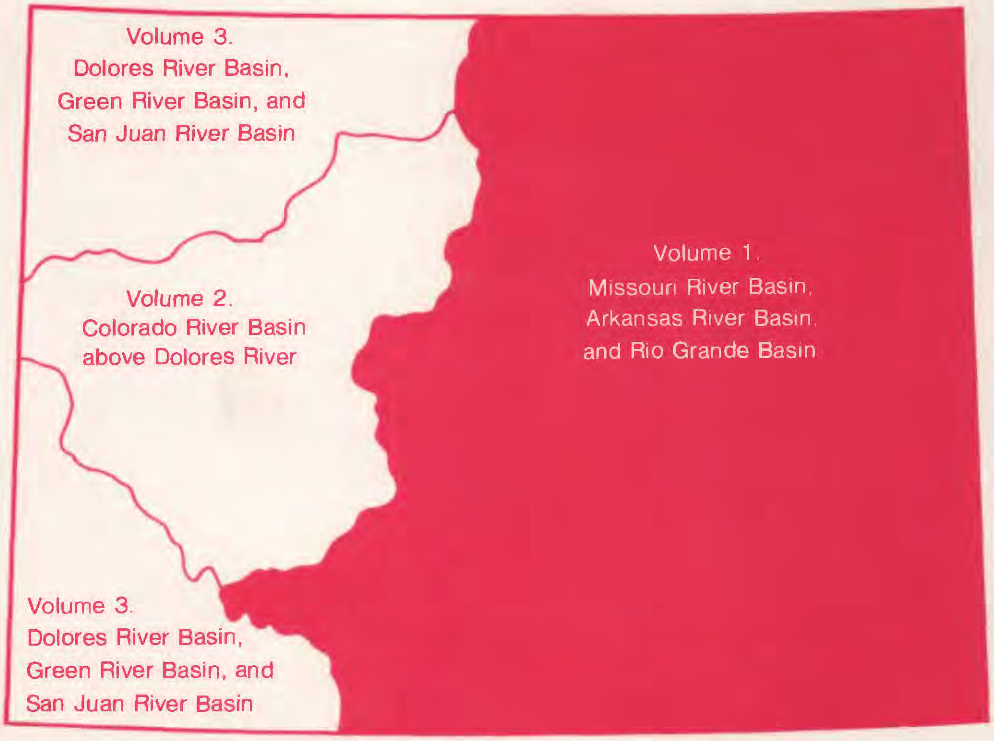
2pahr

U.S. DEPARTMENT OF THE INTERIOR
March 3, 1849

1876

Water Resources Data Colorado Water Year 1982

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


Volume 3.
Dolores River Basin,
Green River Basin, and
San Juan River Basin
Volume 2.
Colorado River Basin
above Dolores River
Volume 1.
Missouri River Basin,
Arkansas River Basin,
and Rio Grande Basin
Volume 3.
Dolores River Basin,
Green River Basin, and
San Juan River Basin

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CO-82-1
Prepared in cooperation with the State of Colorado
and with other agencies

CALENDAR FOR WATER YEAR 1982

1981

OCTOBER

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

NOVEMBER

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

DECEMBER

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

1982

JANUARY

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

FEBRUARY

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

MARCH

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

APRIL

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

MAY

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

JUNE

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

JULY

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

AUGUST

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

SEPTEMBER

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

UNITED STATE DEPARTMENT OF THE INTERIOR

JAMES G. WATT, 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

1983

PREFACE

This report, which consists of three volumes, was prepared by the U.S. Geological Survey in cooperation with the State of Colorado and other agencies by personnel of the Colorado District of the Water Resources Division under the supervision of J. F. Blakey, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region, Lakewood, Colorado.

This report is one of a series issued State by State under the direction of Philip Cohen, Chief Hydrologist, and James E. Biesecker, Assistant Chief Hydrologist for Scientific Publications and Data Management, Reston, Virginia.

Data for Colorado are in three volumes as follows:

Volume 1. Missouri River, Arkansas River, and Rio Grande basins in Colorado,
Volume 2. Colorado River basin in Colorado, above the Dolores River, and
Volume 3. Dolores River, Green River, and San Juan River basins in Colorado.

50272-101

REPORT DOCUMENTATION PAGE

1. REPORT NO. USGS/WRD/HD-82-052

2.

3. Recipient's Accession No.

4. Title and Subtitle
Water Resources Data for Colorado, Water Year 1982
Volume 1. Missouri River basin, Arkansas River basin, and Rio Grande basin

5. Report Date June 1983

6.

7. Author(s) R.C. Ugland, J.T. Steinheimer, J.L. Blattner, and R.D. Steger

8. Performing Organization Rept. No. USGS-WRD-CO-82-1

9. Performing Organization Name and Address
U.S. Geological Survey, Water Resources Division
Box 25046, Mail Stop 415
Denver Federal Center
Lakewood, Colorado 80225

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G)

12. Sponsoring Organization Name and Address
U.S. Geological Survey, Water Resources Division
Box 25046, Mail Stop 415
Denver Federal Center
Lakewood, Colorado 80225

13. Type of Report & Period Covered
Annual--Oct. 1, 1981, t
Sept. 30, 1982

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 1982 water year consists of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs, and water levels and water quality of wells and springs. This report (Volumes 1, 2, and 3) contains discharge records for 408 gaging stations, stage and contents of 27 lakes and reservoirs, 6 partial-record low-flow station, peak flow information for 30 crest-stage partial-record stations, and 50 miscellaneous sites; water levels for 55 observation wells. Nine 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 J. F. Blakey, 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 in Colorado.

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 levels, 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

20. Security Class (This Page) Unclassified

21. No. of Pages 415

22. Price

CONTENTS

Page

Preface III
List of gaging stations, in downstream order, for which records are published VII
List of observation wells, by county, for which records are published XII
Introduction. 1
Cooperation 6
Hydrologic conditions 7
Definition of terms 13
Downstream order and station number 24
Special networks and programs 24
Explanation of stage and water-discharge records. 25
  Collection and computation of data. 25
  Accuracy of field data and computed results 29
  Other data available. 30
  Records of discharge collected by agencies other than the Geological Survey 30
Explanation of water-quality records. 30
  Collection and examination of data. 30
  Water analysis. 30
  Water temperatures. 31
  Solutes 32
  Sediment. 33
  Water-supply papers 34
Explanation of ground-water-level records 35
  Collection of data. 35
  Publications. 37
Selected references 38
Publications on techniques of water-resources investigations. . . . 41
Gaging-station records. 43
  Transmountain diversions. 357
    Transmountain diversions from Colorado River basin in Colorado. . . 357
Discharge at partial-record stations and miscellaneous sites. . . . 360
  Crest-stage partial-record stations 360
Analysis of samples collected at miscellaneous sites. 363
Analysis of miscellaneous stations. 370
Ground-water levels 395
Index 401

ILLUSTRATIONS

Page

Figures 1-3. Map showing:
  1. Location of lake- and streamflow-gaging stations and quality of water stations in Colorado. 3
  2. Location of crest-stage and low-flow partial-record stations in Colorado. 4
  3. Location of observation wells in Colorado. 5
4. Bar graphs showing discharge for 1982 water year compared with median discharge for 1951-80 water years at three representative gaging stations. 9
5. Bar graphs showing average concentrations and discharge for 1982 water year compared with the average concentrations and discharge for water years 1977-81. 11
6. System for numbering wells and miscellaneous sites (latitude and longitude) 35

TABLES

Page

Table 1. Precipitation and departure from normal, in inches. 8
2. Factors for conversion of chemical constituents in grams of micrograms per liter to milliequivalents per liter. 17
3. Factors for conversion of sediment concentration in milligrams per liter to parts per million. 18
4. Degrees Celsius (°C) to degrees Fahrenheit (°F) 32
5. Water-supply paper numbers and parts, water years 1941-71 . . 34

[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]

MISSOURI RIVER BASIN
Missouri River:
PLATTE RIVER BASIN
North Platte River:

Michigan River near Cameron Pass (D). 43
North Fork Michigan River near Gould (D). 44
Canadian River near Lindland (DcCTtSs). 45
Bush Draw near Walden (D) 51
Williams Draw near Walden (Dct) 52
Canadian River near Brownlee (DcCTtSs). 54
North Platte River near Northgate (Dctm). 60
Laramie River near Glendevey (D). 63

South Platte River:

South Platte River above Elevenmile Canyon Reservoir, near Hartsel (D) 64
South Platte River near Lake George (D) 65
Tarryall Creek at upper station, near Como (D). 66
Michigan Creek above Jefferson (D). 67
Jefferson Creek near Jefferson (D). 68
Goose Creek above Cheesman Lake (D) 69
Reservoirs in South Platte River basin (e). 70
South Platte River below Cheesman Lake (D). 71
North Fork South Platte River below Geneva Creek, at Grant (D). . . 72
North Fork South Platte River at South Platte (D) 73
South Platte River at South Platte (D). 74
Plum Creek near Louviers (D). 75
Chatfield Lake near Littleton (e) 76
South Platte River at Littleton (DcmstCT) 77
Bear Creek at Morrison (D). 83
Bear Creek at mouth, at Sheridan (D). 84
South Platte River at Florida Avenue at Denver (D). 85
Cherry Creek near Franktown (D) 86
Cherry Creek Lake near Denver (e) 87
Cherry Creek below Cherry Creek Lake (D). 88
Cherry Creek at Denver (D). 89
South Platte River at Denver (D). 90
South Platte River at 50th Avenue at Denver (D) 91
South Platte River at 64th Avenue at Commerce City (D). 92
Clear Creek near Lawson (D) 93
Clear Creek at Golden (DctCT) 94
Clear Creek at Tabor Street at Wheatridge (D) 98
Clear Creek at mouth, near Derby (D). 100

Page

Missouri River--Continued
  PLATTE RIVER BASIN--Continued
  North Platte River--Continued
    South Platte River--Continued
      Grange Hall Creek below Northglenn (D) 101
    South Platte River at Henderson (D) 102
      St. Vrain Creek at Lyons (D) 103
      St. Vrain Creek below Longmont (D) 104
        Middle Boulder Creek (head of Boulder Creek) at Nederland (D) . . 105
        Boulder Creek near Orodell (D) 106
          South Boulder Creek near Eldorado Springs (D) 107
          Coal Creek near Plainview (Dtc) 108
        Boulder Creek at mouth near Longmont (Dctm) 111
      St. Vrain Creek at mouth, near Platteville (Dtc) 114
      Big Thompson River at Estes Park (D) 117
        Olympus Tunnel at Lake Estes (ctmb) 118
      Big Thompson River near Estes Park (D) 122
        Horsetooth Reservoir near Fort Collins (etcmb) 123
      Big Thompson River at mouth of canyon, near Drake (D) 129
      Big Thompson River above Loveland (ct) 130
      Big Thompson River at Loveland (Dtc) 133
      Big Thompson River below Loveland (ct) 137
        Carter Lake near Berthoud (etcmb) 140
      Big Thompson River at mouth, near La Salle (tc) 144
      Cache la Poudre River:
        Joe Wright Creek above Joe Wright Reservoir (D) 146
        Joe Wright Creek below Joe Wright Reservoir (D) 147
      Cache la Poudre River near Fort Collins (ct) 148
      Cache la Poudre River at mouth of canyon, near Fort Collins (Dtc) . 151
      Cache la Poudre River at Shields Street at Fort Collins (ct) 154
      Cache la Poudre River at Fort Collins (Dct) 156
      Cache la Poudre River below Fort Collins (ct) 160
      Cache la Poudre River above Box Elder Creek near Timnath (Dct) . . . 163
      Cache la Poudre River near Greeley (Dct) 167
    South Platte River near Kersey (D) 170
    South Platte River at Masters (Dctm) 171
    South Platte River near Weldona (Dctb) 173
      Bijou Creek near Fort Morgan (D) 176
    South Platte River at Julesburg (Dtcms) 177
  KANSAS RIVER BASIN
  Arikaree River (head of Kansas River):
  Republican River (continuation of Arikaree River):
    North Fork Republican River:
    North Fork Republican River at Colorado-Nebraska State line (D) . . . 182
    South Fork Republican River:
    Bonny Reservoir near Hale (e) 183
    South Fork Republican River near Hale (D) 184

Page

LOWER MISSISSIPPI RIVER BASIN

Mississippi River:

ARKANSAS RIVER BASIN:

- Arkansas River near Leadville (D) 185

- Lake Fork:

- Turquoise Lake near Leadville (e) 186
    - Halfmoon Creek near Malta (DtcmsT) 187
- Arkansas River near Malta (Dct) 191
    - Lake Creek above Twin Lakes Reservoir (D) 193
- Arkansas River at Granite (D) 193
    - Cottonwood Creek below Hot Springs, near Buena Vista (D) 194
- Arkansas River near Nathrop (D) 195
- Arkansas River near Wellsville (D) 196
    - Badger Creek, Upper Station, near Howard (DctmsS) 197
    - Badger Creek, Lower Station, near Howard (DctmsS) 204
- Arkansas River at Parkdale Siding near Parkdale (ct) 211

- Tallahasee Creek:

- Currant Creek above Cottonwood Creek near Parkdale (ct) 212
    - Cottonwood Creek above Sand Gulch near Parkdale (ct) 213
- Tallahasee Creek above Currant Creek near Parkdale (ct) 214
- Arkansas River at Parkdale (Dct) 215
    - Grape Creek near Westcliffe (D) 217
    - Fourmile Creek near Canon City (D) 218
- Arkansas River at Portland (DtcmCTs) 219
    - Turkey Creek near Fountain (Dctm) 223
        - Little Turkey Creek near Fountain (Dct) 225
    - Turkey Creek above Teller Reservoir near Stone City (D) 227
    - Teller Reservoir near Stone City (D) 228
    - Turkey Creek near Stone City (D) 229
- Pueblo Reservoir near Pueblo (e) 230
- Arkansas River above Pueblo (Dct) 231
    - Fountain Creek near Colorado Springs (Dctm) 233
    - Fountain Creek below 8th Street at Colorado Springs (tc) 236

- Monument Creek:

- Monument Creek at Palmer Lake (D) 238
    - West Monument Creek at U.S. Air Force Academy (D) 239
    - Kettle Creek near Black Forest (D) 240
- Monument Creek at Pikeview (Dct) 241
- Monument Creek at Bijou Street at Colorado Springs (ct) 244
- Fountain Creek at Colorado Springs (Dct) 246
- Fountain Creek below Janitell Road below Colorado Springs (ct) 250
- Fountain Creek below Circle Drive below Colorado Springs (ct) 253

Page

Mississippi River--Continued
  ARKANSAS RIVER BASIN--Continued
    Fountain Creek--Continued
      B Ditch Drain near Security (Dct) 255
    Fountain Creek at Security (D). 258
      Clover Ditch near Widefield (Dct) 259
    Fountain Creek below Widefield (ct) 263
      Jimmy Camp Creek at Fountain (D). 266
    Fountain Creek above Little Fountain Creek below Fountain (ct). . . . 267
      Little Fountain Creek above Keaton Reservoir near Fort Carson (Dct). 269
        Womack Ditch near Fort Carson (D) 271
      Little Fountain Creek near Fort Carson (D). 272
      Little Fountain Creek near Fountain (D) 273
        Rock Creek above Fort Carson Reservation (D). 274
        Rock Creek near Fort Carson (D) 275
        Rock Creek near Fountain (D). 276
    Fountain Creek near Pinon (Dctm). 277
    Fountain Creek at Pueblo (Dct). 280
    St. Charles River at Vineland (D) 283
  Arkansas River near Avondale (D). 284
    Huerfano River at Manzanares Crossing, near Redwing (D) 285
    Huerfano River near Boone (D) 286
    Apishapa River near Fowler (D). 287
    Timpas Creek at mouth, near Swink (D) 288
    Crooked Arroyo near Swink (D) 289
  Arkansas River at La Junta (D). 290
    Horse Creek near Las Animas (D) 291
  Arkansas River at Las Animas (D). 292
    Purgatoire River at Madrid (D). 293
      Long Canyon Creek near Madrid (D) 294
    Trinidad Lake (e). 295
    Purgatoire River below Trinidad Lake (DSs) 296
      Van Bremer Arroyo near Model (D) 300
    Purgatoire River near Thatcher (D) 300
    Purgatoire River at Ninemile Dam, near Higbee (D). 300
    Purgatoire River near Las Animas (D) 301
  John Martin Reservoir at Caddoa (e). 302
  Arkansas River below John Martin Reservoir (D) 303
  Arkansas River at Lamar (D). 304
    Big Sandy Creek near Lamar (D) 305
  Arkansas River near Granada (D). 306
    Frontier ditch near Coolidge, KS (D) 307
  Arkansas River near Coolidge, KS (Dcmts) 308

Page

WESTERN GULF OF MEXICO BASINS:

RIO GRANDE BASIN

Rio Grande at Thirtymile Bridge, near Creede (D) 312
  North Clear Creek below Continental Reservoir (D). 313
  Willow Creek at Creede (D) 314
Rio Grande at Wagonwheel Gap (D) 315
  Goose Creek at Wagonwheel Gap (D). 316
  South Fork Rio Grande at South Fork (D). 317
Rio Grande near Del Norte (D). 318
  Pinos Creek near Del Norte (D) 319
  Closed basin in San Luis Valley:
    San Luis Creek near Poncha Pass (DSs). 320
    San Luis Creek above Villa Grove (DSs) 326
    Kerber Creek at Ashley Ranch, near Villa Grove (D) 332
    Noland Gulch Tributary Reservoir Inflow near Villa Grove (D) 333
    Saguache Creek near Saguache (D) 334
    Anaconda Reservoir near Villa Grove (e). 335
    Tracy Pit Reservoir Inflow near Saguache (D) 336
  Alamosa Creek above Terrace Reservoir (D). 337
  La Jara Creek at Gallegos Ranch, near Capulin (D). 338
    La Jara Arroyo:
      La Jara Arroyo tributary:
        Yellow Warbler Reservoir Inflow near Conejos (D) 339
        Turkey Reservoir Inflow near Conejos (D) 340
        Bobolink Reservoir near Conejos (e). 341
Rio Grande above mouth of Trinchera Creek, near Lasauses (D) 342
  Trinchera Creek below Smith Reservoir, near Blanca (D) 343
  Conejos River:
  Platoro Reservoir at Platoro (e) 344
  Conejos River below Platoro Reservoir (D). 345
  Conejos River near Mogote (D). 346
    San Antonio River at Ortiz (D) 347
      Los Pinos River near Ortiz (D) 348
    San Antonio River at mouth, near Manassa (D) 349
  Conejos River near Lasauses (D). 350
  Culebra Creek at San Luis (D). 351
Rio Grande near Lobatos (Dcmst) 352
Rio Grande at Colorado-New Mexico State line (D). 356
  Transmountain Diversions from Colorado River Basin in Colorado. 357

OBSERVATION WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED

Page

Adams County. 395
Alamosa County. 395

Baca County 395
Bent County 395

Elbert County 395
El Paso County. 396

Huerfano County 396

Kiowa County. 396
Kit Carson County 396

Larimer County. 396
Lincoln County. 397
Logan County. 397

Morgan County 397

Otero County. 398

Phillips County 398
Prowers County. 398
Pueblo County 398

Sedgwick County 398-399

Washington County 399
Weld County 399-400

Yuma County 400

WATER RESOURCES DATA FOR COLORADO, 1982

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

By R. C. Ugland, J. T. Steinheimer, R. D. Steger, and J. L. Blattner

INTRODUCTION

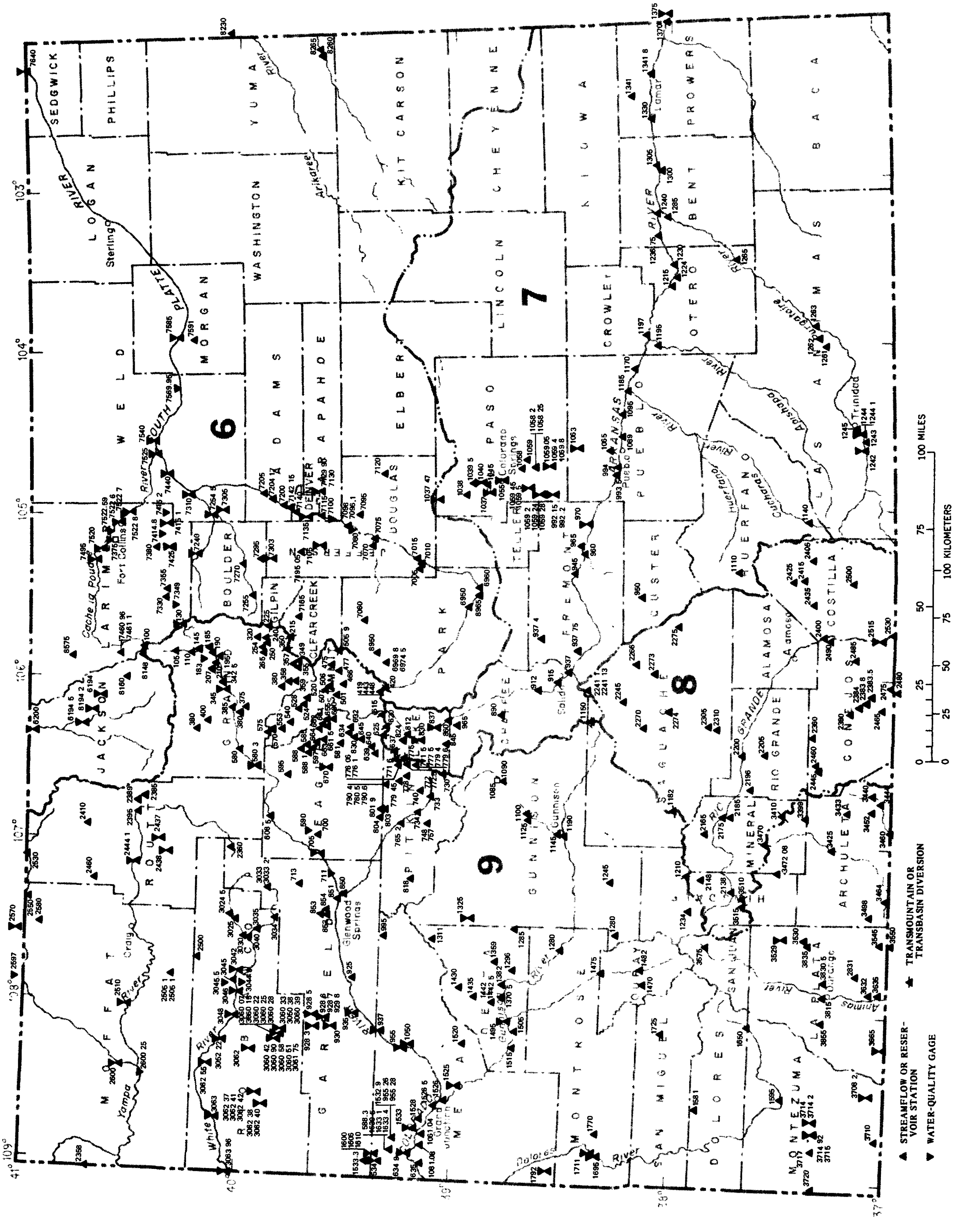
Water-resources data for the 1982 water year for Colorado consists of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of wells and springs. This report (Volumes 1, 2, and 3) contains discharge records for 408 streamflow-gaging stations, stage and contents of 27 lakes and reservoirs, low-flow data for 6 partial-record stations, peak flow information for 30 crest-stage partial-record stations and 50 miscellaneous sites; water-quality data for 163 streamflow-gaging stations and 245 miscellaneous sites; and water levels for 55 observation 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, and locations of observation wells are shown in figure 3. Nine pertinent stations in bordering States also are included in this report. The records were collected and computed by the Colorado District. These data that were collected by the U.S. Geological Survey and cooperating State and Federal agencies in Colorado and represent part of the National Water Data System.

Records of discharge and stage of streams, and contents and stage of lakes and reservoirs are published in a series of U.S. Geological Survey Water-Supply Papers entitled, "Surface-water Supply of the United States." These water-supply papers were published in an annual series through September 30, 1960, and then in 5-year compilations for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply paper entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1955 in an annual series of water-supply papers entitled "Water Levels and Artesian Pressures in Wells in the United States," and from 1955 to the present time, in a 5-year series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be purchased from Eastern Distribution Branch Text Products Section, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

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-82-1." These water-data reports are for sale, in paper copy or in microfiche, 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) 234-5092.



SEDGWICK
PHILLIPS
LOGAN
YUMA
WASHINGTON
KIT CARSON
CHEYENNE
KIOWA
PROWERS
BACA
BENT
OTERO
CROWLEY
LINCOLN
ELBERT
MORGAN
WELD
ADAMS
ARAPAHOE
DOUGLAS
EL PASO
PUEBLO
LAS ANIMAS
HUERFANO
CUSTER
FREMONT
TELLER
PARK
JEFFERSON
DENVER
BOULDER
LARIMER
GILPIN
CLEAR CREEK
JACKSON
GRAND
SUMMIT
LAKE
CHAFFEE
SAGUACHE
ALAMOSA
COSTILLA
CONEJOS
RIO GRANDE
MINERAL
ARCHULETA
LA PLATA
MONTEZUMA
DOLORES
SAN JUAN
SAN MIGUEL
OURAY
HINSDALE
MONTROSE
GUNNISON
DELTA
MESA
PITKIN
EAGLE
GARFIELD
RIO BLANCO
ROUTT
MOFFAT
6
7
8
9
Sterling
Fort Collins
Denver
Colorado Springs
Pueblo
Lamar
Trinidad
Salida
Gunnison
Glenwood Springs
Grand Junction
Craig
Durango
SOUTH PLATTE RIVER
ARKANSAS RIVER
RIO GRANDE
Cache la Poudre
Arikaree
Republican River
Purgatoire River
Apishapa
Huerfano River
Cucharas
Alamosa
Yampa River
White River
Colorado River
Gunnison River
Dolores River
San Juan River
Animas
41°
40°
39°
38°
37°
109°
108°
107°
106°
105°
104°
103°
0 25 50 75 100 MILES
0 25 50 75 100 KILOMETERS
▲ STREAMFLOW OR RESERVOIR STATION
▼ WATER-QUALITY GAGE
★ TRANSMOUNTAIN OR TRANSBASIN DIVERSION

Figure 1.--Location of lake- and streamflow-gaging stations and quality-of-water stations in Colorado.

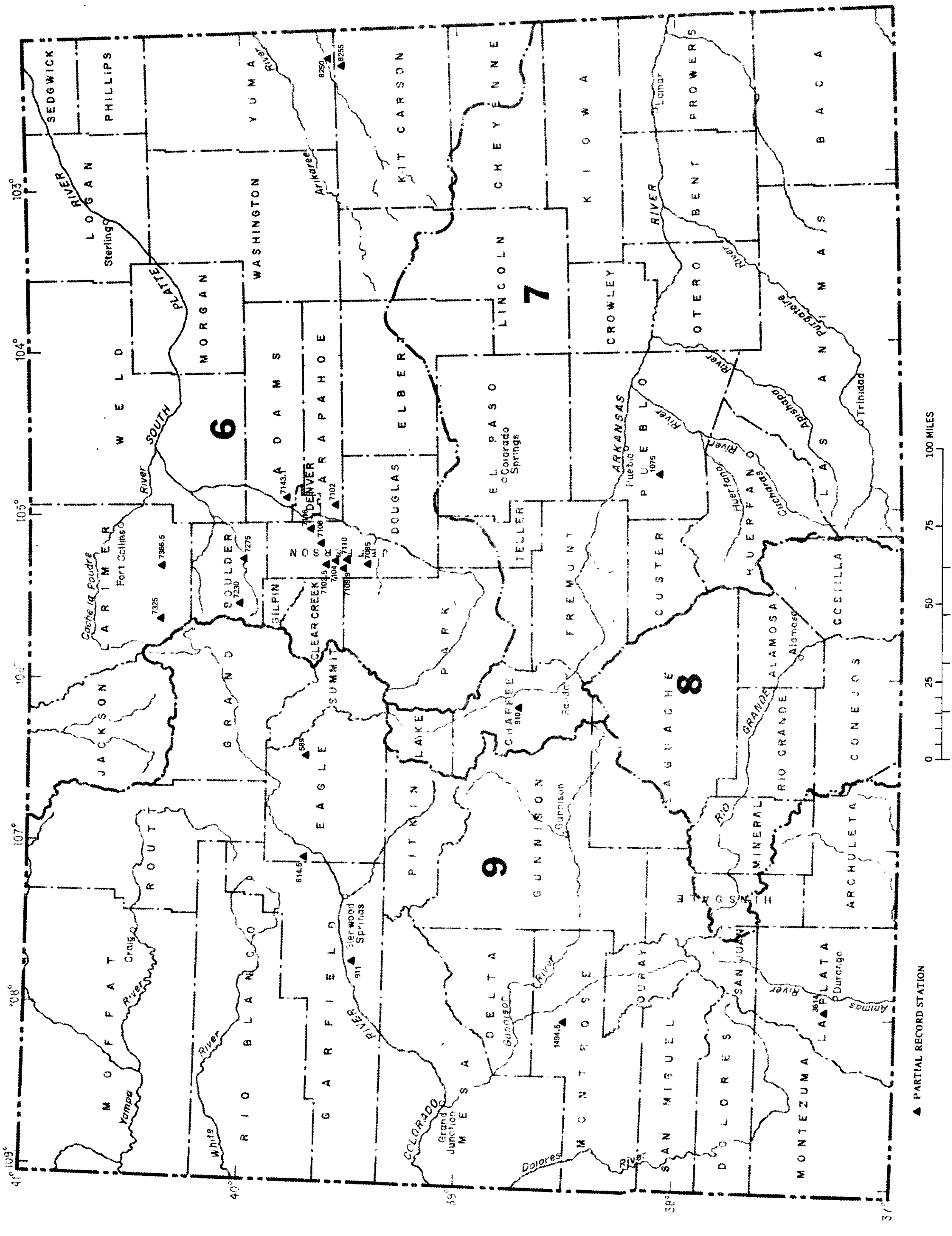

SEDGWICK
PHILLIPS
LOGAN
Sterling
WELD
MORGAN
WASHINGTON
YUMA
KIT CARSON
CHEYENNE
KIOWA
PROWERS
Lamar
BACA
LINCOLN
CROWLEY
BENT
OTERO
LAS ANIMAS
Trinidad
ADAMS
ARAPAHOE
DENVER
ELBERT
DOUGLAS
EL PASO
Colorado Springs
PUEBLO
Pueblo
HUERFANO
CUSTER
FREMONT
TELLER
PARK
JEFFERSON
CLEAR CREEK
GILPIN
BOULDER
LARIMER
Fort Collins
JACKSON
GRAND
SUMMIT
EAGLE
LAKE
CHAFFEE
Salida
SAGUACHE
ALAMOSA
Alamosa
COSTILLA
CONEJOS
RIO GRANDE
MINERAL
HINSDALE
ARCHULETA
LA PLATA
Durango
SAN JUAN
OURAY
SAN MIGUEL
DOLORES
MONTEZUMA
MONTROSE
DELTA
GUNNISON
Gunnison
PITKIN
GARFIELD
Glenwood Springs
MESA
Grand Junction
RIO BLANCO
ROUTT
MOFFAT
Craig
SOUTH PLATTE RIVER
Cache la Poudre River
Arikaree River
ARKANSAS RIVER
Purgatoire River
Apishapa River
Huerfano River
Cucharas River
RIO GRANDE
COLORADO RIVER
Gunnison River
Dolores River
Animas River
White River
Yampa River
6
7
8
9
8250
8255
7143.1
7116
7108
7102
7110
7104.5
7103.5
7109.9
7065
7275
7230
7366.5
7325
1075
910
589
614.5
911
1494.5
3614
103°
104°
105°
106°
107°
108°
109°
41°
40°
39°
38°
37°
0 25 50 75 100 MILES
0 25 50 75 100 KILOMETERS
▲ PARTIAL RECORD STATION

Figure 2.--Location of crest-stage and low-flow partial record stations in Colorado.

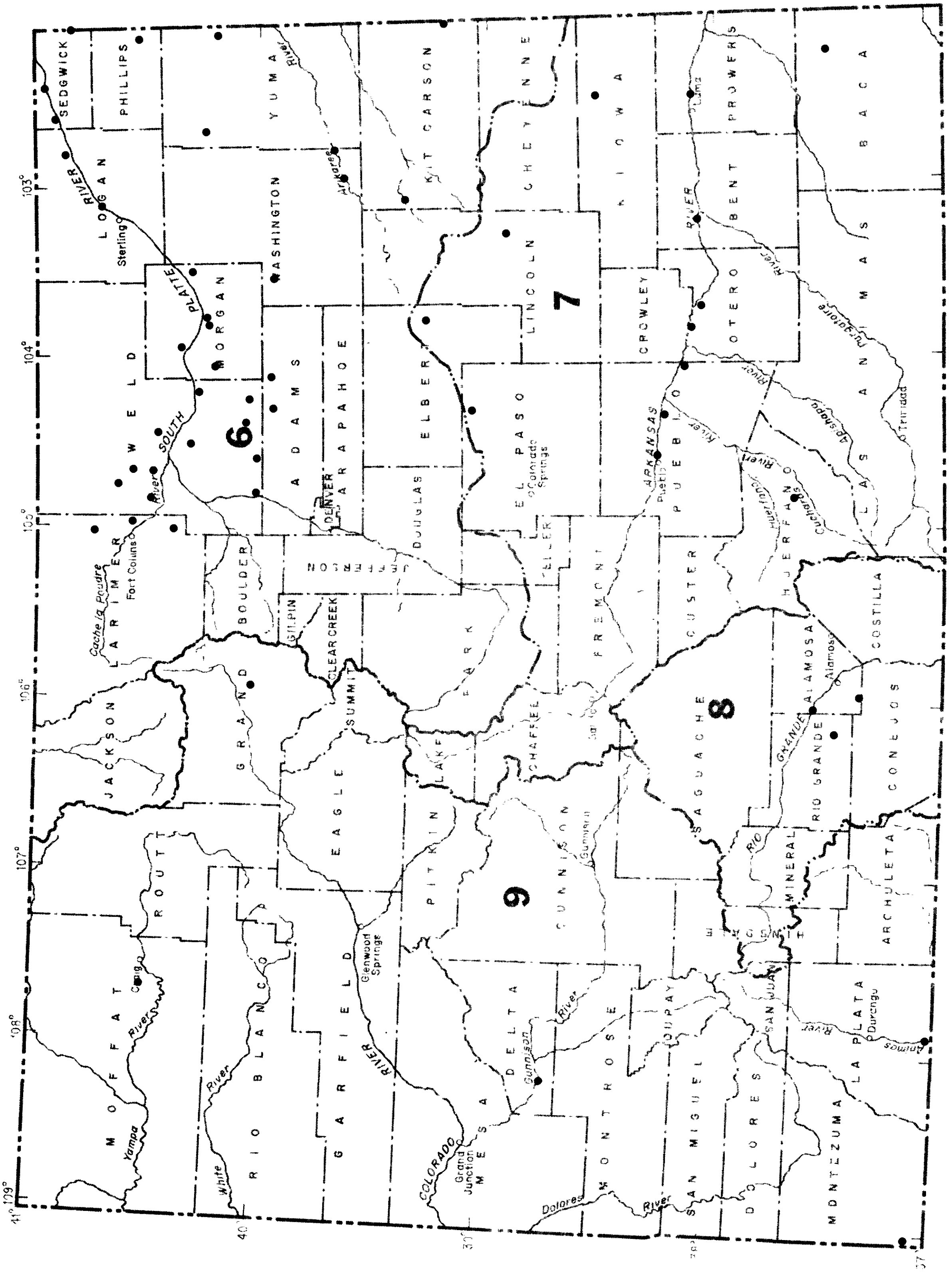

SEDGWICK
PHILLIPS
YUMA
LOGAN
Sterling
RIVER
SOUTH
PLATTE
River
WASHINGTON
MORGAN
WELD
LARIMER
Cache la Poudre
Fort Collins
BOULDER
ADAMS
ARAPAHOE
DENVER
JEFFERSON
GILPIN
CLEAR CREEK
ELBERT
DOUGLAS
KIT CARSON
CHEYENNE
LINCOLN
KIOWA
CROWLEY
PROWERS
Lamar
BENT
OTERO
BACA
LAS ANIMAS
Trinidad
Purgatoire River
Apishapa
PUEBLO
Pueblo
ARKANSAS
River
EL PASO
Colorado Springs
TELLER
FREMONT
CUSTER
HUERFANO
Huerfano River
Cucharas
COSTILLA
ALAMOSA
Alamosa
CONEJOS
RIO GRANDE
RIO GRANDE
SAGUACHE
MINERAL
ARCHULETA
LA PLATA
Durango
Animas
River
MONTEZUMA
DOLORES
Dolores
River
SAN MIGUEL
SAN JUAN
HINSDALE
OURAY
MONTROSE
DELTA
Gunnison
River
MESA
Grand Junction
COLORADO
RIVER
GUNNISON
Gunnison
PITKIN
LAKE
CHAFFEE
Salida
PARK
SUMMIT
EAGLE
GRAND
JACKSON
ROUTT
MOFFAT
Craig
Yampa
River
RIO BLANCO
White
River
GARFIELD
Glenwood Springs
6
7
8
9
103°
104°
105°
106°
107°
108°
109°
41°
40°
39°
38°
37°
0 25 50 75 100 MILES
0 25 50 75 100 KILOMETERS

Figure 3.--Location of observation wells in Colorado.

COOPERATION

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

Arkansas River Compact Administration, Frank G. Cooley, Chairman and Federal Representative.
City and County of Denver, Board of Water Commissioners, M. A. Pugsley, President.
City of Aspen, Wayne Chapman, City Manager.
City of Aurora, Thomas Griswald, Manager of Planning and Resources.
City of Colorado Springs, Department of Public Utilities, James D. Phillips, Director.
City of Glenwood Springs, M. Flinn, Manager.
City of Longmont, James Cinea, Water Superintendent.
City of Northglenn, Thomas Ambalam, Director of Natural Resources.
Colorado Department of Highways, Jack Kinstlinger, Executive Director.
Colorado Division of Water Resources, J. A. Danielson, State Engineer.
Colorado River Water Conservation District, Roland C. Fischer, Secretary-Engineer.
Colorado Water Conservation Board, J. W. McDonald, Director.
Copper Mountain Water and Sanitation District, William Caffery, District Manager.
Denver Regional Council of Governments, Robert D. Farley, Executive Director.
Eagle County Board of Commissioners, Eric Edeem, Environmental Health Officer.
Grand County, R. Howard Moody, County Commissioner.
Larimer-Weld Regional Counci of Governments, T. L. Trembly, Project Manager.
Metropolitan Denver Sewage Disposal District No. 1, Jack B. Enger, Manager.
Mineral County, Nellie M. Wyley, Chairperson, Board of County Commissioners.
Northern Colorado Water Conservation District, Larry Simpson, Manager.
Pitkin County Board of County Commissioners, C. Stewart, County Manager.
Pleasant View Water and Sanitation District, Jeff Isum, District Liaison Officer.
Pueblo Civil Defense, Betty Jo Hopper, Director.
Purgatoire River Water Conservancy District, C. Latuda, President.
Southeastern Colorado Water Conservancy District, C. L. Thomson, General Manager.
Southwestern Water Conservation District, Edward Searle, Manager.
Uncompaghre Valley Water Users Association, James Herbit, Manager.
Upper Yampa Water Conservancy District, J. Fetcher.
Urban Drainage and Flood Control District, L. Scott Tucker, Executive Director.
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 Indian Affairs, Bureau of Land Management, Bureau of Mines, Bureau of Reclamation, the National Park Service, and the U.S. Environmental Protection Agency. Organizations that supplied data are acknowledged in station descriptions.

ACKNOWLEDGMENTS

The Colorado District personnel who contributed significantly to the collection and preparation of the data in this report were:

S. T. Green, C. T. Warren, W. F. Payne, T. C. Cheatum, M. W. Eddy, K. N. Nellson, and M. D. Klock of the Pueblo subdistrict office.

E. J. Charbonneau, G. B. O'Neill, R. M. Neam, J. D. Martinez, B. D. Rasmuson, B. E. Kelley, and H. E. Hodges of the Lakewood subdistrict office.

E. A. Anderson, J. L. Ebling, L. L. Jones, Pauline Juarez, J. E. Kircher, D. S. Leonard, R. F. Middelburg Jr., M. K. Namba, M. E. Olsen, H. M. Ortega, M. M. Vaught and B. J. Vitry, of the District office.

HYDROLOGIC CONDITIONS

Overview of the State for the 1982 Water Year

The 1982 water year began with above normal precipitation west of the Continental Divide and below normal precipitation east of the Divide. This pattern persisted through April. In May, intense rains on the eastern plains eased the below normal precipitation that had prevailed since October. This began a wetter-than-normal trend throughout the State that lasted for the remainder of the water year.

Precipitation and departures-from-normal data obtained from published reports of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service for the five major drainage basins in Colorado are shown in table 1. Precipitation and departures from normal are shown on a cumulative basis for each half of the water year and for the entire water year. During the first half of the year the Colorado River and the Rio Grande basins received more than normal precipitation whereas the Arkansas River, Kansas River, and the South Platte River basins all received less than normal precipitation. The last half of the water year all basins received above normal precipitation and the total year was above normal for the entire state.

Table 1.--Precipitation and departures from normal, in inches

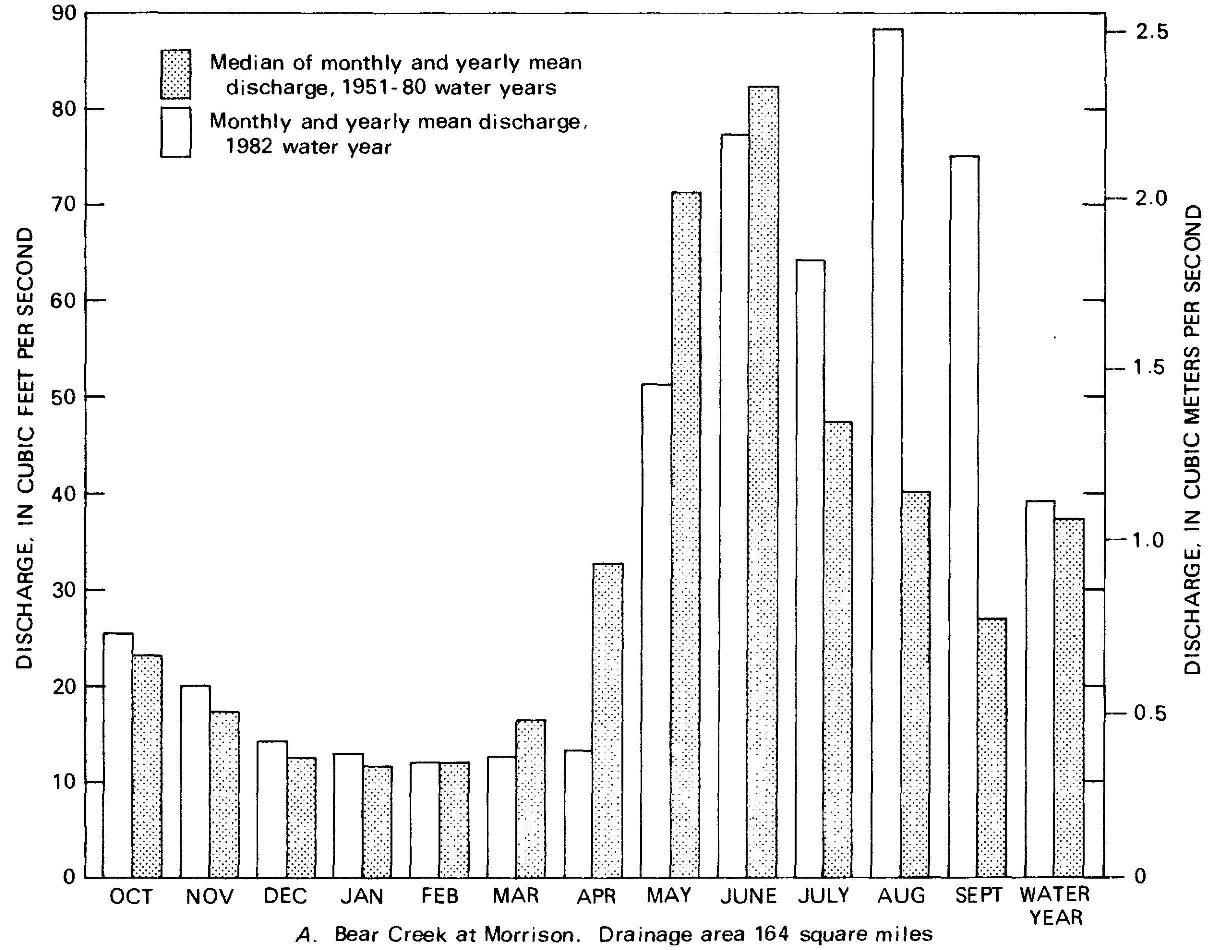
Drainage basin	October-March Precipitation	October-March Departure from normal	April-September Precipitation	April-September Departure from normal	1982 water year Precipitation	1982 water year Departure from normal
Arkansas River-----	3.22	-0.94	12.61	+1.48	15.83	+0.54
Colorado River-----	9.65	+1.99	9.43	+1.25	19.08	+3.24
Kansas River-------	2.35	-1.26	16.85	+3.05	19.20	+1.79
South Platte River-	3.21	-1.12	13.69	+2.60	16.90	+1.48
Rio Grande River---	4.94	+.36	8.98	+1.69	13.92	+2.05

Streamflow

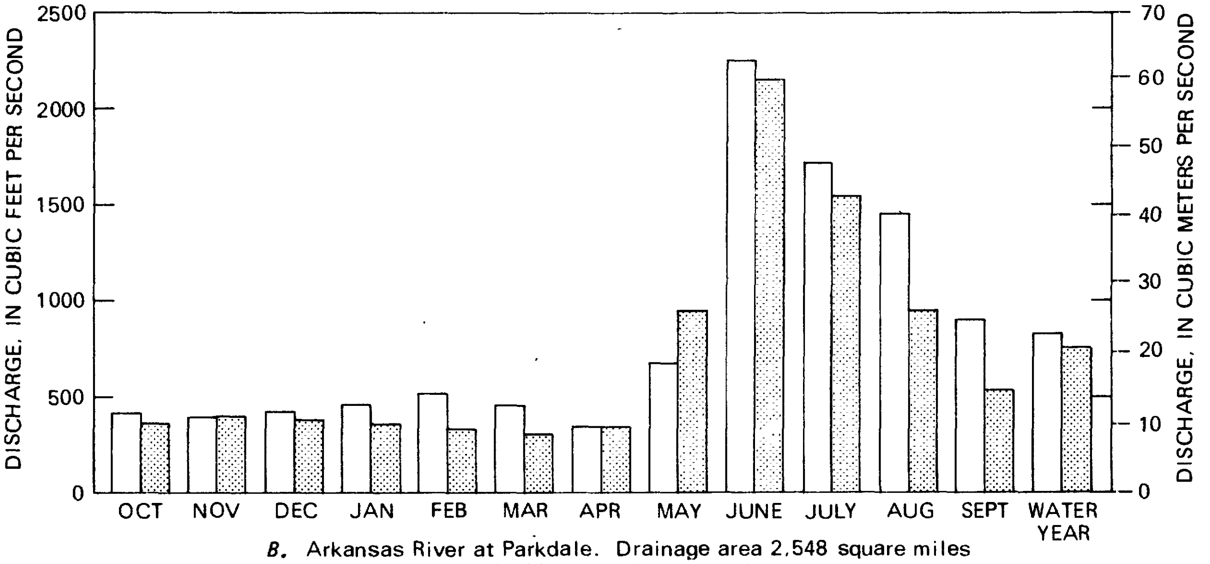
The monthly and annual mean discharges for the 1982 water year are compared with the medians for 1951-80 water years as shown in figure 4. The monthly mean discharge for the 06710500 Bear Creek at Morrison station ranged from 40 percent of normal in April to 281 percent of normal in September. The water-year mean was 105 percent of normal as compared with 62 percent of normal in the 1981 water year. At the 07094500 Arkansas River near Parkdale station the monthly mean discharge ranged from 73 percent of normal in May to 171 percent of normal in September. The water-year mean was 110 percent of normal as compared with 68 percent of normal in the 1981 water year. At the 08220000 Rio Grande River at Del Norte station the monthly mean discharges ranged from 81 percent of normal in May to 360 percent of normal in September. The water-year mean was 123 percent of normal as compared with 69 percent of normal in the 1981 water year.

Reservoir storage in the Colorado-Big Thompson project increased 70,800 acre-ft (87.3 hm³) and John Martin Reservoir decreased 5,870 acre-ft (7.24 hm³) during this water year. In general, most other reservoirs showed an increase during the year.

On July 15, 1982, the Lawn Lake dam collapsed probably as the result of water leaking from a gate valve in the dam. The resulting flood traveling down the Roaring River and into the Fall River, which flows through the town of Estes Park, caused the death of three people and an estimated $31 million dollars damage, including the subsequent failure of Cascade Dam. The peak flow at Lawn Lake was estimated, based on dam break modeling, as 18,000 ft³/s (510 m³/s). This peak attenuated to 7,200 ft³/s (204 m³/s) at Cascade Dam, 6.7 miles downstream on Fall River. The failure of Cascade Dam increased the peak flow based on dam break modeling, to about 16,000 ft³/s (453 m³/s). This peak flow attenuated to 13,000 ft³/s (368 m³/s), 1 mile downstream from the dam, and to 5,500 ft³/s (156 m³/s) at Lake Estes, 5.8 miles (9.3 meters) below Cascade Dam.

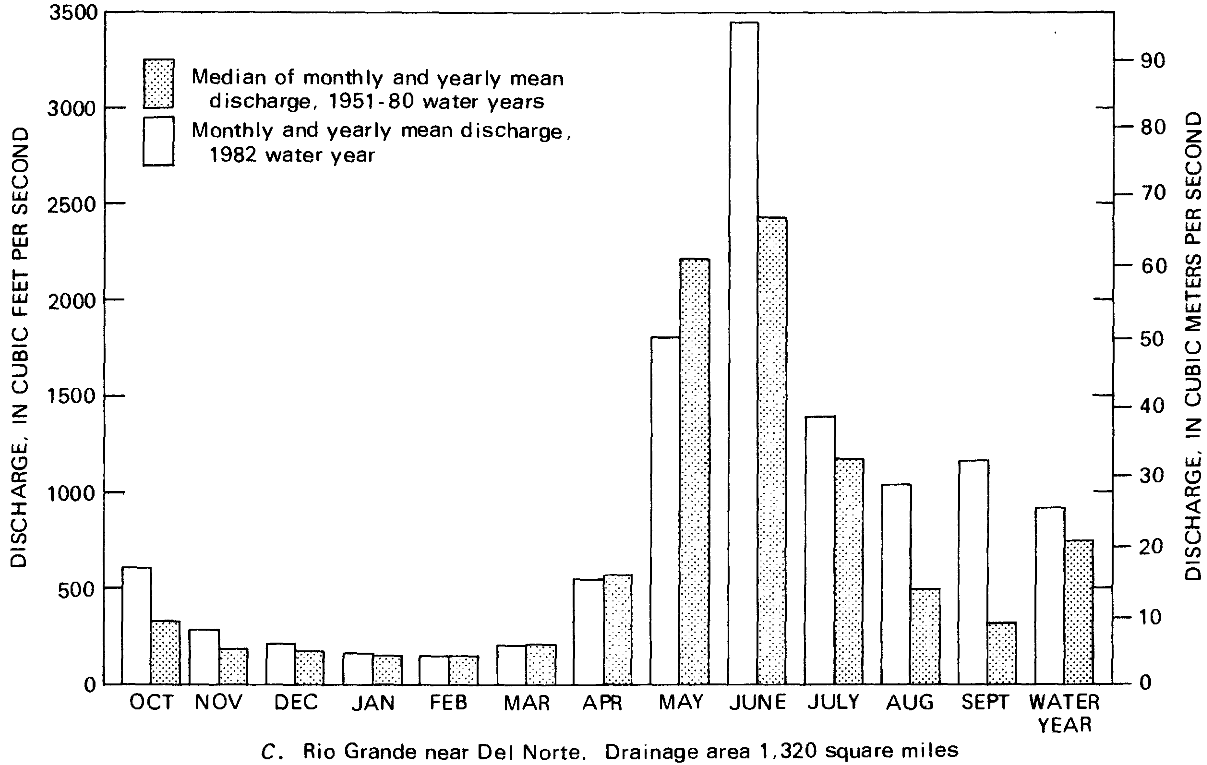


A. Bear Creek at Morrison. Drainage area 164 square miles (425 square kilometers)



B. Arkansas River at Parkdale. Drainage area 2,548 square miles (6,599 square kilometers)

Figure 4.--Discharge for 1982 water year compared with median discharge for 1951-80 water [illegible] stations.



C. Rio Grande near Del Norte. Drainage area 1,320 square miles (3,419 square kilometers)

Figure 4.--Discharge for 1982 water year compared with median discharge for 1951-80 water years at three representative streamflow-gaging stations--Continued.

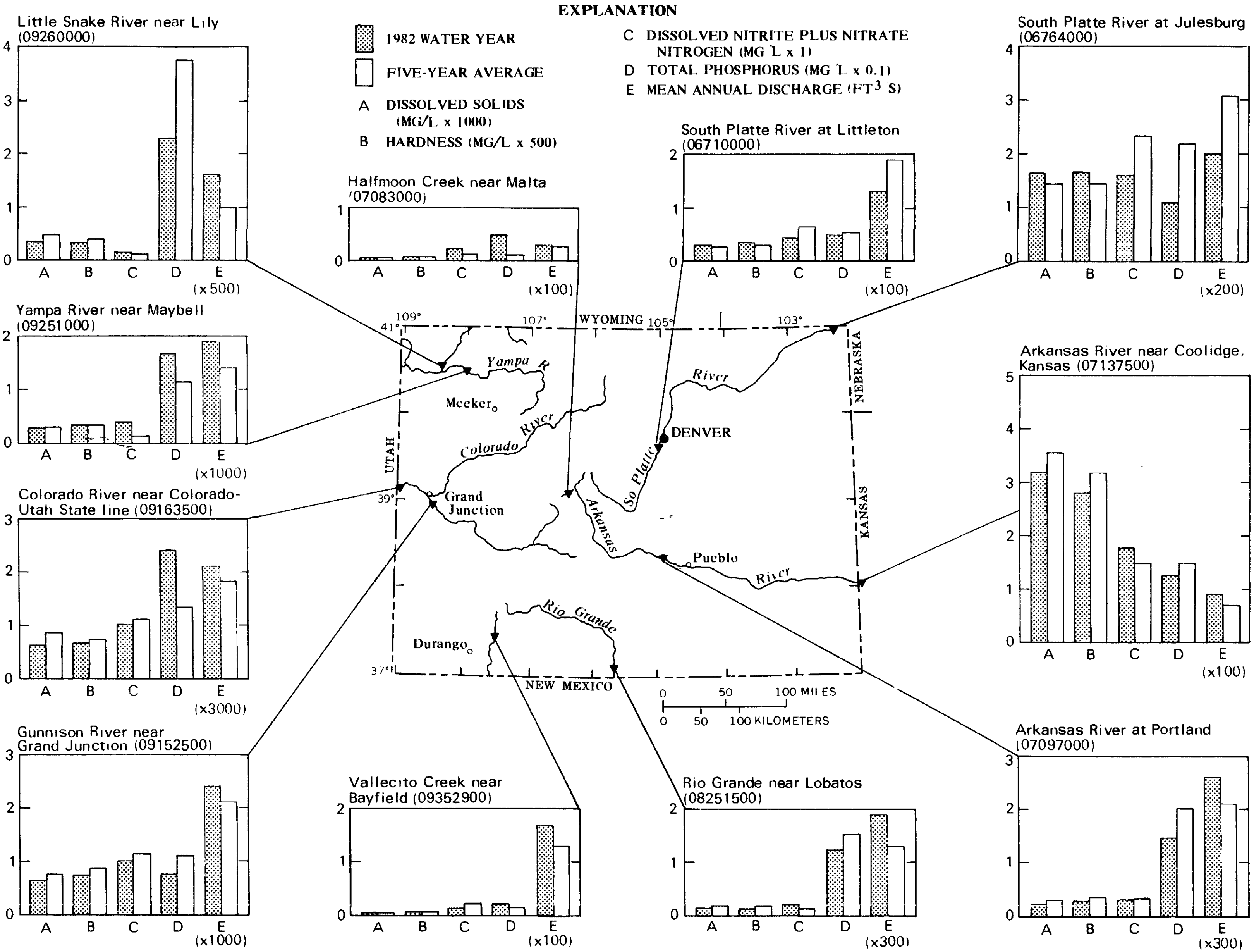


Figure 5.--Average concentrations and discharge for 1982 water year compared with the average concentrations and discharge for 1977-81 water years.

Chemical Quality of Streamflow

Water-quality conditions as defined by dissolved solids, hardness, and nutrient species concentrations vary considerably within the State (fig. 5). Much of the variation can be explained by differences in geology, climate, land use, and water use. In general, the quality of high mountain streams is characterized by low concentrations of dissolved constituents (dissolved solids less than 80 mg/L). The relatively chemically inert igneous rocks in mountainous areas and lack of man-induced influences are primary influences on water-quality conditions in these areas. However, local areas where streams contain large quantities of dissolved constituents (specific conductance ranging from 200 to 1500 mmhos) as well as heavy metals (cadium, copper, iron, lead, manganese, nickel, zinc, and occasionally selenium) occur around metal-mining districts (Moran and Wentz, 1974).

As streams flow from high elevations to lower elevations in eastern and western Colorado, geological formation, and land-and water-use changes, such as an increase in sedimentary rock types, agricultural water-use and industrial and mining demands, interact to increase concentrations of dissolved chemical constituents. As evidenced by the graphical summaries in figure 5, average concentrations of dissolved chemical constituents are greater in eastern Colorado streams than in western Colorado streams.

The fact that 1982 water-year average concentrations of dissolved constituents generally are lower than the previous 5-year average is consistent with dilution resulting from 1982 water-year flows that in most instances exceeded the previous 5-year average flow.

Chemical and suspended-material loading is generally directly correlated with flow increases. As shown in figure 5, average annual flows are much smaller in streams flowing from eastern Colorado than from western Colorado. Consequently, dissolved and suspended chemical loads are less in eastern Colorado than in western Colorado streams.

Ground-Water

Water levels indicate the response of the aquifer to recharge and discharge. Recharge and discharge can be either natural or man-made. Water levels will rise when recharge is plentiful and discharge is small and will decline when recharge is small and discharge is large. Water levels also are used to help define hydrologic units and water-supply potential.

The aquifer systems within the State can be grouped into two catagories: unconsolidated aquifers and consolidated aquifers. The unconsolidated aquifers recieve recharge from precipitation, return flow from irrigation, and leakage from canals and streams. Discharge may be as seepage of ground water to streams, seeps, or springs, by loss to evapotranspiration, or by withdrawl by wells. The consolidated aquifers recieve recharge from precipitation and streams crossing outcrop areas. These aquifers primarily discharge water to springs and streams, although locally some discharge is by wells.

East of the Continental Divide, because of the substantial utilization of ground water by man, the major fluctuations are declines caused by well pumpage. West of the Divide, where withdrawal is low, the water-level fluctuations reflect mostly changes in natural conditions.

Ground water is being mined from the unconsolidated aquifers in the Northern High Plains and from the consolidated aquifers in the Denver Basin. The aquifers in the alluvial valleys in eastern Colorado have been affected by both surface-water irrigation and ground-water pumpage. Most of the aquifers in western Colorado are still under natural conditions except where ground water is being pumped for the production of energy resources.

DEFINITION OF TERMS

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

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

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

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.

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

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

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2C° 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 intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

Ash mass is the mass of 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 those for 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 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

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

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

Bottom material: See Bed material.

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

Cfs-day is the volume of water represented by 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. It represents a runoff of approximately 0.0372 inch from 1 square mile, or 0.3468 millimeter from 1 square kilometer.

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

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

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

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

Cubic foot per second (cfs, 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 approximately 7.48 gallons per second, or 448.8 gallons per minute, or 0.02832 cubic meters per second.

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

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

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

Dissolved refers to that material in a representative water sample which passes through a 0.45 μm membrane filter. This may include some very small (colloidal) suspended particles as well as the amount of substance present in true chemical solution. It 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 oxygen (DO) is the dissolved-oxygen content of water in equilibrium with air and is a function of atmospheric pressure and temperature and dissolved-solids concentration of the water. The capacity of water for dissolved-oxygen decreases as dissolved solids or temperature increase or as atmospheric pressure decreases. Dissolved-solids concentration has the least effect on dissolved-oxygen concentration. Photosynthesis and respiration may cause diel variations in dissolved-oxygen concentration in water from some streams.

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

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. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

Hardness of water is the physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Micrograms per liter (UG/L, µg/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 represent 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 sediment per liter of water-sediment mixture.

Table 2.--*Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter*

Ion	Multi-ply by	Ion	Multi-ply by
Aluminum (Al^{+3})*......	0.11119	Iodide (I^{-1})..........	0.00788
Ammonia as N..........	.07139	Iron (Fe^{+3})*..........	.05372
Barium (Ba^{+2}).........	.01456	Lead (Pb^{+2})*..........	.00965
Bicarbonate (HCO_3^{-1})..	.01639	Lithium (Li^{+1})*.......	.14411
Bromide (Br^{-1})........	.01251	Magnesium (Mg^{+2})......	.08226
Calcium (Ca^{+2})........	.04990	Manganese (Mn^{+2})*.....	.03640
Carbonate (CO_3^{-2}).....	.03333	Nickel (Ni^{+2})*........	.03406
Chloride (Cl^{-1}).......	.02821	Nitrate as N..........	.07139
Chromium (Cr^{+6})*......	.11539	Nitrite as N..........	.07139
Cobalt (Co^{+2})*........	.03394	Phosphate,ortho as P..	.09686
Copper (Cu^{+2})*........	.03148	Potassium (K^{+1}).......	.02557
Cyanide (CN^{-1})........	.03844	Sodium (Na^{+1}).........	.04350
Fluoride (F^{-1})........	.05264	Strontium (Sr^{+2})*.....	.02283
Hydrogen (H^{+1})........	.99209	Sulfate (SO_4^{-2}).......	.02082
Hydroxide (OH^{-1})......	.05880	Zinc (ZN^{+2})*..........	.03060

*Constituents reported in micrograms per liter; multiply by factor and divide results by 1,000.

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

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

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

Table 3.--Factors for conversion of sediment concentration in milligrams per liter to parts per million*

[All values calculated to three significant figures]

Range of concentration in 1000 mg/L	Divide by	Range of concentration in 1000 mg/L	Divide by	Range of concentration in 1000 mg/L	Divide by	Range of concentration in 1000 mg/L	Divide by
0 - 8	1.00	201-217	1.13	411-424	1.26	619-634	1.39
8.05- 24	1.01	218-232	1.14	427-440	1.27	636-650	1.40
24.2 - 40	1.02	234-248	1.15	443-457	1.28	652-666	1.41
40.5 - 56	1.03	250-264	1.16	460-473	1.29	668-682	1.42
56.5 - 72	1.04	266-280	1.17	476-489	1.30	684-698	1.43
72.5 - 88	1.05	282-297	1.18	492-506	1.31	700-715	1.44
88.5 -104	1.06	299-313	1.19	508-522	1.32	717-730	1.45
105 -120	1.07	315-329	1.20	524-538	1.33	732-747	1.46
121 -136	1.08	331-345	1.21	540-554	1.34	749-762	1.47
137 -152	1.09	347-361	1.22	556-570	1.35	765-780	1.48
153 -169	1.10	363-378	1.23	572-585	1.36	782-796	1.49
170 -185	1.11	380-393	1.24	587-602	1.37	798-810	1.50
186 -200	1.12	395-409	1.25	604-617	1.38		

*Based on water density of 1.000 g/mL and a specific gravity of sediment of 2.65.

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

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

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

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

Pesticide network is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams whose waters are used for irrigation or in streams in areas where potential contamination could result from the application of the commonly used insecticides and herbicides.

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

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 mL of sample.

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

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 disintegrations per minute (dpm).

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

Radiochemical network is a network of regularly sampled water-quality stations where samples are collected monthly or twice a year (at high and low flow) to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Radioisotopes are isotopic forms of an element that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight, but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus. For example: Ordinary chlorine is a mixture of isotopes having atomic weights 35 and 37, with the natural mixture having atomic weight about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron (Rose and Rose, 1966). There are 275 isotopes of the 81 stable elements in addition to over 800 radioactive isotopes.

Radioisotopes that are determined in this program are natural uranium in µg/L (micrograms per liter), radium as radium-226 in PC/L (pCi/L, picocuries per liter), gross beta radiation as equivalent strontium/yttrium-90 or cesium-137 in PC/L, and gross alpha radiation as micrograms of uranium equivalent per liter (µg/L). Gross alpha and beta radioactivity associated with the fine-grained (silt and clay-sized) sediments in the samples are also determined.

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

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

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

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft (0.09 m) above the bed) expressed as milligrams of dry sediments per liter of water-sediment mixture (mg/L).

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

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

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

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

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

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

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

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

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

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

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

Suspended, total the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 µm 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.

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the location of the thermograph.

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 water 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 in milligrams per liter by 0.00136.

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

Total 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 determines all of the constituent in the sample.)

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

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

Water year in the U.S. Geological Survey 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, 1981, is called the "1981 water year."

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

WRD is an abbreviation for "Water-Data Report" in the summary REVISIONS paragraph to refer to State annual basic-data reports published prior to 1975.

WDR is used as an abbreviation for "Water-Resources Data" in the summary REVISIONS paragraph to refer to State annual basic-data reports published after 1975.

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

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

DOWNSTREAM ORDER AND STATION NUMBER

Stations are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all mainstream stations are listed before the first mainstream station. Stations on tributaries to tributaries are listed in a similar manner. In the list of gaging stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station and each partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station.

Gaps are left in the sequential allocation of numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete 8-digit number for each station, such as 07083000, which appears just to the left of the station name, includes the 2-digit part number "07" plus the 6-digit downstream order number "083000." In this report the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. Records in this report are for Part 6 (Missouri River basin), Part 7 (Lower Mississippi River basin), and Part 8 (Western Gulf of Mexico basins). Records for Part 9 (Colorado River Basin) are in Volumes 2 and 3. All records for a drainage basin encompassing more than one State can be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

SPECIAL NETWORKS AND PROGRAMS

Some of the stations for which data are published in this report are included in special networks and programs. These stations are identified by their title, set in parentheses, under the station name.

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

Irrigation-network stations are water-quality stations located at or near certain streamflow gaging stations west of the main stem of the Mississippi River. Data collected at these stations are used to evaluate the chemical quality of surface waters used for irrigation and the changes resulting from the drainage of irrigated lands. Prior to water year 1966, the data for these stations were published in the annual Water-Supply Paper series, "Quality of Surface Water for Irrigation, Western States."

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated in the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are: (1) To depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis, and (2) to detect and assess long-term changes in streamflow and stream quality.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and Computation of Data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at 5-, 15-, 30- or 60-minute intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the U.S. Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6. Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is determined by sounding at many points.

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

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

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

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

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

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

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

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are affected by the revisions, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given.

The type of gage currently in use, the datum of the present gage above mean sea level, referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified. National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS."

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

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE;" it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance.

The maximum discharge (or contents) and the maximum gage height, the minimum discharge if there is little or no regulation (or minimum contents), and the minimum gage height, if it is significant, are given under "EXTREMES." The minimum daily discharge is given if there is extensive regulation (also the minimum discharge and gage height if they are abnormally low). Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second (ft^3/s) 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 may be expressed in acre-feet (line headed "AC-FT"). In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

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

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

Data collected at partial-record stations and at miscellaneous sites follow the information for continuous record sites. Data for partial-record discharge stations are presented in three tables. The first is a table of discharge measurements at low-flow partial-record stations, the second is a table of annual maximum stage and discharge at crest-stage stations, and the third is a table of discharge measurements at miscellaneous sites.

Accuracy of field data and computed results

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

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

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second (ft^3/s) for discharges of less than 1 ft^3/s; to tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations 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. However, because all the effects cannot be measured or evaluated, satisfactory adjustments generally cannot be made. For some stations, available figures of diversions or change in contents of reservoirs are included as supplemental data. Even at those stations where adjustments can be made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Data Available

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

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

Records of Discharge Collected by Agencies other than the Geological Survey

Records of discharge not published by the Geological Survey were collected at many sites in Colorado during the water year by the following agencies: City of Colorado Springs; Colorado Division of Water Resources; Forest Service, U.S. Department of Agriculture; City and County of Denver, Board of Water Commissioners; National Weather Service, Department of Commerce; and Water and the Bureau of Reclamation.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

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

The descriptive heading for water-quality records gives the period of record for all water-quality data, the period of daily record for parameters that are measured on a daily basis (such as, specific conductance, pH, dissolved oxygen, water temperature, sediment discharge), extremes for the period of daily record, extremes for current year, and general remarks.

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

Water Analysis

Most methods for collecting and analyzing water samples are described in "U.S. Geological Survey Techniques of Water-Resources Investigations," which are listed on page 35.

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

Chemical-quality data 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 wth 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 determination of carbonate and bicarbonate in the laboratory.

Prior to the 1968 water year, data for chemical constituents and concentrations of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967, the Geological Survey began reporting data for chemical constituents and concentrations of suspended sediment in milligrams per liter (mg/L) and water temperatures in degrees Celsius (°C). In waters with a density of 1.000 grams per milliliter (g/mL), parts per million and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/mL, values in parts per million should be multiplied by the density to convert to milligrams per liter. Temperature reported in degrees Celsius may be converted to degrees Fahrenheit by using table 3.

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

Water Temperatures

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

Table 4.--Degrees Celsius (°C) to degrees Fahrenheit (°F)*
(Temperature reported to nearest 0.5°C)

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0.0	32	10.0	50	20.0	68	30.0	86	40.0	104
.5	33	10.5	51	20.5	69	30.5	87	40.5	105
1.0	34	11.0	52	21.0	70	31.0	88	41.0	106
1.5	35	11.5	53	21.5	71	31.5	89	41.5	107
2.0	36	12.0	54	22.0	72	32.0	90	42.0	108
2.5	36	12.5	54	22.5	72	32.5	90	42.5	108
3.0	37	13.0	55	23.0	73	33.0	91	43.0	109
3.5	38	13.5	56	23.5	74	33.5	92	43.5	110
4.0	39	14.0	57	24.0	75	34.0	93	44.0	111
4.5	40	14.5	58	24.5	76	34.5	94	44.5	112
5.0	41	15.0	59	25.0	77	35.0	95	45.0	113
5.5	42	15.5	60	25.5	78	35.5	96	45.5	114
6.0	43	16.0	61	26.0	79	36.0	97	46.0	115
6.5	44	16.5	62	26.5	80	36.5	98	46.5	116
7.0	45	17.0	63	27.0	81	37.0	99	47.0	117
7.5	45	17.5	63	27.5	81	37.5	99	47.5	117
8.0	46	18.0	64	28.0	82	38.0	100	48.0	118
8.5	47	18.5	65	28.5	83	38.5	101	48.5	119
9.0	48	19.0	66	29.0	84	39.0	102	49.0	120
9.5	49	19.5	67	29.5	85	39.5	103	49.5	121

*$^{\circ}C=5/9(^{\circ}F-32^{\circ})$ or $^{\circ}F=9/5(^{\circ}C)+32^{\circ}$.

In October 1968, the Geological Survey began reporting many of the chemical constituents as well as the minor elements in micrograms per liter instead of milligrams per liter. See "Definition of Terms," and table 5 for converting English units to SI units.

The biological information includes qualitative and quantitative analyses of plankton, periphyton, Chlorophyll a and b, biomass and bottom organisms. Microbiological information includes quantitative identification of selected bacteriological indicator organisms.

Solutes

Most methods for collecting and analyzing water samples to determine the kinds and concentrations of solutes are described by Brown, Skougstad, and Fishman (1970). Analysis of pesticides and organic substances in water are described by Goerlitz and Lamar (1967), Lamar, Goerlitz, and Law (1965), and Goerlitz and Brown (1972). The collection and analysis of aquatic, biological, and microbiological samples are described by Slack and others (1973).

Sediment

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

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge. A blank in the daily mean concentration column of the suspended-sediment discharge table indicates the value in the sediment discharge column was estimated. A zero value in the sediment-discharge column when there are nonzero values in the mean discharge and mean concentration columns indicates the load is less than 0.005 ton per day.

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

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

WATER-SUPPLY PAPERS

The annual series of Water-Supply Papers that give information on quality of surface waters in Colorado are shown in the following table:

Table 5.--Water-Supply Paper numbers and parts, water years 1941-71

Year	Part 6	Part 7	Part 8	Part 9	Irrigation (1951-65)[a]
1941	942	942	942	942	----
1942	950	950	950	950	----
1943	970	970	970	970	----
1944	1022	1022	1022	1022	----
1945	1030	1030	1030	1030	----
1946	1050	1050	1050	1050	----
1947	1102	1102	1102	1102	----
1948	1132	1133	1133	1133	----
1949	1162	1163	1163	1163	----
1950	1187	1188	1188	1189	----
1951	1198	1199	1199	1200	1264
1952	1251	1252	1252	1253	1362
1953	1291	1292	1292	1293	1380
1954	1351	1352	1352	1353	1430
1955	1401	1402	1402	1403	1465
1956	1451	1452	1452	1453	1485
1957	1521	1522	1522	1523	1524
1958	1572	1573	1573	1574	1575
1959	1643	1644	1644	1645	1699
1960	1743	1744	1744	1745	1746
1961	1883	1884	1884	1885	1886
1962	1943	1944	1944	1945	1946
1963	1949	1950	1950	1951	1952
1964	1956	1957	1957	1958	1960
1965	1963	1964	1964	1965	1967
1966	1993	1994	1994	1995	----
1967	2013	2014	2014	2015	----
1968	2095	2096	2097	2098	----
1969	2145	2146	2147	2148	----
1970	2155	[b]2156	[b]2157	[b]2158	----
1971	2165	[b]2166	[b]2167	[b]2168	----

[a] Annual series, "Quality of Surface Waters for Irrigation, Western States."

[b] In preparation.

Information about reports and other data on quality of water in Colorado may be obtained from the district office at the address given on the back of the title page of this report.

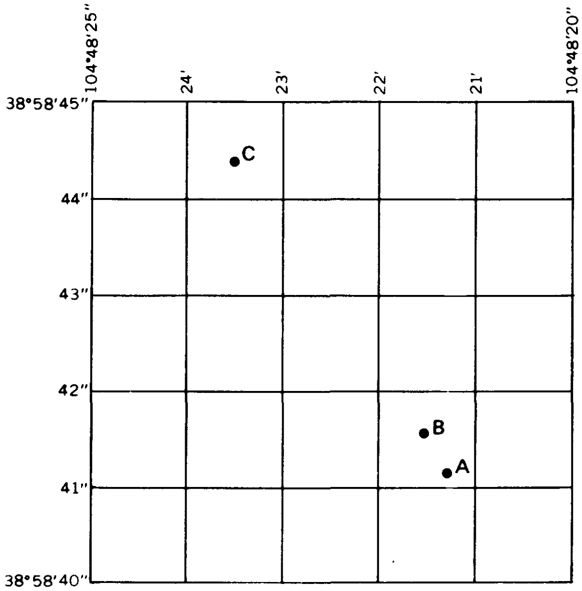
EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Collection of Data

Only ground-water level data from a basic national network of observation wells are published herein. These water-level measurements are intended to provide a record of water-level changes in important aquifers.

The locations of wells are referenced by two systems. One system is based on latitude and longitude, and the second is based on the U.S. Bureau of Land Management system of land subdivision. The latitude and longitude grid system facilitates machine processing of data and plotting of data points.

The latitude and longitude grid system is used to provide the geographic location of each well. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude; N designates north; the next seven digits denote degrees, minutes, and seconds of longitude; and the last two digits are sequential numbers for wells within a 1-second grid, as shown below in figure 6.



Coordinates for site	A	385841N104482101
	B	385841N104482102
	C	385844N104482300

Figure 6.--System for numbering wells and miscellaneous sites (latitude and longitude).

The local well number locates a well within a 10-acre (4.0-ha) 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 (10 km) by townships and is subdivided in the east-west direction every 6 mi (10 km) by ranges. The first number of the well location designates the township and the second number designates the range.

The 36-mi^2 (93-km^2) area described by the township and range designation is subdivided into 1-mi^2 (2.59-km^2) areas called sections. The sections are numbered sequentially. The third number of the well location designates the section. The section, which contains 640 acres (259 ha), is subdivided into quarter sections. The 160-acre (64.8-ha) area is designated by the first letter following the section: A indicates the northeast quarter, B the northwest, C the southwest, and D the southeast. The quarter section is subdivided into quarter-quarter sections. The 40-acre (16.2-ha) area is designated in the same manner by the second letter following the section. The quarter-quarter section is subdivided into quarter-quarter-quarter sections. The 10-acre (4.0-ha) 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 (4.0-ha) 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.

The local number is provided for continuity with older reports.

Measurements are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well insure that measurements at each well are of consistent accuracy and reliability.

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

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

Publications

Publication of ground-water level data for the United States in water-supply papers was begun by the Geological Survey in 1935. From 1935 through 1939, a single water-supply paper covering the entire nation was issued each year (Water-Supply Papers 777, 817, 840, 845, and 886). From 1940 through 1974, separate water-supply papers were issued for six sections of the United States. Water-level data for Colorado are included in the water-supply papers listed below, each report containing one or more calendar years (January through December) of data. Data in this report are for the 12-month water year ending September 30.

Calendar year	WSP no.	Calendar year	WSP no.	Calendar year	WSP no.	Calendar year	WSP no.
1940	910	1945	1027	1950	1169	1955	1408
1941	940	1946	1075	1951	1195	1956-60	1760
1942	948	1947	1100	1952	1225	1961-65	1845
1943	990	1948	1130	1953	1269	1966-70	1980
1944	1020	1949	1160	1954	1325		

Information about reports and other data on ground water in Colorado may be obtained from the district office at the address given on the back of the title page of this report.

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, 1971, Standard methods for the examination of water and waste water, 13th ed: American Public Health Assoc., New York, 874 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, 1943, Stream-gaging procedure, a manual describing methods and practices of the Geological Survey: U.S. Geological Survey Water-Supply Paper 888, 245 p.

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 fluial 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 waterquality 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.

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.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

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

1-D1. *Water temperature--influential factors, field measurement, and data presentation,* by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-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. F. 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-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-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 text 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-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. Guy 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-C1. *Laboratory theory and methods for sediment analysis,* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 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-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 (152 m) upstream from Michigan ditch, 2.2 mi (3.5 km) southeast of Cameron Pass, 8 mi (13 km) east of Gould, and 27 mi (43 km) southeast of Walden.

DRAINAGE AREA.--1.53 mi^2 (3.96 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 10,390 ft (3,167 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. No diversion above station. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--9 years, 2.81 ft^3/s (0.080 m^3/s), 2,040 acre-ft/yr (2.52 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44 ft^3/s (1.25 m^3/s) June 18, 1974, gage height, 3.53 ft (1.076 m); minimum daily, 0.12 ft^3/s (0.003 m^3/s) Jan. 12, 13, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft^3/s (0.88 m^3/s) at 1700 July 1, gage height, 3.10 ft (0.945 m); minimum daily, 0.18 ft^3/s (0.005 m^3/s) Mar. 4-6, Apr. 25-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	.61	.49	.53	.45	.20	.22	.25	3.2	27	6.1	1.4
2	.74	.61	.49	.57	.45	.20	.22	.55	3.2	26	6.3	1.3
3	.76	.61	.49	.57	.45	.20	.22	1.0	2.7	25	6.7	1.3
4	.85	.61	.49	.57	.45	.18	.22	1.2	2.9	24	5.9	1.2
5	.82	.57	.49	.57	.41	.18	.22	.91	4.5	22	5.1	1.5
6	.86	.57	.49	.57	.37	.18	.22	.72	5.0	19	4.8	1.6
7	.82	.57	.49	.57	.37	.20	.24	.63	5.6	17	4.7	1.5
8	.83	.57	.49	.57	.37	.20	.25	.57	6.4	16	4.5	2.1
9	.82	.56	.49	.57	.33	.20	.25	.54	7.1	18	5.2	2.0
10	.79	.54	.49	.57	.33	.22	.25	.60	8.4	17	4.4	1.8
11	.72	.53	.49	.57	.33	.22	.22	.58	9.2	17	3.9	1.8
12	.86	.49	.49	.57	.33	.22	.22	.57	11	17	3.5	2.0
13	.93	.49	.49	.57	.29	.23	.22	.57	11	17	3.7	2.1
14	.86	.49	.49	.57	.29	.25	.22	.57	12	17	4.2	2.2
15	.79	.49	.49	.57	.29	.25	.22	.57	13	15	3.7	2.6
16	.72	.49	.49	.57	.29	.25	.25	.57	14	14	3.2	2.8
17	.72	.49	.49	.57	.25	.25	.25	.59	19	14	3.1	2.9
18	.79	.49	.49	.57	.25	.22	.22	.69	21	13	2.9	2.7
19	.79	.49	.49	.57	.25	.22	.22	.89	20	12	2.7	2.7
20	.72	.49	.49	.57	.25	.23	.22	.94	19	11	2.7	2.7
21	.65	.49	.53	.57	.22	.25	.22	.91	19	11	2.6	2.5
22	.65	.49	.53	.57	.22	.25	.20	1.4	19	11	2.4	2.4
23	.61	.49	.53	.57	.22	.25	.20	1.7	22	11	2.2	3.0
24	.61	.49	.53	.61	.20	.25	.20	1.6	24	10	2.1	2.8
25	.61	.49	.53	.61	.20	.24	.18	1.3	24	9.5	2.0	3.2
26	.61	.49	.53	.61	.20	.22	.18	1.3	23	8.9	1.8	4.0
27	.61	.49	.53	.57	.20	.22	.18	1.8	24	8.1	1.8	3.6
28	.61	.49	.53	.57	.20	.25	.18	2.7	25	8.1	1.9	3.6
29	.61	.49	.53	.49	---	.25	.18	3.1	26	7.6	1.8	3.5
30	.61	.49	.53	.49	---	.25	.19	2.8	26	6.7	1.7	3.4
31	.61	---	.53	.45	---	.25	---	2.6	---	6.4	1.6	---
TOTAL	22.77	15.66	15.63	17.47	8.46	6.98	6.48	34.72	430.2	456.3	109.2	72.2
MEAN	.73	.52	.50	.56	.30	.23	.22	1.12	14.3	14.7	3.52	2.41
MAX	.93	.61	.53	.61	.45	.25	.25	3.1	26	27	6.7	4.0
MIN	.61	.49	.49	.45	.20	.18	.18	.25	2.7	6.4	1.6	1.2
AC-FT	45	31	31	35	17	14	13	69	853	905	217	143

CAL YR 1981 TOTAL 810.01 MEAN 2.22 MAX 26 MIN .16 AC-FT 1610
WTR YR 1982 TOTAL 1196.07 MEAN 3.28 MAX 27 MIN .18 AC-FT 2370

NOTE.--NO GAGE-HEIGHT RECORD NOV. 12 TO DEC. 15.

06616000 NORTH FORK MICHIGAN RIVER NEAR GOULD, CO

LOCATION.--Lat 40°32'58", long 106°01'14", in SE¼NW¼ sec.27, T.7 N., R.77 W., Jackson County, Hydrologic Unit 10180001, on left bank 25 ft (8 m) upstream from county road bridge, 0.7 mi (1.1 km) downstream from dam on recreation lake, 1.6 mi (2.6 km) north of Gould, 2.8 mi (4.5 km) upstream from mouth, and 19 mi (31 km) southeast of Walden.

DRAINAGE AREA.--21.2 mi² (54.9 km²).

PERIOD OF RECORD.--October 1950 to September 1982 (discontinued).

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 8,793 ft (2,680.1 m), National Geodetic Vertical Datum of 1929. Prior to Oct. 6, 1964, at site 0.6 mi (1.0 km) upstream at datum 55.00 ft (16.764 m) higher. Oct. 6, 1964, to Aug. 10, 1965, at site 0.2 mi (0.3 km) upstream at different datum.

REMARKS.--Records good except those for winter period and period of no gage-height record, which are poor. One small diversion above station to Canadian River drainage. Slight natural regulation by recreation lake, capacity, 1,250 acre-ft (1.54 hm³), since Dec. 11, 1963. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--32 years, 16.9 ft³/s (0.479 m³/s), 12,240 acre-ft/yr (15.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 290 ft³/s (8.21 m³/s) May 25, 1961, gage height, 3.15 ft (0.960 m), site and datum then in use, from rating curve extended above 160 ft³/s (4.5 m³/s); maximum gage height, 5.23 ft (1.594 m) May 28, 1979; no flow Dec. 11, 1963, to Apr. 30, 1964, caused by filling recreation lake upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 136 ft³/s (3.85 m³/s) at 0300 June 18, gage height, 4.39 ft (1.338 m), only peak above base of 100 ft³/s (2.8 m³/s); minimum daily, 1.7 ft³/s (0.048 m³/s) Apr. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	3.8	3.1	3.0	3.0	2.9	2.6	27	91	60	11	5.1
2	2.2	3.7	3.2	3.0	3.0	2.9	2.4	49	86	56	9.9	4.4
3	2.5	3.7	3.1	3.0	3.0	2.9	2.2	62	88	50	10	4.2
4	3.3	3.6	3.1	3.0	3.0	2.8	2.0	75	84	44	9.6	3.6
5	4.5	3.4	3.1	3.0	3.0	2.8	2.4	57	103	40	8.8	4.1
6	4.5	3.2	3.0	3.0	3.0	2.8	2.1	37	113	42	8.2	5.3
7	3.7	3.4	2.9	3.0	3.0	2.8	2.0	29	105	37	7.6	4.7
8	3.6	3.3	2.7	3.0	3.0	2.8	2.0	26	113	33	6.8	5.0
9	4.3	3.1	2.7	3.0	3.0	2.8	2.0	32	107	34	8.5	5.7
10	4.2	2.8	2.9	3.0	3.0	2.8	1.7	40	103	33	8.9	4.9
11	3.8	2.7	2.9	3.0	3.0	2.8	1.7	39	101	28	8.3	7.0
12	5.4	2.6	2.9	3.0	3.0	2.8	2.8	35	108	26	7.4	17
13	5.7	2.6	2.9	3.0	3.0	2.8	2.3	38	110	24	7.7	11
14	6.6	[illegible].7	2.9	3.0	3.0	2.8	2.2	29	103	22	10	12
15	6.0	[illegible].3	3.0	3.0	3.0	2.8	2.2	25	99	20	8.4	13
16	5.7	3.3	3.0	3.0	3.0	2.8	2.6	24	103	19	7.0	12
17	5.5	3.2	3.0	3.0	3.0	2.8	3.0	25	112	18	7.5	8.3
18	4.9	3.3	3.0	3.0	3.0	2.8	3.1	31	131	17	7.1	6.8
19	4.5	3.5	3.0	3.0	3.0	2.8	3.3	38	112	16	6.4	5.8
20	4.3	3.2	3.0	3.0	3.0	2.8	3.4	35	98	15	6.0	5.4
21	4.1	3.1	3.0	3.0	3.0	2.8	3.2	40	90	14	5.7	5.2
22	3.6	3.2	3.0	3.0	3.0	2.8	3.0	65	85	13	5.7	4.7
23	3.1	3.6	3.0	3.0	3.0	2.8	3.8	73	81	12	5.3	5.6
24	3.3	3.5	3.0	3.0	3.0	2.8	5.6	67	77	12	4.9	5.5
25	3.6	3.6	3.0	3.0	3.0	2.8	8.9	60	77	13	5.1	4.4
26	3.2	3.5	3.0	3.0	3.0	2.7	12	59	74	12	5.3	5.6
27	3.4	3.1	3.0	3.0	3.0	2.5	13	86	70	12	5.1	6.3
28	3.7	3.1	3.0	3.0	3.0	2.5	12	99	67	14	5.8	6.1
29	3.7	3.0	3.0	3.0	---	2.7	13	107	65	19	10	6.4
30	4.2	3.1	3.0	3.0	---	2.9	17	96	62	15	7.4	6.3
31	4.0	---	3.0	3.0	---	2.7	---	86	---	12	5.9	---
TOTAL	127.3	97.2	92.4	93.0	84.0	86.3	139.5	1591	2818	782	231.3	201.4
MEAN	4.11	3.24	2.98	3.00	3.00	2.78	4.65	51.3	93.9	25.2	7.46	6.71
MAX	6.6	3.8	3.2	3.0	3.0	2.9	17	107	131	60	11	17
MIN	2.2	2.6	2.7	3.0	3.0	2.5	1.7	24	62	12	4.9	3.6
AC-FT	252	193	183	184	167	171	277	3160	5590	1550	459	399

CAL YR 1981	TOTAL 3602.7	MEAN 9.87	MAX 84	MIN 1.8	AC-FT 7150
WTR YR 1982	TOTAL 6343.4	MEAN 17.4	MAX 131	MIN 1.7	AC-FT 12580

NOTE.--NO GAGE-HEIGHT RECORD DEC. 14 TO MAR. 25.

06619400 CANADIAN RIVER NEAR LINDLAND, CO

LOCATION.--Lat 40°41'43", long 106°03'56", in NE¼NE¼ sec.6, T.8 N., R.77 W., Jackson County, Hydrologic Unit 10180001, on right bank 1.1 mi (1.8 km) below mouth of Muddy Creek, 8.3 mi (13.4 km) north of Lindland, and 12 mi (19.3 km) east of Walden.

DRAINAGE AREA.--44.0 mi² (114 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 8,150 ft (2,484 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Natural flow of stream affected by numerous diversions for irrigation of hay meadows and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 177 ft³/s (5.01 m³/s) June 11, 1978, gage height, 4.18 ft (1.274 m); maximum gage height, 4.49 ft (1.369 m), May 20, 1978; minimum daily discharge, 2.7 ft³/s (0.076 m³/s) Feb. 5, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 99 ft³/s (2.80 m³/s) at 0100 July 29, gage height, 2.68 ft (0.817 m); minimum daily, 5.0 ft³/s (0.14 m³/s) Feb. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	9.8	6.0	6.0	6.0	6.8	9.0	44	45	88	30	12
2	7.6	9.8	6.0	6.0	5.6	6.8	9.0	48	44	81	27	11
3	8.4	9.4	6.0	6.0	5.2	6.8	9.0	55	42	68	27	11
4	10	9.4	6.5	6.0	5.0	6.6	10	62	40	64	25	10
5	11	9.4	7.0	6.0	5.0	6.4	10	50	40	61	23	11
6	9.8	8.7	7.0	6.0	5.4	6.0	10	32	45	59	21	14
7	8.7	9.1	7.0	6.0	5.8	6.0	9.8	28	44	44	20	12
8	9.1	9.1	7.0	6.0	6.0	6.0	18	26	45	39	19	14
9	11	8.4	7.0	6.0	6.0	6.0	20	26	48	40	21	13
10	10	7.6	7.0	6.0	6.0	6.0	14	30	48	37	21	12
11	9.0	8.4	7.0	6.0	6.0	6.0	16	30	45	34	19	17
12	12	8.0	7.0	6.0	6.0	6.0	16	35	48	36	20	31
13	13	8.4	7.0	6.0	6.0	6.0	21	41	58	32	19	21
14	14	8.7	7.0	6.0	6.4	6.0	30	36	64	33	26	31
15	12	9.1	7.0	6.0	6.6	6.0	34	38	60	33	20	28
16	12	9.4	6.5	6.0	6.8	6.0	29	52	60	42	19	23
17	13	9.4	6.0	6.0	6.8	6.0	28	68	71	41	21	21
18	12	9.1	6.0	6.0	6.8	6.0	26	70	88	39	20	22
19	12	9.8	6.0	6.0	6.8	6.0	26	66	80	38	18	21
20	11	9.0	6.0	6.0	6.8	6.0	25	55	77	34	17	20
21	11	9.8	6.0	6.0	6.8	6.0	23	50	78	33	16	20
22	10	9.4	6.0	6.0	6.8	6.0	18	60	79	31	16	19
23	9.4	10	6.0	6.0	6.8	6.0	19	67	82	28	16	19
24	9.1	10	6.0	6.0	6.8	6.0	25	66	80	30	14	19
25	10	9.0	6.0	6.0	6.8	6.0	31	60	84	30	14	18
26	10	9.0	6.0	6.0	6.8	6.0	34	55	88	30	16	21
27	10	8.0	6.0	6.0	6.8	6.6	31	58	77	37	16	21
28	11	7.4	6.0	6.0	6.8	7.0	26	54	77	55	13	20
29	10	7.0	6.0	6.0	---	8.0	33	51	80	73	17	20
30	10	7.0	6.0	6.0	---	8.0	25	47	86	46	13	19
31	9.4	---	6.0	6.0	---	8.0	---	49	---	35	12	---
TOTAL	323.1	266.6	198.0	186.0	175.4	197.0	634.8	1509	1903	1371	596	551
MEAN	10.4	8.89	6.39	6.00	6.26	6.35	21.2	48.7	63.4	44.2	19.2	18.4
MAX	14	10	7.0	6.0	6.8	8.0	34	70	88	88	30	31
MIN	7.6	7.0	6.0	6.0	5.0	6.0	9.0	26	40	28	12	10
AC-FT	641	529	393	369	348	391	1260	2990	3770	2720	1180	1090

CAL YR 1981 TOTAL 5597.2 MEAN 15.3 MAX 130 MIN 2.7 AC-FT 11100
WTR YR 1982 TOTAL 7910.9 MEAN 21.7 MAX 88 MIN 5.0 AC-FT 15690

NOTE.--NO GAGE-HEIGHT RECORD NOV. 28 TO MAR. 24

06619400 CANADIAN RIVER NEAR LINDLAND, CO--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1978 to current year.
WATER TEMPERATURE: April 1978 to current year.
SUSPENDED SEDIMENT DISCHARGE: May 1978 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler since May 1978. Water-quality monitor since April 1978.

REMARKS.--Daily maximum and minimum specific conductance data available in district office. Water-quality monitor shut down from Nov. 17, 1981 to Mar. 24, 1982. Suspended sediment sampler shut down Oct. 1 to March 31.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 301 micromhos April 8, 1982; minimum, 74 micromhos May 27, 1979.
WATER TEMPERATURES: Maximum, 24°C June 12, 1979; minimum, 0.0°C many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily, 139 mg/L Apr. 27, 1980; minimum daily, 2 mg/L several days during winter months each year.
SEDIMENT LOADS: Maximum daily, 27 tons (24 t) Apr. 23, 1979; minimum daily, 0.02 ton (0.02 t) many days during winter months in 1979 and 1981.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 301 micromhos April 8; minimum 85 micromhos June 12.
WATER TEMPERATURES: Maximum, 21.0°C on many days during June, July, and August; minimum, 0.0°C many days during March and April.
SEDIMENT CONCENTRATIONS: Maximum daily, 69 mg/L June 18; minimum daily, 1 mg/L Sept. 3-6.
SEDIMENT LOADS: Maximum daily, 16 tons (15 t) June 18; minimum daily. 0.03 ton (0.03 t) Sept. 3, 4 and 5.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
APR										
13...	1515	18	210	225	--	2.0	10.1	100	28	7.2
MAY										
25...	1230	57	140	145	8.0	5.5	9.1	62	18	4.1
JUN										
23...	1530	79	100	107	7.2	14.0	7.6	45	13	3.1

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
APR									
13...	8.9	.4	2.6	60	50	4.6	.2	9.0	148
MAY									
25...	5.0	.3	1.0	48	22	.8	.1	9.5	90
JUN									
23...	3.6	.2	.9	41	19	.7	.1	7.6	73

DATE	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
APR									
13...	.20	7.2	.10	.030	20	2100	400	200	140
MAY									
25...	.12	13.9	< .10	.020	20	790	150	30	24
JUN									
23...	.10	15.6	< .10	.020	10	780	170	50	20

06619400 CANADIAN RIVER NEAR LINDLAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
MAY												
25...	1230	550	90	1	< 1	< 1	< 3	13	3	4	2	.1
JUN												
23...	1530	400	60	< 1	< 1	< 1	< 1	2	2	< 1	< 1	.3

DATE	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)
MAY											
25...	< .1	< 1	< 1	2	37	< 1	< 1	30	13	8.4	2.2
JUN											
23...	< .1	2	< 1	4	2	< 1	< 1	10	14	7.3	6.2

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR					
24...	1630	5.7	10	.15	--
APR					
13...	1330	18	39	1.9	28
MAY					
04...	1030	65	70	12	79
25...	1230	57	20	3.1	68
JUN					
15...	1330	62	20	3.3	74
JUN					
23...	1530	79	33	7.0	56
JUL					
12...	1300	36	11	1.1	--
AUG					
04...	1135	28	6	.45	--
31...	1510	13	13	.46	--

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157	154				---	254	143	112	125	127	146
2	158	154				---	244	137	108	121	127	146
3	159	155				---	235	133	110	121	126	149
4	158	155				---	241	127	110	122	127	150
5	161	156				---	258	127	109	120	128	150
6	154	157				---	252	135	103	120	133	145
7	154	159				---	235	140	101	119	137	146
8	153	160				---	245	151	103	126	138	152
9	150	160				---	241	153	102	140	144	158
10	150	162				---	250	147	100	144	142	155
11	154	163				---	---	144	97	140	145	163
12	160	164				---	223	166	93	130	148	181
13	163	163				---	229	146	92	121	147	152
14	161	163				---	207	154	96	119	152	188
15	150	167				---	194	183	99	116	142	168
16	156	175				---	196	204	101	121	139	149
17	161	---				---	219	211	108	122	139	139
18	161	---				---	220	169	100	123	142	139
19	152	---				---	216	145	99	124	139	135
20	151	---				---	207	145	100	125	140	135
21	150	---				---	207	152	98	127	143	147
22	150	---				---	---	143	98	132	143	147
23	154	---				---	209	143	102	136	143	151
24	158	---				---	187	148	111	139	143	143
25	149	---				236	175	148	113	135	142	141
26	159	---				239	170	155	113	136	144	147
27	158	---				245	173	143	116	140	148	144
28	156	---				245	189	131	119	165	152	145
29	158	---				246	155	113	120	145	147	144
30	154	---				258	159	107	126	131	143	144
31	153	---				254	---	120	---	130	147	---
MEAN	156						214	147	105	130	141	150

06619400 CANADIAN RIVER NEAR LINDLANC, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	11.5	6.0	4.0	.5							---	---
2	10.5	7.5	4.5	.5							---	---
3	11.5	9.5	4.5	.5							---	---
4	10.0	8.5	4.5	.5							---	---
5	9.5	7.0	3.5	.5							---	---
6	11.0	6.0	4.5	.5							---	---
7	11.5	7.0	4.5	2.0							---	---
8	10.0	8.0	4.0	1.5							---	---
9	10.0	6.5	3.5	.5							---	---
10	9.5	6.5	3.0	.5							---	---
11	9.5	6.0	2.0	.5							---	---
12	8.0	5.5	2.5	.5							---	---
13	9.5	5.0	3.0	.5							---	---
14	8.5	6.5	3.5	.5							---	---
15	7.5	5.0	3.5	1.5							---	---
16	6.5	4.5	5.5	2.0							---	---
17	5.0	3.5	---	---							---	---
18	7.5	3.0	---	---							---	---
19	7.0	3.0	---	---							---	---
20	7.0	3.0	---	---							---	---
21	7.0	3.0	---	---							---	---
22	6.0	2.0	---	---							---	---
23	5.5	1.0	---	---							---	---
24	4.0	.5	---	---							---	---
25	4.0	.5	---	---							1.0	.0
26	4.0	.5	---	---							1.0	.5
27	5.5	1.0	---	---							1.0	.5
28	5.0	2.5	---	---							1.0	.5
29	5.0	3.5	---	---							.5	.5
30	3.5	1.5	---	---							.5	.0
31	3.0	.5	---	---							.5	.0
MONTH	11.5	.5										

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

06619400 CANADIAN RIVER NEAR LINDLAND, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	7.6			9.8			6.0		
2	7.6			9.8			6.0		
3	8.4			9.4			6.0		
4	10			9.4			6.5		
5	11			9.4			7.0		
6	9.8			8.7			7.0		
7	8.7			9.1			7.0		
8	9.1			9.1			7.0		
9	11			8.4			7.0		
10	10			7.6			7.0		
11	9.0			8.4			7.0		
12	12			8.0			7.0		
13	13			8.4			7.0		
14	14			8.7			7.0		
15	12			9.1			7.0		
16	12			9.4			6.5		
17	13			9.4			6.0		
18	12			9.1			6.0		
19	12			9.8			6.0		
20	11			9.0			6.0		
21	11			9.8			6.0		
22	10			9.4			6.0		
23	9.4			10			6.0		
24	9.1			10			6.0		
25	10			9.0			6.0		
26	10			9.0			6.0		
27	10			8.0			6.0		
28	11			7.4			6.0		
29	10			7.0			6.0		
30	10			7.0			6.0		
31	9.4			---			6.0		
TOTAL	323.1			266.6			198.0		

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	6.0			6.0			6.8		
2	6.0			5.6			6.8		
3	6.0			5.2			6.8		
4	6.0			5.0			6.6		
5	6.0			5.0			6.4		
6	6.0			5.4			6.0		
7	6.0			5.8			6.0		
8	6.0			6.0			6.0		
9	6.0			6.0			6.0		
10	6.0			6.0			6.0		
11	6.0			6.0			6.0		
12	6.0			6.0			6.0		
13	6.0			6.0			6.0		
14	6.0			6.4			6.0		
15	6.0			6.6			6.0		
16	6.0			6.8			6.0		
17	6.0			6.8			6.0		
18	6.0			6.8			6.0		
19	6.0			6.8			6.0		
20	6.0			6.8			6.0		
21	6.0			6.8			6.0		
22	6.0			6.8			6.0		
23	6.0			6.8			6.0		
24	6.0			6.8			6.0		
25	6.0			6.8			6.0		
26	6.0			6.8			6.0		
27	6.0			6.8			6.6		
28	6.0			6.8			7.0		
29	6.0			---			8.0		
30	6.0			---			8.0		
31	6.0			---			8.0		
TOTAL	186.0			175.4			197.0		

06619400 CANADIAN RIVER NEAR LINDLAND, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	9.0	---	.28	44	---	3.0	45	24	2.9
2	9.0	---	.28	48	---	3.4	44	26	3.1
3	9.0	---	.28	55	---	3.9	42	22	2.5
4	10	---	.34	62	50	8.4	40	20	2.2
5	10	---	.34	50	26	3.5	40	21	2.3
6	10	---	.34	32	15	1.3	45	28	3.4
7	9.8	---	.33	28	12	.91	44	28	3.3
8	18	---	.86	26	14	.98	45	26	3.2
9	20	---	1.0	26	8	.56	48	25	3.2
10	14	---	.58	30	14	1.1	48	23	3.0
11	16	---	.72	30	8	.65	45	23	2.8
12	16	---	.72	35	22	2.1	48	33	4.3
13	21	---	1.1	41	14	1.5	58	36	5.6
14	30	42	3.4	36	9	.87	64	28	4.8
15	34	---	5.8	38	9	.92	60	24	3.9
16	29	---	1.8	52	---	3.7	60	26	4.2
17	28	---	1.7	68	---	10	71	48	9.2
18	26	---	1.5	70	---	10	88	69	16
19	26	---	1.5	66	36	6.4	80	43	9.3
20	25	---	1.4	55	19	2.8	77	33	6.9
21	23	---	1.3	50	14	1.9	78	32	6.7
22	18	---	.86	60	32	5.2	79	28	6.0
23	19	---	.94	67	35	6.3	82	29	6.4
24	25	---	1.4	66	27	4.8	80	35	7.6
25	31	---	1.9	60	18	2.9	84	36	8.2
26	34	---	2.2	55	22	3.3	88	40	9.5
27	31	---	1.9	58	35	5.5	77	26	5.4
28	26	---	1.5	54	37	5.4	77	35	7.3
29	33	---	2.1	51	41	5.6	80	42	9.1
30	25	---	1.4	47	25	3.2	86	40	9.3
31	---	---	---	49	31	4.1	---	---	---
TOTAL	634.8	---	39.77	1509	---	114.19	1903	---	171.6
		JULY			AUGUST			SEPTEMBER	
1	88	30	7.1	30	22	1.8	12	6	.19
2	81	27	5.9	27	13	.95	11	2	.06
3	68	22	4.0	27	10	.73	11	1	.03
4	64	21	3.6	25	10	.68	10	1	.03
5	61	20	3.3	23	13	.81	11	1	.03
6	59	15	2.4	21	20	1.1	14	1	.04
7	44	14	1.7	20	17	.92	12	2	.06
8	39	21	2.2	19	14	.72	14	4	.15
9	40	18	1.9	21	18	1.0	13	3	.11
10	37	18	1.8	21	14	.79	12	3	.10
11	34	20	1.8	19	19	.97	17	---	.87
12	36	14	1.4	20	13	.70	31	---	3.8
13	32	19	1.6	19	16	.82	21	22	1.2
14	33	21	1.9	26	25	1.8	31	---	1.0
15	33	13	1.2	20	24	1.3	28	---	.50
16	42	14	1.6	19	23	1.2	23	3	.19
17	41	18	2.0	21	24	1.4	21	3	.17
18	39	14	1.5	20	13	.70	22	3	.18
19	38	11	1.1	18	20	.97	21	3	.17
20	34	14	1.3	17	18	.83	20	3	.16
21	33	5	.45	16	20	.86	20	3	.16
22	31	9	.75	16	14	.60	19	3	.15
23	28	3	.23	16	18	.78	19	3	.15
24	30	9	.73	14	22	.83	19	3	.15
25	30	3	.24	14	12	.45	18	3	.15
26	30	3	.24	16	14	.60	21	3	.17
27	37	20	2.0	16	22	.95	21	8	.45
28	55	---	7.5	13	22	.77	20	4	.22
29	73	38	7.5	17	23	1.1	20	4	.22
30	46	20	2.5	13	17	.60	19	4	.21
31	35	14	1.3	12	9	.29	---	---	---
TOTAL	1371	---	72.74	596	---	28.02	551	---	11.07

06619415 BUSH DRAW NEAR WALDEN, CO

LOCATION.--Lat 40°44'34", long 106°05'42", in SW¼SE¼ sec.13, T.9 N., R.78 W., Jackson County, Hydrologic Unit 10180001, on left bank 1,500 ft (457 m) above Canadian River and 9.8 mi (15.8 km) east of Walden.

DRAINAGE AREA.--4.10 mi^2 (10.6 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1981 to current year (seasonal record only).

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 8,070 ft (2,460 m), from topographic map.

REMARKS.--Records good. No diversion above station. Slight regulation by small ponds.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1.0 ft^3/s (0.028 m^3/s) at 1915 July 12, 1981, gage height, 10.47 ft (1.319 m); no flow many days most years.

EXTREMES FOR CURRENT SEASON.--No flow entire season of operation.

06619420 WILLIAMS DRAW NEAR WALDEN, CO

LOCATION.--Lat 40°44'17", long 106°06'49", in NW¼NE¼ sec.23, T.9 N., R.78 W., Jackson County, Hydrologic Unit 10180001, on left bank 1,200 ft (366 m) above small dam, 1.2 mi (1.9 km) above Canadian River and 8.8 mi (14.3 km) east of Walden.

DRAINAGE AREA.--3.95 mi^2 (10.23 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder. Altitude of gage is 8,110 ft (2,472 m), from topographic map.

REMARKS.--Records good. No diversion above station. Slight regulation by small ponds.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22 ft^3/s (0.62 m^3/s) Apr. 21, 1980, gage height, 11.76 ft (3.584 m), result of indirect determination of peak flow; no flow many days.

EXTREMES FOR CURRENT SEASON.--Maximum discharge, 1.3 ft^3/s (0.037 m^3/s) at 1730 May 15, gage height, 10.56 ft (3.219 m); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							.00	.00	.00	.00	.00	.00
2							.00	.00	.00	.00	.00	.00
3							.00	.00	.00	.00	.00	.00
4							.00	.00	.00	.00	.00	.00
5							.00	.00	.00	.00	.00	.00
6							.00	.00	.00	.00	.00	.00
7							.00	.00	.00	.00	.00	.00
8							.00	.00	.00	.00	.00	.00
9							.00	.00	.00	.00	.00	.00
10							.00	.00	.00	.00	.00	.00
11							.20	.00	.00	.00	.00	.03
12							.20	.00	.00	.00	.00	.00
13							.26	.00	.00	.00	.00	.00
14							.26	.00	.00	.00	.00	.06
15							.19	.26	.00	.00	.00	.02
16							.10	.30	.00	.00	.00	.00
17							.00	.17	.00	.00	.00	.00
18							.00	.06	.00	.00	.00	.00
19							.00	.00	.00	.00	.00	.00
20							.00	.03	.00	.00	.00	.00
21							.00	.10	.00	.00	.00	.00
22							.00	.01	.00	.00	.00	.00
23							.00	.04	.00	.00	.00	.00
24							.00	.09	.00	.00	.00	.00
25							.00	.02	.00	.00	.00	.00
26							.00	.00	.00	.00	.00	.00
27							.00	.00	.00	.00	.00	.00
28							.00	.00	.00	.00	.00	.00
29							.00	.00	.00	.00	.00	.00
30							.00	.00	.00	.00	.00	.00
31							---	.00	---	.00	.00	---
TOTAL							1.21	1.08	.00	.00	.00	.11
MEAN							.040	.035	.000	.000	.000	.004
MAX							.26	.30	.00	.00	.00	.06
MIN							.00	.00	.00	.00	.00	.00
AC-FT							2.4	2.1	.00	.00	.00	.2

06619420 WILLIAMS DRAW NEAR WALDEN, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
APR									
13...	1630	.84	170	165	11.0	7.0	51	12	5.0
14...	0915	.14	310	327	8.5	9.6	130	29	13

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
APR									
13...	14	.9	3.1	62	10	2.2	.2	9.3	98
14...	23	1.0	3.8	120	35	3.1	.4	5.7	186

DATE	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
APR									
13...	.13	.22	.30	.210	60	5100	520	90	25
14...	.25	.07	.10	.140	60	460	130	20	8

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)
APR							
13...	1630	6900	3100	7	< 1	30	89

06619450 CANADIAN RIVER NEAR BROWNLEE, CO

LOCATION.--Lat 40°48'29", long 106°14'09", in NE¼SW¼ sec.26, T.10 N., R.79 W., Jackson County, Hydrologic Unit 10180001, on right bank 3.1 mi (5.0 km) east of Brownlee, 3.9 mi (6.3 km) below mouth of Coon Creek, and 4.7 mi (7.6 km) north of Walden.

DRAINAGE AREA.--158 mi^2 (409 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 7,930 ft (2,417 m) from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Natural flow of stream affected by numerous diversions for irrigation of hay meadows and return flows from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 352 ft^3/s (9.97 m^3/s) Apr. 23, 1980, gage height, 4.29 ft (1.308 m); maximum gage height, 4.92 ft (1.500 m) at 1700 Apr. 22, 1980 (backwater from ice); minimum daily discharge, 2.6 ft^3/s (0.074 m^3/s) Sept. 9, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 172 ft^3/s (4.87 m^3/s) at 1230 June 19, gage height, 3.10 ft (0.945 m); minimum daily, 8.0 ft^3/s (0.23 m^3/s) Feb. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	26	10	10	10	13	12	43	84	132	45	14
2	11	21	10	10	9.4	13	12	56	73	126	38	12
3	12	22	10	10	8.8	12	12	59	67	106	33	9.4
4	14	14	11	10	8.4	11	13	66	62	94	31	8.8
5	17	14	11	10	8.0	11	14	73	57	80	31	9.4
6	17	14	11	10	9.0	11	15	64	56	84	28	10
7	16	14	11	10	10	11	16	50	61	82	25	12
8	15	14	11	10	10	11	17	43	62	68	22	14
9	15	13	11	10	10	11	18	36	63	58	22	17
10	16	12	11	10	10	11	19	34	66	56	24	16
11	16	11	11	10	10	11	20	36	65	51	24	15
12	18	11	11	10	10	11	25	44	79	44	22	27
13	20	11	11	10	11	11	31	53	95	41	23	39
14	24	11	11	10	12	11	40	62	108	51	24	48
15	24	11	11	10	13	11	48	64	119	48	27	50
16	25	11	10	10	13	11	48	77	127	44	24	43
17	26	11	10	10	13	11	39	96	132	41	24	34
18	24	11	10	10	13	11	36	91	153	36	37	32
19	23	11	10	10	13	11	37	84	167	34	38	30
20	22	11	10	10	13	11	30	80	160	36	26	28
21	20	11	10	10	13	11	33	79	151	32	20	26
22	20	11	10	10	13	11	34	69	152	32	19	24
23	19	11	10	10	13	11	30	72	156	28	19	22
24	19	11	10	10	13	11	34	78	156	27	18	20
25	20	11	10	10	13	11	41	79	150	40	16	20
26	25	11	10	10	13	11	46	77	156	36	17	22
27	21	11	10	10	13	11	52	68	156	36	20	25
28	22	11	10	10	13	11	53	68	139	52	19	25
29	24	11	10	10	---	11	47	68	121	88	20	24
30	20	11	10	10	---	11	51	69	121	92	19	24
31	20	---	10	10	---	11	---	80	---	60	17	---
TOTAL	596	384	322	310	318.6	346	923	2018	3314	1835	772	700.6
MEAN	19.2	12.8	10.4	10.0	11.4	11.2	30.8	65.1	110	59.2	24.9	23.4
MAX	26	26	11	10	13	13	53	96	167	132	45	50
MIN	11	11	10	10	8.0	11	12	34	56	27	16	8.8
AC-FT	1180	762	639	615	632	686	1830	4000	6570	3640	1530	1390

CAL YR 1981 TOTAL 6554.6 MEAN 18.0 MAX 132 MIN 2.8 AC-FT 13000
WTR YR 1982 TOTAL 11839.2 MEAN 32.4 MAX 167 MIN 8.0 AC-FT 23480

06619450 CANADIAN RIVER NEAR BROWNLEE, CO--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1978 to current year.
WATER TEMPERATURE: April 1978 to current year.
SUSPENDED SEDIMENT DISCHARGE: May 1978 to current year.

INSTRUMENTATION.--Automatic pumping sediment sampler since May 1978. Water-quality monitor since April 1978.

REMARKS.--Daily maximum and minimum specific conductance data available in district office. Water-quality monitor shut down Nov. 17, 1981 to Mar. 31, 1982. No monitor record Oct. 23 to Nov. 17, May 15-18. Suspended sediment sampler shut down Oct. 1 to March 31.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 494 micromhos May 7, 1981; minimum, 147 micromhos June 4, 1980.
WATER TEMPERATURES: Maximum, 29.5°C July 6, 1981; minimum, 0.0°C many days during winter period.
SEDIMENT CONCENTRATIONS: Maximum daily, 282 mg/L Apr. 26, 1980; minimum daily, 1 mg/L Dec. 21, 1980.
SEDIMENT LOADS: Maximum daily, 176 tons (160 t) Apr. 24, 1980; minimum daily, 0.02 ton (0.02 t) on many days during winter months in 1978.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 424 micromhos April 9; minimum 150 micromhos Sept. 15.
WATER TEMPERATURES: Maximum, 27.0°C July 23; minimum, 0.0°C many days during October and April.
SEDIMENT CONCENTRATIONS: Maximum, 136 mg/L May 17; minimum daily, 1 mg/L Sept. 4, 5.
SEDIMENT LOADS: Maximum daily, 52 tons (47 t); minimum daily. 0.02 ton (0.02 t) Sept. 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
MAY										
25...	1730	78	220	230	8.0	9.5	8.0	94	27	6.5
JUN										
24...	0900	157	250	250	7.4	13.0	7.0	116	33	8.2

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
MAY									
25...	8.6	.4	1.4	80	29	1.4	.2	11	133
JUN									
24...	8.1	.3	1.5	107	24	1.1	.2	13	154

DATE	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
MAY									
25...	.18	28.0	<.10	.020	20	1100	94	50	11
JUN									
24...	.21	65.3	<.10	.020	30	680	200	50	22

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
MAY												
25...	1730	540	70	1	1	<1	<3	4	3	3	2	.1
JUN												
24...	0900	290	30	1	<1	<1	<1	1	1	<1	<1	.4

06619450 CANADIAN RIVER NEAR BROWNLEE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
MAY											
25...	<.1	1	1	2	12	<1	<1	10	<12	8.7	8.3
JUN											
24...	.1	2	<1	6	13	<1	<1	20	13	9.9	10

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
APR					
14...	1450	42	154	17	--
MAY					
03...	1650	58	98	15	65
25...	1730	78	73	15	31
JUN					
15...	1530	124	42	14	30
24...	0900	157	90	38	12
JUL					
12...	1800	39	15	1.6	--
AUG					
04...	1615	32	34	2.9	--
31...	1130	16	17	.73	--

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	282						324	245	249	237	237	247
2	277						323	221	246	237	235	243
3	273						328	216	242	229	231	241
4	273						315	212	244	232	210	260
5	276						324	202	242	239	186	269
6	275						314	200	234	242	195	276
7	275						320	212	223	249	207	277
8	273						355	222	218	268	216	262
9	272						379	228	220	279	224	292
10	270						372	230	251	278	238	313
11	265						347	221	263	284	248	282
12	266						288	220	270	294	231	270
13	277						290	212	259	301	237	255
14	278						298	222	247	306	---	254
15	275						301	---	245	307	---	179
16	276						302	---	247	300	262	240
17	284						311	---	258	290	272	225
18	286						306	---	273	285	251	228
19	288						290	300	267	286	302	227
20	288						290	258	257	275	265	239
21	284						279	264	253	280	---	243
22	278						287	279	249	283	262	246
23	---						296	248	247	278	262	249
24	---						282	231	240	283	262	247
25	---						265	226	238	263	260	251
26	---						245	232	234	261	262	255
27	---						224	233	233	251	260	257
28	---						239	227	248	251	264	251
29	---						264	225	244	285	268	250
30	---						245	215	253	258	279	254
31	---						---	232	---	241	259	---
MEAN							300	231	246	269	246	253

06619450 CANADIAN RIVER NEAR BROWNLEE, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.5	3.5										
2	11.5	5.0										
3	13.5	8.0										
4	10.0	8.0										
5	10.5	6.0										
6	14.0	4.0										
7	15.0	5.0										
8	10.0	7.0										
9	11.5	5.5										
10	11.5	4.5										
11	11.0	4.5										
12	10.0	4.5										
13	13.5	5.5										
14	11.5	6.0										
15	9.0	3.0										
16	8.0	3.0										
17	5.0	2.5										
18	10.0	.5										
19	10.0	1.0										
20	10.5	1.0										
21	10.0	1.5										
22	8.5	.0										
23	---	---										
24	---	---										
25	---	---										
26	---	---										
27	---	---										
28	---	---										
29	---	---										
30	---	---										
31	---	---										
MONTH												

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

06619450 CANADIAN RIVER NEAR BROWNLEE, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	11			26			10		
2	11			21			10		
3	12			22			10		
4	14			14			11		
5	17			14			11		
6	17			14			11		
7	16			14			11		
8	15			14			11		
9	15			13			11		
10	16			12			11		
11	16			11			11		
12	18			11			11		
13	20			11			11		
14	24			11			11		
15	24			11			11		
16	25			11			10		
17	26			11			10		
18	24			11			10		
19	23			11			10		
20	22			11			10		
21	20			11			10		
22	20			11			10		
23	19			11			10		
24	19			11			10		
25	20			11			10		
26	25			11			10		
27	21			11			10		
28	22			11			10		
29	24			11			10		
30	20			11			10		
31	20			---			10		
TOTAL	596			384			322		

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	10			10			13		
2	10			9.4			13		
3	10			8.8			12		
4	10			8.4			11		
5	10			8.0			11		
6	10			9.0			11		
7	10			10			11		
8	10			10			11		
9	10			10			11		
10	10			10			11		
11	10			10			11		
12	10			10			11		
13	10			11			11		
14	10			12			11		
15	10			13			11		
16	10			13			11		
17	10			13			11		
18	10			13			11		
19	10			13			11		
20	10			13			11		
21	10			13			11		
22	10			13			11		
23	10			13			11		
24	10			13			11		
25	10			13			11		
26	10			13			11		
27	10			13			11		
28	10			13			11		
29	10			---			11		
30	10			---			11		
31	10			---			11		

06619450 CANADIAN RIVER NEAR BROWNLEE, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	12		1.2	43	---	8.4	84	49	11
2	12		1.2	56	---	12	73	40	7.9
3	12		1.2	59	---	13	67	25	4.5
4	13		1.4	66	96	17	62	25	4.2
5	14		1.5	73	90	18	57	26	4.0
6	15		1.7	64	51	8.8	56	35	5.3
7	16		1.9	50	36	4.9	61	33	5.4
8	17		2.1	43	38	4.4	62	33	5.5
9	18		2.3	36	30	2.9	63	32	5.4
10	19		2.5	34	29	2.7	66	37	6.6
11	20		2.6	36	32	3.1	65	34	6.0
12	25		3.7	44	43	5.1	79	44	9.4
13	31		5.0	53	45	6.4	95	49	13
14	40		7.5	62	48	8.0	108	54	16
15	48		9.8	64	49	8.5	119	65	21
16	48		9.8	77	88	18	127	31	11
17	39		7.2	96	136	35	132	53	19
18	36		6.4	91	107	26	153	78	32
19	37		6.6	84	94	21	167	92	41
20	30		4.8	80	86	19	160	76	33
21	33		5.6	79	---	13	151	66	27
22	34		5.8	69	---	12	152	71	29
23	30		4.8	72	---	13	156	88	37
24	34		5.8	78	---	15	156	123	52
25	41		8.0	79	---	17	150	113	46
26	46		9.2	77	91	19	156	96	40
27	52		11	68	68	12	156	80	34
28	53		11	68	60	11	139	70	26
29	47		9.6	68	68	12	121	65	21
30	51		10	69	65	12	121	54	18
31	---			80	52	11	---	---	---
TOTAL	923		161.2	2018	---	389.2	3314	---	591.2
		JULY			AUGUST			SEPTEMBER	
1	132	50	18	45	44	5.3	14	10	.38
2	126	38	13	38	38	3.9	12	5	.16
3	106	29	8.3	33	28	2.5	9.4	4	.10
4	94	35	8.9	31	24	2.0	8.8	1	.02
5	80	38	8.2	31	32	2.7	9.4	1	.03
6	84	44	10	28	31	2.3	10	2	.05
7	82	27	6.0	25	30	2.0	12	3	.10
8	68	29	5.3	22	27	1.6	14	3	.11
9	58	28	4.4	22	23	1.4	17	15	.69
10	56	30	4.5	24	34	2.2	16	8	.35
11	51	28	3.9	24	28	1.8	15	7	.28
12	44	18	2.1	22	22	1.3	27	22	1.6
13	41	10	1.1	23	16	.99	39	37	3.9
14	51	27	3.7	24	25	1.6	48	26	3.4
15	48	18	2.3	27	33	2.4	50	21	2.8
16	44	8	.95	24	25	1.6	43	10	1.2
17	41	14	1.5	24	22	1.4	34	4	.37
18	36	4	.39	37	51	5.1	32	4	.35
19	34	5	.46	38	---	2.9	30	4	.32
20	36	22	2.1	26	37	2.6	28	3	.23
21	32	23	2.0	20	34	1.8	26	3	.21
22	32	25	2.2	19	26	1.3	24	3	.19
23	28	26	2.0	19	20	1.0	22	3	.18
24	27	20	1.5	18	20	.97	20	3	.16
25	40	44	4.8	16	18	.78	20	4	.22
26	36	40	3.9	17	17	.78	22	6	.36
27	36	38	3.7	20	24	1.3	25	10	.68
28	52	56	7.9	19	24	1.2	25	4	.27
29	88	97	23	20	24	1.3	24	4	.26
30	92	57	14	19	18	.92	24	4	.26
31	60	44	7.1	17	22	1.0	---	---	---
TOTAL	1835	---	177.20	772	---	59.94	700.6	---	19.23

06620000 NORTH PLATTE RIVER NEAR NORTHGATE, CO

LOCATION.--Lat 40°56'10", long 106°20'21", in SW¼SE¼ sec.11, T.11 N., R.80 W., Jackson County, Hydrologic Unit 10180001, on right bank 350 ft (110 m) downstream from bridge on State Highway 125, 0.8 mi (1.3 km) upstream from Camp Creek, 4.2 mi (6.8 km) northwest of Northgate, and 4.4 mi (7.1 km) south of Colorado-Wyoming State line.

DRAINAGE AREA.--1,431 mi^2 (3,706 km^2).

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 7,810.39 ft (2,380.607 m) 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 (1.3 km) downstream at datum 3.36 ft (1.024 m) lower.

REMARKS.--Records good except those for winter period, which are poor. Diversions for irrigation of about 130,000 acres (526 km^2) of hay meadows above station. Transbasin diversions above station to Cache la Poudre River basin (see elsewhere in this report).

AVERAGE DISCHARGE.--67 years, 429 ft^3/s (12.15 m^3/s), 310,800 acre-ft/yr (383 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,720 ft^3/s (190 m^3/s) June 11, 1923, gage height, 6.24 ft (1.902 m), site and datum then in use; maximum gage height recorded, 9.65 ft (2.941 m) Apr. 25, 1980, (ice jam); minimum daily discharge, 19 ft^3/s (0.54 m^3/s) July 17-19, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,320 ft^3/s (65.7 m^3/s) June 27, gage height, 5.27 ft (1.606 m); minimum daily, 45 ft^3/s (1.27 m^3/s) Feb. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	110	155	189	92	125	269	667	1310	2040	1060	272
2	62	120	148	167	85	135	267	813	1150	2040	896	241
3	64	123	156	140	75	147	265	1030	1100	2010	827	220
4	66	118	175	110	65	156	262	1210	1060	1800	797	200
5	73	111	175	78	55	168	260	1450	910	1640	752	190
6	86	107	194	72	50	179	259	1480	797	1640	688	197
7	88	105	190	68	45	190	258	1240	824	1560	621	200
8	88	105	194	69	46	200	253	900	792	1270	570	206
9	82	107	206	70	47	210	253	775	770	1180	570	216
10	85	96	209	71	49	220	252	792	788	1240	583	220
11	89	95	211	73	51	228	251	879	812	1260	557	224
12	91	92	205	75	52	232	281	876	842	1270	507	258
13	101	92	200	77	53	238	417	1050	977	1340	465	347
14	134	104	200	79	54	240	553	1090	1090	1390	454	404
15	148	122	204	82	55	244	770	927	1200	1320	471	456
16	162	126	189	86	57	248	970	816	1220	1280	495	469
17	174	131	177	90	58	250	768	868	1240	1170	477	419
18	165	125	193	95	60	252	622	916	1460	1150	465	367
19	142	113	200	100	64	252	520	851	1740	1140	471	331
20	126	106	204	104	67	253	388	873	1790	1100	420	306
21	113	119	197	108	71	256	358	916	1640	1090	393	304
22	113	144	180	106	75	260	401	877	1610	1040	382	299
23	118	135	169	105	80	263	365	910	1770	1110	357	268
24	113	123	169	103	85	268	438	981	2030	1060	337	261
25	112	125	171	100	92	269	541	1070	2010	1120	318	248
26	112	118	179	99	96	270	655	1060	2110	1100	323	248
27	126	159	180	98	105	271	715	923	2180	1140	313	289
28	127	174	181	96	115	273	651	917	1960	1460	295	338
29	125	163	182	95	---	273	650	994	1890	1760	300	328
30	124	165	188	94	---	270	665	1110	1920	1610	318	343
31	119	---	190	94	---	270	---	1270	---	1330	304	---
TOTAL	3389	3633	5771	2993	1899	7110	13577	30531	40992	42660	15786	8669
MEAN	109	121	186	96.5	67.8	229	453	985	1366	1376	509	289
MAX	174	174	211	189	115	273	970	1480	2180	2040	1060	469
MIN	61	92	148	68	45	125	251	667	770	1040	295	190
AC-FT	6720	7210	11450	5940	3770	14100	26930	60560	81310	84620	31310	17190

CAL YR 1981 TOTAL 61810 MEAN 169 MAX 1260 MIN 39 AC-FT 122600
WTR YR 1982 TOTAL 177010 MEAN 485 MAX 2180 MIN 45 AC-FT 351100

06620000 NORTH PLATTE RIVER NEAR NORTHGATE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1965 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (MG/L AS CACO3)
OCT									
19...	1620	139	340	294	8.3	9.0	10.4	K4	117
NOV									
17...	1630	131	310	287	8.2	4.0	11.2	K3	114
JAN									
05...	1630	78	310	289	7.3	.0	8.5	20	111
FEB									
17...	0900	57	--	267	--	.0	--	--	108
MAR									
29...	1500	273	--	276	--	.5	--	--	112
MAY									
05...	1130	1470	--	178	--	6.0	--	--	67
JUN									
17...	1110	1170	--	282	--	14.0	--	--	107
JUL									
20...	1600	909	--	211	--	19.0	--	--	82
SEP									
03...	1520	209	--	214	--	14.0	--	--	88

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE FET-FLD (MG/L AS HCO3)	CAR-BONATE FET-FLD (MG/L AS CO3)	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
OCT									
19...	33	8.5	15	.6	2.0	140	0	120	29
NOV									
17...	32	8.3	13	.5	2.1	130	0	110	21
JAN									
05...	31	8.1	14	.6	1.8	140	0	120	21
FEB									
17...	30	8.0	15	.7	1.3	--	--	110	23
MAR									
29...	32	7.8	16	.7	1.8	--	--	120	28
MAY									
05...	18	5.3	10	.6	1.5	--	--	65	22
JUN									
17...	28	9.1	21	.9	2.5	--	--	120	24
JUL									
20...	22	6.6	10	.5	2.0	--	--	94	14
SEP									
03...	25	6.3	10	.5	1.1	--	--	94	15

K BASED ON NON-IDEAL COLONY COUNT.

06620000 NORTH PLATTE RIVER NEAR NORTHGATE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT								
19...	3.3	.7	9.1	170	.23	63.8	.90	.050
NOV								
17...	2.3	1.0	8.9	150	.21	53.1	.13	.140
JAN								
05...	2.7	.4	12	160	.22	33.7	.10	.130
FEB								
17...	1.7	.6	11	160	.21	24.6	.00	.000
MAR								
29...	2.1	.5	10	170	.23	125	.00	.030
MAY								
05...	1.7	.5	8.6	110	.14	437	.00	.090
JUN								
17...	2.2	.7	12	170	.23	537	.30	.030
JUL								
20...	.5	.4	8.0	120	.16	295	.00	.000
SEP								
08...	1.4	.8	5.4	120	.17	67.7	.20	.050

06657500 LARAMIE RIVER NEAR GLENDEVEY, CO

LOCATION.--Lat 40°48'02", long 105°52'40", in NW¼NW¼ sec.36, T.10 N., R.76 W., Larimer County, Hydrologic Unit 10180010, on left bank 200 ft (61 m) downstream from bridge on county road, 350 ft (110 m) downstream from Nunn Creek, 1,300 ft (400 m) upstream from Stub Creek, and 3.0 mi (4.8 km) east of Glendevey.

DRAINAGE AREA.--101 mi² (262 km²).

PERIOD OF RECORD.--June 1904 to October 1905, August 1910 to September 1982 (discontinued). Monthly discharge only for some periods, published in WSP 1310. Published as "at Glendevey" 1905, 1910-18.

REVISED RECORDS.--WSP 469: 1911-12. WSP 506: Drainage area. WSP 1310: 1905, 1914. WSP 1918: 1918 (monthly runoff).

GAGE.--Water-stage recorder. Altitude of gage is 8,230 ft (2,509 m), from topographic map. See WSP 1730 for history of changes prior to Sept. 20, 1935.

REMARKS.--Records good except those for winter period, which are fair. Diversions for irrigation of about 700 acres (2.83 km²) of hay meadows above station. Transbasin diversions above station to Cache la Poudre River and tributaries (see elsewhere in this report). Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--73 years, 73.0 ft³/s (2.067 m³/s), 52,890 acre-ft/yr (65.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,240 ft³/s (63.4 m³/s) June 9, 1923, gage height, 4.55 ft (1.387 m), from floodmarks, site and datum then in use, from rating curve extended above 1,400 ft³/s (40 m³/s); minimum daily recorded, 5.0 ft³/s (0.14 m³/s) Feb. 14, 15, 1911, but may have been less during winter periods of no gage-height record.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 857 ft³/s (24.3 m³/s) at 0100 June 25, gage height, 3.30 ft (1.006 m); minimum daily, 14 ft³/s (0.40 m³/s) Apr. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	25	20	19	16	17	16	44	185	670	108	61
2	22	25	19	19	17	17	15	54	186	622	52	56
3	24	25	18	19	17	17	16	82	197	560	48	53
4	29	24	20	19	17	17	15	127	199	529	45	51
5	35	23	18	19	17	17	15	97	241	496	41	51
6	32	23	18	19	17	17	15	67	277	457	36	54
7	31	23	18	19	17	17	14	48	279	320	33	50
8	33	23	18	19	19	17	15	41	322	177	31	56
9	33	21	20	19	22	16	16	45	323	156	34	59
10	30	20	18	19	20	16	15	59	325	136	35	49
11	29	19	18	19	19	17	17	61	326	126	31	64
12	36	20	19	19	20	17	24	58	359	131	31	94
13	37	21	17	19	20	19	24	52	374	128	33	83
14	38	21	19	19	18	19	29	37	339	132	74	99
15	34	21	17	19	16	18	33	44	326	125	78	99
16	33	22	18	19	17	17	31	57	337	102	66	103
17	31	22	18	17	15	18	26	71	454	103	69	89
18	30	21	19	18	16	18	26	91	500	115	113	83
19	30	20	19	17	16	17	25	98	570	107	71	74
20	29	23	19	16	15	18	21	92	609	101	63	69
21	28	21	19	16	16	22	25	88	585	96	62	65
22	25	20	19	17	17	20	22	104	629	93	46	60
23	24	21	19	17	17	18	26	108	665	91	50	61
24	25	21	19	16	18	16	30	101	682	85	81	60
25	25	20	19	16	19	16	33	94	745	77	77	60
26	27	20	19	16	20	15	33	93	662	67	75	107
27	29	20	19	16	17	15	34	118	591	90	76	82
28	27	20	19	16	16	16	34	155	658	126	75	77
29	26	20	19	16	---	17	38	174	687	152	92	72
30	26	20	19	16	---	16	35	175	703	218	72	69
31	26	---	19	16	---	19	---	172	---	202	67	---
TOTAL	906	645	579	550	491	536	718	2707	13335	6590	1865	2110
MEAN	29.2	21.5	18.7	17.7	17.5	17.3	23.9	87.3	445	213	60.2	70.3
MAX	38	25	20	19	22	22	38	175	745	670	113	107
MIN	22	19	17	16	15	15	14	37	185	67	31	49
AC-FT	1800	1280	1150	1090	974	1060	1420	5370	26450	13070	3700	4190

CAL YR 1981 TOTAL 14997 MEAN 41.1 MAX 577 MIN 10 AC-FT 29750
WTR YR 1982 TOTAL 31032 MEAN 85.0 MAX 745 MIN 14 AC-FT 61550

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 (60 m) downstream from highway bridge, 2.5 mi (4.0 km) upstream from water line of Elevenmile Canyon Reservoir at elevation 8,561 ft (2,609 m), and 13 mi (21 km) southeast of Hartsel.

DRAINAGE AREA.--880 mi^2 (2,279 km^2).

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 (2,625.191 m) 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 (0.140 m) lower.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Antero Reservoir, capacity, 22,300 acre-ft (27.5 hm^3). Many small diversions above station for irrigation of about 24,000 acres (97.1 km^2). 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.--43 years (water years 1940-82), 77.2 ft^3/s (2.186 m^3/s), 55,930 acre-ft/yr (69.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, occurred Apr. 28, 1970, gage height, 7.60 ft (2.316 m), from floodmarks; maximum daily, 3,970 ft^3/s (112 m^3/s) Apr. 27, 1970; minimum daily, 0.20 ft^3/s (0.006 m^3/s) Oct. 25, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 916 ft^3/s (25.9 m^3/s) at 2100 Aug. 23, gage height, 4.12 ft (1.256 m); minimum daily, 0.20 ft^3/s (0.006 m^3/s) Oct. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	57	49	40	22	38	23	95	26	175	296	43
2	36	57	34	52	22	26	18	95	34	166	263	43
3	35	53	34	52	22	16	26	100	43	184	261	43
4	38	57	34	47	22	13	22	129	33	247	270	44
5	33	55	34	30	22	16	16	139	56	221	261	45
6	36	55	35	29	22	22	22	130	45	205	256	45
7	37	55	35	25	22	25	22	107	28	181	253	45
8	36	55	35	22	22	25	27	113	34	158	225	45
9	34	54	34	22	22	25	60	104	27	137	197	44
10	32	48	31	22	22	24	61	93	30	125	162	45
11	30	40	31	22	22	24	62	91	31	141	177	45
12	28	58	31	22	22	24	62	97	34	144	194	45
13	29	73	31	22	22	25	69	82	54	188	188	45
14	28	73	30	22	22	25	84	54	156	209	202	44
15	30	73	31	22	22	25	84	55	156	207	215	44
16	35	84	40	21	22	25	83	57	86	200	206	44
17	49	93	36	20	22	25	83	57	110	195	206	44
18	56	91	36	20	22	26	83	55	116	191	203	45
19	34	82	31	21	22	26	83	60	142	202	219	45
20	1.0	35	26	22	22	26	83	77	173	201	265	46
21	.50	54	31	22	22	26	84	77	175	196	286	45
22	.40	58	40	22	22	26	89	71	157	198	322	46
23	.30	72	42	22	22	26	93	52	124	199	383	45
24	.25	87	45	22	22	20	93	47	108	199	172	45
25	.20	81	45	22	22	20	92	28	134	200	43	46
26	11	81	45	22	23	20	94	21	155	196	43	46
27	35	75	45	22	21	20	95	21	170	203	43	46
28	36	65	45	22	19	20	94	22	157	226	43	46
29	44	65	39	22	---	19	93	24	140	265	42	46
30	56	65	32	22	---	18	94	24	180	290	42	47
31	58	---	29	22	---	22	---	24	---	344	43	---
TOTAL	933.65	1954	1116	797	613	718	1996	2201	2914	6193	5981	1347
MEAN	30.1	65.1	36.0	25.7	21.9	23.2	66.5	71.0	97.1	200	193	44.9
MAX	58	93	49	52	23	38	95	139	180	344	383	47
MIN	.20	35	26	20	19	13	18	21	26	125	42	43
AC-FT	1850	3880	2210	1580	1220	1420	3960	4370	5780	12280	11860	2670

CAL YR 1981 TOTAL 15654.46 MEAN 42.9 MAX 236 MIN .20 AC-FT 31050
WTR YR 1982 TOTAL 26763.65 MEAN 73.3 MAX 383 MIN .20 AC-FT 53090

NOTE.--NO GAGE-HEIGHT RECORD DEC. 23 TO MAR. 24.

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 (210 m) downstream from Elevenmile Canyon Reservoir and 8.2 mi (13.2 km) southwest of town of Lake George.

DRAINAGE AREA.--963 mi^2 (2,494 km^2).

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. Altitude of gage is 8,458 ft (2,578.0 m), from topographic map. Prior to Oct. 26, 1940, at site 1 mi (1.6 km) downstream at datum 8,423.95 ft (2,567.620 m) National Geodetic Vertical Datum, adjustment of 1912.

REMARKS.--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 (27.5 hm^3), diversions for irrigation, 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.--53 years, 73.5 ft^3/s (2.082 m^3/s), 53,250 acre-ft/yr (65.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 3,000 ft^3/s (85 m^3/s) Apr. 28, 1970, gage height, 8.34 ft (2.542 m), 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, 603 ft^3/s (17.1 m^3/s) at 1500 Aug. 27, gage height, 4.31 ft (1.314 m); minimum daily, 16 ft^3/s (0.45 m^3/s) Dec. 2, Apr. 1, 3-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	19	35	18	20	19	16	100	44	167	332	429
2	56	29	16	18	20	20	18	100	44	171	357	428
3	57	38	17	18	20	20	16	100	42	171	314	428
4	57	37	17	18	21	20	16	112	31	171	333	393
5	57	37	17	19	21	21	16	130	32	171	446	370
6	56	41	17	19	21	21	16	161	32	246	460	371
7	56	46	17	19	20	22	16	179	28	297	436	370
8	56	46	17	19	19	22	25	187	25	301	95	212
9	53	46	17	19	20	22	43	188	25	301	263	51
10	51	46	17	20	20	28	43	157	25	303	308	51
11	51	46	17	20	20	31	43	114	25	304	326	51
12	51	71	17	19	20	31	45	97	25	305	380	51
13	51	90	17	19	20	31	47	82	26	307	434	51
14	51	83	17	23	19	31	55	67	26	333	394	51
15	51	51	17	26	19	32	55	68	24	348	321	51
16	88	49	17	26	20	31	55	68	87	350	344	51
17	117	48	17	31	24	31	55	68	125	378	364	38
18	82	49	17	34	26	31	56	68	139	398	364	31
19	69	49	17	33	26	31	55	69	148	399	363	31
20	70	49	17	33	26	30	55	69	148	398	396	31
21	56	49	17	33	25	28	58	69	161	399	415	39
22	31	49	18	34	25	28	64	69	172	398	414	45
23	19	49	18	33	26	28	63	70	172	396	415	45
24	20	49	18	34	21	29	66	58	148	396	431	45
25	20	49	18	32	18	29	64	36	111	395	490	45
26	20	49	18	32	18	24	79	37	97	394	546	45
27	20	49	18	24	18	20	95	37	97	392	583	34
28	20	49	18	19	18	20	113	37	97	423	525	27
29	20	49	18	19	---	21	111	38	97	391	429	26
30	21	49	18	19	---	21	101	37	138	317	429	25
31	22	---	18	20	---	17	---	41	---	291	428	---
TOTAL	1505	1460	554	750	591	790	1560	2713	2391	10011	12135	3916
MEAN	48.5	48.7	17.9	24.2	21.1	25.5	52.0	87.5	79.7	323	391	131
MAX	117	90	35	34	26	32	113	188	172	423	583	429
MIN	19	19	16	18	18	17	16	36	24	167	95	25
AC-FT	2990	2900	1100	1490	1170	1570	3090	5380	4740	19860	24070	7770

CAL YR 1981 TOTAL 18385.0 MEAN 50.4 MAX 228 MIN 7.7 AC-FT 36470
WTR YR 1982 TOTAL 38376.0 MEAN 105 MAX 583 MIN 16 AC-FT 76120

06696980 TARRYALL CREEK AT UPPER STATION, NEAR COMO, CO

LOCATION.--Lat 39°20'23", long 105°54'42", in NE¼SW¼ sec.20, T.8 S., R.76 W., Park County, Hydrologic Unit 10190001, on left bank 150 ft (46 m) upstream from culvert on county road 1.8 mi (2.9 km) northwest of Como. Prior to July 15, 1980, at site 250 ft (76 m) downstream.

DRAINAGE AREA.--23.7 mi^2 (61.4 km^2).

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

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 9,935 ft (3,028 m), from topographic map.

REMARKS.--Records good except those for periods of no gage-height record, 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, not determined, maximum daily, 170 ft^3/s (4.81 m^3/s) June 12, 1980; minimum daily, 1.5 ft^3/s (0.042 m^3/s) Apr. 5, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 96 ft^3/s (2.72 m^3/s) at 1930 June 17, gage height, 2.12 ft (0.646 m); minimum daily, 2.0 ft^3/s (0.057 m^3/s) Feb. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	7.2	5.3	3.0	2.5	4.0	4.0	12	69	64	30	26
2	7.8	6.7	5.0	3.0	2.5	4.0	4.0	13	74	61	30	25
3	8.4	7.0	5.0	3.0	2.4	4.0	4.0	18	74	56	29	23
4	8.1	7.0	5.0	3.0	2.2	4.0	4.0	19	66	55	30	24
5	7.6	6.7	5.0	3.0	2.0	4.0	4.0	20	72	52	30	30
6	7.3	6.4	5.0	3.0	2.3	4.0	4.0	16	76	49	28	26
7	7.3	6.4	5.0	3.0	2.5	4.0	4.1	16	77	46	26	24
8	7.0	6.4	5.0	3.0	2.5	4.0	4.1	16	79	44	24	24
9	7.0	6.4	5.0	3.0	2.5	4.0	4.3	17	80	43	23	22
10	7.0	6.4	5.0	3.0	2.5	4.0	4.4	18	83	40	20	21
11	7.6	6.4	4.8	3.0	2.5	4.0	4.4	20	84	40	24	27
12	7.6	6.2	4.7	3.0	2.5	4.0	4.4	20	83	39	26	34
13	7.8	5.9	4.5	3.0	2.5	4.0	4.4	19	87	39	32	29
14	7.6	5.9	4.5	3.0	2.8	4.0	4.4	17	87	36	33	30
15	9.0	6.2	4.5	3.0	3.0	4.0	4.5	18	85	35	30	28
16	8.7	6.2	4.4	3.0	3.4	4.0	4.5	19	84	34	31	26
17	8.1	6.2	4.1	3.0	3.5	4.0	4.5	21	86	34	32	25
18	8.1	6.4	4.1	3.0	3.5	4.0	4.5	22	88	33	33	26
19	8.4	6.4	4.1	3.0	3.5	4.0	4.5	22	79	33	45	26
20	8.4	6.4	4.1	3.0	3.8	4.0	4.5	22	72	32	43	27
21	8.4	6.7	4.0	2.9	4.0	4.0	4.6	22	69	32	38	25
22	8.1	6.4	3.4	2.9	4.0	4.0	4.7	25	71	30	40	24
23	7.8	6.4	2.8	2.9	4.0	4.0	5.0	30	70	29	41	24
24	7.8	6.2	2.7	3.4	4.0	4.0	5.1	39	73	28	38	24
25	7.3	6.2	3.0	3.5	4.0	4.0	5.2	40	75	28	36	24
26	7.3	6.4	3.0	3.5	4.0	4.0	6.0	39	74	29	33	24
27	7.3	6.0	3.0	3.3	4.0	4.0	7.2	42	72	30	34	24
28	7.6	6.0	3.0	3.1	4.0	4.0	8.1	47	74	36	33	24
29	7.6	6.0	3.0	3.0	---	4.0	9.0	58	72	37	30	23
30	7.3	6.0	3.0	3.0	---	4.0	10	61	70	42	29	24
31	6.7	---	3.0	2.7	---	4.0	---	64	---	32	28	---
TOTAL	239.8	191.1	128.0	94.2	86.9	124.0	150.4	832	2305	1218	979	763
MEAN	7.74	6.37	4.13	3.04	3.10	4.00	5.01	26.8	76.8	39.3	31.6	25.4
MAX	9.0	7.2	5.3	3.5	4.0	4.0	10	64	88	64	45	34
MIN	6.7	5.9	2.7	2.7	2.0	4.0	4.0	12	66	28	20	21
AC-FT	476	379	254	187	172	246	298	1650	4570	2420	1940	1510

CAL YR 1981 TOTAL 3120.9 MEAN 8.55 MAX 25 MIN 1.5 AC-FT 6190
WTR YR 1982 TOTAL 7111.4 MEAN 19.5 MAX 88 MIN 2.0 AC-FT 14110

NOTE.--NO GAGE-HEIGHT RECORD NOV. 27 TO MAY. 1.

