

INTRODUCTORY STATEMENT

ANNUAL DIVISION ENGINEERS REPORT  
IRRIGATION DIVISION NO. 2

1977

IRRIGATION DIVISION NUMBER 2 CONSISTS OF ALL LANDS IRRIGATED FROM DITCHES AND CANALS DIVERTING WATER FROM THE ARKANSAS RIVER AND ITS TRIBUTARIES. THE DIVISION IS COMPOSED OF ELEVEN WATER DISTRICTS (10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 66, and 67) COMPRISING THE COUNTIES OF EL PASO, CHAFFEE, LAKE, FREMONT, CUSTER, PUEBLO, PARK, LAS ANIMAS, TELLER, CROWLEY, OTERO, BENT, PROWERS, BACA AND KIOWA.

THE AREA THAT IS ENCOMPASSED BY IRRIGATION DIVISION NUMBER 2 MAY BE BEST DESCRIBED BY THE FOLLOWING SUMMARIZED TABLES.

## OUTLINE FOR ORAL PRESENTATION

1977 was one of the driest years in my memory as far as stream flow in Division 2 was concerned. However, total precipitation was not dramatically low (being about 70%) and the timing and amounts generally were good. Overall, when all factors were considered, it was an average to slightly below average year yield-wise. Dry-land wheat, despite early winds, was generally good. The price, as usual when you have a good year, was not at all good. Irrigated land was about the same; fortuitously timely precipitation and a little winter storage as a hedge against the river call made for a fair yield. Much ado has been made about the farmers' strike, but we have no reports of any fields being plowed up, and in no instance have we heard of anyone not taking his irrigation water.

Litigation is again our major endeavor. We have enjoyed two more extremely bitter court hearings on the Purgatoire case that Kupe and I talked about last year, concerning a Corp of Engineers and Bureau of Reclamation Project that suffers from an acute case of lack of planning. One of these cases we won - - at least two more trials are in the works and the preceding two are in the Supreme Court.

There seems to be a lot of interest and comment on water sales. It seems the going rate is about 1,000 dollars for each irrigated acre and some shares have been sold at public auction. The Public Service has made offers on one entire ditch company with the intent to construct a new power plant. If constructed, that will make three installations in Division 2 in the last 5 years. All are coal fired with fuel coming from Routt County and northern Wyoming. It looks like the pace is picking up in industrial development.

In Division 2 Water Court there are cases that should be attended on at least one half of the working days in a year. It is impossible to attend all of these as our Judge is from Lamar and the Supreme Court has encouraged him to conduct as many hearings as possible in Lamar, which is over 120 miles away. The statute requires attendance on protested rulings of referees, and of course when subpoenaed. We are lucky that in our Division there are three of us and we can make some of the more important cases. One thing that worries me is the provision under SB 4 that referees can rule on plans of augmentation. This requires a consultation and for this consultation to have any meaning, some preparation must be done. Otherwise, the consultation is a farce or worse. We need more personnel, more money, and more time for the part-time people, and possibly an end to the drought, if that can be arranged.

We have had excellent cooperation with all in Denver over the last year, and surely do appreciate all the help we get. It got us through another extremely dry and difficult year.

## TABLE OF CONTENTS

Comments . . . . .	1
Division 2 by Counties . . . . .	3-18
County Summaries . . . . .	19-20
Basin Yield Drainage in Acre Feet . . . . .	21
Basin Yield - Commentary . . . . .	22
Direct Flow Diversions - Municipalities . . . . .	23
Direct Flow Diversions - Water Districts . . . . .	24
Direct Flow Diversions - Transmountain . . . . .	25
Transmountain Diversions - Graphs . . . . .	26-34
Summary - Precipitation, Dams, Floods - Division 2 . . . . .	35
Water Content - Snow Depth . . . . .	36-37
Precipitation . . . . .	38
Precipitation - Pueblo, Colorado . . . . .	39
Wind - Humidity Comparison, Pueblo, Colorado . . . . .	40
Listing of Major Reservoirs in Division 2 . . . . .	41-42
Reservoir Comparison - Acre Feet, Division 2 . . . . .	43-45
Livestock Water Tanks . . . . .	46
Tabulation - Water Rights . . . . .	47-53
Winter Water Storage . . . . .	54-66
Ground Water Administration . . . . .	67
Well Summary - Division 2 . . . . .	68
New Permits Issued in Division 2 . . . . .	69
Principal Aquifer, Arkansas River Valley Pueblo, Colorado to Kansas State Line . . . . .	70-71

Withdrawal in Acre Feet Per Year . . . . .	72
Arkansas River Compact . . . . .	73-74
Personnel Roster - Division 2 . . . . .	75-77
Mileage Total Water Districts - Division 2 . . . . .	78
Officers and Directors of Southeastern Colorado Water Conservancy District . . . . .	79
Water Related Organizations . . . . .	80-81

APPENDIX  
Hydrographic Records

#### DIVISION ENGINEERS COMMENTS.

Snow pack in 1977 water year was considerably below normal and the run-off was minimal. Water rights that almost always diverted during snow melt were, in most cases, not able to divert at all. The run-off was, however, fairly well timed, and very efficient diversion was made. Rain fall later during the rest of the irrigation season was spotty over the division, but again, was generally well timed, with its severity increasing east of Pueblo. Generally this year was below normal overall, but with winter storage water and well timed precipitation, average to slightly below average crops were realized.

There were two significant periods of flood activity; each consisted of several days of intermittent heavy thunder showers. A further reference will be made in the hydrographic section. Unlike last year, no significant temporary storage occurred in Pueblo Reservoir. There was inadvertant out-of-priority storage in Cucharas Reservoir and Black Hills Reservoir. In both cases this water was ordered released, and the order was, after some discussion, complied with.

The enforcement program for ground water Rules and Regulations, after the judge staid his last year's ruling, was implemented about as last year with well owners being contacted and advised of their impact. We did this through the Attorney General seeking an injunction and the case was disposed of when the well owner agreed to comply and a suitable order was issued by the court.

