow many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	236	419	63	213
2	---	---	---	---	---	---	---	---	438	190	9.7	18
3	---	---	---	---	---	---	---	---	363	.00	293	.00
4	---	---	---	---	---	---	---	---	115	74	391	.00
5	---	---	---	---	---	---	---	---	.00	139	409	.00
6	---	---	---	---	---	---	---	---	.00	356	272	.00
7	---	---	---	---	---	---	---	---	.00	506	118	30
8	---	---	---	---	---	---	---	---	24	373	246	190
9	---	---	---	---	---	---	---	---	317	20	216	270
10	---	---	---	---	---	---	---	---	501	116	472	327
11	---	---	---	---	---	---	---	---	387	438	400	318
12	---	---	---	---	---	---	---	---	33	471	271	322
13	---	---	---	---	---	---	---	---	.34	343	38	90
14	---	---	---	---	---	---	---	---	57	168	.00	.00
15	---	---	---	---	---	---	---	---	101	185	.00	33
16	---	---	---	---	---	---	---	---	445	347	156	.00
17	---	---	---	---	---	---	---	---	539	560	300	47
18	---	---	---	---	---	---	---	---	223	416	380	228
19	---	---	---	---	---	---	---	---	32	148	441	327
20	---	---	---	---	---	---	---	---	6.6	.00	342	381
21	---	---	---	---	---	---	---	---	43	130	58	192
22	---	---	---	---	---	---	---	---	131	316	.00	.00
23	---	---	---	---	---	---	---	---	347	519	.00	.00
24	---	---	---	---	---	---	---	---	450	337	.00	.00
25	---	---	---	---	---	---	---	---	474	28	.00	.00
26	---	---	---	---	---	---	---	336	412	14	.00	.00
27	---	---	---	---	---	---	---	248	151	56	115	111
28	---	---	---	---	---	---	---	45	.00	239	237	223
29	---	---	---	---	---	---	---	.00	95	494	306	243
30	---	---	---	---	---	---	---	.00	348	368	303	226
31	---	---	---	---	---	---	---	106	---	239	307	---
TOTAL	---	---	---	---	---	---	---	---	6268.94	8009.00	6143.70	3789.00
MEAN	---	---	---	---	---	---	---	---	209	258	198	126
MAX	---	---	---	---	---	---	---	---	539	560	472	381
MIN	---	---	---	---	---	---	---	---	.00	.00	.00	.00
AC-FT	---	---	---	---	---	---	---	---	12430	15890	12190	7520

ARKANSAS RIVER BASIN

07122350 FORT LYON CANAL NEAR BIG BEND, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	.00	.00	.00	.00	.00	.00	46	.00	87	2.7	204
2	.00	.00	.00	.00	.00	.00	.00	121	29	42	299	50
3	.00	49	.00	.00	.00	.00	.00	263	259	.00	452	.00
4	.00	127	.00	.00	.00	.00	88	341	294	.00	477	.00
5	.00	154	.00	.00	.00	.00	231	206	89	.00	261	.00
6	.00	160	.00	.00	.00	.00	349	55	99	36	45	.00
7	.00	165	.00	.00	.00	.00	233	1.1	258	169	.00	.00
8	34	180	.00	.00	.00	.00	124	22	307	318	5.8	6.4
9	93	182	.00	.00	.00	.00	19	.00	419	450	221	.00
10	150	100	.00	.00	.00	.00	1.2	32	333	477	395	51
11	153	.72	.00	.00	.00	.00	.00	102	25	247	484	144
12	145	.00	.00	.00	.00	.00	.00	261	.00	4.6	241	142
13	147	.00	.00	.00	.00	.00	101	330	256	.00	64	228
14	140	.00	.00	.00	.00	.00	283	323	362	1.0	.20	223
15	143	120	.00	.00	.00	.00	349	330	259	52	98	201
16	111	233	.00	.00	.00	.00	257	95	131	11	148	189
17	16	242	.00	.00	.00	.00	143	97	17	148	396	130
18	.00	183	.00	.00	.00	.00	15	40	210	312	409	5.6
19	.00	47	.00	.00	.00	.00	.00	108	325	548	350	.00
20	.00	7.2	.00	.00	.00	.00	.00	206	444	467	159	.00
21	.00	1.6	.00	.00	.00	18	.00	321	304	163	15	.00
22	.00	.00	.00	.00	.00	17	90	374	57	.16	.00	.00
23	.00	.00	.00	.00	.00	105	220	91	9.5	.00	.00	.00
24	.00	.00	.00	.00	.00	166	339	.00	74	2.0	.00	.00
25	.00	.00	.00	.00	.00	182	355	.00	128	158	37	.00
26	.00	.00	.00	.00	.00	145	269	.00	342	396	70	.00
27	.00	.00	.00	.00	.00	148	59	65	298	531	214	.00
28	.00	.00	.00	.00	.00	162	.65	397	190	489	279	.00
29	.00	.00	.00	.00	---	165	5.4	443	121	82	280	.00
30	.00	.00	.00	.00	---	84	.00	192	117	.00	283	.00
31	.00	---	.00	.00	---	.35	---	14	---	5.3	294	---
TOTAL	1225.00	1951.52	0.00	0.00	0.00	1192.35	3531.25	4876.10	5756.50	5196.06	5979.70	1574.00
MEAN	39.5	65.1	.00	.00	.00	38.5	118	157	192	168	193	52.5
MAX	153	242	.00	.00	.00	182	355	443	444	548	484	228
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	2430	3870	.0	.0	.0	2370	7000	9670	11420	10310	11860	3120

WTR YR 1989 TOTAL 31282.48 MEAN 85.7 MAX 548 MIN .00 AC-FT 62050

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	15	6.4	3.5	3.1	6.2	12	16	5.7	2.3	7.3	14
2	5.4	15	6.4	3.5	2.8	15	16	15	7.4	2.6	5.7	13
3	5.5	15	5.1	3.5	2.7	3.2	17	12	48	3.2	6.1	8.7
4	11	9.9	5.1	3.5	2.5	2.2	13	12	35	3.8	4.8	8.8
5	14	9.5	5.1	3.5	2.2	2.0	12	12	10	4.5	5.7	8.4
6	16	6.5	10	3.5	1.9	2.0	14	9.7	11	4.7	9.2	8.8
7	19	5.7	11	3.5	1.8	2.0	19	11	13	5.0	19	8.4
8	8.8	5.2	9.2	3.5	1.8	2.4	18	8.3	9.1	5.5	11	7.5
9	5.9	12	8.1	3.7	1.8	2.3	12	2.6	28	5.7	7.3	6.4
10	8.0	19	8.5	3.8	2.0	2.1	27	2.1	19	5.9	7.2	5.7
11	10	18	7.6	3.9	2.2	2.1	19	2.0	18	6.2	7.8	5.7
12	12	12	7.2	3.7	2.2	2.1	13	2.9	19	5.8	8.9	6.2
13	9.0	16	5.9	3.6	2.1	2.1	15	4.2	18	5.7	10	6.7
14	6.0	17	5.8	3.4	2.1	2.2	15	7.2	20	6.5	11	13
15	14	18	6.1	3.3	2.1	2.4	8.8	10	23	9.3	10	27
16	15	8.7	5.9	3.3	2.1	8.3	9.5	9.4	21	9.0	11	30
17	16	6.9	5.2	3.2	2.1	15	10	10	21	8.5	14	28
18	20	9.6	5.3	3.0	2.2	10	10	18	17	7.2	14	15
19	29	13	6.3	3.0	2.5	8.3	10	22	12	4.4	14	18
20	21	6.8	6.1	3.1	2.5	17	10	14	8.3	4.6	16	15
21	14	6.2	5.9	3.1	2.5	19	11	13	8.3	4.1	17	11
22	11	6.0	5.8	3.1	2.5	9.8	13	19	10	3.9	14	11
23	11	5.9	5.1	3.1	2.5	4.5	16	10	12	3.9	10	12
24	10	5.7	5.2	2.9	3.1	5.1	14	11	8.9	4.7	6.8	18
25	8.8	5.4	4.9	2.8	3.9	6.4	12	15	5.4	5.6	5.6	22
26	8.1	5.5	5.1	2.9	3.8	4.5	8.8	16	4.7	5.3	6.0	19
27	8.3	5.4	4.5	2.8	3.3	3.9	8.1	16	2.6	9.5	7.3	18
28	9.4	5.8	4.2	2.9	3.1	4.7	11	17	2.8	9.4	9.9	17
29	15	5.5	3.9	2.7	---	6.2	12	20	2.6	7.9	11	12
30	16	5.6	3.9	2.8	---	7.9	12	17	2.1	6.8	12	11
31	16	---	3.7	2.9	---	14	---	5.4	---	8.0	13	---
TOTAL	379.2	295.8	188.5	101.0	69.4	194.9	398.2	359.8	422.9	179.5	312.6	405.3
MEAN	12.2	9.86	6.08	3.26	2.48	6.29	13.3	11.6	14.1	5.79	10.1	13.5
MAX	29	19	11	3.9	3.9	19	27	22	48	9.5	19	30
MIN	5.4	5.2	3.7	2.7	1.8	2.0	8.1	2.0	2.1	2.3	4.8	5.7
AC-FT	752	587	374	200	138	387	790	714	839	356	620	804
CAL YR 1988	TOTAL 3350.3											
WTR YR 1989	TOTAL 3307.1											
	MEAN 9.15			MAX 46			MIN 1.6			AC-FT 6650		
	MEAN 9.06			MAX 48			MIN 1.8			AC-FT 6560		

ARKANSAS RIVER BASIN

07123000 ARKANSAS RIVER AT LA JUNTA, CO

LOCATION.--Lat 37°59'26", long 103°31'55", in SE¼ 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 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: Water year 1988, Dec. 16-20, Jan. 2 to Feb. 3, Feb. 8, 17-23, May 17 to June 3, and Sept. 20, 21. Records fair except for estimated daily discharges, which are poor. Estimated daily discharges: Water year 1989, Dec. 29-31, Feb. 5-16, and May 16. Records fair. 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 observations of 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: 14 years (water years 1975-88), 273 ft³/s; 197,800 acre-ft/yr; 15 years (water years 1975-89), 266 ft³/s; 192,700 acre-ft/yr; 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 WATER YEAR 1988.--Maximum discharge, 1,440 ft³/s at 1300 July 11, gage height, 6.95 ft, maximum gage height, 8.82 ft at 1030 Feb. 7 (backwater from ice); minimum daily discharge, 12 ft³/s, Sept. 11, 12.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,960 ft³/s at 1030 July 15, gage height, 8.08 ft; minimum daily, 23 ft³/s, May 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	68	264	206	290	120	130	47	70	248	209	59
2	44	69	275	180	265	107	358	60	85	857	239	80
3	49	70	275	180	270	105	493	54	85	519	275	85
4	46	72	211	175	263	97	248	53	79	348	275	154
5	45	88	163	165	267	106	79	51	71	241	252	156
6	53	90	155	155	255	102	68	48	77	349	261	108
7	52	82	143	155	255	111	65	50	72	328	236	93
8	56	89	133	160	250	151	56	57	139	340	244	33
9	56	84	130	170	227	160	70	54	131	345	199	16
10	56	81	125	200	193	155	59	55	89	300	120	13
11	58	96	116	220	164	146	49	51	75	543	81	12
12	59	74	106	240	146	146	49	53	92	358	71	12
13	57	74	103	250	163	145	56	52	97	340	66	20
14	60	79	95	240	184	146	55	43	84	315	56	31
15	69	89	74	260	151	108	54	42	94	203	61	53
16	67	201	115	230	122	73	50	47	87	148	52	57
17	62	52	115	205	130	219	52	55	80	188	55	49
18	65	48	135	180	140	140	60	55	73	257	75	47
19	56	151	145	180	140	137	62	50	67	214	59	68
20	53	244	135	180	150	122	66	50	71	146	101	80
21	53	213	111	190	140	74	68	70	65	170	175	90
22	49	188	103	200	140	90	66	100	62	244	183	98
23	47	186	100	210	140	83	68	65	132	254	138	107
24	46	208	87	200	132	84	67	60	191	222	98	125
25	55	227	75	180	127	83	66	65	155	189	108	167
26	59	248	130	180	118	85	62	65	232	137	88	133
27	61	261	151	170	115	80	59	70	182	116	122	77
28	67	260	166	160	117	91	57	70	126	190	104	62
29	63	260	156	150	113	71	55	70	127	132	121	49
30	62	259	180	240	---	63	50	70	100	104	137	55
31	66	---	187	280	---	63	---	70	---	203	132	---
TOTAL	1732	4211	4459	6091	5167	3463	2797	1802	3090	8548	4393	2189
MEAN	55.9	140	144	196	178	112	93.2	58.1	103	276	142	73.0
MAX	69	261	275	280	290	219	493	100	232	857	275	167
MIN	41	48	74	150	113	63	49	42	62	104	52	12
AC-FT	3440	8350	8840	12080	10250	6870	5550	3570	6130	16950	8710	4340

CAL YR 1987 TOTAL 214396 MEAN 587 MAX 6840 MIN 25 AC-FT 425300
WTR YR 1988 TOTAL 47942 MEAN 131 MAX 857 MIN 12 AC-FT 95090

07123000 ARKANSAS RIVER AT LA JUNTA, CO--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	53	116	139	97	123	48	220	35	343	586	65
2	69	45	116	139	96	113	49	188	117	354	553	40
3	66	42	113	176	67	98	55	167	133	351	576	30
4	54	29	110	178	69	85	54	140	144	366	509	26
5	62	26	108	177	65	88	47	94	77	494	506	35
6	73	25	108	163	65	93	54	54	61	417	571	32
7	97	24	117	146	55	97	53	61	78	423	769	28
8	105	24	118	119	60	111	49	41	91	375	613	26
9	112	28	115	143	60	125	42	31	70	403	610	24
10	130	38	116	232	90	135	46	66	61	375	507	24
11	136	48	118	239	140	126	40	73	92	348	295	24
12	143	40	118	159	180	140	31	49	265	334	336	100
13	138	43	113	107	200	226	39	23	113	295	180	110
14	153	36	113	110	220	326	43	137	66	500	206	134
15	147	53	113	154	240	318	70	500	68	1560	506	142
16	136	92	110	136	240	155	73	549	77	454	556	121
17	136	239	115	128	247	53	58	555	89	521	474	98
18	136	257	244	118	208	45	55	89	44	659	476	101
19	140	275	235	119	199	51	70	63	94	563	620	76
20	130	195	168	144	130	107	118	43	139	260	524	65
21	136	173	143	137	108	113	102	38	168	125	383	36
22	136	162	137	120	102	342	107	46	222	44	239	25
23	146	149	130	112	104	166	141	39	225	36	143	24
24	152	143	134	110	98	40	154	57	488	59	96	34
25	159	140	133	113	93	41	132	39	623	79	74	45
26	146	135	135	112	90	37	100	28	670	226	94	54
27	139	130	120	104	85	36	119	27	535	414	94	50
28	136	124	118	102	87	42	138	27	374	546	91	35
29	139	124	110	101	---	75	165	26	264	620	76	27
30	133	118	120	102	---	113	193	40	358	611	108	24
31	89	---	130	105	---	51	---	33	---	634	71	---
TOTAL	3738	3010	3994	4244	3495	3671	2445	3543	5841	12789	11442	1655
MEAN	121	100	129	137	125	118	81.5	114	195	413	369	55.2
MAX	159	275	244	239	247	342	193	555	670	1560	769	142
MIN	54	24	108	101	55	36	31	23	35	36	71	24
AC-FT	7410	5970	7920	8420	6930	7280	4850	7030	11590	25370	22700	3280
CAL YR 1988	TOTAL 48282	MEAN 132	MAX 857	MIN 12	AC-FT 95770							
WTR YR 1989	TOTAL 59867	MEAN 164	MAX 1560	MIN 23	AC-FT 118700							

ARKANSAS RIVER BASIN

07123675 HORSE CREEK NEAR LAS ANIMAS, CO

LOCATION.--Lat 38°05'06", long 103°21'12", in SE¼SW¼ 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. Elevation of gage is 3,975 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Jan. 8, 12-13, 16, 27, Feb. 1-9, and Mar. 4-6. Records good except those for estimated daily discharges, which are fair. Natural flow of stream affected by seepage and sluicing from Fort Lyon Canal. There is some irrigation upstream, however, amounts are unknown.

AVERAGE DISCHARGE.--10 years, 16.0 ft³/s; 11,590 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,030 ft³/s, July 15, 1989, gage height, 6.61 ft, from rating curve extended to peak flow on the basis of an indirect measurement; no flow many days in 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft³/s at 1030 July 15, gage height, 6.61 ft; minimum daily discharge, 0.95 ft³/s, July 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	6.3	4.3	3.6	8.0	7.7	4.4	4.0	3.3	3.4	8.7	3.5
2	5.2	6.3	4.5	4.2	6.0	9.4	3.9	4.1	3.3	4.8	5.8	4.0
3	4.9	6.2	4.9	4.3	4.0	7.7	3.5	3.7	3.8	4.2	5.0	4.0
4	4.8	5.6	5.0	5.2	3.5	4.5	3.1	2.6	8.0	2.6	4.5	4.2
5	5.6	5.4	5.5	7.9	3.0	3.0	3.4	2.5	9.1	1.9	5.1	4.2
6	5.7	5.4	5.5	8.6	3.0	3.5	3.2	2.3	5.6	1.7	3.7	4.6
7	6.4	5.2	5.4	8.0	3.0	5.3	4.2	5.7	3.9	1.4	3.3	4.7
8	6.7	4.7	4.6	6.0	3.0	3.4	3.0	3.9	3.9	1.3	3.6	4.9
9	6.1	4.1	4.6	5.4	3.0	8.4	3.3	1.8	5.4	1.1	3.0	4.9
10	5.8	5.6	4.8	6.5	3.7	10	7.7	1.6	8.2	.95	3.1	4.9
11	5.4	5.8	5.0	6.1	4.5	12	6.0	1.7	6.8	1.1	3.6	5.2
12	5.8	5.4	4.7	6.0	6.2	12	3.6	1.5	5.0	1.7	6.4	5.2
13	5.5	5.2	5.3	5.0	7.5	11	3.6	1.3	6.1	1.5	7.4	5.8
14	5.5	5.3	6.0	5.0	6.6	10	2.9	1.5	7.1	5.6	6.3	5.7
15	5.7	5.0	5.9	5.1	7.1	7.7	3.7	13	7.3	585	4.7	4.9
16	5.2	4.5	4.9	5.0	6.9	6.0	4.1	40	7.1	36	4.3	4.4
17	6.8	4.0	4.5	5.3	6.3	5.6	2.6	69	5.7	18	6.0	5.2
18	7.5	4.0	5.1	5.4	5.8	7.8	2.6	18	4.9	11	8.2	4.8
19	7.8	4.7	5.8	5.5	6.2	11	6.4	15	4.3	8.7	6.4	3.7
20	7.2	3.6	6.0	5.5	7.1	7.1	6.5	11	3.8	8.4	6.6	4.3
21	7.0	3.4	6.1	5.6	7.9	5.4	5.7	8.4	4.1	8.0	5.3	4.6
22	7.0	3.1	5.4	6.1	8.8	4.9	5.4	7.5	3.6	6.8	5.9	4.3
23	5.9	3.1	4.7	6.0	8.0	4.3	4.2	6.7	3.7	6.3	5.6	4.0
24	5.7	3.4	4.5	5.6	7.3	4.3	2.7	5.9	3.8	5.3	4.6	4.0
25	5.5	4.1	4.8	5.5	6.9	4.2	2.1	4.9	3.5	4.5	4.4	3.9
26	5.8	4.6	6.4	4.6	8.4	3.7	1.7	4.7	3.6	4.1	4.1	3.7
27	6.0	4.2	4.9	4.5	9.8	3.4	1.3	4.9	3.2	4.5	3.9	3.7
28	6.1	4.6	4.0	5.7	5.4	3.4	1.7	5.1	2.8	5.1	3.9	3.5
29	6.2	5.0	3.6	5.3	---	5.6	4.5	5.7	2.9	5.3	3.8	3.3
30	6.4	4.5	3.3	6.1	---	8.1	4.6	5.1	2.9	3.7	3.6	3.2
31	6.3	---	3.6	11	---	5.6	---	3.3	---	4.5	3.5	---
TOTAL	186.1	142.3	153.6	179.6	166.9	206.0	115.6	266.4	146.7	758.45	154.3	131.3
MEAN	6.00	4.74	4.95	5.79	5.96	6.65	3.85	8.59	4.89	24.5	4.98	4.38
MAX	7.8	6.3	6.4	11	9.8	12	7.7	69	9.1	585	8.7	5.8
MIN	4.6	3.1	3.3	3.6	3.0	3.0	1.3	1.3	2.8	.95	3.0	3.2
AC-FT	369	282	305	356	331	409	229	528	291	1500	306	260

CAL YR 1988 TOTAL 3267.4 MEAN 8.93 MAX 31 MIN 2.5 AC-FT 6480
WTR YR 1989 TOTAL 2607.25 MEAN 7.14 MAX 585 MIN .95 AC-FT 5170

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.

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

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 9,330 microsiemens May 1, 1988; minimum, 902 microsiemens July 15, 1989.

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, 5,600 microsiemens May 18; minimum, 902 microsiemens July 15.

WATER TEMPERATURE: Maximum, 33.3°C July 10; minimum, 0.0°C many days during winter.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4320	4300	4430	4520	4370	4500	4520	4630	4230	3690	4040	3920
2	4190	4340	4340	4590	4290	4580	4540	4590	4300	3190	4460	3720
3	4180	4320	4300	4660	4450	4590	4450	4480	4150	3400	4100	3740
4	4100	4260	4290	4700	4470	4530	4390	4520	3590	3710	3910	3600
5	4120	4300	4500	4660	4380	4570	4520	4540	4100	3650	3580	3780
6	4220	4280	4520	4430	4250	4520	4510	4500	4740	3620	3870	4150
7	4180	4310	4560	4520	4220	4420	4390	4020	4490	3560	3880	4050
8	4150	4260	4570	4500	4160	4340	4580	4240	4340	3520	3770	3890
9	4060	4200	4670	4590	4120	4300	4390	4360	4060	3520	3820	3880
10	4030	3950	4590	4620	4190	4560	3930	4430	3700	3510	3430	3860
11	4060	4170	4630	4550	4340	4590	4210	4530	4020	3340	3420	3910
12	4070	4040	4670	4450	4780	4620	4430	4560	4310	3120	3590	4280
13	4060	4000	4570	4450	4800	4630	4410	4490	4350	3470	4040	4570
14	4050	4010	4580	4590	4670	4640	4410	4450	4940	3420	3890	4480
15	4050	4050	4460	4500	4590	4560	4590	4130	4810	1120	4040	4360
16	4090	4130	4430	4500	4490	4510	4490	3820	4450	3110	4040	4210
17	4170	4360	4530	4510	4570	4440	4460	4090	4490	3340	4520	3670
18	4100	4400	4620	4440	4640	4240	4390	5530	4460	4070	4550	3710
19	4050	4200	4560	4410	4480	3830	4210	4990	4320	4260	4300	4050
20	4150	4340	4670	4370	4450	4160	4430	4510	4220	4060	4130	4240
21	4130	4350	4700	4390	4440	4330	4440	4560	3900	3930	4320	4460
22	4140	4450	4600	4380	4490	4450	4530	4430	4050	4010	4040	4330
23	4190	4430	4530	4390	4490	4540	4510	4420	4200	3860	4150	4270
24	4250	4410	4530	4400	4450	4500	4450	4440	4370	4010	4250	4230
25	4240	4470	4510	4440	4410	4510	4440	4350	4310	4060	4200	4210
26	4260	4450	4590	4400	4450	4470	4500	4340	4360	4150	4140	4180
27	4280	4450	4480	4400	4520	4470	4470	4430	4420	4390	4060	4160
28	4250	4410	4440	4450	4530	4520	4420	4120	4260	3810	4040	4140
29	4280	4480	4550	4410	---	4190	4320	3730	4090	3400	4090	4120
30	4280	4440	4500	4390	---	4370	4570	3700	4010	3890	4050	4100
31	4280	---	4470	4370	---	4670	---	4160	---	3890	3980	---
MEAN	4160	4290	4530	4480	4450	4460	4430	4390	4270	3620	4020	4080
MAX	4320	4480	4700	4700	4800	4670	4590	5530	4940	4390	4550	4570
MIN	4030	3950	4290	4370	4120	3830	3930	3700	3590	1120	3420	3600

07123675 HORSE CREEK NEAR LAS ANIMAS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.9	11.8	15.4	6.9	10.3	2.2	7.5	1.5	4.4	.0	10.6	1.9
2	21.0	9.6	16.3	7.5	10.3	2.4	8.1	1.8	1.5	.0	12.3	5.5
3	21.8	11.2	16.1	7.6	9.5	2.1	7.7	2.3	.0	.0	6.7	.4
4	13.1	9.8	13.0	8.4	8.8	1.6	8.6	1.8	.0	.0	7.4	.4
5	13.0	9.5	13.6	7.1	9.2	1.5	8.8	2.9	.0	.0	9.6	.4
6	13.3	10.6	14.6	5.8	8.9	1.1	7.0	1.2	2.3	.0	10.8	.5
7	15.4	10.7	14.8	7.9	5.5	2.6	6.1	.6	2.2	.0	13.7	.7
8	19.7	9.2	13.8	7.8	7.7	2.4	5.2	.6	3.3	.0	16.3	3.9
9	18.3	8.6	14.8	9.5	7.1	1.9	7.6	.8	5.6	.0	17.9	5.7
10	18.9	8.9	12.4	7.4	7.6	1.0	8.5	1.2	8.0	.0	20.0	6.8
11	19.6	8.7	12.8	7.6	6.9	1.8	7.1	.9	9.6	1.3	18.3	7.0
12	20.0	9.3	12.2	5.4	8.3	1.0	5.8	.5	9.7	1.5	18.9	7.2
13	19.9	9.5	12.6	5.7	10.2	1.7	5.9	.5	7.3	.3	19.2	7.9
14	19.9	9.7	14.2	6.5	7.9	2.5	7.7	.5	7.6	.0	14.5	5.3
15	---	10.6	8.8	5.1	5.4	3.6	6.5	.5	8.4	.3	16.3	2.9
16	19.7	---	11.1	3.0	5.3	4.6	7.6	.5	9.1	.0	17.9	4.0
17	19.9	9.8	9.9	4.1	7.7	1.0	9.0	.6	3.1	.0	16.5	6.4
18	18.2	10.3	11.2	4.1	8.9	1.5	8.7	.6	5.9	.9	14.7	3.8
19	17.1	9.7	10.1	4.0	7.9	3.5	9.0	.8	4.6	1.8	14.3	4.8
20	17.8	8.7	10.6	2.7	7.7	1.4	8.3	.6	4.8	1.8	7.8	2.9
21	17.8	8.9	10.8	2.5	8.7	1.5	9.1	.6	8.2	.5	15.8	.8
22	17.7	9.4	10.4	2.8	6.6	1.7	8.3	.8	10.1	.0	16.4	4.4
23	17.2	8.2	12.3	3.6	7.7	1.5	9.1	.5	10.7	.8	16.9	5.5
24	---	8.0	12.3	6.9	6.5	1.2	4.8	1.1	12.3	1.5	17.8	5.9
25	15.6	---	7.5	6.3	8.7	1.8	4.6	1.3	13.1	---	20.0	6.5
26	17.4	7.8	9.9	5.1	7.1	1.9	8.3	.5	11.5	3.7	19.8	6.8
27	15.4	8.2	7.1	2.2	5.7	.5	6.0	.5	10.8	3.0	18.3	7.6
28	13.5	7.1	10.9	1.3	5.2	.5	4.2	1.4	4.9	1.8	21.4	7.3
29	13.8	6.6	8.6	3.1	6.5	.5	8.0	.6	---	---	19.6	7.3
30	15.9	8.3	8.5	1.0	7.2	.6	10.1	1.4	---	---	18.7	7.4
31	16.5	7.5	---	---	7.9	.8	10.0	1.6	---	---	18.8	5.0
MONTH	---	---	16.3	1.0	10.3	.5	10.1	.5	13.1	---	21.4	.4
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	19.0	7.4	20.9	5.7	23.3	13.4	32.5	17.0	26.5	18.7	26.4	16.6
2	18.9	6.7	22.0	9.5	25.7	13.5	32.7	18.5	29.6	17.1	28.2	17.2
3	19.2	8.3	19.7	10.4	21.5	13.6	30.5	17.9	30.1	17.4	27.9	15.8
4	17.2	7.2	16.2	10.1	16.3	13.2	30.9	17.3	28.4	16.9	24.1	16.0
5	20.1	4.8	23.6	10.2	25.7	10.8	32.2	16.8	26.9	17.8	27.6	15.9
6	21.6	7.0	23.2	11.9	27.3	14.2	32.0	15.9	28.6	17.2	26.9	15.8
7	21.8	7.3	25.7	10.5	23.7	14.7	30.9	15.8	26.0	16.1	27.5	15.2
8	14.2	7.1	22.3	11.5	24.9	13.6	31.9	15.4	27.6	15.5	24.0	16.1
9	8.5	4.2	19.8	13.1	25.9	14.1	31.0	15.0	27.8	16.3	22.7	14.1
10	16.1	2.2	19.4	11.8	28.0	14.0	33.3	16.4	29.3	16.6	24.7	13.6
11	14.0	4.6	20.7	12.0	25.7	14.8	32.4	16.9	28.2	17.1	15.8	11.3
12	15.8	4.6	21.2	12.0	23.7	14.3	29.8	18.4	26.7	17.9	11.8	10.3
13	21.0	7.8	---	---	20.9	14.7	31.2	17.0	24.2	18.0	14.8	10.6
14	21.3	6.8	---	---	24.0	13.0	30.8	17.2	27.4	16.5	20.8	9.5
15	20.8	6.9	---	---	25.8	12.4	27.8	21.7	27.6	17.0	22.7	10.7
16	23.3	9.1	---	---	26.8	14.7	26.8	20.2	27.0	17.2	23.8	12.0
17	19.7	10.1	---	---	26.3	14.5	26.8	19.1	27.1	15.5	24.9	12.9
18	22.8	8.6	21.4	---	28.1	14.1	25.5	17.4	28.1	18.4	25.0	14.4
19	23.9	9.1	22.9	13.4	28.5	16.3	26.3	15.6	27.5	16.9	22.5	15.0
20	25.4	10.2	24.0	13.2	24.6	15.9	25.4	16.1	28.1	17.6	24.5	15.9
21	25.0	10.6	24.6	13.5	21.1	14.0	26.5	15.5	27.6	16.3	20.7	14.6
22	22.0	10.9	---	13.1	21.8	12.7	26.2	15.9	25.0	17.1	21.4	13.2
23	24.1	10.2	25.4	---	20.8	13.4	27.9	---	26.5	15.0	19.6	11.5
24	24.1	9.9	24.5	12.8	26.9	14.8	---	15.2	24.7	16.4	21.4	10.4
25	24.7	10.5	23.4	12.8	28.1	15.4	25.5	---	27.5	15.0	22.5	12.2
26	23.2	9.1	19.4	12.3	28.7	15.7	---	---	27.2	14.9	22.3	12.1
27	21.9	9.4	24.0	10.3	29.4	14.9	---	---	22.0	17.0	22.4	12.3
28	17.3	7.2	26.9	14.7	29.6	17.2	29.3	15.5	23.1	15.4	23.2	12.2
29	20.0	8.0	25.6	14.9	30.3	16.2	27.9	17.5	27.8	15.1	23.1	13.2
30	11.6	7.9	26.2	14.4	30.8	15.9	28.1	15.3	28.5	15.6	23.6	12.9
31	---	---	24.4	13.2	---	---	27.2	17.1	27.3	16.1	---	---
MONTH	25.4	2.2	---	---	30.8	10.8	---	---	30.1	14.9	28.2	9.5

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.

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. 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: Feb. 1-13. Records good except for estimated daily discharges, and those for discharges above 1,000 ft³/s, which are fair. 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; 15 years (water years 1975-89), 257 ft³/s; 186,200 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, 1,790 ft³/s at 2030 July 15, gage height, 6.59 ft; minimum daily discharge, 24 ft³/s, Nov. 5-6.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	74	135	140	120	108	46	148	41	297	411	55
2	41	32	134	138	115	124	39	156	41	269	404	47
3	46	27	133	144	100	118	34	128	57	293	345	40
4	47	25	134	142	90	104	29	113	103	273	308	35
5	41	24	132	141	90	100	27	100	86	306	308	34
6	41	24	131	140	110	104	27	68	56	314	309	33
7	55	25	131	130	120	107	28	50	45	301	385	34
8	72	25	133	119	150	107	30	44	43	303	444	33
9	78	26	132	117	200	118	28	38	48	264	416	33
10	81	27	133	151	240	128	27	35	39	287	432	32
11	93	29	136	200	280	130	28	34	41	291	319	32
12	100	30	132	172	280	131	28	35	84	243	245	35
13	99	31	126	132	250	143	28	36	124	235	281	60
14	98	33	124	128	225	209	27	48	74	208	91	80
15	109	64	122	127	310	195	25	215	44	1060	293	94
16	111	89	123	128	298	69	37	583	39	988	365	105
17	113	143	124	127	283	49	50	797	36	332	393	97
18	113	245	151	126	267	44	44	326	35	480	273	90
19	109	251	245	125	215	42	37	149	33	480	376	90
20	113	224	192	123	199	57	39	126	36	336	432	74
21	106	158	140	127	155	78	67	99	46	214	359	62
22	116	156	133	131	139	131	66	83	47	90	250	45
23	123	156	128	128	132	191	66	74	73	47	160	34
24	126	148	127	122	130	107	90	61	135	39	107	32
25	129	139	127	121	128	54	104	59	379	41	84	34
26	131	134	125	120	123	44	90	54	487	43	66	41
27	127	131	125	121	119	35	77	48	419	157	65	47
28	121	126	119	124	113	32	91	44	397	290	64	42
29	122	135	122	120	---	31	109	41	284	361	62	33
30	125	133	155	118	---	51	122	46	255	381	58	28
31	125	---	143	120	---	71	---	45	---	383	69	---
TOTAL	2951	2864	4247	4102	4981	3012	1540	3883	3627	9606	8174	1531
MEAN	95.2	95.5	137	132	178	97.2	51.3	125	121	310	264	51.0
MAX	131	251	245	200	310	209	122	797	487	1060	444	105
MIN	40	24	119	117	90	31	25	34	33	39	58	28
AC-FT	5850	5680	8420	8140	9880	5970	3050	7700	7190	19050	16210	3040
CAL YR 1988	TOTAL	40232	MEAN	110	MAX	432	MIN	19	AC-FT	79800		
WTR YR 1989	TOTAL	50518	MEAN	138	MAX	1060	MIN	24	AC-FT	100200		

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.

REMARKS.--Daily data that are not published are either missing or of poor quality. Daily maximum and minimum specific conductance data are available in the district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 7,950 microsiemens Jan. 22, 1986; minimum, 660 microsiemens July 15, 1989.

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, 3,720 microsiemens Sept. 10; minimum, 660 microsiemens July 15.

WATER TEMPERATURE: Maximum, 31.3°C July 4; minimum, 0.0°C many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT									
12...	1140	101	2320	8.2	14.0	10.2	--	0.06	2.20
NOV									
10...	0910	27	3550	8.1	7.0	11.7	--	0.10	1.30
DEC									
06...	1215	133	2770	8.2	4.0	11.8	--	0.11	3.50
JAN									
11...	0830	196	2250	8.2	0.0	12.8	1820	0.16	3.40
FEB									
23...	0745	133	2740	8.2	2.5	11.9	2290	0.14	3.30
MAR									
21...	1000	69	2250	8.2	4.0	12.0	1850	0.05	1.60
APR									
19...	1150	38	3200	8.1	20.0	10.3	2740	0.07	1.20
MAY									
16...	1140	482	1440	8.2	13.0	8.1	1070	0.07	1.70
JUN									
22...	1130	48	2800	8.1	13.5	9.7	2310	0.09	1.20
JUL									
19...	1030	479	1230	8.3	24.0	6.8	899	0.04	1.50
AUG									
17...	0800	414	1300	8.3	20.5	7.4	980	0.03	1.60
SEP									
14...	0830	79	2460	8.2	8.5	9.7	2010	0.05	2.60

07124000 ARKANSAS RIVER AT LAS ANIMAS, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3010	2510	2800	2540	2800	2620	2920	2180	3380	1490	2270	2710
2	2980	---	2750	2530	3050	2550	2940	2170	3310	1470	1970	2840
3	2870	---	2770	2520	3370	2440	---	2200	2680	1470	1190	3220
4	2920	---	2800	2530	3400	3070	---	2570	1890	1430	1230	3440
5	3180	---	2840	2520	3410	3380	3380	2560	2090	1430	1240	3440
6	3130	---	2660	2560	3080	2780	3350	2520	3140	1300	1240	3500
7	2760	---	2630	2640	---	2800	3220	2720	3440	1200	1230	3370
8	2620	---	2850	2790	---	2790	3170	2860	3390	1180	1200	3430
9	2580	---	2870	2840	---	2700	3350	2840	3120	1270	1170	3570
10	2590	3350	2840	2650	---	2580	3380	2840	3480	1240	1140	3570
11	2420	3260	2740	2200	---	2520	3400	2790	3320	1240	---	---
12	2270	3220	2570	2240	---	2500	3370	2750	2750	1320	---	---
13	2400	3240	2610	2560	---	2390	3400	2700	1590	1360	---	2520
14	2630	3200	---	2720	---	2000	3440	2560	2100	1390	---	2430
15	2680	2780	---	2730	---	1810	3460	1800	2820	889	---	2450
16	2460	2960	---	2670	---	2420	3040	1430	3050	911	---	2350
17	2390	2890	---	2690	---	---	2800	1450	3050	1340	1310	2370
18	2330	2780	---	2680	---	---	3050	---	3000	---	1580	2340
19	2390	2660	---	2740	---	---	3150	2800	2960	1250	---	2320
20	2340	2560	2310	2750	---	---	3140	2890	3010	---	---	2460
21	2330	2470	2550	2660	2450	2330	2610	3090	2880	---	---	2780
22	2290	2570	2740	2640	2560	2170	2480	3330	2630	---	---	3100
23	2270	2940	2800	2720	2680	1610	2490	3350	2090	---	---	3260
24	2210	2890	2800	2790	2680	2120	2370	3540	1680	---	---	3310
25	2150	2740	2790	2790	2640	2800	2320	3490	1230	3220	2640	3370
26	2170	2630	2790	2810	2680	2880	2760	3530	1180	3090	2790	2900
27	2210	2540	2850	2790	2680	---	2810	3550	1270	1650	2640	2730
28	2310	2760	2940	2770	2660	---	2630	3440	1350	1150	2540	2910
29	2320	2720	2480	2740	---	---	2420	3460	1440	1110	2570	3150
30	2290	2780	1350	2750	---	2400	2300	3390	1580	1070	2750	3350
31	2310	---	1780	2760	---	2440	---	3360	---	1450	2420	---
MEAN	2510	---	---	2660	---	---	---	---	2500	---	---	---
MAX	3180	---	---	2840	---	---	---	---	3480	---	---	---
MIN	2150	---	---	2200	---	---	---	---	1180	---	---	---

TEMPERATURE, WATER (DEG. C, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989)

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.7	13.3	15.3	10.3	6.6	4.6	1.8	.4	5.6	.7	8.8	1.4
2	19.0	11.6	---	---	6.9	5.1	2.8	.4	1.7	.1	10.5	5.7
3	19.8	12.8	---	---	6.8	5.1	3.5	.5	.9	.0	7.5	.7
4	15.0	11.3	---	---	6.4	4.4	4.6	.4	.0	.0	2.9	.5
5	12.7	10.5	---	---	6.1	4.2	7.6	3.2	.0	.0	4.2	.3
6	13.0	11.3	---	---	5.4	2.3	6.4	2.0	.0	.0	5.9	.4
7	14.4	11.8	---	---	3.4	1.3	4.6	.2	.1	.0	12.6	1.8
8	16.6	12.4	---	---	4.3	2.9	1.0	.2	---	---	16.0	5.1
9	16.6	12.1	---	---	3.7	2.6	1.6	.1	---	---	18.0	7.5
10	16.9	12.7	11.2	---	3.6	2.5	3.1	.0	---	---	19.2	9.1
11	17.1	13.5	10.4	6.9	3.4	2.5	2.5	.0	---	---	17.5	10.2
12	19.5	14.1	10.7	4.7	3.7	1.0	1.0	.0	---	---	18.1	9.8
13	16.4	12.1	10.4	4.8	5.1	1.9	.4	.1	---	---	17.9	10.4
14	16.6	13.0	10.8	5.2	5.4	4.4	1.7	.1	---	---	12.9	8.1
15	18.1	14.8	7.8	5.6	5.3	4.5	2.3	.1	---	---	12.8	5.5
16	18.4	12.8	5.7	4.3	4.5	3.5	2.2	.2	4.7	1.8	17.7	4.9
17	20.1	12.6	5.2	4.1	4.3	3.1	5.0	.2	3.2	2.5	15.6	7.0
18	17.7	13.5	5.3	4.6	4.9	3.5	6.3	.3	3.9	2.8	14.5	3.3
19	17.2	11.2	5.3	4.9	4.6	3.7	6.7	.3	11.6	3.6	14.8	5.5
20	15.4	10.2	4.8	3.1	4.3	1.7	6.2	.3	5.9	4.8	8.0	2.7
21	15.5	10.5	4.4	2.2	5.0	.1	6.6	.4	6.6	4.4	13.4	.5
22	15.5	10.9	5.5	4.4	3.8	.6	5.6	.6	9.1	2.0	13.6	4.6
23	15.2	---	7.2	4.1	4.0	.1	6.8	.5	9.4	2.4	13.8	8.0
24	15.5	9.7	8.4	6.1	3.1	.2	3.5	1.5	12.1	4.1	16.6	7.8
25	14.1	10.4	7.1	5.1	3.9	.7	3.4	1.3	12.3	5.4	18.1	6.6
26	13.9	8.3	6.7	3.8	4.4	1.0	6.1	1.0	10.6	6.2	19.2	7.2
27	13.5	9.7	5.2	2.1	1.6	.2	4.5	1.4	10.4	4.1	17.1	7.4
28	12.6	8.4	6.5	4.1	.5	.3	4.0	1.9	5.6	1.5	20.0	6.8
29	12.6	8.0	6.7	5.1	.8	.3	7.1	2.2	---	---	18.5	6.9
30	14.5	9.5	6.2	5.3	.6	.3	10.0	3.3	---	---	15.0	8.2
31	15.5	10.1	---	---	1.5	.4	10.4	5.3	---	---	16.3	6.0
MONTH	20.1	---	---	---	6.9	.1	10.4	.0	---	---	20.0	.3

ARKANSAS RIVER BASIN

07124000 ARKANSAS RIVER AT LAS ANIMAS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	19.4	7.8	15.8	7.6	26.1	14.1	30.1	22.1	26.8	24.0	25.8	17.9
2	19.1	6.4	16.1	11.7	29.8	14.1	31.1	24.1	25.7	23.5	28.8	18.3
3	18.9	7.8	16.0	12.8	23.7	13.9	31.2	24.9	26.2	20.0	27.3	16.7
4	17.5	6.3	14.5	12.9	16.2	13.7	31.3	24.4	25.9	22.7	24.5	16.1
5	21.9	4.3	18.4	11.3	26.0	11.3	29.5	24.4	25.1	22.8	27.0	16.3
6	22.3	7.1	20.1	11.7	30.8	15.3	29.6	22.5	24.8	21.9	27.2	15.7
7	21.6	7.6	22.4	12.3	24.7	15.6	28.7	21.9	23.9	22.5	26.8	15.5
8	13.7	6.3	25.3	13.7	28.0	13.8	28.6	21.5	23.7	21.4	22.3	14.8
9	6.9	3.8	20.8	14.0	27.0	15.0	28.3	21.2	23.5	21.6	19.8	13.3
10	16.8	2.8	23.4	10.6	30.8	13.5	29.4	22.0	23.5	20.9	21.6	12.5
11	14.0	4.5	21.5	12.0	27.8	14.8	28.3	22.3	23.4	20.5	13.5	7.4
12	16.6	3.7	22.8	12.5	24.4	14.9	26.3	22.5	23.2	21.3	9.0	6.0
13	21.7	6.9	22.9	10.9	20.8	17.3	24.5	21.7	22.5	20.0	12.6	7.5
14	21.3	6.2	17.8	8.0	22.0	15.4	24.3	21.4	25.1	16.5	20.3	8.1
15	22.6	6.2	15.3	10.3	20.5	13.7	23.2	20.9	23.2	21.0	20.2	11.9
16	22.5	8.8	14.9	10.8	23.3	15.6	27.7	22.4	22.8	21.1	22.0	11.3
17	20.3	11.7	15.9	12.4	22.0	15.4	28.0	22.3	25.0	---	25.5	12.3
18	26.8	12.7	20.5	15.6	22.8	15.3	25.4	23.3	26.0	17.8	25.4	18.2
19	22.0	14.9	22.4	16.3	---	17.2	27.7	23.7	26.3	20.5	24.1	19.4
20	22.9	10.6	20.6	14.9	24.7	18.8	27.3	21.1	25.5	---	25.7	20.1
21	26.4	13.9	22.9	15.6	19.8	15.2	25.6	18.9	25.2	20.3	23.2	19.6
22	21.0	15.3	27.5	14.8	21.1	13.3	28.9	14.8	25.1	23.9	22.8	18.4
23	23.9	15.0	28.8	13.9	19.7	13.6	27.9	16.0	25.7	23.5	20.6	16.2
24	21.1	15.4	26.3	13.6	24.7	15.7	30.4	18.3	26.1	22.1	22.7	15.3
25	24.3	16.0	25.1	13.2	22.3	19.1	30.9	18.6	27.0	19.5	24.1	17.1
26	17.5	13.2	22.2	12.2	21.5	19.4	29.7	18.4	28.2	19.2	24.0	12.6
27	19.0	12.7	26.4	9.8	25.9	19.5	30.8	20.6	24.1	18.9	22.2	12.8
28	17.6	11.2	30.3	15.1	25.0	21.5	29.8	23.6	25.5	17.3	23.8	13.5
29	18.0	10.0	28.7	14.9	27.3	22.7	30.6	24.1	28.5	17.2	24.6	14.7
30	12.5	8.9	27.9	14.6	28.5	24.0	29.4	23.8	29.9	17.0	24.0	14.4
31	---	---	26.7	13.6	---	---	28.3	23.9	28.8	18.5	---	---
MONTH	26.8	2.8	30.3	7.6	---	11.3	31.3	14.8	29.9	---	28.8	6.0

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 70 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. 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: Nov. 18 to Feb. 15. Records good except for estimated daily discharges, which are poor. Diversions for irrigation of about 6,000 acres upstream from station. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--17 years, 68.4 ft³/s; 49,560 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 (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 31	1715	*a3,050	*b5.90	No other peaks greater than base discharge.			