06697450 MICHIGAN CREEK ABOVE JEFFERSON, CO

LOCATION.--Lat 39°21'17", long 105°50'22", in NE¼SW¼ sec.13, T.8 S., R.76 W., Park County, Hydrologic Unit 10190001, on left bank 0.7 mi (1.1 km) upstream from bridge on U.S. Highway 285 and 2.6 mi (4.2 km) southwest of Jefferson.

DRAINAGE AREA.--23.3 mi² (60.3 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 9,503 ft (2,897 m), from topographic map. Prior to May 6, 1982, at site 0.4 mi (0.6 km) upstream at different datum.

REMARKS.--Records good except those prior to May 6, 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, 121 ft³/s (3.43 m³/s) June 10, 1979, gage height, 2.11 ft (0.643 m), site and datum then in use; minimum daily, 0.41 ft³/s (0.012 m³/s) Feb. 3-10, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 81 ft³/s (2.29 m³/s) at 0100 July 30, gage height, 1.65 ft (0.503 m); maximum gage height, 1.91 ft (0.582 m) Nov. 2 (backwater from beaver dam); minimum daily discharge, 0.41 ft³/s (0.012 m³/s) Feb. 3-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	5.4	4.0	1.4	.62	1.9	6.3	9.4	15	43	26	12
2	2.2	5.4	4.0	1.4	.55	2.1	6.4	9.5	19	39	26	8.8
3	2.2	5.7	4.0	1.4	.41	2.3	6.4	9.7	20	36	25	8.5
4	2.2	5.4	4.0	1.4	.41	2.3	6.4	9.8	16	36	23	8.5
5	2.2	5.7	3.8	1.4	.41	2.4	6.4	10	20	33	23	11
6	2.2	5.9	3.7	1.4	.41	2.5	6.4	10	21	28	20	12
7	2.2	5.7	3.5	1.4	.41	2.6	6.4	8.8	23	27	19	12
8	2.2	5.4	3.4	1.4	.41	2.6	6.4	8.8	24	28	17	13
9	2.6	5.7	3.3	1.4	.41	2.6	6.4	8.8	26	34	16	12
10	2.6	5.0	3.2	1.4	.41	2.6	6.4	8.8	31	29	16	11
11	2.9	4.8	3.0	1.4	.42	2.6	6.4	9.7	29	29	17	19
12	3.1	5.2	2.9	1.4	.43	2.6	6.4	12	34	29	18	29
13	3.2	5.2	2.8	1.4	.55	2.6	6.4	9.2	45	31	24	18
14	3.6	5.7	2.7	1.4	.63	2.7	6.4	6.6	45	29	26	18
15	4.0	5.4	2.6	1.4	.74	3.0	6.4	6.6	42	29	20	18
16	4.6	5.4	2.5	1.4	.82	3.3	6.4	10	39	27	20	16
17	4.2	5.4	2.5	1.4	.95	3.5	6.5	9.2	40	25	24	14
18	3.9	5.4	2.5	1.3	1.1	3.8	6.6	7.2	55	23	30	14
19	4.2	5.4	2.5	1.2	1.2	3.8	6.7	11	43	17	31	15
20	4.4	5.4	2.5	1.0	1.3	3.8	6.8	7.2	36	20	28	18
21	4.4	5.4	2.4	.90	1.3	4.1	6.9	6.6	32	21	24	16
22	4.6	5.2	2.3	.80	1.3	4.4	7.4	7.6	37	19	22	13
23	4.6	4.9	2.1	.80	1.4	4.7	7.7	7.2	40	16	21	13
24	4.6	4.6	2.0	.80	1.5	5.2	8.1	6.6	46	17	19	13
25	5.0	4.4	1.7	.80	1.6	5.6	8.4	8.2	47	16	19	13
26	5.0	4.1	1.5	.80	1.6	6.0	8.5	12	46	25	18	13
27	5.0	4.0	1.4	.80	1.6	6.2	8.7	10	42	34	16	13
28	5.0	4.0	1.4	.80	1.7	6.2	8.8	5.2	49	37	16	12
29	5.2	4.0	1.4	.80	---	6.2	9.0	8.5	50	47	14	12
30	5.4	4.0	1.4	.80	---	6.2	9.2	8.8	43	50	13	13
31	5.4	---	1.4	.79	---	6.2	---	12	---	31	14	---
TOTAL	115.1	153.2	82.4	36.19	24.59	116.6	211.6	275.0	1055	905	645	418.8
MEAN	3.71	5.11	2.66	1.17	.88	3.76	7.05	8.87	35.2	29.2	20.8	14.0
MAX	5.4	5.9	4.0	1.4	1.7	6.2	9.2	12	55	50	31	29
MIN	2.2	4.0	1.4	.79	.41	1.9	6.3	5.2	15	16	13	8.5
AC-FT	228	304	163	72	49	231	420	545	2090	1800	1280	831

CAL YR 1981 TOTAL 1570.90 MEAN 4.30 MAX 18 MIN .80 AC-FT 3120
WTR YR 1982 TOTAL 4038.48 MEAN 11.1 MAX 55 MIN .41 AC-FT 8010

NOTE.--NO GAGE-HEIGHT RECORD NOV. 18 TO MAY 5.

06698000 JEFFERSON CREEK NEAR JEFFERSON, CO

LOCATION.--Lat 39°23'34", long 105°48'38", in SE¼SE¼ sec.31, T.7 S., R.75 W., Park County, Hydrologic Unit 10190001, on right bank 1.2 mi (1.9 km) northwest of Jefferson and 1.3 mi (2.1 km) upstream from bridge on U.S. Highway 285.

DRAINAGE AREA.--11.8 mi² (30.6 km²).

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

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 9,600 ft (2,926 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, 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, 48 ft³/s (1.36 m³/s) June 24, 1978, gage height, 1.38 ft (0.421 m); maximum gage height, 1.48 ft (0.451 m) June 11, 1980; no flow Jan. 28 to Apr. 5, 1979, May 18, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41 ft³/s (1.16 m³/s) at 2130 Aug. 13, gage height, 1.37 ft (0.418 m); no flow May 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	1.6	1.5	1.5	.60	3.0	2.5	1.5	8.6	22	17	19
2	.50	2.0	1.5	1.5	.60	3.0	2.5	1.5	11	20	18	19
3	.60	2.0	1.5	1.5	.40	3.0	2.0	1.7	12	19	17	19
4	.50	2.0	1.5	1.5	.40	3.0	2.0	2.9	8.1	19	17	18
5	.50	2.0	1.5	1.5	.40	3.0	2.0	6.4	12	17	17	19
6	.40	1.7	1.5	1.5	.40	2.5	2.0	8.9	15	18	16	18
7	.40	1.5	1.5	1.5	.40	2.5	2.0	7.8	13	14	16	18
8	.50	1.3	1.5	1.5	.60	2.5	2.0	5.0	15	12	14	17
9	1.2	1.4	1.5	1.5	.60	2.5	2.0	5.2	17	12	14	17
10	.90	1.4	1.5	1.5	.60	2.5	2.0	7.2	20	11	14	16
11	.80	1.4	1.5	1.5	.60	2.5	2.0	7.2	20	10	14	19
12	.80	1.4	1.5	1.5	.80	2.5	2.0	7.8	19	10	19	20
13	.70	1.4	1.5	1.5	1.2	2.5	2.0	3.6	21	17	30	18
14	.70	1.4	1.5	1.5	1.6	2.5	1.5	.32	24	23	30	15
15	1.0	1.0	1.5	1.5	2.0	2.5	1.5	.70	20	22	30	8.4
16	1.2	1.1	1.5	1.5	2.1	2.5	1.5	.70	20	22	30	6.2
17	1.0	2.0	1.5	1.5	2.2	2.5	1.5	.24	22	21	30	5.0
18	.50	2.0	1.5	1.5	2.3	2.5	1.5	.00	24	20	30	4.5
19	.50	2.0	1.5	1.0	2.4	2.5	1.5	4.0	22	20	30	5.0
20	.60	2.0	1.5	1.0	2.5	2.5	1.5	6.2	19	19	29	5.7
21	.60	2.0	1.5	1.0	3.0	2.5	1.5	8.9	18	16	26	4.5
22	.50	1.5	1.0	1.0	3.0	2.5	1.5	5.9	18	13	26	3.6
23	.60	1.5	1.0	1.0	3.0	2.5	1.5	1.4	20	12	24	3.5
24	1.1	1.5	1.0	1.0	3.0	2.5	1.5	4.0	21	12	22	3.1
25	1.2	1.5	1.0	1.0	3.0	2.5	1.5	4.5	21	12	21	2.9
26	1.3	1.5	1.0	1.0	3.0	2.5	1.5	4.2	22	15	20	2.9
27	1.6	1.5	1.0	.80	3.0	2.5	1.5	3.5	22	23	20	2.7
28	1.9	1.5	1.4	.60	3.0	2.5	1.5	2.4	23	28	20	2.2
29	1.6	1.5	1.4	.60	---	2.5	1.5	5.9	24	30	18	2.2
30	1.6	1.5	1.4	.60	---	2.5	1.5	5.9	23	28	17	2.4
31	1.7	---	1.4	.60	---	2.5	---	6.2	---	23	19	---
TOTAL	27.50	48.1	43.1	38.20	46.70	80.0	52.5	131.66	554.7	560	665	316.8
MEAN	.89	1.60	1.39	1.23	1.67	2.58	1.75	4.25	18.5	18.1	21.5	10.6
MAX	1.9	2.0	1.5	1.5	3.0	3.0	2.5	8.9	24	30	30	20
MIN	.40	1.0	1.0	.60	.40	2.5	1.5	.00	8.1	10	14	2.2
AC-FT	55	95	85	76	93	159	104	261	1100	1110	1320	628

CAL YR 1981 TOTAL 1285.00 MEAN 3.52 MAX 14 MIN .40 AC-FT 2550
WTR YR 1982 TOTAL 2564.26 MEAN 7.03 MAX 30 MIN .00 AC-FT 5090

NOTE.--NO GAGE-HEIGHT RECORD NOV. 17 TO MAY 3.

06700500 GOOSE CREEK ABOVE CHEESMAN LAKE, CO
(Known also as Lost Park Creek)

LOCATION.--Lat 39°12'32", long 105°18'11", in sec.2, T.10 S., R.71 W., Jefferson County, Hydrologic Unit 10190002, on right bank 1.0 mi (1.6 km) upstream from water line of Cheesman Lake at elevation 6,842 ft (2,085.4 m) and 1.7 mi (2.7 km) west of Cheesman Dam.

DRAINAGE AREA.--86.6 mi^2 (224 km^2).

PERIOD OF RECORD.--August to December 1899 (published as "at Lake Cheeseman"), October 1924 to September 1982 (discontinued). Monthly discharge only for some periods, published in WSP 1310. No winter records in some years.

REVISED RECORDS.--WSP 1730: Drainage area. WSP 1918: 1953.

GAGE.--Water-stage recorder and compound rectangular weir. Altitude of gage is 6,910 ft (2,106 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Small diversions above station for irrigation of about 100 acres (404,700 m^2). 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.--45 years (water years 1925-30, 1936, 1940-41, 1944-47, 1951-82), 28.2 ft^3/s (0.799 m^3/s), 20,430 acre-ft/yr (25.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 487 ft^3/s (13.8 m^3/s) June 9, 1957, gage height, 4.11 ft (1.253 m), from rating curve extended above 170 ft^3/s (4.8 m^3/s); maximum gage height, 4.57 ft (1.393 m), May 30, 1942; minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 110 ft^3/s (3.1 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 19	0130	121	3.43	1.83	0.558	Sept. 14	0800	111	3.14	1.73	0.527
Aug. 16	2030	* 201	5.69	2.33	0.710						

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	15	8.0	8.0	6.0	6.5	8.0	24	77	79	42	31
2	15	15	9.0	8.0	5.5	6.5	8.0	27	73	71	35	24
3	15	14	9.5	8.0	4.5	7.0	8.0	28	32	63	41	21
4	16	14	9.0	8.0	4.0	7.0	8.5	31	97	59	59	20
5	15	14	9.0	8.0	3.0	6.5	8.5	32	81	56	80	22
6	15	14	9.0	7.5	3.5	5.5	8.0	23	74	52	59	37
7	14	14	9.5	6.0	4.5	5.5	8.0	19	72	50	53	40
8	14	13	9.5	5.5	5.0	6.5	8.0	21	71	48	46	43
9	14	12	9.5	6.0	4.5	7.0	8.0	28	68	48	44	35
10	13	11	9.5	7.0	4.5	7.5	7.0	28	68	47	39	30
11	12	12	9.5	7.0	5.0	7.5	10	24	67	44	37	34
12	13	12	9.5	7.0	5.0	7.5	15	27	69	42	67	74
13	12	13	9.0	6.5	5.0	7.5	14	30	67	40	67	95
14	12	14	8.0	6.5	4.5	7.5	15	33	64	43	52	98
15	12	14	8.5	7.5	5.0	7.5	16	35	63	39	44	85
16	20	13	8.5	7.5	5.5	7.0	16	46	92	36	58	83
17	19	12	8.0	7.5	6.0	7.0	14	61	74	34	71	69
18	16	12	7.5	8.0	5.5	7.0	15	70	105	32	62	63
19	14	11	8.0	8.0	5.5	7.0	14	92	151	32	54	62
20	14	10	8.5	7.5	6.0	6.5	12	89	129	30	53	73
21	13	11	8.5	7.0	6.5	5.5	11	77	102	29	57	67
22	13	11	8.0	7.0	7.0	5.5	13	73	98	28	48	59
23	12	11	7.0	6.5	6.5	6.0	14	66	106	24	55	55
24	13	10	6.5	7.0	6.0	6.5	17	66	105	18	59	52
25	14	9.1	7.0	6.5	5.5	6.5	16	73	98	16	50	50
26	16	8.0	7.0	6.5	5.5	6.5	17	83	106	19	50	49
27	14	9.0	7.0	6.5	6.0	7.0	20	94	97	37	44	48
28	13	9.0	6.5	6.5	6.5	8.0	19	76	88	71	43	45
29	12	9.0	6.5	6.5	---	8.5	24	74	86	63	40	44
30	12	8.5	7.0	6.0	---	9.0	28	77	80	73	35	45
31	15	---	8.0	6.0	---	7.0	---	78	---	57	34	---
TOTAL	437	354.6	255.5	217.0	147.5	213.5	400.0	1605	2610	1380	1578	1553
MEAN	14.1	11.8	8.24	7.00	5.27	6.89	13.3	51.8	87.0	44.5	50.9	51.8
MAX	20	15	9.5	8.0	7.0	9.0	28	94	151	79	80	98
MIN	12	8.0	6.5	5.5	3.0	5.5	7.0	19	63	16	34	20
AC-FT	867	703	507	430	293	423	793	3180	5180	2740	3130	3080

CAL YR 1981 TOTAL 5211.6 MEAN 14.3 MAX 80 MIN 2.0 AC-FT 10340
WTR YR 1982 TOTAL 10751.1 MEAN 29.5 MAX 151 MIN 3.0 AC-FT 21320

NOTE.--NO GAGE-HEIGHT RECORD OCT. 30 TO APR. 27.

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 (13 km) southwest of Lake George. DRAINAGE AREA, 963 mi^2 (2,494 km^2). 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 twice 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 NGVD.

Reservoir is formed by concrete arch dam; storage began in October 1932; dam completed in November 1932. Spillway built 5.00 ft (1.524 m) higher Aug. 1, 1957. Capacity, 97,780 acre-ft (121 hm^3) between elevations 8,488.25 ft (2,587.219 m), invert of outlet pipe, and 8,597.00 ft (2,620.366 m), crest of spillway. Dead storage is negligible. Figures given represent total contents. Water is for municipal use by city of Denver. Records furnished by Denver Board of Water Commissioners.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 111,200 acre-ft (137 hm^3) Apr. 28, 1970, elevation, 8,600.82 ft (2,621.530 m); no contents at times in 1935.

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 97,900 acre-ft (121 hm^3) Jan. 15, 16, elevation, 8,597.03 ft (2,620.375 m); minimum observed, 70,530 acre-ft (87.0 hm^3) Sept. 29, 30, elevation, 8,587.96 ft (2,617.510 m).

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 (6.6 km) southwest of Deckers. DRAINAGE AREA, 1,752 mi^2 (4,538 km^2). 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 twice 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 (97.5 hm^3) at gage height 212 ft (64.4 m), 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 furnished by Denver Board of Water Commissioners.

EXTREMES FOR PERIOD OF RECORD: Maximum contents observed, 81,360 acre-ft (100 hm^3) Apr. 29, 1970, gage height, 214.60 ft (65.410 m); minimum observed since appreciable storage was attained, 3,650 acre-ft (4.50 hm^3) Apr. 20, 1933, gage height, 55.02 ft (16.770 m).

EXTREMES FOR CURRENT YEAR: Maximum contents observed, 79,450 acre-ft (98.0 hm^3) July 30, gage height, 212.44 ft (64.752 m); minimum observed, 47,010 acre-ft (58.0 hm^3) May 22, gage height, 169.08 ft (51.536 m).

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation (feet)+	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)+	Contents (acre-feet)	Change in contents (acre-feet)
	06695500	ELEVENMILE CANYON RESERVOIR		06701000	CHEESMAN RESERVOIR	
Sept. 30..........	8,596.30	95,430	-	192.85	63,400	-
Oct. 31...........	8,596.05	94,590	-840	190.91	61,930	-1,470
Nov. 30...........	8,596.45	95,930	+1,340	194.35	64,550	+2,620
Dec. 31...........	8,596.84	97,240	+1,310	195.18	65,190	+640
CAL YR 1981....	--	--	+700	--	--	-8,890
Jan. 31...........	8,596.98	97,710	+470	195.52	65,460	+270
Feb. 28...........	8,597.00	97,780	+70	195.77	65,650	+190
Mar. 31...........	8,596.98	97,710	-70	195.12	65,150	-500
Apr. 30...........	8,596.99	97,740	+30	180.81	54,600	-10,550
May 31...........	8,596.70	96,770	-970	169.73	47,190	-7,410
June 30...........	8,596.69	96,740	-30	188.75	60,310	+13,120
July 31...........	8,594.24	88,760	-7,980	212.43	79,440	+19,130
Aug. 31...........	8,589.85	75,730	-13,030	212.08	79,130	-310
Sept. 30..........	8,587.96	70,530	-5,200	211.52	78,650	-480
WTR YR 1982....	--	--	-24,900	--	--	+15,250

06701500 SOUTH PLATTE RIVER BELOW CHEESMAN LAKE, CO

LOCATION.--Lat 39°12'33", long 105°16'02", in SE¼NW¼ sec.6, T.10 S., R.70 W., Jefferson County, Hydrologic Unit 10190002, on left bank 1,400 ft (430 m) downstream from toe of Cheesman Dam and 3.8 mi (6.1 km) southwest of Deckers.

DRAINAGE AREA.--1,752 mi^2 (4,538 km^2).

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

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

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 6,609.29 ft (2,014.512 m), National Geodetic Vertical Datum of 1929. Prior to May 14, 1956, at site 370 ft (110 m) upstream at datum 0.50 ft (0.152 m) higher.

REMARKS.--Records excellent. Natural flow of stream affected by minor transmountain diversion from Colorado River basin through Boreas Pass ditch (see elsewhere in this report), Elevenmile Canyon Reservoir and Cheesman Lake (see elsewhere in this report), diversions for irrigation of about 40,000 acres (160 km^2), 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.--58 years, 157 ft^3/s (4.446 m^3/s), 113,700 acre-ft/yr (140 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,640 ft^3/s (131 m^3/s) Apr. 29, 1970, gage height, 13.4 ft (4.08 m), from floodmarks, by computation of outflow from Cheesman Lake; minimum daily determined, 1.6 ft^3/s (0.045 m^3/s) Apr. 8-14, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 813 ft^3/s (23.0 m^3/s) at 1600 Aug. 28, gage height, 3.43 ft (1.045 m); minimum daily, 15 ft^3/s (0.42 m^3/s) Dec. 7-11, 14-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	284	21	19	35	35	35	17	357	28	48	545	603
2	294	21	18	35	35	35	72	357	19	48	515	591
3	318	30	19	35	35	36	117	446	18	48	500	588
4	292	36	17	35	35	36	117	509	18	47	522	571
5	166	36	16	35	35	37	156	506	19	45	591	517
6	51	36	16	35	35	38	187	486	20	153	628	490
7	52	36	15	35	35	38	187	475	20	252	632	504
8	53	36	15	35	35	39	187	475	34	168	512	529
9	54	36	15	35	36	39	201	475	73	103	316	460
10	54	36	15	35	36	42	228	472	42	103	340	435
11	54	38	15	35	36	54	228	471	73	103	388	435
12	54	38	16	35	36	63	285	471	124	103	456	434
13	55	66	16	35	37	63	344	394	160	75	581	435
14	55	87	15	35	38	63	358	294	181	57	622	444
15	55	75	15	35	36	76	365	264	161	57	564	456
16	67	17	15	35	37	86	365	264	52	58	538	455
17	106	17	15	35	38	86	365	262	29	58	604	377
18	134	17	19	35	38	86	365	264	30	58	628	313
19	126	19	29	35	36	93	365	256	30	58	601	310
20	102	19	34	35	34	97	304	236	32	58	604	167
21	86	19	34	35	34	96	252	257	34	73	660	102
22	79	19	35	35	34	108	252	305	34	87	663	216
23	70	20	35	35	34	129	305	305	40	87	677	205
24	65	20	35	35	34	145	354	235	44	87	702	115
25	64	20	35	35	34	152	351	181	44	89	692	44
26	52	19	35	35	34	151	337	183	44	89	724	44
27	33	19	35	35	35	126	329	172	45	91	752	30
28	26	19	35	35	35	39	329	156	45	91	805	19
29	26	18	35	35	---	17	329	120	46	156	713	20
30	23	19	35	35	---	17	343	84	48	337	641	20
31	21	---	35	35	---	17	---	60	---	545	615	---
TOTAL	2971	909	738	1085	992	2139	7994	9792	1587	3432	18331	9929
MEAN	95.8	30.3	23.8	35.0	35.4	69.0	266	316	52.9	111	591	331
MAX	318	87	35	35	38	152	365	509	181	545	805	603
MIN	21	17	15	35	34	17	17	60	18	45	316	19
AC-FT	5890	1800	1460	2150	1970	4240	15860	19420	3150	6810	36360	19690

CAL YR 1981 TOTAL 34228 MEAN 93.8 MAX 402 MIN 13 AC-FT 67890
WTR YR 1982 TOTAL 59899 MEAN 164 MAX 805 MIN 15 AC-FT 118800

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

LOCATION.--Lat 39°27'26", long 105°39'29", in NW¼ sec.10, T.7 S., R.74 W., Park County, Hydrologic Unit 10190002, on left bank at Grant, 1,550 ft (470 m) downstream from Geneva Creek, and 1.3 mi (2.1 km) downstream from east portal of Harold D. Roberts tunnel.

DRAINAGE AREA.--127 mi^2 (329 km^2).

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

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 8,560.81 ft (2,609.335 m) 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 (15 m) downstream at datum 3.49 ft (1.064 m) lower.

REMARKS.--Records excellent. Small diversions above station for irrigation of about 200 acres (809,400 m^2). Transmountain diversions from Colorado River basin to North Fork South Platte River above station through Harold D. Roberts tunnel (see elsewhere in this report). 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.--45 years (water years 1909-13, 1943-82), 69.4 ft^3/s (1.965 m^3/s), 50,280 acre-ft/yr (62.0 hm^3/yr), adjusted for inflow from Harold D. Roberts tunnel since 1964.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 990 ft^3/s (28.0 m^3/s) June 7, 8, 1912, gage height, 3.30 ft (1.006 m), site and datum then in use, from rating curve extended above 530 ft^3/s (15 m^3/s); maximum gage height, 4.72 ft (1.439 m), site and datum then in use, Feb. 11, 1952 (backwater from ice); minimum daily discharge, 6.5 ft^3/s (0.18 m^3/s) Nov. 27, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 700 ft^3/s (19.8 m^3/s) at 0100 July 28, gage height, 2.04 ft (0.622 m); minimum daily, 17 ft^3/s (0.48 m^3/s) Apr. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	313	122	130	130	127	21	45	232	302	553	63
2	95	316	128	130	129	126	19	52	233	282	550	59
3	34	315	130	129	128	124	22	62	219	263	546	58
4	30	255	129	130	127	123	22	75	202	255	531	55
5	169	151	129	130	127	122	21	73	236	235	401	69
6	305	126	130	130	127	122	19	53	241	287	208	70
7	301	116	130	128	127	123	17	49	235	403	106	65
8	348	116	129	128	127	123	19	48	254	475	97	64
9	367	113	128	128	127	124	24	53	257	497	93	63
10	226	127	127	128	127	124	21	59	342	483	89	60
11	24	136	127	128	127	114	22	60	470	472	88	69
12	88	137	127	128	125	105	31	58	524	469	96	86
13	275	159	127	127	124	104	30	55	534	472	119	78
14	333	171	127	127	124	106	33	54	460	495	120	73
15	339	172	127	127	124	93	36	59	387	546	100	82
16	343	173	127	127	127	84	34	62	299	535	100	78
17	339	170	127	127	127	61	28	62	265	531	104	69
18	334	164	127	127	127	46	31	65	315	527	117	65
19	270	157	127	130	126	27	29	69	264	563	127	69
20	229	161	127	130	127	22	27	70	245	632	112	79
21	260	169	127	130	128	20	31	77	250	653	111	70
22	278	168	127	130	128	21	28	98	306	641	118	63
23	273	168	125	130	127	24	29	117	323	643	107	63
24	273	167	126	130	127	22	29	130	292	666	96	62
25	271	166	127	130	127	23	28	128	289	662	91	63
26	270	158	127	130	126	21	29	127	285	667	84	63
27	273	157	127	130	127	19	29	132	285	668	80	63
28	275	161	127	130	126	19	30	152	325	635	81	61
29	299	164	127	130	---	19	35	186	311	600	72	61
30	312	139	130	130	---	22	37	201	304	598	69	62
31	307	---	130	130	---	22	---	202	---	568	68	---
TOTAL	7631	5165	3952	3999	3550	2232	811	2733	9184	15725	5234	2005
MEAN	246	172	127	129	127	72.0	27.0	88.2	306	507	169	66.8
MAX	367	316	130	130	130	127	37	202	534	668	553	86
MIN	24	113	122	127	124	19	17	45	202	235	68	55
AC-FT	15140	10240	7840	7930	7040	4430	1610	5420	18220	31190	10380	3980

CAL YR 1981 TOTAL 67855 MEAN 186 MAX 450 MIN 15 AC-FT 134600
WTR YR 1982 TOTAL 62221 MEAN 170 MAX 668 MIN 17 AC-FT 123400

06707000 NORTH FORK SOUTH PLATTE RIVER AT SOUTH PLATTE, CO

LOCATION.--Lat 39°24'32", long 105°10'31", in SW¼ sec.25, T.7 S., R.70 W., Jefferson County, Hydrologic Unit 10190002, on left bank 0.2 mi (0.3 km) west of South Platte and 0.3 mi (0.5 km) upstream from mouth.

DRAINAGE AREA.--479 mi² (1,241 km²).

PERIOD OF RECORD.--June 1909 to September 1910, April 1913 to September 1982 (discontinued). Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1930(M), 1933(M), 1942(M). WSP 1730: 1954(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,090.55 ft (1,856.400 m) National Geodetic Vertical Datum, adjustment of 1912. Prior to May 13, 1925, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter period and those for periods of no gage-height record, which are poor. Small diversions above station for irrigation of about 2,000 acres (8.09 km²). Transmountain diversions from Colorado River basin to North Fork South Platte River above station through Harold D. Roberts tunnel (see elsewhere in this report). 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.--70 years (water years 1910, 1914-82), 153 ft³/s (4.333 m³/s), 110,800 acre-ft/yr (137 hm³/yr), adjusted for inflow from Harold D. Roberts tunnel since 1964.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,050 ft³/s (58.1 m³/s) June 13, 1949, gage height, 6.30 ft (1.920 m); minimum observed, 4.0 ft³/s (0.11 m³/s) Dec. 8, 1932 (discharge measurement).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 838 ft³/s (23.7 m³/s) at 0630 July 28, gage height, 3.86 ft (1.177 m); minimum daily, 31 ft³/s (0.88 m³/s) Mar. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	303	133	140	150	127	40	78	305	445	625	160
2	126	321	139	150	145	133	40	86	310	422	618	149
3	105	315	157	130	120	136	38	95	315	400	632	142
4	80	303	149	140	110	136	40	105	300	385	640	136
5	77	197	139	160	100	127	39	115	300	362	602	139
6	311	172	157	160	120	112	39	75	315	355	468	172
7	321	157	160	130	140	121	40	80	280	445	309	172
8	328	157	153	135	135	130	38	75	284	528	251	164
9	385	149	157	155	130	133	37	80	290	558	206	168
10	370	149	153	145	135	133	39	85	315	565	197	146
11	128	168	157	140	130	139	40	90	422	550	210	153
12	95	172	157	140	145	124	45	100	505	535	251	210
13	211	179	149	135	150	118	43	95	535	528	251	215
14	315	197	153	135	155	121	44	100	520	542	278	202
15	334	197	149	150	160	121	48	110	505	618	246	192
16	340	197	157	135	155	105	48	120	438	602	290	188
17	334	188	136	145	155	102	42	140	370	595	256	149
18	334	188	127	135	145	82	45	140	438	588	256	149
19	309	179	133	145	145	65	45	145	445	595	267	153
20	251	172	149	140	150	40	41	145	385	670	267	184
21	256	192	160	140	150	34	40	145	355	738	297	192
22	284	197	157	135	150	31	44	160	385	708	278	172
23	278	192	130	130	150	36	48	170	460	685	278	153
24	290	188	115	150	145	37	52	190	438	685	273	149
25	278	188	145	140	140	38	51	200	452	670	256	146
26	284	188	140	155	135	39	53	210	460	685	256	149
27	284	168	145	155	136	38	55	230	422	692	235	139
28	284	184	135	130	130	39	57	225	445	798	251	127
29	290	184	135	140	---	42	62	260	460	752	224	121
30	309	188	145	130	---	40	68	280	438	752	206	146
31	303	---	145	135	---	38	---	280	---	662	175	---
TOTAL	7962	5929	4516	4385	3911	2717	1361	4409	11892	18115	9849	4837
MEAN	257	198	146	141	140	87.6	45.4	142	396	584	318	161
MAX	385	321	160	160	160	139	68	280	535	798	640	215
MIN	68	149	115	130	100	31	37	75	280	355	175	121
AC-FT	15790	11760	8960	8700	7760	5390	2700	8750	23590	35930	19540	9590

CAL YR 1981	TOTAL	79089	MEAN 217	MAX 475	MIN 50	AC-FT	156900
WTR YR 1982	TOTAL	79883	MEAN 219	MAX 798	MIN 31	AC-FT	158400

NOTE.--NO GAGE-HEIGHT RECORD DEC. 23 TO FEB. 26, MAR. 19 TO APR. 30, MAY 4 TO JUNE 8.

06707500 SOUTH PLATTE RIVER AT SOUTH PLATTE, CO

LOCATION.--Lat 39°24'33", long 105°10'10", in SE¼ sec.25, T.7 S., R.70 W., Jefferson County, Hydrologic Unit 10190002, on left bank at South Platte, 200 ft (61 m) downstream from bridge on State Highway 75, and 400 ft (120 m) downstream from North Fork.

DRAINAGE AREA.--2,579 mi² (6,680 km²).

PERIOD OF RECORD.--July 1887 to September 1891, May to October 1892, October 1895 to September 1897, October 1898 to June 1900, October 1900 to September 1982 (discontinued). Monthly discharge only for some periods, published in WSP 1310. Published as "at" or "near Deansbury," "at Deansbury and Platte Canyon," "at" or "near Platte Canyon," prior to 1901, and "below North Fork, at South Platte" 1914.

REVISED RECORDS.--WSP 306: 1910. WSP 1310: 1887-91, 1893, 1896, 1900, 1904, 1915(M), 1922(M), 1936(M). WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 6,078.43 ft (1,852.705 m), National Geodetic Vertical Datum adjustment of 1912. See WSP 1710 or 1730 for history of changes prior to Mar. 14, 1910.

REMARKS.--Records good except those for period Feb. 5 to Mar. 9, which are fair. Natural flow of stream affected by transmountain diversions through Boreas Pass ditch and Harold D. Roberts tunnel (see elsewhere in this report), Elevenmile Canyon Reservoir and Cheesman Lake (see elsewhere in this report), diversions above station for irrigation of about 45,000 acres (182 km²), 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,320 ft³/s (179 m³/s) June 8, 1921, gage height, 8.95 ft (2.728 m), from rating curve extended above 3,500 ft³/s (99 m³/s); minimum daily determined, 10 ft³/s (0.28 m³/s) Dec. 5, 1899.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,190 ft³/s (33.7 m³/s) at 2100 July 31, gage height, 4.22 ft (1.286 m), maximum gage height, 5.07 ft (1.545 m) between Feb. 5-10 (backwater from ice); minimum daily discharge, 70 ft³/s (1.98 m³/s) Mar. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	372	364	168	190	205	195	78	445	400	536	1160	758
2	417	378	192	210	195	200	76	448	389	504	1100	735
3	434	372	195	170	150	200	141	492	406	476	1090	726
4	372	375	188	180	130	205	159	600	392	462	1080	708
5	337	268	192	220	115	190	170	627	392	452	1120	681
6	382	232	192	220	150	180	238	588	403	452	996	676
7	378	212	188	170	190	190	238	556	368	690	870	694
8	389	210	185	180	180	195	232	548	375	758	785	712
9	434	200	178	220	170	200	230	548	403	681	564	672
10	428	195	190	205	175	200	274	556	434	681	548	609
11	172	222	190	190	170	212	277	560	492	668	592	632
12	122	225	190	195	205	218	298	584	614	658	676	681
13	278	238	185	180	220	212	389	576	650	650	780	735
14	396	301	182	180	225	218	403	480	681	622	890	726
15	410	307	178	205	230	218	420	431	668	654	805	735
16	420	271	188	180	220	212	431	431	536	663	805	726
17	428	238	166	200	225	210	428	445	438	658	840	668
18	462	235	161	180	210	178	417	445	504	654	900	564
19	456	222	192	195	215	164	420	448	544	663	890	560
20	386	210	220	185	215	148	403	431	476	726	875	572
21	382	238	212	185	215	138	307	428	448	758	958	378
22	392	238	205	180	215	134	313	492	466	766	920	500
23	389	238	170	165	220	168	328	512	540	762	915	476
24	382	235	145	200	210	190	414	516	528	762	968	438
25	375	235	195	190	205	205	417	448	544	758	910	307
26	378	228	190	210	195	202	410	462	572	780	920	295
27	364	210	200	210	200	205	400	466	532	805	915	295
28	347	220	175	170	200	136	400	442	544	890	996	253
29	347	228	180	190	---	83	400	459	556	885	920	242
30	368	225	195	170	---	76	417	438	528	1010	805	245
31	372	---	195	175	---	70	---	406	---	1160	780	---
TOTAL	11569	7570	5782	5900	5455	5552	9528	15308	14823	21644	27373	16939
MEAN	373	252	187	190	195	179	318	494	494	698	883	567
MAX	462	378	220	220	230	218	431	627	681	1160	1160	758
MIN	122	195	145	165	115	70	76	406	368	452	548	242
AC-FT	22950	15020	11470	11700	10820	11010	18900	30360	29400	42930	54290	33720

CAL YR 1981 TOTAL 122243 MEAN 335 MAX 632 MIN 115 AC-FT 242500
WTR YR 1982 TOTAL 147503 MEAN 404 MAX 1160 MIN 70 AC-FT 292600

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 (1.3 km) northeast of Louviers, 1.2 mi (1.9 km) downstream from Indian Creek, and 7.5 mi (12.1 km) upstream from mouth.

DRAINAGE AREA.--302 mi^2 (782 km^2).

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

REVISED RECORDS.--WSP 1730: 1958, drainage area at site 2.5 mi (4.0 km) downstream. WSP 1918: 1957(M).

GAGE.--Water-stage recorder. Altitude of gage is 5,585 ft (1,702 m), from topographic map. Prior to Feb. 12, 1957, at site 2.5 mi (4.0 km) downstream and Nov. 7, 1965, to Aug. 6, 1966, at site 2.2 mi (3.5 km) downstream at different datums. Feb. 12, 1957, to Nov. 6, 1965, at present site at about present datum.

REMARKS.--Records poor. Diversions above station for irrigation. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--35 years, 28.2 ft^3/s (0.799 m^3/s) 20,430 acre-ft/yr (25.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 154,000 ft^3/s (4,360 m^3/s) June 16, 1965, gage height, 22.4 ft (6.83 m), from floodmarks, by slope-area measurement of peak flow; no flow at times in 1951-52, 1956-60, 1963-64.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 305 ft^3/s (8.64 m^3/s) at 0030 July 29, gage height, 2.41 ft (0.734 m), only peak above base of 220 ft^3/s (6.2 m^3/s); maximum gage height, 2.41 ft (0.734 m) at 0030 July 29; minimum daily discharge, 0.20 ft^3/s (0.006 m^3/s) July 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	9.2	6.8	9.2	4.4	14	9.2	18	33	10	4.8	18
2	.61	9.2	10	10	2.4	15	4.8	16	30	6.8	2.0	12
3	.61	8.0	10	10	1.2	15	4.0	12	30	6.8	2.0	10
4	.66	10	10	10	2.4	45	4.4	6.8	16	6.8	2.0	6.8
5	.66	10	10	8.0	2.8	24	5.6	18	15	6.8	2.0	10
6	.66	6.8	10	8.0	3.2	16	5.6	42	10	4.8	2.1	14
7	.66	5.6	10	9.0	3.2	18	13	36	6.8	3.2	2.3	18
8	.66	5.2	5.6	9.0	4.8	21	13	14	5.2	2.8	2.6	62
9	.66	4.4	5.2	8.0	5.2	24	15	15	4.8	3.6	2.8	36
10	.66	4.4	5.2	7.0	4.4	24	27	14	4.8	2.0	3.0	21
11	.70	4.4	8.0	7.0	4.4	18	16	15	6.8	3.6	3.3	30
12	.70	4.8	10	8.0	5.0	24	13	36	9.2	9.2	3.7	93
13	.70	5.2	10	8.0	9.2	16	24	98	10	2.8	4.2	101
14	.70	5.2	12	8.0	8.0	16	15	108	12	1.4	5.0	83
15	.88	5.2	10	7.0	16	24	15	42	13	1.1	5.5	67
16	4.4	5.6	14	6.8	15	21	16	30	10	.66	6.2	33
17	4.0	6.8	9.2	9.2	15	21	21	45	6.8	.52	7.5	27
18	3.6	5.6	4.8	6.8	21	27	30	39	33	.56	9.0	57
19	3.6	5.6	9.2	8.0	21	18	18	45	21	.48	11	73
20	3.6	6.8	14	10	39	8.0	21	45	14	.34	15	57
21	2.0	6.8	9.2	9.0	15	9.2	18	39	9.2	.30	24	36
22	3.2	6.8	12	8.0	14	9.2	18	27	12	.22	14	15
23	2.8	8.0	10	9.0	14	8.0	27	33	27	.22	18	21
24	4.0	8.0	10	9.0	13	6.8	15	33	33	.22	24	21
25	5.6	10	10	9.0	13	12	6.8	42	39	.20	18	24
26	5.6	10	10	9.0	10	9.2	14	62	57	.20	24	27
27	4.4	11	10	9.2	9.2	15	24	24	36	.25	42	27
28	4.8	12	10	9.2	9.2	14	24	18	21	15	62	12
29	4.8	13	13	6.8	---	10	24	21	15	124	57	12
30	4.8	10	10	2.4	---	9.2	21	33	15	18	39	18
31	10	---	12	5.6	---	10	---	30	---	24	30	---
TOTAL	81.20	223.6	300.2	253.2	285.0	521.6	482.4	1056.8	555.6	256.87	448.0	1041.8
MEAN	2.62	7.45	9.68	8.17	10.2	16.8	16.1	34.1	18.5	8.29	14.5	34.7
MAX	10	13	14	10	39	45	30	108	57	124	62	101
MIN	.48	4.4	4.8	2.4	1.2	6.8	4.0	6.8	4.8	.20	2.0	6.8
AC-FT	161	444	595	502	565	1030	957	2100	1100	510	889	2070

CAL YR 1981 TOTAL 7987.39 MEAN 21.9 MAX 152 MIN .18 AC-FT 15840
WTR YR 1982 TOTAL 5506.27 MEAN 15.1 MAX 124 MIN .20 AC-FT 10920

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 (7.6 km) southwest of courthouse in Littleton.

DRAINAGE AREA.--3,018 mi² (7,817 km²).

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 NGVD.

REMARKS.--Reservoir is formed by earthfill dam. Storage began May 29, 1975. Capacity, 235,000 acre-ft (290 hm³) at elevation 5,500 ft (1,676.400 m), crest of spillway. No dead storage. Figures given represent total contents. Reservoir is for flood control and recreation.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 54,690 acre-ft (67.4 hm³) May 26, 1980, elevation, 5,447.58 ft (1,660.422 m); no contents prior to May 29, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 27,600 acre-ft (34.0 hm³) Sept. 13, elevation, 5,432.64 ft (1,655.869 m); minimum, 18,090 acre-ft (22.3 hm³) Dec. 6, elevation, 5,425.20 ft (1,653.601 m).

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	5,426.53	19,540	-
Oct. 31	5,425.83	18,760	-780
Nov. 30	5,425.59	18,510	-250
Dec. 31	5,425.87	18,810	+300
CAL YR 1981			-7,460
Jan. 31	5,427.22	20,330	+1,520
Feb. 28	5,428.73	22,150	+1,820
Mar. 31	5,428.81	22,250	+100
Apr. 30	5,428.39	21,730	-520
May 31	5,429.79	23,520	+1,790
June 30	5,429.27	22,840	-680
July 31	5,429.17	22,710	-130
Aug. 31	5,431.63	26,100	+3,390
Sept. 30	5,431.91	26,500	+400
WTR YR 1982			+6,960

06710000 SOUTH PLATTE RIVER AT LITTLETON, CO

LOCATION.--Lat 39°37'08", long 105°01'07", in NE¼ sec.17, T.5 S., R.68 W., Arapahoe County, Hydrologic Unit 10190002, on left bank 200 ft (61 m) downstream from Crestline Ave. Bridge at Littleton, 3.1 mi (5.0 km) upstream from Bear Creek, and 6.3 mi (10 km) downstream from Chatfield Dam.

DRAINAGE AREA.--3,069 mi^2 (7,949 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1941 to current year.

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,304.36 ft (1,616.769 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Nov. 23, 1948, nonrecording gage on bridge 200 ft (61 m) upstream at datum 1.00 ft (0.305 m) higher. Nov. 23, 1948, to Sept. 30, 1951, water-stage recorder at present site at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good except those for winter period, which are fair. 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).

AVERAGE DISCHARGE.--33 years (water years 1942-74), 234 ft^3/s (6.627 m^3/s), 169,500 acre-ft/yr (209 hm^3/yr), prior to completion of Chatfield Dam, 7 years (water years 1976-82), 173 ft^3/s (4.899 m^3/s), 125,300 acre-ft/yr (154 hm^3/yr), subsequent to completion of Chatfield Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 110,000 ft^3/s (3,100 m^3/s) June 16, 1965, gage height, 15.45 ft (4.709 m), from floodmarks, estimated from contracted-opening and flow-over-road measurement of peak flow at point 1.6 mi (2.6 km) downstream and slope-area measurement of peak flow on Plum Creek at point 12.7 mi (20.4 km) upstream; minimum daily, 7.2 ft^3/s (0.20 m^3/s) Oct. 2, 1956.
Stage and discharge of the flood of June 16, 1965, are the greatest since at least 1894.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 740 ft^3/s (21.0 m^3/s) at 0630 Sept. 15, gage height, 3.62 ft (1.103 m); minimum daily, 11 ft^3/s (0.31 m^3/s) Dec. 13-15, Mar. 26-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	61	36	18	16	12	252	65	80	258	620	195
2	49	58	108	18	16	12	196	65	104	133	656	190
3	49	59	108	17	15	62	93	95	164	44	668	195
4	49	59	91	17	16	134	60	224	100	42	493	205
5	50	85	71	36	16	141	62	309	97	40	331	208
6	49	59	71	65	16	104	49	304	97	81	322	207
7	51	58	56	65	16	64	31	229	100	157	317	211
8	56	57	15	66	16	63	30	158	105	238	314	224
9	62	86	14	66	16	76	26	153	65	179	274	225
10	77	116	13	66	16	69	18	149	24	125	183	154
11	78	58	12	69	16	24	18	140	36	190	201	130
12	79	55	12	64	16	14	18	173	40	263	282	179
13	79	55	11	68	16	13	18	145	84	465	230	430
14	82	56	11	57	16	16	20	60	254	377	442	678
15	85	56	11	19	18	13	23	35	367	226	670	736
16	79	56	14	17	16	13	37	41	360	167	498	647
17	79	56	26	17	15	12	41	29	237	166	342	452
18	80	55	35	19	14	12	41	35	127	172	331	333
19	80	75	34	16	25	12	54	41	66	182	334	299
20	80	102	34	16	107	12	72	59	147	254	446	297
21	78	70	37	16	112	12	75	58	151	371	508	300
22	78	26	37	16	74	12	87	56	155	372	531	302
23	72	24	35	16	17	12	103	58	115	373	529	300
24	63	27	35	16	19	12	86	60	103	359	562	302
25	65	24	35	16	14	12	72	58	154	326	605	236
26	62	29	35	16	13	11	65	114	150	281	595	180
27	60	28	35	16	13	11	54	66	148	281	546	177
28	60	25	35	16	12	11	48	62	216	317	484	177
29	59	26	35	15	---	11	50	62	285	341	476	161
30	61	23	35	15	---	11	65	60	287	191	426	209
31	70	---	20	15	---	123	---	62	---	336	282	---
TOTAL	2070	1624	1157	969	692	1116	1864	3225	4418	7307	13498	8539
MEAN	66.8	54.1	37.3	31.3	24.7	36.0	62.1	104	147	236	435	285
MAX	85	116	108	69	112	141	252	309	367	465	670	736
MIN	49	23	11	15	12	11	18	29	24	40	183	130
AC-FT	4110	3220	2290	1920	1370	2210	3700	6400	8760	14490	26770	16940

CAL YR 1981 TOTAL 28161 MEAN 77.2 MAX 306 MIN 11 AC-FT 55860
WTR YR 1982 TOTAL 46479 MEAN 127 MAX 736 MIN 11 AC-FT 92190

06710000 SOUTH PLATTE RIVER AT LITTLETON, CO--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1979 to current year.
WATER TEMPERATURES: April 1970 to current year.

INSTRUMENTATION.--Temperature recorder since April 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 692 micromhos Dec. 4, 1981; minimum daily, 118 micromhos Dec. 3, 1979.
WATER TEMPERATURES: Maximum, 32°C June 12, 1979; minimum, freezing point on many days during winter months most years.

EXTREMES FOR CURRENT YEAR.--
Specific conductance: Maximum daily, 692 micromhos Dec. 4; minimum daily, 321 micromhos July 14.
WATER TEMPERATURES: Maximum, 27.0°C July 12; minimum, 0.0°C Feb. 3-13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (FTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
NOV										
10...	1345	123	480	424	8.0	10.0	8.0	10.4	K26	110
JAN										
05...	1320	19	640	580	7.8	4.0	4.0	12.3	82	108
MAR										
08...	1130	60	461	502	7.6	5.0	4.7	10.5	90	140
MAY										
06...	1230	295	442	425	8.0	14.0	16	8.5	K29	98
JUL										
06...	1030	40	480	509	8.0	18.0	1.9	10.2	260	480
SEP										
09...	1200	236	399	384	8.0	22.0	4.0	8.8	52	190

DATE	HARD-NESS (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 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)
NOV										
10...	150	42	12	31	1.2	2.6	91	68	33	1.0
JAN										
05...	210	60	15	40	1.3	3.1	140	100	44	1.1
MAR										
08...	160	46	11	28	1.0	2.6	110	70	31	1.0
MAY										
06...	160	44	11	28	1.0	2.8	100	71	29	1.2
JUL										
06...	180	51	12	33	1.1	2.8	124	74	32	.2
SEP										
09...	130	34	10	26	1.1	2.5	85	52	32	.9

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, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
NOV										
10...	10	258	254	.35	85.7	--	--	--	--	--
JAN										
05...	9.6	365	357	.50	18.7	.74	.120	.73	.080	.030
MAR										
08...	9.1	269	265	.37	43.6	.67	.080	.68	.020	.010
MAY										
06...	1.4	345	249	.47	275	.24	.090	1.00	.080	.020
JUL										
06...	4.9	299	285	.41	32.3	.30	.080	1.10	.020	.020
SEP										
09...	9.1	226	218	.31	144	.10	.140	1.10	.040	.030

K BASED ON NON-IDEAL COLONY COUNT.

06710000 SOUTH PLATTE RIVER AT LITTLETON, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	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)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)
JAN 05...	1320	1	1	200	79	<1	<1	<10	<10	<1
MAR 08...	1130	1	1	100	70	<1	<1	10	<10	5
MAY 06...	1230	1	1	100	67	<1	<3	<10	<10	1
JUL 06...	1030	<1	<1	100	73	<1	<1	<10	<10	<1

DATE	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	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 TOTAL RECOV-ERABLE (UG/L AS HG)
JAN 05...	<3	5	2	640	<10	1	<1	210	130	.1
MAR 08...	<3	4	1	430	<10	1	2	110	26	<.1
MAY 06...	<1	13	1	2000	23	6	2	150	15	.1
JUL 06...	<1	3	1	180	17	1	<1	40	29	.1

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN 05...	<.1	1	<1	2	2	<1	<1	20	<3
MAR 08...	<.1	4	1	1	1	<1	<1	10	<3
MAY 06...	<.1	2	<1	<1	<1	<1	<1	20	<12
JUL 06...	<.1	6	1	<1	<1	<1	<1	20	<3

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 10...	1345	123	35	12	--
JAN 05...	1320	19	60	3.1	--
MAR 08...	1130	60	16	2.6	86
MAY 06...	1230	295	98	78	73
JUL 06...	1030	40	2	.22	--
SEP 09...	1200	236	7	4.5	--

06710000 SOUTH PLATTE RIVER AT LITTLETON, CO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	464	478	670	599	600	426	430	447	461	498	363	368
2	468	481	676	594	548	426	433	443	477	500	362	368
3	469	479	672	588	546	415	433	443	472	499	380	367
4	472	478	692	603	547	421	434	443	473	500	370	367
5	469	477	647	599	546	425	435	453	486	503	367	366
6	469	479	655	612	548	423	445	453	490	497	370	367
7	466	480	645	651	544	421	445	454	488	323	370	367
8	459	480	649	646	545	432	466	455	488	323	371	367
9	448	479	647	630	546	422	443	453	490	322	370	366
10	449	476	668	630	575	426	465	457	492	323	365	367
11	449	477	669	645	576	422	475	457	495	322	372	367
12	450	476	555	649	578	423	436	457	492	322	370	366
13	454	515	682	655	577	423	454	455	492	322	373	366
14	450	521	561	652	575	419	471	457	492	321	370	366
15	433	596	490	648	575	411	447	457	492	348	370	365
16	459	594	391	660	575	524	446	459	491	348	369	366
17	460	594	630	660	576	528	454	459	491	348	370	367
18	448	594	630	675	578	438	445	458	494	348	370	367
19	448	600	602	676	578	516	442	458	501	349	370	367
20	463	597	644	676	576	519	441	458	493	347	371	367
21	448	597	603	652	576	433	441	457	492	347	374	367
22	472	595	597	652	576	428	444	458	493	347	375	367
23	461	646	596	644	576	420	442	459	494	349	374	367
24	474	667	603	653	427	419	440	462	494	348	378	367
25	479	668	608	623	428	420	441	464	494	348	378	366
26	447	669	613	626	427	415	440	464	495	349	378	366
27	464	667	610	628	427	414	441	462	496	363	378	365
28	464	668	613	654	425	415	440	462	496	363	380	366
29	466	668	616	649	---	421	443	462	496	363	381	368
30	466	665	617	650	---	423	440	461	496	365	383	368
31	469	---	619	646	---	421	---	463	---	370	386	---
MEAN	460	562	618	640	542	435	445	456	490	373	373	367

WTR YR 1982 MEAN 480 MAX 692 MIN 321

06710000 SOUTH PLATTE RIVER AT LITTLETON, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.5	13.0	11.0	7.0	4.0	2.0	4.5	1.0	4.0	1.0	8.5	5.5
2	19.0	13.0	11.5	8.5	6.0	2.5	3.5	1.5	5.0	.5	13.0	5.0
3	18.5	15.5	12.5	8.0	6.5	3.5	3.0	1.0	.5	.0	9.0	5.0
4	17.5	12.5	12.0	7.5	5.0	3.0	3.5	1.0	.0	.0	8.0	3.0
5	19.0	13.0	11.0	7.0	6.5	3.0	4.0	1.5	.0	.0	9.0	3.0
6	18.5	12.0	11.5	7.0	6.5	3.5	2.0	1.0	.0	.0	9.0	3.0
7	19.0	12.0	11.0	7.5	6.5	3.5	1.0	1.0	.0	.0	10.0	3.0
8	17.5	12.5	10.0	8.0	7.5	4.5	1.5	1.0	.0	.0	8.5	3.5
9	18.0	13.5	11.0	6.0	7.5	4.5	4.0	1.0	.0	.0	10.5	3.0
10	18.5	12.0	11.0	7.0	8.0	4.5	2.0	1.0	.5	.0	10.5	4.0
11	18.0	13.0	10.5	6.0	8.5	5.0	4.0	1.0	1.0	.0	11.5	5.5
12	18.0	12.5	10.5	6.0	7.5	5.0	2.5	1.0	2.0	.0	13.5	7.5
13	14.5	13.0	10.0	6.5	7.0	4.5	3.0	1.0	3.5	.0	13.5	6.0
14	14.0	12.5	10.5	7.5	6.5	3.5	4.0	.5	5.0	1.5	13.5	7.0
15	13.5	12.5	10.5	7.0	6.5	3.0	4.5	1.0	7.0	2.0	11.0	7.0
16	16.0	12.0	11.5	7.5	5.5	3.0	3.0	.5	7.0	3.0	13.0	5.5
17	14.0	10.0	10.5	7.5	5.0	2.0	6.0	1.0	8.5	3.0	14.0	6.0
18	15.5	9.5	9.0	6.5	3.0	1.5	5.0	1.5	8.5	2.5	11.0	7.0
19	15.5	9.5	9.0	5.5	4.5	3.0	6.0	2.5	9.0	3.0	11.5	6.0
20	15.5	9.5	9.0	5.5	6.5	3.5	5.5	2.0	8.0	3.0	11.5	4.0
21	10.0	9.5	9.0	6.0	6.0	2.5	4.5	2.0	9.0	3.0	11.0	3.0
22	10.0	9.5	10.0	6.5	3.5	1.5	3.5	1.5	9.0	3.5	12.5	4.0
23	13.0	8.5	10.0	6.5	2.5	1.5	1.5	1.0	7.0	4.5	12.5	4.5
24	12.0	8.5	9.5	5.5	1.5	1.0	6.0	1.5	8.5	3.5	13.5	5.0
25	12.0	7.0	8.5	5.0	1.5	1.0	6.0	2.0	9.0	4.0	13.0	5.0
26	13.0	7.5	7.0	3.5	1.5	1.0	8.0	3.0	10.5	3.5	9.0	6.5
27	12.5	8.5	6.0	3.5	1.5	1.0	7.0	4.0	12.0	5.0	14.0	5.5
28	12.0	8.0	7.5	3.5	1.5	1.0	6.5	2.0	12.5	6.0	15.0	7.0
29	12.5	8.5	5.5	4.0	1.5	1.0	4.5	1.5	---	---	11.0	6.5
30	11.0	7.5	6.5	4.0	2.5	1.0	5.0	1.0	---	---	9.5	3.5
31	11.0	6.0	---	---	4.0	1.5	4.0	.5	---	---	11.0	3.5
MONTH	19.5	6.0	12.5	3.5	8.5	1.0	8.0	.5	12.5	.0	15.0	3.0

06710000 SOUTH PLATTE RIVER AT LITTLETON, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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

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 (55 m) upstream from bridge on State Highway 8 and 0.2 mi (0.3 km) upstream from Mount Vernon Creek.

DRAINAGE AREA.--164 mi^2 (425 km^2).

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 (1,761.875 m), 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 (24 m) downstream at present datum.

REMARKS.--Records good. Small diversions for irrigation of about 1,000 acres (4.05 km^2) above 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.--67 years (water years 1891, 1897, 1899, 1901, 1920-82), 52.4 ft^3/s (1.484 m^3/s), 37,960 acre-ft/yr (46.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,600 ft^3/s (244 m^3/s), estimated, July 24, 1896; minimum daily, 0.8 ft^3/s (0.023 m^3/s) Nov. 26, 1939, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 193 ft^3/s (5.47 m^3/s) at 0500 Aug. 14, gage height, 5.78 ft (1.762 m), no peak above base of 250 ft^3/s (7.1 m^3/s); minimum daily, 7.6 ft^3/s (0.215 m^3/s) Nov. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	23	16	14	14	11	12	18	81	92	66	78
2	28	30	9.8	13	13	14	18	20	81	86	62	73
3	28	28	16	13	11	14	10	19	92	80	67	71
4	27	26	18	14	9.0	14	8.6	20	82	76	85	66
5	28	25	14	14	8.0	13	14	28	78	73	82	67
6	27	25	16	13	8.5	13	12	25	75	71	74	84
7	26	25	16	12	8.5	17	13	18	67	74	73	73
8	24	23	16	14	8.5	14	11	18	68	72	66	70
9	24	22	14	15	9.0	13	9.8	16	66	71	63	66
10	24	18	14	14	9.0	13	9.8	17	66	71	61	60
11	24	18	14	12	9.4	14	11	18	64	64	59	68
12	22	20	15	12	9.4	16	14	27	63	63	73	96
13	23	22	13	12	9.8	14	14	40	64	60	72	85
14	26	23	13	13	11	14	14	42	61	63	136	91
15	29	22	14	14	13	14	15	41	62	58	96	90
16	33	22	13	13	16	14	16	41	64	55	109	89
17	29	21	13	15	16	13	15	43	67	50	123	84
18	25	22	12	14	16	13	12	53	89	51	118	79
19	24	14	22	14	13	14	13	60	91	50	109	80
20	24	7.6	18	14	14	11	13	71	79	50	109	85
21	24	16	16	14	15	9.4	9.8	74	79	47	131	84
22	23	24	16	13	16	9.4	14	78	79	46	112	76
23	22	18	11	14	15	10	16	84	81	44	116	72
24	24	20	12	15	15	11	14	85	85	42	103	71
25	22	18	13	15	13	14	12	89	95	41	94	70
26	24	18	13	16	11	13	11	96	95	46	90	70
27	28	8.6	13	16	12	13	13	91	91	56	82	67
28	27	8.3	12	16	11	12	15	86	89	87	81	63
29	27	14	13	16	---	13	14	95	90	100	79	63
30	26	16	14	14	---	11	18	87	91	87	79	64
31	27	---	14	14	---	8.6	---	86	---	75	81	---
TOTAL	798	597.5	443.8	432	334.1	397.4	392.0	1586	2335	2001	2751	2255
MEAN	25.7	19.9	14.3	13.9	11.9	12.8	13.1	51.2	77.8	64.5	88.7	75.2
MAX	33	30	22	16	16	17	18	96	95	100	136	96
MIN	22	7.6	9.8	12	8.0	8.6	8.6	16	61	41	59	60
AC-FT	1580	1190	880	857	663	788	778	3150	4630	3970	5460	4470

CAL YR 1981 TOTAL 8805.5 MEAN 24.1 MAX 80 MIN 2.0 AC-FT 17470
WTR YR 1982 TOTAL 14322.8 MEAN 39.2 MAX 136 MIN 7.6 AC-FT 28410

06711500 BEAR CREEK AT MOUTH, AT SHERIDAN, CO

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 (2.1 km) upstream from mouth, and 2.1 mi (3.4 km) west of city hall in Englewood.

DRAINAGE AREA.--260 mi² (673 km²).

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

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,295 ft (1,614 m), 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 (0.30 m) higher.

REMARKS.--Records good. Flow regulated by Bear Creek Lake since July 1979. Storage and diversions above station for irrigation of about 12,000 acres (48.6 km²). 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.--55 years, 38.6 ft³/s (1.093 m³/s), 27,970 acre-ft/yr (34.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,150 ft³/s (231 m³/s) May 7, 1969, gage height, 10.5 ft (3.20 m), present datum, from flood marks, from rating curve extended above 3,400 ft³/s (96 m³/s); no flow July 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 324 ft³/s (9.18 m³/s) at 2000 Aug. 20, gage height, 3.90 ft (1.189 m); minimum daily, 3.8 ft³/s (0.11 m³/s) July 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	10	30	25	22	14	6.5	63	35	18	62
2	14	12	10	29	24	22	11	5.9	36	27	15	53
3	14	13	10	26	21	25	13	7.2	36	17	19	27
4	14	11	10	23	17	30	15	8.2	65	15	18	18
5	14	11	11	24	15	34	16	12	62	18	20	15
6	13	11	20	25	17	22	16	12	28	17	24	22
7	14	10	27	25	20	19	12	7.9	17	15	13	29
8	13	10	27	25	30	23	11	7.4	12	12	11	23
9	13	10	27	26	63	23	8.5	5.7	8.0	10	8.9	20
10	13	11	27	25	12	23	7.0	5.1	9.6	9.9	8.8	17
11	13	10	29	24	12	22	7.0	4.1	9.2	9.1	10	28
12	13	10	29	25	11	23	7.2	41	12	11	17	73
13	14	10	29	24	10	24	6.3	49	13	9.8	17	108
14	18	10	27	24	9.5	23	5.6	30	15	7.2	78	108
15	25	11	26	23	16	23	5.3	18	15	8.9	95	108
16	23	11	26	23	24	22	4.9	13	16	7.8	103	92
17	19	11	25	24	27	22	5.2	12	18	6.3	109	82
18	15	10	21	24	27	22	6.3	40	57	6.9	122	81
19	15	10	22	24	26	23	7.4	11	81	7.9	111	79
20	16	9.9	27	24	25	21	6.7	16	66	6.3	125	82
21	15	9.6	31	23	25	19	8.4	38	47	5.3	127	92
22	14	10	33	23	26	19	5.9	25	19	3.8	117	88
23	12	12	27	23	36	20	5.6	16	17	4.1	119	82
24	13	11	21	23	46	19	6.1	23	52	4.2	113	78
25	16	11	19	24	9.6	18	8.6	57	71	5.6	100	77
26	14	13	21	24	15	19	8.9	97	73	5.3	88	76
27	26	10	24	25	20	16	10	78	63	8.3	84	74
28	29	10	26	24	22	11	9.6	73	54	23	89	70
29	18	10	24	25	---	12	7.1	74	22	60	82	67
30	20	11	26	23	---	11	6.7	79	14	43	72	67
31	23	---	28	22	---	13	---	77	---	28	66	---
TOTAL	507	324.5	720	756	631.1	645	262.3	949.0	1070.8	447.7	1999.7	1898
MEAN	16.4	10.8	23.2	24.4	22.5	20.8	8.74	30.6	35.7	14.4	64.5	63.3
MAX	29	15	33	30	63	34	16	97	81	60	127	108
MIN	12	9.6	10	22	9.5	11	4.9	4.1	8.0	3.8	8.8	15
AC-FT	1010	644	1430	1500	1250	1280	520	1880	2120	888	3970	3760

CAL YR 1981	TOTAL 5833.7	MEAN 16.0	MAX 130	MIN 4.7	AC-FT 11570
WTR YR 1982	TOTAL 10211.1	MEAN 28.0	MAX 127	MIN 3.8	AC-FT 20250

06711590 SOUTH PLATTE RIVER AT FLORIDA AVENUE AT DENVER, CO

LOCATION.--Lat 39°41'23", long 104°59'57", in SE¼NE¼ sec.21, T.4 S., R.68 W., Denver County, Hydrologic Unit 10190002, on left bank, 150 ft (46 m) downstream from Florida Avenue Bridge, 125 ft (38 m) upstream from Sanderson Gulch in Denver.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--March 1981 to December 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 5,230 ft (1,594 m), from topographic map.

REMARKS.--Records fair. 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 765 ft³/s (21.7 m³/s) at 1500 May 28, 1981, gage height, 5.00 ft (1.524 m), from rating curve extended above 240 ft³/s (6.80 m³/s); minimum daily, 80 ft³/s (2.27 m³/s) Apr. 2, 1981.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	123	89									
2	101	118	146									
3	104	113	160									
4	104	113	148									
5	106	134	123									
6	104	118	129									
7	106	113	136									
8	107	113	97									
9	110	123	92									
10	134	172	91									
11	129	112	91									
12	134	112	95									
13	135	107	94									
14	142	108	95									
15	174	109	90									
16	168	110	91									
17	144	108	99									
18	144	106	102									
19	141	120	104									
20	138	152	108									
21	138	130	119									
22	135	92	142									
23	135	90	113									
24	118	91	104									
25	153	90	115									
26	123	109	118									
27	126	92	122									
28	126	92	120									
29	119	91	117									
30	123	92	130									
31	187	---	106									
TOTAL	4012	3353	3486									
MEAN	129	112	112									
MAX	187	172	160									
MIN	101	90	89									
AC-FT	7960	6650	6910									

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 (2.4 km) upstream from Russellville Gulch and 2.5 mi (4.0 km) south of Franktown.

DRAINAGE AREA.--169 mi^2 (438 km^2).

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

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 6,170 ft (1,881 m), from topographic map. See WSP 1730 for history of changes prior to Oct. 1, 1953.

REMARKS.--Records fair except those for winter period, which are poor. Many small diversions above station for irrigation of about 800 acres (3.24 km^2). Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--42 years (water years 1941-82), 8.49 ft^3/s (0.240 m^3/s), 6,150 acre-ft/yr (7.58 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,170 ft^3/s (260 m^3/s) Aug. 5, 1945, gage height, 4.91 ft (1.497 m), site and datum then in use, by float measurement; minimum daily, 0.20 ft^3/s (0.006 m^3/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.--Maximum discharge, 1,430 ft^3/s (40.5 m^3/s) at 1745 Aug. 10, gage height, 6.97 ft (2.124 m), only peak above base of 200 ft^3/s (5.7 m^3/s); minimum daily discharge, 0.43 ft^3/s (0.012 m^3/s) July 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	4.0	5.2	4.8	5.9	10	3.9	5.3	6.1	11	2.2	3.7
2	1.8	4.3	5.2	5.2	5.6	9.4	3.9	5.3	5.5	8.9	1.6	3.5
3	2.0	4.7	5.3	5.0	5.4	9.0	3.9	5.3	9.2	8.1	1.6	3.4
4	2.0	4.8	5.3	4.5	5.2	8.7	4.0	5.4	8.1	7.5	6.2	3.4
5	2.0	4.6	5.7	4.6	5.2	7.6	4.0	6.3	5.8	7.0	4.1	3.3
6	2.0	4.5	5.8	5.0	5.1	6.8	3.9	7.3	4.9	6.1	2.9	3.4
7	2.1	4.5	6.0	5.0	5.8	6.4	3.9	7.1	4.2	5.9	10	3.4
8	2.2	4.4	6.1	4.5	6.0	6.7	3.9	7.2	3.7	5.6	4.0	3.5
9	2.2	4.4	6.0	4.5	5.9	6.6	4.0	6.8	3.3	5.3	2.6	3.7
10	2.2	4.4	6.2	4.5	5.6	7.3	4.1	6.8	3.0	5.7	134	3.8
11	2.2	4.6	6.4	4.5	5.8	7.5	4.3	6.4	2.8	5.5	14	3.9
12	2.2	4.5	6.3	4.5	6.0	7.5	4.3	7.8	2.6	5.2	22	5.0
13	2.3	4.7	5.9	4.6	6.2	7.5	4.2	16	2.3	4.9	13	7.3
14	2.4	4.8	5.9	4.8	7.0	7.1	4.3	31	1.9	5.6	8.9	7.8
15	2.4	4.9	5.5	4.8	9.4	6.8	4.3	19	1.6	6.0	7.1	7.6
16	2.5	4.9	5.2	4.8	10	6.3	4.2	18	1.7	6.1	5.9	6.6
17	2.6	4.8	5.4	5.5	12	5.8	4.3	16	2.0	14	10	5.9
18	2.7	4.6	5.2	5.4	13	5.7	4.4	13	16	3.2	7.5	5.4
19	2.6	4.6	5.5	5.8	13	5.5	4.3	11	10	1.8	26	5.0
20	2.6	4.7	5.8	5.9	14	5.1	4.2	9.0	8.0	1.4	11	4.9
21	2.7	4.8	6.4	5.9	16	5.0	4.4	8.1	7.3	1.2	11	4.7
22	2.6	4.8	5.9	5.8	15	4.9	4.4	7.6	6.7	.67	17	4.3
23	2.7	5.0	5.8	5.6	14	4.9	4.4	8.9	6.1	.49	9.9	3.9
24	2.9	5.0	5.6	5.6	13	4.6	4.5	7.8	5.8	.46	6.6	3.9
25	3.2	5.3	5.1	5.3	10	4.4	4.6	9.0	5.5	.43	5.6	3.8
26	3.2	5.7	4.8	6.1	9.6	4.4	4.6	34	11	.46	5.0	3.7
27	3.0	5.5	5.1	6.4	10	4.4	4.7	13	12	.46	4.6	3.3
28	3.2	5.5	4.7	6.0	10	4.4	4.8	9.0	13	.64	4.2	3.0
29	3.4	5.5	4.7	5.9	---	4.3	5.1	7.5	20	4.0	4.1	2.8
30	3.3	5.5	5.3	6.0	---	4.2	5.2	7.2	23	3.7	4.0	2.9
31	4.2	---	5.2	6.0	---	4.2	---	6.8	---	2.8	3.8	---
TOTAL	79.2	144.3	172.5	162.8	249.7	193.0	129.0	328.9	213.1	140.11	370.4	130.8
MEAN	2.55	4.81	5.56	5.25	8.92	6.23	4.30	10.6	7.10	4.52	11.9	4.36
MAX	4.2	5.7	6.4	6.4	16	10	5.2	34	23	14	134	7.8
MIN	1.8	4.0	4.7	4.5	5.1	4.2	3.9	5.3	1.6	.43	1.6	2.8
AC-FT	157	286	342	323	495	383	256	652	423	278	735	259

CAL YR 1981 TOTAL 2010.60 MEAN 5.51 MAX 50 MIN .30 AC-FT 3990
WTR YR 1982 TOTAL 2313.81 MEAN 6.34 MAX 134 MIN .43 AC-FT 4590

06712990 CHERRY CREEK LAKE NEAR DENVER, CO

LOCATION.--Lat 39°09'03", long 104°51'13", in NW¼NE¼ sec.2, T.55 S., R.67 W., Arapahoe County, Hydrologic Unit 10190003, 0.8 mi (1.3 km) southwest from intersection of Interstate Highway 225 and Parker Road, 0.2 mi (1.4 km) from right end of dam, 1.6 mi (2.6 km) northwest of intersection of Parker and Airline Roads, and 11.5 mi (18.5 km) upstream from mouth.

DRAINAGE AREA.--385 mi² (997 km²).

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 NGVD.

REMARKS.--Reservoir is formed by earthfill dam. Storage began May 15, 1957; dam completed in June 1950. Capacity, 92,820 acre-ft (114 hm³), at elevation 5,598.00 ft (1,706.270 m), crest of spillway. No dead storage. Figures given represent total contents. Reservoir is for flood control and recreation.

COOPERATION.--Records furnished by U.S. Army, Corps of Engineers. Capacity revised on basis of new capacity table dated January 1975.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,120 acre-ft (38.4 hm³) June 3, 1973, elevation, 5,565.82 ft (1.696.462 m); minimum, 9,980 acre-ft (12.3 hm³) Nov. 23, 24, 1978, elevation, 5,545.90 ft (1,690.390 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,810 acre-ft (14.6 hm³) June 5, elevation, 5,548.28 ft (1,691.116 m); minimum, 11,320 acre-ft (14.0 hm³) July 28, elevation, 5,547.66 ft (1,690.927 m).

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	5,548.25	11,780	-
Oct. 31	5,548.03	11,600	-180
Nov. 30	5,547.96	11,550	-50
Dec. 31	5,548.02	11,600	+50
CAL YR 1981		-	-650
Jan. 31	5,548.10	11,660	+60
Feb. 28	5,548.19	11,730	+70
Mar. 31	5,548.08	11,640	-90
Apr. 30	5,547.86	11,470	-170
May 31	5,548.11	11,670	+200
June 30	5,548.12	11,680	+10
July 31	5,547.86	11,470	-210
Aug. 31	5,547.84	11,460	-10
Sept. 30	5,547.67	11,320	-140
WTR YR 1982			-460

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 (610 m) downstream from Cherry Creek Dam, 2.2 mi (3.5 km) southeast of Sullivan, 9 mi (14 km) southeast of Civic Center in Denver, and 11 mi (18 km) upstream from mouth.

DRAINAGE AREA.--385 mi² (997 km²).

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 (1,673.507 m) (Corps of Engineers bench mark).

REMARKS.--Records excellent. Flow regulated by Cherry Creek Lake (see elsewhere in this report). Diversions above station for irrigation of about 1,800 acres (7.28 km²). Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--32 years, 3.57 ft³/s (0.101 m³/s), 2,590 acre-ft/yr (3.19 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft³/s (40.8 m³/s) July 31, 1956, gage height, 6.07 ft (1.850 m); no flow most of time since May 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood known, 34,000 ft³/s (963 m³/s) Aug. 3, 1933, by slope-area measurement near present site (Castlewood Dam failure).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18 ft³/s (0.51 m³/s) at 1520 Apr. 26, gage height, 3.33 ft (01.015 m); no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

Apr. 23	0.88	June 3	0.42
Apr. 26	1.4	July 28	1.4
May 12	0.38	July 29	0.70

CAL YR 1981	TOTAL 0.00	MEAN 0.00	MAX 0.00	MIN 0.00	AC-FT 0.00
WTR YR 1982	TOTAL 5.18	MEAN 0.014	MAX 1.4	MIN 0.00	AC-FT 10

06713500 CHERRY CREEK AT DENVER, CO

LOCATION.--Lat 39°44'58", long 105°00'08", in NE¼ sec.33, T.3 S., R.68 W., Denver County, Hydrologic Unit 10190003, on right bank on downstream side of Wazee Street Bridge in Denver, 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--409 mi² (1,059 km²).

PERIOD OF RECORD.--August 1942 to September 1969, February 1980 to current year.

REVISED RECORDS.--WSP 1710: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,175.48 ft (1,577.486 m) National Geodetic Vertical Datum of 1929. See WSP 1730 for history of changes prior to July 16, 1951. July 16, 1951, to Sept. 30, 1969, water-stage recorder at present site and datum.

REMARKS.--Records good, except for period January 20 to March 31, which are poor. Several diversions above station for irrigation of about 1,900 acres (769 hm²). Floodflow regulated by Cherry Creek Reservoir 11 mi (18 km) upstream (capacity, 95,960 acre-ft (118 hm³). Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--29 years (water years 1943-69, 1981-82), 16.0 ft³/s (0.453 m³/s), 11,590 acre-ft/yr (14.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 3,120 ft³/s (88.4 m³/s) Aug. 5, 1945, gage height, 5.25 ft (1.600 m) site and datum then in use; maximum gage height, 11.91 ft (3.630 m) June 17, 1965 (backwater from South Platte River); minimum daily discharge, 0.4 ft³/s (0.011 m³/s) June 16-18, 1948.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 26, 1885, reached a discharge of 20,000 ft³/s (566 m³/s) by float measurement. Flood of May 19, 20, 1864, reached a somewhat higher stage. Flood of Aug. 3, 1933, reached a discharge of about 15,000 ft³/s (425 m³/s) as determined by rise of South Platte River at Denver.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 914 ft³/s (25.9 m³/s) at 1645 June 24, gage height, 4.92 ft (1.500 m); minimum daily, 5.9 ft³/s (0.17 m³/s) Apr. 8, 10, 11, 16-18, 21, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	8.2	7.8	8.9	10	7.4	7.1	6.8	12	39	12	17
2	11	9.6	7.3	7.8	9.5	7.4	6.5	7.1	14	13	12	15
3	13	8.9	7.3	6.4	8.5	8.0	6.5	7.7	151	10	14	15
4	13	7.8	7.3	7.3	8.5	12	7.4	7.7	14	11	24	15
5	11	6.9	7.3	8.2	8.5	15	8.6	9.9	13	11	79	17
6	12	7.8	7.3	7.3	8.5	10	6.2	7.1	13	10	73	15
7	12	7.3	7.3	6.9	8.5	8.9	6.2	6.5	12	9.6	15	16
8	12	7.3	7.3	6.9	8.1	8.6	5.9	6.8	12	9.9	17	16
9	11	7.8	7.3	9.6	8.1	8.6	6.2	6.8	12	10	15	16
10	12	7.8	7.3	7.8	8.1	8.9	5.9	7.1	12	10	16	16
11	12	8.2	7.3	7.8	8.1	9.3	5.9	6.8	12	9.6	18	32
12	12	7.3	7.8	7.3	8.0	10	6.5	201	11	10	29	36
13	14	7.3	7.8	7.3	8.0	12	6.5	133	14	11	18	56
14	14	7.3	8.2	12	8.6	13	7.1	66	14	10	15	26
15	30	7.3	8.2	8.2	8.3	14	6.2	30	13	9.3	19	42
16	19	7.8	7.8	6.4	8.3	16	5.9	13	12	10	14	14
17	13	7.8	8.2	7.3	8.3	16	5.9	13	19	9.6	15	14
18	12	7.8	8.2	11	9.3	12	5.9	15	108	10	16	14
19	12	6.9	8.2	11	10	7.7	6.2	15	19	9.6	15	12
20	12	6.9	8.2	10	10	7.4	7.4	13	12	9.6	23	13
21	13	7.3	13	9.6	9.6	7.1	5.9	14	13	8.6	30	13
22	12	7.3	19	9.6	8.6	7.1	5.9	12	14	10	15	13
23	12	8.2	8.9	8.9	8.0	7.1	6.5	13	16	10	17	12
24	14	8.2	7.8	10	7.7	7.1	6.2	26	100	9.6	14	12
25	25	11	8.2	12	8.0	6.5	6.2	21	16	11	15	12
26	22	16	7.3	14	8.6	6.5	6.2	38	15	13	15	12
27	11	8.9	6.9	14	7.4	6.5	6.2	14	14	14	15	13
28	6.9	7.3	6.0	14	7.1	6.5	6.8	15	12	46	14	12
29	6.9	8.2	6.4	12	---	6.5	7.7	23	11	93	16	12
30	14	11	11	11	---	6.8	6.5	17	37	19	16	12
31	17	---	8.9	10	---	6.8	---	17	---	12	15	---
TOTAL	421.8	247.4	256.8	290.5	238.2	286.7	194.1	789.3	747	478.4	641	540
MEAN	13.6	8.25	8.28	9.37	8.51	9.25	6.47	25.5	24.9	15.4	20.7	18.0
MAX	30	16	19	14	10	16	8.6	201	151	93	79	56
MIN	6.9	6.9	6.0	6.4	7.1	6.5	5.9	6.5	11	8.6	12	12
AC-FT	837	491	509	576	472	569	385	1570	1480	949	1270	1070

CAL YR 1981 TOTAL 4794.9 MEAN 13.1 MAX 142 MIN 5.1 AC-FT 9510
WTR YR 1982 TOTAL 5131.2 MEAN 14.1 MAX 201 MIN 5.9 AC-FT 10180

06714000 SOUTH PLATTE RIVER AT DENVER, CO

LOCATION.--Lat 39°45'35", long 105°00'10", in NW¼SE¼ sec.28, T.3 S., R.68 W., Denver County, Hydrologic Unit 10190003, on right bank 90 ft (27 m) upstream from Nineteenth Street Bridge in Denver and 0.4 mi (0.6 km) downstream from Cherry Creek.

DRAINAGE AREA.--3,804 mi^2 (9,852 km^2).

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

REVISED RECORDS.--WSP 1310: 1934(M). WSP 1730: 1957(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5,157.64 ft (1,572.049 m) 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 (0.8 km) of present site at various datums. Aug. 29, 1931, to June 28, 1965, water-stage recorder at site 70 ft (21 m) downstream at datum 3.66 ft (1.116 m) higher. June 29, 1965, to Mar. 18, 1966, water-stage recorder at site 70 ft (21 m) downstream at present datum.

REMARKS.--Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 79,000 acres (320 km^2) and municipal use, 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.--79 years (water years 1896-1974), 344 ft^3/s (9.742 m^3/s), 249,200 acre-ft/yr (308 hm^3/yr), prior to completion of Chatfield Dam, 7 years (water years 1976-82), 309 ft^3/s (8.751 m^3/s), 223,900 acre-ft/yr (276 hm^3/yr), subsequent to completion of Chatfield Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,300 ft^3/s (1,140 m^3/s) June 17, 1965, gage height, 18.66 ft (5.688 m), from flood marks, present datum, from rating curve extended above 2,700 ft^3/s (76 m^3/s), on basis of contracted-opening measurement of peak flow; minimum daily, 8.8 ft^3/s (0.25 m^3/s) Mar. 25, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,220 ft^3/s (91.2 m^3/s) at 2030 May 12, gage height, 5.57 ft (1.698 m); minimum daily, 46 ft^3/s (1.30 m^3/s) Apr. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	131	74	103	89	67	291	96	224	446	666	355
2	93	122	136	98	89	67	262	87	222	310	663	336
3	92	109	157	84	77	85	156	90	676	152	688	313
4	102	107	150	80	74	248	107	217	275	128	626	313
5	99	123	120	92	77	314	144	387	266	125	626	326
6	99	124	126	124	79	217	109	356	220	124	641	328
7	97	109	137	123	80	130	82	308	204	205	452	335
8	102	109	90	120	76	128	75	201	178	303	420	332
9	103	121	81	157	147	124	71	190	167	307	397	331
10	129	181	76	140	71	153	63	186	102	202	316	288
11	126	118	75	134	70	93	59	187	103	245	320	348
12	131	110	86	138	65	80	56	913	124	293	489	451
13	134	104	83	140	69	80	50	816	137	489	428	753
14	145	105	87	160	74	84	48	429	282	455	522	922
15	230	106	79	106	79	81	46	233	433	328	871	1150
16	194	107	78	77	85	78	54	170	437	255	733	849
17	146	104	90	106	79	76	66	131	436	247	552	621
18	144	102	96	108	79	73	61	156	704	253	576	497
19	142	112	96	94	82	65	64	125	338	266	510	448
20	142	152	104	82	152	63	111	137	331	286	844	445
21	144	143	125	84	180	61	111	167	317	415	967	464
22	140	83	173	82	173	65	105	141	297	418	760	458
23	139	76	124	77	89	66	127	142	278	417	775	446
24	126	78	97	86	120	62	121	249	526	409	775	442
25	200	78	100	91	76	58	90	236	375	394	829	400
26	132	134	110	90	62	62	97	533	374	354	801	321
27	129	88	121	86	63	66	84	233	347	385	740	321
28	127	83	119	85	66	60	88	215	362	581	644	305
29	121	83	114	90	---	59	73	249	387	906	637	293
30	159	91	151	84	---	57	102	265	440	430	593	311
31	249	---	114	81	---	99	---	273	---	335	464	---
TOTAL	4210	3293	3369	3202	2522	3021	2973	8118	9562	10463	19325	13502
MEAN	136	110	109	103	90.1	97.5	99.1	262	319	338	623	450
MAX	249	181	173	160	180	314	291	913	704	906	967	1150
MIN	92	76	74	77	62	57	46	87	102	124	316	288
AC-FT	8350	6530	6680	6350	5000	5990	5900	16100	18970	20750	38330	26780

CAL YR 1981 TOTAL 56739 MEAN 155 MAX 626 MIN 66 AC-FT 112500
WTR YR 1982 TOTAL 83560 MEAN 229 MAX 1150 MIN 46 AC-FT 165700

06714130 SOUTH PLATTE RIVER AT 50th AVENUE AT DENVER, CO

LOCATION.--Lat 39°47'13", long 104°58'28", in SW¼ SW¼ sec.14, T.3 S., R.68 W., Denver County, Hydrologic Unit 10190003, on left bank 2,400 ft (232 m) upstream from Franklin Street Bridge and 2,800 ft (853 m) downstream from Interstate 70 overpass in Denver.

DRAINAGE AREA.--3,810 mi^2 (9,870 km^2), approximate.

PERIOD OF RECORD.--February 1980 to December 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 5,133 ft (1,565 m) from topographic map.

REMARKS.--Records fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of about 79,000 acres (320 km^2) 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,700 ft^3/s (133 m^3/s) July 16, 1980, gage height, 8.50 ft (2.591 m); minimum daily, 42 ft^3/s (1.19 m^3/s) June 17, 1981.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	162	75									
2	99	131	131									
3	108	117	148									
4	108	113	154									
5	110	117	151									
6	106	136	122									
7	110	108	126									
8	117	110	136									
9	120	117	93									
10	167	173	82									
11	176	113	73									
12	178	108	82									
13	198	101	82									
14	212	101	86									
15	288	99	80									
16	271	106	76									
17	218	101	90									
18	218	101	97									
19	221	108	99									
20	221	146	104									
21	221	141	129									
22	221	82	181									
23	221	75	129									
24	206	75	95									
25	281	76	117									
26	221	136	120									
27	215	90	120									
28	209	82	117									
29	181	84	113									
30	198	97	144									
31	338	---	115									
TOTAL	5853	3306	3467									
MEAN	189	110	112									
MAX	338	173	181									
MIN	95	75	73									
AC-FT	11610	6560	6880									

CAL YR 1981 TOTAL 63928 MEAN 175 MAX 744 MIN 42 AC-FT 126800

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 (91 m) southeast of intersection of York Street and East 64th Avenue and 1,900 ft (579 m) upstream from mouth of Sand Creek at Northeast corner of Metro Denver Sewage Disposal plant at Commerce City.

DRAINAGE AREA.--3,829 mi² (9,917 km²).

PERIOD OF RECORD.--January to September 1982.

GAGE.--Water-stage recorder. Altitude of gage is 5,105 ft (1,556 m), from topographic map.

REMARKS.--Records good. 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 observation of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR CURRENT PERIOD.--Jan. to Sept., maximum discharge, 2,670 ft³/s (75.6 m³/s) at 2130 Aug. 5, gage height, 5.09 ft (1.551 m); minimum daily, 4.0 ft³/s (0.11 m³/s) Mar. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				---	8.6	7.7	8.6	70	5.9	57	577	234
2				---	8.6	9.6	9.6	70	5.9	14	496	284
3				---	8.6	9.6	7.7	78	363	11	464	259
4				---	8.6	12	5.9	130	8.6	9.6	447	255
5				---	8.6	43	5.9	325	5.9	17	624	280
6				---	8.6	17	6.8	316	5.9	19	711	280
7				---	8.6	6.8	5.2	289	5.2	14	400	280
8				---	8.6	6.8	4.6	181	6.8	14	355	280
9				---	8.6	5.9	5.9	169	5.9	126	335	251
10				---	8.6	5.9	5.9	166	8.6	120	259	192
11				---	8.6	6.8	6.8	143	9.6	150	276	265
12				---	9.6	6.8	5.2	929	17	192	491	440
13				---	9.6	7.7	5.2	823	22	415	395	533
14				---	9.6	8.6	5.9	93	147	420	360	405
15				---	9.6	9.6	11	40	350	289	508	623
16				---	9.6	9.6	9.6	17	360	209	486	330
17				---	8.6	9.6	12	11	338	209	370	139
18				---	11	8.6	12	11	501	213	415	80
19				---	8.6	6.8	11	11	46	225	307	35
20				---	8.6	5.9	9.6	11	17	246	549	32
21				---	8.6	6.8	15	9.6	17	390	760	35
22				---	8.6	6.8	43	9.6	15	425	365	32
23				---	7.7	6.8	76	8.6	15	410	370	29
24				---	7.7	5.2	76	15	190	410	360	29
25				---	6.8	4.0	76	17	20	395	410	29
26				---	6.8	5.9	74	248	12	355	400	27
27				---	6.8	7.7	70	6.8	12	370	380	23
28				6.8	7.7	5.9	68	5.9	11	538	375	22
29				7.7	---	5.9	66	5.9	11	874	370	22
30				7.7	---	5.9	72	22	89	147	355	20
31				8.6	---	5.9	---	17	---	163	302	---
TOTAL				---	240.1	271.1	790.4	4248.4	2621.3	7446.6	13272	5745
MEAN				---	8.58	8.75	26.3	137	87.4	240	428	192
MAX				---	11	43	76	929	501	874	760	623
MIN				---	6.8	4.0	4.6	5.9	5.2	9.6	259	20
AC-FT				---	476	538	1570	8430	5200	14770	26330	11400

06716500 CLEAR CREEK NEAR LAWSON, CO

LOCATION.--Lat 39°45'57", long 105°37'32", in NW¼NW¼ sec.25, T.3 S., R.74 W., Clear Creek County, Hydrologic Unit 10190004, on left bank at east edge of Lawson, 30 ft (9 m) downstream from private bridge, and 2.0 mi (3.2 km) downstream from West Fork Clear Creek.

DRAINAGE AREA.--147 mi² (381 km²).

PERIOD OF RECORD.--March 1946 to current year. Records prior to 1959 include inflow from August P. Gumlick Tunnel (formerly Jones Pass tunnel).

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 8,080 ft (2,463 m), from topographic map. Mar. 20, 1946, to Sept. 30, 1967, at site 1.5 mi (2.4 km) upstream at different datum.

REMARKS.--Records good except those for winter period, which are poor. Natural flow affected by minor transmountain diversion from Colorado River basin through Berthoud Pass ditch (see elsewhere in this report). No diversion above 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.--36 years, 135 ft³/s (3.823 m³/s), 97,810 acre-ft/yr (121 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,130 ft³/s (174 m³/s) June 4, 1956, gage height, 7.41 ft (2.259 m), site and datum then in use, from rating curve extended above 1,600 ft³/s (45 m³/s), on basis of computation of peak flow over dam, caused by failure of Georgetown Dam on White Reservoir 5.0 mi (8.0 km) upstream; minimum daily, 13 ft³/s (0.37 m³/s) Feb. 20, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 895 ft³/s (25.3 m³/s) at 2400 June 28, gage height, 5.44 ft (1.658 m); only peak above base of 600 ft³/s (17 m³/s); minimum daily, 18 ft³/s (0.51 m³/s) Feb. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	44	32	26	24	24	29	53	259	830	336	127
2	47	47	38	25	23	24	29	65	263	802	317	122
3	48	45	35	25	22	24	30	80	273	780	303	119
4	50	43	32	26	18	23	28	94	263	759	299	112
5	50	38	30	28	20	22	29	106	283	717	289	125
6	51	37	31	26	21	22	30	84	311	661	270	126
7	52	40	29	22	22	24	29	76	312	601	255	114
8	49	41	29	25	22	24	26	75	345	566	240	111
9	48	37	28	28	20	24	28	77	385	557	230	110
10	44	33	28	30	21	25	26	89	416	531	220	104
11	45	36	27	30	22	26	27	95	425	522	201	108
12	45	37	27	29	23	28	33	94	459	519	235	125
13	47	38	26	28	24	25	30	94	504	520	235	120
14	45	40	27	29	25	27	30	79	493	513	234	118
15	47	38	28	29	24	28	34	80	495	509	218	112
16	54	36	28	29	24	26	35	80	490	487	208	108
17	49	33	27	30	23	26	32	79	553	469	227	102
18	48	33	32	29	22	27	33	82	581	455	283	98
19	51	28	36	25	23	26	32	88	522	437	241	96
20	48	27	30	25	23	25	31	85	513	425	234	97
21	49	33	29	25	24	25	29	87	555	408	216	89
22	45	32	28	24	24	26	30	103	617	396	199	88
23	43	30	25	22	25	31	33	126	654	390	189	93
24	43	35	25	24	23	31	34	145	683	382	175	96
25	42	33	27	24	23	30	33	152	718	376	170	94
26	42	25	25	25	22	31	34	149	730	374	170	94
27	44	31	25	24	24	31	36	156	732	369	162	87
28	41	34	25	25	24	31	35	176	806	388	155	83
29	44	35	27	24	---	33	39	232	835	424	150	84
30	40	28	28	24	---	27	40	242	817	401	139	84
31	41	---	27	24	---	30	---	238	---	360	132	---
TOTAL	1441	1067	891	809	635	826	944	3461	15292	15928	6932	3146
MEAN	46.5	35.6	28.7	26.1	22.7	26.6	31.5	112	510	514	224	105
MAX	54	47	38	30	25	33	40	242	835	830	336	127
MIN	40	25	25	22	18	22	26	53	259	360	132	83
AC-FT	2860	2120	1770	1600	1260	1640	1870	6860	30330	31590	13750	6240

CAL YR 1981 TOTAL 28433 MEAN 77.9 MAX 514 MIN 17 AC-FT 56400
WTR YR 1982 TOTAL 51372 MEAN 141 MAX 835 MIN 18 AC-FT 101900

06719505 CLEAR CREEK AT GOLDEN, CO

LOCATION.--Lat 39°45'11", long 105°14'05", in NE¼NW¼ sec.33, T.3 S., R.70 W., Jefferson County, Hydrologic Unit 10190004, on left bank 100 ft (30 m) downstream from U.S. Highway 6 bridge at west edge of Golden, 0.7 mi (1.1 km) downstream from headgate of Church ditch, and 13.3 mi (21.4 km) downstream from North Clear Creek.

DRAINAGE AREA.--400 mi^2 (1,036 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year. Records for station at site 0.8 mi (1.3 km) upstream (October 1908 to December 1919, June 1911 to September 1974) are not equivalent due to diversions by Church ditch. Sediment data available April to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 5,695 ft (1,736 m), from topographic map.

REMARKS.--Records good except for December, January and February, 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 above station. Diversion by Welch ditch 1.4 mi (2.3 km) upstream and by Church Ditch 0.7 mi (1.1 km) upstream for irrigation of about 5,200 acres (21.0 km^2) below station.

AVERAGE DISCHARGE.--8 years, 168 ft^3/s (4.758 m^3/s) 121,700 acre-ft/yr (150 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,860 ft^3/s (52.7 m^3/s) June 13, 1980, gage height, 5.10 ft (1.411 m), maximum gage height 5.55 ft (1.692 m) June 30, 1982 at present site; minimum daily discharge, 18 ft^3/s (0.51 m^3/s) Dec. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,380 ft^3/s (39.1 m^3/s) at 1900 June 30, gage height, 5.55 ft (1.692 m); minimum daily, 18 ft^3/s (0.51 m^3/s) Dec. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	46	28	35	40	37	36	63	369	959	339	149
2	60	52	18	35	40	38	36	79	367	890	316	153
3	60	52	56	35	40	39	28	96	366	842	304	147
4	60	47	52	36	30	38	35	122	349	812	300	133
5	60	47	48	40	45	33	33	150	384	773	309	137
6	58	37	52	40	45	29	34	114	430	705	282	174
7	57	38	47	41	45	32	34	105	410	637	263	143
8	57	39	45	42	45	39	28	97	469	591	237	125
9	56	39	38	40	45	36	30	101	487	573	223	115
10	56	33	39	40	45	33	29	118	539	542	211	106
11	56	35	41	40	45	38	32	127	548	530	195	111
12	54	36	40	40	45	43	36	153	575	533	239	147
13	57	40	37	40	45	39	40	147	639	531	254	139
14	56	41	38	40	45	38	37	110	623	515	257	168
15	57	42	42	40	45	40	40	100	621	517	225	145
16	62	42	44	40	45	38	46	103	588	500	232	130
17	58	35	40	40	45	37	40	97	679	485	225	114
18	53	38	27	40	45	38	43	107	791	465	331	105
19	54	34	35	40	45	38	41	134	668	450	271	98
20	53	35	35	40	43	32	42	141	614	428	264	117
21	51	37	35	40	43	32	36	143	646	407	242	119
22	52	39	35	40	45	32	41	159	720	392	215	91
23	46	37	36	40	45	33	42	194	782	384	205	91
24	47	37	19	40	42	36	43	233	807	368	180	98
25	47	37	34	40	38	34	41	255	857	354	174	96
26	46	35	35	40	37	34	43	270	864	350	175	96
27	48	34	35	40	39	37	49	268	825	359	163	96
28	50	34	35	40	39	35	47	286	919	401	160	87
29	47	38	30	40	---	36	52	351	971	474	153	85
30	50	41	35	40	---	32	55	380	999	446	140	89
31	48	---	35	40	---	28	---	371	---	375	131	---
TOTAL	1682	1177	1166	1224	1196	1104	1169	5174	18906	16588	7215	3604
MEAN	54.3	39.2	37.6	39.5	42.7	35.6	39.0	167	630	535	233	120
MAX	66	52	56	42	45	43	55	380	999	959	339	174
MIN	46	33	18	35	30	28	28	63	349	350	131	85
AC-FT	3340	2330	2310	2430	2370	2190	2320	10260	37500	32900	14310	7150

CAL YR 1981 TOTAL 38387 MEAN 105 MAX 754 MIN 18 AC-FT 76140
WTR YR 1982 TOTAL 60205 MEAN 165 MAX 999 MIN 18 AC-FT 119400

06719505 CLEAR CREEK AT GOLDEN, CO

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1981 to current year.

PERIOD OF DAILY RECORDS.--
SPECIFIC CONDUCTANCE: March 1981 to current year.
WATER TEMPERATURES: March 1981 to current year.

INSTRUMENTATION.--Water quality monitor since March 1981.

REMARKS.--Records rated good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 408 micromhos Dec. 25, 1981; minimum daily, 60 micromhos June 28, 1982.
pH: Maximum, 8.7 units Mar. 27, April 10, 1981; minimum 6.6 units July 16, 1981.
WATER TEMPERATURES: Maximum daily 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 CONCENTRATIONS.--Maximum daily, 282 mg/L May 29, 1981; minimum daily, 3 mg/L Sept. 21-24, 1981.
SEDIMENT LOADS: Maximum daily, 230 tons (209 t) June 3, 1981; minimum daily 0.62 ton (0.56 t) Sept. 23-24, 1981.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 408 micromhos Dec. 25; minimum daily, 60 micromhos June 28.
WATER TEMPERATURES: Maximum daily 19.0°C Aug. 23; minimum, freezing point on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	NITROGEN DISSOLVED (MG/L AS N)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
MAR										
01...	1345	34	356	269	7.5	2.5	11.0	.89	107	30
JUL										
21...	1100	310	85	92	7.2	13.5	8.8	.51	32	9.2
SEP										
14...	1400	162	130	149	7.3	10.0	9.2	.64	50	14

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
MAR										
01...	7.8	17	.7	3.9	62	78	8.1	.8	11	197
JUL										
21...	2.2	3.8	.3	1.3	26	19	1.5	.4	6.4	60
SEP										
14...	3.7	6.4	.4	1.5	28	31	3.5	.5	8.1	87

DATE	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)
MAR										
01...	.26	18.1	.46	.47	.62	.20	.42	1.1	.060	.010
JUL										
21...	.08	50.2	.12	.11	.50	.10	.40	.62	.030	<.010
SEP										
14...	.12	38.1	.20	.14	.60	.10	.50	.80	.160	.030

06719505 CLEAR CREEK AT GOLDEN, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC TOTAL (UG/L AS AS)	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, DIS-SOLVED (UG/L AS FE)
MAR									
01...	1	< 1	2	< 1	6	2	41	10	< 10
JUL									
21...	< 1	< 2	2	3	5	< 1	13	7	35
SEP									
14...	--	--	--	--	--	--	--	--	34

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
MAR									
01...	4	1	750	< .1	< .1	< 1	< 1	460	270
JUL									
21...	1	< 1	310	.5	< .1	< 1	< 1	190	150
SEP									
14...	--	--	520	--	--	--	--	--	--

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	194	301	300	301	286	263	247	144	75	102	127
2	161	195	---	288	307	289	269	236	140	72	104	126
3	163	190	337	294	307	283	269	228	139	75	108	128
4	163	188	296	301	344	283	263	219	141	75	106	137
5	164	220	302	309	357	291	268	205	136	75	106	147
6	163	268	295	299	353	299	268	204	131	77	109	146
7	164	274	289	293	336	304	268	205	129	79	108	152
8	164	274	293	294	323	292	268	207	119	80	110	151
9	165	273	296	306	321	291	273	207	106	80	112	155
10	165	278	304	295	316	295	272	202	97	83	113	180
11	168	281	302	291	314	293	275	197	99	81	116	162
12	169	277	301	289	314	296	273	190	95	83	116	135
13	168	280	305	292	314	286	264	188	90	86	114	133
14	167	274	310	297	311	289	266	199	92	87	115	151
15	170	276	315	300	305	289	266	205	86	85	116	144
16	173	276	298	294	293	285	255	204	84	89	116	161
17	174	278	309	293	294	286	247	204	87	90	119	154
18	177	292	323	286	297	284	258	201	90	92	113	155
19	179	285	313	290	296	283	256	196	93	92	118	166
20	180	300	270	290	288	286	253	190	93	95	117	168
21	180	299	273	293	279	291	268	188	91	92	120	165
22	181	281	285	294	273	292	261	185	86	94	124	141
23	184	276	309	298	276	291	265	180	83	96	122	142
24	189	291	---	315	279	277	263	173	85	98	124	143
25	189	281	378	295	281	270	265	165	81	102	123	145
26	193	285	347	289	286	272	265	163	80	111	124	157
27	194	320	317	287	293	268	260	159	81	101	123	166
28	191	327	315	297	285	267	259	155	67	106	125	157
29	193	296	325	299	---	269	260	148	71	101	125	179
30	191	291	329	301	---	266	252	144	76	101	125	169
31	187	---	315	307	---	270	---	148	---	103	129	---
MEAN	175	271	309	296	305	285	264	192	100	89	116	151

WTR YR 1982 MEAN 212 MAX 378 MIN 67

06719505 CLEAR CREEK AT GOLDEN, CO—Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	13.5	10.5	4.5	1.5	.0	.0	.0	.0	.0	.0	3.5	1.0
2	13.0	9.5	5.5	3.0	2.5	.5	.0	.0	.0	.0	6.0	1.5
3	13.0	11.0	5.0	3.0	.0	.0	.0	.0	.0	.0	4.0	1.5
4	11.5	8.5	5.0	2.5	.0	.0	.0	.0	.0	.0	4.5	.5
5	12.5	9.0	5.0	2.5	.0	.0	.0	.0	.0	.0	3.0	.0
6	12.0	8.5	4.5	2.0	.5	.0	.0	.0	.0	.0	2.0	.0
7	12.0	8.0	6.0	3.0	.5	.0	.0	.0	.0	.0	3.0	.0
8	11.0	8.5	5.5	3.0	.5	.0	.0	.0	.0	.0	3.0	.0
9	12.0	9.0	3.5	1.5	1.0	.0	.0	.0	.0	.0	6.0	.0
10	11.0	7.0	3.0	1.0	1.5	.0	.0	.0	.0	.0	7.5	1.5
11	11.0	7.0	2.5	.5	1.0	.0	.0	.0	.0	.0	7.5	2.5
12	11.0	8.0	2.5	.5	1.0	.0	.0	.0	.0	.0	8.5	4.0
13	9.0	7.5	4.0	1.5	1.0	.0	.0	.0	.0	.0	7.5	2.5
14	8.0	7.0	5.0	3.5	.5	.0	.0	.0	.0	.0	8.5	3.5
15	8.0	7.0	5.5	3.5	.5	.0	.0	.0	.0	.0	8.0	4.0
16	9.0	6.0	7.0	4.5	.0	.0	.0	.0	.0	.0	7.5	2.5
17	7.0	5.0	5.5	3.5	.0	.0	.0	.0	.0	.0	8.5	2.5
18	7.0	3.5	3.5	2.0	.0	.0	.0	.0	.0	.0	6.5	3.0
19	7.5	4.0	2.0	.0	.0	.0	.0	.0	.5	.0	6.0	2.0
20	8.0	4.5	1.0	.0	.0	.0	.0	.0	.5	.0	6.5	.0
21	6.0	3.5	3.0	.0	1.0	.0	.0	.0	2.0	.0	3.5	.0
22	3.5	2.5	4.5	2.5	.0	.0	.0	.0	2.5	.0	4.5	.0
23	5.0	1.5	4.0	2.5	.0	.0	.0	.0	2.0	.0	7.0	.0
24	5.0	2.5	4.0	1.5	.0	.0	.0	.0	2.0	.0	8.0	1.5
25	4.5	1.5	2.5	.0	.0	.0	.0	.0	1.5	.0	6.5	1.0
26	6.0	2.0	.5	.0	.0	.0	.0	.0	2.0	.0	5.0	2.0
27	7.5	5.0	.5	.0	.0	.0	.0	.0	4.0	.0	8.0	3.0
28	6.5	4.0	.0	.0	.0	.0	.0	.0	4.5	.5	10.0	3.0
29	7.5	5.0	.0	.0	.0	.0	.0	.0	---	---	10.5	2.5
30	5.0	2.5	.0	.0	.0	.0	.0	.0	---	---	5.5	.5
31	3.5	1.0	---	---	.0	.0	.0	.0	---	---	8.0	.0
MONTH	13.5	1.0	7.0	.0	2.5	.0	.0	.0	4.5	.0	10.5	.0

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.5	2.5	14.0	8.5	13.0	8.5	13.5	9.5	17.5	12.5	17.5	13.5
2	7.5	2.5	15.0	9.0	12.0	8.0	13.5	9.0	16.5	13.5	17.0	12.0
3	10.0	.5	12.5	10.0	11.5	8.5	14.0	9.0	17.0	13.5	16.5	13.0
4	10.5	3.5	13.0	9.0	13.0	7.5	13.0	9.5	16.0	14.0	16.0	13.0
5	7.0	2.5	11.0	6.0	14.0	8.0	12.0	9.0	18.0	13.0	15.5	13.0
6	8.0	2.5	9.0	4.0	13.0	8.0	13.0	8.5	17.5	13.0	14.5	10.5
7	7.0	2.5	9.5	5.5	13.0	7.0	13.0	9.0	18.5	13.5	15.5	12.0
8	6.5	.0	11.0	7.0	13.5	8.0	12.5	9.0	17.5	13.5	15.0	12.0
9	9.0	1.5	13.5	7.5	12.5	8.0	13.0	9.5	18.0	14.0	16.0	11.0
10	10.5	1.5	12.5	8.5	11.5	8.0	14.5	9.0	16.5	13.0	15.5	12.5
11	12.5	5.0	10.0	8.0	11.5	8.0	14.0	9.5	16.5	13.0	14.5	10.5
12	14.0	8.0	7.5	3.5	12.5	8.0	15.5	10.0	16.5	13.5	10.5	9.0
13	13.5	6.5	5.5	2.5	11.5	8.5	13.5	10.5	17.0	14.0	10.5	9.5
14	13.5	7.0	9.0	4.5	10.5	8.5	15.0	10.5	18.0	13.5	10.5	8.0
15	12.0	7.0	11.5	6.0	10.5	8.5	13.5	10.5	16.5	14.0	12.0	8.5
16	7.5	4.0	10.5	7.0	12.5	7.0	15.5	9.5	17.0	13.0	14.0	10.0
17	11.0	2.0	13.0	7.5	11.5	9.0	14.5	11.0	16.5	14.0	13.5	10.5
18	12.0	4.5	13.0	8.0	10.5	8.0	15.0	11.5	18.0	13.5	13.0	9.5
19	7.0	3.0	12.0	9.0	12.0	6.5	16.0	11.0	16.5	14.5	13.0	10.5
20	5.0	1.0	11.5	8.5	13.0	7.5	16.0	11.5	17.5	13.5	13.0	10.5
21	9.5	.0	14.5	8.5	13.0	8.0	15.5	11.5	18.0	14.0	14.5	10.5
22	12.0	3.0	15.0	9.5	12.0	8.5	16.5	12.0	16.5	13.5	14.5	10.0
23	13.5	5.5	13.0	10.0	11.5	8.5	18.0	12.0	19.0	14.0	14.0	11.5
24	13.5	7.5	11.0	8.5	12.0	8.0	18.0	12.5	17.5	14.0	14.5	11.0
25	13.5	7.0	10.0	7.0	11.0	8.5	16.0	13.0	15.5	13.5	13.0	11.0
26	10.0	8.0	14.0	6.0	11.0	8.5	15.5	13.0	16.5	13.0	13.0	11.5
27	8.5	6.5	12.0	9.0	14.0	8.0	14.5	13.0	17.0	13.5	13.5	10.5
28	15.0	6.0	14.5	9.5	14.0	9.5	15.5	12.5	18.0	13.5	12.0	9.5
29	11.5	8.0	13.0	9.5	12.5	9.5	14.5	13.0	17.0	13.5	10.5	7.0
30	13.0	7.5	12.0	8.5	13.0	9.5	17.0	12.0	17.0	14.0	9.0	7.0
31	---	---	12.0	7.0	---	---	17.5	12.5	17.0	13.0	---	---
MONTH	15.0	.0	15.0	2.5	14.0	6.5	18.0	8.5	19.0	12.5	17.5	7.0
YEAR	19.0	.0										

06719526 CLEAR CREEK AT TABOR STREET AT WHEATRIDGE, CO

LOCATION.--Lat 39°46'27", long 105°07'48", in NE¼SE¼ sec.20, T.3 S., R.69 W., Jefferson County, Hydrologic Unit 10190004, on left bank 330 ft (100 m) southeast of dead end of Tabor Street near 42nd Avenue at Wheatridge.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--August 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,400 ft (1,646 m) from topographic map.

REMARKS.--Records good. Natural flow of stream affected by minor transmountain diversions, storage reservoirs, diversions for irrigation above station, 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, 1,080 ft^3/s (30.6 m^3/s) June 30, 1982, gage height, 7.07 ft (2.155 m); minimum daily, 0.15 ft^3/s (0.004 m^3/s) Mar. 21, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft^3/s (30.6 m^3/s) at 2030 June 30, gage height, 7.07 ft (2.155 m); minimum daily, 0.15 ft^3/s (0.004 m^3/s) Mar. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1											---	18
2											---	16
3											---	14
4											---	16
5											---	7.4
6											---	7.8
7											---	20
8											---	24
9											---	14
10											---	26
11											45	34
12											27	36
13											41	37
14											33	16
15											25	9.8
16											34	11
17											29	12
18											11	9.8
19											4.6	6.6
20											11	8.2
21											21	6.3
22											26	5.2
23											30	4.3
24											22	3.6
25											23	4.6
26											17	4.6
27											18	3.8
28											14	4.6
29											12	6.6
30											11	3.6
31											10	---
TOTAL											---	390.8
MEAN											---	13.0
MAX											---	37
MIN											---	3.6
AC-FT											---	775

06719526 CLEAR CREEK AT TABOR STREET AT WHEATRIDGE, CO

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	6.6	6.3	.46	.88	.78	4.9	1.8	72	690	163	44
2	2.6	8.5	6.3	.46	.52	1.1	4.1	14	41	617	110	50
3	2.4	8.9	7.0	.52	.98	.58	4.3	29	33	586	91	49
4	2.8	8.5	7.0	.68	.52	.68	4.6	48	25	559	150	39
5	4.1	8.9	6.6	1.6	.98	.40	5.2	74	39	502	161	41
6	4.1	8.9	5.5	2.2	.58	.34	5.5	38	71	415	133	86
7	3.6	7.0	7.0	2.0	.68	.68	4.6	30	91	345	103	56
8	2.8	6.3	6.6	3.6	1.1	1.6	4.6	19	128	373	77	35
9	1.6	6.3	8.5	3.3	.68	1.1	4.6	26	97	368	49	28
10	1.1	7.8	7.4	3.3	4.4	.78	4.9	39	97	348	68	22
11	.88	7.4	7.8	3.3	6.7	.34	4.1	55	67	331	82	55
12	.98	8.2	6.3	3.6	.78	.46	4.6	98	48	365	141	86
13	1.1	8.5	6.3	2.4	.52	.58	5.5	98	240	371	165	94
14	1.1	7.8	6.6	.98	.46	.88	4.9	22	222	292	132	91
15	1.5	6.6	7.0	.52	.52	.52	4.9	13	66	259	74	33
16	4.6	6.6	6.3	.52	.98	.58	5.2	9.8	33	206	76	17
17	2.8	6.3	5.9	.52	.68	.78	5.2	5.2	76	204	77	26
18	1.1	5.5	6.3	.58	.68	.46	4.6	14	233	177	177	28
19	2.8	6.6	4.3	.58	.68	.34	5.5	45	100	175	124	13
20	5.5	6.3	4.3	1.6	.98	.29	5.9	47	38	159	137	39
21	5.9	4.9	3.3	1.3	.58	.15	5.5	47	54	120	137	47
22	4.6	4.1	1.2	.98	.29	.34	5.2	37	107	105	70	20
23	6.6	7.8	.68	.88	.52	.34	5.2	53	180	108	55	20
24	8.5	6.3	.58	.46	.58	2.8	5.2	92	228	114	42	24
25	11	7.0	.46	.52	.58	6.3	4.9	79	287	102	39	17
26	8.5	7.4	.52	.88	5.2	6.6	5.9	11	315	94	33	18
27	8.2	5.2	.46	.58	3.3	5.5	7.0	17	270	133	34	15
28	8.2	7.0	.46	.46	.52	5.2	7.4	18	546	199	54	11
29	7.8	6.6	.68	.88	---	7.0	7.4	60	638	413	39	10
30	8.9	9.3	.52	.78	---	9.3	5.2	82	653	351	30	18
31	10	---	.46	.88	---	6.6	---	97	---	204	25	---
TOTAL	138.46	213.1	138.62	41.32	35.87	63.40	156.6	1318.8	5095	9285	2848	1132
MEAN	4.47	7.10	4.47	1.33	1.28	2.05	5.22	42.5	170	300	91.9	37.7
MAX	11	9.3	8.5	3.6	6.7	9.3	7.4	98	653	690	177	94
MIN	.88	4.1	.46	.46	.29	.15	4.1	1.8	25	94	25	10
AC-FT	275	423	275	82	71	126	311	2620	10110	18420	5650	2250

WTR YR 1982 TOTAL 20466.17 MEAN 56.1 MAX 690 MIN .15 AC-FT 40590

06720000 CLEAR CREEK AT MOUTH, NEAR DERBY, CO

LOCATION.--Lat 39°49'42", long 104°57'30", in SW¼SW¼ sec.36, T.2 S., R.68 W., Adams County, Hydrologic Unit 10190004, on right bank 210 ft (64 m) downstream from York Street bridge, 0.6 mi (1.0 km) upstream from mouth, and 2.5 mi (4.0 km) west of Derby.

DRAINAGE AREA.--575 mi² (1,489 km²).

PERIOD OF RECORD.--April to November 1914, March 1927 to September 1982 (discontinued). Prior to October 1933, monthly discharge only, published in WSP 1310.

REVISED RECORDS.--WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,110 ft (1,558 m), from topographic map. See WSP 1710 or 1730 for history of changes prior to July 16, 1958. July 16, 1958, to Sept. 20, 1965, water-stage recorder at site 50 ft (15 m) upstream at datum 1.56 ft (0.475 m) higher.

REMARKS.--Records good except those for winter period, which are fair. Natural flow of stream affected by transmountain diversions (see elsewhere in this report), storage reservoirs, diversions for irrigation of about 75,000 acres (304 km²) above station, 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.--55 years, 90.4 ft³/s (2.560 m³/s), 65,490 acre-ft/yr (80.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,070 ft³/s (144 m³/s) July 24, 1965, gage height, 8.97 ft (2.734 m), present datum; minimum daily, 0.4 ft³/s (0.011 m³/s) Mar. 11, 1943.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,040 ft³/s (29.5 m³/s) at 0300 July 1, gage height, 4.98 ft (1.518 m); minimum daily, 0.65 ft³/s (0.018 m³/s) Dec. 4-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	3.7	.84	11	2.3	3.3	4.7	2.8	99	870	82	16
2	3.4	2.4	.72	11	2.4	2.7	5.4	2.6	47	681	48	18
3	3.5	2.2	.70	13	2.0	2.4	5.6	3.1	39	542	26	15
4	3.8	2.1	.65	16	2.0	19	7.2	5.0	13	466	46	15
5	4.0	2.0	.65	14	1.5	24	11	71	11	391	159	21
6	3.8	1.7	.65	16	2.0	8.7	7.1	58	40	302	214	57
7	3.6	1.7	.97	18	2.5	4.6	8.5	22	55	220	60	66
8	3.8	1.7	6.6	15	2.5	3.1	8.0	9.8	187	221	31	28
9	3.8	1.5	17	14	2.0	3.0	6.8	8.0	84	270	24	15
10	3.3	1.7	19	11	2.0	3.1	4.7	6.6	65	252	22	13
11	3.0	1.8	23	6.8	2.5	2.8	4.3	8.8	30	228	41	96
12	4.1	1.5	20	8.7	2.5	2.6	4.7	233	22	272	117	157
13	3.2	1.3	17	8.3	3.0	2.3	3.8	604	144	304	105	124
14	3.0	1.2	17	27	3.0	1.9	3.5	172	257	214	123	184
15	7.0	1.2	16	31	3.8	1.9	3.5	67	71	176	47	168
16	5.3	1.1	16	12	3.0	2.3	3.0	41	12	116	52	27
17	4.0	1.1	15	14	2.6	2.2	3.3	21	49	103	51	27
18	3.8	1.1	16	12	6.4	2.2	2.8	25	368	85	137	48
19	3.5	1.5	13	6.5	6.5	2.3	2.8	17	185	73	67	27
20	3.0	1.1	12	4.6	6.6	2.3	4.1	11	25	53	179	42
21	2.9	1.1	14	5.6	6.5	2.0	3.9	16	27	39	293	72
22	2.4	1.1	30	7.1	6.4	2.2	3.0	15	64	25	59	23
23	2.2	.96	17	11	6.2	4.3	3.1	40	115	25	51	17
24	2.8	.85	16	7.2	7.4	8.1	3.0	117	238	31	25	18
25	9.0	1.1	14	6.2	5.7	7.7	2.6	144	289	20	20	16
26	3.1	3.7	13	4.4	8.3	7.7	2.9	81	257	20	15	14
27	2.6	1.3	11	4.4	10	8.2	3.6	24	189	38	14	14
28	2.3	1.1	13	4.1	3.0	8.9	3.1	8.4	382	264	15	12
29	1.8	1.2	17	5.1	---	7.8	3.3	44	607	724	22	9.7
30	13	1.3	23	5.3	---	6.3	2.8	78	616	501	18	12
31	43	---	16	2.5	---	5.7	---	119	---	155	14	---
TOTAL	161.1	47.31	396.78	332.8	114.6	165.6	136.1	2075.1	4587	7681	2177	1371.7
MEAN	5.20	1.58	12.8	10.7	4.09	5.34	4.54	66.9	153	248	70.2	45.7
MAX	43	3.7	30	31	10	24	11	604	616	870	293	184
MIN	1.8	.85	.65	2.5	1.5	1.9	2.6	2.6	11	20	14	9.7
AC-FT	320	94	787	660	227	328	270	4120	9100	15240	4320	2720

CAL YR 1981 TOTAL 6959.01 MEAN 19.1 MAX 421 MIN .65 AC-FT 13800
WTR YR 1982 TOTAL 19246.09 MEAN 52.7 MAX 870 MIN .65 AC-FT 38170

06720417 GRANGE HALL CREEK BELOW NORTHGLENN, CO

LOCATION.--Lat 39°53'30", long 104°57'27", in NW¼SW¼ sec.12 T.2 S., R.68 W., Adams County, Hydrologic Unit 10190003, on left bank, 175 ft (53 m) upstream from Pacific Railroad culvert, 1,600 ft (488 m) downstream from South Tributary at Northglenn.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--March 1981 to September 1982 (discontinued).

GAGE.--Water-stage recorder and 90° V-notch weir. Altitude of gage is 5,200 ft (1,585 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period May to September, 62 ft^3/s (1.76 m^3/s) at 0630 May 13, gage height, 2.54 ft (0.77 m), from rating curve; minimum daily, 0.04 ft^3/s (0.001 m^3/s) Apr. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.33	1.4	.30	.33	.25	.25	.31	.06	1.3	1.3	1.2	.81
2	.23	1.2	.28	.33	.28	.23	.30	.06	1.3	5.0	1.1	.86
3	.25	.95	.28	.33	.35	.45	.30	.06	3.0	9.2	1.0	.86
4	.37	.64	.28	.33	.33	1.1	.28	.06	2.1	8.9	1.0	.86
5	.42	.57	.30	.33	.33	.30	.28	.07	1.5	8.0	1.0	.86
6	.25	.57	.40	.33	.33	.30	.26	.08	1.3	7.2	.90	2.7
7	.33	.57	.42	.33	.30	.20	.26	.08	1.3	6.2	1.2	1.3
8	.42	.45	.37	.33	.30	.23	.24	.09	1.3	4.0	1.5	.86
9	.42	.40	.37	.33	.30	.23	.24	.10	1.3	2.4	1.2	.74
10	.40	.40	.37	.33	.30	.23	.24	.12	1.3	2.1	1.3	.74
11	.40	.37	.37	.33	.30	.22	.22	.13	1.3	2.4	1.1	6.2
12	.50	.35	.37	.33	.30	.22	.22	5.4	1.3	2.5	1.9	4.2
13	1.1	.33	.35	.33	.30	.20	.22	33	1.3	1.7	1.1	3.9
14	.71	.28	.37	.33	.30	.23	.20	6.5	2.0	1.6	1.0	4.7
15	2.2	.30	.40	.33	.30	.25	.20	3.2	2.0	1.6	3.4	12
16	1.1	.30	.35	.33	.35	.19	.20	2.1	1.6	1.5	1.2	.57
17	.71	.30	.37	.33	.28	.20	.18	1.3	2.3	1.4	2.2	.54
18	.35	.30	.35	.33	.28	.22	.18	1.3	8.2	1.4	1.3	.54
19	.22	.30	.30	.33	.28	.22	.18	1.3	5.1	1.3	1.0	.54
20	.33	.33	.33	.35	.23	.23	.18	1.3	1.8	1.1	1.0	.50
21	.45	.30	.33	.45	.25	.23	.16	1.2	1.6	1.0	1.0	.47
22	.67	.30	.33	.64	.25	.22	.16	1.1	1.4	.95	1.0	.47
23	.57	.30	.33	.61	.25	.22	.16	1.0	1.3	.81	.90	.45
24	.67	.30	.33	.50	.23	.28	.16	1.0	.86	.74	.86	.45
25	1.8	.20	.33	.30	.23	.33	.14	1.1	.64	.71	.81	.42
26	.95	5.4	.33	.30	.28	.33	.14	1.2	.78	.67	.78	.42
27	.78	.30	.33	.30	.25	.33	.13	1.3	.95	.74	.74	.37
28	.67	.30	.33	.30	.23	.30	.04	1.2	1.0	8.0	1.4	.37
29	.67	.72	.33	.30	---	.35	.05	1.0	1.2	5.4	.90	.35
30	1.2	.45	.33	.35	---	.37	.06	1.2	1.4	2.7	.74	.35
31	1.8	---	.33	.30	---	.28	---	1.3	---	1.3	.74	---
TOTAL	21.27	18.88	10.56	10.97	7.96	8.94	5.89	68.91	53.73	93.82	36.47	48.40
MEAN	.69	.63	.34	.35	.28	.29	.20	2.22	1.79	3.03	1.18	1.61
MAX	2.2	5.4	.42	.64	.35	1.1	.31	33	8.2	9.2	3.4	12
MIN	.22	.20	.28	.30	.23	.19	.04	.06	.64	.67	.74	.35
AC-FT	42	37	21	22	16	18	12	137	107	186	72	96

WTR YR 1982 TOTAL 385.80 MEAN 1.06 MAX 33 MIN .04 AC-FT 765

06720500 SOUTH PLATTE RIVER AT HENDERSON, CO

LOCATION.--Lat 39°55'19", long 104°52'00", in SE¼NE¼ sec.34, T.1 S., R.67 W., Adams County, Hydrologic Unit 10190003, on right bank 500 ft (150 m) upstream from bridge on State Highway 22 and 0.2 mi (0.3 km) northwest of Henderson.

DRAINAGE AREA.--4,713 mi^2 (12,207 km^2).

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.

GAGE.--Water-stage recorder. Datum of gage is 5,003.12 ft (1,524.951 m) National Geodetic Vertical Datum of 1929. See WSP 1710 or 1730 for history of changes prior to June 1, 1960. June 1, 1960, to May 10, 1969, water-stage recorder at site 1,200 ft (370 m) upstream at datum 2.00 ft (0.610 m) higher. May 11 to Oct. 2, 1969, nonrecording gage at site 500 ft (150 m) downstream at present datum.

REMARKS.--Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals, diversions for irrigation of about 253,000 acres (1,020 km^2), 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.--48 years (water years 1927-74), 366 ft^3/s (10.37 m^3/s), 265,200 acre-ft/yr (327 hm^3/yr), prior to completion of Chatfield Dam; 8 years (water years 1975-82), 407 ft^3/s (11.53 m^3/s), 294,900 acre-ft/yr (364 hm^3/yr), subsequent to completion of Chatfield Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft^3/s (935 m^3/s) May 6, 1973, gage height, 11.67 ft (3.557 m), from rating curve extended above 7,200 ft^3/s (200 m^3/s), partly on basis of flow-over-road measurement of peak flow; maximum gage height, 12.93 ft (3.941 m) June 17, 1965, site and datum then in use; minimum daily discharge, 4.4 ft^3/s (0.12 m^3/s) Apr. 1, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,050 ft^3/s (143 m^3/s) at 0100 May 13, gage height, 6.19 ft (1.887 m); minimum daily, 64 ft^3/s (1.81 m^3/s) Mar. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	188	305	197	188	173	182	81	210	266	1090	724	433
2	191	249	188	191	167	173	133	219	213	886	694	482
3	191	259	188	188	164	173	133	242	570	730	588	442
4	191	216	194	188	161	203	122	308	269	640	718	415
5	207	213	188	173	164	236	147	530	210	577	706	460
6	207	210	191	170	173	216	128	505	210	505	1080	530
7	200	203	191	155	182	182	100	474	236	411	737	566
8	207	200	188	173	182	182	89	324	301	407	560	496
9	216	200	194	176	173	138	89	294	219	560	530	474
10	229	200	216	176	161	128	122	294	223	496	460	460
11	239	197	197	173	164	73	117	283	249	492	420	447
12	252	191	200	170	167	77	117	884	272	622	808	866
13	266	185	194	170	167	73	105	2340	316	769	712	821
14	290	179	197	185	176	64	100	664	582	756	640	886
15	347	179	197	194	173	73	100	420	634	599	640	984
16	407	191	203	164	176	64	100	367	550	487	706	682
17	308	185	197	176	167	67	110	276	560	474	706	510
18	297	188	197	182	179	67	105	223	1260	464	795	428
19	301	182	197	179	179	73	117	152	603	487	616	359
20	294	188	197	170	173	77	147	188	339	478	622	343
21	294	182	200	170	179	85	182	188	320	560	1250	375
22	294	182	232	167	182	100	191	122	335	560	682	308
23	297	191	216	161	182	96	207	147	383	566	652	305
24	280	194	200	179	179	89	207	255	518	555	566	305
25	379	191	188	185	170	96	176	327	628	535	560	297
26	327	207	185	182	188	100	200	484	535	520	555	276
27	320	194	185	176	191	81	194	203	464	566	515	286
28	327	188	182	173	179	100	200	107	599	768	510	280
29	324	188	176	173	---	128	182	216	762	1620	515	269
30	308	200	191	170	---	147	210	203	1100	794	510	259
31	492	---	207	176	---	128	---	301	---	456	474	---
TOTAL	8670	6037	6073	5453	4871	3671	4211	11750	13726	19430	20251	14044
MEAN	280	201	196	176	174	118	140	379	458	627	653	468
MAX	492	305	232	194	191	236	210	2340	1260	1620	1250	984
MIN	188	179	176	155	161	64	81	107	210	407	420	259
AC-FT	17200	11970	12050	10820	9660	7280	8350	23310	27230	38540	40170	27860

CAL YR 1981 TOTAL 95188 MEAN 261 MAX 1420 MIN 105 AC-FT 188800
WTR YR 1982 TOTAL 118187 MEAN 324 MAX 2340 MIN 64 AC-FT 234400

06724000 ST. VRAIN CREEK AT LYONS, CO

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 (23 m) southwest of U.S. Highway 36 (State Highways 7 and 66) at southeast edge of Lyons, 400 ft (120 m) upstream from St. Vrain Supply Canal, and 0.4 mi (0.6 km) downstream from confluence of North and South St. Vrain Creeks.

DRAINAGE AREA.--212 mi² (549 km²).

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

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

GAGE.--Water-stage recorder. Altitude of gage is 5,292 ft (1,613 m), 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 (0.305 m) higher.

REMARKS.--Records good. Diversions above station for irrigation of about 20,000 acres (80.9 km²). Flow partly regulated by small reservoirs above 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.--91 years (water years 1888-91, 1896-1982), 128 ft³/s (3.625 m³/s), 92,740 acre-ft/yr (114 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,500 ft³/s (297 m³/s) June 22, 1941, gage height, 9.06 ft (2.761 m), present datum, from floodmark, from rating curve extended above 2,100 ft³/s (59 m³/s), on basis of slope-area measurement at gage height 8.90 ft (2.713 m); 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 (2.783 m), from information by local resident, discharge, about 9,800 ft³/s (278 m³/s). For discussions of these floods, see WSP 997.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,600 ft³/s (45.3 m³/s) at 0100 July 27, gage height, 5.65 ft (1.722 m); minimum daily, 2.5 ft³/s (0.071 m³/s) Mar. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	18	12	14	12	3.4	5.3	47	252	970	317	133
2	18	20	12	15	11	8.9	7.8	51	255	916	269	125
3	16	22	12	9.9	6.5	9.8	18	64	272	757	257	122
4	20	21	12	11	10	9.6	22	91	240	688	244	116
5	20	22	14	13	7.9	13	22	121	245	605	238	120
6	21	23	14	13	9.3	3.9	23	130	284	540	216	123
7	18	21	12	11	9.9	2.6	22	128	277	409	213	115
8	16	22	11	10	10	9.8	20	130	286	377	220	105
9	17	21	9.7	12	11	11	17	115	283	393	215	99
10	18	19	9.1	11	11	13	18	93	287	386	209	90
11	16	17	9.7	11	12	14	16	102	302	420	220	92
12	15	17	9.6	13	12	12	13	123	333	420	227	100
13	20	19	13	12	7.3	10	6.2	139	348	418	216	227
14	21	19	12	9.7	7.3	7.5	16	112	343	426	237	239
15	25	16	14	11	12	8.8	25	82	352	409	226	151
16	28	14	12	9.2	12	11	38	84	352	370	205	132
17	26	15	8.8	15	12	12	32	93	409	342	200	133
18	22	16	9.5	12	11	6.4	37	110	516	356	199	118
19	24	18	16	14	12	11	35	134	335	334	211	89
20	22	19	15	13	13	8.0	43	146	289	318	222	86
21	24	16	15	11	11	9.7	39	140	295	290	219	81
22	23	17	14	10	9.5	6.9	35	141	319	267	213	80
23	25	16	9.2	8.4	9.3	8.6	33	171	416	275	212	80
24	25	14	9.7	12	7.8	5.9	34	200	551	288	201	78
25	23	13	14	14	2.6	8.8	29	196	603	295	196	76
26	23	14	14	12	6.5	10	28	196	587	310	191	76
27	29	11	14	13	9.1	8.9	42	199	609	515	179	76
28	23	13	13	12	8.9	9.6	44	213	851	403	171	74
29	24	15	13	12	---	4.9	39	251	934	463	177	74
30	24	15	14	11	---	2.5	45	272	922	477	172	74
31	23	---	14	12	---	3.3	---	253	---	396	156	---
TOTAL	667	523	381.3	367.2	273.9	264.8	804.3	4327	12347	13833	6648	3284
MEAN	21.5	17.4	12.3	11.8	9.78	8.54	26.8	140	412	446	214	109
MAX	29	23	16	15	13	14	45	272	934	970	317	239
MIN	15	11	8.8	8.4	2.6	2.5	5.3	47	240	267	156	74
AC-FT	1320	1040	756	728	543	525	1600	8580	24490	27440	13190	6510

CAL YR 1981 TOTAL 20949.3 MEAN 57.4 MAX 355 MIN 6.6 AC-FT 41550
WTR YR 1982 TOTAL 43720.5 MEAN 120 MAX 970 MIN 2.5 AC-FT 86720

06725450 ST. VRAIN CREEK BELOW LONGMONT, CO

LOCATION.--Lat 40°09'29", long 105°00'53", in NW¼NW¼ sec.9, T.2 N., R.68 W., Weld County, Hydrologic Unit 10190005, on right bank 1,600 ft (488 m) upstream from mouth of Boulder Creek, 1.8 mi (2.9 km) downstream from Spring Gulch, and 4.7 mi (7.6 km) southeast of Longmont.

DRAINAGE AREA.--424 mi^2 (1,098 km^2).

PERIOD OF RECORD.--Streamflow records, October 1976 to September 1982 (discontinued). Water-quality data available, October 1976 to February 1981.

GAGE.--Water-stage recorder. Altitude of gage is 4,850 ft (1,478 m), from topographic map.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--6 years, 117 ft^3/s (3.313 m^3/s), 84,770 acre-ft/yr (105 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,380 ft^3/s (67.4 m^3/s) May 1, 1980, gage height, 6.37 ft (1.941 m); minimum daily, 22 ft^3/s (0.62 m^3/s) Apr. 25, 1978, Apr. 3, 25, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,090 ft^3/s (30.9 m^3/s) at 0300 Sept. 14, gage height, 4.63 ft (1.411 m); minimum daily, 22 ft^3/s (0.62 m^3/s) Apr. 3, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	47	38	27	44	27	29	32	76	670	218	184
2	44	46	40	30	44	31	24	26	74	630	201	177
3	42	47	38	30	31	38	22	29	74	490	187	180
4	46	46	37	32	30	35	24	42	74	381	201	174
5	57	46	37	31	30	34	27	47	64	329	184	168
6	61	44	36	32	30	29	29	52	57	257	174	174
7	57	44	38	34	30	31	30	48	44	132	165	187
8	53	44	40	32	30	30	31	48	59	61	150	198
9	55	47	40	30	30	29	30	41	52	62	150	180
10	50	46	40	30	29	30	26	38	53	62	150	177
11	48	52	40	30	29	29	26	50	55	64	165	174
12	57	50	37	30	28	31	25	138	72	79	165	194
13	64	50	37	30	28	29	27	243	97	81	165	227
14	62	48	36	30	27	32	24	117	92	90	171	560
15	68	42	36	30	27	32	26	81	92	92	162	236
16	72	40	36	30	27	30	40	70	94	92	159	153
17	64	40	36	36	27	27	28	66	113	90	184	144
18	59	41	35	37	27	30	25	62	302	92	159	117
19	57	40	37	37	27	27	24	62	198	92	150	97
20	53	40	37	37	27	24	28	62	135	104	168	90
21	55	40	42	36	28	23	32	59	120	112	208	83
22	55	38	47	30	29	24	29	53	123	104	208	81
23	55	40	37	35	29	24	24	57	184	110	243	76
24	59	37	36	35	30	26	24	59	240	102	218	76
25	55	41	35	35	29	36	22	62	331	107	212	76
26	50	41	32	35	29	36	24	55	365	107	198	81
27	50	37	34	41	28	24	32	50	285	198	201	79
28	47	37	32	37	30	23	35	55	397	396	201	74
29	48	37	32	46	---	24	26	74	486	489	190	72
30	50	38	30	41	---	26	32	79	470	357	187	72
31	55	---	27	41	---	25	---	79	---	309	194	---
TOTAL	1692	1286	1135	1047	834	896	825	2036	4878	6341	5688	4561
MEAN	54.6	42.9	36.6	33.8	29.8	28.9	27.5	65.7	163	205	183	152
MAX	72	52	47	46	44	38	40	243	486	670	243	560
MIN	42	37	27	27	27	23	22	26	44	61	150	72
AC-FT	3360	2550	2250	2080	1650	1780	1640	4040	9680	12580	11280	9050

CAL YR 1981 TOTAL 21376 MEAN 58.6 MAX 180 MIN 27 AC-FT 42400
WTR YR 1982 TOTAL 31219 MEAN 85.5 MAX 670 MIN 22 AC-FT 61920

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 (300 m) upstream from Barker Reservoir.

DRAINAGE AREA.--36.2 mi² (93.8 km²).

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 (2,495.09 m) Public Service Co. datum. Prior to Mar. 18, 1909, at datum 4.0 ft (1.22 m) lower. Mar. 18, 1909, to Apr. 23, 1952, at datum 2.5 ft (0.76 m) lower than present datum.

REMARKS.--Records good. No diversion above station. Flow regulated at times by Jasper Lake, capacity, 326 acre-ft (402,000 m³). 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.--75 years, 54.0 ft³/s (1.529 m³/s), 39,120 acre-ft/yr (48.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 811 ft³/s (23.0 m³/s) June 2, 1914, gage height, 5.37 ft (1.637 m), datum then in use, by computation of peak flow over compound weir; minimum daily, 0.8 ft³/s (0.023 m³/s) Jan. 14, 1908.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 406 ft³/s (11.5 m³/s) at 2300 June 27, gage height, 2.92 ft (0.890 m); only peak above base of 280 ft³/s (7.9 m³/s); minimum daily, 4.7 ft³/s (0.133 m³/s) Jan. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	13	5.7	5.9	5.9	5.9	8.5	36	154	341	128	51
2	10	12	6.7	5.9	5.9	6.5	7.9	44	165	323	124	48
3	12	10	7.7	4.9	5.7	6.3	8.9	59	176	289	122	46
4	14	9.8	7.5	5.1	5.7	5.9	8.5	85	158	282	116	43
5	15	9.3	7.5	5.3	5.3	5.5	7.7	78	187	256	102	50
6	14	9.3	7.5	5.5	5.5	6.7	7.9	54	206	225	99	51
7	14	9.5	7.5	5.7	5.5	6.5	7.7	47	187	197	93	42
8	13	9.5	7.5	5.5	5.5	6.1	7.5	46	204	199	92	38
9	13	8.9	7.1	5.3	5.5	5.9	7.5	51	204	213	90	37
10	12	7.3	6.9	5.3	5.5	5.3	7.3	58	201	204	83	35
11	12	7.1	6.9	5.1	5.3	6.1	8.1	51	192	197	86	37
12	12	7.1	6.7	4.9	4.9	6.3	13	51	199	190	108	42
13	13	7.7	6.5	5.1	4.9	6.1	12	54	215	194	99	42
14	13	8.5	6.5	4.7	4.9	6.5	14	52	213	197	106	43
15	16	8.5	6.7	4.9	4.9	6.3	17	45	208	185	92	41
16	17	8.5	7.1	5.3	5.1	6.1	19	45	208	167	85	41
17	13	8.1	6.7	5.5	5.5	6.1	16	46	262	171	97	36
18	14	7.7	6.9	5.3	5.5	5.9	15	57	297	167	95	33
19	14	6.9	7.1	5.3	5.3	5.7	15	68	222	160	104	31
20	13	8.5	7.1	5.1	5.7	5.9	13	74	208	154	93	33
21	13	8.7	6.9	5.1	6.3	6.7	14	83	225	149	88	29
22	11	8.3	6.9	4.9	6.7	5.9	14	99	262	143	83	26
23	10	8.3	6.3	5.3	6.7	5.7	15	112	292	141	77	25
24	11	8.3	6.3	5.2	5.7	5.9	16	122	276	141	69	25
25	11	7.9	6.5	4.9	6.7	6.7	16	112	284	151	66	24
26	12	7.5	6.5	5.7	6.3	6.3	19	110	299	151	61	24
27	13	8.9	6.1	5.9	6.3	6.5	20	128	305	130	58	24
28	12	8.9	5.9	6.1	5.9	6.9	21	165	338	149	61	24
29	12	8.9	5.7	6.1	---	6.9	29	190	341	213	61	22
30	12	5.9	5.7	6.1	---	6.1	31	176	331	176	57	22
31	12	---	5.7	6.1	---	8.1	---	154	---	145	54	---
TOTAL	393	258.8	208.3	167.0	158.6	193.3	416.5	2552	7019	6000	2749	1065
MEAN	12.7	8.63	6.72	5.39	5.66	6.24	13.9	82.3	234	194	88.7	35.5
MAX	17	13	7.7	6.1	6.7	8.1	31	190	341	341	128	51
MIN	10	5.9	5.7	4.7	4.9	5.3	7.3	36	154	130	54	22
AC-FT	780	513	413	331	315	383	826	5060	13920	11900	5450	2110

CAL YR 1981 TOTAL 12633.6 MEAN 34.6 MAX 346 MIN 1.9 AC-FT 25060
WTR YR 1982 TOTAL 21180.5 MEAN 58.0 MAX 341 MIN 4.7 AC-FT 42010

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 (1.1 km) southwest of old Orodell, 1.1 mi (1.8 km) upstream from Fourmile Creek, and 2.9 mi (4.7 km) southwest of courthouse in Boulder.

DRAINAGE AREA.--102 mi^2 (264 km^2).

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. Altitude of gage is 5,826 ft (1,775.8 m), 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 (1.8 km) downstream, just upstream from Fourmile Creek, at different datums.

REMARKS.--Records good. Flow regulated by Barker Reservoir, capacity, 11,500 acre-ft (14.2 hm^3). Low flow during nonirrigation season regulated by Orodell powerplant 1,500 ft (460 m) 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 1907-14, 1917-82), 87.8 ft^3/s (2.486 m^3/s), 63,610 acre-ft/yr (78.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,500 ft^3/s (70.8 m^3/s) June 6, 1921, gage height, 4.31 ft (1.314 m), from rating curve extended above 1,200 ft^3/s (34.0 m^3/s); minimum daily, 1 ft^3/s (0.03 m^3/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, 510 ft^3/s (14.4 m^3/s) at 1015 July 2, gage height, 3.43 ft (1.045 m); minimum daily, 2.6 ft^3/s (0.07 m^3/s) Dec. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	16	15	13	31	28	39	31	193	391	224	78
2	13	17	13	4.8	33	30	39	27	156	449	204	96
3	8.4	19	14	4.5	33	32	18	26	140	434	202	92
4	6.9	14	13	32	36	31	24	43	127	404	197	91
5	10	12	14	29	34	26	38	55	128	382	190	104
6	13	13	5.8	34	12	12	33	41	117	342	164	126
7	13	9.3	14	38	12	12	39	34	125	284	137	118
8	11	4.5	12	28	30	31	38	22	139	265	132	104
9	8.0	12	12	12	31	35	37	27	151	295	145	96
10	14	12	11	13	32	36	33	30	159	289	116	72
11	23	12	11	31	32	32	21	34	176	274	112	53
12	17	12	3.0	31	30	30	40	62	180	261	155	75
13	14	12	2.6	32	13	19	44	80	187	268	146	79
14	14	12	11	32	12	18	35	75	192	268	181	87
15	21	3.7	13	31	30	37	25	74	193	265	143	72
16	24	12	13	18	32	34	41	81	183	227	125	73
17	22	12	11	14	34	34	34	79	193	218	149	74
18	20	11	11	32	35	37	24	72	232	221	128	72
19	24	11	3.2	32	36	37	27	85	159	211	144	71
20	21	11	3.9	33	14	20	40	88	119	200	132	75
21	19	9.4	12	33	13	20	47	93	124	195	132	69
22	22	3.6	13	30	33	37	43	90	110	173	137	65
23	17	12	15	14	32	39	26	75	125	159	122	57
24	20	12	15	12	32	38	21	96	146	153	100	50
25	15	12	15	30	31	36	14	115	139	173	86	49
26	14	11	16	31	30	33	15	159	128	209	99	54
27	18	12	5.2	31	13	22	30	143	121	233	98	54
28	17	3.2	16	30	12	16	45	150	160	265	93	61
29	16	12	14	38	---	35	49	171	361	363	95	49
30	15	13	12	13	---	34	38	185	371	342	84	54
31	16	---	14	13	---	37	---	194	---	266	74	---
TOTAL	496.3	337.7	353.7	769.3	748	918	997	2537	5034	8479	4246	2270
MEAN	16.0	11.3	11.4	24.8	26.7	29.6	33.2	81.8	168	274	137	75.7
MAX	24	19	16	38	36	39	49	194	371	449	224	126
MIN	6.9	3.2	2.6	4.5	12	12	14	22	110	153	74	49
AC-FT	984	670	702	1530	1480	1820	1980	5030	9980	16820	8420	4500

CAL YR 1981	TOTAL	13254.6	MEAN 36.3	MAX 190	MIN 2.2	AC-FT 26290
WTR YR 1982	TOTAL	27186.0	MEAN 74.5	MAX 449	MIN 2.6	AC-FT 53920

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 (0.3 km) downstream from South Draw, 1.0 mi (1.6 km) west of Eldorado Springs, 1.8 mi (2.9 km) downstream from South Boulder diversion canal, 5.0 mi (8.0 km) south of Boulder, and 6.7 mi (10.8 km) downstream from Gross Reservoir.

DRAINAGE AREA.--109 mi^2 (282 km^2).

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. Altitude of gage is 6,080 ft (1,853 m), from topographic map. See WSP 1710 or 1730 for history of changes prior to May 10, 1940.