This year, as last, a great amount of time was spent by the Division Engineer and staff in the Water Court. The Water Court is becoming more time consuming as cases become more complex and more interest is shown by protestors. Most cases now go to trial, or at least to hearing before the referee. Since the Division is generally either subpoenaed as a witness or required by statute (in the case of protested rulings of referees) to be present in court, some preparation is mandatory. The legal end of Division business could conceivably occupy at least one man continuously.

The preparation for the 1978 tabulation is taking a considerable amount of time now, and it can be anticipated on publication will generate a tremendous amount of office traffic which could mean additional personnel in the clerical area.

The water commissioners' diversion records were key punched in the Division office, and while this does constitute a departure from last year, appears to have more advantages than disadvantages.

The hydrographic section maintained 22 gaging stations and monitored 9 transmountain stations (copies of these records are enclosed). One unpublished gage on Texas Creek was discontinued during the year as the effort to rehabilitate it exceeded its administrative value. The gage at Huerfano near Red Wing was destroyed in a flood in August and subsequently

re-built by Division personnel, assisted by Wayne Crosby from Denver. The peak flow was estimated in excess of 20,000 c.f.s. This was moderately destructive at the site, but due to its extremely short duration (less than 1 hour) did very little damage except to the road and gage.

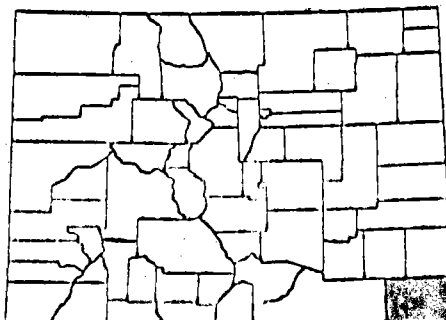
The Fry-Ark Project has continued on schedule of construction, with the largest remaining dam (Twin Lakes) being let out for bid in the Fall of 1977. The attacks on the Fry-Ark by environmental groups, both in the courts and in congress, have been especially vicious. To date they have been unsuccessful in slowing construction, but the costs have been enormous to the Project for environmental, both preservation and enhancement. Winter water storage was again implemented on a unanimous agreement, and seemed to be highly beneficial to all participants. A unique feature was the storage of water in John Martin by one of the entities. This is covered in detail in the Winter Water segment of this report.

In summary, it has been a dry year, but timely precipitation and some stored Winter Water caused a near average crop. Prices for farm products have been very low, and attendant costs to farmers have risen, in some cases dramatically. Costs for fuel and power cannot help but increase even more in the future. Some marginal operations are in financial difficulty. The attitude of the agricultural water users has become markedly more litigious and hostile. Precipitation enhancement, if any, has had no measurable effect at this time. Although an accelerated program is underway, prospects for next irrigation season are not good.

IRRIGATION DIVISION II

BACA COUNTY

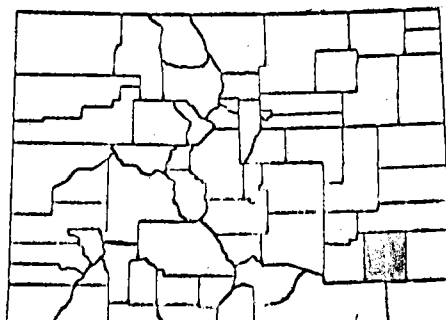
MAJOR CITY	Springfield
1970 POPULATION	5,516
URBAN POPULATION	No city over 2,500
RURAL POPULATION	5,516
COUNTY AREA	2,565 Sq. Miles
TERRAIN	Plains
ELEVATION (MAJOR CITY)	4,356
MAJOR STREAM	Carrizo
MAJOR TRIBUTARY	None
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	56,910
AVERAGE GROWING SEASON	169 days
ANNUAL MEAN TEMPERATURE	52.20
AVERAGE ANNUAL RAINFALL	14.73 inches
AVERAGE ANNUAL SNOWFALL	27.7 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	750
WATER RESOURCE PROJECTS	Underground Water
LAND OWNERSHIP	
PRIVATE	1,736,612 acres
FEDERAL	205,500 acres
STATE	42,928 acres
COUNTY AND MUNICIPAL	86 acres



IRRIGATION DIVISION II

BENT COUNTY

MAJOR CITY	Las Animas
1970 POPULATION	6,343
URBAN POPULATION	2,955
RURAL POPULATION	3,388
COUNTY AREA	1,517 Sq. Miles
TERRAIN	Plains
ELEVATION (MAJOR CITY)	3,901
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	Purgatoire
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	45,292
AVERAGE GROWING SEASON	158 Days
ANNUAL MEAN TEMPERATURE	51.3
AVERAGE ANNUAL RAINFALL	12.25 inches
AVERAGE ANNUAL SNOWFALL	21.0 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	450
WATER RESOURCE PROJECTS	Fryingpan
LAND OWNERSHIP	
PRIVATE	939,722 acres
FEDERAL	10,233 acres
STATE	142,673 acres
COUNTY AND MUNICIPAL	147 acres

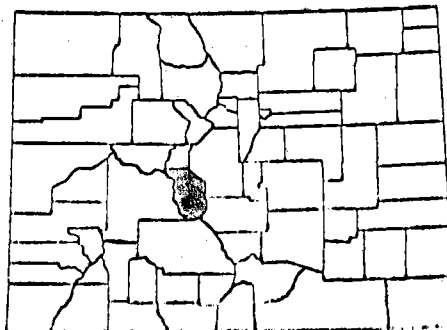




IRRIGATION DIVISION II

CHAFFEE COUNTY

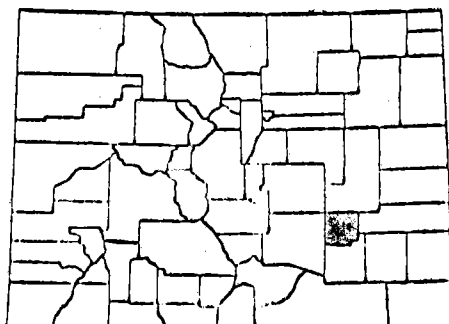
MAJOR CITY	Salida
1970 POPULATION	9,663
URBAN POPULATION	4,322
RURAL POPULATION	5,341
COUNTY AREA	1,039 Sq. Miles
TERRAIN	Mountainous
ELEVATION (MAJOR CITY)	7,036
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	South Arkansas
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	16,216
AVERAGE GROWING SEASON	112 Days
ANNUAL MEAN TEMPERATURE	46.3
AVERAGE ANNUAL RAINFALL	10.87 inches
AVERAGE ANNUAL SNOWFALL	46.2 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	170
WATER RESOURCE PROJECTS	Fryingpan
LAND OWNERSHIP	
PRIVATE	128,736 acres
FEDERAL	502,651 acres
STATE	20,103 acres
COUNTY AND MUNICIPAL	3,511 acres