Minimum daily, 12 ft³/s, Dec. 24-28.

a-From rating extended above 300 ft³/s, on basis of drift-timed measurement and slope-area measurements of peak flow.

b-From floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	24	17	17	15	25	22	44	88	32	118	29
2	42	23	17	18	14	22	25	41	92	26	51	30
3	42	23	17	20	13	22	25	37	82	25	24	85
4	40	23	16	20	13	26	25	32	65	24	24	29
5	49	23	14	20	14	16	24	34	70	28	26	37
6	50	21	14	19	20	24	22	37	54	30	26	29
7	43	23	14	17	23	25	21	39	51	33	34	26
8	45	23	14	15	28	23	21	42	55	31	40	25
9	40	22	14	14	32	25	25	52	69	29	42	24
10	37	27	16	14	35	29	30	65	61	27	41	25
11	34	25	18	14	33	31	33	67	52	25	36	26
12	33	25	19	15	32	31	32	91	53	41	83	40
13	30	24	21	18	30	29	30	75	87	76	50	43
14	29	24	20	20	28	29	33	74	58	87	35	36
15	26	26	19	21	28	27	29	73	40	30	42	30
16	26	24	18	21	29	25	29	78	30	17	40	28
17	26	20	17	21	32	23	28	75	26	16	46	27
18	25	20	16	21	32	23	30	61	17	17	47	25
19	27	20	15	21	39	23	36	49	20	18	44	36
20	27	25	15	20	35	24	40	47	45	21	39	22
21	27	28	14	19	25	19	47	49	58	41	36	21
22	27	30	13	18	20	31	51	53	61	27	32	21
23	25	30	13	17	24	28	54	53	65	31	31	21
24	25	28	12	16	33	27	54	59	51	34	30	21
25	24	25	12	15	44	26	55	75	40	30	30	20
26	23	23	12	16	44	25	53	79	33	39	29	20
27	23	21	12	17	43	25	55	78	30	91	28	20
28	23	18	12	17	29	27	52	79	25	41	28	20
29	23	16	13	17	---	26	49	90	29	28	27	20
30	23	15	14	16	---	25	47	95	34	34	62	20
31	24	---	16	15	---	24	---	90	---	320	33	---
TOTAL	980	699	474	549	787	785	1077	1913	1541	1349	1254	856
MEAN	31.6	23.3	15.3	17.7	28.1	25.3	35.9	61.7	51.4	43.5	40.5	28.5
MAX	50	30	21	21	44	31	55	95	92	320	118	85
MIN	23	15	12	14	13	16	21	32	17	16	24	20
AC-FT	1940	1390	940	1090	1560	1560	2140	3790	3060	2680	2490	1700

CAL YR 1988 TOTAL 14878.6 MEAN 40.7 MAX 170 MIN 8.6 AC-FT 29510
WTR YR 1989 TOTAL 12264 MEAN 33.6 MAX 320 MIN 12 AC-FT 24330

07124300 LONG CANYON CREEK NEAR MADRID, CO

LOCATION.--Lat 37°06'53", long 104°36'17", in SE¼NW¼ sec.6, T.34 S., R.64 W., Las Animas County, Hydrologic Unit 11020010, on left bank 700 ft upstream from private bridge, 1.4 mi upstream from Oso Canyon, 2.2 mi southeast of Madrid, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--100 mi².

PERIOD OF RECORD.--March 1972 to September 1989 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 6,259.09 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 28, Dec. 8-10, 16-18, 21-25, Dec. 27 to Jan. 2, Jan. 8-10, 12-14, Feb. 3-9, and June 21-26. Records good except for estimated daily discharges, which are poor. No diversion upstream from station. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--17 years, 4.31 ft³/s; 3,120 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,140 ft³/s, July 17, 1979, gage height, 7.37 ft, from floodmarks, from rating curve extended above 1,000 ft³/s, on basis of slope-area measurements at gage heights, 6.88 ft, and 7.37 ft; no flow, Feb. 22 to May 22, 1979.

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)
July 31	1730	*832	*a4.76	No other peak greater than base discharge			

a From floodmark

Minimum daily discharge, 0.15 ft³/s, July 5, 8-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.75	.89	.70	.65	.55	.55	.49	.43	.23	.19	2.8	.31
2	.67	.89	.67	.70	.51	.55	.49	.43	.25	.16	.54	4.8
3	.67	.89	.64	.71	.47	.55	.49	.43	.23	.18	.45	9.7
4	.71	.86	.69	.62	.45	.67	.49	.43	.23	.16	.42	2.9
5	1.0	.78	.72	.55	.45	.59	.49	.42	.23	.15	.49	5.7
6	1.1	.78	.65	.61	.50	.53	.48	.37	.23	.16	.48	1.2
7	1.0	.78	.62	.54	.53	.49	.43	.37	.22	.16	.53	1.0
8	1.0	.78	.62	.54	.55	.53	.43	.37	.23	.15	.55	.79
9	.84	.78	.62	.60	.56	.55	.40	.37	.23	.15	6.1	5.3
10	.71	.78	.68	.65	.57	.55	.51	.37	.23	.15	.49	19
11	.73	.78	.73	.59	.59	.55	.55	.37	.23	.16	.37	2.9
12	.76	.69	.83	.59	.52	.55	.55	.36	.23	.16	.51	8.8
13	.74	.67	.69	.65	.58	.52	.54	.31	.23	.20	1.3	3.3
14	.76	.63	.61	.73	.59	.49	.49	.27	.23	2.0	.85	1.6
15	.67	.81	.52	.76	.55	.49	.49	.27	.23	.96	2.1	1.4
16	.67	.69	.58	.79	.60	.49	.48	.33	.20	.40	.85	1.2
17	.67	.69	.64	.84	.61	.49	.43	.37	.19	.30	.65	1.0
18	.67	.62	.68	.66	.63	.49	.43	.35	.18	.27	.44	1.1
19	.70	.81	.65	.65	.55	.49	.43	.27	.18	.23	.41	1.7
20	.67	.91	.61	.64	.55	.49	.43	.30	.20	.23	.43	1.5
21	.67	.85	.66	.66	.61	.76	.43	.31	.20	.23	.45	.99
22	.73	.83	.70	.69	.62	.49	.43	.30	.21	.25	.46	.89
23	.78	.61	.70	.60	.55	.51	.43	.29	.21	.23	.45	.89
24	.78	.67	.68	.55	.55	.49	.43	.29	.20	.26	.40	.89
25	.86	.67	.66	.55	.55	.49	.43	.27	.20	.27	.39	.89
26	.89	.66	.62	.58	.55	.49	.42	.27	.20	.26	.37	.89
27	.89	.68	.60	.62	.55	.49	.39	.27	.20	.25	.40	.86
28	.89	.68	.56	.53	.55	.49	.43	.26	.20	.25	.41	.89
29	.89	.63	.55	.70	---	.49	.43	.27	.21	.26	.37	.88
30	.89	.67	.58	.59	---	.47	.43	.27	.23	1.1	.67	.75
31	.89	---	.62	.62	---	.47	---	.25	---	21	.47	---
TOTAL	24.65	22.46	20.08	19.76	15.44	16.25	13.77	10.24	6.47	30.88	25.60	84.02
MEAN	.80	.75	.65	.64	.55	.52	.46	.33	.22	1.00	.83	2.80
MAX	1.1	.91	.83	.84	.63	.76	.55	.43	.25	.21	6.1	19
MIN	.67	.61	.52	.53	.45	.47	.39	.25	.18	.15	.37	.31
AC-FT	49	45	40	39	31	32	27	20	13	61	51	167
CAL YR 1988	TOTAL 761.45	MEAN 2.08	MAX 164	MIN .49	AC-FT 1510							
WTR YR 1989	TOTAL 289.62	MEAN .79	MAX 21	MIN .15	AC-FT 567							

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.

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

GAGE.--Water-stage recorder. Datum of gage is 6,073.64 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army, Corps of Engineers).

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, 26,100 acre-ft, Apr. 16, 17, elevation, 6,185.94 ft;
minimum contents, 5,080 acre-ft, Sept. 17, elevation, 6,145.24 ft.

REVISIONS.--Contents in acre-feet, for water year 1988 were published in error when a new capacity table was put in use. The correct figures given below supersede those published in WDR CO-88-1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45500	47800	48400	49500	50500	51600	52600	53600	44000	36800	31900	21500
2	45500	47700	48500	49500	50600	51700	52600	53700	43700	36700	31500	21300
3	45600	47600	48500	49500	50700	51700	52700	53600	43400	36500	31100	21000
4	45600	47500	48600	49600	50700	51800	52700	53500	43100	36400	30700	20800
5	45600	47500	48700	49600	50700	51800	52800	53400	42900	36400	30400	20500
6	45600	47500	48700	49600	50800	51800	52800	53300	42700	36400	30100	20300
7	45700	47600	48800	49600	50800	51900	52800	53000	42400	36300	29900	20000
8	45700	47600	48800	49600	50800	51900	52900	52500	42100	36300	29600	19700
9	45700	47600	48800	49700	50900	52000	52900	52100	41900	36300	29400	19500
10	45700	47600	48800	49700	50900	52000	52900	51600	41600	36300	29200	19200
11	45800	47600	48900	49800	50900	52000	53000	51100	41400	36200	28800	19000
12	45800	47700	48800	49800	51000	51900	53000	50500	41100	36100	28500	18800
13	45900	47800	48900	49800	51100	51900	53000	50000	40900	36000	28100	18600
14	45900	47700	48900	49800	51100	51900	53000	49400	40700	35800	27900	18500
15	46000	47800	48900	49900	51200	51900	53100	48800	40500	35600	27500	18300
16	46000	47900	48900	49900	51200	51900	53200	48300	40300	35500	27300	18000
17	46000	47900	49000	50000	51300	52000	53200	47700	40000	35300	27100	17800
18	46100	48000	49000	50000	51300	52000	53300	47200	39700	35100	26900	17500
19	46100	48000	49100	50000	51300	52100	53300	46900	39400	34900	26700	17300
20	46100	48100	49100	50000	51400	52100	53400	46900	39000	34700	26400	17100
21	46100	48100	49100	50100	51400	52200	53400	47000	38700	34500	26100	17000
22	46200	48200	49200	50100	51400	52200	53400	47000	38400	34200	25800	16900
23	46200	48200	49200	50200	51400	52300	53400	46900	38100	34000	25600	17000
24	46200	48200	49200	50200	51400	52300	53400	46500	37600	33700	25100	17100
25	46300	48200	49200	50200	51500	52300	53500	46200	37300	33500	24600	17200
26	46400	48300	49300	50300	51500	52400	53500	45900	37100	33200	24100	17300
27	46400	48300	49300	50300	51600	52400	53500	45600	36900	33000	23700	17400
28	46400	48300	49400	50400	51600	52400	53600	45300	36900	32600	23200	17500
29	46500	48300	49400	50400	51600	52400	53600	45000	36700	32200	22800	17600
30	46500	48400	49400	50500	---	52400	53600	44700	36800	32100	22400	17700
31	46500	---	49500	50500	---	52500	---	44300	---	32000	219	

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

CAL	YR	1988	MAX	53700	MIN	16900
WTR	YR	1989	MAX	26100	MIN	5080

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.

PERIOD OF RECORD.--Streamflow records, December 1976 to current year. Water-quality data available, March 1977 to September 1984.

REMARKS.--No estimated daily discharges. Records good. 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 observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

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, 291 ft³/s at 1045 May 4, gage height, 6.34 ft; minimum daily, 0.04 ft³/s. Mar. 21-26.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.58	.27	.11	.08	.14	.08	.07	251	92	117	155	58
2	.58	55	.11	.08	.14	.08	.05	277	92	117	212	26
3	.57	77	.11	.08	.14	.08	.08	284	92	116	73	16
4	.47	52	.11	.08	.14	.08	.11	287	93	116	16	69
5	.44	25	.11	.08	.14	.08	.10	274	83	115	30	113
6	.43	8.1	.11	.08	.14	.08	.11	261	75	69	36	56
7	.38	.16	.11	.08	.14	.08	.08	245	62	152	40	18
8	.38	.14	.11	.08	.14	.08	.11	244	52	202	58	16
9	.38	.14	.11	.08	.14	.08	.11	244	53	200	73	16
10	.37	.14	.11	.08	.14	7.3	.11	242	53	198	109	16
11	.33	.14	.11	8.1	.14	11	7.4	242	54	236	84	12
12	.33	.14	.11	.16	.14	4.9	8.9	259	35	255	49	27
13	.33	.14	.11	.16	.13	.22	17	270	27	191	86	63
14	.33	.12	.11	.14	.09	21	21	269	14	146	86	63
15	.33	.18	7.7	.14	.08	31	21	244	1.2	139	43	44
16	.33	.16	11	.14	.08	25	21	233	1.2	132	40	25
17	.33	.14	3.4	.14	.08	.12	24	232	1.2	112	40	19
18	.31	.14	.11	18	.08	.11	37	222	1.2	96	52	8.6
19	.27	.14	.09	30	.08	.12	48	210	15	49	59	3.3
20	.27	.14	.08	20	.08	.09	105	209	31	39	59	3.2
21	.27	.14	.08	.15	.08	.04	141	207	38	52	42	.91
22	.28	.14	.08	.14	.08	.04	152	206	67	56	34	.18
23	.28	.14	.08	.14	.08	.04	155	206	83	56	46	.18
24	.29	.12	.08	.14	.08	.04	155	204	57	64	55	.16
25	.40	.11	.08	.14	.08	.04	154	203	55	58	34	.14
26	.32	.11	.08	.14	.08	.04	154	217	97	39	18	.14
27	.27	.11	.08	.14	.08	.05	167	223	121	34	27	.14
28	.27	.11	.11	.14	.08	.07	176	222	121	66	29	2.3
29	.27	.11	.09	.14	---	.08	201	221	120	110	27	2.1
30	.27	.11	.08	.14	---	.06	214	153	118	26	23	1.0
31	.27	---	.08	.14	---	.08	---	113	---	21	63	---
TOTAL	10.93	220.59	24.84	79.33	3.02	102.16	1980.23	7174	1804.8	3379	1798	679.35
MEAN	.35	7.35	.80	2.56	.11	3.30	66.0	231	60.2	109	58.0	22.6
MAX	.58	77	11	30	.14	31	214	287	121	255	212	113
MIN	.27	.11	.08	.08	.08	.04	.05	113	1.2	21	16	.14
AC-FT	22	438	49	157	6.0	203	3930	14230	3580	6700	3570	1350
CAL YR 1988	TOTAL	27417.01	MEAN	74.9	MAX	303	MIN	.02	AC-FT	54380		
WTR YR 1989	TOTAL	17256.25	MEAN	47.3	MAX	287	MIN	.04	AC-FT	34230		

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, and crest-stage gage. Elevation of gage is 5,310 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 9 to Mar. 9. Records good except for estimated daily discharges, which are fair. Natural flow affected by return flow from irrigation and storage in a small channel reservoir upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 511 ft³/s Aug. 23, 1986, gage height, 10.02 ft, from rating curve extended above about 45 ft³/s on basis of flow through culvert computation; no flow many days 1985, 1986, 1988, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 73 ft³/s at 1930 July 31, gage height, 6.05 ft; no flow most of time.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.58	.04	.04	.00	.00	.00	.00	.00	.00	.00	.21	.00
2	.19	.04	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.05	.03	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.03	.03	.04	.00	.00	.00	.00	.00	.30	.00	.00	.00
5	.03	.03	.04	.00	.00	.00	.00	.00	.19	.00	.00	.00
6	.03	.04	.04	.00	.00	.00	.00	.02	.00	.00	.00	.00
7	.03	.03	.03	.00	.00	.00	.00	1.3	.00	.00	.00	.00
8	.03	.03	.03	.00	.00	.00	.00	1.5	.00	.00	.00	.00
9	.03	.03	.03	.00	.00	.00	.00	1.6	.00	.00	.00	.00
10	.03	.03	.03	.00	.00	.00	.00	1.1	.01	.00	.00	.00
11	.03	.03	.03	.00	.00	.00	.00	.93	.24	.00	.00	.00
12	.03	.03	.03	.00	.00	.00	.00	1.1	.05	.00	.00	.00
13	.03	.03	.03	.00	.00	.00	.00	.62	.00	.00	.00	.00
14	.03	.03	.03	.00	.00	.00	.00	.44	.00	.00	.00	.00
15	.02	.04	.03	.00	.00	.00	.00	.69	.00	.00	.00	.00
16	2.1	.03	.03	.00	.00	.00	.00	1.1	.00	.00	.00	.00
17	1.2	.03	.03	.00	.00	.00	.00	9.0	.00	.00	.00	.00
18	.48	.03	.03	.00	.00	.00	.00	8.3	.00	.00	.00	.00
19	.13	.04	.03	.00	.00	.00	.00	2.7	.00	.00	.00	.00
20	.04	.03	.03	.00	.00	.00	.00	1.6	.00	.00	.00	.03
21	.04	.03	.03	.00	.00	.00	.00	1.3	.00	.00	.00	.00
22	.04	.03	.03	.00	.00	.00	.00	.48	.48	.00	.00	.00
23	.04	.03	.03	.00	.00	.00	.00	.02	.02	.00	.00	.00
24	.04	.03	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.04	.03	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.04	.03	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.03	.03	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.03	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.04	.03	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.04	.03	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.04	---	.00	.00	---	.00	---	.00	---	6.7	.00	---
TOTAL	5.54	0.95	0.80	0.00	0.00	0.00	0.00	33.80	1.29	6.70	0.21	0.03
MEAN	.18	.032	.026	.00	.00	.00	.00	1.09	.043	.22	.007	.001
MAX	2.1	.04	.04	.00	.00	.00	.00	9.0	.48	6.7	.21	.03
MIN	.02	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	11	1.9	1.6	.0	.0	.0	.0	67	2.6	13	.4	.06

CAL YR 1988 TOTAL 531.49 MEAN 1.45 MAX 81 MIN .00 AC-FT 1050
WTR YR 1989 TOTAL 49.32 MEAN .14 MAX 9.0 MIN .00 AC-FT 98

07126140 VAN BREMER ARROYO NEAR TYRONE, CO--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1985 to current year.

WATER TEMPERATURE: May 1985 to current year.

INSTRUMENTATION.--Water-quality monitor since May 1985.

REMARKS.--Daily data are complete for the year.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 25,700 microsiemens May 20, 1988; minimum, 320 microsiemens

Aug. 23, 1986.

WATER TEMPERATURE: Maximum, 36.5°C July 4, 1986; minimum, 0.0°C on many days during the winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 14,600 microsiemens Oct 16; minimum, 700 microsiemens Sept. 20.

WATER TEMPERATURE: Maximum, 29.8°C Aug. 1; minimum, 0.0°C on many days during the winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 CA CO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
MAY 18...	1215	8.8	4250	8.2	16.0	8.4	960	170	130

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINIT LAB (MG/L AS CA 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)
MAY 18...	660	9	19	260	1800	260	0.30	26

DATE	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, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY 18...	2900	3220	3.94	68.9	0.61	0.06	150	50

07126140 VAN BREMER ARROYO NEAR TYRONE, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

	DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	5500	4800	10000	9600	10600	9400	---	---	---	---	---	---	
2	6700	5400	9900	9600	10200	9200	---	---	---	---	---	---	
3	7500	6600	10000	9500	10300	9400	---	---	---	---	---	---	
4	7900	7500	10200	9700	10700	9400	---	---	---	---	---	---	
5	8300	7800	10100	9800	10400	9500	---	---	---	---	---	---	
6	8500	7600	10100	9700	10400	9200	---	---	---	---	---	---	
7	8700	8200	10000	9600	10100	9200	---	---	---	---	---	---	
8	8900	8400	10000	9700	9900	9100	---	---	---	---	---	---	
9	9100	8700	10000	9700	10500	9600	---	---	---	---	---	---	
10	9300	8800	10100	9800	10500	9800	---	---	---	---	---	---	
11	9500	9000	10100	9600	10400	9500	---	---	---	---	---	---	
12	9600	9100	10200	9800	10700	9800	---	---	---	---	---	---	
13	9700	9200	10200	9800	9900	9200	---	---	---	---	---	---	
14	9600	8600	10100	9700	9400	9000	---	---	---	---	---	---	
15	9500	8600	10300	9600	9500	9000	---	---	---	---	---	---	
16	14600	5000	10500	9700	10200	9500	---	---	---	---	---	---	
17	5200	4700	10500	10000	10200	9500	---	---	---	---	---	---	
18	6000	5200	10200	9900	9800	9300	---	---	---	---	---	---	
19	7100	6100	10000	9600	9300	8800	---	---	---	---	---	---	
20	8200	7100	10500	9600	9800	9000	---	---	---	---	---	---	
21	9000	8200	10900	10100	10300	9500	---	---	---	---	---	---	
22	9400	9000	10500	9700	10000	9300	---	---	---	---	---	---	
23	9600	9300	9900	9200	10700	10000	---	---	---	---	---	---	
24	9600	9100	9500	9100	10500	9900	---	---	---	---	---	---	
25	9700	9300	9600	9200	10300	9400	---	---	---	---	---	---	
26	9800	9400	9800	9500	9900	8900	---	---	---	---	---	---	
27	9900	9500	10500	9700	11500	10000	---	---	---	---	---	---	
28	10000	9500	10900	10100	---	---	---	---	---	---	---	---	
29	9900	9500	10100	9600	---	---	---	---	---	---	---	---	
30	10000	9600	10800	9800	---	---	---	---	---	---	---	---	
31	10000	9500	---	---	---	---	---	---	---	---	---	---	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	---	---	---	---	---	---	---	---	4500	1700	---	---	
2	---	---	---	---	---	---	---	---	4500	4500	---	---	
3	---	---	---	---	---	---	---	---	---	---	---	---	
4	---	---	---	---	11300	5000	---	---	---	---	---	---	
5	---	---	---	---	5000	4700	---	---	---	---	---	---	
6	---	---	13000	10500	4900	4800	---	---	---	---	---	---	
7	---	---	12500	5600	---	---	---	---	---	---	---	---	
8	---	---	5700	4800	---	---	---	---	---	---	---	---	
9	---	---	4800	4000	---	---	---	---	---	---	---	---	
10	---	---	4400	4100	8000	7700	---	---	---	---	---	---	
11	---	---	4600	4100	9100	3200	---	---	---	---	---	---	
12	---	---	4200	3800	4800	4100	---	---	---	---	---	---	
13	---	---	4200	4000	5100	5000	---	---	---	---	---	---	
14	---	---	4400	4000	---	---	---	---	---	---	---	---	
15	---	---	4300	3700	---	---	---	---	---	---	---	---	
16	---	---	6300	3400	---	---	---	---	---	---	---	---	
17	---	---	5200	3800	---	---	---	---	---	---	---	---	
18	---	---	4700	4100	---	---	---	---	---	---	---	---	
19	---	---	4900	4200	---	---	---	---	---	---	---	---	
20	---	---	4700	4000	---	---	---	---	---	---	5900	700	
21	---	---	4300	3500	---	---	---	---	---	---	---	---	
22	---	---	4300	3400	11000	3700	---	---	---	---	---	---	
23	---	---	4700	4300	4700	4100	---	---	---	---	---	---	
24	---	---	---	---	---	---	---	---	---	---	---	---	
25	---	---	---	---	---	---	---	---	---	---	---	---	
26	---	---	---	---	---	---	---	---	---	---	---	---	
27	---	---	---	---	---	---	---	---	---	---	---	---	
28	---	---	---	---	---	---	---	---	---	---	---	---	
29	---	---	---	---	---	---	---	---	---	---	---	---	
30	---	---	---	---	---	---	---	---	---	---	---	---	
31	---	---	---	---	---	---	3500	900	---	---	---	---	

07126140 VAN BREMER ARROYO NEAR TYRONE, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.0	11.0	8.4	3.5	.6	.0	---	---	---	---	---	---
2	18.8	8.1	9.0	4.8	.6	.0	---	---	---	---	---	---
3	20.9	10.7	9.1	4.9	.5	.0	---	---	---	---	---	---
4	16.5	10.0	9.0	6.8	.0	.0	---	---	---	---	---	---
5	17.7	8.5	7.2	3.0	.0	.0	---	---	---	---	---	---
6	15.7	8.3	6.8	2.2	.0	.0	---	---	---	---	---	---
7	17.8	9.6	7.4	3.9	.0	.0	---	---	---	---	---	---
8	17.4	7.9	7.2	3.7	.0	.0	---	---	---	---	---	---
9	15.5	6.4	7.3	4.7	.0	.0	---	---	---	---	---	---
10	15.7	5.9	6.7	3.3	.0	.0	---	---	---	---	---	---
11	15.8	5.8	7.2	4.1	.0	.0	---	---	---	---	---	---
12	16.3	6.8	6.1	2.5	.0	.0	---	---	---	---	---	---
13	16.2	7.2	6.2	2.9	.0	.0	---	---	---	---	---	---
14	16.6	8.0	7.0	3.6	.0	.0	---	---	---	---	---	---
15	16.3	8.3	6.8	3.4	.0	.0	---	---	---	---	---	---
16	15.9	7.6	3.7	.8	.0	.0	---	---	---	---	---	---
17	15.8	8.4	3.6	1.3	.0	.0	---	---	---	---	---	---
18	16.3	9.3	3.0	.8	.0	.0	---	---	---	---	---	---
19	14.6	8.1	2.2	.8	.0	.0	---	---	---	---	---	---
20	13.4	6.5	1.2	.0	.0	.0	---	---	---	---	---	---
21	13.0	6.9	.6	.0	.0	.0	---	---	---	---	---	---
22	12.5	6.6	.2	.0	.0	.0	---	---	---	---	---	---
23	12.0	5.7	.8	.0	.0	.0	---	---	---	---	---	---
24	11.2	5.1	2.1	.0	.0	.0	---	---	---	---	---	---
25	10.5	5.5	2.5	.7	.0	.0	---	---	---	---	---	---
26	10.4	4.6	3.5	.8	.0	.0	---	---	---	---	---	---
27	10.1	5.5	1.7	.3	.0	.0	---	---	---	---	---	---
28	9.1	4.3	2.0	.1	---	---	---	---	---	---	---	---
29	9.8	5.1	1.7	.0	---	---	---	---	---	---	---	---
30	9.2	5.0	1.0	.0	---	---	---	---	---	---	---	---
31	8.7	4.4	---	---	---	---	---	---	---	---	---	---
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	29.8	16.7	---	---
2	---	---	---	---	---	---	---	---	19.6	19.3	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	17.9	11.4	---	---	---	---	---	---
5	---	---	---	---	28.3	10.2	---	---	---	---	---	---
6	---	---	14.4	14.1	16.0	15.1	---	---	---	---	---	---
7	---	---	22.5	11.6	---	---	---	---	---	---	---	---
8	---	---	23.7	13.2	---	---	---	---	---	---	---	---
9	---	---	17.0	13.3	---	---	---	---	---	---	---	---
10	---	---	20.5	11.1	24.1	11.4	---	---	---	---	---	---
11	---	---	16.2	12.2	26.0	11.9	---	---	---	---	---	---
12	---	---	21.1	11.0	24.6	13.9	---	---	---	---	---	---
13	---	---	17.1	10.0	22.3	17.4	---	---	---	---	---	---
14	---	---	17.6	10.9	---	---	---	---	---	---	---	---
15	---	---	20.9	11.9	---	---	---	---	---	---	---	---
16	---	---	16.6	9.5	---	---	---	---	---	---	---	---
17	---	---	14.6	7.5	---	---	---	---	---	---	---	---
18	---	---	23.3	9.7	---	---	---	---	---	---	---	---
19	---	---	23.4	12.5	---	---	---	---	---	---	---	---
20	---	---	25.4	13.3	---	---	---	---	---	---	24.9	14.6
21	---	---	22.7	13.8	---	---	---	---	---	---	---	---
22	---	---	27.0	12.9	15.7	10.1	---	---	---	---	---	---
23	---	---	29.2	11.4	25.0	10.6	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	18.2	17.0	---	---	---	---

ARKANSAS RIVER BASIN

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 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 good.

AVERAGE DISCHARGE.--23 years, 2.30 ft³/s; 1,670 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, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 31	2215	a*202	*3.16				

Minimum daily, 0.04 ft³/s, June 21-22.

a-From rating extended above 65 ft³/s, on basis of slope-area measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.33	.16	.17	.15	.20	.20	.17	.14	.10	.06	27	.08
2	.20	.19	.17	.17	.18	.20	.17	.14	.10	.06	2.2	.08
3	.17	.17	.17	.17	.15	.19	.17	.14	.10	.16	.59	.08
4	.17	.18	.17	.17	.14	.17	.17	.14	.10	.15	.23	.08
5	.17	.20	.17	.20	.14	.17	.17	.14	.10	.09	.22	.29
6	.15	.26	.18	.19	.14	.17	.17	.13	.10	.08	.19	.11
7	.14	.27	.17	.17	.14	.17	.17	.12	.09	.08	.17	.10
8	.14	.27	.17	.17	.14	.17	.17	.12	.15	.08	.17	.09
9	.12	.27	.17	.17	.13	.17	.17	.12	.13	.08	.16	.08
10	.12	.24	.17	.18	.17	.20	.17	.12	.11	.08	.14	.12
11	.12	.25	.17	.19	.24	.20	.17	.12	.10	.08	1.9	.15
12	.13	.17	.17	.17	.25	.20	.17	.12	.11	.08	9.4	2.1
13	.14	.21	.17	.17	.24	.18	.24	.12	.15	.08	5.1	.35
14	.14	.22	.17	.17	.21	.14	.23	.12	.20	7.3	.97	.16
15	.14	.28	.17	.17	.20	.14	.18	.15	.15	1.5	.26	.12
16	.14	.31	.17	.17	.20	.14	.17	.32	.12	.24	.13	.12
17	.14	.28	.17	.18	.20	.17	.16	.28	.10	.13	.10	.12
18	.14	.27	.17	.20	.20	.14	.12	9.1	.09	.09	.09	.10
19	.14	.39	.17	.20	.20	.14	.12	5.7	.08	.08	.08	.15
20	.14	.30	.16	.20	.23	.14	.12	2.6	.05	.08	.08	1.2
21	.14	.27	.15	.20	.27	.14	.10	1.3	.04	.08	.08	.31
22	.14	.21	.14	.20	.22	.14	.10	.92	.04	.08	.08	.14
23	.14	.17	.14	.20	.20	.14	.10	.72	.05	.08	.08	.08
24	.14	.20	.14	.20	.20	.14	.11	.30	.06	.08	.08	.08
25	.14	.20	.18	.20	.20	.17	.12	.23	.06	.08	.08	.08
26	.14	.20	.16	.20	.20	.20	.12	.17	.06	.08	.08	.08
27	.14	.20	.14	.21	.20	.20	.12	.14	.06	.08	.08	.08
28	.14	.17	.14	.22	.20	.20	.12	.14	.06	.08	.08	.09
29	.14	.17	.14	.18	---	.20	.12	.14	.06	.08	.08	.10
30	.14	.17	.14	.18	---	.20	.13	.10	.06	.08	.08	.10
31	.14	---	.14	.21	---	.17	---	.10	---	14	.08	---
TOTAL	4.62	6.85	5.01	5.76	5.39	5.30	4.52	24.20	2.78	25.38	50.06	6.82
MEAN	.15	.23	.16	.19	.19	.17	.15	.78	.093	.82	1.61	.23
MAX	.33	.39	.18	.22	.27	.20	.24	9.1	.20	14	27	2.1
MIN	.12	.16	.14	.15	.13	.14	.10	.10	.04	.06	.08	.08
AC+FT	9.2	14	9.9	11	11	11	9.0	48	5.5	50	99	14
CAL YR 1988	TOTAL 520.01	MEAN 1.42	MAX 34	MIN .08	AC-FT 1030							
WTR YR 1989	TOTAL 146.69	MEAN .40	MAX 27	MIN .04	AC-FT 291							

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.--Record is complete for year. Daily maximum and minimum specific conductance data are available in the 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, 4,630 microsiemens May 19; minimum, 210 microsiemens July 31.

WATER TEMPERATURE: Maximum, 31.0°C July 6; minimum, 1.4°C Feb. 4-5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
MAY 19...	1305	5.3	4460	8.0	19.5	7.2	1200	200	180

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	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)	SILICA, DIS- SOLVED (MG/L AS SIO2)
MAY 19...	660	8	17	232	2100	220	0.50	12

DATE	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, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY 19...	3730	3550	5.07	53.4	3.80	0.03	80	40

ARKANSAS RIVER BASIN

07126200 VAN BREMER ARROYO NEAR MODEL, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1920	2020	1960	2070	1900	1710	2030	2060	3070	2310	634	1570
2	1920	2010	1960	2100	1860	1730	2020	2060	2920	2300	1030	1620
3	1920	2010	1980	2130	1900	1730	2020	2030	2990	2180	1250	1640
4	1920	2010	1980	2140	1920	1750	2010	2030	2970	2240	1370	1630
5	1930	2010	1990	2120	1920	1760	2020	2040	3110	2270	1460	1490
6	1920	2000	2000	2060	1940	1780	2030	2020	3010	2300	1540	1620
7	1920	2000	2010	1970	1970	1810	2030	2030	3030	2270	1580	1680
8	1930	2000	2000	1970	2000	1830	2030	2030	3010	2220	1610	1710
9	1930	2010	2030	1980	2020	1850	2010	2000	2860	2160	1620	1720
10	1940	2000	2040	1990	2030	1870	2000	2000	2940	2130	1650	1680
11	1950	1990	2030	2080	2060	1880	2050	1990	3020	2120	1600	1660
12	1970	1980	2040	2090	2040	1890	2020	2000	2970	2090	1470	1530
13	1980	1970	2040	2120	1990	1900	2030	1990	2890	2080	655	1720
14	1970	1980	2060	2060	1900	1900	2050	1990	2950	1830	781	1770
15	1970	1960	2040	2060	1860	1900	2040	1990	2820	1120	889	1790
16	1970	1970	2020	2080	1850	1910	2020	1980	2720	950	1010	1800
17	1970	1960	2000	2080	1840	1960	2030	1960	2610	1080	1110	1800
18	1970	1960	2000	2100	1830	1970	2020	2610	2540	1270	1190	1810
19	1950	1930	2000	2090	1800	1950	2020	3880	2430	1420	1280	1760
20	1990	1960	1990	2040	1780	1960	2020	3810	2390	1520	1340	1510
21	2010	1960	1990	2000	1740	1980	2010	3950	2360	1540	1380	1490
22	2020	1970	2000	1970	1730	1990	2000	4140	2280	1550	1400	1540
23	2020	1990	2000	1940	1720	2010	1990	4180	2250	1550	1430	1590
24	2030	2000	2010	1930	1700	2000	1990	4030	2310	1550	1440	1610
25	2020	2020	2010	1900	1700	2020	2000	3910	2300	1540	1450	1630
26	2020	1980	2020	1880	1690	2010	2000	3710	2320	1530	1460	1640
27	2040	1950	2070	1890	1670	2010	2010	3490	2320	1540	1500	1650
28	2030	1920	2070	1880	1690	2010	2000	3420	2300	1590	1500	1660
29	2030	1930	2070	1910	---	2020	2000	3270	2290	1610	1530	1660
30	2030	1960	2090	1910	---	2010	2020	3280	2300	1600	1560	1670
31	2030	---	2070	1920	---	2020	---	3140	---	1500	1570	---
MEAN	1970	1980	2020	2010	1860	1910	2020	2740	2680	1770	1330	1650

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.2	13.4	14.8	7.2	7.7	3.3	4.9	3.3	7.0	3.5	12.4	4.7
2	19.9	11.2	14.8	8.3	7.9	3.5	4.4	3.2	4.4	2.2	11.8	5.0
3	21.1	13.1	14.5	8.3	7.6	3.6	5.3	3.2	2.7	1.8	9.6	2.8
4	17.9	12.8	13.9	9.5	7.1	3.4	5.5	3.6	2.9	1.4	5.9	2.2
5	18.6	11.7	12.5	7.0	7.3	3.3	7.7	3.7	2.5	1.4	6.9	3.2
6	16.0	11.6	13.5	6.1	7.0	3.3	6.6	3.3	3.1	1.7	10.7	3.1
7	18.9	11.9	11.8	7.6	4.2	2.7	4.5	2.0	3.1	1.6	13.5	4.7
8	18.5	11.5	10.6	7.2	4.8	2.7	5.3	2.5	3.2	1.7	15.2	6.9
9	17.4	10.5	12.1	7.4	5.2	2.7	5.1	2.8	3.3	1.7	16.6	8.2
10	17.6	10.0	11.4	7.3	4.9	3.0	5.4	3.3	4.0	2.1	17.7	8.8
11	18.4	9.9	10.6	7.6	4.7	3.1	5.2	3.3	5.5	2.3	15.5	9.3
12	18.6	10.4	11.3	5.4	5.3	2.9	5.0	3.0	6.7	2.6	16.3	9.0
13	18.5	10.8	11.9	5.7	6.6	3.5	4.4	2.2	5.8	2.8	16.6	9.4
14	18.8	11.4	12.6	6.9	6.8	3.7	5.0	2.4	6.5	2.5	14.4	7.5
15	18.8	11.8	9.0	4.0	4.8	2.9	4.9	2.7	8.2	3.2	14.3	6.1
16	19.3	10.6	8.6	3.7	5.5	2.9	4.9	2.6	9.3	3.0	16.2	6.7
17	18.6	11.1	8.6	3.5	5.6	3.2	6.1	2.8	5.3	3.3	15.6	7.8
18	18.7	11.6	7.9	3.2	6.0	3.2	6.8	3.2	9.2	3.0	14.2	6.5
19	16.4	11.1	7.0	2.2	6.2	3.4	6.9	2.9	8.9	4.2	15.3	7.5
20	17.9	10.0	5.3	1.9	6.2	3.0	6.7	3.0	6.1	4.1	10.0	4.9
21	18.3	10.4	6.1	2.9	5.8	3.0	7.9	3.1	9.3	3.1	14.7	3.0
22	17.1	10.6	6.4	2.7	4.9	1.9	7.4	3.3	9.8	3.5	16.3	6.4
23	16.7	9.7	8.1	3.7	4.5	2.8	7.7	3.0	11.5	4.3	15.4	8.0
24	16.8	9.3	9.3	4.3	4.7	2.8	5.5	3.2	12.1	4.8	15.1	7.0
25	15.2	9.3	6.1	4.7	6.3	3.2	4.4	3.0	13.0	5.8	17.8	7.2
26	16.3	8.5	6.6	4.2	4.5	2.1	7.8	3.2	14.0	6.0	16.9	8.0
27	14.3	9.2	6.6	3.3	5.1	2.4	5.7	3.0	12.6	5.5	14.3	8.5
28	14.4	7.2	7.5	3.4	5.2	2.7	3.5	2.2	8.3	4.9	19.3	7.5
29	14.1	8.5	7.1	2.8	4.9	2.8	6.4	2.4	---	---	18.2	9.0
30	13.2	8.5	6.7	3.4	5.0	2.8	9.0	3.1	---	---	17.0	9.2
31	14.6	7.8	---	---	4.7	3.0	9.8	3.3	---	---	18.7	6.4
MONTH	21.1	7.2	14.8	1.9	7.9	1.9	9.8	2.0	14.0	1.4	19.3	2.2

07126200 VAN BREMER ARROYO NEAR MODEL, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.8	8.7	20.1	7.9	21.7	15.8	29.4	18.5	23.3	18.0	23.0	18.3
2	16.8	8.0	20.5	11.6	24.4	15.0	29.9	19.1	27.1	20.1	26.1	17.4
3	17.7	8.5	19.3	11.4	19.4	15.4	28.6	19.3	29.0	20.2	24.9	17.7
4	18.0	8.5	18.1	10.9	18.5	14.3	29.5	19.1	29.4	19.6	22.2	17.4
5	19.1	6.9	22.6	9.8	26.4	12.6	30.8	18.7	27.1	19.5	27.0	17.8
6	19.7	9.3	23.7	11.6	27.5	15.5	31.0	19.0	27.3	18.3	25.2	17.4
7	18.5	9.9	24.0	13.2	23.7	15.9	28.7	18.2	27.2	18.4	26.8	17.0
8	18.1	10.1	24.4	14.1	22.9	16.1	27.6	18.2	27.8	17.5	26.0	18.5
9	10.9	5.5	18.9	14.4	24.5	14.7	27.7	17.8	27.8	18.7	22.8	16.2
10	14.7	3.8	21.0	11.9	24.1	15.1	25.5	18.2	28.0	19.0	21.6	13.3
11	13.5	6.6	17.4	14.0	26.7	15.1	27.5	18.8	27.1	20.0	16.8	13.7
12	9.9	6.3	21.8	12.8	23.5	16.4	28.5	20.4	26.6	19.1	13.5	11.5
13	17.8	6.4	21.1	12.8	24.7	16.3	29.6	19.2	22.3	18.8	14.4	10.7
14	19.6	7.5	17.7	13.4	23.4	16.6	27.9	15.8	26.3	18.4	19.8	9.9
15	19.6	9.1	21.0	13.1	27.6	15.4	25.6	16.9	28.0	19.5	22.9	11.3
16	19.6	10.0	19.9	14.1	25.5	17.5	29.3	18.9	27.8	18.6	24.0	13.3
17	21.0	11.0	16.8	13.3	27.5	16.6	29.8	17.8	29.0	17.4	23.2	14.4
18	21.5	11.4	19.2	13.3	28.6	17.0	29.0	18.8	27.6	18.7	23.7	14.4
19	23.0	11.6	21.0	15.3	26.4	19.0	29.8	19.2	27.3	18.5	22.2	16.2
20	23.2	12.9	22.8	16.9	24.0	17.4	28.6	19.3	28.8	19.3	22.5	16.8
21	24.6	13.2	23.4	17.9	21.4	16.4	27.3	17.9	27.4	18.7	21.8	16.9
22	20.6	13.7	25.9	16.7	19.6	13.8	29.0	17.7	26.3	18.7	21.6	15.9
23	21.6	12.8	26.0	17.5	25.0	14.6	26.6	18.8	26.2	17.6	21.8	13.8
24	21.7	12.0	24.0	15.9	25.1	16.2	23.2	18.8	22.3	18.1	22.1	13.5
25	22.2	12.0	24.6	15.4	26.1	17.2	25.8	17.2	25.9	16.4	22.4	13.8
26	19.9	11.3	21.6	14.6	27.6	17.3	26.2	17.9	25.6	16.8	22.1	14.1
27	21.4	10.9	22.6	11.9	28.4	17.7	28.2	18.3	21.5	18.2	23.2	14.6
28	14.6	10.1	25.3	15.9	26.0	18.5	28.1	18.5	24.7	17.6	23.2	14.4
29	16.1	9.3	23.6	16.1	28.0	18.3	28.1	19.0	26.6	17.4	23.6	15.1
30	15.1	9.9	25.7	16.0	27.9	18.4	27.6	19.5	26.2	17.4	23.9	14.8
31	---	---	26.1	16.3	---	---	27.8	17.9	26.3	18.2	---	---
MONTH	24.6	3.8	26.1	7.9	28.6	12.6	31.0	15.8	29.4	16.4	27.0	9.9

ARKANSAS RIVER BASIN

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. Elevation of gage is 4,790 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 9 to Feb. 25, and July 11-12. 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; 13 years (water years 1977-89), 79.5 ft³/s; 57,600 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, 953 ft³/s at 0330 Aug. 1, gage height, 6.07 ft; minimum daily, 0.28 ft³/s, July 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	38	36	31	35	51	23	5.3	3.1	5.1	297	.71
2	41	38	37	32	27	45	22	6.4	2.9	5.4	41	.55
3	40	38	38	32	24	42	22	7.0	3.6	4.4	21	.62
4	39	35	36	34	22	39	21	8.1	22	4.1	21	.51
5	38	32	35	40	20	33	20	8.1	21	4.5	9.1	118
6	42	37	35	41	19	35	20	11	18	4.7	6.2	96
7	46	38	36	40	18	37	19	11	13	2.9	4.4	24
8	46	38	35	35	20	37	18	8.5	11	1.9	4.0	9.6
9	43	38	34	29	25	36	17	7.9	13	1.2	5.3	6.9
10	41	38	32	27	30	37	18	7.9	13	.64	3.8	5.4
11	40	37	31	26	33	38	21	8.6	11	.28	70	8.7
12	40	37	35	25	37	34	25	13	13	.63	83	84
13	40	37	43	25	46	28	23	13	14	1.0	143	90
14	39	37	46	24	45	26	21	10	25	8.3	37	36
15	38	39	45	25	44	28	18	14	25	13	14	21
16	38	41	41	29	39	26	12	22	12	9.2	6.5	16
17	36	41	40	30	38	26	9.4	51	13	12	5.2	13
18	36	39	38	34	37	24	9.9	53	13	11	6.6	10
19	35	43	42	34	39	21	9.4	42	11	6.2	3.8	9.9
20	35	40	49	33	40	23	7.3	26	10	3.9	3.1	32
21	37	35	58	34	41	27	6.0	25	7.1	3.6	2.4	50
22	36	36	43	35	42	27	5.6	19	5.9	2.2	2.1	29
23	35	40	43	35	43	28	5.2	16	5.5	1.4	2.2	24
24	35	48	45	35	44	28	4.6	10	4.9	.77	5.4	19
25	36	49	44	35	46	27	5.0	7.2	40	.42	6.6	17
26	36	48	42	35	51	25	5.3	4.7	17	2.3	4.7	15
27	37	45	42	37	86	24	4.3	4.2	8.7	4.7	3.4	14
28	38	40	25	38	66	23	3.9	4.1	6.0	3.2	3.2	14
29	38	40	23	39	---	22	4.2	3.7	4.9	5.4	2.4	12
30	38	38	25	40	---	22	4.8	3.7	6.0	3.4	1.4	13
31	38	---	29	45	---	23	---	3.6	---	145	.94	---
TOTAL	1200	1180	1183	1034	1057	942	404.9	435.0	373.6	272.74	819.74	789.89
MEAN	38.7	39.3	38.2	33.4	37.7	30.4	13.5	14.0	12.5	8.80	26.4	26.3
MAX	46	49	58	45	86	51	25	53	40	145	297	118
MIN	35	32	23	24	18	21	3.9	3.6	2.9	.28	.94	.51
AC-FT	2380	2340	2350	2050	2100	1870	803	863	741	541	1630	1570
CAL YR 1988	TOTAL	21637	MEAN	59.1	MAX	1090	MIN	13	AC-FT	42920		
WTR YR 1989	TOTAL	9691.87	MEAN	26.6	MAX	297	MIN	.28	AC-FT	19220		

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 1982. Pumping sediment sampler since May 1983.