REMARKS.--Records good except those for winter period, which are fair. Many small diversions above station for irrigation. Water is imported above Gross Reservoir from Colorado River basin through Moffat water tunnel (see elsewhere in this report). Flow regulated since May 1, 1955, by Gross Reservoir, capacity, 43,060 acre-ft (53.1 hm^3), 6.7 mi (10.8 km) above station. City of Denver diverts water 1.8 mi (2.9 km) above 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.--26 years (water years 1957-82), 62.0 ft^3/s (1.756 m^3/s), 44,920 acre-ft/yr (55.4 hm^3/yr), unadjusted for storage and diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,390 ft^3/s (209 m^3/s) Sept. 2, 1938, gage height, 9.24 ft (2.816 m), from floodmarks, site and datum then in use, from rating curve extended above 600 ft^3/s (17 m^3/s), on basis of slope-area measurement of peak flow; no flow Oct. 15, 1932.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 435 ft^3/s (12.3 m^3/s) at 2200 June 19, gage height, 3.00 ft (0.914 m); minimum daily, 1.9 ft^3/s (0.054 m^3/s) Oct. 23, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	8.5	4.8	15	9.0	9.0	12	23	286	294	164	44
2	6.8	8.5	3.7	15	9.0	32	12	23	294	286	167	36
3	6.8	7.2	4.8	15	9.0	16	12	40	294	286	123	25
4	6.8	9.5	8.0	15	9.0	11	12	54	294	286	79	22
5	6.8	12	10	15	9.0	12	10	54	294	282	67	24
6	8.5	12	10	14	9.0	12	10	60	294	282	54	22
7	9.0	12	10	14	10	12	10	65	330	274	46	22
8	9.0	12	10	14	10	12	10	64	375	246	48	29
9	9.0	12	10	14	10	12	10	62	406	250	62	33
10	9.0	12	10	14	9.0	12	9.0	62	375	282	70	30
11	9.0	12	10	14	9.0	11	9.0	62	339	286	58	30
12	9.0	12	11	12	9.0	11	9.0	59	330	282	53	29
13	9.5	12	11	9.0	9.0	11	9.0	100	330	274	39	35
14	9.5	12	10	9.0	9.0	11	15	126	330	236	27	50
15	10	12	10	9.0	9.0	18	24	126	294	181	23	58
16	10	12	10	9.0	9.0	17	22	128	274	196	37	56
17	9.0	12	10	9.0	9.0	16	21	70	282	184	50	48
18	9.0	12	10	9.0	9.0	16	20	69	362	178	58	43
19	9.0	12	10	9.0	9.0	16	20	69	425	167	64	43
20	8.5	9.0	10	9.0	9.0	16	20	67	375	155	62	43
21	8.0	6.0	12	9.0	9.0	16	19	64	352	136	60	43
22	5.8	6.0	8.5	9.0	9.0	16	17	89	326	128	58	42
23	1.9	6.0	8.5	9.0	9.0	13	22	111	310	128	74	42
24	2.5	6.4	8.5	9.0	9.0	12	26	150	339	128	83	43
25	3.1	6.4	8.5	9.0	9.0	12	26	187	384	128	70	43
26	2.2	6.4	8.5	9.0	9.0	12	26	196	398	128	45	43
27	1.9	6.4	8.0	9.0	9.0	12	26	206	384	126	42	31
28	4.1	6.4	8.0	9.0	9.0	12	26	222	393	133	45	25
29	7.2	6.4	8.0	9.0	---	12	25	246	339	172	45	25
30	8.5	6.4	11	9.0	---	12	24	262	306	161	44	26
31	9.0	---	15	9.0	---	12	---	274	---	164	44	---
TOTAL	225.2	285.5	287.8	342.0	255.0	424.0	513.0	3390	10114	6439	1961	1085
MEAN	7.26	9.52	9.28	11.0	9.11	13.7	17.1	109	337	208	63.3	36.2
MAX	10	12	15	15	10	32	26	274	425	294	167	58
MIN	1.9	6.0	3.7	9.0	9.0	9.0	9.0	23	274	126	23	22
AC-FT	447	566	571	678	506	841	1020	6720	20060	12770	3890	2150

CAL YR 1981 TOTAL 13112.4 MEAN 35.9 MAX 326 MIN 1.9 AC-FT 26010
WTR YR 1982 TOTAL 25321.5 MEAN 69.4 MAX 425 MIN 1.9 AC-FT 50230

06730300 COAL CREEK NEAR PLAINVIEW, CO

LOCATION.--Lat 39°52'40", long 105°16'36", in SE¼NE¼ sec.13, T.2 S., R.71 W., Jefferson County, Hydrologic Unit 10190005, on left bank 100 ft (30 m) upstream from culvert on State Highway 72, 1.2 mi (1.9 km) south of Plainview, 4.9 mi (7.9 km) downstream from Beaver Creek, and 9 mi (14 km) north of Golden.

DRAINAGE AREA.--15.1 mi² (39.1 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1959 to September 1982 (discontinued).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,540 ft (1,993 m), from topographic map. Prior to June 17, 1964, water-stage recorder at site 60 ft (18 m) downstream at datum 4.49 ft (1.369 m) lower.

REMARKS.--Records good except those for winter period, which are poor. No diversion above station.

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

AVERAGE DISCHARGE.--23 years, 4.51 ft³/s (0.128 m³/s), 3,270 acre-ft/yr (4.04 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,060 ft³/s (58.3 m³/s) May 7, 1969, gage height, 5.30 ft (1.615 m), from rating curve extended above 730 ft³/s (21 m³/s); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43 ft³/s (1.22 m³/s) at 2100 May 20, gage height, 1.20 ft (0.366 m); minimum daily, 0.07 ft³/s (0.002 m³/s) Oct. 1-4, 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.73	.40	.50	.45	.45	.61	.80	14	4.3	2.0	.50
2	.07	.87	.27	.45	.40	.45	.67	.67	12	4.3	2.4	.40
3	.07	.87	.31	.40	.35	.55	.55	.67	12	3.2	2.7	.40
4	.07	.80	.31	.40	.25	.61	.67	.67	11	3.0	2.0	.31
5	.10	.73	.31	.40	.15	.61	.61	.73	9.6	2.7	1.6	.45
6	.10	.73	.27	.50	.30	.55	.61	.67	8.3	2.3	1.4	.73
7	.10	.67	.23	.45	.45	.67	.61	.67	7.1	2.3	1.2	.55
8	.07	.73	.23	.40	.40	.55	.55	.61	6.1	2.3	1.1	.50
9	.10	.67	.27	.45	.35	.55	.55	.61	5.8	2.5	.94	.40
10	.10	.61	.31	.45	.40	.61	.50	.55	5.2	2.0	.73	.31
11	.10	.55	.31	.40	.25	.73	.50	.67	4.8	1.8	.67	.64
12	.13	.55	.31	.45	.30	.87	.55	1.6	4.8	1.6	1.0	1.6
13	.13	.50	.31	.40	.31	.80	.73	4.8	4.0	2.0	1.5	2.6
14	.13	.50	.35	.40	.40	.80	.73	9.6	4.3	2.0	1.4	9.6
15	.31	.50	.35	.45	.45	.80	.73	13	4.0	1.5	1.1	8.7
16	.45	.50	.35	.40	.55	.73	.73	15	3.8	1.3	.94	6.4
17	.40	.45	.31	.35	.55	.73	.73	19	4.0	1.1	.87	5.2
18	.35	.45	.35	.45	.50	.73	.73	26	15	.94	.80	4.5
19	.35	.45	.40	.45	.45	.67	.73	35	16	.80	.67	3.6
20	.31	.40	.40	.45	.45	.61	.80	39	14	.67	.89	3.4
21	.35	.45	.40	.45	.45	.61	.80	39	14	.61	1.5	3.0
22	.40	.45	.40	.40	.50	.61	.80	35	12	.55	1.4	2.7
23	.40	.45	.35	.23	.55	.61	.80	29	12	.45	1.8	2.3
24	.40	.45	.31	.23	.50	.61	.80	25	10	.35	1.2	2.2
25	.45	.45	.35	.31	.45	.67	.80	23	10	.35	1.1	2.0
26	.45	.45	.35	.40	.45	.61	.87	31	8.7	.40	.94	2.0
27	.45	.45	.35	.40	.45	.67	1.0	30	7.1	1.2	.87	1.8
28	.45	.45	.35	.40	.45	.61	.87	25	5.5	1.3	.94	1.6
29	.40	.45	.50	.40	---	.61	.80	21	4.8	3.6	.87	1.5
30	.45	.40	.50	.40	---	.55	.87	18	4.3	5.0	.73	1.5
31	.55	---	.50	.35	---	.55	---	17	---	3.0	.61	---
TOTAL	8.26	16.71	10.71	12.57	11.51	19.78	21.30	463.32	254.2	59.42	37.87	71.39
MEAN	.27	.56	.35	.41	.41	.64	.71	14.9	8.47	1.92	1.22	2.38
MAX	.55	.87	.50	.50	.55	.87	1.0	39	16	5.0	2.7	9.6
MIN	.07	.40	.23	.23	.15	.45	.50	.55	3.8	.35	.61	.31
AC-FT	16	33	21	25	23	39	42	919	504	118	75	142

CAL YR 1981 TOTAL 1208.64 MEAN 3.31 MAX 60 MIN .00 AC-FT 2400
WTR YR 1982 TOTAL 987.04 MEAN 2.70 MAX 39 MIN .07 AC-FT 1960

06730300 COAL CREEK NEAR PLAINVIEW, CO--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)
OCT 06...	0915	.13	320	296	7.2	8.5	8.8	72
NOV 18...	1230	.40	275	275	7.9	5.0	9.8	64
DEC 16...	1545	.35	220	223	7.3	2.0	10.4	57
JAN 20...	1550	.45	236	236	7.7	2.0	10.6	60
FEB 25...	1330	.45	243	232	7.3	3.0	10.5	53
MAR 25...	1430	.61	250	257	8.1	6.0	--	60
APR 16...	1325	.67	257	256	7.4	7.0	9.7	63
MAY 21...	1500	32	132	138	7.0	12.0	8.4	38
JUN 07...	1005	6.4	120	149	7.1	9.0	9.5	39
JUL 10...	0845	.70	186	191	7.9	14.5	7.4	51
AUG 16...	0900	.80	240	260	7.3	14.5	8.3	58
SEP 13...	1045	1.1	249	250	7.7	10.0	8.6	58

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-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)
OCT 06...	19	6.0	29	1.6	1.7	59	<5.0	47	.3
NOV 18...	17	5.2	26	1.5	1.3	39	7.0	50	.2
DEC 16...	15	4.7	22	1.4	1.2	38	11	33	.3
JAN 20...	16	4.9	25	1.5	1.0	40	9.0	42	.3
FEB 25...	14	4.3	21	1.4	1.0	34	8.0	41	.2
MAR 25...	16	4.9	23	1.4	1.2	33	9.0	46	.2
APR 16...	17	5.1	24	1.4	1.3	40	7.0	44	.3
MAY 21...	11	2.5	11	.8	1.4	23	6.0	17	.4
JUN 07...	11	2.8	11	.8	1.1	32	11	14	.3
JUL 10...	14	3.9	17	1.1	1.2	49	9.0	24	.3
AUG 16...	16	4.4	29	1.8	1.2	52	9.0	44	.2
SEP 13...	16	4.3	25	1.5	1.3	45	8.0	39	.2

06730300 COAL CREEK NEAR PLAINVIEW, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	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- PHORUS, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT								
06...	15	159	.22	.06	.13	<.010	96	14
NOV								
18...	12	142	.19	.15	<.09	.050	110	14
DEC								
16...	11	121	.16	.11	<.10	.020	43	9
JAN								
20...	11	133	.18	.16	<.09	.010	30	7
FEB								
25...	9.4	119	.16	.14	<.10	.020	22	3
MAR								
25...	8.9	129	.18	.21	<.10	.030	28	4
APR								
16...	9.2	132	.18	.24	<.10	<.010	22	4
MAY								
21...	13	79	.11	6.8	.58	.030	130	8
JUN								
07...	13	84	.11	1.5	.13	.060	81	6
JUL								
10...	14	113	.15	.21	<.10	.060	160	15
AUG								
16...	13	148	.20	.32	<.10	.030	210	12
SEP								
13...	13	134	.18	.40	<.10	.030	64	13

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 (1.0 km) upstream from mouth, 1.0 mi (1.6 km) downstream from State Highway 254, and 4.8 mi (7.7 km) southeast of Longmont.

DRAINAGE AREA.--439 mi² (1,137 km²).

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. Altitude of gage is 4,860 ft (1,481 m), from topographic map. Prior to June 10, 1939, at site 0.8 mi (1.3 km) upstream at different datum. June 10, 1939, to Sept. 30, 1949, at site 1.0 mi (1.6 km) upstream at different datum. May 1, 1951, to Sept. 30, 1955, at site 1.4 mi (2.3 km) upstream at different datum.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,410 ft³/s (125 m³/s) Sept. 3, 1938, gage height, 6.94 ft (2.115 m), site and datum then in use, from rating curve extended above 340 ft³/s (9.63 m³/s), on basis of slope-area measurement of peak flow; no flow at times many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 770 ft³/s (21.8 m³/s) at 1000 May 13, gage height, 3.60 ft (1.097 m); minimum daily, 0.80 ft³/s (0.023 m³/s) Apr. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	25	49	52	70	58	31	4.6	83	210	123	4.6
2	3.5	22	44	55	86	63	30	5.8	60	259	134	5.2
3	3.9	23	44	58	85	62	28	4.5	20	265	68	6.9
4	3.0	22	43	56	44	34	12	4.0	26	254	33	5.9
5	2.6	21	45	50	36	33	8.7	4.9	6.2	236	13	5.0
6	5.6	34	46	52	38	34	24	3.5	16	185	19	27
7	34	27	42	54	40	35	22	2.1	4.9	86	22	29
8	35	25	48	58	37	36	24	2.7	4.0	21	12	18
9	25	21	47	60	34	37	20	1.9	7.5	22	19	11
10	23	19	46	59	31	43	16	1.6	21	69	16	8.4
11	26	21	46	60	33	31	6.4	1.4	31	35	15	8.9
12	33	21	47	63	35	30	1.4	8.9	46	36	20	82
13	35	23	38	63	36	20	3.8	398	60	22	42	68
14	36	19	38	65	38	16	3.6	102	66	22	28	332
15	36	21	46	69	39	17	7.2	46	68	23	16	180
16	48	19	50	79	41	27	6.8	54	33	6.1	5.3	123
17	43	20	48	58	38	27	3.0	38	19	5.2	17	127
18	28	24	47	54	38	29	1.9	43	169	8.1	13	116
19	27	23	50	67	40	34	.92	24	166	9.1	3.2	83
20	25	23	52	71	43	32	2.7	14	48	11	6.5	69
21	32	23	54	73	47	18	8.9	18	25	8.2	210	62
22	27	23	57	92	47	19	11	6.9	22	20	42	38
23	28	22	57	87	71	26	3.7	1.9	14	7.4	13	12
24	27	27	54	83	72	29	1.4	1.9	34	3.6	4.2	16
25	31	29	56	66	72	29	.80	16	43	4.6	3.7	13
26	26	31	58	89	71	23	1.0	76	23	16	4.8	13
27	20	28	60	94	73	22	1.4	19	44	77	7.1	20
28	20	31	58	88	59	16	3.1	6.5	49	331	5.9	19
29	19	40	52	90	---	12	3.6	10	228	432	4.2	28
30	18	48	47	99	---	21	4.0	55	175	321	4.0	18
31	29	---	50	69	---	23	---	105	---	208	3.9	---
TOTAL	753.1	755	1519	2133	1394	936	292.32	1081.1	1611.6	3213.3	927.8	1548.9
MEAN	24.3	25.2	49.0	68.8	49.8	30.2	9.74	34.9	53.7	104	29.9	51.6
MAX	48	48	60	99	86	63	31	398	228	432	210	332
MIN	2.6	19	38	50	31	12	.80	1.4	4.0	3.6	3.2	4.6
AC-FT	1490	1500	3010	4230	2760	1860	580	2140	3200	6370	1840	3070

CAL YR 1981 TOTAL 10275.46 MEAN 28.2 MAX 298 MIN .26 AC-FT 20380
WTR YR 1982 TOTAL 16165.12 MEAN 44.3 MAX 432 MIN .80 AC-FT 32060

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 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 06...	1520	1.4	1275	1290	9.0	20.5	>20.0	K6	82
NOV 16...	1520	20	950	947	9.0	12.5	16.8	K11	210
DEC 14...	1420	31	890	850	8.2	6.0	14.2	K32	190
JAN 18...	1450	55	800	838	7.7	5.5	10.4	200	490
FEB 22...	1400	46	665	630	7.7	10.5	9.6	--	110
MAR 22...	1230	32	846	880	8.5	10.5	--	K65	280
APR 12...	1415	1.4	898	942	9.2	20.5	20.0	K10	720
MAY 20...	0945	13	1100	1090	8.4	14.0	13.2	100	470
JUN 09...	0930	3.1	1030	1050	8.2	13.5	13.2	560	320
JUL 22...	0940	17	700	707	8.8	21.0	15.2	460	250
AUG 18...	1250	17	740	778	8.6	27.0	14.2	270	1200
SEP 13...	1515	62	540	560	8.1	14.5	8.7	640	1400

DATE	HARD-NESS (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 LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 06...	470	69	72	100	2.3	6.0	240	380	21
NOV 16...	310	55	43	89	2.5	4.8	230	200	26
DEC 14...	260	48	34	75	2.3	12	220	150	37
JAN 18...	230	42	30	64	2.1	8.3	190	160	36
FEB 22...	180	36	23	53	1.9	7.6	170	110	26
MAR 22...	260	46	35	86	2.6	6.8	210	180	37
APR 12...	380	69	51	91	2.3	5.7	250	300	26
MAY 20...	380	65	52	100	2.5	4.1	260	290	25
JUN 09...	380	70	50	86	2.2	3.6	253	280	21
JUL 22...	270	49	35	54	1.6	4.7	175	160	21
AUG 18...	300	54	39	56	1.6	4.6	192	200	21
SEP 13...	200	38	26	38	1.3	3.2	126	130	13

K BASED ON NON-IDEAL COLONY COUNT.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT									
06...	1.4	.7	798	1.1	3.0	.79	.130	15	10
NOV									
16...	1.2	2.6	573	.78	30.6	3.0	1.20	42	9
DEC									
14...	1.1	7.6	506	.69	42.4	2.0	2.40	63	170
JAN									
18...	.9	8.5	470	.64	69.8	1.3	2.20	67	120
FEB									
22...	.5	6.8	371	.50	46.1	1.2	2.60	62	98
MAR									
22...	1.1	5.1	532	.72	46.0	2.0	2.00	58	100
APR									
12...	1.1	5.1	703	.96	2.7	.74	.740	70	120
MAY									
20...	1.9	5.3	709	.96	24.9	2.0	.410	20	90
JUN									
09...	1.1	1.2	669	.91	5.6	.79	.380	38	82
JUL									
22...	.8	2.9	434	.59	19.3	.34	.530	29	16
AUG									
18...	.9	4.8	500	.68	22.9	.87	.240	11	16
SEP									
13...	.7	6.6	337	.46	56.4	1.2	.530	26	8

06731000 ST. VRAIN CREEK AT MOUTH, NEAR PLATTEVILLE, CO

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 (43 m) downstream from bridge on county road, 1.3 mi (2.1 km) upstream from mouth, and 4.2 mi (6.8 km) northwest of Platteville.

DRAINAGE AREA.--976 mi² (2,528 km²).

WATER-DISCHARGE RECORDS

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.

REVISED RECORDS.--WSP 956: 1938(M). WSP 1440: 1934, 1935(M). WSP 1730: 1958, drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,740 ft (1,445 m), from topographic map. See WSP 1730 for history of changes prior to Apr. 25, 1960.

REMARKS.--Records good. Diversions above station for irrigation of about 177,000 acres (716 km²). Flow partly regulated by many small reservoirs above station.

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

AVERAGE DISCHARGE.--57 years (water years 1905-6, 1928-82), 207 ft³/s (5.862 m³/s), 150,000 acre-ft/yr (185 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft³/s (320 m³/s) Sept. 3, 1938, gage height, 8.93 ft (2.722 m), site and datum then in use, from rating curve extended above 4,700 ft³/s (133 m³/s); minimum daily, 12 ft³/s (0.34 m³/s) Apr. 23, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,350 ft³/s (38.2 m³/s) at 1900 May 13, gage height, 3.88 ft (1.183 m); maximum gage height, 4.06 ft (1.237 m) at 1230 Sept. 14; minimum daily discharge, 32 ft³/s (0.91 m³/s) May 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	111	102	121	116	101	63	47	181	840	437	239
2	70	106	104	115	124	104	63	40	142	901	395	234
3	77	104	107	106	102	117	59	36	160	811	351	237
4	98	102	102	93	75	126	56	32	142	671	307	237
5	112	101	108	119	80	124	55	36	126	602	284	232
6	119	105	111	124	95	118	59	48	115	493	254	261
7	125	108	105	103	115	105	60	50	102	315	250	270
8	120	98	106	102	100	98	56	51	76	193	224	278
9	108	97	108	132	90	107	58	53	82	168	225	268
10	98	95	111	105	105	111	58	41	81	201	245	254
11	98	101	107	92	125	96	50	40	105	170	262	259
12	93	101	105	114	151	89	44	70	120	184	260	318
13	111	102	100	115	155	85	41	679	135	175	310	328
14	123	98	97	136	146	75	40	523	161	184	292	863
15	125	95	104	138	143	71	38	250	158	196	277	564
16	141	92	111	120	159	77	43	206	153	201	252	416
17	140	89	113	139	148	78	51	191	139	193	279	388
18	123	90	107	137	138	78	44	177	288	183	284	364
19	118	87	111	152	131	80	41	159	394	185	251	323
20	115	87	109	152	133	75	42	130	234	191	255	286
21	111	87	107	134	116	68	52	103	193	179	406	258
22	116	86	126	128	108	67	52	100	189	175	317	235
23	113	85	120	112	117	68	56	85	216	181	307	211
24	118	85	98	124	118	68	52	73	252	174	279	206
25	121	87	109	116	118	70	46	103	304	182	255	206
26	116	90	122	122	118	70	46	142	391	191	250	205
27	111	88	115	132	120	66	38	134	349	262	266	205
28	108	85	135	126	109	61	46	100	390	625	262	205
29	107	95	98	130	---	60	46	107	611	951	260	204
30	104	103	105	131	---	60	44	163	685	759	252	199
31	118	---	135	120	---	60	---	206	---	608	248	---
TOTAL	3423	2860	3368	3795	3355	2636	1499	4175	6674	11344	8796	8753
MEAN	110	95.3	109	122	120	85.0	50.0	135	222	366	284	292
MAX	141	111	135	152	159	126	63	679	685	951	437	863
MIN	66	85	97	92	75	60	38	32	76	168	224	199
AC-FT	6790	5670	6680	7530	6650	5230	2970	8280	13240	22500	17450	17360

CAL YR 1981 TOTAL 45330 MEAN 124 MAX 393 MIN 47 AC-FT 89910
WTR YR 1982 TOTAL 60678 MEAN 166 MAX 951 MIN 32 AC-FT 120400

06731000 ST. VRAIN CREEK AT MOUTH, NEAR PLATTEVILLE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1955 to August 1956, September 1965 to September 1968, October 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)
OCT 07...	0950	126	1590	1590	8.1	13.0	9.5	610
NOV 17...	1350	61	1620	1700	8.2	11.5	13.7	600
DEC 18...	1100	71	1380	1360	7.8	.5	11.6	540
JAN 19...	1220	134	1300	1330	7.7	1.0	10.0	460
FEB 23...	1000	108	1320	1290	7.8	5.0	9.1	480
MAR 18...	1010	83	1410	1380	8.1	6.5	9.7	520
APR 28...	1230	40	1630	1640	8.4	16.5	14.0	640
MAY 13...	1000	419	850	--	7.5	7.0	7.1	300
JUN 10...	1400	165	1270	1330	8.2	21.5	9.0	500
JUL 13...	1010	204	1230	1290	7.8	21.5	7.2	480
AUG 13...	0845	325	1280	1270	7.8	18.5	6.4	480
SEP 16...	0915	340	1200	1170	7.6	13.0	7.7	460

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-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)
OCT 07...	105	84	140	2.8	7.8	250	560	29	1.4
NOV 17...	107	82	140	2.8	5.2	270	530	35	1.3
DEC 18...	96	74	120	2.5	5.4	240	520	35	1.1
JAN 19...	85	61	110	2.5	5.3	220	410	30	1.0
FEB 23...	86	65	110	2.5	5.0	220	460	20	.7
MAR 18...	93	71	130	2.8	6.7	240	460	45	1.1
APR 28...	110	88	150	2.9	5.8	240	640	39	1.2
MAY 13...	56	39	69	2.0	9.8	130	280	24	.7
JUN 10...	96	62	110	2.4	4.6	216	450	32	1.1
JUL 13...	96	58	110	2.4	5.0	200	450	31	1.0
AUG 13...	86	64	100	2.2	4.9	197	460	21	1.0
SEP 16...	86	60	98	2.2	5.3	208	420	23	.8

06731000 ST. VRAIN CREEK AT MOUTH, NEAR PLATTEVILLE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	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-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT								
07...	6.9	1100	1.5	374	2.7	.490	16	93
NOV								
17...	5.0	1080	1.5	178	3.4	.740	34	120
DEC								
18...	7.8	1020	1.4	196	3.1	.740	33	160
JAN								
19...	9.4	855	1.2	309	2.4	.890	25	170
FEB								
23...	7.9	899	1.2	262	2.7	.750	32	210
MAR								
18...	6.0	969	1.3	217	2.7	.650	36	260
APR								
28...	6.1	1200	1.6	130	3.6	.320	22	240
MAY								
13...	6.0	572	.78	647	1.9	.390	100	460
JUN								
10...	5.5	904	1.2	403	2.9	.370	<3	130
JUL								
13...	9.3	896	1.2	494	3.5	.290	35	76
AUG								
13...	8.4	877	1.2	770	3.0	.290	5	29
SEP								
16...	10	839	1.1	770	2.5	.240	25	37

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 (180 m) downstream from bridge on State Highways 7 and 66, 900 ft (270 m) downstream from Black Canyon Creek, and 0.3 mi (0.5 km) northwest of Estes powerplant. Station is upstream from Lake Estes.

DRAINAGE AREA.--137 mi² (486 km²).

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 (2,283.71 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to May 18, 1949, at site 740 ft (230 m) downstream at different datum. May 18, 1949, to Mar. 22, 1951, at site 60 ft (18 m) upstream at datum 1.2 ft (0.37 m) higher.

REMARKS.--Records good except those for winter period, which are fair. Diversion from Colorado River basin to Big Thompson River basin above station through Alva B. Adams tunnel began Aug. 10, 1947, and ended Aug. 2, 1950. Small power developments and small diversions for irrigation and municipal use above station. Diversions above station from Wind River to Lake Estes (bypassing this station) were 748 acre-ft (922,300 m³/yr) during current year. 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.--36 years, 125 ft³/s (3.540 m³/s), 90,560 acre-ft/yr (112 hm³/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 (156 m³/s) July 15, 1982, caused by failure of Lawn Lake Dam, gage height, indeterminate. Minimum discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 29	0200	864	24.5	5.33	1.625	July 15	0905	* 5,500	156	--unknown-	

Minimum daily discharge, 10 ft³/s (0.28 m³/s) Mar. 7, 8, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	34	13	14	17	12	12	52	249	726	312	120
2	34	34	20	15	16	12	12	74	277	676	275	108
3	36	33	19	14	15	12	12	108	254	592	267	101
4	39	36	18	15	15	12	12	159	228	568	270	95
5	45	30	17	17	14	12	12	153	275	538	270	97
6	45	30	16	16	13	12	14	102	357	510	236	115
7	44	31	15	17	14	10	14	82	300	419	224	108
8	44	30	15	15	14	10	14	70	341	400	216	99
9	46	29	14	15	13	11	13	67	342	402	209	101
10	41	26	17	14	14	11	13	74	366	385	212	96
11	40	30	18	13	14	11	13	83	368	391	212	90
12	45	28	17	14	14	10	22	90	366	385	206	101
13	45	28	16	13	14	11	22	88	441	398	201	105
14	46	27	17	13	14	13	21	82	457	396	207	123
15	52	26	17	13	14	12	24	77	385	710	206	117
16	50	26	18	13	14	11	27	80	361	372	197	123
17	42	25	16	14	14	12	21	90	498	363	187	121
18	42	24	14	14	14	12	20	107	608	389	191	120
19	40	22	16	15	14	12	22	135	491	348	190	114
20	39	22	18	16	14	11	19	139	502	335	204	128
21	39	26	17	16	14	11	22	133	521	309	257	120
22	35	24	16	16	14	12	19	149	553	300	207	105
23	34	24	12	15	14	13	16	179	588	309	182	121
24	36	24	14	16	14	12	20	201	623	311	164	124
25	35	24	13	16	13	11	23	178	639	311	151	115
26	34	24	15	17	12	12	28	159	605	410	133	128
27	36	24	14	16	12	11	31	191	603	417	128	133
28	34	22	13	15	11	11	30	273	711	423	125	135
29	35	24	14	15	---	13	33	305	733	377	138	125
30	34	18	15	14	---	12	40	275	697	463	138	120
31	34	---	15	16	---	12	---	225	---	375	129	---
TOTAL	1236	805	489	462	389	359	601	4180	13739	13308	6244	3408
MEAN	39.9	26.8	15.8	14.9	13.9	11.6	20.0	135	458	429	201	114
MAX	52	36	20	17	17	13	40	305	733	726	312	135
MIN	34	18	12	13	11	10	12	52	228	300	125	90
AC-FT	2450	1600	970	916	772	712	1190	8290	27250	26400	12380	6760

CAL YR 1981 TOTAL 28540.3 MEAN 78.2 MAX 641 MIN 5.5 AC-FT 56610
WTR YR 1982 TOTAL 45220.0 MEAN 124 MAX 733 MIN 10 AC-FT 89690

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 (3.0 km) 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. Due to Lawn Lake Dam break, the intake at Olympus Tunnel was closed causing streamflow on July 16, 1982, to be 1.0 ft³/s.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT											
08...	0855	500	51	50	7.0	10.0	8.5	--	--	19	5.8
NOV											
18...	0945	550	50	43	7.2	4.0	9.7	--	--	20	5.9
DEC											
16...	1050	556	58	54	7.1	1.5	9.0	--	--	22	6.7
JAN											
21...	1415	550	68	62	6.9	1.5	12.0	--	--	23	7.0
FEB											
25...	1115	399	75	63	7.0	1.5	9.6	--	--	24	7.2
MAR											
25...	1215	544	63	62	6.8	2.0	--	--	--	24	7.2
APR											
15...	1310	550	79	61	7.5	4.5	9.8	K17	<5	25	7.5
MAY											
20...	1600	575	50	56	7.0	7.0	8.8	73	K14	22	6.5
JUN											
08...	0800	401	33	34	6.9	10.0	8.6	1400	K49	12	3.4
JUL											
16...	1140	1.0	30	23	6.9	12.0	7.7	2200	520	5	1.5
AUG											
16...	1530	301	23	26	6.9	15.0	7.4	K13000	1200	8	2.5
SEP											
16...	1440	300	35	37	7.0	13.5	8.3	K400	44	11	3.5

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)
OCT											
08...	1.1	2.1	.2	.5	22	<5.0	.5	.1	3.3	--	--
NOV											
18...	1.2	2.2	.2	.8	17	6.0	.6	.1	3.3	31	.04
DEC											
16...	1.2	2.2	.2	.8	24	6.0	.5	.2	3.1	35	.05
JAN											
21...	1.4	2.4	.2	.9	27	<5.0	.6	.2	2.7	--	--
FEB											
25...	1.4	2.4	.2	.8	28	6.0	.5	.2	2.4	38	.05
MAR											
25...	1.4	2.5	.2	.9	27	<5.0	.4	.2	2.5	--	--
APR											
15...	1.5	2.5	.2	.9	30	5.0	.5	.2	2.8	39	.05
MAY											
20...	1.3	2.2	.2	.8	23	5.0	.6	.2	3.8	34	.05
JUN											
08...	.9	2.1	.3	.6	13	<5.0	.8	.2	5.3	--	--
JUL											
16...	.4	1.5	.3	.8	10	5.0	3.1	.2	4.5	24	.03
AUG											
16...	.5	1.5	.2	.4	12	<5.0	.6	.1	3.8	--	--
SEP											
16...	.7	1.4	.2	.5	12	<5.0	.5	.1	3.9	--	--

K BASED ON NON-IDEAL COLONY COUNT.

06734900 OLYMPUS TUNNEL AT LAKE ESTES, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	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, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)
OCT										
08...	--	--	.020	<.10	.140	.020	.010	31	2	--
NOV										
18...	46.0	.06	.010	.07	<.060	.060	<.010	29	1	--
DEC										
16...	52.5	--	<.020	<.10	.100	.010	.010	19	1	--
JAN										
21...	--	--	<.020	<.09	.140	.010	.010	19	<1	--
FEB										
25...	40.9	--	<.020	<.10	.070	5.00	.030	13	3	--
MAR										
25...	--	--	<.020	<.10	.080	.020	.020	25	5	--
APR										
15...	57.9	--	<.020	<.10	.110	<.010	<.010	22	3	10000
MAY										
20...	52.8	--	<.020	<.10	<.060	<.010	<.010	86	5	16000
JUN										
08...	--	--	<.020	<.10	<.060	.050	.020	99	4	4700
JUL										
16...	.06	--	<.020	.10	.210	.590	.050	170	34	--
AUG										
16...	--	--	<.020	<.10	.140	.060	.030	100	19	1500
SEP										
16...	--	--	<.020	<.10	.100	.020	.040	95	2	--

06734900 OLYMPUS TUNNEL AT LAKE ESTES, CO--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO SEPTEMBER 1982

DATE	APR 15,82	MAY 20,82	JUN 8,82	AUG 16,82	SEP 16,82
TIME	1310	1600	0800	1530	1440
TOTAL CELLS/ML	10000	16000	4700	1500	20000
DIVERSITY: DIVISION	0.7	1.3	1.3	1.2	0.5
.CLASS	0.7	1.3	1.3	1.2	0.5
..ORDER	1.1	1.6	2.2	2.3	0.6
...FAMILY	1.3	1.7	2.4	2.6	0.6
....GENUS	2.0	2.0	2.8	2.8	0.7

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)										
.BACILLARIOPHYCEAE										
..ACHNANTHALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	--	-	*	0	29	2	--	-
..BACILLARIALES										
...NITZSCHIACEAE										
....NITZSCHIA	72	1	230	1	40	1	--	-	--	-
..EPITHEMIALES										
...EPITHEMIACEAE										
....RHOPALODIA	--	-	--	-	--	-	--	-	*	0
..EUPODISCALES										
...COSCINODISCACEAE										
....CYCLOTELLA	5400#	54	1800	12	120	3	--	-	*	0
....MELOSIRA	2200#	22	1900	12	2100#	44	490#	32	190	1
..FRAGILARIALES										
...FRAGILARIACEAE										
....DIATOMA	140	1	--	-	--	-	--	-	--	-
....HANNAEA	--	-	--	-	--	-	87	6	--	-
....SYNEDRA	220	2	690	4	820#	17	160	10	*	0
....TABELLARIA	--	-	--	-	80	2	--	-	--	-
..NAVICULALES										
...CYMBELLACEAE										
....CYMBELLA	140	1	--	-	--	-	--	-	--	-
...GOMPHONEMACEAE										
....GOMPHONEMA	--	-	--	-	*	0	--	-	--	-
...NAVICULACEAE										
....NAVICULA	72	1	--	-	*	0	43	3	--	-
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHLOROCOCCACEAE										
....POLYEDRIOPSIS	--	-	--	-	*	0	--	-	--	-
....SCHROEDERIA	1200	12	--	-	--	-	29	2	--	-
...DICTYOSPHAERIACEAE										
....DICTYOSPHAERIUM	--	-	--	-	--	-	140	9	130	1
...MICRACTINIACEAE										
....GOLENKINIA	--	-	--	-	*	0	--	-	--	-
....MICRACTINIUM	--	-	140	1	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	180	1	160	3	29	2	150	1
....CHODATELLA	290	3	280	2	200	4	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-	*	0
....OOCYSTIS	--	-	--	-	--	-	--	-	130	1
....SELENASTRUM	--	-	--	-	--	-	--	-	*	0
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	--	-	--	-	400	2
....GLOEOACTINIUM	--	-	320	2	160	3	--	-	--	-
....SCENEDESMUS	--	-	460	3	160	3	87	6	--	-
....TETRASTRUM	290	3	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	*	0	60	1	390#	25	*	0
..ZYGNEMATALES										
...DESMIDIACEAE										
....SPONDYLOSIUM	--	-	--	-	--	-	--	-	*	0
....STAURASTRUM	--	-	--	-	--	-	--	-	*	0
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	*	0	--	-	--	-	--	-

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

06734900 OLYMPUS TUNNEL AT LAKE ESTES, CO--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO SEPTEMBER 1982

DATE	APR 15,82		MAY 20,82		JUN 8,82		AUG 16,82		SEP 16,82	
TIME	1310		1600		0800		1530		1440	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	9400#	61	520	11	--	-	19000#	92
..NOSTOCALES										
...HAMMATOIDEACEAE										
....RAPHIDIOPSIS	--	-	--	-	140	3	--	-	--	-
..OSCILLATORIALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	60	1	--	-	170	1
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	*	0	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	43	3	210	1
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..DINOKONTAE										
...CERATIACEAE										
....CERATIUM	--	-	--	-	--	-	--	-	*	0

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

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 (30 m) upstream from Dry Gulch, 600 ft (180 m) downstream from Olympus Dam, and 2.0 mi (3.2 km) east of Estes Park.

DRAINAGE AREA.--155 mi^2 (401 km^2). Area at site used Jan. 29, 1934, to Mar. 21, 1951, 162 mi^2 (420 km^2).

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 (2,262.38 m) 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 (2.4 km) downstream at different datum. Jan. 29, 1934, to Mar. 21, 1951, water-stage recorder at site 0.4 mi (0.6 km) downstream at datum 10.5 ft (3.20 m) lower.

REMARKS.--Records excellent. Low flow regulated by Lake Estes since Nov. 30, 1948. Diversion from Colorado River basin to Big Thompson River basin above 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 (41,310 acre-ft or 50.9 hm^3 during current year) has also been diverted through Olympus tunnel and returned to the river below the station at mouth of canyon, near Drake. Small power developments and small diversions for irrigation and municipal use above 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 ft^3/s (79.3 m^3/s) June 20, 1933, gage height, 4.0 ft (1.22 m), site and datum then in use, from rating curve extended above 460 ft^3/s (13 m^3/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, 538 ft^3/s (15.2 m^3/s) at 1130 July 26, gage height, 4.03 ft (1.228 m); minimum daily, 9.3 ft^3/s (0.26 m^3/s) Mar. 12, 15-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	36	16	13	16	14	12	40	99	131	392	76
2	34	40	13	13	17	16	12	56	101	184	321	75
3	33	33	20	13	17	14	11	73	99	135	283	216
4	34	33	20	13	17	14	12	50	100	100	270	76
5	39	33	20	13	14	11	11	52	99	99	101	74
6	45	30	20	13	14	11	11	51	99	99	99	74
7	43	30	20	13	14	11	11	51	99	100	99	75
8	43	30	19	16	14	12	11	51	100	100	99	74
9	44	30	19	16	14	12	11	51	101	99	98	74
10	45	28	19	16	14	11	11	51	100	99	99	73
11	40	26	15	16	14	11	12	51	101	99	100	75
12	40	30	14	16	13	9.3	12	51	99	100	99	75
13	45	28	14	16	13	9.8	22	49	100	110	100	75
14	44	28	14	16	13	9.8	21	50	100	421	100	75
15	46	26	14	13	13	9.3	19	49	99	423	101	75
16	51	26	14	13	13	9.3	24	49	99	417	101	50
17	50	25	14	13	13	9.3	27	50	100	417	101	49
18	44	24	13	13	13	9.3	21	50	100	449	101	49
19	42	24	13	13	13	9.8	19	50	99	445	101	48
20	39	23	14	13	13	9.8	22	50	100	449	102	48
21	40	26	14	13	13	9.8	24	49	99	475	101	49
22	38	28	14	16	14	9.8	26	49	99	463	101	49
23	33	22	13	16	14	9.8	23	49	99	461	100	49
24	33	25	13	16	13	9.8	17	49	100	483	101	50
25	35	25	13	17	13	9.8	22	49	100	516	101	50
26	33	24	13	16	13	9.8	25	49	124	531	101	49
27	34	31	13	16	13	13	28	50	100	510	100	125
28	34	26	13	16	13	12	33	50	100	449	101	133
29	33	20	13	16	---	12	30	97	125	451	100	139
30	34	22	13	16	---	12	36	99	145	427	100	128
31	35	---	12	16	---	12	---	99	---	489	100	---
TOTAL	1219	832	469	455	388	342.5	576	1714	3085	9731	3973	2327
MEAN	39.3	27.7	15.1	14.7	13.9	11.0	19.2	55.3	103	314	128	77.6
MAX	51	40	20	17	17	16	36	99	145	531	392	216
MIN	33	20	12	13	13	9.3	11	40	99	99	98	48
AC-FT	2420	1650	930	902	770	679	1140	3400	6120	19300	7880	4620

CAL YR 1981 TOTAL 15185.1 MEAN 41.6 MAX 101 MIN 4.1 AC-FT 30120
WTR YR 1982 TOTAL 25111.5 MEAN 68.8 MAX 531 MIN 9.3 AC-FT 49810

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 (7.7 km) west of city hall in Fort Collins. Water-quality sampling site in middle of reservoir at Soldier Canyon Dam.

WATER-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 NGVD.

REMARKS.--Reservoir is formed by 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 (177 hm^3) above elevations 5,320 ft (1,621.5 m), invert of channel from Spring Canyon Dam, 5,310 ft (1,618.5 m), invert of channel from Dixon Canyon Dam, 5,270 ft (1,606.3 m), trashrack sill of outlet at Soldier Canyon Dam, and below maximum water-surface elevation, 5,430 ft (1,655.1 m), 6 ft (1.8 m) below crest of Satanka Dike. Dead storage, 8,270 acre-ft (10.2 hm^3). 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 furnished by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 141,600 acre-ft (175 hm^3) July 2, 1970, elevation, 5,429.02 ft (1,654.765 m); minimum observed, 9 acre-ft (11,100 m^3) Nov. 16-30, 1977, elevation, 5,270.25 ft (1,606.372 m); no storage prior to Apr. 18, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 120,400 acre-ft (148 hm^3) July 14, elevation, 5,417.24 ft (1,651.175 m); minimum observed, 43,180 acre-ft (53.2 hm^3) Oct. 18, elevation, 5,361.75 ft (1,634.261 m).

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.	5,370.62	53,110	-
Oct. 31.	5,362.30	43,770	-9,340
Nov. 30.	5,364.98	46,690	+2,920
Dec. 31.	5,377.48	61,430	+14,740
CAL YR 1981			-13,390
Jan. 31.	5,390.80	79,110	+17,680
Feb. 28.	5,399.57	91,880	+12,770
Mar. 31.	5,408.20	105,400	+13,520
Apr. 30.	5,413.12	113,400	+8,000
May 31.	5,416.60	119,300	+5,900
June 30.	5,416.85	119,700	+400
July 31.	5,413.42	113,900	-5,800
Aug. 31.	5,403.98	98,660	-15,240
Sept. 30.	5,400.84	93,810	-4,850
WTR YR 1982			+40,700

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Samples collected from surface in middle of reservoir at Soldier Canyon Dam. Reservoir storage represents usable contents.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAM-PLING DEPTH (FEET)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)
APR				
16...	1100	.10	5.5	10.3
16...	1105	.10	5.5	10.3
16...	1106	5.00	5.0	10.4
16...	1107	10.0	5.0	10.5
16...	1108	20.0	5.0	10.5
16...	1109	25.0	5.0	10.5
16...	1110	30.0	5.0	10.5
16...	1111	40.0	5.0	10.4
16...	1112	50.0	5.0	10.4
16...	1113	60.0	5.0	10.4
16...	1114	70.0	5.0	10.4
16...	1115	75.0	5.0	10.4
16...	1116	80.0	5.0	10.4
16...	1117	90.0	5.0	10.4
16...	1118	100	5.0	10.4
16...	1119	110	5.0	10.4
16...	1120	120	5.0	10.4
16...	1121	125	5.0	10.4
MAY				
27...	1000	.10	13.0	9.1
27...	1005	.10	13.0	9.1

DATE	TIME	SAM-PLING DEPTH (FEET)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)
MAY				
27...	1006	5.00	12.0	9.2
27...	1007	10.0	12.0	9.2
27...	1008	20.0	11.5	9.2
27...	1009	25.0	11.5	9.2
27...	1010	30.0	10.5	9.2
27...	1011	40.0	8.0	9.3
27...	1012	50.0	7.5	9.3
27...	1013	60.0	7.0	9.2
27...	1014	70.0	7.0	9.2
27...	1015	75.0	7.0	9.2
27...	1016	80.0	7.0	9.2
27...	1017	90.0	7.0	9.2
27...	1018	100	6.5	9.2
27...	1019	110	6.0	9.2
27...	1020	120	6.0	9.2
27...	1021	125	6.0	9.1
27...	1022	130	6.0	9.2
27...	1023	150	6.0	9.0
JUN				
23...	1030	.10	18.5	8.0

DATE	TIME	SAM-PLING DEPTH (FEET)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)
JUN				
23...	1031	5.00	17.5	8.0
23...	1032	10.0	17.0	8.0
23...	1033	20.0	15.5	8.2
23...	1034	25.0	14.0	8.0
23...	1035	30.0	13.0	8.0
23...	1036	40.0	11.0	8.2
23...	1037	50.0	8.0	8.5
23...	1038	60.0	8.0	8.4
23...	1039	70.0	7.5	8.4
23...	1040	75.0	7.5	8.4
23...	1041	80.0	7.5	8.4
23...	1042	90.0	7.0	8.4
23...	1043	100	7.0	8.4
23...	1044	110	7.0	8.2
23...	1045	120	6.5	8.1
23...	1046	125	6.5	8.1
23...	1047	130	6.5	8.0
23...	1048	150	6.5	7.8
AUG				
04...	1040	.10	23.0	7.1
04...	1041	5.00	22.5	7.1

DATE	TIME	SAM-PLING DEPTH (FEET)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)
AUG				
04...	1042	10.0	22.0	7.0
04...	1043	20.0	19.5	6.6
04...	1044	25.0	18.0	6.4
04...	1045	30.0	15.0	6.4
04...	1046	40.0	11.5	6.9
04...	1047	50.0	9.5	7.4
04...	1048	60.0	9.0	7.4
04...	1049	70.0	8.5	7.5
04...	1050	75.0	8.0	7.6
04...	1051	80.0	8.0	7.6
04...	1052	90.0	8.0	7.6
04...	1053	100	8.0	7.6
04...	1054	110	7.5	7.6
04...	1055	120	7.0	7.6
04...	1056	125	7.0	7.5
04...	1057	130	7.0	7.4
04...	1058	140	7.0	7.2
31...	0930	.10	21.0	7.0
31...	0931	5.00	21.0	7.1

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
AUG				
31...	0932	10.0	21.0	7.2
31...	0933	20.0	19.5	6.9
31...	0934	25.0	19.0	6.8
31...	0935	30.0	18.0	6.4
31...	0936	40.0	13.0	6.6
31...	0937	50.0	11.0	7.0
31...	0938	60.0	10.0	7.2
31...	0939	70.0	9.5	7.2
31...	0940	75.0	9.0	7.1
31...	0941	80.0	9.0	7.1
31...	0942	90.0	9.0	7.2
31...	0943	100	8.5	7.2
31...	0944	110	8.0	7.1
31...	0945	120	8.0	7.0
31...	0946	125	8.0	6.9
31...	0947	130	7.5	6.8
SEP				
29...	1000	.10	16.5	7.4
29...	1001	5.00	16.0	7.2
29...	1002	10.0	16.0	7.2
29...	1003	20.0	16.0	7.2
29...	1004	25.0	16.0	7.2
29...	1005	30.0	16.0	7.2
29...	1006	40.0	15.0	6.4
29...	1007	50.0	12.5	5.8
29...	1008	60.0	11.0	6.0
29...	1009	70.0	10.0	6.2
29...	1010	75.0	10.0	6.2
29...	1011	80.0	10.0	6.2
29...	1012	90.0	9.5	6.1
29...	1013	100	9.0	6.2
29...	1014	110	8.5	6.0
29...	1015	120	8.0	5.8
29...	1016	125	8.0	5.8
29...	1017	130	8.0	5.8
29...	1018	137	8.0	5.6

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TRANSPARENCY (SECCHI DISK) (IN)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
APR											
16...	1100	79	75	7.6	--	--	--	31	9.7	1.6	2.5
16...	1105	79	80	7.6	56.0	K1	<1	--	--	--	--
MAY											
27...	1000	79	163	7.1	--	--	--	30	9.3	1.6	2.4
27...	1005	79	77	7.1	95.0	<1	<1	--	--	--	--
JUN											
23...	1030	76	76	7.4	116	<1	--	28	8.6	1.6	5.8
23...	1045	76	75	7.4	--	--	--	--	--	--	--
AUG											
04...	1040	75	78	7.1	--	<1	<1	31	9.8	1.7	2.5
04...	1045	75	76	7.6	--	--	--	--	--	--	--
31...	0930	76	76	7.3	50.0	K1	<1	30	9.3	1.6	2.8
SEP											
29...	1000	76	67	7.8	58.0	--	K1	30	9.5	1.6	2.2
29...	1010	76	68	7.8	--	--	--	--	--	--	--

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)
APR										
16...	.2	1.0	35	7.0	.6	.2	2.3	47	46	.06
16...	--	--	--	--	--	--	--	49	--	.07
MAY										
27...	.2	.9	<7.0	6.0	32	.2	2.5	--	--	--
27...	--	--	--	--	--	--	--	76	--	.10
JUN										
23...	.5	.8	32	7.0	1.0	.1	2.7	--	47	.06
23...	--	--	--	--	--	--	--	55	--	.07
AUG										
04...	.2	.9	37	5.0	.6	.2	2.2	--	45	.06
04...	--	--	--	--	--	--	--	51	--	.07
31...	.2	.8	27	5.0	2.3	.1	2.7	--	41	.06
SEP										
29...	.2	.8	19	5.0	1.2	.2	2.8	--	35	.05
29...	--	--	--	--	--	--	--	42	--	.06

K BASED ON NON-IDEAL COLONY COUNT.

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	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, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
APR										
16...	--	<.020	--	<.10	--	.080	.66	--	<.010	--
16...	--	<.020	--	<.10	.140	--	--	<.010	--	--
MAY										
27...	--	<.020	--	<.10	--	.090	.60	--	.030	--
27...	<.020	<.020	<.10	<.10	.070	--	--	.090	--	.030
JUN										
23...	--	<.020	--	<.10	--	.110	1.30	--	.030	--
23...	--	<.020	<.10	<.10	.110	--	--	<.010	--	--
AUG										
04...	--	<.020	--	<.10	--	<.060	.90	--	.020	--
04...	--	<.020	--	<.10	.090	--	--	.030	--	--
31...	--	<.020	--	.10	--	<.060	.40	--	.030	--
SEP										
29...	--	<.020	--	.13	--	.060	.60	--	.080	--
29...	--	<.020	--	.10	.060	--	--	.010	--	--

DATE	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)
APR									
16...	490	--	--	<1	4	--	5	--	29
MAY									
27...	--	<1	100	1	<10	1	7	80	41
JUN									
23...	150	--	--	<1	3	--	6	--	53
AUG									
04...	--	<1	<100	1	10	<1	7	310	3
31...	470	--	--	<1	7	--	6	--	47
SEP									
29...	--	<1	<100	1	<10	<1	6	340	32

DATE	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)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
APR									
16...	1	--	<3	--	--	--	--	<1	10
MAY									
27...	<1	<10	3	.1	<1	4	<1	1	<10
JUN									
23...	5	--	3	--	--	--	--	<1	10
AUG									
04...	1	<10	1	.1	<1	1	<1	<1	30
31...	<1	--	1	--	--	--	--	<1	10
SEP									
29...	<1	<10	<1	.2	3	4	<1	<1	10

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)
APR 16...	--	--	--	--	--	--	--	--	--	--
MAY 27...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01
27...	--	--	--	--	--	--	--	--	--	--
JUN 23...	--	--	--	--	--	--	--	--	--	--
AUG 04...	--	--	--	--	--	--	--	--	--	--
SEP 29...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
APR 16...	--	--	--	--	--	--	--	--	--	--
MAY 27...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
27...	--	--	--	--	--	--	--	--	--	--
JUN 23...	--	--	--	--	--	--	--	--	--	--
AUG 04...	--	--	--	--	--	--	--	--	--	--
SEP 29...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	ALGAL GROWTH POTEN-TIAL, BOTTLE TEST (MG/L)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)
APR 16...	--	--	--	--	--	--	--	--	<1.0	11000
MAY 27...	<.01	<.10	<1	<.01	<.01	<.01	<.01	<.01	--	--
27...	--	--	--	--	--	--	--	--	<1.0	370
JUN 23...	--	--	--	--	--	--	--	--	<1.0	290
AUG 04...	--	--	--	--	--	--	--	--	6.0	160
SEP 29...	<.01	<.10	<1	<.01	.04	<.01	<.01	<.01	--	--

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO SEPTEMBER 1982

DATE	APR 16,82		MAY 27,82		JUN 23,82		AUG 4,82		AUG 31,82		SEP 29,82	
TIME	1105		1005		1045		1045		0940		1010	
TOTAL CELLS/ML	11000		370		290		160		200		1300	
DIVERSITY: DIVISION	0.9		0.0		0.3		0.0		0.0		0.6	
.CLASS	0.9		0.0		0.3		0.0		0.0		0.6	
..ORDER	1.3		0.0		1.2		0.0		0.0		1.3	
...FAMILY	1.4		0.8		1.2		0.0		0.0		1.3	
....GENUS	2.1		0.8		1.2		0.0		0.0		2.2	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
BACILLARIOPHYTA (DIATOMS)												
.BACILLARIOPHYCEAE												
..EUPODISCALES												
...COSCINODISCACEAE												
....CYCLOTELLA	1300	12	--	-	14	5	--	-	--	-	14	1
....MELOSIRA	6800#	60	--	-	--	-	--	-	--	-	--	-
..FRAGILARIALES												
...FRAGILARIACEAE												
....ASTERIONELLA	450	4	--	-	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....SCHROEDERIA	--	-	290#	77	--	-	--	-	--	-	14	1
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	86#	23	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	310	3	--	-	--	-	--	-	--	-	28	2
....CHODATELLA	140	1	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	160#	100	--	-	55	4
...SCENEDESMACEAE												
....GLOEOACTINIUM	1100	10	--	-	--	-	--	-	200#	100	--	-
....SCENEDESMUS	220	2	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	220	2	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	--	-	28	2
..ZYGNEMATALES												
...DESMIDIACEAE												
....SPONDYLOSIUM	590	5	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	14	1
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	170	13
....ANACYSTIS	*	0	--	-	170#	60	--	-	--	-	28	2
..OSCILLATORIALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	100#	35	--	-	--	-	620#	49
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	290#	23
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	*	0	--	-	--	-	--	-	--	-	--	-

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

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)
APR										
16...	--	--	--	--	--	--	--	--	--	--
MAY										
27...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01
27...	--	--	--	--	--	--	--	--	--	--
JUN										
23...	--	--	--	--	--	--	--	--	--	--
AUG										
04...	--	--	--	--	--	--	--	--	--	--
SEP										
29...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
APR										
16...	--	--	--	--	--	--	--	--	--	--
MAY										
27...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
27...	--	--	--	--	--	--	--	--	--	--
JUN										
23...	--	--	--	--	--	--	--	--	--	--
AUG										
04...	--	--	--	--	--	--	--	--	--	--
SEP										
29...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	ALGAL GROWTH POTEN-TIAL, BOTTLE TEST (MG/L)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)
APR										
16...	--	--	--	--	--	--	--	--	<1.0	11000
MAY										
27...	<.01	<.10	<1	<.01	<.01	<.01	<.01	<.01	--	--
27...	--	--	--	--	--	--	--	--	<1.0	370
JUN										
23...	--	--	--	--	--	--	--	--	<1.0	290
AUG										
04...	--	--	--	--	--	--	--	--	6.0	160
SEP										
29...	<.01	<.10	<1	<.01	.04	<.01	<.01	<.01	--	--

06737500 HORSETOOTH RESERVOIR NEAR FORT COLLINS, CO--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO SEPTEMBER 1982

DATE	APR 16,82		MAY 27,82		JUN 23,82		AUG 4,82		AUG 31,82		SEP 29,82	
TIME	1105		1005		1045		1045		0940		1010	
TOTAL CELLS/ML	11000		370		290		160		200		1300	
DIVERSITY: DIVISION	0.9		0.0		0.3		0.0		0.0		0.6	
.CLASS	0.9		0.0		0.3		0.0		0.0		0.6	
..ORDER	1.3		0.0		1.2		0.0		0.0		1.3	
...FAMILY	1.4		0.8		1.2		0.0		0.0		1.3	
....GENUS	2.1		0.8		1.2		0.0		0.0		2.2	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)												
.BACILLARIOPHYCEAE												
..EUPODISCALES												
...COSCINODISCACEAE												
....CYCLOTELLA	1300	12	--	-	14	5	--	-	--	-	14	1
....MELOSIRA	6800#	60	--	-	--	-	--	-	--	-	--	-
..FRAGILARIALES												
...FRAGILARIACEAE												
....ASTERIONELLA	450	4	--	-	--	-	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....SCHROEDERIA	--	-	290#	77	--	-	--	-	--	-	14	1
...COCCOMYXACEAE												
....ELAKATOTHRIX	--	-	86#	23	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	310	3	--	-	--	-	--	-	--	-	28	2
....CHODATELLA	140	1	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	160#	100	--	-	55	4
...SCENEDESMACEAE												
....GLOEOACTINIUM	1100	10	--	-	--	-	--	-	200#	100	--	-
....SCENEDESMUS	220	2	--	-	--	-	--	-	--	-	--	-
....TETRASTRUM	220	2	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	--	-	28	2
..ZYGNEMATALES												
...DESMIDIACEAE												
....SPONDYLOSIUM	590	5	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	14	1
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....AGMENELLUM	--	-	--	-	--	-	--	-	--	-	170	13
....ANACYSTIS	*	0	--	-	170#	60	--	-	--	-	28	2
..OSCILLATORIALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	100#	35	--	-	--	-	620#	49
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	290#	23
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	*	0	--	-	--	-	--	-	--	-	--	-

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

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 (120 m) upstream from Handy Ditch diversion dam, and 6.0 mi (9.7 km) east of Drake.

DRAINAGE AREA.--305 mi^2 (790 km^2).

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 (1,617.107 m), 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 (2.438 m) lower, Sept. 19, 1977, to July 27, 1980, at present site, datum 7.37 ft (2.246 m) lower. See WSP 1710 or 1730 for history of changes prior to Oct. 1, 1949.

REMARKS.--Records good except those for winter period and those for period of no gage height record, which are poor. Diversions above station for irrigation. Diversions from Colorado River basin to Big Thompson River basin above 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, 41,310 acre-ft (50.9 hm^3) diverted during current year, and Dille tunnel since Apr. 20, 1959, 2,890 acre-ft (3.6 hm^3) during current year, and returned to the river just below this 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, 31,200 ft^3/s (884 m^3/s) July 31, 1976, gage height, 19.86 ft (6.053 m), 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, 1,220 ft^3/s (34.6 m^3/s) at 2100 Sept. 13, gage height, 4.24 ft (1.308 m); minimum daily, 14 ft^3/s (0.40 m^3/s) Mar. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	49	25	21	24	24	22	50	168	310	589	113
2	56	52	29	22	24	26	21	62	171	350	544	107
3	53	50	29	21	23	26	17	81	171	320	484	104
4	54	47	30	22	19	25	23	69	171	295	436	107
5	55	46	31	23	15	20	19	68	174	252	234	105
6	61	46	32	23	19	20	22	66	181	252	174	105
7	61	45	32	19	22	21	21	66	181	230	168	107
8	60	45	33	22	21	22	18	66	174	219	154	109
9	60	43	32	24	20	21	18	66	181	230	149	109
10	61	41	30	24	21	20	19	66	178	212	149	107
11	58	39	28	24	21	21	23	70	187	193	157	109
12	55	41	26	24	21	22	22	83	190	184	149	111
13	58	43	24	24	22	17	26	100	197	197	154	203
14	61	42	24	24	23	19	31	86	197	432	152	149
15	65	39	24	22	23	20	30	86	200	608	154	80
16	69	39	24	21	23	19	33	92	197	608	157	60
17	65	39	21	22	23	19	34	98	234	602	157	35
18	61	36	20	22	20	18	36	105	325	636	159	26
19	57	35	22	22	20	18	34	111	295	629	154	26
20	55	31	25	22	22	14	32	109	275	643	154	26
21	55	37	25	22	23	16	33	105	262	657	152	26
22	53	39	24	23	23	16	39	107	270	650	154	26
23	50	38	23	24	23	17	37	107	295	650	149	26
24	51	36	22	25	22	18	34	113	305	657	146	25
25	50	38	23	26	21	19	32	113	325	692	146	25
26	51	31	22	26	21	19	37	111	340	692	141	24
27	50	31	22	25	22	21	43	115	280	784	141	25
28	50	31	21	25	22	22	46	118	290	692	139	25
29	49	28	20	25	---	22	47	154	295	650	141	25
30	49	27	21	24	---	18	49	178	315	685	136	25
31	49	---	21	24	---	19	---	168	---	622	134	---
TOTAL	1738	1184	785	717	603	619	898	2989	7024	14833	6207	2150
MEAN	56.1	39.5	25.3	23.1	21.5	20.0	29.9	96.4	234	478	200	71.7
MAX	69	52	33	26	24	26	49	178	340	784	589	203
MIN	49	27	20	19	15	14	17	50	168	184	134	24
AC-FT	3450	2350	1560	1420	1200	1230	1780	5930	13930	29420	12310	4260

CAL YR 1981 TOTAL 21432.5 MEAN 58.7 MAX 204 MIN 8.0 AC-FT 42510
WTR YR 1982 TOTAL 39747.0 MEAN 109 MAX 784 MIN 14 AC-FT 78840

NOTE.--NO GAGE-HEIGHT RECORD NOV. 27 TO MAR. 2.

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 (14.5 km) upstream from Greeley-Loveland Ditch and 2.5 mi (4.0 km) west of Loveland.

DRAINAGE AREA.--525 mi² (1,360 km²), approximately.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT										
07...	1000	164	140	131	7.9	11.0	9.3	54	16	3.4
NOV										
17...	1440	1.3	1400	1300	8.1	11.0	13.5	650	180	48
DEC										
15...	1025	1.0	1480	1340	7.6	2.5	9.6	750	206	56
JAN										
21...	1100	1.9	1400	1370	7.8	1.0	11.4	660	186	48
FEB										
24...	1020	6.9	1030	925	7.8	4.5	10.7	560	164	36
MAR										
25...	0845	2.0	1330	1290	7.7	1.5	--	700	200	49
APR										
14...	1400	29	442	399	8.2	16.5	9.0	190	56	11
MAY										
13...	1500	136	232	195	7.8	10.0	9.5	83	24	5.5
JUN										
09...	1715	81	120	131	8.6	17.0	8.0	51	15	3.2
JUL										
15...	1400	327	154	162	8.0	19.0	7.8	63	18	4.4
AUG										
17...	1300	157	270	238	7.6	22.0	8.0	100	28	7.6
SEP										
14...	0935	320	188	195	7.7	10.5	9.2	76	22	5.1

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT									
07...	3.4	.2	.7	36	28	1.0	.2	3.4	78
NOV									
17...	40	.7	2.9	150	510	16	.4	7.3	902
DEC									
15...	46	.8	4.0	150	650	15	.5	8.3	1090
JAN									
21...	38	.7	3.2	180	560	13	.4	9.1	975
FEB									
24...	22	.4	2.3	80	460	8.8	.3	9.7	755
MAR									
25...	36	.6	2.9	130	590	14	.5	7.0	985
APR									
14...	10	.3	1.6	91	110	4.6	.4	6.1	256
MAY									
13...	7.8	.4	3.9	51	41	3.4	.3	6.1	125
JUN									
09...	3.5	.2	.8	29	29	1.6	.2	5.5	77
JUL									
15...	4.1	.2	.7	36	36	1.2	.2	5.2	92
AUG									
17...	7.0	.3	.8	54	60	1.5	.2	5.0	143
SEP									
14...	5.7	.3	2.2	36	41	2.6	.2	7.5	111

06741480 BIG THOMPSON RIVER ABOVE LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT										
07...	1000	240	< 1	< 100	< 1	6	< 2	8	250	19
NOV										
17...	1440	60	--	--	<1	4	--	5	--	25
DEC										
15...	1025	110	--	--	<1	3	--	8	--	28
JAN										
21...	1100	80	--	--	<1	2	--	2	--	31
FEB										
24...	1020	--	<1	100	<1	10	2	4	60	14
MAR										
25...	0845	110	--	--	1	4	--	10	--	18
APR										
14...	1400	260	--	--	<1	7	--	4	--	21
MAY										
13...	1500	--	1	<100	<1	10	1	32	3400	81
JUN										
09...	1715	180	--	--	<1	2	--	8	--	60
JUL										
15...	1400	1700	--	--	<1	13	--	7	--	32
AUG										
17...	1300	--	1	<100	<1	<10	<1	6	1700	48
SEP										
14...	0935	8100	--	--	<1	16	--	15	--	80

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT									
07...	3	20	4	< 0.1	2	2	1	< 1	30
NOV									
17...	1	--	150	--	--	--	--	<1	10
DEC									
15...	5	--	340	--	--	--	--	<1	50
JAN									
21...	<1	--	170	--	--	--	--	<1	20
FEB									
24...	3	30	27	<.1	3	3	10	<1	70
MAR									
25...	3	--	150	--	--	--	--	<1	20
APR									
14...	3	--	11	--	--	--	--	<1	10
MAY									
13...	16	110	19	.2	5	5	2	<1	40
JUN									
09...	<1	--	6	--	--	--	--	<1	10
JUL									
15...	4	--	10	--	--	--	--	<1	20
AUG									
17...	<1	50	8	.1	2	8	1	<1	10
SEP									
14...	5	--	9	--	--	--	--	<1	40

06741480 BIG THOMPSON RIVER ABOVE LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	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, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
OCT									
07...	.11	34.5	.14	.020	.16	.160	.61	.130	--
NOV									
17...	1.2	3.2	1.50	.020	1.5	.070	.71	.040	--
DEC									
15...	1.5	2.9	2.50	.020	2.5	.130	1.10	.030	--
JAN									
21...	1.3	5.0	--	<.020	1.9	.160	.96	.020	--
FEB									
24...	1.0	14.1	--	<.020	.87	.090	.95	.570	--
MAR									
25...	1.3	5.3	--	<.020	1.6	.130	.57	.010	--
APR									
14...	.35	20.0	--	<.020	.30	.070	.56	<.010	--
MAY									
13...	.17	45.9	--	<.020	.52	.250	1.80	.030	--
JUN									
09...	.10	16.8	--	<.020	.10	.100	.80	.070	--
JUL									
15...	.13	81.2	--	<.020	.16	.100	1.20	.060	.030
AUG									
17...	.19	60.6	--	<.020	<.10	.130	1.70	.020	--
SEP									
14...	.15	95.9	--	<.020	.58	.100	4.80	.050	--

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 (210 m) downstream from county road bridge C-13, 1.7 mi (2.7 km) south of sugar refinery in Loveland, and 1.9 mi (3.1 km) from Farmers Ditch diversion.

DRAINAGE AREA.--535 mi² (1,386 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 4,906 ft (1,495.3 m), from topographic map.

REMARKS.--Records fair. Natral 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 (197 m³/s) Apr. 30, 1980, gage height, 10.10 ft (3.078 m), from highwater mark; minimum daily, 0.80 ft³/s (0.023 m³/s) May 11, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,270 ft³/s (64.3 m³/s) at 0100 Sept. 14, gage height, 7.17 ft (2.185 m); minimum daily, 1.0 ft³/s (0.028 m³/s) May 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	3.7	6.2	4.8	3.0	2.8	3.7	45	4.0	53	48	25
2	7.0	3.4	3.4	4.2	3.2	3.0	3.4	47	1.6	9.4	63	16
3	5.2	3.7	3.2	4.6	3.0	4.0	3.7	58	3.0	15	83	12
4	5.5	4.0	3.2	7.0	3.0	3.7	4.2	56	3.4	28	88	9.4
5	7.4	4.0	3.0	5.2	3.0	4.0	4.6	56	2.8	40	68	20
6	75	4.0	3.0	6.6	3.0	3.7	5.5	63	1.8	68	72	22
7	167	4.2	3.0	4.6	3.0	3.4	6.2	64	1.8	104	68	13
8	167	4.0	3.2	5.2	3.0	4.6	7.0	58	2.0	125	64	15
9	169	4.2	3.2	4.8	3.0	4.2	7.4	64	7.5	141	64	13
10	173	4.6	3.0	4.6	3.0	2.6	7.8	68	27	134	59	18
11	169	4.6	3.0	4.6	3.6	2.8	8.3	69	28	126	62	34
12	167	4.6	3.0	4.6	4.2	2.6	8.8	89	31	133	63	34
13	175	4.6	3.0	4.6	4.6	2.6	24	126	45	138	61	28
14	178	5.2	3.0	4.6	5.4	2.4	33	4.2	45	146	67	354
15	196	5.2	3.2	3.4	5.6	2.8	33	2.0	50	149	63	11
16	113	4.8	3.2	3.2	5.8	2.8	27	1.4	53	130	59	6.2
17	11	4.6	3.7	3.0	5.8	2.8	40	1.2	55	160	58	3.2
18	8.3	3.4	4.0	3.4	6.2	3.0	45	1.2	37	150	64	2.6
19	7.8	3.7	3.7	3.8	6.6	3.2	41	1.2	7.0	120	76	2.2
20	7.0	3.7	3.2	4.6	7.6	3.0	35	1.5	7.0	110	73	52
21	6.6	3.4	3.4	5.5	8.6	3.0	37	1.8	5.2	109	58	175
22	5.5	3.4	4.8	3.4	8.8	3.2	36	2.4	19	101	63	180
23	5.2	3.4	5.2	3.4	8.6	3.2	36	2.2	36	93	59	180
24	5.5	3.4	5.5	3.0	8.3	3.4	28	3.0	44	106	63	190
25	4.8	3.7	5.8	2.4	8.8	6.2	28	2.8	54	123	67	184
26	4.8	4.0	5.5	3.4	8.3	5.5	33	1.4	48	146	70	182
27	4.6	3.4	5.2	3.2	4.0	4.0	37	1.5	33	240	57	178
28	4.2	3.2	5.8	4.6	2.8	4.2	42	1.1	14	190	31	190
29	4.0	3.2	5.8	3.4	---	3.7	47	1.0	30	160	28	184
30	4.2	3.4	5.5	4.2	---	3.2	41	1.2	55	100	20	182
31	4.2	---	5.8	4.0	---	3.4	---	1.2	---	60	33	---
TOTAL	1873.8	118.7	125.7	131.9	143.8	107.0	713.6	895.3	751.1	3507.4	1872	2515.6
MEAN	60.4	3.96	4.05	4.25	5.14	3.45	23.8	28.9	25.0	113	60.4	83.9
MAX	196	5.2	6.2	7.0	8.8	6.2	47	126	55	240	88	354
MIN	4.0	3.2	3.0	2.4	2.8	2.4	3.4	1.0	1.6	9.4	20	2.2
AC-FT	3720	235	249	262	285	212	1420	1780	1490	6960	3710	4990

CAL YR 1981 TOTAL 13350.25 MEAN 36.6 MAX 322 MIN .80 AC-FT 26480
WTR YR 1982 TOTAL 12755.90 MEAN 34.9 MAX 354 MIN 1.0 AC-FT 25300

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 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
OCT										
07...	1240	169	200	166	7.8	12.5	9.1	69	20	4.7
NOV										
17...	1230	5.0	1550	1420	8.2	9.5	14.5	670	170	60
DEC										
15...	1255	3.1	1630	1460	8.1	3.5	14.9	730	175	70
JAN										
20...	1640	3.9	1490	1460	7.8	1.0	11.4	680	170	61
FEB										
24...	1240	8.2	1360	1180	8.1	5.0	12.0	660	176	54
MAR										
24...	1445	2.8	1520	1490	8.4	12.0	--	780	192	73
APR										
14...	1630	36	645	644	8.3	18.5	8.3	300	82	22
MAY										
13...	1215	191	223	243	7.6	7.0	10.0	110	29	8.2
JUN										
09...	1535	1.6	1310	1410	8.2	22.5	16.0	550	120	60
JUL										
15...	1140	151	368	380	8.2	18.5	8.3	150	38	14
AUG										
17...	1500	59	437	464	8.7	26.0	8.8	190	45	19
SEP										
14...	1215	121	312	328	7.6	12.5	8.6	130	33	11

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT									
07...	5.0	.3	.8	40	41	1.6	.3	3.6	102
NOV									
17...	65	1.2	3.6	180	550	13	.5	5.8	980
DEC									
15...	78	1.4	3.8	200	640	26	.4	7.0	1130
JAN									
20...	64	1.2	3.5	200	580	16	.4	8.2	1030
FEB									
24...	44	.8	3.0	190	580	11	.3	7.9	995
MAR									
24...	76	1.3	4.2	180	710	18	.5	4.1	1190
APR									
14...	21	.6	2.2	110	230	7.2	.5	6.0	438
MAY									
13...	13	.6	3.0	46	70	4.2	.3	4.7	162
JUN									
09...	85	1.7	8.0	200	520	21	.5	5.2	943
JUL									
15...	15	.6	1.2	55	120	2.6	.2	5.4	230
AUG									
17...	21	.7	1.3	73	160	3.3	.2	4.8	299
SEP									
14...	13	.5	2.5	54	92	3.7	.2	7.5	198

06741510 BIG THOMPSON RIVER AT LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	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, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
OCT									
07...	.14	46.5	--	<.020	.17	.160	.85	<.010	--
NOV									
17...	1.3	13.2	.78	.020	.80	.170	.75	.090	--
DEC									
15...	1.5	9.5	--	<.020	1.1	.230	.87	.030	--
JAN									
20...	1.4	11.0	--	<.020	1.1	.290	.75	.020	--
FEB									
24...	1.4	22.0	--	<.020	1.0	.150	.96	.020	--
MAR									
24...	1.6	9.0	--	<.020	.70	.110	.76	.050	--
APR									
14...	.60	42.6	--	<.020	.28	.080	.30	<.010	--
MAY									
13...	.22	83.5	--	<.020	.39	.340	1.80	.050	--
JUN									
09...	1.3	4.1	.58	.050	.63	8.20	3.40	--	1.60
JUL									
15...	.31	93.8	--	<.020	.15	.090	1.30	.060	.030
AUG									
17...	.41	47.6	--	<.020	<.10	.080	1.00	.060	--
SEP									
14...	.27	64.7	--	<.020	.60	.120	2.60	.040	--

DATE	TIME	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)
OCT										
07...	1240	530	1	100	< 1	8	< 1	4	900	20
NOV										
17...	1230	60	--	--	<1	4	--	4	--	48
DEC										
15...	1255	170	--	--	<1	2	--	7	--	33
JAN										
20...	1640	60	--	--	1	2	--	2	--	43
FEB										
24...	1240	--	<1	<100	<1	10	2	6	50	14
MAR										
24...	1445	2000	--	--	1	10	--	10	--	43
APR										
14...	1630	240	--	--	<1	3	--	5	--	23
MAY										
13...	1215	--	1	<100	<1	10	2	25	5900	61
JUN										
09...	1535	70	--	--	<1	3	--	4	--	69
JUL										
15...	1140	1700	--	--	<1	14	--	7	--	18
AUG										
17...	1500	--	1	<100	<1	<10	<1	4	890	19
SEP										
14...	1215	7600	--	--	<1	18	--	14	--	74

06741510 BIG THOMPSON RIVER AT LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	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)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
OCT									
07...	3	50	6	< 0.1	2	3	1	< 1	20
NOV									
17...	1	--	53	--	--	--	--	<1	30
DEC									
15...	2	--	62	--	--	--	--	<1	30
JAN									
20...	1	--	63	--	--	--	--	<1	60
FEB									
24...	3	50	36	<.1	3	2	21	<1	10
MAR									
24...	3	--	35	--	--	--	--	<1	30
APR									
14...	2	--	22	--	--	--	--	<1	20
MAY									
13...	15	320	26	.4	2	7	3	19	50
JUN									
09...	<1	--	54	--	--	--	--	<1	20
JUL									
15...	3	--	16	--	--	--	--	<1	30
AUG									
17...	<1	40	9	.1	1	4	2	<1	10
SEP									
14...	5	--	20	--	--	--	--	<1	50

06741520 BIG THOMPSON RIVER BELOW LOVELAND, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 40°23'00", long 105°01'45", in NW¼ SE¼ sec.20, T.5 N., R.68 W., Larimer County, Hydrologic Unit 10190006, at county road 9 E bridge, about 0.3 mi (0.48 km) upstream from outlet ditch and 2.0 mi (3.2 km) southeast of Loveland.

DRAINAGE AREA.--540 mi² (1,400 km²), approximately.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT										
07...	1430	174	280	238	7.9	14.0	9.2	92	25	7.1
NOV										
17...	1015	11	1450	1380	8.0	9.0	12.5	530	120	56
DEC										
15...	1430	12	1440	1160	8.3	8.0	13.1	450	101	48
JAN										
21...	0840	6.9	1400	1410	7.7	2.0	11.4	500	112	53
FEB										
24...	1535	17	1220	1350	8.1	9.0	10.6	530	130	49
MAR										
24...	1220	14	1440	1420	8.1	11.0	--	590	133	62
APR										
15...	0915	33	841	783	7.8	12.0	9.5	350	90	30
MAY										
13...	0930	167	510	510	7.7	6.5	9.5	180	41	20
JUN										
09...	1245	21	816	829	8.6	18.5	10.5	290	66	31
JUL										
15...	0930	169	440	441	8.0	17.5	8.0	170	42	16
AUG										
17...	1700	94	573	579	8.6	26.0	6.9	210	49	22
SEP										
17...	1000	17	1620	1620	7.9	14.5	6.7	630	130	74

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
OCT									
07...	11	.5	1.5	49	66	4.1	.3	4.0	150
NOV									
17...	93	1.9	6.4	180	470	22	.8	5.4	891
DEC									
15...	96	2.2	7.9	140	430	27	1.1	7.7	823
JAN									
21...	100	2.1	7.9	200	480	32	.9	8.8	922
FEB									
24...	76	1.6	6.8	180	490	28	.5	8.1	906
MAR									
24...	110	2.2	7.4	180	560	29	.9	6.7	1020
APR									
15...	38	1.0	3.3	130	290	11	.5	6.1	550
MAY									
13...	36	1.3	4.0	41	180	24	.4	4.8	338
JUN									
09...	56	1.6	4.5	101	290	14	.7	5.4	534
JUL									
15...	21	.8	1.5	64	140	3.9	.3	5.6	270
AUG									
17...	37	1.2	2.6	87	190	10	.4	5.4	371
SEP									
17...	140	2.7	7.6	181	700	27	.8	9.9	1210

06741520 BIG THOMPSON RIVER BELOW LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	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, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)
OCT 07...	.20	70.5	.35	.040	.39	.220	.90	<.010	--
NOV 17...	1.2	26.5	1.90	.200	2.1	.320	1.70	2.70	--
DEC 15...	1.1	26.7	4.20	.300	4.5	1.40	3.20	3.70	--
JAN 21...	1.3	17.2	1.40	.200	1.6	<.070	7.60	2.70	--
FEB 24...	1.2	41.6	1.80	.290	2.1	3.90	8.70	1.90	--
MAR 24...	1.4	38.6	1.30	.280	1.6	3.10	4.80	2.70	--
APR 15...	.75	49.0	.57	.050	.62	.570	1.10	.740	--
MAY 13...	.46	152	.65	.040	.69	.670	2.20	.380	--
JUN 09...	.73	30.3	1.10	.200	1.3	.230	1.30	1.10	--
JUL 15...	.37	123	.25	.020	.27	.140	1.40	.160	.120
AUG 17...	.50	94.2	.35	.080	.43	.410	2.00	.270	--
SEP 17...	1.7	55.5	1.40	.150	1.5	2.10	4.40	1.70	--

DATE	TIME	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 07...	1430	680	1	< 100	< 1	9	< 1	5	1300	19
NOV 17...	1015	60	--	--	<1	4	--	7	--	34
DEC 15...	1430	70	--	--	<1	4	--	8	--	24
JAN 21...	0840	100	--	--	<1	5	--	3	--	75
FEB 24...	1535	--	1	100	<1	10	2	15	290	27
MAR 24...	1220	200	--	--	<1	5	--	13	--	32
APR 15...	0915	340	--	--	<1	1	--	7	--	26
MAY 13...	0930	--	1	<100	<1	10	2	13	4500	52
JUN 09...	1245	410	--	--	<1	2	--	5	--	27
JUL 15...	0930	2000	--	--	<1	12	--	8	--	19
AUG 17...	1700	--	1	100	<1	<10	<1	7	2800	21
SEP 17...	1000	1000	--	--	<1	<1	--	4	--	28

06741520 BIG THOMPSON RIVER BELOW LOVELAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	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)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MOLYB- DENUM, TOTAL RECOV- ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT 07...	4	60	10	< 0.1	2	3	2	< 1	40
NOV 17...	7	--	64	--	--	--	--	1	20
DEC 15...	4	--	50	--	--	--	--	<1	20
JAN 21...	3	--	130	--	--	--	--	<1	60
FEB 24...	4	70	63	<.1	3	4	10	<1	30
MAR 24...	12	--	96	--	--	--	--	1	40
APR 15...	2	--	59	--	--	--	--	<1	20
MAY 13...	14	130	38	<.1	6	7	3	<1	30
JUN 09...	<1	--	25	--	--	--	--	<1	10
JUL 15...	2	--	22	--	--	--	--	<1	30
AUG 17...	<1	80	16	.1	1	8	3	<1	30
SEP 17...	5	--	170	--	--	--	--	<1	20

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 (89 m) from right abutment of Carter Lake Dam on Dry Creek, 7.0 mi (11.3 km) west of Berthoud, and 8.9 mi (14.3 km) upstream from mouth. Water-quality sampling site near center of reservoir.

WATER-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 NGVD.

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 (140 hm³) between elevations 5,618.00 ft (1,712.336 m), trashrack sill at outlet, and 5,763.00 ft (1,756.562 m), maximum water surface, 6 ft (1.8 m) below crest of dam. Dead storage, 3,310 acre-ft (4.08 hm³). 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 (1,713.0 m) 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 furnished by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 109,100 acre-ft (135 hm³) Apr. 27-29, 1971, elevation, 5,759.12 ft (1,755.380 m); minimum observed since appreciable storage was attained, 960 acre-ft (1.18 hm³) Oct. 25, 1954, elevation, 5,621.40 ft (1,713.403 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 106,700 acre-ft (132 hm³) June 2, elevation, 5,757.08 ft (1,754.758 m); minimum contents, 27,800 acre-ft (34.3 hm³) Oct. 29, elevation, 5,673.66 ft (1,729.332 m).

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	5,681.88	33,940	-
Oct. 31	5,674.54	28,440	-5,500
Nov. 30	5,695.84	45,300	+16,860
Dec. 31	5,710.10	58,010	+12,710
CAL YR 1981			-12,900
Jan. 31	5,720.24	67,690	+9,680
Feb. 28	5,731.86	79,400	+11,710
Mar. 31	5,744.48	92,740	+13,340
Apr. 30	5,748.16	97,770	+5,030
May 31	5,756.48	106,100	+8,330
June 30	5,753.85	103,100	-3,000
July 31	5,736.62	84,360	-18,740
Aug. 31	5,724.62	72,030	-12,330
Sept. 30	5,714.26	61,920	-10,110
WTR YR 1982			+27,980

06742500 CARTER LAKE NEAR BERTHOUD, CO--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Samples collected at surface near center of reservoir. Reservoir storage represents usable contents.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAMPLING DEPTH (FEET)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
APR				
16...	1440	.10	5.0	10.6
16...	1441	5.00	5.0	10.6
16...	1442	10.0	5.0	10.6
16...	1443	20.0	4.5	10.6
16...	1444	25.0	4.5	10.6
16...	1445	30.0	4.5	10.6
16...	1446	40.0	4.5	10.6
16...	1447	50.0	4.0	10.6
16...	1448	60.0	4.0	10.6
16...	1449	70.0	4.0	10.6
16...	1450	75.0	4.0	10.5
16...	1451	80.0	4.0	10.5
16...	1452	90.0	4.0	10.4
16...	1453	100	4.0	10.4
16...	1454	110	4.0	10.4
16...	1455	120	4.0	10.4
16...	1456	125	4.0	10.4
16...	1457	130	4.0	10.4
MAY				
27...	1400	.10	12.5	9.4
27...	1401	5.00	11.5	9.6

DATE	TIME	SAMPLING DEPTH (FEET)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
MAY				
27...	1402	10.0	11.0	9.6
27...	1403	20.0	10.0	9.6
27...	1404	25.0	9.5	9.7
27...	1405	30.0	8.5	9.6
27...	1406	40.0	7.0	9.4
27...	1407	50.0	6.0	9.4
27...	1408	60.0	6.0	9.2
27...	1409	70.0	6.0	9.2
27...	1410	75.0	6.0	9.3
27...	1411	80.0	6.0	9.3
27...	1412	90.0	6.0	9.3
27...	1413	100	6.0	9.3
27...	1414	110	6.0	9.3
27...	1415	120	6.0	9.3
27...	1416	125	6.0	9.3
27...	1417	130	5.5	9.3
27...	1418	150	5.5	9.0
JUN				
23...	1400	.10	17.5	7.8
23...	1401	5.00	17.5	7.8

DATE	TIME	SAMPLING DEPTH (FEET)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
JUN				
23...	1402	10.0	17.5	8.0
23...	1403	20.0	14.0	8.7
23...	1404	25.0	11.5	8.8
23...	1405	30.0	10.0	8.7
23...	1406	40.0	7.0	8.5
23...	1407	50.0	7.0	8.5
23...	1408	60.0	6.5	8.4
23...	1409	70.0	6.5	8.5
23...	1410	75.0	6.5	8.4
23...	1411	80.0	6.0	8.4
23...	1412	90.0	6.0	8.4
23...	1413	100	6.0	8.2
23...	1414	110	6.0	8.2
23...	1415	120	6.0	8.0
23...	1416	125	6.0	7.9
23...	1417	130	6.0	7.8
23...	1418	150	6.0	7.4
AUG				
04...	1500	.10	22.0	7.1
04...	1501	5.00	22.0	7.1
04...	1502	10.0	22.0	7.2

DATE	TIME	SAMPLING DEPTH (FEET)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
AUG				
04...	1503	20.0	20.0	7.6
04...	1504	25.0	19.5	7.8
04...	1505	30.0	16.0	8.1
04...	1506	40.0	9.0	7.6
04...	1507	50.0	8.0	7.6
04...	1508	60.0	7.5	7.6
04...	1509	70.0	7.0	7.7
04...	1510	75.0	7.0	7.7
04...	1511	80.0	7.0	7.8
04...	1512	90.0	6.5	7.6
04...	1513	100	6.5	7.6
04...	1514	110	6.5	7.4
04...	1515	120	6.5	6.8
04...	1516	125	6.5	6.3
31...	1400	.10	21.0	7.6
31...	1401	5.00	21.0	7.7
31...	1402	10.0	20.5	7.9
31...	1403	20.0	20.5	8.0
31...	1404	25.0	17.5	7.6

06742500 CARTER LAKE NEAR BERTHOUD, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	SAM-PLING DEPTH (FEET)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)
AUG				
31...	1405	30.0	15.0	7.6
31...	1406	40.0	11.0	7.5
31...	1407	50.0	8.5	7.6
31...	1408	60.0	7.5	7.8
31...	1409	70.0	7.0	7.8
31...	1410	75.0	7.0	7.8
31...	1411	80.0	7.0	7.6
31...	1412	90.0	6.5	7.4
31...	1413	100	6.5	7.3
31...	1414	110	6.5	7.1
SEP				
29...	1340	.10	17.0	7.6
29...	1341	5.00	16.5	7.6
29...	1342	10.0	16.0	7.6
29...	1343	20.0	16.0	7.4
29...	1344	25.0	16.0	7.4
29...	1345	30.0	16.0	6.5
29...	1346	40.0	11.0	5.6
29...	1347	50.0	9.0	5.8
29...	1348	60.0	8.0	6.0
29...	1349	70.0	7.0	6.0
29...	1350	75.0	7.0	5.9
29...	1351	80.0	7.0	5.8
29...	1352	90.0	7.0	5.6
29...	1353	100	6.5	5.1

DATE	TIME	SAM-PLING DEPTH (FEET)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	PH (UNITS)	TRANS-PAR-ENCY (SECCHI DISK) (IN)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
APR									
16...	1440	.10	80	7.8	53.0	<1	<1	--	46
MAY									
27...	1400	.10	81	7.6	99.0	<1	<1	--	47
JUN									
23...	1400	.10	81	7.5	118	K5	--	<1	48
AUG									
04...	1500	.10	84	7.6	--	<1	<1	--	57
31...	1400	.10	89	7.5	51.0	K1	<1	--	59
SEP									
29...	1340	.10	90	8.3	77.0	<1	<1	<1	45

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NITRITE TOTAL (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 TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	ALGAL GROWTH POTEN-TIAL, BOTTLE TEST (MG/L)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)
APR								
16...	.06	--	<.020	<.10	.120	<.010	3.3	6000
MAY								
27...	.06	<.020	<.020	<.10	.070	.100	<1.0	3500
JUN								
23...	.07	--	<.020	<.10	<.060	<.010	<1.0	1600
AUG								
04...	.08	--	<.020	<.10	.080	.020	--	200
31...	.08	--	<.020	<.10	.070	.020	2.0	--
SEP								
29...	.06	--	<.020	<.10	<.060	.010	--	--

K BASED ON NON-IDEAL COLONY COUNT.

06742500 CARTER LAKE NEAR BERTHOUD, CO--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO SEPTEMBER 1982

DATE	APR 16,82	MAY 27,82	JUN 23,82	AUG 4,82	AUG 31,82	SEP 29,82
TIME	1440	1400	1400	1500	1400	1340
TOTAL CELLS/ML	6000	3500	1600	200	29	2000
DIVERSITY: DIVISION	0.1	1.5	1.1	0.6	0.0	1.1
.CLASS	0.1	1.5	1.1	0.6	0.0	1.1
..ORDER	0.1	1.5	1.2	0.6	0.0	1.1
...FAMILY	0.1	1.6	1.2	0.6	0.0	1.1
....GENUS	0.3	1.6	1.2	0.6	0.0	1.2

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)												
.BACILLARIOPHYCEAE												
..ACHNANTHALES												
...ACHNANTHACEAE												
....COCCONEIS	--	-	--	-	29	2	--	-	--	-	--	-
..EUPODISCALES												
...COSCINODISCACEAE												
....CYCLOTELLA	260	4	--	-	14	1	29	14	--	-	41	2
....MELOSIRA	5700#	95	--	-	--	-	--	-	--	-	120	6
..FRAGILARIALES												
...FRAGILARIACEAE												
....FRAGILARIA	--	-	1500#	42	860#	53	--	-	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...CHLOROCOCCACEAE												
....SCHROEDERIA	*	0	--	-	--	-	--	-	--	-	--	-
...DICTYOSPHAERIACEAE												
....DICTYOSPHAERIUM	--	-	460	13	--	-	--	-	--	-	--	-
...OOCYSTACEAE												
....ANKISTRODESMUS	*	0	--	-	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	170#	86	--	-	55	3
...SCENEDESMACEAE												
....SCENEDESMUS	--	-	120	3	--	-	--	-	--	-	--	-
..ULOTRICHALES												
...ULOTRICHACEAE												
....ULOTHRIX	--	-	--	-	720#	44	--	-	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	--	-	55	3
CHRYSOPHYTA												
.CHRYSOPHYCEAE												
..OCHROMONADALES												
...OCHROMONADACEAE												
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	170	8
.XANTHOPHYCEAE												
..MISCHOCOCCALES												
...SCIADACEAE												
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	29#	100	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	--	-	--	-	14	1	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	--	-	--	-	--	-	1600#	78
..NOSTOCALES												
...NOSTOCACEAE												
....CYLINDROSPERMUM	--	-	1500#	42	--	-	--	-	--	-	--	-

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

06744000 BIG THOMPSON RIVER AT MOUTH, NEAR LA SALLE, CO

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1954 to July 1956, October 1967 to September 1968, October 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)
OCT								
07...	0830	159	1270	1290	7.8	12.0	7.8	530
NOV								
17...	1515	69	2110	2160	8.2	11.0	10.6	1000
DEC								
18...	0950	53	2120	2180	7.9	.5	11.1	1000
JAN								
19...	1400	56	2330	2030	8.1	3.5	10.3	940
FEB								
23...	0845	62	2160	2000	8.0	4.5	9.5	940
MAR								
18...	0920	46	2280	2100	8.2	5.5	10.4	1100
APR								
28...	1030	32	2420	2290	8.2	11.5	12.0	1100
MAY								
13...	1110	396	1080	1040	7.9	7.0	8.1	390
JUN								
10...	1200	7.1	2240	2360	8.0	18.0	12.3	1100
JUL								
13...	1230	71	1730	1820	8.0	22.5	6.5	730
AUG								
13...	1000	61	1530	1540	7.8	17.5	6.6	660
SEP								
16...	1140	176	1890	1780	8.1	13.5	8.1	770

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-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)
OCT									
07...	111	62	82	1.7	5.5	170	500	12	.9
NOV									
17...	190	130	150	2.1	6.5	290	860	27	1.2
DEC									
18...	200	130	170	2.3	6.8	310	1000	32	1.2
JAN									
19...	180	120	160	2.3	8.0	320	920	30	1.1
FEB									
23...	180	120	150	2.1	7.2	310	870	19	.7
MAR									
18...	200	140	180	2.4	7.6	330	1100	29	1.1
APR									
28...	200	140	220	2.9	5.5	290	1200	37	1.1
MAY									
13...	73	51	67	1.7	10	110	410	16	.5
JUN									
10...	190	150	170	2.2	5.4	299	1100	26	1.0
JUL									
13...	140	92	150	2.7	5.0	208	810	23	.9
AUG									
13...	130	82	100	1.9	5.5	238	610	19	.8
SEP									
16...	150	96	130	2.3	7.1	245	770	21	.8

06744000 BIG THOMPSON RIVER AT MOUTH, NEAR LA SALLE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	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-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT								
07...	6.5	890	1.2	382	1.7	.140	<10	140
NOV								
17...	6.2	1560	2.1	291	3.7	.430	60	100
DEC								
18...	9.6	1760	2.4	252	4.3	.510	30	150
JAN								
19...	11	1640	2.2	248	3.7	.450	10	150
FEB								
23...	11	1560	2.1	261	3.3	.330	10	130
MAR								
18...	8.1	1880	2.6	233	3.0	.300	30	160
APR								
28...	7.2	2000	2.7	173	2.8	.210	50	360
MAY								
13...	5.1	706	.96	755	1.6	.220	65	410
JUN								
10...	7.1	1840	2.5	35.3	1.8	.110	40	510
JUL								
13...	8.9	1360	1.9	261	2.1	.200	31	120
AUG								
13...	11	1120	1.5	184	3.3	.130	5	150
SEP								
16...	11	1350	1.8	642	3.0	.160	7	90

06746095 JOE WRIGHT CREEK ABOVE JOE WRIGHT RESERVOIR, CO

LOCATION.--Lat 40°32'24", long 105°52'56", in SE¼SE¼ sec.26, T.7 N., R.76 W., Larimer County, Hydrologic Unit 10190007, on left bank 150 ft (46 m) below unnamed tributary and Colorado Highway 14 culvert crossing, 1.5 mi (2.4 km) northeast of Cameron Pass, 1.5 mi (2.4 km) southwest of Joe Wright Dam, and 8 mi (12.9 km) east of Gould.

DRAINAGE AREA.--3.01 mi^2 (7.80 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 9,990 ft (3,045 m), from topographic map.

REMARKS.--Records good except those for winter periods and period of no gage-height record, 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, 107 ft^3/s (3.03 m^3/s) June 18, 1982, gage height, 1.58 ft (0.482 m); maximum gage height, 3.99 ft (1.216 m) Apr. 19, 1981 (backwater from ice); minimum daily discharge, 0.20 ft^3/s (0.006 m^3/s) Jan. 30-Apr. 4, 1979, Feb. 9 to Apr. 9, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 107 ft^3/s (3.03 m^3/s) at 0200 June 18, gage height, 1.66 ft (0.506 m); maximum gage height, 2.42 ft (0.738 m) at 0230 June 5 (backwater from ice); minimum daily discharge, 0.26 ft^3/s (0.007 m^3/s) Mar. 3-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	.64	.66	.38	.38	.29	.43	.78	7.9	77	19	2.6
2	1.5	.64	.66	.38	.38	.27	.43	.86	11	70	19	2.4
3	1.9	.64	.66	.38	.36	.26	.43	.98	12	65	19	2.3
4	2.2	.64	.66	.38	.35	.26	.43	1.1	14	62	19	2.1
5	2.4	.64	.66	.38	.33	.26	.43	1.2	16	55	15	3.5
6	2.1	.64	.66	.38	.33	.26	.43	1.4	18	48	11	3.0
7	1.9	.64	.66	.38	.33	.27	.43	1.5	20	49	9.7	2.9
8	2.1	.64	.66	.38	.33	.28	.43	1.7	23	62	9.5	5.2
9	2.2	.64	.66	.38	.33	.29	.43	1.7	27	65	13	3.6
10	2.1	.64	.66	.38	.33	.30	.43	1.7	30	57	9.8	2.0
11	2.1	.64	.66	.38	.33	.31	.43	1.7	35	55	8.5	1.6
12	2.5	.64	.60	.38	.33	.32	.43	1.7	43	54	7.9	1.9
13	2.6	.64	.56	.38	.33	.32	.43	1.7	47	56	8.9	1.8
14	2.5	.64	.50	.38	.33	.32	.43	1.8	47	59	9.3	2.0
15	2.4	.64	.50	.38	.33	.32	.43	2.0	46	56	7.6	3.4
16	2.4	.64	.50	.38	.32	.32	.45	2.2	53	50	7.2	2.5
17	2.8	.64	.50	.38	.31	.32	.48	2.5	73	47	6.8	2.2
18	3.1	.66	.50	.38	.31	.32	.48	2.8	96	42	6.1	1.8
19	3.3	.66	.50	.38	.31	.32	.48	3.3	71	39	5.6	1.7
20	3.2	.66	.50	.38	.31	.32	.48	4.0	74	36	5.2	1.8
21	2.8	.66	.50	.38	.31	.32	.48	4.7	73	33	5.7	1.7
22	2.6	.66	.46	.38	.31	.32	.48	5.6	77	32	5.0	1.6
23	2.1	.66	.44	.38	.31	.32	.50	6.8	63	31	4.3	2.1
24	1.1	.66	.42	.38	.31	.35	.54	7.0	47	30	4.0	1.6
25	1.0	.66	.40	.38	.31	.38	.54	7.0	50	29	3.9	2.3
26	.80	.66	.40	.38	.31	.38	.54	7.0	49	29	3.5	3.0
27	.80	.66	.40	.38	.31	.38	.54	7.0	56	27	3.1	2.1
28	.74	.66	.40	.38	.31	.38	.60	7.0	64	29	3.6	2.0
29	.68	.66	.40	.38	---	.38	.64	7.0	72	24	3.5	2.0
30	.67	.66	.40	.38	---	.38	.70	7.4	73	19	3.1	1.9
31	.64	---	.40	.38	---	.38	---	7.8	---	19	2.9	---
TOTAL	60.73	19.46	16.54	11.78	9.14	9.90	14.38	110.92	1387.9	1406	259.7	70.6
MEAN	1.96	.65	.53	.38	.33	.32	.48	3.58	46.3	45.4	8.38	2.35
MAX	3.3	.66	.66	.38	.38	.38	.70	7.8	96	77	19	5.2
MIN	.64	.64	.40	.38	.31	.26	.43	.78	7.9	19	2.9	1.6
AC-FT	120	39	33	23	18	20	29	220	2750	2790	515	140

CAL YR 1981 TOTAL 2028.23 MEAN 5.56 MAX 69 MIN .20 AC-FT 4020
WTR YR 1982 TOTAL 3377.05 MEAN 9.25 MAX 96 MIN .26 AC-FT 6700

NOTE.--NO GAGE-HEIGHT RECORD NOV. 18 TO MAY 27.

06746110 JOE WRIGHT CREEK BELOW JOE WRIGHT RESERVOIR, CO

LOCATION.--Lat 40°33'43", long 105°52'09", in SE¼NE¼ sec.24, T.7 N., R.76 W., Larimer County, Hydrologic Unit 10190007, on left bank 500 ft (152 m) downstream from unnamed tributary, 2,000 ft (610 m) downstream from Joe Wright Dam, and 3 mi (4.8 km) southwest of Chambers Lake.

DRAINAGE AREA.--6.90 mi^2 (17.9 km^2).

PERIOD OF RECORD.--June 29, 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 9,710 ft (2,960 m), from topographic map.

REMARKS.--Records 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, 145 ft^3/s (4.11 m^3/s), June 30, 1978, gage height, 2.46 ft (0.750 m); minimum daily, 0.27 ft^3/s (0.008 m^3/s) Jan. 31 to Feb. 14, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 111 ft^3/s (3.14 m^3/s) at 0815 July 1, gage height, 2.31 ft (0.704 m); minimum daily, 0.32 ft^3/s (0.009 m^3/s) Mar. 4-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.6	.86	.60	.58	.35	.35	.35	5.6	103	26	67
2	2.5	2.6	.76	.60	.54	.35	.35	.35	6.5	97	22	68
3	2.6	2.8	.66	.60	.50	.34	.35	.35	19	96	21	68
4	2.6	2.8	.60	.60	.48	.32	.35	1.2	31	88	20	68
5	2.6	2.8	.60	.60	.45	.32	.35	8.8	36	79	20	68
6	2.6	2.8	.60	.60	.43	.32	.35	8.8	41	70	20	67
7	2.6	2.8	.60	.60	.40	.34	.35	8.8	60	71	20	67
8	2.6	2.8	.60	.60	.37	.35	.35	8.8	77	73	20	67
9	2.6	2.8	.60	.60	.35	.35	.35	8.8	83	78	15	69
10	2.6	2.8	.60	.60	.35	.35	.35	8.8	84	80	14	54
11	2.6	3.2	.60	.60	.35	.35	.35	9.0	87	83	17	10
12	2.6	3.3	.60	.60	.35	.35	.35	9.1	92	86	17	6.0
13	2.8	3.8	.60	.60	.35	.35	.35	8.8	97	80	18	4.0
14	2.8	4.0	.60	.60	.35	.35	.35	8.8	94	78	18	3.0
15	2.8	4.0	.60	.60	.35	.35	.35	8.8	98	78	18	2.5
16	2.8	4.0	.60	.60	.35	.35	.35	8.8	99	76	18	2.0
17	2.8	4.0	.60	.60	.35	.35	.35	8.8	75	69	18	1.8
18	2.8	4.0	.60	.60	.35	.35	.35	8.6	67	60	16	1.6
19	2.8	3.8	.60	.60	.35	.35	.35	8.6	80	59	16	1.5
20	2.8	3.8	.60	.60	.35	.35	.35	6.0	83	57	16	1.4
21	2.8	3.8	.60	.60	.35	.35	.35	1.5	81	49	16	1.4
22	2.7	3.8	.60	.60	.35	.35	.35	1.5	77	48	16	1.3
23	2.8	3.6	.60	.60	.35	.35	.35	1.9	49	48	16	1.3
24	2.8	3.4	.60	.60	.35	.35	.35	1.8	31	47	11	1.2
25	2.8	2.6	.60	.60	.35	.35	.35	1.3	64	43	9.1	1.2
26	2.8	2.2	.60	.60	.35	.35	.35	1.4	76	36	22	1.2
27	2.7	1.7	.60	.60	.35	.35	.35	1.6	79	32	49	1.2
28	2.6	1.5	.60	.60	.35	.35	.35	3.0	80	32	54	1.1
29	2.6	1.2	.60	.60	---	.35	.35	3.7	88	36	62	1.1
30	2.6	1.0	.60	.60	---	.35	.35	4.0	96	35	66	1.1
31	2.6	---	.60	.60	---	.35	---	4.4	---	35	67	---
TOTAL	83.2	90.3	19.08	18.60	10.75	10.74	10.50	166.45	2036.1	2002	758.1	708.9
MEAN	2.68	3.01	.62	.60	.38	.35	.35	5.37	67.9	64.6	24.5	23.6
MAX	2.8	4.0	.86	.60	.58	.35	.35	9.1	99	103	67	69
MIN	2.5	1.0	.60	.60	.35	.32	.35	.35	5.6	32	9.1	1.1
AC-FT	165	179	38	37	21	21	21	330	4040	3970	1500	1410

CAL YR 1981 TOTAL 3019.50 MEAN 8.27 MAX 93 MIN .30 AC-FT 5990
WTR YR 1982 TOTAL 5914.72 MEAN 16.2 MAX 103 MIN .32 AC-FT 11730

NOTE.--NO GAGE-HEIGHT RECORD NOV. 18 TO MAY 11.

06749500 CACHE LA POUDRE RIVER NEAR FORT COLLINS, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 40°42'04", long 105°14'27", in NW¼SW¼ sec.33, T.9 N., R.70 W., Larimer County, Hydrologic Unit 10190007, 1,000 ft (300 m) upstream from North Fork and 11 mi (18 km) northwest of Fort Collins.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
OCT									
08...	1415	30	70	55	7.7	12.0	7.8	23	6.7
NOV									
17...	1030	18	75	65	7.0	4.5	10.6	26	7.3
DEC									
16...	1030	13	77	55	7.1	.5	11.5	30	8.2
JAN									
20...	1115	22	82	87	7.3	.5	11.6	30	8.2
FEB									
23...	1330	23	77	73	7.2	1.5	11.6	27	7.2
MAR									
23...	0920	17	82	86	7.4	1.0	--	31	8.4
APR									
14...	1015	16	86	78	--	10.0	9.2	29	8.0
MAY									
12...	1415	377	39	48	7.0	7.0	9.9	24	7.3
JUN									
11...	1200	1870	41	37	7.2	9.0	9.2	13	3.8
JUL									
14...	1030	1320	35	33	7.5	12.5	8.8	11	3.2
AUG									
19...	1200	650	39	38	7.2	17.0	7.8	13	3.6
SEP									
15...	1330	173	75	62	7.1	10.0	9.2	24	6.8

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT									
08...	1.6	2.9	.3	.9	28	5.0	1.1	.2	9.6
NOV									
17...	2.0	3.8	.3	.9	28	6.0	1.2	.2	11
DEC									
16...	2.3	4.0	.3	1.0	33	5.0	1.1	.2	11
JAN									
20...	2.3	4.0	.3	1.0	36	<5.0	1.4	.3	11
FEB									
23...	2.1	3.3	.3	.8	33	6.0	1.8	.2	8.8
MAR									
23...	2.4	4.1	.3	1.1	36	6.0	1.6	.3	10
APR									
14...	2.2	4.1	.4	1.1	36	6.0	1.4	.3	9.7
MAY									
12...	1.3	2.3	.2	.9	21	7.0	.7	.2	8.2
JUN									
11...	1.0	1.9	.2	.8	15	<5.0	.8	.1	8.5
JUL									
14...	.7	1.3	.2	.5	14	<5.0	.4	.1	7.1
AUG									
19...	.9	1.8	.2	.5	17	<5.0	.5	.1	6.8
SEP									
15...	1.7	3.1	.3	.9	18	5.0	1.1	.2	10

06749500 CACHE LA POUDRE RIVER NEAR FORT COLLINS, CO

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)
OCT								
08...	45	.06	3.6	<.020	<.10	.130	.55	<.010
NOV								
17...	50	.07	2.4	<.020	.14	.140	.28	<.010
DEC								
16...	53	.07	1.9	<.020	<.10	<.070	.31	.010
JAN								
20...	--	--	--	<.020	<.09	<.070	.25	<.010
FEB								
23...	50	.07	3.1	<.020	<.10	.060	.69	<.010
MAR								
23...	56	.08	2.6	<.020	<.10	.080	.24	.010
APR								
14...	54	.07	2.3	<.020	<.10	<.060	.32	<.010
MAY								
12...	41	.06	41.7	<.020	<.10	.120	.51	<.010
JUN								
11...	--	--	--	<.020	<.10	<.060	1.40	.040
JUL								
14...	--	--	--	<.020	<.10	<.060	.80	.050
AUG								
19...	--	--	--	<.020	<.10	.130	1.00	.070
SEP								
15...	40	.05	18.7	<.020	<.10	.100	.50	.060

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT									
08...	70	--	--	< 1	5	--	2	--	32
NOV									
17...	--	<1	<100	<1	<10	<1	5	30	37
DEC									
16...	110	--	--	<1	2	--	7	--	28
JAN									
20...	120	--	--	<1	3	--	2	--	34
FEB									
23...	--	<1	<100	<1	<10	1	8	40	24
MAR									
23...	150	--	--	<1	5	--	3	--	9
APR									
14...	70	--	--	<1	3	--	3	--	12
MAY									
12...	--	<1	<100	<1	<10	<1	9	330	120
JUN									
11...	770	--	--	<1	1	--	4	--	120
JUL									
14...	270	--	--	<1	8	--	2	--	81
AUG									
19...	--	<1	<100	<1	<10	<1	3	520	61
SEP									
15...	180	--	--	<1	<1	--	2	--	100

06749500 CACHE LA POUDRE RIVER NEAR FORT COLLINS, CO

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	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)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
OCT 08...	< 2	--	3	--	--	--	--	< 1	20
NOV 17...	<1	10	2	<.1	2	2	<1	<1	10
DEC 16...	2	--	2	--	--	--	--	<1	10
JAN 20...	2	--	<1	--	--	--	--	<1	20
FEB 23...	2	<10	2	<.1	<1	2	<1	<1	10
MAR 23...	7	--	4	--	--	--	--	<1	10
APR 14...	2	--	<3	--	--	--	--	<1	10
MAY 12...	6	10	3	<.1	<1	4	<1	7	10
JUN 11...	1	--	4	--	--	--	--	<1	20
JUL 14...	1	--	3	--	--	--	--	<1	30
AUG 19...	1	20	2	.1	<1	6	<1	<1	10
SEP 15...	5	--	2	--	--	--	--	<1	10

DATE	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)
MAY 12...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01
SEP 15...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)
MAY 12...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
SEP 15...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)
MAY 12...	<.01	<.01	<.10	<1	<.01	<.01	<.01	<.01	<.01
SEP 15...	<.01	<.01	<.10	<1	<.01	<.01	<.01	<.01	<.01

06752000 CACHE LA POUDRE RIVER AT MOUTH OF CANYON, NEAR FORT COLLINS, CO

LOCATION.--Lat 40°39'52", long 105°13'26", in NW¼ sec.15, T.8 N., R.70 W., Larimer County, Hydrologic Unit 10190007, on left bank at mouth of canyon, 0.5 mi (0.8 km) downstream from headgate of Poudre Valley Canal, 1.2 mi (1.9 km) upstream from Lewstone Creek, and 9.3 mi (15.0 km) northwest of courthouse in Fort Collins.

DRAINAGE AREA.--1,056 mi^2 (2,735 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June to August 1881, May to July 1883, October 1883 to current year. Monthly discharge only for some periods, published in WSP 1310. Records for Mar. 23 to Apr. 30 and July 4 to Aug. 20, 1883, published in WSP 9, have been found to be unreliable and should not be used. Prior to 1902, published as Cache la Poudre Creek or River at or near Fort Collins.

REVISED RECORDS.--WSP 1310: 1885-87, 1889, 1892, 1894-96, 1934. WSP 1730: 1960, drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Altitude of gage is 5,220 ft (1,591 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Natural flow of stream affected by transbasin and transmountain diversions (see elsewhere in this report), diversions above station for irrigation of about 50,000 acres (202 km^2), most of which is below station 78,950 acre-ft (97.3 hm^3) during current year, and diversions for municipal use 11,170 acre-ft (13.8 hm^3) during current year.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, occurred May 20, 1904; maximum discharge determined, 21,000 ft^3/s (595 m^3/s) June 9, 1891 (from reports of State Engineer of Colorado), caused by failure of Chambers Lake Dam; minimum daily discharge, 1.6 ft^3/s (0.045 m^3/s) Nov. 20, 28, 1948, caused by diversion of Poudre Valley Canal 0.5 mi (0.8 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,170 ft^3/s (89.8 m^3/s) at 0545 June 30, gage height, 5.48 ft (1.670 m); minimum daily, 5.5 ft^3/s (0.16 m^3/s) Nov. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	28	18	26	14	12	19	184	754	2780	684	425
2	31	33	6.5	24	10	17	27	240	778	2660	804	426
3	31	39	14	25	315	29	29	255	744	2360	778	409
4	30	40	17	20	8.0	25	22	293	695	2190	728	333
5	16	34	22	18	8.0	20	32	349	819	2050	760	275
6	9.3	28	22	19	8.0	15	28	322	1010	1730	700	267
7	9.5	29	22	17	8.0	10	31	285	969	1510	665	270
8	25	29	25	20	23	15	18	285	1070	1580	640	279
9	34	23	23	20	52	22	15	324	1190	1500	754	271
10	36	21	28	18	71	24	30	356	1180	1400	634	227
11	35	15	29	18	71	22	42	390	1340	1440	623	135
12	41	11	24	19	94	24	44	401	1340	1530	619	125
13	42	19	18	18	138	23	47	449	1430	1410	627	169
14	44	32	22	20	138	15	38	340	1380	1290	666	300
15	53	31	26	19	138	26	37	285	1310	1180	573	144
16	57	33	30	17	138	28	41	285	1340	1150	623	92
17	53	25	30	19	138	23	41	285	1560	1100	681	90
18	46	24	25	21	57	23	32	290	1660	1020	679	59
19	41	31	28	21	9.0	18	37	260	1100	899	701	40
20	43	15	30	19	10	13	36	222	1280	825	646	31
21	46	20	29	18	9.0	10	17	226	1300	790	656	8.3
22	34	41	31	17	8.0	9.1	21	255	1420	726	617	8.9
23	27	33	30	18	7.0	18	33	368	1480	746	598	8.8
24	26	32	28	19	7.0	17	33	431	1590	768	519	8.8
25	37	31	26	19	8.0	21	33	437	1950	779	535	46
26	28	21	28	20	8.0	23	35	407	2400	789	489	74
27	38	9.8	30	21	9.0	24	36	448	2530	871	437	89
28	36	5.5	32	20	9.0	23	30	618	2790	941	387	84
29	37	14	30	21	---	17	25	774	2790	1110	401	77
30	34	20	29	19	---	21	79	813	2860	855	442	71
31	33	---	28	20	---	14	---	739	---	540	419	---
TOTAL	1088.8	767.3	780.5	610	1513.0	601.1	988	11616	44059	40519	19785	4842.8
MEAN	35.1	25.6	25.2	19.7	54.0	19.4	32.9	375	1469	1307	616	161
MAX	57	41	32	26	315	29	79	813	2860	2780	804	426
MIN	9.3	5.5	6.5	17	7.0	9.1	15	184	695	540	387	8.3
AC-FT	2160	1520	1550	1210	3000	1190	1960	23040	87390	80370	37860	9610

CAL YR 1981 TOTAL 65946.6 MEAN 181 MAX 1970 MIN 5.5 AC-FT 130800
WTR YR 1982 TOTAL 126470.5 MEAN 346 MAX 2860 MIN 5.5 AC-FT 250900

NOTE.--NO GAGE-HEIGHT RECORD DEC. 18 TO MAR. 12.

06752000 CACHE LA POUDRE RIVER AT MOUTH OF CANYON, NEAR FORT COLLINS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1962 to October 1965, October 1971 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	OXYGEN, DIS-SOLVED (MG/L)	DATE	TIME	OXYGEN, DIS-SOLVED (MG/L)
OCT 08...	1250	9.0	MAY 12...	1500	9.9
NOV 17...	0845	10.4	JUN 11...	0800	9.4
DEC 16...	1115	11.5	JUL 14...	1120	8.6
JAN 20...	1215	11.6	AUG 19...	0855	8.0
FEB 23...	1200	12.0	SEP 15...	1135	9.0
APR 14...	0830	9.6			

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)
OCT 08...	1250	30	70	63	7.6	12.5	9.0	24
NOV 17...	0845	28	78	67	6.9	4.5	10.4	27
DEC 16...	1115	35	140	123	7.4	.5	11.5	59
JAN 20...	1215	36	84	86	7.0	.5	11.6	31
FEB 23...	1200	30	86	81	7.1	1.5	12.0	31
MAR 23...	1020	27	91	92	7.2	3.0	--	35
APR 14...	0830	37	218	181	7.9	8.0	9.6	86
MAY 12...	1500	380	70	64	7.0	7.5	9.9	31
JUN 11...	0800	1460	65	64	7.2	9.5	9.4	25
JUL 14...	1120	1280	35	35	7.5	13.5	8.6	13
AUG 19...	0855	678	52	53	7.0	16.0	8.0	18
SEP 15...	1135	120	114	108	7.5	10.5	9.0	45

06752000 CACHE LA POUDRE RIVER AT MOUTH OF CANYON, NEAR FORT COLLINS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- 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)
OCT 08...	6.8	1.8	3.1	.3	.9	29	5.0	1.0	.3
NOV 17...	7.7	2.0	3.7	.3	1.0	23	5.0	1.2	.2
DEC 16...	16	4.7	6.1	.4	1.3	63	5.0	11	.4
JAN 20...	8.8	2.3	4.0	.3	1.0	36	<5.0	1.5	.3
FEB 23...	8.2	2.5	3.7	.3	.8	37	5.0	1.8	.2
MAR 23...	9.6	2.6	4.4	.3	1.2	38	5.0	1.7	.3
APR 14...	24	6.4	9.1	.5	1.5	92	5.0	5.4	.7
MAY 12...	9.3	1.8	2.9	.2	1.2	28	7.0	1.0	.3
JUN 11...	7.1	1.8	2.9	.3	1.0	27	<5.0	1.4	.3
JUL 14...	3.9	.8	1.5	.2	.5	16	<5.0	.5	.1
AUG 19...	5.1	1.3	2.1	.2	.6	24	<5.0	.7	.2
SEP 15...	13	3.1	4.4	.3	1.3	36	9.0	2.1	.3

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	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- PHORUS, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 08...	9.5	46	.06	3.7	<.10	.010	33	4
NOV 17...	10	--	--	--	.14	<.010	35	2
DEC 16...	11	94	.13	8.9	.17	.030	17	7
JAN 20...	11	--	--	--	<.09	.010	23	<1
FEB 23...	8.4	53	.07	4.3	<.10	<.010	20	2
MAR 23...	8.9	57	.08	4.2	<.10	.020	<3	4
APR 14...	9.6	117	.16	11.7	<.10	<.010	<9	7
MAY 12...	8.1	49	.07	50.3	<.10	<.010	120	6
JUN 11...	9.3	--	--	--	<.10	.040	120	5
JUL 14...	7.6	--	--	--	<.10	<.010	87	3
AUG 19...	7.4	--	--	--	<.10	.040	80	5
SEP 15...	11	66	.09	21.4	.12	.040	91	5

06752258 CACHE LA POUDRE 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 (1.3 km) downstream from Larimer-Weld Canal and 1.0 mi (1.6 km) northwest of Fort Collins.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT										
08...	1140	88	190	195	8.1	14.0	9.8	83	25	5.1
NOV										
17...	1215	5.2	480	479	7.8	9.5	10.8	220	62	16
DEC										
16...	1320	3.6	480	409	7.7	4.0	12.0	230	64	17
JAN										
20...	1420	1.9	524	537	7.7	4.0	11.2	250	70	18
FEB										
23...	1515	1.8	470	521	7.8	7.5	11.5	220	60	16
MAR										
24...	0930	1.8	520	495	7.8	6.5	--	250	70	19
APR										
13...	1750	3.8	528	499	8.2	13.0	9.6	250	70	18
MAY										
12...	1115	45	200	195	8.0	9.5	9.0	89	26	5.8
JUN										
10...	1600	113	80	75	7.6	15.0	8.2	28	8.2	1.9
JUL										
14...	1320	299	61	57	7.8	16.0	8.3	22	6.6	1.4
AUG										
19...	1420	141	80	79	7.7	18.0	8.0	31	9.2	2.0
SEP										
15...	0930	20	178	183	7.5	10.5	9.0	76	22	5.1

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)
OCT										
08...	4.7	.2	1.2	69	28	2.2	.2	5.6	114	.16
NOV										
17...	13	.4	2.0	160	69	5.6	.4	9.4	274	.37
DEC										
16...	14	.4	1.8	160	67	5.6	.5	11	282	.38
JAN										
20...	15	.4	1.8	210	62	6.5	.5	11	316	.43
FEB										
23...	12	.4	1.5	180	55	5.6	.3	9.7	273	.37
MAR										
24...	16	.5	1.9	160	71	7.2	.6	9.1	295	.40
APR										
13...	14	.4	2.1	180	91	6.1	.5	7.6	322	.44
MAY										
12...	6.5	.3	1.4	70	26	2.4	.4	6.7	118	.16
JUN										
10...	3.0	.3	.9	27	9.0	1.2	.2	9.0	50	.07
JUL										
14...	1.9	.2	.7	23	5.0	.7	.1	7.6	38	.05
AUG										
19...	2.5	.2	.7	33	8.0	.8	.2	6.1	49	.07
SEP										
15...	5.9	.3	1.8	67	20	2.5	.3	8.9	108	.15

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT									
08...	27.1	.19	.140	--	--	<.010	--	22	8
NOV									
17...	3.9	.10	.080	--	--	.010	--	23	16
DEC									
16...	2.7	1.0	<.070	--	--	.020	--	17	11
JAN									
20...	1.6	1.2	.100	--	--	<.010	--	12	16
FEB									
23...	1.3	1.1	.080	--	--	.010	--	20	26
MAR									
24...	1.4	.94	.060	--	--	.030	--	16	20
APR									
13...	3.3	.92	.090	--	--	<.010	--	24	15
MAY									
12...	14.3	.11	.180	--	--	.020	--	59	8
JUN									
10...	15.3	<.10	.140	.46	.60	.050	--	110	8
JUL									
14...	30.7	<.10	<.060	--	--	.050	.010	84	5
AUG									
19...	18.7	<.10	.080	--	--	.020	--	68	5
SEP									
15...	5.8	.21	.060	--	--	.030	--	77	11

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
MAY										
12...	1115	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	<.01
SEP										
15...	0930	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01	.01

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)
MAY									
12...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
SEP									
15...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAY									
12...	<.01	<.10	<.01	<.10	<1	<.01	<.01	<.01	<.01
SEP									
15...	<.01	<.10	<.01	<.10	<1	<.01	.02	<.01	<.01

06752260 CACHE LA POUDRE RIVER AT FORT COLLINS, CO

LOCATION.--Lat 40°35'17", long 105°04'08", in NE¼SW¼ sec.12, T.7 N., R.69 W., Larimer County, Hydrologic Unit 10190007, on left bank 150 ft (46 m) downstream from Lincoln Ave. Bridge, and 2,200 ft (670 m) east of intersection of College Ave. (U.S. Highway 287) and Mountain Ave. in Fort Collins.

DRAINAGE AREA.--1,127 mi² (2,919 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 4,940 ft (1,506 m), from topographic map.

REMARKS.--Records good. Natural flow of stream affected by transmountain and transbasin diversions, storage reservoirs, power developments, diversion for municipal supply, diversions above station for irrigation, and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,700 ft³/s (161 m³/s) Aug. 1, 1976, gage height, 8.84 ft (2.694 m), from floodmarks, from rating curve extended above 1,200 ft³/s (34 m³/s), on basis of slope-area measurement of peak flow; minimum daily, 0.77 ft³/s (0.022 m³/s) Sept. 16, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,160 ft³/s (89.5 m³/s) at 0200 July 1, gage height, 5.65 ft (1.722 m); minimum daily, 1.6 ft³/s (0.045 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	4.9	25	3.1	4.5	2.3	5.6	28	44	2810	58	96
2	37	4.4	23	2.8	4.5	2.5	3.8	22	94	2700	87	161
3	86	4.3	22	2.6	110	5.6	3.4	20	116	2320	72	125
4	88	4.6	13	2.7	44	2.6	3.5	4.7	68	1850	19	18
5	113	4.3	7.6	2.8	3.5	3.0	3.1	34	187	1460	36	15
6	104	3.8	7.3	2.9	2.9	2.5	4.8	57	353	947	28	67
7	84	6.5	7.3	2.4	2.4	2.1	3.8	50	277	494	166	82
8	81	9.1	6.9	2.4	2.7	2.2	4.8	61	207	266	80	95
9	83	7.9	6.0	2.5	2.7	2.2	5.3	101	139	267	118	39
10	89	8.2	5.7	2.7	1.8	1.9	5.1	42	52	483	31	35
11	70	8.0	5.7	2.5	8.7	2.2	4.5	79	150	444	4.4	9.9
12	70	7.3	5.4	2.4	19	2.3	4.3	83	313	344	8.6	14
13	79	7.3	5.4	2.5	101	2.1	4.7	214	457	253	49	35
14	91	6.9	5.4	2.5	94	5.0	7.7	36	341	143	148	299
15	118	6.6	5.3	2.5	87	3.0	7.9	24	312	98	34	75
16	123	6.8	3.8	2.5	67	2.6	8.4	33	445	90	11	6.0
17	92	7.9	4.1	2.3	69	1.9	10	25	817	51	65	4.3
18	63	8.3	3.2	2.4	51	2.2	9.4	19	966	30	86	3.8
19	39	7.6	3.3	3.0	5.1	2.6	10	108	865	9.9	88	3.1
20	25	8.4	4.5	2.8	7.4	2.2	11	150	967	111	88	2.7
21	15	7.0	3.2	2.7	6.7	1.8	11	167	1350	176	156	2.6
22	5.4	6.8	4.4	2.6	9.8	2.7	11	156	1560	135	66	2.4
23	4.4	7.5	3.1	2.5	4.7	3.7	13	187	1250	143	13	2.1
24	5.8	7.9	2.9	2.7	3.0	4.6	8.5	84	1290	153	8.2	1.9
25	4.6	7.2	3.0	2.9	2.5	13	6.3	126	1740	162	30	2.3
26	4.3	8.4	3.0	4.3	2.6	11	7.7	37	2150	187	20	2.5
27	4.3	12	3.1	3.8	2.1	12	19	22	2400	433	42	1.9
28	4.3	19	3.0	4.0	2.4	17	20	135	2540	296	36	3.8
29	4.3	19	2.4	4.3	---	9.4	38	154	2580	394	50	1.8
30	4.8	18	2.6	4.3	---	8.8	40	157	2610	299	29	1.6
31	4.9	---	3.2	4.6	---	15	---	66	---	155	6.6	---
TOTAL	1617.1	245.9	203.8	91.0	722.0	152.0	295.6	2481.7	26640	17703.9	1733.8	1208.7
MEAN	52.2	8.20	6.57	2.94	25.8	4.90	9.85	80.1	888	571	55.9	40.3
MAX	123	19	25	4.6	110	17	40	214	2610	2810	166	299
MIN	4.3	3.8	2.4	2.3	1.8	1.8	3.1	4.7	44	9.9	4.4	1.6
AC-FT	3210	488	404	180	1430	301	586	4920	52840	35120	3440	2400

CAL YR 1981 TOTAL 20206.99 MEAN 55.4 MAX 1460 MIN .77 AC-FT 40080
WTR YR 1982 TOTAL 53095.50 MEAN 145 MAX 2810 MIN 1.6 AC-FT 105300

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

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT 08...	0945	83	210	205	7.9	12.5	9.4	91	27
NOV 16...	1645	6.4	560	567	7.8	11.0	10.8	250	67
DEC 14...	1700	5.3	640	536	7.8	5.0	13.0	250	69
JAN 18...	1530	2.2	776	785	7.7	3.5	12.3	330	88
FEB 23...	1615	3.9	554	426	7.8	6.5	.0	260	70
MAR 23...	1645	4.1	680	640	8.1	12.0	--	290	75
APR 13...	1520	3.8	616	590	8.2	16.0	11.1	270	72
MAY 12...	0850	49	210	205	7.7	9.5	9.2	93	27
JUN 10...	1330	77	92	91	8.1	14.5	9.2	35	10
JUL 13...	1600	215	65	63	7.7	17.0	8.1	23	6.8
AUG 19...	1730	116	96	105	8.0	19.5	8.5	42	12
SEP 14...	1510	255	162	174	7.8	13.0	9.2	74	21

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)
OCT 08...	5.7	5.4	.3	1.1	75	29	2.2	.3	5.3
NOV 16...	19	20	.6	2.8	180	91	9.7	.5	8.1
DEC 14...	20	25	.7	3.0	170	110	11	.5	10
JAN 18...	26	36	.9	4.0	240	130	26	.5	12
FEB 23...	20	22	.6	3.0	200	96	12	.3	8.5
MAR 23...	26	30	.8	3.3	180	130	14	.5	6.0
APR 13...	23	25	.7	3.4	190	120	12	.6	4.8
MAY 12...	6.2	8.1	.4	2.2	71	26	4.5	.4	5.8
JUN 10...	2.5	3.7	.3	1.0	32	11	1.8	.2	9.8
JUL 13...	1.5	2.3	.2	.7	24	7.0	1.0	.1	7.6
AUG 19...	3.0	4.0	.3	1.0	39	12	1.5	.2	6.4
SEP 14...	5.3	5.9	.3	1.9	59	26	2.1	.2	8.8

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)
OCT									
08...	122	.17	27.3	.15	.020	.17	.130	.60	.010
NOV									
16...	330	.45	5.7	.84	.030	.87	.180	.77	.010
DEC									
14...	436	.59	6.2	--	<.020	1.1	<.070	.75	.020
JAN									
18...	474	.64	2.8	--	<.020	1.7	.130	.82	.010
FEB									
23...	356	.48	3.8	--	<.020	.81	.060	.91	.030
MAR									
23...	397	.54	4.4	--	<.020	.79	.150	.84	.050
APR									
13...	377	.51	3.9	--	<.020	.48	.100	.63	<.010
MAY									
12...	124	.17	16.4	--	<.020	.18	.300	.77	.010
JUN									
10...	68	.09	14.1	--	<.020	<.10	<.060	.80	.040
JUL									
13...	42	.06	24.4	--	<.020	<.10	.080	.70	.050
AUG									
19...	64	.09	20.0	--	<.020	.15	.090	1.10	.080
SEP									
14...	108	.15	74.4	--	<.020	.22	.090	.80	.030

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
OCT									
08...	360	--	--	< 1	15	--	9	--	30
NOV									
16...	--	1	<100	1	<10	<1	5	170	63
DEC									
14...	80	--	--	<1	3	--	7	--	61
JAN									
18...	100	--	--	<1	3	--	2	--	37
FEB									
23...	--	1	100	<1	10	2	10	200	52
MAR									
23...	220	--	--	<1	2	--	5	--	81
APR									
13...	150	--	--	<1	3	--	5	--	110
MAY									
12...	--	1	<100	<1	<10	<1	10	510	56
JUN									
10...	320	--	--	<1	1	--	4	--	120
JUL									
13...	220	--	--	<1	8	--	2	--	82
AUG									
19...	--	<1	<100	<1	<10	<1	3	400	62
SEP									
14...	690	--	--	<1	2	--	5	--	87

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	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)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
OCT									
08...	4	--	8	--	--	--	--	<1	20
NOV									
16...	<1	40	24	<.1	2	2	<1	<1	10
DEC									
14...	2	--	32	--	--	--	--	<1	10
JAN									
18...	3	--	63	--	--	--	--	<1	20
FEB									
23...	3	50	49	<.1	3	2	1	<1	10
MAR									
23...	2	--	27	--	--	--	--	<1	10
APR									
13...	1	--	34	--	--	--	--	<1	10
MAY									
12...	16	30	18	<.1	5	2	<1	2	20
JUN									
10...	1	--	9	--	--	--	--	<1	20
JUL									
13...	1	--	7	--	--	--	--	<1	20
AUG									
19...	<1	20	5	.1	<1	3	<1	<1	10
SEP									
14...	<1	--	8	--	--	--	--	<1	20

DATE	PCB, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)
MAY									
12...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.03	<.01
SEP									
14...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	<.01	<.01

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
MAY									
12...	<.01	<.01	<.01	<.01	<.01	<.01	.03	.12	<.01
SEP									
14...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAY									
12...	<.01	<.01	<.01	<.10	<1	<.01	.16	<.01	.01
SEP									
14...	<.01	<.01	<.01	<.10	<1	<.01	.02	<.01	<.01

06752270 CACHE LA POUDRE RIVER BELOW FORT COLLINS, CO

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 (2.3 km) west of Interstate 25 on Prospect Street in Fort Collins.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT 07...	1545	14	605	600	8.5	17.0	11.4	270	70
NOV 16...	1400	6.7	770	747	8.2	12.0	12.2	340	90
DEC 14...	1440	12	720	696	8.1	6.0	13.6	320	84
JAN 18...	1320	9.1	873	840	8.0	6.0	14.3	330	86
FEB 23...	1235	9.2	689	695	8.2	6.0	13.2	290	75
MAR 23...	1500	11	770	760	8.4	12.0	--	270	70
APR 13...	1215	4.6	689	654	8.6	16.0	12.9	280	69
MAY 10...	1545	45	385	430	8.4	17.5	10.2	170	46
JUN 10...	1030	89	202	208	8.0	13.0	9.6	69	19
JUL 13...	1345	298	123	124	7.9	18.0	8.2	46	13
AUG 20...	0930	94	423	335	7.6	17.5	8.8	110	30
SEP 15...	1615	82	450	456	7.8	14.0	9.2	170	46

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)
OCT 07...	22	26	.7	2.4	180	110	10	.7	9.0
NOV 16...	29	30	.8	1.9	220	110	17	.7	13
DEC 14...	27	37	1.0	3.5	220	120	19	.7	11
JAN 18...	27	45	1.2	3.2	250	110	40	.7	12
FEB 23...	25	37	1.0	4.0	220	110	29	.4	8.9
MAR 23...	24	59	1.7	5.2	210	110	52	.7	8.4
APR 13...	25	38	1.1	4.5	200	110	25	.8	6.6
MAY 10...	13	15	.5	3.0	110	80	12	.6	6.7
JUN 10...	5.2	12	.7	1.4	58	25	11	.3	8.2
JUL 13...	3.3	5.6	.4	.9	37	20	3.7	.2	8.0
AUG 20...	8.6	22	1.0	1.7	82	49	21	.3	6.9
SEP 15...	14	23	.8	2.9	118	87	16	.3	8.5

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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, 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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
OCT 07...	366	.50	13.8	1.80	.050	1.8	.170	1.00	.090
NOV 16...	435	.59	7.9	3.10	.040	3.1	.130	1.00	.050
DEC 14...	453	.62	14.7	4.00	.100	4.1	.370	1.80	.600
JAN 18...	494	.67	12.1	4.40	.030	4.4	.110	1.70	.010
FEB 23...	432	.59	10.7	2.20	.080	2.3	1.70	4.60	.570
MAR 23...	468	.64	13.9	2.70	.170	2.9	2.50	3.80	1.10
APR 13...	415	.56	5.2	3.50	.120	3.6	.200	1.10	.880
MAY 10...	248	.34	30.1	1.20	.110	1.3	.520	1.60	.390
JUN 10...	119	.16	28.6	--	<.020	.50	.140	.70	.160
JUL 13...	78	.11	62.8	--	<.020	.28	.060	.90	.080
AUG 20...	192	.26	48.7	--	<.020	.60	.150	1.30	.080
SEP 15...	274	.37	60.7	1.30	.020	1.3	.130	1.10	.130

DATE	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 07...	160	--	--	<1	7	--	6	--	12
NOV 16...	--	1	<100	1	<10	1	8	110	12
DEC 14...	140	--	--	<1	5	--	8	--	18
JAN 18...	220	--	--	<1	5	--	3	--	16
FEB 23...	--	1	100	<1	<10	2	4	160	25
MAR 23...	360	--	--	<1	5	--	6	--	33
APR 13...	170	--	--	<1	2	--	3	--	59
MAY 10...	--	1	100	<1	<10	1	7	540	49
JUN 10...	430	--	--	1	3	--	5	--	88
JUL 13...	290	--	--	<1	7	--	2	--	83
AUG 20...	--	1	100	<1	<10	<1	3	300	41
SEP 15...	550	--	--	<1	<1	--	3	--	43

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT 07...	3	--	11	--	--	--	--	<1	60
NOV 16...	1	20	9	<.1	4	12	4	<1	10
DEC 14...	2	--	11	--	--	--	--	<1	20
JAN 18...	2	--	18	--	--	--	--	<1	20
FEB 23...	5	50	41	.1	4	3	2	<1	10
MAR 23...	14	--	29	--	--	--	--	<1	20
APR 13...	2	--	47	--	--	--	--	<1	10
MAY 10...	12	50	28	.1	6	3	1	<1	10
JUN 10...	<1	--	12	--	--	--	--	1	20
JUL 13...	1	--	10	--	--	--	--	<1	20
AUG 20...	<1	30	12	.1	<1	4	1	<1	20
SEP 15...	9	--	24	--	--	--	--	<1	20

DATE	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)
MAY 10...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01
SEP 15...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.04	<.01

DATE	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
MAY 10...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
SEP 15...	<.01	<.01	<.01	<.01	<.01	<.01	.01	<.01	<.01

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
MAY 10...	<.01	<.01	<.01	<.10	<1	<.01	.09	<.01	<.01
SEP 15...	<.01	<.01	<.01	<.10	<1	<.01	.13	<.01	.01

06752280 CACHE LA POUDRE 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 (640 m) upstream from Box Elder Creek, 2.0 mi (3.2 km) upstream from Interstate Highway 25 bridge and 3.8 mi (6.1 km) southeast of intersection of College Avenue and Prospect Street in Fort Collins.

DRAINAGE AREA.--1,245 mi^2 (3,225 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 4,860 ft (1,481 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Natural flow of stream affected by transmountain and transbasin diversions, storage reservoirs, power developments, diversion for municipal supply, diversions above station for irrigation, and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,410 ft^3/s (125 m^3/s) May 25, 1980, gage height, 6.40 ft (1.951 m), maximum gage height, 6.73 ft (2.051 m) June 30, 1982; minimum daily discharge, 3.0 ft^3/s (0.085 m^3/s) Oct. 4, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,000 ft^3/s (85.0 m^3/s) at 2300 June 30, gage height, 6.73 ft (2.051 m); minimum daily, 3.3 ft^3/s (0.093 m^3/s) Apr. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	14	5.5	4.9	4.4	5.0	4.8	3.6	5.4	3000	111	105
2	16	14	5.0	4.9	4.4	5.4	4.9	3.6	5.4	2830	114	178
3	16	13	4.6	4.8	16	5.4	4.3	4.0	6.1	2220	95	179
4	16	14	4.6	4.6	5.0	5.2	4.3	4.4	5.2	1800	56	62
5	16	15	4.6	4.8	4.4	5.2	4.3	4.2	10	1500	54	54
6	16	14	4.9	4.8	4.2	4.9	4.0	5.0	62	929	41	88
7	16	25	5.5	4.6	4.0	4.9	4.2	5.4	26	702	123	96
8	18	23	5.5	4.6	3.8	5.4	4.0	5.2	13	302	98	50
9	15	23	5.7	4.8	3.8	5.5	4.2	5.5	8.9	329	120	41
10	14	23	5.5	4.8	3.6	4.8	3.8	5.4	8.6	502	88	34
11	14	23	5.4	4.6	3.5	5.0	3.6	5.4	10	470	48	32
12	14	23	5.4	4.6	3.5	5.2	3.8	7.4	24	276	48	33
13	16	23	5.4	4.4	3.7	5.0	3.8	98	57	195	58	57
14	16	23	5.4	4.4	4.0	5.0	4.0	14	23	116	180	381
15	27	23	5.4	4.4	4.4	5.0	4.0	8.6	17	71	94	164
16	34	22	5.2	4.3	4.8	5.0	3.8	6.4	73	66	54	64
17	19	14	5.0	4.2	5.0	5.0	3.8	6.1	279	41	75	54
18	15	5.4	5.0	4.3	23	5.0	4.0	5.5	322	23	120	52
19	16	4.8	5.0	4.3	8.1	5.0	4.2	5.5	222	15	88	50
20	20	4.6	4.9	4.2	5.9	5.0	4.0	5.2	263	48	94	46
21	19	4.6	4.9	4.2	5.5	5.0	4.0	5.5	441	91	175	42
22	18	4.6	5.0	4.0	5.5	5.0	4.0	5.2	614	68	106	42
23	16	4.8	5.0	3.8	5.4	5.0	3.8	5.5	755	50	46	40
24	16	4.9	4.9	4.2	5.4	4.9	3.7	5.9	867	20	46	37
25	17	4.9	4.9	4.2	5.2	4.4	3.7	6.1	1240	25	62	35
26	16	4.9	4.9	4.3	5.0	4.4	3.6	5.7	1940	32	66	36
27	15	4.9	4.9	4.0	5.0	4.4	4.3	4.9	2110	406	65	35
28	14	4.9	4.8	4.2	4.9	4.3	4.0	4.8	2510	296	75	46
29	14	4.9	4.8	4.3	---	4.8	3.7	5.4	2620	425	70	36
30	14	4.6	4.8	4.4	---	4.4	3.3	5.5	2780	380	80	33
31	15	---	4.9	4.4	---	4.4	---	5.5	---	228	33	---
TOTAL	524	391.8	157.3	137.3	161.4	152.9	119.9	268.4	17317.6	17456	2583	2202
MEAN	16.9	13.1	5.07	4.43	5.76	4.93	4.00	8.66	577	563	83.3	73.4
MAX	34	25	5.7	4.9	23	5.5	4.9	98	2780	3000	180	381
MIN	14	4.6	4.6	3.8	3.5	4.3	3.3	3.6	5.2	15	33	32
AC-FT	1040	777	312	272	320	303	238	532	34350	34620	5120	4370

CAL YR 1981 TOTAL 13922.7 MEAN 38.1 MAX 1700 MIN 4.0 AC-FT 27620
WTR YR 1982 TOTAL 41471.6 MEAN 114 MAX 3000 MIN 3.3 AC-FT 82260

NOTE.--NO GAGE-HEIGHT RECORD JUNE 29 to JULY 13.

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 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT									
07...	1340	15	1290	1430	8.3	16.5	10.9	630	163
NOV									
16...	1240	25	980	1020	7.4	13.0	8.5	390	100
DEC									
14...	1300	5.4	2140	1950	8.0	5.5	15.2	1100	280
JAN									
18...	1140	4.2	2110	2150	7.8	3.5	15.7	1100	280
FEB									
23...	1035	5.6	1640	1510	7.7	4.5	11.5	800	202
MAR									
23...	1320	5.1	2120	2050	8.1	11.0	--	1100	290
APR									
13...	1020	3.9	2170	2060	8.1	13.0	11.3	1100	280
MAY									
10...	1320	5.2	1670	1650	8.3	19.5	10.7	890	221
JUN									
10...	1030	8.7	1840	1880	8.3	18.0	9.4	930	240
JUL									
13...	1145	242	167	165	7.8	16.5	8.4	58	16
AUG									
16...	1745	137	437	449	8.5	21.5	7.8	170	45
SEP									
16...	0930	63	898	894	7.8	13.0	8.0	380	98

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)
OCT									
07...	55	65	1.2	4.2	170	520	20	.9	8.1
NOV									
16...	33	57	1.4	5.9	170	270	28	1.0	13
DEC									
14...	93	98	1.3	6.0	200	980	27	1.2	9.5
JAN									
18...	96	110	1.4	6.0	240	1000	38	.9	10
FEB									
23...	72	83	1.4	5.6	83	840	27	.5	8.3
MAR									
23...	100	110	1.4	5.9	180	1100	33	1.1	26
APR									
13...	100	110	1.4	6.6	210	1000	34	1.2	11
MAY									
10...	81	94	1.5	5.7	120	780	65	1.3	9.4
JUN									
10...	80	90	1.4	5.2	168	910	26	1.1	8.7
JUL									
13...	4.4	6.8	.4	1.0	37	32	3.9	.2	7.8
AUG									
16...	15	27	1.0	2.0	82	110	15	.4	7.3
SEP									
16...	32	52	1.3	4.6	145	270	33	.5	10

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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, 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)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
OCT									
07...	946	1.3	38.3	1.60	.050	1.6	.150	1.20	.050
NOV									
16...	642	.87	43.3	7.00	.350	7.3	3.70	4.80	2.60
DEC									
14...	1630	2.2	23.8	2.90	.030	2.9	.110	1.30	.090
JAN									
18...	1700	2.3	19.3	--	<.020	3.3	.170	1.30	.470
FEB									
23...	1300	1.8	19.7	2.20	.030	2.2	.220	2.00	.020
MAR									
23...	1790	2.4	24.6	--	<.020	2.4	.100	1.10	.050
APR									
13...	1680	2.3	17.7	2.00	.030	2.0	.090	.89	.020
MAY									
10...	1340	1.8	18.8	1.20	.030	1.2	.290	1.60	.120
JUN									
10...	1460	2.0	34.3	--	.030	<.10	.160	1.00	.060
JUL									
13...	96	.13	62.7	--	<.020	.26	.080	1.00	.090
AUG									
16...	275	.37	102	.96	.020	.98	.100	1.40	.260
SEP									
16...	596	.81	101	1.90	.110	2.0	.510	1.80	.210

DATE	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)
OCT									
07...	210	--	--	< 1	7	--	7	--	11
NOV									
16...	--	1	100	1	<10	<1	7	380	22
DEC									
14...	140	--	--	<1	4	--	8	--	50
JAN									
18...	110	--	--	<1	7	--	2	--	40
FEB									
23...	--	1	100	<1	10	3	8	340	11
MAR									
23...	500	--	--	<1	5	--	8	--	80
APR									
13...	840	--	--	<1	7	--	6	--	50
MAY									
10...	--	1	<100	<1	10	1	6	1400	88
JUN									
10...	210	--	--	<1	<1	--	3	--	13
JUL									
13...	290	--	--	<1	6	--	3	--	98
AUG									
16...	--	1	<100	<1	<10	<1	4	400	30
SEP									
16...	330	--	--	<1	8	--	2	--	26

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
OCT 07...	2	--	19	--	--	--	--	< 1	40
NOV 16...	1	60	30	<.1	4	1	4	<1	20
DEC 14...	1	--	60	--	--	--	--	<1	20
JAN 18...	1	--	70	--	--	--	--	1	50
FEB 23...	4	140	120	<.1	5	3	9	<1	20
MAR 23...	8	--	100	--	--	--	--	1	20
APR 13...	2	--	100	--	--	--	--	<1	20
MAY 10...	6	160	100	.1	10	4	10	<1	20
JUN 10...	3	--	28	--	--	--	--	1	20
JUL 13...	2	--	11	--	--	--	--	<1	30
AUG 16...	<1	30	9	.1	<1	2	1	<1	10
SEP 16...	<1	--	28	--	--	--	--	<1	10

DATE	PCB, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)
JUN 10...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.01	<.01
SEP 16...	<.10	<.10	<.01	<.10	<.01	<.01	<.01	.03	<.01

DATE	ENDOSULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
JUN 10...	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
SEP 16...	<.01	<.01	<.01	<.01	<.01	<.01	.01	<.01	<.01

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 10...	<.01	<.01	<.01	<.10	<1	<.01	.05	<.01	<.01
SEP 16...	<.01	<.01	<.01	<.10	<1	<.01	.09	<.01	<.01

06752500 CACHE LA POUDRE RIVER NEAR GREELEY, CO

LOCATION.--Lat 40°25'04", long 104°38'22", in NW¼ sec.11, T.5 N., R.65 W., Weld County, Hydrologic Unit 10190007, on right bank 25 ft (8 m) downstream from highway bridge, 2.9 mi (4.7 km) east of courthouse in Greeley, and 3.0 mi (4.8 km) upstream from mouth.