IRRIGATION DIVISION II

CROWLEY COUNTY

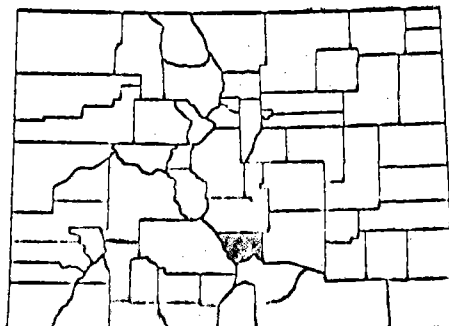
MAJOR CITY	Ordway
1970 POPULATION	2,947
URBAN POPULATION	No city over 2,500
RURAL POPULATION	2,947
COUNTY AREA	803 Sq. Miles
TERRAIN	Plains
ELEVATION (MAJOR CITY)	4,312
MAJOR STREAM	Horse Creek
MAJOR TRIBUTARY	None
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	25,010
AVERAGE GROWING SEASON	162 days
ANNUAL MEAN TEMPERATURE	51.4
AVERAGE ANNUAL RAINFALL	12.31 inches
AVERAGE ANNUAL SNOWFALL	21.2 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	400
WATER RESOURCE PROJECTS	Fryingpan
LAND OWNERSHIP	
PRIVATE	531,034 acres
FEDERAL	5,054 acres
STATE	52,711 acres
COUNTY AND MUNICIPAL	897 acres



IRRIGATION DIVISION II

CUSTER COUNTY

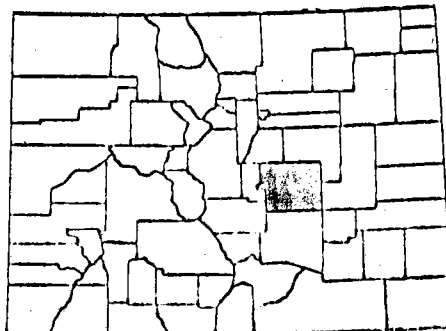
MAJOR CITY	Westcliffe
1970 POPULATION	1,028
URBAN POPULATION	No city over 2,500
RURAL POPULATION	1,028
COUNTY AREA	737 Sq. Miles
TERRAIN	Mountain Valley
ELEVATION (MAJOR CITY)	7,888
MAJOR STREAM	Grape
MAJOR TRIBUTARY	Texas
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	15,930
AVERAGE GROWING SEASON	86 days
ANNUAL MEAN TEMPERATURE	43.7
AVERAGE ANNUAL RAINFALL	16.47 inches
AVERAGE ANNUAL SNOWFALL	88.1 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	180
WATER RESOURCE PROJECTS	U.S.G.S. Underground Study
LAND OWNERSHIP	
PRIVATE	298,001 acres
FEDERAL	186,695 acres
STATE	11,989 acres
COUNTY AND MUNICIPAL	452 acres



IRRIGATION DIVISION II

EL PASO COUNTY

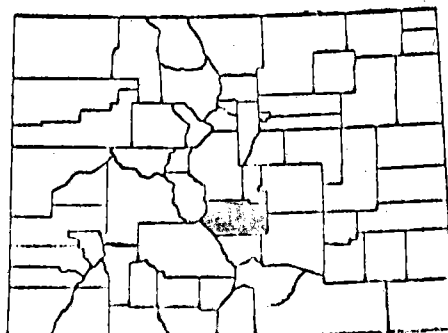
MAJOR CITY	Colorado Springs
1970 POPULATION	229,113
URBAN POPULATION	200,145
RURAL POPULATION	27,968
COUNTY AREA	2,158 Sq. Miles
TERRAIN	Foothills
ELEVATION (MAJOR CITY)	6,012
MAJOR STREAM	Fountain
MAJOR TRIBUTARY	Monument
MAJOR WATER USE	Commercial & Irrig.
IRRIGATED ACRES	13,630
AVERAGE GROWING SEASON	148 days
ANNUAL MEAN TEMPERATURE	48.0
AVERAGE ANNUAL RAINFALL	14.49 inches
AVERAGE ANNUAL SNOWFALL	35.0 inches
MAJOR SOURCE INCOME	Military, Manufacturing
NUMBER OF FARMS	750
WATER RESOURCE PROJECTS	Blue River, Fryingspan, Homestake
LAND OWNERSHIP	
PRIVATE	981,504 acres
FEDERAL	187,866 acres
STATE	192,482 acres
COUNTY AND MUNICIPAL	14,839 acres



IRRIGATION DIVISION II

FREMONT COUNTY

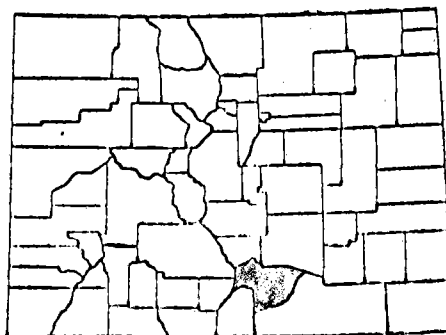
MAJOR CITY	Canon City
1970 POPULATION	20,220
URBAN POPULATION	11,917
RURAL POPULATION	8,303
COUNTY AREA	1,562 Sq. Miles
TERRAIN	Foothills
ELEVATION (MAJOR CITY)	5,332
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	Grape
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	14,930
AVERAGE GROWING SEASON	164 days
ANNUAL MEAN TEMPERATURE	54.1
AVERAGE ANNUAL RAINFALL	12.66
AVERAGE ANNUAL SNOWFALL	35.6
MAJOR SOURCE INCOME	Agriculture, Industry
NUMBER OF FARMS	421
WATER RESOURCE PROJECTS	Fryingpan
LAND OWNERSHIP	
PRIVATE	523,202 acres
FEDERAL	441,445 acres
STATE	65,326 acres
COUNTY AND MUNICIPAL	7,785 acres