REMARKS.--Daily data that are not published are either missing or of poor quality. Daily maximum and minimum specific conductance data available in the district office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 5,850 microsiemens July 16, 1989; minimum, 340 microsiemens Aug. 4, 1987.

WATER TEMPERATURE: Maximum, 31.0° C Aug. 15, 1984; minimum, 0.0° C on many days during 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, 0.03 tons Apr. 29 and July 25, 1989.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,850 microsiemens July 16; minimum, 698 microsiemens Aug. 13.

WATER TEMPERATURE: Maximum, 30.3° C July 13; minimum, 0.0° C on many days during winter months.

SEDIMENT CONCENTRATION: Maximum daily, 37,300 mg/l Aug. 1; minimum daily, 3 mg/l Apr. 29.

SEDIMENT LOAD: Maximum daily, 36,900 tons Aug. 1; minimum daily, 0.03 tons Apr. 29, and July 25.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
NOV 22...	1200	33	3320	--	0.5	12.4	1700	310	220	250	3	4.7
MAR 09...	1630	36	3110	8.4	13.0	10.4	1500	270	210	240	3	4.9
APR 21...	0945	6.0	3900	8.2	18.0	7.0	1700	280	250	380	4	6.2
AUG 02...	0945	39	1760	8.0	21.0	7.0	850	210	78	110	2	6.4

DATE	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 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)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	223	1900	40	0.40	8.7	3080	2870	4.19	274	--	0.34
MAR 09...	208	1800	40	0.40	8.3	2870	2700	3.90	279	--	0.26
APR 21...	194	2400	68	0.40	6.0	3850	3510	5.24	62.4	--	<0.10
AUG 02...	98	970	7.9	0.40	8.8	1540	1450	2.09	162	13800	0.56

DATE	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	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 22...	<0.01	--	--	--	--	30	--	--	40	--	--
MAR 09...	<0.01	--	--	--	--	30	--	--	60	--	--
APR 21...	0.01	--	--	--	--	20	--	--	100	--	--
AUG 02...	0.01	20	3	360	320000	9	20	4800	1	1400	<0.01

ARKANSAS RIVER BASIN

07126300 PURGATOIRE RIVER NEAR THATCHER, CO--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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					
20...	1240	35	6	0.57	--
NOV					
22...	1200	33	25	2.2	--
DEC					
21...	1540	64	9	1.6	--
FEB					
09...	1300	25	6	0.40	--
MAR					
09...	1630	36	23	2.2	--
APR					
14...	1400	22	7	0.42	--
21...	0945	6.0	10	0.16	--
MAY					
19...	1555	38	2010	206	99
JUN					
09...	1255	10	165	4.5	--
20...	1605	10	104	2.8	--
29...	0915	5.0	87	1.2	--
JUL					
18...	1210	11	70	2.1	--
25...	1405	0.30	25	0.02	--
AUG					
02...	0930	39	13200	1390	100
02...	1250	40	11100	1200	100
07...	1620	4.0	70	0.76	--
24...	1105	5.0	105	1.4	--
SEP					
13...	1830	68	18700	3430	100

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2950	3380	3500	3880	3320	2230	3290	4080	3500	1640	2020	3330
2	2980	3370	3470	3750	3280	2540	3290	3990	3560	1770	1710	3330
3	2990	3370	3500	3600	3490	2670	3250	4040	3570	1920	1890	3330
4	3000	3380	3460	3420	3640	2740	3260	3930	3450	2010	2040	3300
5	3030	3400	3470	3290	3710	2840	3300	3890	3340	2120	1980	3090
6	3030	3410	3460	3160	3770	2840	3320	3910	4190	2300	2100	2150
7	3060	3430	3460	3150	3910	3090	3340	3880	4180	2470	2230	2210
8	3090	3560	3460	3350	4000	3000	3360	3890	3510	2700	2400	1810
9	3090	3450	3480	3400	3820	3140	3360	4140	3170	2960	2640	1750
10	3080	3320	3620	3420	3660	3120	3330	4150	3400	3300	2780	1820
11	3130	3330	3400	3640	3540	3160	3340	4180	3310	3500	2820	1750
12	3180	3320	3460	3640	3410	3130	3370	4380	3300	3530	1930	1740
13	3180	3330	3580	3660	3310	3080	3340	4160	3280	3680	1190	1820
14	3190	3350	3490	3520	3170	3130	3420	3840	3420	3280	1990	2010
15	3210	3300	3450	3520	3190	3210	3480	3640	3420	2290	2270	1800
16	3250	3300	3470	3550	3270	3380	3540	3470	3510	4710	2050	1850
17	3280	3300	3390	3600	3200	3640	3550	3290	3750	3730	2060	2080
18	3280	3280	3310	3440	3270	4040	3740	3630	3830	3070	2010	2370
19	3320	3320	3470	3400	3240	3890	3670	3810	3740	3650	1850	2540
20	3290	3340	3500	3370	3300	3530	3780	3790	3740	4350	1820	2580
21	3280	3290	3470	3300	3200	3460	3910	3420	3900	4300	1900	2930
22	3300	3290	3490	3370	3120	3590	3980	3370	3990	4140	1980	2820
23	3330	3420	3680	3400	3110	3550	4040	3290	4000	4040	2090	2270
24	3380	3480	3510	3340	3170	3490	4130	3280	4010	3980	2300	2040
25	3370	3420	3470	3340	3250	3470	4190	3340	3570	3970	3010	2200
26	3370	3390	3420	3370	3460	3480	4340	3360	2400	3920	3570	2380
27	3350	3540	3540	3400	3330	3440	4490	3360	2190	3360	3410	2530
28	3340	3590	3760	3300	2500	3370	4490	3370	1950	3180	3140	2630
29	3350	3570	3560	3330	---	3350	4310	3380	1700	3100	3180	2750
30	3380	3500	3670	3380	---	3350	4170	3400	1600	2970	3280	2860
31	3380	---	3810	3300	---	3330	---	3450	---	2380	3340	---
MEAN	3210	3390	3510	3440	3380	3230	3680	3710	3350	3170	2350	2400
MAX	3380	3590	3810	3880	4000	4040	4490	4380	4190	4710	3570	3330
MIN	2950	3280	3310	3150	2500	2230	3250	3280	1600	1640	1190	1740

07126300 PURGATOIRE RIVER NEAR THATCHER, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	15.0	13.4	11.7	8.3	2.4	.1	.4	.0	1.5	.0	8.1	4.2
2	16.9	12.3	11.8	8.8	2.8	.3	.3	.0	.9	.0	8.5	4.9
3	18.1	14.1	12.2	9.0	2.6	.3	.4	.0	.3	.1	7.1	3.0
4	16.4	14.2	11.6	9.5	2.1	.1	.3	.0	.3	.1	3.1	.6
5	16.4	13.1	10.1	8.1	2.0	.1	.6	.0	.2	.1	3.0	.1
6	14.8	13.1	10.1	6.9	1.8	.0	.6	.0	.1	.1	5.3	.1
7	15.7	12.7	9.7	7.8	.6	.1	.3	.0	.2	.1	7.9	2.9
8	16.4	12.8	9.0	7.0	.7	.0	.4	.0	.2	.1	10.7	5.6
9	15.5	12.4	9.8	7.7	.5	.0	.4	.0	.2	.0	13.1	7.9
10	15.5	11.9	9.4	7.5	.4	.0	.5	.0	.2	.0	14.4	9.6
11	15.6	11.7	9.0	7.5	.3	.0	.5	.0	.3	.0	13.5	10.6
12	16.0	12.1	8.7	6.1	.4	.0	.2	.0	.4	.0	13.9	10.3
13	16.0	12.3	8.6	5.8	.5	.0	.3	.0	.3	.0	14.3	10.6
14	16.3	12.8	9.7	6.9	.9	.0	.3	.0	.4	.0	13.0	9.6
15	16.5	13.2	8.2	4.6	.7	.0	.3	.0	.5	.0	11.7	7.7
16	16.4	12.6	6.0	3.3	.4	.0	.3	.0	.5	.0	13.1	7.7
17	16.4	12.9	5.5	3.3	.4	.0	.4	.0	.3	.0	13.5	8.9
18	16.3	13.0	4.9	3.0	.4	.0	.4	.0	.8	.0	12.2	8.9
19	15.4	13.0	4.0	1.9	1.1	.0	.4	.0	1.3	.1	12.4	8.3
20	15.5	12.0	2.1	.3	1.2	.0	.5	.0	.9	.3	11.0	5.4
21	15.5	12.1	2.0	.0	.8	.0	.5	.0	3.4	.0	9.7	3.8
22	15.4	12.2	2.0	.0	.6	.0	.4	.0	4.0	.1	12.2	6.8
23	14.5	11.6	3.1	.2	.3	.0	.5	.0	5.7	1.3	12.3	8.8
24	14.4	11.0	3.9	1.2	.4	.0	.3	.0	6.5	2.8	12.4	8.7
25	13.6	10.9	3.1	2.4	.6	.0	.2	.1	8.0	4.1	14.5	8.8
26	13.3	9.8	3.3	1.9	.9	.0	.7	.0	9.2	5.5	14.0	10.0
27	12.5	10.4	3.0	1.1	.3	.0	.3	.0	9.3	6.1	12.7	10.0
28	11.8	8.5	2.8	.3	.5	.0	.2	.0	6.9	5.0	15.4	9.5
29	11.9	9.5	2.7	.8	.5	.0	.5	.0	---	---	15.2	10.7
30	11.2	9.3	2.1	.1	.4	.0	.8	.0	---	---	15.1	11.0
31	11.6	8.5	---	---	.4	.0	1.6	.0	---	---	14.7	8.6
MONTH	18.1	8.5	12.2	.0	2.8	.0	1.6	.0	9.3	.0	15.4	.1
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	14.5	10.7	15.9	9.4	20.9	17.9	28.5	22.0	23.1	19.7	23.3	20.5
2	15.1	9.9	18.0	12.9	22.6	17.2	28.7	22.7	25.1	20.6	25.8	19.6
3	14.8	10.7	18.0	14.1	19.3	16.9	28.3	23.2	27.3	21.5	25.7	19.7
4	15.1	10.3	17.1	14.1	17.1	15.5	28.9	22.1	26.9	22.1	22.2	19.6
5	15.7	9.7	19.5	13.0	21.7	14.2	30.1	22.2	25.5	22.3	23.9	19.6
6	17.2	11.6	21.0	14.9	24.0	17.6	29.6	22.5	25.7	21.3	21.2	18.3
7	17.1	12.6	22.3	16.5	21.9	17.7	29.7	22.5	26.4	20.7	23.9	18.3
8	16.8	12.6	23.1	18.0	21.6	18.1	29.6	21.9	27.4	20.7	24.6	19.3
9	14.1	7.2	20.1	17.0	20.8	16.7	29.4	21.6	27.4	21.5	21.4	17.6
10	11.4	5.4	19.5	15.2	21.1	17.3	27.3	21.1	27.7	22.1	21.1	15.7
11	10.6	7.4	17.2	15.5	23.9	17.6	28.7	21.0	29.1	21.3	17.8	14.8
12	8.8	7.3	18.9	14.3	22.2	19.1	29.7	22.3	24.6	20.3	14.6	11.3
13	13.6	7.0	18.8	14.4	21.8	18.2	30.3	22.5	23.0	19.3	11.4	9.8
14	15.6	9.1	17.7	15.3	21.7	18.0	29.9	19.9	24.8	19.5	15.4	9.6
15	16.3	11.3	19.2	14.8	24.1	17.4	26.4	20.2	25.6	20.2	18.4	11.9
16	17.3	12.5	17.9	15.5	23.4	19.9	27.6	22.2	25.4	20.5	20.4	14.0
17	18.5	14.1	15.6	14.1	24.8	19.1	27.7	21.3	26.1	20.1	21.1	15.7
18	18.8	13.7	19.2	13.5	26.1	20.1	27.7	22.4	25.8	20.5	21.5	15.2
19	19.9	14.6	20.9	15.3	25.1	21.3	28.5	22.7	26.2	21.3	20.7	17.2
20	21.3	16.2	23.1	17.3	23.1	14.9	28.7	23.3	28.1	21.3	21.9	17.1
21	22.8	17.1	22.1	17.6	20.8	17.5	27.9	22.8	27.3	21.3	19.9	17.5
22	20.7	17.6	24.1	18.0	17.8	15.4	28.5	22.0	25.4	21.2	19.6	16.3
23	20.4	16.5	23.4	17.3	21.9	15.7	27.4	22.6	26.1	20.3	19.6	15.0
24	20.6	16.0	23.0	18.4	24.2	18.2	26.0	22.3	22.5	19.3	19.9	14.3
25	21.1	15.7	23.4	18.4	24.8	19.1	26.6	20.5	24.0	18.0	20.6	15.2
26	19.3	15.1	19.8	16.9	25.3	19.4	27.6	20.5	24.5	18.7	20.4	15.5
27	19.7	14.4	20.7	15.1	26.6	20.6	27.3	21.5	21.6	19.8	20.7	15.3
28	16.2	12.8	23.0	17.4	25.9	21.6	27.9	21.5	23.6	19.0	20.9	15.7
29	13.6	10.9	22.2	17.9	27.0	21.1	27.0	21.5	25.8	19.5	21.8	17.0
30	13.4	10.9	23.7	18.2	27.5	21.3	26.7	22.3	26.8	19.9	21.8	16.6
31	---	---	23.3	18.3	---	---	23.7	19.8	26.8	19.9	---	---
MONTH	22.8	5.4	24.1	9.4	27.5	14.2	30.3	19.8	29.1	18.0	25.8	9.6

ARKANSAS RIVER BASIN

07126300 PURGATOIRE RIVER NEAR THATCHER, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	43	145	17	38	---	3.6	36	---	1.6
2	41	---	9.4	38	32	3.3	37	---	1.6
3	40	65	7.0	38	32	3.3	38	---	1.6
4	39	65	6.8	35	---	3.1	36	---	1.6
5	38	---	6.7	32	---	2.6	35	---	1.5
6	42	50	5.7	37	50	5.0	35	---	1.5
7	46	80	9.9	38	---	6.2	36	---	1.6
8	46	---	11	38	60	6.2	35	---	1.5
9	43	60	7.0	38	58	6.0	34	---	1.1
10	41	50	5.5	38	---	5.6	32	---	1.0
11	40	---	6.7	37	52	5.2	31	---	1.0
12	40	63	6.8	37	55	5.5	35	---	1.1
13	40	85	9.2	37	---	5.5	43	---	1.4
14	39	---	10	37	---	5.5	46	---	1.5
15	38	90	9.2	39	58	6.1	45	---	1.5
16	38	88	9.0	41	---	6.4	41	---	1.3
17	36	---	8.2	41	---	6.4	40	---	1.3
18	36	54	5.2	39	---	5.8	38	---	1.2
19	35	28	2.6	43	---	6.4	42	---	1.4
20	35	8	.76	40	---	4.8	49	---	1.6
21	37	15	1.5	35	---	3.4	58	10	1.6
22	36	25	2.4	36	24	2.3	43	---	1.2
23	35	---	3.1	40	---	2.2	43	---	1.2
24	35	32	3.0	48	---	2.6	45	---	1.2
25	36	32	3.1	49	---	2.6	44	---	1.2
26	36	---	3.4	48	---	2.6	42	---	1.1
27	37	35	3.5	45	---	2.4	42	---	1.1
28	38	35	3.6	40	---	2.2	25	---	.68
29	38	---	3.6	40	---	2.2	23	---	.62
30	38	35	3.6	38	---	2.0	25	---	.68
31	38	35	3.6	---	---	---	29	---	.78
TOTAL	1200	---	188.06	1180	---	127.0	1183	---	39.26
JANUARY			FEBRUARY			MARCH			
1	31	---	.84	35	---	.76	51	---	5.5
2	32	---	.86	27	---	.58	45	---	4.9
3	32	---	.86	24	---	.52	42	---	4.5
4	34	---	.92	22	---	.48	39	---	3.8
5	40	---	1.1	20	---	.43	33	---	3.2
6	41	---	1.1	19	---	.41	35	---	3.4
7	40	---	1.1	18	---	.39	37	---	3.2
8	35	---	.94	20	---	.43	37	---	3.2
9	29	---	.78	25	6	.40	36	23	2.3
10	27	---	.73	30	---	.65	37	---	2.4
11	26	---	.70	33	---	.71	38	52	5.3
12	25	---	.68	37	---	.80	34	40	3.7
13	25	---	.68	46	---	.99	28	---	2.9
14	24	---	.65	45	---	.97	26	---	2.5
15	25	---	.68	44	---	.95	28	---	2.6
16	29	---	.78	39	---	.84	26	---	2.2
17	30	---	.81	38	---	.82	26	---	2.1
18	34	---	.92	37	---	.80	24	---	1.8
19	34	---	.92	39	---	.84	21	---	1.5
20	33	---	.89	40	---	.86	23	---	1.5
21	34	---	.92	41	---	.88	27	---	1.6
22	35	---	.94	42	---	.91	27	---	1.5
23	35	---	.94	43	---	.93	28	---	1.5
24	35	---	.94	44	---	.95	28	---	1.5
25	35	---	.94	46	---	.99	27	---	1.3
26	35	---	.94	51	---	5.5	25	---	1.2
27	37	---	1.0	86	---	19	24	17	1.1
28	38	---	1.0	66	---	11	23	---	1.2
29	39	---	1.0	---	---	---	22	20	1.2
30	40	---	1.1	---	---	---	22	18	1.1
31	45	---	1.2	---	---	---	23	---	1.7
TOTAL	1034	---	27.86	1057	---	53.79	942	---	77.4

07126300 PURGATOIRE RIVER NEAR THATCHER, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	23	40	2.5	5.3	4	.06	3.1	---	.92
2	22	38	2.3	6.4	6	.10	2.9	65	.51
3	22	---	2.4	7.0	---	.17	3.6	70	.68
4	21	37	2.1	8.1	10	.22	22	185	13
5	20	37	2.0	8.1	6	.13	21	180	10
6	20	---	1.4	11	---	.24	18	---	8.3
7	19	18	.92	11	6	.18	13	190	6.7
8	18	10	.48	8.5	4	.09	11	175	5.2
9	17	---	.23	7.9	---	.10	13	170	6.0
10	18	5	.24	7.9	5	.11	13	---	5.6
11	21	---	.31	8.6	8	.19	11	120	3.6
12	25	---	.40	13	---	.42	13	90	3.2
13	23	---	.37	13	9	.32	14	---	3.0
14	21	7	.40	10	10	.27	25	120	8.1
15	18	---	.50	14	---	.28	25	160	11
16	12	13	.42	22	9	.53	12	---	4.7
17	9.4	10	.25	51	185	31	13	140	4.9
18	9.9	---	.27	53	1070	193	13	145	5.1
19	9.4	11	.28	42	2010	225	11	---	3.7
20	7.3	12	.24	26	---	46	10	110	3.0
21	6.0	12	.19	25	350	24	7.1	105	2.0
22	5.6	12	.18	19	210	11	5.9	---	1.4
23	5.2	12	.17	16	---	6.5	5.5	80	1.2
24	4.6	---	.17	10	140	3.8	4.9	75	.99
25	5.0	16	.22	7.2	170	3.3	40	295	31
26	5.3	16	.23	4.7	---	2.0	17	---	8.1
27	4.3	---	.17	4.2	150	1.7	8.7	156	3.7
28	3.9	10	.10	4.1	140	1.5	6.0	124	2.0
29	4.2	3	.03	3.7	---	1.0	4.9	98	1.3
30	4.8	---	.04	3.7	100	1.0	6.0	147	2.4
31	---	---	---	3.6	140	1.4	---	---	---
TOTAL	404.9	---	19.51	435.0	---	555.61	373.6	---	161.30
JULY			AUGUST			SEPTEMBER			
1	5.1	112	1.5	297	37300	36900	.71	---	.10
2	5.4	---	1.4	41	12000	1330	.55	---	.07
3	4.4	84	1.0	21	2080	119	.62	---	.08
4	4.1	84	.93	21	650	37	.51	---	.07
5	4.5	---	1.1	9.1	---	3.7	118	21500	13800
6	4.7	84	1.1	6.2	110	1.8	96	33500	9560
7	2.9	98	.77	4.4	76	.90	24	13000	842
8	1.9	---	.50	4.0	72	.78	9.6	---	156
9	1.2	63	.20	5.3	---	.89	6.9	900	17
10	.64	56	.10	3.8	---	.43	5.4	430	6.3
11	.28	---	.04	70	1170	855	8.7	---	8.9
12	.63	56	.10	83	4110	1000	84	8740	4320
13	1.0	56	.15	143	4540	2080	90	19500	4870
14	8.3	125	5.9	37	3660	367	36	---	1070
15	13	---	6.6	14	1760	66	21	3800	215
16	9.2	144	3.6	6.5	---	10	16	1000	43
17	12	117	3.8	5.2	158	2.2	13	---	18
18	11	72	2.1	6.6	135	2.4	10	500	14
19	6.2	45	.75	3.8	---	1.2	9.9	572	16
20	3.9	28	.29	3.1	98	.82	32	701	96
21	3.6	---	.31	2.4	---	.58	50	1070	144
22	2.2	36	.21	2.1	---	.50	29	700	55
23	1.4	21	.08	2.2	110	.65	24	---	38
24	.77	---	.04	5.4	120	1.7	19	530	27
25	.42	24	.03	6.6	145	2.6	17	430	20
26	2.3	42	.26	4.7	---	1.8	15	---	15
27	4.7	---	.80	3.4	120	1.1	14	300	11
28	3.2	32	.27	3.2	92	.79	14	240	9.1
29	5.4	---	.71	2.4	---	.44	12	---	6.8
30	3.4	---	.32	1.4	---	.20	13	210	7.4
31	145	11400	4030	.94	---	.13	---	---	---
TOTAL	272.74	---	4064.96	819.74	---	42789.61	789.89	---	35385.82
YEAR	9692		83490.2						

07126325 TAYLOR ARROYO BELOW ROCK CROSSING, NEAR THATCHER, CO

LOCATION.--Lat 37°25'26", long 103°55'09", in SE¼SE¼ sec.17, T.30 S., R.58 W., Las Animas County, Hydrologic Unit 11010010, 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, 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.--6 Years, 0.25 ft³/s; 181 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)
July 13	0015	24	4.26	July 31	1845	*a2,820	*b10.96
July 14	1715	620	7.42	Aug. 11	1630	16	4.08
July 14	2200	88	5.07	Aug. 12	2200	8.0	3.93

No flow most of time.

a-From rating extended to peak flow on the basis of slope-conveyance.

b-From floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	7.3	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.24	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.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	.65	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.22	1.1	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.5	1.1	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	79	.05	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.5	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.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	.02
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	144	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	235.54	10.51	0.02
MEAN	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.60	.34	.001
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	144	7.3	.02
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	.0	.0	.0	.0	.0	.0	.0	.0	467	21	.04

CAL YR 1988 TOTAL 20.01 MEAN .06 MAX 17 MIN .00 AC-FT 40
WTR YR 1989 TOTAL 246.07 MEAN .67 MAX 144 MIN .00 AC-FT 488

07126325 TAYLOR ARROYO BELOW ROCK CROSSING NEAR THATCHER, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--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: July 17, Aug. 12, and Sept. 20. Maximum and minimum specific conductance and water temperature are published only for the period of flow during the day that was recorded. Record is complete for specific conductance except July 15-17 and for water temperature except July 17, 31 and part of Aug. 1.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,520 microsiemens Aug. 20, 1984; minimum, 90 microsiemens June 1, 1986.

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, 1,570 microsiemens July 14; minimum, 110 microsiemens Aug. 11, Sept. 20.

WATER TEMPERATURE: Maximum, 30.5°C Aug. 14; minimum, 11.1°C July 14.

SEDIMENT CONCENTRATIONS: Maximum daily, 2,670 mg/L July 15; no flow most of time.

SEDIMENT LOAD: Maximum daily, 2,970 tons July 15; no flow most time.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
AUG 01...	1630	1.0	260	8.0	26.0	6.2	182

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
AUG 01...	1620	1.2	663	2.1
01...	1835	0.84	608	1.4

07126325 TAYLOR ARROYO BELOW ROCK CROSSING NEAR THATCHER, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

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	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	280	240	---	---
2	---	---	---	---	---	---	---	---	310	280	---	---
3	---	---	---	---	---	---	---	---	320	300	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	170	110	---	---
12	---	---	---	---	---	---	200	200	220	160	---	---
13	---	---	---	---	---	---	1530	360	320	190	---	---
14	---	---	---	---	---	---	1570	230	300	280	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	160	110
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	230	140	---	---	---	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

[illegible]

07126325 TAYLOR ARROYO BELOW ROCK CROSSING NEAR THATCHER, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	---	---
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	---	---
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 1988 TO SEPTEMBER 1989

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	---	---	.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	---	---	---	---	---
TOTAL	0.00	---	---	0.00	---	---	0.00	---	---
JULY			AUGUST			SEPTEMBER			
1	.00	---	---	7.3	959	29	.00	---	---
2	.00	---	---	.24	348	.24	.00	---	---
3	.00	---	---	.07	61	.02	.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	---	---	.65	148	1.3	.00	---	---
12	.22	41	2.4	1.1	---	1.3	.00	---	---
13	4.5	1050	32	1.1	166	.60	.00	---	---
14	79	1770	1370	.05	47	.01	.00	---	---
15	7.5	2670	110	.00	---	---	.00	---	---
16	.30	149	.13	.00	---	---	.00	---	---
17	.02	---	---	.00	---	---	.00	---	---
18	.00	---	---	.00	---	---	.00	---	---
19	.00	---	---	.00	---	---	.00	---	---
20	.00	---	---	.00	---	---	.02	---	---
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	144	1180	2970	.00	---	---	---	---	---
TOTAL	235.54	---	---	10.51	---	---	0.02	---	---
YEAR	246.07	---	4517						

ARKANSAS RIVER BASIN

07126390 LOCKWOOD CANYON CREEK NEAR THATCHER, CO

LOCATION.--Lat 37°29'37", long 103°49'47", in SE¼NW¼ sec.30, T.29 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 April 1989. Prior to May 3, 1989, at site 1,000 ft upstream, at different datum. Sites are not equivalent because of seepage at previous site. May 1989 to current year.

REVISED RECORDS.--WDR CO-86-1: 1983, 1984.

GAGE.--Water-stage recorder, 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.--No estimated daily discharges. Records good except those for discharges above 10 ft³/s, which are poor.

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.--Peak discharges greater than base discharge of 2.0 ft³/s, and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 6	2315	2.5	3.81	Aug. 1	0200	a35	4.76
July 31	1945	*a155	*b6.05				

No flow most of time.

a-From rating extended above 5 ft³/s, on basis of slope-area measurement of peak flow.

b-From floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.01	.01	.01	.01	.03	.05	.06	.00	.00	8.1	.00
2	.00	.01	.02	.01	.01	.03	.04	.06	.00	.00	.03	.00
3	.00	.01	.03	.01	.01	.03	.04	.00	.00	.00	.00	.00
4	.00	.01	.03	.01	.01	.03	.04	.00	.00	.00	.00	.00
5	.00	.01	.03	.01	.01	.03	.05	.00	.00	.00	.00	.00
6	.00	.01	.03	.01	.01	.03	.05	.00	.12	.00	.00	.00
7	.00	.01	.03	.01	.01	.04	.05	.00	.37	.00	.00	.00
8	.00	.01	.02	.01	.01	.04	.05	.00	.00	.00	.00	.00
9	.00	.01	.02	.01	.01	.04	.05	.00	.00	.00	.00	.00
10	.00	.01	.02	.01	.01	.04	.05	.00	.00	.00	.00	.00
11	.01	.01	.02	.01	.01	.04	.05	.00	.00	.00	.00	.00
12	.01	.01	.02	.01	.01	.05	.05	.00	.00	.00	.00	.00
13	.01	.01	.02	.01	.01	.05	.05	.00	.00	.00	.00	.00
14	.01	.01	.02	.01	.01	.05	.05	.00	.00	.00	.00	.00
15	.01	.02	.02	.01	.01	.05	.05	.00	.00	.00	.00	.00
16	.01	.01	.02	.01	.02	.05	.05	.00	.00	.00	.00	.00
17	.01	.01	.02	.01	.02	.05	.05	.00	.00	.00	.00	.00
18	.01	.01	.02	.01	.02	.04	.05	.00	.00	.00	.00	.00
19	.01	.01	.02	.01	.02	.04	.05	.00	.00	.00	.00	.00
20	.01	.01	.01	.01	.02	.04	.06	.00	.00	.00	.00	.00
21	.01	.01	.01	.01	.02	.05	.06	.00	.00	.00	.00	.00
22	.01	.02	.01	.01	.02	.05	.06	.00	.00	.00	.00	.00
23	.01	.01	.01	.01	.02	.05	.06	.00	.00	.00	.00	.00
24	.01	.01	.01	.01	.02	.05	.06	.00	.00	.00	.00	.00
25	.01	.01	.01	.01	.03	.05	.06	.00	.00	.00	.00	.00
26	.01	.01	.01	.01	.03	.05	.06	.00	.00	.00	.00	.00
27	.01	.01	.01	.01	.03	.05	.06	.00	.00	.00	.00	.00
28	.01	.01	.01	.01	.03	.05	.06	.00	.00	.00	.00	.00
29	.01	.01	.01	.01	---	.05	.06	.00	.00	.00	.00	.00
30	.01	.01	.01	.01	---	.05	.06	.00	.00	.00	.00	.00
31	.01	---	.01	.01	---	.05	---	.00	---	12	.00	---
TOTAL	0.21	0.32	0.54	0.31	0.45	1.35	1.58	0.12	0.49	12.00	8.13	0.00
MEAN	.007	.011	.017	.010	.016	.044	.053	.004	.016	.39	.26	.00
MAX	.01	.02	.03	.01	.03	.05	.06	.06	.37	12	8.1	.00
MIN	.00	.01	.01	.01	.01	.03	.04	.00	.00	.00	.00	.00
AC-FT	.4	.6	1.1	.6	.9	2.7	3.1	.2	1.0	24	16	.0

CAL YR 1988 TOTAL 26.87 MEAN .074 MAX 18 MIN .00 AC-FT 53

WTR YR 1989 TOTAL c MEAN c MAX c MIN c AC-FT c

c NOTE.--Water year summary nonequivalent due to new gage location.

07126390 LOCKWOOD CANYON CREEK NEAR THATCHER, CO--Continued

WATER-QUALITY RECORD

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.--Daily data that are not published are either missing, of poor quality, or during periods of no flow. Water-quality monitor was moved 1,000 ft downstream to a dry section of channel on May 3, 1989. Previous site has seepage that doesn't reach present site. QW sample collected on May 25, 1989 was at the previous site.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 3,830 microsiemens Dec. 6, 21, 1986, site then in use; minimum, 190 microsiemens May 22, 1987, site then in use.

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: Maximum, 3,490 microsiemens Dec. 5, site then in use; minimum, 584 microsiemens June 6.

WATER TEMPERATURE: Maximum 21.8°C Aug. 2; minimum, 0.0°C Feb. 7-10, site then in use.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
MAY a 25...	0840	0.02	3120	7.8	18.0	8.3	1500	320	160
AUG 01...	1240	3.0	680	7.9	22.5	6.2	260	77	16

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 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)
MAY a 25...	280	3	11	139	1800	34	0.60	1.3
AUG 01...	23	0.6	9.2	84	230	4.9	0.30	8.2

DATE	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, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY a 25...	2940	2690	4.00	0.16	<0.10	0.01	40	10
AUG 01...	426	423	0.58	3.45	0.92	0.04	20	40

a SAMPLE TAKEN FROM SEEPAGE AT PREVIOUS SITE.

ARKANSAS RIVER BASIN

07126390 LOCKWOOD CANYON CREEK NEAR THATCHER, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	3440	3410	3450	3430	---	---	---	---	2960	2880
2	---	---	3430	3410	3460	3410	---	---	---	---	3000	2950
3	---	---	3430	3410	3470	3420	---	---	---	---	3030	2990
4	---	---	3430	3410	3480	3460	---	---	3400	3300	3100	3020
5	---	---	3430	3410	3490	3410	---	---	3420	3390	3170	3100
6	---	---	3430	3400	---	---	---	---	3440	3390	3230	3170
7	---	---	3420	3400	---	---	---	---	3390	3370	3250	3180
8	---	---	3420	3400	---	---	---	---	3380	3370	3180	3070
9	---	---	3420	3400	---	---	---	---	3380	3360	3110	3040
10	---	---	3410	3390	---	---	---	---	3360	3300	3110	3060
11	3440	3420	3410	3390	---	---	---	---	3310	3230	3100	3070
12	3450	3420	3410	3380	---	---	---	---	3240	3110	3110	3090
13	3450	3420	3410	3380	---	---	---	---	3110	3000	3140	3100
14	3450	3300	3400	3380	---	---	---	---	3060	3030	3160	3130
15	3450	3340	3400	3340	---	---	---	---	3070	3030	3160	3140
16	3450	3430	3390	3340	---	---	---	---	3080	3030	3170	3130
17	3450	3390	3370	3320	---	---	---	---	3090	3040	3170	3120
18	3480	3340	3370	3330	---	---	---	---	3080	3040	3150	3130
19	3460	3320	3370	3350	---	---	---	---	3070	3000	3160	3140
20	3450	3250	3390	3350	---	---	---	---	3010	2950	3160	3140
21	3450	3430	3400	3370	---	---	---	---	2950	2910	3150	3120
22	3450	3430	3410	3320	---	---	---	---	2990	2940	3150	3120
23	3460	3430	3430	3230	---	---	---	---	3020	2980	3140	3110
24	3450	3430	3430	3400	---	---	---	---	2990	2950	3130	3100
25	3450	3430	3440	3390	---	---	---	---	2950	2860	3120	3090
26	3450	3430	3430	3410	---	---	---	---	2850	2790	3120	3090
27	3450	3430	3440	3410	---	---	---	---	2850	2780	3120	3100
28	3450	3430	3440	3420	---	---	---	---	2880	2830	3120	3080
29	3450	3430	3450	3430	---	---	---	---	---	---	3120	3090
30	3440	3420	3450	3430	---	---	---	---	---	---	3110	3090
31	3440	3420	---	---	---	---	---	---	---	---	3120	3080
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	3120	3090	3170	3150	---	---	---	---	---	---	---	---
2	3120	3100	3170	3140	---	---	---	---	1370	1180	---	---
3	3130	3100	---	---	---	---	---	---	---	---	---	---
4	3130	3090	---	---	---	---	---	---	---	---	---	---
5	3140	3100	---	---	---	---	---	---	---	---	---	---
6	3140	3100	---	---	1140	584	---	---	---	---	---	---
7	3140	3120	---	---	2590	1610	---	---	---	---	---	---
8	3130	3100	---	---	---	---	---	---	---	---	---	---
9	3130	3110	---	---	---	---	---	---	---	---	---	---
10	3120	3090	---	---	---	---	---	---	---	---	---	---
11	3120	3090	---	---	---	---	---	---	---	---	---	---
12	3110	3100	---	---	---	---	---	---	---	---	---	---
13	3110	3050	---	---	---	---	---	---	---	---	---	---
14	3090	3040	---	---	---	---	---	---	---	---	---	---
15	3100	3060	---	---	---	---	---	---	---	---	---	---
16	3090	3050	---	---	---	---	---	---	---	---	---	---
17	3090	3060	---	---	---	---	---	---	---	---	---	---
18	3090	3060	---	---	---	---	---	---	---	---	---	---
19	3090	3060	---	---	---	---	---	---	---	---	---	---
20	3090	3060	---	---	---	---	---	---	---	---	---	---
21	3110	3070	---	---	---	---	---	---	---	---	---	---
22	3110	3080	---	---	---	---	---	---	---	---	---	---
23	3130	3080	---	---	---	---	---	---	---	---	---	---
24	3140	3100	---	---	---	---	---	---	---	---	---	---
25	3140	3110	---	---	---	---	---	---	---	---	---	---
26	3150	3120	---	---	---	---	---	---	---	---	---	---
27	3170	3140	---	---	---	---	---	---	---	---	---	---
28	3170	3150	---	---	---	---	---	---	---	---	---	---
29	3170	3150	---	---	---	---	---	---	---	---	---	---
30	3160	3150	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	2420	1130	---	---	---	---

07126390 LOCKWOOD CANYON CREEK NEAR THATCHER, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	8.5	6.7	3.0	2.4	1.2	.5	2.2	1.6	6.5	4.8
2	---	---	8.5	7.0	3.0	2.7	1.4	.8	2.1	1.2	6.9	5.1
3	---	---	9.3	7.1	2.9	2.5	1.6	1.1	2.9	.6	6.1	3.5
4	---	---	8.9	7.8	2.9	2.1	1.7	1.2	4.5	3.0	5.1	2.8
5	---	---	7.9	6.5	2.8	1.9	2.1	1.5	3.0	1.5	4.8	2.4
6	---	---	7.3	5.6	2.6	1.7	2.0	1.6	1.4	.1	4.6	2.8
7	---	---	7.2	6.4	2.5	1.6	1.9	1.2	.2	.0	5.9	3.7
8	---	---	7.3	6.3	1.9	1.6	1.3	.6	.3	.0	7.2	4.9
9	---	---	7.3	6.3	2.0	1.7	1.2	.6	.3	.0	8.7	6.7
10	---	---	7.5	6.2	1.8	1.4	1.4	.5	.6	.0	9.6	6.7
11	12.8	10.3	7.6	6.5	1.6	1.3	1.3	.9	1.1	.4	9.4	7.3
12	12.8	10.5	6.9	5.4	1.5	1.2	1.2	.8	1.7	.7	9.9	7.7
13	13.0	10.9	6.7	5.0	1.5	1.4	1.3	.5	1.7	.9	12.0	8.1
14	13.2	11.2	7.2	5.2	1.8	1.5	.7	.5	2.1	1.3	9.9	8.0
15	13.3	11.3	6.4	3.1	1.9	1.7	.7	.4	2.4	1.4	8.9	7.0
16	13.0	10.8	4.0	2.4	1.9	1.7	.8	.5	2.4	1.5	9.4	6.4
17	13.3	10.9	3.7	2.4	1.8	1.6	1.0	.5	2.3	1.8	10.0	7.2
18	13.1	11.3	3.5	3.0	1.7	1.5	1.3	.7	2.8	1.6	9.4	7.2
19	12.7	11.0	3.6	3.2	1.9	1.4	1.4	.8	2.7	2.2	10.5	7.6
20	12.3	10.4	3.4	2.8	2.1	1.9	1.4	.8	2.4	2.2	8.9	6.1
21	12.2	10.4	3.0	2.3	2.0	1.4	1.6	.9	3.1	2.1	7.6	5.0
22	12.3	10.2	3.0	2.3	2.2	1.9	1.9	1.1	3.1	2.2	8.7	5.6
23	11.5	9.8	3.2	2.9	2.3	1.2	1.8	1.3	3.9	2.4	9.2	6.7
24	11.1	9.1	3.2	3.0	3.6	1.6	1.8	1.4	4.4	2.9	10.0	7.0
25	10.5	8.8	3.5	3.1	3.6	2.3	1.5	1.2	5.0	3.3	11.3	7.3
26	10.4	8.5	3.7	3.0	3.2	2.8	1.6	1.2	5.0	3.6	12.1	8.1
27	10.0	8.6	3.5	2.3	2.9	1.5	1.5	.8	5.4	4.3	11.3	8.6
28	9.4	8.1	3.1	2.2	2.8	2.2	1.5	1.2	5.3	4.5	11.9	8.5
29	9.1	7.6	3.5	3.1	2.5	1.6	1.2	.8	---	---	11.7	9.2
30	8.8	7.6	3.3	2.5	2.4	1.3	2.0	.9	---	---	12.6	9.3
31	8.7	6.9	---	---	1.8	1.0	1.9	1.4	---	---	11.8	8.5
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	11.3	9.2	13.1	9.6	---	---	---	---	---	---	---	---
2	11.8	8.9	14.3	11.1	---	---	---	---	21.8	19.9	---	---
3	12.0	9.4	---	---	---	---	---	---	---	---	---	---
4	12.1	9.4	---	---	---	---	---	---	---	---	---	---
5	12.3	8.8	---	---	---	---	---	---	---	---	---	---
6	13.0	9.6	---	---	6.7	4.5	---	---	---	---	---	---
7	14.4	10.3	---	---	16.9	8.6	---	---	---	---	---	---
8	13.6	11.1	---	---	---	---	---	---	---	---	---	---
9	11.7	8.6	---	---	---	---	---	---	---	---	---	---
10	9.8	6.9	---	---	---	---	---	---	---	---	---	---
11	9.7	7.3	---	---	---	---	---	---	---	---	---	---
12	8.5	7.3	---	---	---	---	---	---	---	---	---	---
13	10.8	7.0	---	---	---	---	---	---	---	---	---	---
14	11.4	8.0	---	---	---	---	---	---	---	---	---	---
15	12.7	9.0	---	---	---	---	---	---	---	---	---	---
16	13.9	10.2	---	---	---	---	---	---	---	---	---	---
17	14.3	11.4	---	---	---	---	---	---	---	---	---	---
18	15.3	11.8	---	---	---	---	---	---	---	---	---	---
19	16.1	12.7	---	---	---	---	---	---	---	---	---	---
20	17.0	13.6	---	---	---	---	---	---	---	---	---	---
21	18.1	14.6	---	---	---	---	---	---	---	---	---	---
22	18.1	15.3	---	---	---	---	---	---	---	---	---	---
23	18.6	15.2	---	---	---	---	---	---	---	---	---	---
24	17.9	15.0	---	---	---	---	---	---	---	---	---	---
25	17.9	14.8	---	---	---	---	---	---	---	---	---	---
26	17.7	14.3	---	---	---	---	---	---	---	---	---	---
27	17.6	14.2	---	---	---	---	---	---	---	---	---	---
28	15.5	13.3	---	---	---	---	---	---	---	---	---	---
29	13.6	11.8	---	---	---	---	---	---	---	---	---	---
30	12.0	10.4	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	20.5	20.1	---	---	---	---

07126415 RED ROCK CANYON CREEK AT MOUTH, NEAR THATCHER, CO

LOCATION.--Lat 37°30'54", long 103°43'25", in NW¼SE¼ sec.18, T.29 S., R.56 W., Las Animas County, Hydrologic Unit 11020010, on left bank, 200 ft downstream from Welsh Canyon, 0.3 mi upstream from mouth, and 21 mi east of Thatcher.