DRAINAGE AREA.--1,877 mi^2 (4,861 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--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.

REVISED RECORDS.--WSP 1440: 1935, 1938(M), 1942-43. WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,610 ft (1,405 m), from topographic map. See WSP 1710 or 1730 for history of changes prior to Dec. 14, 1933.

REMARKS.--Records good. Natural flow of stream affected by transmountain and transbasin diversions, storage reservoirs, power developments, diversion for municipal supply, diversions above station for irrigation of about 250,000 acres (1,010 km^2), and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--63 years (water years 1915-19, 1925-82), 114 ft^3/s (3.228 m^3/s), 82,590 acre-ft/yr (102 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,220 ft^3/s (120 m^3/s) June 24, 26, 1917; minimum daily, 0.8 ft^3/s (0.023 m^3/s) Oct. 3, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,150 ft^3/s (89.2 m^3/s) at 1700 July 1, gage height, 7.59 ft (2.313 m); minimum daily, 6.0 ft^3/s (0.170 m^3/s) May 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	96	82	79	81	78	64	10	17	3070	268	61
2	38	92	86	79	79	78	72	8.0	18	2980	135	56
3	36	91	91	75	67	79	77	8.0	38	2700	100	61
4	72	92	86	74	67	79	75	6.8	58	2240	72	68
5	58	91	86	78	78	78	74	8.0	54	1730	45	75
6	50	92	88	75	77	75	70	12	52	1060	45	75
7	56	92	88	68	77	75	68	10	46	572	30	71
8	56	97	90	78	77	75	66	7.2	27	216	23	70
9	62	96	91	81	71	75	66	6.0	20	135	25	75
10	66	94	92	79	72	77	64	9.0	27	108	48	76
11	59	98	91	78	74	74	63	9.0	28	88	59	77
12	59	98	91	75	74	74	64	48	30	92	54	142
13	58	102	92	77	75	71	66	121	32	94	48	137
14	62	98	94	78	78	74	57	77	40	94	48	580
15	67	96	94	79	79	78	46	44	67	97	50	636
16	84	97	94	81	81	85	45	32	66	86	75	342
17	100	106	88	86	84	82	38	27	59	79	48	277
18	97	105	85	85	81	77	36	22	97	82	43	238
19	85	96	94	84	86	75	24	22	81	75	36	220
20	97	92	94	84	88	72	22	18	66	84	30	184
21	114	94	96	81	81	67	12	12	57	67	32	195
22	114	94	94	79	81	67	12	9.5	77	39	28	175
23	110	92	84	74	78	70	8.0	10	365	34	41	189
24	106	92	78	79	77	72	9.0	9.0	455	24	92	167
25	105	92	82	81	77	71	9.0	8.0	1110	15	77	155
26	97	91	82	81	77	70	8.5	9.0	2060	32	72	157
27	94	91	82	82	77	68	9.5	7.6	2520	169	72	159
28	90	90	78	78	77	63	8.0	6.4	2790	171	71	165
29	91	90	71	82	---	64	7.2	6.0	2920	200	66	175
30	91	94	75	77	---	66	14	10	2950	429	72	163
31	102	---	78	79	---	64	---	20	---	428	71	---
TOTAL	2421	2841	2697	2446	2171	2273	1254.2	612.5	16227	17290	1976	5221
MEAN	78.1	94.7	87.0	78.9	77.5	73.3	41.8	19.8	541	558	63.7	174
MAX	114	106	96	86	88	85	77	121	2950	3070	268	636
MIN	36	90	71	68	67	63	7.2	6.0	17	15	23	56
AC-FT	4800	5640	5350	4850	4310	4510	2490	1210	32190	34290	3920	10360

CAL YR 1981 TOTAL 32968.0 MEAN 90.3 MAX 1640 MIN 9.0 AC-FT 65390
WTR YR 1982 TOTAL 57429.7 MEAN 157 MAX 3070 MIN 6.0 AC-FT 113900

06752500 CACHE LA POUDRE RIVER NEAR GREELEY, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1951 to September 1952, August 1954 to August 1956, December 1963 to September 1966, October 1967 to September 1968, October 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)
OCT								
06...	1630	53	1610	1680	8.1	17.0	9.9	700
NOV								
17...	1630	92	1700	1770	7.8	11.5	8.9	710
DEC								
18...	0845	70	1830	1820	7.6	2.0	9.4	840
JAN								
19...	1510	79	1960	1950	7.9	6.0	10.4	770
FEB								
22...	1630	82	1810	1750	7.9	10.5	11.4	790
MAR								
18...	0815	74	1940	1900	7.5	7.0	7.3	850
APR								
28...	0915	5.0	1840	1770	7.6	10.0	5.6	820
MAY								
13...	1300	105	1380	1410	7.8	11.0	7.2	540
JUN								
09...	1600	19	1730	1790	8.0	21.0	14.9	770
JUL								
13...	1345	90	1360	1390	7.7	22.0	7.2	570
AUG								
13...	1130	32	1540	1530	7.0	19.5	7.2	650
SEP								
16...	1230	42	1340	1220	8.2	14.0	8.6	490

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-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)
OCT									
06...	153	78	110	2.0	11	260	580	30	1.1
NOV									
17...	151	80	110	2.0	8.7	260	580	39	1.1
DEC									
18...	175	98	130	2.2	8.9	280	780	48	1.0
JAN									
19...	164	88	130	2.3	9.1	290	700	42	1.0
FEB									
22...	169	90	130	2.2	8.2	300	730	41	.6
MAR									
18...	177	100	140	2.3	8.0	290	760	46	.9
APR									
28...	198	80	130	2.1	10	350	700	49	.7
MAY									
13...	102	69	97	2.0	9.7	190	510	34	.7
JUN									
09...	170	83	120	2.1	8.7	264	680	42	.8
JUL									
13...	130	59	85	1.7	6.3	210	510	29	.7
AUG									
13...	140	72	110	2.1	6.9	243	560	31	.8
SEP									
16...	100	58	94	2.1	5.9	172	460	24	.6

06752500 CACHE LA POUDRE RIVER NEAR GREELEY, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	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-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT								
06...	11	1150	1.6	165	4.3	.450	20	110
NOV								
17...	8.9	1160	1.6	288	5.1	.800	26	150
DEC								
18...	11	1450	2.0	274	5.8	.400	28	160
JAN								
19...	14	1340	1.8	286	3.1	.880	39	160
FEB								
22...	11	1380	1.9	306	5.0	1.50	48	200
MAR								
18...	8.7	1440	2.0	288	5.0	.530	48	280
APR								
28...	14	1410	1.9	19.0	4.7	.460	48	540
MAY								
13...	7.5	958	1.3	272	3.0	.490	31	260
JUN								
09...	9.5	1290	1.8	66.2	4.4	.620	14	230
JUL								
13...	13	982	1.3	239	5.1	.360	10	150
AUG								
13...	13	1100	1.5	95.0	4.7	.450	40	160
SEP								
16...	11	870	1.2	98.7	3.0	.260	12	34

06754000 SOUTH PLATTE RIVER NEAR KERSEY, CO

LOCATION.--Lat 40°24'44", long 104°33'46", in NW¼SW¼ sec.9, T.5 N., R.64 W., Weld County, Hydrologic Unit 10190003, on downstream side of bridge on State Highway 37, 1.9 mi (3.1 km) north of railroad in Kersey, and 2.5 mi (4.0 km) downstream from Cache la Poudre River.

DRAINAGE AREA.--9,598 mi^2 (24,859 km^2).

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 (1,394.695 m) National Geodetic Vertical Datum of 1929. See WSP 1710 or 1730 for history of changes prior to July 3, 1935.

REMARKS.--Records good except those for winter period, 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 (3,590 km^2), 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 ft^3/s (22.00 m^3/s), 562,900 acre-ft/yr (694 hm^3/yr), prior to completion of Chatfield Dam; 7 years (water years 1976-82), 969 ft^3/s (27.44 m^3/s), 702,000 acre-ft/yr (866 hm^3/yr), subsequent to completion of Chatfield Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,500 ft^3/s (892 m^3/s) May 8, 1973, gage height, 11.73 ft (3.575 m); minimum daily, 28 ft^3/s (0.79 m^3/s) Apr. 30, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,500 ft^3/s (354 m^3/s) at 2300 June 25, gage height, 8.93 ft (2.722 m); minimum daily, 61 ft^3/s (1.73 m^3/s) Apr. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	312	718	577	561	577	608	288	67	397	4850	1390	510
2	304	691	595	567	578	597	276	64	407	5640	856	450
3	305	584	592	533	565	592	280	65	384	5370	738	396
4	337	558	580	490	520	608	280	68	531	4400	558	384
5	355	530	583	511	450	624	248	68	509	3300	451	396
6	336	514	589	515	490	629	238	74	382	2150	468	440
7	393	503	579	490	530	668	231	97	305	1090	672	520
8	487	494	564	418	490	646	210	90	231	443	555	575
9	507	480	576	427	525	625	182	80	185	291	345	605
10	517	501	581	400	560	586	168	84	174	255	307	605
11	528	515	600	410	595	550	160	69	146	251	324	615
12	561	524	592	415	575	499	145	113	152	233	299	768
13	595	518	575	420	594	463	140	1520	167	226	428	1330
14	633	509	573	422	645	403	135	3400	231	248	524	2700
15	684	483	576	437	699	387	123	1400	328	348	473	3210
16	717	511	584	436	666	385	121	849	462	324	508	2550
17	772	548	584	468	656	384	118	646	384	265	543	1870
18	665	557	564	489	648	376	113	510	603	242	733	1500
19	613	535	571	507	646	404	100	418	1700	220	710	1290
20	617	534	580	510	654	404	101	380	1170	216	646	1120
21	600	546	577	500	636	404	83	336	664	211	643	1130
22	604	545	588	501	620	404	78	316	391	162	1270	1170
23	596	534	598	480	620	409	74	296	599	165	825	1120
24	601	546	570	530	623	409	68	280	713	148	752	1040
25	615	547	535	550	613	409	63	293	2360	132	617	1000
26	638	557	549	595	606	418	61	368	4680	142	557	1000
27	658	560	536	613	610	414	62	462	3690	458	526	1010
28	624	576	520	602	623	384	62	351	3600	700	515	998
29	624	569	489	594	---	344	62	265	3780	1580	506	986
30	615	592	495	592	---	312	64	255	4400	3330	520	933
31	628	---	533	598	---	320	---	347	---	2490	520	---
TOTAL	17041	16379	17605	15581	16614	14665	4334	13631	33725	39880	18779	32221
MEAN	550	546	568	503	593	473	144	440	1124	1286	606	1074
MAX	772	718	600	613	699	668	288	3400	4680	5640	1390	3210
MIN	304	480	489	400	450	312	61	64	146	132	299	384
AC-FT	33800	32490	34920	30900	32950	29090	8600	27040	66890	79100	37250	63910

CAL YR 1981 TOTAL 198085 MEAN 543 MAX 2640 MIN 64 AC-FT 392900
WTR YR 1982 TOTAL 240455 MEAN 659 MAX 5640 MIN 61 AC-FT 476900

06756995 SOUTH PLATTE RIVER AT MASTERS, CO

LOCATION.--Lat 40°18'22", long 104°14'40", in SE¼ sec.18, T.4 N., R.61 W., Weld County, Hydrologic Unit 10190003, on right bank at bridge on Weld County Road 87, 1.0 mi (1.6 km) north of U.S. Highway 34 at Masters.

DRAINAGE AREA.--12,119 mi^2 (31,595 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,450 ft (1,356 m), from topographic map.

REMARKS.--Records fair except those for period of no gage-height record, which are poor. Natural flow of stream affected by transmountain, transbasin, and storage diversions, power developments, ground-water withdrawals and diversions for irrigation, and return flows 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, 15,100 ft^3/s (428 m^3/s) May 2, 1980, gage height, 10.06 ft (3.066 m); minimum daily, 3.5 ft^3/s (0.099 m^3/s) Mar. 16, 18, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,010 ft^3/s (114 m^3/s) at 1100 June 26, gage height 6.30 ft (1.920 m); minimum daily, 12 ft^3/s (0.34 m^3/s) Nov. 14-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	121	35	230	292	107	49	91	253	3350	590	470
2	102	177	45	245	207	107	52	111	296	3870	344	470
3	119	124	40	230	177	107	47	111	317	3850	354	390
4	135	80	35	210	246	102	47	107	309	2840	655	390
5	152	29	30	200	440	109	47	95	188	1900	578	415
6	158	18	35	190	600	121	47	98	121	994	572	448
7	162	13	40	165	680	114	42	109	168	987	746	518
8	197	13	50	160	770	111	31	132	146	228	725	616
9	207	13	50	210	840	89	33	138	119	273	518	622
10	127	13	50	190	800	80	32	119	114	253	339	542
11	111	13	50	180	740	71	65	100	102	238	321	530
12	116	14	50	230	700	62	82	102	107	235	357	596
13	119	13	50	250	630	58	85	175	109	242	366	867
14	135	12	60	280	420	56	87	1400	121	253	596	1420
15	135	12	60	300	310	52	91	557	305	309	610	2820
16	127	12	60	250	220	43	84	138	448	348	610	1960
17	152	16	56	300	150	38	93	72	334	321	622	1780
18	121	16	56	380	130	40	100	80	300	305	760	1210
19	165	16	70	380	110	43	155	261	352	292	676	697
20	155	16	80	370	102	51	165	242	334	253	548	506
21	138	17	100	350	102	56	165	246	146	235	488	400
22	127	17	90	300	100	55	119	265	60	218	827	454
23	124	17	84	250	100	55	98	221	48	207	843	524
24	127	17	76	350	98	55	95	210	40	200	590	448
25	135	20	72	490	98	53	91	265	63	200	536	442
26	132	22	110	470	102	53	85	305	2330	187	426	454
27	149	22	140	450	102	57	89	352	2000	301	470	415
28	140	22	165	420	104	65	89	386	1820	596	460	400
29	121	24	170	348	---	76	87	232	1710	990	460	400
30	116	30	210	348	---	74	80	184	2200	1600	460	381
31	109	---	230	339	---	53	---	218	---	1210	470	---
TOTAL	4208	949	2449	9065	9370	2213	2432	7122	14960	27285	16917	21585
MEAN	136	31.6	79.0	292	335	71.4	81.1	230	499	880	546	720
MAX	207	177	230	490	840	121	165	1400	2330	3870	843	2820
MIN	95	12	30	160	98	38	31	72	40	187	321	381
AC-FT	8350	1880	4860	17980	18590	4390	4820	14130	29670	54120	33550	42810

CAL YR 1981 TOTAL 88801 MEAN 243 MAX 1750 MIN 12 AC-FT 176100
WTR YR 1982 TOTAL 118555 MEAN 325 MAX 3870 MIN 12 AC-FT 235200

NOTE.--NO GAGE-HEIGHT RECORD NOV. 18 TO JAN. 27.

06756995 SOUTH PLATTE RIVER AT MASTERS, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1976 to September 1979. March 1982 to September 1982.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (FTU)	OXYGEN, DISSOLVED (MG/L)
MAR								
17...	1630	36	1550	--	8.6	14.0	--	12.0
APR								
27...	1545	91	1550	1510	8.2	14.0	2.3	9.4
MAY								
14...	0815	1400	850	--	7.6	10.0	200	7.9
JUN								
09...	1400	118	1610	--	8.0	22.0	5.6	8.0
JUL								
14...	1230	260	1360	--	8.1	23.5	9.2	8.1
AUG								
12...	1440	375	1560	--	8.2	26.0	14	8.1
SEP								
17...	1345	1570	1230	--	8.1	15.0	46	7.8

DATE	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
MAR							
17...	450	K17	K34	3.0	1.50	4.5	.190
APR							
27...	K31	42	120	2.8	.82	3.6	.170
MAY							
14...	K8200	K31000	K44000	2.6	10.0	13	2.20
JUN							
09...	K42	K7	K33	2.7	.80	3.5	.210
JUL							
14...	120	87	130	3.7	1.60	5.3	.300
AUG							
12...	680	360	K160	4.4	1.70	6.1	.360
SEP							
17...	K8700	K7200	--	3.9	3.00	6.9	.830

K BASED ON NON-IDEAL COLONY COUNT.

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 (120 m) downstream from bridge on State Highway 144, 2.8 mi (4.5 km) southeast of Weldona, and 4.2 mi (6.8 km) upstream from Bijou Creek.

DRAINAGE AREA.--13,245 mi^2 (34,305 km^2).

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 (1,313.017 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. 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 ft^3/s (16.20 m^3/s), 414,400 acre-ft/yr (511 hm^3/yr), prior to completion of Chatfield Dam. 7 years (water years 1976-82), 637 ft^3/s (18.04 m^3/s), 461,500 acre-ft/yr (569 hm^3/yr), subsequent to completion of Chatfield Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,800 ft^3/s (759 m^3/s) May 8, 1973, gage height, 11.68 ft (3.560 m), from rating curve extended above 16,000 ft^3/s (453 m^3/s); minimum daily, 39 ft^3/s (1.10 m^3/s) May 19, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,770 ft^3/s (78.4 m^3/s) at 0500 July 3, gage height, 6.25 ft (1.905 m); minimum daily, 42 ft^3/s (1.19 m^3/s) Apr. 14-16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	210	156	438	463	251	165	98	204	2310	869	503
2	96	244	174	453	338	254	160	104	226	2540	436	447
3	107	257	160	430	247	269	159	117	263	3000	276	398
4	119	206	138	384	150	284	158	122	308	2670	326	344
5	128	170	150	345	100	285	155	127	285	1850	376	335
6	141	133	161	337	130	287	154	131	185	1110	363	360
7	151	113	172	241	280	290	155	130	180	461	479	401
8	158	100	173	252	320	289	142	136	178	204	603	458
9	209	96	166	297	220	292	131	148	164	135	494	459
10	167	96	163	274	300	196	126	147	153	178	333	449
11	151	94	166	270	320	175	124	142	142	165	291	508
12	142	94	166	354	240	176	149	141	148	145	274	539
13	142	96	172	391	280	170	96	151	150	126	263	647
14	146	96	169	450	350	168	42	454	203	142	320	1180
15	162	93	175	509	410	169	42	960	308	143	402	2240
16	157	91	174	428	340	168	42	336	441	188	387	2320
17	191	91	169	466	320	161	43	204	432	186	427	1930
18	238	93	168	585	309	158	43	147	376	163	438	1480
19	221	99	200	587	289	155	67	122	359	173	566	963
20	242	95	213	573	274	156	146	135	441	159	377	688
21	246	96	227	542	262	165	167	138	359	172	323	549
22	230	98	220	466	252	171	166	142	200	193	325	496
23	239	99	206	359	245	174	140	136	142	176	699	496
24	234	97	199	478	238	174	127	118	128	168	462	499
25	245	100	233	724	237	170	125	124	104	165	395	502
26	238	104	303	707	238	170	124	130	843	165	334	483
27	241	102	325	599	246	173	113	173	1920	256	342	501
28	242	103	339	568	250	177	111	244	1620	551	486	477
29	226	106	339	550	---	181	102	225	1490	870	496	458
30	217	115	376	493	---	180	98	153	1510	1550	492	422
31	208	---	444	476	---	179	---	148	---	1410	480	---
TOTAL	5735	3587	6596	14026	7648	6267	3572	5783	13462	21724	13134	21532
MEAN	185	120	213	452	273	202	119	187	449	701	424	718
MAX	246	257	444	724	463	292	167	960	1920	3000	869	2320
MIN	96	91	138	241	100	155	42	98	104	126	263	335
AC-FT	11380	7110	13080	27820	15170	12430	7090	11470	26700	43090	26050	42710

CAL YR 1981 TOTAL 106116 MEAN 291 MAX 1850 MIN 75 AC-FT 210500
WTR YR 1982 TOTAL 123066 MEAN 337 MAX 3000 MIN 42 AC-FT 244100

06758500 SOUTH PLATTE RIVER NEAR WELDONA, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1967 to September 1968, October 1971 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: March 1977 to March 1979, April 1982 to Oct. 1982.

EXTREMES FOR PERIOD OF PUBLISHED DAILY RECORD.
SEDIMENT CONCENTRATIONS: Maximum daily, 4,000 mg/L May 3, 1977; minimum daily, 8 mg/L Oct. 14, 1977.
SEDIMENT LOADS: Maximum daily, 11,400 tons (10,300 t) May 3, 1977; minimum daily, 1.9 tons (1.7 t) Apr. 12, 1978.

REMARKS.--
Sediment record for the April to Oct. 1982 period will be published in a subsequent volume.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT									
06...	1300	155	1780	1750	8.3	18.0	11.0	647	147
NOV									
18...	1315	100	1720	1840	8.2	10.5	11.8	645	156
DEC									
17...	1430	164	1630	1600	8.1	4.0	11.8	628	151
JAN									
20...	1140	539	1720	1600	7.9	.5	12.2	557	129
FEB									
22...	1330	200	1670	1610	8.0	11.0	10.0	625	153
MAR									
17...	1320	167	1740	1600	8.1	14.0	11.0	613	148
APR									
27...	1300	93	1670	1630	8.2	13.0	9.8	625	158
MAY									
14...	0945	191	1850	1960	8.2	10.0	10.0	712	160
JUN									
09...	1045	121	1710	1790	8.3	16.5	9.3	663	160
JUL									
13...	1550	58	1590	1690	8.4	27.5	9.0	597	140
AUG									
12...	1120	145	1660	1700	8.2	23.5	8.1	609	140
SEP									
16...	1500	2120	1310	1230	8.1	16.5	8.3	451	100

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)
OCT									
06...	68	170	3.0	9.3	250	610	80	1.2	13
NOV									
18...	62	160	2.8	7.7	220	610	80	1.0	13
DEC									
17...	61	150	2.7	7.3	250	590	70	1.0	14
JAN									
20...	57	140	2.7	7.7	250	520	70	1.1	15
FEB									
22...	59	150	2.7	7.6	260	580	73	.7	16
MAR									
17...	59	150	2.7	7.3	260	550	70	1.0	13
APR									
27...	56	150	2.7	7.7	240	630	71	.9	13
MAY									
14...	76	180	3.0	8.1	250	730	73	1.0	13
JUN									
09...	64	170	3.0	7.8	253	640	74	1.1	14
JUL									
13...	60	150	2.8	8.0	216	630	65	1.0	12
AUG									
12...	63	150	2.7	7.9	232	610	66	1.1	14
SEP									
16...	49	110	2.3	7.0	181	420	47	.8	13

06758500 SOUTH PLATTE RIVER NEAR WELDONA, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ALGAL GROWTH POTEN- TIAL, BOTTLE TEST (MG/L)
OCT 06...	1260	1.7	527	2.5	.060	<10	16	--
NOV 18...	1230	1.7	332	2.5	.050	10	24	--
DEC 17...	1210	1.6	536	3.8	.230	<10	34	--
JAN 20...	1110	1.5	1620	5.0	.720	<10	14	--
FEB 22...	1210	1.6	653	3.9	.250	10	22	--
MAR 17...	1160	1.6	523	2.3	.110	<3	19	--
APR 27...	1240	1.7	311	2.6	.110	10	22	--
MAY 14...	1410	1.9	727	4.3	.100	<9	32	2.0
JUN 09...	1300	1.7	425	2.7	.150	<3	20	--
JUL 13...	1210	1.6	189	2.9	.130	7	25	23
AUG 12...	1210	1.6	474	3.8	.040	<3	18	55
SEP 16...	874	1.2	5000	4.1	.370	17	10	120

06759100 BIJOU CREEK NEAR FORT MORGAN, CO

LOCATION.--Lat 40°16'58", long 103°52'31", in NW¼SE¼ sec.28, T.4 N., R.58 W., Morgan County, Hydrologic Unit 10190011, on left bank 1,000 ft (305 m) downstream from bridge on State Highway 144, 0.8 mi (1.3 km) upstream from South Platte River, and 4.0 mi (6.4 km) northwest of Fort Morgan.

DRAINAGE AREA.--1,500 mi^2 (3,885 km^2).

PERIOD OF RECORD.--Streamflow records, December 1976 to current year. Water quality data available October 1976 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 4,302 ft (1,311 m), from topographic map.

REMARKS.--Records fair. Natural flow of stream affected by delivery of stored water from Bijou No. 2 reservoir to South Platte River past the gage, and waste flows from Fort Morgan Canal, which crosses 1.5 mi (2.4 km) 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, 2,200 ft^3/s (62.3 m^3/s) July 26, 1977, gage height, 6.01 ft (1.832 m) from floodmark, from rating curve extended above 58 ft^3/s (1.6 m^3/s), on basis of slope-area measurement of peak flow; minimum daily, 4.8 ft^3/s (0.14 m^3/s) Oct. 2-4, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 180 ft^3/s (5.10 m^3/s) at 0900 July 27, gage height, 2.72 ft (0.829 m); minimum daily, 5.2 ft^3/s (0.15 m^3/s) Feb. 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	8.8	7.6	8.0	7.3	6.4	8.4	7.6	79	60	34	10
2	8.4	8.8	8.4	8.0	7.3	6.4	8.8	8.0	82	37	30	10
3	8.0	8.8	8.4	8.0	7.3	6.0	8.8	8.0	99	21	30	10
4	7.6	8.4	8.0	8.0	6.2	5.8	8.8	8.0	58	40	29	10
5	7.6	8.4	8.8	8.0	5.5	5.6	9.6	7.6	48	18	30	10
6	7.6	8.4	8.8	8.4	5.2	5.6	9.6	7.3	44	14	31	10
7	7.3	8.2	7.6	7.1	5.2	5.6	9.6	7.6	36	14	30	10
8	7.6	8.0	8.0	7.3	5.4	5.4	9.6	8.0	34	14	26	23
9	7.6	8.0	7.6	7.6	5.7	12	8.8	8.4	30	14	25	31
10	8.4	8.0	8.0	8.0	6.0	26	8.8	8.4	29	13	24	30
11	8.8	8.0	8.0	7.6	6.0	20	8.8	8.8	27	13	24	17
12	8.8	8.0	8.0	7.6	6.0	8.8	8.4	8.8	19	13	23	10
13	8.8	8.0	7.6	8.0	6.5	8.4	27	9.2	10	13	21	11
14	9.2	7.9	8.0	8.8	7.0	8.8	66	12	20	13	19	11
15	9.6	7.7	7.6	8.4	7.4	8.4	66	24	19	13	17	10
16	10	7.6	7.6	8.4	7.5	8.8	17	11	55	13	16	11
17	10	7.6	8.0	8.4	7.8	8.8	11	10	69	12	14	12
18	10	7.6	7.6	8.4	8.2	8.4	10	10	73	13	14	13
19	9.6	7.6	8.0	9.2	8.4	8.0	10	10	71	15	12	12
20	9.6	8.0	8.4	8.8	8.4	8.4	9.6	10	53	23	13	12
21	9.6	7.6	8.4	8.4	8.4	8.4	10	11	26	31	13	26
22	9.6	7.3	8.0	8.0	8.4	7.6	9.6	11	85	30	15	32
23	9.6	7.3	7.6	8.4	7.6	7.6	9.6	12	92	29	15	31
24	9.6	7.3	8.0	8.0	7.6	7.6	11	11	88	30	14	25
25	9.3	7.1	7.6	7.3	6.6	8.0	11	11	82	28	13	13
26	9.2	7.3	7.6	7.3	6.8	8.0	9.6	12	59	26	12	12
27	9.2	7.3	7.6	7.3	6.6	8.4	9.2	12	37	73	14	12
28	9.2	7.6	8.0	7.3	6.4	8.4	8.4	12	45	30	13	12
29	9.2	7.6	7.6	7.3	---	8.4	8.4	47	21	28	12	12
30	9.0	7.6	7.6	7.3	---	8.4	7.6	77	46	27	13	11
31	8.8	---	7.6	7.3	---	8.4	---	82	---	29	12	---
TOTAL	275.2	235.8	245.6	245.9	192.7	270.8	419.0	490.7	1536	747	608	459
MEAN	8.88	7.86	7.92	7.93	6.88	8.74	14.0	15.8	51.2	24.1	19.6	15.3
MAX	10	8.8	8.8	9.2	8.4	26	66	82	99	73	34	32
MIN	7.3	7.1	7.6	7.1	5.2	5.4	7.6	7.3	10	12	12	10
AC-FT	546	468	487	488	382	537	831	973	3050	1480	1210	910

CAL YR 1981 TOTAL 5459.0 MEAN 15.0 MAX 65 MIN 7.1 AC-FT 10830
WTR YR 1982 TOTAL 5725.7 MEAN 15.7 MAX 99 MIN 5.2 AC-FT 11360

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO

Streamflow data for water year 1982, will be published in a subsequent report.

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.

REMARKS.--Specific-conductance and temperature data obtained on channel no. 2 (station 06763990).

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 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (FTU)	OXYGEN, DIS-SOLVED (MG/L)	NITRO-GEN DIS-SOLVED (MG/L AS N)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)
OCT										
05...	1415	70	2260	2410	8.3	20.0	10	9.2	1.7	120
DEC										
17...	0915	205	2130	2130	8.0	.5	4.2	12.2	--	340
MAR										
16...	1350	144	2080	2100	8.1	15.0	5.0	8.7	--	--
APR										
26...	1400	48	2180	2050	8.3	11.0	2.7	9.6	--	K24
JUN										
08...	1230	224	2110	2300	8.4	25.5	22	11.1	--	160
AUG										
11...	1230	45	2090	2110	8.3	18.5	1.2	11.4	--	K240

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (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 LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT										
05...	200	830	220	69	230	3.5	15	220	900	120
DEC										
17...	140	810	210	69	200	3.1	18	290	800	100
MAR										
16...	K80	860	230	69	210	3.1	16	260	820	99
APR										
26...	150	780	210	63	210	3.3	18	230	870	110
JUN										
08...	360	800	200	72	230	3.5	19	203	940	110
AUG										
11...	940	790	210	65	190	2.9	21	124	830	99

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	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)
OCT										
05...	.8	23	1800	1710	2.5	340	.85	.81	.150	.160
DEC										
17...	.7	25	1790	1600	2.4	991	--	2.3	--	.260
MAR										
16...	.7	26	1750	1630	2.4	680	--	2.2	--	.120
APR										
26...	.7	22	1770	1640	2.4	229	--	1.9	--	.310
JUN										
08...	.7	21	1780	1710	2.4	1080	--	.57	--	.120
AUG										
11...	.6	26	1600	1520	2.2	194	--	1.6	--	.260

K BASED ON NON-IDEAL COLONY COUNT.

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
OCT									
05...	1.3	.71	1.40	.53	.87	2.3	.150	.030	0
DEC									
17...	--	--	1.30	--	--	--	.110	.090	--
MAR									
16...	--	--	.81	--	--	--	.130	.080	<1
APR									
26...	--	--	1.40	--	--	--	.090	.070	--
JUN									
08...	--	--	1.70	--	--	--	.140	<.010	<1
AUG									
11...	--	--	1.50	--	--	--	.030	.030	<1

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	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)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)
OCT										
05...	1415	4	3	100	0	0	0	10	10	0
MAR										
16...	1350	3	3	100	100	<1	<1	<10	10	1
JUN										
08...	1230	3	3	<100	<100	<1	<1	10	<10	2
AUG										
11...	1230	4	4	<100	<100	<1	<1	<10	<10	<1

DATE	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT									
05...	0	4	1	680	40	2	1	220	20
MAR									
16...	1	8	3	340	20	8	3	40	20
JUN									
08...	<1	6	<1	1200	50	5	<1	130	20
AUG									
11...	<1	2	1	10	30	13	1	100	80

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT									
05...	.1	.0	5	1	2	2	0	20	10
MAR									
16...	<.1	<.1	1	3	4	4	<1	20	10
JUN									
08...	.3	<.1	5	<1	4	3	<1	20	10
AUG									
11...	<.1	<.1	1	<1	2	<1	<1	60	10

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)
DEC										
17...	0915	52	1.1	77	1.6	27	4.8	26	4.8	.10
JUN										
08...	1230	--	3.8	<52	5.6	<22	6.7	<21	6.3	.12

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL (UG/L)
DEC										
17...	0915	--	0	--	.0	--	.0	--	.0	--
MAR										
16...	1350	<.10	--	<.01	--	<.10	--	<.01	--	<.01
APR										
26...	1400	<.10	<1	<.01	<.1	<.10	<1.0	<.01	<.1	<.01

DATE	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ETHION, TOTAL (UG/L)
DEC									
17...	.0	--	.0	--	--	.0	--	.0	--
MAR									
16...	--	<.01	--	.00	<.01	--	<.01	--	.00
APR									
26...	<.1	<.01	<.1	.01	<.01	<.1	<.01	<.1	<.01

DATE	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)
DEC									
17...	--	.0	--	.0	--	.0	--	--	.0
MAR									
16...	<.01	--	<.01	--	<.01	--	.00	<.01	--
APR									
26...	<.01	<.1	<.01	<.1	<.01	<.1	<.01	<.01	<.1

DATE	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
DEC									
17...	--	--	--	--	.0	--	--	--	--
MAR									
16...	.00	.00	.00	<1	--	.00	.01	<.01	<.01
APR									
26...	<.01	<.01	<.01	<1	<10	<.01	<.01	<.01	<.01

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					
05...	1415	70	56	11	--
DEC					
17...	0900	205	141	78	20
MAR					
16...	1350	144	35	14	38
APR					
26...	1400	4B	32	4.1	--
JUN					
08...	1230	224	540	327	74
AUG					
11...	1230	45	39	4.7	--

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 (30 m) east of Colorado-Nebraska State line and 9.5 mi (15.3 km) upstream from confluence with Arikaree River.

DRAINAGE AREA.--1,360 mi^2 (3,520 km^2), approximately, of which about 100 mi^2 (260 km^2) 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 (1,016.840 m)National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1934, nonrecording gage at present site and datum.

REMARKS.--Records fair. Natural flow affected by diversion in Pioneer Canal for irrigation of about 2,700 acres (10.9 km^2) in Colorado and Nebraska.

AVERAGE DISCHARGE.--52 years, 47.4 ft^3/s (1.342 m^3/s), 34,340 acre-ft/yr (42.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft^3/s (59.8 m^3/s) Apr. 28, 1947, gage height, 5.92 ft (1.804 m), from rating curve extended above 800 ft^3/s (22.7 m^3/s), on basis of slope-area measurement of peak flow; no flow Aug. 25, 26, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 130 ft^3/s (3.7 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
May 30	0530	* 1,090	30.9	4.98	1.518	June 30	1430	452	12.8	2.01	0.613
June 12	2330	191	5.41	1.79	0.546						

Minimum daily discharge, 5.5 ft^3/s (0.16 m^3/s) Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	58	55	55	50	52	49	24	77	97	11	8.4
2	32	49	54	54	49	53	54	22	87	66	9.4	9.8
3	33	58	53	55	50	52	58	20	77	57	8.2	10
4	39	59	53	55	50	52	60	14	68	54	8.4	9.1
5	37	56	53	55	44	51	61	41	67	47	8.4	15
6	34	55	53	53	46	52	63	59	67	39	8.3	20
7	32	56	54	51	49	53	63	49	69	39	7.4	23
8	32	56	54	56	50	53	63	40	74	38	8.3	31
9	33	57	55	58	52	52	62	35	70	38	8.1	44
10	34	57	55	53	54	51	64	35	69	38	12	35
11	35	56	53	42	52	51	63	34	67	38	19	31
12	35	57	53	47	50	51	53	37	76	39	23	34
13	35	57	54	56	50	50	43	70	115	36	23	35
14	36	57	53	66	48	51	43	66	86	26	39	39
15	37	56	53	58	49	51	42	56	85	22	24	41
16	38	56	54	50	51	50	44	44	90	19	15	40
17	39	57	53	58	51	52	44	42	79	14	8.1	40
18	37	57	53	50	51	51	41	39	75	8.6	8.6	40
19	39	56	54	49	52	52	43	35	71	8.4	8.7	40
20	42	56	55	49	52	50	42	35	65	8.1	10	41
21	39	57	57	49	52	49	45	34	64	8.0	11	41
22	43	56	57	51	53	51	43	31	62	7.5	9.0	39
23	36	55	57	49	53	49	42	31	61	6.6	18	40
24	44	55	56	48	52	49	36	39	59	6.5	25	40
25	61	55	57	52	51	48	16	31	59	6.7	30	40
26	64	55	54	50	51	49	11	36	82	6.8	9.3	40
27	60	55	54	51	51	50	13	37	82	8.2	8.6	40
28	55	55	59	50	51	50	23	36	70	8.5	6.9	40
29	49	54	62	50	---	51	33	36	54	8.5	5.5	39
30	53	55	54	49	---	48	26	495	126	8.9	6.6	38
31	58	---	55	49	---	47	---	188	---	10	9.0	---
TOTAL	1275	1678	1696	1618	1414	1571	1343	1791	2253	818.3	406.8	983.3
MEAN	41.1	55.9	54.7	52.2	50.5	50.7	44.8	57.8	75.1	26.4	13.1	32.8
MAX	64	59	62	66	54	53	64	495	126	97	39	44
MIN	32	49	53	42	44	47	11	14	54	6.5	5.5	8.4
AC-FT	2530	3330	3360	3210	2800	3120	2660	3550	4470	1620	807	1950

CAL YR 1981 TOTAL 15392.3 MEAN 42.2 MAX 98 MIN 2.5 AC-FT 30530
WTR YR 1982 TOTAL 16847.4 MEAN 46.2 MAX 495 MIN 5.5 AC-FT 33420

06826000 BONNY RESERVOIR NEAR HALE, CO

LOCATION.--Lat 39°37'24", long 102°10'26", in SE¼SE¼ sec.9, T.5 S., R.43 W., Yuma County, Hydrologic Unit 10250003, in stair well to outlet conduit of Bonny Dam on South Fork Republican River, 1.7 mi (2.7 km) west of Hale, and 3.0 mi (4.8 km) downstream from Landsman Creek.

DRAINAGE AREA.--1,820 mi² (4,710 km²), approximately.

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

REVISED RECORDS.--WSP 1710: 1955.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to Oct. 1, 1967, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by an earthfill dam. Storage began July 6, 1950; dam completed May 4, 1951. Capacity of reservoir, 170,200 acre-ft (210 hm³) below elevation 3,710 ft (1,130.8 m), crest of spillway, of which 128,800 acre-ft (159 hm³) is for flood control and 39,900 acre-ft (49.2 hm³) is for irrigation. Dead storage, 1,420 acre-ft (1.75 hm³) below elevation 3,635.0 ft (1,107.95 m), sill of trashrack at outlet conduit. Figures given represent total contents.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 55,030 acre-ft (67.9 hm³) May 17, 1957, elevation, 3,678.10 ft (1,121.085 m); minimum observed since appreciable contents was attained, 22,520 acre-ft (27.83 hm³) Oct. 6-14, 1952, elevation, 3,661.20 ft (1,115.934 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 40,560 acre-ft (50.0 hm³) July 2, 3, elevation, 3,671.62 ft (1,119.110 m); minimum, 34,480 acre-ft (42.5 hm³) Oct. 20-22, elevation, 3,668.45 ft (1,118.144 m). minimum, 35,040 acre-ft (43.2 hm³) Sept. 30, elevation, 3,668.75 ft (1,118.235 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)
(Furnished by U.S. Bureau of Reclamation

3,665.0	28,460
3,672.0	41,340

CONTENTS, IN ACRE-FTEET, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35000	34690	35460	36270	37000	37220	37730	37870	39270	40520	39680	37500
2	34970	34780	35500	36290	37020	37200	37750	37890	39470	40560	39620	37410
3	34950	34800	35520	36330	37020	37220	37750	37890	39530	40560	39570	37310
4	34870	34870	35540	36350	37040	37220	37770	37890	39590	40480	39490	37180
5	34840	34890	35580	36360	37040	37240	37770	37940	39620	40380	39430	37200
6	34800	34930	35620	36380	37060	37240	37790	37940	39640	40280	39390	37180
7	34740	34950	35630	36400	37080	37260	37790	37940	39660	40260	39350	37300
8	34690	34950	35650	36420	37100	37280	37810	37920	39680	40220	39270	37390
9	34670	34970	35670	36420	37120	37310	37810	37920	39700	40220	39090	37370
10	34650	35000	35690	36440	37120	37330	37830	37870	39700	40160	39030	37310
11	34630	35020	35730	36480	37140	37350	37830	37830	39700	40240	38970	37240
12	34620	35040	35760	36480	37160	37370	37850	38130	39840	40240	38910	37180
13	34560	35080	35780	36500	37180	37410	37850	38310	39920	40280	38860	37140
14	34540	35090	35820	36500	37200	37430	37870	38350	39920	40320	38780	37140
15	34540	35110	35850	36520	37200	37450	37830	38340	40120	40320	38720	37100
16	34540	35130	35870	36520	37220	37480	37890	38430	40240	40320	38660	37080
17	34520	35170	35870	36540	37240	37500	37920	38410	40240	40240	38580	37060
18	34520	35170	35890	36540	37240	37540	37870	38460	40260	40240	38520	37040
19	34520	35190	35930	36560	37240	37560	37870	38480	40280	40220	38460	36980
20	34480	35230	35950	36590	37220	37600	37850	38450	40260	40260	38370	36950
21	34480	35260	35980	36630	37240	37620	37830	38430	40260	40200	38310	36910
22	34480	35280	36020	36690	37180	37640	37830	38430	40260	40140	38230	36880
23	34500	35320	36040	36710	37180	37660	37810	38520	40260	40040	38150	36840
24	34520	35340	36040	36740	37140	37660	37790	38860	40280	40000	38060	36800
25	34540	35360	36060	36780	37140	37680	37770	38860	40300	39920	37960	36760
26	34580	35380	36100	36840	37160	37680	37770	38910	40440	39840	37900	36720
27	34600	35390	36120	36850	37160	37690	37810	38910	40460	39740	37790	36690
28	34630	35430	36140	36890	37200	37690	37830	38970	40460	39760	37710	36630
29	34650	35450	36160	36930	---	37710	37850	38970	40460	39760	37680	36570
30	34630	35460	36190	36950	---	37710	37850	39030	40520	39740	37600	36570
31	34650	---	36230	36980	---	37730	---	39090	---	39720	37580	---
MAX	35000	35460	36230	36980	37240	37730	37920	39090	40520	40560	39680	37500
MIN	34480	34690	35460	36270	37000	37200	37730	37830	39270	39720	37580	36570

WTR YR 1982 MAX 40560 MIN 34480

06826500 SOUTH FORK REPUBLICAN RIVER NEAR HALE, CO

LOCATION.--Lat 39°37'26", long 102°09'47", in SW¼NE¼ sec.15, T.5 S., R.43 W., Yuma County, Hydrologic Unit 10250003, on right bank 0.5 mi (0.8 km) downstream from Bonny Dam and 1.2 mi (1.9 km) west of Hale.

DRAINAGE AREA.--1,825 mi² (4,730 km²), approximately.

PERIOD OF RECORD.--October 1946 to September 1948, May 1951 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 3,610 ft (1,100 m), from topographic map. Oct. 1, 1946, to Sept. 30, 1948, at site 4 mi (6 km) downstream at different datum.

REMARKS.--Records good. Flow regulated by Bonny Reservoir since July 6, 1950 (station 06826000). Many diversions above station for irrigation. Water diverted by Hale ditch from Bonny Reservoir bypasses station (2,110 acre-ft or 2.60 hm³ diverted during current year). Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

COOPERATION.--Hale ditch diversion records furnished by State Engineer of Colorado.

AVERAGE DISCHARGE.--31 years (water years 1952-82), 20.3 ft³/s (0.575 m³/s), 14,710 acre-ft/yr (18.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,790 ft³/s (107 m³/s) May 28, 1947, gage height, 4.71 ft (1.436 m), site and datum then in use; maximum gage height, 4.84 ft (1.475 m) Apr. 28, 1947, site and datum then in use; no flow Aug. 11-13, 1947.

EXTREMES OUTSIDE PERIOD OF RECORD.--Greatest flood known occurred May 31, 1935, stage and discharge not determined. A discharge of 103,000 ft³/s (2,920 m³/s) was determined at a site near Newton 5.5 mi (8.8 km) upstream, with a drainage area of approximately 1,270 mi² (3,290 km²).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41 ft³/s (1.16 m³/s) at 2100 Feb. 18, gage height, 4.44 ft (1.353 m); minimum daily, 4.0 ft³/s (0.11 m³/s) Mar. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	6.6	5.5	4.6	14	18	5.0	4.8	8.2	5.5	6.0	4.9
2	4.6	7.4	5.6	4.8	20	16	5.2	5.0	10	5.4	5.9	4.6
3	4.6	7.4	4.6	4.7	19	19	4.6	5.0	9.7	4.6	5.9	4.7
4	4.5	7.4	4.5	4.5	20	19	4.7	5.1	6.4	4.6	7.8	5.0
5	4.5	7.4	4.5	4.6	20	19	4.9	6.4	5.8	4.8	7.1	6.0
6	4.4	7.4	4.2	4.4	20	18	4.9	5.6	5.5	4.8	6.7	6.5
7	4.5	7.4	4.4	4.2	20	19	5.1	5.7	7.2	4.8	6.8	7.5
8	4.7	7.4	4.5	4.3	20	11	5.0	5.8	6.1	5.4	6.5	10
9	4.6	7.4	4.6	4.3	20	4.3	4.8	5.6	5.7	5.7	6.8	9.0
10	4.5	7.4	4.7	4.2	20	5.2	4.5	6.4	5.7	5.5	7.7	6.5
11	4.7	7.4	4.6	4.3	20	5.0	4.5	6.9	6.2	6.4	8.2	6.5
12	4.8	7.4	4.7	13	19	5.4	5.4	10	6.7	6.1	7.7	6.8
13	4.8	7.4	4.8	19	20	4.8	4.2	11	7.3	5.4	7.0	7.8
14	4.8	7.4	4.4	20	19	5.0	5.0	8.7	7.1	5.2	7.6	7.3
15	4.9	7.4	4.5	19	20	5.2	4.9	8.2	9.6	5.2	8.2	6.6
16	5.3	7.4	4.6	11	21	5.0	4.9	8.5	7.2	5.1	7.5	6.4
17	5.2	7.0	4.4	5.2	27	5.0	5.0	7.5	7.1	5.1	7.3	6.7
18	4.5	7.4	4.5	5.2	39	5.1	5.2	7.9	6.4	4.6	7.5	6.3
19	4.6	5.8	4.5	5.2	39	5.1	5.0	8.1	6.3	4.6	7.3	6.2
20	4.6	5.9	4.7	5.2	37	4.9	4.9	8.3	6.3	4.8	7.4	5.8
21	4.7	5.7	4.6	4.7	37	4.8	5.1	8.0	6.4	5.1	6.4	5.9
22	4.8	5.3	4.5	5.8	37	4.1	5.2	8.0	6.8	5.2	6.0	5.8
23	4.8	6.4	4.5	5.2	39	4.4	5.2	8.7	6.6	5.4	5.7	6.0
24	5.0	6.5	4.4	5.8	40	4.4	5.4	8.7	8.2	5.9	5.5	6.2
25	5.0	6.6	4.6	5.2	40	4.0	4.6	7.7	7.1	6.0	5.8	6.2
26	4.9	6.1	4.6	5.2	28	4.1	4.7	7.3	10	6.2	5.7	6.4
27	5.8	6.2	4.6	5.2	18	4.6	4.9	6.7	7.7	7.4	5.6	6.4
28	5.6	6.1	4.4	5.2	18	4.8	5.0	7.6	6.4	7.0	5.1	6.2
29	5.8	6.1	4.3	4.7	---	5.1	4.9	6.6	6.0	7.3	4.9	6.4
30	5.8	7.3	4.6	4.7	---	4.9	4.7	8.0	7.8	7.6	5.0	7.2
31	5.8	---	4.6	4.7	---	4.4	---	8.2	---	6.2	4.9	---
TOTAL	151.5	206.0	142.5	208.1	711	248.6	147.4	226.0	213.5	172.9	203.5	193.8
MEAN	4.89	6.87	4.60	6.71	25.4	8.02	4.91	7.29	7.12	5.58	6.56	6.46
MAX	5.8	7.4	5.6	20	40	19	5.4	11	10	7.6	8.2	10
MIN	4.4	5.3	4.2	4.2	14	4.0	4.2	4.8	5.5	4.6	4.9	4.6
AC-FT	301	409	283	413	1410	493	292	448	423	343	404	384

CAL YR 1981 TOTAL 4909.6 MEAN 13.5 MAX 86 MIN 4.1 AC-FT 9740
WTR YR 1982 TOTAL 2824.8 MEAN 7.74 MAX 40 MIN 4.0 AC-FT 5600

ARKANSAS RIVER BASIN

07081200 ARKANSAS RIVER NEAR LEADVILLE, CO

LOCATION.--Lat 39°15'26", long 106°20'35", in NW¼NW¼ sec.21, T.9 S., R.80 W., Lake County, Hydrologic Unit 11020001, 500 ft (150 m) downstream from confluence of East Fork Arkansas River and Tennessee Creek, 0.5 mi (0.8 km) downstream from highway bridge, and 2.8 mi (4.5 km) west of Leadville.

DRAINAGE AREA.--97.2 mi^2 (251.7 km^2).

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 9,730 ft (2,966 m), from topographic map.

REMARKS.--Records good except those Nov. 18 to Apr. 29, which are poor. Transmountain diversion from Colorado River basin to Arkansas River basin enters above this station (see elsewhere in this report). Small diversions upstream for irrigation and municipal use. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--15 years, 70.4 ft^3/s (1.993 m^3/s), 51,000 acre-ft/yr (62.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,030 ft^3/s (29.2 m^3/s) June 11, 12, 1980, gage height, 4.21 ft (1.283 m); minimum daily, 7.0 ft^3/s (0.20 m^3/s) Feb. 3-20, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 560 ft^3/s (15.9 m^3/s) at 1100 June 18, gage height, 3.59 ft (1.094 m); minimum daily, 10 ft^3/s (0.28 m^3/s) Feb. 5-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	21	17	21	14	13	12	82	246	368	115	60
2	25	21	16	21	13	13	12	124	275	337	107	56
3	29	20	16	20	12	13	12	134	265	296	103	53
4	28	20	17	20	11	13	12	133	210	273	98	51
5	28	19	18	20	10	12	12	123	246	237	95	57
6	26	19	20	20	10	12	12	107	292	217	90	67
7	25	19	21	19	10	12	12	97	265	197	87	56
8	25	19	22	19	10	12	12	87	332	186	81	54
9	25	19	23	19	10	12	12	82	353	195	79	53
10	24	16	24	19	10	12	13	85	380	182	78	48
11	24	16	23	19	11	12	15	91	373	176	75	52
12	23	16	23	19	11	12	17	93	402	168	78	80
13	23	16	23	18	11	12	20	84	436	172	104	73
14	23	17	22	18	12	12	23	76	414	166	113	74
15	25	17	22	17	13	12	30	76	412	165	91	66
16	30	17	21	17	14	11	30	80	364	152	94	62
17	30	16	21	17	15	11	29	82	413	148	80	56
18	28	17	20	17	17	11	28	78	513	141	94	54
19	26	16	20	17	19	12	25	78	408	136	92	55
20	25	14	19	17	19	12	25	79	346	132	106	58
21	24	14	20	17	19	12	30	81	347	126	111	58
22	23	15	21	17	18	12	35	91	358	122	96	53
23	22	17	22	17	16	12	35	114	355	122	119	51
24	23	18	21	16	15	12	30	131	378	118	98	49
25	23	20	21	16	15	12	28	136	399	113	89	46
26	22	20	22	16	14	12	30	131	399	119	104	46
27	23	20	23	16	14	12	33	149	360	118	91	47
28	23	19	23	16	14	12	37	177	406	161	87	46
29	23	18	23	16	---	12	43	225	404	178	77	46
30	22	18	23	16	---	12	50	240	382	188	71	48
31	20	---	22	15	---	12	---	220	---	138	66	---
TOTAL	766	534	649	552	377	373	714	3566	10733	5547	2869	1675
MEAN	24.7	17.8	20.9	17.8	13.5	12.0	23.8	115	358	179	92.5	55.8
MAX	30	21	24	21	19	13	50	240	513	368	119	80
MIN	20	14	16	15	10	11	12	76	210	113	66	46
AC-FT	1520	1060	1290	1090	748	740	1420	7070	21290	11000	5690	3320

CAL YR 1981 TOTAL 13330 MEAN 36.5 MAX 228 MIN 12 AC-FT 26440
WTR YR 1982 TOTAL 28355 MEAN 77.7 MAX 513 MIN 10 AC-FT 56240

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 (6.4 km) west of Leadville and 4.6 mi (7.4 km) upstream from mouth.

DRAINAGE AREA.--28.1 mi^2 (72.8 km^2).

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Nonrecording gage read once daily. Datum of gage is 9,754.00 ft (2,973.019 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation); gage readings have been reduced to elevations NGVD.

REMARKS.--Reservoir formed by earthfill dam completed in 1909, capacity, 17,400 acre-ft (21.5 hm^3). Enlargement of dam began Dec. 8, 1965, and closure was made Apr. 15, 1968. Enlarged capacity, 129,400 acre-ft (160 hm^3) at elevation 9,869.4 ft (3,008.19 m), crest of spillway. Dead storage, 2,770 acre-ft (3.42 hm^3) below elevation 9,765.90 ft (2,976.646 m), 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 furnished by U.S. Bureau of Reclamation.

EXTREMES (at 0800 of following day) FOR PERIOD OF RECORD.--Maximum contents, 129,750 acre-ft (160 hm^3) July 30, 1982, elevation, 9,869.58 ft (3,008.248 m); minimum since appreciable storage was attained, 14,510 acre-ft (17.9 hm^3) Oct. 1, 1968, elevation, 9,782.85 ft (2,981.813 m).

EXTREMES (at 0800 of the following day) FOR CURRENT YEAR.--Maximum contents, 129,750 acre-ft (160 hm^3) July 30, elevation, 9,869.58 ft (3,008.248m); minimum, 48,530 acre-ft/yr (59.8 hm^3/s) May 18, elevation, 9,817.49 ft (2,992.371 m).

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 1000, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	9,846.23	90,000	-
Oct. 31	9,839.58	79,490	-10,510
Nov. 30	9,833.26	69,950	-9,540
Dec. 31	9,829.36	64,350	-5,600
CAL YR 1981		-	+1,660
Jan. 31	9,826.02	59,710	-4,640
Feb. 28	9,823.23	55,950	-3,760
Mar. 31	9,824.53	57,690	+1,740
Apr. 30	9,817.96	49,120	-8,570
May 31	9,822.16	54,530	+5,410
June 30	9,854.73	104,000	+49,470
July 31	9,869.37	129,380	+25,380
Aug. 31	9,866.23	123,800	-5,580
Sept. 30	9,865.44	122,410	-1,390
WTR YR 1982			+32,410

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 (2.3 km) upstream from culvert, 3.3 mi (5.3 km) upstream from mouth, and 4.3 mi (6.9 km) southwest of Malta.

DRAINAGE AREA.--23.6 mi^2 (61.1 km^2).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 2121: Drainage area at site 1.4 mi (2.3 km) downstream. WRD Colo. 1968: 1967(M). WDR CO-79-1: 1976(M). WDR CO-80-1: 1954(M).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 9,830 ft (2,996 m), from topographic map. Prior to Oct. 19, 1966, at sites 1.4 mi (2.3 km) downstream at different datums.

REMARKS.--Records good except those for period of no gage-height record, which are poor. No regulation or diversion above station.

AVERAGE DISCHARGE.--36 years, 28.2 ft^3/s (0.799 m^3/s) 20,430 acre-ft/yr (25.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 450 ft^3/s (12.7 m^3/s) June 30, 1957, gage height, 3.48 ft (1.061 m), site and datum then in use; minimum not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 150 ft^3/s (4.2 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)			(ft^3/s)	(m^3/s)	(ft)	(m)
June 18	0130	162	4.59	2.96	0.902	June 23	2230	* 209	5.92	3.15	0.960
June 21	2315	182	5.15	3.05	0.930	June 28	2130	182	5.15	3.07	0.936

Minimum daily discharge, 2.7 ft^3/s (0.08 m^3/s) Feb. 5-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	13	5.0	3.3	3.8	4.0	3.8	15	86	140	76	35
2	14	12	5.4	3.3	3.5	4.0	3.2	19	87	135	71	33
3	17	12	5.4	3.3	3.2	3.9	3.9	25	77	126	66	31
4	15	10	5.4	3.3	2.9	3.9	3.7	31	70	119	61	30
5	15	10	5.3	3.3	2.7	3.9	3.8	35	82	106	56	35
6	12	10	5.2	3.4	2.7	3.8	3.7	26	84	96	55	33
7	10	10	4.9	3.4	2.7	3.7	3.6	20	82	84	53	31
8	10	9.9	5.0	3.3	2.7	3.7	3.8	19	90	80	48	29
9	9.9	8.9	5.1	3.3	2.8	3.7	3.8	20	97	89	48	28
10	9.5	9.4	5.2	3.4	2.8	3.7	3.8	22	110	84	46	28
11	9.1	11	5.0	3.5	2.9	3.7	4.6	23	116	88	42	32
12	8.9	10	4.8	3.6	3.0	3.7	6.1	21	126	88	48	38
13	8.7	11	4.5	3.7	3.0	3.7	6.1	18	126	86	52	38
14	8.6	9.9	4.3	3.6	3.0	3.7	6.9	16	117	83	51	36
15	9.6	8.7	4.1	3.5	3.1	3.7	7.5	15	115	83	45	35
16	9.3	8.6	4.0	3.5	3.2	3.5	8.0	15	118	88	42	34
17	8.8	8.2	3.8	3.6	3.5	3.3	7.5	14	137	96	43	33
18	8.6	7.9	3.7	3.7	3.8	3.3	8.0	16	139	92	43	33
19	8.5	6.1	3.7	3.8	3.8	3.3	7.7	17	111	90	44	32
20	12	7.6	3.7	3.8	4.0	3.4	6.8	18	98	88	46	35
21	15	7.8	3.8	3.6	4.1	3.5	7.1	20	122	84	48	34
22	14	8.2	3.8	3.5	4.1	3.4	9.8	27	151	80	49	32
23	14	7.2	3.8	3.4	4.2	3.5	11	38	150	80	58	32
24	12	6.7	3.8	3.4	4.3	3.4	10	46	162	80	53	30
25	12	6.6	3.7	3.4	4.4	3.4	8.1	46	158	81	53	29
26	13	6.6	3.6	3.5	4.3	3.4	8.3	43	152	79	57	30
27	14	6.2	3.5	3.6	4.1	3.5	8.6	58	142	77	50	29
28	12	6.0	3.3	3.8	4.1	3.5	9.1	69	150	93	47	29
29	12	6.0	3.3	4.0	---	3.2	10	85	152	109	43	28
30	12	5.8	3.3	4.0	---	3.6	12	84	144	100	40	30
31	10	---	3.3	3.8	---	4.1	---	82	---	84	36	---
TOTAL	358.5	261.3	132.7	109.6	96.7	112.1	200.3	1003	3551	2888	1570	962
MEAN	11.6	8.71	4.28	3.54	3.45	3.62	6.68	32.4	118	93.2	50.6	32.1
MAX	17	13	5.4	4.0	4.4	4.1	12	85	162	140	76	38
MIN	8.5	5.8	3.3	3.3	2.7	3.2	3.2	14	70	77	36	28
AC-FT	711	518	263	217	192	222	397	1990	7040	5730	3110	1910

CAL YR 1981 TOTAL 7431.3 MEAN 20.4 MAX 177 MIN 2.8 AC-FT 14740
WTR YR 1982 TOTAL 11245.2 MEAN 30.8 MAX 162 MIN 2.7 AC-FT 22300

NOTE.--NO GAGE-HEIGHT RECORD NOV. 26 TO MAR. 16.

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 current year.

INSTRUMENTATION.--Water temperature recorder since May 23, 1967.

REMARKS.--Temperature recorder was out of service for lack of parts Jan. 26-July 22, Aug. 14-17.

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.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum, 8.0°C Aug. 21, 24; minimum, 0.0°C on many days during October to April.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT									
20...	1530	13	--	72	7.5	3.0	8.9	< 1	< 1
DEC									
01...	1100	6.0	--	91	7.7	.0	9.2	< 1	< 1
JAN									
26...	1400	3.9	--	105	8.1	.0	8.9	< 1	< 1
MAR									
16...	1445	4.5	--	94	7.3	1.0	9.6	< 1	K2
APR									
30...	1415	10	--	92	7.1	9.5	8.5	< 1	< 1
JUN									
16...	1145	105	70	66	7.2	6.0	8.7	< 1	--
JUL									
16...	1300	86	--	54	7.2	10.5	9.4	< 1	< 1
AUG									
17...	1715	42	--	67	7.6	11.5	8.2	< 1	< 1
SEP									
23...	1345	32	--	85	7.7	10.0	8.8	< 1	< 1

DATE	HARD-NESS (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 LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT									
20...	40	10	3.7	1.4	.1	.8	30	6.0	.5
DEC									
01...	56	15	4.4	1.9	.1	1.0	49	13	1.1
JAN									
26...	45	11	4.3	1.7	.1	.7	44	6.0	.3
MAR									
16...	42	10	4.1	1.8	.1	.7	45	5.0	1.5
APR									
30...	40	9.9	3.8	1.8	.1	.9	38	6.0	.8
JUN									
16...	26	6.6	2.3	.9	.1	.5	26	< 5.0	.5
JUL									
16...	23	6.1	1.9	.8	.1	.5	26	5.0	.2
AUG									
17...	30	7.8	2.6	1.1	.1	.6	32	< 5.0	.5
SEP									
23...	39	10	3.4	1.4	.1	.6	39	5.0	.5

K BASED ON NON-IDEAL COLONY COUNT.

07083000 HALFMOON CREEK NEAR MALTA, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT									
20...	.1	5.5	44	47	.06	1.5	.15	.16	.140
DEC									
01...	.1	7.4	52	73	.07	.84	.18	.19	<.010
JAN									
26...	.1	7.1	58	58	.08	.61	--	--	--
MAR									
16...	.1	6.6	71	57	.10	.86	.15	.17	.010
APR									
30...	.2	6.0	62	52	.08	1.7	.10	.14	.050
JUN									
16...	.1	3.8	42	--	.06	11.9	.12	.14	.050
JUL									
16...	<.1	3.6	35	34	.05	8.1	.13	.74	.040
AUG									
17...	.1	4.1	69	--	.09	7.8	.13	.18	.060
SEP									
23...	<.1	4.6	49	49	.07	4.2	.20	.16	<.010

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)
OCT											
20...	1530	1	1	200	29	<1	<1	<1	<10	<1	<3
JUL											
16...	1300	1	1	<100	19	1	<1	<1	<10	<1	<3

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DISSOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DISSOLVED (UG/L AS HG)
OCT											
20...	5	<10	180	160	1	10	4	10	11	.2	.0
JUL											
16...	1	<10	130	59	<1	<10	<4	10	6	.2	.1

DATE	MOLYBDENUM, DISSOLVED (UG/L AS MO)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DISSOLVED (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT										
20...	<10	<1	<1	<1	<1	76	<6.0	10	11	--
JUL										
16...	<10	<1	<1	<1	<1	4	<6.0	10	18	<.01

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
JAN					JUL				
26...	1400	3.9	2	.02	16...	1300	86	4	.93
MAR					AUG				
16...	1445	4.5	4	.05	17...	1715	42	5	.57
APR					SEP				

07083000 HALFMOON CREEK NEAR MALTA, CO--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	5.0	12.0	.0	1.0	.0	.0	.0	.0				
2	4.0	8.0	.0	2.0	.0	.0	.0	.0				
3	5.0	10.5	.0	3.0	.0	.0	.0	.0				
4	4.0	11.0	.0	2.5	.0	.0	.0	.0				
5	4.0	10.5	.0	1.5	.0	.0	.0	.0				
6	2.0	10.5	.0	2.0	.0	.0	.0	.0				
7	2.5	9.5	.0	2.0	.0	.0	.0	.0				
8	3.0	9.5	.0	2.0	.0	.0	.0	.0				
9	2.5	9.0	.0	1.0	.0	.0	.0	.0				
10	1.0	9.5	.0	.0	.0	.0	.0	.0				
11	3.0	6.5	.0	.5	.0	.0	.0	.0				
12	3.0	6.0	.0	.5	.0	.0	.0	.0				
13	3.0	9.5	.0	1.0	.0	.0	.0	.0				
14	3.0	8.5	.0	.5	.0	.0	.0	.0				
15	.5	4.0	.0	2.5	.0	.0	.0	.0				
16	.0	6.0	.0	4.0	.0	.0	.0	.0				
17	.0	5.5	.0	1.0	.0	.0	.0	.0				
18	.0	6.0	.0	.0	.0	.0	.0	.0				
19	.0	6.0	.0	.0	.0	.0	.0	.0				
20	1.0	5.0	.0	.0	.0	.0	.0	.0				
21	.0	6.0	.0	.0	.0	.0	.0	.0				
22	.0	5.5	.0	.0	.0	.0	.0	.0				
23	.0	4.5	.0	.0	.0	.0	.0	.0				
24	.0	2.0	.0	.0	.0	.0	.0	.0				
25	.0	1.5	.0	.0	.0	.0	.0	.0				
26	.0	2.0	.0	.0	.0	.0	---	---				
27	.0	4.0	.0	.0	.0	.0	---	---				
28	.0	4.0	.0	.0	.0	.0	---	---				
29	1.0	4.5	.0	.0	.0	.0	---	---				
30	.0	1.0	.0	.0	.0	.0	---	---				
31	.0	1.0	---	---	.0	.0	---	---				
MONTH	5.0	1.0	.0	.0	.0	.0						

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1							---	---	6.0	14.5	6.0	15.0
2							---	---	7.5	11.0	5.5	14.5
3							---	---	7.0	14.5	6.5	14.5
4							---	---	7.0	12.0	6.5	10.5
5							---	---	6.5	11.0	7.0	9.0
6							---	---	6.5	12.0	5.0	12.0
7							---	---	7.0	11.5	6.0	11.5
8							---	---	6.5	13.0	6.0	10.0
9							---	---	8.0	13.5	5.0	13.5
10							---	---	6.0	13.0	6.0	10.5
11							---	---	6.5	13.0	6.5	10.0
12							---	---	8.0	13.0	5.5	9.0
13							---	---	8.0	12.0	3.5	5.5
14							---	---	---	---	2.0	7.0
15							---	---	---	---	4.0	10.0
16							---	---	---	---	3.5	12.0
17							---	---	---	---	5.0	12.5
18							---	---	7.0	15.0	4.5	8.5
19							---	---	8.0	13.5	3.5	9.5
20							---	---	7.5	15.0	5.5	9.5
21							---	---	8.5	13.0	4.5	11.0
22							---	---	7.5	12.5	3.5	12.5
23							5.5	15.0	7.0	14.0	5.5	13.0
24							6.0	14.5	8.5	13.0	5.0	12.5
25							6.5	10.5	8.0	10.0	5.5	10.0
26							6.5	12.0	6.0	12.5	6.5	10.5
27							6.5	12.5	6.0	11.0	4.5	9.0
28							7.0	11.0	6.0	12.5	3.0	11.0
29							6.5	10.5	6.0	13.0	3.0	9.5
30							6.5	13.0	6.5	11.0	3.0	4.0
31							5.5	15.0	6.0	14.5	---	---
MONTH									8.5	10.0	7.0	4.0

07083700 ARKANSAS RIVER NEAR MALTA, CO

LOCATION.--Lat 39°10'08", long 106°19'23", in NE¼NW¼ sec.22, T.10 S., R.80 W., Lake County, Hydrologic Unit 11020001, on left bank 40 ft (12 m) downstream and 30 ft (9 m) shoreward of left end of bridge on U.S. Highway 24, 3.5 mi (5.6 km) downstream from Lake Fork, 4.4 mi (7.1 km) southeast of Malta, and 5.7 mi (9.2 km) south of Leadville.

DRAINAGE AREA.--228 mi^2 (590 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to September 1967, October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 9,300 ft (2,835 m), from topographic map.

REMARKS.--Records good except those for winter period and those for period of no gage-height record, which are poor. Flow regulated by Turquoise Lake (station 07082400) on Lake Fork 8 mi (13 km) upstream. Transmountain diversions from Colorado River basin to Arkansas River basin enter upstream from this station (see elsewhere in this report). Diversions for irrigation of about 5,600 acres (22.7 km^2) above station. Diversions from Colorado River basin to Lake Creek basin above station through Homestake tunnel began in May 1967 and through Charles H. Boustead tunnel in May 1972; since June 1981, this imported water has been diverted from Turquoise Lake through Mt. Elbert conduit, bypassing this station. Most of the natural flow of Lake Fork and Halfmoon Creek has also been diverted through Mt. Elbert conduit since June 1981, and returned to the river below this station.

AVERAGE DISCHARGE.--8 years (water years 1975-82), 235 ft^3/s (6.655 m^3/s), 170,300 acre-ft/yr (210 hm^3/yr), subsequent to enlarging Turquoise Lake in 1968.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 2,200 ft^3/s (62.3 m^3/s) May 12, 1980, gage height, about 5.4 ft (1.637 m) from rating curve extended above 1900 ft^3/s (53.8 m^3/s); minimum daily, 40 ft^3/s (1.13 m^3/s) Oct. 11, 12, 16-20, 1974, Dec. 7-12, Dec. 25, 1976, to Jan. 15, 1977, Jan. 25 to Feb. 7, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 700 ft^3/s (19.8 m^3/s) June 29, gage height, unkrown; minimum daily, 52 ft^3/s (1.47 m^3/s) Dec. 20-21, Mar. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	76	72	68	95	67	58	160	302	611	172	152
2	92	76	68	66	90	67	55	180	337	552	168	151
3	99	75	66	62	84	67	62	181	326	485	169	150
4	98	75	62	60	80	63	59	180	268	460	169	147
5	94	73	58	60	30	59	57	176	296	408	170	144
6	93	70	58	60	78	61	56	148	341	375	170	145
7	91	68	60	60	76	64	56	135	292	331	171	145
8	90	66	62	60	74	67	55	135	340	321	171	143
9	90	66	66	65	72	57	55	133	350	358	170	144
10	88	64	66	70	70	58	56	141	385	324	170	142
11	85	64	66	70	70	60	64	146	383	297	172	140
12	82	62	64	70	70	61	77	148	415	318	169	136
13	80	62	62	70	75	60	83	137	458	304	170	137
14	80	62	60	70	85	60	97	133	432	278	170	137
15	80	62	58	80	95	61	111	138	435	265	170	136
16	100	62	57	80	105	59	110	137	400	260	172	137
17	115	60	55	80	110	59	102	133	466	246	167	136
18	110	60	54	80	120	58	103	132	600	248	165	133
19	100	60	53	80	125	57	95	132	502	245	166	132
20	96	60	52	80	115	56	81	135	392	241	164	132
21	90	64	52	80	112	57	77	138	377	225	164	131
22	84	70	60	80	90	57	77	153	416	216	164	130
23	80	80	63	80	84	57	85	175	413	205	164	130
24	82	88	63	80	77	57	88	188	494	195	162	131
25	84	82	64	90	66	56	91	187	620	184	162	128
26	85	78	62	95	66	56	97	178	640	176	164	128
27	85	74	60	100	67	56	99	202	620	186	164	128
28	78	74	60	100	68	57	108	217	660	324	164	128
29	76	73	60	100	---	57	118	266	670	420	164	130
30	76	74	65	100	---	52	131	289	640	386	164	128
31	76	---	70	100	---	61	---	279	---	242	165	---
TOTAL	2747	2080	1898	2396	2399	1844	2463	5212	13270	9686	5186	4111
MEAN	88.6	69.3	61.2	77.3	85.7	59.5	82.1	168	442	312	167	137
MAX	115	88	72	100	125	67	131	289	670	611	172	152
MIN	76	60	52	60	66	52	55	132	268	176	162	128
AC-FT	5450	4130	3760	4750	4760	3660	4890	10340	26320	19210	10290	8150

CAL YR 1981 TOTAL 48093 MEAN 132 MAX 770 MIN 52 AC-FT 95390
WTR YR 1982 TOTAL 53292 MEAN 146 MAX 670 MIN 52 AC-FT 105700

NOTE.--NO GAGE-HEIGHT RECORD OCT. 29 TO DEC. 2.

07083700 ARKANSAS RIVER NEAR MALTA, CO--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (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)
OCT												
21...	1530	96	214	7.9	9.0	7.5	96	24	8.7	4.8	.2	1.2
DEC												
03...	1500	73	217	8.3	.0	12.0	97	24	8.9	4.6	.2	1.3
JAN												
27...	1445	121	219	7.9	.0	9.0	90	22	8.6	4.6	.2	1.4
MAR												
04...	1545	61	270	7.5	3.5	8.1	110	27	10	5.6	.3	1.4
APR												
29...	1800	118	220	7.5	7.5	8.8	93	22	9.2	4.4	.2	1.6
JUL												
16...	1030	260	145	7.2	9.5	11.8	63	16	5.6	2.2	.1	.7
AUG												
17...	1210	167	175	7.4	14.5	10.2	80	20	7.3	3.0	.2	1.0
SEP												
23...	1100	132	194	7.8	9.0	9.8	86	21	8.1	3.5	.2	.9

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, 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-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT												
21...	62	41	2.8	.2	9.2	131	.18	34.0	.18	.030	650	260
DEC												
03...	57	42	14	.3	9.3	141	.19	27.8	.25	.020	1100	380
JAN												
27...	56	44	3.3	.2	9.8	130	.18	42.5	.28	<.010	450	410
MAR												
04...	64	57	3.7	.2	9.3	155	.21	25.5	.30	.050	58	540
APR												
29...	46	55	2.5	.2	9.3	135	.18	43.0	.16	.270	1500	990
JUL												
16...	46	22	1.3	.2	6.3	83	.11	58.3	.17	.050	120	240
AUG												
17...	47	29	1.7	.2	7.6	99	.13	44.6	--	.030	210	330
SEP												
23...	94	32	2.1	.2	8.0	133	.18	47.4	.13	.020	110	380

Streamflow data for water year 1982 for the following stations will be published in a subsequent report.

ARKANSAS RIVER BASIN

07084500 LAKE CREEK ABOVE TWIN LAKES RESERVOIR, CO

ARKANSAS RIVER BASIN

07086000 ARKANSAS RIVER AT GRANITE, CO

07089000 COTTONWOOD CREEK BELOW HOT SPRINGS, NEAR BUENA VISTA, CO.

LOCATION.--Lat 38°48'46", long 106°13'18", in SE¼SE¼ sec.21, T.14 S., R.79 W., Chaffee County, Hydrologic Unit 11020001, on left bank 0.2 mi (0.3 km) downstream from Cottonwood Hot Springs, 0.9 mi (1.4 km) downstream from confluence of Middle Cottonwood and South Cottonwood Creeks, 2.9 mi (4.7 km) upstream from North Cottonwood Creek, and 5.5 mi (8.8 km) southwest of Buena Vista.

DRAINAGE AREA.--65.0 mi^2 (168 km^2).

PERIOD OF RECORD.--October 1910 to September 1923, August 1949 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1177: 1915, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 8,532 ft (2,600.6 m), from river-profile survey. Prior to Oct. 1, 1923, nonrecording gage near present site at different datum.

REMARKS.--Records good. Several small diversions above station for irrigation. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--46 years (water years 1911-23, 1950-82), 55.2 ft^3/s (1.563 m^3/s), 39,990 acre-ft/yr (49.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,180 ft^3/s (33.4 m^3/s) July 1, 1957, gage height, 4.52 ft (1.378 m), from floodmarks, from rating curve extended above 690 ft^3/s (20 m^3/s); minimum observed, 10 ft^3/s (0.28 m^3/s) Mar. 20-23, 25, Apr. 9, 19, 1914.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 227 ft^3/s (6.43 m^3/s) at 0430 June 29, gage height, 2.38 ft (0.725 m), no peak above base of 300 ft^3/s (8.5 m^3/s); minimum daily, 13 ft^3/s (0.37 m^3/s) Apr. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	19	16	18	17	15	14	28	96	181	81	58
2	23	21	17	18	16	15	14	34	104	166	75	51
3	26	20	17	18	16	15	14	34	106	157	74	45
4	26	20	17	17	16	14	14	22	92	174	72	43
5	26	20	17	18	16	14	14	46	118	161	70	47
6	25	20	17	18	16	14	14	32	119	153	70	48
7	24	20	17	18	15	14	14	28	106	147	74	44
8	24	20	17	17	16	14	13	28	125	135	68	55
9	24	20	17	18	16	14	14	28	127	140	64	65
10	23	19	17	17	15	14	14	29	142	136	63	61
11	23	19	17	17	16	14	14	34	138	134	61	65
12	24	19	17	17	15	15	20	35	143	129	63	90
13	24	19	17	17	15	14	17	31	156	128	77	86
14	24	19	17	17	15	14	18	27	159	122	77	83
15	26	19	17	17	15	14	19	25	157	118	69	79
16	27	18	17	17	15	14	19	25	149	107	72	79
17	24	18	16	17	15	14	18	23	165	107	72	80
18	23	18	17	17	15	14	18	25	188	109	67	79
19	23	15	17	17	15	14	18	28	173	103	78	79
20	23	16	17	17	15	14	18	31	151	97	71	82
21	23	17	17	17	15	14	17	36	158	93	72	86
22	23	18	17	17	15	14	17	48	189	88	68	78
23	23	18	16	16	15	14	17	60	193	85	67	74
24	23	18	16	17	15	14	17	68	190	81	71	72
25	22	18	17	17	15	14	16	64	195	81	75	82
26	21	16	17	17	14	14	17	58	193	81	77	80
27	22	16	18	17	15	14	18	77	194	83	75	70
28	22	17	17	17	15	14	18	90	204	100	77	67
29	22	17	17	17	---	14	21	108	212	99	64	67
30	21	16	17	17	---	14	24	99	201	106	65	68
31	20	---	18	17	---	15	---	85	---	90	63	---
TOTAL	727	550	525	533	429	439	500	1386	4643	3691	2192	2063
MEAN	23.5	18.3	16.9	17.2	15.3	14.2	16.7	44.7	155	119	70.7	68.8
MAX	27	21	18	18	17	15	24	108	212	181	81	90
MIN	20	15	16	16	14	14	13	22	92	81	61	43
AC-FT	1440	1090	1040	1060	851	871	992	2750	9210	7320	4350	4090

CAL YR 1981 TOTAL 9803 MEAN 26.9 MAX 79 MIN 14 AC-FT 19440
WTR YR 1982 TOTAL 17678 MEAN 48.4 MAX 212 MIN 13 AC-FT 35060

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 (90 m) upstream from end of Chaffee County Road 60 in Browns Canyon, 3.7 mi (5.9 km) downstream from Browns Creek, 6.7 mi (10.8 km) south of Nathrop, and 9 mi (14 km) north of Salida.

DRAINAGE AREA.--1,060 mi^2 (2,745 km^2).

PERIOD OF RECORD.--October 1964 to September 1982 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 7,350 ft (2,240 m), from topographic map.

REMARKS.--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 (61 km^2), 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.--18 years, 636 ft^3/s (18.01 m^3/s), 460,800 acre-ft/yr (568 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,960 ft^3/s (140 m^3/s) June 12, 1980, gage height, 8.51 ft (2.594 m); maximum gage height, 9.94 ft (2.725 m) Aug. 31, 1972 (backwater from unnamed tributary); minimum daily discharge, 95 ft^3/s (2.69 m^3/s) Feb. 25-27, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,780 ft^3/s (78.7 m^3/s) at 0800 July 1, gage height, 6.99 ft (2.131 m); minimum daily, 192 ft^3/s (5.44 m^3/s) Apr. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	353	321	235	220	415	400	240	311	1380	2720	1270	685
2	297	337	234	220	422	416	244	353	1510	2640	1190	590
3	302	310	233	220	420	415	254	408	1570	2540	1130	559
4	309	304	225	220	400	405	247	549	1240	2400	1380	552
5	303	335	300	230	380	395	232	753	807	2010	1190	584
6	314	308	320	250	380	390	233	934	1410	1880	1230	625
7	290	304	310	250	380	390	203	846	1380	1690	1370	565
8	317	313	300	250	380	391	197	759	1470	1610	1120	538
9	281	298	290	250	380	390	198	653	1620	1500	1070	543
10	257	294	300	250	380	389	192	591	1850	1460	1060	525
11	268	293	295	250	380	390	194	551	1990	1460	1100	558
12	262	275	300	250	400	407	224	641	2050	1500	1110	746
13	271	278	310	246	410	394	220	626	2190	1580	1110	698
14	299	275	295	364	430	400	220	584	2220	1600	1190	721
15	339	230	300	390	430	395	234	517	2180	1610	1120	635
16	454	201	310	393	440	419	251	457	2070	1510	1120	614
17	421	195	305	395	440	418	235	442	2210	1420	1080	603
18	402	204	300	395	440	409	232	422	2460	1310	1070	657
19	390	197	315	381	440	400	228	413	2420	1210	1190	674
20	345	203	315	367	425	410	232	414	2270	1130	1310	701
21	332	207	330	366	420	400	228	430	2160	1130	1650	717
22	340	224	315	376	419	395	360	486	2120	1100	1460	669
23	351	234	280	370	415	385	631	628	2270	1030	1490	641
24	386	286	260	370	407	214	670	824	2440	947	1470	641
25	390	252	260	380	415	217	644	887	2510	946	1250	627
26	335	218	270	380	410	220	620	870	2510	981	1110	627
27	336	224	280	380	400	226	606	980	2450	1030	949	602
28	327	220	280	390	405	222	531	1150	2430	1160	955	554
29	332	223	210	408	---	221	398	1370	2670	1480	872	536
30	329	239	210	415	---	227	300	1400	2680	1700	819	512
31	333	---	220	418	---	217	---	1360	---	1490	763	---
TOTAL	10265	7802	8707	10044	11463	10967	9498	21609	60537	47774	36198	18499
MEAN	331	260	281	324	409	354	317	697	2018	1541	1168	617
MAX	454	337	330	418	440	419	670	1400	2680	2720	1650	746
MIN	257	195	210	220	380	214	192	311	807	946	763	512
AC-FT	20360	15480	17270	19920	22740	21750	18840	42860	120100	94760	71800	36690

CAL YR 1981 TOTAL 151845 MEAN 416 MAX 1750 MIN 147 AC-FT 301200
WTR YR 1982 TOTAL 253363 MEAN 694 MAX 2720 MIN 192 AC-FT 502500

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 (15 m) upstream from Chaffee-Fremont County line, 2.0 mi (3.2 km) northwest of Wellsville, 2.8 mi (4.5 km) downstream from South Arkansas River, and 3.5 mi (5.6 km) southeast of Salida.

DRAINAGE AREA.--1,485 mi² (3,846 km²).

PERIOD OF RECORD.--April 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,883.4 ft (2,098.06 m), National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Records good except those for period of no gage-height record, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions for irrigation of about 26,000 acres (110 km²), and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--21 years, 688 ft³/s (19.48 m³/s), 498,500 acre-ft/yr (615 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,240 ft³/s (177 m³/s) June 12, 1980, gage height, 8.02 ft (2.444 m); minimum daily, 110 ft³/s (3.12 m³/s) Jan. 12, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,840 ft³/s (80.4 m³/s) at 1200 July 1, gage height, 6.37 ft (1.942 m); minimum daily, 202 ft³/s (5.72 m³/s) Apr. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	363	404	264	387	480	460	283	311	1450	2800	1340	818
2	351	404	275	383	485	465	279	347	1520	2710	1240	740
3	335	391	299	359	440	470	295	391	1620	2600	1160	692
4	351	375	279	331	400	465	291	503	1450	2410	1310	665
5	359	387	339	363	340	450	268	698	920	2000	1200	665
6	367	375	408	383	380	450	261	848	1350	1880	1200	675
7	363	367	400	323	420	455	240	830	1400	1690	1340	675
8	363	367	391	315	470	450	230	740	1420	1600	1170	655
9	343	367	387	367	440	450	216	655	1530	1450	1120	640
10	319	363	371	375	470	445	212	595	1720	1420	1070	635
11	311	359	375	355	470	449	202	535	1900	1390	1090	630
12	311	351	387	375	470	454	226	595	2020	1380	1100	794
13	319	347	383	343	470	454	247	605	2210	1460	1120	812
14	343	343	371	359	470	454	240	575	2270	1410	1220	794
15	387	319	379	426	470	454	236	512	2240	1490	1170	770
16	503	291	387	449	475	454	264	444	2110	1450	1150	734
17	485	279	371	472	475	454	258	426	2200	1380	1140	710
18	458	275	363	467	470	454	240	418	2590	1290	1110	710
19	444	275	375	472	465	454	261	404	2660	1220	1150	728
20	413	264	391	467	465	444	268	404	2500	1140	1280	806
21	404	291	387	449	480	444	272	404	2320	1110	1520	806
22	400	303	387	440	480	444	275	436	2220	1110	1460	794
23	404	303	375	426	475	444	615	560	2320	1050	1420	764
24	418	327	335	462	475	303	670	764	2570	976	1460	758
25	431	323	383	440	480	247	675	854	2660	955	1300	752
26	404	291	363	440	480	261	650	854	2700	969	1200	746
27	387	275	395	444	460	261	625	927	2640	1020	1070	740
28	383	307	375	431	460	264	600	1080	2490	1120	1030	698
29	383	287	367	462	---	264	494	1350	2770	1360	997	686
30	395	295	383	476	---	264	291	1430	2740	1690	934	670
31	418	---	391	472	---	261	---	1450	---	1550	896	---
TOTAL	11915	9905	11336	12713	12815	12542	10184	20945	62510	47080	36967	21762
MEAN	384	330	366	410	458	405	339	676	2084	1519	1192	725
MAX	503	404	408	476	485	470	675	1450	2770	2800	1520	818
MIN	311	264	264	315	340	247	202	311	920	955	896	630
AC-FT	23630	19650	22480	25220	25420	24880	20200	41540	124000	93380	73320	43160

CAL YR 1981 TOTAL 159702 MEAN 438 MAX 1650 MIN 174 AC-FT 316800
WTR YR 1982 TOTAL 270674 MEAN 742 MAX 2800 MIN 202 AC-FT 536900

NOTE.--NO GAGE-HEIGHT RECORD FEB. 4 TO MAR. 11.

07093740 BADGER CREEK, UPPER STATION NEAR HOWARD, CO

LOCATION.--Lat 38°39'25", long 105°48'45", in SE¼NE¼ sec.24, T.50 N., R.10 E., Fremont County, Hydrologic Unit 11020001, on left bank 0.4 mi (0.6 km) downstream from County Road 2, 0.7 mi (1.1 km) upstream from Steer Creek, 14.0 mi (22.5 km) north of Howard, and 14.3 mi (23.0 km) upstream from mouth.

DRAINAGE AREA.--106 mi^2 (275 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 8,780 ft (2,676 m), from topographic map.

REMARKS.--Records good except those between 8 ft^3/s (0.23 m^3/s) and 250 ft^3/s (7.08 m^3/s), which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 641 ft^3/s (18.2 m^3/s) Aug. 20, 1982, gage height, 7.68 ft (2.341 m), result of indirect determination of peak flow; minimum daily, 3.2 ft^3/s (0.09 m^3/s) many days in 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft^3/s (0.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Aug. 13	2000	30	0.85	5.11	1.558	Aug. 20	1930	a * 641	18.2	7.68	2.341
Aug. 17	1515	62	1.76	5.56	1.695						

a - From rating curve extended above 7.0 ft^3/s (0.20 m^3/s) on basis of slope-area measurement of peak flow.
Minimum daily discharge, 3.3 ft^3/s (0.09 m^3/s) July 9-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	3.7	3.9	5.2	4.8	4.9	6.4	4.9	3.7	3.4	4.8	4.0
2	3.8	3.7	3.9	5.2	4.8	4.9	6.4	4.8	3.8	3.4	3.9	4.1
3	3.8	3.6	3.9	5.2	4.8	4.9	6.4	4.7	3.8	3.5	3.9	4.1
4	3.8	3.7	3.9	5.3	4.8	4.9	6.4	4.6	3.9	3.4	3.9	4.1
5	3.8	3.7	3.9	5.4	4.8	5.0	6.4	4.6	4.0	3.4	4.0	4.2
6	3.8	3.6	3.9	5.6	4.8	5.0	6.4	5.0	4.1	3.4	4.2	4.1
7	3.8	3.6	3.9	5.6	4.8	5.0	6.4	4.8	4.2	3.4	4.6	4.1
8	3.7	3.6	3.8	5.6	4.8	5.1	6.4	4.5	4.2	3.4	4.6	4.1
9	3.7	3.6	3.8	5.6	4.7	5.1	6.5	4.5	4.3	3.3	4.5	4.1
10	3.6	3.7	3.9	5.6	4.7	5.4	6.6	4.4	4.4	3.3	4.4	4.0
11	3.6	3.7	4.0	5.6	4.7	5.9	7.0	4.3	4.5	3.3	4.4	4.0
12	3.5	3.7	4.2	5.6	4.7	5.9	7.5	4.2	4.6	3.3	4.4	4.0
13	3.4	3.7	4.2	5.6	4.7	5.9	8.1	4.2	4.7	3.3	6.2	4.0
14	3.4	3.7	4.2	5.4	4.7	6.0	7.0	4.1	4.6	3.4	5.0	3.9
15	3.4	3.7	4.3	5.4	4.7	6.0	6.7	4.0	4.4	3.4	4.7	3.8
16	3.5	3.8	4.4	5.4	4.6	6.2	6.6	4.0	4.5	3.4	5.3	3.8
17	3.5	3.8	4.4	5.3	4.6	6.2	6.5	3.9	4.6	3.5	8.4	3.8
18	3.5	3.8	4.5	5.3	4.6	6.2	6.4	3.9	4.6	3.5	5.0	4.5
19	3.5	3.8	4.6	5.3	4.6	6.2	6.3	3.9	4.6	3.5	6.0	6.0
20	3.5	3.8	4.7	5.3	4.7	6.2	6.2	3.8	4.5	3.5	38	5.5
21	3.4	3.8	4.7	5.2	4.7	6.2	6.0	3.8	4.3	3.5	9.2	5.1
22	3.4	3.8	4.8	5.2	4.8	6.2	5.9	3.8	4.3	3.6	6.2	5.0
23	3.4	3.8	4.8	5.2	4.8	6.3	5.8	3.7	4.3	3.6	5.3	4.8
24	3.4	3.8	4.8	5.1	4.8	6.3	5.7	3.7	4.1	3.6	4.7	4.3
25	3.5	3.8	4.8	5.1	4.8	6.3	5.6	3.7	3.9	3.6	4.4	3.8
26	3.6	3.8	4.8	5.1	4.8	6.3	5.5	3.8	3.9	3.6	4.3	3.7
27	3.6	3.8	4.8	5.1	4.8	6.3	5.4	3.6	3.9	3.6	4.0	3.7
28	3.6	3.8	4.8	5.1	4.8	6.3	5.3	3.5	3.7	3.6	4.0	3.7
29	3.5	3.9	4.9	5.1	---	6.3	5.2	3.4	3.4	4.4	3.9	3.6
30	3.5	3.9	5.0	5.0	---	6.3	5.0	3.5	3.5	5.4	3.9	3.7
31	3.6	---	5.1	4.8	---	6.3	---	3.6	---	4.8	3.9	---
TOTAL	110.8	112.2	135.6	164.5	132.7	180.0	188.0	127.2	125.3	111.3	184.0	125.6
MEAN	3.57	3.74	4.37	5.31	4.74	5.81	6.27	4.10	4.18	3.59	5.94	4.19
MAX	3.8	3.9	5.1	5.6	4.8	6.3	8.1	5.0	4.7	5.4	38	6.0
MIN	3.4	3.6	3.8	4.8	4.6	4.9	5.0	3.4	3.4	3.3	3.9	3.6
AC-FT	220	223	269	326	263	357	373	252	249	221	365	249

CAL YR 1981 TOTAL 1544.1 MEAN 4.23 MAX 28 MIN 3.2 AC-FT 3060
WTR YR 1982 TOTAL 1697.2 MEAN 4.65 MAX 38 MIN 3.3 AC-FT 3370

07093740 BADGER CREEK, UPPER 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 June 1981 to current year (seasonal only).

INSTRUMENTATION.--Pumping sediment sampler since June 1981, set to collect sample every twelve hours.

REMARKS.--In addition to automatic sampler, EWI samples are collected by local observer who also exchanges bottles in sampler on a predetermined interval. Sediment data for 1981 is considered poor and for 1982, data is fair. Previously unpublished 1981 water year data are published in this report.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily, 25,800 mg/L Aug. 20, 1982; minimum daily, 5 mg/L Sept. 18-22.
SEDIMENT LOADS: Maximum daily, 11,200 tons Aug. 20, 1982; minimum daily, 0.05 ton Sept. 20-22, 1981.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily, 25,800 mg/L Aug. 20; minimum daily, 7 mg/L July 17, 19, 24, 27.
SEDIMENT LOADS: Maximum daily, 11,200 tons, Aug. 20; minimum daily, 0.10 ton on many days.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
FEB				
25...	1445	4.0	22	.24
MAY				
29...	1530	4.2	114	1.3
JUL				
08...	1310	5.0	113	1.5
23...	1546	4.4	22	.26
AUG				
21...	1450	5.0	27	.36
27...	1410	6.2	1600	27
27...	1442	8.0	1920	41
27...	1509	8.8	2990	71
SEP				
11...	1530	4.2	6	.07
23...	1332	4.0	9	.10

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT									
26...	1230	3.7	1390	1370	7.0	15.5	8.2	>1200	>2000
DEC									
07...	1610	3.9	1340	1430	7.2	13.0	9.8	<1	490
FEB									
24...	1300	4.8	1420	1510	7.9	14.0	7.0	--	--
MAY									
04...	1300	4.5	--	1360	7.4	16.0	9.8	>1200	>2000
JUL									
23...	0815	3.5	1490	1500	7.1	15.5	11.2	<1	<1
AUG									
19...	1200	4.4	1350	1340	7.3	17.5	9.6	>120	>160

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD-NESS (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 LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT									
26...	279	72	24	180	4.9	11	190	83	270
DEC									
07...	290	75	25	170	4.5	12	210	88	290
FEB									
24...	285	73	25	160	4.3	12	210	86	270
MAY									
04...	299	77	26	170	4.4	12	210	88	290
JUL									
23...	292	74	26	180	4.7	11	166	88	290
AUG									
19...	279	72	24	160	4.3	11	170	82	250

DATE	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, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT									
26...	.5	24	780	1.1	7.7	.33	.020	80	7
DEC									
07...	.5	23	812	1.1	8.6	.46	.010	20	6
FEB									
24...	.5	24	779	1.1	10.1	.39	.030	18	9
MAY									
04...	.5	22	814	1.1	9.9	.38	.050	130	31
JUL									
23...	.4	22	793	1.1	7.5	.39	.040	7	3
AUG									
19...	.4	24	727	.99	8.6	.34	.040	170	14

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
26...	1230	3.7	44	.44
DEC				
07...	1610	3.9	24	.26
FEB				
24...	1300	4.8	157	2.0
APR				
13...	1415	8.0	132	2.9
MAY				
04...	1300	4.5	30	.37
25...	1435	3.7	26	.26
JUN				
22...	1730	4.3	49	.57
JUL				
23...	0815	3.5	16	.15
AUG				
10...	1500	4.4	30	.36
19...	1200	4.4	39	.46
SEP				
01...	1130	4.0	62	.67

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

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							---		
2							---		
3							---		
4							---		
5							---		
6							---		
7							---		
8							---		
9							---		
10							---		
11							---		
12							---		
13							---		
14							---		
15							---		
16							---		
17							---		
18							3.7		
19							3.7		
20							3.7		
21							3.6		
22							3.6		
23							3.6		
24							3.5		
25							3.5		
26							3.5		
27							3.5		
28							3.5		
29							3.5		
30							3.5		
31							3.5		
TOTAL							49.9		
		JANUARY			FEBRUARY			MARCH	
1	3.5			3.4			4.0		
2	3.6			3.4			4.0		
3	3.6			3.4			4.0		
4	3.6			3.4			4.1		
5	3.6			3.3			4.1		
6	3.6			3.3			4.0		
7	3.6			3.3			4.0		
8	3.6			3.2			4.1		
9	3.5			3.3			4.1		
10	3.5			3.3			4.1		
11	3.5			3.3			4.1		
12	3.5			3.2			4.1		
13	3.4			3.2			4.1		
14	3.2			3.2			4.0		
15	3.3			3.3			4.0		
16	3.2			3.3			4.0		
17	3.2			3.4			3.9		
18	3.3			3.4			3.9		
19	3.2			3.5			4.0		
20	3.2			3.6			4.0		
21	3.2			3.7			3.9		
22	3.2			3.7			3.9		
23	3.3			3.7			4.0		
24	3.3			3.8			4.1		
25	3.3			4.0			4.1		
26	3.3			4.0			4.3		
27	3.3			4.0			4.5		
28	3.4			4.0			4.2		
29	3.5			---			4.2		
30	3.5			---			4.4		
31	3.5			---			4.3		
TOTAL	105.5			97.6			126.5		

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	4.3			3.7			4.5	---	1.8
2	4.9			3.8			4.4	---	1.8
3	4.9			3.9			4.5	---	1.8
4	4.2			4.0			4.6	---	1.8
5	4.2			4.0			4.7	---	1.9
6	4.4			4.0			4.8	---	1.9
7	4.5			4.1			4.9	---	1.9
8	4.1			4.1			4.9	---	1.9
9	3.7			4.1			5.0	---	1.9
10	4.0			4.3			5.0	141	---
11	4.0			4.4			5.0	---	1.8
12	4.1			4.3			5.1	---	1.8
13	3.8			4.4			5.1	---	1.7
14	3.7			4.5			5.1	---	1.6
15	3.6			4.5			5.0	---	1.5
16	3.8			4.5			5.1	---	1.4
17	3.7			4.6			5.2	---	1.4
18	3.7			4.6			5.1	---	1.3
19	3.6			4.6			5.2	---	1.2
20	3.4			4.6			5.2	---	1.1
21	3.3			4.6			5.3	---	1.1
22	3.4			4.6			5.3	66	---
23	3.3			4.6			5.5	---	1.0
24	3.3			4.6			5.6	---	1.1
25	3.4			4.6			5.4	---	1.0
26	3.4			4.5			5.3	---	.90
27	3.4			4.4			5.4	---	.90
28	3.5			4.4			5.3	---	.90
29	3.5			4.3			5.1	---	.80
30	3.6			4.4			4.9	---	.70
31	---			4.4			---	---	---
TOTAL	114.7			134.4			151.5	---	39.90

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)
		JULY			AUGUST			SEPTEMBER	
1	4.7	---	.60	4.0	---	.30	4.8	---	1.3
2	4.6	---	1.2	3.9	---	.30	4.5	---	.90
3	4.6	---	1.0	3.8	28	---	4.5	---	.60
4	4.2	---	.70	6.8	---	93	28	---	6840
5	3.9	---	.50	3.8	---	.50	11	---	742
6	3.8	---	.50	3.8	---	.50	4.6	---	1.0
7	8.2	---	773	4.3	---	1.2	4.3	---	.60
8	5.6	---	4.7	4.3	---	1.2	4.5	75	---
9	4.8	---	---	3.8	---	.50	4.5	---	.60
10	4.6	---	1.2	6.2	---	170	4.3	---	.20
11	4.5	---	1.1	5.6	---	3.0	4.2	6	---
12	4.4	---	1.1	5.2	---	.70	4.2	---	.10
13	4.6	---	1.1	5.1	---	.60	4.2	---	.10
14	4.5	---	1.0	5.0	---	.40	4.0	---	.10
15	4.5	---	1.0	4.8	20	---	4.0	---	.10
16	4.5	81	---	14	---	471	4.0	---	.10
17	4.5	---	.90	5.4	72	---	4.0	---	.10
18	4.5	---	.80	5.3	60	.90	4.0	---	.10
19	4.4	---	.70	5.1	40	.60	4.0	---	.10
20	4.4	---	.60	5.1	30	.40	3.9	---	.05
21	4.4	---	.50	5.0	27	---	3.9	---	.05
22	4.4	---	.40	5.0	---	.30	3.9	5	.05
23	4.4	22	---	5.0	---	.30	3.9	9	---
24	4.4	---	.30	5.0	---	.30	3.9	---	.10
25	4.4	---	.30	5.0	---	.30	3.8	---	.10
26	4.4	---	.30	4.8	---	.30	3.8	---	.10
27	4.4	---	.30	5.8	---	49	3.7	---	.10
28	4.4	---	.30	4.6	---	.60	3.7	---	.20
29	4.3	---	.30	4.6	---	.40	3.7	---	.20
30	4.2	---	.30	4.6	---	.30	3.6	---	.20
31	4.2	---	.30	4.5	---	.20	---	---	---
TOTAL	141.7	---	795.00	160.2	---	797.10	153.4	---	7589.15
YEAR	1235.4		9221.15						

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	3.7			3.7			3.9		
2	3.8			3.7			3.9		
3	3.8			3.6			3.9		
4	3.8			3.7			3.9		
5	3.8			3.7			3.9		
6	3.8			3.6			3.9		
7	3.8			3.6			3.9		
8	3.7			3.6			3.8		
9	3.7			3.6			3.8		
10	3.6			3.7			3.9		
11	3.6			3.7			4.0		
12	3.5			3.7			4.2		
13	3.4			3.7			4.2		
14	3.4			3.7			4.2		
15	3.4			3.7			4.3		
16	3.5			3.8			4.4		
17	3.5			3.8			4.4		
18	3.5			3.8			4.5		
19	3.5			3.8			4.6		
20	3.5			3.8			4.7		
21	3.4			3.8			4.7		
22	3.4			3.8			4.8		
23	3.4			3.8			4.8		
24	3.4			3.8			4.8		
25	3.5			3.8			4.8		
26	3.6			3.8			4.8		
27	3.6			3.8			4.8		
28	3.6			3.8			4.8		
29	3.5			3.9			4.9		
30	3.5			3.9			5.0		
31	3.6			---			5.1		
TOTAL	110.8			112.2			135.6		
		JANUARY			FEBRUARY			MARCH	
1	5.2			4.8			4.9		
2	5.2			4.8			4.9		
3	5.2			4.8			4.9		
4	5.3			4.8			4.9		
5	5.4			4.8			5.0		
6	5.6			4.8			5.0		
7	5.6			4.8			5.0		
8	5.6			4.8			5.1		
9	5.6			4.7			5.1		
10	5.6			4.7			5.4		
11	5.6			4.7			5.9		
12	5.6			4.7			5.9		
13	5.6			4.7			5.9		
14	5.4			4.7			6.0		
15	5.4			4.7			6.0		
16	5.4			4.6			6.2		
17	5.3			4.6			6.2		
18	5.3			4.6			6.2		
19	5.3			4.6			6.2		
20	5.3			4.7			6.2		
21	5.2			4.7			6.2		
22	5.2			4.8			6.2		
23	5.2			4.8			6.3		
24	5.1			4.8			6.3		
25	5.1			4.8			6.3		
26	5.1			4.8			6.3		
27	5.1			4.8			6.3		
28	5.1			4.8			6.3		
29	5.1			---			6.3		
30	5.0			---			6.3		
31	4.8			---			6.3		
TOTAL	164.5			132.7			180.0		

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	6.4	80	1.4	4.9	---	.40	3.7	13	.13
2	6.4	80	1.4	4.8	---	.40	3.8	19	.19
3	6.4	82	1.4	4.7	---	.40	3.8	29	.30
4	6.4	82	1.4	4.6	30	.37	3.9	25	.26
5	6.4	84	1.5	4.6	22	.27	4.0	29	.31
6	6.4	84	1.5	5.0	21	.28	4.1	31	.34
7	6.4	84	1.5	4.8	28	.36	4.2	34	.39
8	6.4	91	1.6	4.5	33	.40	4.2	29	.33
9	6.5	90	1.6	4.5	29	.35	4.3	47	.55
10	6.6	101	1.8	4.4	24	.29	4.4	25	.30
11	7.0	107	2.0	4.3	26	.30	4.5	42	.51
12	7.5	95	1.9	4.2	29	.33	4.6	34	.42
13	8.1	130	2.8	4.2	20	.23	4.7	40	.51
14	7.0	111	2.1	4.1	28	.31	4.6	26	.32
15	6.7	101	1.8	4.0	30	.32	4.4	27	.32
16	6.6	---	1.4	4.0	42	.45	4.5	26	.32
17	6.5	---	1.1	3.9	29	.31	4.6	57	.71
18	6.4	30	.52	3.9	34	.36	4.6	---	.70
19	6.3	24	.41	3.9	27	.28	4.6	---	.80
20	6.2	---	.50	3.8	22	.23	4.5	---	.70
21	6.0	37	.60	3.8	21	.22	4.3	---	.60
22	5.9	34	.54	3.8	16	.16	4.3	49	.57
23	5.8	40	.63	3.7	21	.21	4.3	67	.78
24	5.7	26	.40	3.7	23	.23	4.1	43	.48
25	5.6	---	.40	3.7	26	.26	3.9	43	.45
26	5.5	21	.31	3.8	22	.23	3.9	37	.39
27	5.4	35	.51	3.6	19	.18	3.9	25	.26
28	5.3	34	.49	3.5	16	.15	3.7	---	.30
29	5.2	54	.76	3.4	38	.35	3.4	27	.25
30	5.0	---	.40	3.5	23	.22	3.5	18	.17
31	---	---	---	3.6	35	.34	---	---	---
TOTAL	188.0	---	34.67	127.2	---	9.19	125.3	---	12.66
		JULY			AUGUST			SEPTEMBER	
1	3.4	23	.21	4.8	29	.38	4.0	62	.67
2	3.4	---	.20	3.9	16	.17	4.1	---	.70
3	3.5	24	.23	3.9	19	.20	4.1	55	.61
4	3.4	---	.20	3.9	---	---	4.1	---	.60
5	3.4	12	.11	4.0	12	.13	4.2	---	.70
6	3.4	13	.12	4.2	21	.24	4.1	---	.70
7	3.4	12	.10	4.6	37	.46	4.1	---	.70
8	3.4	10	.09	4.6	20	.25	4.1	---	.70
9	3.3	11	.10	4.5	35	.43	4.1	---	.80
10	3.3	13	.12	4.4	30	.36	4.0	---	.80
11	3.3	15	.13	4.4	32	.38	4.0	---	.80
12	3.3	12	.11	4.4	23	.27	4.0	---	.90
13	3.3	11	.10	6.2	5760	274	4.0	---	.90
14	3.4	11	.10	5.0	9	9.0	3.9	---	.90
15	3.4	12	.11	4.7	44	.56	3.8	94	.96
16	3.4	12	.11	5.3	1110	24	3.8	---	.90
17	3.5	7	.07	8.4	7620	613	3.8	---	.80
18	3.5	10	.09	5.0	36	.50	4.5	---	1.2
19	3.5	7	.07	6.0	4890	215	6.0	---	5.0
20	3.5	10	.09	38	25800	11200	5.5	---	3.0
21	3.5	---	.10	9.2	3190	188	5.1	---	1.2
22	3.6	---	.10	6.2	---	.80	5.0	---	1.2
23	3.6	16	.16	5.3	---	.60	4.8	---	1.1
24	3.6	7	.07	4.7	---	.40	4.3	---	1.0
25	3.6	11	.11	4.4	40	.48	3.8	76	.78
26	3.6	10	.10	4.3	45	.52	3.7	75	.75
27	3.6	7	.07	4.0	40	.43	3.7	70	.70
28	3.6	9	.09	4.0	30	.32	3.7	70	.70
29	4.4	30	.40	3.9	30	.32	3.6	60	.58
30	5.4	3130	93	3.9	30	.32	3.7	70	.70
31	4.8	354	5.0	3.9	---	.40	---	---	---
TOTAL	111.3	---	101.66	184.0	---	12531.92	125.6	---	31.05
YEAR	1697.2		12721.15						

07093775 BADGER CREEK, LOWER STATION NEAR HOWARD, CO

LOCATION.--Lat 38°57'59", long 105°51'06", in SW¼SW¼ sec.27, T.49 N., R.10 E., Fremont County, Hydrologic Unit 11020001, on left bank 300 ft (91 m) upstream from Denver and Rio Grande Railroad bridge, 600 ft (183 m) upstream from mouth, and 1.8 mi (2.9 km) northwest of Howard.

DRAINAGE AREA.--211 mi² (546 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1980 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,780 ft (2,066 m), from topographic map.

REMARKS.--Records good except those between 10 ft³/s (0.28 m³/s) and 260 ft³/s (7.36 m³/s) and those for winter period, which are fair and those Aug. 22 to Sept. 29, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 271 ft³/s (7.67 m³/s) Aug. 20, 1982, gage height, 5.68 ft (1.731 m), result of indirect determination of peak flow; minimum daily, 0.56 ft³/s (0.02 m³/s) Feb. 4, 5, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
July 27	1530	95	2.69	5.00	1.524	Aug. 20	1900	88	2.49	4.97	1.515
July 28	2400	95	2.69	5.00	1.524	Aug. 20	2230	* 271	7.67	a 5.68	1.731
July 30	2100	172	4.87	5.25	1.600	Aug. 21	0100	104	2.95	5.03	1.533
Aug. 17	1630	42	1.19	4.75	1.448	Aug. 22	2100	22	0.62	4.37	1.332
Aug. 17	2100	60	1.70	4.85	1.478	Sept. 30	1300	98	2.78	5.01	1.527
Aug. 19	1730	75	2.12	4.92	1.500	Sept. 30	2000	56	1.59	4.81	1.466

a - from floodmark
Minimum daily discharge, 0.56 ft³/s (0.02 m³/s) Feb. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.90	5.2	4.5	5.2	3.5	4.0	5.0	5.7	6.9	5.8	7.0	3.2
2	.98	5.2	4.8	5.2	3.0	4.0	5.2	5.9	6.8	5.3	6.4	3.2
3	1.2	5.2	5.0	2.7	2.0	4.0	5.1	5.5	6.6	5.2	5.8	3.2
4	1.3	5.2	5.2	3.5	.56	4.0	5.2	5.8	6.7	5.8	5.8	4.0
5	1.4	5.2	5.2	3.7	.56	4.6	5.0	7.2	7.0	5.8	6.4	5.2
6	1.7	5.2	5.2	3.7	.80	3.7	5.0	7.0	6.7	5.8	8.8	5.2
7	1.9	5.2	4.6	1.1	1.5	5.2	5.1	6.8	6.5	5.8	11	5.8
8	2.2	5.8	4.6	1.2	2.0	5.1	4.9	6.3	6.4	6.4	9.4	6.4
9	2.4	5.8	4.6	3.7	1.5	4.8	5.3	6.2	6.3	6.4	8.8	6.4
10	2.4	5.8	5.2	4.0	5.2	4.6	5.3	5.8	6.7	5.2	8.8	6.4
11	2.4	5.8	4.6	1.9	4.6	4.6	5.4	5.5	6.4	5.2	8.2	5.8
12	2.7	5.8	4.6	3.7	4.6	4.7	5.8	6.8	5.8	5.2	8.2	5.8
13	3.5	5.8	4.6	1.7	4.6	4.8	6.2	7.5	5.8	4.6	8.8	5.8
14	3.7	5.8	4.6	4.6	4.6	5.3	6.7	6.8	5.8	5.2	13	5.2
15	4.6	5.8	5.2	4.0	4.0	4.6	6.7	6.9	5.8	5.2	8.8	5.2
16	5.8	5.8	5.2	3.2	4.6	5.0	6.4	6.9	6.4	5.2	8.2	5.2
17	5.2	5.8	3.2	3.7	4.6	4.9	6.4	6.8	5.8	4.6	19	5.2
18	5.2	5.8	1.9	3.7	4.6	5.1	6.4	7.0	6.4	5.8	11	5.2
19	5.2	5.8	4.6	3.5	4.6	4.8	6.0	6.6	7.6	5.8	11	5.8
20	5.2	4.6	4.0	3.5	4.0	4.5	5.8	6.8	7.6	5.2	27	9.4
21	5.2	5.8	4.0	3.2	4.6	5.6	5.9	7.0	6.4	5.2	14	5.8
22	5.2	5.8	3.5	3.7	4.6	4.9	5.9	7.0	6.4	5.2	5.5	5.2
23	5.2	5.8	.73	3.7	4.6	5.0	5.9	6.9	6.4	4.6	4.5	5.2
24	5.2	5.8	1.2	3.7	4.6	5.0	5.9	7.0	6.4	4.0	4.0	5.2
25	5.2	5.8	4.6	3.7	4.6	4.9	5.8	9.0	6.4	4.0	3.6	5.2
26	5.2	4.6	3.7	3.5	4.6	4.9	5.8	7.8	6.4	4.0	4.0	5.2
27	5.2	4.0	4.6	3.5	4.0	4.9	6.0	7.6	5.2	8.8	3.2	5.2
28	5.2	4.0	1.7	3.7	4.0	5.0	5.6	7.5	5.2	6.4	3.0	5.2
29	5.2	4.3	2.4	3.2	---	5.4	5.7	6.9	5.8	8.8	2.8	5.2
30	5.2	4.5	5.2	3.2	---	5.4	5.4	7.2	5.8	9.1	2.6	18
31	5.2	---	5.2	4.0	---	5.2	---	7.4	---	8.2	2.5	---
TOTAL	117.08	161.0	128.23	106.6	101.02	148.5	170.8	211.1	190.4	177.8	251.1	173.0
MEAN	3.78	5.37	4.14	3.44	3.61	4.79	5.69	6.81	6.35	5.74	8.10	5.77
MAX	5.8	5.8	5.2	5.2	5.2	5.6	6.7	9.0	7.6	9.1	27	18
MIN	.90	4.0	.73	1.1	.56	3.7	4.9	5.5	5.2	4.0	2.5	3.2
AC-FT	232	319	254	211	200	295	339	419	378	353	498	343

CAL YR 1981 TOTAL 1984.74 MEAN 5.44 MAX 33 MIN .73 AC-FT 3940
WTR YR 1982 TOTAL 1936.63 MEAN 5.31 MAX 27 MIN .56 AC-FT 3840

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.--In addition to pumping sediment sampler, samples are collected by local observer who also exchanges sediment bottles in sampler on a prescribed interval. Sediment discharge record is considered fair at normal flow and poor on rises. Previously unpublished 1981 water-year data are published in this report.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily, 15,400 mg/L (estimated) Aug. 21, 1982; minimum daily, 1 mg.L, Sept. 22, 1981.
SEDIMENT LOADS: Maximum daily, 3,280 tons (2,980 t) (estimated) Aug. 20, 1982; minimum daily, no load Sept. 12-30, 1981.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily, 15,400 mg/L (estimated) Aug. 21; minimum daily, 8 mg/L June 17, July 2-3.
SEDIMENT LOADS: Maximum daily, 3,280 tons (2,980 t) (estimated) Aug. 20; minimum daily, 0.11 tons (0.10 t) July 2-3.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
MAY					JUL				
15...	1800	6.4	14	.24	24...	1630	4.2	73	.83
29...	0900	6.1	6	.10	SEP				
JUN					11...	1735	.72	14	.03
25...	2115	4.6	304	3.8	24...	1015	.85	2	.00

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT									
23...	1245	5.0	1150	1200	7.9	14.5	7.1	>1200	>2000
DEC									
08...	0900	4.0	1150	1140	8.5	1.0	11.2	<4	690
FEB									
26...	1130	4.5	1160	1300	8.2	8.0	7.7	--	--
MAY									
04...	1730	6.2	--	1070	8.5	13.0	8.4	>1200	>2000
JUL									
21...	1210	5.2	1130	1120	8.2	22.0	10.4	<1	<1
AUG									
19...	1630	8.1	1045	1050	8.2	20.0	9.4	>1200	>1600
SEP									
24...	1200	5.2	1110	1080	7.2	17.5	7.2	>240	>320

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD-NESS (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 LAB (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT									
23...	287	77	23	120	3.2	9.1	180	99	200
DEC									
08...	289	78	23	120	3.2	8.7	190	110	200
FEB									
26...	315	85	25	120	3.0	8.5	190	130	190
MAY									
04...	301	81	24	110	2.9	8.6	180	110	200
JUL									
21...	275	72	23	110	3.0	8.8	140	100	200
AUG									
19...	270	72	22	110	3.0	9.3	185	89	180
SEP									
24...	278	75	22	120	3.2	8.4	201	100	180

DATE	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, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
OCT									
23...	.6	26	664	.90	9.0	.13	.050	530	58
DEC									
08...	.6	23	678	.92	7.3	.18	.030	36	10
FEB									
26...	.6	22	695	.95	8.5	<.10	.040	24	7
MAY									
04...	.6	22	664	.90	11.1	<.10	.030	54	10
JUL									
21...	.6	23	622	.85	8.7	<.10	.040	20	5
AUG									
19...	.5	29	625	.85	13.7	.10	.110	1100	97
SEP									
24...	.5	25	652	.89	9.2	<.10	.070	72	19

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
OCT				
23...	1245	5.0	268	3.6
FEB				
26...	1130	4.5	54	.66
APR				
01...	1715	4.6	14	.17
21...	1830	6.1	31	.51
MAY				
04...	1730	6.2	8	.13
JUN				
03...	1925	6.5	14	.25
17...	1430	5.8	8	.13
AUG				
19...	1630	8.1	267	5.8
SEP				
24...	1200	5.2	22	.31

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

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							---		
2							5.2		
3							5.8		
4							5.2		
5							5.2		
6							5.2		
7							5.2		
8							5.2		
9							4.6		
10							7.0		
11							5.2		
12							5.8		
13							5.8		
14							5.8		
15							6.4		
16							7.0		
17							7.0		
18							6.4		
19							6.4		
20							6.4		
21							6.4		
22							7.0		
23							7.0		
24							7.0		
25							7.0		
26							7.0		
27							7.0		
28							5.8		
29							5.8		
30							5.8		
31							5.8		
TOTAL							182.4		

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)
		JANUARY			FEBRUARY			MARCH	
1	5.8			5.8			6.0		
2	6.4			5.8			5.3		
3	6.4			5.4			5.2		
4	6.4			5.4			5.1		
5	6.4			5.4			5.1		
6	6.4			5.4			5.5		
7	6.4			5.4			6.7		
8	6.4			5.2			6.2		
9	5.8			5.2			5.3		
10	5.8			5.2			6.5		
11	5.8			4.6			6.0		
12	5.8			4.0			5.1		
13	6.4			4.0			5.0		
14	6.4			4.0			5.0		
15	5.8			4.0			4.7		
16	5.8			4.0			5.0		
17	6.4			4.6			6.1		
18	6.4			4.6			5.1		
19	6.4			4.6			4.5		
20	7.0			4.6			5.5		
21	6.4			5.2			5.4		
22	6.4			4.6			4.4		
23	5.8			4.6			4.3		
24	5.8			4.6			4.2		
25	5.8			4.6			4.2		
26	5.2			4.6			4.5		
27	5.2			5.0			6.0		
28	5.2			5.8			5.7		
29	5.8			---			5.2		
30	5.8			---			5.3		
31	5.8			---			5.2		
TOTAL	187.6			136.2			163.3		

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	5.1			7.1	---	---	5.8	4	---
2	5.7			7.4	---	---	5.2	2	---
3	7.8			7.2	---	---	5.2	2	---
4	7.6			7.0	---	---	5.2	3	---
5	7.2			7.0	---	---	5.8	3	---
6	6.8			6.8	---	---	6.4	2	---
7	7.5			6.6	---	---	5.2	3	---
8	8.3			6.8	---	---	4.6	2	---
9	8.3			7.0	---	---	5.2	5	---
10	9.0			6.8	---	---	5.2	4	---
11	11			6.8	---	---	5.2	5	---
12	12			6.8	---	---	4.6	2	---
13	12			7.0	---	---	4.6	2	---
14	11			6.4	---	---	4.6	2	---
15	10			6.4	14	---	5.2	5	---
16	9.9			7.0	---	.30	5.2	---	.10
17	10			6.4	---	.20	5.2	---	.10
18	11			6.4	---	.20	5.2	11	---
19	8.0			7.0	---	.20	5.2	---	.10
20	8.8			7.0	---	.20	5.2	---	.10
21	8.8			5.8	---	.20	4.6	---	.05
22	9.4			6.4	---	.20	4.6	---	.05
23	8.9			6.4	---	.20	4.6	---	.00
24	8.4			6.4	---	.10	4.6	---	.00
25	8.0			6.4	---	.10	5.2	55	1.6
26	7.8			6.4	---	.10	4.6	---	.10
27	8.2			6.4	---	.10	3.8	---	.10
28	8.0			6.4	---	.05	3.8	---	.10
29	8.0			6.4	4	---	4.6	---	.10
30	7.5			5.8	4	---	4.6	12	---
31	---			5.8	3	---	---	---	---
TOTAL	260.0			205.5	---	2.15	149.0	---	2.50

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)
		JULY			AUGUST			SEPTEMBER	
1	5.2	9	---	4.0	40	---	5.8	---	1.6
2	5.2	10	---	3.8	51	---	5.8	---	1.1
3	5.8	10	---	3.8	41	---	4.6	---	.70
4	5.8	9	---	6.4	57	1.3	4.6	---	.60
5	5.8	15	---	7.0	---	1.3	33	---	3690
6	5.2	6	---	5.8	58	---	.81	---	.70
7	5.2	9	---	6.4	5	3.2	.98	---	.30
8	11	71	2.6	9.2	5	49	.81	---	.10
9	7.6	42	1.0	7.6	5	12	.81	---	.10
10	7.0	35	---	8.2	5	17	.81	---	.05
11	6.4	22	---	9.4	5	26	.73	14	---
12	6.4	29	---	7.6	---	1.8	.73	---	.00
13	6.4	29	---	6.4	---	1.4	.73	---	.00
14	5.8	35	---	6.4	---	1.2	.73	---	.00
15	5.2	31	---	6.4	---	1.0	.73	---	.00
16	4.6	27	---	16	5	82	.73	---	.00
17	4.6	29	---	17	5	53	.73	---	.00
18	4.6	43	---	8.8	5	6.7	.73	---	.00
19	4.6	38	---	7.0	---	1.5	.73	---	.00
20	4.0	42	---	6.4	---	1.2	.81	---	.00
21	4.0	35	---	6.4	---	1.0	.81	---	.00
22	4.0	37	---	5.8	---	.80	.81	1	.00
23	4.0	42	---	5.8	---	.60	.81	---	.00
24	4.0	72	---	5.8	---	.50	.85	2	.00
25	4.6	46	---	5.8	---	.50	.81	3	.00
26	7.0	78	---	5.2	---	.40	.73	---	.00
27	7.0	60	---	7.7	5	15	.81	---	.00
28	6.4	56	---	10	5	23	.90	---	.00
29	4.0	45	---	8.2	74	---	.90	---	.00
30	4.0	46	---	6.4	60	1.0	.90	---	.00
31	4.0	39	---	13	5	693	---	---	---
TOTAL	169.4	---	3.6	233.7	---	995.40	73.73	---	3695.25
YEAR	1760.83		4698.90						

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	.90			5.2			4.5		
2	.98			5.2			4.8		
3	1.2			5.2			5.0		
4	1.3			5.2			5.2		
5	1.4			5.2			5.2		
6	1.7			5.2			5.2		
7	1.9			5.2			4.6		
8	2.2			5.8			4.6		
9	2.4			5.8			4.6		
10	2.4			5.8			5.2		
11	2.4			5.8			4.6		
12	2.7			5.8			4.6		
13	3.5			5.8			4.6		
14	3.7			5.8			4.6		
15	4.6			5.8			5.2		
16	5.8			5.8			5.2		
17	5.2			5.8			3.2		
18	5.2			5.8			1.9		
19	5.2			5.8			4.6		
20	5.2			4.6			4.0		
21	5.2			5.8			4.0		
22	5.2			5.8			3.5		
23	5.2			5.8			.73		
24	5.2			5.8			1.2		
25	5.2			5.8			4.6		
26	5.2			4.6			3.7		
27	5.2			4.0			4.6		
28	5.2			4.0			1.7		
29	5.2			4.3			2.4		
30	5.2			4.5			5.2		
31	5.2			---			5.2		
TOTAL	117.08			161.0			128.23		

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)
		JANUARY			FEBRUARY			MARCH	
1	5.2			3.5			4.0		
2	5.2			3.0			4.0		
3	2.7			2.0			4.0		
4	3.5			.56			4.0		
5	3.7			.56			4.6		
6	3.7			.80			3.7		
7	1.1			1.5			5.2		
8	1.2			2.0			5.1		
9	3.7			1.5			4.8		
10	4.0			5.2			4.6		
11	1.9			4.6			4.6		
12	3.7			4.6			4.7		
13	1.7			4.6			4.8		
14	4.6			4.6			5.3		
15	4.0			4.0			4.6		
16	3.2			4.6			5.0		
17	3.7			4.6			4.9		
18	3.7			4.6			5.1		
19	3.5			4.6			4.8		
20	3.5			4.0			4.5		
21	3.2			4.6			5.6		
22	3.7			4.6			4.9		
23	3.7			4.6			5.0		
24	3.7			4.6			5.0		
25	3.7			4.6			4.9		
26	3.5			4.6			4.9		
27	3.5			4.0			4.9		
28	3.7			4.0			5.0		
29	3.2			---			5.4		
30	3.2			---			5.4		
31	4.0			---			5.2		
TOTAL	106.6			101.02			148.5		

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

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	5.0			5.7	9	.14	6.9	12	.22
2	5.2			5.9	8	.13	6.8	17	.31
3	5.1			5.5	9	.13	6.6	12	.21
4	5.2			5.8	9	.14	6.7	17	.31
5	5.0			7.2	---	.60	7.0	27	.51
6	5.0			7.0	---	.50	6.7	18	.33
7	5.1			6.8	23	.42	6.5	13	.23
8	4.9			6.3	22	.37	6.4	---	.20
9	5.3			6.2	22	.37	6.3	17	.29
10	5.3			5.8	18	.28	6.7	17	.31
11	5.4			5.5	18	.27	6.4	---	.30
12	5.8			6.8	50	.92	5.8	16	.25
13	6.2			7.5	42	.85	5.8	---	.20
14	6.7			6.8	34	.62	5.8	---	.20
15	6.7			6.9	42	.78	5.8	---	.10
16	6.4			6.9	36	.67	6.4	---	.20
17	6.4			6.8	37	.68	5.8	8	.13
18	6.4			7.0	33	.62	6.4	10	.17
19	6.0			6.6	30	.53	7.6	16	.33
20	5.8			6.8	21	.39	7.6	32	.66
21	5.9			7.0	23	.43	6.4	30	.52
22	5.9			7.0	---	.40	6.4	38	.66
23	5.9			6.9	---	.40	6.4	29	.50
24	5.9			7.0	---	.30	6.4	23	.40
25	5.8			9.0	---	1.0	6.4	25	.43
26	5.8			7.8	---	.60	6.4	17	.29
27	6.0			7.6	---	.50	5.2	20	.28
28	5.6			7.5	---	.30	5.2	16	.22
29	5.7			6.9	---	.20	5.8	10	.16
30	5.4			7.2	---	.20	5.8	14	.22
31	---			7.4	12	.24	---	---	---
TOTAL	170.8			211.1	---	13.98	190.4	---	9.14
		JULY			AUGUST			SEPTEMBER	
1	5.8	17	.27	7.0	198	3.7	3.2	237	2.0
2	5.3	8	.11	6.4	150	2.6	3.2	634	5.5
3	5.2	8	.11	5.8	145	2.3	3.2	678	5.9
4	5.8	---	.20	5.8	122	1.9	4.0	91	.98
5	5.8	---	.20	6.4	96	1.7	5.2	142	2.0
6	5.8	---	.20	8.8	76	1.8	5.2	112	1.6
7	5.8	---	.20	11	78	2.3	5.8	57	.89
8	6.4	---	.30	9.4	43	1.1	6.4	68	1.2
9	6.4	---	.50	8.8	41	.97	6.4	---	.90
10	5.2	27	.38	8.8	22	.52	6.4	---	.70
11	5.2	---	.40	8.2	31	.69	5.8	---	.50
12	5.2	28	.39	8.2	35	.77	5.8	---	.50
13	4.6	---	.30	8.8	13	.31	5.8	---	.50
14	5.2	---	.40	13	622	24	5.2	---	.40
15	5.2	---	.40	8.8	92	2.2	5.2	27	.38
16	5.2	---	.30	8.2	54	1.2	5.2	---	.40
17	4.6	---	.20	19	1540	127	5.2	---	.30
18	5.8	---	.60	11	455	19	5.2	---	.30
19	5.8	---	.50	11	10700	722	5.8	---	.30
20	5.2	---	.50	27	---	3280	9.4	---	1.3
21	5.2	---	.50	14	---	1320	5.8	---	.60
22	5.2	---	.50	5.5	---	132	5.2	---	.50
23	4.6	29	.36	4.5	800	9.7	5.2	---	.40
24	4.0	15	.16	4.0	734	7.9	5.2	22	.31
25	4.0	12	.13	3.6	370	3.6	5.2	---	.30
26	4.0	14	.15	4.0	470	5.1	5.2	---	.30
27	8.8	1550	181	3.2	381	3.3	5.2	---	.30
28	6.4	178	201	3.0	337	2.7	5.2	---	.30
29	8.8	2120	322	2.8	337	2.5	5.2	---	.30
30	9.1	2000	38	2.6	301	2.1	18	5	1050
31	8.2	1700	38	2.5	219	1.5	---	---	---
TOTAL	177.8	---	788.26	251.1	---	5686.46	173.0	---	1079.86
YEAR	1936.63		7577.70						

07094025 ARKANSAS RIVER AT PARKDALE SIDING NEAR PARKDALE, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°29'07", long 105°23'56", in NW¼NW¼ sec.13, T.18 S., R.72 W., Fremont County, Hydrologic Unit 11020001, at Parkdale Siding, 1.1 mi (1.8 km) upstream from Tallahassee Creek.

PERIOD OF RECORD.--January 1981 to September 1982 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
FEB 11...	1100	574	--	197	7.8	.5	10.6	26	4.6
APR 07...	1030	268	271	263	8.8	7.5	9.2	33	8.4
MAY 20...	0900	418	274	246	7.6	12.0	9.1	32	7.3
JUN 22...	0908	2390	118	141	7.2	13.0	8.0	21	2.3
JUL 23...	0925	1220	153	167	7.4	17.5	7.1	18	2.7
SEP 21...	0930	1060	216	237	7.7	13.5	9.4	24	5.0

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, DIS-SOLVED (UG/L AS PB)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)
FEB 11...	<1	<100	2	7	9	<1	<1	<2.6	.7
APR 07...	<1	<100	<1	3	1	<1	<1	3.6	<.3
MAY 20...	1	<100	<1	5	<1	<1	<1	<3.3	.7
JUN 22...	<1	<100	1	5	<1	<1	<1	<1.2	8.2
JUL 23...	<1	100	1	32	11	<1	<1	<1.4	1.8
SEP 21...	<1	<100	<1	2	<1	<1	<1	5.7	2.6

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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
FEB 11...	<3.8	1.0	2.8	1.1	2.7	1.0	<.1	4.1
APR 07...	5.3	<.4	3.0	.5	2.9	.5	.1	5.2
MAY 20...	<4.9	1.1	2.7	1.3	2.6	1.2	<.1	4.6
JUN 22...	<1.8	12	1.5	9.3	1.4	8.9	<.1	1.8
JUL 23...	<2.1	2.7	2.1	2.3	2.1	2.2	<.1	2.5
SEP 21...	8.4	3.8	3.3	2.6	3.1	2.5	<.1	3.9

07094090 CURRANT CREEK ABOVE COTTONWOOD CREEK NEAR PARKDALE, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°31'46", long 105°23'14", in NE¼NE¼ sec.36, T.17 S., R.72 W., Fremont County, Hydrologic Unit 11020001, at the bridge on Highway 9, 1.0 mi (1.6 km) upstream from Cottonwood Creek.

PERIOD OF RECORD.--January 1981 to September 1982 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
APR									
07...	1400	3.0	702	645	9.0	13.8	8.5	58	24
MAY									
20...	1240	.72	708	706	8.3	20.0	8.0	57	26
JUN									
22...	1650	1.8	677	686	8.1	20.5	6.7	61	25
SEP									
21...	1445	8.0	644	643	8.3	19.0	6.7	51	23

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, DIS-SOLVED (UG/L AS PB)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)
APR									
07...	1	100	<1	7	<1	1	<1	23	<.3
MAY									
20...	1	100	<1	4	<1	1	<1	19	.5
JUN									
22...	1	<100	1	5	2	1	<1	29	1.2
SEP									
21...	1	100	<1	4	<1	1	<1	18	6.0

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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
APR								
07...	34	<.4	14	.9	14	.8	<.1	27
MAY								
20...	28	.7	7.2	2.3	6.9	2.3	<.1	22
JUN								
22...	43	1.8	7.3	3.4	7.0	3.2	<.1	24
SEP								
21...	26	8.8	11	6.7	11	6.4	<.1	22

07094200 COTTONWOOD CREEK ABOVE SAND GULCH NEAR PARKDALE, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°32'42", long 105°25'52", in NE¼NW¼ sec.27, T.17 S., R.72 W., Fremont County, Hydrologic Unit 11020001, 0.5 mi (0.8 km) west of Highway 9 and 2.6 mi (4.2 km) upstream from mouth.

PERIOD OF RECORD.--January 1981 to September 1982 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB 11...	1330	.30	--	754	8.1	3.0	9.2	56	44
APR 07...	1330	2.0	779	750	9.0	13.5	8.3	44	53
MAY 20...	1345	.92	828	835	8.2	20.0	8.0	32	67
JUN 22...	1553	.82	854	868	8.1	19.5	6.8	53	67
SEP 21...	1400	2.5	862	872	8.2	18.0	7.2	43	71

DATE	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, DISSOLVED (UG/L AS PB)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)
FEB 11...	1	100	1	2	<1	1	1	26	<.3
APR 07...	1	100	<1	3	1	1	<1	25	<.3
MAY 20...	1	200	<1	2	<1	1	<1	24	<.3
JUN 22...	1	<100	5	4	20	<1	<5	20	1.3
SEP 21...	1	100	<1	<1	<1	<1	<1	88	<.3

DATE	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RA-226, DISSOLVED, PLANCHET COUNT (PCI/L)	URANIUM NATURAL DISSOLVED (UG/L AS U)
FEB 11...	38	<.4	9.1	1.3	8.8	1.4	<.1	30
APR 07...	37	<.4	16	.8	15	.8	<.1	26
MAY 20...	35	<.5	<7.5	3.8	<7.2	3.6	.1	34
JUN 22...	29	1.9	12	2.6	11	2.5	<.1	28
SEP 21...	130	<.4	33	1.0	32	1.0	.2	30

07094300 TALLAHASSEE CREEK ABOVE CURRANT CREEK NEAR PARKDALE, CO

WATER-QUALITY RECORDS

LOCATION.--Lat 38°29'46", long 105°24'50", in NE¼SW¼ sec.11, T.18 S., R.72 W., Fremont County, Hydrologic unit 11020001, 0.6 mi (1.0 km) upstream from Currant Creek and 1.25 mi (2.0 km) upstream from mouth.

PERIOD OF RECORD.--January 1981 to September 1982 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
APR 08...	1130	22	483	470	8.5	9.5	8.8	41	16
MAY 20...	1020	.51	498	517	7.8	12.5	9.3	39	18
JUN 22...	1141	1.2	497	509	8.1	20.0	7.3	47	11
JUL 23...	1030	.80	557	561	8.2	22.0	7.3	35	18
SEP 21...	1100	4.0	387	405	8.1	13.5	7.4	25	6.4

DATE	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	LEAD, DISSOLVED (UG/L AS PB)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)
APR 08...	2	100	1	2	2	2	<1	12	<.3
MAY 20...	2	100	<1	6	<1	1	<1	9.5	<.3
JUN 22...	2	<100	27	4	1	1	<1	15	2.1
JUL 23...	2	100	1	7	<1	1	<1	10	<.3
SEP 21...	2	<100	<1	2	<1	1	<1	12	.3

DATE	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RA-226, DISSOLVED, PLANCHET COUNT (PCI/L)	URANIUM NATURAL DISSOLVED (UG/L AS U)
APR 08...	17	<.4	15	.7	14	.7	.1	23
MAY 20...	14	<.4	7.2	2.7	6.9	2.7	<.1	20
JUN 22...	22	3.1	8.9	3.3	8.6	3.2	.1	20
JUL 23...	15	<.4	9.9	2.1	9.5	2.1	.2	17
SEP 21...	18	.5	11	1.9	11	1.9	<.1	13

07094500 ARKANSAS RIVER AT PARKDALE, CO

LOCATION.--Lat 38°29'14", long 105°22'23", in NE¼NW¼ sec.18, T.18 S., R.71 W., Fremont County, Hydrologic Unit 11020001, on left bank at Parkdale, 100 ft (30 m) upstream from Bumback Gulch, 300 ft (90 m) upstream from bridge on U.S. Highway 50, and 0.9 mi (1.4 km) upstream from Copper Gulch.

DRAINAGE AREA.--2,548 mi^2 (6,599 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to September 1955, October 1964 to current year. Monthly discharge only for October 1945 to May 1946, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,720 ft (1,473 m), from topographic map. Prior to Oct. 1, 1964, at site 600 ft (180 m) downstream at different datum.

REMARKS.--Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, diversions for irrigation of about 35,000 acres (140 km^2) above station, and return flow from irrigated areas.

AVERAGE DISCHARGE.--28 years (water years 1946-55, 1965-82), 769 ft^3/s (21.78 m^3/s), 557,100 acre-ft/yr (687 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,880 ft^3/s (167 m^3/s) June 22, 1947, gage height, 9.02 ft (2.749 m), site and datum then in use, from rating curve extended above 3,000 ft^3/s (85 m^3/s); minimum daily, 200 ft^3/s (5.66 m^3/s) Jan. 5-7, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,220 ft^3/s (91.2 m^3/s) at 1530 July 1, gage height, 5.58 ft (1.701 m); minimum daily, 234 ft^3/s (6.63 m^3/s) Apr. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	387	462	353	458	532	515	302	314	1560	3160	1600	1020
2	405	453	335	450	526	508	314	318	1660	3010	1440	925
3	397	452	366	420	496	523	323	355	1820	2860	1370	830
4	390	431	369	380	468	517	323	424	1670	2720	1460	774
5	397	426	354	414	450	508	301	595	1150	2320	1450	776
6	403	437	464	443	450	485	293	781	1240	2100	1400	815
7	413	422	470	393	470	494	290	836	1530	1940	1550	819
8	397	422	462	360	460	498	256	758	1520	1830	1440	765
9	399	422	449	437	460	498	246	684	1650	1660	1310	739
10	391	418	442	439	500	498	241	614	1850	1600	1260	728
11	377	413	438	428	500	496	234	558	2030	1550	1280	724
12	372	412	446	451	480	501	236	584	2100	1510	1280	941
13	376	403	448	410	520	506	267	646	2290	1620	1280	1080
14	388	403	438	404	560	506	258	607	2430	1580	1420	1010
15	408	394	437	452	580	507	249	567	2370	1660	1430	988
16	510	370	450	504	574	500	266	505	2260	1610	1360	920
17	565	344	434	538	538	506	273	467	2330	1540	1380	893
18	530	337	415	536	521	501	258	451	2710	1460	1390	914
19	512	337	425	533	513	493	272	427	2890	1380	1450	982
20	494	334	453	521	522	487	287	416	2690	1290	1500	1050
21	456	339	458	505	531	492	300	424	2560	1260	2180	1060
22	445	347	464	490	538	490	276	444	2410	1250	1840	1030
23	448	360	421	457	538	484	444	529	2500	1200	1730	980
24	455	364	380	510	530	438	630	694	2810	1130	1730	947
25	482	391	389	519	530	302	636	857	2890	1080	1710	944
26	474	368	422	499	542	307	622	882	2980	1110	1560	920
27	443	345	452	505	515	320	604	921	2900	1200	1360	900
28	437	359	439	494	513	317	586	1120	2700	1310	1300	849
29	431	364	432	499	---	313	548	1370	3000	1640	1270	815
30	434	364	450	516	---	310	370	1540	3020	2020	1170	848
31	459	---	474	511	---	310	---	1600	---	1880	1120	---
TOTAL	13475	11693	13229	14476	14357	14130	10505	21288	67520	53480	45020	26986
MEAN	435	390	427	467	513	456	350	687	2251	1725	1452	900
MAX	565	462	474	538	580	523	636	1600	3020	3160	2180	1080
MIN	372	334	335	360	450	302	234	314	1150	1080	1120	724
AC-FT	26730	23190	26240	28710	28480	28030	20840	42220	133900	106100	89300	53530

CAL YR 1981 TOTAL 181917 MEAN 498 MAX 2010 MIN 236 AC-FT 360800
WTR YR 1982 TOTAL 306159 MEAN 839 MAX 3160 MIN 234 AC-FT 607300

07094500 ARKANSAS RIVER AT PARKDALE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1981 to September 1982 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
FEB									
11...	1445	574	191	200	7.6	4.0	10.5	25	4.9
APR									
07...	1230	271	304	285	8.8	8.3	9.6	34	8.7
MAY									
20...	1130	420	238	255	7.8	13.5	9.3	32	7.5
JUN									
22...	1309	2390	120	144	7.4	15.0	8.1	21	2.4
JUL									
23...	1120	1220	159	168	7.5	19.3	6.9	18	2.8
SEP									
21...	1200	1080	239	256	8.0	15.5	7.2	25	5.0

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, DIS-SOLVED (UG/L AS PB)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)
FEB									
11...	<1	<100	1	6	2	<1	<1	4.6	.7
APR									
07...	<1	<100	<1	7	1	<1	<1	<3.4	.3
MAY									
20...	1	<100	1	4	3	<1	<1	<2.8	.8
JUN									
22...	<1	<100	10	4	25	<1	<5	<1.2	6.4
JUL									
23...	<1	<100	1	8	<1	<1	<1	2.3	<.3
SEP									
21...	<1	<100	<1	3	4	<1	<1	<3.1	2.2

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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
FEB								
11...	6.8	1.1	1.9	1.1	1.8	1.1	<.1	4.7
APR								
07...	<5.0	.4	3.1	.7	3.0	.6	<.1	6.4
MAY								
20...	<4.1	1.2	2.3	1.4	2.2	1.4	<.1	4.3
JUN								
22...	<1.8	9.4	1.6	6.4	1.5	6.1	<.1	2.3
JUL								
23...	3.4	<.4	2.0	.6	1.9	.6	<.1	2.4
SEP								
21...	<4.6	3.3	3.0	2.8	2.9	2.7	<.1	5.0

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 (0.8 km) upstream from water line of De Weese Reservoir at elevation 7,665 ft (2,336.3 m), 0.5 mi (0.8 km) downstream from Swift Creek, and 3.6 mi (5.8 km) northwest of Westcliffe.

DRAINAGE AREA.--320 mi² (829 km²).

PERIOD OF RECORD.--October 1924 to September 1961, October 1962 to September 1982 (discontinued). Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1241: 1950(M). WSP 1311: 1927(M).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 7,690 ft (2,344 m), from topographic map. Prior to Mar. 17, 1939, at site 30 ft (9 m) upstream at present datum.

REMARKS.--Records good except those for winter period, which are poor. Diversions above station for irrigation of about 15,000 acres (60.7 km²). 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.--57 years (water years 1925-61, 1963-82), 31.6 ft³/s (0.895 m³/s), 22,890 acre-ft/yr (28.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,460 ft³/s (211 m³/s) Aug. 2, 1966, gage height, 8.45 ft (2.576 m), from rating curve extended above 320 ft³/s (9.1 m³/s), on basis of slope-area measurement of peak flow; minimum daily, 0.1 ft³/s (0.003 m³/s) June 19-22, 1936.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 206 ft³/s (5.83 m³/s) at 1500 Sept. 20, gage height, 1.79 ft (0.546 m), no peak above base of 250 ft³/s (7.1 m³/s); minimum daily, 3.0 ft³/s (0.085 m³/s) June 10.

Minimum daily discharge, 1.8 ft³/s (0.051 m³/s) June 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	21	19	15	16	28	20	13	14	19	44	91
2	13	25	21	13	13	33	16	13	8.9	12	32	78
3	17	20	22	12	10	36	13	12	8.0	8.0	27	65
4	16	19	17	13	8.0	34	13	7.4	8.0	6.9	24	54
5	15	18	20	15	10	29	12	11	7.4	5.8	21	47
6	14	18	19	13	11	27	13	25	5.2	5.2	17	46
7	14	21	19	10	12	29	13	21	5.2	5.2	15	39
8	13	34	18	12	13	31	12	13	4.2	6.4	14	37
9	13	24	17	13	9.0	51	12	11	3.6	6.4	12	37
10	14	21	19	13	11	50	11	8.9	3.0	6.9	12	32
11	13	19	19	13	12	43	11	6.4	3.6	6.9	11	39
12	12	19	18	13	10	46	11	7.4	6.9	7.4	9.8	105
13	12	19	17	10	13	38	11	11	14	7.4	12	139
14	12	19	15	11	17	63	11	12	19	6.9	49	125
15	19	18	16	14	15	77	7.4	11	12	5.8	58	97
16	24	17	18	11	15	43	6.9	11	14	4.7	63	105
17	15	16	16	14	15	35	6.9	9.8	12	4.2	49	132
18	15	15	13	13	15	29	6.9	9.8	27	5.2	45	166
19	15	15	16	13	17	22	5.2	8.9	96	5.8	45	183
20	15	15	19	13	18	18	5.2	7.4	47	5.2	49	188
21	16	18	20	12	18	19	12	7.4	25	4.7	102	170
22	15	21	13	12	22	20	15	8.0	18	4.2	58	144
23	14	21	10	11	21	20	17	9.8	14	4.2	55	123
24	14	21	7.0	13	20	18	12	11	17	3.6	70	110
25	15	20	12	20	19	16	11	34	25	4.7	105	103
26	16	20	16	24	21	18	12	24	25	5.2	125	97
27	16	17	17	23	22	22	11	11	26	6.4	125	86
28	14	20	16	21	25	21	12	8.9	17	16	125	82
29	13	20	15	20	---	20	12	12	21	52	106	77
30	13	17	20	18	---	18	13	16	20	61	89	71
31	18	---	17	18	---	21	---	15	---	61	105	---
TOTAL	457	588	521.0	446	428.0	975	344.5	387.1	527.0	364.3	1673.8	2868
MEAN	14.7	19.6	16.8	14.4	15.3	31.5	11.5	12.5	17.6	11.8	54.0	95.6
MAX	24	34	22	24	25	77	20	34	96	61	125	188
MIN	12	15	7.0	10	8.0	16	5.2	6.4	3.0	3.6	9.8	32
AC-FT	906	1170	1030	885	849	1930	683	768	1050	723	3320	5690

CAL YR 1981 TOTAL 6183.4 MEAN 16.9 MAX 122 MIN 1.8 AC-FT 12260
WTR YR 1982 TOTAL 9579.7 MEAN 26.2 MAX 188 MIN 3.0 AC-FT 19000

NOTE.--NO GAGE-HEIGHT RECORD JAN. 22 TO MAR. 4.