IRRIGATION DIVISION II

HUERFANO COUNTY

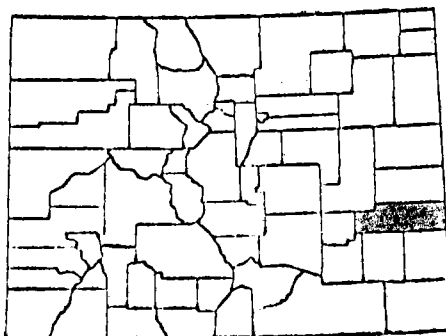
MAJOR CITY	Walsenburg
1970 POPULATION	6,410
URBAN POPULATION	4,227
RURAL POPULATION	2,133
COUNTY AREA	1,578 Sq. Miles
TERRAIN	Mesa, Tableland
ELEVATION (MAJOR CITY)	6,185
MAJOR STREAM	Huerfano
MAJOR TRIBUTARY	Cucharas
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	11,453
AVERAGE GROWING SEASON	151 days
ANNUAL MEAN TEMPERATURE	50.2
AVERAGE ANNUAL RAINFALL	14.13 inches
AVERAGE ANNUAL SNOWFALL	69.0 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	280
WATER RESOURCE PROJECTS	None
LAND OWNERSHIP	
PRIVATE	747,000 acres
FEDERAL	211,670 acres
STATE	43,525 acres
COUNTY AND MUNICIPAL	320 acres



IRRIGATION DIVISION II

KIOWA COUNTY

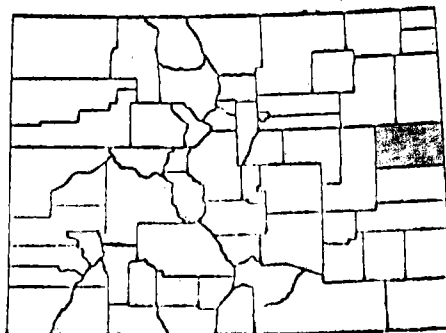
<u>MAJOR CITY</u>	<u>Eds</u>
<u>1970 POPULATION</u>	<u>2,006</u>
<u>URBAN POPULATION</u>	<u>No city over 2,500</u>
<u>RURAL POPULATION</u>	<u>2,006</u>
<u>COUNTY AREA</u>	<u>1,792 Sq. Miles</u>
<u>TERRAIN</u>	<u>Plains</u>
<u>ELEVATION (MAJOR CITY)</u>	<u>4,213</u>
<u>MAJOR STREAM</u>	<u>Big Sandy</u>
<u>MAJOR TRIBUTARY</u>	<u>None</u>
<u>MAJOR WATER USE</u>	<u>Irrigation</u>
<u>IRRIGATED ACRES</u>	<u>5,127</u>
<u>AVERAGE GROWING SEASON</u>	<u>156 days</u>
<u>ANNUAL MEAN TEMPERATURE</u>	<u>51.0</u>
<u>AVERAGE ANNUAL RAINFALL</u>	<u>13.78 inches</u>
<u>AVERAGE ANNUAL SNOWFALL</u>	<u>22.3 inches</u>
<u>MAJOR SOURCE INCOME</u>	<u>Agriculture</u>
<u>NUMBER OF FARMS</u>	<u>350</u>
<u>WATER RESOURCE PROJECTS</u>	<u>None</u>
<u>LAND OWNERSHIP</u>	
PRIVATE	1,413,911 acres
FEDERAL	3,975 acres
STATE	70,893 acres
COUNTY AND MUNICIPAL	365 acres



IRRIGATION DIVISION II

KIT CARSON COUNTY

<u>MAJOR CITY</u>	<u>Burlington</u>
<u>1970 POPULATION</u>	<u>7,379</u>
<u>URBAN POPULATION</u>	<u>2,784</u>
<u>RURAL POPULATION</u>	<u>4,595</u>
<u>COUNTY AREA</u>	<u>1,171 Sq. Miles</u>
<u>TERRAIN</u>	<u>Plains</u>
<u>ELEVATION (MAJOR CITY)</u>	<u>4,163</u>
<u>MAJOR STREAM</u>	<u>Republican</u>
<u>MAJOR TRIBUTARY</u>	<u>None</u>
<u>MAJOR WATER USE</u>	<u>Irrigation</u>
<u>IRRIGATED ACRES</u>	<u>56,576</u>
<u>AVERAGE GROWING SEASON</u>	<u>154 days</u>
<u>ANNUAL MEAN TEMPERATURE</u>	<u>50.3</u>
<u>AVERAGE ANNUAL RAINFALL</u>	<u>16.35 inches</u>
<u>AVERAGE ANNUAL SNOWFALL</u>	<u>22.7 inches</u>
<u>MAJOR SOURCE INCOME</u>	<u>Agriculture</u>
<u>NUMBER OF FARMS</u>	<u>840</u>
<u>WATER RESOURCE PROJECTS</u>	<u>None</u>
<u>LAND OWNERSHIP</u>	
PRIVATE	1,324,600 acres
FEDERAL	292 acres
STATE	56,486 acres
COUNTY AND MUNICIPAL	985 acres