DRAINAGE AREA.--48.8 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder, and crest-stage gage. Elevation of gage is 4,510 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records below 10 ft³/s are fair, records between 10 ft³/s, and 300 ft³/s, are poor.

AVERAGE DISCHARGE.--6 years, 0.32 ft³/s; 232 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,530 ft³/s, May 22, 1987, gage height, 10.09 ft, from floodmark, from rating curve extended above 10 ft³/s on the basis of three slope-area measurements of peak flows; no flow most of 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 6	2400	32	6.01	July 31	2215	a*87	*6.41
July 12	1815	27	5.96				

No flow most of time.

a-From rating curve extended above 10 ft³/s on the basis of three slope-area measurements of peak flows.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	5.7	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.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	.37	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	2.1	.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	1.2	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.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	.02	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.0	.00	.00
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	2.47	7.25	5.72	0.00
MEAN	.00	.00	.00	.00	.00	.00	.00	.001	.082	.23	.18	.00
MAX	.00	.00	.00	.00	.00	.00	.00	.02	2.1	6.0	5.7	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	.0	.0	.0	.0	.0	.0	.04	4.9	14	11	.0

CAL YR 1988 TOTAL 78.35 MEAN .21 MAX 35 MIN .00 AC-FT 155
WTR YR 1989 TOTAL 15.46 MEAN .04 MAX 6.0 MIN .00 AC-FT 31

WATER-QUALITY RECORDS

WATER TEMPERATURE: Maximum, 30.5°C Aug 1; minimum, 14.9°C June 6-7.

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

[illegible]

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	2430	601	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	83	83	---	---	---	---	---	---
7	---	---	---	---	247	86	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	139	113	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	2580	2440	---	---	---	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

[illegible]

07126415 RED ROCK CANYON CREEK AT MOUTH, NEAR THATCHER, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIOD OF FLOW DURING THE DAY

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	30.5	19.4	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	14.9	14.9	---	---	---	---	---	---
7	---	---	---	---	21.4	14.9	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	23.1	22.0	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	22.3	20.9	---	---	---	---

ARKANSAS RIVER BASIN

07126470 CHACUACO CREEK AT MOUTH NEAR TIMPAS, CO

LOCATION.--Lat 37°32'38", long 103°37'54", in SE¼SE¼ 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, and crest-stage gage. Elevation of gage is 4,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Aug. 17-19. Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--6 years, 1.18 ft³/s; 855 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)
May 16	2200	416	b6.09	Aug. 17	2000	87	4.61
July 31	1845	333	5.80	Aug. 18	0515	79	4.55
Aug. 12	1115	67	4.46	Sept. 19	2000	194	5.22
Aug. 13	0230	*a2,470	*b10.15	Sept. 20	0315	202	5.26
Aug. 16	1815	1,990	b9.40				

No flow most of time.

a-From rating extended to peak flow on the basis of a slope-area measurement.

b-From floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	1.0	.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	6.0	.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	23	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	308	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00
16	.00	.00	.00	.00	.00	.00	.00	25	.00	.00	86	.00
17	.00	.00	.00	.00	.00	.00	.00	39	.00	.00	16	.00
18	.00	.00	.00	.00	.00	.00	.00	4.5	.00	.00	21	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.58	24
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	60
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.63
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	---	15	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	68.50	6.00	15.00	478.78	84.63
MEAN	.00	.00	.00	.00	.00	.00	.00	2.21	.20	.48	15.4	2.82
MAX	.00	.00	.00	.00	.00	.00	.00	39	6.0	15	308	60
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	.0	.0	.0	.0	.0	.0	136	12	30	950	168
CAL YR 1988	TOTAL	115.30	MEAN	.32	MAX	100	MIN	.00	AC-FT	229		
WTR YR 1989	TOTAL	652.91	MEAN	1.79	MAX	308	MIN	.00	AC-FT	1300		

WATER-QUALITY RECORDS

[illegible]

07126470 CHACAUCO CREEK NEAR MOUTH NEAR TIMPAS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MAXIMUMS AND MINIMUMS ONLY FOR PERIODS OF FLOW DURING THE DAY

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	17.7	12.5	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	30.9	23.4	---	---
13	---	---	---	---	---	---	---	---	24.1	15.0	---	---
14	---	---	---	---	---	---	---	---	31.4	18.4	---	---
15	---	---	---	---	---	---	---	---	32.0	20.2	---	---
16	---	---	8.4	5.0	---	---	---	---	15.5	13.2	---	---
17	---	---	13.9	5.8	---	---	---	---	23.5	14.7	---	---
18	---	---	---	---	---	---	---	---	30.6	18.1	---	---
19	---	---	---	---	---	---	---	---	22.2	19.4	18.4	13.6
20	---	---	---	---	---	---	---	---	---	---	26.5	15.3
21	---	---	---	---	---	---	---	---	---	---	18.0	16.6
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	25.4	17.8	---	---	---	---

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	---	---

07126470 CHACAUCO CREEK NEAR MOUTH NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
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	---	---
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	---	---	6.0	---	5.4
11	.00	---	---	.00	---	---	.00	---	---
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	25	---	515	.00	---	---
17	.00	---	---	39	---	172	.00	---	---
18	.00	---	---	4.5	---	3.0	.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	---	---	68.50	---	---	6.00	---	---

07126470 CHACAUCO CREEK NEAR MOUTH NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
	JULY			AUGUST			SEPTEMBER		
1	.00	---	---	1.0	---	2.6	.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	---	---	23	676	87	.00	---	---
13	.00	---	---	308	4600	8940	.00	---	---
14	.00	---	---	22	820	57	.00	---	---
15	.00	---	---	1.2	213	1.1	.00	---	---
16	.00	---	---	86	1710	2710	.00	---	---
17	.00	---	---	16	1410	118	.00	---	---
18	.00	---	---	21	888	78	.00	---	---
19	.00	---	---	.58	---	.34	24	951	296
20	.00	---	---	.00	---	---	60	1530	427
21	.00	---	---	.00	---	---	.63	---	.31
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	15	1020	226	.00	---	---	---	---	---
TOTAL	15.00	---	---	478.78	---	---	84.63	---	---
YEAR	653			13638.8					

ARKANSAS RIVER BASIN

07126480 BENT CANYON CREEK AT MOUTH NEAR TIMPAS, CO

LOCATION.-- Lat 37°35'19", long 103°38'51", in SE4SE4 sec.23, T.28 S., R.65 W., Las Animas County, Hydrologic Unit 11020010, on left bank 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.--56.2 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder, and crest-stage gage. Elevation of gage is 4,402 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: May 16-18. Records fair. This stream flows only from storm events.

AVERAGE DISCHARGE.--6 Years, 0.16 ft³/s; 116 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,640 ft³/s, Aug. 21, 1984, gage height, 12.56 ft, from floodmark, result of slope-area measurement of peak flow; no flow most of time.

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)
June 29	1630	*1.2	*2.90				

No flow most of time.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.02	.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	.02	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.02	.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	.01
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	.02	.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	0.02	0.02	0.04	0.00	0.01
MEAN	.00	.00	.00	.00	.00	.00	.00	.001	.001	.001	.00	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.02	.02	.02	.00	.01
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	.0	.0	.0	.0	.0	.0	.04	.04	.08	.0	.02

CAL YR 1988 TOTAL 12.41 MEAN .03 MAX 5.6 MIN .00 AC-FT 25
WTR YR 1989 TOTAL 0.09 MEAN .00 MAX .02 MIN .00 AC-FT .2

07126480 BENT CANYON CREEK NEAR MOUTH NEAR TIMPAS, CO--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1983 to current year.

WATER TEMPERATURE: July 1983 to current year.

SUSPENDED SEDIMENT: May 1983 to current year.

INSTRUMENTATION.--Water-quality monitor since July 1983. Automatic pumping sampler since May 1983.

REMARKS.--Estimated daily load and concentrations: May 16, June, 29, July 12, 14, and Sept. 20. Daily data that are not published are either missing, there was no flow during the day, or of poor quality. The flow did not reach the monitor probes or the sediment intake this year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,640 microsiemens, June 29, 1988; minimum, 109 microsiemens, Aug. 1, 1984.

WATER TEMPERATURE: Maximum, 22.0°C, Aug. 22, 1984, Aug. 22, 1986; minimum, 8.6°C, May 24, 1988.

SEDIMENT CONCENTRATIONS: Maximum daily, 48,700 mg/l July 15, 1984; minimum daily, no flow most of time.

SEDIMENT LOADS: Maximum daily, 21,100 tons Aug. 22, 1984; minimum daily, no flow most of time.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: No flow by probe.

WATER TEMPERATURE: No flow by probe.

SEDIMENT CONCENTRATIONS: Maximum daily, 18 mg/l (est.) July 12; no flow most of time.

SEDIMENT LOADS: Maximum daily, .04 tons (est.) May 16, June 29, July 12; no flow most of time.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	.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	---	---
TOTAL	0.00	---	---	0.00	---	---	0.00	---	---

ARKANSAS RIVER BASIN

07126480 BENT CANYON CREEK NEAR MOUTH NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
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	---	---
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	---	---	.00	---	---
12	.00	---	---	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.00	---	---	.00	---	---	.00	---	---
15	.00	---	---	.00	---	---	.00	---	---
16	.00	---	---	.02	---	.04	.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	---	---	.02	---	.04
30	.00	---	---	.00	---	---	.00	---	---
31	---	---	---	.00	---	---	---	---	---
TOTAL	0.00	---	---	0.02	---	---	0.02	---	---

07126480 BENT CANYON CREEK NEAR MOUTH NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)
	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	.00	---	---	.00	---	---	.00	---	---
8	.00	---	---	.00	---	---	.00	---	---
9	.00	---	---	.00	---	---	.00	---	---
10	.00	---	---	.00	---	---	.00	---	---
11	.00	---	---	.00	---	---	.00	---	---
12	.02	---	.04	.00	---	---	.00	---	---
13	.00	---	---	.00	---	---	.00	---	---
14	.02	---	.02	.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	---	---	.01	---	---
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	0.04	---	---	0.00	---	---	0.01	---	---
YEAR	0.09		0.14						

ARKANSAS RIVER BASIN

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO

LOCATION.--Lat 37°37'10", long 103°35'32" in NE¼SE¼ sec.10, T.28 S., R.55 W., Las Animas County, Hydrologic Unit 11020010, at Rock Crossing, 2.1 mi upstream from Minnie Canyon, 2.4 mi downstream from Beaty Canyon, and 17 mi southeast of Timpas.

DRAINAGE AREA.--2,635 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORD.--WDR CO-87-1: 1984-86 (M).

GAGE.--Water-stage recorder, and crest-stage gage. Elevation of gage is 4,350 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 8 to Feb. 26, and July 6-10. Records good except for estimated daily discharges, which are poor. Diversions upstream from station for irrigation of about 30,000 acres. Peak flows are regulated to some extent by Trinidad Dam, 92 mi upstream.

AVERAGE DISCHARGE.--6 years, 66.5 ft³/s; 48,180 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,280 ft³/s, Aug. 21, 1984, gage height 12.60 ft, from rating curve extended above 3,290 ft³/s; minimum daily, 0.02 ft³/s, July 12, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,770 ft³/s at 0515 Aug. 13, gage height, 11.32 ft; minimum daily, 0.02 ft³/s, July 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	36	40	33	39	68	24	7.4	2.7	18	389	.67
2	34	36	40	35	42	56	24	6.6	2.6	6.9	127	.53
3	33	36	40	36	40	49	23	6.3	2.5	3.6	43	.39
4	32	35	40	37	35	46	23	6.2	2.5	2.5	20	.28
5	32	35	40	39	25	45	23	6.6	2.5	1.6	18	.25
6	31	33	39	40	15	37	23	7.0	8.1	.68	12	43
7	34	33	38	39	17	36	22	7.8	49	.50	8.8	90
8	38	37	36	37	20	38	21	8.2	21	.35	5.8	31
9	41	36	35	34	25	39	20	10	13	.25	4.1	13
10	40	36	35	29	30	38	20	9.5	12	.10	3.0	7.8
11	39	36	37	26	32	38	20	8.2	13	.03	2.3	5.4
12	37	34	40	25	35	41	21	7.9	9.0	.02	88	7.0
13	38	34	48	26	40	38	25	7.6	9.2	112	627	64
14	39	34	45	29	41	32	29	8.5	9.7	49	143	91
15	38	40	40	31	40	29	25	12	10	72	51	41
16	38	43	35	33	38	28	22	18	24	31	95	23
17	39	41	35	34	38	28	21	86	18	12	40	16
18	37	41	35	35	39	27	15	54	10	7.6	22	11
19	37	43	37	36	41	26	12	60	8.0	5.5	9.7	8.6
20	36	45	40	36	43	26	11	54	8.5	6.2	6.5	83
21	36	45	42	35	42	26	12	35	8.3	5.1	6.6	21
22	37	39	36	32	42	26	10	26	7.3	3.3	4.4	51
23	37	37	31	32	43	28	8.7	24	7.0	2.3	3.1	28
24	36	41	31	33	44	28	7.9	17	5.3	1.1	2.4	23
25	36	49	33	33	45	29	7.6	14	3.8	.65	2.1	18
26	36	51	30	34	48	29	7.0	11	4.5	.41	1.1	14
27	36	52	27	34	55	27	6.2	8.2	22	.30	.75	12
28	36	48	23	34	82	27	5.7	6.8	12	.20	.61	10
29	36	43	20	34	---	26	6.1	4.9	9.1	.15	.49	9.7
30	36	42	25	34	---	27	7.5	4.0	8.5	.12	2.1	9.2
31	36	---	30	33	---	25	---	3.0	---	3.5	.99	---
TOTAL	1124	1191	1103	1038	1076	1063	502.7	545.7	323.1	346.96	1739.84	732.82
MEAN	36.3	39.7	35.6	33.5	38.4	34.3	16.8	17.6	10.8	11.2	56.1	24.4
MAX	41	52	48	40	52	58	29	86	49	112	627	91
MIN	31	33	20	25	15	25	5.7	3.0	2.5	.02	.49	.25
AC-FT	2230	2360	2190	2060	2130	2110	997	1080	641	688	3450	1450

CAL YR 1988 TOTAL 22222 MEAN 60.7 MAX 1220 MIN 13 AC-FT 44080
WTR YR 1989 TOTAL 10786.12 MEAN 29.6 MAX 627 MIN .02 AC-FT 21390

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.--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 maximum and minimum specific conductance data available in district office.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 5,260 microsiemens July 12, 1989; minimum, 212 microsiemens July 14, 1989.

WATER TEMPERATURE: Maximum, 35.8°C July 5, 1989; 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, 1988, and Feb. 10, 1989.

SEDIMENT LOADS: Maximum daily, 152,000 tons May 23, 1985; minimum daily, 0.0 tons (estimated) July 11-12, 1989.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,260 microsiemens July 12; minimum, 212 microsiemens July 14.

WATER TEMPERATURE: Maximum, 35.8°C July 5; minimum, 0.0°C many days during the winter months.

SEDIMENT CONCENTRATION: Maximum daily, 23,700 mg/l Aug. 2; minimum daily, 5 mg/l Feb. 10.

SEDIMENT LOAD: Maximum daily, 21,200 tons Aug. 13; minimum daily, 0.0 tons July 11-12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 CA CO3)	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 23...	1225	40	3450	--	4.5	11.8	1500	290	200	250	3	4.5
MAR 10...	1430	38	3090	8.2	17.0	9.4	1400	260	190	230	3	5.1
APR 20...	1600	12	3500	8.3	25.0	7.4	1700	300	220	300	3	5.9
JUL 13...	1700	59	452	7.2	27.5	5.8	170	43	15	23	0.8	5.0
AUG 02...	1945	91	2140	7.9	26.5	6.2	1000	240	100	160	2	7.4

DATE	ALKA- LITY LAB (MG/L AS CA 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 AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 23...	194	1900	37	0.40	6.8	3110	2810	4.23	336	--	0.11
MAR 10...	176	1700	37	0.40	6.4	2860	2530	3.89	293	--	<0.10
APR 20...	161	2100	48	0.40	5.0	3410	3080	4.64	110	--	<0.10
JUL 13...	97	150	5.7	0.20	5.4	341	307	0.46	54.3	3520	0.44
AUG 02...	135	1200	14	0.50	9.1	1920	1820	2.61	472	31700	0.74

DATE	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	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 23...	<0.01	--	--	--	--	30	--	--	20	--	--
MAR 10...	<0.01	--	--	--	--	30	--	--	60	--	--
APR 20...	<0.01	--	--	--	--	20	--	--	50	--	--
JUL 13...	0.02	2	1	48	44000	13	42	740	<1	190	<0.01
AUG 02...	0.02	2	3	680	590000	30	2	14000	<10	2500	0.01

ARKANSAS RIVER BASIN

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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					
19...	1515	37	49	4.9	--
NOV					
23...	1225	40	23	2.5	--
DEC					
23...	1105	22	48	2.8	--
FEB					
10...	1235	30	5	0.40	--
MAR					
10...	1430	38	65	6.7	--
APR					
18...	1735	14	66	2.5	--
20...	1600	12	55	1.8	--
MAY					
24...	1055	16	123	5.3	--
JUN					
09...	0950	14	62	2.3	--
15...	0945	10	154	4.2	--
JUL					
13...	1550	69	2330	434	100
13...	1820	54	1600	233	--
19...	1135	6.0	113	1.8	--
AUG					
02...	1820	91	32500	7980	100
02...	2025	80	31100	6720	100
08...	1140	6.0	153	2.5	--
18...	1220	20	178	9.6	--
18...	1245	28	191	14	--
SEP					
15...	1405	37	3540	354	100

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2730	3300	3370	3790	3310	3410	3540	3510	4340	4010	---	2820
2	2620	3280	3480	3710	3380	3440	3560	3550	4340	4190	---	2930
3	2720	3280	3530	3840	3550	3170	3570	3590	4270	4150	2240	3110
4	2770	3290	3540	3620	3670	2630	3530	3600	4220	4110	2090	3240
5	2780	3320	3460	3570	3740	2570	3470	3610	4200	4190	1990	3180
6	2780	3320	3470	3690	3640	2420	3450	3630	4190	---	1930	2960
7	2800	3300	3430	3660	3670	2700	3490	3690	3990	---	1930	3180
8	2800	3290	3430	3670	3690	2800	3500	3780	3300	---	2130	3590
9	2800	3290	3470	3640	3670	2880	3470	3830	1970	---	2580	3330
10	2830	3300	3450	3430	3670	2930	3430	3910	2360	---	2560	3040
11	2840	3340	3470	3390	3660	3070	3400	4050	2920	5120	2530	3130
12	2870	3320	3470	3400	3530	3170	3360	4070	3180	5070	2490	3210
13	2870	3420	3460	3480	3590	3200	3350	4060	2550	1780	720	2830
14	2940	3450	3470	3440	3570	3170	3400	4060	2970	492	848	2160
15	2890	3240	3530	3540	3310	3130	3420	4100	3740	686	1170	2120
16	2900	3130	3470	3610	3240	3150	3440	3980	3630	1190	1060	2920
17	2960	3160	3470	3680	3170	3210	3440	2240	4310	1340	417	2060
18	2990	3170	3550	3750	3130	3220	3460	2320	4580	973	826	1900
19	3090	3170	3470	3730	3030	3230	---	3870	4110	929	1330	2010
20	3150	3180	3490	3540	3110	3150	---	3890	3680	945	1360	1330
21	3160	3200	3460	3430	3220	3180	3540	3620	3520	996	1250	1430
22	3200	3190	3510	3480	3170	3250	3590	3700	3640	1040	1520	1130
23	3220	3230	3510	3420	3230	3380	3630	3550	3610	1090	1830	1810
24	3220	3340	3580	3300	3220	3590	3640	3770	3640	1140	1700	2300
25	3240	3370	3550	3290	3230	3960	3620	4420	3650	1230	1810	2670
26	3220	3300	3610	3250	3170	3850	3630	4550	3700	1310	2000	3100
27	3220	3330	3690	3290	3120	3570	3680	4200	3820	1400	2440	3170
28	3260	3420	3790	3290	3210	3570	3670	4200	3930	1520	2570	3150
29	3280	3410	3920	3360	---	3620	3640	4280	3790	1650	2580	3190
30	3310	3350	3870	3280	---	3560	3560	4340	3790	1760	2420	3170
31	3310	---	3780	3300	---	3540	---	4370	---	1880	2480	---
MEAN	2990	3290	3540	3510	3390	3220	---	3820	3660	---	---	2670
MAX	3310	3450	3920	3840	3740	3960	---	4550	4580	---	---	3590
MIN	2620	3130	3370	3250	3030	2420	---	2240	1970	---	---	1130

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.6	13.4	13.7	8.1	4.2	.2	.2	.0	4.3	1.2	10.6	4.5
2	18.5	11.3	13.8	8.5	5.0	.4	.2	.0	.9	.0	10.7	5.9
3	19.9	13.4	13.9	8.6	4.2	.2	.4	.0	.0	.0	7.9	.6
4	15.8	11.5	12.2	9.1	3.7	.0	.4	.0	.0	.0	2.4	.1
5	16.2	10.7	11.2	7.1	3.6	.0	2.0	.0	.0	.0	2.7	.1
6	13.7	11.6	11.8	5.6	3.1	.0	4.0	.0	.0	.0	6.7	.1
7	16.5	11.4	11.1	7.3	.4	.0	1.4	.0	.0	.0	11.5	2.6
8	17.5	11.3	9.5	6.8	.2	.0	.6	.0	.0	.0	14.4	6.5
9	16.2	10.7	11.1	7.0	.3	.0	.1	.0	.0	.0	16.6	8.9
10	16.6	10.5	10.7	7.0	.5	.0	.6	.0	.4	.2	17.5	4.7
11	17.2	10.6	10.3	7.5	.4	.0	.2	.0	.5	.2	16.2	10.5
12	18.1	11.6	9.5	5.1	.5	.0	.2	.0	.7	.2	16.2	10.2
13	17.9	12.1	9.8	5.2	2.1	.0	.1	.0	.9	.2	16.9	10.3
14	17.9	12.1	11.3	6.1	2.9	.0	.2	.0	.9	.2	14.5	9.0
15	18.5	12.6	8.5	1.7	.9	.0	.2	.0	1.5	.2	13.9	6.1
16	18.0	11.5	5.0	.2	.3	.0	.3	.0	2.9	.2	16.1	7.1
17	18.3	12.0	6.0	1.3	.7	.0	.6	.0	1.5	.1	15.8	8.7
18	18.1	12.0	5.3	1.4	1.3	.0	1.0	.0	4.5	.2	13.6	7.4
19	17.4	12.2	5.2	2.2	2.8	.3	1.6	.0	4.3	1.7	13.9	7.8
20	17.4	10.9	3.7	.2	2.8	.0	2.4	.0	4.6	2.4	10.5	4.8
21	17.4	11.2	4.0	.2	2.5	.0	4.2	.0	6.4	1.3	12.4	2.1
22	16.9	11.5	3.9	.2	1.7	.0	4.3	.0	7.9	1.2	15.6	6.8
23	15.9	10.3	5.8	.5	.8	.0	3.9	.0	10.0	2.8	14.4	9.1
24	16.2	10.0	6.4	2.6	.7	.0	2.2	.0	11.2	4.2	14.9	8.4
25	14.3	9.8	4.2	2.9	1.6	.0	.6	.0	12.0	6.0	17.3	8.4
26	15.2	9.0	4.4	1.9	2.0	.0	3.2	.0	12.6	6.5	16.9	9.9
27	13.4	9.8	3.4	.3	.4	.0	.6	.0	11.9	6.3	15.8	9.7
28	11.6	7.6	3.7	.0	.2	.0	.5	.0	7.7	5.3	18.7	9.4
29	11.9	7.2	4.0	.2	.1	.0	2.1	.0	---	---	17.3	10.8
30	13.0	8.1	3.0	.0	.2	.0	5.0	.0	---	---	17.2	10.0
31	13.6	8.0	---	---	.3	.0	7.4	1.1	---	---	17.4	7.4
MONTH	19.9	7.2	13.9	.0	5.0	.0	7.4	.0	12.6	.0	18.7	.1
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	16.5	10.6	19.4	8.0	26.4	16.1	31.3	21.5	---	---	---	---
2	16.7	9.1	22.2	11.8	29.4	15.3	32.6	22.6	---	---	---	---
3	17.3	10.1	20.1	12.5	24.0	16.0	33.4	21.6	---	---	---	---
4	17.8	9.6	19.2	12.2	17.2	13.5	33.6	19.6	---	---	---	---
5	18.4	8.5	23.4	10.9	29.1	11.0	35.8	16.8	---	---	---	---
6	19.8	10.9	25.1	13.2	31.5	15.7	---	---	---	---	---	---
7	20.4	11.9	27.0	15.8	23.4	18.4	---	---	---	---	---	---
8	16.7	11.7	27.8	16.8	24.7	17.7	---	---	---	---	---	---
9	12.3	5.3	21.0	16.8	25.7	17.3	---	---	---	---	---	---
10	13.7	3.3	22.7	14.3	25.8	17.6	---	---	---	---	---	---
11	14.4	7.4	20.4	14.9	27.8	17.9	35.4	17.2	---	---	---	---
12	10.6	7.6	23.0	14.1	25.4	19.2	34.0	20.8	---	---	---	---
13	17.7	7.6	21.3	14.4	25.7	18.2	27.6	20.4	---	---	---	---
14	19.2	9.5	18.6	13.8	24.3	17.3	27.9	17.2	---	---	---	---
15	19.6	10.3	21.4	14.8	28.2	16.8	28.4	20.9	---	---	---	---
16	21.3	12.3	18.6	14.8	27.3	20.4	30.8	22.1	---	---	22.9	14.4
17	19.6	13.1	15.3	8.0	27.4	18.8	30.9	21.9	---	---	23.1	16.0
18	21.4	12.8	21.8	12.6	29.8	19.1	30.1	22.0	---	---	24.2	15.7
19	---	---	23.7	15.9	28.1	20.6	31.0	21.7	---	---	21.9	17.5
20	25.2	---	26.1	17.8	24.7	19.5	30.5	22.1	---	---	22.5	16.5
21	25.7	16.1	27.2	18.2	22.1	16.8	29.9	21.2	---	---	21.8	17.2
22	22.6	16.6	28.1	18.4	19.3	14.4	31.2	20.5	---	---	20.9	16.8
23	22.9	15.0	26.5	18.1	24.4	15.2	30.4	20.5	---	---	20.2	14.0
24	23.9	13.9	24.0	17.3	30.0	16.8	27.2	20.3	---	---	21.8	14.1
25	24.1	14.7	22.7	16.6	29.5	17.6	29.1	19.1	---	---	22.4	15.0
26	21.7	13.7	21.7	15.0	30.9	16.4	28.3	18.9	---	---	22.6	15.7
27	23.0	11.9	24.3	13.7	30.3	20.3	33.3	19.4	---	---	22.4	15.8
28	18.4	11.0	28.0	16.9	28.8	20.8	33.4	19.1	---	---	23.2	16.0
29	16.7	9.5	27.9	16.2	30.2	20.0	35.8	18.6	---	---	23.9	16.8
30	15.5	10.0	27.7	17.3	31.4	20.9	35.2	18.0	---	---	24.5	16.5
31	---	---	27.9	16.3	---	---	34.9	19.9	---	---	---	---
MONTH	---	---	28.1	8.0	31.5	11.0	---	---	---	---	---	---

ARKANSAS RIVER BASIN

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	33	---	12	36	26	2.5	40	---	1.9
2	34	135	12	36	21	2.0	40	---	1.9
3	33	105	9.4	36	---	2.2	40	---	1.9
4	32	---	9.1	35	22	2.1	40	---	1.9
5	32	95	8.2	35	26	2.4	40	---	1.9
6	31	75	6.3	33	---	3.5	39	---	1.9
7	34	---	8.3	33	39	3.5	38	---	1.8
8	38	100	10	37	26	2.6	36	---	2.0
9	41	100	11	36	---	1.7	35	---	2.0
10	40	---	14	36	12	1.2	35	---	2.0
11	39	135	14	36	12	1.2	37	---	2.1
12	37	128	13	34	30	2.8	40	---	2.6
13	38	---	15	34	---	3.4	48	---	3.1
14	39	138	14	34	33	3.0	45	---	2.9
15	38	112	11	40	---	3.2	40	---	2.6
16	38	---	9.8	43	---	3.1	35	---	2.8
17	39	75	7.9	41	24	2.6	35	---	2.8
18	37	76	7.6	41	14	1.5	35	---	2.8
19	37	57	5.7	43	---	2.1	37	---	3.9
20	36	44	4.3	45	24	2.9	40	---	4.2
21	36	44	4.3	45	24	2.9	42	---	5.1
22	37	---	3.8	39	---	2.3	36	---	4.4
23	37	33	3.3	37	20	2.0	31	48	4.0
24	36	32	3.1	41	---	2.0	31	---	4.0
25	36	---	2.8	49	---	2.4	33	---	4.0
26	36	30	2.9	51	---	2.5	30	---	3.2
27	36	33	3.2	52	---	2.5	27	---	2.8
28	36	---	3.4	48	---	2.3	23	---	1.9
29	36	30	2.9	43	---	2.1	20	---	1.6
30	36	24	2.3	42	---	2.0	25	---	2.0
31	36	---	2.6	---	---	---	30	---	2.4
TOTAL	1124	---	237.2	1191	---	72.5	1103	---	84.4
JANUARY			FEBRUARY			MARCH			
1	33	---	2.7	39	---	.63	68	---	9.2
2	35	---	2.6	42	---	.68	56	---	7.6
3	36	---	2.6	40	---	.65	49	---	6.6
4	37	---	2.4	35	---	.57	46	---	6.2
5	39	---	2.2	25	---	.40	45	---	6.1
6	40	---	1.9	15	---	.24	37	---	5.5
7	39	---	1.6	17	---	.28	36	---	5.3
8	37	---	1.2	20	---	.32	38	---	6.2
9	34	---	.83	25	---	.40	39	---	6.3
10	29	---	.47	30	5	.40	38	64	6.6
11	26	---	.42	32	---	.52	38	---	8.6
12	25	---	.40	35	---	.57	41	156	17
13	26	---	.42	40	---	.65	38	132	14
14	29	---	.47	41	---	.66	32	---	5.2
15	31	---	.50	40	---	.65	29	25	2.0
16	33	---	.53	38	---	.62	28	20	1.5
17	34	---	.55	38	---	.62	28	---	1.1
18	35	---	.57	39	---	.63	27	15	1.1
19	36	---	.58	41	---	.66	26	10	.70
20	36	---	.58	43	---	.70	26	---	3.5
21	35	---	.57	42	---	.68	26	75	5.3
22	32	---	.52	42	---	.68	26	60	4.2
23	32	---	.52	43	---	.70	28	---	4.5
24	33	---	.53	44	---	.71	28	65	4.9
25	33	---	.53	45	---	.73	29	60	4.7
26	34	---	.55	48	---	.78	29	---	6.3
27	34	---	.55	55	---	3.0	27	90	6.6
28	34	---	.55	82	---	22	27	85	6.2
29	34	---	.55	---	---	---	26	---	6.0
30	34	---	.55	---	---	---	27	80	5.8
31	33	---	.53	---	---	---	25	75	5.1
TOTAL	1038	---	29.47	1076	---	40.13	1063	---	179.90

07126485 PURGATOIRE RIVER AT ROCK CROSSING NEAR TIMPAS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	---	5.2	7.4	---	.80	2.7	---	.41
2	24	80	5.2	6.6	---	.71	2.6	---	.39
3	23	70	4.4	6.3	---	.68	2.5	---	.32
4	23	---	4.3	6.2	---	.67	2.5	---	.32
5	23	75	4.6	6.6	---	.71	2.5	---	.32
6	23	---	4.6	7.0	---	.76	8.1	---	2.0
7	22	---	4.4	7.8	---	.84	49	112	19
8	21	---	4.2	8.2	---	.88	21	50	2.8
9	20	---	3.8	10	100	2.7	13	65	2.3
10	20	---	3.8	9.5	---	2.0	12	---	2.6
11	20	---	3.2	8.2	---	.88	13	---	3.5
12	21	60	3.4	7.9	---	.85	9.0	---	1.9
13	25	---	4.7	7.6	---	.82	9.2	---	2.0
14	29	80	6.3	8.5	---	1.5	9.7	---	2.6
15	25	---	5.4	12	92	3.0	10	154	4.2
16	22	---	4.2	18	---	7.8	24	483	32
17	21	---	4.0	86	1700	469	18	476	25
18	15	60	2.4	54	---	112	10	---	8.1
19	12	---	1.7	60	---	70	8.0	---	6.5
20	11	56	1.7	54	---	44	8.5	---	6.9
21	12	---	1.8	35	---	26	8.3	---	6.7
22	10	56	1.5	26	---	13	7.3	---	3.9
23	8.7	40	.94	24	---	12	7.0	---	3.8
24	7.9	---	.85	17	128	5.9	5.3	---	1.4
25	7.6	---	.82	14	---	3.6	3.8	---	.51
26	7.0	---	.76	11	---	2.4	4.5	63	1.4
27	6.2	---	.67	8.2	---	1.6	22	---	6.5
28	5.7	---	.62	6.8	---	1.2	12	---	2.3
29	6.1	---	.66	4.9	---	.74	9.1	---	1.5
30	7.5	---	.81	4.0	---	.60	8.5	62	1.8
31	---	---	---	3.0	---	.45	---	---	---
TOTAL	502.7	---	90.93	545.7	---	788.09	323.1	---	152.97
JULY			AUGUST			SEPTEMBER			
1	18	---	2.4	389	10900	11200	.67	---	.07
2	6.9	---	.93	127	23700	6570	.53	---	.06
3	3.6	---	.49	43	---	813	.39	---	.04
4	2.5	---	.34	20	2000	108	.28	---	.03
5	1.6	---	.22	18	689	33	.25	---	.03
6	.68	---	.09	12	---	13	43	16500	4340
7	.50	---	.07	8.8	---	4.8	90	---	5950
8	.35	---	.05	5.8	153	2.4	31	1300	109
9	.25	---	.03	4.1	---	1.1	13	---	18
10	.10	---	.01	3.0	---	.57	7.8	---	4.2
11	.03	---	.00	2.3	---	.31	5.4	---	2.2
12	.02	---	.00	88	1750	1000	7.0	---	1.9
13	112	3240	1560	627	7050	21200	64	10900	3800
14	49	1930	522	143	1860	710	91	13700	3850
15	72	1330	386	51	1500	206	41	3540	392
16	31	400	33	95	2400	2470	23	950	59
17	12	---	5.3	40	1350	146	16	---	8.6
18	7.6	---	2.7	22	202	12	11	---	3.0
19	5.5	113	1.7	9.7	---	3.1	8.6	---	1.2
20	6.2	---	1.7	6.5	---	2.1	83	2300	711
21	5.1	---	1.1	6.6	---	2.1	21	500	28
22	3.3	---	.53	4.4	---	1.4	51	---	120
23	2.3	---	.31	3.1	---	.67	28	400	30
24	1.1	---	.15	2.4	---	.52	23	280	17
25	.65	---	.09	2.1	---	.45	18	---	12
26	.41	---	.06	1.1	---	.12	14	250	9.4
27	.30	---	.04	.75	---	.08	12	---	7.9
28	.20	---	.03	.61	---	.06	10	---	6.3
29	.15	---	.02	.49	---	.05	9.7	---	5.8
30	.12	---	.02	2.1	---	.23	9.2	---	5.2
31	3.5	154	62	.99	---	.11	---	---	---
TOTAL	346.96	---	2581.38	1739.84	---	44501.17	732.82	---	19491.93
YEAR	10786		68250.1						

ARKANSAS RIVER BASIN

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. 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 during water year 1988. Records fair. Estimated daily discharges, current year, Oct. 1-3, Jan. 9-14, 25-27, Feb. 4-10, and Apr. 27 to May 11. 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; 12 years (water years 1977-88), 82.4 ft³/s; 59,700 acre-ft/yr; 13 years (water years 1977-89), 78.2 ft³/s; 56,660 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 WATER YEAR 1988.--Maximum discharge, 2,450 ft³/s at 1845 May 21, gage height, 5.14 ft; minimum daily, 6.7 ft³/s, Nov. 3.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,610 ft³/s at 0615 July 14, gage height, 5.59 ft; no flow, Aug. 26 to Sept. 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	30	21	35	45	40	23	36	221	500	26	60
2	28	22	26	53	51	40	58	51	177	403	33	51
3	17	6.7	35	37	92	40	45	53	181	167	35	30
4	16	11	38	34	64	48	46	41	182	115	27	31
5	18	19	33	41	55	54	101	68	146	81	43	38
6	16	21	36	48	51	53	214	67	137	71	44	43
7	17	21	34	37	48	51	236	135	114	41	60	33
8	14	21	34	45	58	51	174	119	104	108	101	27
9	13	21	32	65	78	51	138	37	86	171	202	23
10	15	22	32	57	75	44	115	31	67	467	440	21
11	16	24	30	40	60	32	95	27	67	430	250	20
12	19	26	30	34	87	33	82	46	63	495	130	16
13	42	31	30	28	70	36	70	43	59	99	100	18
14	36	32	22	26	75	25	65	44	62	67	116	65
15	20	32	15	26	88	22	42	47	80	37	87	73
16	29	34	23	26	89	21	36	52	115	29	84	70
17	39	32	29	26	80	21	57	51	124	40	92	66
18	31	32	21	26	83	30	37	46	109	48	84	57
19	46	32	33	24	60	31	50	50	104	63	102	49
20	45	33	40	23	71	22	83	130	87	129	111	47
21	22	32	33	32	67	22	112	1620	97	104	95	59
22	19	34	43	34	69	24	82	1040	85	81	74	59
23	18	34	44	34	67	23	54	725	89	76	55	64
24	18	30	33	24	67	20	40	696	70	65	41	126
25	18	32	28	28	62	33	38	611	59	60	39	235
26	20	32	27	38	60	62	33	515	58	45	72	96
27	21	32	28	34	53	54	29	453	78	143	71	64
28	21	32	31	31	40	18	24	439	102	119	49	45
29	21	32	37	34	40	17	21	394	86	71	32	40
30	18	25	53	39	---	13	20	330	186	40	35	37
31	18	---	35	45	---	17	---	272	---	32	52	---
TOTAL	718	817.7	986	1104	1905	1048	2220	8269	3195	4397	2782	1663
MEAN	23.2	27.3	31.8	35.6	65.7	33.8	74.0	267	106	142	89.7	55.4
MAX	46	34	53	65	92	62	236	1620	221	500	440	235
MIN	13	6.7	15	23	40	13	20	27	58	29	26	16
AC-FT	1420	1620	1960	2190	3780	2080	4400	16400	6340	8720	5520	3300
CAL YR 1987	TOTAL 41442.5		MEAN 114	MAX 2410	MIN 6.3	AC-FT 82200						
WTR YR 1988	TOTAL 29104.7		MEAN 79.5	MAX 1620	MIN 6.7	AC-FT 57730						

333

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	51	28	13	32	81	21	8.3	9.0	43	285	.00
2	44	50	26	14	38	50	24	8.3	8.2	39	118	.00
3	48	50	26	17	23	41	17	8.8	5.6	24	39	.00
4	46	49	27	17	16	58	17	8.7	5.1	24	34	.00
5	42	45	26	18	14	46	17	9.5	3.5	18	28	.00
6	40	43	24	39	14	61	20	9.9	42	16	31	.00
7	40	38	19	22	12	28	16	11	8.4	12	24	28
8	44	40	18	16	16	33	14	11	22	11	17	26
9	49	38	20	10	20	41	13	12	26	8.7	11	17
10	48	32	21	14	26	40	15	12	19	6.5	6.7	11
11	45	32	21	12	30	28	18	11	20	5.8	6.2	7.4
12	44	32	22	10	42	28	17	7.9	14	5.4	17	9.0
13	43	32	36	9.0	36	30	20	10	13	49	423	9.4
14	42	32	14	14	37	24	23	7.4	14	326	84	35
15	41	34	8.6	21	55	21	18	15	14	26	52	35
16	40	36	18	19	48	23	19	28	22	32	38	33
17	49	38	30	32	47	22	16	59	32	13	82	22
18	44	38	22	35	65	18	13	34	19	11	21	16
19	44	39	7.2	34	45	19	9.7	35	12	20	28	12
20	39	40	8.4	33	48	17	8.7	27	9.0	12	14	29
21	40	40	5.3	36	38	17	7.4	29	9.4	6.4	11	1.2
22	48	39	9.2	32	43	21	7.5	26	5.6	3.3	11	4.2
23	45	36	18	36	51	26	6.2	23	4.1	3.0	6.8	21
24	40	32	11	37	47	27	5.1	17	4.1	58	1.7	25
25	42	28	15	30	46	29	4.9	14	4.1	61	.14	21
26	47	32	24	24	55	27	4.4	11	4.1	33	.00	16
27	47	34	19	28	57	15	4.4	10	3.9	18	.00	13
28	46	41	6.8	33	73	21	7.5	6.9	4.1	12	.00	13
29	48	30	17	24	---	25	7.7	5.1	4.5	11	.00	13
30	48	28	11	45	---	21	7.7	7.2	18	9.2	.00	14
31	52	---	11	28	---	21	---	7.7	---	9.2	.00	---
TOTAL	1383	1129	569.5	752.0	1074	959	399.2	490.7	379.7	926.5	1389.54	431.20
MEAN	44.6	37.6	18.4	24.3	38.4	30.9	13.3	15.8	12.7	29.9	44.8	14.4
MAX	52	51	36	45	73	81	24	59	42	326	423	35
MIN	39	28	5.3	9.0	12	15	4.4	5.1	3.5	3.0	.00	.00
AC-FT	2740	2240	1130	1490	2130	1900	792	973	753	1840	2760	855
CAL YR 1988	TOTAL 29664.5											
WTR YR 1989	TOTAL 9883.34											
			MEAN 81.1	MAX 1620	MIN 5.3		AC-FT 58840					
			MEAN 27.1	MAX 423	MIN .00		AC-FT 19600					

ARKANSAS RIVER BASIN

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. 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: Dec. 9-19, Dec. 24 to Jan. 30, and Feb. 2-21. Records good except for estimated daily discharges, which are fair. Flow regulated to some extent since January 1975 by Trinidad Lake near Trinidad, upstream. Diversions 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; 12 years (water years 1978-89), 71.1 ft³/s; 51,510 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, 1,520 ft³/s at 2330 May 16, gage height, 6.69 ft; minimum daily, 1.8 ft³/s, Sept. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	19	43	30	33	60	10	6.1	3.5	15	17	2.6
2	29	28	43	32	25	77	9.4	6.2	3.5	7.2	157	2.3
3	14	23	41	33	15	57	7.8	5.9	17	5.4	70	1.9
4	26	38	36	37	10	38	8.8	5.4	18	4.9	9.3	1.9
5	20	26	39	43	10	32	9.0	5.3	11	5.4	4.6	2.5
6	23	26	39	42	10	47	8.4	5.4	7.6	3.5	4.0	1.8
7	29	21	39	34	12	57	6.7	5.3	4.0	4.9	4.3	1.9
8	30	18	36	19	15	41	5.8	4.8	3.8	4.1	4.0	2.6
9	28	18	25	20	25	35	6.3	5.0	6.9	3.5	4.6	2.8
10	31	26	27	27	30	34	7.5	6.2	8.8	3.0	4.4	2.6
11	32	37	30	25	34	35	7.6	5.9	3.9	2.7	3.7	3.5
12	27	37	32	20	35	31	6.7	6.6	5.4	3.1	4.0	3.9
13	21	34	40	16	35	32	6.8	6.7	12	3.3	212	7.2
14	17	23	48	23	30	32	6.7	8.3	7.9	177	263	4.1
15	17	24	35	25	33	47	6.0	16	5.6	147	69	4.0
16	17	35	30	30	40	65	6.2	122	5.3	15	19	5.8
17	17	29	33	30	32	37	5.7	339	5.1	7.3	13	2.7
18	15	30	42	30	30	29	5.7	93	6.7	7.4	45	2.0
19	16	36	37	30	32	17	5.8	62	3.0	5.6	9.6	2.0
20	17	36	44	32	35	18	6.1	29	2.6	4.2	13	3.8
21	27	39	43	33	40	14	5.7	12	2.9	3.9	7.1	3.4
22	15	50	37	33	42	8.3	5.0	13	11	3.4	3.8	15
23	15	49	24	32	44	9.8	5.0	7.4	8.5	3.4	3.4	5.6
24	17	43	24	31	47	8.3	4.8	4.4	3.9	3.4	3.3	2.9
25	25	41	22	32	46	8.6	4.5	3.9	9.2	3.4	3.2	5.3
26	17	41	20	31	43	7.4	5.1	4.4	98	5.3	2.9	3.7
27	17	46	22	27	45	7.7	5.8	4.6	15	3.4	2.4	2.6
28	20	48	16	31	50	8.3	5.7	4.2	8.5	2.7	3.2	2.7
29	18	49	17	33	---	9.4	6.8	3.8	8.4	2.5	4.4	3.0
30	18	50	20	35	---	12	6.0	3.5	9.4	2.8	4.0	2.9
31	16	---	23	38	---	13	---	3.5	---	12	2.9	---
TOTAL	656	1020	1007	934	878	927.8	197.4	808.8	316.4	475.7	971.1	109.0
MEAN	21.2	34.0	32.5	30.1	31.4	29.9	6.58	26.1	10.5	15.3	31.3	3.63
MAX	32	50	48	43	50	77	10	339	98	177	263	15
MIN	14	18	16	16	10	7.4	4.5	3.5	2.6	2.5	2.4	1.8
AC-FT	1300	2020	2000	1850	1740	1840	392	1600	628	944	1930	216
CAL YR 1988	TOTAL	15439.7	MEAN	42.2	MAX	1050	MIN	2.4	AC-FT	30620		
WTR YR 1989	TOTAL	8301.2	MEAN	22.7	MAX	339	MIN	1.8	AC-FT	16470		

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.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 6,320 microsiemens July 31, 1989; minimum, 420 microsiemens Sept. 2, 1986.