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 right bank 1,000 ft (300 m) downstream from railroad bridge, 0.6 mi (1.0 km) upstream from mouth, and 2.8 mi (4.5 km) east of courthouse in Canon City.

DRAINAGE AREA.--434 mi^2 (1,124 km^2).

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.

GAGE.--Water-stage recorder. Concrete control since Oct. 1, 1974. Altitude of gage is 5,254 ft (1,601 m), from topographic map. April to October 1910, nonrecording gage at site 1,200 ft (370 m) upstream at different datum. October 1948 to September 1953, water-stage recorder at site 0.6 mi (1.0 km) upstream at different datum.

REMARKS.--Records good except those for period of no gage-height record Nov. 7 to Dec. 7, which are poor. Diversions for irrigation of about 500 acres (2.02 km^2) above station. Water imported to basin from Arkansas River for irrigation of a few small orchards above station. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--16 years (water years 1949-53, 1972-82), 20.6 ft^3/s (0.583 m^3/s), 14,920 acre-ft/yr (18.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,260 ft^3/s (121 m^3/s) July 11, 1951, gage height, 9.25 ft (2.819 m), from floodmarks, site and datum then in use, from rating curve extended above 96 ft^3/s (2.7 m^3/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 above base of 300 ft^3/s (8.5 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)			(ft^3/s)	(m^3/s)	(ft)	(m)
a June 25	0100	*1,620	45.9	5.03	1.533	July 29	0330	1,150	32.6	4.78	1.457
July 26	2030	718	20.3	4.49	1.369	Aug. 3	2400	502	14.2	4.09	1.247
July 28	1930	682	19.3	4.41	1.344	Aug. 19	1800	694	19.7	4.42	1.347

a-From rating curve extended on the basis of two slope-area measurements of peak flow.

Minimum daily discharge, 5.5 ft^3/s (0.16 m^3/s) Mar. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	38	25	14	11	10	22	19	44	63	59	67
2	29	41	25	15	10	10	24	19	40	55	55	60
3	31	41	25	15	8.8	10	25	21	58	49	66	65
4	30	41	25	17	6.3	10	34	22	57	49	94	66
5	32	41	25	18	6.6	10	27	30	55	49	69	70
6	35	40	25	16	7.0	11	19	33	48	44	69	71
7	35	39	25	14	7.7	11	15	35	42	47	66	67
8	35	37	25	12	7.8	11	8.2	33	40	43	70	72
9	36	35	24	11	7.5	9.8	11	30	38	42	57	71
10	36	34	23	11	7.7	6.8	14	28	35	39	53	69
11	33	32	21	11	8.1	7.5	23	29	37	39	57	117
12	30	31	24	12	8.6	8.2	20	33	53	41	55	111
13	29	30	23	12	8.9	7.7	12	40	47	38	54	124
14	29	29	24	12	9.6	7.8	11	39	46	36	53	146
15	32	29	24	12	9.6	7.8	12	36	46	34	55	140
16	37	28	25	12	9.5	7.9	14	35	48	35	58	136
17	36	28	26	12	11	8.0	16	33	43	32	54	127
18	33	27	26	13	12	8.5	15	31	82	30	63	114
19	32	27	25	13	11	7.5	13	28	116	32	117	114
20	31	26	25	12	10	6.9	15	27	113	33	128	133
21	30	26	25	12	10	5.8	13	28	104	33	188	128
22	30	25	26	13	10	5.5	14	25	110	34	136	133
23	29	25	20	12	10	7.3	12	24	109	34	116	127
24	30	25	20	12	10	14	16	27	111	34	105	123
25	33	25	20	12	10	24	15	37	190	33	102	120
26	33	28	18	13	10	35	14	35	124	95	95	115
27	33	26	20	13	11	24	16	32	100	67	78	108
28	33	25	22	13	11	26	18	39	85	87	80	106
29	33	25	19	14	---	30	18	35	77	190	78	116
30	34	25	17	14	---	33	19	32	68	103	73	116
31	36	---	14	13	---	27	---	48	---	71	73	---
TOTAL	1004	929	711	405	260.7	409.0	505.2	963	2166	1611	2476	3132
MEAN	32.4	31.0	22.9	13.1	9.31	13.2	16.8	31.1	72.2	52.0	79.9	104
MAX	37	41	26	18	12	35	34	48	190	190	188	146
MIN	29	25	14	11	6.3	5.5	8.2	19	35	30	53	60
AC-FT	1990	1840	1410	803	517	811	1000	1910	4300	3200	4910	6210

CAL YR 1981 TOTAL 7251.3 MEAN 19.9 MAX 68 MIN 2.9 AC-FT 14380
WTR YR 1982 TOTAL 14571.9 MEAN 39.9 MAX 190 MIN 5.5 AC-FT 28900

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 (1.6 km) downstream from Hardscrabble Creek.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--4,024 mi^2 (10,422 km^2).

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 (1,530.581 m), National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1974, at site 400 ft (120 m) downstream at datum 0.03 ft (0.009 m) lower.

REMARKS.--Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions above station for irrigation of about 60,000 acres (243 km^2) and return flow from irrigated areas.

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

AVERAGE DISCHARGE.--21 years (water years 1940-52, 1975-82), 721 ft^3/s (20.42 m^3/s), 522,400 acre-ft/yr (644 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft^3/s (598 m^3/s) June 5, 1949, gage height, 12.12 ft (3.712 m), from rating curve extended above 5,300 ft^3/s (150 m^3/s); minimum daily, 71 ft^3/s (2.01 m^3/s) Apr. 2, 1945.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,910 ft^3/s (196 m^3/s) at 2300 July 28, gage height, 8.28 ft (2.524 m); minimum daily, 111 ft^3/s (3.14 m^3/s) Apr. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	266	412	266	400	456	470	356	191	1620	2900	1680	899
2	293	392	243	400	465	460	368	178	1680	2810	1430	828
3	276	388	272	290	429	475	336	204	1960	2680	1280	753
4	272	364	276	390	447	480	250	228	1790	2550	1390	705
5	272	352	266	380	350	485	234	434	1370	2240	1410	711
6	276	364	333	380	400	442	231	614	1190	1950	1280	741
7	293	340	364	438	440	442	219	717	1560	1800	1500	747
8	279	336	368	420	450	456	191	614	1530	1680	1420	699
9	289	336	360	410	460	452	168	540	1600	1510	1220	642
10	276	333	356	400	470	465	153	545	1740	1430	1230	636
11	256	329	348	396	470	465	139	510	1960	1370	1180	720
12	243	325	348	388	480	460	129	545	2060	1340	1170	1020
13	240	314	360	384	490	470	125	658	2200	1380	1260	1210
14	263	314	364	329	495	475	143	609	2340	1380	1290	1330
15	314	293	356	360	510	480	124	565	2300	1450	1270	1280
16	416	279	360	380	495	485	111	500	2220	1440	1280	1190
17	456	263	360	420	515	480	137	420	2180	1380	1270	1130
18	438	247	336	452	495	485	137	333	2530	1300	1320	1160
19	416	247	336	470	485	442	129	307	3080	1190	1400	1250
20	412	243	368	460	485	429	160	289	2660	1060	1940	1360
21	396	243	380	442	500	429	180	276	2480	1010	2220	1350
22	392	256	404	420	520	452	155	289	2290	1010	1870	1310
23	388	263	380	430	535	470	180	344	2300	964	1710	1190
24	388	266	368	450	530	500	447	475	2550	912	1680	1140
25	424	289	380	456	525	307	480	771	3030	854	1750	1110
26	420	286	390	420	510	286	465	892	2900	1180	1580	1110
27	380	259	410	442	480	300	465	906	2780	1370	1350	1070
28	380	259	380	424	470	296	460	1060	2620	1940	1230	1020
29	368	276	348	416	---	296	408	1270	2750	2530	1190	977
30	384	276	392	430	---	322	314	1520	2850	2280	1060	958
31	475	---	416	440	---	364	---	1660	---	2000	970	---
TOTAL	10641	9144	10888	12717	13357	13320	7394	18464	66120	50890	43830	30246
MEAN	343	305	351	410	477	430	246	596	2204	1642	1414	1008
MAX	475	412	416	470	535	500	480	1660	3080	2900	2220	1360
MIN	240	243	243	290	350	286	111	178	1190	854	970	636
AC-FT	21110	18140	21600	25220	26490	26420	14670	36620	131100	100900	86940	59990

CAL YR 1981 TOTAL 143979 MEAN 394 MAX 1570 MIN 94 AC-FT 285600
WTR YR 1982 TOTAL 287011 MEAN 786 MAX 3080 MIN 111 AC-FT 569300

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.

REMARKS.--Specific conductance and water temperature records are once daily measurements obtained by a local observer.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily observed, 1,380 micromhos Sept. 30, 1981; minimum daily, 174 micromhos June 24, 1980.
WATER TEMPERATURES: Maximum daily observed, 21.5°C Aug. 8, 1982; minimum daily, 0.0°C many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily observed, 1,380 micromhos Oct. 1; minimum daily observed, 213 micromhos July 10.
WATER TEMPERATURES: Maximum daily observed, 21.5°C Aug. 8; minimum daily, 0.0°C many days during December to February.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
FEB											
19...	1045	515	--	400	8.2	5.5	5.7	8.1	190	220	160
AUG											
04...	1130	1430	280	305	7.8	20.0	75	13.7	>600	>1000	130

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
FEB										
19...	43	13	20	.7	2.1	100	87	6.9	.3	11
AUG										
04...	37	9.0	13	.5	1.9	91	56	4.9	.4	12

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
FEB										
19...	252	244	.34	350	.32	.140	.67	.080	.060	<1
AUG										
04...	253	189	.34	977	.19	.120	1.20	.290	.110	1

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)
FEB										
19...	1045	2	2	100	63	<1	<1	10	<10	3
AUG										
04...	1130	3	1	100	59	3	<1	20	<10	3

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB									
19...	<3	16	3	1200	290	8	2	90	52
AUG									
04...	<1	28	10	8000	400	98	13	350	58

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
FEB									
19...	.1	<.1	4	<1	2	2	<1	80	42
AUG									
04...	.6	<.1	7	<1	1	1	<1	200	32

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV					
04...	0930	400	24	26	39
24...	1115	260	16	11	41
FEB					
19...	1045	515	35	49	94
MAR					
11...	1320	456	66	81	37
APR					
16...	1050	110	6	1.8	67
MAY					
11...	1015	535	92	133	34
JUN					
08...	1050	1470	219	869	28
JUL					
09...	1410	1450	225	881	23
19...	1500	1200	115	373	19
AUG					
04...	1130	1430	482	1860	42
SEP					
03...	1530	741	94	188	59
17...	1140	1140	229	705	38

07097000 ARKANSAS RIVER AT PORTLAND, CO--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1380	890	---	---	597	709	676	---	---	642	254	---
2	1360	883	---	793	601	714	---	---	---	628	---	322
3	1360	855	---	793	600	708	---	---	817	---	270	326
4	1360	854	1100	799	561	709	---	---	---	---	230	---
5	1360	850	1100	787	560	706	---	447	223	---	236	---
6	1030	853	1090	773	561	530	---	593	219	267	228	---
7	1030	951	---	796	562	719	---	596	---	257	235	364
8	1030	953	---	794	562	714	768	594	---	---	239	---
9	1030	958	984	797	548	708	---	776	222	---	240	---
10	1050	966	---	952	468	565	---	---	---	213	---	---
11	903	961	---	953	474	710	---	---	557	---	---	370
12	894	949	---	954	498	715	---	---	567	---	---	378
13	886	950	996	950	575	757	---	---	570	---	---	369
14	885	964	994	950	578	---	---	---	---	---	254	354
15	885	968	988	625	577	---	---	---	591	---	---	343
16	885	967	1000	629	641	---	---	608	564	---	---	---
17	838	968	926	627	---	---	---	---	555	---	---	---
18	840	975	929	---	---	1160	574	---	---	---	331	---
19	855	979	---	---	---	---	565	---	233	---	338	---
20	865	961	928	---	---	---	---	736	222	252	249	---
21	858	970	924	---	589	---	---	---	216	---	247	---
22	818	1060	928	---	588	---	---	---	---	257	241	---
23	812	1060	826	---	588	---	564	---	374	---	244	---
24	810	1070	830	---	962	---	---	---	427	---	263	---
25	812	1070	---	---	---	1090	---	785	433	299	280	---
26	809	1060	832	626	---	---	---	816	924	---	---	---
27	752	---	---	629	---	---	---	910	956	305	---	---
28	754	---	822	628	---	---	---	917	---	262	---	---
29	757	1090	819	629	---	---	863	---	---	---	---	---
30	764	1090	823	535	---	---	---	---	---	---	276	---
31	769	---	828	553	---	---	---	---	---	266	---	---
MEAN	950	969										

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	8.5	---	.0	1.0	4.5	5.5	---	---	15.5	17.0	---
2	14.5	8.0	---	.0	.5	4.5	---	---	---	16.0	---	19.0
3	14.5	7.5	---	.0	.5	4.0	---	---	15.0	---	19.5	19.0
4	14.0	7.5	3.5	.0	.5	4.0	---	---	---	---	20.0	---
5	14.5	7.0	---	.0	.0	4.0	---	12.5	15.0	---	21.0	---
6	14.0	7.5	3.0	.0	.0	3.5	---	10.5	14.5	16.0	21.0	---
7	13.5	7.5	---	.0	.0	3.0	---	10.5	---	15.5	21.0	20.0
8	12.5	7.5	---	.0	.0	2.5	9.0	11.5	---	---	21.5	---
9	12.0	7.0	3.0	.0	.0	3.0	---	11.5	14.0	---	21.0	---
10	12.0	6.5	---	.0	.0	3.5	---	---	---	16.0	---	---
11	12.0	6.0	---	.5	.0	4.0	---	---	14.0	---	---	17.0
12	11.5	6.0	---	.5	.0	4.5	---	---	14.0	---	---	16.5
13	11.0	6.0	2.5	.0	.5	5.0	---	---	14.5	---	---	16.0
14	10.5	6.0	2.0	.0	.5	---	---	---	---	---	21.0	16.5
15	10.0	6.5	2.0	.0	2.0	---	---	---	15.0	---	---	16.5
16	10.0	6.5	2.0	.0	3.0	---	---	12.0	15.0	---	---	---
17	10.0	6.0	2.0	.5	3.5	---	---	---	14.5	---	---	---
18	10.0	5.5	1.5	.0	4.0	8.5	12.0	---	---	---	21.0	---
19	9.5	5.5	1.5	---	4.0	---	---	---	13.5	---	21.0	---
20	9.0	5.0	.5	---	4.5	---	---	13.5	12.0	17.0	21.0	---
21	9.0	5.0	.5	---	5.0	---	---	---	13.5	---	20.5	---
22	9.5	6.0	.0	---	5.0	---	---	---	---	17.0	20.5	---
23	9.5	5.5	.0	---	5.5	---	10.5	---	14.5	---	21.0	---
24	9.0	5.5	.0	---	5.0	---	---	---	14.5	---	21.0	---
25	9.0	5.0	.0	---	---	4.5	---	16.0	---	17.5	21.0	---
26	9.5	4.5	.0	.5	---	---	---	16.0	---	---	---	---
27	9.0	---	.0	1.0	---	---	---	15.5	---	18.0	---	---
28	8.5	---	.0	1.0	---	---	---	15.0	---	17.5	---	---
29	8.5	4.0	.0	.5	---	---	12.0	---	---	---	---	---
30	8.5	4.0	.0	.0	---	---	---	---	---	---	19.5	---
31	8.0	---	.0	.0	---	---	---	---	---	17.0	---	---
MEAN	11.0	6.0										

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 11020002, on Ft. Carson Military Reservation, on right bank 100 ft (30 m) downstream from State Highway 115 bridge, 0.7 m (1.1 km) downstream from Turkey Canyon, 0.8 mi (1.3 km) upstream from Turkey Creek Ranch, and 9.4 mi (15.1 km) southwest of Fountain.

DRAINAGE AREA.--13.0 mi² (33.7 km²).

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Altitude of gage is 6,420 ft (1,957 m), from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,020 ft³/s (28.9 m³/s) July 28, 1982, gage height, 4.70 ft (1.433 m) from rating curve extended above 140 ft³/s (3.96 m³/s); no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 15 ft³/s (0.42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 3	2230	21	0.59	2.65	0.808	Aug. 15	1345	20	0.57	2.42	0.738
July 11	2145	41	1.16	2.86	0.872	Aug. 17	1730	40	1.13	2.68	0.817
July 28	1900	*1020	28.9	4.70	1.433	Sept. 8	1745	190	5.38	3.33	1.015
Aug. 7	0130	47	1.33	2.73	0.832	Sept. 13	2100	40	1.13	2.68	0.817
Aug. 10	1645	96	2.72	2.99	0.911	Sept. 26	1245	21	0.59	2.44	0.744

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.15	.03	.00	.00	.00	.06	.19	4.1	2.8	11	3.6
2	.15	.08	.02	.00	.00	.00	.07	.25	4.2	2.4	8.0	3.3
3	.11	.07	.01	.00	.00	.00	.03	.40	17	2.1	5.8	3.8
4	.10	.06	.00	.00	.00	.00	.03	.67	18	1.7	2.1	3.5
5	.06	.05	.00	.00	.00	.00	.08	1.7	17	1.4	.79	3.2
6	.12	.08	.00	.00	.00	.00	.04	1.5	14	1.2	.72	3.1
7	.11	.06	.00	.00	.00	.00	.02	1.2	10	1.1	17	3.0
8	.05	.04	.00	.00	.00	.00	.01	1.2	8.9	1.0	14	7.3
9	.04	.06	.00	.00	.00	.00	.01	1.4	6.6	.75	12	4.0
10	.03	.05	.00	.00	.00	.00	.02	1.3	6.0	.60	12	3.8
11	.02	.06	.00	.00	.00	.00	.01	1.2	5.8	1.7	11	3.1
12	.00	.06	.00	.00	.00	.00	.01	2.1	6.0	2.4	10	2.8
13	.01	.06	.00	.00	.00	.00	.08	2.6	5.2	1.3	13	3.9
14	.01	.06	.00	.00	.00	.00	.10	2.7	4.7	1.0	12	8.8
15	.17	.06	.00	.00	.00	.00	.09	2.7	4.0	.75	14	11
16	.23	.06	.00	.00	.00	.00	.18	3.0	3.7	.51	17	11
17	.22	.06	.00	.00	.00	.00	.12	3.2	3.5	.35	25	9.8
18	.18	.06	.00	.00	.00	.00	.02	3.4	7.0	.28	30	9.0
19	.15	.06	.00	.00	.00	.00	.11	3.4	6.5	.21	26	8.2
20	.11	.06	.00	.00	.00	.00	.25	3.4	6.2	.13	23	9.9
21	.08	.06	.00	.00	.00	.00	.10	3.4	5.8	.14	25	11
22	.08	.06	.00	.00	.00	.00	.18	3.2	5.4	.08	23	10
23	.08	.06	.00	.00	.00	.00	.13	3.1	5.0	.07	21	5.4
24	.08	.06	.00	.00	.00	.00	.10	3.1	4.5	.05	20	1.9
25	.09	.06	.00	.00	.00	.00	.04	4.4	4.5	.03	18	8.8
26	.17	.08	.00	.00	.00	.00	.07	4.6	4.5	.01	15	19
27	.07	.04	.00	.00	.00	.00	.37	4.6	4.8	.36	13	7.8
28	.04	.04	.00	.00	.00	.01	.13	4.4	4.4	45	9.0	4.3
29	.02	.04	.00	.00	---	.03	.18	4.3	4.0	35	7.4	3.8
30	.04	.04	.00	.00	---	.05	.31	4.2	3.5	24	6.0	3.4
31	.14	---	.00	.00	---	.09	---	4.6	---	16	4.6	---
TOTAL	2.92	1.84	.06	.00	.00	.18	2.95	81.41	204.8	144.42	426.41	191.5
MEAN	.094	.061	.002	.000	.000	.006	.098	2.63	6.83	4.66	13.8	6.38
MAX	.23	.15	.03	.00	.00	.09	.37	4.6	18	45	30	19
MIN	.00	.04	.00	.00	.00	.00	.01	.19	3.5	.01	.72	1.9
AC-FT	5.8	3.6	.1	.00	.00	.4	5.9	161	406	286	846	380

CAL YR 1981 TOTAL 230.22 MEAN .63 MAX 10 MIN .00 AC-FT 457
WTR YR 1982 TOTAL 1056.49 MEAN 2.89 MAX 45 MIN .00 AC-FT 2100

07099215 TURKEY CREEK NEAR FOUNTAIN, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1978 to September 1982 (discontinued).

REMARKS.--Water-quality data for the 1981 water year are published in this report.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS (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
JUL												
14...	1315	1.0	210	221	7.8	22.5	340	89	23	7.6	9.8	.5

DATE	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, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
JUL												
14...	1.8	89	18	2.5	.5	19	137	.18	.37	14	.18	.060

DATE	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (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)
JUL										
14...	820	<1	<100	<10	130	<1	10	3	1200	24

DATE	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)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
JUL									
14...	<1	50	6	.2	4	7	<1	<1	20

07099220 LITTLE TURKEY CREEK NEAR FOUNTAIN, CO

LOCATION.--Lat 38°37'37", long 104°51'55", in SW¼NW¼ sec.26, T.16 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on Fort Carson Military Reservation, at right upstream end of bridge on military road No. 11, 1.0 mi (1.6 km) downstream from State Highway 115, 2.8 mi (4.5 km) upstream from mouth, and 9.1 mi (14.6 km) southwest of Fountain.

DRAINAGE AREA.--9.59 mi² (24.84 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 6,395 ft (1,949 m), from topographic map.

REMARKS.--Records good except those above 100 ft^3/s (2.8 m^3/s) which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 226 ft^3/s (6.40 m^3/s) July 28, 1982; gage height, 4.57 ft (1.393 m); no flow most of time each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10 ft^3/s (0.28 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)	Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)
June 3	2130	23	0.65	1.59	0.485	Aug. 10	1700	126	3.57	3.30	1.006
July 28	2100	* 226	6.40	4.57	1.393	Aug. 15	1800	18	0.51	0.95	0.290
Aug. 7	0200	11	0.31	1.22	0.372	Aug. 18	0015	25	0.71	1.12	0.341

No flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.00	.00	.00	.00	.00	.00	.00	2.6	2.9	6.7	2.4
2	.10	.00	.00	.00	.00	.00	.00	.00	2.2	2.6	5.5	1.9
3	.06	.00	.00	.00	.00	.00	.00	.00	16	1.9	4.5	2.4
4	.06	.00	.00	.00	.00	.00	.00	.00	21	1.6	4.3	3.1
5	.03	.00	.00	.00	.00	.00	.00	.00	18	1.1	5.1	1.6
6	.00	.00	.00	.00	.00	.00	.00	.00	14	.67	4.6	1.9
7	.00	.00	.00	.00	.00	.00	.00	.00	12	.46	5.6	2.2
8	.00	.00	.00	.00	.00	.00	.00	.00	10	.29	4.4	2.5
9	.00	.00	.00	.00	.00	.00	.00	.00	8.1	.16	4.3	2.2
10	.00	.00	.00	.00	.00	.00	.00	.00	6.6	.10	16	2.4
11	.00	.00	.00	.00	.00	.00	.00	.00	5.5	.53	15	2.5
12	.00	.00	.00	.00	.00	.00	.00	.00	5.1	1.4	9.4	2.7
13	.00	.00	.00	.00	.00	.00	.00	.00	4.3	.18	9.0	3.3
14	.00	.00	.00	.00	.00	.00	.00	.00	3.5	.13	9.0	3.3
15	.00	.00	.00	.00	.00	.00	.00	.08	3.4	.05	11	6.3
16	.00	.00	.00	.00	.00	.00	.00	.01	3.3	.02	14	7.8
17	.00	.00	.00	.00	.00	.00	.00	.57	3.0	.01	18	7.8
18	.00	.00	.00	.00	.00	.00	.00	1.0	5.3	.00	25	7.8
19	.00	.00	.00	.00	.00	.00	.00	1.3	6.6	.00	22	6.3
20	.00	.00	.00	.00	.00	.00	.00	1.4	6.3	.00	18	7.8
21	.00	.00	.00	.00	.00	.00	.00	1.5	6.9	.00	21	6.8
22	.00	.00	.00	.00	.00	.00	.00	1.4	6.9	.00	20	6.0
23	.00	.00	.00	.00	.00	.00	.00	1.4	7.2	.00	18	5.5
24	.00	.00	.00	.00	.00	.00	.00	1.6	6.3	.00	16	5.5
25	.00	.00	.00	.00	.00	.00	.00	2.2	5.8	.00	13	5.0
26	.00	.00	.00	.00	.00	.00	.00	2.9	5.2	.00	11	5.8
27	.00	.00	.00	.00	.00	.00	.00	2.9	4.8	.03	9.0	4.2
28	.00	.00	.00	.00	.00	.00	.00	2.6	4.2	18	7.2	2.4
29	.00	.00	.00	.00	---	.00	.00	2.4	3.7	13	5.8	2.0
30	.00	.00	.00	.00	---	.00	.00	2.9	3.3	10	4.8	1.5
31	.00	---	.00	.00	---	.00	---	2.9	---	8.2	3.8	---
TOTAL	.35	.00	.00	.00	.00	.00	.00	29.06	211.1	63.33	341.0	122.9
MEAN	.011	.000	.000	.000	.000	.000	.000	.94	7.04	2.04	11.0	4.10
MAX	.10	.00	.00	.00	.00	.00	.00	2.9	21	18	25	7.8
MIN	.00	.00	.00	.00	.00	.00	.00	.00	2.2	.00	3.8	1.5
AC-FT	.7	.00	.00	.00	.00	.00	.00	58	419	126	676	244

CAL YR 1981 TOTAL 108.74 MEAN .30 MAX 5.9 MIN .00 AC-FT 216
WTR YR 1982 TOTAL 767.74 MEAN 2.10 MAX 25 MIN .00 AC-FT 1520

07099220 LITTLE TURKEY CREEK NEAR FOUNTAIN, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May to July 1979, August 1981 to September 1982 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
JUL								
14...	1420	.17	245	254	7.8	20.0	110	33

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)
JUL									
14...	7.2	8.8	.4	2.6	107	17	2.1	.5	18

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
JUL								
14...	154	.21	.07	60	<.020	.10	<.060	.070

DATE	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (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)
JUL										
14...	210	1	100	<10	160	<1	10	2	210	25

DATE	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)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)
JUL									
14...	<1	60	16	.2	4	6	<1	<1	10

07099230 TURKEY CREEK ABOVE TELLER RESERVOIR NEAR STONE CITY, CO

LOCATION.--Lat 38°27'37", long 104°49'19", in NW¼NE¼ sec.30, T.18 S., R.66 W., Pueblo County, Hydrologic Unit 11020002, on Ft. Carson Military Reservation, on left bank, 0.5 mi (0.8 km) west of intersection of military roads 9 and 1, 1.6 mi (2.6 km) upstream from Teller Reservoir Dam and 2.4 mi (3.9 km) northeast of Stone City.

DRAINAGE AREA.--62.5 mi^2 (162 km^2).

PERIOD OF RECORD.--Streamflow records, May 1978 to current year. Water-quality data available, May 1978 to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 5,520 ft (1,682 m) from topographic map.

REMARKS.--Records fair. Diversion above gage for irrigation, amount unknown. Several observations of water temperature and specific conductance were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,640 ft^3/s (103 m^3/s) Aug. 20, 1982, gage height, 11.51 ft (3.508 m), from rating curve extended above 100 ft^3/s (2.83 m^3/s) on the basis of slope-area measurements at gage heights 8.04 ft (2.450 m) and 11.27 ft (3.435 m); no flow many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft^3/s (0.57 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 3	0730	96	2.72	6.16	1.878	Aug. 10	2115	192	5.44	6.97	2.124
June 18	2315	20	0.57	5.17	1.576	Aug. 20	1900	* 3,640	103	11.51	3.508
July 28	2400	3,060	86.7	11.15	3.398	Sept. 8	1900	396	11.2	7.99	2.435
Aug. 7	0430	215	6.09	7.17	2.185	Sept. 20	1845	26	.74	6.03	1.838

Minimum daily discharge, .19 ft^3/s (0.005 m^3/s) Oct. 2-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.35	.55	.75	.74	.81	.51	.73	.93	4.4	20	17
2	.19	.39	.60	.75	.74	.81	.45	.72	.97	3.8	15	16
3	.19	.36	.55	.75	.60	.81	.41	.73	40	3.2	12	16
4	.19	.46	.57	.83	.48	.93	.40	.74	39	2.7	11	17
5	.19	.43	.60	.81	.45	.93	.41	.80	32	2.4	11	15
6	.19	.48	.60	.76	.45	.87	.42	.76	24	1.9	13	14
7	.19	.47	.65	.66	.47	.81	.41	.72	20	1.6	42	14
8	.19	.45	.64	.64	.50	.81	.40	.68	16	1.5	25	33
9	.19	.49	.65	.83	.50	.80	.39	.64	13	1.2	24	21
10	.19	.51	.65	.79	.50	.75	.39	.60	11	1.1	38	13
11	.19	.51	.65	.82	.50	.77	.37	.60	9.4	.93	28	11
12	.19	.55	.68	.87	.52	.75	.35	.70	9.8	2.3	21	11
13	.19	.48	.58	.71	.55	.74	.46	.90	7.5	2.1	21	11
14	.19	.43	.60	.86	.55	.73	.75	1.0	6.0	1.6	23	17
15	.19	.53	.60	.81	.51	.72	1.0	1.1	5.4	1.2	23	17
16	.22	.50	.60	.65	.51	.70	1.0	1.1	5.6	.81	34	22
17	.26	.45	.60	.76	.60	.69	.87	1.1	5.2	.67	39	22
18	.25	.47	.65	.74	.65	.68	.81	.95	12	.63	72	23
19	.25	.47	.65	.73	.60	.66	.81	.85	20	.57	82	21
20	.25	.47	.65	.69	.60	.65	.81	.81	18	.53	353	24
21	.28	.51	.62	.69	.60	.60	.81	.75	15	.48	61	24
22	.28	.50	.66	.62	.65	.60	.72	.75	15	.44	48	22
23	.31	.51	.66	.58	.75	.61	.73	.75	14	.45	41	20
24	.33	.49	.60	.65	.75	.60	.79	.80	12	.44	35	20
25	.37	.55	.59	.56	.75	.57	.80	.90	11	.45	34	20
26	.39	.60	.60	.90	.81	.56	.75	.93	11	.42	32	20
27	.39	.54	.64	1.1	.81	.57	.72	.90	9.9	.70	28	18
28	.39	.51	.61	1.0	.81	.56	.72	.87	7.4	95	24	16
29	.36	.51	.70	.94	---	.54	.73	.86	6.0	236	19	14
30	.35	.54	.82	.66	---	.50	.74	.87	5.3	32	20	13
31	.36	---	.74	.71	---	.51	---	.90	---	26	19	---
TOTAL	7.92	14.51	19.56	23.62	16.95	21.64	18.93	25.51	402.40	427.52	1268	542
MEAN	.26	.48	.63	.76	.61	.70	.63	.82	13.4	13.8	40.9	18.1
MAX	.39	.60	.82	1.1	.81	.93	1.0	1.1	40	236	353	33
MIN	.19	.35	.55	.56	.45	.50	.35	.60	.93	.42	11	11
AC-FT	16	29	39	47	34	43	38	51	798	848	2520	1080

CAL YR 1981 TOTAL 330.13 MEAN .90 MAX 71 MIN .05 AC-FT 655
WTR YR 1982 TOTAL 2788.56 MEAN 7.64 MAX 353 MIN .19 AC-FT 5530

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 (2.3 km) upstream from Booth Gulch, and 2.0 mi (3.2 km) east of Stone City.

DRAINAGE AREA.--71.5 mi² (185 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 5,453 ft (1,662.1 m), from topographic map.

REMARKS.--Records good except those for periods of no gage-height record, which are poor. Reservoir is formed by an earthfill dam completed in about 1908. Maximum capacity of reservoir is 1,780 acre-ft (2.2 hm³) at an uncontrolled spillway elevation of about 88 ft (26.8 m), 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 FOR PERIOD OF RECORD.--Maximum contents, 2,210 acre-ft (2.72 hm³) June 21, 1980, elevation, 90.15 ft (27.478 m), from capacity curve extended above 88 ft (26.8 m); no contents May 1 to June 5, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,120 acre-ft (2.61 hm³) at 2300 Aug. 20, elevation, 89.73 ft (27.350 m); minimum contents, 384 acre-ft (0.48 hm³) May 21, elevation, 76.59 ft (23.345 m).

Capacity table (elevation, in feet, and total contents, in acre-feet)

65.6	0
90.0	2,176

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	495	439	414	388	401	407	415	390	399	1200	1680	1810
2	492	437	413	388	401	410	415	388	402	1200	1700	1800
3	486	435	412	386	401	415	415	388	950	1200	1700	1800
4	483	433	412	388	401	422	414	386	990	1200	1710	1790
5	482	433	411	388	401	423	414	392	1000	1190	1720	1790
6	478	434	411	388	401	424	413	390	1000	1190	1720	1780
7	476	433	410	389	402	425	412	389	1000	1180	1790	1780
8	474	429	410	389	402	427	410	388	1000	1180	1820	1840
9	473	428	409	389	402	427	409	387	990	1160	1830	1840
10	471	427	408	389	402	427	408	386	990	1160	1850	1830
11	470	426	407	391	391	425	405	386	980	1150	1880	1820
12	468	425	406	391	393	425	405	394	980	1140	1900	1820
13	467	425	405	391	391	424	405	390	970	1140	1870	1810
14	465	424	404	391	393	424	404	390	960	1150	1850	1810
15	463	424	403	395	395	423	403	390	950	1150	1840	1810
16	461	423	402	395	395	423	403	390	950	1150	1860	1820
17	459	422	401	395	397	422	401	390	960	1150	1860	1810
18	458	421	400	396	399	422	399	390	980	1140	1900	1810
19	456	421	400	396	401	421	399	390	1000	1120	1920	1800
20	455	420	399	396	403	421	399	387	1020	1100	2120	1810
21	454	420	398	396	404	420	397	384	1040	1100	1900	1800
22	453	419	397	396	403	420	397	386	1060	1090	1880	1800
23	453	419	396	396	402	419	394	387	1080	1080	1870	1800
24	452	418	395	396	401	419	394	387	1100	1070	1860	1800
25	451	417	394	396	401	418	394	390	1130	1060	1860	1800
26	450	417	393	396	405	418	392	388	1150	1060	1840	1800
27	448	416	392	397	403	417	392	388	1160	1060	1840	1790
28	446	415	391	397	407	417	391	390	1180	1080	1830	1790
29	445	415	391	397	---	416	391	392	1190	1560	1830	1790
30	443	414	390	401	---	416	388	395	1200	1620	1820	1790
31	441	---	390	401	---	415	---	395	---	1660	1820	---
MAX	495	439	414	401	407	427	415	395	1200	1660	2120	1840
MIN	441	414	390	386	391	407	388	384	399	1060	1680	1780

WTR YR 1982 MAX 2120 MIN 384

07099235 TURKEY CREEK NEAR STONE CITY, CO

LOCATION.--Lat 38°26'27", long 104°49'31", in SE¼NW¼ sec.31, T.18 S., R.66 W., Pueblo County, Hydrologic Unit 11020002, on Fort Carson Military Reservation, on left bank, 0.1 mi (0.2 km) downstream from Teller Reservoir Dam, 1 mi (1.6 km) upstream from Military road No. 11, and 2.1 mi (3.4 km) southeast of Stone City.

DRAINAGE AREA.--71.5 mi^2 (185 km^2).

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

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage 5,400 ft (1,646 m), from topographic map.

REMARKS.--Records good. Flow regulated by Teller Reservoir 0.1 mi (0.2 km) 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 ft^3/s (0.108 m^3/s) June 3, 1982, gage height, 0.80 ft (0.244 m); minimum daily, 0.01 ft^3/s (0.001 m^3/s) on many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.8 ft^3/s (0.108 m^3/s) at 0400 June 3, gage height, 0.80 ft (0.244 m); minimum daily, 0.09 ft^3/s (0.003 m^3/s) May 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	.15	.15	.12	.15	.15	.12	.15	.25	1.3	1.7	1.1
2	.25	.16	.15	.12	.15	.12	.12	.16	.30	1.4	1.7	1.1
3	.25	.18	.15	.12	.15	.12	.12	.10	.65	1.4	1.7	1.1
4	.25	.18	.15	.12	.15	.12	.15	.10	.30	1.4	1.7	1.1
5	.25	.18	.15	.12	.12	.12	.15	.12	.35	1.5	1.6	1.1
6	.25	.18	.15	.12	.12	.12	.18	.09	.37	1.5	1.6	1.2
7	.25	.18	.15	.12	.13	.12	.15	.09	.49	1.6	1.6	1.2
8	.23	.18	.15	.12	.15	.12	.14	.10	.59	1.6	1.7	1.2
9	.21	.18	.15	.12	.15	.12	.15	.10	.70	1.5	1.7	1.2
10	.19	.18	.15	.12	.15	.12	.15	.11	.88	1.4	1.6	1.2
11	.18	.18	.15	.12	.15	.11	.15	.12	1.0	1.4	1.6	1.1
12	.20	.18	.15	.12	.17	.10	.15	.16	1.1	1.3	1.7	1.1
13	.21	.18	.15	.12	.21	.10	.15	.15	1.1	1.3	1.6	1.2
14	.19	.18	.15	.12	.15	.11	.12	.15	1.2	1.3	1.5	1.3
15	.19	.18	.15	.15	.15	.12	.12	.15	1.2	1.3	1.5	1.3
16	.18	.18	.15	.15	.15	.13	.12	.15	1.2	1.3	1.4	1.3
17	.18	.18	.15	.15	.12	.13	.12	.13	.98	1.3	1.3	1.3
18	.18	.18	.15	.15	.12	.12	.12	.15	1.0	1.4	1.3	1.3
19	.18	.18	.12	.15	.12	.10	.12	.15	1.0	1.4	1.3	1.3
20	.18	.18	.12	.15	.12	.10	.12	.15	1.1	1.4	1.4	1.4
21	.18	.18	.12	.15	.12	.10	.12	.18	1.1	1.4	1.2	1.4
22	.18	.18	.12	.15	.12	.10	.14	.18	1.0	1.4	1.2	1.5
23	.18	.18	.12	.15	.12	.12	.16	.18	1.1	1.4	1.2	1.4
24	.18	.18	.12	.15	.12	.12	.16	.20	1.1	1.4	.97	1.4
25	.15	.15	.12	.15	.12	.14	.15	.23	1.1	1.4	.97	1.4
26	.18	.15	.12	.15	.12	.15	.13	.21	1.1	1.4	.97	1.4
27	.15	.15	.12	.15	.12	.15	.15	.21	1.1	1.4	.97	1.4
28	.15	.15	.12	.15	.14	.12	.15	.21	1.2	1.4	.97	1.5
29	.16	.15	.12	.15	---	.12	.13	.21	1.2	1.4	.97	1.5
30	.18	.15	.12	.15	---	.12	.15	.25	1.3	1.6	1.1	1.5
31	.16	---	.12	.15	---	.12	---	.26	---	1.7	1.1	---
TOTAL	6.09	5.17	4.26	4.23	3.86	3.71	4.16	4.90	27.06	43.9	42.82	38.5
MEAN	.20	.17	.14	.14	.14	.12	.14	.16	.90	1.42	1.38	1.28
MAX	.25	.18	.15	.15	.21	.15	.18	.26	1.3	1.7	1.7	1.5
MIN	.15	.15	.12	.12	.12	.10	.12	.09	.25	1.3	.97	1.1
AC-FT	12	10	8.4	8.4	7.7	7.4	8.3	9.7	54	87	85	76

CAL YR 1981 TOTAL 152.84 MEAN .42 MAX .76 MIN .12 AC-FT 303
WTR YR 1982 TOTAL 188.66 MEAN .52 MAX 1.7 MIN .09 AC-FT 374

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 (11 km) west of Pueblo.

DRAINAGE AREA.--4,669 mi² (12,093 km²).

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 NGVD.

REMARKS.--Reservoir is formed by concrete and earthfill dam. Storage began Jan. 9, 1974; dam completed in August 1975. Capacity, 357,700 acre-ft (441 hm³) at elevation 4,898.70 ft (1,493.124 m), crest of spillway. Dead storage, 3,730 acre-ft (4.60 hm³) below elevation 4,764.00 ft (1,452.067 m), 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 furnished by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 111,920 acre-ft (138 hm³) Mar. 18, 1982, elevation, 4,838.00 ft (1,474.622 m); minimum since appreciable storage was attained, 22,680 acre-ft (28.0 hm³) Nov. 13, 1974, elevation, 4,790.50 ft (1,460.144 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 111,920 acre-ft (138 hm³) Mar. 18, elevation, 4,838.00 ft (1,474.622 m); minimum, 32,800 acre-ft (40.4 hm³) Oct. 13, elevation, 4,798.56 ft (1,462.601 m).

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 2400, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	4,798.69	32,970	-
Oct. 31	4,799.00	33,390	+420
Nov. 30	4,803.67	40,050	+6,660
Dec. 31	4,814.00	57,170	+17,120
CAL YR 1981		-	-15,640
Jan. 31	4,824.36	78,060	+20,890
Feb. 28	4,833.66	100,400	+22,340
Mar. 31	4,837.30	110,040	+9,640
Apr. 30	4,829.61	90,240	-19,800
May 31	4,823.26	75,650	-14,590
June 30	4,826.46	82,790	-7,140
July 31	4,816.69	62,260	-20,530
Aug. 31	4,816.65	62,180	-80
Sept. 30	4,816.01	60,950	-1,230
WTR YR 1982			+13,700

07099400 ARKANSAS RIVER ABOVE PUEBLO, CO

LOCATION.--Lat 38°16'17", long 104°43'06", in NE¼NE¼ sec.36, T.20 S., R.66 W., Pueblo County, Hydrologic Unit 11020002, on left bank 450 ft (140 m) downstream from headgate of West Pueblo ditch, 0.4 mi (0.6 km) downstream from Pueblo Dam, and 7 mi (11 km) west of Pueblo.

DRAINAGE AREA.--4,670 mi^2 (12,095 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,740 ft (1,445 m), from topographic map. Prior to Mar. 23, 1967, at site 730 ft (220 m) upstream at datum 1.23 ft (0.375 m) higher. May 24, 1974, to Feb. 24, 1975, at site 2,000 ft (610 m) downstream at different datum.

REMARKS.--Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, diversions above station for irrigation of about 88,000 acres (356 km^2) and return flow from irrigated areas. Flow completely regulated by Pueblo Reservoir (station 07099350) since Jan. 9, 1974.

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

AVERAGE DISCHARGE.--8 years (water years 1966-73), 643 ft^3/s (18.21 m^3/s), 465,900 acre-ft/yr (574 hm^3/yr), prior to completion of Pueblo Dam; 8 years (1975-82), 590 ft^3/s (16.71 m^3/s), 427,500 acre-ft/yr (527 hm^3/yr) subsequent to completion of Pueblo Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft^3/s (286 m^3/s) Aug. 1, 1966, gage height, 9.4 ft (2.87 m), from floodmarks, present site and datum, from rating curve extended above 1,600 ft^3/s (45 m^3/s), on basis of slope-area measurement of peak flow; minimum daily, 28 ft^3/s (0.79 m^3/s) May 11, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,240 ft^3/s (148 m^3/s) at 1200 July 30, gage height, 6.88 ft (2.097 m); minimum daily, 50 ft^3/s (1.42 m^3/s) Dec. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	212	400	83	58	94	164	332	712	1590	2790	913	1180
2	220	414	80	60	94	162	360	690	1490	2680	919	931
3	215	436	80	60	96	128	356	678	1590	2550	919	783
4	200	454	75	94	96	92	238	678	1640	2360	1410	668
5	195	454	72	94	96	90	250	700	1260	1980	1490	620
6	198	436	72	94	96	90	348	805	756	1920	1400	656
7	198	392	61	96	97	92	404	992	1280	1940	1370	722
8	195	372	54	96	97	92	380	925	1380	1940	1400	722
9	212	352	54	96	97	90	348	859	1460	2170	1160	734
10	220	340	60	96	99	90	340	778	1490	2140	1260	744
11	215	332	50	96	97	82	336	778	1590	2020	1830	690
12	195	332	54	96	99	75	320	841	1890	1790	1870	1100
13	172	313	54	97	99	73	299	871	2010	1210	1640	1080
14	166	242	73	97	99	114	328	865	2080	1300	1470	1830
15	178	76	82	96	97	205	356	662	2100	1320	1550	1260
16	210	54	84	97	97	215	344	510	2110	1250	1480	1230
17	306	68	84	97	99	271	360	500	1980	1360	1420	1120
18	380	90	84	96	99	368	380	445	2050	1650	1230	955
19	396	94	86	94	97	380	360	296	2810	1750	1330	985
20	418	84	86	92	97	392	360	271	2510	1600	1920	1290
21	418	75	75	92	97	404	368	282	1520	1310	1180	1480
22	299	75	56	92	97	384	368	316	1830	1340	4580	1480
23	292	75	57	92	97	302	344	364	2570	1420	2030	1400
24	292	76	58	92	99	288	656	476	2420	1330	1640	1180
25	292	78	58	92	99	328	706	706	3080	1220	1840	1170
26	292	78	57	92	132	336	717	783	3260	1390	1780	1150
27	296	81	58	92	162	310	734	847	2660	1780	1590	1100
28	296	84	60	92	164	328	823	901	2540	1580	1320	1040
29	306	86	61	94	---	352	794	1110	1610	2260	1410	973
30	320	84	58	94	---	340	750	1410	2730	4690	1520	913
31	324	---	58	94	---	340	---	1580	---	3500	1410	---
TOTAL	8128	6527	2084	2820	2889	6977	13059	22631	59286	59540	48281	31186
MEAN	262	218	67.2	91.0	103	225	435	730	1976	1921	1557	1040
MAX	418	454	86	97	164	404	823	1580	3260	4690	4580	1830
MIN	166	54	50	58	94	73	238	271	756	1210	913	620
AC-FT	16120	12950	4130	5590	5730	13840	25900	44890	117600	118100	95770	61860

CAL YR 1981 TOTAL 136305 MEAN 373 MAX 2400 MIN 50 AC-FT 270400
WTR YR 1982 TOTAL 263408 MEAN 722 MAX 4690 MIN 50 AC-FT 522500

07099400 ARKANSAS RIVER ABOVE PUEBLO, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 1982 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
APR									
07...	1545	414	570	590	8.6	8.5	9.7	190	9.5
JUN									
23...	1000	2450	339	339	7.4	17.0	9.1	88	3.0
JUL									
23...	1440	1480	278	291	7.7	20.5	8.1	60	4.1
SEP									
22...	0915	1470	454	458	7.6	17.5	7.7	110	6.3

DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, DIS-SOLVED (UG/L AS PB)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)
APR								
07...	1	100	< 1	7	2	4	< 1	< .3
JUN								
23...	1	< 100	< 1	15	2	2	<1	1.5
JUL								
23...	1	< 100	3	8	1	1	< 1	.5
SEP								
22...	1	< 100	<1	<1	<1	3	<1	<.5
22...	--	--	--	--	--	--	--	<.5

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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
APR								
07...	<11	<.5	8.2	.7	7.8	.7	<.1	8.9
JUN								
23...	<4.7	2.2	3.1	1.9	3.0	1.8	<.1	3.3
JUL								
23...	4.6	.8	< 2.1	1.0	< 2.0	1.0	.1	3.7
SEP								
22...	12	<.7	7.1	1.4	6.8	1.4	<.1	5.6
22...	--	--	--	--	--	--	--	--

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO

LOCATION.--Lat 38°51'17", long 104°52'39", in SE¼SW¼ sec.3, T.14 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on left bank 200 ft (61 m) upstream from diversion to city of Colorado Springs, 0.5 mi (0.8 km) east of bridge on U.S. Highway 24 near west city limits of Colorado Springs, and 1.0 mi (1.6 km) downstream from Sutherland Creek.

DRAINAGE AREA.--103 mi² (267 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1958 to current year.

GAGE.--Water-stage recorder and Parshall flume with overflow weirs. Altitude of gage is 6,110 ft (1,862 m), from topographic map.

REMARKS.--Records good. 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.--24 years, 12.6 ft³/s (0.357 m³/s), 9,130 acre-ft/yr (11.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,630 ft³/s (74.5 m³/s) Aug. 4, 1964, gage height, 5.27 ft (1.606 m), from rating curve extended above 190 ft³/s (5.4 m³/s), on basis of slope-area measurements at gage heights 3.87, 4.52, and 5.27 ft (1.180, 1.378, and 1.606 m); minimum daily, 2.0 ft³/s (0.057 m³/s) Jan. 24, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 305 ft³/s (8.64 m³/s) at 1600 June 12, gage height, 3.63 ft (1.106 m); minimum daily, 6.6 ft³/s (0.19 m³/s) July 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	29	8.5	9.0	11	8.4	7.8	9.0	21	17	13	13
2	16	28	9.2	10	10	8.0	7.8	9.4	23	16	12	14
3	19	27	9.6	9.2	7.3	8.5	7.6	11	39	15	15	16
4	21	28	9.6	9.8	6.8	11	7.2	10	27	13	15	14
5	23	25	9.6	12	7.0	8.6	7.2	15	23	12	13	19
6	26	21	9.4	11	7.5	8.6	7.3	11	19	14	12	23
7	23	17	9.4	9.2	8.5	9.5	7.4	11	18	16	16	18
8	23	17	9.4	11	8.0	9.3	7.1	9.5	17	16	12	15
9	23	17	9.5	11	7.5	10	7.1	9.1	17	14	11	14
10	28	16	9.6	10	7.0	9.3	7.3	8.4	16	13	21	15
11	25	15	9.8	11	7.0	9.5	7.3	7.2	18	12	17	14
12	25	14	10	11	7.0	9.5	7.5	22	28	11	15	36
13	25	13	9.9	10	7.0	9.4	7.7	14	16	14	17	33
14	28	13	9.8	11	7.8	9.3	8.1	14	15	16	15	20
15	32	12	9.8	9.8	8.8	9.5	7.5	13	15	13	21	21
16	33	13	10	8.8	10	9.3	7.4	13	16	10	17	18
17	30	13	8.5	11	8.2	9.2	6.9	17	16	9.1	18	17
18	30	13	8.7	9.8	8.0	9.5	7.0	17	27	9.0	14	18
19	30	11	10	9.4	8.0	9.5	7.3	16	25	8.6	18	20
20	29	12	11	9.2	8.1	9.0	7.3	16	22	8.0	42	23
21	29	13	11	9.2	10	9.4	8.0	16	19	7.4	37	18
22	29	13	11	8.6	9.5	9.8	7.5	17	15	7.0	26	22
23	30	13	7.9	7.9	8.4	9.6	7.6	16	18	6.6	24	25
24	29	13	7.9	11	8.1	10	7.5	22	28	7.2	23	22
25	29	9.4	9.0	9.2	7.7	9.5	7.0	25	22	8.7	22	15
26	29	9.0	9.0	10	8.4	9.1	7.3	25	23	13	21	22
27	29	9.5	8.5	11	8.7	9.1	8.2	23	20	20	20	21
28	29	9.6	8.0	11	8.5	8.5	8.0	22	18	28	18	21
29	29	9.9	8.0	11	---	8.6	7.8	22	19	20	15	18
30	27	10	8.2	10	---	7.9	9.5	22	17	17	14	19
31	28	---	8.0	14	---	7.8	---	23	---	14	15	---
TOTAL	817	463.4	287.8	316.1	229.8	284.2	226.2	485.6	617	405.6	569	584
MEAN	26.4	15.4	9.28	10.2	8.21	9.17	7.54	15.7	20.6	13.1	18.4	19.5
MAX	33	29	11	14	11	11	9.5	25	39	28	42	36
MIN	11	9.0	7.9	7.9	6.8	7.8	6.9	7.2	15	6.6	11	13
AC-FT	1620	919	571	627	456	564	449	963	1220	805	1130	1160

CAL YR 1981 TOTAL 4738.7 MEAN 13.0 MAX 44 MIN 3.2 AC-FT 9400
WTR YR 1982 TOTAL 5285.7 MEAN 14.5 MAX 42 MIN 6.6 AC-FT 10480

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	ALKALINITY LAB (MG/L AS CACO3)
OCT 20...	1145	30	132	148	7.6	7.0	9.8	1.2	54	17	2.9	53
NOV 18...	1125	13	220	230	7.5	6.0	8.9	<2.0	92	28	5.4	87
DEC 16...	1415	9.8	--	395	7.9	3.0	10.0	1.1	120	36	7.0	120
JAN 15...	1100	11	--	368	7.7	1.5	11.7	E.9	130	39	7.6	140
FEB 22...	1025	10	--	283	7.5	4.0	10.5	1.5	--	--	--	110
MAR 23...	1500	11	277	275	7.6	8.0	8.5	1.7	--	--	--	110
APR 27...	1230	7.7	329	335	7.7	8.5	9.4	<1.0	--	--	--	130
MAY 26...	1210	25	206	236	7.5	10.5	9.6	3.6	--	--	--	76
JUN 15...	1115	12	256	282	--	11.0	9.2	1.5	--	--	--	99
JUL 14...	1230	16	227	256	7.7	16.0	8.0	1.2	--	--	--	92
AUG 10...	1400	9.8	291	313	7.9	17.5	7.8	E1.2	--	--	--	120
SEP 22...	1215	27	182	211	7.7	11.5	9.2	.9	--	--	--	63

DATE	SULFIDE TOTAL (MG/L AS S)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)
OCT 20...	1.0	11	.39	.030	.42	.130	.32	.45	.87	.060	.070
NOV 18...	1.1	3	.69	.030	.72	.130	.42	.55	1.3	.020	.030
DEC 16...	.4	21	--	<.020	.93	<.070	--	.45	1.4	.010	.010
JAN 15...	.4	6	--	<.020	1.0	<.070	--	.69	1.7	.010	.010
FEB 22...	--	16	--	<.020	.88	.220	.48	.70	1.6	--	--
MAR 23...	--	8	--	<.020	.92	.120	.67	.79	1.7	--	--
APR 27...	--	7	--	<.020	.87	.130	.66	.79	1.7	--	--
MAY 26...	--	168	.55	.020	.57	.100	.90	1.00	1.6	--	--
JUN 15...	--	65	--	<.020	.66	.120	1.1	1.20	1.9	--	--
JUL 14...	--	35	--	<.020	.58	<.060	--	2.30	2.9	--	--
AUG 10...	--	52	--	<.020	.65	.070	.93	1.00	1.7	--	--
SEP 22...	--	271	--	<.020	.50	.110	7.4	7.50	8.0	--	--

E ESTIMATED.

07103700 FOUNTAIN CREEK NEAR COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	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)
OCT								
20...	0	0	<1	23	1300	47	6	120
NOV								
18...	1	<10	<1	7	740	70	5	110
DEC								
16...	<1	<10	<1	9	330	54	2	90
JAN								
15...	1	<10	<1	37	800	66	4	100
FEB								
22...	<1	<10	<1	11	610	--	5	70
MAR								
23...	1	<10	<1	9	1600	--	8	150
APR								
27...	<1	<10	<1	6	260	--	1	70
MAY								
26...	1	<10	<1	9	58000	--	12	320
JUN								
15...	<1	<10	<1	6	2000	--	3	160
JUL								
14...	<1	<10	<1	4	1100	--	5	120
AUG								
10...	<1	<10	<1	3	1700	--	<1	130
SEP								
22...	<1	<10	<1	7	7300	--	<1	390

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
20...	26	.1	2	0	0	50	<.01
NOV							
18...	57	.1	3	<1	0	30	<.01
DEC							
16...	73	<.1	<1	<1	<0	20	<.01
JAN							
15...	81	<.1	1	<1	0	30	<.01
FEB							
22...	--	.1	4	<1	<0	30	<.01
MAR							
23...	--	.1	8	<1	<0	50	<.01
APR							
27...	--	<.1	2	<1	<0	30	<.01
MAY							
26...	--	.1	4	<1	0	50	<.01
JUN							
15...	--	.1	9	<1	<0	40	<.01
JUL							
14...	--	.2	4	<1	<0	20	<.01
AUG							
10...	--	.1	<1	<1	<0	30	<.01
SEP							
22...	--	.1	3	<1	<0	70	<.01

DATE	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	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)	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
OCT										
20...	<1.9	2.0	<2.8	2.9	3.6	1.7	3.5	1.6	<.1	1.6

07103707 FOUNTAIN CREEK BELOW 8th STREET, AT COLORADO SPRINGS, CO

LOCATION.--Lat 38°49'46", long 104°50'21", in NW¼SE¼ sec.13, T.14 S., R.67 W., El Paso County, Hydrologic Unit 11020003, in Colorado Springs, 270 ft (82 m) downstream from 8th Street and 0.4 mi (0.6 km) upstream from confluence of Fountain Creek and Monument Creek.

PERIOD OF RECORD.--February 1981 to September 1982 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	ALKA-LINITY LAB (MG/L AS CACO3)
OCT												
20...	1240	29	230	220	7.3	8.5	9.4	1.2	83	24	5.7	61
NOV												
18...	1200	7.8	--	497	7.7	7.5	8.9	<2.3	180	47	14	110
DEC												
16...	1445	6.2	--	573	7.9	4.0	10.2	1.0	210	55	17	150
JAN												
15...	1130	5.2	617	620	7.5	.0	12.1	E1.1	230	59	19	160

DATE	SULFIDE TOTAL (MG/L AS S)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	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)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT											
20...	.4	347	.55	.040	.59	.140	.22	.36	.95	.070	.050
NOV											
18...	.6	35	.96	.040	1.0	.140	.33	.47	1.5	.020	.020
DEC											
16...	1.0	53	--	<.020	1.5	.070	.58	.65	2.2	.020	.020
JAN											
15...	.3	33	--	<.020	1.7	.090	.70	.79	2.5	.020	.020

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, HEXA-VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	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)
OCT								
20...	0	0	<1	10	1400	44	6	170
NOV								
18...	2	<10	<1	10	1600	83	9	310
DEC								
16...	1	<10	<1	10	1200	53	6	350
JAN								
15...	1	<10	<1	15	3000	33	9	440

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
20...	67	.1	2	1	<0	50	<.01
NOV							
18...	230	.2	3	3	0	80	<.01
DEC							
16...	300	<.1	<1	3	1	110	<.01
JAN							
15...	380	.1	3	4	0	210	<.01

E ESTIMATED.

07103707 FOUNTAIN CREEK BELOW 8th STREET, AT COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
OCT										
20...	3.7	2.2	5.4	3.2	3.3	2.7	3.1	2.5	<.1	2.0

07103747 MONUMENT CREEK AT PALMER LAKE, CO

LOCATION.--Lat 39°06'07", long 104°53'27", in SE¼SE¼ sec.9, T.11 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on right bank 0.9 mi (1.4 km) upstream from Monument Lake, 1.5 mi (7.4 km) downstream from North Monument Creek, and 1.9 mi (3.1 km) southeast of town of Palmer Lake.

DRAINAGE AREA.--25.9 mi^2 (67.1 km^2).

PERIOD OF RECORD.--Streamflow records, February 1977 to current year. Water-quality data available, April 1977 to September 1980.

GAGE.--Water-stage recorder. Altitude of gage is 6,950 ft (2,118 m), from topographic map. Record not equivalent to former downstream site.

REMARKS.--Records good except those for winter period which are fair. Storage and diversions above station for municipal supply of Palmer Lake.

AVERAGE DISCHARGE.--5 years (water years 1978-82) 4.15 ft^3/s (0.118 m^3/s), 3,010 acre-ft/yr (3.71 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 216 ft^3/s (6.12 m^3/s) Aug. 2, 1981, from rating curve extended above 130 ft^3/s (3.68 m^3/s), gage height, 2.07 ft (0.631 m), from floodmark; minimum daily, 0.10 ft^3/s (0.003 m^3/s) many days in 1978-79.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35 ft^3/s (0.99 m^3/s) at 0415 June 19, gage height, 1.03 ft (0.314 m); minimum daily, 0.66 ft^3/s (0.019 m^3/s) Oct. 6, 8, 10-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB.	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.82	1.4	1.1	1.1	.90	1.1	1.4	2.3	7.8	10	7.7	4.4
2	.82	1.4	1.1	.93	.80	1.2	1.6	2.1	7.2	8.9	5.8	4.1
3	.82	1.4	1.1	.90	.75	1.2	1.5	2.3	8.8	8.1	5.2	3.7
4	.74	1.4	1.1	1.1	.70	1.5	1.4	2.4	8.4	7.3	6.5	3.3
5	.74	1.4	1.0	1.0	.70	1.2	1.5	2.6	7.5	6.5	5.8	3.3
6	.66	1.4	.97	1.0	.70	1.2	1.6	2.6	6.5	5.8	5.2	3.9
7	.74	1.4	.93	1.1	.80	1.2	1.5	2.6	7.1	5.5	4.4	4.4
8	.66	1.5	.93	1.1	.80	1.4	1.5	2.6	6.0	5.2	3.9	3.5
9	.74	1.5	.94	.95	.70	1.4	1.5	2.6	5.0	5.2	3.7	3.1
10	.66	1.4	1.1	.84	.70	1.4	1.4	2.4	4.4	4.9	5.2	2.7
11	.66	1.4	1.1	.91	.70	1.4	1.3	2.3	4.9	4.6	6.2	2.4
12	.74	1.4	1.0	.80	.80	1.6	1.4	3.1	5.4	4.0	5.8	4.1
13	.74	1.3	1.0	.88	1.0	1.7	1.6	4.4	5.5	3.5	5.2	6.9
14	.74	1.3	1.0	.90	1.0	1.9	1.8	7.3	5.1	3.3	4.9	6.5
15	.82	1.3	1.0	.90	1.0	1.9	1.9	8.5	4.8	2.9	5.2	6.2
16	.90	1.2	1.0	1.1	.90	1.9	1.9	9.3	4.5	2.6	6.5	5.2
17	.90	1.3	1.0	.90	.83	1.9	1.7	12	6.9	2.4	6.2	4.4
18	.98	1.4	1.1	.82	.80	1.9	1.5	11	21	2.9	5.5	4.4
19	.90	1.6	1.0	.82	.80	1.8	1.5	11	26	2.6	4.9	4.3
20	.90	1.5	.90	.80	.78	1.8	1.6	11	22	2.1	4.6	4.3
21	.90	1.5	1.1	.80	.82	1.8	1.5	10	23	1.9	13	4.1
22	.98	1.5	.90	.80	.89	1.5	1.4	9.4	21	1.8	14	3.7
23	.98	1.5	.90	.90	.91	1.5	1.6	9.0	20	1.5	14	3.3
24	1.1	1.5	.90	1.1	.96	1.5	1.7	9.0	18	1.2	12	3.2
25	1.1	1.8	1.0	1.1	.98	1.5	1.7	9.8	17	1.2	11	2.9
26	1.1	1.6	.90	.98	1.0	1.4	1.8	12	20	1.3	10	2.9
27	1.1	1.5	.90	.98	1.0	1.5	2.0	11	17	2.1	8.5	2.8
28	1.1	1.5	.90	.90	1.1	1.5	1.9	11	14	6.5	7.7	2.6
29	1.1	1.4	.90	.90	---	1.6	2.0	9.6	12	15	6.9	2.5
30	1.3	1.2	.90	1.0	---	3.0	2.3	9.1	10	13	5.8	2.5
31	1.4	---	1.0	1.0	---	1.4	---	8.8	---	10	4.9	---
TOTAL	27.84	42.9	30.67	29.31	23.82	48.8	49.0	213.1	346.8	153.8	216.2	115.6
MEAN	.90	1.43	.99	.95	.85	1.57	1.63	6.87	11.6	4.96	6.97	3.85
MAX	1.4	1.8	1.1	1.1	1.1	3.0	2.3	12	26	15	14	6.9
MIN	.66	1.2	.90	.80	.70	1.1	1.3	2.1	4.4	1.2	3.7	2.4
AC-FT	55	85	61	58	47	97	97	423	688	305	429	229

CAL YR 1981 TOTAL 1158.13 MEAN 3.17 MAX 20 MIN .40 AC-FT 2300
WTR YR 1982 TOTAL 1297.84 MEAN 3.56 MAX 26 MIN .66 AC-FT 2570

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 (150 m) upstream from diversion to city of Colorado Springs water-treatment plant, 2.7 mi (4.3 km) south of U.S. Air Force Academy chapel, and 4.4 mi (7.1 km) upstream from mouth.

DRAINAGE AREA.--14.9 mi^2 (38.6 km^2).

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 7,180 ft (2,188 m), from topographic map.

REMARKS.--Records good except those for winter period, which are fair. Natural flow of stream affected by transmountain 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.--12 years, 2.25 ft^3/s (0.067 m^3/s), 1,630 acre-ft/yr (2.01 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80 ft^3/s (2.27 m^3/s) May 8, 1980, gage height, 2.73 ft (0.832 m) from rating curve extended above 34 ft^3/s (0.96 m^3/s); maximum gage height, 3.31 ft (1.009 m) Dec. 22, 1976 (backwater from ice); no flow on many days in 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.80 ft^3/s (0.16 m^3/s) at 1900 Aug. 20, gage height, 1.60 ft (0.488 m); maximum gage height, 2.30 ft (0.701 m) at 1100 Feb. 10 (backwater from ice); minimum daily discharge, 0.11 ft^3/s (0.003 m^3/s) April 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	.45	.30	.24	.23	.14	.17	.50	2.9	1.6	.71	1.0
2	.70	.45	.29	.23	.22	.14	.21	.43	2.9	1.5	.64	.94
3	.70	.45	.28	.23	.20	.17	.27	.49	4.2	1.3	.61	.99
4	.63	.45	.27	.23	.20	.14	.19	.44	3.9	1.3	.78	.90
5	.63	.40	.27	.25	.20	.20	.15	.57	4.0	1.2	.57	1.0
6	.63	.40	.28	.23	.20	.20	.14	.51	4.0	1.2	.50	1.0
7	.70	.40	.26	.23	.20	.23	.14	.53	3.9	1.2	1.1	.90
8	.70	.40	.26	.23	.20	.14	.11	.52	3.8	1.2	.63	.84
9	.70	.40	.27	.23	.20	.17	.11	.50	3.6	1.3	.49	.78
10	.63	.35	.27	.22	.20	.20	.12	.45	3.5	1.2	.47	.70
11	.56	.35	.27	.25	.25	.27	.13	.50	3.3	1.1	.44	.73
12	.56	.35	.27	.23	.25	.27	.17	.88	3.2	.96	.46	1.2
13	.50	.35	.27	.23	.22	.20	.16	1.2	3.1	.96	.53	1.4
14	.55	.35	.32	.24	.28	.23	.18	1.5	2.8	.90	.47	1.5
15	.65	.35	.30	.23	.25	.20	.15	1.6	2.8	.80	.51	1.3
16	.69	.31	.30	.23	.26	.17	.14	1.6	2.6	.80	.51	1.2
17	.57	.31	.30	.25	.24	.16	.13	1.7	2.5	.82	.52	1.1
18	.53	.31	.28	.25	.20	.22	.13	1.9	2.9	.69	.47	1.1
19	.59	.31	.27	.25	.19	.22	.13	2.0	2.7	.66	.41	1.1
20	.47	.31	.26	.23	.20	.14	.13	2.0	2.4	.67	1.3	1.4
21	.45	.31	.24	.23	.20	.14	.27	2.2	2.2	.60	2.1	1.4
22	.45	.31	.27	.20	.20	.15	.28	2.2	2.1	.52	1.5	1.1
23	.45	.31	.25	.20	.23	.17	.26	2.3	2.1	.49	1.4	1.1
24	.45	.31	.24	.20	.17	.12	.28	2.4	2.1	.46	1.4	1.1
25	.45	.31	.24	.21	.14	.14	.26	3.0	2.1	.46	1.6	1.0
26	.45	.31	.25	.21	.14	.13	.30	3.1	2.0	.51	1.5	1.0
27	.45	.31	.27	.20	.14	.12	.44	3.1	1.9	.91	1.4	.99
28	.45	.31	.27	.20	.14	.13	.41	3.1	1.8	1.6	1.4	.93
29	.40	.31	.27	.21	---	.16	.38	3.1	1.7	1.8	1.3	.89
30	.45	.31	.26	.20	---	.16	1.1	3.1	1.6	1.2	1.2	.93
31	.45	---	.25	.20	---	.19	---	3.1	---	.95	1.1	---
TOTAL	17.29	10.55	8.40	6.97	5.75	5.42	7.04	50.52	84.6	30.86	28.02	31.52
MEAN	.56	.35	.27	.22	.21	.17	.23	1.63	2.82	1.00	.90	1.05
MAX	.70	.45	.32	.25	.28	.27	1.1	3.1	4.2	1.8	2.1	1.5
MIN	.40	.31	.24	.20	.14	.12	.11	.43	1.6	.46	.41	.70
AC-FT	34	21	17	14	11	11	14	100	168	61	56	63

CAL YR 1981 TOTAL 264.75 MEAN .73 MAX 10 MIN .01 AC-FT 525
WTR YR 1982 TOTAL 286.94 MEAN .79 MAX 4.2 MIN .11 AC-FT 569

07103950 KETTLE CREEK NEAR BLACK FOREST, CO

LOCATION.--Lat 39°00'14", long 104°44'21", in NE¼SE¼ sec.14, T.12 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on right bank 13 ft (4 m) downstream from bridge on Milan Rd., 1.2 mi (1.9 km) downstream from Burgess Creek, and 2.2 mi (3.5 km) southwest of Black Forest.

DRAINAGE AREA.--9.01 mi² (23.34 km²).

PERIOD OF RECORD.--May 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,980 ft (2,130 m), from topographic map.

REMARKS.--Records good except those above 20 ft³/s (0.57 m³/s), which are fair, and those for period of no gage-height record, which are poor. No known diversion above station. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--6 years, 0.79 ft³/s (0.022 m³/s), 572 acre-ft/yr (0.71 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft³/s (65.1 m³/s) Aug. 5, 1981, gage height, 4.41 ft (0.549 m), from floodmark, from rating curve extended above 20 ft³/s (0.57 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5 ft³/s (0.19 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 11	1400	7.2	0.20	0.66	0.210	Sept. 6	2100	10	0.28	0.76	0.232
June 17	1400	6.8	0.19	0.68	0.207	Sept. 13	1700	* 16	0.45	0.87	0.265
July 28	1845	8.9	0.25	0.78	0.238						

Minimum daily discharge, 0.10 ft³/s (0.003 m³/s) Apr. 17-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	.40	.27	.35	.55	.56	.27	.17	.45	.31	.20	.17
2	.40	.40	.33	.30	.45	.62	.23	.14	.50	.23	.23	.17
3	.31	.35	.45	.30	.40	.56	.14	.17	1.5	.20	.17	.17
4	.35	.35	.45	.35	.38	.45	.12	.17	1.4	.20	.35	.17
5	.31	.31	.45	.40	.35	.40	.14	.23	1.2	.20	.32	.20
6	.31	.31	.50	.40	.30	.50	.12	.17	.56	.20	.23	.70
7	.35	.40	.40	.40	.30	.60	.12	.20	.50	.17	.20	1.0
8	.45	.35	.27	.40	.33	.50	.12	.17	.35	.20	.17	1.2
9	.40	.40	.27	.40	.35	.31	.14	.14	.27	.23	.23	1.2
10	.40	.45	.35	.45	.40	.27	.17	.20	.23	.23	.31	1.0
11	.35	.35	.56	.48	.55	.40	.17	.17	1.1	.20	.23	1.1
12	.35	.27	.52	.50	.70	.35	.12	.31	.31	.35	.35	2.0
13	.30	.31	.47	.52	.80	.27	.12	.47	.27	.27	.40	3.5
14	.31	.35	.45	.56	1.0	.23	.12	.44	.23	.23	.20	3.6
15	.27	.31	.35	.62	1.1	.23	.12	.27	.23	.20	.23	2.0
16	.45	.39	.30	.56	1.1	.27	.12	.35	.27	.17	.17	1.4
17	.45	.41	.27	.56	.96	.27	.10	.31	1.3	.20	.35	1.3
18	.40	.46	.27	.62	.76	.17	.10	.31	.92	.23	.40	1.0
19	.35	.45	.14	.62	.68	.31	.10	.18	.76	.27	.27	.76
20	.35	.35	.14	.62	.76	.20	.10	.15	.40	.23	.81	.69
21	.40	.45	.20	.55	1.0	.20	.10	.24	.35	.20	.50	.56
22	.45	.50	.20	.50	1.1	.18	.10	.28	.50	.17	.27	.45
23	.40	.62	.17	.53	1.0	.14	.12	.28	.40	.14	.20	.40
24	.45	.56	.17	.60	1.0	.14	.12	.33	.27	.14	.20	.40
25	.40	.50	.20	.65	.69	.17	.12	.35	.37	.14	.17	.35
26	.45	.62	.20	.70	.62	.27	.19	.40	.62	.17	.23	.31
27	.40	.54	.23	.70	.69	.23	.31	.31	.40	.39	.20	.23
28	.31	.40	.27	.70	.69	.14	.20	.31	.31	.60	.14	.20
29	.40	.34	.31	.60	---	.17	.20	.35	.35	.40	.14	.17
30	.40	.36	.31	.60	---	.17	.17	.31	.35	.27	.17	.31
31	.45	---	.35	.60	---	.14	---	.35	---	.17	.17	---
TOTAL	11.77	12.26	9.82	16.14	19.01	9.42	4.37	8.23	16.67	7.31	8.21	26.71
MEAN	.38	.41	.32	.52	.68	.30	.15	.27	.56	.24	.26	.89
MAX	.45	.62	.56	.70	1.1	.62	.31	.47	1.5	.60	.81	3.6
MIN	.27	.27	.14	.30	.30	.14	.10	.14	.23	.14	.14	.17
AC-FT	23	24	19	32	38	19	8.7	16	33	14	16	53

CAL YR 1981	TOTAL 568.58	MEAN 1.56	MAX 220	MIN .05	AC-FT 1130
WTR YR 1982	TOTAL 149.92	MEAN .41	MAX 3.6	MIN .10	AC-FT 297

NOTE.--NO GAGE-HEIGHT RECORD DEC. 25 TO FEB. 18.

07104000 MONUMENT CREEK AT PIKEVIEW, CO

LOCATION.--Lat 38°55'04", long 104°49'05", in NW¼SE¼ sec.18, T.13 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on right bank at downstream side of abandoned bridge at northeast edge of Pikeview, 600 ft (180 m) upstream from unnamed tributary, 1,200 ft (370 m) upstream from bridge on U.S. Interstate Highway I-25, and 0.7 mi (1.1 km) downstream from Dry Creek.

DRAINAGE AREA.--204 mi^2 (528 km^2).

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 (1,890.754 m), National Geodetic Vertical Datum of 1929. September 1938 to October 1949, nonrecording gage at present site at datum 0.10 ft (0.030 m) lower.

REMARKS.--Records good except those for winter period, 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.--17 years (water years 1939-49, 1977-82), 23.6 ft^3/s (0.668 m^3/s), 17,100 acre-ft/yr (21.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,750 ft^3/s (106 m^3/s) Aug. 5, 1981, gage height, 7.48 ft (2.280 m), from rating curve extended above 100 ft^3/s (2.8 m^3/s), on basis of slope-area measurement of peak flow; no flow July 24, 1939.

EXTREMES OUTSIDE PERIDO OF RECORD.--Flood of May 30, 1935, reached a stage of about 14 ft (4.3 m) present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,500 ft^3/s (70.8 m^3/s) at 1800 Aug. 4, gage height, 6.09 ft (1.856 m), from floodmark, from rating curve extended above 100 ft^3/s (2.8 m^3/s), on basis of slope-area measurements of peak flow; minimum daily, 5.5 ft^3/s (0.16 m^3/s) July 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	9.1	14	10	10	8.3	12	14	62	28	25	22
2	11	8.6	15	9.4	9.0	8.0	12	14	69	24	26	21
3	12	11	13	9.4	8.0	8.3	12	13	58	23	32	21
4	13	11	13	11	8.0	8.6	13	13	45	22	136	18
5	11	9.8	12	12	8.0	9.8	13	17	42	21	26	14
6	9.0	9.8	13	12	8.0	10	14	18	37	20	17	15
7	11	9.8	12	10	9.0	10	13	17	33	19	33	17
8	11	12	13	10	9.0	10	13	17	31	18	19	15
9	11	9.0	13	11	8.0	11	11	16	26	20	19	14
10	9.8	9.0	13	10	8.0	11	12	15	24	20	23	10
11	9.2	9.8	13	10	9.0	11	12	15	26	17	17	11
12	9.2	9.0	13	9.0	11	11	12	32	27	15	20	11
13	9.2	11	13	9.0	12	10	11	36	27	14	23	45
14	8.8	9.0	12	10	12	10	11	41	24	13	21	33
15	11	11	12	10	12	11	11	38	23	13	22	30
16	10	10	12	9.0	12	10	11	30	23	13	23	23
17	8.6	10	12	10	10	9.4	9.8	28	36	12	20	20
18	8.7	9.4	14	11	10	9.4	11	28	54	12	20	19
19	9.0	9.8	15	11	9.8	10	12	31	60	11	36	19
20	8.6	9.8	12	11	9.4	9.4	12	33	56	8.3	44	19
21	7.7	9.4	12	10	10	9.8	12	36	50	6.9	30	19
22	8.8	9.0	11	10	10	11	11	38	48	6.2	27	19
23	8.6	11	8.6	12	9.4	10	11	37	46	6.2	27	18
24	7.7	10	8.0	12	8.6	11	11	40	50	5.8	29	17
25	7.2	11	8.0	12	9.0	11	11	58	47	5.5	29	16
26	8.3	11	9.0	12	9.8	10	14	86	48	6.6	29	17
27	8.0	11	9.0	11	9.4	11	14	78	42	27	27	17
28	7.6	13	9.0	10	8.6	11	12	76	37	40	25	16
29	7.2	13	8.4	10	---	11	12	71	32	39	24	16
30	9.0	13	10	11	---	12	14	62	32	31	23	16
31	9.4	---	10	11	---	12	---	64	---	27	22	---
TOTAL	292.6	309.3	362.0	325.8	267.0	316.0	359.8	1112	1215	544.5	894	568
MEAN	9.44	10.3	11.7	10.5	9.54	10.2	12.0	35.9	40.5	17.6	28.8	18.9
MAX	13	13	15	12	12	12	14	86	69	40	136	45
MIN	7.2	8.6	8.0	9.0	8.0	8.0	9.8	13	23	5.5	17	10
AC-FT	580	613	718	646	530	627	714	2210	2410	1080	1770	1130

CAL YR 1981 TOTAL 6803.0 MEAN 18.6 MAX 184 MIN 3.4 AC-FT 13490
WTR YR 1982 TOTAL 6566.0 MEAN 18.0 MAX 136 MIN 5.5 AC-FT 13020

07104000 MONUMENT CREEK AT PIKEVIEW, CO--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	ALKA-LINITY LAB (MG/L AS CACO3)
OCT 20...	0930	8.3	398	400	7.6	6.0	10.1	1.8	170	55	7.6	100
NOV 18...	0920	9.8	348	360	7.7	5.0	9.0	<2.1	160	50	7.4	99
DEC 16...	1130	13	--	428	7.8	2.0	10.4	1.8	160	51	7.3	100
JAN 14...	1430	10	--	420	7.4	.5	11.2	E2.2	160	50	7.3	100
FEB 22...	1115	12	348	335	7.3	8.5	9.3	4.0	--	--	--	89
MAR 23...	1320	11	365	355	7.2	14.5	7.4	2.0	--	--	--	86
APR 27...	1045	13	340	340	7.4	10.0	8.7	<4.5	--	--	--	85
MAY 26...	1015	60	212	232	7.4	12.0	9.5	9.6	--	--	--	63
JUN 15...	0930	22	266	285	7.3	13.5	8.7	3.3	--	--	--	78
JUL 14...	1030	14	314	322	7.4	20.5	7.3	5.1	--	--	--	88
AUG 10...	1100	17	322	339	7.4	22.0	6.6	E6.0	--	--	--	95
SEP 22...	0945	19	315	337	7.5	10.5	9.3	E2.7	--	--	--	91

DATE	SULFIDE TOTAL (MG/L AS S)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	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)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT 20...	.1	32	1.4	.040	1.4	.140	.50	.64	2.0	.140	.060
NOV 18...	.5	55	1.5	.030	1.5	.150	.45	.60	2.1	.100	.090
DEC 16...	.4	207	--	<.020	2.0	.100	.57	.67	2.7	.080	.100
JAN 14...	2.1	68	--	<.020	1.9	.240	.75	.99	2.9	.110	.110
FEB 22...	--	57	--	<.020	1.8	.180	.92	1.10	2.9	--	--
MAR 23...	--	130	--	<.020	1.7	.070	.53	.60	2.3	--	--
APR 27...	--	111	1.1	.050	1.1	.160	1.1	1.30	2.4	--	--
MAY 26...	--	710	.53	.040	.57	.150	1.4	1.50	2.1	--	--
JUN 15...	--	132	.76	.020	.78	.150	.95	1.10	1.9	--	--
JUL 14...	--	80	--	<.020	1.0	.060	2.2	2.30	3.3	--	--
AUG 10...	--	250	.77	.040	.81	.280	1.3	1.60	2.4	--	--
SEP 22...	--	170	--	<.020	1.2	.200	1.3	1.50	2.7	--	--

E ESTIMATED.

07104000 MONUMENT CREEK AT PIKEVIEW, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, HEXA-VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	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)
OCT								
20...	7	0	<1	36	2700	<10	6	140
NOV								
18...	1	<10	<1	7	1900	32	2	100
DEC								
16...	<1	<10	<1	21	4900	14	7	200
JAN								
14...	2	<10	<1	23	2900	17	4	90
FEB								
22...	<1	<10	<1	13	5500	--	10	160
MAR								
23...	2	<10	<1	12	3200	--	5	90
APR								
27...	<1	<10	<1	15	7300	--	18	200
MAY								
26...	<1	<10	<1	18	12000	--	25	520
JUN								
15...	<1	<10	<1	6	2400	--	3	90
JUL								
14...	<1	<10	<1	7	1800	--	7	70
AUG								
10...	<1	<10	<1	6	4500	--	2	150
SEP								
22...	<1	<10	<1	5	3100	--	9	100

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
20...	56	.0	15	2	0	70	<.01
NOV							
18...	36	.2	1	2	0	30	<.01
DEC							
16...	23	.1	<1	2	<0	40	<.01
JAN							
14...	29	.1	3	2	0	50	<.01
FEB							
22...	--	.1	5	3	0	110	<.01
MAR							
23...	--	.1	7	2	<0	40	<.01
APR							
27...	--	.2	7	2	0	130	<.01
MAY							
26...	--	.2	6	2	0	100	<.01
JUN							
15...	--	.3	3	1	<0	30	<.01
JUL							
14...	--	.4	4	<1	<0	40	<.01
AUG							
10...	--	.4	7	2	0	30	<.01
SEP							
22...	--	.3	<1	1	<0	30	<.01

DATE	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
OCT										
20...	<7.4	4.8	<11	7.0	6.7	4.4	6.4	4.2	<.1	5.7

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.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	ALKA-LINITY LAB (MG/L AS CACO3)
OCT 20...	1040	12	595	580	8.0	8.0	9.8	2.4	240	72	14	140
NOV 18...	1015	11	550	550	8.0	7.0	9.2	<6.6	240	70	15	140
DEC 16...	1315	9.1	--	590	8.0	4.5	10.0	4.5	230	68	14	130
JAN 15...	0950	14	563	620	7.7	.5	11.9	E1.6	240	72	14	140
FEB 22...	1200	19	455	450	7.8	8.0	9.5	5.1	--	--	--	110
MAR 23...	1415	12	524	500	7.5	16.5	7.4	2.7	--	--	--	110
APR 27...	1300	19	489	480	7.7	14.0	8.0	<4.5	--	--	--	110
MAY 26...	1115	64	--	304	7.4	14.5	8.8	7.8	--	--	--	75
JUN 15...	1015	26	405	411	--	16.0	8.2	3.6	--	--	--	100
JUL 14...	1115	17	447	470	7.9	24.0	7.1	6.9	--	--	--	120
AUG 10...	1215	19	473	482	7.7	26.0	6.3	E5.5	--	--	--	120
SEP 22...	1115	25	461	473	7.9	18.0	7.7	E4.5	--	--	--	120

DATE	SULFIDE TOTAL (MG/L AS S)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	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)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT 20...	.6	371	1.7	.040	1.7	.160	.71	.87	2.6	.180	.170
NOV 18...	1.2	101	1.7	.040	1.7	.140	.69	.83	2.5	.070	.070
DEC 16...	.6	705	--	<.020	2.0	.070	.93	1.00	3.0	.170	.090
JAN 15...	.5	31	--	<.020	2.3	.240	.76	1.00	3.3	.090	.010
FEB 22...	--	1590	.97	.030	1.0	.340	.49	.83	1.8	--	--
MAR 23...	--	206	--	<.020	1.9	<.060	--	.62	2.5	--	--
APR 27...	--	516	1.3	.090	1.4	.270	1.4	1.70	3.1	--	--
MAY 26...	--	1060	.71	.020	.73	.090	1.3	1.40	2.1	--	--
JUN 15...	--	237	.83	.020	.85	.150	.85	1.00	1.9	--	--
JUL 14...	--	73	--	<.020	.88	<.060	--	2.90	3.8	--	--
AUG 10...	--	253	.96	.040	1.0	.120	1.2	1.30	2.3	--	--
SEP 22...	--	355	1.3	.030	1.3	.200	1.6	1.80	3.1	--	--

E ESTIMATED.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, HEXA-VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	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)
OCT								
20...	0	0	<1	35	3400	<10	8	110
NOV								
18...	1	<10	<1	11	3500	10	5	100
DEC								
16...	<1	<10	<1	44	27000	12	35	690
JAN								
15...	1	<10	<1	8	1100	31	5	50
FEB								
22...	<1	<10	<1	45	35000	--	32	730
MAR								
23...	2	<10	<1	11	5400	--	8	130
APR								
27...	<1	<10	<1	21	13000	--	16	260
MAY								
26...	<1	<10	<1	27	21000	--	18	520
JUN								
15...	<1	<10	<1	9	4400	--	5	130
JUL								
14...	<1	<10	<1	7	2600	--	4	90
AUG								
10...	<1	<10	<1	8	5200	--	1	140
SEP								
22...	1	<10	<1	13	7300	--	8	170

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
20...	20	.1	3	4	<0	70	<.01
NOV							
18...	16	.2	4	5	<0	30	<.01
DEC							
16...	30	.1	16	4	<0	190	<.01
JAN							
15...	25	.1	3	5	<0	20	<.01
FEB							
22...	--	.2	21	5	0	200	<.01
MAR							
23...	--	.1	10	4	<0	50	<.01
APR							
27...	--	.2	8	4	0	100	<.01
MAY							
26...	--	.2	11	2	0	130	<.01
JUN							
15...	--	.2	10	2	<0	30	<.01
JUL							
14...	--	.2	5	1	<0	50	<.01
AUG							
10...	--	.2	5	3	<0	50	<.01
SEP							
22...	--	.2	8	2	0	70	<.01

DATE	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
OCT										
20...	<8.1	4.8	<12	7.1	5.5	6.3	5.3	6.1	<.1	7.4

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 (9.4 m) upstream from bridge on Nevada Ave. in Colorado Springs, 100 ft (30 m) downstream from mouth of Cheyenne Creek, and 1.3 mi (2.1 km) downstream from Monument Creek.

DRAINAGE AREA.--392 mi^2 (1,015 km^2).

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. Altitude of gage is 5,900 ft (1,800 m), from topographic map. Prior to Oct. 1, 1972, nonrecording gage at same site at different datum.

REMARKS.--Records good except those for winter period, which are fair. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation and municipal use, and return flow from irrigated areas.

AVERAGE DISCHARGE.--9 years (water years 1922-24, 1977-82), 49.3 ft^3/s (1.396 m^3/s), 35,720 acre-ft/yr (44.0 hm^3/yr). The figure published in the 1981 report was in error; the correct figure is 8 years, 49.1 ft^3/s (1.391 m^3/s), 35,570 acre-ft/yr (43.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,000 ft^3/s (170 m^3/s) July 29, 1978, gage height, 7.15 ft (2.179 m), from rating curve extended above 2,400 ft^3/s (68.0 m^3/s); minimum daily, 2.0 ft^3/s (0.06 m^3/s) Aug. 19, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,050 ft^3/s (86.4 m^3/s) at 1830 Aug. 4, gage height, 6.52 ft (1.987 m); from rating curve extended on basis of slope-area measurement of peak flow; minimum daily, 8.2 ft^3/s (0.23 m^3/s) July 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	34	19	22	24	24	17	20	78	54	48	51
2	37	36	22	22	24	23	14	20	117	50	42	45
3	40	34	21	22	25	25	16	21	426	50	63	38
4	39	32	19	19	24	48	16	17	159	40	349	33
5	37	30	20	24	21	32	16	66	131	33	108	46
6	37	27	18	22	21	35	18	32	109	29	73	54
7	35	24	17	19	23	29	18	29	88	28	272	55
8	35	24	18	20	27	26	15	29	74	33	78	56
9	40	23	19	25	27	26	15	29	69	32	63	57
10	40	22	20	22	24	25	16	25	65	34	226	40
11	35	22	19	20	26	24	15	24	64	38	147	40
12	35	22	19	22	27	25	15	212	135	38	112	107
13	40	22	18	20	29	25	15	119	88	37	147	251
14	42	22	18	21	39	25	15	113	68	33	75	138
15	57	22	18	23	37	22	14	91	64	21	130	129
16	51	21	19	22	39	20	14	75	70	14	100	89
17	38	22	17	27	35	21	15	91	100	14	86	82
18	37	22	16	25	30	19	14	84	190	15	86	79
19	37	22	23	23	31	19	14	78	141	14	198	79
20	36	20	23	22	27	17	17	73	124	12	305	94
21	34	22	21	20	28	17	17	65	108	11	312	77
22	35	22	21	21	28	18	15	76	97	11	196	75
23	38	22	14	16	27	18	15	72	97	11	168	75
24	34	22	15	24	23	18	15	127	169	9.0	157	70
25	34	22	21	24	21	19	15	175	107	8.2	140	64
26	35	21	22	26	24	22	80	145	136	11	124	68
27	35	20	22	26	24	20	33	118	93	126	103	68
28	35	20	22	24	24	20	23	108	80	275	88	63
29	35	21	18	24	---	18	22	100	70	132	80	62
30	38	22	25	23	---	16	24	88	57	82	75	62
31	37	---	22	26	---	17	---	100	---	61	64	---
TOTAL	1172	717	606	696	759	713	568	2422	3374	1356.2	4215	2247
MEAN	37.8	23.9	19.5	22.5	27.1	23.0	18.9	78.1	112	43.7	136	74.9
MAX	57	36	25	27	39	48	80	212	426	275	349	251
MIN	34	20	14	16	21	16	14	17	57	8.2	42	33
AC-FT	2320	1420	1200	1380	1510	1410	1130	4800	6690	2690	8360	4460

CAL YR 1981 TOTAL 15010.0 MEAN 41.1 MAX 654 MIN 9.0 AC-FT 29770
WTR YR 1982 TOTAL 18845.2 MEAN 51.6 MAX 426 MIN 8.2 AC-FT 37380

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	NITROGEN DISSOLVED (MG/L AS N)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
OCT											
21...	0915	29	--	400	7.5	6.0	9.9	1.7	2.1	150	43
NOV											
19...	1045	16	--	582	7.5	4.5	9.6	2.8	3.9	230	65
DEC											
17...	1020	14	--	768	7.8	1.0	10.6	3.0	1.8	290	80
JAN											
19...	0900	34	684	695	7.8	2.0	10.9	2.8	1.2	260	73
FEB											
23...	0930	33	--	520	7.8	4.0	10.4	--	3.6	--	--
MAR											
24...	0930	19	--	600	7.8	7.0	10.1	--	1.4	--	--
APR											
28...	1000	26	655	--	7.4	11.5	8.6	--	3.5	--	--
MAY											
27...	1045	120	456	--	7.3	16.5	8.5	--	6.5	--	--
JUN											
16...	0930	78	431	--	7.6	13.5	8.7	--	E4.8	--	--
JUL											
15...	1030	29	--	515	7.7	20.5	7.8	--	17	--	--
AUG											
11...	1530	88	316	327	7.5	22.5	6.8	--	E6.0	--	--
SEP											
13...	1030	102	373	301	7.6	13.0	8.9	--	5.0	--	--

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	ALKALINITY LAB (MG/L AS CACO3)	SULFIDE TOTAL (MG/L AS S)	CHLORINE, TOTAL RESIDUAL (MG/L)	CHLORIDE, DISSOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 105 DEG. C, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)
OCT											
21...	11	94	.1	<.01	12	277	397	1.0	1.10	.060	.050
NOV											
19...	17	130	.5	<.01	18	425	55	1.5	1.60	.020	.020
DEC											
17...	22	160	.3	<.01	21	538	94	--	--	<.020	<.020
JAN											
19...	18	140	.6	<.01	23	468	41	--	--	<.020	<.020
FEB											
23...	--	130	--	<.01	--	--	297	2.0	--	.020	--
MAR											
24...	--	130	--	<.01	--	--	128	--	--	<.020	--
APR											
28...	--	120	--	<.01	--	--	254	1.4	--	.050	--
MAY											
27...	--	71	--	<.01	--	--	204	.66	--	.040	--
JUN											
16...	--	86	--	<.01	--	--	202	.78	--	.030	--
JUL											
15...	--	120	--	<.01	--	--	30	1.1	--	.020	--
AUG											
11...	--	80	--	<.01	--	--	318	.74	--	.040	--
SEP											
13...	--	76	--	<.01	--	--	318	.66	--	.040	--

E ESTIMATED.

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT 21...	1.1	1.1	.360	.340	.45	.21	.81	.55	1.9	.200	.180
NOV 19...	1.5	1.6	.180	.170	1.2	1.0	1.40	1.2	2.9	.050	.030
DEC 17...	2.3	2.3	.120	.120	.67	.59	.79	.71	3.1	.100	.070
JAN 19...	2.4	2.3	.300	.270	.27	.25	.57	.52	3.0	.050	.090
FEB 23...	2.0	--	.150	--	.55	--	.70	--	2.7	--	--
MAR 24...	2.0	--	.100	--	.69	--	.79	--	2.8	--	--
APR 28...	1.4	--	.170	--	1.2	--	1.40	--	2.8	--	--
MAY 27...	.70	--	.140	--	.76	--	.90	--	1.6	--	--
JUN 16...	.81	--	.190	--	1.1	--	1.30	--	2.1	--	--
JUL 15...	1.1	--	<.060	--	--	--	.90	--	2.0	--	--
AUG 11...	.78	--	.120	--	1.5	--	1.60	--	2.4	--	--
SEP 13...	.70	--	.110	--	1.1	--	1.20	--	1.9	--	--

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	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)
OCT 21...	0	0	<1	16	1700	37	5	150
NOV 19...	<1	<10	<1	9	1900	17	5	190
DEC 17...	<1	<10	<1	10	2000	16	3	250
JAN 19...	1	<10	<1	4	1400	<10	3	190
FEB 23...	<1	10	<1	16	6200	--	11	250
MAR 24...	3	<10	<1	11	3600	--	4	230
APR 28...	<1	<10	<1	14	6600	--	12	250
MAY 27...	<1	<10	<1	17	5600	--	14	250
JUN 16...	<1	<10	<1	35	4000	--	11	180
JUL 15...	<1	<10	<1	5	1100	--	3	150
AUG 11...	<1	<10	<1	9	9300	--	20	320
SEP 13...	<1	<10	<1	12	7500	--	250	250

07105500 FOUNTAIN CREEK AT COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
21...	65	.0	4	2	0	80	<.01
NOV							
19...	140	.2	2	3	0	40	<.01
DEC							
17...	210	.1	6	4	<0	70	<.01
JAN							
19...	160	.2	10	5	0	190	<.01
FEB							
23...	--	.1	6	3	0	80	<.01
MAR							
24...	--	<.1	10	4	<0	70	<.01
APR							
28...	--	.1	8	4	0	110	<.01
MAY							
27...	--	.1	5	3	0	70	<.01
JUN							
16...	--	.3	8	2	0	60	<.01
JUL							
15...	--	.2	8	1	<0	60	<.01
AUG							
11...	--	<.1	<1	2	<0	120	<.01
SEP							
13...	--	.2	2	2	0	90	<.01

DATE	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)	RA-226, DISSOLVED, PLANCHET COUNT (PCI/L)	URANIUM NATURAL DISSOLVED (UG/L AS U)
OCT										
21...	<7.4	2.9	<11	4.2	4.4	3.2	4.2	3.0	<.1	3.8

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 (61 m) 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 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	NITROGEN DISSOLVED (MG/L AS N)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
OCT 21...	1040	85	641	650	7.3	9.5	8.8	4.1	12	170	42
NOV 19...	1145	38	--	875	7.2	12.0	7.2	6.3	>30	190	50
DEC 17...	1115	36	--	850	7.2	9.0	8.1	16	13	210	54
JAN 19...	1000	86	804	845	7.2	8.5	8.7	18	12	190	51
FEB 23...	1045	91	729	--	7.0	9.0	8.6	--	11	170	44
MAR 24...	1030	67	770	780	7.0	11.5	8.0	--	15	180	47
APR 28...	1230	76	793	770	7.3	17.0	7.1	--	13	200	51
MAY 27...	1245	149	--	490	7.4	15.5	8.3	--	10	130	38
JUN 16...	1100	111	--	592	7.4	16.0	7.8	--	E9.0	160	42
JUL 15...	1200	69	798	795	7.0	21.5	6.7	--	35	190	50
AUG 11...	1315	136	595	611	7.0	20.5	6.9	--	E19	160	42
SEP 13...	1115	172	--	525	7.5	14.0	8.6	--	15	140	35

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFIDE TOTAL (MG/L AS S)	CHLORINE, TOTAL RESIDUAL (MG/L)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT 21...	15	--	--	--	130	.1	<.01	36	--	--
NOV 19...	17	--	--	--	94	.6	<.01	50	--	--
DEC 17...	19	--	--	--	130	.6	<.01	39	--	--
JAN 19...	16	--	--	--	180	1.8	<.01	45	--	--
FEB 23...	14	72	2.6	7.7	140	--	.01	42	1.6	14
MAR 24...	15	84	2.9	9.3	110	--	.01	46	2.3	17
APR 28...	17	73	2.4	9.0	84	--	<.01	40	2.5	14
MAY 27...	9.7	41	1.6	5.1	100	--	<.01	17	2.4	15
JUN 16...	13	54	2.0	6.8	120	--	.01	31	1.5	15
JUL 15...	17	78	2.6	8.2	140	--	.01	34	2.1	15
AUG 11...	13	52	1.9	5.5	99	--	.01	24	2.5	15
SEP 13...	12	49	2.0	6.1	80	--	.01	21	1.8	14

E ESTIMATED.

07105530 FOUNTAIN CREEK BELOW JANITELL ROAD BELOW COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 105 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)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT										
21...	426	--	--	--	6	.69	.92	.140	.180	.83
NOV										
19...	489	--	--	--	100	.81	.92	.180	.180	.99
DEC										
17...	523	--	--	--	69	1.6	1.60	.110	.110	1.7
JAN										
19...	487	--	--	--	45	1.0	.91	.070	.050	1.1
FEB										
23...	449	420	.57	103	141	.93	--	.060	--	.99
MAR										
24...	495	457	.62	82.7	49	.86	--	.080	--	.94
APR										
28...	487	437	.59	89.7	80	1.1	--	.090	--	1.2
MAY										
27...	303	289	.39	116	222	.64	--	.060	--	.70
JUN										
16...	385	368	.50	110	140	.82	--	.070	--	.89
JUL										
15...	493	457	.62	85.1	35	.75	--	.210	--	.96
AUG										
11...	385	354	.48	130	206	.71	--	.170	--	.88
SEP										
13...	376	297	.40	138	256	.75	--	.550	--	1.3

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, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT										
21...	1.1	--	--	--	--	11.0	3.0	12	3.50	.990
NOV										
19...	1.1	12.0	11.0	4.0	4.0	16.0	15	17	5.60	4.20
DEC										
17...	1.7	12.0	12.0	2.0	2.0	14.0	14	16	4.20	.860
JAN										
19...	.96	--	--	--	--	17.0	17	18	5.30	.830
FEB										
23...	--	12.0	--	3.0	--	15.0	--	16	--	--
MAR										
24...	--	13.0	--	4.0	--	17.0	--	18	--	--
APR										
28...	--	10.0	--	5.0	--	15.0	--	16	--	--
MAY										
27...	--	4.60	--	1.9	--	6.50	--	7.2	--	--
JUN										
16...	--	5.50	--	.00	--	5.50	--	6.4	--	--
JUL										
15...	--	11.0	--	2.0	--	13.0	--	14	--	--
AUG										
11...	--	5.10	--	4.2	--	9.30	--	10	--	--
SEP										
13...	--	5.20	--	4.2	--	9.40	--	11	--	--

07105530 FOUNTAIN CREEK BELOW JANITELL ROAD BELOW COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	CHROMIUM, HEXAVALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)
OCT								
21...	1	0	<1	27	1700	49	11	330
NOV								
19...	1	10	<1	37	8700	44	46	460
DEC								
17...	1	<10	<1	19	920	55	5	180
JAN								
19...	1	10	<1	15	1300	66	7	150
FEB								
23...	<1	10	<1	17	2600	46	10	170
MAR								
24...	1	<10	<1	13	1200	54	7	160
APR								
28...	1	10	<1	20	3000	16	10	190
MAY								
27...	1	<10	<1	18	5300	48	13	250
JUN								
16...	<1	<10	<1	9	2500	28	7	180
JUL								
15...	<1	<10	<1	12	750	33	4	170
AUG								
11...	<1	<10	<1	27	21000	43	38	780
SEP								
13...	1	<10	<1	23	6200	17	23	250

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
21...	240	.1	23	5	3	130	.04
NOV							
19...	190	.3	28	6	2	200	.04
DEC							
17...	150	.1	25	7	2	80	.06
JAN							
19...	140	.1	22	6	1	80	.04
FEB							
23...	120	.1	11	4	2	120	.01
MAR							
24...	130	.1	24	5	1	100	.01
APR							
28...	110	<.1	16	5	1	130	.01
MAY							
27...	42	.1	11	3	0	100	.01
JUN							
16...	70	.1	10	4	0	60	<.01
JUL							
15...	120	.3	16	4	1	80	<.01
AUG							
11...	110	.2	14	7	0	180	.01
SEP							
13...	52	.1	76	4	0	100	<.01

DATE	GROSS ALPHA, DISSOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DISSOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DISSOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RA-226, DISSOLVED, PLANCHET COUNT (PCI/L)	URANIUM NATURAL DISSOLVED (UG/L AS U)
OCT										
21...	<8.8	4.4	<13	6.4	8.8	3.1	8.4	3.0	<.1	1.8

07105535 FOUNTAIN CREEK BELOW CIRCLE DRIVE BELOW COLORADO SPRINGS, CO

LOCATION.--Lat 38°47'46", long 104°47'05", in NW¼NE¼ sec.33, T.14 S., R.66 W., El Paso County, Hydrologic Unit 11020003, approximately 600 ft (183 m) downstream from Circle Drive below Colorado Springs.

PERIOD OF RECORD.--December 1979 to September 1982 (discontinued).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	NITRO-GEN DIS-SOLVED (MG/L AS N)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT 21...	1215	79	697	660	7.2	10.0	9.2	6.9	18	170	43
NOV 19...	1330	38	808	789	7.3	12.5	7.4	6.9	30	220	55
DEC 17...	1220	36	833	883	7.4	9.0	8.6	16	14	220	55
JAN 19...	1120	89	836	855	7.2	9.5	8.5	17	12	190	51

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)	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RINE, TOTAL RESI-DUAL (MG/L)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT 21...	15	69	2.5	8.2	120	.0	160	<.01	32	15
NOV 19...	19	81	2.6	8.4	140	.8	190	<.01	36	15
DEC 17...	20	81	2.6	8.5	110	.6	190	<.01	42	14
JAN 19...	16	84	2.8	8.5	180	.6	150	<.01	44	16

DATE	SOLIDS, RESIDUE AT 105 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)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT 21...	453	419	.57	89.4	26	.77	.74	.220	.220	.99
NOV 19...	516	495	.67	50.8	26	1.3	1.20	.310	.300	1.6
DEC 17...	541	485	.66	47.1	53	1.6	1.60	.190	.190	1.8
JAN 19...	495	483	.66	116	59	1.1	1.10	.090	.090	1.2

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, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT 21...	.96	--	--	--	--	10.0	--	11	3.30	.980
NOV 19...	1.5	11.0	9.40	4.0	--	15.0	--	17	4.00	3.70
DEC 17...	1.8	11.0	12.0	3.0	2.0	14.0	14	16	4.10	.860
JAN 19...	1.2	--	--	--	--	18.0	16	19	3.70	.820

07105535 FOUNTAIN CREEK BELOW CIRCLE DRIVE BELOW COLORADO SPRINGS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	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)
OCT								
21...	0	10	<1	24	1600	45	7	360
NOV								
19...	<1	<10	<1	11	1000	38	5	210
DEC								
17...	<1	10	<1	18	730	48	4	200
JAN								
19...	1	10	<1	20	1500	58	8	180

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
21...	250	.1	23	4	1	120	.03
NOV							
19...	190	.1	13	6	1	70	.03
DEC							
17...	150	.2	23	7	1	70	.05
JAN							
19...	140	.1	23	6	1	90	.03

DATE	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	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)	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
OCT										
21...	<8.8	1.6	<13	2.4	7.5	3.1	7.2	2.9	.2	2.7

07105780 B DITCH DRAIN NEAR SECURITY, CO

LOCATION.--Lat 38°45'09", long 104°45'43", in SW¼SE¼ sec.10, T. 15 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on left bank, on Fort Carson Military Reservation, 800 ft (244 m) upstream from Interstate 25, 0.7 mi (1.1 km) upstream from mouth, and 1.0 mi (1.6 km) southwest of Security.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--April 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,724 ft (1,744.7 m), from topographic map.

REMARKS.--Records good except those for winter period and those for March and April, which are fair. Unknown amounts of flow are introduced to the stream from activities in the cantonment area of Fort Carson, upstream. Several observation of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,700 ft^3/s (76.5 m^3/s) Aug. 15, 1981, gage height, 13.78 ft (4.200 m), result of slope-area measurement of peak flow; minimum daily, 0.02 ft^3/s (0.001 m^3/s) Oct. 4, Dec. 28, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,400 ft^3/s (39.6 m^3/s) at 2030 July 28, gage height, 11.05 ft (3.368 m), from rating curve extended above 1.3 ft^3/s (0.037 m^3/s) on basis of slope area measurements of peak flow; minimum daily, 0.02 ft^3/s (0.001 m^3/s), Oct. 4, Dec. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.13	.17	.15	.14	.06	.14	.35	.33	.24	.91	.42
2	.03	.13	.16	.18	.14	.08	.12	.31	11	.35	.72	.41
3	.04	.14	.16	.20	.10	.08	.10	.35	112	.37	.49	.44
4	.02	.15	.16	.17	.09	.06	.10	.27	.84	.33	.59	.42
5	.04	.10	.17	.20	.06	.08	.10	1.6	.57	.31	.29	.45
6	.08	.11	.16	.18	.09	.10	.10	.51	.45	.25	.53	.43
7	.04	.10	.16	.14	.10	.10	.10	.49	.31	.26	97	1.8
8	.06	.10	.16	.13	.06	.10	.10	.33	.27	.23	.59	.52
9	.05	.10	.17	.16	.06	.08	.09	.31	.15	.24	.57	.48
10	.04	.12	.17	.12	.06	.08	.13	.29	.16	.21	1.2	.47
11	.04	.15	.16	.14	.10	.05	.12	.29	.25	.29	.59	.56
12	.05	.13	.15	.14	.11	.04	.10	1.5	.35	.18	.65	.97
13	.06	.13	.15	.12	.20	.13	.10	.49	.25	.17	.53	92
14	.05	.14	.15	.13	.25	.17	.10	.27	.22	.17	.49	4.9
15	.11	.13	.17	.15	.25	.17	.11	.26	.39	.19	1.2	5.8
16	.10	.20	.18	.14	.22	.17	.10	.23	.24	.15	.67	.65
17	.06	.18	.18	.17	.18	.15	.10	.37	.99	.13	.63	.57
18	.05	.18	.18	.18	.16	.15	.09	.33	22	.13	.61	.67
19	.07	.16	.20	.17	.14	.14	.09	.20	.75	.14	34	.59
20	.07	.17	.21	.16	.11	.14	.08	.17	.37	.13	119	1.1
21	.07	.17	.21	.15	.10	.11	.08	.16	.31	.13	18	.59
22	.07	.17	.15	.13	.10	.11	.07	.23	.29	.13	.51	.55
23	.07	.17	.06	.11	.10	.12	.07	.20	.45	.12	.47	.55
24	.06	.18	.04	.14	.08	.12	.06	.22	33	.11	.41	.53
25	.06	.18	.06	.13	.07	.14	.06	.72	.67	.13	.52	.51
26	.06	.17	.06	.16	.06	.15	.55	.47	1.1	.20	.46	.51
27	.06	.16	.06	.16	.07	.15	.65	.23	.33	15	.41	.51
28	.08	.16	.02	.18	.07	.12	.43	.20	.27	163	.41	.47
29	.10	.17	.03	.17	---	.10	.35	.22	.24	7.3	.42	.45
30	.11	.17	.06	.16	---	.10	.59	.24	.24	2.6	.43	.45
31	.12	---	.10	.16	---	.13	---	.39	---	1.1	.43	---
TOTAL	1.95	4.45	4.22	4.78	3.27	3.48	4.98	12.20	188.79	194.29	283.73	118.77
MEAN	.063	.15	.14	.15	.12	.11	.17	.39	6.29	6.27	9.15	3.96
MAX	.12	.20	.21	.20	.25	.17	.65	1.6	112	163	119	92
MIN	.02	.10	.02	.11	.06	.04	.06	.16	.15	.11	.29	.41
AC-FT	3.9	8.8	8.4	9.5	6.5	6.9	9.9	24	374	385	563	236

WTR YR 1982 TOTAL 824.91 MEAN 2.26 MAX 163 MIN .02 AC-FT 1640

07105780 B DITCH DRAIN NEAR SECURITY, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1981 to September 1982.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	NITRO-GEN DIS-SOLVED (MG/L AS N)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
OCT 23...	0930	.04	--	6720	7.8	5.0	10.5	18	4.0	460	120	39
NOV 18...	1315	.17	6170	7540	7.8	9.0	10.2	20	<5.1	1900	290	290
DEC 14...	1220	.17	--	7400	7.9	3.5	13.1	--	2.1	2200	330	340
JAN 18...	1130	.18	5410	5650	7.6	1.0	9.1	6.3	>15	1500	240	220
FEB 22...	1315	.17	--	4700	7.8	7.0	12.2	--	2.6	--	--	--
MAR 24...	1215	.11	6590	6750	7.5	8.5	15.0	--	2.1	--	--	--
APR 28...	1400	.06	3640	3550	7.6	20.5	6.5	--	4.2	--	--	--
MAY 28...	1210	.21	4430	4530	7.4	23.0	10.8	--	--	--	--	--
JUN 16...	1515	.25	4390	4550	7.5	24.0	7.2	--	E1.8	--	--	--
JUL 15...	1345	.35	4650	4860	7.6	25.5	8.5	--	9.6	--	--	--
AUG 13...	1330	.33	3590	3680	7.3	27.0	6.1	--	5.0	--	--	--
SEP 13...	1345	.57	3240	3330	7.5	18.5	6.8	--	4.0	--	--	--

DATE	ALKA-LINITY LAB (MG/L AS CACO3)	SULFIDE TOTAL (MG/L AS S)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
OCT 23...	430	.1	120	5920	6	17	16.0	.020	.030	17	16
NOV 18...	430	.4	190	6420	20	19	19.0	.060	.030	19	19
DEC 14...	490	.8	160	7170	40	27	25.0	.020	.030	27	25
JAN 18...	430	.0	120	5090	2	2.5	2.40	1.70	1.70	4.2	4.1
FEB 22...	--	--	85	4520	--	12	--	.160	--	12	--
MAR 24...	--	--	110	6650	--	15	--	.100	--	15	--
APR 28...	240	--	--	--	32	7.4	--	.130	--	7.5	--
MAY 28...	--	--	85	3870	--	7.6	--	.130	--	7.7	--
JUN 16...	--	--	65	3900	--	7.6	--	.120	--	7.7	--
JUL 15...	260	--	--	--	12	11	--	.060	--	11	--
AUG 13...	--	--	63	3140	--	--	--	--	--	6.8	--
SEP 13...	--	--	50	1300	--	6.7	--	.040	--	6.7	--

E ESTIMATED.

07105780 B DITCH DRAIN NEAR SECURITY, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
OCT											
23...	<.060	.100	--	1.9	2.10	.10	2.0	19	.040	.020	--
NOV											
18...	.220	.210	1.6	1.1	1.80	.50	1.3	21	.040	.090	.020
DEC											
14...	.170	.150	1.3	--	1.50	--	<.21	29	.040	.050	--
JAN											
18...	.180	.160	1.4	2.0	1.60	.00	2.2	5.8	.060	.020	--
FEB											
22...	.140	--	1.5	--	1.60	--	--	14	--	--	--
MAR											
24...	.110	--	.99	--	1.10	--	--	16	--	--	--
APR											
28...	.210	--	1.9	--	2.10	--	--	9.6	--	--	--
MAY											
28...	.220	--	1.6	--	1.80	--	--	9.5	--	--	--
JUN											
16...	.170	--	.83	--	1.00	--	--	8.7	--	--	--
JUL											
15...	.150	--	2.0	--	2.10	--	--	13	--	--	--
AUG											
13...	--	--	--	--	1.20	--	--	8.0	--	--	--
SEP											
13...	.060	--	1.2	--	1.30	--	--	8.0	--	--	--

DATE	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	CHROMIUM, HEXAVALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)
OCT								
23...	0	0	<1	7	240	30	4	140
NOV								
18...	1	10	<1	10	630	90	1	150
DEC								
14...	<1	10	<1	10	480	60	3	150
JAN								
18...	1	10	<1	4	250	30	2	180
APR								
28...	2	10	<1	13	1200	--	2	160
JUL								
15...	<1	10	<1	6	200	--	2	80

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
23...	140	.3	4	55	3	30	<.01
NOV							
18...	100	.2	5	53	0	30	<.01
DEC							
14...	140	.1	3	60	0	30	.01
JAN							
18...	190	.1	13	28	1	20	.01
APR							
28...	--	<.1	6	21	<1	30	<.01
JUL							
15...	--	.2	14	34	<1	30	<.01

07105800 FOUNTAIN CREEK AT SECURITY, CO

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 (1.4 km) southwest of South Security School, 3.5 mi (5.6 km) northeast of Fountain, and 5.5 mi (8.8 km) upstream from Jimmy Camp Creek.

DRAINAGE AREA.--495 mi² (1,282 km²).

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,640 ft (1,719 m), from topographic map. Prior to Oct. 26, 1966, at site 1,040 ft (320 m) upstream at datum 6.00 ft (1.829 m) higher. Oct. 26, 1966, to July 18, 1972, at site 980 ft (300 m) upstream at datum 6.00 ft (1.829 m) higher, July 19, 1972, to Feb. 20 1980, at site 980 ft (300 m) downstream at datum 6.00 ft (1.829 m) lower.

REMARKS.--Records good except those July 28-30, which are fair. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation of about 5,100 acres (21 km²) 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.--18 years, 64.2 ft³/s (1.818 m³/s), 46,510 acre-ft/yr (57.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft³/s (708 m³/s) July 24, 1965, gage height, 11.30 ft (3.444 m), site and datum then in use, from floodmarks, from rating curve extended above 2,900 ft³/s (82 m³/s), on basis of slope-area measurement of peak flow; minimum daily, 1.9 ft³/s (0.054 m³/s) Mar. 1, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,710 ft³/s (190 m³/s) at 2130 July 28, 1982, gage height, 5.18 ft (1.579 m) from flood mark, on basis of slope-area measurement of peak flow; minimum daily, 18 ft³/s (0.51 m³/s) Dec. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	60	34	25	87	80	51	42	107	112	67	80
2	69	62	43	22	89	80	46	40	114	102	61	84
3	78	58	37	22	94	76	49	42	974	100	75	90
4	76	51	32	38	92	105	49	42	225	91	452	86
5	80	51	31	37	94	105	49	73	133	83	111	88
6	89	51	27	44	96	92	51	74	124	79	80	128
7	87	51	32	60	94	78	51	74	107	70	461	138
8	87	53	36	60	102	85	51	68	99	71	88	130
9	85	51	48	71	89	87	49	67	107	72	96	132
10	85	48	43	67	94	82	53	69	102	71	264	116
11	82	49	44	67	89	76	51	56	107	122	147	130
12	82	49	40	71	99	82	51	294	207	94	102	226
13	80	48	38	65	99	82	46	110	108	83	108	468
14	80	42	30	63	102	82	46	102	103	76	93	317
15	89	43	28	67	105	87	46	97	93	65	288	344
16	99	40	31	63	102	80	37	92	88	59	137	184
17	85	37	31	69	110	80	38	106	114	59	112	176
18	78	37	20	69	92	76	36	124	204	62	110	166
19	78	36	22	62	94	69	37	114	115	61	326	162
20	76	32	25	62	92	69	42	117	102	50	607	199
21	71	36	25	58	94	80	43	118	115	51	648	165
22	71	36	26	65	92	80	44	129	139	53	230	168
23	76	40	20	60	89	67	42	126	147	52	214	179
24	74	43	22	71	87	60	42	143	223	49	188	180
25	71	43	32	76	82	53	42	168	210	47	158	168
26	71	38	36	80	80	54	58	134	256	51	140	172
27	69	42	31	87	80	56	52	123	198	177	129	172
28	67	38	31	78	82	54	48	115	174	840	118	160
29	67	44	18	82	---	53	53	118	148	640	100	150
30	65	46	26	85	---	51	54	110	125	195	91	144
31	65	---	30	69	---	51	---	121	---	91	83	---
TOTAL	2399	1355	969	1915	2601	2312	1407	3208	5068	3828	5884	5102
MEAN	77.4	45.2	31.3	61.8	92.9	74.6	46.9	103	169	123	190	170
MAX	99	62	48	87	110	105	58	294	974	840	648	468
MIN	65	32	18	22	80	51	36	40	88	47	61	80
AC-FT	4760	2690	1920	3800	5160	4590	2790	6360	10050	7590	11670	10120

CAL YR 1981 TOTAL 30974 MEAN 84.9 MAX 1040 MIN 18 AC-FT 61440

WTR YR 1982 TOTAL 36048 MEAN 98.8 MAX 974 MIN 18 AC-FT 71500

07105820 CLOVER DITCH DRAIN NEAR WIDEFIELD, CO

LOCATION.--Lat 38°43'07", long 104°43'43", in SW¼NE¼ sec.25, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on left bank 200 ft (61 m) downstream from Fort Carson Military Road No. 1, 500 ft (152 m) upstream from bridge on Interstate 25, 0.2 mi (0.3 km) upstream from mouth, and 1.2 mi (1.9 km) south of Widefield.

DRAINAGE AREA.--Not determined.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,620 ft (1,713 m), from topographic map.

REMARKS.--Records good except those above 50 ft^3/s (15.2 m^3/s), which are poor. This station is operated primarily to monitor low flows downstream from Fort Carson sewage-treatment plant. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,500 ft^3/s (70.8 m^3/s) July 28, 1982, gage height, 9.64 ft (2.938 m), from rating curve extended above 50 ft^3/s (15.2 m^3/s); no flow Oct. 5, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,500 ft^3/s (70.8 m^3/s) at 2145 July 28, gage height, 9.64 ft (2.938 m), from rating curve extended above 50 ft^3/s (15.2 m^3/s); no flow Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	1.6	3.9	5.0	1.0	1.7	2.4	5.6	1.6	2.7	5.9	3.7
2	.36	1.9	3.9	5.0	.92	2.2	2.2	6.3	12	2.5	6.9	2.7
3	.40	2.6	3.8	5.0	1.4	2.6	2.6	5.6	49	2.1	5.7	2.1
4	.12	2.1	3.9	5.2	1.2	2.9	3.0	5.9	15	2.1	7.0	1.9
5	.00	2.1	3.2	5.4	.77	4.3	3.2	14	11	2.7	6.0	1.6
6	1.8	1.9	3.4	5.4	1.2	3.5	1.8	6.8	9.6	2.7	6.2	1.6
7	.70	1.9	3.8	4.6	2.1	4.1	1.5	5.6	7.3	2.2	45	14
8	.40	2.4	2.9	4.6	2.2	4.1	1.8	5.4	4.9	2.2	7.8	9.0
9	.40	3.2	3.0	5.4	1.8	4.1	1.8	4.7	4.5	2.2	8.0	8.0
10	.45	2.7	3.3	4.7	1.4	2.3	1.7	3.9	3.9	2.1	9.8	6.8
11	.40	2.7	3.5	4.8	1.4	1.6	2.2	3.3	3.9	5.4	6.6	6.3
12	.51	2.5	2.9	4.8	2.4	1.3	2.3	13	3.9	5.1	7.8	11
13	.45	2.9	2.8	4.7	1.7	1.0	2.0	5.4	3.7	4.7	6.3	54
14	.77	2.6	2.7	4.7	1.4	1.4	2.4	4.5	4.5	4.7	5.9	13
15	2.9	2.0	2.7	4.4	1.3	1.6	2.5	3.9	5.6	3.8	31	25
16	2.3	3.4	3.0	3.8	1.7	2.0	2.2	4.1	5.4	3.9	6.6	15
17	1.6	2.7	2.6	4.2	1.4	1.2	2.8	4.5	8.4	3.5	4.9	14
18	1.5	3.6	3.0	4.3	1.1	1.4	2.5	4.3	20	3.4	5.1	14
19	1.9	3.8	2.5	4.6	1.1	1.7	1.2	3.7	7.6	3.6	8.0	13
20	2.1	3.8	2.7	4.8	.92	1.6	.92	2.5	3.1	3.8	20	16
21	2.1	3.4	3.0	4.5	1.1	1.6	.45	2.4	2.7	4.1	10	15
22	2.2	3.7	3.3	3.4	2.9	1.9	.40	2.2	3.5	3.2	6.0	11
23	1.3	5.0	2.5	1.2	1.4	2.3	.40	2.9	3.5	3.4	5.5	11
24	1.1	4.5	2.5	.70	.57	2.2	.40	5.6	7.7	2.7	5.4	11
25	1.3	3.8	2.3	.77	.51	2.9	.40	5.6	4.7	2.9	5.9	10
26	1.9	3.8	2.6	2.1	.57	2.2	2.1	3.5	6.6	6.8	5.9	9.6
27	2.4	4.0	2.4	3.5	.84	2.7	14	2.2	3.3	10	5.1	9.6
28	2.6	4.0	3.8	2.7	1.3	4.2	9.0	1.4	3.7	158	4.7	9.3
29	1.8	3.3	4.8	2.1	---	3.8	8.6	.84	3.5	11	4.7	5.6
30	1.1	3.8	6.6	2.2	---	3.4	8.8	1.4	2.7	9.6	4.1	5.4
31	.77	---	5.6	1.4	---	2.6	---	2.9	---	5.8	3.7	---
TOTAL	38.33	91.7	102.9	119.97	37.60	76.4	87.57	143.94	226.8	282.9	271.5	330.2
MEAN	1.24	3.06	3.32	3.87	1.34	2.46	2.92	4.64	7.56	9.13	8.76	11.0
MAX	2.9	5.0	6.6	5.4	2.9	4.3	14	14	49	158	45	54
MIN	.00	1.6	2.3	.70	.51	1.0	.40	.84	1.6	2.1	3.7	1.6
AC-FT	76	182	204	238	75	152	174	286	450	561	539	655

WTR YR 1982 TOTAL 1809.81 MEAN 4.96 MAX 158 MIN .00 AC-FT 3590

07105820 CLOVER DITCH DRAIN NEAR WIDEFIELD, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1981 to September 1982.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	NITROGEN DISSOLVED (MG/L AS N)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
OCT											
23...	1110	3.0	1540	1610	7.3	11.0	8.6	12	33	410	98
NOV											
18...	1415	3.6	1300	1410	7.4	13.5	6.0	16	<45	350	81
DEC											
14...	1345	4.3	1190	1300	7.3	11.0	6.5	20	30	310	73
JAN											
15...	1230	3.3	1260	1250	7.0	8.5	8.6	21	E32	290	69
FEB											
22...	1400	4.7	1250	1260	7.5	13.5	9.3	--	26	300	70
MAR											
24...	1445	3.5	1210	1200	7.2	15.0	8.5	--	18	--	--
APR											
28...	1445	4.5	1280	1210	7.5	20.0	6.5	--	21	330	79
MAY											
27...	1415	5.8	1310	1330	7.3	20.0	7.6	--	21	--	--
JUN											
16...	1430	4.9	1360	1410	7.4	21.0	6.2	--	E27	--	--
JUL											
16...	1230	2.0	1530	1570	7.4	24.5	6.2	--	E33	430	100
AUG											
12...	1215	6.0	1480	1510	7.3	23.5	6.0	--	43	--	--
SEP											
13...	1420	4.3	1410	1450	7.4	18.0	6.9	--	24	--	--

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 105 DEG. C, DISSOLVED (MG/L)
OCT											
23...	41	--	--	--	240	.1	--	48	--	--	1110
NOV											
18...	36	--	--	--	210	.3	--	51	--	--	922
DEC											
14...	32	--	--	--	180	.0	--	41	--	--	860
JAN											
15...	29	--	--	--	180	.0	--	39	--	--	818
FEB											
22...	31	140	3.8	7.2	200	--	370	42	.8	10	858
MAR											
24...	--	--	--	--	160	--	--	--	--	--	--
APR											
28...	32	150	3.9	8.4	210	--	360	60	1.0	15	867
MAY											
27...	--	--	--	--	120	--	--	--	--	--	--
JUN											
16...	--	--	--	--	200	--	--	--	--	--	--
JUL											
16...	43	190	4.4	8.2	180	--	520	62	1.7	16	1120
AUG											
12...	--	--	--	--	210	--	--	--	--	--	--
SEP											
13...	--	--	--	--	140	--	--	--	--	--	--

E ESTIMATED.

07105820 CLOVER DITCH DRAIN NEAR WIDEFIELD, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
OCT 23...	--	--	--	297	2.0	1.90	.720	.730	2.7	2.6
NOV 18...	--	--	--	1	1.9	2.10	.960	.890	2.9	3.0
DEC 14...	--	--	--	29	2.7	2.70	1.00	<1.00	3.7	3.8
JAN 15...	--	--	--	63	1.6	1.60	.450	--	2.0	2.0
FEB 22...	791	1.1	10.0	39	3.0	--	.440	--	3.4	--
MAR 24...	--	--	--	17	2.7	--	.480	--	3.2	--
APR 28...	832	1.1	10.1	43	3.4	--	.610	--	4.0	--
MAY 27...	--	--	--	26	3.0	--	.680	--	3.7	--
JUN 16...	--	--	--	35	3.4	--	1.10	--	4.5	--
JUL 16...	1050	1.4	5.7	29	4.3	--	1.60	--	5.9	--
AUG 12...	--	--	--	219	2.1	--	.500	--	2.6	--
SEP 13...	--	--	--	43	1.9	--	.510	--	2.4	--

DATE	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, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT 23...	1.20	1.20	8.5	8.1	9.70	.40	9.3	12	4.80	<.010
NOV 18...	--	--	--	--	14.0	1.0	13	17	5.40	.730
DEC 14...	14.0	14.0	2.0	2.0	16.0	.00	16	20	7.50	.850
JAN 15...	21.0	16.0	.00	3.0	19.0	.00	19	21	6.80	6.50
FEB 22...	14.0	--	4.0	--	18.0	--	--	21	--	--
MAR 24...	14.0	--	4.0	--	18.0	--	--	21	--	--
APR 28...	9.90	--	5.1	--	15.0	--	--	19	--	--
MAY 27...	9.90	--	1.1	--	11.0	--	--	15	--	--
JUN 16...	8.30	--	2.7	--	11.0	--	--	16	--	--
JUL 16...	2.20	--	3.3	--	5.50	--	--	11	--	--
AUG 12...	4.20	--	6.8	--	11.0	--	--	14	--	--
SEP 13...	8.50	--	8.5	--	17.0	--	--	19	--	--

07105820 CLOVER DITCH DRAIN NEAR WIDEFIELD, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, HEXA-VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	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)
OCT								
23...	0	20	<1	19	10000	28	9	330
NOV								
18...	1	<10	<1	13	260	53	3	90
DEC								
14...	1	<10	<1	20	430	61	2	90
JAN								
15...	1	<10	<1	90	2600	64	6	130
FEB								
22...	<1	10	<1	11	470	53	6	110
MAR								
24...	2	<10	<1	16	510	--	5	150
APR								
28...	1	<10	<1	15	2100	30	1	190
MAY								
27...	<1	<10	1	7	500	--	3	120
JUN								
16...	<1	<10	<1	8	910	--	<1	150
JUL								
16...	<1	<10	<1	9	1000	20	2	130
AUG								
12...	2	<10	<1	19	14000	--	10	450
SEP								
13...	1	<10	<1	13	1200	--	8	150

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
23...	73	.3	11	7	2	70	.01
NOV							
18...	90	.2	2	6	5	40	<.01
DEC							
14...	76	.1	<1	5	1	50	<.01
JAN							
15...	90	.1	5	5	3	80	<.01
FEB							
22...	110	.1	5	5	2	40	<.01
MAR							
24...	--	.1	9	5	1	40	<.01
APR							
28...	140	<.1	6	5	1	50	<.01
MAY							
27...	--	.1	3	5	1	30	<.01
JUN							
16...	--	.1	6	5	1	30	<.01
JUL							
16...	63	.2	8	6	<1	50	<.01
AUG							
12...	--	<.1	17	6	<1	110	<.01
SEP							
13...	--	.2	9	7	1	30	<.01

07105825 FOUNTAIN CREEK BELOW WIDEFIELD, CO

LOCATION.--Lat 38°43'00", long 104°43'24", in SE¼NE¼ sec.25, T.15 S., R.66 W., El Paso County, Hydrologic Unit 11020003, approximately 200 ft (61 m) downstream from the City of Widefield waste-water treatment facility below Widefield.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	NITROGEN DISSOLVED (MG/L AS N)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
OCT											
21...	1410	100	740	720	7.3	7.5	9.0	9.4	41	190	50
NOV											
20...	0900	30	--	1070	7.7	4.0	8.3	8.6	56	280	73
DEC											
17...	1400	42	--	1020	7.7	5.5	9.0	12	27	280	72
JAN											
19...	1300	90	920	955	7.4	8.0	8.6	15	32	240	63
FEB											
23...	1215	95	800	740	7.3	9.0	9.0	--	25	220	59
MAR											
24...	1315	84	874	900	7.2	15.0	7.2	--	33	230	61
APR											
28...	1530	89	929	890	7.5	22.0	5.9	--	41	230	61
MAY											
28...	1340	170	--	578	7.2	21.5	6.5	--	22	150	41
JUN											
16...	1245	121	--	762	7.2	21.0	6.1	--	E29	200	52
JUL											
15...	1430	91	894	900	7.0	26.0	4.6	--	76	230	61
AUG											
11...	1130	170	631	649	7.1	20.0	6.4	--	E31	180	49
SEP											
13...	1515	191	648	658	7.1	17.0	6.7	--	43	170	43

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORINE, TOTAL RESIDUAL (MG/L)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT											
21...	17	73	2.5	8.5	98	.0	180	<.01	36	--	16
NOV											
20...	24	130	3.6	8.1	200	.7	240	<.01	84	--	18
DEC											
17...	25	98	2.7	7.7	150	.6	230	<.01	55	--	16
JAN											
19...	20	93	2.8	8.0	180	.0	200	<.01	57	--	17
FEB											
23...	18	76	2.4	6.6	140	--	180	.02	41	1.5	16
MAR											
24...	20	97	3.0	8.3	120	--	200	.01	58	2.1	17
APR											
28...	20	86	2.6	8.5	160	--	220	<.01	48	2.2	14
MAY											
28...	12	52	2.0	5.8	90	--	130	.02	31	2.6	15
JUN											
16...	16	73	2.4	6.8	130	--	160	.01	43	1.9	16
JUL											
15...	19	97	3.0	7.5	150	--	200	<.01	64	2.1	17
AUG											
11...	13	59	2.1	4.9	110	--	140	.01	40	2.2	15
SEP											
13...	14	64	2.3	5.2	97	--	140	<.01	33	1.9	15

E ESTIMATED.

07105825 FOUNTAIN CREEK BELOW WIDEFIELD, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 105 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)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
OCT 21...	492	450	.61	121	354	2.1	2.10	.280	.270	2.4
NOV 20...	697	708	.96	57.3	26	2.2	2.20	.170	.170	2.4
DEC 17...	643	608	.83	68.9	378	2.8	2.80	.280	.280	3.1
JAN 19...	592	576	.78	140	289	1.9	1.90	.250	.250	2.1
FEB 23...	541	482	.66	124	420	1.4	--	.120	--	1.5
MAR 24...	567	536	.73	122	558	1.9	--	.270	--	2.2
APR 28...	591	556	.76	134	255	1.8	--	.420	--	2.2
MAY 28...	400	344	.47	158	319	1.7	--	.360	--	2.1
JUN 16...	491	449	.61	147	336	2.1	--	.370	--	2.5
JUL 15...	587	556	.76	137	86	3.1	--	.990	--	4.1
AUG 11...	419	391	.53	179	818	1.4	--	.310	--	1.7
SEP 13...	456	374	.51	193	252	2.2	--	.500	--	2.7

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, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT 21...	2.4	6.10	--	1.2	--	7.30	7.0	9.7	3.00	1.00
NOV 20...	2.4	11.0	9.00	4.0	.00	15.0	6.2	17	3.80	3.70
DEC 17...	3.1	6.60	6.60	1.9	2.2	8.50	8.8	12	2.40	2.30
JAN 19...	2.1	9.50	--	3.5	--	13.0	13	15	2.80	2.80
FEB 23...	--	5.10	--	.80	--	5.90	--	7.4	--	--
MAR 24...	--	8.80	--	2.2	--	11.0	--	13	--	--
APR 28...	--	7.40	--	5.6	--	13.0	--	15	--	--
MAY 28...	--	3.20	--	1.0	--	4.20	--	6.3	--	--
JUN 16...	--	3.40	--	1.3	--	4.70	--	7.2	--	--
JUL 15...	--	5.00	--	.60	--	5.60	--	9.7	--	--
AUG 11...	--	2.00	--	3.3	--	5.30	--	7.0	--	--
SEP 13...	--	3.70	--	3.5	--	7.20	--	9.9	--	--

07105825 FOUNTAIN CREEK BELOW WIDEFIELD, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, HEXA-VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	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)
OCT								
21...	0	0	<1	34	7900	67	12	510
NOV								
20...	<1	<10	<1	28	1500	44	6	330
DEC								
17...	<1	10	<1	31	7600	26	6	520
JAN								
19...	1	<10	<1	31	11000	38	14	470
FEB								
23...	1	10	<1	34	18000	26	21	580
MAR								
24...	2	<10	<1	25	9300	31	15	420
APR								
28...	<1	<10	<1	32	13000	23	24	410
MAY								
28...	<1	<10	<1	22	11000	32	21	380
JUN								
16...	<1	<10	<1	19	9300	33	15	340
JUL								
15...	<1	<10	<1	14	2200	18	37	390
AUG								
11...	<1	<10	<1	25	21000	7	39	710
SEP								
13...	<1	<10	<1	19	12000	14	18	390

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
21...	260	.2	26	4	2	160	.02
NOV							
20...	310	.1	27	5	<0	70	.02
DEC							
17...	330	.2	39	6	1	110	.02
JAN							
19...	180	.2	50	6	2	130	.02
FEB							
23...	120	.1	28	5	1	190	.01
MAR							
24...	180	.1	33	5	1	110	.01
APR							
28...	99	.1	25	5	1	130	<.01
MAY							
28...	23	.1	25	3	0	130	<.01
JUN							
16...	45	.1	27	4	0	100	<.01
JUL							
15...	270	.2	20	3	0	60	<.01
AUG							
11...	13	.1	17	5	0	160	<.01
SEP							
13...	42	.2	45	4	0	100	<.01

DATE	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
OCT										
21...	<8.8	18	<13	27	11	13	10	12	<.1	3.6

07105900 JIMMY CAMP CREEK AT FOUNTAIN, CO

LOCATION.--Lat 38°41'04", long 104°41'17", in NW¼SE¼ sec.5, T.16 S., R.65 W., El Paso County, Hydrologic Unit 11020003, on right bank at downstream side of bridge on county road, 1,000 ft (300 m) east of Fountain, and 1.5 mi (2.4 km) upstream from mouth.

DRAINAGE AREA.--65.6 mi^2 (169.9 km^2).

PERIOD OF RECORD.--January 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,530 ft (1,686 m), from topographic map.

REMARKS.--Records good except those for winter period and those above 2,000 ft^3/s (56.6 m^3/s), which are fair. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--6 years, 2.48 ft^3/s (0.070 m^3/s), 1,800 acre-ft/yr (2.22 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,920 ft^3/s (82.7 m^3/s) Aug. 20, 1982, from rating curve extended above 2,000 ft^3/s (56.6 m^3/s), gage height, 4.61 ft (1.405 m), from floodmark; minimum daily, 0.20 ft^3/s (0.006 m^3/s) July 18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,920 ft^3/s (82.7 m^3/s) at 2400 Aug. 20, from rating curve extended above 2,000 ft^3/s (56.6 m^3/s), gage height, 4.61 ft (1.405 m), from floodmark; minimum daily, 1.3 ft^3/s (0.037 m^3/s) Mar. 29-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	29	2.6	1.9	2.8	1.7	1.5	2.2	3.4	1.5	1.7	2.8
2	1.5	60	2.6	1.7	2.3	1.9	1.5	2.0	5.0	1.5	2.2	2.7
3	1.7	30	2.6	2.0	2.0	1.7	2.2	1.9	44	1.5	2.8	2.8
4	1.6	3.4	2.6	2.4	1.6	1.9	1.4	1.7	7.4	1.5	12	2.8
5	1.7	2.8	2.6	2.6	1.6	1.7	1.4	1.9	5.4	1.9	7.2	2.8
6	1.9	2.9	2.6	2.4	1.7	1.7	12	1.5	11	2.2	4.2	2.6
7	2.0	3.2	2.8	2.0	1.7	1.9	2.8	2.0	8.6	2.0	60	3.1
8	2.1	3.2	2.8	2.4	1.7	2.2	2.6	2.0	2.9	2.0	8.0	3.4
9	2.0	2.9	2.6	3.0	1.7	2.0	2.2	2.2	2.4	1.9	4.0	3.5
10	2.5	2.7	2.8	2.8	1.9	1.9	1.9	1.9	2.3	1.9	25	3.3
11	2.7	3.5	2.8	2.8	1.9	1.8	1.9	2.2	2.3	1.9	7.0	3.4
12	2.2	2.9	2.8	2.8	2.2	1.7	1.5	3.7	11	1.7	4.6	4.0
13	2.0	3.0	2.8	2.8	2.4	1.7	1.7	2.8	3.6	1.8	3.6	4.4
14	2.0	2.7	2.9	3.0	2.4	1.6	1.9	2.6	4.2	2.3	3.4	8.7
15	2.2	2.7	2.4	2.8	2.4	1.5	1.9	2.4	2.6	2.4	11	5.6
16	2.3	2.5	2.4	2.8	2.1	1.5	1.7	2.2	2.6	2.2	4.7	4.0
17	2.0	2.6	2.1	3.5	2.1	1.5	1.7	2.2	3.9	2.2	3.4	3.4
18	2.1	2.6	2.3	3.1	2.0	1.5	1.7	2.2	7.0	2.2	3.2	3.4
19	2.3	2.8	2.8	3.1	2.0	1.4	1.5	2.2	4.9	2.2	3.5	3.4
20	2.4	2.8	2.6	2.6	1.9	1.9	1.5	2.0	2.6	2.0	131	4.2
21	2.6	2.8	2.2	2.6	1.8	2.3	1.4	2.2	2.2	1.9	10	3.4
22	2.8	2.6	1.9	2.6	1.8	12	1.5	2.2	1.9	1.7	4.0	3.2
23	2.8	2.6	1.7	3.0	1.8	2.6	1.9	2.0	1.9	1.7	3.3	3.1
24	2.9	2.6	1.7	2.8	1.8	1.9	2.0	2.4	1.7	1.5	3.1	3.0
25	3.3	2.6	1.8	2.6	1.5	1.5	1.9	2.8	1.7	1.4	3.1	3.0
26	2.0	2.6	1.8	3.1	1.6	1.4	1.7	3.4	1.7	4.8	3.3	3.0
27	2.0	2.8	1.8	2.6	1.9	1.5	1.7	3.4	1.7	5.9	3.1	2.9
28	2.0	2.8	1.7	2.5	1.9	1.4	1.6	3.1	1.7	2.4	3.0	2.6
29	1.9	2.6	1.8	2.5	---	1.3	3.2	2.8	1.5	4.4	2.9	2.6
30	1.9	2.6	1.9	3.0	---	1.3	5.2	3.6	1.5	2.2	2.8	2.8
31	2.0	---	1.9	3.1	---	1.9	---	4.5	---	1.9	2.9	---
TOTAL	66.8	194.8	72.7	82.9	54.5	63.8	68.6	76.2	154.6	68.6	344.0	103.9
MEAN	2.15	6.49	2.35	2.67	1.95	2.06	2.29	2.46	5.15	2.21	11.1	3.46
MAX	3.3	60	2.9	3.5	2.8	12	12	4.5	44	5.9	131	8.7
MIN	1.4	2.5	1.7	1.7	1.5	1.3	1.4	1.5	1.5	1.4	1.7	2.6
AC-FT	132	386	144	164	108	127	136	151	307	136	682	206

CAL YR 1981 TOTAL 1123.1 MEAN 3.08 MAX 120 MIN 1.0 AC-FT 2230
WTR YR 1982 TOTAL 1351.4 MEAN 3.70 MAX 131 MIN 1.3 AC-FT 2680

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 (1.6 km) upstream from mouth of Little Fountain Creek below Fountain.

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	ALKA-LINITY LAB (MG/L AS CACO3)
OCT												
20...	1400	50	1270	1210	7.0	16.5	6.7	15	360	94	30	170
NOV												
20...	1100	45	1300	1370	7.4	7.0	8.4	>20	430	108	38	190
DEC												
21...	1220	53	1260	1220	7.4	6.0	9.1	18	370	94	32	190
JAN												
18...	1245	80	1130	1140	7.3	7.5	8.8	26	320	82	28	160
FEB												
24...	1415	72	1090	970	7.2	9.0	8.6	27	--	--	--	150
MAR												
25...	1215	52	1090	1100	7.3	10.5	8.1	23	--	--	--	140
APR												
29...	1120	24	1360	1330	7.2	14.5	6.8	14	--	--	--	190
MAY												
26...	1315	175	643	648	7.0	18.5	6.9	21	--	--	--	100
JUN												
15...	1220	93	1090	1030	--	19.5	6.4	12	--	--	--	160
JUL												
14...	1330	28	1240	1180	7.1	27.5	5.1	20	--	--	--	170
AUG												
12...	1115	105	1020	1030	7.0	20.5	6.8	16	--	--	--	160
SEP												
20...	1130	172	818	784	7.3	14.0	7.8	E14	--	--	--	110

DATE	SULFIDE TOTAL (MG/L AS S)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	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)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT											
20...	.0	4	3.6	.270	3.9	1.40	.70	2.10	6.0	1.40	1.30
NOV											
20...	.5	65	3.3	.070	3.4	1.00	13	14.0	17	1.90	1.80
DEC											
21...	.4	74	3.4	.130	3.5	3.60	2.7	6.30	9.8	2.00	1.70
JAN											
18...	.0	167	2.9	.080	3.0	8.80	.00	8.50	12	.040	2.30
FEB											
24...	--	156	1.0	.060	1.1	3.20	1.1	4.30	5.4	--	--
MAR											
25...	--	107	2.6	.100	2.7	7.20	1.2	8.40	11	--	--
APR											
29...	--	112	3.3	.140	3.4	3.80	.90	4.70	8.1	--	--
MAY											
26...	--	1180	.12	.140	.26	.420	1.7	2.10	2.4	--	--
JUN											
15...	--	112	3.1	.300	3.4	1.10	.80	1.90	5.3	--	--
JUL											
14...	--	40	3.5	.720	4.2	.680	2.3	3.00	7.2	--	--
AUG											
12...	--	234	2.4	.400	2.8	.690	1.5	2.20	5.0	--	--
SEP											
20...	--	550	3.2	.160	3.4	.200	4.7	4.90	8.3	--	--

E ESTIMATED.

07105905 FOUNTAIN CREEK ABOVE LITTLE FOUNTAIN CREEK BELOW FOUNTAIN, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, HEXA-VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	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)
OCT								
20...	0	0	<1	14	4800	<10	9	490
NOV								
20...	<1	<10	<1	12	2900	15	6	420
DEC								
21...	3	<10	<1	15	3200	24	6	420
JAN								
18...	1	<10	<1	15	6100	37	10	390
FEB								
24...	<1	<10	<1	23	6300	--	15	350
MAR								
25...	3	<10	<1	22	3000	--	11	380
APR								
29...	<1	<10	<1	18	1700	--	7	290
MAY								
26...	<1	10	<1	40	31000	--	15	810
JUN								
15...	<1	<10	<1	9	3100	--	4	160
JUL								
14...	<1	<10	<1	7	1300	--	3	310
AUG								
12...	<1	<10	<1	13	9600	--	4	300
SEP								
20...	1	<10	<1	18	14000	--	17	450

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
20...	320	.1	13	6	0	80	<.01
NOV							
20...	350	.1	20	7	0	60	<.01
DEC							
21...	330	.2	15	6	0	50	.02
JAN							
18...	230	.1	32	6	1	70	<.01
FEB							
24...	--	.1	20	5	1	90	<.01
MAR							
25...	--	.1	23	6	1	70	<.01
APR							
29...	--	.2	10	7	0	50	<.01
MAY							
26...	--	.2	21	6	0	170	<.01
JUN							
15...	--	.1	21	5	0	50	<.01
JUL							
14...	--	.2	21	4	0	40	<.01
AUG							
12...	--	.1	12	4	0	90	<.01
SEP							
20...	--	.4	22	5	0	130	<.01

DATE	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
OCT										
20...	<17	9.5	<26	14	<12	<10	<12	9.8	<.1	8.9

07105920 LITTLE FOUNTAIN CREEK ABOVE KEATON RESERVOIR NEAR FORT CARSON, CO

LOCATION.--Lat 38°40'54", long 104°51'29", in NE¼SW¼ sec.2, T.16 S., R.67 W., El Paso County, Hydrologic Unit 11020003, on right bank 0.1 mi (0.2 km), 0.7 mi (1.1 km) upstream from State Highway 115, and 4.8 mi (7.7 km) southwest of Fort Carson.