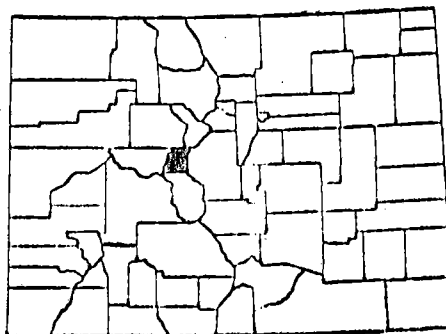




IRRIGATION DIVISION II

LAKE COUNTY

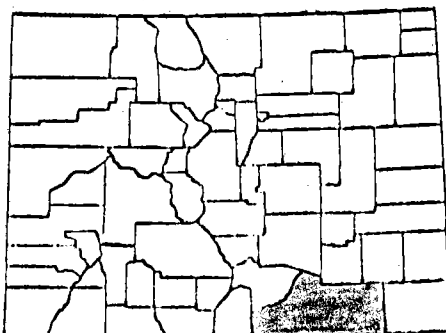
MAJOR CITY	Leadville
1970 POPULATION	8,138
URBAN POPULATION	4,265
RURAL POPULATION	3,873
COUNTY AREA	380 Sq. Miles
TERRAIN	Mountainous
ELEVATION (MAJOR CITY)	10,152
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	Lake Fork
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	6,036
AVERAGE GROWING SEASON	82 days
ANNUAL MEAN TEMPERATURE	37.3
AVERAGE ANNUAL RAINFALL	18.45 inches
AVERAGE ANNUAL SNOWFALL	124.7 inches
MAJOR SOURCE INCOME	Mining
NUMBER OF FARMS	17
WATER RESOURCE PROJECTS	Fryingpan
LAND OWNERSHIP	
PRIVATE	71,342 acres
FEDERAL	198,844 acres
STATE	1,795 acres
COUNTY AND MUNICIPAL	1,620 acres



IRRIGATION DIVISION II

LAS ANIMAS COUNTY

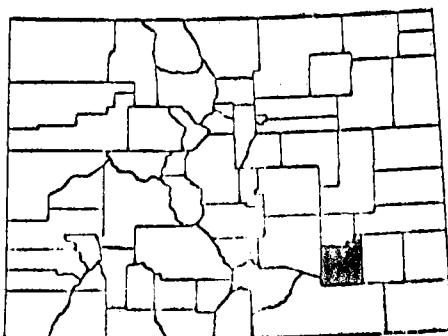
MAJOR CITY	Trinidad
1970 POPULATION	15,291
URBAN POPULATION	9,721
RURAL POPULATION	5,570
COUNTY AREA	4,793 Sq. Miles
TERRAIN	Foothills
ELEVATION (MAJOR CITY)	6,025
MAJOR STREAM	Purgatoire
MAJOR TRIBUTARY	None
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	19,463
AVERAGE GROWING SEASON	156 days
ANNUAL MEAN TEMPERATURE	50.4
AVERAGE ANNUAL RAINFALL	15.03 inches
AVERAGE ANNUAL SNOWFALL	47.7 inches
MAJOR SOURCE INCOME	Agriculture, Coal Mining
NUMBER OF FARMS	200
WATER RESOURCE PROJECTS	Trinidad Dam
LAND OWNERSHIP	
PRIVATE	3,179,204 acres
FEDERAL	151,214 acres
STATE	163,997 acres
COUNTY AND MUNICIPAL	3,482 acres



IRRIGATION DIVISION II

OTERO COUNTY

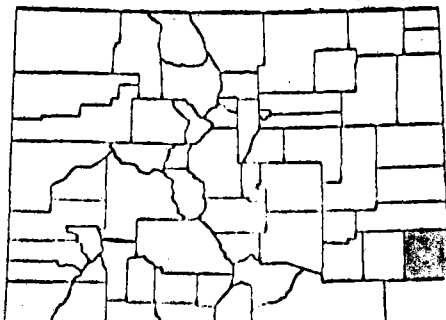
MAJOR CITY	La Junta
1970 POPULATION	22,824
URBAN POPULATION	12,514
RURAL POPULATION	10,310
COUNTY AREA	1,267 Sq. Miles
TERRAIN	Plains
ELEVATION (MAJOR CITY)	La Junta
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	Horse Creek
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	57,675
AVERAGE GROWING SEASON	162 days
ANNUAL MEAN TEMPERATURE	52.0
AVERAGE ANNUAL RAINFALL	12.31 inches
AVERAGE ANNUAL SNOWFALL	26.7 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	690
WATER RESOURCE PROJECTS	Fryingpan
LAND OWNERSHIP	
PRIVATE	506,310 acres
FEDERAL	169,004 acres
STATE	120,572 acres
COUNTY AND MUNICIPAL	2,050 acres



IRRIGATION DIVISION II

PROWERS COUNTY

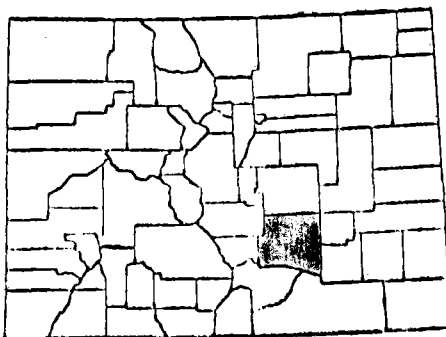
MAJOR CITY	Lamar
1970 POPULATION	12,877
URBAN POPULATION	7,510
RURAL POPULATION	5,367
COUNTY AREA	1,626 Sq. Miles
TERRAIN	Plains
ELEVATION (MAJOR CITY)	3,622
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	None
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	93,004
AVERAGE GROWING SEASON	163 days
ANNUAL MEAN TEMPERATURE	52.0
AVERAGE ANNUAL RAINFALL	15.20 inches
AVERAGE ANNUAL SNOWFALL	26.0 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	469
WATER RESOURCE PROJECTS	None
LAND OWNERSHIP	
PRIVATE	996,952 acres
FEDERAL	1,064 acres
STATE	44,667 acres
COUNTY AND MUNICIPAL	1,794 acres