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, 6,320 microsiemens July 31; minimum, 510 microsiemens Aug. 13.

WATER TEMPERATURE: Maximum 32.6°C July 6; minimum, 0.0°C many days during winter.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT									
12...	0845	30	3270	8.2	10.5	9.1	--	0.08	0.40
NOV									
08...	1145	18	3780	8.4	9.0	12.8	--	0.09	<0.10
DEC									
06...	1445	40	3790	8.3	3.5	13.1	--	0.09	0.40
JAN									
10...	1445	42	4200	8.2	2.0	12.4	3870	0.12	1.00
FEB									
23...	0915	44	3460	8.3	2.0	11.4	3190	0.09	0.70
MAR									
21...	1240	14	3540	8.2	10.5	12.0	3320	0.06	0.70
APR									
19...	1445	6.4	4950	8.1	25.0	11.9	4760	0.10	<0.10
MAY									
18...	0845	93	1610	8.0	13.0	7.9	1260	0.05	0.20
JUN									
21...	1600	3.2	4030	8.2	22.0	10.7	3550	0.08	<0.10
JUL									
19...	0830	6.5	2690	7.9	20.5	7.2	2260	0.05	<0.10
AUG									
16...	1250	143	1320	8.0	25.5	6.4	970	0.04	<0.40
SEP									
14...	1030	4.6	4110	8.0	12.0	10.2	3740	0.07	0.70

07128500 PURGATOIRE RIVER NEAR LAS ANIMAS, CO--Continued

SPECIFIC CONDUCTANCE, (MICRESIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3190	3750	3550	4230	3680	3440	4460	4870	4780	4220	1530	4330
2	3210	3530	3590	4130	3950	3110	4680	4740	4840	4580	2480	4260
3	3280	3600	3630	4170	4230	3140	4690	4470	3480	4010	1060	4340
4	3140	3360	3620	4260	4560	3400	4790	4820	2600	3940	1550	4320
5	3310	3530	3580	3950	---	3650	4660	5030	3080	3500	2330	4270
6	3360	3550	3700	3740	---	3830	4690	5040	3510	4000	2850	4310
7	3260	3700	3920	3680	---	3660	4740	5080	4510	4090	3120	4180
8	3220	3730	3970	4110	---	3260	4760	5110	4590	4140	3300	3970
9	3270	3860	4070	4210	---	3260	4880	4960	3640	4230	3440	3890
10	3290	3850	4120	4090	---	3200	4640	5030	3440	4020	3530	4270
11	3300	3630	4080	4140	---	3210	4530	5120	4870	4210	3630	4170
12	3300	3550	4100	4190	---	3350	4760	5110	4520	4220	3600	4170
13	3440	3540	3990	4520	---	3390	4910	5090	2480	4160	---	4190
14	3510	3720	3850	4520	---	3440	4910	4830	3190	3530	---	4250
15	3520	3780	3860	4440	3340	3300	4840	3490	3230	787	---	4630
16	3560	3660	3930	4380	3260	2400	4880	2250	3800	1520	1500	4490
17	3570	3670	3970	4170	3270	2990	4760	---	3870	2150	1990	3900
18	3620	3680	3990	4010	3470	3030	4910	---	3640	2390	1500	3910
19	3520	3650	3880	3880	3350	3330	4990	2980	3680	2740	2070	4000
20	3500	3560	3860	3860	3360	3500	5080	3480	4230	3130	1860	4030
21	3280	3540	3850	3860	3380	3520	4990	3990	4110	3430	2830	4290
22	3570	3570	3850	3840	3350	4150	5040	3590	3440	3620	3200	3940
23	3650	3630	3990	3880	3450	4140	5120	3670	2870	3750	3640	3130
24	---	3640	4030	3950	3510	4260	5190	3990	3050	3850	4060	3260
25	3540	3650	4030	3910	3540	4420	5170	4320	3620	3900	4210	3620
26	3620	3660	3980	3910	3480	4450	5070	4500	1520	3740	4280	3980
27	3700	3610	3960	3910	3490	4580	5150	4610	2170	3290	4330	3780
28	3570	3630	4270	3720	3430	4470	4930	4700	3040	3640	4140	3940
29	3580	3610	4370	3670	---	4440	5040	4690	3510	3730	3750	4090
30	3600	3560	4290	3620	---	4320	4890	4700	3870	3980	3910	4230
31	3760	---	4250	3620	---	4230	---	4760	---	4090	4230	---
MEAN	---	3630	3940	4020	---	3640	4870	---	3570	3570	---	4070
MAX	---	3860	4370	4520	---	4580	5190	---	4870	4580	---	4630
MIN	---	3360	3550	3620	---	2400	4460	---	1520	787	---	3130

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	13.1	14.3	7.2	4.7	.1	1.3	.0	5.4	.1	8.0	2.0
2	18.7	11.2	14.0	7.6	5.4	.5	2.0	.0	.2	.1	10.1	5.8
3	21.7	12.2	13.8	8.0	5.2	.6	2.3	.0	.2	.1	7.7	.1
4	14.9	10.3	12.2	8.8	4.4	.1	2.2	.1	.1	.1	3.3	.1
5	11.3	9.2	11.6	6.8	4.2	.1	4.5	.5	.2	.1	4.2	.1
6	11.7	10.0	11.5	5.1	3.9	.1	4.4	.1	.2	.1	6.4	.0
7	14.5	10.1	12.4	7.2	1.6	.5	3.1	.1	.2	.1	9.8	.1
8	17.7	9.8	10.6	7.0	2.8	.1	2.2	.0	.2	.1	14.0	4.7
9	16.7	9.7	12.4	7.9	2.7	.1	2.2	.1	.2	.1	16.5	7.3
10	17.0	9.7	10.8	7.0	1.9	.1	2.4	.1	.1	.0	18.1	8.8
11	17.7	10.2	9.9	7.2	1.8	.1	1.8	.1	.2	.0	17.0	9.9
12	18.6	10.9	10.2	5.4	2.4	.1	1.7	.0	.3	.0	17.3	9.9
13	19.0	11.5	10.3	5.0	4.2	.1	1.5	.0	.3	.1	17.1	10.5
14	18.9	11.4	11.1	5.6	3.4	.1	1.5	.0	1.7	.1	13.9	8.1
15	19.5	12.3	8.5	2.8	2.4	.6	1.3	.0	3.6	.0	13.6	4.9
16	19.0	12.2	5.6	.7	2.8	.1	1.1	.0	2.7	.1	14.3	6.4
17	19.4	11.3	5.0	1.4	2.4	.1	2.2	.0	.2	.1	14.7	8.2
18	18.8	11.1	6.1	.9	3.6	.1	2.5	.0	1.7	.1	13.1	6.9
19	17.2	10.8	6.1	2.6	3.8	.1	2.2	.1	1.3	.1	13.7	6.7
20	17.9	10.0	4.8	.1	4.5	.8	2.9	.1	2.0	.1	8.7	4.0
21	17.3	10.3	4.7	.1	4.6	.1	3.1	.1	3.4	.1	13.4	1.5
22	18.0	10.7	4.7	.3	3.5	.4	2.7	.1	6.8	.1	17.4	4.9
23	16.5	9.6	7.5	1.7	4.0	.1	3.5	.1	9.3	1.7	15.5	7.5
24	---	---	8.6	4.3	3.5	.1	2.1	.4	11.3	3.3	17.4	6.5
25	14.2	---	6.0	4.5	2.9	.1	1.9	.6	13.0	5.2	20.1	7.4
26	16.0	8.0	6.6	3.3	3.3	.1	3.9	.1	11.2	6.1	19.4	7.9
27	14.6	9.0	4.3	.9	1.5	.0	1.4	.0	10.4	4.8	19.1	9.0
28	11.2	7.2	5.0	.1	1.3	.0	.9	.1	6.5	2.3	21.6	8.9
29	11.2	6.4	4.8	1.7	1.1	.0	3.1	.1	---	---	19.9	9.7
30	13.8	7.4	3.3	.1	1.3	.0	4.6	.1	---	---	18.2	8.8
31	14.8	7.5	---	---	1.4	.0	8.2	.6	---	---	18.5	6.2
MONTH	---	---	14.3	.1	5.4	.0	8.2	.0	13.0	.0	21.6	.0

07128500 PURGATOIRE RIVER NEAR LAS ANIMAS, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	19.5	9.1	23.3	6.1	24.0	15.8	32.4	20.2	29.7	21.6	25.8	19.9
2	19.1	8.3	19.5	10.4	26.9	16.1	32.2	21.1	27.5	19.5	29.5	20.9
3	18.8	9.5	21.0	11.8	22.4	15.5	32.2	20.9	30.6	22.3	27.7	20.1
4	17.4	8.7	17.8	11.7	17.3	14.8	31.4	20.0	30.2	20.8	25.4	20.3
5	19.3	6.9	25.8	8.9	25.9	12.0	32.2	19.6	---	---	27.1	20.4
6	22.4	8.8	26.3	10.6	29.2	16.4	32.6	18.8	---	---	27.2	19.9
7	22.6	9.6	28.1	12.4	23.4	17.0	30.5	18.4	---	---	27.5	20.1
8	14.7	8.1	30.1	14.5	25.8	15.3	31.2	18.1	---	---	25.3	18.7
9	7.7	3.6	23.1	15.5	25.0	16.2	30.3	18.1	---	---	23.3	17.3
10	15.5	2.3	24.3	12.0	29.1	15.7	31.6	18.4	---	---	24.8	16.2
11	14.0	5.5	22.5	13.7	28.4	17.1	31.8	18.8	---	---	18.2	12.6
12	15.2	4.8	23.2	13.2	25.8	16.9	26.3	20.5	---	---	12.3	10.8
13	21.4	7.4	23.5	12.2	24.4	17.4	31.1	19.6	---	---	14.4	10.9
14	22.1	7.8	19.7	10.9	24.9	15.2	30.9	19.4	---	---	20.5	6.5
15	22.6	8.0	20.0	9.3	27.6	14.3	27.3	19.1	---	---	23.1	12.8
16	24.5	10.2	16.6	9.3	29.0	17.0	32.0	20.4	28.6	---	26.0	15.3
17	20.1	10.8	13.8	9.3	27.2	16.7	31.4	19.7	30.5	18.9	25.8	16.6
18	23.8	9.5	21.8	13.1	29.6	17.1	30.7	20.3	29.8	21.4	25.8	17.4
19	26.4	10.4	23.8	15.9	29.9	18.8	27.6	20.4	30.7	20.9	23.3	18.7
20	27.7	11.9	26.2	16.5	26.1	18.0	30.3	17.7	31.1	20.8	26.4	19.5
21	27.7	12.8	27.8	16.9	22.2	16.1	29.4	18.5	31.0	20.7	22.3	18.2
22	23.7	13.4	28.4	16.7	22.4	14.4	30.0	18.2	26.9	21.9	23.2	17.4
23	25.6	12.6	28.6	15.7	21.7	14.6	29.5	18.2	29.5	19.9	22.0	15.9
24	26.0	12.1	26.5	16.3	27.0	15.8	29.1	19.1	29.1	21.8	22.3	14.8
25	26.6	12.6	25.7	15.4	29.3	14.3	27.6	19.4	28.7	20.4	24.1	17.2
26	22.9	11.3	21.8	14.2	25.3	13.4	27.3	18.0	28.5	18.9	22.7	16.7
27	23.6	11.2	24.2	12.3	29.3	16.8	30.3	18.3	24.4	20.6	23.2	14.1
28	21.0	9.2	28.4	16.2	30.4	18.8	31.2	19.0	26.2	19.2	24.1	14.3
29	21.9	9.7	27.0	16.9	31.0	18.0	30.5	19.2	28.9	19.8	24.7	15.9
30	12.4	8.4	28.1	17.0	31.4	18.9	29.1	19.3	29.4	20.4	24.6	15.7
31	---	---	26.1	15.1	---	---	28.7	20.4	27.5	19.9	---	---
MONTH	27.7	2.3	30.1	6.1	31.4	12.0	32.6	17.7	---	---	29.5	6.5

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. Monthend contents only prior to November 1943, published in WSP 1311.

GAGE.--Water-stage recorder 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: Jan. 15-16, and Aug. 5-6. 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, 125,000 acre-ft, Mar. 16, 25, elevation, 3,826.59 ft;
minimum contents, 34,600 acre-ft, Sept. 26, elevation, 3,806.05 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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81600	79300	87500	98200	109000	120000	124000	94500	83900	78100	51500	37300
2	81400	79500	88000	98500	110000	121000	123000	93900	83400	77900	50400	37200
3	81200	79700	88300	98900	110000	121000	122000	93400	82900	77400	49400	37100
4	80900	79800	88700	99500	110000	121000	121000	92900	83200	76900	48100	37000
5	80800	79900	89100	100000	110000	122000	120000	92100	83500	76300	46900	37200
6	80700	80000	89300	101000	111000	122000	119000	91400	83400	76000	45700	36900
7	80800	80000	89700	101000	111000	122000	118000	90600	83500	75000	44500	36600
8	80900	80200	90100	101000	111000	123000	116000	88600	83700	73700	43600	36300
9	80900	80300	90400	101000	111000	123000	116000	87100	83800	72200	42700	36000
10	81000	80400	90800	102000	111000	123000	114000	85300	83900	70500	41600	36000
11	81000	80700	91100	102000	112000	124000	113000	83300	84100	69000	40600	35800
12	81000	80700	91500	102000	112000	124000	112000	81500	84100	67600	39800	35700
13	81000	80900	91900	103000	112000	124000	111000	79900	84100	65900	39400	35600
14	81000	81100	92300	103000	113000	125000	110000	78400	84100	64700	39300	35500
15	81000	81200	92700	104000	113000	125000	109000	78000	84000	64400	39000	35400
16	81100	81300	93000	104000	114000	125000	108000	79500	84000	64500	38900	35400
17	80900	81700	93300	104000	114000	125000	107000	82200	83700	64700	38700	35400
18	80800	82200	93700	104000	115000	125000	106000	83700	83500	64600	38600	35400
19	80700	82800	94300	105000	116000	125000	105000	84400	83200	64500	38500	35400
20	80700	83300	94900	105000	116000	125000	104000	84800	82600	64400	38700	35500
21	80700	83700	95300	106000	117000	125000	103000	85200	81700	64100	38700	35400
22	80500	84200	95600	106000	118000	125000	102000	85300	80900	63700	38500	35100
23	80300	84700	96000	106000	118000	125000	101000	85500	80100	63100	38200	34900
24	80200	85000	96200	107000	118000	125000	100000	85400	79400	62500	38000	34800
25	80000	85400	96600	107000	119000	125000	99600	85500	79300	61300	37700	34600
26	79800	85900	96900	107000	119000	125000	98600	85500	79500	59600	37500	34600
27	79600	86200	97100	108000	120000	125000	97700	85600	79100	57900	37400	34600
28	79400	86600	97300	108000	120000	125000	96900	85600	78600	56500	37400	34600
29	79200	86900	97400	108000	---	125000	96000	85500	78700	55100	37500	34600
30	79100	87300	97600	109000	---	125000	95300	84900	78500	53800	37400	3

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 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.--No estimated daily discharges. Records good. 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; 41 years (water years 1949-89), 255 ft³/s; 184,700 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, 1,200 ft³/s at 1000 July 10, gage height, 3.99 ft; minimum daily, 2.2 ft³/s, June 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	6.2	2.8	2.8	3.6	3.2	412	526	286	404	956	87
2	143	7.3	2.8	2.8	3.6	3.2	412	476	286	407	947	86
3	143	7.3	2.8	2.8	3.6	3.2	467	457	286	443	945	84
4	143	7.3	2.8	2.8	3.6	3.2	532	453	121	460	911	83
5	140	7.3	2.8	2.7	3.6	3.2	554	453	3.7	478	857	112
6	110	7.3	2.8	2.8	3.6	3.2	554	457	3.2	441	853	142
7	87	7.3	2.8	2.5	3.6	3.2	584	457	3.2	661	850	150
8	81	6.9	2.8	2.8	3.6	3.2	616	764	3.9	934	843	147
9	81	6.8	2.8	2.5	3.6	3.6	611	1030	3.0	925	837	143
10	81	6.8	2.8	2.5	3.6	3.6	610	1000	2.4	1020	854	145
11	97	6.8	2.8	2.5	3.6	3.6	595	960	2.2	1050	834	143
12	113	6.8	2.8	2.5	3.6	3.6	569	915	29	1010	792	107
13	129	6.8	2.8	2.5	3.6	3.6	538	897	83	1010	613	107
14	137	6.8	2.8	2.5	3.6	3.6	532	893	94	976	473	123
15	137	6.4	2.8	2.5	3.6	64	534	666	85	784	435	111
16	137	6.3	2.6	2.5	3.6	121	547	268	92	661	410	102
17	160	6.3	2.5	2.5	3.6	134	553	189	102	509	410	103
18	175	6.3	2.5	2.5	3.2	134	560	95	102	448	381	102
19	175	6.3	2.6	2.5	3.2	134	560	4.6	192	489	367	102
20	194	6.3	2.8	2.5	3.2	119	560	4.4	289	425	369	102
21	206	6.3	2.8	2.5	3.2	113	560	4.4	386	342	371	121
22	206	6.3	2.5	2.5	3.2	113	542	4.4	450	342	367	136
23	206	5.1	2.5	2.5	3.2	113	529	3.7	448	340	337	137
24	229	3.2	2.5	3.5	3.2	110	540	4.0	443	340	306	137
25	265	3.2	2.5	4.4	3.2	105	547	4.2	444	630	260	99
26	279	3.2	2.7	4.4	3.2	105	544	3.9	498	864	140	54
27	265	3.2	2.8	3.6	3.2	108	542	3.4	327	878	69	42
28	254	8.9	2.8	3.6	3.2	134	540	3.3	252	927	69	42
29	253	8.1	2.8	3.6	---	139	542	65	449	954	69	42
30	254	2.9	2.8	3.6	---	129	542	276	403	945	69	42
31	175	---	2.8	3.6	---	258	---	328	---	955	79	---
TOTAL	5198	186.0	84.5	89.8	96.4	2180.2	16328	11665.3	6168.6	21052	16073	3133
MEAN	168	6.20	2.73	2.90	3.44	70.3	544	376	206	679	518	104
MAX	279	8.9	2.8	4.4	3.6	258	616	1030	498	1050	956	150
MIN	81	2.9	2.5	2.5	3.2	3.2	412	3.3	2.2	340	69	42
AC-FT	10310	369	168	178	191	4320	32390	23140	12240	41760	31880	6210

CAL YR 1988 TOTAL 141587.8 MEAN 387 MAX 1530 MIN 2.5 AC-FT 280900
WTR YR 1989 TOTAL 82254.8 MEAN 225 MAX 1050 MIN 2.2 AC-FT 163200

ARKANSAS RIVER BASIN

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.

REMARKS.--Daily data that are not published are either missing or of poor quality. Daily maximum and minimum specific conductance data 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, 2,970 microsiemens Apr. 27; minimum, 1,930 microsiemens Oct. 28.

WATER TEMPERATURE: Maximum, 27.9°C June 10; minimum, 0.0°C Feb. 3-12.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	OXYGEN, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT								
12...	1410	116	2290	8.3	9.8	--	0.11	<0.10
NOV								
08...	1445	6.9	2440	8.1	13.0	--	0.15	<0.10
DEC								
08...	1145	2.9	2640	7.8	11.6	--	0.39	<0.10
JAN								
11...	1140	2.6	2750	7.7	9.7	2260	0.69	0.20
FEB								
23...	1050	3.3	2800	7.5	10.5	2400	0.70	0.50
MAR								
23...	0810	116	2690	8.5	11.6	2290	0.06	0.60
APR								
20...	0845	555	2690	8.5	11.7	2300	0.06	0.40
MAY								
19...	0900	4.4	2710	8.2	9.6	--	0.11	0.10
JUN								
22...	1415	450	2690	8.4	9.4	2270	0.06	<0.10
JUL								
20...	1030	484	2600	8.2	8.6	2210	0.24	<0.10
AUG								
17...	1110	411	2160	8.3	8.7	1800	<0.19	<0.10
SEP								
14...	1210	123	2080	8.4	10.2	1670	0.15	<0.10

07130500 ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, CO--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2200	2120	2480	2690	2780	2790	2590	2870	2390	2650	2210	2010
2	2190	2160	2480	---	2800	2810	2590	2870	2380	2680	2190	2010
3	2170	2190	2480	---	2910	2820	2600	2860	2360	2710	2160	2020
4	2140	2220	2490	---	---	2840	2600	2800	2360	2740	2140	2030
5	2140	2240	2490	---	---	2830	2600	2760	2420	2730	2150	2040
6	2150	2260	2500	2550	---	2800	2610	2730	2480	2710	2190	2060
7	2160	2310	2500	2580	---	2750	2620	2700	2540	2680	2280	2080
8	2170	2340	2490	2580	---	2810	2630	2640	2550	2650	2310	2100
9	2200	2350	2530	2590	---	2800	2630	2680	2560	2700	2320	2110
10	2210	2360	2530	2600	---	2810	2630	2690	2630	2710	2330	2120
11	2210	2370	2530	2610	---	2810	2640	2690	2630	2690	2330	2070
12	2250	2380	2550	2640	---	2810	2650	2720	2570	2670	2310	2070
13	2240	2380	2530	2700	---	2810	2670	2700	2550	2640	2270	2080
14	2240	2380	2540	2720	2760	2810	2670	2700	2570	2600	2260	2060
15	2240	2380	2520	2720	2750	2750	2680	2670	2580	2180	2250	2030
16	2240	2370	2540	2720	2780	2610	2690	2660	2590	2080	2230	2070
17	2240	2380	2570	2720	2780	2610	2680	2650	2610	2040	2250	2110
18	2240	2380	2560	2710	2800	2610	2620	2670	2610	2080	2230	2140
19	2230	2390	2530	---	2760	2610	2610	2620	2590	2560	2140	2160
20	2210	2390	2560	---	2750	2600	2620	2700	2560	2590	2080	2190
21	2210	2400	2530	---	2740	2600	2670	2710	2540	2620	2070	2190
22	2210	2400	2560	2700	2740	2600	2730	2720	2570	2640	2060	2180
23	2220	2450	2600	2700	2730	2590	2780	2710	2610	2660	2050	2160
24	2230	2480	2590	2700	2680	2590	2830	2720	2600	2690	2030	2160
25	2230	2500	2600	2710	2740	2600	2870	2720	2600	2590	2000	2160
26	2180	2490	2600	2750	2770	2610	2910	2720	2590	2340	2010	2170
27	2170	2490	2670	2730	2780	2620	2940	2730	2580	2330	2010	2180
28	2070	2500	2680	2730	2790	2610	2940	2740	2590	2330	2000	2200
29	2140	2470	2710	2760	---	2620	2880	2650	2600	2320	2020	2210
30	2060	2470	2690	2760	---	2610	2850	2490	2630	2280	2020	2220
31	2100	---	2680	2770	---	2600	---	2420	---	2240	2010	---
MEAN	2190	2370	2560	---	---	2700	2700	2700	2550	2520	2160	2110
MAX	2250	2500	2710	---	---	2840	2940	2870	2630	2740	2330	2220
MIN	2060	2120	2480	---	---	2590	2590	2420	2360	2040	2000	2010

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	17.3	16.3	14.4	9.3	5.0	.9	1.6	.2	4.5	1.0	6.9	3.5
2	17.1	16.1	14.3	10.6	5.0	1.0	---	---	1.3	.1	8.0	5.4
3	17.0	16.0	14.0	11.1	4.2	1.5	---	---	1.0	.0	6.6	2.9
4	16.0	15.3	13.6	11.3	4.1	1.3	---	---	.5	.0	3.6	.9
5	15.2	14.7	12.2	9.9	4.2	.4	4.3	---	.0	.0	5.5	1.0
6	14.8	14.3	13.1	9.6	3.9	.2	4.7	3.9	.0	.0	5.0	1.0
7	14.7	14.1	11.5	9.0	2.7	1.6	4.7	3.9	.0	.0	8.5	1.3
8	15.3	13.7	11.1	9.2	3.9	1.0	4.7	2.5	.0	.0	10.6	3.3
9	14.6	13.2	11.3	8.7	3.7	1.2	4.7	2.4	.0	.0	14.9	5.0
10	14.2	12.8	9.9	7.7	3.8	1.6	4.7	2.4	.0	.0	14.5	6.5
11	14.8	13.4	9.8	8.0	3.5	2.0	4.7	2.4	.0	.0	14.4	7.7
12	14.7	13.5	9.8	6.5	3.2	1.6	4.7	2.2	.9	.0	13.1	7.7
13	14.8	13.5	10.1	6.8	4.4	1.4	2.9	2.0	2.3	.2	15.0	9.1
14	14.6	13.7	11.4	7.9	4.2	2.1	2.2	2.0	3.2	.4	11.2	7.8
15	14.2	13.2	9.2	6.4	3.6	1.5	2.2	2.0	4.1	.1	8.2	5.1
16	14.2	12.9	8.9	5.6	3.1	.9	2.2	2.0	4.5	.6	5.9	4.6
17	15.0	13.1	8.2	6.0	3.2	.9	2.2	2.0	3.9	.7	5.9	4.8
18	15.1	14.3	8.1	5.0	3.1	1.2	2.0	1.4	3.5	2.3	6.3	4.8
19	14.9	14.1	6.8	5.2	4.0	2.3	---	---	3.8	1.2	6.1	5.1
20	14.8	14.1	7.5	4.2	4.8	1.8	---	---	4.3	1.0	5.4	4.6
21	14.6	13.9	7.4	4.2	4.4	1.3	---	---	5.8	2.2	6.2	4.3
22	14.5	13.8	7.2	4.1	3.8	1.6	4.0	3.3	7.5	1.5	6.3	5.0
23	14.6	13.9	8.1	4.7	4.0	1.3	4.4	2.2	9.4	2.6	6.0	5.0
24	14.5	13.7	8.1	4.8	3.4	1.4	4.1	3.3	11.7	3.5	6.3	5.0
25	14.3	13.7	5.4	4.7	3.2	1.5	4.4	2.9	12.1	4.9	6.9	5.2
26	14.1	13.5	6.2	3.9	3.9	1.8	5.6	1.7	8.5	5.9	7.6	5.4
27	14.0	13.3	4.1	2.4	2.5	1.1	4.6	1.3	8.4	4.8	7.6	6.3
28	13.5	13.2	5.4	1.0	2.9	1.1	3.8	1.0	5.9	3.7	8.0	6.5
29	13.3	12.8	4.8	2.6	2.4	.9	4.7	1.1	---	---	8.2	6.6
30	13.4	12.7	3.6	.6	2.0	.8	6.5	1.1	---	---	8.4	7.1
31	13.3	10.9	---	---	2.1	.3	6.7	2.4	---	---	8.5	7.1
MONTH	17.3	10.9	14.4	.6	5.0	.2	---	---	12.1	.0	15.0	.9

ARKANSAS RIVER BASIN

07130500 ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	8.3	7.5	14.3	13.5	18.8	18.1	21.4	20.5	24.0	23.4	23.2	22.0
2	8.5	7.7	14.3	13.4	19.0	18.0	21.5	20.5	24.0	23.5	23.7	22.1
3	9.1	8.2	13.8	13.2	18.8	17.9	21.5	20.8	24.4	23.6	24.0	21.9
4	9.3	8.6	14.0	13.3	18.7	16.0	21.7	20.8	24.3	23.5	23.6	22.3
5	9.4	8.7	14.6	13.7	24.8	14.6	22.0	21.1	24.5	23.7	23.8	22.4
6	10.0	8.8	14.4	13.6	26.6	17.3	22.4	21.2	24.4	23.8	23.8	22.3
7	10.0	8.8	14.7	13.7	23.0	18.3	22.2	21.3	23.9	23.4	23.9	22.3
8	9.9	9.1	14.6	13.8	23.8	17.2	22.2	21.6	23.5	23.2	23.0	21.7
9	9.6	9.3	14.9	14.0	23.3	17.2	22.4	21.7	23.3	22.9	22.2	21.2
10	9.4	8.8	15.3	14.2	27.9	16.6	23.2	21.9	23.2	22.7	21.9	20.7
11	9.3	8.7	15.7	15.1	25.6	18.0	23.2	22.4	23.3	22.8	20.8	19.2
12	9.2	8.9	16.3	15.5	21.6	18.4	23.3	22.6	23.2	22.7	19.2	18.2
13	9.6	8.9	16.2	15.8	20.3	18.8	23.5	22.9	23.3	22.8	18.2	17.2
14	10.2	8.9	16.1	15.8	20.2	18.6	23.4	22.8	23.8	23.0	17.2	16.4
15	10.1	9.4	16.2	15.7	20.7	18.3	23.7	23.1	23.7	22.9	17.8	16.2
16	10.3	9.6	16.1	15.4	20.7	18.6	23.6	23.0	23.4	22.8	17.5	16.0
17	10.3	9.6	16.2	15.7	20.6	18.5	23.9	23.0	23.4	22.7	17.2	15.8
18	10.7	9.7	20.7	15.7	21.0	18.8	23.8	23.0	23.8	22.8	17.6	16.0
19	10.7	9.9	21.5	14.5	20.4	19.1	23.7	22.9	23.8	22.8	17.9	16.2
20	11.4	10.1	23.2	16.3	20.4	19.4	23.8	22.9	24.2	23.2	18.5	16.8
21	11.0	10.3	25.9	17.0	20.4	19.8	23.7	22.8	23.9	22.9	18.5	17.6
22	11.5	10.3	25.7	17.7	20.1	19.3	23.6	22.7	23.5	22.8	18.4	17.3
23	11.7	10.9	27.2	16.5	19.7	19.3	23.5	22.6	23.8	22.9	18.0	16.9
24	11.9	11.2	24.3	16.2	20.4	19.3	23.3	22.5	23.4	22.8	17.9	16.5
25	12.3	11.1	23.1	17.1	20.5	19.7	23.5	22.5	23.7	22.5	17.9	16.3
26	14.6	11.5	22.1	15.5	20.4	19.7	23.4	23.0	24.0	22.2	18.1	16.3
27	14.4	13.8	23.3	14.3	20.3	19.7	23.2	22.7	22.7	21.7	18.5	15.8
28	14.8	13.8	25.4	16.5	20.5	19.4	22.9	22.5	23.1	21.6	18.4	15.7
29	14.6	13.9	19.4	16.9	21.0	20.1	24.2	22.5	23.6	21.6	18.5	15.8
30	14.2	13.9	19.0	17.8	21.5	20.1	24.2	23.5	23.6	21.5	18.7	15.9
31	---	---	19.0	18.0	---	---	24.2	23.4	23.4	21.1	---	---
MONTH	14.8	7.5	27.2	13.2	27.9	14.6	24.2	20.5	24.5	21.1	24.0	15.7

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 downstream side of 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; WRD 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. 15-18, Dec. 27 to Jan. 3, 13-17, and Feb. 3-8. Records good except for periods of estimated daily discharges, and those for discharges above 400 ft³/s, which are fair. 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 observations 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, 37 years (water years 1949-55, 1960-89), 112 ft³/s, unadjusted; 81,140 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, 1,450 ft³/s at 1300 July 15, gage height, 8.28 ft; minimum daily, 7.4 ft³/s, Mar. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	13	33	26	30	25	39	57	40	36	865	8.0
2	10	13	33	26	21	25	11	56	51	22	571	7.9
3	10	13	33	26	16	25	21	48	59	17	491	7.8
4	10	13	32	26	15	28	15	48	164	23	455	7.9
5	10	13	32	28	15	29	32	49	88	50	437	8.5
6	12	13	31	28	15	26	55	55	18	97	459	21
7	12	13	30	27	17	24	45	65	16	124	457	34
8	12	13	30	25	20	23	31	129	15	511	445	36
9	11	13	30	25	24	24	33	580	14	552	424	36
10	11	13	31	27	26	27	36	648	15	580	388	39
11	11	13	31	26	31	22	33	671	16	694	423	110
12	12	13	31	22	35	21	37	674	14	637	408	72
13	12	13	30	20	33	22	26	642	14	606	369	38
14	12	13	30	20	31	21	17	644	17	499	77	20
15	13	21	27	22	30	13	14	637	19	734	43	13
16	13	34	26	24	28	21	17	269	17	120	27	12
17	13	33	27	25	27	37	28	303	17	81	14	11
18	14	33	30	25	26	28	36	104	17	141	12	10
19	15	33	31	29	26	28	40	55	18	82	11	12
20	15	33	31	30	26	8.5	38	23	18	53	12	12
21	15	33	30	31	26	7.4	42	21	16	41	11	17
22	15	33	29	33	26	7.5	41	19	32	62	11	12
23	15	33	29	34	25	7.9	33	18	55	49	11	11
24	15	33	29	32	25	7.9	31	17	57	47	11	10
25	14	33	29	32	24	7.8	42	17	56	111	11	9.7
26	14	33	28	33	24	7.8	49	16	57	505	10	9.8
27	14	33	26	33	24	8.0	54	16	132	579	11	9.9
28	14	32	25	34	24	8.2	57	15	77	604	9.6	12
29	14	34	25	33	---	31	57	15	54	577	9.2	11
30	13	36	25	32	---	34	54	18	107	553	8.6	11
31	13	---	26	32	---	31	---	21	---	532	8.1	---
TOTAL	394	702	910	866	690	636.0	1064	5950	1290	9319	6499.5	629.5
MEAN	12.7	23.4	29.4	27.9	24.6	20.5	35.5	192	43.0	301	210	21.0
MAX	15	36	33	34	35	37	57	674	164	734	865	110
MIN	10	13	25	20	15	7.4	11	15	14	17	8.1	7.8
AC-FT	781	1390	1800	1720	1370	1260	2110	11800	2560	18480	12890	1250

CAL YR 1988 TOTAL 56868 MEAN 155 MAX 858 MIN 10 AC-FT 112800
WTR YR 1989 TOTAL 28950.0 MEAN 79.3 MAX 865 MIN 7.4 AC-FT 57420

ARKANSAS RIVER BASIN

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. Elevation of gage is 3,480 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Feb. 5-10. 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 observation of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 233 ft³/s; 168,800 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, 3.2 ft³/s, Sept. 2-4, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 900 ft³/s at 2400 July 15, gage height, 8.20 ft; minimum daily, 3.2 ft³/s, Sept. 2-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	42	113	107	102	98	13	58	7.1	34	543	3.6
2	50	40	118	106	88	99	11	59	8.6	11	487	3.2
3	48	39	117	106	61	99	9.0	55	14	8.2	411	3.2
4	42	35	115	107	58	88	9.2	50	92	7.0	373	3.2
5	44	31	115	110	55	89	8.8	49	180	6.6	352	3.8
6	47	28	112	109	55	91	9.6	22	116	7.9	361	3.7
7	50	32	109	108	55	96	15	7.1	83	23	383	4.5
8	49	36	112	103	58	99	13	4.5	68	120	390	6.2
9	48	38	111	98	65	74	13	112	64	295	390	6.9
10	46	37	111	103	80	38	19	336	62	351	362	9.4
11	47	40	113	105	107	40	10	405	59	452	344	25
12	45	39	112	104	108	39	8.8	442	54	495	360	83
13	44	38	113	99	110	48	7.1	443	55	525	387	86
14	44	36	115	100	108	71	5.8	496	58	454	288	60
15	43	66	112	100	106	72	6.8	530	59	513	158	41
16	42	97	111	101	103	77	7.9	494	56	407	105	34
17	42	114	109	103	101	90	6.9	438	56	173	83	28
18	45	117	109	102	99	88	6.6	347	42	142	57	21
19	45	118	118	101	100	87	6.9	212	9.6	122	39	6.6
20	46	120	119	100	101	87	8.1	149	8.1	84	39	6.2
21	42	119	115	101	101	83	8.1	117	7.1	51	33	6.2
22	46	118	113	101	100	75	9.1	100	6.9	38	32	6.5
23	44	118	110	99	100	69	7.4	88	7.3	36	34	6.5
24	43	118	109	97	100	57	6.0	77	11	28	32	7.7
25	39	117	108	96	99	26	5.7	70	14	20	32	6.7
26	38	120	111	96	98	17	20	68	13	120	29	6.8
27	36	119	107	97	98	16	29	64	16	310	27	5.5
28	38	120	102	108	99	13	29	64	51	378	19	5.2
29	39	120	103	108	---	12	36	59	27	395	5.0	4.7
30	41	121	103	106	---	14	46	30	37	390	4.5	4.1
31	41	---	105	106	---	15	---	12	---	380	3.9	---
TOTAL	1364	2333	3450	3187	2515	1967	391.8	5457.6	1341.7	6376.7	6163.4	498.4
MEAN	44.0	77.8	111	103	89.8	63.5	13.1	176	44.7	206	199	16.6
MAX	50	121	119	110	110	99	46	530	180	525	543	86
MIN	36	28	102	96	55	12	5.7	4.5	6.9	6.6	3.9	3.2
AC-FT	2710	4630	6840	6320	4990	3900	777	10830	2660	12650	12230	989

CAL YR 1988 TOTAL 71423 MEAN 195 MAX 773 MIN 22 AC-FT 141700
WTR YR 1989 TOTAL 35045.6 MEAN 96.0 MAX 543 MIN 3.2 AC-FT 69510

07137000 FRONTIER DITCH NEAR COOLIDGE, KS

LOCATION.--Lat 38°02'18", long 102°02'19", in SW¼SE¼NE¼ 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 good except during days affected by submergence, which are 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 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	33	.00	.00	.00	.00	.00	41	13	34	34	15
2	14	36	.00	.00	.00	.00	.00	36	34	26	42	15
3	18	28	.00	.00	.00	.00	.00	34	21	21	37	14
4	23	26	.00	.00	.00	.00	.00	30	28	19	33	13
5	12	14	.00	.00	.00	.00	.00	11	7.8	15	32	23
6	.21	7.5	.00	.00	.00	.00	24	.08	8.5	21	34	41
7	.01	11	.00	.00	.00	.00	33	.00	13	18	38	45
8	.00	23	.00	.00	.00	.00	35	.00	20	17	36	49
9	.00	28	.00	.00	.00	.00	48	.00	22	40	36	50
10	.00	26	.00	.00	.00	.00	52	.00	20	41	37	48
11	.00	27	.00	.00	.00	.00	51	.00	20	41	46	44
12	.00	27	.00	.00	.00	.00	e50	.00	18	48	50	26
13	.00	25	.00	.00	.00	.00	e50	.00	17	49	28	.00
14	.00	24	.00	.00	.00	.00	e53	.00	18	49	.90	.00
15	.00	15	.00	.00	.00	.00	e58	.31	25	55	.55	.00
16	.00	.59	.00	.00	.00	.00	e60	.35	28	53	.39	.00
17	.00	.36	.00	.00	.00	.00	e55	.24	30	48	.31	.00
18	.00	.16	.00	.00	.00	.00	e48	.00	24	48	.17	.00
19	.00	.01	.00	.00	.00	.00	46	.00	18	47	.02	.00
20	.00	.00	.00	.00	.00	.00	48	.00	13	43	.00	.00
21	.00	.00	.00	.00	.00	.00	47	.00	12	36	.00	.00
22	.00	.00	.00	.00	.00	.00	45	.00	23	28	.00	.00
23	.00	.00	.00	.00	.00	.00	47	8.5	17	24	.00	.00
24	.00	.00	.00	.00	.00	.00	47	18	18	22	.00	.00
25	13	.00	.00	.00	.00	.00	45	17	15	32	.00	9.0
26	29	.00	.00	.00	.00	.00	47	17	14	46	.00	24
27	31	.00	.00	.00	.00	.00	50	16	13	51	.00	21
28	47	.00	.00	.00	.00	.00	49	13	15	42	4.3	18
29	28	.00	.00	.00	---	.00	52	14	21	39	11	22
30	30	.00	.00	.00	---	.00	47	16	30	36	14	24
31	26	---	.00	.00	---	.00	---	13	---	33	16	---
TOTAL	281.02	351.62	0.00	0.00	0.00	0.00	1187.00	285.48	576.3	1122	530.64	501.00
MEAN	9.07	11.7	.00	.00	.00	.00	39.6	9.21	19.2	36.2	17.1	16.7
MAX	47	36	.00	.00	.00	.00	60	41	34	55	50	50
MIN	.00	.00	.00	.00	.00	.00	.00	.00	7.8	15	.00	.00
AC-FT	557	697	.0	.0	.0	.0	2350	566	1140	2230	1050	994

CAL YR 1988 TOTAL 4921.36 MEAN 13.4 MAX 56 MIN .00 AC-FT 9760
WTR YR 1989 TOTAL 4835.06 MEAN 13.2 MAX 60 MIN .00 AC-FT 9590

e Estimated

ARKANSAS RIVER BASIN

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS

LOCATION.--Lat 38°01'34", long 102°00'41", in NW¼NE¼NW¼ 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.

DRAINAGE AREA.--25,410 mi², of which 1,708 mi² is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to October 1903, March to May 1921, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1311.