DRAINAGE AREA.--11.0 mi² (28.5 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR CO-80-1: 1979.

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 6,430 ft (1,960 m), from topographic map.

REMARKS.--Records good except those above 70 ft³/s (1.98 m³/s), which are fair, and those for winter period Dec. 17-Mar. 3, which are poor. No diversions above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 513 ft³/s (14.5 m³/s) June 3, 1981, gage height, 3.72 ft (1.134 m), from floodmark, from rating curve extended above 70 ft³/s (1.98 m³/s), on basis of slope-area measurement of peak flow; no flow Aug. 22-28, Sept. 8-24, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20 ft³/s (0.56 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 28	0045	22	0.62	1.39	0.424	Aug. 15	2000	93	2.63	2.19	0.678
June 3	1845	57	1.61	1.85	0.564	Aug. 21	1315	78	2.21	2.04	0.622
June 19	1330	21	0.59	1.38	0.421	Sept. 7	0230	48	1.36	1.76	0.536
July 28	2215	* 116	3.29	2.37	0.722	Sept. 15	2345	36	1.02	1.63	0.497

Minimum daily discharge, 0.74 ft³/s (0.02 m³/s), Dec. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	1.6	1.2	1.3	1.2	1.4	1.4	2.1	16	7.1	8.8	12
2	2.7	1.6	1.2	1.3	1.2	1.4	1.5	2.5	14	6.5	7.1	10
3	2.6	1.6	1.2	1.2	1.1	1.4	1.3	2.7	45	6.0	5.8	9.3
4	2.5	1.6	1.2	1.2	1.1	1.0	1.5	2.6	52	5.5	6.1	8.4
5	2.4	1.6	1.0	1.3	.90	.80	1.5	3.5	47	5.1	6.7	7.8
6	2.4	1.4	1.2	1.2	.90	1.2	1.4	3.4	37	4.7	6.1	7.4
7	2.4	1.4	1.0	.90	.90	1.4	1.4	3.8	29	4.5	6.4	17
8	2.2	1.4	1.0	.90	.90	1.4	1.2	3.9	23	4.2	5.6	12
9	2.4	1.4	1.0	.90	.90	1.4	1.2	4.8	19	4.0	5.3	9.4
10	2.4	1.4	1.0	.90	.90	1.7	1.3	5.0	17	3.7	8.2	7.9
11	2.4	1.4	1.0	1.0	.90	1.7	1.3	4.9	14	3.7	11	7.3
12	2.2	1.4	1.0	.90	1.1	2.0	1.6	5.8	13	3.8	12	7.8
13	2.2	1.4	.96	.90	1.6	2.1	1.7	5.9	11	3.9	13	8.6
14	2.1	1.4	.96	1.0	1.6	2.2	1.7	6.2	10	3.5	13	13
15	2.5	1.4	1.2	1.1	1.4	2.2	1.7	6.8	9.9	3.1	46	31
16	2.4	1.4	1.2	1.1	1.4	2.2	1.7	8.0	9.3	2.6	69	33
17	2.2	1.2	1.0	1.0	1.3	2.2	1.6	9.1	8.3	2.3	61	27
18	2.1	1.2	1.1	1.3	1.2	2.2	1.5	9.9	11	2.1	69	22
19	2.0	1.2	1.2	1.3	1.2	2.1	1.6	11	19	1.9	55	18
20	1.9	1.2	1.3	1.3	1.1	1.9	1.4	11	20	1.7	48	19
21	1.8	1.2	1.1	1.2	1.2	1.9	1.7	11	19	1.9	74	17
22	1.8	1.2	.96	1.1	1.4	2.1	1.6	10	18	1.5	71	15
23	1.7	1.2	.82	1.1	1.6	1.9	1.8	9.4	16	1.3	58	14
24	1.7	1.2	.74	1.1	1.7	1.8	1.8	9.8	15	1.2	48	13
25	1.7	1.2	.88	1.0	1.6	1.6	1.6	13	13	1.1	39	12
26	1.7	1.2	1.0	1.0	1.5	1.7	1.7	16	12	1.2	31	11
27	1.7	1.2	.96	1.1	1.5	1.6	2.0	21	11	1.7	25	10
28	1.6	1.4	.90	1.2	1.6	1.4	2.0	21	9.9	23	20	9.5
29	1.6	1.4	.90	1.2	---	1.5	2.1	19	8.8	44	16	8.7
30	1.6	1.2	1.2	1.2	---	1.5	2.3	17	7.9	14	15	8.1
31	1.7	---	1.3	1.2	---	1.3	---	17	---	11	13	---
TOTAL	65.4	40.6	32.68	34.40	34.90	52.20	48.1	277.1	555.1	181.8	873.1	406.2
MEAN	2.11	1.35	1.05	1.11	1.25	1.68	1.60	8.94	18.5	5.86	28.2	13.5
MAX	2.8	1.6	1.3	1.3	1.7	2.2	2.3	21	52	44	74	33
MIN	1.6	1.2	.74	.90	.90	.80	1.2	2.1	7.9	1.1	5.3	7.3
AC-FT	130	81	65	68	69	104	95	550	1100	361	1730	806

CAL YR 1981 TOTAL 1342.63 MEAN 3.68 MAX 100 MIN .36 AC-FT 2660
WTR YR 1982 TOTAL 2601.58 MEAN 7.13 MAX 74 MIN .74 AC-FT 5160

NOTE.--NO GAGE-HEIGHT RECORD NOV. 14 TO DEC. 31, JAN. 8 TO MAR. 19, JUNE 3-10.

07105920 LITTLE FOUNTAIN CREEK ABOVE KEATON RESERVOIR NEAR FORT CARSON, CO--Continued

WATER-QUALITY RECORD.

PERIOD OF RECORD.--May 1978 to September 1982 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
JUL								
14...	1230	3.7	90	92	6.5	15.0	32	9.8

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
JUL									
14...	1.9	3.9	.3	1.6	29	10	.9	2.8	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)
JUL								
14...	61	.08	.61	5	<.020	<.10	<.060	.060

DATE	ALUMINUM, TOTAL RECOVERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)
JUL										
14...	110	<1	<100	<10	180	<1	10	2	60	19

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MO)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)
JUL									
14...	<1	10	2	.1	3	4	<1	<1	10

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 (91 m) downstream from Keaton Reservoir, 0.5 mi (0.8 km) upstream from State Highway 115, and 4.7 m (7.6 km) southwest of Fort Carson.

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

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 6,400 ft (1.951 m), from topographic map.

REMARKS.--Records good except for those periods during the summer when possible backwater occurred, 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4.8 ft³/s (0.14 m³/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, 2.2 ft³/s (0.06 m³/s) Sept. 15; no flow Dec. 18-Jan. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.8	1.1	.00	.24	.25	1.0	.90	2.1	2.1	1.9	1.9
2	1.8	1.7	1.0	.00	.24	.27	.94	.90	2.0	2.0	1.9	2.0
3	1.8	1.7	1.0	.00	.24	.26	.94	.90	2.0	2.0	1.9	2.1
4	1.8	1.7	1.0	.00	.22	.25	.99	.90	2.0	2.0	2.0	2.1
5	1.8	1.7	1.0	.00	.22	.25	.94	.90	2.0	2.0	2.0	2.0
6	1.8	1.6	1.0	.00	.24	.22	.94	.90	2.1	2.0	2.0	2.0
7	1.8	1.6	.99	.00	.24	.22	.99	2.1	2.0	2.0	2.0	2.0
8	1.8	1.6	.99	.00	.24	.22	.99	2.1	2.0	2.0	2.0	2.0
9	1.8	1.6	.99	.10	.24	.24	.97	2.0	2.0	2.0	2.0	2.0
10	1.8	1.6	.94	.25	.24	.25	.99	2.0	2.0	2.0	2.0	2.0
11	1.8	1.6	.94	.27	.22	.25	.99	1.9	2.0	2.0	2.0	2.0
12	1.8	1.6	.94	.25	.22	.25	.90	1.9	2.0	2.0	2.0	2.0
13	1.8	1.6	.90	.25	.22	.25	.90	1.9	2.0	2.0	2.0	2.0
14	1.8	1.5	.90	.27	.25	.25	.90	1.9	2.0	2.0	2.0	2.0
15	1.8	1.5	.85	.27	.29	.25	.90	2.0	2.0	2.0	2.0	2.2
16	1.8	1.5	.58	.25	.29	.25	.90	2.0	2.0	2.0	1.9	2.1
17	1.8	1.4	.20	.23	.26	.25	.90	2.0	2.0	2.0	1.9	2.0
18	1.8	1.4	.00	.24	.25	.74	.90	2.0	2.0	2.0	1.9	2.1
19	1.8	1.4	.00	.26	.25	1.6	.90	2.0	2.0	2.0	1.9	2.0
20	1.8	1.4	.00	.25	.25	1.6	.90	1.9	2.0	2.0	1.9	2.0
21	1.8	1.4	.00	.25	.25	1.6	.90	2.0	2.0	2.0	2.0	2.0
22	1.8	1.4	.00	.23	.27	1.4	.90	2.0	2.0	1.9	2.0	2.0
23	1.8	1.3	.00	.25	.29	1.2	.90	2.0	2.0	1.9	2.0	2.0
24	1.8	1.3	.00	.24	.26	1.2	.90	2.0	2.0	1.9	2.0	2.0
25	1.8	1.3	.00	.25	.25	1.2	.90	2.0	2.0	1.9	2.0	2.0
26	1.8	1.2	.00	.24	.25	1.2	.90	2.0	2.0	1.9	1.9	2.0
27	1.8	1.2	.00	.25	.25	1.2	.90	2.0	2.0	1.9	1.9	2.1
28	1.8	1.1	.00	.24	.25	1.2	.90	2.0	2.0	1.9	1.9	2.0
29	1.8	1.1	.00	.24	---	1.2	.90	2.0	2.0	2.0	1.9	2.0
30	1.8	1.1	.00	.24	---	1.2	.90	2.0	2.0	2.0	1.9	2.0
31	1.8	---	.00	.24	---	1.2	---	2.0	---	2.0	1.9	---
TOTAL	55.8	43.9	15.32	5.56	6.93	21.92	27.78	55.10	60.2	61.4	60.6	60.6
MEAN	1.80	1.46	.49	.18	.25	.71	.93	1.78	2.01	1.98	1.95	2.02
MAX	1.8	1.8	1.1	.27	.29	1.6	1.0	2.1	2.1	2.1	2.0	2.2
MIN	1.8	1.1	.00	.00	.22	.22	.90	.90	2.0	1.9	1.9	1.9
AC-FT	111	87	30	11	14	43	55	109	119	122	120	120

CAL YR 1981	TOTAL 464.19	MEAN 1.27	MAX 3.7	MIN .00	AC-FT 921
WTR YR 1982	TOTAL 475.11	MEAN 1.30	MAX 2.2	MIN .00	AC-FT 942

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 (0.5 km) downstream from Keaton Reservoir, 0.4 mi (0.6 km) upstream from State Highway 115, 1.2 mi (1.9 km) upstream from Deadman Canyon and 4.8 mi (7.7 km) southwest of Fort Carson.

DRAINAGE AREA.--11.8 km^2 (30.6 km^2).

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. Altitude of gage is 6,360 ft (1.939 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record and those for winter period, which are poor. Womack Ditch diverts about 5 ft^3/s (0.14 m^3/s) from Keaton Reservoir upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 157 ft^3/s (4.45 m^3/s) May 8, 1980, gage height, 4.46 ft (1.359 m), from rating curve extended above 70 ft^3/s (1.98 m^3/s); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 85 ft^3/s (2.41 m^3/s) at 1200 Aug. 21, gage height, 3.77 ft (1.149 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.68	.09	.00	2.6	.32	.84	.02	.80	15	5.9	6.4	12
2	.61	.09	.00	.67	.30	.84	.05	.90	13	4.9	5.0	11
3	.51	.07	.00	.58	.30	.79	.09	.95	44	4.2	3.9	9.2
4	.58	.06	.00	.56	.30	.64	.16	.95	49	3.7	3.9	8.7
5	.29	.05	.00	.58	.30	.33	.29	1.3	41	3.2	5.0	8.2
6	.35	.05	.00	.66	.30	.69	.33	1.3	34	2.7	4.2	7.7
7	.31	.05	.00	.50	.30	.67	.35	1.7	29	2.5	4.9	14
8	.20	.04	.00	.55	.30	.61	.27	2.0	24	2.3	3.7	12
9	.22	.04	.00	.50	.30	.61	.18	2.7	20	2.1	3.4	9.2
10	.33	.03	.00	.45	.30	.62	.20	3.0	17	1.8	5.6	8.0
11	.27	.02	.00	.45	.35	.71	.23	3.0	15	1.8	8.2	6.8
12	1.3	.01	.00	.40	.38	.83	.42	4.0	13	1.9	9.2	7.2
13	.31	.00	.00	.40	.40	.88	.68	4.1	11	2.0	11	7.5
14	.25	.00	.00	.40	.45	.97	.70	4.3	10	1.7	10	13
15	.38	.00	.00	.40	.50	1.1	.70	4.6	9.9	1.2	39	24
16	.41	.00	.00	.40	.50	1.1	.74	6.0	9.2	.86	69	29
17	.30	.00	.00	.45	.50	1.1	.75	8.4	8.6	.61	59	25
18	.24	.00	.00	.45	.45	.98	.70	8.4	10	.46	62	21
19	.22	.00	.00	.45	.40	.34	.70	9.1	16	.32	49	17
20	.17	.00	.00	.45	.40	.13	.65	9.3	18	.18	40	18
21	.17	.00	.00	.43	.47	.05	.75	9.2	18	.11	76	16
22	.16	.00	.00	.42	.63	.04	.75	8.5	16	.07	79	15
23	.15	.00	.00	.42	.90	.06	.80	7.8	14	.02	64	14
24	.14	.00	.00	.41	.97	.07	.80	8.1	13	.00	50	12
25	.11	.00	.00	.39	.94	.02	.70	12	12	.00	40	11
26	.09	.00	.00	.40	.87	.01	.70	15	10	.00	32	9.9
27	.08	.00	.00	.42	.86	.01	.80	19	9.3	.11	26	8.9
28	.09	.00	.00	.36	.90	.01	.80	19	8.3	11	22	8.0
29	.11	.00	.00	.35	---	.02	.85	19	7.3	32	18	7.3
30	.10	.00	.00	.36	---	.06	.90	17	6.6	11	16	7.0
31	.10	---	2.0	.35	---	.03	---	16	---	7.7	14	---
TOTAL	9.23	.60	2.00	16.21	13.89	15.16	16.06	227.40	521.2	106.34	839.4	377.6
MEAN	.30	.020	.065	.52	.50	.49	.54	7.34	17.4	3.43	27.1	12.6
MAX	1.3	.09	2.0	2.6	.97	1.1	.90	19	49	32	79	29
MIN	.08	.00	.00	.35	.30	.01	.02	.80	6.6	.00	3.4	6.8
AC-FT	18	1.2	4.0	32	28	30	32	451	1030	211	1660	749

CAL YR 1981	TOTAL 789.65	MEAN 2.16	MAX 67	MIN .00	AC-FT 1570
WTR YR 1982	TOTAL 2145.09	MEAN 5.88	MAX 79	MIN .00	AC-FT 4250

NOTE.--NO GAGE-HEIGHT RECORD APR. 17 TO MAY 17.

07105940 LITTLE FOUNTAIN CREEK NEAR FOUNTAIN, CO

LOCATION.--Lat 38°38'33", long 104°44'49", in NE¼SW¼ sec.23, T.16 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on Fort Carson Military Reservation, on right bank 300 ft (91 m) downstream from Military Road No. 1, 0.4 mi (0.6 km) upstream from mouth of Rock Creek, 3.8 mi (6.1 km) southwest of Fountain.

DRAINAGE AREA.--26.9 mi² (69.7 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 5,560 ft (1,695 m), from topographic map.

REMARKS.--Records good except those for winter period, which are fair, and those above 300 ft³/s (8.50 m³/s), which are poor. Diversions above station for irrigation, recreation, and municipal use, amount unknown.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,230 ft³/s (348 m³/s) May 8, 1980, gage height, 7.55 ft (2.301 m) from rating curve extended above 260 ft³/s (7.36 m³/s); no flow many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 768 ft³/s (21.7 m³/s) at 1915 Aug. 20, gage height, 7.65 ft (2.332 m), from rating curve extended above 260 ft³/s (7.36 m³/s); minimum daily, 0.04 ft³/s (0.001 m³/s) Dec. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	.19	.18	.20	.16	.12	.35	.40	9.2	3.4	11	32
2	.20	.25	.21	.20	.14	.16	.26	.24	12	2.0	6.6	26
3	.12	.21	.11	.20	.11	.21	.20	.23	126	1.2	4.3	22
4	.08	.27	.11	.20	.08	.21	.24	.23	51	.80	2.4	18
5	.06	.27	.15	.16	.05	.18	.26	.50	42	.67	4.3	15
6	.05	.29	.11	.12	.05	.18	.26	.55	36	.42	3.4	13
7	.09	.32	.06	.12	.05	.23	.26	.42	32	.29	46	20
8	.12	.29	.04	.16	.05	.21	.24	.42	28	.25	16	17
9	.08	.27	.05	.16	.05	.21	.21	.36	24	.20	12	13
10	.10	.27	.07	.16	.05	.21	.21	.32	21	.12	50	9.9
11	.13	.27	.09	.12	.05	.21	.21	.27	19	5.1	9.1	7.8
12	.16	.22	.08	.10	.12	.19	.23	1.1	16	5.1	8.2	7.2
13	.24	.21	.09	.10	.20	.14	.23	.53	14	1.8	6.0	33
14	.17	.21	.11	.17	.22	.16	.23	.32	12	1.5	3.7	16
15	.21	.21	.14	.20	.25	.16	.22	.26	11	1.3	58	25
16	.27	.23	.18	.16	.25	.16	.22	.26	11	1.1	72	34
17	.27	.27	.11	.16	.25	.15	.22	.26	11	1.1	51	28
18	.22	.25	.08	.16	.24	.14	.22	.25	15	1.0	74	26
19	.24	.21	.10	.16	.22	.16	.22	.19	19	1.0	69	25
20	.26	.21	.15	.18	.21	.17	.21	.69	20	.96	156	28
21	.18	.21	.16	.20	.20	.20	.21	1.1	19	.89	107	22
22	.18	.21	.12	.20	.19	.21	.21	2.5	18	.82	64	21
23	.21	.21	.08	.20	.14	.21	.21	3.1	17	.82	66	18
24	.21	.21	.06	.20	.10	.21	.20	3.1	17	.78	67	16
25	.16	.21	.10	.20	.10	.20	.20	6.2	15	.77	65	14
26	.19	.21	.14	.20	.13	.24	.20	7.6	14	.77	64	14
27	.21	.21	.14	.20	.20	.27	.20	10	11	3.9	58	13
28	.21	.18	.10	.18	.10	.27	.19	11	9.2	66	53	12
29	.16	.24	.13	.16	---	.26	.25	10	7.3	112	47	10
30	.14	.21	.16	.16	---	.26	.30	10	4.9	28	45	9.2
31	.13	---	.19	.16	---	.25	---	11	---	19	40	---
TOTAL	5.39	7.02	3.60	5.25	3.96	6.14	6.87	83.40	661.6	263.06	1339.0	565.1
MEAN	.17	.23	.12	.17	.14	.20	.23	2.69	22.1	8.49	43.2	18.8
MAX	.34	.32	.21	.20	.25	.27	.35	11	126	112	156	34
MIN	.05	.18	.04	.10	.05	.12	.19	.19	4.9	.12	2.4	7.2
AC-FT	11	14	7.1	10	7.9	12	14	165	1310	522	2660	1120

CAL YR 1981 TOTAL 1058.09 MEAN 2.90 MAX 93 MIN .00 AC-FT 2100
WTR YR 1982 TOTAL 2950.39 MEAN 8.08 MAX 156 MIN .04 AC-FT 5850

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 (6 m) upstream from county road bridge, 0.6 mi (1.0 km) northwest of Rock Creek Park, 1.2 mi (1.9 km) upstream from State Highway 115, and 3.2 mi (5.1 km) southwest of Fort Carson.

DRAINAGE AREA.--6.79 mi^2 (17.6 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 6,390 ft (1,948 m) from topographic map.

REMARKS.--Records good except those above 30 ft^3/s (0.85 m^3/s), which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 250 ft^3/s (7.08 m^3/s) July 28, 1982, gage height, 4.73 ft (1.442 m) from rating curve extended above 30 ft^3/s (85 m^3/s); no flow many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10 ft^3/s (0.28 m^3/s) and maximum (*):

Date	Time	Discharge		Gage height		Date	Time	Discharge		Gage height	
		(ft^3/s)	(m^3/s)	(ft)	(m)			(ft^3/s)	(m^3/s)	(ft)	(m)
June 3	0815	38	1.08	2.64	0.805	Aug. 21	0045	49	1.39	2.82	0.860
July 28	2100	* 250	7.08	4.73	1.442	Sept. 7	0200	12	0.34	2.05	0.625
Aug. 10	1815	17	0.48	2.29	0.698	Sept. 15	1000	18	0.51	2.23	0.680
Aug. 15	1615	31	0.88	2.62	0.799						

Minimum daily discharge, 0.12 ft^3/s (0.003 m^3/s) Feb. 12-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.47	.55	.25	.28	.34	.44	.69	1.1	5.4	2.5	15	8.4
2	.43	.59	.37	.27	.29	.47	.68	1.2	5.1	2.2	12	7.7
3	.40	.60	.30	.29	.26	.61	.58	1.2	27	2.0	11	7.4
4	.38	.59	.32	.35	.26	.60	.62	1.2	19	1.8	10	6.7
5	.37	.56	.35	.36	.26	.39	.62	1.3	13	1.7	10	6.5
6	.46	.55	.36	.33	.26	.64	.61	1.4	11	1.6	9.9	6.3
7	.40	.52	.38	.38	.23	.59	.62	1.4	8.9	1.6	10	6.2
8	.38	.52	.38	.38	.19	.54	.55	1.5	7.2	1.4	9.8	5.4
9	.35	.53	.37	.37	.16	.56	.53	1.6	6.2	1.4	9.6	5.2
10	.37	.48	.36	.33	.19	.74	.55	1.7	5.4	1.3	11	4.9
11	.38	.44	.36	.37	.16	1.1	.56	1.8	4.8	1.4	11	4.8
12	.38	.41	.35	.34	.12	1.5	.57	1.9	4.5	1.4	11	5.2
13	.38	.32	.38	.34	.12	1.6	.65	2.1	4.0	1.4	11	6.1
14	.40	.29	.36	.34	.19	1.6	.69	2.4	4.7	1.3	11	7.5
15	.50	.30	.37	.31	.30	1.6	.70	2.7	4.4	1.2	18	17
16	.48	.29	.39	.36	.28	1.5	.78	3.0	3.2	.90	21	16
17	.46	.27	.29	.37	.30	1.4	.77	3.2	3.1	.90	18	13
18	.44	.25	.24	.30	.26	1.4	.70	3.4	4.7	.82	16	12
19	.43	.33	.36	.26	.30	1.4	.70	3.5	6.5	.82	17	10
20	.43	.30	.28	.25	.33	1.2	.62	3.5	6.0	.68	19	11
21	.42	.32	.29	.26	.42	1.1	.82	3.5	5.6	.62	40	9.5
22	.42	.31	.32	.30	.57	1.1	.90	3.3	5.4	.56	28	8.6
23	.42	.33	.29	.44	.68	1.0	.90	3.2	5.0	.50	23	7.6
24	.42	.32	.27	.38	.70	1.0	.90	3.2	4.6	.56	20	6.9
25	.41	.30	.30	.30	.58	.84	.90	5.3	4.3	.50	17	6.4
26	.40	.34	.28	.34	.55	.84	.90	5.7	4.0	.50	15	6.0
27	.39	.29	.28	.44	.56	.78	.95	5.6	3.6	.88	13	5.6
28	.35	.37	.35	.33	.43	.75	1.0	5.4	3.2	54	12	5.4
29	.35	.36	.39	.30	---	.78	1.0	5.2	3.0	68	11	4.8
30	.42	.36	.38	.44	---	.69	1.1	5.0	2.7	26	10	4.5
31	.57	---	.30	.38	---	.66	---	5.6	---	19	9.3	---
TOTAL	12.86	11.99	10.27	10.49	9.29	29.42	22.16	92.1	195.5	199.44	459.6	232.6
MEAN	.41	.40	.33	.34	.33	.95	.74	2.97	6.52	6.43	14.8	7.75
MAX	.57	.60	.39	.44	.70	1.6	1.1	5.7	27	68	40	17
MIN	.35	.25	.24	.25	.12	.39	.53	1.1	2.7	.50	9.3	4.5
AC-FT	26	24	20	21	18	58	44	183	388	396	912	461

CAL YR 1981 TOTAL 463.38 MEAN 1.27 MAX 29 MIN .07 AC-FT 919
WTR YR 1982 TOTAL 1285.72 MEAN 3.52 MAX 68 MIN .12 AC-FT 2550

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., Hydrologic Unit 11020003, on left bank at Fort Carson Girl Scout Camp, 0.2 mi (0.3 km) downstream from bridge on State Highway 115 and 2.9 mi (4.7 km) southwest of Fort Carson.

DRAINAGE AREA.--7.79 mi^2 (20.2 km^2).

PERIOD OF RECORD.--Streamflow records, May 1978 to current year. Water quality data available, May 1978 to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 6,150 ft (1,875 m) from topographic map.

REMARKS.--Records good except those above 50 ft^3/s (1.42 m^3/s) which are poor. Some diversions above station for irrigation and other uses, amounts unknown.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 353 ft^3/s (10.0 m^3/s) July 28, 1982, gage height, 6.09 ft (1.856 m), from floodmark, from rating curve extended above 50 ft^3/s (1.42 m^3/s); no flow most of time.

EXT
(1.856 m) from floodmark, from rating curve extended above 50 ft^3/s (1.42 m^3/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.05	3.6	3.8	14	6.1
2	.00	.00	.00	.00	.00	.00	.00	.05	3.3	3.6	11	5.3
3	.00	.00	.00	.00	.00	.00	.00	.05	56	3.2	9.5	4.8
4	.00	.00	.00	.00	.00	.00	.00	.05	41	2.8	8.1	4.2
5	.00	.00	.00	.00	.00	.00	.00	.05	29	2.6	7.2	3.9
6	.00	.00	.00	.00	.00	.00	.00	.05	18	2.2	6.1	3.6
7	.00	.00	.00	.00	.00	.00	.00	.05	13	2.2	8.0	4.9
8	.00	.00	.00	.00	.00	.00	.00	.05	8.5	1.9	6.4	3.8
9	.00	.00	.00	.00	.00	.00	.00	.04	8.0	1.8	5.8	3.3
10	.00	.00	.00	.00	.00	.00	.00	.04	7.6	1.5	8.2	3.0
11	.00	.00	.00	.00	.00	.00	.00	.05	7.2	1.5	11	2.8
12	.00	.00	.00	.00	.00	.00	.02	.05	6.4	1.4	9.3	3.5
13	.00	.00	.00	.00	.00	.00	.04	.05	6.2	1.1	8.6	4.2
14	.00	.00	.00	.00	.00	.00	.05	.06	5.4	.82	8.7	7.6
15	.00	.00	.00	.00	.00	.00	.06	.07	5.0	.64	22	17
16	.00	.00	.00	.00	.00	.00	.06	.08	4.1	.50	30	17
17	.00	.00	.00	.00	.00	.00	.06	.09	3.2	.35	23	14
18	.00	.00	.00	.00	.00	.00	.07	.10	9.0	.30	18	12
19	.00	.00	.00	.00	.00	.00	.07	.12	12	.22	14	10
20	.00	.00	.00	.00	.00	.00	.06	.15	10	.13	16	11
21	.00	.00	.00	.00	.00	.00	.06	.17	8.4	.06	54	9.2
22	.00	.00	.00	.00	.00	.00	.05	.19	8.0	.00	39	8.4
23	.00	.00	.00	.00	.00	.00	.05	.20	7.4	.00	29	7.4
24	.00	.00	.00	.00	.00	.00	.05	.22	7.1	.00	25	7.1
25	.00	.00	.00	.00	.00	.00	.05	.26	6.8	.00	20	6.5
26	.00	.00	.00	.00	.00	.00	.05	.80	6.5	.00	17	5.6
27	.00	.00	.00	.00	.00	.00	.06	2.3	5.6	.00	14	5.0
28	.00	.00	.00	.00	.00	.00	.06	2.8	5.3	52	11	4.2
29	.00	.00	.00	.00	---	.00	.06	3.0	4.5	73	9.1	3.8
30	.00	.00	.00	.00	---	.00	.05	3.0	4.0	27	8.0	3.4
31	.00	---	.00	.00	---	.00	---	3.8	---	19	7.0	---
TOTAL	.00	.00	.00	.00	.00	.00	1.03	18.04	320.1	203.62	478.0	202.6
MEAN	.000	.000	.000	.000	.000	.000	.034	.58	10.7	6.57	15.4	6.75
MAX	.00	.00	.00	.00	.00	.00	.07	3.8	56	73	54	17
MIN	.00	.00	.00	.00	.00	.00	.00	.04	3.2	.00	5.8	2.8
AC-FT	.00	.00	.00	.00	.00	.00	2.0	36	635	404	948	402

CAL YR 1981 TOTAL 207.00 MEAN .57 MAX 30 MIN .00 AC-FT 411
WTR YR 1982 TOTAL 1223.39 MEAN 3.35 MAX 73 MIN .00 AC-FT 2430

07105960 ROCK CREEK NEAR FOUNTAIN, CO

LOCATION.--Lat 38°39'16", long 104°44'48", in NE¼SW¼ sec.14, T.16 S., R.66 W., El Paso County, Hydrologic Unit 11020003, on left bank at edge of Military Road No. 1 on Fort Carson Military Reservation, 1.1 mi (1.8 km) upstream from mouth at Little Fountain Creek and 3.2 mi (5.1 km) southwest of Fountain.

DRAINAGE AREA.--16.9 mi^2 (43.8 km^2).

PERIOD OF RECORD.--Streamflow records, May 1978 to current year. Water-quality data available, May 1978 to September 1979.

GAGE.--Water-stage recorder. Altitude of gage is 5,600 ft (1,707 m) from topographic map.

REMARKS.--Records good except those above 50 ft^3/s (1.42 m^3/s) which are poor. Diversions above this station for irrigation and recreation, amounts unknown. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 139 ft^3/s (3.94 m^3/s) July 29, 1982, gage height, 4.19 ft (1.277 m), from rating curve extended above 50 ft^3/s (1.42 m^3/s); minimum daily, 0.01 ft^3/s (0.001 m^3/s) Aug. 31 to Sept. 12, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 139 ft^3/s (3.94 m^3/s) at 0030 July 29, gage height, 4.19 ft (1.277 m); from rating curve extended above 50 ft^3/s (1.4 m^3/s) minimum daily, 0.14 ft^3/s (0.004 m^3/s) Oct. 3-5, Nov. 13, Feb. 2-7, Mar. 30-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.18	.18	.21	.18	.21	.15	.28	.31	.36	16	5.9
2	.17	.18	.18	.21	.14	.21	.20	.28	.60	.32	11	5.3
3	.14	.15	.18	.21	.14	.21	.23	.28	36	.32	8.6	5.0
4	.14	.18	.19	.21	.14	.18	.25	.28	34	.32	6.8	4.8
5	.14	.16	.18	.23	.14	.18	.26	.32	24	.32	6.8	4.6
6	.15	.15	.19	.23	.14	.17	.27	.28	15	.32	6.6	4.8
7	.17	.18	.20	.21	.14	.17	.28	.28	10	.32	13	5.3
8	.17	.18	.17	.23	.18	.16	.28	.32	7.7	.32	8.3	5.3
9	.17	.18	.15	.24	.15	.17	.28	.32	6.0	.32	5.7	4.8
10	.17	.18	.15	.21	.15	.18	.28	.32	4.7	.32	12	4.4
11	.17	.17	.16	.21	.18	.19	.28	.36	3.4	.32	14	4.1
12	.17	.16	.15	.21	.15	.20	.28	.50	2.8	.36	11	4.7
13	.17	.14	.16	.21	.18	.18	.28	.36	2.2	.36	9.0	8.8
14	.18	.17	.17	.23	.18	.19	.28	.35	1.5	.32	9.4	16
15	.17	.20	.18	.24	.18	.18	.28	.36	.95	.32	19	22
16	.17	.18	.18	.24	.18	.17	.28	.37	1.1	.32	25	24
17	.17	.18	.17	.26	.18	.18	.27	.40	.65	.32	20	20
18	.18	.19	.16	.27	.18	.18	.27	.41	2.4	.32	17	17
19	.18	.19	.17	.26	.18	.17	.26	.45	5.3	.32	16	15
20	.18	.18	.18	.24	.18	.16	.25	.45	4.6	.32	20	17
21	.18	.18	.19	.24	.21	.17	.24	.45	3.9	.30	60	13
22	.18	.19	.21	.24	.21	.18	.24	.45	3.5	.28	35	10
23	.18	.19	.20	.24	.21	.18	.24	.43	3.1	.28	30	10
24	.18	.20	.20	.24	.21	.18	.25	.43	3.0	.28	27	10
25	.15	.21	.20	.21	.21	.16	.25	.50	3.7	.24	24	8.4
26	.15	.18	.20	.24	.21	.17	.28	.44	3.2	.28	24	6.8
27	.15	.18	.18	.24	.21	.18	.28	.42	2.4	.38	16	6.5
28	.15	.18	.18	.21	.21	.18	.28	.38	1.6	13	13	6.3
29	.17	.18	.18	.21	---	.18	.28	.35	1.0	87	9.5	5.8
30	.18	.18	.21	.21	---	.14	.28	.40	.63	37	8.4	5.6
31	.17	---	.21	.18	---	.14	---	.37	---	25	7.0	---
TOTAL	5.16	5.35	5.61	7.02	4.95	5.50	7.83	11.59	189.24	170.56	509.1	281.2
MEAN	.17	.18	.18	.23	.18	.18	.26	.37	6.31	5.50	16.4	9.37
MAX	.18	.21	.21	.27	.21	.21	.28	.50	36	87	60	24
MIN	.14	.14	.15	.18	.14	.14	.15	.28	.31	.24	5.7	4.1
AC-FT	10	11	11	14	9.8	11	16	23	375	338	1010	558

CAL YR 1981 TOTAL 164.63 MEAN .45 MAX 18 MIN .09 AC-FT 327
WTR YR 1982 TOTAL 1203.11 MEAN 3.30 MAX 87 MIN .14 AC-FT 2390

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 (1.9 km) northeast of Pinon, and 3.2 mi (5.1 km) upstream from Steele Hollow Creek.

DRAINAGE AREA.--849 mi^2 (2,199 km^2).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR CO-80-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 5,005 ft (1,526 m), from topographic map. Prior to Apr. 23, 1976, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter period, and those below 2.75 ft (0.838 m), which are poor. Natural flow of stream affected by storage reservoirs, power developments, transbasin and transmountain diversions municipal use, diversions above station for irrigation of about 10,000 acres (40 km^2) and municipal use, and return flow from irrigated areas.

AVERAGE DISCHARGE.--9 years, 70.4 ft^3/s (1.994 m^3/s), 51,000 acre-ft/yr (62.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft^3/s (289 m^3/s) May 8, 1980, gage height, 7.05 ft (2.149 m), from rating curve extended above 7,300 ft^3/s (207 m^3/s); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,360 ft^3/s (265 m^3/s) at 0700 Aug. 21, gage height, 7.38 ft (2.249 m), from rating curve extended above 7,300 ft^3/s (207 m^3/s); no flow July 20-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	65	66	50	85	79	66	4.2	116	111	126	126
2	5.6	80	62	54	100	77	68	2.5	100	85	79	117
3	3.6	76	61	54	80	79	78	2.1	1440	68	70	106
4	8.8	72	54	54	60	80	92	1.5	510	45	187	86
5	8.1	61	59	52	50	105	80	57	279	30	458	61
6	5.2	61	61	51	40	85	90	94	194	11	117	135
7	13	58	58	50	40	76	75	13	185	6.0	1050	170
8	14	55	61	52	40	76	50	6.1	189	2.5	167	211
9	12	58	63	55	40	71	29	4.7	129	1.5	57	246
10	16	55	60	62	60	71	32	4.4	87	.95	145	100
11	20	58	41	70	80	63	47	4.0	162	9.3	639	114
12	28	55	77	80	90	66	49	385	185	39	192	211
13	27	54	71	90	110	75	29	348	299	16	244	517
14	27	52	53	100	120	87	14	172	134	7.0	194	893
15	29	45	59	61	129	75	20	81	118	1.2	308	596
16	61	44	60	58	117	78	12	54	143	.30	414	281
17	55	65	56	61	100	86	11	52	157	.10	238	175
18	44	68	62	55	111	86	11	177	459	.05	220	152
19	45	65	78	55	96	91	10	52	458	.01	179	153
20	49	50	74	58	110	87	9.3	29	292	.00	710	236
21	39	52	84	58	105	85	9.3	11	255	.00	3130	200
22	32	58	101	68	101	76	7.4	6.3	222	.00	539	162
23	36	55	75	76	107	68	5.4	20	203	.00	358	155
24	45	63	45	72	83	76	5.0	24	194	.00	342	150
25	49	74	40	80	81	73	4.0	305	374	.00	326	145
26	52	77	40	76	74	85	3.0	193	318	24	318	140
27	61	74	40	76	85	90	82	159	292	209	311	135
28	55	73	40	61	77	80	30	93	220	898	285	126
29	45	72	42	58	---	73	8.0	97	189	2190	229	119
30	49	70	45	65	---	86	4.8	115	142	390	156	120
31	61	---	48	80	---	87	---	170	---	208	141	---
TOTAL	1003.5	1865	1836	1992	2371	2472	1031.2	2736.8	8045	4352.91	11929	6138
MEAN	32.4	62.2	59.2	64.3	84.7	79.7	34.4	88.3	268	140	385	205
MAX	61	80	101	100	129	105	92	385	1440	2190	3130	893
MIN	3.6	44	40	50	40	63	3.0	1.5	87	.00	57	61
AC-FT	1990	3700	3640	3950	4700	4900	2050	5430	15960	8630	23660	12170

CAL YR 1981 TOTAL 24516.03 MEAN 67.2 MAX 1210 MIN .15 AC-FT 48630
WTR YR 1982 TOTAL 45772.41 MEAN 125 MAX 3130 MIN .00 AC-FT 90790

07106300 FOUNTAIN CREEK NEAR PINON, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1976 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1976 to September 1979.
WATER TEMPERATURE: October 1976 to September 1979.

INSTRUMENTATION.--Water-quality monitor from October 1976 to September 1979.

REMARKS.--Daily maximum and minimum specific-conductance data available in district office for period October 1976 to September 1979.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 5,070 micromhos July 24, 1979; minimum, 204 micromhos several days in October and November, 1978.
WATER TEMPERATURES: Maximum, 34.5°C July 24, 1977; minimum, freezing point on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	ALKA-LINITY LAB (MG/L AS CACO3)
OCT												
23...	1415	50	1380	1420	7.7	14.5	8.6	10	420	113	34	200
NOV												
20...	1215	49	1340	1430	7.9	7.5	9.3	11	470	122	39	210
DEC												
14...	1115	68	--	1380	7.9	4.0	10.3	16	430	113	37	210
JAN												
15...	1415	93	1180	1210	7.5	2.5	10.7	E34	360	93	30	190
FEB												
23...	1445	95	--	1040	7.4	12.0	8.5	27	--	--	--	160
MAR												
25...	1330	80	1230	1230	7.4	13.0	8.2	>22	--	--	--	170
APR												
29...	1245	25	1480	1450	7.7	17.5	7.5	9.9	--	--	--	220
MAY												
26...	1430	200	1020	1030	7.5	24.5	6.7	21	--	--	--	150
JUN												
15...	1330	117	1140	1140	--	23.5	6.6	10	--	--	--	180
JUL												
14...	1445	2.5	1420	1460	7.6	23.5	5.8	6.9	--	--	--	220
AUG												
12...	1345	90	1030	1050	7.6	28.0	6.0	13	--	--	--	160
SEP												
20...	1300	342	900	903	7.3	16.0	8.0	E14	--	--	--	140

DATE	SULFIDE TOTAL (MG/L AS S)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	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)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P)
OCT											
23...	.1	297	2.9	.080	3.0	.460	1.3	1.80	4.8	.970	1.00
NOV											
20...	.4	195	3.3	.050	3.3	.710	.89	1.60	4.9	1.20	1.10
DEC											
14...	.8	214	3.7	.060	3.8	1.20	1.1	2.30	6.1	1.30	1.40
JAN											
15...	.4	1350	2.8	.060	2.9	6.60	.20	6.80	9.7	2.30	2.10
FEB											
23...	--	534	1.5	.060	1.6	2.30	1.0	3.30	4.9	--	--
MAR											
25...	--	270	3.9	.100	4.0	2.60	1.1	3.70	7.7	--	--
APR											
29...	--	1	2.4	.030	2.4	.060	1.7	1.80	4.2	--	--
MAY											
26...	--	1240	3.0	.040	3.0	.090	2.2	2.30	5.3	--	--
JUN											
15...	--	611	2.9	.060	3.0	.160	2.2	2.40	5.4	--	--
JUL											
14...	--	2	--	<.020	1.7	.060	2.7	2.80	4.5	--	--
AUG											
12...	--	824	1.9	.060	2.0	.130	3.7	3.80	5.8	--	--
SEP											
20...	--	1280	3.5	.160	3.7	.160	5.8	6.00	9.7	--	--

E ESTIMATED.

07106300 FOUNTAIN CREEK NEAR PINON, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, HEXA- VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	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)
OCT								
23...	0	0	<1	20	8100	<10	16	300
NOV								
20...	<1	<10	<1	17	6900	<10	12	320
DEC								
14...	<1	10	<1	27	8100	340	8	430
JAN								
15...	1	10	<1	60	43000	19	46	1500
FEB								
23...	1	10	<1	34	18000	--	24	580
MAR								
25...	4	<10	<1	35	11000	--	17	510
APR								
29...	<1	10	1	23	9500	--	19	300
MAY								
26...	<1	<10	<1	45	38000	--	21	1100
JUN								
15...	<1	<10	<1	20	13000	--	17	360
JUL								
14...	<1	10	<1	5	150	--	1	30
AUG								
12...	<1	<10	<1	30	30000	--	29	680
SEP								
20...	<1	<10	<1	44	44000	--	24	1200

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT							
23...	16	.2	13	5	1	80	<.01
NOV							
20...	90	.1	14	5	0	70	<.01
DEC							
14...	140	.1	12	3	1	80	<.01
JAN							
15...	110	.2	51	7	1	300	.01
FEB							
23...	--	.1	26	5	1	150	<.01
MAR							
25...	--	.1	28	6	1	110	<.01
APR							
29...	--	.3	12	4	1	80	<.01
MAY							
26...	--	.2	29	5	0	240	<.01
JUN							
15...	--	.2	21	5	0	100	<.01
JUL							
14...	--	.1	6	3	0	20	<.01
AUG							
12...	--	.1	22	4	0	160	<.01
SEP							
20...	--	.4	41	7	1	250	<.01

DATE	GROSS ALPHA, DIS- SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	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)	RA-226, DIS- SOLVED, PLAN- CHET COUNT (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
OCT										
23...	<17	12	<25	18	<12	16	<11	16	<.1	11

07106500 FOUNTAIN CREEK AT PUEBLO, CO

LOCATION.--Lat 38°17'16", long 104°36'02", in SE¼SW¼ sec.19, T.20 S., R.64 W., Pueblo County, Hydrologic Unit 11020003, on left bank at upstream side of bridge on U.S. Highway 50 at Pueblo and 2.6 mi (4.2 km) upstream from mouth.

DRAINAGE AREA.--926 mi^2 (2,398 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1922 to September 1925, October 1940 to September 1965, February 1971 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WDR CO-79-1: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,705 ft (1,434 m), from topographic map. See WSP 1711 or 1731 for history of changes prior to Oct. 1, 1940, and WSP 1921 for changes prior to Sept. 30, 1965. Feb. 1, 1971, to Sept. 30, 1976, water-stage recorder at site 1.4 mi (2.3 km) upstream at datum 4,725.30 ft (1,440.271 m), National Geodetic Vertical Datum of 1929 (unadjusted).

REMARKS.--Records good except those for winter period, which are fair. 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 (57 km^2) above station and municipal use, and return flow from irrigated areas.

AVERAGE DISCHARGE.--39 years (water years 1923-25, 1941-65, 1972-82), 59.1 ft^3/s (1.674 m^3/s), 42,820 acre-ft/yr (52.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,000 ft^3/s (1,330 m^3/s) June 17, 1965, gage height, 19.0 ft (5.79 m), from floodmarks, site and datum then in use, from rating curve extended above 400 ft^3/s (11 m^3/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 ft^3/s (963 m^3/s), by slope-area measurement. Flood of May 30, 1935, reached a discharge of 35,000 ft^3/s (991 m^3/s), by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,080 ft^3/s (257 m^3/s) at 1015 Aug. 21, gage height, 6.20 ft (1.890 m); minimum daily, 0.12 ft^3/s (0.003 m^3/s) July 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	87	78	81	71	116	78	18	134	108	127	162
2	9.8	112	65	78	71	134	70	14	122	98	103	143
3	10	127	70	78	71	140	73	9.9	1760	91	96	138
4	9.8	126	73	78	60	160	73	9.7	540	79	138	123
5	9.7	133	73	77	54	185	65	18	229	62	391	97
6	9.8	98	65	72	54	126	68	117	275	41	146	124
7	9.1	98	69	74	54	111	67	46	232	29	1460	140
8	15	93	65	88	54	109	44	23	186	19	302	172
9	16	87	60	90	54	96	54	14	170	9.6	192	182
10	19	88	62	91	54	108	59	12	148	4.4	191	129
11	25	82	64	94	80	112	72	6.5	197	1.7	724	130
12	29	85	62	99	150	117	64	16	169	22	205	154
13	39	76	65	100	170	121	60	545	214	15	148	273
14	41	83	68	100	200	140	44	98	124	13	130	801
15	37	83	68	96	170	120	39	86	119	5.1	153	993
16	62	72	71	90	150	93	27	74	130	2.4	394	400
17	88	88	69	87	145	88	17	216	128	2.6	230	340
18	65	94	74	80	140	80	15	150	248	2.3	209	297
19	73	71	77	75	122	82	14	60	506	2.0	230	318
20	77	69	77	70	142	82	13	58	232	1.4	1080	385
21	69	72	77	71	136	88	13	44	180	.88	4420	231
22	69	71	78	70	156	86	11	34	200	.75	800	196
23	62	69	78	72	150	86	11	52	170	.44	430	196
24	72	73	79	72	122	76	12	81	161	.21	370	186
25	72	73	83	68	135	79	8.5	248	234	.12	330	179
26	73	75	83	71	115	77	4.4	157	156	903	302	173
27	75	85	85	68	122	84	35	132	170	318	274	157
28	80	87	83	68	115	92	64	108	138	831	262	142
29	83	94	84	68	---	82	36	105	129	2210	234	137
30	83	81	85	68	---	74	26	170	120	459	204	135
31	85	---	82	64	---	79	---	196	---	219	174	---
TOTAL	1476.4	2632	2272	2458	3117	3223	1236.9	2918.1	7521	5550.90	14449	7233
MEAN	47.6	87.7	73.3	79.3	111	104	41.2	94.1	251	179	466	241
MAX	88	133	85	100	200	185	78	545	1760	2210	4420	993
MIN	9.1	69	60	64	54	74	4.4	6.5	119	.12	96	97
AC-FT	2930	5220	4510	4880	6180	6390	2450	5790	14920	11010	28660	14350

CAL YR 1981 TOTAL 25123.75 MEAN 68.8 MAX 718 MIN .01 AC-FT 49830
WTR YR 1982 TOTAL 54087.30 MEAN 148 MAX 4420 MIN .12 AC-FT 107300

07106500 FOUNTAIN CREEK AT PUEBLO, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	ALKALINITY LAB (MG/L AS CACO3)
OCT 23...	1515	58	1790	1720	7.8	15.5	8.4	6.6	500	129	43	220
NOV 20...	1300	53	1630	1700	7.9	9.0	9.1	6.4	540	136	48	220
DEC 14...	1015	64	1520	1530	8.0	3.0	10.7	9.3	520	131	47	230
JAN 15...	1500	105	1350	1310	7.9	.0	11.5	E34	410	103	36	190
FEB 23...	1520	140	--	1220	7.6	12.5	8.5	19	--	--	--	180
MAR 25...	1430	106	1490	1420	7.6	14.0	8.4	11	--	--	--	200
APR 29...	1330	36	--	1720	7.8	18.5	7.5	7.2	--	--	--	230
MAY 26...	1520	159	--	1220	7.6	25.5	6.5	20	--	--	--	170
JUN 15...	1420	100	--	1250	--	23.5	6.7	8.5	--	--	--	180
JUL 16...	1415	2.7	2030	2170	8.1	30.5	9.2	E10	--	--	--	210
AUG 10...	1515	170	1380	1360	7.7	28.5	6.0	--	--	--	--	200
SEP 20...	1345	480	1090	1100	7.7	19.5	7.8	--	--	--	--	160

DATE	SULFIDE TOTAL (MG/L AS S)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)
OCT 23...	2.3	387	4.5	.020	4.5	.080	1.0	1.10	5.6	.460	.470
NOV 20...	.3	271	4.1	.030	4.1	.170	1.3	1.50	5.6	.760	.610
DEC 14...	.6	236	--	<.020	4.7	.210	.99	1.20	5.9	1.30	.730
JAN 15...	.2	1930	3.9	.080	4.0	4.10	1.4	5.50	9.5	1.90	1.90
FEB 23...	--	698	2.6	.050	2.6	1.00	1.2	2.20	4.8	--	--
MAR 25...	--	366	5.3	.080	5.4	.230	1.7	1.90	7.3	--	--
APR 29...	--	308	4.4	.020	4.4	.070	.13	.20	4.6	--	--
MAY 26...	--	360	--	<.020	3.3	.120	2.0	2.10	5.4	--	--
JUN 15...	--	612	3.0	.030	3.0	.110	1.7	1.80	4.8	--	--
JUL 16...	--	6	11	.030	11	.080	1.7	1.80	13	--	--
AUG 10...	--	405	2.7	.030	2.7	.070	2.6	2.70	5.4	--	--
SEP 20...	--	1620	3.6	.020	3.6	.070	8.3	8.40	12	--	--

E ESTIMATED.

07106500 FOUNTAIN CREEK AT PUEBLO, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	CHRO-MIUM, HEXA-VALENT, DIS. (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	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)
OCT 23...	0	0	<1	23	13000	<10	16	330
NOV 20...	<1	<10	<1	19	9100	<10	13	280
DEC 14...	<1	<10	<1	14	3500	<10	5	130
JAN 15...	1	<10	<1	80	55000	23	69	1700
FEB 23...	<1	10	<1	38	24000	--	23	680
MAR 25...	4	<10	<1	23	10000	--	14	340
APR 29...	<10	<10	1	19	9500	--	10	250
MAY 26...	<1	<10	<1	49	33000	--	12	760
JUN 15...	1	<10	<1	23	15000	--	24	420
JUL 16...	<1	<10	<1	4	80	--	<1	40
AUG 10...	<1	<10	<1	22	26000	--	21	610
SEP 20...	<1	<10	<1	52	55000	--	13	1600

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT 23...	6	.2	16	23	0	100	<.01
NOV 20...	7	.2	13	20	0	70	<.01
DEC 14...	9	.1	2	18	1	50	<.01
JAN 15...	17	.3	60	26	2	370	<.01
FEB 23...	--	.1	28	17	1	150	<.01
MAR 25...	--	.1	21	1	1	90	<.01
APR 29...	--	.3	12	27	1	90	<.01
MAY 26...	--	.2	23	18	0	160	<.01
JUN 15...	--	.2	25	13	0	140	<.01
JUL 16...	--	.2	6	200	<0	40	<.01
AUG 10...	--	.2	10	19	0	140	<.01
SEP 20...	--	.5	49	16	1	290	<.01

DATE	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (PCI/L AS U-NAT)	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)	RA-226, DIS-SOLVED, PLAN-CHET COUNT (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)
OCT 23...	<24	20	<35	29	<18	18	<17	17	<.1	15

07108900 ST. CHARLES RIVER AT VINELAND, CO

LOCATION.--Lat 38°14'44", long 104°29'09", in NE¼SW¼ sec.6, T.21 S., R.63 W., Pueblo County, Hydrologic Unit 11020002, on right bank at right downstream end of downstream bridge on U.S. Highway 50C, 1.6 mi (2.6 km) west of Vineland, and 3.0 mi (3.9 km) upstream from mouth.

DRAINAGE AREA.--474 mi² (1,228 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 4,581.58 ft (1,396.465 m) (Colorado Division of Highways benchmark).

REMARKS.--Records good except those for winter period, which are fair and those above 1800 ft³/s (51.0 m³/s), which are poor. Natural flow of stream affected by diversions above station for irrigation of about 8,500 acres (34.4 km²), and for industrial uses, and return flow from land irrigated by Bessemer Ditch. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,560 ft³/s (214 m³/s) Aug. 11, 1982, gage height, 12.70 ft (3.871 m), from rating curve extended above 1,800 ft³/s (51.0 m³/s); minimum daily, 0.25 ft³/s (0.007 m³/s) Apr. 25, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1901, 56,000 ft³/s (1,590 m³/s) at a site 5.0 mi (8.0 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,560 ft³/s (214 m³/s), at 0100 Aug. 11, gage height, 12.70 ft (3.871 m), from rating curve extended above 1,800 ft³/s (51.0 m³/s); minimum daily, 2.5 ft³/s (0.071 m³/s) Apr. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	9.7	6.4	8.6	7.4	9.8	17	7.6	88	28	183	63
2	6.3	9.0	6.9	7.9	6.8	10	16	4.8	52	20	127	61
3	6.3	9.0	7.7	7.0	6.4	9.3	9.4	3.8	63	16	57	59
4	6.2	7.1	7.5	6.0	5.6	7.3	7.8	3.7	45	14	45	56
5	6.6	6.6	7.8	5.1	5.0	7.4	4.6	6.9	33	14	41	52
6	6.5	6.5	7.6	5.0	4.5	7.3	5.3	26	25	12	67	56
7	5.0	7.2	8.0	4.8	4.5	7.7	5.5	20	20	7.6	87	57
8	6.5	7.3	7.9	5.0	4.8	7.1	5.0	12	19	7.8	42	50
9	7.9	8.0	7.9	5.5	5.2	7.4	5.0	7.0	13	7.8	35	46
10	7.2	8.0	8.0	7.0	5.0	7.1	4.6	5.1	11	7.1	151	46
11	6.3	7.5	7.6	10	4.8	7.2	5.5	3.8	9.5	6.4	865	46
12	5.6	8.8	8.1	9.0	6.0	8.2	5.6	27	17	6.4	57	185
13	5.0	8.4	7.4	9.0	8.0	7.7	5.6	25	22	6.4	174	336
14	5.6	8.4	7.4	15	10	9.0	3.8	21	32	6.5	112	344
15	6.3	8.6	7.6	13	12	9.5	2.5	19	25	7.1	684	280
16	6.9	8.1	7.8	8.2	19	15	3.3	16	34	5.4	188	270
17	7.5	8.4	8.4	18	18	11	5.0	14	30	4.9	56	247
18	6.5	8.4	9.8	6.6	13	13	5.6	9.0	45	4.2	58	244
19	7.6	7.8	7.8	7.0	12	18	5.0	8.4	64	4.3	114	242
20	7.3	7.5	9.0	7.6	12	19	5.0	8.2	100	5.2	101	204
21	6.9	7.0	8.2	8.5	11	19	5.6	7.8	61	4.4	949	93
22	7.7	6.3	7.0	7.9	10	20	7.0	8.2	50	4.4	430	73
23	6.8	6.3	6.4	10	10	19	7.7	9.4	92	4.1	307	68
24	7.2	7.0	6.0	8.4	10	19	9.2	10	158	4.1	252	70
25	8.3	7.5	6.0	9.5	11	19	7.6	29	62	4.0	258	70
26	7.5	6.2	6.2	9.6	11	19	8.1	41	51	4.1	218	69
27	8.2	6.5	6.4	12	10	19	22	29	48	50	188	62
28	8.8	7.3	6.4	8.3	11	21	12	108	43	358	183	57
29	6.5	7.3	6.2	7.3	---	21	8.0	124	37	1060	171	52
30	6.3	7.3	6.5	8.8	---	17	8.3	122	35	618	144	52
31	7.1	---	7.2	7.0	---	16	---	131	---	303	76	---
TOTAL	209.4	229.0	229.1	262.6	254.0	407.0	222.6	867.7	1384.5	2605.2	6420	3610
MEAN	6.75	7.63	7.39	8.47	9.07	13.1	7.42	28.0	46.2	84.0	207	120
MAX	8.8	9.7	9.8	18	19	21	22	131	158	1060	949	344
MIN	5.0	6.2	6.0	4.8	4.5	7.1	2.5	3.7	9.5	4.0	35	46
AC-FT	415	454	454	521	504	807	442	1720	2750	5170	12730	7160

CAL YR 1981 TOTAL 6808.0 MEAN 18.7 MAX 687 MIN 1.6 AC-FT 13500
WTR YR 1982 TOTAL 16701.1 MEAN 45.8 MAX 1060 MIN 2.5 AC-FT 33130

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 (5 m) downstream from bridge on Sixmile Rd., 0.3 mi (0.5 km) upstream from Sixmile Creek, and 2.6 mi (4.2 km) west of Avondale.

DRAINAGE AREA.--6,327 mi² (16,387 km²).

PERIOD OF RECORD.--Streamflow records, May 1939 to September 1951, February 1965 to current year. Water-quality data available, April to October 1975, April 1979 to September 1980.

REVISED RECORDS.--WSP 1087: 1942. WSP 1311: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,509.53 ft (1,374.505 m) National Geodetic Vertical Datum of 1929. Prior to February 1965, at site 550 ft (170 m) downstream at datum 1.37 ft (0.418 m) lower.

REMARKS.--Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation of about 123,000 acres (498 km²) and municipal use, and return flow from irrigated areas. Flow partly regulated by Pueblo Reservoir (station 07099350) since Jan. 9, 1974. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years (water years 1975-82), 769 ft³/s (21.78 m³/s), 557,100 acre-ft/yr (687 hm³/yr), subsequent to completion of Pueblo Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 50,000 ft³/s (1,416 m³/s) June 18, 1965, gage height, 9.77 ft (2.978 m), from rating curve extended above 6,700 ft³/s (190 m³/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 (1.42 m³/s) Apr. 2, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,320 ft³/s (264 m³/s) at 1500 July 29, gage height, 6.94 ft (2.115 m); minimum daily, 226 ft³/s (6.40 m³/s) Nov. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	347	512	256	269	315	352	459	834	1940	3070	1510	1600
2	339	546	253	265	309	352	472	756	1710	2990	1300	1390
3	357	608	258	258	310	354	513	735	3060	2700	1150	1070
4	327	653	254	259	287	308	399	748	2750	2540	1500	961
5	304	610	245	291	276	324	360	780	2070	2240	2060	857
6	314	596	235	287	276	323	418	988	1320	1920	1830	883
7	323	557	233	282	279	306	534	1190	1520	2030	2690	954
8	324	531	237	299	295	300	520	1130	1780	1980	2150	993
9	332	527	233	318	295	301	480	971	1780	2200	1600	981
10	381	520	238	326	297	292	443	867	1820	2270	1510	975
11	372	525	242	325	312	291	447	784	1890	2170	2890	943
12	380	530	247	334	309	276	450	1070	2190	2010	1970	1300
13	337	535	241	301	323	255	420	1380	2400	1430	1900	2070
14	328	533	236	333	348	270	401	1110	2400	1280	1620	2900
15	333	363	262	343	362	323	461	958	2380	1370	2010	2380
16	363	263	279	342	352	370	472	688	2390	1210	2260	2090
17	477	226	279	354	342	378	468	652	2320	1340	1890	1820
18	557	244	277	341	330	502	491	799	2350	1560	1670	1640
19	598	275	285	334	321	534	474	530	3600	1750	1660	1570
20	614	291	291	329	315	533	469	443	3590	1680	2480	1780
21	625	252	298	319	317	554	492	390	2140	1330	6880	2040
22	515	235	325	318	316	564	487	422	1970	1250	4700	1970
23	473	231	278	311	320	493	457	466	2990	1360	3550	1930
24	469	231	263	304	313	428	644	539	3090	1370	2230	1660
25	476	246	263	303	330	449	815	935	3510	1170	2460	1600
26	463	262	269	311	311	481	829	1060	3860	1260	2560	1550
27	475	261	267	320	343	464	872	1070	3410	2750	2260	1490
28	466	263	264	323	351	460	1000	1130	3050	3410	2050	1410
29	451	262	259	316	---	492	965	1290	2190	5150	1900	1320
30	469	270	272	320	---	465	899	1710	2730	5020	2080	1190
31	471	---	282	311	---	502	---	2010	---	4980	1900	---
TOTAL	13060	11958	8121	9646	8854	12296	16611	28435	74200	68790	70220	45317
MEAN	421	399	262	311	316	397	554	917	2473	2219	2265	1511
MAX	625	653	325	354	362	564	1000	2010	3860	5150	6880	2900
MIN	304	226	233	258	276	255	360	390	1320	1170	1150	857
AC-FT	25900	23720	16110	19130	17560	24390	32950	56400	147200	136400	139300	89890

CAL YR 1981 TOTAL 204214 MEAN 559 MAX 2480 MIN 200 AC-FT 405100
WTR YR 1982 TOTAL 367508 MEAN 1007 MAX 6880 MIN 226 AC-FT 729000

07111000 HUERFANO RIVER AT MANZANARES CROSSING, NEAR REDWING, CO

LOCATION.--Lat 37°43'40", long 105°21'03", in sec.5, T.27 S., R.71 W., Huerfano County, Hydrologic Unit 11020006, on left bank at Manzanares Crossing, 500 ft (150 m) downstream from private bridge, 0.2 mi (0.3 km) downstream from Manzanares Creek, and 3.5 mi (5.6 km) southwest of Redwing.

DRAINAGE AREA.--73 mi² (189 km²).

PERIOD OF RECORD.--July 1923 to May 1977, October 1977 to September 1982 (discontinued). Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1311: 1945(M). WSP 1921: 1957.

GAGE.--Water-stage recorder. Altitude of gage is 8,270 ft (2,521 m), from topographic map. Apr. 26, 1946, to Sept. 30, 1972, at datum 1.00 ft (0.305 m) higher. See WSP 1711 or 1731 for history of changes prior to Apr. 26, 1946.

REMARKS.--Records good. Diversions above station for irrigation of about 1,800 acres (7.28 km²). 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.--58 years (water years 1924-76, 1978-82), 31.0 ft³/s (0.878 m³/s), 22,460 acre-ft/yr (27.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/s (289 m³/s) Aug. 2, 1951, gage height, 8.14 ft (2.481 m), from rating curve extended above 270 ft³/s (7.6 m³/s), on basis of slope-area measurement of peak flow; minimum daily, 3.5 ft³/s (0.099 m³/s) Mar. 30, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 102 ft³/s (2.89 m³/s) at 1000 Sept. 17, gage height, 2.62 ft (0.799 m); maximum gage height, 2.69 ft (0.820 m) Jan. 23 (backwater from ice), minimum daily discharge, 6.8 ft³/s (0.19 m³/s) Jan. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	12	10	7.2	8.1	10	11	19	53	48	45	32
2	13	13	12	7.0	8.0	10	12	19	52	46	40	32
3	14	13	13	6.8	7.5	10	12	23	53	45	37	32
4	14	12	11	7.6	7.0	10	14	27	52	45	43	31
5	14	12	11	9.8	7.0	9.5	15	32	53	40	39	29
6	14	12	10	8.9	7.5	8.9	14	29	52	39	38	29
7	13	13	9.8	8.6	7.5	9.0	14	25	51	38	37	28
8	13	14	9.8	8.6	7.5	10	14	23	51	34	36	28
9	13	12	9.5	8.6	7.0	10	14	22	50	33	32	40
10	13	12	9.5	8.1	7.0	10	13	22	51	32	30	37
11	13	12	9.8	7.8	7.0	11	14	23	49	32	28	40
12	14	12	9.5	7.8	7.0	12	16	24	50	31	33	83
13	14	13	9.5	7.8	7.6	11	16	23	57	31	33	82
14	14	13	9.2	7.8	8.6	11	16	22	55	28	32	66
15	17	13	9.2	7.8	8.9	11	15	20	57	27	35	57
16	16	13	9.5	7.6	8.9	9.8	14	20	55	27	35	61
17	15	13	8.9	7.6	8.9	11	13	19	58	27	33	93
18	15	12	9.2	7.6	8.9	11	14	20	69	28	51	85
19	14	11	11	7.4	8.9	9.5	13	22	67	28	48	74
20	14	10	9.8	7.6	9.2	8.6	13	24	59	26	48	64
21	14	12	8.6	7.5	8.9	9.2	12	30	57	24	49	58
22	14	12	7.8	7.5	8.9	8.9	15	37	56	23	46	51
23	14	12	7.8	7.5	9.2	8.9	15	35	56	23	64	47
24	14	12	8.6	8.0	8.9	9.2	14	38	57	23	66	45
25	15	13	11	8.6	8.9	9.5	14	42	57	23	64	40
26	13	12	12	8.6	8.9	9.8	14	36	56	27	62	37
27	14	13	12	8.4	9.8	9.8	14	40	55	31	52	36
28	13	14	9.8	8.1	9.8	9.8	14	40	55	51	47	35
29	13	14	8.4	7.8	---	9.2	14	48	51	56	40	32
30	13	11	7.8	8.0	---	7.8	16	52	50	63	39	31
31	12	---	7.4	8.0	---	9.5	---	52	---	56	36	---
TOTAL	429	372	302.4	246.0	231.3	304.9	419	908	1644	1085	1318	1435
MEAN	13.8	12.4	9.75	7.94	8.26	9.84	14.0	29.3	54.8	35.0	42.5	47.8
MAX	17	14	13	9.8	9.8	12	16	52	69	63	66	93
MIN	12	10	7.4	6.8	7.0	7.8	11	19	49	23	28	28
AC-FT	851	738	600	488	459	605	831	1800	3260	2150	2610	2850

CAL YR 1981 TOTAL 6594.1 MEAN 18.1 MAX 55 MIN 7.0 AC-FT 13080
WTR YR 1982 TOTAL 8694.6 MEAN 23.8 MAX 93 MIN 6.8 AC-FT 17250

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 (1.3 km) upstream from mouth, and 1.6 mi (2.6 km) south of Boone.

DRAINAGE AREA.--1,875 mi^2 (4,856 km^2).

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.

REVISED RECORDS.--WDR CO-81-1: 1980 (M).

GAGE.--Water-stage recorder. Datum of gage is 4,443.75 ft (1,354.455 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those above 3,000 ft^3/s (85.0 m^3/s) and those for winter period which are poor. Natural flow of stream affected by diversions for irrigation of about 48,000 acres (194 km^2), 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.--6 years (water years 1923-25, 1980-82), 32.0 ft^3/s (0.906 m^3/s), 23,180 acre-ft/yr (28.6 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,400 ft^3/s (549 m^3/s) Aug. 1, 1923, gage height, 9.4 ft (2.865 m) datum then in use, from rating curve extended above 1,200 ft^3/s (34.0 m^3/s) on the basis of slope-area measurement of peak flow; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,110 ft^3/s (145 m^3/s) at 0730 Aug. 21, gage height, 9.27 ft (2.825 m), from rating curve extended above 3,000 ft^3/s (85.0 m^3/s); maximum gage height 9.40 ft (2.865 m) at about 1500 July 29, due to backwater from Arkansas River; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.02	.01	1.0	20	7.3	1.0	1.8	1.1	13	15	9.4
2	.01	.01	.04	1.0	10	6.8	2.9	.54	.24	18	5.5	3.6
3	.01	.00	.04	1.2	10	6.0	30	.36	30	7.9	2.8	1.5
4	.00	.00	.04	1.4	10	6.2	11	.17	14	10	2.4	.65
5	.00	.00	.12	1.5	10	7.8	6.2	2.5	11	6.9	2.1	.51
6	.00	.00	.07	1.5	10	11	1.5	3.6	6.0	3.9	.74	.69
7	.00	.00	.05	1.2	10	5.8	.44	.54	3.6	2.6	.18	3.5
8	.00	.00	.07	1.0	10	5.0	.24	.32	2.2	1.9	.01	6.7
9	.00	.00	.07	1.2	15	4.6	.15	.08	.51	1.4	.01	.22
10	.00	.00	.05	1.4	30	3.5	.24	.02	.38	.60	.00	.06
11	.00	.00	.04	1.4	60	2.4	.24	.02	2.2	.19	387	.04
12	.00	.00	.04	1.4	184	1.9	.19	1.8	10	.12	19	146
13	.00	.00	.04	1.4	251	1.7	.07	5.2	17	.07	6.8	36
14	.00	.00	.04	1.4	290	2.2	.19	4.0	14	.04	3.4	68
15	.00	.00	.09	1.3	100	2.4	.30	1.2	18	.01	69	51
16	.00	.00	.05	1.0	90	1.0	.30	.73	17	.01	29	45
17	.00	.00	.12	1.0	76	18	.37	.47	12	.70	10	37
18	.00	.00	.15	2.0	50	19	.30	.26	113	.00	2.4	34
19	.00	.00	.12	4.0	36	15	.30	.03	63	.00	.81	33
20	.00	.00	.07	5.0	27	18	.30	.01	80	.00	15	35
21	.00	.00	.04	6.0	22	16	.37	.03	79	.00	1310	31
22	.00	.00	.04	6.0	20	10	2.4	.06	79	.00	116	34
23	.00	.00	.04	8.0	20	1.7	4.6	.01	221	.00	45	27
24	.00	.00	.05	12	16	1.1	1.7	.05	50	.00	38	21
25	.00	.00	.30	20	14	2.2	.81	1.4	66	.00	34	30
26	.00	.00	.20	35	11	1.1	.52	.54	58	.00	23	22
27	.00	.00	.10	50	11	1.9	5.1	.08	67	16	13	13
28	.00	.00	.10	28	9.2	1.7	2.7	.01	45	157	12	14
29	.00	.01	.30	20	---	1.4	.42	.03	25	1660	14	7.4
30	.00	.02	.90	26	---	24	3.8	4.8	13	221	12	5.6
31	.00	---	1.0	19	---	11	---	6.4	---	40	8.0	---
TOTAL	.09	.06	4.39	262.3	1422.2	217.7	78.65	37.06	1118.23	2161.34	2196.15	716.87
MEAN	.003	.002	.14	8.46	50.8	7.02	2.62	1.20	37.3	69.7	70.8	23.9
MAX	.07	.02	1.0	50	290	24	30	6.4	221	1660	1310	146
MIN	.00	.00	.01	1.0	9.2	1.0	.07	.01	.24	.00	.00	.04
AC-FT	.2	.1	8.7	520	2820	432	156	74	2220	4290	4360	1420

CAL YR 1981 TOTAL 8345.27 MEAN 22.9 MAX 2900 MIN .00 AC-FT 16550
WTR YR 1982 TOTAL 8215.04 MEAN 22.5 MAX 1660 MIN .00 AC-FT 16290

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 (5.6 km) southeast of Fowler, and 5.4 mi (8.7 km) upstream from mouth.

DRAINAGE AREA.--1,125 mi^2 (2,914 km^2).

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 (1,315.837 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 29, 1923, at site 3 mi (5 km) downstream at different datum. Aug. 29, 1923, to Sept. 30, 1925, at present site at different datum.

REMARKS.--Records good. Waste water from Oxford Farmers Co. and Rocky Ford Highline canals enters river above station. Diversions above station for irrigation of about 4,700 acres (19.0 km^2). Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--46 years, 29.6 ft^3/s (0.838 m^3/s) 21,450 acre-ft/yr (26.4 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 83,000 ft^3/s (2,350 m^3/s) Aug. 22, 1923, by slope-area measurement 2 mi (3 km) upstream from present site, caused by failure of Apishapa Dam 31 mi (50 km) upstream; no flow Feb. 5, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,650 ft^3/s (46.7 m^3/s) at 0515 Aug. 11, gage height, 6.34 ft (1.932 m), no peak above base of 3,000 ft^3/s (85 m^3/s); minimum daily, 2.1 ft^3/s (0.059 m^3/s) Apr. 12-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	5.0	3.7	3.0	2.8	3.2	6.1	3.8	7.9	8.2	17	13
2	6.5	12	3.7	3.0	2.6	3.0	7.3	4.0	5.6	6.7	7.9	14
3	6.4	8.7	3.7	3.2	2.6	3.2	3.2	4.2	176	7.1	7.7	12
4	6.4	8.4	3.7	3.2	2.4	3.4	5.0	3.9	28	6.1	7.4	11
5	6.3	7.2	3.7	3.2	2.4	3.2	2.4	2.4	56	7.2	9.1	12
6	6.3	7.5	3.7	3.0	2.6	3.0	4.9	3.0	48	7.0	9.4	12
7	6.6	7.5	3.4	3.0	2.8	3.0	4.2	2.8	18	5.6	12	7.3
8	6.6	8.1	3.7	3.0	2.8	3.0	5.8	2.6	18	6.1	20	3.9
9	7.5	8.1	3.7	3.2	2.6	3.2	4.3	3.2	18	8.9	13	4.0
10	7.5	6.0	3.9	3.0	2.6	3.0	3.0	4.0	37	8.9	11	4.2
11	8.1	5.7	3.9	3.0	2.6	3.0	2.2	4.2	47	11	702	3.9
12	7.8	8.1	3.7	3.0	2.6	3.0	2.1	4.6	55	16	74	170
13	6.6	9.0	3.7	2.8	2.8	3.2	2.1	3.5	133	9.4	24	98
14	5.7	8.4	3.7	2.8	2.8	3.3	3.5	2.8	50	9.6	17	92
15	6.3	5.0	3.7	2.8	3.0	3.5	2.8	2.8	58	8.8	9.2	59
16	6.0	5.7	3.9	2.6	3.0	30	3.0	2.7	29	7.7	6.8	35
17	6.0	4.4	3.7	2.8	2.8	6.5	2.6	3.0	16	7.9	18	30
18	6.3	4.2	3.9	2.8	2.8	4.9	3.4	2.9	94	14	11	59
19	7.8	4.2	3.7	2.8	2.8	4.6	2.6	3.1	180	5.1	9.1	86
20	6.9	4.2	3.7	2.8	2.8	4.2	3.4	4.8	184	11	16	92
21	6.6	4.2	3.9	2.8	2.8	4.2	3.4	4.8	98	5.9	484	96
22	5.2	4.2	3.9	3.0	3.0	5.9	4.8	3.5	34	5.2	126	64
23	5.7	3.9	3.7	2.8	2.8	5.0	3.6	13	90	3.9	87	45
24	6.6	3.9	3.4	3.0	2.8	5.2	3.5	11	81	7.1	29	64
25	8.1	3.9	3.4	2.8	3.0	4.3	3.4	6.7	36	6.3	38	75
26	6.0	3.9	3.4	2.8	3.0	4.0	3.5	5.7	103	6.8	32	82
27	6.0	3.9	3.4	2.6	3.0	3.9	2.8	4.3	77	5.3	22	79
28	6.3	3.9	3.2	2.6	3.2	4.7	2.7	5.4	40	6.5	11	54
29	6.0	3.9	3.0	2.8	---	8.9	3.5	4.7	20	7.5	7.7	36
30	5.0	3.9	3.2	2.8	---	56	6.7	6.9	8.5	228	12	29
31	5.7	---	3.2	2.8	---	6.6	---	14	---	78	12	---
TOTAL	201.3	177.0	112.2	89.8	77.8	206.1	111.8	148.3	1846.0	532.8	1862.3	1442.3
MEAN	6.49	5.90	3.62	2.90	2.78	6.65	3.73	4.78	61.5	17.2	60.1	48.1
MAX	8.1	12	3.9	3.2	3.2	56	7.3	14	184	228	702	170
MIN	5.0	3.9	3.0	2.6	2.4	3.0	2.1	2.4	5.6	3.9	6.8	3.9
AC-FT	399	351	223	178	154	409	222	294	3660	1060	3690	2860

CAL YR 1981 TOTAL 5713.0 MEAN 15.7 MAX 757 MIN 1.8 AC-FT 11330
WTR YR 1982 TOTAL 6807.7 MEAN 18.7 MAX 702 MIN 2.1 AC-FT 13500

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 (12 m) shoreward, 125 ft (38 m) upstream from left end of 20th Rd. Bridge, 1.7 mi (2.7 km) southwest of Swink, and 2.9 mi (4.7 km) upstream from mouth.

DRAINAGE AREA.--496 mi^2 (1,285 km^2).

PERIOD OF RECORD.--January 1922 to September 1925, March 1968 to current year.

REVISED RECORDS.--WDR CO 76-1: 1975.

GAGE.--Water-stage recorder. Altitude of gage is 4,120 ft (1,256 m), from topographic map. Prior to May 29, 1975, at site 140 ft (43 m) downstream at datum 0.13 ft (0.040 m) lower.

REMARKS.--Records good except those Dec. 23 to Feb. 17, which are poor. Natural flow of stream affected by minor diversions above station for irrigation, water imported from Arkansas River and Crooked Arroyo for irrigation above 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.--17 years (water years 1923-25, 1969-82), 61.6 ft^3/s (1.745 m^3/s), 44,630 acre-ft/yr (55.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,300 ft^3/s (348 m^3/s) July 10, 1978, gage height, 21.11 ft (6.434 m), from floodmark, from rating curve extended above 250 ft^3/s (7.1 m^3/s) on basis of contracted-opening measurement of peak flow; minimum daily, 3.3 ft^3/s (0.093 m^3/s) Aug. 7, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1922, 21,400 ft^3/s (606 m^3/s) June 17, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,750 ft^3/s (163 m^3/s) at 0800 Aug. 11, gage height, 16.34 ft (4.980 m), from floodmark, from rating curve extended above 250 ft^3/s (7.1 m^3/s) on the basis of contracted-opening measurement of peak flow; minimum daily, 4.1 ft^3/s (0.12 m^3/s) Mar. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	83	43	15	21	18	36	27	103	48	74	74
2	24	90	38	14	19	17	58	19	95	36	81	61
3	25	101	34	14	16	34	77	19	267	36	66	65
4	5.3	92	31	14	13	27	59	14	105	32	60	52
5	38	65	36	13	12	46	43	22	70	41	56	52
6	44	73	39	12	11	54	27	26	109	31	59	65
7	44	93	37	11	13	49	24	28	120	37	66	63
8	41	93	36	11	14	49	31	42	97	33	71	61
9	40	102	38	11	13	34	31	46	84	32	66	64
10	38	113	34	12	12	34	30	24	84	30	63	65
11	42	99	39	12	11	30	20	16	119	36	954	71
12	42	99	41	11	10	30	20	63	103	54	155	84
13	45	110	40	10	10	36	22	52	79	45	116	125
14	48	99	42	11	11	4.1	16	46	73	48	83	125
15	38	64	41	13	13	17	13	48	96	36	73	139
16	38	40	15	15	16	30	12	26	142	36	85	124
17	32	52	9.3	15	18	36	16	45	108	40	139	124
18	7.5	49	40	15	27	56	15	37	83	42	102	135
19	42	49	45	17	20	82	19	44	74	38	78	120
20	47	43	60	20	20	63	23	42	132	29	67	154
21	54	48	54	23	22	72	17	28	132	27	61	102
22	67	50	40	22	22	49	15	19	150	26	54	76
23	57	52	30	17	39	46	18	19	161	25	65	88
24	59	50	24	17	30	33	20	32	339	25	90	143
25	38	54	24	20	15	35	16	56	76	26	88	153
26	41	46	22	22	31	32	14	53	65	31	92	159
27	57	52	19	24	20	42	25	65	65	35	86	160
28	55	46	17	25	22	24	28	73	77	44	78	152
29	57	46	16	25	---	40	30	59	68	59	85	157
30	63	46	15	25	---	113	32	39	61	162	79	149
31	78	---	15	24	---	46	---	74	---	105	85	---
TOTAL	1335.8	2099	1014.3	510	501	1278.1	807	1203	3337	1325	3377	3162
MEAN	43.1	70.0	32.7	16.5	17.9	41.2	26.9	38.8	111	42.7	109	105
MAX	78	113	60	25	39	113	77	74	339	162	954	160
MIN	5.3	40	9.3	10	10	4.1	12	14	61	25	54	52
AC-FT	2650	4160	2010	1010	994	2540	1600	2390	6620	2630	6700	6270

CAL YR 1981 TOTAL 13198.9 MEAN 36.2 MAX 384 MIN 5.3 AC-FT 26180
WTR YR 1982 TOTAL 19949.2 MEAN 54.7 MAX 954 MIN 4.1 AC-FT 39570

07122400 CROOKED ARROYO NEAR SWINK, CO

LOCATION.--Lat 37°58'56", long 103°35'52", in SW¼SW¼ sec.5, T.24 S., R.55 W., Otero County, Hydrologic Unit 11020005, on right bank 54 ft (16 m) downstream from bridge on State Highway 10, 2.0 mi (3.2 km) upstream from mouth, and 2.8 mi (4.5 km) southeast of Swink.

DRAINAGE AREA.--108 mi^2 (280 km^2).

PERIOD OF RECORD.--February 1968 to current year.

REVISED RECORDS.--WDR CO 76-1: 1975.

GAGE.--Water-stage recorder. Altitude of gage is 4,100 ft (1,250 m), from topographic map.

REMARKS.--Records good except those above 80 ft^3/s (2.27 m^3/s) which are fair. Natural flow of stream affected by minor diversions above station for irrigation, water exported above station to Timpas Creek, water imported from Arkansas River for irrigation above 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.--14 years, 10.6 ft^3/s (0.300 m^3/s) 7,680 acre-ft/yr (9.47 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,200 ft^3/s (34.0 m^3/s) Aug. 7, 1971, gage height, 7.91 ft (2.411 m), from rating curve extended above 87 ft^3/s (2.5 m^3/s); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 226 ft^3/s (6.40 m^3/s) at 0930 June 3, gage height, 4.61 ft (1.405 m), from rating curve extended above 40 ft^3/s (1.13 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 0.04 ft^3/s (0.001 m^3/s) Dec. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.94	22	1.4	1.5	1.5	.21	8.4	2.5	34	13	22	9.4
2	.70	38	1.2	1.5	1.4	.27	20	3.2	30	12	23	11
3	.06	31	1.2	1.4	1.4	.41	45	3.0	74	11	14	14
4	.17	19	1.0	1.4	1.4	.76	5.2	3.1	9.9	11	13	12
5	1.4	23	.90	1.5	1.4	.76	4.8	3.1	11	13	6.6	11
6	.05	24	1.2	1.4	1.2	1.0	3.2	3.1	18	16	7.6	14
7	.05	20	1.0	1.4	1.2	1.4	.90	2.9	12	14	10	12
8	.05	21	.90	1.4	1.2	1.4	4.1	2.4	14	9.8	10	12
9	.05	32	.90	1.4	1.2	1.5	3.7	2.2	16	6.2	15	15
10	.05	27	.76	1.4	1.2	1.7	1.4	2.2	19	6.1	14	17
11	.05	27	.50	1.4	1.2	1.9	4.0	1.8	24	5.9	14	19
12	.05	27	.33	1.4	1.2	2.1	1.0	.21	21	12	12	35
13	.05	20	.12	1.2	1.2	2.1	5.4	.16	32	11	16	32
14	.50	18	.09	1.2	1.4	2.5	3.4	.33	33	13	23	24
15	.41	14	.09	1.2	1.2	2.7	1.6	.76	41	9.2	19	18
16	.41	4.0	.09	1.2	1.4	2.8	.50	2.2	18	6.4	22	17
17	.33	3.4	.09	1.2	1.5	3.2	1.4	16	18	6.5	19	17
18	1.9	2.5	.06	1.2	1.4	25	2.0	10	13	7.3	23	24
19	7.7	1.7	.06	1.2	1.4	68	.50	7.3	11	9.1	19	27
20	8.1	1.9	.06	1.2	1.4	46	1.0	13	14	8.2	15	25
21	16	1.5	.04	1.2	1.4	15	1.7	6.5	16	5.7	15	11
22	16	1.5	.09	1.2	1.0	17	2.3	1.9	24	3.7	7.4	5.6
23	17	1.7	.76	1.2	.16	16	2.5	.27	23	5.2	6.9	7.6
24	6.8	1.9	1.4	1.2	.16	14	2.4	.76	25	6.0	16	24
25	12	1.7	1.4	1.2	.16	22	2.4	4.3	12	3.6	18	19
26	20	1.9	1.4	1.2	.16	4.2	2.4	6.3	16	2.4	16	23
27	9.8	1.8	1.4	1.2	.21	9.3	2.2	7.8	20	4.2	10	25
28	4.7	1.6	1.4	1.2	.21	21	2.3	6.4	21	3.6	11	24
29	9.3	1.5	1.4	1.2	---	17	2.2	7.2	15	8.1	13	22
30	31	1.5	1.5	1.2	---	23	2.4	11	16	18	15	22
31	26	---	1.5	1.2	---	29	---	22	---	21	14	---
TOTAL	191.62	393.1	24.24	39.9	29.86	353.21	140.30	153.89	650.9	282.2	459.5	548.6
MEAN	6.18	13.1	.78	1.29	1.07	11.4	4.68	4.96	21.7	9.10	14.8	18.3
MAX	31	38	1.5	1.5	1.5	68	45	22	74	21	23	35
MIN	.05	1.5	.04	1.2	.16	.21	.50	.16	9.9	2.4	6.6	5.6
AC-FT	380	780	48	79	59	701	278	305	1290	560	911	1090

CAL YR 1981 TOTAL 1882.88 MEAN 5.16 MAX 38 MIN .01 AC-FT 3730
WTR YR 1982 TOTAL 3267.32 MEAN 8.95 MAX 74 MIN .04 AC-FT 6480

071230000 ARKANSAS RIVER AT LA JUNTA, CO

Streamflow data for water year 1982, will be published in a subsequent report.

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 (5 m) right of right upstream end of box culverts on State Highway 194, 3.2 mi (5.1 km) upstream of mouth, 3.4 mi (5.5 km) downstream from Fort Lyon Canal Aqueduct, and 7.5 mi (12.1 km) west of Las Animas.

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

GAGE.--Water-stage recorder. Altitude of gage is 3,975 ft (1,212 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Natural flow of stream affected by seepage and sluicing from Fort Lyon Canal. There is some irrigation upstream, however, amounts are unknown. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 176 ft³/s (4.98 m³/s) May 18, 1980, gage height, 3.42 ft (1.042 m); no flow many days in 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 149 ft³/s (4.22 m³/s) at 1830 Mar. 30, gage height, 3.40 ft (1.036 m); minimum daily 0.02 ft³/s (0.001 m³/s) July 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.2	3.7	3.7	2.5	3.0	4.3	2.6	3.2	8.2	5.5	7.5
2	1.5	2.4	3.7	3.5	2.2	3.0	3.7	2.0	3.1	7.0	5.4	6.8
3	1.5	2.4	4.0	3.3	1.9	3.0	3.1	1.9	8.8	5.2	6.3	6.0
4	1.5	2.7	4.1	3.4	1.7	3.0	3.1	1.6	12	4.9	6.7	3.5
5	1.4	2.7	4.3	3.6	1.6	3.0	3.0	1.5	11	4.7	6.0	2.1
6	1.3	2.7	4.3	3.5	1.6	2.9	2.9	1.9	32	4.7	4.6	1.9
7	1.3	3.4	4.2	3.3	1.6	2.9	3.1	2.0	11	4.1	3.6	2.5
8	1.5	3.1	4.1	3.0	1.6	2.9	3.1	1.9	8.2	4.0	4.0	3.5
9	1.5	3.1	4.0	3.0	1.6	2.9	1.4	1.7	5.5	4.4	4.1	2.0
10	1.5	3.3	3.7	2.5	1.6	2.9	1.0	1.9	4.5	15	4.9	1.6
11	1.5	3.7	3.6	2.0	2.0	1.5	1.0	4.8	4.0	5.6	3.7	10
12	1.3	3.1	3.6	2.0	2.0	2.5	1.0	4.2	4.6	4.1	2.3	25
13	1.4	2.9	3.5	2.0	2.2	2.9	1.3	3.9	5.1	3.2	3.3	27
14	1.4	2.9	3.5	2.0	2.2	3.1	1.4	3.4	3.6	2.8	7.0	20
15	1.4	2.9	3.5	2.0	3.1	3.1	1.4	3.3	5.0	2.4	5.5	15
16	1.4	2.9	3.5	2.5	3.6	3.1	1.4	3.2	6.1	2.4	4.0	13
17	2.3	3.1	3.5	2.7	5.1	3.7	1.4	3.2	5.3	1.6	3.3	15
18	1.2	3.3	3.5	1.8	6.1	3.6	1.1	3.1	12	.83	2.8	14
19	1.3	3.3	3.5	1.8	6.0	3.1	1.2	3.1	15	.58	2.3	13
20	1.2	3.3	3.4	1.8	5.8	3.1	1.2	3.1	16	1.2	2.0	18
21	1.2	3.2	3.1	1.8	5.2	3.1	1.2	3.4	9.4	1.4	8.0	22
22	1.1	3.2	2.9	1.8	4.8	3.2	1.2	4.2	6.8	.66	15	21
23	1.4	3.2	2.7	2.7	4.5	4.6	1.2	3.7	6.0	.09	10	19
24	1.6	3.3	2.6	2.0	4.2	3.7	1.2	5.6	5.0	.06	5.0	17
25	1.6	3.5	2.5	1.9	3.9	3.1	1.2	5.8	5.1	.03	3.0	15
26	1.9	3.6	2.4	1.9	3.5	2.4	1.3	5.5	5.7	.03	2.0	21
27	2.1	3.7	2.4	2.3	3.3	2.4	1.4	4.0	7.3	.02	2.0	29
28	2.1	3.7	2.5	2.5	3.1	2.4	1.8	4.3	13	.06	2.5	32
29	2.0	3.7	2.8	2.5	---	2.2	2.0	5.4	9.9	1.8	4.0	38
30	2.0	3.7	3.0	2.5	---	25	2.5	3.8	8.7	6.6	7.0	33
31	2.0	---	3.3	2.7	---	6.4	---	3.3	---	6.1	8.0	---
TOTAL	47.9	94.2	105.4	78.0	88.5	117.7	56.1	103.3	252.9	103.76	153.8	454.4
MEAN	1.55	3.14	3.40	2.52	3.16	3.80	1.87	3.33	8.43	3.35	4.96	15.1
MAX	2.3	3.7	4.3	3.7	6.1	25	4.3	5.8	32	15	15	38
MIN	1.1	2.2	2.4	1.8	1.6	1.5	1.0	1.5	3.1	.02	2.0	1.6
AC-FT	95	187	209	155	176	233	111	205	502	206	305	901

CAL YR 1981 TOTAL 1113.36 MEAN 3.05 MAX 13 MIN .00 AC-FT 2210
WTR YR 1982 TOTAL 1655.96 MEAN 4.54 MAX 38 MIN .02 AC-FT 3280

NOTE.--NO GAGE-HEIGHT RECORD DEC. 5 TO JAN. 6.

07124000 ARKANSAS RIVER AT LAS ANIMAS, CO

LOCATION.--Lat 38°04'51", long 103°13'09", in SE¼NE¼ sec.3, T.23 S., R.52 W., Bent County, Hydrologic Unit 11020009, on right bank at upstream side of bridge on U.S. Highway 50, 1.1 mi (1.8 km) north of courthouse in Las Animas, and 4.2 mi (6.8 km) upstream from Purgatoire River.

DRAINAGE AREA.--14,417 mi² (37,340 km²), of which 441 mi² (1,142 km²) are probably noncontributing.

PERIOD OF RECORD.--Streamflow records, May to November 1898 (gage heights only), August to November 1909 (gage heights and discharge measurements only), May 1939 to current year. Water-quality data available, November 1963 to September 1966.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,883.97 ft (1,183.834 m), 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 (0.6 km) downstream at datum 9.00 ft (2.743 m) lower.

REMARKS.--Records good except those for winter period, 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 (1,670 km²), and return flow from irrigated areas. Flow partly regulated by Pueblo Reservoir (station 07099350) since Jan. 9, 1974. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--34 years (water years 1940-73), 203 ft³/s (5.749 m³/s), 147,100 acre-ft/yr (181 hm³/yr), prior to completion of Pueblo Dam; 8 years (water years 1975-82), 153 ft³/s (4.333 m³/s), 110,800 acre-ft/yr (137 hm³/yr), subsequent to completon of Pueblo Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,000 ft³/s (1,250 m³/s) May 20, 1955, gage height, 15.03 ft (4.581 m), site and datum then in use, from rating curve extended above 24,000 ft³/s (680 m³/s), on basis of slope-area measurement of peak flow; minimum daily, 0.9 ft³/s (0.025 m³/s) July 31, Aug. 1, 3, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,310 ft³/s (150 m³/s) at 0030 Aug. 23, gage height, 6.23 ft (1.899 m); minimum daily, 15 ft³/s (0.42 m³/s) Oct. 18-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	23	143	75	142	102	48	17	474	459	1410	581
2	22	21	170	100	135	102	37	17	370	484	389	470
3	32	21	163	115	120	105	44	16	842	492	220	442
4	34	23	127	120	110	120	59	16	646	459	166	459
5	30	22	120	120	110	121	28	18	264	477	151	452
6	18	22	128	120	110	121	21	18	277	475	88	416
7	16	21	134	115	110	120	23	16	312	462	104	337
8	16	21	131	110	115	114	23	16	277	495	144	268
9	16	24	129	110	120	126	24	16	312	512	473	424
10	16	23	125	130	125	153	26	44	291	465	422	444
11	16	22	118	140	130	130	26	37	403	500	797	479
12	17	22	120	150	140	123	24	31	433	511	402	480
13	16	21	120	150	150	122	23	47	454	527	123	496
14	16	21	112	150	160	129	23	60	383	519	423	104
15	16	21	103	147	170	121	21	129	443	571	513	212
16	16	30	97	145	170	88	22	134	499	550	480	291
17	16	239	97	145	165	67	20	140	466	544	496	118
18	15	42	104	145	161	56	19	107	565	504	502	225
19	15	21	113	145	148	53	20	73	504	569	525	357
20	16	19	94	135	152	70	20	142	326	551	562	354
21	20	19	96	120	149	78	19	132	567	529	583	510
22	20	19	107	120	140	48	19	91	384	507	3910	502
23	32	19	119	130	130	23	18	71	403	306	2730	554
24	38	19	72	140	128	21	18	60	755	249	1520	335
25	32	19	55	140	129	20	18	119	510	224	200	232
26	33	19	50	140	133	19	18	88	536	259	83	200
27	34	19	50	140	125	19	16	72	862	201	116	207
28	32	19	50	139	112	21	17	276	467	288	52	220
29	28	19	50	138	---	38	17	316	565	837	40	357
30	25	19	52	135	---	86	17	385	566	2160	122	442
31	22	---	55	137	---	97	---	499	---	1650	531	---
TOTAL	692	869	3204	4046	3789	2613	728	3203	14156	17336	18277	10968
MEAN	22.3	29.0	103	131	135	84.3	24.3	103	472	559	590	366
MAX	38	239	170	150	170	153	59	499	862	2160	3910	581
MIN	15	19	50	75	110	19	16	16	264	201	40	104
AC-FT	1370	1720	6360	8030	7520	5180	1440	6350	28080	34390	36250	21760

CAL YR 1981 TOTAL 27525 MEAN 75.4 MAX 1150 MIN 12 AC-FT 54600
WTR YR 1982 TOTAL 79881 MEAN 219 MAX 3910 MIN 15 AC-FT 158400

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 (21 m) downstream from county bridge, 0.3 mi (0.5 km) northeast of Madrid, and 1.0 mi (1.6 km) downstream from Burro Canyon.

DRAINAGE AREA.--550 mi^2 (1,420 km^2), approximately.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--March 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 6,261.61 ft (1,908.539 m) National Geodetic Vertical Datum of 1929 (U.S. Army, Corps of Engineers bench mark).

REMARKS.--Records good except those for winter period, which are fair. Diversions for irrigation of about 6,000 acres (24.3 km^2) above station.

AVERAGE DISCHARGE.--10 years, 58.8 ft^3/s (1.665 m^3/s), 42,600 acre-ft/yr (52.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft^3/s (405 m^3/s) July 20, 1976, gage height, 12.80 ft (3.901 m), from floodmarks, from rating curve extended above 300 ft^3/s (8.5 m^3/s), on basis of drift-timed measurement of peak flow; minimum daily, 3.0 ft^3/s (0.085 m^3/s) Feb. 23 to Mar. 2, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft^3/s (28.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 14	0115	1,670	47.3	3.85	1.173	Aug. 21	0330	1,090	30.9	3.32	1.012
Aug. 5	1630	1,420	40.2	3.60	1.097	Aug. 28	1615	1,430	40.5	3.61	1.100
Aug. 15	1415	*3,580	101	5.60	1.707	Sept. 2	1645	1,380	39.1	3.56	1.085

Minimum daily discharge, 15 ft^3/s (0.42 m^3/s) Feb. 3-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	42	23	32	18	26	33	66	122	202	167	306
2	66	41	32	32	16	24	32	65	119	185	143	320
3	66	41	35	25	15	23	31	60	114	171	145	223
4	60	41	29	25	15	26	32	66	119	176	138	233
5	56	37	37	29	15	26	40	93	128	176	217	206
6	48	35	29	30	18	21	43	87	136	171	134	215
7	50	39	33	30	20	30	51	67	136	182	131	237
8	48	43	31	25	17	37	53	58	119	142	136	187
9	46	40	27	25	16	32	50	53	125	125	125	184
10	43	37	30	28	16	26	54	55	128	103	119	170
11	41	33	29	30	17	26	53	53	127	90	117	196
12	39	34	29	30	21	26	55	69	146	87	129	259
13	37	34	30	30	27	35	76	77	142	87	127	200
14	38	36	28	30	32	34	84	68	258	100	163	194
15	38	34	28	25	35	32	98	60	187	84	366	184
16	53	32	33	25	36	28	100	54	180	69	169	179
17	41	30	24	34	32	28	95	48	159	53	224	190
18	39	30	30	34	29	26	108	43	258	51	246	192
19	41	31	48	27	22	28	103	42	288	53	234	218
20	39	23	34	26	23	23	108	42	231	51	225	291
21	42	30	30	25	23	23	87	65	198	34	645	198
22	41	33	30	25	23	23	87	89	197	32	449	190
23	41	34	24	25	23	26	82	101	205	29	464	180
24	43	33	24	31	24	23	82	100	209	29	458	177
25	48	30	24	33	24	24	68	106	216	30	439	173
26	50	29	30	30	23	25	46	88	223	46	397	171
27	47	27	32	26	24	27	37	96	221	142	373	163
28	43	27	32	18	28	30	33	110	222	137	522	159
29	39	29	32	23	---	30	30	120	218	198	374	150
30	39	32	32	21	---	30	47	132	210	240	354	145
31	43	---	32	20	---	25	---	130	---	186	347	---
TOTAL	1434	1017	941	849	632	843	1898	2363	5341	3461	8277	6090
MEAN	46.3	33.9	30.4	27.4	22.6	27.2	63.3	76.2	178	112	267	203
MAX	69	43	48	34	36	37	108	132	288	240	645	320
MIN	37	23	23	18	15	21	30	42	114	29	117	145
AC-FT	2840	2020	1870	1680	1250	1670	3760	4690	10590	6860	16420	12080

CAL YR 1981 TOTAL 28433.3 MEAN 77.9 MAX 1640 MIN 4.4 AC-FT 56400
WTR YR 1982 TOTAL 33146.0 MEAN 90.8 MAX 645 MIN 15 AC-FT 65750

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 (210 m) upstream from private bridge, 1.4 mi (2.3 km) upstream from Oso Canyon, 2.2 mi (3.5 km) southeast of Madrid, and 2.3 mi (3.7 km) upstream from mouth.

DRAINAGE AREA.--100 mi^2 (260 km^2), approximately.

PERIOD OF RECORD.--March 1972 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 6,259.09 ft (1,907.771 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those Oct. 1 to Nov. 30, which are fair. No diversion above station. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--10 years, 3.04 ft^3/s (0.086 m^3/s), 2,200 acre-ft/yr (2.71 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,140 ft^3/s (70.2 m^3/s) July 17, 1979, gage height, 7.37 ft (2.097 m), from floodmarks, from rating curve extended above 1,000 ft^3/s (28 m^3/s), on basis of slope-area measurements at gage heights 6.88 ft (2.097 m), and 7.37 ft (2.246 m); no flow Feb. 22 to May 22, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)	Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)
June 14	0100	1,060	30.0	a 5.16	1.573	Aug. 16	1600	2,400	68.0	a 6.75	2.057
July 27	1700	530	15.0	a 4.45	1.356	Sept. 7	1600	1,410	39.9	5.56	1.695
Aug. 5	1715	*2,530	71.6	6.89	2.100	Sept. 11	1600	412	11.7	4.22	1.286
Aug. 11	1800	1,120	31.7	5.22	1.591	Sept. 30	1500	230	6.51	3.76	1.146
Aug. 15	1330	2,350	66.6	b 6.7	2.042						

Minimum daily discharge, 0.11 ft^3/s (0.003 m^3/s) Feb. 13.

a - From floodmark
b - estimated

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.2	.75	.50	.20	.53	.85	.48	.30	.44	3.5	1.3
2	1.8	1.2	1.2	.50	.20	.55	.84	.48	.30	.44	2.2	1.2
3	1.7	1.2	1.0	.46	.20	.56	.67	.70	.70	.44	2.2	1.2
4	1.6	1.2	1.2	.74	.19	.70	.52	.70	.70	.39	20	1.2
5	1.5	1.2	1.9	1.9	.19	.94	.52	.70	.30	.26	188	1.2
6	1.5	1.2	1.4	1.4	.40	.70	.51	.70	.30	.24	28	1.2
7	1.4	1.2	1.3	.62	.40	.60	.51	.70	.30	3.4	7.2	112
8	1.2	1.2	.77	.77	.24	.61	.51	.70	.30	.48	3.0	21
9	1.1	1.2	.88	.95	.30	.62	.50	.70	.30	.48	12	8.3
10	.90	1.2	.76	.35	.30	.48	.50	.48	.30	.48	8.3	3.9
11	.90	1.2	.95	.43	.29	.70	.50	.48	.30	.70	69	32
12	.90	1.2	.95	.57	.24	1.2	.50	.48	.30	.48	4.4	24
13	.90	1.2	.95	.50	.11	1.2	.50	.48	.30	.48	2.2	16
14	.90	1.2	.84	.50	.21	1.2	.49	.48	55	.70	53	6.0
15	.90	1.2	1.1	.89	.19	1.2	.49	.48	.89	.70	107	3.9
16	1.0	1.2	.92	.95	.30	.94	.49	.48	7.2	.70	95	2.8
17	1.0	1.2	.70	1.2	.30	.94	.49	.48	2.6	.70	24	2.1
18	1.0	1.2	.52	1.1	.48	.94	.48	.48	7.8	.48	20	8.2
19	1.0	1.2	.92	.94	.49	.94	.48	.48	7.9	.70	8.5	15
20	1.0	1.2	.95	.61	.50	.94	.48	.48	1.3	.70	4.7	61
21	1.0	1.2	.91	.56	.50	.94	.48	.48	.65	.30	3.0	11
22	1.0	1.2	.91	.30	.48	.94	.48	.48	.60	.30	2.0	4.9
23	1.1	1.2	.25	.30	.48	.94	.48	.48	.94	.48	1.4	2.6
24	1.2	1.2	.48	.55	.30	.93	.48	.70	1.2	.30	1.2	1.7
25	1.2	1.2	.50	.46	.19	.93	.48	1.2	.68	.70	1.2	1.4
26	1.2	1.2	.32	.39	.40	.92	.48	.70	.53	1.2	1.2	1.3
27	1.2	1.2	.30	.35	.50	.91	.48	.48	.53	31	1.2	1.2
28	1.2	1.4	.48	.19	.52	.90	.48	.48	.53	2.3	1.2	1.2
29	1.2	1.2	.38	.19	---	.88	.48	.30	.53	11	1.2	1.2
30	1.2	1.2	.50	.31	---	.87	.48	.30	.51	29	1.3	23
31	1.2	---	.50	.34	---	.86	---	.30	---	5.0	1.4	---
TOTAL	36.70	36.2	25.49	19.82	9.10	26.51	15.63	17.04	94.09	94.97	678.5	373.0
MEAN	1.18	1.21	.82	.64	.33	.86	.52	.55	3.14	3.06	21.9	12.4
MAX	1.8	1.4	1.9	1.9	.52	1.2	.85	1.2	55	31	188	112
MIN	.90	1.2	.25	.19	.11	.48	.48	.30	.30	.24	1.2	1.2
AC-FT	73	72	51	39	18	53	31	34	187	188	1350	740

CAL YR 1981 TOTAL 2607.53 MEAN 7.14 MAX 362 MIN .02 AC-FT 5170
WTR YR 1982 TOTAL 1427.05 MEAN 3.91 MAX 188 MIN .11 AC-FT 2830

07124400 TRINIDAD LAKE NEAR TRINIDAD, CO

LOCATION.--Lat 37°08'27", long 104°33'03", in NE¼SW¼ sec.27, T.33 S., R.64 W., Las Animas County, Hydrologic Unit 11020010, in valve house near center of dam on Purgatoire River and 3.2 mi (5.1 km) southwest of courthouse in Trinidad.

DRAINAGE AREA.--672 mi^2 (1,740 km^2).

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

REVISED RECORDS.--WDR-CO-78-1: 1977(M).

GAGE.--Water-stage recorder. Datum of gage is 6,073.64 ft (1,851.245 m), National Geodetic Vertical Datum of 1929 (levels by U.S. Army, Corps of Engineers).

REMARKS.--Reservoir is formed by a rock and earthfill dam completed in 1977. Storage began Aug. 19, 1977. Total capacity, 158,500 acre-ft (195 hm^3), at elevation 6,276.0 ft (1,912.92 m). Elevation of high crest of spillway, 6,258 ft (1,907.44 m), with capacity of 117,400 acre-ft (145 hm^3). Elevation of notch crest in spillway is 6,243.0 ft (1,902.87 m), capacity, 89,170 acre-ft (110 hm^3). Permanent pool is 4,500 acre-ft (5.55 hm^3) at elevation 6,143.0 ft (1,872.39 m). Elevation of outlet invert is 6,095.0 ft (1,857.76 m). Reservoir is used for flood control, storage for irrigation, and to help control sedimentation. Figures given are total contents.

COOPERATION.--Capacity tables were furnished by U.S. Army, Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 58,069 acre-ft (71.6 hm^3) June 26, 1980, elevation, 6,222.37 ft (1,896.578 m); no contents prior to Aug. 19, 1977.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 50,100 acre-ft (61.8 hm^3) Apr. 6, elevation, 6,215.9 ft (1,894.625 m); minimum contents, 36,200 acre-ft (44.6 hm^3) July 29.

Capacity table (elevation, in feet, and contents, in acre-feet)

6,175.0	15,900	6,200.0	33,530	6,220.0	55,029
6,180.0	18,700	6,210.0	43,330	6,230.0	68,580
6,190.0	25,360				

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42300	43700	45500	46700	47800	48900	50000	45800	41700	43000	37600	40100
2	42300	43700	45600	46700	47900	49000	50000	45600	41600	43000	37800	40200
3	42300	43800	45600	46600	47900	49000	50000	45400	41500	42800	37800	40200
4	42400	43900	45700	46700	47900	49000	50000	45100	41600	42700	37700	40200
5	42400	44000	45800	46700	47900	49100	50100	45000	41900	42500	37800	40200
6	42300	44000	45800	46700	48000	49100	50000	44800	41900	42300	37800	40100
7	42300	44200	45900	46700	48000	49100	50000	44700	41800	42300	37800	40200
8	42300	44200	46000	46800	48000	49200	50000	44500	41600	42100	37800	40100
9	42300	44300	46000	46800	48100	49200	49900	44300	41500	41800	37800	40100
10	42200	44300	46100	46800	48200	49300	49900	44000	41400	41600	37600	40000
11	42200	44400	46100	46900	48200	49300	49900	43800	41300	41300	37500	40100
12	42200	44500	46200	46900	48300	49400	49900	43600	41300	41100	37600	40200
13	42200	44500	46200	47000	48300	49400	49800	43500	41300	40800	37800	40100
14	42200	44600	46300	47000	48400	49500	49700	43300	41600	40600	37900	40000
15	42300	44700	46400	47100	48400	49500	49600	43200	41400	40300	38700	40000
16	42400	44700	46400	47100	48500	49500	49400	43000	41300	40000	38800	40000
17	42500	44800	46300	47200	48600	49600	49200	42900	41200	39700	38700	40000
18	42600	44800	46200	47200	48700	49600	48900	42700	41600	39400	38500	40200
19	42700	44900	46200	47300	48700	49600	48600	42500	42100	39000	38200	40400
20	42700	44900	46300	47300	48800	49600	48300	42300	42700	38800	37800	40900
21	42800	45000	46300	47400	48700	49700	48100	42100	43000	38500	38100	40600
22	42900	45000	46400	47400	48800	49700	47900	42000	43200	38100	38300	40200
23	43000	45100	46400	47400	48800	49700	47700	41900	43200	37800	38600	40000
24	43000	45200	46400	47500	48700	49800	47500	41800	43300	37400	38500	40000
25	43100	45200	46400	47500	48700	49800	47300	41900	43300	37000	39300	40000
26	43200	45300	46500	47600	48800	49800	47000	41900	43400	36600	39600	40000
27	43300	45300	46500	47600	48800	49800	46800	41800	43400	36400	39700	39900
28	43400	45400	46500	47700	48900	49900	46500	41800	43300	36300	40100	39800
29	43500	45400	46600	47700	---	49900	46300	41800	43100	36400	40200	39800
30	43500	45500	46600	47700	---	49900	46000	41800	43000	36900	40400	39900
31	43600	---	46600	47800	---	50000	---	41800	---	37300	40300	---
MAX	43600	45500	46600	47800	48900	50000	50100	45800	43400	43000	40400	40900
MIN	42200	43700	45500	46600	47800	48900	46000	41800	41200	36300	37500	39800

WTR YR 1982 MAX 50100 MIN 36300

07124410 PURGATOIRE RIVER BELOW TRINIDAD LAKE, CO

LOCATION.--Lat 37°08'37", long 104°32'49", in SW¼NE¼ sec.27, T.33 S., R.64 W., Las Animas County, Hydrologic Unit 11020010, on left bank at toe of dam and 3.0 mi (4.8 km) southwest of courthouse in Trinidad.

DRAINAGE AREA.--672 mi² (1,740 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1976 to current year.

GAGE.--Water-stage recorder with concrete control. Datum of gage is 6,073.64 ft (1,851.245 m), National Geodetic Vertical Datum of 1929 (levels by U.S. Army, Corps of Engineers). Auxillary gage is water-stage recorder in shelter about 1,000 ft (305 m) downstream.

REMARKS.--Records good. Natural flow of stream affected by diversions above station for irrigation of about 6,000 acres (24 km²). Flow since Aug. 19, 1977, completely regulated by Trinidad Lake (station 07124400) immediately upstream.

AVERAGE DISCHARGE.--5 years (water years 1978-82), 65.8 ft³/s (1.863 m³/s), 47,670 acre-ft/yr (58.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 963 ft³/s (27.3 m³/s) Sept. 10, 1981, gage height, 7.89 ft (2.405 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 518 ft³/s (14.7 m³/s) at 1845 Sept. 21, gage height, 7.12 ft (2.170 m); no flow many days during winter.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	.03	.00	19	.00	.00	.00	165	195	140	.51	304
2	59	.03	.00	19	.00	.00	.00	165	188	151	.46	231
3	59	.02	.00	16	.00	.00	.00	165	157	168	107	207
4	59	.02	.00	.02	.00	.00	.00	165	66	170	211	207
5	71	.02	.00	.00	.00	.00	.00	167	3.4	177	205	207
6	78	.02	.00	.00	.00	.00	30	168	135	187	189	207
7	78	.02	.00	.00	.00	.00	30	168	175	190	178	207
8	78	.02	.00	.00	.00	.00	30	167	165	188	177	207
9	79	.02	.00	.00	.00	.00	30	167	165	188	169	208
10	79	.02	.00	.00	.00	.00	30	167	143	187	165	208
11	79	.02	.00	.00	.00	.00	30	167	167	187	166	207
12	60	.02	.00	.00	.00	.00	30	167	172	187	131	208
13	49	.02	.00	.00	.00	.00	59	167	172	187	53	207
14	44	.02	.00	.00	.00	.00	77	158	211	186	133	207
15	.14	.02	.00	.00	.00	.00	83	144	298	186	157	153
16	.14	.02	26	.00	.00	.00	121	142	251	186	208	103
17	.17	.02	62	.00	.00	.00	168	142	208	187	344	97
18	.18	.02	85	.00	.00	.00	173	155	176	187	391	97
19	.18	.02	10	.00	.00	.00	168	147	57	187	390	97
20	.24	.02	.02	.00	24	.00	164	139	.38	185	457	98
21	.16	.02	.02	.00	23	.00	158	143	.32	192	425	358
22	.12	.00	.02	.00	23	.00	151	151	103	208	296	439
23	.09	.00	.02	.00	24	.06	150	151	168	216	227	255
24	.08	.00	.00	.00	24	.04	150	145	151	225	187	178
25	.08	.00	.00	.00	9.2	.03	149	122	164	229	164	178
26	.06	.00	.00	.00	.02	.02	149	132	171	229	179	178
27	.06	.00	.00	.00	.00	.02	152	130	171	230	204	178
28	.04	.00	.00	.00	.00	.02	155	123	234	230	214	160
29	.03	.00	.00	.00	---	.02	154	123	245	148	215	123
30	.03	.00	.00	.00	---	.02	159	141	191	78	232	110
31	.03	---	12	.00	---	.00	---	179	---	.51	319	---
TOTAL	940.83	.44	195.08	54.02	127.22	.23	2750.00	4732	4703.10	5596.51	6493.97	5824
MEAN	30.3	.015	6.29	1.74	4.54	.007	91.7	153	157	181	209	194
MAX	79	.03	85	19	24	.06	173	179	298	230	457	439
MIN	.03	.00	.00	.00	.00	.00	.00	122	.32	.51	.46	97
AC-FT	1870	.9	387	107	252	.5	5450	9390	9330	11100	12880	11550

CAL YR 1981 TOTAL 28678.00 MEAN 78.6 MAX 917 MIN .00 AC-FT 56880
WTR YR 1982 TOTAL 31417.40 MEAN 86.1 MAX 457 MIN .00 AC-FT 62320

07124410 PURGATOIRE RIVER BELOW TRINIDAD LAKE, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: March 1977 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily, 47,000 mg/L Aug. 1, 1979; minimum daily, no flow many days during year.
SEDIMENT LOADS: Maximum daily, 45,700 tons (41,460 t) Aug. 12, 1981; minimum daily, no flow many days during year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily, 172 mg/L Sept. 11; minimum daily, no flow many days during year.
SEDIMENT LOADS: Maximum daily, 96 tons (41,460 t) Sept. 11; minimum daily, no flow many days during year.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
APR				
20...	1550	170	4	1.8
JUN				
10...	1530	165	5	2.2
AUG				
10...	1335	171	22	10
SEP				
17...	1210	96	37	9.6
22...	1245	--	58	--

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	67	30	5.4	.03			.00	---	---
2	59	28	4.5	.03			.00	---	---
3	59	---	3.8	.02			.00	---	---
4	59	24	3.8	.02			.00	---	---
5	71	26	5.0	.02			.00	---	---
6	78	30	6.3	.02			.00	---	---
7	78	21	4.4	.02			.00	---	---
8	78	16	3.4	.02			.00	---	---
9	79	21	4.5	.02			.00	---	---
10	79	23	4.9	.02			.00	---	---
11	79	18	3.8	.02			.00	---	---
12	60	24	3.9	.02			.00	---	---
13	49	21	2.8	.02			.00	---	---
14	44	17	2.2	.02			.00	---	---
15	.14	---	---	.02			.00	---	---
16	.14	---	---	.02			26	41	3.1
17	.17	---	---	.02			62	35	7.0
18	.18	---	---	.02			85	34	7.8
19	.18	---	---	.02			10	---	2.1
20	.24	---	---	.02			.02	---	---
21	.16	---	---	.02			.02	---	---
22	.12	---	---	.00			.02	---	---
23	.09	---	---	.00			.02	---	---
24	.08	---	---	.00			.00	---	---
25	.08	---	---	.00			.00	---	---
26	.06	---	---	.00			.00	---	---
27	.06	---	---	.00			.00	---	---
28	.04	---	---	.00			.00	---	---
29	.03	---	---	.00			.00	---	---
30	.03	---	---	.00			.00	---	---
31	.03	---	---	---			12	25	1.3
TOTAL	940.83	---	58.7	0.44			195.08	---	21.3

07124410 PURGATOIRE RIVER BELOW TRINIDAD LAKE, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	19	5	.26	.00	---	---	.00		
2	19	8	.41	.00	---	---	.00		
3	16	6	.26	.00	---	---	.00		
4	.02	---	---	.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	---	---	24	---	1.1	.00		
21	.00	---	---	23	---	.90	.00		
22	.00	---	---	23	---	.40	.00		
23	.00	---	---	24	2	.13	.06		
24	.00	---	---	24	4	.26	.04		
25	.00	---	---	9.2	---	.00	.03		
26	.00	---	---	.02	---	---	.02		
27	.00	---	---	.00	---	---	.02		
28	.00	---	---	.00	---	---	.02		
29	.00	---	---	---	---	---	.02		
30	.00	---	---	---	---	---	.02		
31	.00	---	---	---	---	---	.00		
TOTAL	54.02	---	0.93	127.22	---	2.79	0.23		

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	---	---	165	6	2.7	195	4	2.1
2	.00	---	---	165	---	.89	188	2	1.0
3	.00	---	---	165	0	.00	157	0	.00
4	.00	---	---	165	1	.45	66	1	.18
5	.00	---	---	167	2	.90	3.4	---	.10
6	30	9	.65	168	2	.91	135	7	3.1
7	30	3	.24	168	4	1.8	175	0	.00
8	30	3	.24	167	4	1.8	165	0	.00
9	30	4	.32	167	2	.90	165	2	.89
10	30	1	.08	167	0	.00	143	5	1.9
11	30	2	.16	167	2	.90	167	5	2.2
12	30	6	.49	167	2	.90	172	6	2.8
13	59	7	1.1	167	2	.90	172	5	2.3
14	77	3	.62	158	3	1.3	211	23	16
15	83	8	1.8	144	2	.78	298	27	22
16	121	---	6.6	142	2	.77	251	18	12
17	168	---	9.0	142	2	.77	208	15	8.4
18	173	---	9.3	155	4	1.7	176	14	6.7
19	168	11	5.0	147	6	2.4	57	---	.60
20	164	2	.89	139	8	3.0	.38	0	.00
21	158	4	1.7	143	6	2.3	.32	0	.00
22	151	0	.00	151	3	1.2	103	9	4.5
23	150	3	1.2	151	---	1.2	168	11	5.0
24	150	2	.81	145	3	1.2	151	12	4.9
25	149	1	.40	122	9	2.9	164	12	5.3
26	149	2	.80	132	6	2.4	171	14	6.5
27	152	2	.82	130	4	1.4	171	---	7.8
28	155	2	.84	123	7	2.3	234	17	11
29	154	5	2.1	123	1	.33	245	15	9.9
30	159	2	.86	141	3	1.3	191	14	7.2
31	---	---	---	179	8	3.8	---	---	---
TOTAL	2750.00	---	46.02	4732	---	44.10	4703.10	---	144.37

07124410 PURGATOIRE RIVER BELOW TRINIDAD LAKE, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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)
		JULY			AUGUST			SEPTEMBER	
1	140	14	5.3	.51	---	---	304	48	39
2	151	19	7.7	.46	---	---	231	44	27
3	168	20	9.1	107	---	10	207	58	32
4	170	18	8.3	211	11	6.3	207	---	30
5	177	17	8.1	205	10	5.5	207	52	29
6	187	18	9.1	189	16	8.2	207	56	31
7	190	18	9.2	178	19	9.1	207	38	21
8	188	19	9.6	177	---	10	207	39	22
9	188	19	9.6	169	25	11	208	62	35
10	187	15	7.6	165	22	9.8	208	62	35
11	187	15	7.6	166	---	9.4	207	172	96
12	187	16	8.1	131	20	8.8	208	152	85
13	187	18	9.1	53	---	10	207	31	17
14	186	---	7.5	133	30	10	207	28	16
15	186	13	6.5	157	28	12	153	---	12
16	186	11	5.5	208	36	20	103	---	8.0
17	187	---	5.6	344	44	41	97	32	8.4
18	187	11	5.6	391	44	46	97	29	7.6
19	187	12	6.1	390	32	34	97	25	6.5
20	185	12	6.0	457	52	65	98	31	8.2
21	192	11	5.7	425	---	57	358	42	46
22	208	6	3.4	296	---	40	439	34	40
23	216	8	4.7	227	49	30	255	36	25
24	225	14	8.5	187	49	25	178	42	20
25	229	---	8.0	164	42	19	178	10	4.8
26	229	13	8.0	179	46	22	178	23	11
27	230	16	9.9	204	45	24	178	38	18
28	230	16	9.9	214	38	22	160	24	10
29	148	14	5.6	215	41	24	123	15	5.0
30	78	13	5.3	232	43	26	110	32	9.5
31	.51	0	.00	319	35	29	---	---	---
TOTAL	5596.51	---	220.20	6493.97	---	644.1	5824	---	755.0
YEAR	31417.40		1937.51						

Streamflow data for water year 1982 for the following stations will be published in a subsequent report.

ARKANSAS RIVER BASIN

07126200 VAN BREMER ARROYO NEAR MODEL, CO

ARKANSAS RIVER BASIN

07126300 PURGATOIRE RIVER NEAR THATCHER, CO

ARKANSAS RIVER BASIN

07126500 PURGATOIRE RIVER AT NINEMILE DAM, NEAR HIGBEE, CO

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 (3.7 km) southeast of courthouse in Las Animas, and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--3,503 mi² (9,073 km²).

PERIOD OF RECORD.--Streamflow records, 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. Water-quality data available, November 1963 to September 1965, October 1966 to July 1969.

REVISED RECORDS.--WSP 1241: 1927(M).

GAGE.--Water-stage recorder. Datum of gage is 3,878.04 ft (1,182.0267 m), 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 (0.914 m) higher. Supplementary water-stage recorder at site 1.6 mi (2.6 km) downstream at different datum July 12 to Nov. 17, 1966. Nov. 18, 1966 to May 4, 1982 at datum 3.1 ft (0.945 m) lower.

REMARKS.--Records good. Flow regulated to some extent since January 1975 by Trinidad Lake near Trinidad upstream. Diversions for irrigation of about 36,000 acres (150 km²) above station. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--37 years (water years 1923-31, 1949-76), 116 ft³/s (3.285 m³/s) 84,040 acre-ft/yr (104 hm³/yr), prior to completion of Trinidad Lake; 5 years (water years 1978-82), 66.9 ft³/s (1.895 m³/s) 48,470 acre-ft/yr (59.8 hm³/yr), subsequent to completion of Trinidad Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,000 ft³/s (1,980 m³/s) May 20, 1955, gage height, 20.00 ft (6.096 m), different datum, from rating curve extended above 38,000 ft³/s (1,100 m³/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, 2,340 ft³/s (66.3 m³/s) at 0930 July 31, gage height, 8.21 ft (2.502 m); minimum daily, 1.5 ft³/s (0.042 m³/s) July 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	34	35	22	33	33	15	5.2	87	43	458	11
2	33	34	32	24	23	32	6.3	5.4	67	28	150	14
3	27	36	34	25	20	30	4.8	5.2	571	18	65	15
4	21	26	35	26	16	30	4.3	4.9	92	10	79	13
5	17	21	36	30	15	30	5.3	4.7	28	6.0	148	14
6	13	25	34	35	15	29	6.2	5.9	20	4.1	50	10
7	12	22	34	40	15	28	7.4	5.0	10	7.0	290	6.8
8	11	31	31	29	15	28	6.1	6.0	7.5	21	198	23
9	10	42	28	32	15	28	5.5	7.0	6.6	5.4	78	53
10	7.4	27	24	35	16	26	8.5	8.0	6.7	36	155	31
11	6.8	22	37	33	17	25	7.1	9.8	6.6	60	775	27
12	6.5	22	39	29	18	23	6.0	6.8	6.2	69	259	85
13	6.2	23	41	33	20	20	4.8	7.1	6.6	54	99	682
14	5.9	21	43	36	23	22	5.9	4.1	17	19	43	714
15	6.8	20	31	39	34	21	5.6	3.5	13	12	62	287
16	7.7	23	30	38	49	21	4.9	3.3	22	22	450	180
17	8.3	22	34	36	75	22	7.5	105	100	15	213	150
18	6.5	22	32	33	59	21	10	47	176	5.5	110	128
19	5.9	42	31	42	50	19	4.5	16	116	8.8	72	107
20	6.8	18	40	46	51	20	4.7	11	241	3.8	87	104
21	12	17	41	40	47	18	3.8	8.5	276	4.4	123	130
22	19	19	41	41	43	18	5.0	8.2	145	3.7	332	92
23	17	22	33	37	39	41	4.4	8.4	133	2.8	381	69
24	19	18	21	36	36	32	4.0	13	80	2.3	280	359
25	20	25	20	44	34	40	5.1	11	60	2.0	121	329
26	21	45	20	52	34	32	5.1	9.9	87	1.5	62	168
27	22	38	22	56	34	27	6.4	230	63	1.6	35	140
28	22	24	22	39	33	13	5.1	166	44	2.6	26	139
29	24	33	20	42	---	23	6.5	115	60	5.6	19	155
30	30	40	21	39	---	18	5.0	96	60	423	14	147
31	36	---	22	30	---	17	---	97	---	1520	15	---
TOTAL	494.8	814	964	1119	879	787	180.8	1033.9	2608.2	2417.1	5249	4382.8
MEAN	16.0	27.1	31.1	36.1	31.4	25.4	6.03	33.4	86.9	78.0	169	146
MAX	36	45	43	56	75	41	15	230	571	1520	775	714
MIN	5.9	17	20	22	15	13	3.8	3.3	6.2	1.5	14	6.8
AC-FT	981	1610	1910	2220	1740	1560	359	2050	5170	4790	10410	8690

CAL YR 1981 TOTAL 45370.4 MEAN 124 MAX 3610 MIN 2.2 AC-FT 89990
WTR YR 1982 TOTAL 20929.6 MEAN 57.3 MAX 1520 MIN 1.5 AC-FT 41510

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 (5.1 km) southeast of Hasty, and 58 mi (93 km) upstream from Colorado-Kansas State line.

DRAINAGE AREA.--18,915 mi² (48,990 km²), of which 785 mi² (2,033 km²) 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 about 3,784 ft (1,153.4 m) and nonrecording gage read once daily for those below. Datum of gage is 3,760.00 ft (1,146.048 m) National Geodetic Vertical Datum of 1929 (levels by U.S. Corps of Engineers); gage readings have been reduced to elevations NGVD.

REMARKS.--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 1980 resurvey; new capacity table put into use Aug. 12, 1981), 615,500 acre-ft (865 hm³) at elevation 3,870.00 ft (1,179.576 m) top of spillway gates, of which 345,300 acre-ft (426 hm³) between elevations 3,774.12 ft (1,150.352 m), elevation of no contents, and 3,851.00 ft (1,173.785 m) is for irrigation, and 270,200 acre-ft (333 hm³) between elevations 3,851.00 ft (1.173.785 m) and 3,870.00 ft (1,179.576 m) is reserved for flood control. No dead storage. Figures given represent total contents.

COOPERATION.--Capacity tables furnished by U.S. Army, Corps of Engineers.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 429,600 acre-ft (530 hm³) Aug. 25, 1965, elevation, 3,856.16 ft (1,175.358 m); no contents at times many years.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 53,100 acre-ft (65.5 hm³) Apr. 5, elevation, 3,810.22 ft (1,161.355 m); minimum contents, 9,810 acre-ft (12.1 hm³) Sept. 9, elevation, 3,794.30 ft (1,156.503 m).

Capacity table (elevation, in feet, and contents, in acre-feet)

3,785.0	448	3,800.0	21,800	3,830.0	153,700
3,790.0	3,380	3,810.0	52,300	3,840.0	232,900
3,795.0	11,100	3,820.0	94,400	3,850.0	333,800

CONTENTS, IN ACRE FEET, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17300	13800	18100	27300	37400	46100	52800	35900	23800	18600	23300	10400
2	17100	13900	18500	27700	37700	46300	52900	34600	23700	17400	23900	10300
3	17000	14000	18800	28100	37600	46500	53000	33500	25700	16300	23500	10200
4	16900	14200	19200	28300	38000	46800	53100	32600	27500	15100	22000	10200
5	16800	14300	19500	28700	38100	47100	53000	32000	28100	14100	20100	10200
6	16600	14400	19900	29000	38300	47300	52800	31800	28000	13900	18000	10100
7	16400	14500	20200	29300	38500	47600	52700	31400	28200	14000	16100	10000
8	16300	14600	20600	29500	38700	47900	52600	30900	28100	14000	14300	9870
9	16200	14700	20900	29800	39000	48400	52200	30200	28000	14100	12500	9810
10	16000	14900	21300	30000	39200	49000	52200	29700	27700	14100	11100	9890
11	15900	15000	21500	30200	39600	49600	52100	29100	27600	14200	10800	10000
12	15800	15100	21800	30400	39900	49900	51800	28700	27600	14200	12300	10200
13	15700	15200	22200	30600	40100	50200	51600	28200	27600	14200	11700	11500
14	15500	15400	22500	30800	40500	50400	51200	27600	27500	13900	10500	12800
15	15400	15500	22800	31200	40600	50700	50800	27200	27600	13700	10600	12300
16	15300	15600	23100	31400	41400	50900	50400	26800	27600	13600	10700	11600
17	15100	15900	23400	31700	42100	51000	49800	26400	27600	13700	10800	10800
18	14900	16200	23600	32000	42700	51100	49300	25800	28000	13800	10600	10700
19	14800	16300	23900	32400	43000	51400	48600	25400	28400	13800	10500	10700
20	14600	16500	24200	32800	43200	51400	47600	24900	28700	14000	10400	10800
21	14400	16600	24500	33200	43600	51600	46800	24500	28900	14000	10500	10900
22	14300	16800	24900	33500	43900	51600	45800	24200	27700	14000	13100	11100
23	14200	16900	25200	33800	44200	51700	44800	24200	26500	13900	17900	11100
24	14200	17000	25300	34100	44600	51800	44600	24200	25100	13600	20800	11100
25	14200	17200	25500	34500	44900	51900	42600	24200	24100	13200	21000	11100
26	14100	17200	25600	34900	45100	52100	41500	24200	23000	13100	19400	10800
27	14100	17400	26000	35400	45500	52100	40400	24000	22500	13100	17800	10400
28	14100	17600	26200	35800	45800	52200	39200	24000	21800	13100	16100	10400
29	14000	17700	26500	36300	---	52500	38100	23800	20300	13500	14300	10600
30	13900	18000	26700	36600	---	52500	36900	23900	19500	15100	12300	10900
31	13800	---	27000	37000	---	52700	---	23900	---	20400	10800	---
MAX	17300	18000	27000	37000	45800	52700	53100	35900	28900	20400	23900	12800
MIN	13800	13800	18100	27300	37400	46100	36900	23800	19500	13100	10400	9810

WTR YR 1982 MAX 53100 MIN 9810

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 (0.3 km) downstream from John Martin Dam, 2.6 mi (4.2 km) upstream from Caddoa Creek, and 3.5 mi (5.6 km) southeast of Hasty.

DRAINAGE AREA.--18,915 mi² (48,990 km²), of which 785 mi² (2,033 km²) is probably noncontributing.

PERIOD OF RECORD.--Streamflow records, March 1938 to current year. Published as "at Caddoa" prior to October 1947. Water-quality data available, August 1942 to August 1943, October 1945 to July 1949, January 1951 to September 1981.

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 (1,139.160 m), National Geodetic Vertical Datum of 1929. Prior to Feb. 22, 1940, at site 3 mi (5 km) upstream at datum 22.83 ft (6.959 m) higher. Feb. 22, 1940, to Feb. 4, 1943, at site 700 ft (210 m) upstream at datum 3.64 ft (1.109 m) higher. Feb. 5, 1943, to Apr. 8, 1975, at site 1.5 mi (2.4 km) downstream at datum approximately 27.5 ft (8.38 m) lower.

REMARKS.--Records good. Storage diversions above station for irrigation of about 438,000 acres (1,770 km²) and for flood control. Flow completely regulated by John Martin Dam (station 07130000) 0.2 mi (0.3 km) upstream since Oct. 1948. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--5 years (water years 1939-43), 628 ft³/s (17.78 m³/s), unadjusted, 455,000 acre-ft/yr (561 hm³/yr) during construction of John Martin Dam; 34 years (water years 1949-82), 219 ft³/s (6.202 m³/s), 158,700 acre-ft/yr (196 hm³/yr), adjusted for storage in John Martin Reservoir.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s (1,130 m³/s) Apr. 24, 1942, gage height, 10.46 ft (3.188 m), site and datum then in use, from rating curve extended above 12,000 ft³/s (340 m³/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 (0.14 m³/s) July 16, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,320 ft³/s (37.4 m³/s) at 1215 June 22, gage height, 4.28 ft (1.305 m); minimum daily, 1.5 ft³/s (0.042 m³/s) Nov. 20-Jan. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	212	92	1.5	1.5	2.0	2.0	2.0	577	541	1050	543	831
2	154	39	1.5	1.5	2.0	2.0	2.0	573	562	1090	538	578
3	134	3.6	1.5	1.5	2.0	2.0	2.0	532	358	1110	542	552
4	128	3.2	1.5	1.5	2.0	1.7	2.0	473	114	1110	927	538
5	127	2.0	1.5	1.5	2.6	1.6	36	366	284	980	1240	536
6	125	2.0	1.5	1.5	2.2	1.8	92	127	285	553	1230	534
7	125	1.9	1.5	1.5	2.2	2.0	98	215	292	534	1240	511
8	116	1.9	1.5	1.5	2.2	2.0	106	281	333	520	1240	497
9	100	1.8	1.5	1.5	2.2	2.0	107	282	394	530	1220	497
10	94	1.8	1.5	1.5	2.2	2.0	105	307	421	533	1160	500
11	94	1.7	1.5	1.5	2.0	2.0	107	328	426	555	882	499
12	94	1.7	1.5	1.5	2.0	1.9	128	330	432	546	424	528
13	102	1.7	1.5	1.5	2.0	2.0	184	328	430	589	695	546
14	109	1.7	1.5	1.5	2.0	2.0	214	337	415	620	990	747
15	107	1.7	1.5	1.5	2.0	2.0	226	345	410	567	486	901
16	107	1.6	1.5	1.5	2.0	2.0	239	371	466	497	583	898
17	107	1.6	1.5	1.5	2.0	1.9	253	411	502	455	719	847
18	107	1.6	1.5	1.5	2.0	2.0	253	430	610	433	713	474
19	107	1.6	1.5	1.5	2.0	1.8	416	387	489	441	621	484
20	107	1.5	1.5	1.5	1.6	2.0	510	337	389	449	534	490
21	107	1.5	1.5	1.5	1.6	2.0	454	370	717	451	616	528
22	107	1.5	1.5	1.5	1.6	2.0	478	263	1140	465	558	546
23	107	1.5	1.5	1.5	2.0	2.0	530	134	1250	463	470	579
24	107	1.5	1.5	1.5	2.0	2.0	561	108	1250	454	447	595
25	105	1.5	1.5	1.5	2.0	2.0	588	124	1180	435	817	593
26	105	1.5	1.5	1.5	2.0	2.0	592	169	1140	327	1160	592
27	109	1.5	1.5	1.5	2.0	2.0	585	270	1040	261	1130	589
28	109	1.5	1.5	1.6	2.0	2.0	601	382	1020	268	1140	586
29	110	1.5	1.5	1.6	---	2.0	590	452	1060	389	1140	480
30	108	1.5	1.5	2.0	---	2.0	579	456	1050	512	1140	428
31	107	---	1.5	2.0	---	2.0	---	457	---	551	1120	---
TOTAL	3537	180.6	46.5	47.7	56.4	60.7	8640.0	10522	19000	17738	26175	17504
MEAN	114	6.02	1.50	1.54	2.01	1.96	288	339	633	572	844	583
MAX	212	92	1.5	2.0	2.6	2.0	601	577	1250	1110	1240	901
MIN	94	1.5	1.5	1.5	1.6	1.6	2.0	108	114	261	424	428
AC-FT	7020	358	92	95	112	120	17140	20870	37690	35180	51920	34720

CAL YR 1981 TOTAL 83467.1 MEAN 229 MAX 1120 MIN 1.2 AC-FT 165600
WTR YR 1982 TOTAL 103507.9 MEAN 284 MAX 1250 MIN 1.5 AC-FT 205300

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 (2.1 km) north of courthouse in Lamar.

DRAINAGE AREA.--19,780 mi^2 (51,230 km^2), of which 950 mi^2 (2,460 km^2) 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.

GAGE.--Water-stage recorder. Datum of gage is 3,602.23 ft (1,097.960 m), 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 (140 m) upstream at datum 2.42 ft (0.738 m) higher.

REMARKS.--Records good except those for winter period which are fair and those above 1,200 ft^3/s (34.0 m^3/s) which are poor. Flow regulated by John Martin Reservoir (station 07130000) 21 mi (34 km) 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 (1,970 km^2), 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 ft^3/s (8.439 m^3/s), 215,900 acre-ft/yr (266 hm^3/yr), prior to and during construction of John Martin Dam. 30 years (water years 1949-55, 1960-82), 88.8 ft^3/s (2.515 m^3/s), unadjusted, 64,340 acre-ft/yr (79.3 hm^3/yr), subsequent to completion of John Martin Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 130,000 ft^3/s (3,680 m^3/s) June 5, 1921, gage height, 14.55 ft (4.435 m), present datum, from rating curve extended above 10,000 ft^3/s (280 m^3/s); maximum gage height, 16.48 ft (5.023 m) June 18, 1965, present datum, from floodmarks; no flow at times in 1913-15, 1953.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,930 ft^3/s (54.7 m^3/s) at 0745 June 4, gage height, 7.23 ft (2.204 m) from rating extended above 1,200 ft^3/s (34.0 m^3/s); minimum daily, 0.70 ft^3/s (0.020 m^3/s) April 12-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	9.7	5.6	19	12	12	8.4	141	20	653	96	579
2	65	67	5.8	19	13	12	7.7	144	34	610	74	175
3	41	60	6.2	17	11	12	8.1	138	192	623	78	122
4	25	17	5.8	27	9.0	12	7.7	108	822	622	149	109
5	21	7.2	6.3	18	9.0	13	6.9	110	116	606	625	110
6	17	6.5	6.1	13	9.0	18	14	162	72	233	641	98
7	17	6.3	6.0	12	9.5	13	13	90	55	122	665	104
8	18	6.8	5.9	13	10	12	1.3	69	43	554	704	77
9	11	6.7	6.0	15	9.5	12	1.1	68	37	163	697	61
10	11	6.7	5.8	12	9.0	12	.90	64	17	108	665	63
11	12	6.6	5.8	11	9.5	11	.90	63	10	107	579	61
12	12	6.6	5.7	13	10	11	.70	77	132	141	215	81
13	12	6.5	5.5	20	12	11	.70	87	90	113	100	510
14	14	6.2	5.5	14	14	13	4.2	86	27	81	496	344
15	13	6.1	5.5	13	18	13	15	55	16	65	203	508
16	14	6.0	14	12	20	11	24	21	9.9	84	77	506
17	11	6.0	18	13	18	10	40	55	13	59	77	514
18	11	5.9	21	17	15	10	56	13	373	33	71	237
19	10	5.6	19	15	15	9.9	72	8.9	165	25	82	107
20	9.6	6.4	19	14	14	9.5	105	12	49	19	69	90
21	8.4	6.6	19	12	14	9.3	156	18	58	13	66	88
22	8.3	6.6	21	11	14	10	38	11	541	12	76	90
23	8.1	6.5	18	26	13	9.2	24	42	691	20	74	98
24	8.7	6.2	14	21	13	9.4	38	23	658	17	68	133
25	8.6	6.3	14	15	13	8.6	74	16	701	9.8	51	147
26	8.6	6.4	19	14	13	8.7	136	15	686	13	490	145
27	8.2	6.0	11	13	13	10	97	28	680	24	600	131
28	8.2	5.5	9.6	13	12	10	150	32	653	19	630	93
29	8.6	5.5	9.0	13	---	9.3	143	94	605	19	640	90
30	8.2	5.5	9.6	12	---	8.5	138	32	674	10	658	27
31	8.7	---	14	12	---	8.4	---	27	---	94	665	---
TOTAL	502.2	316.9	336.7	469	351.5	338.8	1381.60	1909.9	8239.9	5271.8	10381	5498
MEAN	16.2	10.6	10.9	15.1	12.6	10.9	46.1	61.6	275	170	335	183
MAX	65	67	21	27	20	18	156	162	822	653	704	579
MIN	8.1	5.5	5.5	11	9.0	8.4	.70	8.9	9.9	9.8	51	27
AC-FT	996	629	668	930	697	672	2740	3790	16340	10460	20590	10910

CAL YR 1981 TOTAL 31378.60 MEAN 86.0 MAX 810 MIN 5.5 AC-FT 62240
WTR YR 1982 TOTAL 34997.30 MEAN 95.9 MAX 822 MIN .70 AC-FT 69420

07134100 BIG SANDY CREEK NEAR LAMAR, CO

LOCATION.--Lat 38°06'51", long 102°29'00", in SW¼SW¼ sec.21, T.22 S., R.45 W., Prowers County, Hydrologic Unit 11020009, on left bank 15 ft (5 m) upstream from State Highway 196, 950 ft (290 m) upstream from mouth, and 7.5 mi (12.1 km) east of Lamar.

DRAINAGE AREA.--3,248 mi² (8,412 km²).

PERIOD OF RECORD.--February 1968 to September 1982 (discontinued).

REVISED RECORDS.--WRD Colo. 1971: Drainage area.

GAGE.--Water-stage recorder and culvert control. Altitude of gage is 3,545 ft (1,080 m), from topographic map. Prior to June 30, 1977, at datum 1.00 ft (0.305 m) lower.

REMARKS.--Records good except those for winter period, which are fair. Natural flow of stream affected by diversions above station 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.

AVERAGE DISCHARGE.--14 years, 11.3 ft³/s (0.320 m³/s), 8,190 acre-ft/yr (10.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,520 ft³/s (71.4 m³/s) Sept. 16, 1976, gage height, 8.48 ft (2.585 m), on basis of measurement of peak flow through culvert and over road; no flow Aug. 13-18, Sept. 1-15, 1976, Sept. 14-30, 1977, many days 1978, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 21, 1965, reached a stage of 9.93 ft (3.027 m) from floodmarks, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 138 ft³/s (3.91 m³/s) at 0900 May 13, gage height, 3.28 ft (1.000 m); minimum daily, 1.4 ft³/s (0.04 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	4.0	4.4	7.5	8.9	7.4	2.4	3.2	9.3	8.3	4.2	7.3
2	1.6	4.0	4.9	7.5	8.4	7.2	1.8	1.9	8.5	9.6	4.1	3.9
3	1.6	4.0	6.6	7.2	8.0	7.1	2.4	2.7	10	7.6	4.4	5.9
4	1.6	4.0	7.6	10	7.0	7.1	3.4	4.0	21	7.1	5.1	6.6
5	1.6	3.8	6.9	9.0	7.0	7.0	3.6	3.2	12	5.2	8.7	7.4
6	1.6	3.8	6.3	7.8	7.0	6.2	4.2	7.6	11	7.4	5.7	7.9
7	2.4	3.8	5.5	9.4	7.0	6.3	5.2	4.2	10	13	5.5	5.7
8	4.4	3.8	5.3	10	7.0	6.2	3.2	3.7	9.8	35	5.0	6.7
9	4.4	3.8	5.2	9.1	7.0	6.0	4.6	3.1	9.9	12	5.1	6.5
10	4.4	3.8	5.0	8.0	7.0	5.8	4.4	3.4	8.6	9.8	4.6	9.1
11	4.0	3.8	5.0	7.5	7.5	6.2	3.4	3.6	8.6	12	5.2	12
12	4.0	3.6	4.9	7.5	7.8	6.5	2.2	11	7.7	13	7.3	19
13	4.0	3.7	5.2	9.5	7.8	6.3	1.9	74	20	12	6.8	22
14	4.0	3.8	4.8	10	8.8	5.9	3.0	20	16	11	8.6	15
15	4.0	3.8	5.1	9.9	12	5.8	4.5	14	16	10	7.8	14
16	4.0	3.8	5.0	12	14	5.0	4.0	9.4	16	9.4	8.8	14
17	4.0	3.9	4.4	12	14	4.7	3.9	10	16	8.8	7.0	15
18	4.0	4.6	6.5	11	11	4.9	3.7	13	18	8.8	6.6	14
19	4.0	4.6	6.9	11	11	4.7	2.8	14	16	6.9	8.1	13
20	4.0	4.6	4.7	11	12	4.4	3.2	14	9.8	6.4	7.9	12
21	4.0	4.6	4.8	9.3	11	4.3	13	13	7.8	3.3	7.7	10
22	4.0	4.6	4.8	10	10	4.2	4.9	12	9.0	2.4	6.5	11
23	4.0	4.6	4.5	12	9.8	4.2	3.3	9.7	9.5	2.0	6.6	12
24	4.0	4.6	4.5	10	9.8	4.7	3.6	8.7	9.7	2.8	5.3	9.6
25	4.2	4.4	4.5	9.5	9.8	5.4	4.0	7.8	8.4	3.6	4.9	9.7
26	4.2	4.4	5.0	9.6	9.6	5.4	4.9	7.7	14	2.8	5.0	12
27	4.2	4.4	6.0	12	9.3	5.0	9.3	7.5	16	4.6	4.8	12
28	4.2	4.4	6.6	12	8.6	5.2	12	8.5	12	3.4	5.2	12
29	4.2	4.4	9.4	12	---	5.6	6.1	9.2	9.4	3.0	6.8	12
30	4.2	4.4	8.1	9.4	---	4.2	4.2	10	7.5	5.1	6.1	13
31	4.0	---	8.1	8.4	---	3.8	---	10	---	4.8	6.8	---
TOTAL	110.2	123.8	176.5	301.1	258.1	172.7	133.1	324.1	357.5	251.1	192.2	330.3
MEAN	3.55	4.13	5.69	9.71	9.22	5.57	4.44	10.5	11.9	8.10	6.20	11.0
MAX	4.4	4.6	9.4	12	14	7.4	13	74	21	35	8.8	22
MIN	1.4	3.6	4.4	7.2	7.0	3.8	1.8	1.9	7.5	2.0	4.1	3.9
AC-FT	219	246	350	597	512	343	264	643	709	498	381	655

CAL YR 1981 TOTAL 2178.19 MEAN 5.97 MAX 20 MIN .01 AC-FT 4320
WTR YR 1982 TOTAL 2730.70 MEAN 7.48 MAX 74 MIN 1.4 AC-FT 5420

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 end of bridge on U.S. Highway 385, 1.2 mi (1.9 km) downstream from headgate of Buffalo Canal and 2.3 mi (3.7 km) north of Granada.