IRRIGATION DIVISION II

PUEBLO COUNTY

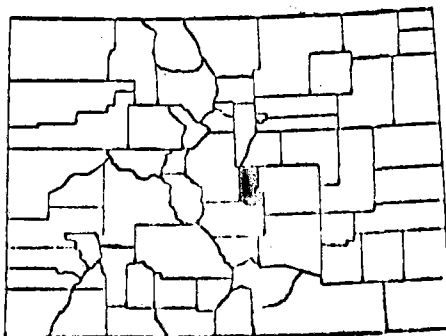
MAJOR CITY	Pueblo
1970 POPULATION	117,212
URBAN POPULATION	106,565
RURAL POPULATION	10,556
COUNTY AREA	2,401 Sq. Miles
TERRAIN	Plains
ELEVATION (MAJOR CITY)	4,696
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	Fountain
MAJOR WATER USE	Irrigation, Industry
IRRIGATED ACRES	35,749
AVERAGE GROWING SEASON	169 days
ANNUAL MEAN TEMPERATURE	51.2
AVERAGE ANNUAL RAINFALL	12.14 inches
AVERAGE ANNUAL SNOWFALL	31.3 inches
MAJOR SOURCE INCOME	Industry
NUMBER OF FARMS	469
WATER RESOURCE PROJECTS	Fryingpan
LAND OWNERSHIP	
PRIVATE	1,173,389 acres
FEDERAL	76,712 acres
STATE	232,519 acres
COUNTY AND MUNICIPAL	3,045 acres



IRRIGATION DIVISION II

TELLER COUNTY

MAJOR CITY	Cripple Creek
1970 POPULATION	3,033
URBAN POPULATION	No city over 2,500
RURAL POPULATION	3,033
COUNTY AREA	554 Sq. Miles
TERRAIN	Mountainous
ELEVATION (MAJOR CITY)	9,949
MAJOR STREAM	Four Mile
MAJOR TRIBUTARY	None
MAJOR WATER USE	Irrigation, Commercial
IRRIGATED ACRES	865
AVERAGE GROWING SEASON	68 days
ANNUAL MEAN TEMPERATURE	NA
AVERAGE ANNUAL RAINFALL	NA
AVERAGE ANNUAL SNOWFALL	NA
MAJOR SOURCE INCOME	Tourism, Agriculture
NUMBER OF FARMS	10
WATER RESOURCE PROJECTS	None
LAND OWNERSHIP	
PRIVATE	195,257 acres
FEDERAL	156,671 acres
STATE	8,755 acres
COUNTY AND MUNICIPAL	5,598 acres



COUNTY	LAND AREA (1000 A.)	NO. OF FARMS	LAND IN FARMS (1000 A.)		LAND IRRIGATED		WHEAT		OATS
			TOTAL	CROP LAND	FARMS	ACRES	WINTER	SPRING	
Baca	1642	750	1430	847	171	56,910	42,000	250	---
Bent	971	450	917	145	301	45,292	9,000	50	230
Chaffee	665	170	160	24	121	16,126	---	---	200
Crowley	514	400	490	105	287	25,010	1,150	80	90
Custer	472	180	280	28	85	15,930	160	50	650
El Paso	1381	750	1050	200	121	13,630	17,000	450	1800
Fremont	1000	550	493	30	421	13,920	550	30	80
Huerfano	1010	280	800	48	138	11,453	3,300	10	220
Kiowa	1147	350	1080	600	15	5,127	38,000	300	---
Kit Carson	1389	840	1340	776	213	56,576	165,000	300	900
Lake	243	17	28	6	10	6,036	---	---	---
Las Animas	3068	600	2781	130	227	19,463	3,940	70	290
Otero	811	690	630	87	539	57,675	3,400	100	460
Prowers	1041	729	1030	530	430	93,044	30,500	---	130
Pueblo	1537	800	1362	151	469	35,749	11,000	160	350
Teller	355	70	155	8	10	865	---	---	---

CORN GRAIN	CORN SILAGE	SORGHUMS		SUGAR BEETS	DRY BEANS	POTATOES	BROOM CORN	ALFALFA	WILD HAY	ALL HAY	BARLEY
		GRAIN	SILAGE								
10,500	200	90,000	49,500	1,640	100	100	35,700	2,100	100	7,900	600
1,100	1,000	17,500	7,300	460	40	40	---	23,500	250	25,150	370
---	---	---	---	---	---	---	---	5,800	480	9,280	100
1,700	2,900	9,600	740	550	20	20	---	12,500	650	13,750	80
---	50	---	130	---	---	---	---	2,300	---	28,300	210
3,300	4,000	3,400	2,100	---	---	---	---	12,500	3,500	22,900	600
280	280	100	170	---	---	---	---	5,000	850	8,350	270
50	100	---	280	---	10	10	10	5,100	800	7,400	250
190	110	38,000	15,600	50	---	---	---	800	500	10,000	---
27,300	9,000	15,000	22,300	2,200	---	---	---	5,200	1,300	20,500	1,400
---	---	---	---	---	---	---	---	---	1,300	1,900	---
700	660	---	4,720	---	---	---	200	12,000	950	12,850	140
4,600	5,700	---	1,660	1,100	---	---	---	14,500	50	15,150	720
1,100	1,500	95,600	41,010	2,430	50	20	100	35,500	---	37,200	---
4,900	1,800	---	4,790	1,390	100	100	---	13,500	---	17,950	1,250
---	---	---	---	---	---	---	---	50	550	2,000	---



ADMINISTRATIVE WATER YEAR 1977

Pertinent Basin Yield Statistics for Arkansas Drainage in Colorado Div. 2

Recorded Flow at Arkansas - Las Animas	52,166	A.F.
Estimated Depletion by Irrigation above Gage 1.5 A.F./Acre x 412,000 Acres - 618,000 A.F.	618,000	A.F.
Recorded Flow at Purgatoire River - Las Animas	35,678	A.F.
Estimated Depletion by Irrigation above Gage 1.5 A.F./Acre x 36,000 Acres - 54,000 A.F.	54,000	A.F.
Basin Yield including 70,445 A.F. Transmountain Import	759,844	A.F.
Less . . . . .	70,445	A.F.
Native Basin Yield above Confluence of Arkansas and Purgatoire River	689,399	A.F.
Total Diversion in Division 2 (except Dists. 66 & 67)	958,625	A.F.