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.--Records good. 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.--39 years (water years 1951-89), 204 ft³/s; 147,800 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, 1,250 ft³/s, Aug. 13, gage height, 5.49 ft; minimum daily, 44 ft³/s, Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	171	193	191	163	181	112	135	112	137	450	103
2	215	168	193	191	147	184	104	154	131	103	586	97
3	212	162	193	190	95	189	146	133	114	85	511	98
4	216	157	193	190	75	168	139	118	250	79	471	93
5	222	161	195	194	68	162	118	131	441	72	447	90
6	235	159	201	190	78	169	116	142	360	76	439	64
7	235	161	199	189	107	179	95	144	235	82	464	49
8	239	156	197	177	124	180	87	133	175	82	466	44
9	220	160	201	171	146	184	78	126	153	183	463	48
10	211	161	203	172	156	176	110	268	138	312	441	44
11	209	165	203	176	171	174	92	420	130	372	423	74
12	202	168	203	169	193	177	76	478	118	455	559	160
13	194	168	205	165	212	177	68	501	112	497	965	182
14	203	169	211	166	205	180	61	708	115	513	568	159
15	203	177	209	163	187	169	51	762	104	486	384	142
16	202	185	207	158	181	164	55	833	106	561	301	131
17	195	188	211	164	179	156	54	680	98	338	348	130
18	193	201	211	165	177	170	70	714	91	260	245	116
19	204	203	215	166	182	183	64	484	86	228	211	108
20	199	204	211	157	183	194	63	371	72	178	209	106
21	192	206	207	159	184	194	68	323	70	160	205	100
22	187	206	207	160	178	187	70	290	63	145	196	102
23	183	209	201	160	177	173	71	250	66	135	166	108
24	182	210	195	153	184	161	72	219	76	128	157	107
25	170	210	195	150	186	152	65	196	81	111	153	94
26	163	210	193	147	181	126	64	176	73	93	147	79
27	164	207	192	148	183	111	63	166	74	217	147	84
28	169	205	184	160	188	95	63	162	76	323	142	86
29	182	209	182	163	---	91	97	151	88	374	135	77
30	185	207	179	166	---	103	121	132	105	407	120	72
31	186	---	181	167	---	108	---	114	---	429	109	---
TOTAL	6190	5523	6170	5237	4490	5017	2513	9614	3913	7621	10628	2947
MEAN	200	184	199	169	160	162	83.8	310	130	246	343	98.2
MAX	239	210	215	194	212	194	146	833	441	561	965	182
MIN	163	156	179	147	68	91	51	114	63	72	109	44
AC-FT	12280	10950	12240	10390	8910	9950	4980	19070	7760	15120	21080	5850
CAL YR 1988	TOTAL 111387	MEAN 304	MAX 794	MIN 124	AC-FT 220900							
WTR YR 1989	TOTAL 69863	MEAN 191	MAX 965	MIN 44	AC-FT 138600							

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 1988 TO SEPTEMBER 1989

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)	BARO- METRIC PRES- SURE (MM HG)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 31...	1105	192	4480	8.1	12.5	10.0	677	270	560
JAN 30...	1100	168	4420	7.9	6.0	11.2	682	K40	420
JUN 07...	1300	235	4110	8.3	19.0	8.6	750	>2000	140
JUL 10...	1330	323	3560	8.1	24.0	--	--	--	--
28...	1215	342	3310	8.3	24.0	8.6	676	600	1500

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 FIELD MG/L AS CACO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 31...	46	1500	340	160	490	6	35	277	338	--	2200
JAN 30...	46	1500	330	170	540	6	11	314	383	--	2300
JUN 07...	59	1600	340	170	510	6	13	227	277	--	2200
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
28...	72	1200	250	130	300	4	8.6	169	177	14	1600

DATE	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, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT 31...	140	1.0	17	3720	5.06	1930	2.30	0.09	0.03	0.11	0.07
JAN 30...	140	0.90	18	3950	5.37	1790	3.00	0.18	0.07	0.12	0.14
JUN 07...	140	1.0	16	3780	5.14	2400	1.80	0.15	0.07	0.10	0.12
JUL 10...	--	--	--	--	--	--	--	--	--	--	--
28...	95	0.90	11	2630	3.58	2430	0.61	0.17	0.03	0.11	0.13

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

ARKANSAS RIVER BASIN

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS--Continued
(National stream-quality accounting network station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
OCT 31...	0.70	0.01	0.59	0.06	0.06	0.06	0.02	176	91	82	--
JAN 30...	1.5	0.02	1.4	0.09	0.06	0.02	0.03	162	73	86	--
JUN 07...	0.90	0.02	0.80	0.06	0.04	0.03	0.02	272	173	75	--
JUL 10...	--	--	--	--	--	--	--	644	562	86	49
JUL 28...	2.6	0.01	2.5	--	0.27	0.06	<0.01	919	849	45	--

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 31...	20	1	100	<10	1	1	<1	<1	<10	<5
JAN 30...	10	1	<100	<10	<1	1	<1	4	50	<5
JUN 07...	--	1	100	<10	1	1	2	7	--	<1
JUL 28...	20	1	100	<10	<1	1	1	3	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 31...	160	20	<0.1	7	2	20	1.0	1100	5	10
JAN 30...	190	20	<0.1	8	2	22	<1.0	7200	3	10
JUN 07...	180	90	0.7	6	2	17	<1.0	5600	5	30
JUL 28...	120	10	<0.1	8	2	10	<1.0	4100	2	30

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. 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. 23, Aug. 10, Sept. 8, 20-21, and Sept. 27-28. 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.--76 years (water years 1911-23, 1927-89), 215 ft³/s; 155,800 acre-ft/yr. The years of record for the average discharge was published in error in the reports for 1985-88, it should have read: 72 years (water years 1911-23, 1927-85), 73 years (water years 1911-23, 1927-86), 74 years (water years 1911-23, 1927-87), 75 years (water years 1911-23, 1927-88). The published figures of average discharge in ft³/s, and runoff in acre-ft/yr are correct.

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, 1,470 ft³/s at 0930 June 1, gage height, 3.78 ft; minimum daily, 1.4 ft³/s, Nov. 1-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	1.4	2.1	2.9	3.7	4.4	5.1	129	1130	453	221	44
2	123	1.4	2.1	2.9	3.7	4.4	5.2	140	938	411	234	43
3	102	1.4	2.2	2.9	3.7	4.4	5.2	162	955	369	222	42
4	95	1.4	2.2	3.0	3.7	4.4	5.2	193	965	367	204	48
5	95	1.5	2.2	3.0	3.8	4.5	5.2	225	950	374	170	74
6	95	1.5	2.2	3.0	3.8	4.5	5.3	251	944	366	134	56
7	95	1.5	2.3	3.0	3.8	4.5	5.3	310	957	323	110	49
8	95	1.5	2.3	3.1	3.8	4.5	5.3	439	1010	298	99	47
9	111	1.6	2.3	3.1	3.9	4.6	5.3	620	970	290	94	47
10	119	1.6	2.3	3.1	3.9	4.6	5.4	648	932	287	97	44
11	119	1.6	2.4	3.1	3.9	4.6	5.4	638	923	284	104	45
12	119	1.6	2.4	3.2	3.9	4.6	5.4	535	914	282	106	53
13	119	1.7	2.4	3.2	4.0	4.7	5.4	513	906	280	94	59
14	114	1.7	2.4	3.2	4.0	4.7	5.5	508	834	271	84	53
15	111	1.7	2.5	3.2	4.0	4.7	5.5	508	780	264	91	48
16	118	1.7	2.5	3.3	4.0	4.7	5.5	428	765	255	81	44
17	119	1.8	2.5	3.3	4.1	4.8	5.5	291	825	245	75	42
18	119	1.8	2.5	3.3	4.1	4.8	5.5	246	921	233	82	49
19	121	1.8	2.6	3.3	4.1	4.8	5.5	246	991	245	84	50
20	96	1.8	2.6	3.4	4.1	4.8	5.5	342	1030	193	71	104
21	67	1.9	2.6	3.4	4.2	4.9	5.5	556	989	99	72	129
22	67	1.9	2.6	3.4	4.2	4.9	5.5	781	889	94	71	115
23	66	1.9	2.7	3.4	4.2	4.9	223	883	711	126	61	65
24	64	1.9	2.7	3.5	4.2	4.9	360	962	627	132	56	59
25	54	2.0	2.7	3.5	4.3	5.0	355	1000	577	130	54	56
26	53	2.0	2.7	3.5	4.3	5.0	314	1000	529	135	51	54
27	53	2.0	2.8	3.5	4.3	5.0	319	893	550	157	51	50
28	53	2.0	2.8	3.6	4.3	5.0	282	810	687	161	56	53
29	53	2.1	2.8	3.6	---	5.1	226	913	693	151	50	50
30	53	2.1	2.8	3.6	---	5.1	154	967	585	147	48	48
31	33	---	2.9	3.6	---	5.1	---	1100	---	144	48	---
TOTAL	2805	51.8	77.1	101.1	112.0	146.9	2351.2	17237	25477	7566	3075	1720
MEAN	90.5	1.73	2.49	3.26	4.00	4.74	78.4	556	849	244	99.2	57.3
MAX	123	2.1	2.9	3.6	4.3	5.1	360	1100	1130	453	234	129
MIN	33	1.4	2.1	2.9	3.7	4.4	5.1	129	529	94	48	42
AC-FT	5560	103	153	201	222	291	4660	34190	50530	15010	6100	3410

CAL YR 1988 TOTAL 52542.8 MEAN 144 MAX 994 MIN 1.4 AC-FT 104200
WTR YR 1989 TOTAL 60720.1 MEAN 166 MAX 1130 MIN 1.4 AC-FT 120400

08214500 NORTH CLEAR CREEK BELOW CONTINENTAL RESERVOIR, CO

LOCATION.--Lat 37°53'18", long 107°12'10", in NE¼SW¼ sec.21, T.42 N., R.3 S., 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. 1 to Apr. 14, and May 5-11. 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.--60 years, 30.7 ft³/s; 22,240 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 222 ft³/s at 0930 June 27, gage height, 2.17 ft; minimum daily, 0.05 ft³/s, Sept. 27-29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	.10	.11	.12	.13	.14	.15	34	41	124	34	12
2	.35	.10	.11	.12	.13	.14	.15	34	42	128	28	11
3	.35	.10	.11	.12	.13	.14	.15	28	42	52	26	11
4	.25	.10	.11	.12	.13	.14	.15	24	42	5.2	19	12
5	.25	.10	.11	.12	.13	.14	.15	36	28	16	17	14
6	.25	.10	.11	.12	.13	.14	.15	44	19	23	16	13
7	.35	.10	.11	.12	.13	.14	.15	44	28	23	14	12
8	.35	.10	.11	.12	.13	.14	.15	53	34	23	14	12
9	.35	.10	.11	.12	.13	.14	.15	75	33	23	14	12
10	.15	.10	.11	.12	.13	.14	.15	85	33	54	15	12
11	.15	.10	.11	.12	.13	.14	.15	85	61	68	16	12
12	.15	.10	.11	.12	.13	.14	.15	70	104	67	18	13
13	.15	.10	.11	.12	.13	.14	.15	56	127	71	17	14
14	.15	.10	.11	.12	.13	.14	.15	54	123	65	15	13
15	.15	.10	.11	.12	.13	.14	.15	53	117	62	16	13
16	.15	.10	.11	.12	.13	.14	.15	44	117	61	14	13
17	.15	.10	.11	.12	.13	.14	.15	40	117	63	14	13
18	.15	.10	.11	.12	.13	.14	.15	41	117	71	17	13
19	.15	.10	.11	.12	.13	.15	.15	44	144	72	16	12
20	.15	.10	.11	.12	.14	.15	.15	47	158	71	14	23
21	.15	.10	.11	.12	.14	.15	.15	58	155	71	16	14
22	.15	.10	.11	.12	.14	.15	.15	64	153	67	16	13
23	.25	.10	.11	.13	.14	.15	25	64	153	63	15	13
24	.15	.10	.11	.13	.14	.15	60	62	153	65	14	12
25	.15	.10	.11	.13	.14	.15	63	57	150	75	14	5.3
26	.15	.10	.11	.13	.14	.15	61	43	161	46	13	.15
27	.15	.10	.12	.13	.14	.15	57	38	202	20	13	.05
28	.15	.10	.12	.13	.14	.15	41	37	214	21	13	.05
29	.15	.11	.12	.13	---	.15	34	45	180	22	13	.05
30	.15	.11	.12	.13	---	.15	34	50	128	23	12	.15
31	.15	---	.12	.13	---	.15	---	42	---	23	12	---
TOTAL	6.25	3.02	3.46	3.81	3.73	4.47	378.30	1551	3176	1638.2	505	317.75
MEAN	.20	.10	.11	.12	.13	.14	12.6	50.0	106	52.8	16.3	10.6
MAX	.35	.11	.12	.13	.14	.15	63	85	214	128	34	23
MIN	.15	.10	.11	.12	.13	.14	.15	24	19	5.2	12	.05
AC-FT	12	6.0	6.9	7.6	7.4	8.9	750	3080	6300	3250	1000	630

CAL YR 1988 TOTAL 10919.43 MEAN 29.8 MAX 241 MIN .10 AC-FT 21660
WTR YR 1989 TOTAL 7590.99 MEAN 20.8 MAX 214 MIN .05 AC-FT 15060

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.

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

REMARKS.--Estimated daily discharges: Nov. 20 to Mar. 15. 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 observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

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, 2,370 ft³/s at 0300 May 24, 30, gage height, 3.89 ft; minimum daily, 80 ft³/s, Feb. 7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	347	189	145	110	119	197	270	592	2190	960	522	204
2	359	148	150	113	120	201	259	568	1900	875	595	187
3	361	140	150	115	119	201	243	588	1790	856	557	183
4	330	139	150	117	113	194	253	641	1790	806	491	194
5	326	129	150	119	102	175	252	709	1730	803	438	299
6	328	128	140	121	90	170	292	822	1770	695	396	267
7	356	138	134	122	80	175	355	988	1710	684	349	230
8	359	133	132	120	90	182	442	1220	1810	637	313	216
9	340	146	131	117	100	194	471	1590	1790	609	299	218
10	371	132	134	113	110	204	440	1730	1700	589	314	200
11	380	149	140	107	115	210	410	1760	1690	594	324	198
12	368	129	142	104	120	214	413	1600	1730	655	376	211
13	357	130	141	102	125	216	385	1420	1710	602	389	243
14	350	155	141	101	120	217	364	1340	1650	570	335	236
15	334	160	140	100	120	219	375	1270	1560	551	337	220
16	329	129	133	100	125	215	386	1170	1560	526	321	207
17	335	135	128	104	130	215	414	996	1670	507	291	196
18	332	130	123	107	140	200	443	862	1730	440	290	197
19	328	130	118	111	145	216	496	940	1830	419	312	213
20	321	125	113	115	155	216	533	1140	1840	426	291	521
21	284	120	111	118	160	170	604	1530	1820	326	281	514
22	264	125	110	120	165	203	641	1820	1630	276	268	401
23	252	130	111	120	170	215	710	2100	1420	310	248	348
24	249	135	116	120	175	230	1140	2230	1280	387	234	294
25	234	140	119	119	180	254	1150	2210	1200	378	220	272
26	222	135	120	117	185	263	1080	2080	1120	452	212	255
27	222	125	117	115	190	251	986	2030	1110	441	203	242
28	219	120	109	114	193	254	905	2010	1220	419	221	235
29	218	130	106	111	---	284	778	2160	1260	424	221	233
30	220	140	106	112	---	263	692	2220	1150	415	207	222
31	217	---	107	115	---	246	---	2070	---	412	209	---
TOTAL	9512	4094	3967	3499	3756	6664	16182	44406	48360	17044	10064	7656
MEAN	307	136	128	113	134	215	539	1432	1612	550	325	255
MAX	380	189	150	122	193	284	1150	2230	2190	960	595	521
MIN	217	120	106	100	80	170	243	568	1110	276	203	183
AC-FT	18870	8120	7870	6940	7450	13220	32100	88080	95920	33810	19960	15190
CAL YR 1988	TOTAL	161663	MEAN	442	MAX	2120	MIN	80	AC-FT	320700		

08218500 GOOSE CREEK AT WAGONWHEEL GAP, CO

LOCATION.--Lat 37°45'07", long 106°49'46", in SW¼ 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 current year.

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: Oct. 26 to Nov. 7, Nov. 12-13, Nov. 16 to Mar. 16, and Mar. 21-22. 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. Several observations of 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.--35 years, 62.8 ft³/s; 45,500 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 30	0400	*260	*3.30	No other peak greater than base discharge.			
Minimum daily, 11 ft ³ /s, Feb. 7.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	26	20	18	20	23	52	64	169	68	58	18
2	31	26	22	20	24	28	48	58	127	66	59	17
3	31	28	22	20	22	30	48	56	158	61	52	17
4	30	30	21	21	24	27	46	54	165	59	45	20
5	29	24	20	22	21	26	48	54	160	56	42	32
6	31	24	20	21	16	28	58	58	128	52	39	26
7	35	24	21	17	11	33	70	126	149	51	36	22
8	34	24	16	12	13	36	83	136	144	48	34	23
9	32	25	17	14	16	37	77	128	146	44	37	23
10	32	23	19	17	18	38	72	150	116	44	39	21
11	32	20	18	18	19	38	68	87	123	46	39	22
12	30	17	19	16	20	38	64	130	136	56	41	23
13	30	18	20	14	19	37	58	136	118	44	39	28
14	48	20	21	14	18	38	66	138	90	41	34	28
15	70	20	21	15	18	36	72	116	106	39	34	29
16	72	16	17	16	17	42	74	90	149	34	29	30
17	74	17	19	18	18	36	81	94	149	31	28	30
18	72	16	20	20	18	34	85	87	149	30	30	34
19	70	15	21	21	20	35	87	116	149	29	30	34
20	66	14	20	20	22	34	81	118	146	29	28	76
21	42	15	19	19	20	28	96	138	128	29	25	49
22	22	17	20	20	18	30	144	181	108	30	24	41
23	22	19	19	20	19	36	126	204	92	39	23	37
24	25	22	16	22	21	40	149	172	52	48	22	32
25	30	22	18	20	22	46	152	225	40	52	21	25
26	28	20	17	18	24	48	133	228	40	59	20	23
27	31	17	13	20	24	46	87	184	51	52	20	22
28	28	18	12	22	20	48	79	187	76	49	21	22
29	27	20	14	17	---	51	79	253	76	52	20	22
30	28	20	15	18	---	46	66	253	72	46	19	20
31	26	---	16	18	---	46	---	236	---	45	20	---
TOTAL	1190	617	573	568	542	1139	2449	4257	3512	1429	1008	846
MEAN	38.4	20.6	18.5	18.3	19.4	36.7	81.6	137	117	46.1	32.5	28.2
MAX	74	30	22	22	24	51	152	253	169	68	59	76
MIN	22	14	12	12	11	23	46	54	40	29	19	17
AC-FT	2360	1220	1140	1130	1080	2260	4860	8440	6970	2830	2000	1680

CAL YR 1988 TOTAL 15733 MEAN 43.0 MAX 197 MIN 12 AC-FT 31210
WTR YR 1989 TOTAL 18130 MEAN 49.7 MAX 253 MIN 11 AC-FT 35960

08219500 SOUTH FORK RIO GRANDE AT SOUTH FORK, CO

LOCATION.--Lat 37°39'25", long 106°38'55", in SW¼NE¼ sec.3, T.39 N., R.3 E., Rio Grande County, Hydrologic Unit 13010001, on left bank near U.S. Highway 160, 700 ft downstream from Church Creek, 0.8 mi southwest of village of South Fork, and 1.4 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. 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. 12, 13, and Nov. 16 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.--65 years (water years 1911-22, 1937-89), 214 ft³/s; 155,000 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 10	0630	1,070	4.32	May 23	2345	*1,120	*4.41

Minimum daily discharge, 28 ft³/s, Feb. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	38	46	40	42	64	220	292	734	142	143	47
2	44	38	50	44	60	70	215	286	683	133	148	45
3	47	38	49	44	56	76	216	306	646	123	112	44
4	44	39	48	48	60	72	228	356	597	113	93	46
5	44	34	48	50	46	68	236	433	575	105	83	68
6	48	36	47	48	36	76	269	543	594	99	79	55
7	53	37	52	40	28	86	310	646	565	94	73	48
8	51	37	43	30	32	96	370	767	549	87	67	48
9	48	41	43	32	36	102	406	922	509	81	76	51
10	47	37	45	40	40	110	394	1050	468	78	77	48
11	46	43	43	42	42	120	362	926	464	82	85	47
12	44	36	46	40	46	122	334	812	482	106	97	52
13	44	38	48	32	46	124	296	722	456	88	89	60
14	44	45	50	32	44	126	277	660	431	78	85	59
15	43	47	52	34	44	120	283	537	364	74	76	54
16	42	36	42	36	44	130	317	457	338	69	70	51
17	42	36	44	40	48	133	374	413	370	67	68	49
18	40	35	46	44	48	129	416	417	362	70	75	48
19	40	34	50	46	54	133	455	547	352	66	86	49
20	39	34	48	44	60	136	519	711	331	68	74	169
21	44	35	46	42	54	122	616	834	301	67	69	108
22	39	38	48	44	50	125	655	884	261	69	60	89
23	38	40	48	44	52	147	708	967	229	76	55	107
24	38	44	42	48	58	168	681	1010	211	106	53	67
25	36	46	50	44	58	188	648	942	196	112	51	62
26	37	45	46	40	62	190	613	841	185	132	50	54
27	36	40	32	42	66	178	517	817	172	120	50	51
28	36	40	32	50	58	190	432	881	163	105	51	49
29	35	44	34	40	---	222	367	974	156	107	48	48
30	39	44	36	40	---	217	320	986	152	110	47	47
31	39	---	38	40	---	207	---	841	---	102	48	---
TOTAL	1313	1175	1392	1280	1370	4047	12054	21780	11896	2929	2338	1820
MEAN	42.4	39.2	44.9	41.3	48.9	131	402	703	397	94.5	75.4	60.7
MAX	53	47	52	50	66	222	708	1050	734	142	148	169
MIN	35	34	32	30	28	64	215	286	152	66	47	44
AC-FT	2600	2330	2760	2540	2720	8030	23910	43200	23600	5810	4640	3610
CAL YR 1988	TOTAL	43386	MEAN	119	MAX	861	MIN	30	AC-FT	86060		
WTR YR 1989	TOTAL	63394	MEAN	174	MAX	1050	MIN	28	AC-FT	125700		

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 18 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. 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. 17-22, and Nov. 27 to Mar. 20. 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.--100 years, 908 ft³/s; 657,800 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, 3,640 ft³/s at 0645 May 30, gage height, 3.64 ft; minimum daily, 120 ft³/s, Jan. 8, and Feb. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	406	281	220	160	180	240	589	968	3040	1150	650	246
2	388	245	230	170	230	250	582	914	2740	1040	810	226
3	397	227	230	170	210	250	562	926	2560	1000	733	217
4	377	223	230	180	220	210	582	999	2520	957	642	222
5	367	217	230	190	200	180	571	1120	2470	948	569	328
6	370	205	220	180	150	190	630	1320	2440	832	514	351
7	403	215	230	150	120	230	728	1610	2380	808	451	283
8	421	217	170	120	140	260	884	1970	2450	753	400	262
9	387	225	150	130	160	300	980	2500	2450	714	393	264
10	404	225	170	150	170	340	959	2870	2230	691	417	253
11	419	225	160	160	180	380	894	2710	2240	693	407	249
12	417	219	160	150	200	410	860	2540	2290	776	506	264
13	415	206	170	130	190	450	800	2260	2260	732	525	305
14	412	232	180	130	190	450	734	2110	2130	678	455	312
15	448	260	180	140	180	380	726	1930	1960	648	440	286
16	440	201	150	140	180	420	763	1710	1960	610	422	273
17	440	175	160	160	190	460	835	1530	2100	580	387	258
18	438	216	170	170	190	430	920	1360	2140	533	381	248
19	431	198	180	180	210	450	991	1550	2220	488	423	263
20	424	169	180	170	220	440	1060	1860	2220	482	401	564
21	402	149	170	160	210	431	1240	2390	2190	436	375	752
22	335	163	180	170	200	452	1360	2820	1930	345	354	553
23	309	204	170	170	210	494	1440	3210	1700	364	326	536
24	312	243	150	190	230	527	1800	3390	1500	481	300	411
25	312	261	190	170	230	569	1870	3380	1380	547	272	370
26	296	216	180	160	240	605	1800	3170	1300	636	253	336
27	288	190	130	170	250	554	1580	3010	1260	636	243	312
28	281	190	130	190	230	555	1420	3000	1340	579	252	293
29	277	220	140	150	---	619	1260	3280	1420	588	258	301
30	281	210	150	160	---	602	1120	3430	1350	577	247	285
31	288	---	160	160	---	557	---	3110	---	555	246	---
TOTAL	11595	6427	5520	4980	5510	12685	30540	68947	62170	20857	13052	9823
MEAN	374	214	178	161	197	409	1018	2224	2072	673	421	327
MAX	448	281	230	190	250	619	1870	3430	3040	1150	810	752
MIN	277	149	130	120	120	180	562	914	1260	345	243	217
AC-FT	23000	12750	10950	9880	10930	25160	60580	136800	123300	41370	25890	19480
CAL YR 1988	TOTAL	219240	MEAN	599	MAX	3120	MIN	130	AC-FT	434900		
WTR YR 1989	TOTAL	252106	MEAN	691	MAX	3430	MIN	120	AC-FT	500100		

08226600 NOLAND GULCH TRIBUTARY RESERVOIR INFLOW NEAR VILLA GROVE, CO

LOCATION.--Lat 38°12'34", long 105°57'40", in NW¼SE¼ sec.27, T.46 N., R.9 E., Saguache County, Hydrologic Unit 13010003, on left bank at inflow site to a small channel reservoir 500 ft upstream from dam, 1.2 mi west along Bureau of Land Management road exiting U.S. Highway 285, and 2.7 mi south of Villa Grove.

DRAINAGE AREA.--0.08 mi².

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder with crest-stage indicator and Parshall Flume. Elevation of gage is 8,000 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. One recording and two nonrecording rain gages are in basin upstream. This station is designed to evaluate rainfall runoff from a small drainage area into a small channel reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2.1 ft³/s, Sept. 30, 1982, gage height, 3.65 ft; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.2 ft³/s at 0700 Sept. 20, gage height, 3.44 ft. No flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

Sept. 20 0.02

RIO GRANDE BASIN

08227400 TRACY PIT RESERVOIR INFLOW NEAR SAGUACHE, CO

LOCATION.--Lat 38°02'44", long 106°13'06", in SE¼SE¼ sec.20, T.44 N., R.7 E., Saguache County, Hydrologic Unit 13010004, on left bank 0.5 mi upstream from mouth at North Tracy Canyon, 5.1 mi southwest of Saguache, and 5.4 mi northwest of U.S. Highway 285 at Swede Corners.

DRAINAGE AREA.--0.05 mi².

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder with crest-stage indicator and Parshall Flume. Elevation of gage is 8,190 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges: Records good. One recording and two nonrecording rain gages in basin upstream. This station is designed to evaluate rainfall-runoff from a small drainage area into a small channel reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4.3 ft³/s, Aug. 25, 1982, gage height, 4.05 ft; no flow most of time.

EXTREMES FOR CURRENT YEAR.--No flow for current season.

08238350 YELLOW WARBLER RESERVOIR INFLOW NEAR ANTONITO, CO

LOCATION.--Lat 37°06'00", long 106°06'44", in NE¼SE¼ sec.17, T.33 N., R.8 E., Conejos County, Hydrologic Unit 13010002, on left bank, 400 ft upstream from Yellow Warbler Dam, 0.4 mi south of the geologic basin known as The Poso, and 6.0 mi west of Antonito.

DRAINAGE AREA.--0.18 mi².

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder with crest-stage indicator and Parshall flume. Elevation of gage is 8,380 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: July 13 to Aug. 17. Two days of flow (July 28, 30) estimated. Records good except for estimated daily discharges, which are poor. One recording and three nonrecording rain gages are in basin upstream. This station is designed to evaluate rainfall-runoff from a small drainage area into a small channel reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17 ft³/s, Aug. 16, 1982, gage height, 4.97 ft; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 10 ft³/s at about 2100 July 28, gage height, about 4.40 ft; no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

March 3	0.04	July 30	0.06
July 28	0.14		

RIO GRANDE BASIN

08238380 TURKEY RESERVOIR INFLOW NEAR CONEJOS, CO

LOCATION.--Lat 37°08'16", long 106°06'41", in SE¼SE¼ sec.32, T.34 N., R.8 E., Conejos County, Hydrologic Unit 13010002, on left bank 300 ft upstream from Turkey Dam, 0.4 mi upstream from mouth at the geologic basin known as The Poso, and 6.2 mi northwest of Conejos.

DRAINAGE AREA.--0.24 mi².

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder with crest-stage indicator and Parshall flume. Elevation of gage is 8,280 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Sept. 14-30. No flow occurred during estimated period. Records good. One recording and three nonrecording rain gages in basin upstream. This station is designed to evaluate rainfall-runoff from small drainage area into a small channel reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8.8 ft³/s, July 30, 1989, gage height, 4.28 ft; no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8.8 ft³/s, July 30 at 1300, gage height, 4.28 ft; no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

July 30 0.22

08238400 BOBOLINK RESERVOIR NEAR CONEJOS, CO

LOCATION.--Lat 37°09'10", long 106°10'18", in SW¼SE¼ sec.26, T.34 N., R.7 E., Conejos County, Hydrologic Unit 13010002, on top of earthfill dam near center, 0.7 mi southeast of Flat Top Mountain, 5.3 mi north of Los Mogotes Peaks and 9.4 mi northwest of Conejos.

DRAINAGE AREA.--0.23 mi².

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder. Elevation of gage is 8,800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated contents: April 2, July 24, Aug. 1, 8, and Sept. 5. Records good. Reservoir is formed by an earthfill dam. Storage occurs intermittently from storm runoff. Maximum storage is 1.0 acre-ft, at a spillway gage height of 7.1 ft. No contents occur below a gage height of 3.38 ft. This dam forms a small channel reservoir for controlling heavy runoff and to help control sedimentation. There is one recording and three nonrecording rain gages in the basin upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2.4 acre-ft, Sept. 9, 1982, gage height, 9.13 ft; no contents most of time.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 0.71 acre-ft at 1415 Aug. 12, gage height, 6.58 ft; no contents most of time.

Capacity table (elevation, in feet, and total contents, in acre-feet)

3.5	0.01	5.5	0.25
4.5	0.06	6.5	0.67

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	---	---	---	---	.00	.02	.00	.00	.00	.01	.03
2	.00	---	---	---	---	.00	.01	.00	.00	.00	.00	.02
3	.00	---	---	---	---	.00	.00	.00	.00	.00	.00	.02
4	.00	---	---	---	---	.00	.00	.00	.00	.00	.00	.02
5	.00	---	---	---	---	.00	.00	.00	.00	.00	.00	.01
6	.00	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
7	.00	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
8	.00	---	---	---	---	.00	.00	.00	.00	.00	.01	.00
9	.00	---	---	---	---	.02	.00	.00	.00	.00	.06	.00
10	.00	---	---	---	---	.05	.00	.00	.00	.00	.05	.00
11	.00	---	---	---	---	.08	.00	.00	.00	.00	.04	.00
12	.00	---	---	---	---	.09	.00	.00	.00	.00	.64	.00
13	.00	---	---	---	---	.12	.00	.00	.00	.00	.54	.00
14	.00	---	---	---	---	.15	.00	.00	.00	.00	.56	.00
15	.00	---	---	---	---	.13	.00	.00	.00	.00	.49	.00
16	.00	---	---	---	---	.12	.00	.00	.00	.00	.43	.00
17	.00	---	---	---	---	.13	.00	.00	.00	.00	.39	.00
18	.00	---	---	---	---	.14	.00	.00	.00	.00	.34	.00
19	.00	---	---	---	---	.15	.00	.00	.00	.00	.29	.00
20	.00	---	---	---	---	.16	.00	.00	.00	.00	.26	.00
21	.00	---	---	---	---	.13	.00	.00	.00	.00	.22	.00
22	.00	---	---	---	---	.12	.00	.00	.00	.00	.19	.00
23	.00	---	---	---	---	.11	.00	.00	.00	.00	.15	.00
24	.00	---	---	---	---	.10	.00	.00	.00	.01	.13	.00
25	.00	---	---	---	---	.09	.00	.00	.00	.00	.11	.00
26	.00	---	---	---	---	.08	.00	.00	.00	.00	.09	.00
27	.00	---	---	---	---	.07	.00	.00	.00	.00	.08	.00
28	.00	---	---	---	---	.06	.00	.00	.00	.00	.07	.00
29	.00	---	---	---	---	.05	.00	.00	.00	.00	.05	.00
30	.00	---	---	---	---	.04	.00	.00	.00	.00	.04	.00
31	.00	---	---	---	---	.03	---	.00	---	.00	.03	---
MAX	.00	---	---	---	---	.16	.02	.00	.00	.01	.64	.03
MIN	.00	---	---	---	---	.00	.00	.00	.00	.00	.00	.00

RIO GRANDE BASIN

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 13010002, on right bank 0.2 mi upstream from Trincheras Creek, 3.2 mi north of Lasauces, 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. Elevation of gage is 7,500 ft, estimated from nearby level lines.

REMARKS.--Estimated daily discharges: Nov. 19-22, and Dec. 8 to Mar. 7. 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.--53 years, 271 ft³/s; 196,300 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, 990 ft³/s at 2130 Apr. 12, gage height, 4.39 ft, maximum gage height, 5.22 ft at 1530 Mar. 4; minimum daily, 27 ft³/s, Oct. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	124	329	240	205	370	605	231	195	94	44	33
2	31	134	323	265	200	370	574	191	164	83	40	30
3	31	220	329	275	200	325	607	162	140	84	42	30
4	29	251	335	270	185	370	597	147	129	78	51	36
5	27	263	330	260	160	380	579	152	146	73	55	39
6	30	274	316	260	185	330	595	153	159	61	54	35
7	35	283	309	275	225	334	613	149	172	54	54	39
8	48	276	230	285	220	355	668	149	176	54	54	47
9	50	278	230	275	205	402	760	165	179	54	49	46
10	58	281	245	240	195	463	890	208	198	51	48	44
11	60	288	260	235	200	526	964	163	210	50	50	43
12	59	300	255	235	200	591	973	153	219	50	51	48
13	60	300	245	250	205	629	949	153	228	49	50	46
14	57	299	260	245	200	688	909	137	240	48	47	47
15	57	312	245	230	205	708	761	130	214	47	48	53
16	58	337	245	215	205	692	572	130	181	52	44	53
17	63	344	235	210	205	656	497	127	153	57	48	47
18	66	318	260	210	200	626	430	143	132	51	48	38
19	70	310	230	210	200	604	358	188	125	54	47	34
20	74	270	240	220	200	595	334	182	126	49	44	44
21	74	260	250	220	205	612	340	185	134	46	42	45
22	73	250	270	220	205	572	264	160	135	50	41	50
23	73	267	225	215	205	528	243	147	130	51	38	89
24	79	299	250	205	225	527	205	137	117	40	40	66
25	82	342	235	200	290	544	183	121	106	43	39	55
26	85	375	200	205	345	564	202	113	99	49	44	51
27	89	331	190	205	325	593	222	129	96	75	43	49
28	89	309	190	200	340	611	200	270	90	72	39	49
29	90	308	200	200	---	592	196	247	87	70	38	55
30	95	320	210	205	---	583	229	216	84	64	36	55
31	104	---	235	205	---	609	---	209	---	52	34	---
TOTAL	1929	8523	7906	7185	6140	16349	15519	5147	4564	1805	1402	1396
MEAN	62.2	284	255	232	219	527	517	166	152	58.2	45.2	46.5
MAX	104	375	335	285	345	708	973	270	240	94	55	89
MIN	27	124	190	200	160	325	183	113	84	40	34	30
AC-FT	3830	16910	15680	14250	12180	32430	30780	10210	9050	3580	2780	2770
CAL YR 1988	TOTAL 69431											
WTR YR 1989	TOTAL 77865											
	MEAN 190		MEAN 213	MAX 575	MIN 20	AC-FT 137700						
				MAX 973	MIN 27	AC-FT 154400						

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 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.

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, 33,910 acre-ft, May 9, elevation, 10,004.0 ft; minimum contents, 28,880 acre-ft, Oct. 27, and Nov. 6, elevation, 9,997.0 ft.

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	9,997.5	29,200	-
Oct. 31.	9,997.2	28,980	-220
Nov. 30.	9,997.3	29,060	+80
Dec. 31.	9,997.7	29,330	+270
CAL YR 1988			-14,020
Jan. 31.	9,997.9	29,490	+160
Feb. 28.	9,998.3	29,470	-20
Mar. 31.	9,999.7	30,780	+1,310
Apr. 30.	10,003.5	33,480	+2,700
May 31.	10,003.6	33,600	+120
June 30.	9,998.7	30,040	-3,560
July 31.	9,986.2	21,930	-8,110
Aug. 31.	9,983.4	20,270	-1,660
Sept. 30.	9,981.9	19,430	-840
WTR YR 1989			-9,770

RIO GRANDE BASIN

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 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: Nov. 3 to Mar. 23. Records good. 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.--37 years, 93.3 ft³/s; 67,600 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, 594 ft³/s at 2130 May 30, gage height, 3.09 ft; minimum daily, 3.4 ft³/s, Nov. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

[illegible]

LOCATION.--Lat 37°03'14", long 106°11'13", in SE1/4 sec.34, T.33 N., R.7 E., Conejos County, Hydrologic Unit 13010005, on right bank 25 ft upstream 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.

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.

GAGE.--Water-stage recorder. Datum of gage is 8,271.54 ft, Colorado State Highway datum. Apr. 17, 1903, to Oct. 31, 1905, nonrecording gage 500 ft downstream at different datum. Oct. 5, 1911, to early 1915, nonrecording gage at present site and datum.

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

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 FOR CURRENT YEAR.--Maximum discharge, 1,610 ft³/s at 0515 May 30, gage height, 4.79 ft; minimum daily, 36 ft³/s, Feb. 7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	55	60	52	68	86	211	442	1150	287	203	98
2	87	55	60	54	76	84	197	393	999	258	284	86
3	82	57	56	56	74	82	195	415	939	231	298	82
4	80	54	58	58	74	71	195	468	875	225	223	87
5	81	51	54	60	62	66	201	503	818	231	189	136
6	84	52	52	60	38	73	232	585	818	293	181	102
7	91	55	56	46	36	75	279	708	825	333	161	83
8	104	54	54	40	42	90	347	911	878	369	173	82
9	106	65	50	40	52	109	408	1140	808	338	164	85
10	88	60	50	46	58	140	416	1340	712	299	171	80
11	83	65	50	48	60	161	385	1330	676	378	194	78
12	81	54	52	46	64	172	375	1230	699	423	216	85
13	79	62	52	40	58	182	321	973	686	378	186	85
14	78	69	50	44	64	179	312	888	652	342	208	97
15	77	68	56	46	58	157	339	715	594	287	203	89
16	75	55	54	50	58	154	393	590	604	258	180	75
17	74	50	52	56	62	159	425	558	664	244	153	80
18	73	65	50	60	66	160	486	485	682	272	148	85
19	72	53	56	62	76	177	643	516	658	272	157	92
20	66	44	50	62	80	183	736	640	628	268	170	128
21	64	44	52	62	72	162	800	874	610	275	130	126
22	63	46	54	66	72	166	811	1070	533	240	128	102
23	62	52	56	66	80	186	876	1230	441	217	130	102
24	61	58	46	70	82	195	867	1370	414	231	110	105
25	61	56	52	74	84	211	854	1250	400	277	98	102
26	60	51	48	68	88	222	835	1140	346	321	105	103
27	59	50	44	66	88	205	764	1050	346	315	114	105
28	56	48	42	68	86	199	661	1180	320	267	121	110
29	55	58	42	58	---	224	549	1300	320	248	106	110
30	56	56	46	64	---	218	465	1470	287	217	97	86
31	58	---	48	66	---	201	---	1330	---	211	108	---
TOTAL	2306	1662	1602	1754	1878	4749	14578	28094	19382	8805	5109	2866
MEAN	74.4	55.4	51.7	56.6	67.1	153	486	906	646	284	165	95.5
MAX	106	69	60	74	88	224	876	1470	1150	423	298	136
MIN	55	44	42	40	36	66	195	393	287	211	97	75
AC-FT	4570	3300	3180	3480	3730	9420	28920	55720	38440	17460	10130	5680
CAL YR 1988	TOTAL 81840	MEAN 224	MAX 1330	MIN 42	AC-FT 162300							
WTR YR 1989	TOTAL 92785	MEAN 254	MAX 1470	MIN 36	AC-FT 184000							

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. 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. 16 to Mar. 19. 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.--49 years (1940-89), 26.0 ft³/s; 18,840 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. 10	0230	*368	*3.26	No other peak greater than base discharge.			
No flow, many days.							

REVISIONS.--The maximum discharge for water year 1988 is 156 ft³/s at 0500 May 1, gage height, 2.86 ft, the previously published figure was incorrect.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	3.4	3.5	1.5	2.0	6.0	99	69	6.1	.00	.00	.00
2	1.8	3.3	3.5	1.5	4.5	7.0	94	69	5.5	.00	.91	.00
3	1.8	3.3	3.5	1.5	4.5	7.0	109	69	5.3	.00	2.8	.00
4	1.8	3.5	3.5	2.0	4.0	6.4	120	74	4.9	.00	2.0	.00
5	2.0	3.2	3.0	2.0	2.0	6.0	113	73	4.7	.00	.75	.00
6	2.5	3.2	3.0	2.0	.60	6.6	134	68	4.0	.00	.60	.00
7	3.4	3.0	4.0	1.5	.40	12	163	65	3.2	.00	.50	.00
8	4.0	3.3	3.5	.80	1.0	22	234	66	3.0	.00	.50	.00
9	3.6	3.4	3.0	.80	2.0	38	273	64	6.1	.00	.40	.00
10	3.2	6.4	3.0	1.5	3.0	56	281	73	7.7	.00	.78	.00
11	3.1	5.5	3.0	1.5	3.5	62	218	74	5.3	.00	1.4	.00
12	2.8	6.3	3.0	1.5	4.0	60	218	61	4.7	.00	2.5	.00
13	2.7	4.1	3.0	.60	3.5	62	168	52	7.2	.00	2.8	.00
14	2.8	5.6	3.0	.80	4.0	72	157	46	8.0	.00	2.2	.00
15	3.0	7.1	3.0	1.0	3.5	66	176	40	5.8	.00	2.2	.00
16	3.2	4.5	2.5	1.0	3.5	64	212	34	5.9	.00	14	.00
17	3.2	4.5	2.5	1.0	3.5	64	243	34	4.1	.00	3.2	.00
18	3.1	5.0	2.5	1.5	4.0	68	261	32	2.2	.00	2.0	.00
19	2.8	3.5	3.0	1.5	4.5	74	251	28	1.7	.00	2.0	.00
20	3.0	2.5	2.5	1.5	4.5	73	262	24	1.1	.00	2.2	.00
21	3.0	2.5	2.5	1.5	4.0	56	256	22	.93	.00	1.4	.00
22	3.1	3.5	3.0	1.5	4.0	54	254	20	.78	.00	.90	.35
23	3.0	4.5	3.0	1.5	4.5	59	230	15	.67	.00	.40	.60
24	3.0	5.5	2.0	2.0	5.5	60	197	14	.47	.00	.06	.75
25	3.0	5.0	2.5	2.0	6.0	73	169	13	.41	.00	.00	.50
26	3.1	4.2	1.5	1.5	6.5	75	153	12	.37	.00	.00	.60
27	3.0	3.5	1.0	1.5	6.5	67	127	11	.30	.00	.00	.50
28	3.2	3.5	1.0	1.5	6.0	68	105	10	.22	.00	.00	.40
29	3.2	4.0	1.0	1.5	---	90	88	8.9	.00	.00	.00	.40
30	3.5	3.5	1.0	2.0	---	93	78	7.8	.00	.00	.00	.41
31	3.3	---	1.5	2.0	---	82	---	7.0	---	.00	.00	---
TOTAL	90.0	124.3	81.5	45.50	105.50	1609.0	5443	1255.7	100.65	0.00	46.50	4.51
MEAN	2.90	4.14	2.63	1.47	3.77	51.9	181	40.5	3.35	.00	1.50	.15
MAX	4.0	7.1	4.0	2.0	6.5	93	281	74	8.0	.00	14	.75
MIN	1.8	2.5	1.0	.60	.40	6.0	78	7.0	.00	.00	.00	.00
AC-FT	179	247	162	90	209	3190	10800	2490	200	.0	92	8.9
CAL YR 1988	TOTAL 4798.66	MEAN 13.1	MAX 128	MIN .17	AC-FT 9520							
WTR YR 1989	TOTAL 8906.16	MEAN 24.4	MAX 281	MIN .00	AC-FT 17670							

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. 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. 18 to Mar. 14. 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.--70 years, 120 ft³/s; 86,940 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), 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)
Apr. 30	2300	*860	*4.53				

Minimum daily, 7.2 ft³/s, Feb. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	16	18	13	16	31	155	290	214	30	24	12
2	18	16	18	16	24	36	149	308	193	27	33	11
3	18	16	18	18	23	36	170	340	179	26	25	11
4	18	16	18	18	23	32	181	388	162	26	22	12
5	20	15	18	20	15	30	193	409	149	24	19	28
6	20	14	18	20	7.4	32	236	422	139	22	19	21
7	21	16	22	12	7.2	42	295	456	131	19	18	15
8	22	15	20	7.6	10	54	373	503	129	17	19	14
9	21	18	17	7.6	14	68	430	519	132	15	22	13
10	20	17	18	10	17	74	441	569	118	16	22	13
11	19	20	18	12	19	78	398	533	107	17	26	11
12	19	9.8	18	10	21	76	390	480	108	20	23	12
13	19	18	18	7.6	18	80	324	398	107	19	20	16
14	18	22	18	8.6	20	84	315	355	102	16	30	15
15	18	23	18	10	19	77	359	296	101	15	30	15
16	18	12	17	10	19	72	437	262	84	13	25	16
17	18	19	16	12	20	71	493	277	76	12	21	15
18	17	21	16	14	21	75	552	256	70	12	22	12
19	16	14	18	16	24	84	577	251	67	12	28	14
20	16	9.0	16	16	25	81	630	282	61	13	20	17
21	16	9.0	17	16	23	69	660	311	56	18	19	21
22	16	12	17	18	23	70	693	311	55	17	17	18
23	16	16	17	16	26	78	705	320	49	22	16	16
24	16	22	12	18	28	87	683	329	46	26	14	16
25	16	20	14	20	31	98	643	311	41	31	13	16
26	16	18	10	18	33	107	590	281	39	31	13	14
27	16	16	8.0	16	34	107	505	264	35	33	13	14
28	16	16	8.0	18	31	114	418	273	29	24	13	14
29	16	18	8.0	14	---	141	352	286	30	27	13	14
30	16	18	9.0	15	---	151	307	281	31	29	12	13
31	17	---	11	15	---	144	---	245	---	28	12	---
TOTAL	552	491.8	489.0	442.4	591.6	2379	12654	10806	2840	657	623	449
MEAN	17.8	16.4	15.8	14.3	21.1	76.7	422	349	94.7	21.2	20.1	15.0
MAX	22	23	22	20	34	151	705	569	214	33	33	28
MIN	16	9.0	8.0	7.6	7.2	30	149	245	29	12	12	11
AC-FT	1090	975	970	878	1170	4720	25100	21430	5630	1300	1240	891

CAL YR 1988 TOTAL 25604.8 MEAN 70.0 MAX 419 MIN 8.0 AC-FT 50790
WTR YR 1989 TOTAL 32974.8 MEAN 90.3 MAX 705 MIN 7.2 AC-FT 65410

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 Lasauces, 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 Sauses."