DRAINAGE AREA.--23,707 mi^2 (61,401 km^2).

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. Altitude of gage is 3,480 ft (1,061 m), from topographic map.

REMARKS.--Records good. Flow regulated by John Martin Reservoir (station 07130000) 38 mi (61 km) 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 (2,024 km^2), and return flow from irrigated areas. Several observation of specific conductance and water temperature were obtained and are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 1,170 ft^3/s (33.1 m^3/s) June 5, 1982, gage height, 9.27 ft (2.825 m); minimum daily, 3.3 ft^3/s (0.093 m^3/s) May 27-28, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft^3/s (33.1 m^3/s) at 0015 June 5, gage height, 9.27 ft (2.825 m); minimum daily, 3.3 ft^3/s (0.093 m^3/s) May 27-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	4.1	29	53	52	53	22	11	5.0	670	8.1	512
2	13	5.4	33	52	52	53	23	12	3.6	502	8.5	329
3	12	24	29	51	52	51	24	14	5.2	502	6.0	167
4	6.4	26	28	47	50	50	23	10	704	519	5.9	126
5	5.0	26	28	50	45	50	24	7.0	386	504	164	97
6	4.8	12	29	49	40	49	24	26	103	409	425	83
7	4.8	9.3	30	47	40	48	15	19	62	208	492	65
8	5.2	7.4	28	42	40	47	7.2	7.2	39	684	546	50
9	5.3	12	28	46	43	46	5.6	4.4	24	525	572	36
10	5.3	12	28	41	45	46	5.3	4.0	17	197	560	26
11	5.0	8.5	28	33	50	48	5.5	3.9	19	167	538	26
12	4.5	8.5	28	45	53	53	6.1	4.9	20	158	404	43
13	4.5	8.5	28	34	56	53	6.0	521	101	113	173	120
14	4.3	8.5	28	55	68	50	6.0	128	34	99	252	400
15	4.2	8.1	28	57	67	45	5.7	61	14	74	339	342
16	4.5	7.4	30	53	68	43	5.7	29	10	63	147	432
17	4.6	7.4	35	54	72	42	5.5	21	7.8	56	89	446
18	5.0	6.4	36	57	68	41	5.9	16	185	45	67	402
19	4.7	5.5	37	59	65	38	6.0	8.0	192	37	45	219
20	4.7	5.0	44	59	64	37	7.6	6.9	92	32	32	167
21	4.7	5.2	46	58	62	36	6.4	6.3	33	24	23	137
22	4.7	5.2	46	61	61	36	5.7	6.1	120	17	23	118
23	4.5	5.2	45	54	60	37	5.0	5.7	418	13	22	112
24	4.5	5.2	41	54	60	36	5.3	5.6	531	10	11	104
25	4.2	5.2	36	54	58	19	5.5	3.9	552	8.6	9.1	112
26	4.1	5.2	49	56	58	6.4	8.6	3.6	551	7.1	154	118
27	4.2	8.1	48	57	58	6.3	20	3.3	546	6.4	413	118
28	4.3	10	44	55	57	6.1	15	3.3	520	6.6	466	98
29	4.5	10	44	57	---	6.2	11	3.4	486	6.6	508	86
30	4.4	19	42	56	---	6.0	10	9.1	470	8.2	516	80
31	4.5	---	43	53	---	17	---	7.3	---	8.2	523	---
TOTAL	168.4	290.3	1096	1599	1564	1155.0	325.6	971.9	6250.6	5679.7	7541.6	5171
MEAN	5.43	9.68	35.4	51.6	55.9	37.3	10.9	31.4	208	183	243	172
MAX	13	26	49	61	72	53	24	521	704	684	572	512
MIN	4.1	4.1	28	33	40	6.0	5.0	3.3	3.6	6.4	5.9	26
AC-FT	334	576	2170	3170	3100	2290	646	1930	12400	11270	14960	10260

CAL YR 1981 TOTAL 24135.0 MEAN 66.1 MAX 611 MIN 4.0 AC-FT 47870
WTR YR 1982 TOTAL 31813.1 MEAN 87.2 MAX 704 MIN 3.3 AC-FT 63100

07137000 FRONTIER DITCH NEAR COOLIDGE, KS

LOCATION.--Lat 38°02'18", long 102°02'19", in NE¼ sec.21, T.23 S., R.43 W., Hamilton County, Kans., Hydrologic Unit 11030001, on left bank 0.3 mi (0.5 km) east of Colorado-Kansas State line, 0.5 mi (0.8 km) downstream from Holly drain diversion, 1.5 mi (2.4 km) west of Coolidge, and 2.3 mi (3.7 km) 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 (1,022.037 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. This ditch diverts water from Arkansas River in Colorado for use in Kansas. These records and records for Arkansas River near Coolidge (station 07137500) represent total flow of Arkansas River at the Colorado-Kansas State line.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 84 ft³/s (2.38 m³/s) Aug. 1, 1975; no flow for many days each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	13	.49	.00	.00	.00	.00	33	34	36	45	30
2	39	1.4	.35	.00	.00	.00	.00	39	30	39	42	30
3	32	3.0	.21	.00	.00	.00	.00	39	31	33	42	32
4	30	4.1	.14	.00	.00	.00	.00	33	43	29	39	34
5	29	1.2	.07	.00	.00	.00	.00	31	35	31	61	37
6	28	1.0	.00	.00	.00	.00	.00	40	20	35	50	38
7	30	.92	.00	.00	.00	.00	.00	48	26	34	46	34
8	28	.70	.00	.00	.00	.00	.00	42	22	42	42	30
9	30	.49	.00	.00	.00	.00	.00	31	18	52	39	40
10	30	.42	.00	.00	.00	.00	.00	30	15	38	35	48
11	31	.28	.00	.00	.00	.00	.00	24	12	45	30	50
12	31	.21	.00	.00	.00	.00	11	29	12	12	29	50
13	24	16	.00	.00	.00	.00	17	48	16	22	26	41
14	23	26	.00	.00	.00	.00	15	52	18	28	29	44
15	22	27	.00	.00	.00	.00	15	40	15	22	31	42
16	24	29	.00	.00	.00	.00	15	38	13	19	26	62
17	25	26	.00	.00	.00	.00	15	32	11	23	22	20
18	23	23	.00	.00	.00	.00	17	32	8.2	22	19	20
19	20	.92	.00	.00	.00	.00	20	26	33	22	24	17
20	21	.56	.00	.00	.00	.00	23	17	24	28	21	18
21	20	.49	.00	.00	.00	.00	28	8.5	18	28	19	13
22	20	.42	.00	.00	.00	.00	28	10	12	20	17	19
23	19	.28	.00	.00	.00	.00	22	16	20	15	16	19
24	20	.14	.00	.00	.00	.00	23	24	28	15	20	20
25	19	20	.00	.00	.00	.00	21	20	36	40	13	19
26	20	19	.00	.00	.00	.00	20	33	33	40	20	20
27	20	12	.00	.00	.00	.00	25	32	31	47	35	20
28	19	11	.00	.00	.00	.00	33	30	32	50	26	18
29	18	8.4	.00	.00	---	.00	32	28	28	50	23	13
30	19	4.1	.00	.00	---	.00	34	29	24	51	23	12
31	18	---	.00	.00	---	.00	---	35	---	51	24	---
TOTAL	768	251.03	1.26	.00	.00	.00	414.00	969.5	698.2	1019	934	890
MEAN	24.8	8.37	.041	.000	.000	.000	13.8	31.3	23.3	32.9	30.1	29.7
MAX	39	29	.49	.00	.00	.00	34	52	43	52	61	62
MIN	18	.14	.00	.00	.00	.00	.00	8.5	8.2	12	13	12
AC-FT	1520	498	2.5	.00	.00	.00	821	1920	1380	2020	1850	1770

CAL YR 1981 TOTAL 5999.79 MEAN 16.4 MAX 49 MIN .00 AC-FT 11900
WTR YR 1982 TOTAL 5944.99 MEAN 16.3 MAX 62 MIN .00 AC-FT 11790

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS

LOCATION.--Lat 38°01'34", long 102°00'41", in NE¼NW¼ 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 (1.6 km) south of Coolidge, and 1.9 mi (3.1 km) downstream from Colorado-Kansas State line.

DRAINAGE AREA.--25,410 mi² (65,812 km²), of which 1,708 mi² (4,424 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to Ocober 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 (1,015.240 m), 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 (0.5 km) upstream at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records good except those for winter period, which are fair. 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 (2,020 km²), and return flow from irrigated areas.

AVERAGE DISCHARGE.--32 years (water years 1951-82), 176 ft³/s (4.984 m³/s), 127,500 acre-ft/yr (157 hm³/yr), subsequent to completion of John Martin Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 158,000 ft³/s (4,470 m³/s) June 17, 1965, gage height, 14.8 ft (4.51 m), present site and datum, from floodmarks, from rating curve extended above 13,000 ft³/s (370 m³/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, 920 ft³/s (26.1 m³/s) July 9, gage height, 4.68 ft (1.426 m); minimum daily, 2.9 ft³/s (0.082 m³/s) Nov. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	10	26	48	58	62	33	10	32	500	30	426
2	10	14	27	54	58	61	32	11	24	576	24	379
3	9.0	20	29	51	54	60	34	10	22	446	16	220
4	8.2	28	31	49	48	59	33	8.7	114	423	13	166
5	8.7	28	33	51	43	57	36	10	578	442	54	135
6	8.0	27	35	49	40	57	31	9.5	204	412	190	127
7	6.9	19	37	52	37	54	33	14	144	256	287	101
8	6.9	16	38	43	36	54	47	13	109	255	350	89
9	7.6	14	39	45	36	53	54	12	87	759	411	70
10	8.0	16	37	41	37	52	34	11	76	290	446	44
11	7.3	19	35	40	43	52	27	14	66	252	450	36
12	7.5	19	33	42	54	55	17	13	59	266	419	40
13	7.4	11	29	44	78	56	8.6	90	95	208	253	76
14	7.3	3.7	27	46	82	58	7.7	269	116	182	177	203
15	8.1	3.3	30	48	81	58	7.5	97	87	158	271	227
16	8.9	3.0	32	51	80	55	7.5	63	78	139	205	310
17	7.4	2.9	32	54	76	51	7.8	46	75	135	145	357
18	7.8	3.1	33	56	71	50	9.2	42	70	114	123	389
19	7.8	19	35	58	65	49	8.9	37	220	292	90	289
20	7.3	20	37	57	66	47	11	31	191	142	97	207
21	7.0	22	37	56	66	44	13	28	167	109	87	174
22	8.0	24	39	61	64	44	26	32	145	92	82	153
23	7.9	29	38	62	63	45	11	36	251	76	71	141
24	7.4	29	31	64	60	44	8.6	33	407	66	66	139
25	13	18	19	66	60	42	8.5	31	466	41	60	139
26	13	13	22	69	61	46	8.8	18	517	36	52	148
27	11	19	46	66	62	51	10	16	496	35	167	159
28	16	21	41	62	63	49	14	15	483	30	287	155
29	15	25	35	61	---	46	18	14	442	30	339	136
30	12	26	37	61	---	41	15	13	400	31	382	140
31	9.4	---	49	59	---	39	---	16	---	30	404	---
TOTAL	278.9	522.0	1049	1666	1642	1591	612.1	1063.2	6221	6823	6057	5375
MEAN	9.00	17.4	33.8	53.7	58.6	51.3	20.4	34.3	207	220	195	179
MAX	16	29	49	69	82	62	54	269	578	759	450	426
MIN	6.9	2.9	19	40	36	39	7.5	8.7	22	30	13	36
AC-FT	553	1040	2080	3300	3260	3160	1210	2110	12340	13530	12010	10660

CAL YR 1981 TOTAL 24273.9 MEAN 66.5 MAX 491 MIN 2.9 AC-FT 48150
WTR YR 1982 TOTAL 32900.2 MEAN 90.1 MAX 759 MIN 2.9 AC-FT 65260

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1963 to September 1968, October 1969 to September 1973, April 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.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 6,800 micromhos Mar. 29, 1978; minimum daily, 454 micromhos June 18, 1965.
WATER TEMPERATURES: Maximum, 34.5°C July 20, 1976; minimum, 0.0°C on several days during winter periods.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
NOV											
19...	1245	16	4900	4980	8.4	7.0	6.0	10.8	240	170	1700
FEB											
01...	1245	62	4650	4550	8.1	1.5	25	12.4	9	156	1700
MAR											
03...	1315	57	4100	4380	8.2	5.0	15	--	E25	94	1700
MAY											
24...	1215	30	4700	4830	8.1	18.0	11	9.3	200	5500	1800
JUL											
06...	1310	434	1840	1930	8.2	22.0	120	8.1	143	860	680
AUG											
30...	1100	389	1650	1710	8.0	23.0	190	6.9	1700	4600	570

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV										
19...	370	200	570	5.9	11	270	2600	180	1.0	14
FEB										
01...	380	190	570	6.0	11	290	2400	180	1.0	15
MAR										
03...	370	180	560	6.0	11	59	2500	180	.9	14
MAY										
24...	380	200	580	6.0	14	256	2500	190	.9	13
JUL										
06...	150	75	180	3.3	6.9	128	890	53	.8	9.4
AUG										
30...	140	54	140	2.8	7.5	127	720	41	.8	11

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
NOV										
19...	4370	4110	5.9	189	1.8	.150	.97	.040	.010	.040
FEB										
01...	4240	3920	5.8	705	2.6	.110	.96	.080	.080	.100
MAR										
03...	4300	3850	5.9	662	2.0	.080	.77	.010	.030	.030
MAY										
24...	4290	4030	5.8	347	2.1	<.060	1.00	.110	.030	<.010
JUL										
06...	1540	1440	2.1	1810	.60	<.060	1.30	.270	.110	.030
AUG										
30...	1360	1190	1.9	1430	1.3	.110	1.70	.220	.060	.060

E ESTIMATED.

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	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)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)
NOV										
19...	2	1	100	<100	1	<1	10	10	1	1
MAR										
03...	--	2	100	100	<1	<1	10	10	<1	2
MAY										
24...	2	1	<100	100	<1	<1	<10	10	1	<1
AUG										
30...	2	2	100	46	<1	<1	10	<10	2	<1

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	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 TOTAL RECOV-ERABLE (UG/L AS HG)
NOV									
19...	11	2	3600	60	6	1	190	50	.1
MAR									
03...	8	3	680	80	2	3	80	40	--
MAY									
24...	8	7	330	20	2	4	80	70	.5
AUG									
30...	10	2	6000	10	4	<1	330	3	.2

DATE	MERCURY DIS-SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV									
19...	<.1	6	2	54	20	<1	<1	50	20
MAR									
03...	.7	3	2	--	24	<1	<1	30	20
MAY									
24...	.4	5	4	24	24	<1	<1	30	30
AUG									
30...	.5	14	2	16	13	<1	<1	50	7

DATE	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
NOV												
19...	--	0	.0	--	--	.0	--	.0	--	.0	--	.0
FEB												
01...	.00	--	--	.00	.00	--	.00	--	.00	--	.00	--
MAR												
03...	<.10	--	--	<.10	<.01	--	<.10	--	<.01	--	<.01	--
MAY												
24...	<.10	--	--	<.10	<.01	--	<.10	--	<.01	--	<.01	--

07137500 ARKANSAS RIVER NEAR COOLIDGE, KS--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDO-SULFAN, TOTAL (UG/L)	ENDO-SULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)
NOV											
19...	--	.0	--	--	.0	--	.0	--	.0	--	--
FEB											
01...	.00	--	.00	.00	--	.00	--	.00	--	.00	.00
MAR											
03...	<.01	--	.00	<.01	--	<.01	--	<.01	--	.00	<.01
MAY											
24...	<.01	--	<.01	<.01	--	<.01	--	<.01	--	<.01	<.01

DATE	HEPTA-CHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
NOV											
19...	.0	--	.0	--	.0	--	.0	--	--	--	--
FEB											
01...	--	.00	--	.00	--	.00	--	.00	.00	.00	.00
MAR											
03...	--	<.01	--	<.01	--	.00	--	<.01	.00	.00	<.01
MAY											
24...	--	<.01	--	<.01	--	<.01	--	<.01	<.01	<.01	<.01

DATE	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)	PARA-THION, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	PER-THANE IN BOTTOM MATERIL (UG/KG)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV											
19...	.0	--	--	.00	--	.0	--	--	--	--	--
FEB											
01...	--	.00	.00	--	0	--	.00	.02	.00	.00	.00
MAR											
03...	--	.00	<.10	--	<1	--	.00	.01	.00	.00	.00
MAY											
24...	--	<.01	<.10	--	<1	--	<.01	.05	<.01	<.01	<.01

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM
MAY							
24...	1215	30	--	--	--	--	--
JUL							
06...	1310	434	319	374	26	36	52

DATE	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM	SED. SUSP. FALL DIAM. % FINER THAN 2.00 MM
MAY						
24...	86	98	E99	100	--	--
JUL						
06...	67	72	75	86	88	100

E ESTIMATED.

RIO GRANDE BASIN

08213500 RIO GRANDE AT THIRTYMILE BRIDGE, NEAR CREEDE, CO

Streamflow data for water year 1982, will be published in a subsequent report.

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 (30 m) downstream from bridge, 1,000 ft (300 m) downstream from Continental Reservoir, and 15 mi (24 km) west of Creede.

DRAINAGE AREA.--51.7 mi^2 (134 km^2).

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. Altitude of gage is 10,200 ft (3,109 m), from topographic map. Prior to Oct. 2, 1951, at site 150 ft (46 m) upstream at different datum.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Continental Reservoir, capacity, 26,720 acre-ft (32.9 hm^3). No diversion above 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.--53 years, 30.1 ft^3/s (0.852 m^3/s), 21,810 acre-ft/yr (26.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 362 ft^3/s (10.3 m^3/s) May 8, 1952, gage height, 3.66 ft (1.116 m), from rating curve extended above 120 ft^3/s (3.4 m^3/s); no flow June 22, 23, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 251 ft^3/s (7.11 m^3/s) at 1400 Nov. 8, gage height, 2.41 ft (0.735 m); minimum daily, 2.0 ft^3/s (0.057 m^3/s) Oct. 30-Nov. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	2.0	2.5	2.5	2.5	3.0	3.2	65	142	58	35	42
2	9.1	2.0	2.5	2.5	2.5	3.0	3.2	81	139	57	33	30
3	9.1	2.0	2.5	2.5	2.5	3.0	3.2	104	139	53	34	46
4	12	2.0	2.5	2.5	2.5	3.0	3.2	121	130	42	33	42
5	14	159	2.5	2.5	2.5	3.0	3.2	134	127	36	27	50
6	16	237	2.5	2.5	2.5	3.0	3.2	138	126	36	25	41
7	17	237	2.5	2.5	2.5	3.0	3.2	128	94	36	26	40
8	15	241	2.5	2.5	2.5	3.0	3.2	101	79	116	27	44
9	14	245	2.5	2.5	2.5	3.0	3.2	54	105	204	25	42
10	15	245	2.5	2.5	2.5	3.0	3.2	30	132	231	23	41
11	16	245	2.5	2.5	2.5	3.0	3.2	48	130	222	28	42
12	18	239	2.5	2.5	2.5	3.0	3.2	104	120	229	34	45
13	21	233	2.5	2.5	2.5	3.0	3.2	116	119	225	36	42
14	27	223	2.5	2.5	2.5	3.0	3.2	87	103	223	31	42
15	30	92	2.5	2.5	2.5	3.0	48	68	91	223	26	44
16	31	2.8	2.5	2.5	3.0	3.0	75	46	85	223	25	41
17	31	2.8	2.5	2.5	3.0	3.0	74	37	88	229	27	37
18	31	2.5	2.5	2.5	3.0	3.0	72	60	92	231	29	39
19	21	2.5	2.5	2.5	3.0	3.0	71	74	91	222	30	43
20	10	2.5	2.5	2.5	3.0	3.0	62	76	75	201	35	42
21	7.3	2.5	2.5	2.5	3.0	3.0	54	82	70	173	34	43
22	7.3	2.5	2.5	2.5	3.0	3.0	47	104	74	116	40	37
23	8.2	2.5	2.5	2.5	3.0	3.0	40	116	75	72	55	34
24	11	2.5	2.5	2.5	3.0	3.0	28	113	74	57	97	32
25	12	2.5	2.5	2.5	3.0	3.0	23	119	71	64	85	31
26	14	2.5	2.5	2.5	3.0	3.0	33	134	62	40	67	30
27	16	2.5	2.5	2.5	3.0	3.0	37	158	60	34	60	30
28	7.1	2.5	2.5	2.5	3.0	3.0	41	148	60	41	61	34
29	2.2	2.5	2.5	2.5	---	3.0	46	144	60	50	55	34
30	2.0	2.5	2.5	2.5	---	3.0	56	153	59	40	53	37
31	2.0	---	2.5	2.5	---	3.0	---	148	---	34	52	---
TOTAL	455.4	2442.1	77.5	77.5	76.5	93.0	851.8	3091	2872	3818	1248	1177
MEAN	14.7	81.4	2.50	2.50	2.73	3.00	28.4	99.7	95.7	123	40.3	39.2
MAX	31	245	2.5	2.5	3.0	3.0	75	158	142	231	97	50
MIN	2.0	2.0	2.5	2.5	2.5	3.0	3.2	30	59	34	23	30
AC-FT	903	4840	154	154	152	184	1690	6130	5700	7570	2480	2330

CAL YR 1981 TOTAL 8123.7 MEAN 22.3 MAX 245 MIN 2.0 AC-FT 16110
WTR YR 1982 TOTAL 16279.8 MEAN 44.6 MAX 245 MIN 2.0 AC-FT 32290

NOTE.--NO GAGE-HEIGHT RECORD NOV. 24 TO APR. 12.

08216500 WILLOW CREEK AT CREEDE, CO

LOCATION.--Lat 37°51'22", long 106°55'37", in SE¼ sec.25, T.42 N., R.1 W. (projected), Mineral County, Hydrologic Unit 13010001, on left bank at north city limits of Creede, 8 ft (2 m) upstream from entrance to paved channel just downstream from Windy Gulch, 0.5 mi (0.8 km) downstream from confluence of East and West Willow Creeks, and 2.6 mi (4.2 km) upstream from mouth.

DRAINAGE AREA.--35.3 mi² (91.4 km²).

PERIOD OF RECORD.--May 1951 to September 1982 (discontinued).

REVISED RECORDS.--WSP 1712: 1955, 1956(M).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 8,880 ft (2,707 m), from topographic map. Prior to Sept. 2, 1953, at site 17 ft (5 m) upstream at present datum.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Diversions above station for municipal supply of Creede. Several observations of specific conductance and water temperature were obtained and are published elsewhere in this report.

AVERAGE DISCHARGE.--31 years, 21.8 ft³/s (0.617 m³/s), 15,790 acre-ft/yr (19.5 hm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 430 ft³/s (12.2 m³/s) June 5, 1957, gage height, 4.14 ft (1.262 m); maximum gage height, 4.16 ft (1.268 m) May 23, 1958; minimum daily discharge, 0.2 ft³/s (0.006 m³/s) Mar. 25, 1956, probably caused by snowslide upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 120 ft³/s (3.4 m³/s) and maximum (*):

		Discharge		Gage height				Discharge		Gage height	
Date	Time	(ft³/s)	(m³/s)	(ft)	(m)	Date	Time	(ft³/s)	(m³/s)	(ft)	(m)
May 26	2200	186	5.27	3.14	0.957	May 28	2100	* 196	5.55	3.20	0.975
May 31	2100	185	5.24	3.13	0.954						

Minimum daily discharge, 3.2 ft³/s (0.091 m³/s) Mar. 28-Apr. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	13	5.6	5.5	4.3	3.9	3.2	27	144	65	33	56
2	16	13	5.6	5.4	4.2	3.9	3.4	31	138	57	36	52
3	19	13	5.8	5.4	4.0	3.8	3.4	36	136	52	36	49
4	17	12	6.5	5.4	4.1	3.8	3.8	38	133	48	32	47
5	16	12	7.0	5.4	3.9	3.7	4.0	36	126	45	30	48
6	16	12	6.5	5.4	3.9	3.7	3.9	30	112	40	30	43
7	16	12	6.2	5.4	3.8	3.6	3.7	29	110	38	29	43
8	15	12	5.9	5.3	3.7	3.6	3.6	29	108	36	30	43
9	14	11	5.9	5.2	3.7	3.5	3.5	29	110	36	26	42
10	14	10	5.9	5.1	3.6	3.5	3.6	31	108	33	26	40
11	16	11	5.9	5.0	3.7	3.5	4.0	32	104	31	25	39
12	16	11	5.3	5.0	3.7	3.4	5.0	29	102	29	28	50
13	18	11	5.9	5.0	3.7	3.4	6.5	26	95	29	30	47
14	17	11	5.9	5.0	3.7	3.4	8.0	25	90	28	29	47
15	18	11	5.9	5.0	3.8	3.4	9.5	24	86	26	27	53
16	18	10	6.2	5.0	3.8	3.4	12	22	85	25	28	53
17	17	9.6	6.2	5.0	3.9	3.4	14	22	87	25	29	54
18	16	8.8	6.2	5.0	4.0	3.4	16	23	84	26	30	58
19	16	6.5	6.0	5.0	4.0	3.4	17	25	78	28	30	58
20	16	6.5	6.0	5.0	4.0	3.4	17	27	75	26	33	60
21	16	7.0	6.0	4.9	4.0	3.3	16	42	76	23	33	59
22	16	7.0	6.0	4.9	4.0	3.3	16	55	73	22	36	55
23	16	7.0	6.0	4.8	4.0	3.3	15	57	71	21	57	54
24	16	6.8	6.0	4.7	4.0	3.3	14	59	72	20	80	52
25	16	6.2	6.0	4.7	4.0	3.3	15	75	72	22	88	49
26	15	5.9	5.8	4.7	3.9	3.3	16	99	71	20	83	48
27	16	5.9	5.8	4.6	3.9	3.3	16	123	70	28	83	47
28	15	7.0	5.7	4.6	3.9	3.2	17	129	68	36	80	47
29	15	7.8	5.6	4.5	---	3.2	21	151	66	49	72	46
30	14	7.0	5.5	4.5	---	3.2	23	135	65	48	68	50
31	12	---	5.5	4.4	---	3.2	---	129	---	36	61	---
TOTAL	493	284.0	184.3	154.8	109.2	107.0	314.1	1625	2815	1048	1338	1489
MEAN	15.9	9.47	5.95	4.99	3.90	3.45	10.5	52.4	93.8	33.8	43.2	49.6
MAX	19	13	7.0	5.5	4.3	3.9	23	151	144	65	88	60
MIN	12	5.9	5.3	4.4	3.6	3.2	3.2	22	65	20	25	39
AC-FT	978	563	366	307	217	212	623	3220	5580	2080	2650	2950

CAL YR 1981 TOTAL 4982.6 MEAN 13.7 MAX 53 MIN 2.2 AC-FT 9880
WTR YR 1982 TOTAL 9961.4 MEAN 27.3 MAX 151 MIN 3.2 AC-FT 19760

NOTE.--NO GAGE-HEIGHT RECORD DEC. 17 TO APR. 20.

08217500 RIO GRANDE AT WAGONWHEEL GAP, CO

LOCATION.--Lat 37°46'01", long 106°49'51", in NW¼NE¼ sec.35, T.41 N., R.1 E., Mineral County, Hydrologic Unit 13010001, on right bank 250 ft (76 m) upstream from private bridge, 0.4 mi (0.6 km) upstream from Goose Creek, and 0.4 mi (0.6 km) west of town of Wagonwheel Gap.

DRAINAGE AREA.--780 mi² (2,020 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 8,431.26 ft (2,569.848 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Santa Maria, Rio Grande, and Continental Reservoirs, combined capacity, 121,400 acre-ft (150 hm³). Diversions above station for irrigation. Transmountain diversions to drainage area above 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.

AVERAGE DISCHARGE.--31 years, 504 ft³/s (14.27 m³/s), 365,100 acre-ft/yr (450 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,870 ft³/s (138 m³/s) July 26, 1957, gage height, 5.38 ft (1.640 m); maximum gage height, 5.84 ft (1.780 m) Sept. 6, 1970; minimum daily discharge, 46 ft³/s (1.30 m³/s) Dec. 9, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,610 ft³/s (73.9 m³/s) at 0500 June 17, gage height, 4.12 ft (1.256 m); minimum daily, 88 ft³/s (2.49 m³/s) Nov. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	276	176	90	125	110	115	137	566	2130	2020	778	733
2	278	185	114	130	105	110	133	595	2050	1770	774	662
3	340	259	156	130	105	112	120	713	2130	1600	729	630
4	324	189	155	125	100	98	156	812	2140	1510	702	566
5	306	168	146	120	100	104	172	880	2130	1390	655	611
6	310	179	145	115	100	96	161	956	2110	1320	631	570
7	312	197	141	115	100	96	145	895	1940	1290	639	575
8	316	217	129	115	100	95	130	866	1840	1250	709	581
9	335	180	114	115	100	96	130	851	1890	1100	786	598
10	320	150	118	115	100	94	130	800	1980	1050	833	458
11	336	157	116	115	100	95	140	816	2100	1010	798	511
12	418	158	133	115	100	106	170	797	2340	978	789	633
13	436	152	133	115	100	101	200	773	2470	947	801	692
14	442	157	120	115	100	111	240	728	2470	910	825	646
15	446	152	103	115	100	115	300	651	2420	812	728	749
16	532	149	108	120	100	107	400	578	2380	786	461	778
17	465	135	117	125	100	112	480	573	2540	789	435	845
18	445	135	112	130	100	108	500	532	2340	837	469	888
19	433	107	130	135	105	102	500	581	1960	823	467	921
20	408	104	132	140	105	95	480	584	1990	788	476	941
21	391	125	111	140	110	99	454	725	2050	743	528	1040
22	377	131	105	140	115	105	437	932	2120	705	560	969
23	371	132	125	140	120	109	442	1070	2140	634	713	912
24	372	124	121	140	120	112	426	1140	2200	633	1040	854
25	364	121	110	140	120	116	423	1300	2410	604	1370	811
26	344	95	100	135	120	130	436	1470	2370	633	1240	777
27	275	88	100	135	120	130	428	1660	2340	696	1090	719
28	245	102	100	130	120	150	451	1650	2280	790	1080	588
29	235	104	110	125	---	130	485	2020	2100	760	972	567
30	218	98	115	120	---	115	514	2090	2050	814	873	652
31	184	---	120	115	---	113	---	2030	---	749	809	---
TOTAL	10854	4426	3729	3890	2975	3377	9320	30634	65410	30741	23760	21477
MEAN	350	148	120	125	106	109	311	988	2180	992	766	716
MAX	532	259	156	140	120	150	514	2090	2540	2020	1370	1040
MIN	184	88	90	115	100	94	120	532	1840	604	435	458
AC-FT	21530	8780	7400	7720	5900	6700	18490	60760	129700	60970	47130	42600

CAL YR 1981 TOTAL 146837 MEAN 402 MAX 2260 MIN 88 AC-FT 291300
WTR YR 1982 TOTAL 210593 MEAN 577 MAX 2540 MIN 88 AC-FT 417700

08218500 GOOSE CREEK AT WAGONWHEEL GAP, CO

LOCATION.--Lat 37°45'07", long 106°49'46", in SW¼SE¼ sec.35, T.41 N., R.1 E., Mineral County, Hydrologic Unit 13010001, on left bank 0.2 mi (0.3 km) downstream from Pierce Creek, 1.0 mi (1.6 km) upstream from mouth, 1.0 mi (1.6 km) south of Wagonwheel Gap, and 8.8 mi (14.2 km) southeast of Creede.

DRAINAGE AREA.--90 mi^2 (230 km^2), approximately.

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

REVISED RECORDS.--WSP 1712: 1955, 1956(M).

GAGE.--Water-stage recorder. Altitude of gage is 8,460 ft (2,579 m), from topographic map.

REMARKS.--Records good except those for winter period, which are poor. Several small diversions above station for irrigation. Lake Humphreys, capacity, 842 acre-ft (1.04 hm^3), 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.--28 years, 58.8 ft^3/s (1.665 m^3/s), 42,600 acre-ft/yr (52.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 879 ft^3/s (24.9 m^3/s) Sept. 14, 1970, gage height, 4.52 ft (1.378 m), from recorded range in stage, from rating curve extended above 480 ft^3/s (14 m^3/s); minimum daily, 4.5 ft^3/s (0.13 m^3/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 above base of 200 ft^3/s (5.7 m^3/s), and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 13	0100	* 253	7.16	3.38	1.030	Aug. 25	0900	250	7.08	* 3.44	1.049

Minimum daily discharge, 12 ft^3/s (0.34 m^3/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	30	17	19	17	19	22	72	228	175	48	66
2	26	34	20	17	16	20	23	74	232	157	49	64
3	41	32	25	16	15	20	22	94	225	144	63	62
4	35	30	24	15	14	19	24	92	214	136	51	60
5	31	30	25	16	13	18	26	92	214	126	46	65
6	29	31	24	18	12	17	26	81	194	116	48	61
7	29	31	23	17	13	17	24	74	184	103	45	59
8	31	30	21	15	13	18	23	72	197	96	44	57
9	34	26	22	16	14	19	23	72	200	103	52	57
10	30	24	22	17	14	20	24	74	208	96	42	55
11	39	26	23	17	15	21	29	77	214	92	39	60
12	54	26	21	18	14	22	49	74	225	85	46	65
13	56	24	21	17	14	21	59	70	225	79	51	80
14	54	25	19	17	14	20	64	63	211	77	54	80
15	58	23	20	17	15	20	72	63	197	76	63	92
16	64	23	20	17	15	20	64	61	184	70	61	96
17	52	21	19	18	15	20	61	63	204	72	51	94
18	46	22	18	18	15	20	63	68	200	74	51	96
19	46	19	19	19	15	18	56	76	211	72	56	94
20	45	20	20	19	15	16	54	77	184	61	58	146
21	45	22	20	18	16	16	45	96	166	56	58	130
22	41	22	19	18	16	17	40	118	155	54	58	120
23	40	22	16	17	18	17	39	116	155	52	61	110
24	40	24	15	18	17	17	36	116	163	49	94	100
25	39	23	16	19	17	18	37	128	184	51	157	95
26	36	21	16	20	18	19	42	138	181	56	120	90
27	36	20	17	20	18	20	42	157	184	61	99	85
28	36	24	16	19	18	22	46	155	200	61	85	85
29	36	24	16	18	---	24	59	200	190	58	72	80
30	34	22	17	17	---	22	64	214	172	58	68	110
31	31	---	18	17	---	21	---	208	---	51	68	---
TOTAL	1238	751	609	544	426	598	1258	3135	5901	2617	1958	2514
MEAN	39.9	25.0	19.6	17.5	15.2	19.3	41.9	101	197	84.4	63.2	83.8
MAX	64	34	25	20	18	24	72	214	232	175	157	146
MIN	24	19	15	15	12	16	22	61	155	49	39	55
AC-FT	2460	1490	1210	1080	845	1190	2500	6220	11700	5190	3880	4990

CAL YR 1981 TOTAL 14903 MEAN 40.8 MAX 222 MIN 12 AC-FT 29560
WTR YR 1982 TOTAL 21549 MEAN 59.0 MAX 232 MIN 12 AC-FT 42740

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 (210 m) downstream from Church Creek, 0.8 mi (1.3 km) southwest of village of South Fork, and 1.4 mi (2.3 km) upstream from mouth.

DRAINAGE AREA.--216 mi² (559 km²).

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 (2,506.002 m), 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 (1.6 km) downstream at different datums.

REMARKS.--Records good except those for winter period, which are poor. Transmountain diversions from Colorado River basin to drainage area above station through Treasure Pass ditch (see elsewhere in this report). Natural flow of stream affected by a few small diversions for irrigation, slight regulation by Beaver Creek Reservoir, capacity, 4,760 acre-ft (5.87 hm³), and several smaller storage reservoirs. 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.--58 years (water years 1911-22, 1937-82), 209 ft³/s (5.919 m³/s), 151,400 acre-ft/yr (187 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft³/s (227 m³/s) Oct. 5, 1911, gage height, 9.7 ft (2.96 m), from floodmarks, present site and datum, from rating curve extended above 1,500 ft³/s (42 m³/s); minimum daily, 10 ft³/s (0.28 m³/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 (0.3 m) lower than that of Oct. 5, 1911, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,360 ft³/s (38.5 m³/s) at 2400 May 29, gage height, 4.82 ft (1.469 m), only peak above base of 900 ft³/s (25 m³/s); minimum daily, 31 ft³/s (0.88 m³/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	109	37	46	40	50	72	451	1200	675	143	220
2	62	107	44	43	39	55	73	460	1180	586	141	189
3	135	102	59	35	38	58	71	630	1160	514	155	177
4	116	96	58	33	37	55	81	675	1120	468	149	173
5	111	78	59	37	33	46	93	660	1120	427	139	197
6	105	77	55	43	31	43	94	527	1010	391	141	181
7	99	81	52	37	32	44	87	435	984	375	141	167
8	105	78	51	33	33	49	84	439	1030	354	131	151
9	114	75	48	35	34	52	83	460	1040	344	139	149
10	102	70	49	37	36	56	90	473	1060	325	129	137
11	131	72	55	37	37	60	118	500	1010	307	137	153
12	220	71	52	42	36	70	201	478	1030	286	137	191
13	258	70	50	37	36	65	242	395	1100	262	135	255
14	252	70	47	37	37	64	268	337	1070	228	135	260
15	230	66	52	40	39	69	292	319	1030	212	133	325
16	295	67	68	40	40	67	280	307	912	201	143	391
17	238	64	59	41	40	63	265	313	966	220	131	435
18	201	65	58	42	40	60	280	361	966	201	133	375
19	187	50	57	46	40	58	286	478	1000	183	133	344
20	177	57	48	45	42	60	286	518	846	155	129	522
21	169	62	50	43	44	60	245	695	780	145	129	550
22	159	64	48	41	45	59	210	810	755	131	159	455
23	159	62	37	38	46	58	191	720	795	129	159	415
24	161	60	33	42	46	56	179	710	810	127	199	361
25	153	57	34	44	47	57	177	755	825	123	320	322
26	139	51	35	48	47	61	183	888	785	123	262	292
27	127	46	40	48	47	64	191	1030	770	145	252	275
28	123	50	36	43	49	70	225	942	795	137	245	283
29	121	55	35	41	---	72	310	1120	785	141	212	255
30	121	52	40	37	---	70	379	1210	735	177	203	409
31	118	---	43	37	---	71	---	1170	---	159	210	---
TOTAL	4754	2084	1489	1248	1111	1843	5636	19266	28669	8251	5104	8609
MEAN	153	69.5	48.0	40.3	39.7	59.5	188	621	956	266	165	287
MAX	295	109	68	48	49	72	379	1210	1200	675	320	550
MIN	62	46	33	33	31	43	71	307	735	123	129	137
AC-FT	9430	4130	2950	2480	2200	3660	11180	38210	56860	16370	10120	17080

CAL YR 1981 TOTAL 46051 MEAN 126 MAX 790 MIN 28 AC-FT 91340
WTR YR 1982 TOTAL 88064 MEAN 241 MAX 1210 MIN 31 AC-FT 174700

NOTE.--NO GAGE-HEIGHT RECORD DEC. 24 TO MAR. 15.

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 (6 m) downstream from county highway bridge, 6.0 mi (9.7 km) west of Del Norte, and 6.8 mi (10.9 km) upstream from Pinos Creek.

DRAINAGE AREA.--1,320 mi^2 (3,419 km^2), 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 (2,432.380 m), National Geodetic Vertical Datum of 1929. Prior to May 16, 1908, nonrecording gage at site 4 mi (6 km) downstream at different datum. May 16, 1908, to Nov. 8, 1910, nonrecording gages on bridge at present site and datum.

REMARKS.--Records good except those for winter period, which are fair. Small diversions above 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 (155 hm^3), and by several smaller reservoirs. Transmountain diversions to drainage area above station from Colorado River basin (see elsewhere in this report). 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.--93 years, 895 ft^3/s (25.35 m^3/s), 648,400 acre-ft/yr (799 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft^3/s (510 m^3/s) Oct. 5, 1911, gage height, 6.80 ft (2.073 m), from rating curve extended above 12,900 ft^3/s (365 m^3/s); minimum daily, 69 ft^3/s (1.95 m^3/s) Aug. 21, 1902.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1873, that of Oct. 5, 1911, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,140 ft^3/s (117 m^3/s) at 0800 June 13, gage height, 4.08 ft (1.244 m); minimum daily, 135 ft^3/s (3.82 m^3/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	335	378	169	210	175	210	255	1110	3660	3000	992	1120
2	335	395	201	190	170	230	259	1140	3560	2700	1000	992
3	474	443	268	160	165	242	235	1440	3580	2360	965	947
4	494	455	264	150	160	231	268	1660	3580	2210	956	884
5	449	356	268	170	145	192	310	1730	3540	2020	884	947
6	437	356	250	190	135	175	310	1700	3440	1890	848	902
7	443	378	238	170	140	178	272	1520	3230	1810	848	875
8	449	395	235	150	145	195	242	1470	3120	1780	884	866
9	500	384	216	160	150	208	242	1490	3190	1610	956	893
10	455	330	219	170	155	223	246	1440	3310	1550	1030	762
11	481	330	250	170	160	242	281	1500	3380	1490	992	770
12	713	335	235	190	155	281	462	1470	3680	1440	974	938
13	804	330	227	170	155	264	628	1380	3950	1380	992	1140
14	848	325	212	170	160	255	665	1260	4010	1300	983	1120
15	804	320	212	180	170	272	729	1130	3900	1160	1040	1260
16	1010	315	246	180	175	255	745	1020	3640	1110	689	1400
17	893	300	198	185	175	264	762	1010	3970	1120	612	1470
18	804	290	180	190	175	246	875	1020	3860	1150	658	1490
19	788	246	190	210	175	227	848	1190	3270	1140	665	1520
20	745	216	220	205	185	192	839	1240	3140	1050	665	1710
21	713	272	225	195	190	192	796	1560	3100	974	754	1950
22	689	300	219	185	195	198	713	1980	3150	929	822	1710
23	673	290	170	175	200	212	689	2050	3230	848	929	1580
24	681	277	150	190	200	216	658	2100	3250	822	1390	1450
25	658	268	155	200	205	227	642	2300	3600	779	2050	1340
26	620	227	160	220	205	246	665	2630	3520	813	1870	1260
27	562	195	180	220	205	246	658	3120	3440	884	1670	1160
28	488	223	165	195	210	268	697	2860	3480	1020	1570	1080
29	462	259	160	185	---	295	875	3440	3210	1010	1430	974
30	419	238	180	170	---	246	965	3680	3080	1090	1280	1040
31	401	---	195	170	---	223	---	3480	---	1000	1210	---
TOTAL	18627	9426	6457	5675	4835	7151	16831	56120	104070	43439	32608	35550
MEAN	601	314	208	183	173	231	561	1810	3469	1401	1052	1185
MAX	1010	455	268	220	210	295	965	3680	4010	3000	2050	1950
MIN	335	195	150	150	135	175	235	1010	3080	779	612	762
AC-FT	36950	18700	12810	11260	9590	14180	33380	111300	206400	86160	64680	70510

CAL YR 1981 TOTAL 206472 MEAN 566 MAX 3270 MIN 145 AC-FT 409500
WTR YR 1982 TOTAL 340789 MEAN 934 MAX 4010 MIN 135 AC-FT 676000

08220500 PINOS CREEK NEAR DEL NORTE, CO

LOCATION.--Lat 37°35'30", long 106°26'58", in SW¼SE¼ sec.29, T.39 N., R.5 E., Rio Grande County, Hydrologic Unit 13010002, on left bank 90 ft (27 m) downstream from Bennett Creek and 8.0 mi (12.9 km) southwest of Del Norte.

DRAINAGE AREA.--53 mi² (140 km²), approximately.

PERIOD OF RECORD.--April 1919 to September 1924, May 1936 to September 1982 (discontinued). No winter records prior to 1950 except water years 1941, 1944-47. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1312: 1922(M), 1941(M). WSP 1923: 1960(M).

GAGE.--Water-stage recorder and rectangular box flume. Altitude of gage is 8,480 ft (2,585 m), from topographic map. May 1, 1919, to Sept. 30, 1924, nonrecording gages at sites about 1,000 ft (300 m) downstream at different datum.

REMARKS.--Records good except those for period of no gage-height record, which are poor. One small diversion above 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.--38 years (water years 1941, 1944-47, 1950-82), 23.8 ft³/s (0.674 m³/s), 17,240 acre-ft/yr (21.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, occurred June 3, 1922, caused by failure of private fish-lake dam; maximum discharge determined, 720 ft³/s (20.4 m³/s) Aug. 3, 1936, gage height, 4.19 ft (1.277 m), by slope-area measurement of peak flow; minimum daily, 0.40 ft³/s (0.011 m³/s) Jan. 6, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 3, 1922, exceeded all other observed floods at this location since at least 1903, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 120 ft³/s (3.4 m³/s), and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 28	2200	* 164	4.64	1.85	0.564	Aug. 17	2230	154	4.36	1.77	0.539

Minimum daily discharge, 3.0 ft³/s (0.085 m³/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	8.3	4.0	5.5	4.5	5.5	9.6	57	136	73	22	50
2	11	8.7	4.5	5.0	4.5	6.0	8.7	55	131	71	21	43
3	19	9.1	6.0	4.5	4.0	6.5	8.7	67	130	68	21	40
4	14	8.3	6.0	4.0	4.0	6.0	10	72	130	63	21	42
5	12	7.9	6.0	4.5	3.5	5.0	12	66	124	58	19	48
6	10	8.3	5.5	5.0	3.0	4.5	11	57	117	54	40	39
7	9.6	8.7	5.0	4.5	3.5	4.5	10	52	113	51	35	40
8	9.6	8.3	5.0	4.0	3.5	5.0	9.6	53	114	46	25	36
9	10	7.1	4.5	4.5	4.0	5.5	10	56	114	44	25	37
10	9.1	6.7	4.5	4.5	4.0	6.0	11	58	113	42	26	35
11	10	8.3	5.0	4.5	4.0	6.5	15	62	114	39	29	36
12	14	7.9	5.0	5.0	4.0	7.5	25	58	116	35	25	35
13	14	8.3	5.0	4.5	4.0	7.0	27	54	114	35	27	36
14	14	7.9	4.5	4.5	4.0	7.0	31	50	110	34	26	41
15	14	7.1	4.5	4.5	4.5	6.7	35	47	108	31	41	42
16	16	7.1	5.0	5.0	4.5	6.7	32	47	103	28	46	42
17	12	6.7	4.5	5.0	4.5	7.1	30	48	101	28	46	50
18	12	6.7	4.0	5.0	4.5	6.7	31	56	101	28	66	42
19	12	5.0	4.5	5.5	4.5	6.4	31	59	104	28	57	42
20	12	5.0	5.0	5.5	5.0	6.4	28	66	89	27	53	86
21	10	7.5	5.0	5.5	5.0	7.5	24	85	85	24	56	77
22	10	8.7	5.0	5.0	5.0	7.9	20	90	78	22	65	71
23	9.7	8.7	4.0	4.5	5.0	8.3	19	75	80	21	65	67
24	10	7.5	3.5	5.0	5.0	8.7	18	74	77	19	64	65
25	9.6	6.7	4.0	5.0	5.5	8.3	18	79	78	20	72	60
26	9.7	5.5	4.0	5.5	5.5	7.1	21	98	78	21	64	54
27	9.6	4.5	4.5	5.5	5.5	7.5	22	108	77	23	63	51
28	9.6	5.0	4.0	5.0	5.5	7.9	27	109	75	28	65	56
29	10	5.5	4.0	5.0	---	7.1	39	131	75	33	55	51
30	9.1	5.0	4.5	4.5	---	7.1	52	135	73	36	57	64
31	8.7	---	5.0	4.5	---	9.1	---	133	---	27	59	---
TOTAL	348.6	216.0	145.5	150.0	124.0	209.0	645.6	2257	3058	1157	1356	1478
MEAN	11.2	7.20	4.69	4.84	4.43	6.74	21.5	72.8	102	37.3	43.7	49.3
MAX	19	9.1	6.0	5.5	5.5	9.1	52	135	136	73	72	86
MIN	8.3	4.5	3.5	4.0	3.0	4.5	8.7	47	73	19	19	35
AC-FT	691	428	289	298	246	415	1280	4480	6070	2290	2690	2930

CAL YR 1981 TOTAL 4056.4 MEAN 11.1 MAX 44 MIN 3.0 AC-FT 8050
WTR YR 1982 TOTAL 11144.7 MEAN 30.5 MAX 136 MIN 3.0 AC-FT 22110

NOTE.--NO GAGE-HEIGHT RECORD NOV. 27 TO MAR. 15.

08224110 SAN LUIS CREEK NEAR PONCHA PASS, CO

LOCATION.--Lat 38°24'22", long 106°03'49", in NE¼NE¼ sec.22, T.48 N., R.8 E., Saguache County, Hydrologic Unit 13010003, on right bank 0.1 mi (0.2 km) east of U.S. Highway 285, 0.5 mi (0.8 km) upstream from Round Hill Gulch, 1.3 mi (2.1 km) downstream from Dorsey Creek, and 1.7 mi (2.7 km) southeast of Poncha Pass.

DRAINAGE AREA.--6.57 mi^2 (17.02 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 8,780 ft (2,676 m), from topographic map.

REMARKS.--Records good except those for periods of no gage-height record and those for winter period, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45 ft^3/s (1.27 m^3/s) July 26, 1982, gage height, unknown; maximum gage height, 1.20 ft (0.366 m) Feb. 12, 1981 (backwater from ice); minimum daily discharge, 0.03 ft^3/s (0.001 m^3/s) Aug. 8, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5 ft^3/s (0.1 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
July 26	unknown	*45	1.27	unknown		Sept. 30	2015	5.2	0.15	0.99	0.302
Aug. 20	1915	5.8	0.16	1.02	0.311						

Minimum daily discharge, 0.10 ft^3/s (0.003 m^3/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	.50	1.5	.85	.75	.90	.97	1.7	1.0	.40	.40	.20
2	.55	.60	1.3	.80	.70	.90	.97	1.6	.90	.30	.35	.19
3	.55	.70	1.4	.80	.70	.90	.90	1.7	.80	.25	.40	.18
4	.60	.80	1.4	.80	.55	.90	.90	1.6	.80	.25	.35	.16
5	.55	.80	1.5	.80	.50	.80	.90	2.0	.80	.25	.30	.23
6	.55	.90	1.7	.75	.50	.80	1.0	1.7	.75	.25	.30	.23
7	.50	.75	1.8	.75	.50	.80	1.1	1.6	.70	.25	.35	.20
8	.50	.45	1.8	.75	.55	.80	.94	1.6	.60	.30	.30	.23
9	.50	.80	1.8	.75	.65	.80	.92	1.6	.65	.30	.30	.40
10	.50	.90	1.8	.75	.70	.85	1.0	1.6	.65	.25	.25	.50
11	.60	1.1	1.7	.80	.75	.90	1.7	1.5	.70	.20	.30	.53
12	.55	1.1	1.6	.80	.75	.90	1.0	1.5	.70	.20	.30	1.1
13	.60	1.1	1.8	.80	.75	.90	.90	1.5	.65	.20	.45	.64
14	.55	1.0	1.9	.75	.75	.90	.90	1.4	.60	.20	.65	.58
15	.60	1.0	1.9	.75	.75	.90	1.0	1.4	.70	.17	.39	.42
16	.70	1.0	1.8	.75	.80	.95	1.0	1.4	.85	.17	.38	.36
17	.65	1.1	1.8	.80	.85	.95	1.1	1.4	.80	.17	.35	.34
18	.60	1.1	1.7	.80	.90	.95	1.2	1.4	1.0	.20	.42	.20
19	.60	1.1	1.8	.80	.90	.95	1.2	1.4	.90	.20	.33	.10
20	.60	1.1	1.8	.75	.90	.95	1.3	1.3	.80	.17	.74	.12
21	.60	1.2	1.8	.75	.90	.95	1.4	1.3	.70	.17	1.0	.16
22	.57	1.2	1.4	.75	.95	.95	1.4	1.3	.75	.15	.40	.16
23	.60	1.2	1.2	.75	.95	.95	1.2	1.4	.75	.15	.32	.15
24	.60	1.5	1.1	.75	.90	.92	1.1	1.4	.80	.20	.90	.17
25	.70	1.7	1.0	.75	.86	.90	1.2	1.5	.60	.30	.65	.20
26	.85	1.5	.97	.80	.80	.90	1.2	1.4	.55	5.0	1.2	.21
27	.85	1.5	.97	.80	.80	.90	1.3	1.3	.50	1.0	.80	.20
28	.65	1.5	.97	.75	.80	.95	1.5	1.3	.40	.70	.45	.20
29	.75	1.6	.97	.75	---	.95	1.6	1.2	.45	1.0	.35	.16
30	.70	1.7	.97	.75	---	.90	1.6	1.1	.45	.80	.30	1.0
31	.60	---	.97	.75	---	.90	---	1.1	---	.55	.25	---
TOTAL	18.82	32.50	46.12	23.95	21.16	27.87	34.40	45.2	21.30	14.70	14.23	9.52
MEAN	.61	1.08	1.49	.77	.76	.90	1.15	1.46	.71	.47	.46	.32
MAX	.85	1.7	1.9	.85	.95	.95	1.7	2.0	1.0	5.0	1.2	1.1
MIN	.50	.45	.97	.75	.50	.80	.90	1.1	.40	.15	.25	.10
AC-FT	37	64	91	48	42	55	68	90	42	29	28	19

CAL YR 1981 TOTAL 317.53 MEAN .87 MAX 2.1 MIN .03 AC-FT 630
WTR YR 1982 TOTAL 309.77 MEAN .85 MAX 5.0 MIN .10 AC-FT 614

NOTE.--NO GAGE-HEIGHT RECORD JAN. 8 TO APR. 1, MAY 5 TO AUG. 11.

08224110 SAN LUIS CREEK NEAR PONCHA PASS, CO

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1981 to current year (seasonal record only).

PERIOD OF DAILY RECORD.--May 1981 to current year (seasonal record only).

INSTRUMENTATION.--Automatic pumping sampler since May 1981.

REMARKS.--In addition to pumping sediment sampler, samples are collected by local observer who also exchanges sediment bottles in sampler on a prescribed interval. Records are considered fair to poor due to lack of consistent data and poor on rises. Previously unpublished 1981 water year data are published in this report.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS.--Maximum daily, 247 mg/L Sept. 30, 1982; minimum daily, 4 mg/L Sept. 27-29, 1982.
SEDIMENT LOADS: Maximum daily, 2.9 tons (2.63 t) Sept. 30, 1982; no load for several days.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS.--Maximum daily, 247 mg/L Sept. 30; minimum daily, 4 mg/L Sept. 27-29.
SEDIMENT LOADS: Maximum daily, 2.9 tons (2.63 t) Sept. 30; no load for several days.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
MAY				
28...	1430	.66	104	.19
JUN				
23...	1125	.43	81	.09
SEP				
22...	0940	.44	31	.04

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
DEC				
02...	0925	1.2	49	.16
MAY				
28...	1100	1.3	104	.37
JUN				
03...	1620	.84	55	.12
JUL				
15...	1100	.18	8	.00
AUG				
11...	0830	.35	26	.02

08224110 SAN LUIS CREEK NEAR PONCHA PASS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

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	.62			1.4			1.2		
2	.63			1.4			1.1		
3	.66			1.4			1.0		
4	.67			1.4			.95		
5	.65			1.5			.97		
6	.66			1.5			.97		
7	.72			1.5			.97		
8	.70			1.5			.97		
9	.70			1.4			.89		
10	.70			1.5			.81		
11	.70			1.6			.80		
12	.70			1.4			.80		
13	.71			1.5			.85		
14	.77			1.4			.82		
15	1.3			1.4			.83		
16	1.0			1.6			.84		
17	.97			1.8			.73		
18	.90			2.0			.70		
19	1.0			1.9			.70		
20	1.1			1.6			.70		
21	1.0			1.6			.70		
22	1.0			1.4			.70		
23	.96			2.0			.70		
24	.80			2.5			.75		
25	1.1			2.5			.80		
26	1.2			2.0			.90		
27	1.1			1.7			.95		
28	1.1			1.4			1.0		
29	1.3			1.1			.99		
30	1.6			1.1			1.0		
31	1.5			---			1.0		
TOTAL	28.52			48.0			27.09		
		JANUARY			FEBRUARY			MARCH	
1	1.0			.65			1.0		
2	.95			.65			.92		
3	.90			.65			.90		
4	.90			.70			.80		
5	.90			.80			1.3		
6	.90			.80			.95		
7	.85			.80			.82		
8	.80			.80			.80		
9	.80			.75			1.2		
10	.75			.65			.80		
11	.75			.60			.85		
12	.70			.70			.87		
13	.70			.80			1.0		
14	.70			.90			.85		
15	.70			1.0			.93		
16	.70			1.0			1.0		
17	.70			1.1			.90		
18	.80			1.2			.91		
19	.90			1.2			1.4		
20	.90			1.2			.97		
21	.90			1.1			1.2		
22	.90			1.0			1.3		
23	.90			1.1			1.2		
24	.85			1.1			1.1		
25	.80			1.2			1.4		
26	.80			1.2			1.4		
27	.80			1.1			1.3		
28	.75			1.1			1.2		
29	.70			---			1.5		
30	.65			---			1.4		
31	.65			---			1.4		

08224110 SAN LUIS CREEK NEAR PONCHA PASS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

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	1.6			1.4	---		.71	133	---
2	1.6			1.4	---		.57	98	---
3	1.5			1.6	---		.85	131	---
4	1.5			1.4	---		1.1	112	---
5	1.7			1.3	---		.80	70	---
6	1.9			1.4	---		.78	48	---
7	1.8			1.1	---		.68	112	---
8	1.7			.99	---		.58	114	---
9	1.9			.99	---		.50	85	---
10	2.1			1.0	---		.48	53	---
11	2.0			1.0	---		.55	74	---
12	1.9			.95	---		.45	---	.10
13	1.7			.90	---		.40	---	.09
14	1.7			.87	---		.40	138	---
15	1.8			1.0	---		.45	141	---
16	1.8			1.2	---		.55	---	.30
17	1.9			1.1	---		.55	---	.20
18	1.8			.93	---		.50	---	.10
19	1.9			.98	---		.50	---	.10
20	1.8			.88	---		.45	---	.08
21	1.5			.88	---		.40	86	---
22	1.5			.83	---		.26	128	---
23	1.4			.87	---		.23	89	---
24	1.5			.96	---		.32	88	---
25	1.5			.97	---		.45	110	.14
26	1.5			1.0	---		.80	198	.46
27	1.4			.83	---		.50	93	---
28	1.3			.67	118		.45	91	---
29	1.4			.66	160		.60	108	---
30	1.4			.86	160		.45	---	.20
31	---			.72	115		---	---	---
TOTAL	50.0			31.64	---		16.31	---	1.77

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	.45	---	.10	.20	28	---	.32	---	.01
2	.55	---	.30	.18	19	---	.26	---	.00
3	.32	---	.20	.18	22	---	.26	---	.00
4	.23	---	.10	.20	23	---	.36	---	.01
5	.16	---	.04	.14	15	---	.32	---	.01
6	.14	---	.03	.08	16	---	.40	---	.01
7	.23	---	.08	.06	17	---	.60	---	.05
8	.36	---	.10	.03	21	---	.60	---	.02
9	.32	---	.08	.18	109	.10	.55	---	.01
10	.36	---	.09	.23	37	---	.55	---	.01
11	.45	---	.20	.75	---	.20	.50	---	.01
12	.36	---	.10	.70	---	.10	.60	---	.08
13	.60	---	.10	.80	---	.10	.55	---	.04
14	.45	---	.10	.55	---	.08	.50	---	.03
15	.36	---	.08	.65	---	.20	.50	---	.03
16	.32	---	.06	.50	---	.10	.45	---	.04
17	.75	---	.20	.45	---	.07	.45	---	.03
18	.75	62	---	.40	---	.05	.45	---	.02
19	.60	53	---	.36	---	.04	.45	---	.02
20	.23	44	---	.36	---	.02	.45	---	.02
21	.16	26	---	.40	---	.03	.45	---	.02
22	.16	19	---	.50	---	.05	.45	31	---
23	.26	31	---	.45	---	.04	.45	---	.03
24	.50	88	.31	.45	---	.04	.45	22	---
25	.89	70	.19	.55	---	.07	.45	18	---
26	.95	100	.30	.40	---	.03	.40	9	---
27	.75	54	---	.45	---	.04	.40	8	---
28	.36	39	---	.45	---	.02	.40	11	---
29	.26	26	---	.40	---	.02	.40	9	---
30	.18	36	---	.32	---	.01	.36	36	---
31	.20	46	---	.36	---	.01	---	---	---
TOTAL	12.66	---	2.76	11.73	---	1.42	13.33	---	0.50
YEAR	323.70		6.45						

08224110 SAN LUIS CREEK NEAR PONCHA PASS, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	.50	17	.02	.50			1.5		
2	.55	16	.02	.60			1.3		
3	.55	18	.03	.70			1.4		
4	.60	12	.02	.80			1.4		
5	.55	20	.03	.80			1.5		
6	.55	13	.02	.90			1.7		
7	.50	22	.03	.75			1.8		
8	.50	17	.02	.45			1.8		
9	.50	14	.02	.80			1.8		
10	.50	16	.02	.90			1.8		
11	.60	18	.03	1.1			1.7		
12	.55	38	.06	1.1			1.6		
13	.60	96	.16	1.1			1.8		
14	.55	30	.04	1.0			1.9		
15	.60	22	.04	1.0			1.9		
16	.70	14	.03	1.0			1.8		
17	.65	30	.05	1.1			1.8		
18	.60	---	---	1.1			1.7		
19	.60	---	---	1.1			1.8		
20	.60	---	---	1.1			1.8		
21	.60	---	---	1.2			1.8		
22	.57	---	---	1.2			1.4		
23	.60	---	---	1.2			1.2		
24	.60	---	---	1.5			1.1		
25	.70	---	---	1.7			1.0		
26	.85	---	---	1.5			.97		
27	.85	---	---	1.5			.97		
28	.65	---	---	1.5			.97		
29	.75	---	---	1.6			.97		
30	.70	---	---	1.7			.97		
31	.60	---	---	---			.97		
TOTAL	18.82	---	0.64	32.50			46.12		
		JANUARY			FEBRUARY			MARCH	
1	.85			.75			.90		
2	.80			.70			.90		
3	.80			.70			.90		
4	.80			.55			.90		
5	.80			.50			.80		
6	.75			.50			.80		
7	.75			.50			.80		
8	.75			.55			.80		
9	.75			.65			.80		
10	.75			.70			.85		
11	.80			.75			.90		
12	.80			.75			.90		
13	.80			.75			.90		
14	.75			.75			.90		
15	.75			.75			.90		
16	.75			.80			.95		
17	.80			.85			.95		
18	.80			.90			.95		
19	.80			.90			.95		
20	.75			.90			.95		
21	.75			.90			.95		
22	.75			.95			.95		
23	.75			.95			.95		
24	.75			.90			.92		
25	.75			.86			.90		
26	.80			.80			.90		
27	.80			.80			.90		
28	.75			.80			.95		
29	.75			---			.95		
30	.75			---			.90		
31	.75			---			.90		
TOTAL	23.95			21.16			27.87		

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	.97			1.7	---	---	1.0	83	.20
2	.97			1.6	---	---	.90	77	.20
3	.90			1.7	---	---	.80	84	.20
4	.90			1.6	---	---	.80	92	.20
5	.90			2.0	---	---	.80	96	.20
6	1.0			1.7	---	---	.75	81	.20
7	1.1			1.6	---	---	.70	87	.20
8	.94			1.6	---	---	.60	77	.10
9	.92			1.6	---	---	.65	102	.20
10	1.0			1.6	---	---	.65	68	.10
11	1.7			1.5	---	---	.70	63	.10
12	1.0			1.5	---	---	.70	71	.10
13	.90			1.5	---	---	.65	---	.10
14	.90			1.4	---	---	.60	---	.10
15	1.0			1.4	---	---	.70	---	.10
16	1.0			1.4	---	---	.85	---	.20
17	1.1			1.4	---	---	.80	---	.20
18	1.2			1.4	---	---	1.0	---	.40
19	1.2			1.4	---	---	.90	---	.20
20	1.3			1.3	---	---	.80	---	.20
21	1.4			1.3	---	---	.70	---	.10
22	1.4			1.3	---	---	.75	---	.10
23	1.2			1.4	---	---	.75	78	.20
24	1.1			1.4	---	---	.80	140	.30
25	1.2			1.5	---	---	.60	94	.20
26	1.2			1.4	---	---	.55	78	.10
27	1.3			1.3	---	---	.50	76	.10
28	1.5			1.3	116	.40	.40	92	.10
29	1.6			1.2	117	.40	.45	73	.10
30	1.6			1.1	86	.30	.45	126	.20
31	---			1.1	92	.30	---	---	---
TOTAL	34.40			45.2	---	1.40	21.30	---	5.00
		JULY			AUGUST			SEPTEMBER	
1	.40	82	.09	.40	53	.06	.20	---	.01
2	.30	48	.04	.35	42	.04	.19	---	.01
3	.25	41	.03	.40	37	.04	.18	25	.01
4	.25	32	.02	.35	35	.03	.16	31	.01
5	.25	22	.01	.30	32	.03	.23	33	.02
6	.25	16	.01	.30	32	.03	.23	33	.02
7	.25	14	.01	.35	35	.03	.20	64	.03
8	.30	27	.02	.30	---	.02	.23	56	.03
9	.30	22	.02	.30	---	.02	.40	96	.20
10	.25	23	.02	.25	---	.01	.50	131	.21
11	.20	21	.01	.30	26	.02	.53	83	.17
12	.20	12	.01	.30	---	.03	1.1	177	.58
13	.20	10	.01	.45	---	.04	.64	---	.20
14	.20	8	.00	.65	---	.09	.58	---	.10
15	.17	8	.00	.39	---	.04	.42	---	.06
16	.17	---	.00	.38	23	.02	.36	---	.03
17	.17	---	.00	.35	33	.03	.34	---	.02
18	.20	---	.01	.42	95	.11	.20	---	.01
19	.20	---	.01	.33	53	.05	.10	---	.00
20	.17	---	.00	.74	152	.83	.12	---	.00
21	.17	---	.00	1.0	86	.32	.16	---	.00
22	.15	---	.00	.40	53	.06	.16	---	.00
23	.15	---	.00	.32	56	.05	.15	---	.00
24	.20	---	.00	.90	61	.21	.17	12	.00
25	.30	---	.01	.65	35	.06	.20	16	.00
26	5.0	200	2.7	1.2	93	.48	.21	11	.00
27	1.0	91	.20	.80	40	.09	.20	4	.00
28	.70	65	.10	.45	52	.06	.20	4	.00
29	1.0	86	.20	.35	---	.04	.16	4	.00
30	.80	83	.20	.30	---	.02	1.0	247	29
31	.55	64	.10	.25	---	.02	---	---	---
TOTAL	14.70	---	3.83	14.23	---	2.98	9.52	---	30.72
YEAR	309.77		44.57						

08224113 SAN LUIS CREEK ABOVE VILLA GROVE, CO

LOCATION.--Lat 38°24'04", long 106°03'51", in SE¼NE¼ sec.22, T.47 S., R.8 E., Saguache County, Hydrologic Unit 13010003, on right bank 600 ft (183 m) east of U.S. Highway 285, 0.2 mi (0.3 km) upstream from Round Hill Gulch, 1.1 mi (1.8 km) upstream from Lone Tree Creek, and 11.3 mi (18.2 km) northwest of Villa Grove.

DRAINAGE AREA.--11.2 mi^2 (29.0 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 8,710 ft (2,655 m), from topographic map.

REMARKS.--Records good except those Dec. 27 to Apr. 27 and those above 10 ft^3/s (0.28 m^3/s), which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44 ft^3/s (1.25 m^3/s) July 26, 1982, gage height, 2.27 ft (0.692 m) from rating curve extended above 8 ft^3/s (0.23 m^3/s); minimum daily, 0.17 ft^3/s (0.005 m^3/s) Aug. 5-6, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5 ft^3/s(0.1 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
July 26	1800	a * 44	1.25	2.27	0.692	Sept. 30	2130	5.2	0.15	1.19	0.363
Aug. 20	2000	9.1	0.26	1.41	0.430						

a - From rating curve extended above 8 ft^3/s (0.23 m^3/s).
Minimum daily discharge, 0.19 ft^3/s (0.005 m^3/s) July 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	.52	1.4	1.0	.80	.75	.60	1.8	.99	.44	.41	.27
2	.45	.60	1.5	1.0	.80	.75	.70	1.8	.91	.38	.38	.25
3	.56	.70	1.4	1.0	.80	.70	.65	1.9	.85	.32	.41	.25
4	.60	.70	1.3	1.0	.70	.70	.70	1.9	.81	.32	.35	.23
5	.56	.70	1.4	1.0	.60	.65	.70	2.4	.80	.32	.32	.27
6	.52	.70	1.4	1.0	.60	.65	.70	1.9	.78	.32	.32	.27
7	.48	.60	1.3	.95	.60	.65	.70	1.8	.68	.29	.38	.25
8	.52	.50	1.5	.95	.65	.65	.70	1.8	.65	.38	.32	.27
9	.52	.60	1.8	1.0	.70	.70	.70	1.8	.65	.38	.29	.38
10	.56	.80	1.7	1.1	.80	.70	.80	1.8	.74	.32	.23	.41
11	.56	.86	1.4	1.1	.80	.70	1.5	1.7	.69	.27	.27	.44
12	.56	.86	1.3	1.1	.80	.70	1.0	1.7	.72	.27	.27	.98
13	.56	.92	1.2	1.0	.80	.70	.90	1.6	.67	.27	.41	.52
14	.70	.98	1.7	1.0	.80	.70	.90	1.5	.63	.27	.56	.48
15	.75	.98	1.5	1.0	.80	.65	1.0	1.4	.67	.23	.35	.38
16	.80	1.0	1.7	1.0	.85	.65	1.0	1.4	.85	.23	.35	.35
17	.75	1.0	1.3	1.1	.85	.65	1.1	1.4	.78	.23	.31	.32
18	.75	.98	1.4	1.1	.85	.65	1.3	1.4	1.1	.29	.38	.27
19	.75	.92	1.5	1.1	.85	.60	1.3	1.4	1.0	.27	.29	.21
20	.75	1.0	1.7	1.0	.85	.60	1.3	1.3	.82	.25	1.0	.21
21	.60	1.0	1.6	.95	.85	.60	1.5	1.3	.70	.23	1.2	.23
22	.60	1.1	1.4	.95	.90	.60	1.5	1.4	.72	.23	.35	.23
23	.60	1.1	1.1	.95	.90	.65	1.3	1.6	.78	.21	.29	.21
24	.60	1.3	1.3	1.0	.85	.65	1.2	1.6	.84	.19	.86	.25
25	.60	1.3	1.1	1.0	.75	.65	1.3	1.6	.64	.25	.60	.27
26	.60	1.5	1.0	1.0	.70	.65	1.4	1.5	.56	5.5	1.0	.29
27	.65	1.3	1.0	.90	.70	.65	1.4	1.4	.52	1.0	.70	.29
28	.60	1.3	1.0	.90	.75	.65	1.5	1.3	.44	.70	.41	.32
29	.60	1.3	1.1	.90	---	.65	1.6	1.2	.47	.98	.35	.29
30	.60	1.3	1.1	.90	---	.60	1.6	1.2	.48	.86	.32	1.1
31	.52	---	1.1	.90	---	.60	---	1.2	---	.56	.32	---
TOTAL	18.67	28.42	42.2	30.85	21.70	20.45	32.55	49.0	21.94	16.76	14.00	10.49
MEAN	.60	.95	1.36	1.00	.78	.66	1.09	1.58	.73	.54	.45	.35
MAX	.80	1.5	1.8	1.1	.90	.75	1.6	2.4	1.1	5.5	1.2	1.1
MIN	.40	.50	1.0	.90	.60	.60	.60	1.2	.44	.19	.23	.21
AC-FT	37	56	84	61	43	41	65	97	44	33	28	21

CAL YR 1981	TOTAL 321.63	MEAN .88	MAX 2.0	MIN .17	AC-FT 638
WTR YR 1982	TOTAL 307.03	MEAN .84	MAX 5.5	MIN .19	AC-FT 609

NOTE.--NO GAGE-HEIGHT RECORD DEC. 27 TO APR. 27.

08224113 SAN LUIS CREEK NEAR VILLA GROVE, CO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1981 to current year (seasonal only).

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: May 1981 to current year (seasonal record only).

INSTRUMENTATION.--Pumping sediment sampler since May 1981.

REMARKS.--In addition to pumping sediment sampler, samples are collected by observer who also exchanges sediment bottles in sampler on a prescribed interval. Sediment discharge record is considered fair at normal flow and poor on rises. Previously unpublished 1981 water year data are published in this report.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS.--Maximum daily, 288 mg/L Apr. 23, 1982; minimum daily, 4 mg/L (estimated) Sept. 27-29, 1982.
SEDIMENT LOADS: Maximum daily, 11 tons (10 t) July 26, 1982; no load at times in 1982.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS.--Maximum daily, 288 mg/L Apr. 23; minimum daily, 4 mg/L (estimated) Sept. 27-29.
SEDIMENT LOADS: Maximum daily, 11 tons (10 t) July 26; no load for several days.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
MAY				
28...	1400	1.2	72	.23

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
DEC				
02...	1030	1.4	143	.54
APR				
21...	1615	1.5	360	1.5
SEP				
24...	0945	.26	13	.00

08224113 SAN LUIS CREEK NEAR VILLA GROVE, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

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	.65			1.2			.94		
2	.65			1.1			.88		
3	.65			1.1			.86		
4	.68			1.1			.86		
5	.70			1.1			.86		
6	.70			1.0			.86		
7	.70			1.0			.86		
8	.70			1.0			.86		
9	.70			.97			.85		
10	.72			1.0			.72		
11	.75			1.1			.69		
12	.75			1.0			.70		
13	.75			1.1			.70		
14	.76			.94			.67		
15	1.5			.92			.67		
16	1.2			1.4			.69		
17	1.1			1.6			.62		
18	1.1			2.4			.71		
19	1.0			2.2			.82		
20	1.1			1.6			.93		
21	1.1			1.7			.82		
22	1.1			1.8			.76		
23	.97			2.0			.68		
24	.75			3.0			.82		
25	1.0			3.0			.82		
26	1.1			2.6			.74		
27	1.1			1.8			.79		
28	1.1			1.6			.76		
29	1.1			1.2			.71		
30	1.3			1.0			.85		
31	1.2			---			.83		
TOTAL	28.68			44.53			24.33		

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	.68			.65			1.0		
2	.66			.65			.95		
3	.76			.65			.90		
4	.99			.70			.85		
5	.91			.80			1.3		
6	.90			.80			1.0		
7	.85			.80			.85		
8	.80			.80			.85		
9	.80			.75			1.1		
10	.80			.70			.90		
11	.75			.65			.85		
12	.75			.70			.90		
13	.70			.80			1.0		
14	.70			.90			.90		
15	.70			1.1			.95		
16	.70			1.1			1.0		
17	.75			1.2			.95		
18	.80			1.2			.95		
19	.85			1.2			1.1		
20	.90			1.2			1.2		
21	.90			1.2			1.2		
22	.90			1.1			1.2		
23	.90			1.1			1.2		
24	.85			1.1			1.3		
25	.80			1.2			1.3		
26	.80			1.2			1.3		
27	.80			1.1			1.4		
28	.75			1.1			1.4		
29	.70			---			1.4		
30	.65			---			1.5		
31	.65			---			1.5		
TOTAL	24.45			26.45			34.20		

08224113 SAN LUIS CREEK NEAR VILLA GROVE, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

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	1.5			1.4	---		1.4	---	---
2	1.5			1.4	---		1.2	---	---
3	1.5			1.4	---		1.4	---	---
4	1.6			1.4	---		1.5	---	---
5	1.7			1.4	---		1.3	---	---
6	1.9			1.3	---		1.2	---	---
7	1.8			1.3	---		1.0	---	---
8	1.8			1.3	---		.79	---	---
9	1.9			1.3	---		.73	---	---
10	2.0			1.2	---		.68	---	---
11	2.0			1.2	---		.64	---	---
12	1.9			1.2	---		.55	---	---
13	1.8			1.2	---		.50	---	---
14	1.7			1.2	---		.46	---	---
15	1.7			1.2	---		.52	---	---
16	1.8			1.2	---		.55	---	---
17	1.9			1.2	---		.49	---	---
18	1.8			1.2	---		.46	---	---
19	1.8			1.1	---		.44	---	---
20	1.8			1.2	---		.39	---	---
21	1.7			1.2	---		.32	---	---
22	1.6			1.2	---		.32	---	---
23	1.6			1.2	---		.32	121	---
24	1.5			1.2	---		.34	114	---
25	1.5			1.3	---		.39	134	---
26	1.4			1.2	---		.70	213	.47
27	1.4			1.2	---		.51	---	---
28	1.4			1.2	72		.46	---	---
29	1.4			1.2	---		.58	---	---
30	1.4			1.4	---		.51	---	---
31	---			1.4	---		---	---	---
TOTAL	50.3			39.0	---		20.65	---	0.47

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			SEPTEMBEF	
1	.48	140	.25	.32	---	.03	.27	14	---
2	.64	---	.40	.27	---	.02	.23	14	---
3	.43	210	---	.25	---	.02	.21	14	---
4	.35	155	---	.25	---	.02	.25	---	.01
5	.29	101	---	.17	---	.01	.27	---	.01
6	.27	---	.07	.17	---	.01	.32	---	.01
7	.32	---	.10	.19	---	.01	.58	---	.05
8	.42	120	---	.21	---	.02	.63	---	.04
9	.38	114	---	.41	---	.10	.57	---	.03
10	.43	116	---	.47	---	.05	.51	---	.02
11	.50	148	---	.81	133	.30	.44	---	.02
12	.45	115	---	.74	---	.10	.61	---	.08
13	.60	95	---	.64	---	.10	.44	---	.04
14	.50	103	---	.44	---	.07	.41	---	.03
15	.43	---	.10	.49	---	.10	.38	---	.03
16	.40	84	---	.40	---	.09	.36	---	.03
17	.70	---	.20	.38	---	.07	.34	---	.02
18	.74	66	---	.34	---	.06	.34	---	.02
19	.61	---	.09	.25	65	---	.35	---	.01
20	.32	---	.04	.27	34	---	.36	---	.01
21	.23	---	.02	.27	34	---	.33	---	.02
22	.25	---	.02	.37	57	---	.34	---	.03
23	.34	---	.03	.33	---	.04	.43	---	.03
24	.53	---	.10	.36	---	.03	.41	---	.03
25	.80	---	.20	.48	136	---	.41	---	.02
26	.92	---	.30	.30	---	.02	.41	---	.01
27	.78	---	.10	.30	---	.02	.41	---	.01
28	.40	---	.05	.33	---	.03	.41	---	.01
29	.35	---	.03	.29	---	.02	.41	---	.01
30	.29	---	.03	.27	---	.02	.38	---	.04
31	.29	---	.04	.27	---	.01	---	---	---
TOTAL	14.44	---	2.17	11.04	---	1.37	11.81	---	0.67
YEAR	329.88		4.68						

08224113 SAN LUIS CREEK NEAR VILLA GROVE, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	.40			.52			1.4		
2	.45			.60			1.5		
3	.56			.70			1.4		
4	.60			.70			1.3		
5	.56			.70			1.4		
6	.52			.70			1.4		
7	.48			.60			1.3		
8	.52			.50			1.5		
9	.52			.60			1.8		
10	.56			.80			1.7		
11	.56			.86			1.4		
12	.56			.86			1.3		
13	.56			.92			1.2		
14	.70			.98			1.7		
15	.75			.98			1.5		
16	.80			1.0			1.7		
17	.75			1.0			1.3		
18	.75			.98			1.4		
19	.75			.92			1.5		
20	.75			1.0			1.7		
21	.60			1.0			1.6		
22	.60			1.1			1.4		
23	.60			1.1			1.1		
24	.60			1.3			1.3		
25	.60			1.3			1.1		
26	.60			1.5			1.0		
27	.65			1.3			1.0		
28	.60			1.3			1.0		
29	.60			1.3			1.1		
30	.60			1.3			1.1		
31	.52			---			1.1		
TOTAL	18.67			28.42			42.2		

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	1.0			.80			.75		
2	1.0			.80			.75		
3	1.0			.80			.70		
4	1.0			.70			.70		
5	1.0			.60			.65		
6	1.0			.60			.65		
7	.95			.60			.65		
8	.95			.65			.65		
9	1.0			.70			.70		
10	1.1			.80			.70		
11	1.1			.80			.70		
12	1.1			.80			.70		
13	1.0			.80			.70		
14	1.0			.80			.70		
15	1.0			.80			.65		
16	1.0			.85			.65		
17	1.1			.85			.65		
18	1.1			.85			.65		
19	1.1			.85			.60		
20	1.0			.85			.60		
21	.95			.85			.60		
22	.95			.90			.60		
23	.95			.90			.65		
24	1.0			.85			.65		
25	1.0			.75			.65		
26	1.0			.70			.65		
27	.90			.70			.65		
28	.90			.75			.65		
29	.90			---			.65		
30	.90			---			.60		
31	.90			---			.60		
TOTAL	30.85			21.70			20.45		

08224113 SAN LUIS CREEK NEAR VILLA GROVE, CO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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	.60	---	---	1.8	168	.86	.99	94	.25
2	.70	---	---	1.8	158	.77	.91	84	.21
3	.65	59	.11	1.9	---	.60	.85	78	.18
4	.70	122	.21	1.9	---	.50	.81	102	.22
5	.70	69	.13	2.4	---	1.0	.80	105	.23
6	.70	134	.25	1.9	---	.40	.78	90	.19
7	.70	135	.26	1.8	---	.30	.68	76	.14
8	.70	68	.13	1.8	58	.28	.65	82	.14
9	.70	112	.21	1.8	56	.27	.65	73	.13
10	.80	146	.32	1.8	43	.21	.74	70	.14
11	1.5	126	.51	1.7	84	.39	.69	83	.15
12	1.0	240	.65	1.7	45	.21	.72	68	.13
13	.90	232	.56	1.6	69	.30	.67	---	.10
14	.90	232	.56	1.5	89	.36	.63	---	.10
15	1.0	166	.45	1.4	67	.25	.67	---	.10
16	1.0	161	.43	1.4	57	.22	.85	---	.20
17	1.1	139	.41	1.4	73	.28	.78	---	.20
18	1.3	---	.63	1.4	57	.22	1.1	---	.40
19	1.3	---	.32	1.4	87	.33	1.0	---	.30
20	1.3	---	.51	1.3	72	.25	.82	---	.20
21	1.5	170	.69	1.3	93	.33	.70	---	.10
22	1.5	180	.73	1.4	102	.40	.72	---	.10
23	1.3	288	1.0	1.6	168	.78	.78	61	.13
24	1.2	69	.22	1.6	280	.98	.84	84	.19
25	1.3	128	.45	1.6	242	1.0	.64	63	.11
26	1.4	166	.63	1.5	126	.49	.56	50	.08
27	1.4	113	.43	1.4	68	.26	.52	52	.07
28	1.5	135	.55	1.3	166	.58	.44	100	.12
29	1.6	210	.91	1.2	133	.43	.47	58	.07
30	1.6	193	.83	1.2	90	.29	.48	48	.06
31	---	---	---	1.2	98	.32	---	---	---
TOTAL	32.55	---	13.09	49.0	---	13.86	21.94	---	4.74

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	.44	40	.05	.41	80	.09	.27	---	.01
2	.38	---	.04	.38	63	.06	.25	---	.01
3	.32	---	.03	.41	48	.05	.25	---	.02
4	.32	---	.02	.35	34	.03	.23	---	.02
5	.32	25	.02	.32	32	.03	.27	---	.02
6	.32	23	.02	.32	---	.03	.27	---	.02
7	.29	---	.02	.38	---	.04	.25	---	.04
8	.38	18	.02	.32	---	.03	.27	---	.04
9	.38	15	.02	.29	---	.02	.38	---	.10
10	.32	19	.02	.23	---	.01	.41	---	.10
11	.27	23	.02	.27	---	.02	.44	---	.10
12	.27	9	.00	.27	---	.02	.98	---	.50
13	.27	12	.00	.41	---	.03	.52	---	.10
14	.27	12	.00	.56	---	.09	.48	---	.10
15	.23	6	.00	.35	---	.03	.38	---	.05
16	.23	---	.00	.35	---	.02	.35	---	.03
17	.23	---	.00	.31	---	.02	.32	---	.02
18	.29	---	.01	.38	---	.10	.27	---	.01
19	.27	---	.01	.29	---	.04	.21	---	.00
20	.25	---	.00	1.0	---	.40	.21	---	.00
21	.23	---	.00	1.2	---	.30	.23	---	.01
22	.23	---	.00	.35	---	.05	.23	---	.01
23	.21	---	.00	.29	---	.04	.21	---	.00
24	.19	---	.00	.86	---	.10	.25	13	.01
25	.25	10	.01	.60	---	.06	.27	---	.01
26	5.5	---	11	1.0	---	.30	.29	---	.01
27	1.0	68	.18	.70	---	.08	.29	---	.00
28	.70	48	.09	.41	---	.06	.32	---	.00
29	.98	35	.09	.35	---	.04	.29	---	.00
30	.86	57	.13	.32	---	.03	1.1	---	23
31	.56	62	.09	.32	---	.02	---	---	---
TOTAL	16.76	---	11.89	14.00	---	2.24	10.49	---	24.34
YEAR	307.03		70.16						

CLOSED BASIN IN SAN LUIS VALLEY, CO

08224500 KERBER CREEK AT ASHLEY RANCH, NEAR VILLA GROVE, CO

LOCATION.--Lat 38°14'28", long 106°06'57", in SW¼NW¼ sec.17, T.46 N., R.8 E., Saguache County, Hydrologic Unit 13010003, on left bank at Ashley Ranch, 4.5 mi (7.2 km) upstream from Little Kerber Creek, and 9 mi (14 km) west of Villa Grove.

DRAINAGE AREA.--38 mi² (98 km²), approximately.

PERIOD OF RECORD.--June 1923 to September 1926 (published as Kerber Creek near Villa Grove), May 1936 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1312: 1937-38. WSP 1512: 1943.

GAGE.--Water-stage recorder. Altitude of gage is 8,830 ft (2,691 m), from topographic map. Prior to Dec. 10, 1963, at site 150 ft (46 m) upstream at datum 1.50 ft (0.457 m) higher.

REMARKS.--Records good except those for period of no gage-height record and those for winter period, which are poor. No diversion above 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.--49 years (water years 1924-26, 1937-82), 12.4 ft³/s (0.351 m³/s), 8,980 acre-ft/yr (11.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 407 ft³/s (11.5 m³/s) May 14, 1941, gage height, 3.88 ft (1.183 m), site and datum then in use, from rating curve extended above 140 ft³/s (4.0 m³/s); maximum gage height, 5.04 ft (1.536 m), site and datum then in use, May 11, 1947 (backwater from beaver dam); no flow Dec. 30, 1976, to Jan. 31, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1872, that of May 14, 1941, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57 ft³/s (1.61 m³/s) at 0200 May 29, gage height, 1.80 ft (0.549 m), no peak above base of 70 ft³/s (2.0 m³/s); minimum daily, 1.0 ft³/s (0.03 m³/s) Feb. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	2.3	2.0	3.0	2.5	3.0	4.0	22	48	19	8.5	16
2	2.9	3.6	2.0	3.0	2.5	3.5	4.5	22	47	18	11	15
3	5.0	3.4	2.5	2.5	2.5	3.5	4.0	26	45	16	8.1	14
4	3.6	3.5	2.5	2.0	2.5	3.5	5.0	28	44	15	7.0	12
5	3.1	3.4	2.5	2.5	2.0	3.0	5.0	29	44	14	7.0	12
6	3.1	3.4	2.5	2.5	1.5	3.0	4.5	25	43	13	7.3	12
7	3.1	4.4	3.0	2.0	1.0	3.0	3.5	21	42	12	7.3	11
8	3.1	4.4	3.0	2.0	2.0	3.0	3.1	19	41	12	6.2	12
9	2.9	3.1	3.0	2.0	2.5	3.5	3.5	17	42	11	5.6	12
10	2.9	2.5	3.0	2.0	3.0	4.0	4.5	17	41	10	5.3	10
11	2.9	2.7	3.0	2.0	3.0	4.0	5.0	18	39	9.7	5.9	14
12	3.1	2.7	3.0	2.5	3.0	4.5	10	18	38	9.3	6.6	16
13	3.1	3.1	3.0	2.5	3.0	4.0	14	17	37	8.9	8.0	15
14	3.1	3.8	3.0	2.5	3.0	4.5	12	17	36	8.9	8.5	14
15	4.1	3.6	3.0	2.5	3.5	4.5	13	17	35	8.5	6.6	14
16	5.9	3.6	3.0	2.5	3.5	4.0	13	15	34	7.4	6.6	12
17	3.8	2.9	3.0	2.5	3.5	4.0	11	15	35	7.3	7.3	12
18	3.4	2.5	2.5	2.5	3.5	4.5	11	15	42	7.3	7.3	15
19	3.4	2.0	2.0	3.0	3.5	4.0	12	16	36	7.3	8.1	15
20	3.4	2.0	2.5	3.0	3.5	3.5	11	17	34	7.0	11	16
21	3.1	2.5	3.0	2.5	3.5	4.0	10	20	30	7.0	27	14
22	3.4	2.5	3.0	2.5	3.5	4.0	9.5	26	30	6.6	17	13
23	3.1	2.5	2.5	2.5	3.5	4.0	10	30	29	6.2	15	12
24	3.1	2.5	2.0	2.5	3.5	4.0	12	42	28	5.9	23	12
25	3.4	2.5	1.5	2.5	3.5	4.0	11	47	27	7.0	21	12
26	2.9	2.0	1.5	3.0	3.5	4.5	13	48	27	7.7	25	12
27	3.4	2.0	2.0	3.0	3.5	4.5	15	52	25	12	23	11
28	3.4	2.0	2.0	3.0	3.5	4.0	14	50	23	12	24	10
29	3.4	2.5	2.0	2.5	---	4.5	18	53	22	13	22	10
30	2.9	2.0	2.5	2.5	---	4.0	21	52	21	10	20	17
31	2.9	---	3.0	2.5	---	3.5	---	49	---	11	18	---
TOTAL	103.6	85.9	79.0	78.0	83.0	119.5	287.1	860	1065	320.0	384.2	392
MEAN	3.34	2.86	2.55	2.52	2.96	3.85	9.57	27.7	35.5	10.3	12.4	13.1
MAX	5.9	4.4	3.0	3.0	3.5	4.5	21	53	48	19	27	17
MIN	2.7	2.0	1.5	2.0	1.0	3.0	3.1	15	21	5.9	5.3	10
AC-FT	205	170	157	155	165	237	569	1710	2110	635	762	778

CAL YR 1981 TOTAL 1588.50 MEAN 4.35 MAX 14 MIN .50 AC-FT 3150
WTR YR 1982 TOTAL 3857.30 MEAN 10.6 MAX 53 MIN 1.0 AC-FT 7650

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 (152 m) upstream from dam, 1.2 mi (1.9 km) west along Bureau of Land Management road exiting U.S. Highway 285, and 2.7 mi (4.3 km) south of Villa Grove.

DRAINAGE AREA.--0.08 mi^2 (0.21 km^2).

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder and Parshall Flume. Altitude of gage is 8,000 ft (2,438 m) from topographic map.

REMARKS.--Records good. Recording rain gage 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 ft^3/s (0.06 m^3/s) Sept. 30, 1982, gage height, 3.65 ft (1.113 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.1 ft^3/s (0.06 m^3/s) at 1845 Sept. 30, gage height, 3.65 ft (1.113 m); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 (SEASONAL RECORD)
MEAN VALUES

SEPT. 30 0.20

CLOSED BASIN IN SAN LUIS VALLEY, CO

08227000 SAGUACHE CREEK NEAR SAGUACHE, CO

LOCATION.--Lat 38°09'48", long 106°17'24", in SE¼SE¼ sec.10, T.45 N., R.6 E., Saguache County, Hydrologic Unit 13010004, on left bank 0.2 mi (0.3 km) downstream from Middle Creek and 10 mi (16 km) northwest of Saguache.

DRAINAGE AREA.--595 mi^2 (1,541 km^2).

PERIOD OF RECORD.--August 1910 to September 1912, June 1914 to September 1982 (discontinued). Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1242: 1948-49. WSP 1312: 1912, 1934(M), 1942(M). WSP 1923: 1951.

GAGE.--Water-stage recorder. Altitude of gage is about 8,030 ft (2,448 m), from topographic map. Prior to Apr. 9, 1934, at sites 0.8 mi (1.3 km) downstream at different datums. Apr. 10, 1934, to Nov. 20, 1966, at present site at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good except those for winter period, which are poor. Natural flow of stream affected by transmountain diversions from Colorado River basin to drainage area above station through Tarbell ditch (see elsewhere in this report), and diversions above station for irrigation. 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.--70 years (water years 1911-12, 1915-82), 67.5 ft^3/s (1.912 m^3/s), 48,900 acre-ft/yr (60.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 790 ft^3/s (22.4 m^3/s) Aug. 3, 1964, gage height, 3.85 ft (1.173 m), present datum, from rating curve extended above 83 ft^3/s (2.4 m^3/s); maximum gage height, 3.94 ft (1.201 m) May 20, 1970; minimum daily discharge, 7.0 ft^3/s (0.20 m^3/s) Jan. 7, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 223 ft^3/s (6.32 m^3/s) at 1000 Aug. 26, gage height, 2.79 ft (0.850 m), only peak above base of 210 ft^3/s (5.9 m^3/s); minimum daily, 12 ft^3/s (0.34 m^3/s) Feb. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	30	14	25	24	29	30	72	140	120	93	156
2	36	36	15	24	23	36	34	72	147	111	89	143
3	41	39	17	22	22	36	26	86	147	95	90	134
4	44	36	22	19	20	36	35	93	154	89	90	136
5	38	32	22	22	18	29	37	97	152	87	78	150
6	36	35	23	24	15	27	36	84	145	92	74	144
7	36	39	25	21	12	29	32	72	131	85	75	127
8	36	38	25	19	20	31	25	68	126	83	69	126
9	35	36	24	21	26	32	25	72	129	80	67	127
10	35	30	26	21	28	36	31	74	131	78	60	127
11	34	29	25	21	27	36	36	72	144	71	62	122
12	36	31	24	24	26	42	54	74	141	71	68	147
13	39	31	24	23	27	38	62	85	138	66	93	164
14	40	36	22	23	29	42	57	83	138	67	104	148
15	39	35	24	23	31	43	59	72	130	67	81	133
16	48	36	25	23	31	36	59	71	136	62	78	129
17	46	32	24	23	32	38	48	73	133	59	78	127
18	39	27	19	26	31	41	48	73	151	72	97	133
19	37	16	16	28	31	34	51	69	156	79	91	157
20	36	15	24	28	31	26	46	73	138	69	111	163
21	35	18	28	26	31	33	42	78	127	66	162	156
22	35	20	27	24	31	31	41	92	127	62	138	141
23	34	19	25	23	32	32	42	97	130	58	136	133
24	34	19	20	25	32	33	46	104	127	58	168	127
25	36	18	14	27	32	35	44	107	123	58	195	123
26	32	16	14	29	33	35	47	111	122	63	220	123
27	35	15	17	29	33	30	50	124	114	73	199	120
28	36	18	18	27	34	34	49	138	116	87	191	119
29	36	20	19	25	---	35	60	140	120	119	200	118
30	36	16	21	23	---	25	69	148	116	166	175	115
31	31	---	24	23	---	20	---	145	---	141	175	---
TOTAL	1147	818	667	741	762	1040	1321	2819	4029	2554	3607	4068
MEAN	37.0	27.3	21.5	23.9	27.2	33.5	44.0	90.9	134	82.4	116	136
MAX	48	39	28	29	34	43	69	148	156	166	220	164
MIN	31	15	14	19	12	20	25	68	114	58	60	115
AC-FT	2280	1620	1320	1470	1510	2060	2620	5590	7990	5070	7150	8070

CAL YR 1981 TOTAL 11470.1 MEAN 31.4 MAX 78 MIN 9.1 AC-FT 22750
WTR YR 1982 TOTAL 23573.0 MEAN 64.6 MAX 220 MIN 12 AC-FT 46760

08227300 ANACONDA RESERVOIR NEAR VILLA GROVE, CO

LOCATION.--Lat 38°08'48", long 106°00'36", in SW¼SW¼ sec.17, T.45 N., R.9 E., Saguache County, Hydrologic Unit 13010004, on top of earthfill dam near center, 0.4 mi (0.6 km) upstream from Stonehouse Gulch, 0.5 mi (0.8 km) upstream from Big Hollow Gulch, 1.5 mi (2.4 km) north of junction of Bureau of Land Management road and U.S. Highway 285 and 7.7 mi (12.4 km) south of Villa Grove.

DRAINAGE AREA.--0.17 mi² (0.44 km²).

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder. Altitude of gage is 8,025 ft (2,446 m), from topographic map.

REMARKS.--Records good. Reservoir is formed by an earthfill dam. Storage occurs intermittenly from storm runoff. Maximum storage is 4.97 acre-feet (6,130 m³) at a spillway gage height of 13.3 ft (4.05 m). No contents occur at a gage height of 3.34 ft (1.018 m). This dam forms a small channel reservoir for controlling heavy runoff and to help control sedimentation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 0.71 acre-ft (875 m³) Sept. 30, 1982, gage height, 7.45 ft (2.271 m); no contents most of time.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 0.71 acre-ft (875 m³) Sept. 30, gage height, 7.45 ft (2.271 m); no contents most of time.

Capacity table (elevation, in feet, and total contents, in acre-feet)

3.3	0
5.6	0.20

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 2400

Aug. 20	0.03	Aug. 21	0.01	Sept. 30	0.05

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 (0.8 km) upstream from mouth at North Tracy Canyon, 5.1 mi (8.2 km) southwest of Saguache, and 5.4 mi (8.7 km) northwest of U.S. Highway 285 at Swede Corners.

DRAINAGE AREA.--0.05 mi² (0.13 km²).

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder and Parshall Flume. Altitude of gage is 8,190 ft (2,496 m) from topographic map.

REMARKS.--Records good. Recording rain gage 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 (0.12 m³/s) Aug. 25, 1982, gage height, 4.05 ft (1.234 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4.3 ft³/s (0.12 m³/s) at 1645 Aug. 25, gage height, 4.05 ft (1.234 m); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Aug. 25 0.08

08236000 ALAMOSA CREEK ABOVE TERRACE RESERVOIR, CO

LOCATION.--Lat 37°22'29", long 106°20'03", in NW¼NE¼ sec.17, T.36 N., R.6 E., Conejos County, Hydrologic Unit 13010002, on left bank 0.8 mi (1.3 km) upstream from high-water line of Terrace Reservoir at elevation 8,568 ft (2,611.5 m), 3.0 mi (4.8 km) downstream from French Creek, and 15 mi (24 km) northwest of Capulin.

DRAINAGE AREA.--107 mi² (277 km²).

PERIOD OF RECORD.--September 1911 to September 1912 (published as Rio Alamosa near Monte Vista), May to June 1914, April 1915 to September 1927, October 1934 to September 1982 (discontinued). No winter records water years 1919-23. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 898: 1911(M). WSP 1312: 1935(M), 1944(M).

GAGE.--Water-stage recorder. Altitude of gage is 8,600 ft (2,621 m), from topographic map. See WSP 1712 or 1732 for history of changes prior to Oct. 1, 1927.

REMARKS.--Records good except those for winter period, which are poor. No diversion above 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.--56 years (water years 1912, 1916-18, 1924-27, 1935-82), 111 ft³/s (3.144 m³/s), 80,420 acre-ft/yr (99.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft³/s (147 m³/s) Oct. 5, 1911, gage height, 11.0 ft (3.353 m), site and datum then in use, from floodmark, from rating curve extended above 1,000 ft³/s (28 m³/s), on basis of computation of peak flow over dam about 8 mi (13 km) upstream; minimum not determined.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1854, that of Oct. 5, 1911, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 797 ft³/s (22.6 m³/s) at 2330 June 12, gage height, 2.95 ft (0.899 m), only peak above base of 670 ft³/s (19 m³/s); minimum daily, 11 ft³/s (0.31 m³/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	45	16	18	16	22	30	278	662	421	110	172
2	34	46	21	16	15	24	31	270	618	404	102	138
3	76	46	26	15	14	24	30	371	632	360	97	121
4	56	43	25	14	13	23	32	398	610	335	93	119
5	59	43	26	15	12	22	32	340	589	315	85	172
6	52	43	25	17	11	21	36	278	527	292	112	130
7	49	48	24	16	12	21	34	229	527	257	102	128
8	50	45	22	14	13	23	29	245	547	233	85	124
9	58	40	23	15	14	25	32	270	540	253	91	128
10	50	35	23	16	15	27	34	278	561	249	83	114
11	55	38	24	16	16	29	46	296	554	233	112	128
12	78	38	21	17	15	31	91	278	610	214	91	138
13	85	38	21	16	15	30	108	229	648	208	91	158
14	95	39	18	16	15	29	124	194	625	197	99	172
15	91	35	19	16	16	29	142	194	589	184	126	218
16	97	35	19	16	16	29	148	187	527	178	160	261
17	83	32	18	17	16	29	140	181	582	187	124	315
18	80	32	17	17	16	29	152	225	603	178	145	249
19	78	19	18	18	16	27	150	283	596	166	126	222
20	78	21	19	18	16	25	140	320	457	158	110	308
21	78	23	19	17	17	25	121	427	475	140	108	350
22	72	24	18	17	17	26	104	475	469	130	195	283
23	69	25	15	16	19	26	93	376	520	126	187	245
24	67	26	13	17	18	26	83	360	520	117	204	211
25	62	23	14	18	18	27	78	398	520	114	288	184
26	56	18	14	19	20	28	78	508	488	110	265	163
27	58	17	16	19	20	29	80	596	482	110	237	155
28	56	25	14	18	20	31	95	514	520	130	241	158
29	55	25	15	17	---	33	142	655	501	142	190	150
30	48	22	16	16	---	30	200	655	445	188	178	254
31	49	---	17	16	---	29	---	625	---	133	184	---
TOTAL	2004	989	596	513	441	829	2635	10933	16544	6462	4421	5668
MEAN	64.6	33.0	19.2	16.5	15.8	26.7	87.8	353	551	208	143	189
MAX	97	48	26	19	20	33	200	655	662	421	288	350
MIN	30	17	13	14	11	21	29	181	445	110	83	114
AC-FT	3970	1960	1180	1020	875	1640	5230	21690	32820	12820	8770	11240

CAL YR 1981 TOTAL 21716.1 MEAN 59.5 MAX 350 MIN 8.5 AC-FT 43070
WTR YR 1982 TOTAL 52035.0 MEAN 143 MAX 662 MIN 11 AC-FT 103200

NOTE.--NO GAGE-HEIGHT RECORD DEC. 20 TO APR. 5.

08238000 LA JARA CREEK AT GALLEGOS RANCH, NEAR CAPULIN, CO

LOCATION.--Lat 37°12'32", long 106°11'16", in NE¼ sec.10, T.34 N., R.7 E., Conejos County, Hydrologic Unit 13010002, on left bank 2.7 mi (4.3 km) downstream from Canyon Del Rancho, 7 mi (11 km) southwest of Capulin, and 16.5 mi (26.5 km) downstream from La Jara Reservoir.

DRAINAGE AREA.--98 mi² (250 km²), approximately.

PERIOD OF RECORD.--April 1916 to November 1917, April 1919 to November 1923, May 1936 to current year. No winter records prior to 1950 except water year 1944. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1242: Drainage area. WSP 1732: 1952.

GAGE.--Water-stage recorder. Altitude of gage is 8,130 ft (2,478 m), from topographic map. Apr. 1, 1916, to Nov. 30, 1917, and Apr. 1, 1919, to Nov. 30, 1923, near present site at different datum.

REMARKS.--Records good except those for period of no gage-height record and those for winter period, which are poor. Small diversions above station for irrigation. Flow regulated by La Jara Reservoir, capacity, 14,040 acre-ft (17.3 hm³). 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.--34 years (water years 1944, 1950-82), 15.3 ft³/s (0.433 m³/s), 11,080 acre-ft/yr (13.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 653 ft³/s (18.5 m³/s) Apr. 22, 1919, gage height, 3.22 ft (0.981 m), site and datum then in use, Apr. 15, 1937, gage height, 5.94 ft (1.811 m); maximum gage height, 6.12 ft (1.865 m) Aug. 11, 1961; minimum daily discharge, 2.0 ft³/s (0.057 m³/s) Jan. 10, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 166 ft³/s (4.70 m³/s) at 2330 May 1, gage height, 3.73 ft (1.137 m); minimum daily, 3.0 ft³/s (0.085 m³/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	6.2	5.5	5.5	5.0	7.0	8.0	126	65	15	8.2	7.0
2	6.2	5.8	6.0	5.0	5.0	7.5	8.5	121	65	14	7.4	6.6
3	8.2	6.2	7.0	4.5	4.5	7.5	8.0	118	63	14	7.4	6.2
4	7.8	5.8	7.0	4.0	4.5	7.0	8.5	120	58	13	7.4	7.4
5	6.6	5.8	8.0	4.5	3.5	6.5	8.6	109	52	13	7.0	9.1
6	6.2	6.2	7.5	5.0	3.0	6.0	9.1	96	49	13	7.0	7.8
7	5.8	6.2	7.5	4.5	4.0	6.0	8.6	71	41	13	5.8	8.6
8	5.8	7.0	7.5	4.0	5.5	6.5	7.4	77	38	10	5.8	7.8
9	5.8	7.0	7.5	4.5	5.0	7.0	7.8	80	36	9.1	5.8	16
10	5.8	6.2	7.5	4.5	6.0	7.0	8.2	74	35	8.6	7.0	14
11	5.8	5.8	8.2	4.5	5.5	7.0	10	77	33	8.6	7.0	11
12	7.8	6.2	8.0	5.0	5.0	7.5	19	76	33	8.6	6.2	9.1
13	9.6	6.2	8.0	4.5	5.5	7.0	26	65	32	9.1	5.8	8.6
14	10	6.2	7.5	4.5	6.0	7.5	28	60	31	9.1	5.8	11
15	9.1	6.2	7.5	4.5	6.5	7.5	37	49	30	8.2	5.8	9.6
16	7.4	6.2	8.0	4.5	6.5	7.0	40	45	31	7.8	13	8.2
17	7.0	6.2	7.0	5.0	7.0	7.5	40	42	29	7.8	14	9.1
18	6.6	5.8	6.0	5.0	6.5	7.5	48	52	28	7.8	9.6	8.6
19	6.2	4.4	6.5	5.5	6.5	7.0	50	58	28	9.6	9.1	8.2
20	6.2	5.4	7.0	5.5	6.5	6.5	43	62	30	9.1	7.8	14
21	5.8	7.8	7.5	5.5	6.5	6.5	32	70	33	8.2	6.6	16
22	5.8	7.8	6.0	5.0	6.5	6.5	26	72	31	7.8	15	13
23	5.8	8.2	4.0	4.5	7.0	7.0	22	64	21	7.8	14	12
24	5.8	7.4	4.0	5.0	7.0	7.0	19	64	19	7.8	13	9.6
25	5.8	5.8	4.0	5.5	7.5	7.0	19	66	18	8.2	12	8.6
26	5.8	5.8	4.0	6.0	7.5	7.5	24	80	15	7.8	11	8.2
27	5.8	5.5	4.5	5.5	7.0	7.5	43	84	15	8.6	23	7.8
28	5.8	6.0	3.5	5.0	7.0	8.0	57	78	15	11	12	8.2
29	5.4	6.5	3.5	5.0	---	8.0	72	83	14	10	8.2	8.2
30	5.4	6.0	4.5	4.5	---	7.5	87	78	14	13	7.4	8.2
31	5.8	---	5.0	5.0	---	7.5	---	69	---	10	7.4	---
TOTAL	203.1	187.8	195.2	151.0	163.5	220.0	824.7	2386	1002	308.6	282.5	287.7
MEAN	6.55	6.26	6.30	4.87	5.84	7.10	27.5	77.0	33.4	9.95	9.11	9.59
MAX	10	8.2	8.2	6.0	7.5	8.0	87	126	65	15	23	16
MIN	5.4	4.4	3.5	4.0	3.0	6.0	7.4	42	14	7.8	5.8	6.2
AC-FT	403	373	387	300	324	436	1640	4730	1990	612	560	571

CAL YR 1981 TOTAL 2460.4 MEAN 6.74 MAX 17 MIN 2.5 AC-FT 4880
WTR YR 1982 TOTAL 6212.1 MEAN 17.0 MAX 126 MIN 3.0 AC-FT 12320

NOTE.--NO GAGE-HEIGHT RECORD DEC. 22 TO APR. 5.

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 (122 m) upstream from Yellow Warbler Dam, 0.4 mi (0.6 km) south of the geologic basin known as The Poso, and 6.0 mi (9.7 km) west of Antonito.

DRAINAGE AREA.--0.18 mi^2 (0.47 km^2).

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 8,380 ft (2,554 m), from topographic map.

REMARKS.--Records good. Recording rain gage 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 ft^3/s (0.48 m^3/s) Aug. 16, 1982, gage height, 4.97 ft (1.515 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17 ft^3/s (0.48 m^3/s) at 1815 Aug. 16, gage height, 4.97 ft (1.515 m); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 (SEASONAL RECORD)
MEAN VALUES

JULY 27	0.16	JULY 28	0.28	JULY 29	0.31	AUG. 16	0.44

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 (91 m) upstream from Turkey Dam, 0.4 mi (0.6 km) upstream from mouth at the geologic basin known as The Poso, and 6.2 mi (10.0 km) northwest of Conejos.

DRAINAGE AREA.--0.24 mi² (0.62 km²).

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder and Parshall flume. Altitude of gage is 8,280 ft (2,524 m), from topographic map.

REMARKS.--Records good. Recording rain gage 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, 7.5 ft³/s (0.21 m³/s) Aug. 11, 1981, gage height, 4.16 ft (1.268 m); no flow most of time.

EXTREMES FOR CURRENT YEAR.--No flow for the period.

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 (1.1 km) southeast of Flat Top Mountain, 5.3 mi (8.5 km) north of Los Mogotes Peaks and 9.4 mi (15.1 km) northwest of Conejos.

DRAINAGE AREA.--0.23 mi^2 (0.59 km^2).

PERIOD OF RECORD.--June 1979 to current year (seasonal record only).

GAGE.--Water-stage recorder. Altitude of gage is 8,800 ft (2,682 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Reservoir is formed by an earthfill dam. Storage occurs intermittenly from storm runoff. Maximum storage is 1.0 acre-ft (1,233 m^3) at a spillway gage height of 7.1 ft (2.16 m). No contents occur at a gage height of 3.42 ft (1.04 m). This dam forms a small channel reservoir for controlling heavy runoff and to help control sedimentation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2.4 acre-ft (2,960 m^3) Sept. 9, 1982, gage height, 9.13 ft (2.783 m); no contents most of time.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2.4 acre-ft (2,960 m^3) at 1715 Sept. 9, gage height, 9.13 ft (2.783 m); no contents most of time.

Capacity table (elevation, in feet, and total contents, in acre-feet)

3.5	0.01	5.5	0.25	7.5	1.29
4.5	0.06	6.5	0.67	9.0	2.31

CONTENTS, IN ACRE-FT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								0	0	.00	.02	.13
2								0	0	.00	.02	.11
3								0	0	.00	.02	.11
4								0	0	.00	.02	.14
5								0	0	.00	.01	.14
6								0	0	.00	.01	.13
7								0	0	.00	.01	.12
8								0	0	.00	.01	.11
9								0	0	.00	.01	.93
10								0	0	.00	.01	.90
11								0	0	.00	.01	.85
12								0	0	.00	.01	.81
13								0	0	.00	.01	.73
14								0	0	.00	.01	.65
15								0	0	.00	.01	.64
16								0	0	.00	.01	.57
17								0	0	.00	.02	.54
18								0	0	.00	.01	.49
19								0	0	.00	.09	.47
20								0	0	.00	.07	.43
21								0	0	.00	.06	.41
22								0	0	.00	.05	.37
23								0	0	.00	.04	.34
24								0	0	.00	.03	.32
25								0	0	.00	.03	.30
26								0	0	.00	.02	.27
27								0	0	.00	.27	.25
28								0	0	.00	.23	.24
29								0	0	.04	.19	.21
30								0	0	.03	.16	.20
31								0	---	.03	.14	---
MAX								.00	.00	.04	.27	.93
MIN								.00	.00	.00	.01	.11

NOTE.--NO GAGE-HEIGHT RECORD JULY 15 TO AUG. 18.

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 (0.3 km) upstream from Trinchera Creek, 3.2 mi (5.1 km) north of Lasauses, and 13 mi (21 km) southeast of Alamosa.

DRAINAGE AREA.--5,740 mi^2 (14,900 km^2), approximately, includes 2,940 mi^2 (7,610 km^2) in closed basin in northern part of San Luis Valley, Colo.

PERIOD OF RECORD.--May 1936 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 7,500 ft (2,286 m), estimated from nearby level lines.

REMARKS.--Records good except those for winter period, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Several observations of water temperature were 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.--46 years, 241 ft^3/s (6.825 m^3/s), 174,600 acre-ft/yr (215 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,470 ft^3/s (155 m^3/s) June 21, 1949, gage height, 9.50 ft (2.896 m), from rating curve extended above 3,600 ft^3/s (100 m^3/s); minimum daily, 0.4 ft^3/s (0.011 m^3/s) July 4, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 965 ft^3/s (27.3 m^3/s) at 0700 Sept. 23, gage height, 4.85 ft (1.478 m); minimum daily, 40 ft^3/s (1.13 m^3/s) Dec. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	158	160	55	205	300	265	147	372	610	98	158
2	104	166	135	60	200	300	246	168	239	658	136	207
3	103	205	185	80	195	310	246	184	207	698	218	322
4	101	342	180	90	200	330	258	205	231	650	302	352
5	130	408	180	120	200	322	239	231	260	642	335	375
6	138	447	205	130	190	275	211	272	292	600	335	368
7	104	420	200	135	180	244	192	318	295	618	332	380
8	105	438	205	150	165	233	141	298	222	678	345	370
9	107	444	211	150	160	246	112	295	190	534	392	380
10	101	456	205	150	170	251	84	308	211	420	412	368
11	101	447	184	155	175	258	72	318	260	360	447	382
12	89	410	158	160	180	256	62	312	328	253	429	335
13	83	398	152	170	180	270	57	322	355	184	402	355
14	93	392	146	170	180	292	54	335	398	170	412	420
15	98	385	138	175	185	288	60	342	382	201	444	534
16	104	380	139	170	185	282	56	338	352	173	450	516
17	110	375	107	175	190	285	83	322	292	152	504	547
18	118	368	80	175	190	278	105	258	305	121	380	561
19	135	358	95	180	190	272	120	173	435	103	330	600
20	120	345	100	185	195	258	86	136	405	93	348	650
21	114	322	121	190	210	242	104	103	362	85	338	710
22	118	298	50	195	220	226	94	96	332	77	342	793
23	117	318	40	200	220	220	97	135	348	71	402	910
24	128	340	75	190	230	226	104	133	372	62	450	762
25	144	330	85	190	240	231	111	152	395	58	492	694
26	147	320	80	190	255	235	118	152	441	57	658	674
27	146	300	65	195	280	246	118	139	547	56	784	646
28	136	250	60	205	305	253	117	163	572	56	426	572
29	121	210	60	210	---	253	120	226	603	66	335	534
30	133	190	60	220	---	263	128	209	634	85	345	513
31	154	---	60	210	---	292	---	342	---	86	242	---
TOTAL	3612	10220	3921	5030	5675	8237	3860	7132	10637	8677	11865	14988
MEAN	117	341	126	162	203	266	129	230	355	280	383	500
MAX	154	456	211	220	305	330	265	342	634	698	784	910
MIN	83	158	40	55	160	220	54	96	190	56	98	158
AC-FT	7160	20270	7780	9980	11260	16340	7660	14150	21100	17210	23530	29730

CAL YR 1981 TOTAL 48718 MEAN 133 MAX 456 MIN 11 AC-FT 96630
WTR YR 1982 TOTAL 93854 MEAN 257 MAX 910 MIN 40 AC-FT 186200

08243500 TRINCHERA CREEK BELOW SMITH RESERVOIR, NEAR BLANCA, CO

LOCATION.--Lat 37°23'10", long 105°33'02", in sec.4, T.31 S., R.73 W. (unsurveyed), Costilla County, Hydrologic Unit 13010002, on right bank 150 ft (46 m) downstream from bridge, 0.6 mi (1.0 km) downstream from Smith Reservoir, and 4.0 mi (6.4 km) southwest of Blanca.

DRAINAGE AREA.--396 mi² (1,026 km²).

PERIOD OF RECORD.--October 1928 to September 1982 (discontinued). No winter records prior to 1944 except water years 1931, 1934-36, 1938. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1512: 1937, 1950(M).

GAGE.--Water-stage recorder. Altitude of gage is 7,700 ft (2,347 m), estimated from nearby U.S. Coast and Geodetic Survey level lines. Prior to Oct. 12, 1964, at site 200 ft (61 m) downstream. Prior to Apr. 19, 1943, at datum 1.00 ft (0.305 m) higher, and at present datum thereafter.

REMARKS.--Records good. Diversions above station for irrigation. Flow regulated by Smith Reservoir, capacity, 5,335 acre-ft (6.58 hm³). 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.--44 years (1930-31, 1933-36, 1937-38, 1943-82), 10.3 ft³/s (0.292 m³/s), 7,460 acre-ft/yr (9.198 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,340 ft³/s (37.9 m³/s) May 11, 1942; no flow Sept. 13, 14, 16, 17, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Outstanding floods occurred in 1886 and October 1911. The flood in 1886 probably exceeded that in October 1911 and the flood in 1911 probably exceeded all subsequent floods, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17 ft³/s (0.48 m³/s) at 1430 June 14, gage height, 2.67 ft (0.814 m); minimum daily, 0.35 ft³/s (0.010 m³/s) Apr. 21, 24.

CORRECTIONS.--The date of occurrence of the maximum discharge for water year 1981 was published in error. The correct date is Apr. 14, this date supersedes that published in WDR-CO-81-1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.4	1.6	2.0	1.2	1.8	1.4	.80	13	9.5	7.0	1.2
2	1.6	1.4	1.6	2.0	1.2	1.8	1.4	.80	13	7.4	7.0	1.2
3	1.6	1.4	1.4	2.0	1.2	1.8	1.4	.80	13	4.5	7.0	1.1
4	1.6	1.4	1.4	1.8	1.2	1.8	1.4	.80	13	4.5	7.0	1.2
5	1.4	1.4	1.4	1.8	1.2	1.8	1.4	.80	12	4.5	7.0	1.2
6	1.4	1.4	1.2	1.8	1.2	1.8	1.4	.80	12	2.5	7.0	1.2
7	1.2	1.4	1.2	1.6	1.2	1.8	1.2	1.0	12	1.6	7.0	1.2
8	1.2	1.4	1.2	1.6	1.2	1.8	1.0	1.8	12	1.6	7.0	1.2
9	1.2	1.4	1.4	1.6	1.2	1.6	1.0	2.8	12	1.6	8.2	1.2
10	1.2	1.2	1.6	1.6	1.2	1.6	1.0	3.3	11	1.6	8.2	1.2
11	1.2	1.2	1.6	1.4	1.2	1.6	1.0	5.9	7.0	1.8	7.8	1.0
12	1.2	1.2	1.8	1.4	1.2	1.6	1.0	7.0	6.2	1.4	7.8	1.0
13	1.2	1.2	2.0	1.4	1.4	1.6	1.0	5.8	6.6	1.8	7.8	1.0
14	1.2	1.2	2.2	1.4	1.4	1.6	1.0	5.8	10	1.8	7.8	1.0
15	1.2	1.2	2.5	1.4	1.4	1.6	.80	5.8	16	1.6	7.8	1.0
16	1.2	1.2	2.5	1.2	1.6	1.6	1.0	5.8	15	1.8	3.8	.80
17	1.2	1.4	2.0	1.2	1.4	1.6	1.0	5.8	15	1.6	1.4	.80
18	1.2	1.4	1.4	1.2	1.6	1.6	.80	9.7	14	1.8	2.0	.80
19	1.2	1.6	1.4	1.2	1.6	1.6	1.0	11	12	1.6	1.6	.80
20	1.2	1.6	1.8	1.2	1.8	1.4	.50	12	12	1.4	1.4	.80
21	1.2	1.8	1.8	1.2	1.8	1.4	.35	12	12	1.4	1.2	.80
22	1.2	1.8	1.8	1.2	1.8	1.4	.50	14	12	3.9	1.2	.80
23	1.2	1.8	1.8	1.2	1.8	1.4	.50	14	12	6.2	1.2	.80
24	1.2	1.8	2.0	1.2	1.8	1.4	.35	14	12	7.8	1.2	.80
25	1.2	1.6	1.8	1.0	1.8	1.4	.50	14	12	7.0	1.0	.80
26	1.2	1.6	2.0	1.0	1.8	1.4	.50	14	10	7.0	1.0	.80
27	1.2	1.6	2.2	1.2	1.8	1.4	.65	14	10	7.0	1.2	.80
28	1.2	1.8	2.2	1.2	1.8	1.4	.65	14	9.5	7.0	1.0	.80
29	1.4	1.6	2.0	1.2	---	1.4	.65	14	8.6	7.0	1.2	.80
30	1.4	1.6	2.2	1.2	---	1.4	.80	14	9.0	6.6	1.4	1.0
31	1.4	---	2.2	1.2	---	1.4	---	14	---	6.2	1.4	---
TOTAL	39.8	44.0	55.2	43.6	41.0	48.8	27.15	240.30	343.9	123.0	134.6	29.10
MEAN	1.28	1.47	1.78	1.41	1.46	1.57	.91	7.75	11.5	3.97	4.34	.97
MAX	1.6	1.8	2.5	2.0	1.8	1.8	1.4	14	16	9.5	8.2	1.2
MIN	1.2	1.2	1.2	1.0	1.2	1.4	.35	.80	6.2	1.4	1.0	.80
AC-FT	79	87	109	86	81	97	54	477	682	244	267	58

CAL YR 1981 TOTAL 1020.25 MEAN 2.80 MAX 17 MIN .15 AC-FT 2020
WTR YR 1982 TOTAL 1170.45 MEAN 3.21 MAX 16 MIN .35 AC-FT 2320

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 (120 m) downstream from Platoro Dam on Conejos River and 0.7 mi (1.1 km) west of Platoro.

DRAINAGE AREA.--40 mi² (104 km²), approximately.

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

GAGE.--Nonrecording gage. Datum of gage is 9,911.5 ft (3,021.03 m), 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 (3,023.92 m) 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 (73.4 hm³) between elevations 9,911.5 ft (3,021.03 m), sill of trashrack at outlet, and 10,034.0 ft (3,058.36 m), crest of spillway. No dead storage. Reservoir is used for irrigation and flood control. Figures given are usable contents.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 61,420 acre-ft (75.7 hm³) June 9, 11, 1958, elevation, 10,035.5 ft (3,058.82 m); no contents for long periods in 1952-56.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 19,980 acre-ft (24.6 hm³) Jan. 23, elevation, 9,982.9 ft (3,042.788 m); minimum contents, 19,520 acre-ft (24.1 hm³) Apr. 28, elevation, 9,982.1 ft (3,042.544 m).

MONTHEND ELEVATION IN FEET NGVD AND CONTENTS, AT 1000, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Date	Elevation	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	9,982.4	19,690	-
Oct. 31	9,982.4	19,690	0
Nov. 30	9,982.5	19,750	+60
Dec. 31	9,982.7	19,860	+110
CAL YR 1981		-	+170
Jan. 31	9,982.9	19,980	+120
Feb. 28	9,982.2	19,580	-400
Mar. 31	9,982.7	19,860	+280
Apr. 30	9,982.6	19,800	-60
May 31	9,982.4	19,630	-170
June 30	9,982.3	19,800	+170
July 31	9,982.5	19,750	-50
Aug. 31	9,982.5	19,750	0
Sept. 30	9,982.4	19,690	-60
WTR YR 1982			0

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 (340 m) downstream from valvehouse for Platoro Reservoir and 0.7 mi (1.1 km) northwest of Platoro.

DRAINAGE AREA.--40 mi² (100 km²), approximately.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 9,866.60 ft (3,007.340 m), National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Records good except those for period of no gage-height record, which are fair. No diversion above station. Flow completely regulated by Platoro Reservoir (station 08244500). 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.--30 years, 89.7 ft³/s (2.540 m³/s), 64,990 acre-ft/yr (80.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,160 ft³/s (32.9 m³/s) Nov. 1, 1957, gage height, 4.02 ft (1.225 m); maximum gage height, 4.29 ft (1.308 m) 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, 750 ft³/s (21.2 m³/s) at 0230 June 28, gage height, 3.42 ft (1.042 m); minimum daily, 8.5 ft³/s (0.24 m³/s) many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	37	14	14	20	8.5	14	116	494	650	126	111
2	18	37	14	14	20	8.5	14	203	482	663	106	65
3	55	37	14	14	20	8.5	14	203	564	604	133	45
4	85	37	14	14	20	8.5	19	203	555	555	142	45
5	78	37	14	14	20	8.5	23	203	502	514	100	107
6	69	37	14	14	20	8.5	23	167	490	442	61	118
7	57	37	14	14	20	8.5	23	118	458	442	50	68
8	46	37	14	14	20	8.5	23	104	524	308	62	46
9	54	37	14	14	20	8.5	23	104	546	362	67	92
10	62	37	14	14	20	8.5	23	118	537	528	72	106
11	62	37	14	14	20	8.5	23	155	596	406	111	90
12	104	37	14	14	20	8.5	23	176	622	336	91	155
13	182	37	14	14	20	8.5	23	144	720	378	73	233
14	150	37	14	14	20	11	23	102	640	390	46	239
15	114	37	14	14	20	14	23	91	627	329	41	221
16	88	25	14	14	20	14	23	91	632	294	88	329
17	61	14	14	14	14	14	23	82	618	346	106	519
18	60	14	14	14	8.5	14	23	95	705	370	56	312
19	66	14	14	14	8.5	14	40	161	735	298	43	266
20	72	14	14	14	8.5	14	86	191	591	224	45	304
21	72	14	14	14	8.5	14	86	209	502	179	57	329
22	72	14	14	14	8.5	14	86	402	546	170	104	233
23	68	14	14	14	8.5	14	72	227	686	185	118	155
24	65	14	14	14	8.5	14	59	212	676	233	167	139
25	65	14	14	14	8.5	14	59	329	645	185	203	116
26	41	14	14	17	8.5	14	46	378	668	136	252	104
27	20	14	14	20	8.5	14	27	498	720	102	227	95
28	43	14	14	20	8.5	14	20	362	740	142	200	90
29	59	14	14	20	---	14	20	490	745	212	167	90
30	46	14	14	20	---	14	51	573	700	242	82	90
31	37	---	14	20	---	14	---	519	---	209	104	---
TOTAL	2089	776	434	467	427.5	359.5	1035	7026	18266	10434	3300	4912
MEAN	67.4	25.9	14.0	15.1	15.3	11.6	34.5	227	609	337	106	164
MAX	182	37	14	20	20	14	86	573	745	663	252	519
MIN	18	14	14	14	8.5	8.5	14	82	458	102	41	45
AC-FT	4140	1540	861	926	848	713	2050	13940	36230	20700	6550	9740

CAL YR 1981 TOTAL 23413.3 MEAN 64.1 MAX 636 MIN 4.0 AC-FT 46440
WTR YR 1982 TOTAL 49526.0 MEAN 136 MAX 745 MIN 8.5 AC-FT 98230

NOTE.--NO GAGE-HEIGHT RECORD DEC. 2 TO APR. 18.

08246500 CONEJOS RIVER NEAR MOGOTE, CO

LOCATION.--Lat 37°03'14", long 106°11'13", in SE¼SE¼ sec.34, T.33 N., R.7 E., Conejos County, Hydrologic Unit 13010005, on right bank 25 ft (8 m) upstream from bridge on State Highway 174, 0.4 mi (0.6 km) downstream from Fox Creek, 5.3 mi (8.5 km) west of Mogote, and 10 mi (16 km) west of Antonito.

DRAINAGE AREA.--282 mi^2 (730 km^2).

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 (8.8 km) upstream and May 1905 to September 1911 (some missing periods most years) at site 3.2 mi (5.1 km) upstream not equivalent to present site due to inflow.

REVISED RECORDS.--WSP 898: 1911(M). WSP 1312: 1903-5, 1913. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 8,271.54 ft (2,521.156 m) Colorado State Highway datum. Apr. 17, 1903, to Oct. 31, 1905, nonrecording gage 500 ft (150 m) downstream at different datum. Oct. 5, 1911, to early 1915, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter period, which are fair. Diversions for irrigation of about 500 acres (2.0 km^2) of hay meadows above station. Some regulation by Platoro Reservoir (station 08244500). 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.--73 years, 331 ft^3/s (9.374 m^3/s), 239,800 acre-ft/yr (296 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,000 ft^3/s (255 m^3/s) Oct. 5, 1911, gage height, 8.50 ft (2.591 m), from floodmarks, present site and datum, from rating curve extended above 3,100 ft^3/s (88 m^3/s); minimum daily determined, 10 ft^3/s (0.28 m^3/s) July 18, 1904.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1854, that of Oct. 5, 1911, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,480 ft^3/s (70.2 m^3/s) at 0800 June 19, gage height, 4.76 ft (1.451 m); minimum daily, 39 ft^3/s (1.10 m^3/s) Dec. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	116	40	70	72	72	91	850	1880	1690	448	306
2	93	122	66	65	72	79	96	1060	1750	1620	356	268
3	184	119	79	60	66	77	84	1220	1810	1480	348	204
4	212	116	75	50	65	72	98	1230	1890	1290	368	187
5	215	114	82	60	55	70	106	1120	1790	1190	328	260
6	194	114	75	65	40	62	116	965	1580	1030	278	285
7	180	116	79	55	45	62	119	785	1480	980	254	260
8	164	116	79	50	55	66	106	780	1530	880	229	198
9	174	111	77	55	50	68	111	845	1640	815	226	194
10	164	106	79	55	60	70	116	825	1660	980	232	236
11	170	106	75	55	55	88	148	880	1690	940	271	257
12	222	106	70	60	50	114	292	905	1910	790	278	274
13	320	106	70	55	55	93	302	800	2100	795	226	400
14	376	106	64	55	65	88	344	651	2150	795	222	476
15	332	98	66	55	68	91	388	606	1910	750	194	464
16	336	101	70	55	68	82	432	579	1930	665	229	548
17	268	86	66	55	72	82	404	574	1920	705	260	805
18	240	72	62	60	70	77	420	620	2130	740	271	710
19	229	57	66	65	70	75	400	750	2320	656	257	543
20	229	53	70	65	70	70	424	845	1880	574	212	628
21	218	66	79	60	70	68	384	985	1610	480	204	725
22	208	66	70	60	70	72	320	1230	1530	444	336	606
23	198	64	45	55	75	72	292	1140	1740	436	384	468
24	187	64	39	60	75	70	246	980	1850	436	476	400
25	177	62	43	65	75	75	236	1080	1790	436	574	356
26	174	53	47	65	79	79	240	1280	1790	392	588	324
27	145	50	52	70	72	77	250	1600	1810	360	543	296
28	128	62	43	70	70	84	310	1530	1920	412	476	299
29	142	75	45	70	---	91	452	1720	1940	452	420	288
30	148	60	52	65	---	66	574	2040	1810	624	352	299
31	128	---	62	70	---	72	---	1890	---	588	316	---
TOTAL	6251	2663	1987	1875	1809	2384	7901	32365	54740	24425	10156	11564
MEAN	202	88.8	64.1	60.5	64.6	76.9	263	1044	1825	788	328	385
MAX	376	122	82	70	79	114	574	2040	2320	1690	588	805
MIN	93	50	39	50	40	62	84	574	1480	360	194	187
AC-FT	12400	5280	3940	3720	3590	4730	15670	64200	108600	48450	2014D	22940

CAL YR 1981 TOTAL 67151 MEAN 184 MAX 1410 MIN 30 AC-FT 133200
WTR YR 1982 TOTAL 158120 MEAN 433 MAX 2320 MIN 39 AC-FT 313600

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 (240 m) south of Colorado-New Mexico State line, 0.4 mi (0.6 km) southeast of Ortiz, and 0.4 mi (0.6 km) upstream from Los Pinos River.

DRAINAGE AREA.--110 mi² (280 km²), 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. Altitude of gage is 7,970 ft (2,429 m), 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 (60 m) downstream at present datum.

REMARKS.--Records good except those for winter period, which are fair. A few small diversions above station for irrigation. 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.--42 years (1940-82), 24.8 ft³/s (0.702 m³/s), 17,970 acre-ft/yr (22.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,750 ft³/s (49.6 m³/s) Apr. 15, 1937, gage height, 5.38 ft (1.640 m), from rating curve extended above 1,100 ft³/s (31 m³/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 above base of 330 ft³/s (9.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 18	2330	374	10.6	3.23	0.984	May 4	0330	* 686	19.4	4.27	1.1301

No flow July 21-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	2.4	1.6	3.0	4.0	4.5	9.7	395	98	4.0	4.8	.80
2	.80	2.8	2.8	3.0	4.0	5.0	9.7	536	86	5.2	2.8	1.2
3	1.4	3.4	3.0	2.5	3.5	5.0	7.5	532	76	3.8	1.6	.80
4	7.1	3.4	2.8	2.0	3.0	4.5	10	536	67	3.2	1.2	.70
5	4.5	2.8	3.2	2.5	2.0	4.0	13	446	55	2.6	1.3	.50
6	3.0	2.6	3.4	3.0	1.0	3.5	14	323	47	2.2	1.3	.15
7	1.6	2.8	3.0	2.5	1.5	3.5	14	245	43	1.8	1.6	.66
8	1.6	3.2	3.0	2.0	2.5	4.0	12	272	36	1.3	4.0	1.6
9	1.6	3.6	2.8	2.5	2.0	4.5	14	295	35	1.3	2.0	1.3
10	1.2	3.6	2.8	2.5	3.0	5.0	15	282	30	1.3	1.4	.90
11	1.6	3.0	3.2	2.5	2.5	6.0	30	292	29	1.3	1.6	.80
12	1.6	2.2	2.8	3.0	2.0	7.5	100	295	26	.70	3.7	1.4
13	8.0	1.3	3.0	3.0	2.5	6.5	140	218	24	.50	4.0	6.4
14	7.5	.90	2.5	3.0	3.5	6.0	170	158	22	.40	1.8	8.2
15	4.8	.80	2.5	3.0	4.0	6.5	200	150	19	.30	1.3	8.9
16	4.2	1.2	2.5	3.0	4.0	6.0	212	154	16	.15	1.4	5.5
17	3.8	1.4	2.2	3.0	4.5	6.5	185	146	15	.15	1.6	3.8
18	3.4	1.6	2.0	3.5	4.0	6.5	225	202	14	.10	1.3	3.8
19	3.2	1.0	2.0	4.0	4.0	5.5	238	250	13	.05	.80	4.2
20	3.0	.90	2.5	4.0	4.0	4.5	176	248	16	.02	1.3	4.5
21	3.0	.90	2.6	3.5	4.0	4.0	118	260	28	.00	1.8	7.8
22	3.0	.90	2.0	3.5	4.0	3.5	87	265	21	.00	1.8	7.2
23	2.8	1.2	1.5	3.0	4.5	3.5	67	212	15	.00	1.3	5.5
24	2.8	1.5	1.5	3.5	4.5	5.0	70	178	13	.00	1.4	4.0
25	2.8	1.5	1.5	3.5	4.5	5.8	75	185	10	.00	2.4	3.0
26	2.8	1.0	1.5	4.0	5.0	8.9	152	198	8.9	.06	2.4	2.6
27	2.6	1.0	2.0	4.0	4.5	9.7	230	205	7.2	.40	2.6	2.2
28	2.6	1.5	1.5	3.5	4.5	10	300	154	5.5	.30	2.6	2.0
29	2.4	2.0	1.5	3.5	---	10	353	162	5.5	8.8	2.0	3.2
30	2.6	1.5	2.0	3.0	---	10	380	133	5.2	15	1.3	4.0
31	2.6	---	2.5	3.5	---	10	---	113	---	8.1	.90	---
TOTAL	94.40	57.90	73.7	96.0	97.0	185.4	3626.9	8040	886.3	63.03	61.30	97.61
MEAN	3.05	1.93	2.38	3.10	3.46	5.98	121	259	29.5	2.03	1.98	3.25
MAX	8.0	3.6	3.4	4.0	5.0	10	380	536	98	15	4.8	8.9
MIN	.50	.80	1.5	2.0	1.0	3.5	7.5	113	5.2	.00	.80	.15
AC-FT	187	115	146	190	192	368	7190	15950	1760	125	122	194

CAL YR 1981 TOTAL 1988.22 MEAN 5.45 MAX 57 MIN .00 AC-FT 3940
WTR YR 1982 TOTAL 13379.54 MEAN 36.7 MAX 536 MIN .00 AC-FT 26540

NOTE.--NO GAGE-HEIGHT RECORD DEC. 23 TO MAR. 2.

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 (1.4 km) south of Colorado-New Mexico State line, 2.1 mi (3.4 km) southwest of Ortiz, and 2.9 mi (4.7 km) upstream from mouth.

DRAINAGE AREA.--167 mi² (433 km²).

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. Altitude of gage is 8,040 ft (2,451 m), from topographic map. Prior to Apr. 15, 1955, at site 350 ft (110 m) upstream at datum 2.52 ft (0.768 m) higher.

REMARKS.--Records good except those for winter period, which are fair. Diversions above station for irrigation. 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.--63 years, 119 ft³/s (3.370 m³/s), 86,220 acre-ft/yr (106 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,160 ft³/s (89.5 m³/s) May 12, 1941, gage height, 5.77 ft (1.759 m), site and datum then in use, from rating curve extended above 1,600 ft³/s (45 m³/s); minimum observed, 4.0 ft³/s (0.11 m³/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 above base of 900 ft³/s (25 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 4	0030	*1,530	43.3	5.91	1.801	May 27	0030	1,430	40.5	5.71	1.740
May 21	2400	1,210	34.3	5.37	1.637	May 29	0030	1,500	42.5	5.81	1.771

Minimum daily discharge, 9.0 ft³/s (0.25 m³/s) Feb. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	26	10	19	17	20	34	780	954	294	61	31
2	19	28	15	18	17	22	37	1060	840	258	52	25
3	53	29	18	16	15	21	35	1180	805	225	52	24
4	53	26	16	15	14	19	38	1250	740	208	48	23
5	39	24	19	17	12	18	43	1080	720	188	42	37
6	34	24	17	18	9.0	16	45	845	638	168	38	35
7	32	26	18	16	11	16	44	680	594	162	48	30
8	30	27	18	14	13	17	38	735	598	153	39	28
9	37	25	17	15	12	18	41	805	580	140	35	28
10	31	24	18	15	15	19	42	760	568	132	32	29
11	28	23	19	15	14	24	56	795	524	122	52	71
12	60	23	16	16	12	29	118	785	548	114	47	84
13	92	24	16	15	13	25	166	598	560	112	36	114
14	91	24	15	15	15	23	200	492	548	105	33	151
15	82	23	15	15	16	24	225	476	520	96	29	114
16	74	24	17	15	16	23	258	444	460	89	34	103
17	66	22	16	15	18	24	270	460	476	84	31	124
18	56	19	14	16	17	24	312	576	484	80	28	99
19	49	18	16	18	17	23	322	685	500	79	47	103
20	45	17	18	18	17	20	282	735	444	74	32	134
21	44	19	21	16	17	16	234	888	480	65	29	142
22	42	19	18	16	17	15	188	972	413	58	35	124
23	39	19	13	15	20	17	160	790	399	53	37	98
24	38	18	11	16	20	23	142	740	385	52	45	82
25	36	18	12	16	20	25	145	775	374	50	66	71
26	33	15	13	18	22	27	175	942	357	57	84	66
27	33	13	14	18	20	28	243	1080	336	57	57	59
28	32	14	12	16	19	31	364	942	329	82	45	66
29	31	17	13	16	---	34	512	1160	318	74	37	66
30	28	15	15	15	---	29	594	1090	300	84	34	66
31	27	---	17	16	---	30	---	966	---	87	37	---
TOTAL	1372	643	487	499	445.0	700	5363	25566	15792	3602	1322	2228
MEAN	44.3	21.4	15.7	16.1	15.9	22.6	179	825	526	116	42.6	74.3
MAX	92	29	21	19	22	34	594	1250	954	294	84	151
MIN	18	13	10	14	9.0	15	34	444	300	50	28	23
AC-FT	2720	1280	966	990	883	1390	10640	50710	31320	7140	2620	4420

CAL YR 1981 TOTAL 19116.0 MEAN 52.4 MAX 540 MIN 10 AC-FT 37920
WTR YR 1982 TOTAL 58019.0 MEAN 159 MAX 1250 MIN 9.0 AC-FT 115100

NOTE.--NO GAGE-HEIGHT RECORD DEC. 23 TO MAR. 9.

08248500 SAN ANTONIO RIVER AT MOUTH, NEAR MANASSA, CO

LOCATION.--Lat 37°10'37", long 105°52'39", in SE¼NE¼ sec.21, T.34 N., R.10 E., Conejos County, Hydrologic Unit 13010005, on right bank 0.3 mi (0.5 km) downstream from bridge on State Highway 142, 2.2 mi (3.5 km) upstream from mouth, and 3.3 mi (5.3 km) east of Manassa.

DRAINAGE AREA.--348 mi² (901 km²).

PERIOD OF RECORD.--April 1923 to September 1982 (discontinued). Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1312: 1936(M). WSP 1732: 1957.

GAGE.--Water-stage recorder. Altitude of gage is 7,650 ft (2,332 m), from topographic map. Prior to Apr. 23, 1936, at former bridge site 200 ft (60 m) upstream at present datum.

REMARKS.--Records good except those for winter period which are poor. Natural flow of stream affected by diversions to Cove Lake Reservoir, capacity, 9,700 acre-ft (12.0 hm³) and diversions for irrigation above 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.--59 years, 80.5 ft³/s (2.280 m³/s), 58,320 acre-ft/yr (71.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft³/s (74.2 m³/s) May 14, 1941, gage height, 6.26 ft (1.908 m), from rating curve extended above 2,200 ft³/s (62 m³/s); maximum gage height, 6.42 ft (1.957 m) May 6, 1952; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1854 occurred Oct. 5, 1911, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,160 ft³/s (32.9 m³/s) at 1800 May 4, gage height, 6.30 ft (1.920 m); only peak above base of 500 ft³/s (14 m³/s); no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	11	7.0	5.0	3.0	11	28	786	904	240	42	2.2
2	.00	9.8	8.0	4.0	3.0	13	14	980	839	206	26	1.7
3	.00	11	9.0	2.0	3.0	13	26	1090	800	154	16	.70
4	.00	14	10	1.0	3.0	12	27	1120	758	131	15	.20
5	.00	13	11	1.0	2.5	11	36	1100	720	119	16	.00
6	.00	11	11	.00	2.0	11	21	1040	618	107	9.0	.00
7	.00	11	11	.00	2.0	12	40	900	578	88	6.4	.00
8	.00	15	11	.00	3.0	15	43	853	562	79	11	.00
9	.00	16	10	.00	4.0	18	27	912	545	72	11	.00
10	.00	16	10	.00	4.5	20	42	912	528	66	7.0	.00
11	.00	16	11	.00	4.5	25	48	908	492	65	3.7	.00
12	.00	14	10	.00	4.0	30	101	940	478	65	3.7	1.1
13	.00	13	10	.00	4.5	27	236	836	480	61	13	32
14	.00	12	9.0	.00	5.0	34	268	654	475	60	9.8	72
15	10	11	9.0	.00	5.5	34	291	545	465	53	7.6	93
16	29	5.9	9.0	.50	5.5	24	336	500	428	40	7.8	77
17	35	5.9	8.0	1.0	5.5	22	288	528	406	34	9.0	82
18	30	8.3	7.0	1.0	5.5	25	315	621	414	30	15	84
19	26	7.0	8.0	2.0	5.5	20	360	748	438	26	11	79
20	23	5.1	9.0	2.0	6.0	15	309	783	442	20	12	78
21	19	3.5	9.0	2.0	6.0	17	255	853	452	13	9.8	126
22	17	3.2	8.0	1.0	6.0	11	204	940	396	9.0	5.5	118
23	16	7.0	6.0	1.0	6.0	12	190	940	334	6.4	4.4	102
24	16	9.0	5.0	2.0	6.0	13	164	864	310	4.4	6.4	88
25	16	8.0	5.0	2.0	6.0	13	140	850	302	3.0	9.0	77
26	15	7.0	5.0	2.0	7.0	17	186	900	273	2.8	26	70
27	15	6.0	6.0	3.0	8.0	27	266	998	256	3.0	40	64
28	15	7.0	4.0	3.0	9.0	24	372	990	252	3.5	22	58
29	15	8.0	3.0	3.0	---	32	470	1010	254	9.8	9.0	62
30	13	8.0	4.0	3.0	---	29	612	1030	243	35	3.2	61
31	12	---	5.0	3.0	---	21	---	962	---	50	2.3	---
TOTAL	322.00	292.7	248.0	44.50	135.5	608	5715	27093	14442	1855.9	389.6	1428.90
MEAN	10.4	9.76	8.00	1.44	4.84	19.6	191	874	481	59.9	12.6	47.6
MAX	35	16	11	5.0	9.0	34	612	1120	904	240	42	126
MIN	.00	3.2	3.0	.00	2.0	11	14	500	243	2.8	2.3	.00
AC-FT	639	581	492	88	269	1210	11340	53740	28650	3680	773	2830

CAL YR 1981 TOTAL 7247.15 MEAN 19.9 MAX 250 MIN .00 AC-FT 14370
WTR YR 1982 TOTAL 52575.10 MEAN 144 MAX 1120 MIN .00 AC-FT 104300

NOTE.--NO GAGE-HEIGHT RECORD NOV. 24 TO MAR. 4.