Commentary on Basin Yield and Water Budget Data

In Water Administrative Year 1977, the native basin yield for the Arkansas Basin above confluence of the Purgatoire (including the Purgatoire River) was 689,399 A.F. The Arkansas flow at Las Animas for 1977 was 52,166 A.F. compared to 73,009 A.F. for 1976. The Purgatoire flow at Las Animas for 1977 was 35,678 A.F. compared to 12,352 A.F. for 1976. The main stem of the Arkansas was much drier than average, while the Purgatoire was near average.

The average precipitation over the area (17,920 square miles) was 11.95 inches. This gives a total volume of water of 11,421,013 for the basin. Of this 11,421,013 A.F. only 689,399 A.F. (6.03%) is accounted for in streamflow; the remaining (93.97%) either evaporated, transpired or was retained in the soil.

The diverted water of 958,625 A.F. when compared with native yield plus transmountain imported water indicated the water was used 1.26 times.

COMPARATIVE WATER YEAR 1976, 1977 DATA

	<u>1976</u>	<u>1977</u>
Basin Yield including Transmountain	757,361 A.F.	759,844 A.F.
Total Diverted (excluding W.D. 66 & 67)	1,325,236 A.F.	958,625 A.F.
Average Precipitation	12.62 in.	11.95 in.

DIVERSION DATA

Recorded Diversion by Municipalities: Water Year 1977

Municipal Diversion, Colorado Springs	15,607
Municipal Diversion, Canon City	11,868
Municipal Diversion, Pueblo	24,890
Other	22,909
Total Recorded Municipal Diversion	<u>75,274</u> A.F.

Estimated Return Flow	49,680
Estimated Depletion by Municipalities	<u>25,594</u> A.F.

Recorded Diversion by Industrial Use

Diversion by Minnequa Canal	87,682
C.F. & I. Diversion from St. Charles	7,159
Other	29,706
Total Industrial Diversion	<u>124,547</u> A.F.

Estimated Return Flow	74,728 A.F.
Estimated Depletion by Industry	49,819 A.F.

Recorded Diversion by Irrigation

Water District 10	41,881
Water District 11	88,757
Water District 12	104,440
Water District 13	22,859
Water District 14	143,545
Water District 15	11,550
Water District 16	28,764
Water District 17	248,030
Water District 18	5,502.23
Water District 19	32,428.51
Water District 66	1,614
Water District 67	88,030
Total Irrigation Diversion	<u>817,400</u> A.F.

DIVERSION SUMMARY DIVISION NO. 2  
Direct Flow Diversions 1977

W.D.	Active	Inactive		# Ditches Admin.		Irr. Direct Diver. A.F.	# Acres Irrig.	A.F. Per Acre	Rec. & Ind. Use Diver. A.F.	Municipal Diver. A.F.	T. Mtn. Diver. A.F.	Total Diver. A.F.
		N.A.	N.U.	Close	Freq.							
10	45		205	40	4	41,881	10,730	3.90	12,274	16,637	31,048	101,840
11	167		138	167	0	88,757	16,950	5.24				88,757
12	239		93	189	52	104,440	17,606	5.93	87,682	25,516		217,638
13	500		53	361	45	22,859	16,902	1.35	0	0		22,859
14	40		25	34	3	143,545	102,549	1.39	16,499	24,890		184,934
15	82		42	208	18	11,550	4,654	2.48	8,092			19,642
16	244		169	208	37	28,764	29,458	0.98		4,351		33,115
17	44		62	33	7	248,030	363,864	0.68				248,030
18	27		24	25	0	5,502	7,550	0.73		455		5,957
19	105		137	92	13	32,428	10,345	3.13		3,425		35,853
66	7		8	7		1,614	489	3.30				1,614
67	38		108	33	6	88,030	76,348	1.15				88,030
TOTAL	1,538		1064	1252	185	817,400	657,445	1.24	124,547	75,274		1,048,269