REVISED RECORDS.--WSP 1312: 1934(M).

GAGE.--Two water-stage recorders. 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. 19, 20, 30, Dec. 22 to Jan. 4, Jan. 7-17, and Feb. 6-10. Records good except for estimated daily discharges, which are fair. Diversions for irrigation of about 75,000 acres upstream from station. Several observations of 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.--68 years, 188 ft³/s; 136,200 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 discharge, 1,060 ft³/s, Apr. 11; no flow, July 15-30, Aug. 4 to Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	26	56	50	68	117	374	244	183	2.2	.07	.00
2	.27	27	58	52	69	125	409	250	129	2.6	.07	.00
3	.22	30	62	52	69	136	394	287	90	2.0	.06	.00
4	.11	41	60	57	71	134	421	330	79	1.8	.00	.00
5	.12	41	58	63	67	130	440	388	101	1.3	.00	.00
6	.14	43	59	60	59	128	478	348	118	.65	.00	.00
7	.17	45	66	48	52	136	582	325	81	.39	.00	.00
8	.18	51	66	42	48	156	697	312	68	.21	.00	.00
9	.13	53	66	42	61	178	875	334	95	.06	.00	.00
10	.14	57	61	48	69	198	1010	423	99	.02	.00	.00
11	.17	60	57	50	71	234	1060	476	79	.03	.00	.00
12	.50	62	60	48	70	264	992	422	72	.16	.00	.00
13	1.6	62	61	42	71	289	953	320	72	.27	.00	.00
14	1.9	61	63	46	74	339	689	252	39	.12	.00	.00
15	1.8	69	69	52	75	337	448	210	19	.00	.00	.00
16	1.7	71	61	59	75	314	443	153	17	.00	.00	.00
17	9.5	64	61	63	78	310	501	126	14	.00	.00	.00
18	10	58	64	67	78	256	501	175	3.7	.00	.00	.00
19	11	59	64	65	78	294	512	157	4.0	.00	.00	.00
20	12	58	67	59	81	324	515	124	3.5	.00	.00	.00
21	16	53	63	60	80	312	512	97	2.9	.00	.00	.00
22	10	52	57	60	81	284	571	79	3.9	.00	.00	.00
23	8.9	54	59	60	82	288	546	104	9.5	.00	.00	.00
24	8.8	63	54	62	85	307	541	168	12	.00	.00	.00
25	5.9	71	58	62	90	323	507	206	5.7	.00	.00	.00
26	5.9	67	54	60	98	345	498	149	3.9	.00	.00	.00
27	10	57	46	63	110	361	450	126	2.8	.00	.00	.00
28	10	55	44	67	113	345	345	111	2.1	.00	.00	.00
29	10	52	44	64	---	347	296	170	2.0	.00	.00	.00
30	11	54	46	66	---	383	247	234	2.6	.00	.00	.00
31	18	---	48	66	---	383	---	273	---	.00	.00	---
TOTAL	166.54	1616	1812	1755	2123	8077	16807	7373	1413.6	11.81	0.20	0.00
MEAN	5.37	53.9	58.5	56.6	75.8	261	560	238	47.1	.38	.006	.00
MAX	18	71	69	67	113	383	1060	476	183	2.6	.07	.00
MIN	.11	26	44	42	48	117	247	79	2.0	.00	.00	.00
AC-FT	330	3210	3590	3480	4210	16020	33340	14620	2800	23	.4	.0
CAL YR 1988	TOTAL	17192.82	MEAN	47.0	MAX	292	MIN	.00	AC-FT	34100		
WTR YR 1989	TOTAL	41155.15	MEAN	113	MAX	1060	MIN	.00	AC-FT	81630		

08251500 RIO GRANDE NEAR LOBATOS, CO

LOCATION.--Lat 37°04'42", long 105°45'22", in sec.22, T.33 N., R.11 E., Conejos County, Hydrologic Unit 13010002, on right bank at highway bridge, 6 mi north of Colorado-New Mexico State line, 7 mi downstream from Culebra Creek, 10 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, Colo.

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. 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. 19-22, and Nov. 25 to Mar. 7. 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: 59 years (water years 1931-89), 453 ft³/s; 328,200 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, 1,870 ft³/s at 1345 Apr. 11, gage height, 3.35 ft; minimum daily, 31 ft³/s, Sept. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	136	350	310	290	485	986	511	485	95	70	36
2	39	165	350	315	295	515	964	457	355	107	50	36
3	38	198	340	340	295	525	979	447	274	92	47	34
4	38	285	340	350	295	490	979	450	220	97	49	34
5	39	305	330	350	280	535	968	496	229	84	59	40
6	38	325	320	350	250	540	1000	511	279	73	62	42
7	38	340	360	345	270	560	1060	475	285	59	59	37
8	45	339	330	345	300	556	1180	462	251	55	58	41
9	59	342	320	345	295	587	1370	477	268	55	60	49
10	66	341	320	335	290	664	1590	564	310	55	55	45
11	77	359	330	310	290	744	1780	664	319	53	55	43
12	76	370	340	305	295	848	1740	601	306	55	60	44
13	80	386	340	305	295	925	1730	532	314	53	64	46
14	82	388	330	310	300	1030	1560	440	310	51	58	43
15	76	400	350	310	300	1060	1290	380	269	48	55	46
16	75	413	340	300	305	1070	1040	333	227	49	53	51
17	76	432	330	295	305	1020	992	279	196	53	48	49
18	83	422	320	295	310	948	990	289	158	57	55	43
19	90	405	350	295	305	909	886	386	136	50	50	31
20	97	405	320	295	305	928	888	360	137	53	47	32
21	101	365	330	300	305	962	863	316	136	49	44	36
22	99	360	340	300	310	895	873	281	148	44	42	36
23	85	351	350	300	310	833	833	246	150	53	41	49
24	87	377	310	295	310	838	783	294	143	54	40	83
25	100	370	330	285	335	865	727	360	126	50	39	56
26	107	360	320	280	410	913	689	310	118	51	39	45
27	112	350	280	285	475	945	744	266	106	64	43	40
28	118	340	260	290	465	964	630	325	104	94	43	38
29	115	350	260	285	---	943	532	413	95	88	40	40
30	118	340	270	285	---	951	505	462	92	80	39	46
31	122	---	280	290	---	964	---	524	---	156	38	---
TOTAL	2418	10319	10040	9600	8790	25012	31151	12911	6546	2077	1562	1291
MEAN	78.0	344	324	310	314	807	1038	416	218	67.0	50.4	43.0
MAX	122	432	360	350	475	1070	1780	664	485	156	70	83
MIN	38	136	260	280	250	485	505	246	92	44	38	31
AC-FT	4800	20470	19910	19040	17430	49610	61790	25610	12980	4120	3100	2560
CAL YR 1988	TOTAL	93143	MEAN	254	MAX	822	MIN	29	AC-FT	184700		
WTR YR 1989	TOTAL	121717	MEAN	333	MAX	1780	MIN	31	AC-FT	241400		

RIO GRANDE BASIN

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 micromhos Sept. 17, 18, 1977; minimum, 89 micromhos 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 1988 TO SEPTEMBER 1989

		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)	HARD- NESS TOTAL (MG/L AS CACO3)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOC- CI, FECAL, KF AGAR (COLS. PER 100 ML)	
OCT	19...	1000	85	535	8.6	11.0	13	8.9	130	67	47
DEC	08...	1030	E330	390	8.3	0.5	4.0	11.0	76	35	390
FEB	24...	1000	E387	212	8.1	0.0	5.0	10.3	66	--	48
APR	21...	1000	886	174	8.1	13.0	22	7.8	49	77	140
JUN	22...	1100	145	518	8.6	15.0	2.8	8.4	140	58	140
AUG	29...	1045	43	520	8.8	19.0	7.2	8.1	100	K13	39
DATE		CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT	19...	39	8.7	67	5.8	184	7	211	77	16	0.8
DEC	08...	23	4.6	47	7.7	132	0	161	44	13	0.4
FEB	24...	20	3.8	19	3.1	80	0	98	25	4.8	0.3
APR	21...	15	2.9	13	2.4	60	0	73	17	3.6	0.2
JUN	22...	43	8.8	51	6.3	139	3	164	100	13	0.6
AUG	29...	30	7.0	68	6.5	175	10	194	50	16	0.8
DATE		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)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	
OCT	19...	26	355	349	<0.10	0.01	0.01	0.4	0.11	0.04	
DEC	08...	30	248	246	0.16	<0.01	--	<0.2	0.09	0.07	
FEB	24...	29	158	154	0.16	0.02	0.03	0.3	0.08	0.04	
APR	21...	23	117	113	<0.10	0.01	0.01	0.5	0.11	0.06	
JUN	22...	28	340	338	<0.10	<0.01	--	0.6	0.09	0.05	
AUG	29...	26	309	312	<0.10	0.01	0.01	0.6	0.11	0.06	

E ESTIMATED

K BASED ON NON-IDEAL COLONY COUNT.

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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 19...	20	3	41	<0.5	1	<1	<3	2	50	<5
FEB 24...	10	2	23	<0.5	<1	<1	<3	1	42	<5
JUN 22...	<10	3	44	<0.5	<1	1	<3	1	35	<1
AUG 29...	20	3	48	<0.5	<1	2	<3	4	25	<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 19...	13	21	<0.1	<10	2	<1	<1.0	350	<6	--
FEB 24...	6	17	<0.1	<10	<1	<1	<1.0	160	<6	11
JUN 22...	10	10	<0.1	<10	<1	<1	<1.0	380	<6	16
AUG 29...	8	20	0.1	<10	1	<1	<1.0	270	9	7

SUSPENDED SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 19...	1000	85	58	13
DEC 08...	1030	330	10	8.9
FEB 24...	1000	387	28	29
APR 21...	1000	886	110	263
JUN 22...	1100	145	12	4.7
AUG 29...	1045	43	25	2.9

RIO GRANDE BASIN

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

WATER-QUALITY CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	TEMPER- ATURE WATER (DEG C)	PH (STAND- ARD UNITS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	OXYGEN, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)
OCT							
19...	1001	55.0	11.5	8.6	554	9.1	62
19...	1002	65.0	11.0	8.5	544	9.1	49
19...	1003	75.0	11.0	8.5	539	9.0	27
19...	1004	85.0	11.0	8.6	533	8.8	40
19...	1005	95.0	11.0	8.6	533	8.8	37
19...	1006	105	11.0	8.6	532	8.8	39
19...	1007	115	11.0	8.6	533	8.8	38
19...	1008	125	11.0	8.6	535	8.8	41
19...	1009	135	11.0	8.6	533	8.8	41
19...	1010	145	12.0	8.7	527	9.4	47
APR							
21...	1001	30.0	14.0	8.2	189	7.9	106
21...	1002	45.0	13.5	8.1	180	7.8	81
21...	1003	60.0	13.5	8.1	175	7.8	114
21...	1004	75.0	13.0	8.1	174	7.7	93
21...	1005	90.0	13.0	8.1	172	7.6	94
21...	1006	105	13.0	8.1	171	7.7	107
21...	1007	120	13.0	8.1	172	7.7	134
21...	1008	135	13.0	8.1	170	7.7	106
21...	1009	150	13.0	8.1	170	7.8	92
21...	1010	165	13.5	8.1	171	7.8	76
21...	1011	180	14.0	8.2	172	7.9	73

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.

09010000 Grand River ditch diverts water from tributaries of Colorado River to La Poudre Pass Creek (tributary to Cache la Poudre River) in NW 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.

REVISIONS (WATER YEARS).--WSP 1313: 1912-27.

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09010000	0	0	0	0	0	0	88	3,400	8,970	4,630	1,570	189
Water year 1989, 18,840												

09013000 Alva B. Adams tunnel diverts water from Grand Lake and Shadow Mountain Lake in NW¼ 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.

[illegible]

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.

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09021500	0	0	0	0	0	0	0	3.0	318	341	150	32
Water year 1989. 843												

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 SW¼SW¼ 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.

[illegible]

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 SE¼ 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 SW¼NE¼ sec.2, T.8 S., R.78 W., left bank of Bemrose Creek in SW¼SW¼ 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.

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09042000	158	0	0	0	0	0	67	1,690	3,490	4,060	1,410	0
Water year 1989, 10,870												

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 1988 TO SEPTEMBER 1989

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09063700	5,290	4,770	0	0	0	0	1,670	3,790	1,460	2,640	3,700	3,530
Water year 1989,	26,850											

09077160 Charles H. Boustead 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 1988 TO SEPTEMBER 1989

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09077160	0	0	0	0	0	0	1,800	17,080	15,560	2,520	275	0
Water year 1989,	37,240											

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 1988 TO SEPTEMBER 1989

Diversion	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
09077500	51	2.0	0	0	0	0	50	1,250	1,770	466	137	39
Water year 1989,	3,770											

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 streamflow-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than streamflow-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 partial-record stations are presented in a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a second table.

CREST-STAGE PARTIAL-RECORD STATIONS

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. 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.

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1989

Station number	Station name	Location	Total drainage area (mi ²)	Non con-trib-uting	Period of record	Annual maximum		
						Date	Gage height (feet)	Dis-charge (ft ³ /s)
PLATTE RIVER BASIN								
06708500	Deer Creek near Littleton, CO	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.	26.2	-	1942-46, 1978-89	1989		d
-----	Lee Gulch at Littleton, CO	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.	a	-	1980-89	6-3-89	12.54	83
-----	Dutch Creek at Platte Canyon Drive, near Littleton, CO	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 downstream from bridge on Platte Canyon Road.	a	-	1985-89	9-10-89	8.10	98
-----	Littles Creek at Littleton, CO	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.	a	-	1985-88 (1988 revised) 1985-89	8-4-88 4-2-89	11.74 11.50	196 160
06710350	Bear Creek near Evergreen, CO	Lat 39°38'11", long 105°20'51", in NW¼NW¼ sec.9, T.5 S., R.71 W., Jefferson County, 1.4 mi upstream from confluence with Evergreen Lake, 1.6 mi northwest of Evergreen.	96.6	-	1978-89	7-30-89	6.06	94
06710400	Cub Creek at Evergreen, CO	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.	22.2	-	1978-89	6-13-89	6.22	28
06710600	Mt. Vernon Creek near Morrison, CO	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.	7.58	-	1978-89	6-8-89	8.30	19
06710990	Parmalee Gulch at mouth at Indian Hills, CO	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.	5.80	-	1978-89	5-13-89	8.76	8.8
06711000	Turkey Creek near Morrison, CO	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.	48.0	-	1942-53, 1969, 1978-89	5-13-89	9.16	24
-----	Weaver Creek near Lakewood, CO	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.	a	-	1982-89	6-3-89	11.00	56

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1989--Continued

Station number	Station name	Location	Total drainage area (mi ²)	Non contributing	Period of record	Date	Annual maximum	
							Gage height (feet)	Discharge (ft ³ /s)
PLATTE RIVER BASIN--Continued								
-----	Little Dry Creek near Arapahoe Road, CO (formerly published as Inflow to Holly Reservoir)	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.	a	-	1985-89	6-3-89	8.92	263
-----	Willow Creek at Dry Creek Road, near Englewood, CO	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.	a	-	1985-89	6-3-89	8.22	378
-----	Little Dry Creek above Englewood, CO	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.	a	-	1982-89	6-3-89	11.64	232
06711570	Harvard Gulch at Colorado Blvd. at Denver, CO	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.	a	-	1979-89	5-15-89	11.56	187
-----	Harvard Gulch below University Blvd. at Denver, CO	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.	a	-	1979-89	5-15-89	12.56	a
06711575	Harvard Gulch at Harvard Park at Denver, CO	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.	a	-	1979-89	5-15-89	12.84	181
06711600	Sanderson Gulch tributary at Lakewood, CO	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.	0.38	-	1969-89	5-15-89	11.79	50
-----	Sanderson Gulch at Mouth at Navajo St. at Denver, CO	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.	a	-	1985-89	6-3-89	10.80	215
-----	Weir Gulch upstream from 1st Avenue, at Denver, CO	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.	a	-	1985-89	6-3-89	10.83	236
-----	Dry Gulch at Denver, CO	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.	a	-	1980-89	9-10-89	12.73	211
-----	Lakewood Gulch at Denver, CO	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.	a	-	1980-89	6-3-89	13.69	555
-----	Sloans Lake, south Tributary at Denver, CO	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.	a	-	1985-89	9-10-89	3.98	441
-----	Westerly Creek at Aurora, CO	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.	a	-	1982-89	6-3-89	12.23	439

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1989--Continued

Station number	Station name	Location	Total drainage area (mi ²)	Non contributing	Period of record	Date	Annual maximum	
							Gage height (feet)	Discharge (ft ³ /s)
PLATTE RIVER BASIN--Continued								
06714310	Sand Creek tributary at Denver, CO	Lat 39°47'07", long 104°50'31", in SW¼SW¼ sec.13, T.3 S., R.67 W., Denver County, in median of Andrews Drive Parkway, 50 ft downstream from Troy St. in Denver.	0.29	-	1971-89	6-3-89		d
-----	Lena Gulch at Upper Site, at Golden, CO	Lat 39°43'21", long 105°11'46", in NE¼NW¼ 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.	a	-	1985-89	6-3-89	10.35	170
06719560	Lena Gulch at Lakewood, CO	Lat 39°44'27", long 105°08'49", in SE¼SE¼ sec.31, T.3 S., 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).	c9.0	-	1974-79, 1986-89	6-3-89	12.12	215
-----	Hidden Lake Outflow at 65th Ave. nr Arvada, CO	Lat 39°48'53", long 105°02'03", in SE¼SE¼ 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.	a	-	1985-89	1989	3.67	a
-----	Little Dry Creek at Westminster, CO	Lat 39°49'34", long 105°02'25", in NW¼NE¼ sec.6, T.3 S., R.68 W., Adams County, 400 ft downstream from 72nd Ave. in Westminster.	a	-	1982-89	1985 1986 (1986 revised) 1989	11.35 10.92 12.14	464 368 659
-----	Four Mile Creek near Crisman, CO	Lat 40°02'44", long 105°22'02", in SE¼SW¼ sec.17, T.1 N., R.71 W., Boulder county, on right bank 0.65 mile below junction of Gold Run Road.	a	-	1985-89	6-9-89	10.21	31
-----	Sunshine Creek at Boulder, CO	Lat 40°01'15", long 105°17'47", in NW¼SW¼ sec.25, T.1 N., R.71 W., Boulder County, on right bank 0.2 mile past Hospital at Open Space Park, 125 ft upstream from footbridge.	a	-	1986-89	6-9-89	2.12	235 24
06723000	Middle Fork St. Vrain Creek near Allens Park, CO	Lat 40°10'07", long 105°26'27", in SW¼NW¼ sec.3, T.2 N., R.72 W., Boulder County, 1.4 mi northeast from Raymond.	28.0	-	1925-30, 1978-89	1983 1984 1985 1986 1987 (1983-87 revised) 7-30-89	7.18 7.37 7.15 7.23 6.74 6.97	717 982 680 781 306 489
06732500	Fall River at Estes Park, CO	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.	39.5	-	1947-53, 1978-89	6-17-89	7.07	94
06736650	Cedar Creek at Cedar Cove, CO	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.	18.9	-	1978-89	--	--	<10
ARKANSAS RIVER BASIN								
07091000	Chalk Creek near Nathrop, CO	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.	97.0	-	1910, 1949-56, 1978-89	1989	2.27	420
07107500	St. Charles River at Burnt Mill, CO	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.	166	-	1923-33, 1978-89	1989	5.74	2,850

a Not determined.

b At different datum.

c Approximately.

d Peak stage did not reach bottom of gage.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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 1989

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", in NW¼SW¼ sec.31, T.18 S., Pueblo County, at right downstream toe of Teller Dam	10-06-88	0.009
				11-04-88	0.007
				12-07-88	0.004
				01-05-89	0.005
				02-16-89	0.005
				04-06-89	0.005
				05-05-89	0.005
				05-30-89	0.005
				07-06-89	0.004
				08-04-89	0.004
				09-14-89	0.004
38426281044940	Teller Reservoir Seepage No. 2 Near Stone City, Co.	Turkey Creek	Lat 38°26'28", long 104°49'40", in NW¼SE¼ sec.36, T.18 S., Pueblo County, 500 ft downstream of right toe of Teller Dam.	10-06-88	0.15
				11-04-88	0.10
				12-07-88	0.10
				01-05-89	0.08
				02-16-89	0.08
				04-06-89	0.07
				05-03-89	0.06
				05-30-89	0.06
				07-06-89	0.04
				08-04-89	0.04
				09-14-89	0.04

ARKANSAS RIVER BASIN

Listed below are data for instantaneous discharge and selected water-quality data for sites on Fountain Creek that were done on synoptic samplings.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

385813105022201 - Fountain Creek below Woodland Park WWTF, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	1315	0.38	762	8.2	1.0	9.8	13
SEP 1989 06...	1220	0.17	--	7.9	22.0	5.0	33

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	43	0.09	1.00	32.0	0.0	32
SEP 1989 06...	55	0.52	1.10	17.0	14	31

385716105014301 - Fountain Creek above Crystola Creek at Crystola, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	1220	0.06	574	7.8	5.0	6.4	<0.1
SEP 1989 06...	1155	0.02	--	7.7	13.0	6.6	0.6

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	41	0.02	3.30	0.67	0.23	0.90
SEP 1989 06...	55	0.05	5.00	0.51	0.49	1.0

385620105005401 - Fountain Creek above Green Mountain Falls, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	1135	1.2	553	8.5	3.0	9.6	1.2
SEP 1989 06...	1125	0.70	609	8.3	13.0	7.2	0.8

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	30	0.02	3.70	0.07	0.43	0.50
SEP 1989 06...	35	0.03	3.50	0.08	0.32	0.40

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

385600105004301 - Fountain Creek above Catamount Creek at Green Mountain Falls, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	1020	1.3	503	8.2	1.5	10.1	<0.1
SEP 1989 06...	1035	1.5	410	8.2	11.5	7.6	0.8

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	25	0.02	3.60	0.05	0.25	0.30
SEP 1989 06...	22	0.02	2.10	0.04	0.56	0.60

385537105001401 - Fountain Creek below Green Mountain Falls, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	0900	3.9	255	8.2	1.0	10.6	<0.1
SEP 1989 06...	1000	2.2	326	8.1	11.5	8.0	0.9

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	10	<0.01	1.50	0.03	0.27	0.30
SEP 1989 06...	15	0.01	1.60	0.04	0.26	0.30

385509104592501 - Fountain Creek at Chipita Park, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	1245	3.7	273	8.2	1.5	10.4	<0.1
SEP 1989 06...	1340	2.4	318	8.4	15.0	7.3	0.5

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	11	<0.01	1.60	0.01	--	<0.20
SEP 1989 06...	17	0.01	1.60	0.03	0.27	0.30

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

385347104581601 - Fountain Creek above Cascade Creek at Cascade, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	1130	4.1	274	8.2	1.0	10.8	<0.1
SEP 1989 06...	1245	2.5	316	8.6	15.0	8.0	0.6

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	11	<0.01	1.50	0.02	--	<0.20
SEP 1989 06...	18	<0.01	1.30	0.02	0.28	0.30

385319104574501 - Fountain Creek above French Creek below Cascade,

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	1330	6.0	229	8.2	1.0	10.8	0.2
SEP 1989 06...	1415	3.6	278	8.6	15.0	7.7	0.5

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	9.6	<0.01	1.30	<0.01	--	<0.20
SEP 1989 06...	13	<0.01	1.20	0.02	0.18	0.20

385205104552501 - Fountain Creek above Manitou Springs, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	1030	8.7	209	8.2	2.0	11.0	<0.1
SEP 1989 06...	1145	3.4	328	8.6	16.0	7.7	0.9

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	10	<0.01	1.10	<0.01	--	<0.20
SEP 1989 06...	19	<0.01	1.20	0.02	0.38	0.40

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

07103700

- FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO.

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	0915	10	305	8.2	1.0	11.1	<0.1
SEP 1989 06...	1020	2.9	554	8.5	15.0	7.9	0.7

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	14	<0.01	1.00	<0.01	--	0.20
SEP 1989 06...	33	<0.01	1.00	0.02	0.28	0.30

384940104495901 - Fountain Creek above Monument Creek at Colorado Springs, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 14...	0745	7.4	458	8.1	0.5	11.0	<0.1
SEP 1989 06...	0930	3.6	970	8.1	14.5	7.7	0.2

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 14...	17	0.02	1.30	<0.01	--	0.20
SEP 1989 06...	34	0.05	1.80	0.03	0.37	0.40

385812105022301 - Unnamed Tributary to Fountain Creek above Crystola, CO

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)
SEP 1989 06...	1415	<0.01	479	8.1	18.5	6.9

385715105014401 - Crystola Creek at the mouth at Crystola, CO

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)
DEC 1988 14...	1245	0.15	300	7.8	2.5	9.4
SEP 1989 06...	1345	0.09	365	7.6	15.0	9.0

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

385659105013201 - Unnamed Tributary to Fountain Creek below Crystola, CO

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)
DEC 1988 14...	1345	0.02	148	8.1	2.0	10.0
SEP 1989 06...	1450	0.01	186	8.1	12.5	7.2

385600105004501 - Catamount Creek at the mouth at Green Mountain Falls, CO

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)
DEC 1988 14...	0950	1.3	113	8.3	1.5	10.2
SEP 1989 06...	1025	0.16	156	8.0	16.0	7.2

385556105004001 - Crystal Creek at the mouth at Green Mountain Falls, CO

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)
DEC 1988 14...	1205	0.51	79	8.0	0.5	10.6
SEP 1989 06...	1310	0.34	105	8.1	11.5	8.2

385346104581601 - Cascade Creek at the mouth at Cascade, CO

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)
DEC 1988 14...	1115	1.4	74	8.3	0.0	10.9
SEP 1989 06...	1220	0.15	131	8.2	13.0	7.8

385318104574301 - French Creek at the mouth below Cascade, CO

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)
DEC 1988 14...	1410	1.5	612	7.1	0.5	10.8
SEP 1989 06...	1440	<0.01	158	7.5	14.0	6.9

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

385130104553101 - Ruxton Creek near the mouth at Manitou Springs, CO

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)
DEC 1988						
14...	1020	0.04	411	8.1	0.0	10.6
SEP 1989						
06...	1100	0.02	297	8.1	15.5	7.7

385130104534601 - Sutherland Creek at the mouth at Manitou Springs, CO

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)
DEC 1988						
14...	0930	0.47	119	8.3	0.5	11.1
SEP 1989						
06...	1020	0.12	233	8.0	15.5	7.5

ARKANSAS RIVER BASIN

Listed below are data for instantaneous discharge and selected water-quality data for sites on Monument Creek that were done on synoptic samplings.

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

390707104552801 - Monument Creek above Palmer Lake, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1510	2.5	113	8.1	0.0	11.6	0.4
SEP 1989 07...	1335	EO.44	109	7.7	16.5	7.2	<0.1

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	0.70	<0.01	0.10	0.02	0.38	0.40
SEP 1989 07...	0.70	<0.01	0.10	0.03	0.27	0.30

07103747 - MONUMENT CREEK AT PALMER LAKE, CO.

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1410	0.87	173	8.2	1.0	10.8	0.4
SEP 1989 07...	1310	0.25	235	8.3	26.5	6.4	0.2

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	3.3	<0.01	<0.10	0.02	--	<0.20
SEP 1989 07...	8.3	<0.01	<0.10	0.03	0.37	0.40

390425104522701 - Monument Creek at Arnold Road below Monument, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1310	3.8	223	8.2	4.5	9.9	1.6
SEP 1989 07...	1210	0.04	--	8.2	24.5	7.2	1.2

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	9.2	<0.01	0.10	0.07	0.43	0.50
SEP 1989 07...	13	<0.01	<0.10	0.04	0.56	0.60

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

390413104522601 - Palmer Lake-Monument WWTF outfall below Monument, CO

WATER QUALITY DATA

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1145	1.0	608	7.9	2.0	9.7	26
SEP 1989 07...	1145	0.78	574	7.5	19.0	5.0	13

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	37	0.06	1.70	21.0	3.0	24
SEP 1989 07...	54	0.88	6.10	1.40	4.7	6.1

390324104514501 - Monument Creek at Baptist Road below Monument, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1045	5.2	328	8.0	0.0	10.2	5.2
SEP 1989 07...	1030	0.86	495	7.8	17.5	8.1	3.0

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	15	0.01	0.70	0.88	5.1	6.0
SEP 1989 07...	51	0.20	2.00	0.41	2.2	2.6

07103780 - MONUMENT CREEK ABOVE NORTHGATE BLVD AT USAF ACADEMY, CO.

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
SEP 1989 07...	1435	0.76	408	8.4	24.5	7.9	1.6

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
SEP 1989 07...	40	0.01	<0.10	0.06	1.2	1.3

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

07103780 - MONUMENT CREEK ABOVE NORTHGATE BLVD AT USAF ACADEMY, CO.

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1600	10	294	8.1	0.0	11.1	3.6
SEP 1989 07...	1435	0.76	204	8.4	24.5	7.9	1.6

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	13	0.01	0.50	2.30	0.50	2.8
SEP 1989 07...	40	0.01	<0.10	0.06	1.2	1.3

390115104502301 - Smith Creek at the mouth at USAF Academy, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1500	0.33	342	8.0	0.0	11.3	0.5
SEP 1989 07...	1430	0.04	370	7.6	22.5	5.9	0.4

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	22	0.01	0.70	0.04	0.56	0.60
SEP 1989 07...	34	<0.01	<0.10	0.03	0.57	0.60

390036104500301 - Monument Creek below Smith Creek at USAF Academy, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	0920	5.3	334	7.7	0.0	10.7	2.6
SEP 1989 07...	0945	1.0	424	7.6	16.0	8.0	0.9

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	15	0.01	0.60	2.40	0.60	3.0
SEP 1989 07...	36	<0.01	<0.10	0.03	0.57	0.60

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

385858104494301 - Monument Creek at USAF Academy Waste Water Treatment Plant

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1400	11	335	8.0	0.0	11.6	5.0
SEP 1989 07...	1330	2.0	335	9.2	24.5	9.5	1.0

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	15	0.01	1.00	2.00	0.50	2.5
SEP 1989 07...	24	0.01	0.40	0.04	0.66	0.70

385732104500301 - Monument Creek above West Monument Creek at USAF Academy, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1245	13	328	8.1	0.0	11.5	3.4
SEP 1989 07...	1230	2.6	336	8.1	16.5	8.3	0.6

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	15	0.01	1.30	1.20	1.0	2.2
SEP 1989 07...	18	0.01	0.40	0.04	0.66	0.70

07104000 - MONUMENT CREEK AT PIKEVIEW, CO.

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1115	10	550	8.3	0.0	11.6	0.6
SEP 1989 07...	1120	9.6	526	8.4	22.0	6.7	0.7

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	25	0.01	2.80	0.43	0.27	0.70
SEP 1989 07...	19	0.02	2.10	0.06	0.94	1.0

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

385234104494901 - Monument Creek at Fillmore Street at Colo Springs, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	1000	7.0	809	8.2	0.0	11.7	0.4
SEP 1989 07...	1020	6.3	803	8.4	18.0	7.6	0.6

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	31	0.01	5.40	0.21	0.69	0.90
SEP 1989 07...	25	0.03	4.50	0.04	1.3	1.3

384943104495801 - Monument Creek at the mouth at Colorado Springs, CO

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)	BOD OXYGEN DEMAND, BIOCHEM CARBON. 5 DAY (MG/L)
DEC 1988 16...	0830	9.2	812	8.3	0.0	11.4	0.4
SEP 1989 07...	0920	6.9	815	8.4	16.0	8.0	0.5

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	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, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 1988 16...	32	<0.01	4.60	0.23	0.27	0.50
SEP 1989 07...	26	0.01	3.40	0.02	1.3	1.3

390300104520701 - Beaver Creek at the mouth below Monument, CO

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)
DEC 1988 16...	1520	1.4	143	8.2	0.0	11.1
SEP 1989 07...	1055	0.27	183	8.5	18.5	8.0

390150104503801 - Unnamed Tributary above Smith Creek at USAF Academy, CO

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)
DEC 1988 16...	1425	0.21	522	8.0	0.0	11.1
SEP 1989 07...	1440	0.07	606	8.1	17.0	6.7

DISCHARGE AND SELECTED WATER-QUALITY DATA AT SITES ON MONUMENT CREEK--Continued

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

385729104500401 - West Monument Creek at the mouth at USAF Academy, CO

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)
DEC 1988 16...	1340	0.23	219	8.1	0.0	11.6
SEP 1989 07...	1200	0.02	344	7.8	14.0	6.5

385708104492901 - Kettle Creek near the mouth above Colorado Springs, CO

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)
DEC 1988 16...	1305	0.39	372	8.1	3.5	10.0
SEP 1989 07...	1515	0.20	402	8.0	19.0	6.7

385618104484401 - Pine Creek near the mouth above Colorado Springs, CO

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)
DEC 1988 16...	1225	2.0	576	8.4	0.0	11.6
SEP 1989 07...	1345	1.4	543	8.5	25.0	6.5

07103990 - COTTONWOOD CREEK AT MOUTH, AT PIKEVIEW, CO.

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)
DEC 1988 16...	1135	5.0	598	8.5	0.0	11.5
SEP 1989 07...	1250	3.1	557	8.6	24.5	6.4

385320104492401 - Templeton Gap Fldwy at the mouth at Colorado Springs, CO

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)
DEC 1988 16...	1035	0.84	1370	8.4	0.0	11.7
SEP 1989 07...	1115	1.1	1080	8.4	17.5	7.9

ARKANSAS RIVER BASIN

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

38532110493301 - Douglas Creek at the mouth at Colorado Springs, CO

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)
DEC 1988 16...	0950	0.10	895	8.4	0.0	11.1
SEP 1989 07...	1025	0.22	774	8.5	17.5	9.9

385302104502201 - Unnamed Tributary above Fillmore Street at Colorado Springs, CO

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)
DEC 1988 16...	0900	0.42	1440	8.3	2.0	11.0
SEP 1989 07...	0945	0.32	1420	8.1	16.0	9.1

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 1988					MAY 1989				
06...	1110	0.50	49	6.0	18...	1030	2.4	42	0.5
NOV					JUN				
04...	1035	0.25	52	0.5	14...	1145	12	36	3.0
DEC					JUL				
23...	1120	0.33	53	1.0	13...	0915	4.5	39	--
FEB 1989					AUG				
15...	1540	0.26	51	1.0	16...	1010	1.4	49	8.5
MAR					SEP				
24...	1115	0.18	60	0.0	15...	1040	0.92	52	5.5
APR									
20...	1030	0.47	52	1.5					
06697200 FRENCH CREEK NEAR JEFFERSON, CO (LAT 39 23 21N LONG 105 38 07W)									
OCT 1988					JUN 1989				
04...	1435	1.9	132	6.0	15...	1205	21	98	7.0
NOV					JUL				
02...	1425	1.3	133	2.0	10...	1515	12	103	--
APR 1989					AUG				
24...	1200	4.5	101	4.0	14...	1405	7.0	124	11.0
MAY					SEP				
16...	1320	7.4	99	3.5	13...	1530	4.0	127	7.0
06699000 ROCK CREEK NEAR JEFFERSON, CO (LAT 39 17 29N LONG 105 41 43W)									
OCT 1988					JUN 1989				
04...	1050	6.3	132	7.0	16...	1155	17	57	9.5
NOV					JUL				
02...	1100	4.5	64	1.0	10...	1315	11	54	--
APR 1989					AUG				
18...	1420	8.3	96	10.5	14...	1200	18	61	11.0
MAY					SEP				
16...	0825	18	126	5.0	13...	1325	11	59	7.0
06699005 TARRYALL CREEK BELOW ROCK CREEK NEAR JEFFERSON, CO. (LAT 39 17 13N LONG 105 41 43W)									
OCT 1988					MAY 1989				
04...	0900	27	140	6.0	16...	1045	212	289	4.5
NOV					JUN				
02...	1145	11	143	3.0	15...	1505	153	189	19.5
DEC					JUL				
20...	1335	8.2	141	0.0	10...	1145	96	108	--
FEB 1989					AUG				
14...	1400	6.2	162	0.0	14...	1020	94	120	10.5
MAR					SEP				
30...	1015	21	120	1.0	13...	1155	51	121	5.5
APR									
18...	1145	77	199	7.5					
06708750 EAST PLUM CREEK AT CASTLE ROCK, COLO. (LAT 39 23 04N LONG 104 51 42W)									
OCT 1988					APR 1989				
06...	1315	4.0	285	17.5	24...	0915	6.5	268	10.0
NOV					MAY				
03...	1150	4.6	295	13.0	23...	1120	2.8	300	21.0
DEC					JUN				
13...	1300	11	275	5.0	15...	1205	3.6	250	23.0
JAN 1989					JUL				
13...	1305	5.9	--	1.0	13...	1130	0.10	465	24.0
FEB					AUG				
16...	1300	8.5	290	0.5	24...	1058	0.07	700	20.5
MAR					SEP				
16...	1300	6.7	310	15.0	11...	1310	1.4	430	13.0

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)
06709500 PLUM CREEK NEAR LOUVIERS, CO. (LAT 39 29 04N LONG 105 00 07W)									
OCT 1988					APR 1989				
03...	1245	7.6	350	19.0	06...	1350	19	335	18.0
18...	0900	12	345	10.0	20...	1030	18	345	20.0
NOV					MAY				
04...	1250	11	360	12.5	01...	0950	17	355	10.0
14...	1105	15	345	10.0	22...	1015	9.0	350	20.0
30...	1020	4.4	370	1.0	JUN				
DEC					06...	1045	11	370	23.0
12...	1205	9.6	350	2.0	16...	1000	9.0	355	18.0
JAN 1989					30...	1015	1.7	390	22.0
03...	1340	17	385	0.5	JUL				
13...	1115	5.6	390	0.5	13...	0940	0.24	410	18.0
31...	1325	23	370	1.0	31...	0953	6.6	390	21.0
FEB					AUG				
17...	1005	14	240	0.0	24...	0920	0.31	385	19.0
MAR					28...	1015	0.21	410	18.0
09...	1440	30	345	16.0	SEP				
16...	0915	22	335	6.0	11...	0930	9.7	365	11.0
06709530 PLUM CREEK AT TITAN ROAD NEAR LOUVIERS, CO (LAT 39 30 27N LONG 105 01 23W)									
OCT 1988					MAY 1989				
18...	1055	9.4	360	15.0	22...	1215	7.7	390	24.0
NOV					JUN				
14...	1415	15	380	11.0	16...	1145	8.2	380	24.5
MAR 1989					SEP				
09...	1310	29	330	14.0	11...	1115	5.7	390	12.0
16...	1110	21	360	13.0					
APR									
20...	1230	17	372	22.0					
06710245 SOUTH PLATTE RIVER AT UNION AVE AT ENGLEWOOD, CO (LAT 39 37 52N LONG 105 00 50W)									
APR 1989					JUL 1989				
18...	1215	227	375	13.0	21...	0850	305	340	20.0
MAY					AUG				
15...	1320	206	480	17.0	17...	1420	504	307	24.0
JUN					SEP				
12...	1400	63	620	21.0	26...	1055	65	550	16.0
06710385 BEAR CREEK ABOVE EVERGREEN, CO (LAT 39 37 58N LONG 105 19 59W)									
OCT 1988					MAY 1989				
07...	1210	24	61	7.0	18...	1650	48	67	15.0
NOV					JUN				
01...	1240	15	64	4.0	16...	1440	77	56	12.5
DEC					JUL				
19...	1145	14	73	0.0	13...	1525	68	45	--
FEB 1989					AUG				
13...	1110	12	74	0.0	18...	0835	46	51	11.5
MAR					SEP				
29...	1435	16	82	5.0	15...	1410	34	59	10.0
31...	1315	8.5	94	5.0					
APR									
17...	1010	24	79	6.5					
06710605 BEAR CREEK ABOVE BEAR CREEK LAKE NEAR MORRISON, CO (LAT 39 39 08N LONG 105 10 23W)									
OCT 1988					MAY 1989				
07...	1640	17	178	11.0	19...	0920	14	157	12.0
NOV					JUN				
01...	1530	13	218	7.0	12...	1315	9.0	167	16.0
DEC					JUL				
19...	1445	8.0	252	0.0	14...	1000	2.9	273	17.5
FEB 1989					AUG				
17...	1140	14	274	0.0	17...	0843	1.1	323	14.5
MAR					SEP				
17...	1055	6.4	240	--	11...	1325	3.3	247	9.5
APR									
17...	1350	0.30	243	15.0					