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 (38 m) downstream from bridge on State Highway 158 and on left bank of secondary channel 230 ft (70 m) upstream from bridge on State Highway 158, 1.0 mi (1.6 km) upstream from mouth, 2.1 mi (3.4 km) north of Lasauses, and 13 mi (21 km) southeast of Alamosa.

DRAINAGE AREA.--887 mi^2 (2,297 km^2).

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 (2,284.482 m), and on secondary (south) channel is 7,496.89 ft (2,285.052 m), 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 (70 m) downstream at datum 0.56 ft (0.171 m) lower; Oct. 23, 1934, to May 3, 1936, at site 250 ft (76 m) downstream, and May 4, 1936, to Oct. 13, 1965, at site 280 ft (85 m) downstream, at datum 1.00 ft (0.305 m) lower.

REMARKS.--Records good except those for winter period, which are fair. Diversions for irrigation of about 75,000 acres (300 km^2) above 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.--61 years, 182 ft^3/s (5.154 m^3/s), 131,900 acre-ft/yr (163 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,890 ft^3/s (110 m^3/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, 1,710 ft^3/s (48.4 m^3/s) May 31; no flow Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	137	45	66	69	103	106	615	1450	1060	348	63
2	.26	132	40	62	69	116	120	887	1160	964	258	80
3	.41	134	36	52	72	127	131	1140	1080	800	200	98
4	.71	131	42	50	67	120	123	1240	1300	646	195	78
5	.20	126	49	58	58	116	141	1320	1340	613	218	83
6	.07	122	43	62	53	102	151	1260	1250	583	188	135
7	.07	125	45	59	58	93	155	1080	1050	477	157	154
8	.04	134	44	54	70	94	170	925	982	481	126	139
9	.04	130	43	61	72	105	155	930	1090	421	114	109
10	23	125	42	66	70	111	157	1040	1150	431	109	114
11	84	119	46	70	70	117	172	1010	1120	638	111	154
12	101	119	47	70	72	138	222	1050	1020	596	139	178
13	149	117	45	62	76	158	319	943	1000	524	137	173
14	245	113	44	61	74	143	319	710	968	500	84	300
15	296	111	37	60	75	143	345	550	963	472	72	340
16	288	107	37	56	74	135	377	516	996	380	60	315
17	304	102	33	56	79	124	387	590	1110	322	67	410
18	260	96	28	58	79	126	336	659	1170	369	86	562
19	235	87	30	58	82	117	381	758	1270	419	100	486
20	222	76	42	63	85	106	366	805	1430	338	89	494
21	218	74	61	63	85	103	304	807	1360	285	70	659
22	212	75	68	56	88	101	240	696	1160	240	56	733
23	206	78	50	54	97	102	222	891	958	228	132	646
24	199	82	47	58	110	103	250	810	919	215	173	526
25	190	82	48	62	114	101	225	803	929	218	188	463
26	183	68	49	62	108	103	246	894	888	220	255	421
27	180	53	54	66	105	114	341	1060	826	183	249	382
28	154	48	49	64	105	114	360	1350	882	192	222	358
29	137	52	52	63	---	119	413	1220	995	273	164	358
30	149	59	57	60	---	136	478	1430	1030	351	116	351
31	152	---	60	63	---	112	---	1640	---	452	76	---
TOTAL	4188.80	3014	1413	1875	2236	3602	7712	29629	32846	13891	4559	9362
MEAN	135	100	45.6	60.5	79.9	116	257	956	1095	448	147	312
MAX	304	137	68	70	114	158	478	1640	1450	1060	348	733
MIN	.00	48	28	50	53	93	106	516	826	183	56	63
AC-FT	8310	5980	2800	3720	4440	7140	15300	58770	65150	27550	9040	18570

CAL YR 1981 TOTAL 16360.25 MEAN 44.8 MAX 304 MIN .00 AC-FT 32450
WTR YR 1982 TOTAL 114327.80 MEAN 313 MAX 1640 MIN .00 AC-FT 226800

08250000 CULEBRA CREEK AT SAN LUIS, CO

LOCATION.--Lat 37°11'02", long 105°25'31", Costilla County, Hydrologic Unit 13010002, in Beaubien Grant, on left bank at bridge 1.0 mi (1.6 km) south of San Luis and 1.0 mi (1.6 km) upstream from Rito Seco.

DRAINAGE AREA.--220 mi² (570 km²).

PERIOD OF RECORD.--April 1927 to September 1982 (discontinued). Monthly discharge only for some periods, published in WSP 1312. Records for January 1910 to December 1911, published as Culebra River at San Luis in WSP 288 and 308, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1312: 1940. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 8,000 ft (2,438 m), from topographic map. Prior to May 23, 1931, water-stage recorder at present site at different datum.

REMARKS.--Records good. Diversions above station for irrigation. Flow regulated by Sanchez Reservoir, capacity, 103,000 acre-ft (130 hm³), on Ventero Creek. 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.--55 years, 45.8 ft³/s (1.297 m³/s), 33,180 acre-ft/yr (40.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 654 ft³/s (18.5 m³/s) July 1, 1947, gage height, 5.09 ft (1.551 m), from rating curve extended above 300 ft³/s (8.5 m³/s); minimum daily, 4.6 ft³/s (0.13 m³/s) Oct. 31, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 208 ft³/s (5.89 m³/s) at 1800 July 29, gage height, 2.45 ft (0.747 m); minimum daily, 11 ft³/s (0.31 m³/s) Feb. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	25	14	16	14	24	16	17	92	65	61	25
2	40	27	15	14	12	25	16	22	104	59	51	21
3	29	27	16	14	13	24	16	21	102	55	62	31
4	19	26	17	13	11	21	16	27	95	46	150	24
5	18	27	18	14	12	19	18	42	87	42	147	30
6	26	28	18	14	12	19	18	48	83	38	103	30
7	35	30	18	14	12	19	17	35	83	61	97	30
8	40	28	17	12	13	19	16	24	85	84	71	29
9	41	21	16	13	13	21	17	16	84	90	61	25
10	38	19	17	13	13	21	17	16	92	85	47	24
11	32	18	18	13	14	21	16	19	115	81	48	26
12	35	18	17	14	12	27	23	14	118	76	70	29
13	33	18	16	14	12	22	19	16	115	75	98	35
14	40	17	16	13	13	23	15	18	124	75	64	35
15	35	17	14	14	14	21	25	21	121	74	38	27
16	30	18	16	14	16	20	25	18	118	74	68	27
17	31	17	13	14	17	19	28	16	118	74	65	33
18	29	16	12	14	16	16	22	30	130	90	83	32
19	28	16	14	16	16	17	22	43	120	91	28	33
20	27	16	16	16	18	16	22	42	66	91	24	46
21	27	16	16	15	19	17	22	48	59	88	84	35
22	27	16	16	14	21	17	19	72	56	86	40	30
23	28	16	15	14	22	18	24	83	59	87	22	28
24	28	16	15	15	21	16	16	70	40	86	22	27
25	30	16	14	16	19	16	16	41	47	86	24	27
26	30	16	14	17	19	16	15	35	34	86	19	26
27	30	15	14	17	19	16	16	51	48	84	28	25
28	27	16	14	16	22	16	12	48	64	93	47	25
29	25	18	14	15	---	17	14	48	65	156	32	25
30	24	16	15	14	---	16	16	55	66	96	30	24
31	26	---	16	13	---	16	---	82	---	81	28	---
TOTAL	943	590	481	446	435	597	554	1138	2590	2455	1812	864
MEAN	30.4	19.7	15.5	14.4	15.5	19.3	18.5	36.7	86.3	79.2	58.5	28.8
MAX	41	30	18	17	22	27	28	83	130	156	150	46
MIN	18	15	12	12	11	16	12	14	34	38	19	21
AC-FT	1870	1170	954	885	863	1180	1100	2260	5140	4870	3590	1710

CAL YR 1981 TOTAL 14821 MEAN 40.6 MAX 148 MIN 12 AC-FT 29400
WTR YR 1982 TOTAL 12905 MEAN 35.4 MAX 156 MIN 11 AC-FT 25600

08251500 RIO GRANDE NEAR LOBATOS, CO

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

DRAINAGE AREA.--7,700 mi^2 (19,900 km^2), approximately, includes 2,940 mi^2 (7,610 km^2) 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 (2,263.942 m), National Geodetic Vertical Datum of 1929. Prior to 1910, nonrecording gages at same site and datum.

REMARKS.--Records good except those for winter period, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals and 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 13,200 ft^3/s (374 m^3/s) June 8, 1905, gage height, 9.1 ft (2.77 m), from rating curve extended above 8,000 ft^3/s (230 m^3/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, 1,950 ft^3/s (55.2 m^3/s) at 1330 June 1, gage height, 3.72 ft (1.134 m); maximum gage height, 3.83 ft (1.167 m) at 1700 June 30; minimum daily discharge, 100 ft^3/s (2.83 m^3/s) Dec. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	294	140	130	280	440	385	657	1860	1690	556	298
2	118	286	180	130	280	445	390	907	1570	1680	445	250
3	118	286	200	125	275	450	370	1240	1350	1610	405	355
4	110	375	230	130	275	466	380	1340	1480	1450	435	430
5	108	466	245	145	275	440	375	1460	1620	1330	520	430
6	142	514	250	180	265	405	380	1500	1670	1290	526	466
7	128	514	260	190	250	360	365	1420	1520	1160	478	496
8	105	520	255	195	245	330	330	1270	1350	1190	450	520
9	108	538	250	200	240	335	290	1200	1340	1110	460	472
10	105	544	260	215	245	360	246	1300	1420	872	478	466
11	128	538	245	225	250	370	234	1290	1460	970	508	490
12	188	514	215	230	260	395	254	1320	1460	979	538	544
13	198	496	205	235	260	410	306	1320	1480	792	520	472
14	254	496	195	235	260	425	379	1130	1490	706	478	608
15	350	490	190	230	270	425	385	961	1500	720	466	792
16	380	472	185	225	270	415	415	864	1490	643	460	840
17	395	466	155	230	275	405	455	872	1530	508	508	848
18	390	455	110	235	280	400	445	907	1550	466	496	1060
19	375	445	125	235	280	405	472	925	1620	514	410	1110
20	350	425	160	245	290	380	490	925	1730	478	410	1090
21	325	400	200	250	305	355	415	934	1730	395	395	1210
22	325	375	130	250	315	335	345	832	1580	320	375	1400
23	315	375	100	250	330	320	306	943	1380	282	435	1530
24	310	405	130	250	350	320	315	1030	1320	234	580	1320
25	320	410	140	255	360	325	315	988	1340	246	636	1160
26	315	395	140	255	375	325	310	1050	1350	254	792	1070
27	310	370	130	260	405	345	360	1160	1390	242	1030	1020
28	298	320	125	270	425	360	415	1350	1470	212	934	934
29	262	290	120	275	---	380	460	1460	1560	266	556	856
30	250	260	120	280	---	400	532	1500	1680	395	526	840
31	282	---	130	280	---	405	---	1750	---	544	430	---
TOTAL	7477	12734	5520	6840	8190	11931	11119	35805	45290	23548	16236	23377
MEAN	241	424	178	221	293	385	371	1155	1510	760	524	779
MAX	395	544	260	280	425	466	532	1750	1860	1690	1030	1530
MIN	105	260	100	125	240	320	234	657	1320	212	375	250
AC-FT	14830	25260	10950	13570	16240	23670	22050	71020	89830	46710	32200	46370

CAL YR 1981 TOTAL 66297 MEAN 182 MAX 544 MIN 36 AC-FT 131500
WTR YR 1982 TOTAL 208067 MEAN 570 MAX 1860 MIN 100 AC-FT 412700

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: Data available, October 1975 to September 1981.
WATER TEMPERATURES: Data available, October 1975 to September 1981.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	NITROGEN DISSOLVED (MG/L AS N)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)
OCT												
06...	1210	229	229	215	8.9	13.0	2.7	10.5	1.0	--	K20	84
NOV												
03...	1345	282	158	--	8.5	8.1	--	10.1	--	K34	K44	--
JAN												
12...	1430	232	--	243	7.1	.0	2.5	11.5	--	188	K4	81
MAR												
22...	1445	335	--	196	8.0	10.0	7.0	9.8	--	K2	K40	74
MAY												
24...	1615	970	--	127	7.8	6.0	18	9.5	--	K76	K80	54
JUN												
29...	1345	2140	190	197	7.8	20.0	7.4	6.8	--	60	66	66
SEP												
09...	1415	808	161	153	8.4	19.0	15	6.9	--	30	100	58

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM AD-SORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
OCT												
06...	26	4.6	19	.9	4.2	87	27	4.9	.4	21	167	161
NOV												
03...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
12...	25	4.5	14	.7	3.6	85	27	5.2	.3	36	187	167
MAR												
22...	23	4.1	14	.7	3.1	70	28	4.1	.2	27	150	146
MAY												
24...	17	2.7	7.2	.4	2.3	47	20	2.2	.2	21	108	101
JUN												
29...	20	3.9	12	.7	3.2	56	41	3.6	.2	19	173	137
SEP												
09...	18	3.2	12	.7	2.5	58	20	3.5	.2	23	115	118

K BASED ON NON-IDEAL COLONY COUNT.

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	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, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
OCT												
06...	.23	103	<.10	.22	.150	.150	.54	.65	.69	.80	.150	.220
NOV												
03...	--	--	--	<.09	--	.080	--	--	.51	--	.080	.060
JAN												
12...	.25	117	--	.35	--	.210	--	--	.69	--	.130	.130
MAR												
22...	.20	136	--	.18	--	.070	--	--	.57	--	.110	.090
MAY												
24...	.15	283	--	.13	--	.130	--	--	1.10	--	.170	.090
JUN												
29...	.24	1000	--	<.10	--	.100	--	--	.90	--	.120	.100
SEP												
09...	.16	251	--	.25	--	.120	--	--	1.90	--	.080	.060

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	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)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)
OCT										
06...	3	3	100	22	1	<1	0	0	0	<3
JAN										
12...	2	2	<100	32	2	<1	<10	<10	1	<3
MAR										
22...	2	1	100	24	1	<1	10	<10	<1	<1
JUN										
29...	2	1	100	22	<1	<1	<10	<10	1	<1
SEP										
09...	2	1	<100	25	<1	3	< 10	<10	1	<1

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	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 TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)
OCT										
06...	5	4	410	61	5	0	70	18	.3	.1
JAN										
12...	7	7	270	71	5	4	60	40	.4	.1
MAR										
22...	4	9	1100	85	5	2	140	47	.3	.4
JUN										
29...	4	4	1000	150	3	2	100	4	.5	.3
SEP										
09...	8	11	940	170	2	4	80	20	1.0	.3

DATE	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT									
06...	2	0	0	0	0	0	30	94	<.01
JAN									
12...	2	1	<1	<1	<1	<1	140	55	--
MAR									
22...	3	2	<1	<1	<1	<1	40	6	--
JUN									
29...	6	3	<1	<1	<1	<1	20	46	--
SEP									
09...	9	7	<1	<1	< 1	<1	40	16	--

08251500 RIO GRANDE NEAR LOBATOS, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS-SOLVED (UG/L AS U)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L)
JAN									
12...	<5.1	<.4	4.0	.6	3.8	.6	.06	.9	.70
JUN									
29...	<2.9	<1.2	3.0	1.0	2.9	1.0	.05	--	.11

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT					
06...	1210	229	14	8.7	--
NOV					
03...	1345	282	8	6.1	--
JAN					
12...	1430	232	11	6.9	46
MAR					
22...	1445	335	34	31	85
MAY					
24...	1615	970	58	152	72
JUN					
29...	1345	2140	24	139	--
SEP					
08...	1415	808	35	76	--

08252000 RIO GRANDE AT COLORADO-NEW MEXICO STATE LINE

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

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

REVISED RECORDS.--WSP 1732: 1954(M). WDR CO 78-1: 1976.

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

REMARKS.--Records good except those for winter period, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Several observations of water temperature were 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, 5,000 ft^3/s (142 m^3/s) June 10, 1979, gage height, 7.77 ft (2.368 m); no flow at times in 1956.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,920 ft^3/s (54.4 m^3/s) at 1400 June 1, gage height, 5.21 ft (1.588 m); minimum daily, 101 ft^3/s (2.86 m^3/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	320	180	135	285	475	404	670	1890	1630	559	333
2	110	314	170	135	285	490	391	870	1630	1610	462	268
3	110	314	200	130	280	500	394	1200	1370	1540	421	336
4	108	375	230	130	280	512	394	1300	1440	1400	431	425
5	101	476	250	145	280	484	394	1440	1590	1260	501	428
6	128	527	260	175	275	431	388	1490	1610	1230	523	459
7	138	539	265	190	260	394	378	1450	1480	1130	494	498
8	110	539	265	195	250	365	359	1300	1330	1110	462	519
9	106	555	260	200	245	372	317	1200	1270	1080	459	490
10	110	559	265	215	250	388	271	1280	1350	865	484	480
11	108	563	260	225	255	398	249	1310	1420	895	508	490
12	180	539	230	230	265	414	246	1330	1410	938	535	547
13	192	512	220	235	265	445	305	1330	1400	780	527	494
14	234	508	210	240	265	470	398	1160	1400	694	501	583
15	333	504	200	235	270	462	394	980	1430	694	480	761
16	372	498	200	230	275	456	431	875	1420	640	484	825
17	388	490	172	230	280	442	473	875	1420	527	515	820
18	398	484	135	235	285	428	476	910	1450	476	523	998
19	378	476	130	240	290	425	484	920	1530	504	442	1090
20	368	459	150	245	290	408	531	910	1720	508	428	1050
21	343	438	200	250	310	385	445	920	1730	428	425	1160
22	340	408	155	255	320	368	391	835	1580	365	404	1360
23	336	398	120	255	335	352	333	900	1380	320	418	1480
24	330	421	120	255	360	349	340	1010	1290	298	539	1330
25	340	435	145	255	375	352	356	938	1310	277	591	1140
26	340	431	150	255	390	352	340	980	1330	289	689	1030
27	336	385	145	260	425	368	385	1110	1360	277	880	980
28	330	352	135	270	450	385	440	1300	1410	246	885	900
29	292	317	130	275	---	388	480	1470	1500	283	555	840
30	271	280	130	280	---	401	550	1460	1620	375	501	820
31	302	---	135	285	---	431	---	1750	---	498	448	---
TOTAL	7642	13416	5817	6890	8395	12890	11737	35473	44070	23167	16974	22934
MEAN	247	447	188	222	300	416	391	1144	1469	747	519	764
MAX	398	563	265	285	450	512	550	1750	1890	1630	885	1480
MIN	101	280	120	130	245	349	246	670	1270	246	404	268
AC-FT	15160	26610	11540	13670	16650	25570	23280	70360	87410	45950	31880	45490

CAL YR 1981 TOTAL 66829 MEAN 183 MAX 563 MIN 42 AC-FT 132600
WTR YR 1982 TOTAL 208505 MEAN 571 MAX 1890 MIN 101 AC-FT 413600

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN IN COLORADO

There are 24 tunnels or ditches, all of which are equipped with water-stage recorders and Parshall flumes or sharp-crested weirs. Records furnished by Colorado Division of Water Resources. The locations of 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 NW¼ 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.

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.

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.

09022500 Moffat water tunnel diverts water from tributaries of Williams Fork (via August P. Gumlick and Vasquez tunnels, beginning in 1959) between headgates (in secs.20 and 29, T.3 S., R.76 W.) and west portal of August P. Gumlick tunnel (in sec.28, T.3 S., R.76 W.) and from the main stem and tributaries of Fraser River between headgates (in sec.8, T.2 S., R.76 W., and sec.24, T.1 S., R.75 W.) and west portal of Moffat tunnel (in sec.11, T.2 S., R.75 W.), in Colorado River basin, to South Boulder Creek, in sec.2, T.2 S., R.74 W., in Platte River basin. (See sta. 09036000 for diversions by August P. Gumlick tunnel.)

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.

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.

09061500 Columbine ditch diverts water from tributaries of Eagle River in sec.5, T.8 S., R.79 W., in Colorado River basin to Chalk Creek (tributary to East Fork Arkansas River) in NW¼ sec.9, T.8 S., R.79 W., in Arkansas River basin.

09062000 Ewing ditch diverts water from Piney Creek in sec.11, T.8 S., R.80 W., in Eagle River basin, to Thayer Gulch (tributary to Tennessee Creek) in sec.11, T.8 S., R.80 W., in Arkansas River basin.

09062500 Wurtz ditch diverts water from tributaries of Eagle River between headgate in sec.32, T.7 S., R.80 W., and Tennessee Pass, in Colorado River basin, to West Tennessee Creek (tributary to Tennessee Creek) in sec.17, T.8 S., R.80 W., in Arkansas River basin.

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.

09073000 Twin Lakes tunnel diverts water from tributaries of Roaring Fork River between headgates (in sec.21, T.11 S., R.83 W., and sec.2, T.11 S., R.83 W.), and west portal of Twin Lakes tunnel (in sec.24, T.11 S., R.83 W), in Colorado River basin, to North Fork Lake Creek in sec.22, T.11 S., R.82 W., in Arkansas River basin.

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN IN COLORADO--Continued

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.

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.

09115000 Larkspur ditch diverts water from tributaries of Tomichi Creek between headgates (in sec.11, T.48 N., R.6 E., and sec.1, T.47 N., R.6 E.), and Marshall Pass, in Gunnison River basin, to Poncha Creek (tributary to South Arkansas River) in SE¼ sec.24, T.48 N., R.6 E., in Arkansas River basin.

09118200 Tarbell ditch diverts water from Lake Fork Cochetopa Creek (tributary to Cochetopa Creek), in NW¼ sec.18, T.43 N., R.2 E., in Gunnison River basin, to Lake Fork Saguache Creek (tributary to Middle Fork Saguache Creek) in NE¼ sec.18, T.43 N., R.2 E., in Rio Grande Basin. All records available prior to October 1960 published in WSP 1733.
REVISIONS (WATER YEARS).--WSP 1733: 1949-51.

09121000 Tabor ditch diverts water from tributaries of Cebolla Creek in secs.29 and 36, T.43 N., R.3 W., in Gunnison River basin, to Big Spring Creek (tributary to North Clear Creek) in sec.35, T.43 N., R.3 W., in Rio Grande basin.

09341000 Treasure Pass diversion ditch diverts water from tributaries of Wolf Creek between headgates (in sec.31, T.38 N., R.2 E., and sec.6, T.37 N., R.3 E.), and Wolf Creek Pass, in San Juan River basin, to tributary of South Fork Rio Grande in sec.31, T.38 N., R.2 E., in Rio Grande basin.

09347000 Don La Font ditches 1 and 2 divert water from tributaries of Piedra River between headgates in NW¼ sec.4, T.38 N., R.1 W., and SW¼ sec.33, T.39 N., R.1 W.), and Piedra Pass, in San Juan River basin, to South River in sec.4, T.38 N., R.1 W., in Rio Grande basin.

09351000 Pine River-Weminuche Pass ditch diverts water from North Fork Los Pinos River (tributary to Los Pinos River) in sec.4, T.39 N., R.4 W., in San Juan River basin, to Weminuche Creek in sec.33, T.40 N., R.4 W., in Rio Grande basin.

09351500 Weminuche Pass ditch diverts water from left bank of Rincon la Vaca Creek (tributary to Los Pinos River) in sec.5, T.39 N., R.4 W., in San Juan River basin, to Weminuche Creek in sec.33, T.40 N., R.4 W., in Rio Grande basin.

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN IN COLORADO

DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

Diversion		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Water year
TO PLATTE RIVER BASIN														
09010000	Grand River ditch...	0	0	0	0	0	0	0	716	6,970	9,520	3,600	1,050	21,860
09013000	Alva B. Adams tunnel	24,440	21,980	29,860	29,920	26,580	29,890	19,190	28,730	3,580	8,830	14,160	11,370	248,500
09021500	Berthoud Pass ditch.	0	0	0	0	0	0	0	0	0	227	168	31	426
09022500	Moffat water tunnel.	1,430	1,180	891	664	500	547	699	5,790	37,660	22,520	9,880	6,080	87,840
09050590	Harold D. Roberts tunnel............	12,650	8,450	6,460	6,430	5,880	3,440	0	0	2,070	18,770	3,860	0	68,010
TO ARKANSAS RIVER BASIN														
09042000	Hoosier Pass tunnel.	0	0	0	0	0	0	0	586	4,160	3,400	1,240	1,200	10,590
09061500	Columbine ditch.....	0	0	0	0	0	0	0	62	1,080	531	141	93	1,910
09062000	Ewing ditch.........	30	0	0	0	0	0	0	116	581	263	92	68	1,120
09062500	Wurtz ditch.........	0	0	0	0	0	0	0	313	2,140	893	315	117	3,780
09063700	Homestake tunnel....	0	40	3,890	4,700	4,210	4,630	2,250	0	0	0	0	0	19,720
09073000	Twin Lakes tunnel...	760	370	182	141	113	159	183	5,170	26,340	15,710	3,550	1,340	54,010
09077160	Charles H. Boustead Tunnel............	0	0	0	0	0	0	0	7,080	41,220	23,830	3,360	0	75,490
09077500	Busk-Ivanhoe tunnel.	163	0	0	0	0	0	0	313	3,830	1,830	413	292	6,840
09115000	Larkspur ditch......	0	0	0	0	0	0	0	0	58	15	32	15	120
TO RIO GRANDE BASIN														
09118200	Tarbell ditch.......	0	0	0	0	0	0	0	0	132	251	294	58	735
09121000	Tabor ditch.........	0	0	0	0	0	0	105	142	560	268	241	288	1,600
09341000	Treasure Pass diversion ditch........	0	0	0	0	0	0	0	4.7	242	143	0.08	0	390
09347000	Don La Font ditches No. 1 and 2.......	0	0	0	0	0	0	0	0	112	98	0	0	210
09351000	Pine River-Weminuche Pass ditch........	0	0	0	0	0	0	0	0	444	185	0	0	629
09351500	Weminuche Pass ditch	0	0	0	0	0	0	0	0	814	774	0	0	1,590

NOTE.--Due to rounding procedures, water year totals may not agree.

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 1982

Station number	Station name	Location	Total drainage area (mi²)	Non-contributing	Period of record	Annual maximum		
						Date	Gage height (feet)	Discharge (ft³/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 (21.3 m) upstream from county bridge over Deer Creek, 7.5 mi (12.1 km) southwest of Littleton.	26.2	-	1942-46, 1978-82	7-29-82	5.32	75
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 (2.3 km) upstream from confluence with Evergreen Lake, 1.6 mi (2.6 km) northwest of Evergreen.	96.6	-	1978-82	8-16-82	6.61	205
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 (0.2 km) upstream from confluence with Bear Creek.	22.2	-	1978-82	8-16-82	6.95	115
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 (3.1 km) north of Morrison.	7.58	-	1978-82	1982	(a)	2.5
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 (6.1 m) upstream from box type culvert beneath U.S. Highway 285.	5.80	-	1978-81	1982	(a)	1.5
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 (3.5 km) southwest of Morrison.	48.0	-	1942-53 1969 1978-82	8-17-82	10.45	165
06711600	Sanderson Gulch tributary at Lakewood, CO	Lat 39°41'19", long 105°04'54", in NE¼SW¼ sec.23, T.4 S., R.68 W., Jefferson County, 300 ft (91 m) upstream from S. Wadsworth Blvd., 300 ft (91 m) south of W. Florida Ave. in Lakewood.	.38	-	1969-82	7-29-82	[b]14.00	270
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 (15 m) downstream from Troy St. in Denver.	.29	-	1971-82	7-07-82	12.60	240

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING YEAR 1982--Continued

Station number	Station name	Location	Total drainage area (mi^2)	Non-contributing	Period of record	Annual maximum		
						Date	Gage height (feet)	Discharge (ft^3/s)
		PLATTE RIVER BASIN--Continued						
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 (2.2 km) northeast from Raymond.	28.0	-	1925-30 1978-82	1982	6.97	320
06727500	Fourmile Creek at Orodell, CO	Lat 40°01'06", long 105°19'33", in NW¼SE¼ sec.27, T.1 N., R.71 W., Boulder County, 2 mi (3.2 km) west of courthouse in Boulder.	24.1	-	1947-53 1978-82	1981 6-18-82	3.60 3.55	100c 85
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 (30.5 m) upstream from State bridge 34 and 0.7 mi (1.1 km) upstream from mouth. Destroyed by flood, 7-82.	39.5	-	1947-53 1978-82	7-15-82	11.10	6,550d
06736650	Cedar Creek at Cedar Cove, CO	Lat 40°25'08", long 105°15'53", in NW¼NW¼ sec.8, T.5 N., R.70 W., Larimer County, 0.2 mi (0.32 km) north of Cedar Cove and 4.1 mi (6.6 km) southeast of Drake.	18.9	-	1978-82	9-14-82	6.94	340
		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 (6.4 km) west of Nathrop.	97.0	-	1910, 1949-56, 1978-82	1982	2.70	630
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 (9.5 km) downstream from North St. Charles River.	166	-	1923-33, 1978-82	1982	5.02	2,050

---

a Peak stage did not reach bottom of gage.
b From floodmark.
c Revised.
d Dam failure, natural peak not determined.

Beginning in water year 1981, several observations of discharge, water temperature, and specific conductance were obtained as part of a special study to determine the amount of inflow from McIntire Springs, into the Conejos River.

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING THE 1982 WATER YEAR

Station no.	Stream	Tributary to	Location	Date	Discharge (ft³/s)	Temperature (°C)	Specific conductance
			RIO GRANDE BASIN				
--------	McIntire Springs at mouth near Lasauses, CO.	Conejos River	Lat 37°17'03", long 105°49'05"	10-14-81	10.5	17	182
				10-28-81	11.0	14	183
				12-01-81	11.7	14.5	178
				01-18-82	12.4	13.5	178
				02-17-82	12.8	16	177
				04-10-82	12.0	22	---

ANALYSIS OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

Samples are collected at sites other than gaging stations and partial-record stations to give coverage in a river basin. Such sites are referred to as miscellaneous sites.

PLATTE RIVER BASIN

06612500 - ROARING FORK NEAR WALDEN, CO.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY										
26...	0945	98	115	122	8.0	5.5	9.5	54	16	3.3
JUL										
13...	1100	187	140	145	7.4	13.0	7.8	64	19	4.1

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY									
26...	4.6	.3	.8	46	12	.9	.7	8.2	74
JUL									
13...	4.2	.2	.5	66	8.0	.6	.5	7.3	84

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAY									
26...	.10	19.6	<.10	<.010	10	450	150	60	41
JUL									
13...	.11	42.4	<.10	<.010	10	820	200	90	43

06613500 - NORTH FORK NORTH PLATTE RIVER AT HIGHO, CO.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY										
26...	0845	80	95	101	7.9	5.5	9.5	46	12	3.9
JUL										
13...	0845	225	60	64	7.0	11.0	8.1	32	8.5	2.5

06613500 NORTH FORK NORTH PLATTE RIVER AT HIGHO, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY									
26...	3.8	.3	1.0	46	7.0	.9	.1	9.5	66
JUL									
13...	2.6	.2	.7	32	<5.0	.5	<.1	5.8	--

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAY									
26...	.09	14.3	<.10	.030	10	540	240	40	19
JUL									
13...	--	--	<.10	<.010	<10	500	150	30	15

06616500 - MICHIGAN R AT HAWORTH SCHOOL NEAR LINDLAND, CO.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY										
26...	1430	103	85	87	7.9	12.0	9.2	38	11	2.6
JUL										
13...	1615	134	80	79	7.2	16.5	7.6	33	9.6	2.3

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY									
26...	3.4	.3	1.1	35	7.0	.9	.1	11	58
JUL									
13...	1.8	.1	.7	33	7.0	.4	.1	8.0	50

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAY									
26...	.08	16.1	<.10	.010	<10	680	250	40	25
JUL									
13...	.07	18.1	<.10	<.010	<10	520	77	50	21

06617100 - MICHIGAN RIVER AT WALDEN, CO.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY 26...	1620	69	220	229	8.0	15.0	8.0	97	27	7.1
JUL 13...	1715	128	210	213	7.5	19.0	7.6	92	26	6.6

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY 26...	11	.5	1.9	91	22	2.0	.3	13	139
JUL 13...	9.3	.4	1.0	94	18	1.1	.2	12	131

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAY 26...	.19	25.9	<.10	.020	10	750	340	90	68
JUL 13...	.18	45.3	<.10	.010	10	1000	360	110	65

06617500 - ILLINOIS CREEK NEAR RAND, CO.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY 26...	1245	109	70	71	7.7	6.5	9.2	30	8.0	2.5
JUL 13...	1340	78	70	73	7.2	15.5	7.1	30	8.7	2.1

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY 26...	3.5	.3	.9	29	7.0	1.1	.1	8.5	49
JUL 13...	2.2	.2	.7						

06617500 ILLINOIS CREEK NEAR RAND, CO--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAY									
26...	.07	14.4	<.10	.020	<10	1600	220	50	24
JUL									
13...	--	--	<.10	<.010	<10	7800	290	30	20

06618500 - ILLINOIS CREEK AT WALDEN, CO.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY										
26...	1530	83	310	328	8.2	12.5	9.1	120	31	9.7
JUL										
13...	0730	48	350	348	8.5	15.5	6.1	140	37	12

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY									
26...	26	1.1	3.1	134	30	4.8	.3	15	201
JUL									
13...	22	.9	1.8	171	13	2.5	.3	8.0	200

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAY									
26...	.27	45.0	<.10	.020	20	1100	240	120	84
JUL									
13...	.27	25.9	<.10	.010	30	460	200	50	50

384840104481200 - CANAL 4 AT HEADGATE

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
APR								
28...	1145	11	800	760	6.8	15.5	4.5	48
MAY								
10...	0940	12	815	793	7.1	15.0	4.9	43
27...	1200	10	678	620	6.9	16.0	5.8	32
JUN								
16...	1515	40	721	722	7.0	18.4	5.2	29
JUL								
15...	1115	12	778	796	6.8	20.0	5.4	34
AUG								
11...	1430	35	765	778	6.8	20.5	5.3	32
SEP								
29...	0645	12	691	697	7.1	12.5	7.8	32

DATE	SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	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)	NITRO-GEN, TOTAL (MG/L AS N)
APR								
28...	465	.33	.050	.38	15.0	6.0	21.0	21
MAY								
10...	470	.16	.050	.21	17.0	5.0	22.0	22
27...	397	.26	.040	.30	10.0	10	20.0	30
JUN								
16...	445	5.3	.080	5.4	10.0	.00	9.10	15
JUL								
15...	476	--	--	5.4	12.0	6.0	18.0	23
AUG								
11...	484	.45	.220	.67	9.30	.00	7.20	7.9
SEP								
29...	428	.62	.280	.90	6.40	1.9	8.30	9.2

403508106270601 - CHEDSEY CREEK ABV MOUTH NR COALMONT, CO

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
MAY										
26...	1115	87	65	66	7.7	6.5	9.5	31	9.6	1.8
JUL										
13...	1230	138	55	53	6.9	12.5	8.1	22	6.2	1.5

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
MAY									
26...	2.5	.2	.6	26	7.0	.7	.3	6.2	45
JUL									
13...	2.1	.2	.4	24	<5.0	.4	.2	4.6	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAY									
26...	.06	10.6	<.10	.020	<10	440	180	40	39
JUL									
13...	--	--	<.10	<.010	<10	520	79	50	31

404108106030701 - CANADIAN R. ABV MUDDY C. 1 MILE ABV STA 06619400

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JUL										
12...	1545	40	115	118	7.5	18.0	7.3	51	15	3.3

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
JUL									
12...	3.2	.2	.9	48	13	.6	<.1	7.3	72

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL									
12...	.10	7.8	<.10	.020	10	640	170	30	22

404109106030501 - MUDDY CREEK AT MOUTH 1 MILE ABV STATION 06619400

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JUL										
12...	1600	3.0	260	274	7.5	17.5	6.4	140	38	10

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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
JUL									
12...	4.6	.2	1.0	115	28	.7	.2	10	162

ANALYSIS OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL									
12...	.22	1.3	<.10	.010	30	680	110	100	72

404151106362501 - LONE PINE CREEK AT LONE PINE TRAILHEAD

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)
JUL								
13...	1015	75	32	34	7.5	5.0	9.0	14

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
JUL									
13...	4.0	.9	1.0	.1	1.1	16	<5.0	.3	<.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL								
13...	4.6	<.10	<.010	<10	80	17	10	2

06614800 - MICHIGAN RIVER NEAR CAMERON PASS, CO. (LAT 40 29 46 LONG 105 51 52)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			JUN , 1982		
07...	9.0	35	24...	1.0	25
APR , 1982			JUL		
07...	1.0	58	14...	5.0	35
MAY			AUG		
11...	1.0	60	05...	13.5	--
27...	1.0	50	SEP		
JUN			01...	12.0	34
15...	.5	40			

06616000 - NORTH FORK MICHIGAN RIVER NEAR GOULD, CO. (LAT 40 32 58 LONG 106 01 14)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			JUN , 1982		
06...	8.0	125	15...	10.5	68
NOV			24...	11.0	60
19...	1.5	120	JUL		
DEC			13...	14.5	90
14...	.5	--	AUG		
JAN , 1982			04...	18.5	100
20...	.5	150	SEP		
MAY			01...	18.0	120
04...	2.0	100			
27...	5.0	85			

06695980 - TARRYALL CREEK AT UPPER STATION, NEAR COMO, CO. (LAT 39 20 22 LONG 105 54 37)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAY , 1982		
08...	2.0	85	28...	2.0	230
NOV			JUN		
17...	.0	<50	10...	4.0	210
JAN , 1982			29...	9.0	65
13...	.0	85	JUL		
FEB			15...	15.0	80
25...	.0	150	28...	5.0	100
MAR			AUG		
29...	1.0	185	25...	13.0	100
MAY					
03...	3.0	170			

06697450 - MICHIGAN CREEK ABOVE JEFFERSON, CO. (LAT 39 21 32 LONG 105 50 27)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			JUN , 1982		
08...	1.0	185	10...	4.0	250
NOV			29...	10.0	100
17...	.0	<50	JUL		
JAN , 1982			15...	11.0	85
13...	.0	95	28...	15.0	65
FEB			AUG		
25...	.0	185	25...	17.0	<50
MAY					
03...	4.0	100			

06698000 - JEFFERSON CREEK NEAR JEFFERSON, CO. (LAT 39 23 24 LONG 105 48 38)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAY , 1982		
08...	1.0	<150	03...	4.0	85
NOV			JUN		
17...	.0	<50	10...	4.0	280
JAN , 1982			29...	6.0	<50
13...	.0	<50	JUL		
FEB			15...	15.0	70
25...	.0	80	28...	158	80
MAR			AUG		
29...	.0	<50	25...	13.0	<50

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
06709500 - PLUM CREEK NEAR LOUVIERS, CO. (LAT 39 29 04 LONG 105 00 07)					
OCT , 1981			MAY , 1982		
01...	9.0	120	18...	17.5	346
20...	5.0	280	26...	5.0	220
NOV			JUN		
05...	12.0	300	04...	11.0	288
DEC			17...	12.0	300
03...	4.0	160	23...	15.0	307
17...	1.0	160	24...	10.0	285
29...	.0	120	JUL		
JAN , 1982			06...	8.0	240
21...	1.5	220	16...	16.0	349
26...	1.0	340	23...	21.0	60
FEB			27...	24.5	360
04...	.0	100	27...	24.5	360
18...	.0	367	30...	25.0	320
19...	5.0	240	AUG		
MAR			11...	27.0	318
11...	6.0	370	20...	26.0	240
19...	4.0	180	24...	18.0	200
APR			25...	24.0	399
01...	5.0	240	SEP		
06...	6.0	375	14...	12.0	279
14...	8.0	375	16...	7.5	200
21...	4.5	351	27...	20.0	314
MAY			29...	16.0	280
03...	22.5	394			
12...	4.0	185			
06711590 - SOUTH PLATTE RIVER AT FLORIDA AVE AT DENVER, CO. (LAT 39 41 23 LONG 104 59 57)					
OCT , 1981			DEC , 1981		
01...	9.0	290	02...	7.5	700
NOV					
05...	12.0	725			
06...	13.0	675			
06712000 - CHERRY CREEK NEAR FRANKTOWN, CO. (LAT 39 21 21 LONG 104 45 46)					
OCT , 1981			APR , 1982		
01...	9.0	110	14...	9.0	285
20...	17.0	240	MAY		
NOV			12...	3.0	220
05...	10.0	210	26...	5.0	240
DEC			JUN		
03...	3.0	130	17...	3.0	175
17...	1.0	110	24...	10.0	280
29...	.0	80	JUL		
JAN , 1982			06...	17.0	120
21...	1.0	185	23...	22.0	85
FEB			AUG		
04...	.0	160	20...	28.0	190
19...	5.0	240	SEP		
MAR			16...	8.0	185
18...	5.0	225	29...	10.0	120
APR					
01...	3.0	170			
06713500 - CHERRY CREEK AT DENVER, CO. (LAT 39 44 58 LONG 105 00 08)					
OCT , 1981			APR , 1982		
07...	14.0	1050	21...	14.0	1010
NOV			MAY		
10...	10.5	1050	10...	17.0	1100
DEC			19...	22.0	--
02...	7.5	1200	JUN		
JAN , 1982			15...	19.0	1110
18...	7.5	1090	30...	24.0	1080
FEB			AUG		
17...	9.0	1000	30...	22.0	950
MAR					
17...	12.0	650			

06714215 - SOUTH PLATTE R AT 64TH ST. AT COMMERCE CITY, CO. (LAT 39 48 44 LONG 104 57 28)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
FEB , 1982			JUN , 1982		
16...	12.0	1900	30...	20.5	1190
MAR			JUL		
17...	17.0	2050	29...	18.0	350
APR			AUG		
23...	18.0	800	31...	20.0	240
MAY					
05...	12.0	600			
10...	16.5	910			

06725450 - ST. VRAIN CREEK BELOW LONGMONT, CO. (LAT 40 09 29 LONG 105 00 53)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			APR , 1982		
06...	17.0	1375	12...	15.0	1410
NOV			MAY		
16...	13.0	1650	20...	16.5	1340
DEC			JUN		
14...	5.5	1530	08...	24.0	912
JAN , 1982			JUL		
19...	3.5	1500	14...	24.0	1310
FEB			AUG		
22...	8.0	1600	18...	20.5	1400
MAR			SEP		
22...	15.0	1330	17...	14.5	1170

06746095 - JOE WRIGHT CREEK ABOVE JOE WRIGHT RESERVOIR, CO. (LAT 40 32 24 LONG 105 52 56)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAY , 1982		
07...	9.5	65	28...	.0	60
NOV			JUN		
18...	.5	60	16...	2.5	35
JAN , 1982			24...	3.0	30
19...	.0	70	JUL		
FEB			14...	8.5	31
24...	.5	--	AUG		
APR			05...	11.0	45
06...	.0	80	SEP		
MAY			01...	11.5	55
11...	.5	58			

06746110 - JOE WRIGHT CREEK BELOW JOE WRIGHT RESERVOIR, CO. (LAT 40 33 43 LONG 105 52 09)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			JUN , 1982		
07...	6.0	40	16...	3.5	44
DEC			24...	4.5	40
16...	10.0	42	JUL		
FEB , 1982			14...	6.0	40
24...	.5	--	AUG		
APR			05...	6.5	46
06...	.0	70	SEP		
MAY			01...	6.5	45
11...	1.0	52			
27...	2.5	48			

06759100 - BIJOU CREEK NEAR FT. MORGAN, CO. (LAT 40 16 58 LONG 103 52 30)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAY , 1982		
06...	22.0	1290	07...	16.0	1580
NOV			JUN		
18...	13.0	1710	04...	20.0	1600
DEC			09...	15.0	1650
17...	10.0	1630	JUL		
JAN , 1982			14...	15.5	--
20...	11.0	1580	20...	30.0	1175
FEB			AUG		
22...	14.0	1720	12...	21.5	1460
MAR			SEP		
17...	16.0	1600	01...	22.0	1700
APR			17...	14.0	1500
27...	13.5	1630			

06826500 - SOUTH FORK REPUBLICAN RIVER NEAR HALE, CO. (LAT 39 37 26 LONG 102 09 47)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAY , 1982		
27...	13.0	480	27...	16.0	550
DEC			JUN		
03...	8.5	560	10...	23.0	510
FEB , 1982			JUL		
16...	7.0	440	20...	19.0	570
MAR			AUG		
22...	10.0	556	31...	20.0	--
APR					
14...	14.0	560			

07081200 - ARKANSAS RIVER NEAR LEADVILLE, CO. (LAT 39 15 26 LONG 106 20 35)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
DEC , 1981			MAY , 1982		
03...	.5	1650	27...	6.5	130
23...	.0	230	JUN		
JAN , 1982			16...	8.0	120
27...	.5	270	JUL		
MAR			08...	8.5	95
04...	1.5	310	22...	9.0	125

07089000 - COTTONWOOD C BL HOT SPRINGS, NR BUENA VISTA, CO. (LAT 38 48 46 LONG 106 13 18)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			JUN , 1982		
21...	8.0	135	17...	12.5	110
DEC			17...	12.5	110
04...	--	145	JUL		
21...	4.0	104	07...	10.5	87
21...	4.0	104	07...	10.5	87
JAN , 1982			21...	9.0	120
28...	2.5	118	AUG		
MAR			18...	10.0	110
05...	3.0	115	SEP		
MAY			21...	13.0	115
05...	7.0	120	21...	13.0	115
26...	12.0	120			

07091200 - ARKANSAS RIVER NEAR NATHROP, CO. (LAT 38 39 08 LONG 106 03 02)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAY , 1982		
21...	5.5	140	26...	12.0	130
21...	5.5	140	26...	12.0	130
DEC			JUN		
03...	1.0	150	04...	10.5	110
03...	1.0	150	04...	10.5	110
JAN , 1982			15...	12.5	100
08...	.0	130	15...	12.5	100
08...	.0	130	JUL		
28...	.5	113	07...	11.5	102
28...	.5	113	07...	11.5	102
FEB			15...	15.0	120
25...	3.0	103	15...	15.0	120
25...	3.0	103	AUG		
MAR			18...	14.5	76
29...	5.0	200	18...	14.5	76
29...	5.0	200	SEP		
MAY			21...	12.5	110
20...	9.0	160	21...	12.5	110
20...	9.0	160			

07096500 - FOURMILE CREEK NEAR CANON CITY, CO. (LAT 38 26 11 LONG 105 11 27)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
NOV , 1981			MAY , 1982		
04...	14.0	1200	19...	20.0	720
04...	14.0	1200	JUN		
DEC			21...	16.5	570
08...	8.0	1100	JUL		
08...	8.0	1100	20...	21.0	1010
JAN , 1982			20...	21.0	1010
29...	9.0	1050	28...	20.0	1200
MAR			AUG		
02...	8.5	1100	25...	19.5	600
02...	8.5	1100	SEP		
APR			14...	15.0	560
20...	13.0	800			

07099235 - TURKEY CREEK NR STONE CITY, CO (LAT 38 26 27 LONG 104 49 31)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			APR , 1982		
19...	15.5	975	16...	11.5	1350
19...	15.5	975	16...	11.5	1350
NOV			MAY		
12...	13.0	1060	11...	17.5	1400
12...	13.0	1060	11...	17.5	1400
DEC			JUN		
31...	8.0	1150	23...	18.5	960
31...	8.0	1150	23...	18.5	960
JAN , 1982			AUG		
29...	6.5	1200	06...	20.5	730
29...	6.5	1200	06...	20.5	730
MAR			30...	20.0	500
08...	11.0	--	30...	20.0	500
08...	11.0	--			

07103747 - MONUMENT CREEK AT PALMER LAKE, CO. (LAT 39 06 07 LONG 104 53 27)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			APR , 1982		
13...	18.0	198	27...	9.5	178
13...	18.0	198	27...	9.5	178
NOV			MAY		
17...	6.5	145	25...	8.5	130
17...	6.5	145	25...	8.5	130
DEC			JUN		
16...	1.5	175	11...	16.5	143
16...	1.5	175	11...	16.5	143
JAN , 1982			JUL		
14...	1.0	189	13...	14.5	145
14...	1.0	189	13...	14.5	145
FEB			AUG		
16...	4.0	193	10...	15.0	159
16...	4.0	193	10...	15.0	159
MAR			SEP		
23...	9.5	162	16...	16.0	165
23...	9.5	162	16...	16.0	165

07103800 - WEST MONUMENT CREEK AT AIR FORCE ACADEMY, CO. (LAT 38 58 14 LONG 104 54 08)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			APR , 1982		
13...	--	95	26...	--	95
13...	9.0	95	26...	6.0	95
NOV			MAY		
16...	--	65	25...	--	100
16...	4.0	65	25...	6.0	100
DEC			JUN		
16...	--	105	11...	--	92
16...	.5	105	11...	9.0	92
JAN , 1982			JUL		
14...	--	98	12...	--	104
14...	.5	98	12...	14.0	104
FEB			AUG		
16...	--	82	10...	--	112
16...	.5	82	10...	12.9	112
MAR			SEP		
23...	--	92	16...	--	103
23...	1.0	92	16...	11.0	103

07103950 - KETTLE CREEK NEAR BLACK FOREST, CO. (LAT 39 00 14 LONG 104 44 21)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAY , 1982		
13...	13.0	265	25...	16.5	270
DEC			JUN		
15...	1.0	243	11...	15.0	273
JAN , 1982			JUL		
13...	1.0	260	12...	20.0	270
FEB			AUG		
18...	1.0	220	03...	20.5	240
MAR			SEP		
23...	1.0	268	16...	16.0	219
APR					
26...	8.0	280			

07105800 - FOUNTAIN CREEK AT SECURITY, CO. (LAT 38 43 46 LONG 104 44 00)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
NOV , 1981			JUN , 1982		
17...	11.5	925	03...	12.0	323
DEC			03...	15.0	629
15...	5.0	990	14...	19.5	615
JAN , 1982			25...	16.0	530
03...	4.5	950	JUL		
FEB			02...	23.0	650
17...	11.5	775	12...	25.5	680
MAR			28...	23.0	575
22...	13.0	780	29...	17.5	342
APR			30...	19.0	730
23...	14.0	989	AUG		
MAY			03...	29.5	820
06...	13.0	824	09...	29.5	680
12...	7.5	327	23...	22.5	520
13...	11.5	672	SEP		
24...	17.5	580	14...	21.5	462

07105900 - JIMMY CAMP CREEK AT FOUNTAIN, CO. (LAT 38 41 04 LONG 104 41 17)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981		
13...	14.0	2800
NOV		
17...	14.5	2700
DEC		
15...	4.0	3250
JAN , 1982		
13...	5.0	3000
FEB		
17...	10.0	3400
MAR		
22...	15.0	3800
APR		
26...	14.0	3060
MAY , 1982		
24...	14.5	3200
JUN		
11...	17.0	3350
JUL		
12...	27.0	3350
AUG		
03...	31.0	3550
13...	25.0	3900
23...	26.5	3000
SEP		
02...	29.0	2650

07105924 - WOMACK DITCH NEAR FORT CARSON, CO. (LAT 38 40 52 LONG 104 51 20)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981		
01...	12.0	88
27...	6.0	140
NOV		
19...	5.0	110
JAN , 1982		
28...	3.5	125
MAR		
03...	5.0	120
APR		
09...	5.0	110
MAY , 1982		
19...	7.5	80
JUN		
15...	10.5	85
30...	12.0	85
JUL		
21...	18.0	100
AUG		
26...	12.0	95

07105928 - LITTLE FOUNTAIN CREEK NEAR FORT CARSON, CO. (LAT 38 40 49 LONG 104 51 06)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981		
01...	15.5	110
01...	15.5	110
27...	10.5	185
27...	10.5	185
JAN , 1982		
21...	2.0	130
21...	2.0	130
MAR		
03...	4.0	120
03...	4.0	120
30...	6.5	165
30...	6.5	165
MAY		
18...	10.5	85
18...	10.5	85
JUN , 1982		
18...	10.5	100
18...	10.5	100
21...	11.0	85
21...	11.0	85
JUL		
22...	18.0	165
22...	18.0	165
AUG		
03...	18.0	160
03...	18.0	160
19...	14.0	95
19...	14.0	95
SEP		
14...	11.0	120
14...	11.0	120

07105940 - LITTLE FOUNTAIN CREEK NEAR FOUNTAIN, CO. (LAT 38 38 35 LONG 104 44 48)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981		
20...	9.0	2450
20...	9.0	2450
NOV		
16...	13.0	3000
DEC		
29...	.5	3750
JAN , 1982		
21...	.5	3250
MAR		
29...	11.5	3250
MAY		
14...	12.0	3000
JUN , 1982		
03...	9.0	540
07...	17.5	350
18...	13.0	720
JUL		
21...	20.0	1630
30...	15.5	540
AUG		
18...	15.5	200
23...	15.0	310
SEP		
14...	12.5	575

07105960 - ROCK CREEK NEAR FOUNTAIN, CO. (LAT 38 39 16 LONG 104 44 48)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981		
20...	12.0	540
20...	12.0	540
NOV		
16...	12.5	1040
16...	12.5	1040
DEC		
29...	5.5	1090
29...	5.5	1090
JAN , 1982		
21...	4.0	1030
21...	4.0	1030
MAR		
01...	9.5	1050
01...	9.5	1050
29...	12.0	1030
29...	12.0	1030
MAY , 1982		
14...	10.5	1075
14...	10.5	1075
JUN		
18...	13.0	660
18...	13.0	660
JUL		
21...	17.0	1175
21...	17.0	1175
AUG		
02...	22.0	395
02...	22.0	395
26...	16.0	355
26...	16.0	355

07108900 - ST. CHARLES RIVER AT VINELAND, CO. (LAT 38 14 44 LONG 104 29 09)

DATE	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)
OCT , 1981		
02...	23.0	2800
NOV		
03...	13.0	2600
DEC		
02...	3.5	2800
JAN , 1982		
11...	.0	3200
15...	1.0	--
FEB		
16...	9.0	--
MAR		
15...	17.0	2580
APR		
22...	16.0	2500
MAY , 1982		
13...	15.0	1750
17...	26.0	2000
28...	16.5	--
JUN		
22...	27.0	1080
24...	11.0	1450
JUL		
15...	31.0	2500
AUG		
13...	25.0	1800
21...	19.5	700
SEP		
03...	20.5	1280
22...	16.5	1130

07109500 - ARKANSAS RIVER NEAR AVONDALE, CO. (LAT 38 14 53 LONG 104 23 55)

DATE	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)
OCT , 1981		
05...	21.0	850
NOV		
03...	13.0	890
DEC		
02...	6.0	1150
JAN , 1982		
11...	.5	1200
FEB		
16...	12.0	--
MAR		
12...	10.0	--
17...	14.0	980
APR		
08...	9.5	--
22...	14.0	760
MAY , 1982		
13...	12.0	900
14...	14.0	--
18...	18.0	850
20...	20.0	--
28...	18.0	--
JUN		
17...	20.0	550
JUL		
15...	22.0	380
SEP		
08...	20.0	1315
23...	19.5	700

07116500 - HUERFANO RIVER NEAR BOONE, CO. (LAT 38 13 33 LONG 104 15 40)

DATE	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)
DEC , 1981		
02...	9.0	5000
02...	9.0	500
JAN , 1982		
11...	.0	7900
14...	.0	7900
FEB		
17...	10.5	--
23...	11.0	--
MAR		
16...	16.0	9200
16...	16.0	9200
APR		
23...	20.0	6000
23...	20.0	6000
MAY		
13...	22.0	3500
13...	22.0	3500
18...	32.0	5800
18...	32.0	5800
JUN		
09...	31.5	5000
09...	31.5	5000
17...	27.0	2000
JUN , 1982		
17...	27.0	2000
18...	16.5	1450
18...	16.5	1450
20...	28.5	1600
23...	17.5	880
23...	17.5	880
24...	28.5	1600
30...	26.0	2700
30...	26.0	2700
JUL		
28...	25.5	1250
28...	25.5	1250
AUG		
02...	34.0	--
06...	33.5	6000
13...	32.0	3600
13...	32.0	3600
18...	34.0	4500
18...	34.0	4500
SEP		
03...	34.5	3500
03...	34.5	3500

07119500 - APISHAPA RIVER NEAR FOWLER, CO. (LAT 38 05 28 LONG 103 58 52)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAY , 1982		
06...	19.0	2300	18...	18.0	3000
NOV			JUN		
05...	14.5	2200	23...	24.0	750
DEC			JUL		
04...	6.0	3000	21...	27.0	1810
JAN , 1982			AUG		
15...	3.5	4000	11...	20.5	750
FEB			23...	23.5	790
19...	12.0	3700	SEP		
MAR			23...	17.5	980
16...	12.0	1500			
APR					
23...	15.0	2350			

07121500 - TIMPAS CREEK AT MOUTH NEAR SWINK, CO. (LAT 38 00 10 LONG 103 39 18)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAR , 1982		
08...	18.0	1920	04...	7.0	2000
08...	18.0	1920	APR		
NOV			08...	15.5	2300
09...	9.0	1400	08...	15.5	2300
09...	9.0	1400	MAY		
DEC			20...	17.5	1700
07...	10.0	1750	20...	17.5	1700
07...	10.0	1750	JUN		
JAN , 1982			24...	20.0	625
08...	6.0	3200	JUL		
08...	6.0	3200	26...	29.0	1800
FEB			26...	29.0	1800
08...	6.0	3400	SEP		
08...	6.0	3400	03...	21.0	1550
MAR			03...	21.0	1550
04...	7.0	2000			

07122400 - CROOKED ARROYO NEAR SWINK, CO. (LAT 37 58 56 LONG 103 35 52)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			MAR , 1982		
08...	14.0	2800	04...	7.0	2700
08...	14.0	2800	04...	7.0	2700
NOV			APR		
09...	9.0	1300	08...	17.0	2700
09...	9.0	1300	08...	12.0	2700
DEC			MAY		
04...	7.0	3200	20...	16.0	1500
04...	7.0	3200	20...	16.0	1500
JAN , 1982			JUN		
08...	3.0	3200	24...	21.5	870
08...	3.0	3200	24...	21.5	870
FEB			SEP		
08...	3.5	3200	02...	23.5	1800
08...	3.5	3200	02...	23.5	1800

07123675 - HORSE CREEK NEAR LAS ANIMAS, CO. (LAT 38 05 07 LONG 103 21 10)

DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)	DATE	TEMPERATURE (DEG C)	SPECIFIC CONDUCTANCE (UMHOS)
OCT , 1981			APR , 1982		
06...	18.5	4600	05...	17.0	4200
06...	18.5	4600	05...	17.0	4200
NOV			MAY		
06...	12.0	4400	19...	25.5	4300
06...	13.0	4400	19...	25.5	4300
30...	7.0	4800	JUN		
30...	7.0	4800	24...	20.5	4600
JAN , 1982			24...	20.5	4600
07...	3.0	4100	JUL		
07...	3.0	4100	31...	30.0	4200
FEB			31...	30.0	4200
16...	9.5	--	SEP		
MAR			02...	24.5	4200
04...	5.0	4200	02...	24.5	4200
04...	5.0	4200			

07124000 - ARKANSAS RIVER AT LAS ANIMAS, CO. (LAT 38 04 51 LONG 103 13 09)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
OCT , 1981			MAY , 1982		
08...	23.5	3900	13...	16.0	--
20...	19.0	--	18...	25.0	--
NOV			JUN		
03...	11.0	3000	08...	24.0	1180
DEC			21...	25.5	860
03...	5.0	1730	JUL		
JAN , 1982			07...	22.0	890
06...	.5	2200	AUG		
MAR			12...	20.5	960
03...	7.0	2600	16...	27.0	1630
APR			SEP		
08...	11.5	3400	01...	27.5	950
21...	22.0	3500	21...	19.0	1100

07124200 - PURGATOIRE RIVER AT MADRID, CO. (LAT 37 07 46 LONG 104 38 20)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
OCT , 1981			JUN , 1982		
27...	1.0	450	11...	16.0	295
27...	10.0	450	11...	16.0	295
NOV			14...	19.5	260
24...	12.0	--	14...	19.5	260
DEC			JUL		
21...	7.0	430	07...	12.0	390
21...	7.0	430	07...	12.0	390
JAN , 1982			22...	24.0	490
19...	1.5	470	22...	24.0	490
19...	1.5	470	28...	23.0	490
FEB			28...	23.0	490
18...	4.5	480	SEP		
18...	4.5	480	03...	24.0	280
MAR			03...	24.0	280
24...	11.0	490	22...	19.0	390
24...	11.0	490	22...	19.0	390

07124300 - LONG CANYON CREEK NEAR MADRID, CO. (LAT 37 06 53 LONG 104 36 17)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
OCT , 1981			APR , 1982		
27...	15.5	480	20...	9.0	525
NOV			JUN		
24...	14.0	--	11...	15.0	530
DEC			14...	21.0	360
21...	11.0	490	JUL		
JAN , 1982			07...	12.0	300
19...	6.5	520	28...	24.0	470
FEB			AUG		
18...	8.0	510	18...	19.5	365
MAR			SEP		
25...	12.0	570	03...	23.0	520

07124410 - PURGATOIRE RIVER BELOW TRINIDAD LAKE, CO. (LAT 37 08 37 LONG 104 32 49)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
OCT , 1981			JUL , 1982		
14...	15.0	330	07...	12.0	390
APR , 1982			22...	13.0	380
17...	5.0	490	SEP		
20...	6.0	410	17...	11.0	390
JUN			22...	16.0	450
10...	10.0	400			

07128500 - PURGATOIRE RIVER NEAR LAS ANIMAS, CO. (LAT 38 02 02 LONG 103 12 00)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
OCT , 1981			MAY , 1982		
06...	19.0	4000	18...	20.0	--
20...	14.5	--	19...	23.0	2900
NOV			JUN		
03...	11.0	3500	08...	26.0	3200
DEC			21...	25.5	2000
03...	6.0	3800	JUL		
JAN , 1982			06...	30.0	3400
07...	.0	3900	24...	32.0	--
MAR			28...	27.0	4000
03...	6.5	3500	30...	20.0	2500
APR			31...	20.5	1270
08...	14.5	5000	AUG		
16...	17.0	--	03...	26.5	1400
21...	11.0	5000	12...	23.0	750
MAY			16...	23.0	580
05...	12.5	4700	SEP		
06...	16.0	4700	01...	31.0	3100
13...	16.0	4700	21...	17.5	1600
17...	19.0	--			
17...	23.0	3000			

07130500 - ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR, CO. (LAT 38 05 02 LONG 102 55 10)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
OCT , 1981		
08...	16.5	1600
21...	12.0	1700
NOV		
05...	11.0	2100
DEC		
02...	5.0	2500
JAN , 1982		
06...	4.5	2800
FEB		
03...	2.0	3100
MAR		
02...	11.0	3000
APR		
07...	11.0	2800
APR , 1982		
20...	11.5	2800
MAY		
19...	16.5	2800
JUN		
09...	20.0	2300
23...	22.0	1800
JUL		
14...	23.5	1200
28...	25.0	1200
AUG		
16...	25.5	1200
SEP		
23...	19.0	1300

07133000 - ARKANSAS RIVER AT LAMAR, CO. (LAT 38 06 24 LONG 102 37 04)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
OCT , 1981		
08...	14.0	3600
21...	10.0	3500
NOV		
05...	16.5	3900
DEC		
01...	8.0	3800
JAN , 1982		
05...	5.0	4400
FEB		
02...	4.0	4600
MAR		
02...	16.0	4600
APR		
06...	13.5	4800
20...	11.0	3500
MAY , 1982		
13...	21.0	3200
JUN		
04...	18.0	750
05...	18.0	2800
09...	20.5	3600
23...	21.5	2000
JUL		
09...	21.5	1600
27...	25.5	2100
AUG		
17...	26.0	1900
SEP		
23...	18.0	2000

07134100 - BIG SANDY CREEK NEAR LAMAR, CO. (LAT 38 06 51 LONG 102 29 00)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
OCT , 1981		
07...	18.0	6000
NOV		
05...	9.0	4600
DEC		
01...	3.0	4500
JAN , 1982		
05...	1.0	4500
FEB		
02...	3.0	4300
MAR		
02...	12.5	4600
APR , 1982		
06...	10.5	4900
MAY		
18...	17.5	4400
JUN		
04...	24.5	2800
22...	27.0	3600
JUL		
27...	25.0	4000
AUG		
31...	30.0	4300

07134180 - ARKANSAS RIVER NEAR GRANADA, CO. (LAT 38 05 44 LONG 102 18 37)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
OCT , 1981		
07...	16.0	4600
21...	11.0	4100
NOV		
04...	14.0	3900
DEC		
01...	3.0	4500
JAN , 1982		
05...	3.0	4400
FEB		
02...	4.0	4200
MAR		
02...	11.5	4400
APR		
06...	10.5	4600
20...	11.0	3400
MAY		
14...	15.5	2600
JUN , 1982		
04...	--	645
04...	19.0	645
04...	24.0	605
05...	18.0	1120
09...	18.0	3800
22...	23.5	3300
JUL		
08...	20.0	420
27...	23.5	4000
AUG		
17...	23.5	2600
31...	26.0	1300
SEP		
22...	23.5	2800

08216500 - WILLOW CREEK AT CREEDE, CO. (LAT 37 51 22 LONG 106 55 37)

DATE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)
NOV , 1981		
04...	6.2	147
DEC		
16...	10.0	110
FEB , 1982		
17...	.0	75
APR , 1982		
21...	2.5	113
MAY		
26...	.0	120
JUL		
01...	6.0	137

08217500 - RIO GRANDE AT WAGONWHEEL GAP, CO. (LAT 37 46 01 LONG 106 49 51)

DATE	TEMPER-ATURE (DEG C)	SPE-CIFIC CON-DUCT-ANCE (UMHOS)
NOV , 1981		
04...	6.5	88
DEC		
16...	.0	120
FEB , 1982		
17...	.0	113
APR		
21...	.0	130
MAY		
26...	3.0	90

06695000 - S PLATTE R AB 11-MILE CANYON RE, NR HARTSEL, CO. (LAT 38 58 03 LONG 105 34 51)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		MAY , 1982	
12...	11.0	17...	16.0
NOV		JUN	
09...	7.0	02...	12.5
24...	5.0	15...	14.0
DEC		28...	16.5
07...	3.0	JUL	
21...	3.5	12...	13.0
JAN , 1982		26...	19.0
04...	.0	AUG	
FEB		09...	19.0
01...	.0	23...	18.0
MAR		SEP	
01...	5.0	07...	17.0
24...	8.5	20...	13.0
APR			
22...	10.5		

06696000 - SOUTH PLATTE RIVER NEAR LAKE GEORGE, CO. (LAT 38 54 19 LONG 105 28 22)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		MAY , 1982	
12...	12.0	17...	8.0
26...	9.0	JUN	
NOV		02...	8.5
09...	6.5	15...	9.0
24...	5.0	28...	12.0
DEC		JUL	
07...	2.0	12...	13.0
21...	3.5	26...	15.0
JAN , 1982		AUG	
04...	3.5	09...	16.0
FEB		23...	17.0
01...	4.0	SEP	
MAR		07...	16.5
01...	4.0	20...	14.0
24...	5.0		
APR			
22...	5.0		

06700500 - GOOSE CREEK ABOVE CHEESMAN LAKE, CO. (LAT 39 12 32 LONG 105 18 11)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		OCT , 1981	
12...	7.0	26...	1.0

06701500 - SOUTH PLATTE RIVER BELOW CHEESMAN LAKE, CO. (LAT 39 12 33 LONG 105 16 02)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		MAY , 1982	
12...	9.0	17...	6.0
26...	9.5	JUN	
NOV		07...	8.0
09...	9.0	22...	8.5
24...	9.0	JUL	
DEC		06...	8.0
07...	7.0	20...	8.0
21...	6.5	AUG	
JAN , 1982		03...	14.5
04...	4.5	16...	10.5
FEB		30...	14.0
01...	3.0	SEP	
MAR		15...	16.0
01...	3.5	30...	14.5
24...	4.5		
APR			
22...	5.5		

06706000 - NF SOUTH PLATTE R BELOW GENEVA C, AT GRANT, CO. (LAT 39 27 26 LONG 105 39 29)

DATE	TEMPER- ATURE (DEG C)	DATE	TEMPER- ATURE (DEG C)
OCT , 1981		MAY , 1982	
13...	7.0	10...	8.0
27...	7.0	JUN	
NOV		03...	5.5
10...	8.0	16...	8.0
25...	6.0	29...	9.0
DEC		JUL	
08...	4.0	13...	8.0
22...	.0	AUG	
JAN , 1982		11...	9.0
05...	3.5	24...	10.0
FEB		SEP	
02...	3.0	08...	10.0
MAR		21...	9.0
02...	4.0		
APR			
22...	8.0		

06710500 - BEAR CREEK AT MORRISON, CO. (LAT 39 39 11 LONG 105 11 43)

DATE	TEMPER- ATURE (DEG C)	DATE	TEMPER- ATURE (DEG C)
OCT , 1981		MAY , 1982	
14...	8.0	04...	14.5
27...	5.0	27...	9.0
NOV		JUN	
10...	3.0	10...	10.5
24...	3.0	21...	12.5
DEC		JUL	
14...	.5	07...	12.0
29...	.0	20...	19.0
JAN , 1982		AUG	
13...	.0	03...	20.0
29...	.0	16...	18.0
FEB		31...	16.5
09...	.0	SEP	
23...	.5	17...	10.5
MAR		29...	9.0
08...	2.0		
APR			
13...	6.5		

06711500 - BEAR CREEK AT MOUTH, AT SHERIDAN, CO. (LAT 39 39 08 LONG 105 01 57)

DATE	TEMPER- ATURE (DEG C)	DATE	TEMPER- ATURE (DEG C)
OCT , 1981		MAY , 1982	
14...	11.0	04...	20.0
27...	11.5	14...	9.0
NOV		27...	19.5
10...	9.0	JUN	
24...	5.0	11...	14.0
DEC		21...	16.5
14...	2.0	JUL	
29...	1.0	07...	16.0
JAN , 1982		20...	25.0
13...	.0	AUG	
29...	4.5	03...	19.0
FEB		18...	22.0
09...	.0	SEP	
23...	5.5	03...	15.0
MAR		17...	13.5
08...	7.0	29...	15.0
APR			
13...	18.0		

06714000 - SOUTH PLATTE RIVER AT DENVER, CO. (LAT 39 45 35 LONG 105 00 10)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		APR , 1982	
13...	13.0	28...	15.0
26...	15.0	MAY	
NOV		19...	16.0
09...	13.0	JUN	
23...	13.0	01...	18.0
DEC		14...	19.0
08...	9.0	JUL	
JAN , 1982		01...	18.5
05...	8.0	15...	21.0
20...	7.0	28...	20.0
FEB		AUG	
04...	3.0	12...	20.0
17...	7.0	25...	18.5
MAR		SEP	
04...	7.0	20...	17.0
APR			
08...	14.0		

06716500 - CLEAR CREEK NEAR LAWSON, CO. (LAT 39 45 57 LONG 105 37 32)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		APR , 1982	
14...	8.0	29...	6.0
27...	5.0	MAY	
NOV		07...	10.5
10...	1.0	21...	10.5
24...	2.0	JUN	
DEC		04...	10.0
14...	.0	24...	6.0
29...	.0	JUL	
JAN , 1982		15...	9.0
13...	.0	29...	10.5
FEB		AUG	
09...	.0	11...	12.0
MAR		26...	12.0
08...	2.0	SEP	
29...	2.5	21...	12.0

06720000 - CLEAR CREEK AT MOUTH, NEAR DERBY, CO. (LAT 39 49 42 LONG 104 57 30)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		APR , 1982	
13...	11.0	08...	10.0
26...	11.5	28...	9.0
NOV		MAY	
09...	10.0	18...	15.5
23...	7.0	JUN	
DEC		01...	15.0
08...	6.0	14...	14.0
23...	3.0	JUL	
JAN , 1982		01...	14.0
05...	1.0	15...	18.0
19...	.0	28...	21.0
FEB		AUG	
04...	.0	12...	20.0
16...	3.0	25...	22.0
MAR		SEP	
04...	4.0	20...	19.0

06720500 - SOUTH PLATTE RIVER AT HENDERSON, CO. (LAT 39 55 19 LONG 104 52 00)

DATE	TEMPER-ATURE (DEG C)
OCT , 1981	
13...	14.5
26...	13.0
NOV	
09...	13.0
23...	12.0
DEC	
08...	12.0
JAN , 1982	
05...	9.0
19...	7.5
FEB	
04...	3.0
16...	9.0
MAR	
04...	10.0
APR	
08...	12.0
APR , 1982	
28...	13.0
MAY	
18...	15.0
JUN	
01...	16.0
14...	17.0
JUL	
01...	15.0
15...	19.0
28...	21.0
AUG	
12...	22.0
25...	21.0
SEP	
22...	17.5

06724000 - ST. VRAIN CREEK AT LYONS, CO. (LAT 40 13 05 LONG 105 15 34)

DATE	TEMPER-ATURE (DEG C)
OCT , 1981	
01...	16.0
15...	11.0
NOV	
02...	8.0
17...	11.0
DEC	
02...	4.0
JAN , 1982	
05...	3.0
FEB	
09...	.0
MAR	
02...	4.0
APR	
12...	9.0
MAY , 1982	
04...	9.0
26...	7.0
JUN	
09...	8.0
21...	11.0
JUL	
06...	13.0
19...	13.0
AUG	
04...	15.0
26...	14.0
SEP	
13...	12.0
21...	12.0

06725500 - MIDDLE BOULDER CREEK AT NEDERLAND, CO. (LAT 39 57 42 LONG 105 30 14)

DATE	TEMPER-ATURE (DEG C)
OCT , 1981	
05...	9.0
19...	3.0
NOV	
02...	2.0
19...	.0
DEC	
14...	.0
28...	.0
JAN , 1982	
11...	.0
FEB	
08...	.0
MAR	
15...	2.0
APR	
15...	5.0
MAY , 1982	
06...	.0
24...	4.0
JUN	
09...	3.0
22...	8.0
JUL	
06...	9.0
19...	13.0
AUG	
05...	14.0
16...	13.0
30...	12.0
SEP	
13...	7.0
27...	9.0

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
06727000 - BOULDER CREEK NEAR ORODELL, CO. (LAT 40 00 23 LONG 105 19 49)			
OCT , 1981		MAY , 1982	
05...	10.5	06...	4.0
19...	3.0	24...	8.0
NOV		JUN	
02...	1.0	09...	8.0
19...	.0	22...	11.0
DEC		JUL	
01...	.0	06...	11.0
14...	.0	19...	13.0
28...	.0	AUG	
JAN , 1982		05...	14.0
11...	.0	16...	14.0
FEB		30...	14.0
08...	.0	SEP	
MAR		13...	11.0
15...	2.0	27...	11.5
APR			
15...	5.0		
06729500 - SOUTH BOULDER CREEK NEAR ELDORADO SPRINGS, CO. (LAT 39 55 52 LONG 105 17 43)			
OCT , 1981		MAY , 1982	
06...	11.0	06...	7.0
19...	6.5	24...	6.5
27...	9.5	JUN	
NOV		09...	8.0
03...	7.0	21...	8.0
17...	7.0	JUL	
DEC		07...	9.0
02...	.0	21...	10.0
15...	3.0	AUG	
29...	.0	06...	11.0
JAN , 1982		17...	11.0
12...	.0	31...	11.0
FEB		SEP	
09...	.0	14...	10.0
MAR		28...	10.5
17...	4.5		
APR			
15...	8.0		
06733000 - BIG THOMPSON RIVER AT ESTES PARK, CO. (LAT 40 22 42 LONG 105 30 48)			
OCT , 1981		MAR , 1982	
01...	8.0	04...	.5
22...	4.0	11...	2.5
NOV		MAY	
05...	2.5	13...	.0
DEC		27...	9.0
03...	.5	JUN	
10...	.0	10...	7.0
17...	.0	17...	8.0
22...	.0	24...	9.0
JAN , 1982		JUL	
07...	1.0	29...	12.0
14...	.5	30...	10.0
21...	1.0	AUG	
FEB		16...	16.0
04...	.5	SEP	
11...	1.0	02...	12.0
18...	1.0	23...	10.0

06735500 - BIG THOMPSON RIVER NEAR ESTES PARK, CO. (LAT 40 22 35 LONG 105 29 06)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		APR , 1982	
01...	12.0	15...	5.0
22...	7.0	MAY	
NOV		13...	4.0
05...	6.0	27...	9.0
DEC		JUL	
03...	1.0	01...	10.0
17...	2.0	AUG	
JAN , 1982		16...	16.0
07...	1.0	SEP	
21...	1.5	02...	17.0
FEB		16...	13.0
04...	.5		
18...	2.0		

06754000 - SOUTH PLATTE RIVER NEAR KERSEY, CO. (LAT 40 24 44 LONG 104 33 46)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		MAR , 1982	
02...	19.0	09...	11.0
19...	13.0	APR	
NOV		18...	11.0
05...	11.0	23...	15.0
18...	10.0	AUG	
DEC		04...	21.0
03...	6.0	SEP	
JAN , 1982		23...	20.0
26...	6.0		
FEB			
12...	2.0		

07095000 - GRAPE CREEK NEAR WESTCLIFFE, CO. (LAT 38 11 10 LONG 105 28 59)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		DEC , 1981	
14...	12.0	10...	.0
NOV		MAR , 1982	
13...	.1	04...	3.3

07111000 - HUERFANO R AT MANZANARES XING, NR REDWING, CO. (LAT 37 43 40 LONG 105 21 03)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		MAR , 1982	
14...	12.0	04...	4.5
NOV		JUL	
13...	5.0	15...	18.0
DEC			
10...	2.0		
29...	1.0		

08214500 - NORTH CLEAR CREEK BL CONTINENTAL RESERVOIR, CO. (LAT 37 53 18 LONG 107 12 10)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		JUN , 1982	
15...	8.0	24...	10.0
27...	5.0	JUL	
NOV		13...	14.0
09...	6.0	AUG	
24...	2.0	23...	13.0
APR , 1982		SEP	
21...	4.0	16...	7.0
MAY			
12...	4.0		

08218500 - GOOSE CREEK AT WAGONWHEEL GAP, CO. (LAT 37 45 07 LONG 106 49 46)

DATE	TEMPER-ATURE (DEG C)	DATE	TEMPER-ATURE (DEG C)
OCT , 1981		MAY , 1982	
15...	7.0	06...	2.5
27...	5.5	27...	7.5
NOV		JUN	
09...	7.0	14...	9.0
24...	1.0	JUL	
DEC		09...	14.0
24...	.0	AUG	
JAN , 1982		26...	14.0
21...	.0	SEP	
FEB		15...	14.0
18...	1.0		
MAR			
15...	2.5		

08219500 - SOUTH FORK RIO GRANDE AT SOUTH FORK, CO. (LAT 37 39 25 LONG 106 38 55)

DATE	TEMPERATURE (DEG C)	DATE	TEMPERATURE (DEG C)
OCT , 1981		APR , 1982	
27...	5.0	15...	3.0
NOV		MAY	
10...	4.0	06...	1.0
24...	3.0	JUN	
DEC		14...	8.0
24...	.0	JUL	
JAN , 1982		09...	12.0
21...	.0	30...	13.0
FEB		AUG	
18...	.0	26...	14.0
MAR		SEP	
15...	1.0	15...	9.0

08220000 - RIO GRANDE NEAR DEL NORTE, CO. (LAT 37 41 22 LONG 106 27 38)

DATE	TEMPERATURE (DEG C)	DATE	TEMPERATURE (DEG C)
NOV , 1981		APR , 1982	
10...	4.5	01...	.5
20...	1.5	15...	5.0
DEC		MAY	
01...	.0	03...	5.0
10...	.5	JUN	
21...	.5	10...	10.0
JAN , 1982		AUG	
03...	.0	10...	15.0
15...	.0	20...	15.0
FEB		SEP	
01...	.0	01...	13.0
16...	.0	10...	12.0
MAR		21...	10.0
01...	.5		
15...	3.0		

08220500 - PINOS CREEK NEAR DEL NORTE, CO. (LAT 37 35 30 LONG 106 26 58)

DATE	TEMPERATURE (DEG C)	DATE	TEMPERATURE (DEG C)
OCT , 1981		APR , 1982	
15...	3.0	15...	8.0
27...	6.0	MAY	
NOV		06...	1.5
10...	3.5	27...	4.0
24...	2.0	JUN	
DEC		14...	12.0
23...	.0	JUL	
JAN , 1982		09...	9.0
21...	.0	30...	16.0
FEB		AUG	
18...	.0	26...	12.5
MAR		SEP	
15...	2.0	15...	6.0

08227000 - SAGUACHE CREEK NEAR SAGUACHE, CO. (LAT 38 09 48 LONG 106 17 24)

DATE	TEMPERATURE (DEG C)	DATE	TEMPERATURE (DEG C)
NOV , 1981		APR , 1982	
05...	6.0	07...	1.0
17...	5.0	MAY	
DEC		06...	10.0
21...	.0	JUL	
JAN , 1982		08...	15.0
18...	.0	26...	20.0
FEB		SEP	
09...	.0	09...	13.0
MAR		27...	12.0
08...	.5		

08236000 - ALAMOSA CREEK ABOVE TERRACE RESERVOIR, CO. (LAT 37 22 29 LONG 106 20 03)

DATE	TEMPER-ATURE (DEG C)
NOV , 1981	
12...	4.0
23...	2.0
DEC	
29...	.0
JAN , 1982	
26...	.0
FEB	
23...	.0
APR	
05...	1.0
APR , 1982	
29...	4.0
JUL	
13...	10.0
AUG	
12...	15.0
31...	12.0
SEP	
23...	7.5

08240000 - RIO GRANDE AB MOUTH TRINCHERA C NR LASAUSES, CO. (LAT 37 18 58 LONG 105 44 32)

DATE	TEMPER-ATURE (DEG C)
OCT , 1981	
14...	11.0
29...	10.0
NOV	
10...	3.0
24...	2.5
DEC	
08...	1.0
JAN , 1982	
14...	.0
FEB	
10...	.0
MAR	
04...	1.0
APR , 1982	
10...	4.0
29...	12.0
MAY	
19...	14.0
JUN	
15...	18.0
JUL	
06...	18.0
28...	19.0
AUG	
10...	23.0

08245000 - CONEJOS RIVER BELOW PLATORO RESERVOIR, CO. (LAT 37 21 18 LONG 106 32 37)

DATE	TEMPER-ATURE (DEG C)
NOV , 1981	
19...	3.5
JUL , 1982	
13...	8.0
AUG	
12...	10.0
AUG , 1982	
31...	10.5
SEP	
23...	9.5

08248000 - LOS PINOS RIVER NEAR ORTIZ, CO. (LAT 36 58 56 LONG 106 04 23)

DATE	TEMPER-ATURE (DEG C)
OCT , 1981	
01...	9.0
09...	7.0
20...	9.0
NOV	
02...	5.0
10...	.0
19...	1.0
DEC	
01...	.5
20...	1.0
JAN , 1982	
04...	.0
FEB	
01...	.0
MAR	
02...	.0
15...	5.0
APR	
01...	9.0
APR , 1982	
15...	1.0
21...	3.5
MAY	
11...	7.5
20...	8.5
JUN	
01...	13.0
09...	10.0
22...	12.0
JUL	
01...	14.0
AUG	
10...	20.0
20...	18.0
SEP	
01...	13.0
10...	13.0
20...	15.0

08248500 - SAN ANTONIO RIVER AT MOUTH, NEAR MANASSA, CO. (LAT 37 10 37 LONG 105 52 39)

DATE	TEMPERATURE (DEG C)	DATE	TEMPERATURE (DEG C)
OCT , 1981		APR , 1982	
16...	13.0	01...	6.0
28...	6.0	21...	4.0
NOV		JUN	
11...	3.0	15...	14.0
24...	6.0	JUL	
FEB , 1982		07...	14.0
10...	.0	28...	18.0
MAR		AUG	
04...	.0	16...	25.0

08250000 - CULEBRA CREEK AT SAN LUIS, CO. (LAT 37 11 02 LONG 105 25 31)

DATE	TEMPERATURE (DEG C)	DATE	TEMPERATURE (DEG C)
OCT , 1981		MAY , 1982	
06...	7.0	18...	13.0
22...	12.0	JUN	
NOV		08...	13.0
04...	2.0	29...	20.0
19...	5.0	JUL	
DEC		19...	18.0
04...	5.0	AUG	
JAN , 1982		11...	23.0
08...	1.5	31...	15.0
FEB		SEP	
25...	5.0	22...	18.0
APR			
06...	7.0		

08252000 - RIO GRANDE AT COLORADO-NEW MEXICO STATE LINE (LAT 37 00 03 LONG 105 43 19)

DATE	TEMPERATURE (DEG C)	DATE	TEMPERATURE (DEG C)
OCT , 1981		MAR , 1982	
14...	10.0	04...	.5
29...	8.0	APR	
NOV		14...	13.0
11...	5.0	MAY	
24...	4.0	25...	15.0
DEC		JUL	
13...	1.0	28...	20.0
JAN , 1982		AUG	
11...	.0	16...	21.0
FEB		SEP	
08...	.0	07...	16.0

EL PASO COUNTY

384313104431801 - SC01506625AAD WIDEFIELD NO. 14.
LOCATION.--Lat 38°43'13", long 104°43'18", in SE¼NE¼NE¼ sec. 25, T.15S., R.66W., El Paso County. Hydrologic Unit 11020003.
AQUIFER.--Widefield of Fountain Alluvium.
WELL CHARACTERISTICS.--Municipal well, diameter 18 in. (0.46 m), depth 48 ft (14.6 m), screened 37 to 48 ft. (11.3 to 14.6 m).
PERIOD OF RECORD.--January 1982 to September 1982.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982.

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	NITRO-GEN DIS-SOLVED (MG/L AS N)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN										
20...	1230	1510	1530	6.5	13.5	12	--	--	--	--
FEB										
24...	1105	1550	1440	6.5	13.5	12	--	--	--	--
MAR										
26...	1115	1500	1530	6.4	14.0	10	--	--	--	--
APR										
30...	1140	1400	1380	6.7	14.0	10	--	--	--	--
MAY										
28...	0930	1370	1400	6.6	14.0	11	--	--	--	--
JUN										
25...	1230	--	1610	7.3	13.0	11	660	400	170	57
JUL										
16...	1200	1540	1600	6.9	13.0	13	--	--	--	--
AUG										
13...	1245	1500	1550	6.8	13.0	14	--	--	--	--
SEP										
17...	1140	1480	1490	6.7	13.0	13	--	--	--	--

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)	SOLIDS, RESIDUE AT 105 DEG. C, DIS-SOLVED (MG/L)
JAN									
20...	--	--	--	--	--	50	--	--	1150
FEB									
24...	--	--	--	--	--	50	--	--	1190
MAR									
26...	--	--	--	--	--	49	--	--	1150
APR									
30...	--	--	--	--	--	49	--	--	1040
MAY									
28...	--	--	--	--	--	50	--	--	1030
JUN									
25...	120	2.2	4.4	260	540	52	1.0	18	1220
JUL									
16...	--	--	--	--	--	53	--	--	1220
AUG									
13...	--	--	--	--	--	55	--	--	1190
SEP									
17...	--	--	--	--	--	58	--	--	1230

DATE	SOLIDS, SUM OF CONSTI-TUENTS, 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)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN									
20...	--	<.020	11	.110	.99	1.1	--	--	--
FEB									
24...	--	<.020	11	.060	1.0	1.1	--	--	--
MAR									
26...	--	<.020	10	.080	.24	.32	--	--	--
APR									
30...	--	<.020	9.2	.060	1.0	1.1	--	--	--
MAY									
28...	--	<.020	9.1	.090	1.5	1.6	--	--	--
JUN									
25...	1160	<.020	9.6	.090	1.6	1.7	.030	12	<1
JUL									
16...	--	<.020	11	.090	2.0	2.1	--	--	--
AUG									
13...	--	<.020	12	.120	2.0	2.1	--	--	--
SEP									
17...	--	<.020	11	.060	1.8	1.9	--	--	--

EL PASO COUNTY

384407104434801 - SC01506624BAD1 WIDEFIELD NO. 4.

LOCATION.--Lat 38°44'07", long 104°43'48", in SE¼NE¼NE¼ sec. 24, T.15S., R.66W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widefield of Fountain Alluvium.

WELL CHARACTERISTICS.--Municipal well, diameter 16 in. (0.41 m), depth 71 ft (21.6 m), screened 41 to 71 ft. (12.5 to 21.6 m).

DATUM.--Altitude of land-surface is 5,685 ft (1,733 m).

PERIOD OF RECORD.--February 1931 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982.

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	SPE- CIFIC CON- DUCT- ANCE LAB (UMHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	NITRO- GEN DIS- SOLVED (MG/L AS N)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT							
26...	1300	774	800	6.8	14.0	8.8	37
NOV							
24...	1330	716	746	6.6	13.0	9.8	26
DEC							
21...	1140	773	760	6.4	13.0	6.7	26
JAN							
20...	1200	787	800	6.3	13.5	8.2	34
FEB							
24...	1030	794	730	6.4	12.5	7.7	33
MAR							
26...	1140	782	750	6.2	13.0	7.3	31
APR							
30...	1115	728	720	6.5	13.0	7.8	30
MAY							
28...	0945	737	757	6.6	13.0	8.1	31
JUN							
24...	1100	750	761	7.1	13.5	7.7	31
JUL							
16...	1130	751	780	6.7	13.0	8.5	35
AUG							
13...	1215	835	860	6.6	15.0	7.6	34
SEP							
17...	1115	788	787	6.5	13.0	7.4	35

DATE	SOLIDS, RESIDUE AT 105 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)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)
OCT							
26...	497	--	<.020	7.5	<.060	--	1.3
NOV							
24...	487	9.20	.020	9.2	.150	.42	.57
DEC							
21...	497	--	<.020	5.9	<.070	--	.83
JAN							
20...	534	--	<.020	7.2	.120	.83	.95
FEB							
24...	531	--	<.020	6.9	<.060	--	.81
MAR							
26...	521	--	<.020	6.7	.060	.50	.56
APR							
30...	486	--	<.020	6.7	.070	1.0	1.1
MAY							
28...	464	--	<.020	6.9	.060	1.1	1.2
JUN							
24...	502	--	<.020	6.2	<.060	--	1.5
JUL							
16...	522	--	<.020	6.6	<.060	--	1.9
AUG							
13...	618	--	<.020	6.0	.110	1.5	1.6
SEP							
17...	611	--	<.020	5.6	.070	1.7	1.8

384458104442601 - SC01506614AAD SECURITY NO. 2.
LOCATION.--Lat 38°44'58", long 104°44'26", in SE¼NE¼NE¼ sec. 14, T.15S., R.66W., El Paso County, Hydrologic Unit 11020003.
AQUIFER.--Widefield of Fountain Alluvium.
WELL CHARACTERISTICS.--Municipal well, diameter 24 in. (0.61 m), depth 78 ft (23.8 m), screened 43 to 78 ft (13.1 to 23.8 m).
DATUM.--Altitude of land-surface is 5,720 ft (1,743 m).
PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982.

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	NITRO-GEN DIS-SOLVED (MG/L AS N)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV							
24...	1050	635	660	6.5	13.0	8.1	22
DEC							
21...	0950	668	658	6.2	13.5	5.9	20
JAN							
20...	1020	661	660	6.2	13.5	7.1	27
FEB							
24...	0920	647	620	6.5	13.0	7.4	23
MAR							
26...	0945	646	680	6.3	13.5	6.4	29
APR							
30...	1020	638	638	6.4	13.5	6.8	26
MAY							
28...	1040	648	668	6.3	13.5	7.6	26
JUN							
22...	1025	663	649	6.7	14.0	7.1	24
JUL							
16...	0950	638	664	6.5	13.0	7.7	28
SEP							
17...	1010	653	657	6.3	13.0	8.1	28

DATE	SOLIDS, RESIDUE AT 105 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)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)
NOV							
24...	428	7.70	.020	7.7	.160	.26	.42
DEC							
21...	416	--	<.020	4.9	.080	.92	1.0
JAN							
20...	445	--	<.020	6.1	.120	.88	1.0
FEB							
24...	438	--	<.020	6.4	<.060	--	1.0
MAR							
26...	427	--	<.020	6.0	.060	.31	.37
APR							
30...	439	--	<.020	5.8	.070	.93	1.0
MAY							
28...	436	--	<.020	6.5	.070	1.0	1.1
JUN							
22...	446	--	<.020	5.7	.080	1.3	1.4
JUL							
16...	447	--	<.020	6.3	<.060	--	1.4
SEP							
17...	513	--	<.020	6.0	.070	2.0	2.1

384535104450801 - SC01506611BCD2 VENETUCCI NO. 3.

LOCATION.--Lat 38°45'35", long 104°45'08", in SE¼SW¼NW¼ sec. 11, T.15S., R.66W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widefield of Fountain Alluvium.

WELL CHARACTERISTICS.--Irrigation well, diameter 24 in. (0.61 m), depth 80 ft (24.4 m), screened unknown.

DATUM.--Elevation of land-surface is 5,750.6 ft (1,752.78 m).

PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982.

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	NITRO-GEN DIS-SOLVED (MG/L AS N)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT							
26...	1210	431	431	6.5	13.0	9.0	14
NOV							
24...	1250	425	445	6.6	13.5	--	12
DEC							
21...	1125	444	401	6.3	13.5	7.6	11
JAN							
20...	0950	403	428	6.4	13.5	9.2	11
FEB							
24...	1135	406	400	6.3	13.5	9.3	11
MAR							
26...	1050	460	480	6.3	14.0	9.2	13
APR							
30...	1000	435	435	6.5	13.0	9.5	14
MAY							
28...	1130	415	432	6.7	13.0	47	10
JUN							
24...	0950	420	423	7.0	13.5	9.5	10

DATE	SOLIDS, RESIDUE AT 105 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)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)
OCT							
26...	303	--	<.020	7.8	<.060	--	1.2
NOV							
24...	270	9.80	.020	9.8	.080	--	--
DEC							
21...	271	--	<.020	6.7	.090	.78	.87
JAN							
20...	284	--	<.020	8.4	.130	.66	.79
FEB							
24...	287	--	<.020	8.4	<.060	--	.92
MAR							
26...	313	--	<.020	8.6	<.060	--	.57
APR							
30...	311	--	<.020	8.4	<.060	--	1.1
MAY							
28...	286	--	<.020	9.7	.070	--	--
JUN							
24...	293	--	<.020	8.4	<.060	--	1.1

384610104453501 - SC01506603DDB SECURITY NO. 14.

LOCATION.--Lat 38°46'10", long 104°45'35", in NW¼SE¼SE¼ sec. 14, T.15S., R.66W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widefield of Fountain Alluvium.

WELL CHARACTERISTICS.--Municipal well, diameter 24 in. (0.61 m), depth 80 ft (24.4 m), screened 39 to 80 ft (11.9 to 24.4 m).

DATUM.--Altitude of land-surface is 5,780 ft (1,762 m).

PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982.

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (UMHOS)	SPE-CIFIC CON-DUCT-ANCE LAB (UMHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	NITRO-GEN DIS-SOLVED (MG/L AS N)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 26...	1105	486	506	6.8	12.5	6.7	11
NOV 24...	1120	498	524	6.8	13.0	8.1	14
DEC 21...	1005	530	501	6.5	13.0	5.8	10
JAN 20...	1050	504	515	6.6	13.5	6.8	17
FEB 24...	0950	503	485	6.7	13.5	8.4	15
MAR 26...	1015	511	515	6.6	13.5	5.8	15
APR 30...	1045	512	510	6.8	13.5	7.1	17
MAY 28...	1020	511	530	6.8	13.0	--	16
JUN 22...	1450	540	531	7.2	13.5	8.0	14
JUL 16...	1020	493	522	6.9	13.0	7.8	17
SEP 17...	1030	496	502	6.8	12.5	6.6	16

DATE	SOLIDS, RESIDUE AT 105 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)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)
OCT 26...	325	--	<.020	5.5	<.060	--	1.2
NOV 24...	330	7.40	.020	7.4	.160	.56	.72
DEC 21...	324	--	<.020	4.7	.070	1.0	1.1
JAN 20...	336	--	<.020	6.4	.150	.26	.41
FEB 24...	338	--	<.020	6.4	<.060	--	2.0
MAR 26...	336	--	<.020	5.1	.100	.66	.76
APR 30...	348	--	<.020	6.1	.070	.88	.95
MAY 28...	340	--	<.020	3.3	.060	--	--
JUN 22...	349	--	<.020	5.9	<.060	--	2.1
JUL 16...	350	--	<.020	6.4	<.060	--	1.4
SEP 17...	403	--	<.020	5.4	.100	1.1	1.2

EL PASO COUNTY

384618104455901 - SC01506603CAD STRATMOOR HILLS NO. 4.

LOCATION.--Lat 38°46'17", long 104°45'59", in SE¼NE¼SW¼ sec. 3, T.15S., R.66W., El Paso County, Hydrologic Unit 11020003.

AQUIFER.--Widefield of Fountain Alluvium.

WELL CHARACTERISTICS.--Municipal well, diameter 16 in. (0.41 m), depth 49 ft (14.9 m), screened 29 to 49 ft (8.8 to 14.9 m).

DATUM.--Altitude of land-surface is 5,760 ft (1,755 m).

PERIOD OF RECORD.--February 1981 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982.

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	SPECIFIC CONDUCTANCE LAB (UMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	NITROGEN DISSOLVED (MG/L AS N)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT							
26...	1145	934	985	6.5	14.0	8.3	40
NOV							
24...	1155	921	932	6.5	14.0	7.9	32
DEC							
21...	1100	976	974	6.3	13.5	7.4	26
JAN							
20...	1125	929	945	6.3	13.5	7.3	38
FEB							
24...	1155	991	985	6.2	13.0	8.1	34
MAR							
26...	1210	1020	1060	6.1	13.0	10	33
APR							
30...	0935	1010	1000	6.7	13.0	9.0	39
MAY							
28...	1110	928	953	6.6	13.0	--	42
JUN							
23...	1130	1100	1020	7.1	14.0	9.3	31
JUL							
16...	1100	933	963	6.7	13.0	8.4	32
AUG							
13...	1120	950	974	6.6	13.0	9.3	32
SEP							
17...	1220	940	936	6.6	13.0	9.3	35

DATE	SOLIDS, RESIDUE AT 105 DEG. C, DISSOLVED (MG/L)	NITROGEN, NITRATE DISSOLVED (MG/L AS N)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)
OCT							
26...	648	--	<.020	6.9	.200	1.2	1.4
NOV							
24...	666	7.60	.020	7.6	.360	.00	.33
DEC							
21...	664	6.10	<.020	6.1	.270	1.0	1.3
JAN							
20...	628	--	<.020	6.8	.230	.28	.51
FEB							
24...	701	--	<.020	7.4	.080	.64	.72
MAR							
26...	721	--	<.020	7.6	.190	2.4	2.6
APR							
30...	729	--	<.020	7.6	.130	1.3	1.4
MAY							
28...	636	--	<.020	5.2	.070	--	--
JUN							
23...	715	--	<.020	7.7	.090	1.5	1.6
JUL							
16...	677	--	<.020	7.5	.200	.70	.90
AUG							
13...	738	--	<.020	7.5	.130	1.7	1.8
SEP							
17...	771	7.40	.020	7.4	.090	1.8	1.9

ADAMS COUNTY

395727N104071701 SC 1-60-17CCC. Carl Sanden. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 87 ft (26.5 m). MP, 1.7 ft (0.52 m) above lsd. Altitude of land surface, 4,830.8 ft (1,472.43 m). Records available: 1942-82.

Highest water level, 25.09 ft (7.647 m) below lsd, Nov. 19, 1942; lowest water level, 50.63 ft (14.41 m) below lsd, June 10, 1982.

June 10, 1982 50.63 ft

395643N104183301 SC 1-62-22DCA. Charles B. Nordloh. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 82 ft (25.0 m). MP, 0.8 ft (0.24 m) below lsd. Altitude of land surface, 4,994 ft (1,522 m). Records available: 1946-82.

Highest water level, 44.21 ft (13.475 m) below lsd, Nov. 25, 1949; lowest water level, 61.9 ft (18.87 m) below lsd, Mar. 12, 1973.

Mar. 9, 1982 60.00 ft

ALAMOSA COUNTY

372154N105555401 NA36- 9-13AAA. U.S. Geological Survey. Jetted observation water-table well in basin-fill deposits. Diameter, 3 in (0.076 m). Depth, 10 ft (3.0 m). MP, 2.3 ft (0.70 m) above lsd. Altitude of land surface, 7,558.1 ft (2,303.71 m). Records available: 1949-64, 1966-75, 1980-82.

Highest water level, 0.07 ft (0.021 m) below lsd, May 5, 1968; lowest water level, 6.17 ft (1.881 m) below lsd, Jan. 6, 1964.

Jan. 20, 1982 3.50 ft

373409N106021501 NA39- 9-31CCC. U.S. Geological Survey. Jetted observation water-table well in basin-fill deposits. Diameter, 3 in (0.076 m). Depth, 10 ft (3.0 m). MP, 1.70 ft (0.518 m) above lsd. Altitude of land surface, 7,567.4 ft (2,306.54 m). Records available: 1948-64, 1966-75, 1977, 1980.

Highest water level, 1.42 ft (0.433 m) below lsd, June 26, 1962; lowest water level, 5.78 ft (1.762 m) below lsd, Jan. 27, 1969.

1982 No measurement.

BACA COUNTY

373058N102151500 SC29-43-15CCB. James Thompson. Drilled observation artesian well in Cheyenne Sandstone Member of Purgatoire Formation. Diameter, 1.25 in (0.032 m). Depth, 343 ft or 104.5 m (reported). MP, 1.40 ft (0.427 m) above lsd. Altitude of land surface, 3,913 ft (1,193 m). Records available: 1955-82.

Highest water level, 48.60 ft (14.813 m) below lsd, Jan. 16, 1975; lowest water level, 68.74 ft (20.95 m) below lsd, Feb. 2, 1978.

Jan. 13, 1982 60.20 ft

BENT COUNTY

380228N103105600 SC23-52-13ODC. B. F. Owens. Drilled stock water-table well in valley-fill deposits. Diameter, 6 in (0.15 m). Depth, 19 ft (5.8 m). MP, 2.0 ft (0.61 m) above lsd. Altitude of land surface, 3,895 ft (1,187 m). Records available: 1959-75, 1979-82.

Highest water level, 8.6 ft (2.62 m) below lsd, Dec. 4, 1962; lowest water level, 16.6 ft (5.060 m) below lsd, Nov. 13, 1964.

Mar. 16, 1982 14.37 ft

ELBERT COUNTY

391717N103475001 SC 9-57- 8ABB. J. C. Mattson. Drilled observation water-table well in alluvium. Diameter, 6 in (0.15 m). Depth, 28 ft (8.5 m). MP, 0.20 ft (0.061 m) above lsd. Altitude of land surface, 5,475 ft (1,669 m). Records available: 1945-82.

Highest water level, 5.00 ft (1.524 m) below lsd, July 2, 1947; lowest water level, 7.92 ft (2.414 m) below lsd, Mar. 2, 1977.

Mar. 17, 1982 7.46 ft

EL PASO COUNTY

390441N104184501

SC11-62-22ADC. Anthony Eurich. Drilled irrigation water-table well in alluvium. Diameter, 24 in (0.61 m). Depth, 44 ft (13.4 m). MP, 0.80 ft (0.244 m) above lsd. Altitude of land surface, 6,364.8 ft (1,940.0 m). Records available: 1945-82.

Highest water level, 5.49 ft (1.673 m) below lsd, Aug. 9, 1947; lowest water level, 8.48 ft (2.585 m) below lsd, July 11, 1952.

Mar. 9, 1982 6.97 ft

HUERFANO COUNTY

373922N104501401

SC-27-67-36ACB. State of Colorado. Drilled stock water-table well in Trinidad Sandstone. Diameter, 7 in (0.178 m). Depth, 62 ft (18.9 m). MP, 2.2 ft (0.67 m) above lsd. Altitude of land surface, 6,282 ft (1,915 m). Records available: 1950-75, 1980.

Highest water level, 41.33 ft (12.95 m) below lsd, May 7, 1980; lowest water level, 43.8 ft (14.87 m) below lsd, Apr. 26, 1955.

1982 No measurement.

KIOWA COUNTY

383230N102274601

SC17-45-31ABA. U.S. Government. Bored observation water-table well in valley-fill deposits. Diameter, 1.25 in (0.032 m). Depth, 11 ft (3.35 m). MP, 1.5 ft (0.46 m) above lsd. Altitude of land surface, 3,954.4 ft (1,205.30 m). Records available: 1959-82.

Highest water level, 5.32 ft (1.625 m) below lsd, Mar. 19, 1979; lowest water level, 8.6 ft (2.62 m) below lsd, Nov. 10, 1960.

Mar. 17, 1982 5.35 ft

KIT CARSON COUNTY

392230N103052000

SC 9-51-10ABB2. Drilled irrigation water-table well in alluvium and Meade Formation. Diameter, 18 in (0.46 m). Depth, 74 ft (22.6 m). MP, 0.1 ft (0.03 m) above lsd. Altitude of land surface, 4,870 ft (1,484 m). Records available: 1951-82.

Highest water level, 30.4 ft (9.27 m) below lsd, Jan. 15, 1952; lowest water level, 40.64 ft (12.387 m) below lsd, Jan. 8, 1979.

Jan. 4, 1982 38.20 ft

391110N102030100

SC10-42-12DCD. U.S. Government. Drilled observation water-table well in Ogallala Formation. Diameter, 1.25 in (0.032 m). Depth, 273 ft (83.2 m). MP, 3.30 ft (1.006 m) above lsd. Altitude of land surface, 3,997.7 ft (1,218.50 m). Records available: 1955-82.

Highest water level, 101.67 ft (30.989 m) below lsd, Aug. 12, 1955; lowest water level, 128.59 ft (38.733 m) below lsd, Jan. 17, 1980.

Jan. 5, 1982 131.72 ft

LARIMER COUNTY

402426N105013001

SB 5-68-17AAB. George Peak. Drilled irrigation water-table well in alluvium. Diameter, 48 in (1.22 m). Depth, 24 ft (7.3 m). MP, 1.0 ft (0.30 m) above lsd. Altitude of land surface, 4,948 ft (1,508 m). Records available: 1941-82.

Highest water level, 5.43 ft (1.655 m) below lsd, Oct. 27, 1947; lowest water level, 14.45 ft (4.404 m) below lsd. Apr. 20, 1949.

Mar. 8, 1982 12.10 ft

403333N104585001

SB 7-68-23CBB1. W. A. Scott. Drilled observation water-table well in alluvium. Diameter, 48 in (1.22 m). Depth, 52 ft (15.8 m). MP, 2.70 ft (0.823 m) above lsd. Altitude of land surface, 4,902 ft (1,494 m). Records available: 1941-79, 1982.

Highest water level, 6.1 ft (1.86 m) below lsd. Nov. 6, 1957; lowest water level, 10.5 ft (3.20 m) below lsd, Mar. 15, 1975.

Mar. 24, 1982 4.93 ft

404517N105014201

SB 9-68-17BAA. Harlan Seaworth. Drilled irrigation water-table well in alluvium. Diameter, 20 in (0.51 m). Depth, 92 ft (28.0 m). MP, 0.40 ft (0.122 m) above lsd. Altitude of land surface, 5,329 ft (1,624 m). Records available: 1939-79, 1982.

Highest water level, 29.02 ft (8.845 m) below lsd, Apr. 3, 1959; lowest water level, 64.45 ft (19.644 m) below lsd, Nov. 9, 1956.

Mar. 8, 1982 38.15 ft

LINCOLN COUNTY

385724N103155601

SC13-53- 1DDC. U.S. Government. Bored observation water-table well in alluvium. Diameter, 1.25 in (0.032 m). Depth, 8 ft (2.4 m). MP, 1.0 ft (0.30 m) above lsd. Altitude of land surface, 4,720 ft (1,439 m). Records available: 1959-77, 1979-82.

Highest water level, 3.5 ft (1.07 m) below lsd, Apr. 4, 1960; lowest water level, 5.28 ft (1.609 m) below lsd, Mar. 2, 1977.

Mar. 17, 1982 4.80 ft

LOGAN COUNTY

404256N103064401

SB 9-51-31BBB. Frank Manuello. Drilled irrigation water-table well in alluvium. Diameter unknown. Depth, 106 ft (32.3 m). MP, 1.0 ft (0.30 m) above lsd. Altitude of land surface, 3,865 ft (1,179 m). Records available: 1947-82.

Highest water level, 2.89 ft (0.881 m) below lsd, Oct. 6, 1947; lowest water level, 7.16 ft (2.182 m) below lsd, Jan. 10, 1975.

Mar. 10, 1982 6.19 ft

405209N102481700

SB10-49- 2CBC. G. E. Henery. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 32 ft (9.8 m). MP, 1.50 ft (0.457 m) above lsd. Altitude of land surface, 3,711 ft (1,131 m). Records available: 1947-79, 1982.

Highest water level, 3.95 ft (1.204 m) below lsd, Apr. 7, 1958; lowest water level, 9.03 ft (2.752 m) below lsd, Nov. 6, 1964.

Mar. 9, 1982 5.65 ft

MORGAN COUNTY

401452N103480200

SB 3-57- 6DCC. City of Fort Morgan. Dug and drilled observation water-table well in alluvium. Diameter, 12 in (0.30 m). Depth, 180 ft (54.9 m). MP, 5.0 ft (1.52 m) below lsd. Altitude of land surface, 4,325.6 ft (1,318.44 m). Records available: 1940-82.

Highest water level, 39.88 ft (12.155 m) below lsd, Jan. 20-21, 1955; lowest water level, 56.76 ft (17.300 m) below lsd, Sept. 5, 1965.

Mar. 10, 1982 51.08 ft

401424N103505200

SB 3-58-11BCC. Alex Stark. Drilled irrigation water-table well in alluvium. Diameter, 16 in (0.41 m). Depth, 145 ft (44.2 m). MP, 0.8 ft (0.24 m) above lsd. Altitude of land surface, 4,366.2 ft (1,330.82 m). Records available: 1939-65, 1967, 1970-79, 1982.

Highest water level, 51.85 ft (15.804 m) below lsd, Nov. 19, 1942; lowest water level, 69.87 ft (21.296 m) below lsd, Nov. 5, 1964.

Mar. 16, 1982 68.38 ft

401214N104053401

SB 3-60-22CCC. B. A. Holden. Drilled irrigation water-table well in alluvium. Diameter, 24 in (0.61 m). Depth, 120 ft (36.6 m). MP, 0.20 ft (0.061 m) above lsd. Altitude of land surface, 4,568.4 ft (1,392.45 m). Records available: 1936-82.

Highest water level, 49.44 ft (15.069 m) below lsd, Apr. 11, 1938; lowest water level, 103.83 ft (28.687 m) below lsd, Mar. 25, 1980.

Mar. 15, 1982 99.67 ft

401915N103321100

SB 4-55- 9DCC. Rudolph and Schooley. Drilled irrigation water-table well in alluvium. Diameter, 14 in (0.36 m). Depth, 88 ft (26.8 m). MP, 2.0 ft (0.61 m) above lsd. Altitude of land surface, 4,175.2 ft (1,272.60 m). Records available: 1930, 1932-79, 1982.

Highest water level, 14.75 ft (4.496 m) below lsd, Oct. 19, 1949; lowest water level, 25.76 ft (7.852 m) below lsd, Mar. 11, 1969.

Mar. 16, 1982 17.73 ft

402113N103580300

SB 5-59-34CAD. G. Williams. Dug domestic and stock water-table well in alluvium. Diameter, 36 in (0.91 m). Depth, 20 ft (6.1 m). MP, 2.20 ft (0.671 m) above lsd. Altitude of land surface, 4,362 ft (1,330 m) above msl. Records available: 1947-82.

Highest water level, 7.16 ft (2.182 m) below lsd, Sept. 9, 1948; lowest water level, 16.72 ft (5.096 m) below lsd, Apr. 7, 1956.

Mar. 16, 1982 16.23 ft

OTERO COUNTY

380706N103534200

SC22-58-21DAA. C. Meyer. Drilled irrigation water-table well in alluvium. Diameter, 24 in (0.61 m). Depth, 56 ft (17.1 m). MP, 1.90 ft (0.579 m) above lsd. Altitude of land surface, 4,282 ft (1,305 m). Records available: 1928-31, 1933-82.

Highest water level, 25.54 ft (7.785 m) below lsd, Mar. 28, 1955; lowest water level, 36.61 ft (11.159 m) below lsd, Mar. 6, 1979.

Mar. 15, 1982 35.40 ft

380334N103434700

SC23-57-12DAD. American Crystal Sugar Co. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 27 ft (8.2 m). MP, 2.00 ft (0.610 m) above lsd. Altitude of land surface, 4,186 ft (1,276 m). Records available: 1944-78, 1980-82.

Highest water level, 8.87 ft (2.704 m) below lsd, Dec. 4, 1946; lowest water level, 15.78 ft (4.810 m) below lsd, Nov. 27, 1956.

Mar. 15, 1982 14.41 ft

PHILLIPS COUNTY

403230N102070901

SB 7-43-35ABB2. Rosa Norris. Drilled irrigation water-table well in Ogallala Formation. Diameter, 16 in (0.40 m). Depth, 300 ft (91.4 m). MP, 0.70 ft (0.213 m) above lsd. Altitude of land surface, 3,601 ft (1,097.58 m). Records available: 1976-81.

Highest water level, 46.06 ft (14.039 m) below lsd, Feb. 20, 1974; lowest water level, 60.91 ft (18.565 m) below lsd, Dec. 29, 1981.

Dec. 29, 1981 60.91 ft

PROWERS COUNTY

380532N102311600

SC22-45-31CBB. U.S. Geological Survey. Driven observation water-table well in alluvium. Diameter, 1.25 in (0.032 m). Depth, 11 ft (3.35 m). MP, 3.5 ft (1.07 m) above lsd. Altitude of land surface, 3,567 ft (1,087 m). Records available: 1950-82.

Highest water level, 0.10 ft (0.030 m) below lsd, Aug. 24, 1967; lowest water level, 6.00 ft (1.829 m) below lsd, May 3, 1965.

Jan. 13, 1982	4.00 ft	July 8, 1982	4.02 ft
Mar. 17, 1982	4.06 ft	Sept. 22, 1982	3.90 ft
May 14, 1982	4.07 ft	Nov. 4, 1982	3.78 ft

PUEBLO COUNTY

381340N104205601

SC21-62- 9CCC. Susie C. Potestio. Drilled irrigation water-table well in alluvium. Diameter, 15 in (0.38 m). Depth, 28 ft (8.5 m). MP, 1.1 ft (0.34 m) above lsd. Altitude of land surface, 4,567 ft (1,392 m). Records available: 1929, 1934-75, 1980-82.

Highest water level, 13.90 ft (4.237 m) below lsd, Nov. 16, 1965; lowest water level, 20.55 ft (6.181 m) below lsd, July 28, 1981.

May 13, 1982 19.34 ft

381443N104320701

SC21-64- 3DAC. Joseph Thomas. Drilled irrigation water-table well in alluvium. Diameter, 15 in (0.38 m). Depth, 35 ft (10.7 m). MP, 2.10 ft (0.640 m) above lsd. Altitude of land surface, 4,679 ft (1,426 m). Records available: 1934-75, 1979, 1982.

Highest water level, 12.20 ft (3.719 m) below lsd, Nov. 11, 1942; lowest water level, 27.50 ft (8.382 m) below lsd, Mar. 14, 1977.

Mar. 17, 1982 23.94 ft

380817N104043400

SC22-60-13BBC. C. J. Sindig. Drilled irrigation water-table well in alluvium. Diameter, 4 ft (1.2 m). Depth, 39 ft (11.9 m). MP, 1.0 ft (0.30 m) above lsd. Altitude of land surface, 4,375 ft (1,334 m). Records available: 1952-82.

Highest water level, 28.21 ft (8.748 m) below lsd, Mar. 13, 1980; lowest water level, 36.16 ft (11.022 m) below lsd, Nov. 28, 1956.

May 13, 1982 32.30 ft

SEDGWICK COUNTY

404741N102030500

SB10-42-32DDD. U.S. Geological Survey. Drilled observation water-table well in Ogallala Formation. Diameter, 1.25 in (0.032 m). Depth, 207 ft (63.1 m). MP, 2.80 ft (0.853 m) above lsd. Altitude of land surface, 3,609.2 ft (1,100.08 m). Records available: 1952-82.

Highest water level, 176.34 ft (53.748 m) below lsd, Jan. 16, 1969; lowest water level, 190.56 ft (57.345 m) below lsd. Jan. 10, 1982.

Jan. 10, 1982 190.56 ft

405805N102235100

SB11-45- 5BBA. F. J. Hilderman. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 52 ft (15.8 m). MP, 0.50 ft (0.152 m) above lsd. Altitude of land surface, 3,540 ft (1,079 m). Records available: 1947-79, 1982.

Highest water level, 11.23 ft (3.423 m) below lsd, Oct. 7, 1949; lowest water level, 20.70 ft (6.309 m) below lsd, Jan. 6, 1975.

Mar. 9, 1982 18.58 ft

405435N102364300

SB11-47-28BBB. James Jankovsky. Drilled irrigation water-table well in alluvium. Diameter, 24 in (0.61 m). Depth, 52 ft (15.8 m). MP, 0.50 ft (0.152 m) above lsd. Altitude of land surface, 3,624 ft (1,105 m). Records available: 1948-79, 1982.

Highest water level, 2.51 ft (0.765 m) below lsd, June 24, 1948; lowest water level, 5.61 ft (1.710 m) below lsd, Oct. 17, 1954.

Mar. 9, 1982 4.05 ft

WASHINGTON COUNTY

395706N103325901

SC 1-55-21BCD. A. Blake. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 41 ft (12.5 m). MP, 1.50 ft (0.457 m) above lsd. Altitude of land surface, 4,487.3 ft (1,367.73 m). Records available: 1947-67, 1970-82.

Highest water level, 11.83 ft (3.606 m) below lsd, Dec. 9, 1947; lowest water level, 16.95 ft (5.166 m) below lsd, Oct. 20, 1960.

Mar. 10, 1982 14.17 ft

394038N102481800

SC 4-49-25ADC1. Cecil Williams. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 17 ft (5.2 m). MP, 0.20 ft (0.061 m) above lsd. Altitude of land surface, 4,350 ft (1,326 m). Records available: 1950-69, 1971-72, 1975-79, 1982.

Highest water level, 7.42 ft (2.262 m) below lsd, Aug. 6, 1951; lowest water level, 16.30 ft (4.968 m) below lsd, Jan. 4, 1979.

Mar. 22, 1982 15.19 ft

393902N102561800

SC 5-50- 2AAB. Lloyd McIrwin. Drilled irrigation water-table well in alluvium. Diameter, 24 in (0.61 m). Depth, 54 ft (16.5 m). MP, 2.00 ft (0.610 m) above lsd. Altitude of land surface, 4,514.6 ft (1,376.05 m). Records available: 1950-67, 1969-75, 1982.

Highest water level, 16.44 ft (5.011 m) below lsd, Nov. 8, 1962; lowest water level, 22.65 ft (6.904 m) below lsd, July 23, 1954.

Mar. 22, 1982 20.01 ft

WELD COUNTY

400306N104154701

SB 1-62-13ADD. C. M. Roark. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 76 ft (23.2 m). MP, 3.00 ft (0.914 m) above lsd. Altitude of land surface, 4,824.1 ft (1.470.39 m). Records available: 1947-75, 1981.

Highest water level, 18.29 ft (5.575 m) below lsd, Oct. 16, 1952; lowest water level, 53.20 ft (14.54 m) below lsd, Mar. 12, 1981.

1982 No measurement.

400427N104244801

SB 1-63- 2CCC. D. Trupp. Drilled irrigation water-table well in alluvium. Diameter, 20 in (0.51 m). Depth, 96 ft (29.3 m). MP, 0.30 ft (0.091 m) above lsd. Altitude of land surface, 4,822 ft (1,470 m). Records available: 1944-56, 1958-82.

Highest water level, 51.70 ft (15.758 m) below lsd, May 1, 1950; lowest water level, 75.90 ft (23.134 m) below lsd, Nov. 13, 1959.

Mar. 10, 1982 67.20 ft

400125N104370001

SB 1-65-25CCD1. Fred Haffner, Sr. Drilled irrigation water-table well in alluvium. Diameter, 24 in (0.61 m). Depth, 69 ft (21.0 m). MP, 0.60 ft (0.183 m) above lsd. Altitude of land surface, 5,044 ft (1,537 m). Records available: 1940-82.

Highest water level, 30.29 ft (9.232 m) below lsd, Apr. 12, 1950; lowest water level, 45.70 ft (13.929 m) below lsd, Mar. 2, 1979.

Mar. 10, 1982 43.23 ft

400129N104483800

SB 1-66-30ADA. G. J. Mancini. Dug irrigation water-table well in alluvium. Diameter, 8 ft (2.4 m). Depth, 31 ft (9.4 m). MP, 1.15 ft (0.351 m) above lsd. Altitude of land surface, 4,953 ft (1,510 m). Records available: 1929-75, 1978-82.

Highest water level, 10.29 ft (3.136 m) below lsd, Oct. 12, 1933; lowest water level, 21.16 ft (6.349 m) below lsd, Mar. 11, 1982.

Mar. 11, 1982 21.16 ft

401727N104133000

SB 4-61-29BBB. K. Mori. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 100 ft (30.5 m). MP, 0.80 ft (0.244 m) above lsd. Altitude of land surface, 4,482 ft (1,366 m). Records available: 1947-79, 1982.

Highest water level, 21.60 ft (6.584 m) below lsd, Oct. 9, 1947; lowest water level, 40.60 ft (12.375 m) below lsd, Mar. 1, 1976.

May 27, 1982 32.38 ft

401912N104313700

SB 4-64-10CDD. T. E. Dwyer. Drilled irrigation water-table well in alluvium. Diameter, 24 in (0.61 m). Depth, 60 ft (18.3 m). MP, 0.60 ft (0.183 m) above lsd. Altitude of land surface, 4,635 ft (1,413 m). Records available: 1940-82.

Highest water level, 6.43 ft (1.960 m) below lsd, Nov. 9, 1949; lowest water level, 23.64 ft (7.205 m) below lsd, Nov. 13, 1956.

Mar. 10, 1982 15.30 ft

402753N104280901

SB 6-63-29BBB. H. L. Wells. Drilled irrigation water-table well in alluvium. Diameter, 4 ft (1.2 m). Depth, 37 ft (11.3 m). MP, 1.80 ft (0.549 m) above lsd. Altitude of land surface, 4,655 ft (1,419 m). Records available: 1932-79, 1982.

Highest water level, 7.19 ft (2.192 m) below lsd, Aug. 11, 1932; lowest water level, 22.85 ft (6.965 m) below lsd, Nov. 12, 1956.

June 2, 1982 12.33 ft

402930N104414301

SB 6-65-17BBC. H. W. Farr. Drilled irrigation water-table well in alluvium. Diameter, 18 in (0.46 m). Depth, 65 ft (19.8 m). MP, 0.80 ft (0.244 m) above lsd. Altitude of land surface, 4,761.9 ft (1,451.43 m). Records available: 1932-75, 1982.

Highest water level, 21.22 ft (6.468 m) below lsd, Aug. 1, 1932; lowest water level, 41.36 ft (12.607 m) below lsd, Nov. 12, 1956.

Mar. 9, 1982 27.11 ft

403032N104510201

SB 6-67-12BBB. Fred Felte. Drilled irrigation water-table well in alluvium. Diameter, 24 in (0.61 m). Depth, 22 ft (6.7 m). MP, 0.50 ft (0.152 m) above lsd. Altitude of land surface, 4,859 ft (1,481 m). Records available: 1941-75, 1982.

Highest water level, 5.45 ft (1.661 m) below lsd, Mar. 21, 1962; lowest water level, 13.30 ft (4.054 m) below lsd, Nov. 12, 1956.

Apr. 29, 1982 10.57 ft

403454N104403701

SB 7-65-16BBB. K. Akahoshi. Drilled irrigation watre-table well in alluvium. Diameter, 4 ft (1.2 m). Depth, 18 ft (5.5 m). MP, 2.70 ft (0.823 m) above lsd. Altitude of land surface, 4,875.1 ft (1,485.93 m). Records available: 1942-48, 1950-79, 1982.

Highest water level, 4.09 ft (1.247 m) below lsd, Oct. 28, 1959; lowest water level, 7.42 ft (2.262 m) below lsd, Apr. 29, 1946.

Mar. 9, 1982 5.13 ft

403914N104451801

SB 8-66-22AAA. Troy Jones. Dug irrigation water-table well in alluvium. Diameter, 12 ft (3.6 m). Depth, 31 ft (9.4 m). MP, 2.1 ft (0.64 m) above lsd. Altitude of land surface, 5,073.7 ft (1,546.46 m). Records available: 1929-82.

Highest water level, 16.20 ft (4.938 m) below lsd, Jan. 8, 1947; lowest water level, 22.68 ft (6.913 m) below lsd, Nov. 22, 1954.

Mar. 8, 1982 21.34 ft

YUMA COUNTY

401105N102061101

SB 3-42-31BDD. U.S. Geological Survey. Drilled observation water-table well in Ogallala Formation. Diameter, 1.25 in (0.032 m). Depth, 92 ft (28.0 m). MP, 0.5 ft (0.15 m) above lsd. Altitude of land surface, 3,615.8 ft (1,102.10 m). Records available: 1952-82.

Highest water level, 21.25 ft (6.477 m) below lsd, Aug. 14, 1952; lowest water level, 48.52 ft (14.789 m) below lsd, Jan. 11, 1981.

Jan. 2, 1982 47.56 ft

401410N102415000

SB 3-48-12CCC. C. Pagel. Drilled stock water-table well in Ogallala Formation. Diameter, 4 in (0.09 m). Depth, 184 ft (56.1 m). MP, 0.1 ft (0.030 m) above lsd. Altitude of land surface, 4,068.1 ft (1,239.96 m). Records available: 1956-78.

Highest water level, 171.4 ft (52.24 m) below lsd, Nov. 21, 1966; lowest water level, 183.92 ft (56.058 m) below lsd, Jan. 15, 1977.

1982 No measurement.

INDEX

Page

Accuracy of field data and computed results....... 29
Acknowledgements................................ 7
Acre-foot, definition of......................... 13
Adams County, ground-water levels................ 395
Alamosa County, ground-water levels.............. 395
Alamosa Creek above Terrace Reservoir............ 337,387
Algae, definition of............................. 13
Algae, blue green, definition of................. 19
Algae, green, definition of...................... 19
Alva B. Adams tunnel at east portal, near Estes Park................................ 357,359
Anaconda Reservoir near Villa Grove.............. 335
Analysis of miscellaneous stations............... 370-388
Analysis of samples collected at miscellaneous sites..................................... 363-369
Apishapa River, near Fowler...................... 287,377
Aquifer, definition of........................... 13
Arkansas River, above Pueblo, gaging station record...................... 231
  water-quality record........................... 232
  at Granite..................................... 193
  at La Junta.................................... 290
  at Lamar....................................... 304,379
  at Las Animas.................................. 292,37B
  at Parkdale, gaging-station record............. 215
    water-quality record......................... 216
  at Parkdale siding near Parkdale, water-quality record....................... 211
  at Portland, gaging-station record............. 219
    water-quality record......................... 220-222
  below John Martin Reservoir.................... 303,379
  near Avondale.................................. 284,376
  near Coolidge, KS, gaging-station record....... 308
    water-quality record......................... 309-311
  near Granata................................... 306,379
  near Leadville................................. 185,373
  near Malta, gaging-station record.............. 191
    water-quality record......................... 192
  near Nathrop................................... 195,373
  near Wellsville................................ 196
Arkansas River basin, crest-stage partial-record stations in............................... 361
  gaging station records in...................... 184

B Ditch Drain near Security, gaging-station record...................... 255
  water-quality record........................... 256-257
Baca County, ground-water levels................. 395
Bacteria, definition of.......................... 13
Bacteria, explanation of......................... 13-14
Badger Creek, lower station, near Howard, gaging-station record.......... 204
  water-quality records.......................... 205-210
Badger Creek, upper station, near Howard, gaging-station record.......... 197
  water-quality record........................... 198-203
Bear Creek, at Morrison.......................... 83,381
  at mouth, at Sheridan.......................... 84,381
Bed material, definition of...................... 14
Bent County, ground-water levels................. 395
Berthoud Pass ditch at Berthoud Pass, diversion by.............................. 357,359
Big Sandy Creek near Lamar....................... 305,379
Big Thompson River, above Loveland, water-quality record....................... 130-132
  at Estes Park.................................. 117,384
  at Loveland, gaging-station record............. 133
    water-quality record......................... 134-136
  at mouth, near La Salle, water-quality record....................... 144-145
  at mouth of canyon, near Drake................. 129
  below Loveland, water-quality record......................... 137-139
  near Estes Park................................ 122,385
Bijou Creek near Fort Morgan..................... 176,372
Biochemical oxygen demand (BOD), definition of............................. 14
Biomass, definition of........................... 14
Biomass, explanation of.......................... 14
Bobolink Reservoir near Conejos.................. 341
Bonny Reservoir near Hale........................ 183
Bottom material, definition of................... 14
Boulder Creek at mouth near Longmont, gaging-station record............................. 111
  water-quality record........................... 112-113

Page

Boulder Creek (Platte River basin) near Orodell... 106,384
Bush Draw near Walden........................... 51
Busk-Ivanhoe tunnel at east portal, near Malta, diversion by.............................. 358-359

Cache la Poudre River, above Box Elder Creek near Timnath, gaging-station record............. 163
  water-quality record........................... 164-166
  at Fort Collins, gaging-station record......... 156
    water-quality record......................... 157-159
  at mouth of canyon, near Fort Collins, gaging-station record.................... 151
    water-quality record......................... 152-153
  at Shields Street, water-quality record........ 154-155
  below Fort Collins, water-quality record....... 160-162
  near Fort Collins, water-quality record........ 14B-150
  near Greeley, gaging-station record............ 167
    water-quality record......................... 168-169
Canadian River near Brownlee, gaging-station record.................................. 54
  water-quality record........................... 55-59
Canadian River near Lindland, gaging-station record.................................. 45
  water-quality record........................... 46-50
Carter Lake near Berthoud, contents of........... 140
  water-quality record........................... 141-143
Cells/volume, definition of...................... 14
Cfs-day, definition of........................... 15
Charles H. Boustead tunnel near Leadville, diversion by.............................. 358-359
Chatfield Lake near Littleton, contents of....... 76
Cheesman Lake near Deckers, contents of.......... 70
Chemical oxygen demand (COD), definition of....... 15
Cherry Creek at Denver.......................... 89,371
  below Cherry Creek Lake........................ 88
  near Franktown................................. 86,371
Cherry Creek Lake near Denver, contents of....... 87
Chlorophyll, definition of....................... 15
Clear Creek (Platte River basin) at Golden........ 94
  at mouth, near Derby........................... 100,382
  at Tabor Street, at Wheatridge................. 98
  near Lawson.................................... 93,382
Clover Ditch near Widefield, gaging-station record.................................. 259
  water-quality record........................... 260-262
Coal Creek near Plainview, gaging-station record.. 108
  water-quality record........................... 109-110
Collection and computation of data, streamflow.... 25-29
Collection and examination of data, water-quality.............................. 30
Columbine ditch near Fremont Pass, diversion by... 357,359
Conejos River, below Platoro Reservoir........... 345,387
  near Lasauses.................................. 350
  near Mogote.................................... 346
Contents, definition of.......................... 15
Control, definition of........................... 15
Cooperation...................................... 6
Cottonwood Creek above Sand Gulch near Parkdale, water-quality records........ 213
Cottonwood Creek below Hot Springs, near Buena Vista.................................... 194,373
Crest-stage partial-record stations.............. 360-361
Crooked Arroyo near Swink........................ 289,377
Cubic foot per second, definition of............. 15
Culebra Creek at San Luis........................ 351,388
Currant Creek above Cottonwood Creek near Parkdale, water-quality records....... 212

Don La Font ditches 1 and 2 at Piedra Pass, diversion by.............................. 358-359
Definition of terms.............................. 13
Diatoms, definition of 19
Discharge at partial-record stations and miscellaneous sites.................... 360-362
Discharge, explanation of........................ 15
Dissolved, definition of......................... 15
Dissolved oxygen (DO), definition of............. 15
Downstream order and station number.............. 24
Drainage area, definition of..................... 16

Elbert County, ground-water levels............... 395
Elevenmile Canyon Reservoir near Lake George, contents of............................... 70
El Paso County, ground-water levels.............. 396
Ewing ditch at Tennessee Pass, diversion by....... 357,359

Page

Explanation of ground-water-level records......... 35
Explanation of stage and water-discharge records......... 25
Explanation of water-quality records............. 30

Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivelents per liter................. 17
Factors for conversion of sediment concentration in milligrams per liter to parts per million.......................... 18
Fountain Creek, above Little Fountain Creek, below Fountain, water-quality record............. 267-268
  at Colorado Springs, gaging-station record...... 246
    water-quality record......................... 247-249
  at Pueblo, gaging-station record............... 280
    water-quality record......................... 281-282
  at Security.................................... 258,374
  below Circle Drive below Colorado Springs, water-quality record..................... 253-254
  below 8th Street at Colorado Springs, water-quality record..................... 236-237
  below Janitell Road, water-quality record....... 250-252
  below Widefield, water-quality record........... 263
  near Colorado Springs, gaging-station record.... 233
    water-quality record......................... 234-235
  near Pinon, gaging-station record.............. 277
    water-quality record......................... 278-279
Fourmile Creek, near Canon City.................. 218,373
Frontier ditch near Coolidge, KS................. 307

Gage height, definition of....................... 16
Gaging station, definition of.................... 16
Goose Creek (Platte River basin) above Cheesman Lake...................................... 69,380
Goose Creek (Rio Grande basin) at Wagonwheel Gap.. 316,385
Grand River ditch at La Poudre Pass, diversion by.............................. 357,359
Grange Hall Creek below Northglenn............... 101
Grape Creek near Westcliffe...................... 217,385
Ground-water levels.............................. 395-400

Halfmoon Creek near Malta, gaging-station record.. 187
  water-quality record........................... 188-190
Hardness, definition of.......................... 16
Harold D. Roberts tunnel at Grant, diversion by... 357,359
Homestake tunnel near Leadville, diversion by..... 357,359
Hoosier Pass tunnel at Hoosier Pass, diversion by. 357,359
Horse Creek near Las Animas...................... 291,377
Horsetooth Reservoir near Fort Collins, contents of............................... 123
  water-quality record........................... 124-128
Huerfano County, ground-water levels............. 396
Huerfano River at Manzanares Crossing, near Redwing.................................... 285,385
  near Boone..................................... 286,376
Hydrologic bench-mark station, explanation of..... 24
Hydrologic conditions............................ 7

Introduction..................................... 1
Irrigation-network stations, explanation of....... 25

Jefferson Creek near Jefferson................... 68,370
Jimmy Camp Creek at Fountain..................... 266,375
Joe Wright Creek, above Joe Wright Reservoir...... 146,372
  below Joe Wright Reservoir..................... 147,372
John Martin Reservoir at Caddoa.................. 302

Kansas River basin, gaging station records in..... 182
Kerber Creek at Ashley Ranch, near Villa Grove.... 332
Kettle Creek near Black Forest................... 240,374
Kiowa County, ground-water levels................ 396
Kit Carson County, ground-water levels........... 396

La Jara Creek at Gallegos Ranch, near Capulin..... 338
Lake Creek above Twin Lakes Reservoir............ 193
Laramie River near Glendevey..................... 63
Larimer County, ground-water levels.............. 396
Larkspur ditch at Marshall Pass, diversion by..... 358-359
Lincoln County, ground-water levels.............. 397
Little Fountain Creek, above Keaton Reservoir, near Fort Carson, gaging-station record..... 269
  water-quality record........................... 270
  near Fort Carson............................... 272
  near Fountain.................................. 273,375
Little Turkey Creek near Fountain, gaging-station record...................... 225
  water-quality record........................... 226
Logan County, ground-water levels................ 397
Long Canyon Creek near Madrid.................... 294,378

Page

Los Pinos River (Rio Grande basin) near Ortiz..... 348,387

Map of Colorado, crest-stage partial-record stations.................................. 4
  lake, stream-gaging and water-quality stations................................ 3
  observation wells.............................. 5
Michigan Creek above Jefferson................... 67,370
Michigan River, near Cameron Pass................ 43,370
  North Fork, near Gould......................... 44,370
Micrograms per liter, definition of.............. 16
Middle Boulder Creek at Nederland................ 105,383
Milligrams per liter, definition of.............. 16
Moffatt water tunnel at east portal, diversion by. 357,359
Monument Creek, at Bijou Street at Colorado Springs, water-quality record.............. 244-245
  at Palmer Lake................................. 238,374
  at Pikeview, gaging-station record............. 241
    water-quality record......................... 242-243
Morgan County, ground-water levels............... 397

National Geodetic Vertical Datum of 1929, definition of.............................. 17
National stream-quality accounting network, explanation of............................. 25
Noland Gulch Tributary Reservoir Inflow near Villa Grove...................................... 333
North Clear Creek below Continental Reservoir..... 313,385
North Fork Michigan River near Gould............. 44
North Fork Republican River at Colorado-Nebraska State line......................... 182
North Fork South Platte River, below Geneva Creek, at Grant.................................. 72,381
  at South Platte................................ 73
North Platte River near Northgate, gaging-station record...................... 60
  water-quality record........................... 61-62

Olympus Tunnel at Lake Estes, water-quality record...................... 118-121
Otero County, ground-water levels................ 398
Other data available............................. 30
Overview of the State for the 1982 Water Year..... 7

Partial-record station, definition of............ 17
Particle size, definition of..................... 18
Particle-size classification, definition of....... 18-19
Periphyton, definition of........................ 19
Pesticide network, definition of................. 19
Phillips County, ground-water levels............. 398
Phytoplankton, definition of..................... 19
Phytoplankton, explanation of.................... 19
Picocurie, definition of......................... 19
Pine River-Weminuche Pass ditch at Weminuche Pass, diversion by.............................. 358-359
Pinos Creek near Del Norte....................... 319,386
Platoro Reservoir at Platoro..................... 344
Platte River basin, crest-stage partial-record stations in............................... 360-361
  gaging station records in...................... 43
Plum Creek near Louviers......................... 75,371
Polychlorinated biphenyls, definition of......... 19
Prowers County, ground-water levels.............. 398
Publications..................................... 37
Publications on techniques of water-resource investigations............................ 41
Pueblo County, ground-water levels............... 398
Pueblo Reservoir near Pueblo..................... 230
Purgatoire River, at Madrid...................... 293,378
  at Ninemile Dam, near Higbee................... 300
  below Trinidad Lake, gaging-station record...... 296
    water-quality record......................... 297-299
  near Las Animas................................ 301,378
  near Thatcher.................................. 300

Quality of ground water, El Paso County............................ 389-394

Radiochemical network, definition of............. 19
Radioisotopes, definition of..................... 20
Records of discharge collected by agencies other than the Geological Survey........... 30
Recoverable from bottom material, definition of... 20
Republican River, South Fork, near Hale.......... 184,372
Reservoirs in South Platte River basin........... 70
Rio Grande, above mouth of Trinchera Creek, near Lasauses.............................. 342,387
  at Colorado-New Mexico State line.............. 356,388
  at Thirtymile Bridge, near Creede.............. 312
  at Wagonwheel Gap.............................. 315,380

Page

Rio Grande, near Del Norte........................ 318,386
  near Lobatos, gaging-station record............. 352
    water-quality record.......................... 353-355
  South Fork, at South Fork....................... 317
Rio Grande basin, gaging station records in....... 312
  discharge at miscellaneous sites in............. 362
Rock Creek, above Fort Carson Reservation......... 274
  near Fort Carson................................ 275
  near Fountain................................... 276,375

Saguache Creek near Saguache...................... 334,386
St. Charles River at Vineland..................... 283,376
St. Vrain Creek, at Lyons......................... 103,383
  at mouth, near Platteville, gaging-station
      record...................................... 114
    water-quality record.......................... 115-116
  below Longmont.................................. 104,372
San Antonio River, at mouth, near Manassa......... 349,388
  at Ortiz.. 347
San Luis Creek above Villa Grove,
    gaging-station record......................... 326
  water-quality record............................ 327-331
  near Poncha Pass, gaging station record......... 320
    water-quality record.......................... 321-325
Sedgwick County, ground-water levels.............. 398-399
Sediment.. 33
Sediment, definition of........................... 20
Sediment, explanation of.......................... 20-21
Selected references............................... 38-40
Sodium adsorption ratio, definition of............ 21
Solute, definition of............................. 21
Solutes, explanation of........................... 32
South Boulder Creek,
    near Eldorado Springs......................... 107,384
South Fork Republican River near Hale............. 184,372
South Fork Rio Grande at South Fork............... 317,386
South Platte River, above Elevenmile Canyon
    Reservoir, near Hartsel....................... 64,380
  at Denver....................................... 90,382
  at Florida Avenue at Denver..................... 85,371
  at 50th Avenue at Denver........................ 91
  at 64th Avenue at Commerce City................. 92,372
  at Henderson.................................... 102,383
  at Julesburg, gaging-station record............. 177
    water-quality record.......................... 178-181
  at Littleton,
      gaging-station record....................... 77
    water-quality record.......................... 78-82
  at Masters, gaging station record............... 171
    water-quality record.......................... 172
  at South Platte................................. 74
  below Cheesman Lake............................. 71,380
  near Lake George................................ 65,380
  near Kersey..................................... 170,385
  near Weldona, gaging-station record............. 173
    water-quality record.......................... 174-175
  North Fork, at South Platte..................... 73
    below Geneva Creek, at Grant.................. 72
Special networks and programs, explanation of..... 24-25
Specific conductance, definition of............... 21
Stage-discharge relation, definition of........... 21
Streamflow, definition of......................... 21
Suspended recoverable, definition of.............. 21-22

Page

Suspended total, definition of.................... 22
System for numbering wells and miscellaneous
    sites... 35

Tabor ditch at Spring Creek Pass, diversion by.... 358-359
Tallahassee Creek above Currant
    Creek near Parkdale, water-quality record..... 214
Tarbell ditch near Cochetopa Pass, diversion by... 358-359
Tarryall Creek at upper station near Como......... 66,370
Teller Reservoir near Stone City.................. 228
Thermograph, definition of........................ 22
Time-weighted average, explanation of............. 22
Timpas Creek at mouth, near Swink................. 288,377
Tons per acre-foot, explanation of................ 22
Tons per day, definition of....................... 22
Total, definition of.............................. 22
Total, explanation of............................. 23
Tracy Pit Reservoir Inflow near Saguache.......... 336
Transmountain diversions from Colorado River basin
    in Colorado................................... 357-359
Treasure Pass diversion ditch at Wolf Creek Pass,
    diversion by.................................. 358-359
Trinchera Creek, below Smith Reservoir,
    near Blanca................................... 343
Trinidad Lake near Trinidad....................... 295
Turkey Creek, above Teller Reservoir, near Stone
    City, gaging-station record................... 227
  water-quality record............................ 227
  near Fountain, gaging-station record............ 223
    water-quality record.......................... 224
  near Stone City................................. 229,373
Turkey Reservoir Inflow near Conejos.............. 340
Turquoise Lake near Leadville..................... 186
Twin Lakes tunnel at east portal, near Twin Lakes,
    diversion by.................................. 357,359

Van Bremer Arroyo near Model...................... 300

Washington County, ground-water levels............ 399
Water analysis.................................... 30-31
Water-supply papers............................... 34
Water temperatures................................ 31-32
Water year, definition of......................... 23
WDR, definition of................................ 23
Weighted average, definition of................... 23
Weld County, ground-water levels.................. 399-400
Weminuche Pass ditch at Weminuche Pass,
    diversion by.................................. 358-359
West Monument Creek at U.S. Air Force Academy..... 239,374
Williams Draw near Walden,
  gaging-station record........................... 52
  water-quality record............................ 53
Willow Creek (tributary to Rio Grande) at Creede.. 314,379
Wind River, diversion by.......................... 117
Womack Ditch near Fort Carson..................... 271,375
WRD, definition of................................ 23
WSP, definition of................................ 23
Wurtz ditch near Tennessee Pass, diversion by..... 357,359

Yellow Warbler Reservoir Inflow near Conejos...... 339
Yuma County, ground-water levels.................. 400

Zooplankton, definition of........................ 23

October 1, 1978

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	$2.54x10^{1}$	millimeters (mm)
	$2.54x10^{-2}$	meters (m)
feet (ft)	$3.048x10^{-1}$	meters (m)
miles (mi)	$1.609x10^{0}$	kilometers (km)
	Area	
acres	$4.047x10^{3}$	square meters (m^2)
	$4.047x10^{-1}$	square hectometers (hm^2)
	$4.047x10^{-3}$	square kilometers (km^2)
square miles (mi^2)	$2.590x10^{0}$	square kilometers (km^2)
	Volume	
gallons (gal)	$3.785x10^{0}$	liters (L)
	$3.785x10^{0}$	cubic decimeters (dm^3)
	$3.785x10^{-3}$	cubic meters (m^3)
million gallons	$3.785x10^{3}$	cubic meters (m^3)
	$3.785x10^{-3}$	cubic hectometers (hm^3)
cubic feet (ft^3)	$2.832x10^{1}$	cubic decimeters (dm^3)
	$2.832x10^{-2}$	cubic meters (m^3)
cfs-days	$2.447x10^{3}$	cubic meters (m^3)
	$2.447x10^{-3}$	cubic hectometers (hm^3)
acre-feet (acre-ft)	$1.233x10^{3}$	cubic meters (m^3)
	$1.233x10^{-3}$	cubic hectometers (hm^3)
	$1.233x10^{-6}$	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	$2.832x10^{1}$	liters per second (L/s)
	$2.832x10^{1}$	cubic decimeters per second (dm^3/s)
	$2.832x10^{-2}$	cubic meters per second (m^3/s)
gallons per minute (gal/min)	$6.309x10^{-2}$	liters per second (L/s)
	$6.309x10^{-2}$	cubic decimeters per second (dm^3/s)
	$6.309x10^{-5}$	cubic meters per second (m^3/s)
million gallons per day	$4.381x10^{1}$	cubic decimeters per second (dm^3/s)
	$4.381x10^{-2}$	cubic meters per second (m^3/s)
	Mass	
tons (short)	$9.072x10^{-1}$	megagrams (Mg) or metric tons

U.S. DEPARTMENT OF THE INTERIOR
Geological Survey, Mail Stop 415
Box 25046, Denver Federal Center
Denver, CO 80225

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF THE INTERIOR
INT 413

U.S.MAIL

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

SPECIAL 4TH CLASS BOOK RATE