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)
06711040 TURKEY CREEK ABOVE BEAR CREEK LAKE NEAR MORRISON, CO (LAT 39 38 27N LONG 105 09 34W)									
OCT 1988					MAY 1989				
05...	0930	0.98	1020	9.0	19...	1140	1.2	--	14.5
NOV					JUN				
03...	1105	1.0	1070	10.0	12...	1450	0.87	1030	15.0
DEC					JUL				
21...	1405	2.1	798	3.0	14...	1120	19	488	19.5
FEB 1989					AUG				
13...	1405	1.7	977	2.5	17...	1005	0.51	1480	15.5
MAR					SEP				
17...	1305	0.81	800	9.0	11...	1130	0.95	1090	10.0
APR									
21...	1405	0.35	990	17.0					
06712000 CHERRY CREEK NEAR FRANKTOWN, CO. (LAT 39 21 21N LONG 104 45 46W)									
OCT 1988					APR 1989				
03...	1000	4.5	232	9.5	06...	1150	11	240	10.0
18...	1300	6.9	225	13.0	24...	1053	6.0	235	11.0
NOV					MAY				
04...	1000	8.8	237	5.5	01...	1220	7.7	250	11.5
30...	1300	9.6	240	0.0	23...	0920	5.6	370	13.0
DEC					JUN				
13...	1015	8.5	230	1.0	06...	1305	4.1	245	13.0
JAN 1989					15...	1010	7.5	235	14.5
03...	1035	5.1	--	0.5	30...	1230	3.1	234	22.0
18...	1115	6.4	210	1.0	JUL				
31...	1020	7.0	220	1.0	14...	0940	1.5	212	17.0
FEB					31...	1305	2.9	218	23.5
16...	1020	5.5	220	0.0	AUG				
MAR					24...	1325	2.0	203	23.0
15...	1030	12	210	2.0	28...	1315	1.7	200	20.0
23...	1010	12	218	6.0	SEP				
					15...	1200	4.1	198	15.0
06713000 CHERRY CREEK BELOW CHERRY CREEK LAKE, CO. (LAT 39 39 12N LONG 104 51 41W)									
JAN 1989					MAY 1989				
31...	0925	20	725	4.0	15...	1025	4.1	725	14.0
MAR					18...	1110	13	750	15.5
01...	1030	27	750	5.0	JUN				
30...	0935	28	700	7.0	12...	1055	17	725	18.0
06713300 CHERRY CREEK AT GLENDALE, CO (LAT 39 42 22N LONG 104 56 15W)									
OCT 1988					JUN 1989				
14...	1125	8.5	1440	15.0	14...	0905	34	780	15.0
JAN 1989					JUL				
17...	1030	4.0	1850	4.0	17...	1200	11	1200	21.0
MAR					AUG				
01...	1200	27	900	6.0	29...	1410	7.4	1490	26.0
30...	1020	30	900	8.0	SEP				
MAY					25...	1025	7.4	1480	15.0
01...	1035	11	1000	11.0					
15...	1140	26	750	15.0					
06713500 CHERRY CREEK AT DENVER, CO. (LAT 39 44 58N LONG 105 00 08W)									
OCT 1988					JUN 1989				
14...	1140	17	1170	15.0	14...	1040	44	850	15.0
JAN 1989					JUL				
17...	1140	10	1430	10.0	21...	1005	18	1140	21.0
MAR					SEP				
01...	1310	34	1000	7.5	05...	1245	19	1000	25.0
30...	1135	32	950	10.0	26...	0940	17	1060	15.0
MAY									
01...	1130	21	1020	15.0					
16...	1035	29	950	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)
06720820 BIG DRY CREEK AT WESTMINSTER, COLO (LAT 39 54 20N LONG 105 02 04W)									
OCT 1988					MAY 1989				
04...	0930	1.7	1220	11.5	05...	1030	2.0	1480	12.5
NOV					JUN				
09...	1145	1.3	1650	9.0	01...	1555	13	560	21.0
DEC					JUL				
13...	1525	1.2	1830	3.0	06...	1110	48	335	15.5
FEB 1989					AUG				
15...	1355	1.2	1900	2.0	04...	0955	14	465	19.0
MAR					11...	0950	50	300	15.5
13...	1350	0.78	1740	13.5	30...	0945	M14	430	18.0
APR									
03...	1335	0.60	2170	11.5					
06721500 NORTH ST. VRAIN CREEK NEAR ALLENS PARK, CO. (LAT 40 13 07N LONG 105 31 57W)									
NOV 1988					MAY 1989				
01...	1115	7.9	23	6.0	03...	1000	22	24	2.5
DEC					JUN				
05...	1010	7.1	27	1.0	12...	1100	194	18	6.0
JAN 1989					JUL				
12...	1155	6.5	27	0.0	10...	1110	101	15	12.0
FEB					AUG				
13...	1110	5.0	27	0.0	21...	1215	55	20	12.5
MAR					SEP				
13...	1000	7.7	28	3.0	14...	1215	29	20	8.0
APR									
17...	1110	12	26	5.0					
06725450 ST. VRAIN CREEK BELOW LONGMONT, CO. (LAT 40 09 29N LONG 105 00 53W)									
OCT 1988					MAY 1989				
04...	1225	56	1390	13.5	02...	1020	41	1190	13.5
NOV					JUN				
02...	1000	47	1260	10.5	01...	1030	185	640	14.5
DEC					JUL				
13...	1020	41	1260	4.5	05...	1040	89	1090	21.5
FEB 1989					AUG				
15...	1105	38	1260	4.5	02...	1125	114	1120	21.5
MAR					30...	1205	94	1370	22.0
13...	1020	40	1300	9.0					
APR									
05...	1055	30	1270	8.5					
06726900 BUMMERS GULCH NEAR EL VADO, CO. (LAT 40 00 42N LONG 105 20 53W)									
OCT 1988					APR 1989				
06...	1200	0.07	490	10.0	17...	1115	0.29	450	9.0
NOV					17...	1135	0.36	450	9.0
17...	1320	0.21	490	3.0	MAY				
DEC					03...	1330	0.40	405	13.5
12...	1435	0.15	485	3.0	JUN				
FEB 1989					02...	1450	0.26	490	11.5
16...	1215	0.21	--	3.0	JUL				
MAR					17...	1140	0.01	640	16.0
16...	1225	0.41	460	8.0	AUG				
					01...	1415	0.02	665	16.0
06727500 FOURMILE CREEK AT ORODELL, CO. (LAT 40 01 06N LONG 105 19 33W)									
OCT 1988					MAY 1989				
06...	1345	0.65	292	11.0	03...	1220	6.4	165	11.0
NOV					JUN				
17...	1200	0.56	293	1.0	02...	1335	11	104	12.5
DEC					JUL				
12...	1255	0.69	280	0.0	17...	1005	1.0	195	16.0
FEB 1989					AUG				
16...	1430	0.51	345	3.0	01...	1325	1.1	190	19.5
MAR					SEP				
16...	1400	2.2	330	8.5	08...	1340	0.27	250	13.5
APR									
17...	0955	2.5	262	8.0					

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)
06730200 BOULDER CREEK AT NORTH 75TH STREET NEAR BOULDER, CO (LAT 40 03 06N LONG 105 10 42W)									
OCT 1988					MAY 1989				
06...	0950	46	685	17.0	03...	1010	108	345	12.5
NOV					JUN				
17...	1005	43	570	12.0	02...	1025	191	217	15.5
DEC					JUL				
12...	1010	48	535	9.0	07...	1110	204	245	20.0
FEB 1989					AUG				
16...	1030	50	620	7.5	01...	1100	208	200	21.0
MAR					SEP				
16...	1015	38	830	13.0	08...	1035	170	200	20.0
APR									
17...	1440	31	760	16.5					
06746095 JOE WRIGHT CREEK ABOVE JOE WRIGHT RESERVOIR, CO. (LAT 40 32 24N LONG 105 52 56W)									
OCT 1988					MAY 1989				
05...	1640	2.0	63	5.0	17...	1255	9.8	52	1.0
NOV					JUN				
04...	1245	0.65	73	0.0	13...	1300	23	33	7.5
DEC					JUL				
23...	1440	0.69	68	0.0	12...	1315	5.4	40	--
FEB 1989					AUG				
16...	1050	0.30	76	0.0	15...	1550	6.5	56	15.0
MAR					SEP				
23...	1530	0.48	80	0.0	14...	1445	4.6	55	10.5
APR									
20...	1410	1.8	78	0.5					
06746110 JOE WRIGHT CREEK BELOW JOE WRIGHT RESERVOIR, CO. (LAT 40 33 43N LONG 105 52 09W)									
OCT 1988					MAY 1989				
06...	1415	0.59	--	4.0	17...	1430	13	53	2.5
NOV					JUN				
04...	1405	0.59	42	0.0	13...	1520	5.8	35	6.5
DEC					JUL				
22...	1425	0.42	28	0.0	12...	1445	2.4	34	--
FEB 1989					AUG				
16...	1325	0.30	47	0.0	15...	1425	1.4	35	9.0
MAR					SEP				
29...	1230	0.40	68	0.0	14...	1630	62	43	7.0
APR									
19...	1530	0.59	69	0.5					
07096500 FOURMILE CREEK NEAR CANON CITY, CO. (LAT 38 26 11N LONG 105 11 27W)									
OCT 1988					MAY 1989				
04...	1645	14	1040	15.0	03...	1405	7.0	1830	18.0
NOV					08...	1635	11	1350	19.0
10...	1455	23	720	10.5	18...	1530	6.7	1930	19.0
DEC					18...	1550	6.7	1930	19.0
07...	1535	5.2	1620	7.0	30...	1655	9.9	1390	19.0
JAN 1989					JUL				
05...	1435	4.2	1870	10.0	07...	1205	9.4	1330	19.0
FEB					AUG				
16...	1505	6.2	1620	11.0	22...	1430	8.2	1260	20.0
APR					SEP				
07...	1455	3.6	1650	19.0	14...	1520	17	881	16.0
07099215 TURKEY CREEK NEAR FOUNTAIN, CO (LAT 38 36 42N LONG 104 53 39W)									
MAR 1989					MAY 1989				
24...	1400	0.01	1400	--	18...	1100	1.7	206	--
07099235 TURKEY CREEK NEAR STONE CITY, CO (LAT 38 26 27N LONG 104 49 31W)									
OCT 1988					APR 1989				
06...	1730	0.02	1010	12.5	06...	1420	0.08	1180	15.0
21...	1800	0.18	1050	14.5	MAY				
NOV					03...	1025	0.10	1160	12.5
04...	1430	0.17	1080	11.5	30...	1405	0.06	1170	23.5
23...	1300	0.19	1100	6.0	JUL				
DEC					06...	1445	0.01	1260	28.0
07...	1255	0.08	1110	2.5	AUG				
JAN 1989					04...	1600	0.02	1260	27.0
05...	1120	0.07	1200	2.0	SEP				
FEB					14...	1020	0.04	1320	9.0
16...	0915	0.10	1140	0.5					

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)
07103800 WEST MONUMENT CREEK AT AIR FORCE ACADEMY, CO. (LAT 38 58 14N LONG 104 54 08W)									
OCT 1988					APR 1989				
04...	1445	0.17	108	--	11...	1045	0.10	86	--
NOV					MAY				
08...	1225	0.14	106	--	08...	1300	0.05	96	--
DEC					JUN				
06...	1545	0.08	97	--	05...	1225	0.15	96	--
JAN 1989					JUL				
10...	1140	0.13	97	--	12...	1025	0.13	104	--
FEB					AUG				
15...	1345	0.07	90	--	10...	1145	0.12	94	--
MAR					SEP				
13...	1400	0.13	128	--	15...	1220	0.17	72	--
07103990 COTTONWOOD CREEK AT MOUTH, AT PIKEVIEW, CO. (LAT 38 55 41N LONG 104 38 35W)									
OCT 1988					JUN 1989				
04...	1310	3.0	561	--	05...	1455	2.8	524	--
NOV					JUL				
08...	1510	2.9	577	--	12...	1250	2.5	500	--
DEC					12...	1620	2.6	289	--
09...	1155	5.0	590	--	13...	1255	2.5	512	--
16...	1135	5.0	598	0.0	14...	1600	4.6	327	--
JAN 1989					17...	1455	2.2	532	--
11...	1345	2.5	580	--	31...	1515	3.0	434	--
17...	1100	3.4	585	--	AUG				
FEB					07...	1445	3.7	509	--
16...	1410	4.4	608	--	08...	1500	3.2	524	--
MAR					17...	1540	4.3	319	--
14...	1530	3.1	592	--	SEP				
APR					07...	1250	3.1	557	24.5
12...	1530	3.1	592	--	14...	1510	3.5	531	--
MAY									
09...	1350	2.6	580	--					
07105900 JIMMY CAMP CREEK AT FOUNTAIN, CO. (LAT 38 41 04N LONG 104 41 17W)									
OCT 1988					APR 1989				
03...	1315	1.2	3180	--	12...	1020	0.78	3200	--
NOV					MAY				
07...	1255	2.7	2970	--	09...	1540	1.0	3010	--
DEC					JUN				
09...	1600	1.3	3170	--	07...	1115	0.81	3080	--
JAN 1989					JUL				
17...	1245	1.1	3130	--	14...	1055	1.0	2800	--
FEB					AUG				
23...	1540	2.0	2630	--	10...	1345	0.99	1960	--
MAR					SEP				
13...	1200	1.2	3100	--	14...	1035	1.7	2500	--
07105924 WOMACK DITCH NEAR FORT CARSON, CO. (LAT 38 40 52N LONG 104 51 20W)									
OCT 1988					APR 1989				
13...	1215	0.45	131	--	10...	1600	1.5	113	--
NOV					MAY				
09...	1200	0.47	172	--	18...	1345	2.4	111	--
DEC					JUL				
09...	1240	1.2	138	--	13...	1255	0.17	123	--
JAN 1989					AUG				
11...	1245	0.50	139	--	24...	1505	0.72	116	--
MAR									
01...	1340	1.4	139	--					
07105928 LITTLE FOUNTAIN CREEK NEAR FORT CARSON, CO. (LAT 38 40 49N LONG 104 51 06W)									
OCT 1988					APR 1989				
11...	1550	0.04	222	12.5	11...	1235	0.01	214	8.0
NOV					MAY				
09...	1100	0.22	200	7.5	18...	1220	2.5	121	13.0
JAN 1989					AUG				
11...	1110	0.00	251	2.0	24...	1325	0.05	214	19.5
MAR									
01...	1425	0.19	165	2.5					

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)
07105945 ROCK CREEK ABOVE FORT CARSON RESERVATION, CO. (LAT 38 42 26N LONG 104 50 47W)									
OCT 1988					MAR 1989				
12...	1440	0.02	177	--	01...	1525	0.46	158	--
NOV					APR				
09...	1350	0.16	172	--	11...	1330	0.61	160	--
DEC					MAY				
09...	1340	0.21	160	--	18...	1515	3.4	175	--
JAN 1989					JUL				
12...	1445	0.20	172	--	13...	1130	0.10	203	--
07105960 ROCK CREEK NEAR FOUNTAIN, CO. (LAT 38 39 16N LONG 104 44 48W)									
OCT 1988									
13...	1250	0.21	1250	--					
07106000 FOUNTAIN CREEK NEAR FOUNTAIN, CO. (LAT 38 36 08N LONG 104 40 13W)									
OCT 1988					MAY 1989				
05...	1430	35	1220	16.5	19...	1425	22	1360	23.5
19...	1540	50	1200	16.5	25...	1130	48	1140	20.0
NOV					30...	1140	35	1170	22.0
10...	1255	74	1100	11.0	JUN				
14...	1350	92	1090	11.0	05...	1100	36	1140	19.5
30...	1340	53	1180	6.5	12...	1350	50	1050	21.5
DEC					13...	1220	166	700	17.5
12...	1300	56	1180	6.0	14...	1300	80	1000	17.0
JAN 1989					20...	0900	50	1130	17.0
10...	1135	51	1170	2.5	27...	1200	48	968	24.0
31...	1415	90	1090	11.0	JUL				
FEB					12...	1250	66	1080	24.0
15...	1400	73	1150	7.5	13...	1030	123	670	21.0
MAR					14...	1530	162	708	20.5
01...	1120	112	1010	4.5	18...	1250	42	1090	27.0
13...	1345	73	1060	16.0	25...	1130	49	1130	24.0
23...	1430	66	1060	17.0	31...	1325	40	1080	26.5
APR					AUG				
04...	1425	86	975	12.0	07...	1415	175	568	22.0
14...	1100	70	1020	12.0	08...	1425	64	895	27.0
18...	1415	15	1340	20.5	28...	1400	43	1200	24.0
MAY					SEP				
02...	1300	50	1020	19.0	11...	1330	302	538	13.0
09...	1335	34	1190	15.5	18...	1330	27	1280	23.0
16...	1120	32	1070	13.0	22...	1220	56	1140	18.5
					25...	1320	45	1170	21.5
07106300 FOUNTAIN CREEK NEAR PINON, CO. (LAT 38 26 50N LONG 104 35 28W)									
OCT 1988					JUN 1989				
12...	1105	30	1300	13.5	12...	1555	57	1140	22.0
NOV					27...	1100	107	830	21.0
10...	1030	67	1160	6.5	JUL				
DEC					05...	1110	6.4	1450	26.0
12...	1625	67	1250	5.0	11...	1345	14	1310	31.0
JAN 1989					13...	1020	226	582	20.5
10...	1350	52	1270	5.0	14...	1245	330	600	24.5
FEB					27...	0925	10	1330	20.0
15...	1630	91	1150	5.0	31...	1220	53	970	26.0
MAR					AUG				
13...	1545	77	1090	16.5	24...	1650	19	1570	24.5
APR					SEP				
17...	1400	48	1180	18.5	18...	1530	16	1330	26.5
27...	1130	16	1310	14.5					
MAY									
15...	1140	175	742	12.0					
07108900 ST. CHARLES RIVER AT VINELAND, CO. (LAT 38 14 44N LONG 104 29 09W)									
OCT 1988					MAY 1989				
05...	1835	8.7	2240	15.5	02...	1635	9.0	2260	20.5
NOV					15...	0935	34	1570	13.5
08...	1255	8.0	2450	9.0	18...	1330	27	1620	21.0
DEC					31...	1455	5.1	2070	26.5
06...	1635	10	2630	5.5	JUL				
JAN 1989					05...	1635	6.6	2170	32.0
19...	0945	9.1	2890	1.0	13...	0955	102	1200	18.5
FEB					AUG				
17...	1035	8.4	1930	1.0	02...	1615	8.7	2190	29.0
APR					SEP				
05...	1720	12	1460	18.0	13...	1605	9.4	2540	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)
07116500 HUERFANO RIVER NEAR BOONE, CO. (LAT 38 13 33N LONG 104 15 40W)									
NOV 1988					APR 1989				
07...	1035	13	1360	10.5	05...	1400	3.3	4740	24.5
DEC					MAY				
06...	1055	1.1	5230	0.0	02...	1130	2.9	5300	23.0
FEB 1989					18...	1140	22	1960	22.5
17...	1255	37	2030	0.0					
07119500 APISHAPA RIVER NEAR FOWLER, CO. (LAT 38 05 28N LONG 103 58 52W)									
OCT 1988					MAY 1989				
05...	1320	4.6	2840	13.0	02...	1405	2.6	2890	20.5
NOV					18...	0950	11	1820	14.0
07...	1350	23	1550	11.5	31...	1220	20	1170	20.0
DEC					JUL				
06...	1305	4.1	2970	7.0	05...	1405	5.3	2340	28.0
JAN 1989					AUG				
04...	1035	3.4	2960	4.5	02...	1335	4.0	2660	26.0
FEB					SEP				
17...	1500	2.6	2960	5.0	13...	1150	9.9	1960	13.0
APR									
05...	1035	15	1270	11.5					
07121500 TIMPAS CREEK AT MOUTH NEAR SWINK, CO. (LAT 38 00 10N LONG 103 39 18W)									
OCT 1988					MAY 1989				
14...	1310	59	1810	15.5	17...	1020	436	1180	10.5
NOV					JUN				
10...	1505	91	1800	11.0	07...	1030	138	1250	20.0
DEC					JUL				
07...	1410	31	2480	4.0	18...	0845	68	1590	19.0
JAN 1989					AUG				
10...	1020	14	3240	5.0	16...	0955	75	1530	19.5
FEB					SEP				
22...	1555	11	3200	12.0	12...	1405	67	1920	11.0
APR									
19...	0930	46	1930	12.5					
07122400 CROOKED ARROYO NEAR SWINK, CO. (LAT 37 58 56N LONG 103 35 52W)									
OCT 1988					APR 1989				
13...	1515	8.5	2050	1515.0	19...	0750	9.5	2400	9.5
NOV					MAY				
10...	1355	18	1850	12.0	17...	0830	9.6	1930	11.5
DEC					JUN				
07...	1310	9.5	2400	6.0	07...	1335	10	1820	18.5
JAN 1989					JUL				
10...	1120	3.6	3370	7.5	18...	1005	8.5	1600	20.0
FEB					AUG				
24...	1050	2.7	3330	8.0	16...	0830	8.9	2160	17.5
MAR					SEP				
22...	1620	7.3	2240	13.5	12...	1300	5.8	2460	13.0
07124200 PURGATOIRE RIVER AT MADRID, CO. (LAT 37 07 46N LONG 104 38 20W)									
OCT 1988					MAY 1989				
06...	1445	43	290	--	30...	1335	99	255	--
31...	1355	26	421	--	JUN				
DEC					27...	1320	31	360	--
05...	1320	9.9	425	--	JUL				
JAN 1989					11...	1515	22	381	--
05...	1315	26	375	--	21...	1155	45	300	--
FEB					AUG				
27...	1340	44	378	--	04...	1140	23	389	--
MAR					18...	1150	46	300	--
27...	1330	25	386	--	31...	1425	30	385	--
APR									
28...	1245	52	309	--					

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)
07124300 LONG CANYON CREEK NEAR MADRID, CO. (LAT 37 06 53N LONG 104 36 17W)									
OCT 1988					APR 1989				
06...	1300	1.3	495	15.0	27...	1415	0.39	523	19.5
31...	1325	0.93	515	14.5	MAY				
DEC					30...	1150	0.28	553	19.5
05...	1115	0.85	517	2.5	JUN				
JAN 1989					27...	1425	0.18	490	26.0
05...	1110	0.58	530	4.0	JUL				
FEB					21...	1315	0.23	490	26.5
27...	1205	0.60	494	10.5	AUG				
MAR					31...	1515	0.50	510	24.5
27...	1120	0.49	517	12.0					
07124410 PURGATOIRE RIVER BELOW TRINIDAD LAKE, CO. (LAT 37 08 37N LONG 104 32 49W)									
NOV 1988					MAY 1989				
07...	1340	0.19	392	9.5	03...	1300	285	427	10.5
DEC					30...	1540	118	436	15.5
05...	1425	0.12	410	4.0	JUN				
JAN 1989					26...	1350	122	418	16.5
05...	1445	0.09	395	3.5	JUL				
FEB					11...	1300	259	434	19.0
27...	1520	0.11	495	6.0	21...	1455	56	430	20.0
MAR					AUG				
27...	1445	0.04	394	8.5	18...	1425	63	425	19.0
APR					31...	1245	92	440	18.0
17...	1430	26	408	8.0					
28...	1430	175	418	10.5					
07133000 ARKANSAS RIVER AT LAMAR, CO. (LAT 38 06 24N LONG 102 37 04W)									
OCT 1988					APR 1989				
13...	1220	12	3800	--	20...	1600	37	3200	--
NOV					JUN				
09...	1630	13	3800	--	23...	1030	55	3090	--
DEC					JUL				
08...	1000	30	4400	--	20...	0745	65	2990	--
JAN 1989					AUG				
12...	0850	21	4350	--	18...	0820	12	3390	--
FEB					SEP				
24...	0825	25	4400	--	15...	0955	12	3700	--
MAR									
23...	1620	7.9	4020	--					
07134180 ARKANSAS RIVER NEAR GRANADA, CO. (LAT 38 05 44N LONG 102 18 37W)									
OCT 1988					APR 1989				
13...	0930	45	4350	13.0	20...	1300	7.8	5030	23.5
NOV					MAY				
09...	0830	37	4320	9.0	18...	1245	328	3150	17.0
DEC					JUN				
08...	0830	113	4230	2.0	23...	0840	6.6	5100	14.0
JAN 1989					JUL				
11...	1455	104	4410	5.0	19...	1400	128	3300	28.0
FEB					AUG				
23...	1445	103	4370	10.5	17...	1515	80	3770	27.0
MAR					SEP				
23...	1400	68	4420	13.0	15...	0745	43	4170	12.0
08217500 RIO GRANDE AT WAGONWHEEL GAP, CO. (LAT 37 46 01N LONG 106 49 51W)									
OCT 1988					MAY 1989				
14...	1225	343	87	8.0	18...	1140	871	75	10.5
NOV					JUN				
09...	1355	165	105	7.5	15...	1345	1550	56	18.0
DEC					JUL				
06...	1510	140	120	0.5	26...	1230	476	75	15.5
JAN 1989					AUG				
19...	1245	111	115	0.0	16...	1505	318	92	19.5
FEB					SEP				
22...	1300	173	120	0.0	13...	1300	239	85	13.5
APR									
05...	1425	240	105	10.0					

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 Alluvium.

WELL CHARACTERISTICS.--Municipal well.

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	0925	1180	7.3	12.0	49	2.50
FEB 24...	0930	1170	7.3	--	48	2.90
MAY 16...	0925	1060	7.3	13.0	45	2.20
AUG 22...	0930	1110	7.2	12.0	51	3.20

384108104420701 - SC01606506DAA - FOUNTAIN NO. 2

LOCATION.--Lat 38°41'08", long 104°42'07", SE¼NE¼NE¼ sec.6, T.16 S., R.65 W., in El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Fountain Alluvium.

WELL CHARACTERISTICS.--Municipal well, depth 56 ft.

PERIOD OF RECORD.--March to September 1985.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 20...	1015	1240	7.2	12.0	45	3.50
FEB 11...	0930	1310	7.4	12.0	50	4.30
MAY 13...	1000	1280	7.2	13.0	51	4.50
AUG 18...	0950	1230	7.2	13.0	49	4.70

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.

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 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	1045	1460	7.3	13.5	43	11.0
FEB 24...	1100	1380	7.4	14.0	40	10.0
MAY 16...	1030	1490	7.3	14.0	43	9.40
AUG 22...	1030	1500	7.2	13.0	43	12.0

QUALITY OF GROUND WATER--Continued

EL PASO COUNTY

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.

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 1988 TO SEPTEMBER 1989

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
SEP 26...	1445	15.0	2830	7.4	3.79	0.01	0.03	3.80	0.11	0.14	0.69	0.80

EL PASO COUNTY

384328104481101 - SC01506620CDD1 - GOLF COURSE NO. 14

LOCATION.--Lat 38°43'28", long 104°48'11", in SE¼SE¼SW¼ sec.20, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

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 1988 TO SEPTEMBER 1989

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
SEP 26...	1530	15.0	5200	7.2	3.09	0.01	0.03	3.10	0.07	0.09	0.93	1.0

QUALITY OF GROUND WATER

EL PASO COUNTY

384331104473401 - SC01506621CCB - GOLF COURSE NO. 22

LOCATION.--Lat 38°43'31", long 104°47'34", in NW¼SW¼SW¼ sec.21, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

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 1988 TO SEPTEMBER 1989

DATE	TIME	TEMPER- ATURE WATER (DEG C)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
SEP 26...	1445	16.0	2830	7.4	5.28	0.02	0.07	5.30	0.12	0.15	0.68	0.80

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 of Fountain 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 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	1130	602	7.3	13.0	21	6.80
FEB 24...	1130	642	7.2	12.5	23	6.00
MAY 16...	1105	624	7.1	14.0	21	6.10
AUG 22...	1100	678	7.1	13.0	24	6.40

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 of Fountain 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 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	1230	624	7.1	13.0	25	7.20
FEB 24...	1200	574	7.0	13.5	22	7.10
MAY 16...	1205	532	7.1	14.0	19	7.90
AUG 22...	1140	539	7.0	13.0	16	7.60

QUALITY OF GROUND WATER--Continued

EL PASO COUNTY

384535104450801 - SC01506611BCD2 VENETUCCI NO. 3.

LOCATION.--Lat 38°45'35", long 104°45'08", in SE¼SW¼NW¼ sec.11, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widfield of Fountain Alluvium.

WELL CHARACTERISTICS.--Irrigation well, diameter 24 in, depth 80 ft, screened unknown.

PERIOD OF RECORD.--February 1981 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	1300	421	7.2	13.0	9.8	9.40
FEB 24...	1300	420	7.1	--	10	8.80
MAY 16...	1245	416	7.1	--	10	9.40

384610104453501 - SC01506603DDB SECURITY NO. 14.

LOCATION.--Lat 38°46'10", long 104°45'35", in NW¼SE¼SE¼ sec.14, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widfield of Fountain 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 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	1210	605	7.6	13.0	23	7.60
FEB 24...	1220	581	7.4	--	23	7.00
MAY 16...	1140	585	7.3	14.0	23	7.10
AUG 22...	1200	632	7.5	13.0	23	5.40

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.--Widefield of Fountain 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 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	1335	877	7.6	13.0	35	7.50
MAY 16...	1335	870	7.2	13.0	37	8.00
AUG 22...	1245	878	7.2	--	34	8.70

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 Alluvium.

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 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	1400	936	--	--	41	8.90
FEB 24...	1340	857	7.2	13.0	34	7.50
MAY 16...	1405	889	7.2	13.0	33	9.10
AUG 22...	1315	953	7.1	12.5	39	8.20

QUALITY OF GROUND WATER--Continued

EL PASO COUNTY

384718104463701 - SC01406633DAF - 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 Alluvium.

WELL CHARACTERISTICS.--Domestic well, diameter 6 in, depth 72 ft .

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 22...	1425	1360	7.3	13.0	31	16.0
FEB 24...	1400	1260	7.3	--	30	12.0
MAY 16...	1430	1280	7.3	13.0	32	13.0
AUG 22...	1400	1290	7.4	13.0	29	13.0

385323104224001 - SC01306230ACC1

LOCATION.--Lat 38°53'23", long 104°22'40", in SW¼SW¼NE¼ sec.23, T.13 S., R.62 W., El Paso County, Hydrologic Unit 11020004.

AQUIFER.--Black Squirrel Alluvium.

WELL CHARACTERISTICS.--Municipal 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 1988 TO SEPTEMBER 1989

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
NOV 23...	1030	395	7.2	13.0	11	7.60
FEB 24...	1515	370	7.3	13.0	9.9	5.80
MAY 16...	1610	379	7.3	--	11	7.20
AUG 22...	1530	418	7.2	11.5	11	6.80

INDEX

	Page		Page
Access to WATSTORE DATA.....	20	Bummers Gulch near El Vado.....	84,393
Accuracy of the records, explanation of.....	17	Busk-Ivanhoe Tunnel, diversion by.....	372
Acre-foot, definition of.....	20		
Adenosine triphosphate, definition of.....	20		
Algae, definition of.....	20	Cache la Poudre River, above Box Elder Creek near	
Algal-growth potential, definition of.....	20	Timnath, gaging-station record.....	134
Alva B. Adams tunnel at east portal, near		water-quality record.....	135-136
Estes Park.....	371	at Fort Collins, gaging station record.....	126
Apishapa River, near Fowler.....	255,397	water-quality record.....	127-131
Aquifer, definition of.....	20	at mouth of Canyon, near Fort Collins.....	123
Arkansas River, above Pueblo, gaging-station		at Shields Street, water-quality record.....	124-125
record.....	189	below Fort Collins, water-quality record.....	132-133
water-quality record.....	190-192	near Greeley.....	137
at Catlin Dam near Fowler.....	256-257	Carter Lake near Berthoud, contents of.....	114
at Buena Vista, gaging-station record.....	157	water-quality record.....	115-116
water-quality record.....	158-160	Cells/volume, definition of.....	21
at Canon City.....	177	Cfs-day, definition of.....	21
at Granite.....	154	Chacuaco Creek at Mouth near Timpas, gaging-	
at Lamar.....	343,398	station record.....	316
at Las Animas, gaging-station record.....	279	water-quality record.....	317-321
water-quality record.....	280-282	Charles H. Boustead Tunnel, diversion by.....	372
at La Junta.....	274-275	Chatfield Lake near Littleton, contents of.....	50
at Moffat Street, at Pueblo, gaging-station		Cheesman Lake near Deckers, contents of.....	44
record.....	193	Chemical oxygen demand (COD), definition of.....	21
water-quality record.....	194-195	Chemical quality of streamflow.....	10
at Parkdale, gaging-station record.....	171	Cherry Creek at Denver.....	66,392
water-quality record.....	172-174	at Glendale.....	65,392
at Portland, gaging-station record.....	179	below Cherry Creek Lake.....	64,392
water-quality record.....	180-183	near Franktown.....	62,392
below John Martin Reservoir, gaging-station		Cherry Creek Lake near Denver, contents of.....	63
record.....	339	Chlorophyll, definition of.....	21
water-quality record.....	340-342	Classification of Records, explanation of.....	17
near Avondale, gaging-station record.....	244	Clear Creek above Clear Creek Reservoir.....	155-156
water-quality record.....	245-250	at Golden, gaging-station record.....	69
near Coolidge, KS, gaging-station record.....	346	water-quality record.....	70-71
water-quality record.....	347-348	Clover Ditch Drain near Widefield,	
near Granada.....	344,398	water-quality record.....	226
near Nathrop.....	161	Color unit, definition of.....	21
near Nepesta.....	252-254	Conejos River, below Platoro Reservoir.....	362
near Wellsville.....	162	near Lasauces.....	366
Arkansas River basin, crest-stage partial-record		near Mogote.....	363
stations in.....	375	Contents, definition of.....	21
gaging station records in.....	147	Control, definition of.....	21
Artesian, definition of.....	20	Control structure, definition of.....	21
Artificial substrate, definition of.....	24	Cooperation.....	4
Ash mass, definition of.....	21	Cottonwood Creek at mouth at Pikeview.....	209,395
		Crooked Arroyo near Swink.....	273,397
B Ditch Drain near Security water-quality record..	222	Cubic foot per second, definition of.....	21
Bacteria, definition of.....	20	Cubic feet per second per square mile,	
Badger Creek, lower station,		definition of.....	21
near Howard, gaging-station record.....	167		
water-quality record.....	168-170	Data Collection and Computation, explanation of...	15
upper station, near Howard,		Definition of terms.....	20-26
gaging-station record.....	163	Diatoms, definition of.....	23
water-quality record.....	164-166	Discharge and selected water-quality data at	
Bear Creek above Bear Creek Lake		sites on Upper Fountain Creek.....	377-382
near Morrison.....	54,391	Discharge and selected water-quality data at	
above Evergreen.....	52,391	sites on Monument Creek.....	383-398
at Morrison.....	53	Discharge at partial-record stations	
at mouth at Sheridan.....	56	and miscellaneous sites.....	373-376
Bed load, definition of.....	24	Discharge, definition of.....	21
Bed load discharge, definition of.....	24	Discontinued Continuous Water-Quality Stations...	33
Bed material, definition of.....	21	Discontinued gaging stations.....	30-32
Bent Canyon Creek at Mouth, near Timpas,		Dissolved, definition of.....	21
gaging-station record.....	322	Dissolved-solids concentration, definition of....	21
water-quality record.....	323-325	Downstream order system.....	13
Berthoud Pass ditch at Berthoud Pass,		Drainage area, definition of.....	22
diversion by.....	371	Drainage basin, definition of.....	22
Big Arroyo near Thatcher, gaging-station record...	258	Dry mass, definition of.....	21
water-quality record.....	259-263		
Big Dry Creek at Westminster.....	75,393	East Plum Creek at Castle Rock.....	47,390
Big Thompson River above Buckhorn Creek near		Elevermile Canyon Reservoir near Lake George,	
Loveland, water-quality record.....	103-104	contents of.....	44
above Loveland, water-quality record.....	105-106	Explanation of omitted data.....	26
at Estes Park.....	93	Explanation of previous water years.....	26
at I-25 near Loveland, water-quality record...	112-113	Explanation of the Records.....	13
at mouth of Canyon, near Drake.....	102		
at Loveland, gaging-station record.....	107	Fecal Coliform bacteria, definition of.....	21
water-quality record.....	108-109	Fecal Streptococcal bacteria, definition of.....	21
below Loveland, water-quality record.....	110-111	Fort Lyon Canal near Big Bend.....	271-272
near Estes Park.....	96	near Casa.....	265-266
Biochemical oxygen demand (BOD), definition of...	21	near Cornelia.....	267-268
Biomass, definition of.....	21	near Hasty.....	269-270
Blue-green algae, definition of.....	23	Fountain Creek above Little Fountain Creek,....	
Bobolink Reservoir near Conejos.....	359	below Fountain, water-quality record.....	228
Bonny Reservoir near Hale.....	146	at Colorado Springs, gaging-station record....	217
Boulder Creek at mouth near Longmont, gaging-		water-quality record.....	218-220
station record.....	89	at Pueblo, gaging-station record.....	239
water-quality record.....	90-91	water-quality record.....	240-242
at North 75th Street, near Boulder.....	88,394	at Security, gaging-station record.....	223
near Orodell.....	85	water-quality record.....	224-225

	Page		Page
Fountain Creek below Janitell Road, water-quality record.....	221	Monument Creek, above North Gate Boulevard, at USAF Academy, gaging-station record.....	204
near Colorado Springs, gaging-station record.....	196	water-quality record.....	205-207
water-quality record.....	197-199	at Bijou Street at Colorado Springs, water-quality record.....	214-216
near Fountain, gaging-station record.....	233,396	at Palmer Lake, gaging-station record.....	200
water-quality record.....	234-237	water-quality record.....	201-203
near Pinon.....	238,396	at Pikeview, gaging-station record.....	210
Fourmile Creek, near Canon City.....	178	water-quality record.....	211-213
at Orodell.....	86,393		
French Creek near Jefferson.....	41,390	National Geodetic Vertical Datum of 1929, definition of.....	22
Frontier ditch near Coolidge, KS.....	345	National stream-quality accounting network, (NASQAN), explanation of.....	22
Gage height, definition of.....	22	National Trends Network, explanation of.....	22
Gaging station, definition of.....	22	Natural substrate, definition of.....	24
Goose Creek (Rio Grande basin) at Wagonwheel Gap..	352	Noland Gulch Tributary Reservoir Inflow near Villa Grove.....	355
Grand River ditch at La Poudre Pass, diversion by.....	371	North Clear Creek below Continental Reservoir....	350
Grape Creek near Westcliffe.....	175-176	gaging-station record.....	119
Green algae, definition of.....	23	water-quality record.....	120-122
Halfmoon Creek near Malta, gaging-station record..	148	North Fork Republican River at Colorado- Nebraska State Line.....	145
water-quality record.....	149-151	North Fork South Platte River, below Geneva Creek at Grant.....	46
Hardness, definition of.....	22	North Platte River near Northgate.....	38
Harold D. Roberts tunnel at Grant, diversion by...	371	North St Vrain Creek near Allens Park.....	76,393
Homestake tunnel near Leadville, diversion by....	372		
Hoosier Pass tunnel at Hoosier Pass, diversion by.	372	Olympus Tunnel at Lake Estes, water-quality record.....	94-95
Horse Creek near Las Animas, gaging-station record.....	276	Omitted data previous water years.....	26
water-quality record.....	277-278	Organic mass, definition of.....	21
Horsetooth Reservoir near Fort Collins, contents of.....	97	Organism, definition of.....	22
water-quality record.....	98-101	Organism count/area, definition of.....	22
Huerfano River near Boone.....	251,397	Organism count/volume, definition of.....	22
Hydrologic bench-mark network, explanation of....	22	Other Records available, explanation of.....	17
Hydrologic unit, definition of.....	22	Overview of water year 1989.....	5-12
Identifying Estimated Daily Discharge, explanation of.....	17	Parameter Code, definition of.....	23
Instantaneous discharge, definition of.....	21	Partial-record station, definition of.....	23
Introduction.....	1	Particle size, classification of.....	23
Jimmy Camp Creek at Fountain.....	227,395	Particle size, definition of.....	23
Joe Wright Creek, above Joe Wright Reservoir.....	117,394	Percent composition, definition of.....	23
below Joe Wright Reservoir.....	118,394	Periphyton, definition of.....	23
John Martin Reservoir at Caddoa, contents of.....	338	Pesticide, definition of.....	23
Kansas River basin, gaging station records in....	145	Phytoplankton, definition of.....	23
Laboratory Measurements, explanation of.....	19	Picocurie, definition of.....	23
Lake Creek above Twin Lakes Reservoir.....	152-153	Plankton, definition of.....	23
Lakes and reservoirs: Bobolink Reservoir.....	359	Platoro Reservoir at Platoro.....	361
Bonny Reservoir.....	146	Platte River basin, crest-stage partial-record stations in.....	373-376
Carter Lake.....	115-116	Platte River basin, gaging station records in....	37
Chatfield Lake.....	50	Plum Creek at Titan Road near Louviers.....	49,391
Cheeseman Lake.....	44	near Louviers.....	48,391
Cherry Creek Lake.....	63	Precipitation.....	5
Elevenmile Canyon Reservoir.....	44	Primary productivity, definition of.....	23
Horsetooth Reservoir.....	97-101	Publications on techniques of water-resources investigations.....	34-35
John Martin Reservoir.....	338	Pueblo Reservoir near Pueblo, contents of.....	188
Platoro Reservoir.....	361	Purgatoire River, at Ninemile Dam, near Higbee....	332-333
Pueblo Reservoir.....	188	at Madrid.....	283,397
Teller Reservoir.....	186	at Rock Crossing, near Timpas, gaging- station record.....	326
Trinidad Lake.....	285	water-quality record.....	327-331
Turquoise Lake.....	147	below Trinidad Lake.....	287,398
Land-surface datum, definition of.....	22	near Las Animas, gaging-station record.....	334
Latitude-Longitude System, explanation of.....	13	water-quality record.....	335-337
Little Fountain Creek, near Fort Carson.....	230,395	near Thatcher, gaging-station record.....	296
Lockwood Canyon Creek near Thatcher, gaging-station record.....	308	water-quality record.....	297-301
water-quality record.....	309-311		
Long Canyon Creek near Madrid.....	284,398	Quality of ground-water, El Paso County.....	399-404
Los Pinos River (Rio Grande basin) near Ortiz....	365		
Map of Colorado, showing locations of crest-stage partial-record stations.....	3	Radiochemical program, definition of.....	23
Map of Colorado, showing locations of lakes, stream-gaging and water-quality stations.....	2	Records of Stage and Water Discharge, definition of.....	15
Mean concentration, definition of.....	24	explanation of.....	15-17
Mean discharge, definition of.....	21	Surface-Water Quality, definition of... explanation of.....	17
Measuring point, definition of.....	22	Ground-Water Quality, definition of... explanation of.....	17-19
Metamorphic stage, definition of.....	22	Recoverable from bottom material, definition of... Red Rock Canyon Creek at mouth, near Thatcher, gaging-station record.....	19
Methylene blue active substances, definition of..	22	water-quality record.....	19-20
Michigan River, near Cameron Pass.....	37,390	Reservoirs in South Platte River basin.....	24
Micrograms per gram, definition of.....	22	Return period, definition of.....	24
Micrograms per liter, definition of.....	22	Rio Grande, above mouth of Trinchera Creek, near Lasasues.....	360
Middle Boulder Creek at Nederland.....	79	at Thirtymile Bridge, near Creede.....	349
Milligrams of carbon, definition of.....	23	at Wagonwheel Gap.....	351,398
Milligrams of oxygen, definition of.....	23		
Milligrams per liter, definition of.....	22		

	Page		Page
Rio Grande near Del Norte.....	354	Suspended total, definition of.....	25
near Lobatos, gaging-station record.....	367	System for numbering wells, springs, and	
water-quality record.....	368-370	miscellaneous sites.....	13
Rio Grande basin, gaging station records in.....	349		
Rock Creek, above Fort Carson Reservation.....	231,396	Tarryall Creek below Rock Creek, near Jefferson...	43,390
near Fort Carson.....	232	Taxonomy, definition of.....	25
near Jefferson (South Platte River basin).....	42,390	Taylor Arroyo below Rock Crossing, near	
Runoff in inches, definition of.....	24	Thatcher, gaging-station record.....	302
		water-quality record.....	303-307
St. Charles River at Vineland.....	243,396	Teller Reservoir near Stone City.....	186
St. Vrain Creek at Lyons.....	77	Thermograph, definition of.....	25
at mouth, near Platteville.....	92	Time-weighted average, explanation of.....	25
below Longmont.....	78,393	Timpas Creek at mouth, near Swink.....	264,397
San Antonio River at Ortiz.....	364	Tons per acre-foot, definition of.....	25
Sediment, definition of.....	24	Tons per day, definition of.....	25
Selected references.....	28-29	Total Coliform bacteria, definition of.....	20
7-day 10-year low flow, definition of.....	24	Total, definition of.....	25
Sodium adsorption ratio, definition of.....	24	Total discharge, definition of.....	25
Solute, definition of.....	24	Total recoverable, definition of.....	25
South Boulder Creek near Eldorado Springs.....	87	Total organism count, definition of.....	22
South Fork Rio Grande at South Fork.....	353	Total sediment discharge, definition of.....	24
South Platte River above Elevenmile Canyon		Total-sediment load, definition of.....	24
Reservoir, near Hartsel.....	39	Tracy Pit Reservoir Inflow near Saguache.....	356
at Denver.....	67	Transmountain diversions from Colorado River basin	
at Englewood, gaging-station record.....	57	in Colorado.....	371-372
water-quality record.....	58-61	no longer published.....	372
at Henderson, gaging-station record.....	72	Trinidad Lake near Trinidad.....	285
water-quality record.....	73-74	Tritium Network, definition of.....	25
at 64th Avenue at Commerce City.....	68	Turkey Creek above Bear Creek Lake	
at Julesburg, gaging-station record.....	142	near Morrison	55,392
water-quality record.....	143-144	Turkey Creek, above Teller Reservoir, near	
at Union Avenue, at Englewood.....	51,391	Stone City.....	185
below Cheesman Lake.....	45	near Fountain.....	184,394
near Kersey.....	138	near Stone City.....	187,394
near Lake George.....	40	Turkey Reservoir Inflow near Conejos.....	358
near Weldona, gaging-station record.....	139	Turquoise Lake near Leadville.....	147
water-quality record.....	140-141		
Special networks and programs.....	13	Van Bremer Arroyo near Model, gaging-station	
Specific conductance, definition of.....	24	record.....	292
Stage-discharge relation, definition of.....	24	water-quality record.....	293-295
Station Identification Numbers, explanation of....	13	near Tyrone, gaging-station record.....	288
Streamflow.....	5	water-quality record.....	289-291
Streamflow, definition of.....	24		
Substrate, definition of.....	24	Water year, definition of.....	25
Supplemental Water-Quality Data for		WDR, definition of.....	26
Gaging Stations.....	390-398	Weighted average, definition of.....	26
Surface area, definition of.....	24	West Monument Creek at U. S. Air Force Academy....	208,395
Surficial bed material, definition of.....	25	Wet mass, definition of.....	21
Suspended, definition of.....	25	Womack Ditch near Fort Carson.....	229,395
Suspended recoverable, definition of.....	25	WSP, definition of.....	26
Suspended Sediment, definition of.....	24		
Suspended Sediment concentration,		Yellow Warbler Reservoir Inflow	
definition of.....	24	near Antonito.....	357
Suspended Sediment discharge, definition of.....	24		
Suspended Sediment load, definition of.....	24	Zooplankton, definition of.....	23

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^{-2}	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} 6.309×10^{-5}	liters per second (L/s) cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1 4.381×10^{-2}	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

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF THE INTERIOR
INT 413

U.S. DEPARTMENT OF THE INTERIOR
Geological Survey, Mail Stop 415
Box 25046, Denver Federal Center
Denver, CO 80225



OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300
SPECIAL 4TH CLASS BOOK RATE