TRANSMOUNTAIN DIVERSION

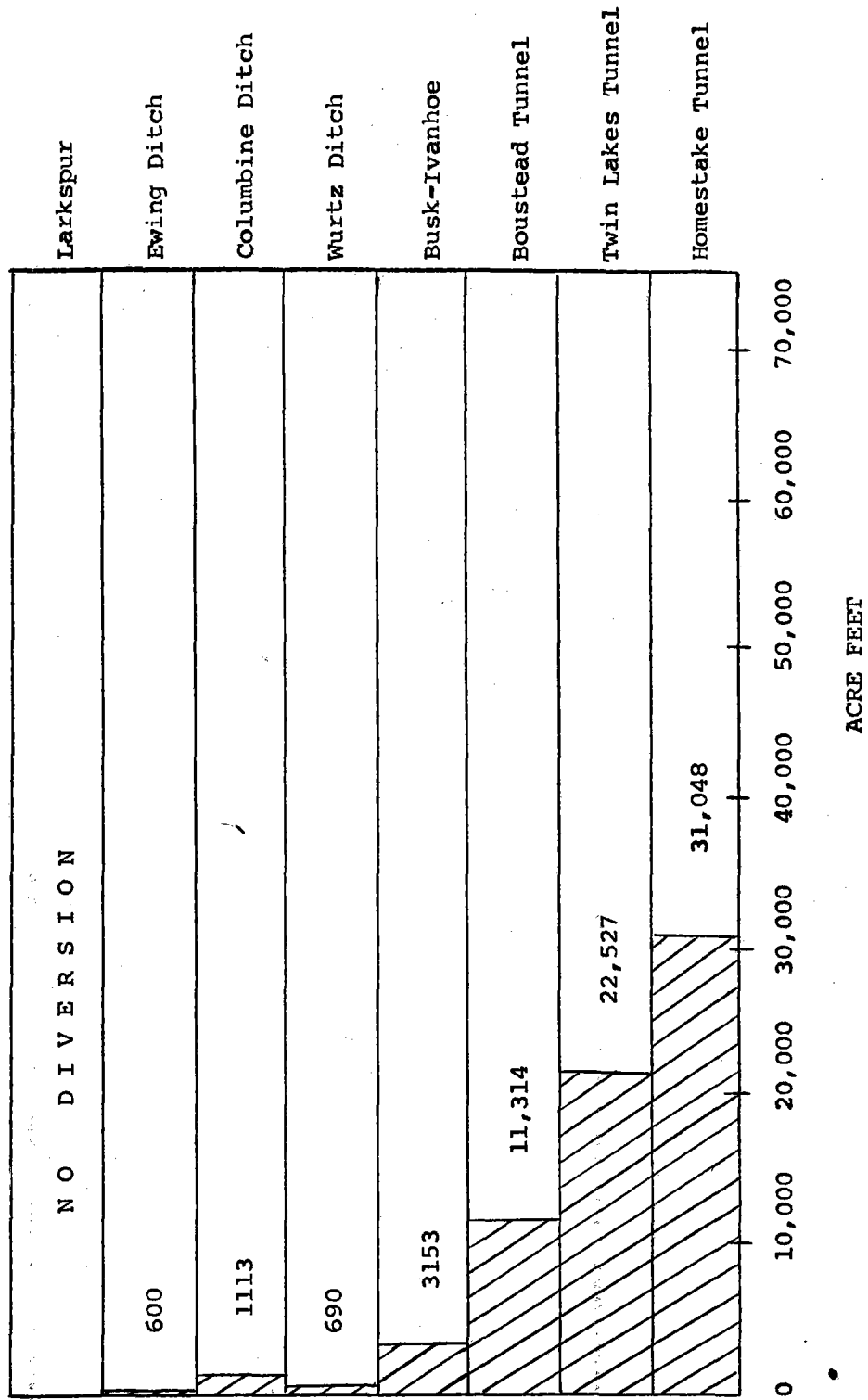
DIVISION NO. 2

Tabulation 1977

<u>NAME</u>	<u>SOURCE</u>	<u>RECIPIENT</u>	<u>AMOUNT DIVERTED</u> <u>10/1/76 to 9/30/77</u>
Homestake Tunnel	Middle Fork Homestake Creek Div. No. 5	Cities of Colorado Springs and Aurora	31048 acre feet
Wurtz Ditch	Eagle River Div. No. 5	City of Pueblo	690 acre feet
Ewing Ditch	Piney Creek	City of Pueblo	600 acre feet
Columbine Ditch	Eagle River Div. No. 5	City of Pueblo	1113 acre feet
Twin Lakes Tunnel	Roaring Fork River Div. No. 5	Twin Lakes Reservoir and Canal Company	22527 acre feet
Busk Ivanhoe Tunnel	Ivanhoe Creek Div. No. 5	Highline Canal Co. and City of Pueblo	3153 acre feet
Larkspur Ditch	Tomici Creek Div. No. 5	Catlin Canal Company	0 acre feet
Boustead Tunnel	Fryingpan River Div. No. 5	U.S.B.R.	11314 acre feet
		TOTAL	70445 acre feet

TRANSMOUNTAIN DIVERSION  
DIVISION NO. 2

SUMMARY OF DIVERSION FOR  
WATER YEAR 1977



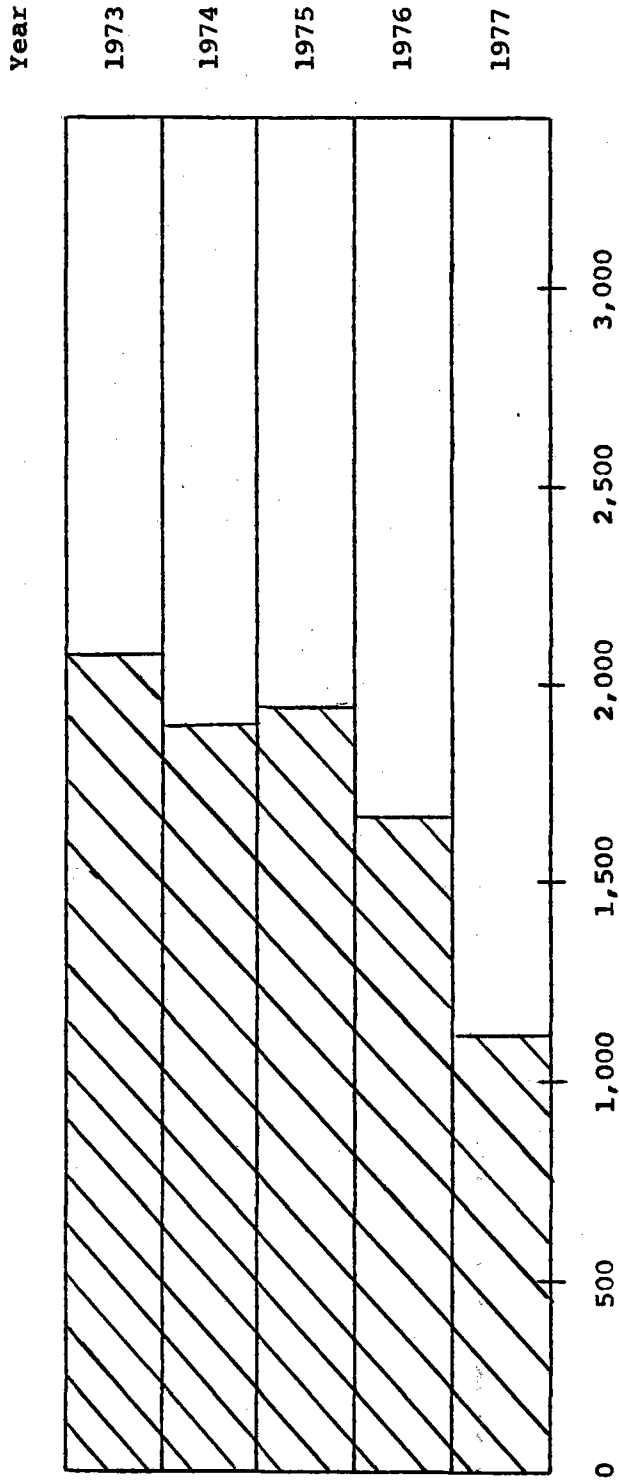
TRANSMOUNTAIN DIVERSION

Division No. 2

COLUMBINE DITCH 1977

Source: Eagle River, Division No. 5

Recipient: City of Pueblo



ACRE FEET

5 YEAR COMPARISON

TRANSMOUNTAIN DIVERSION

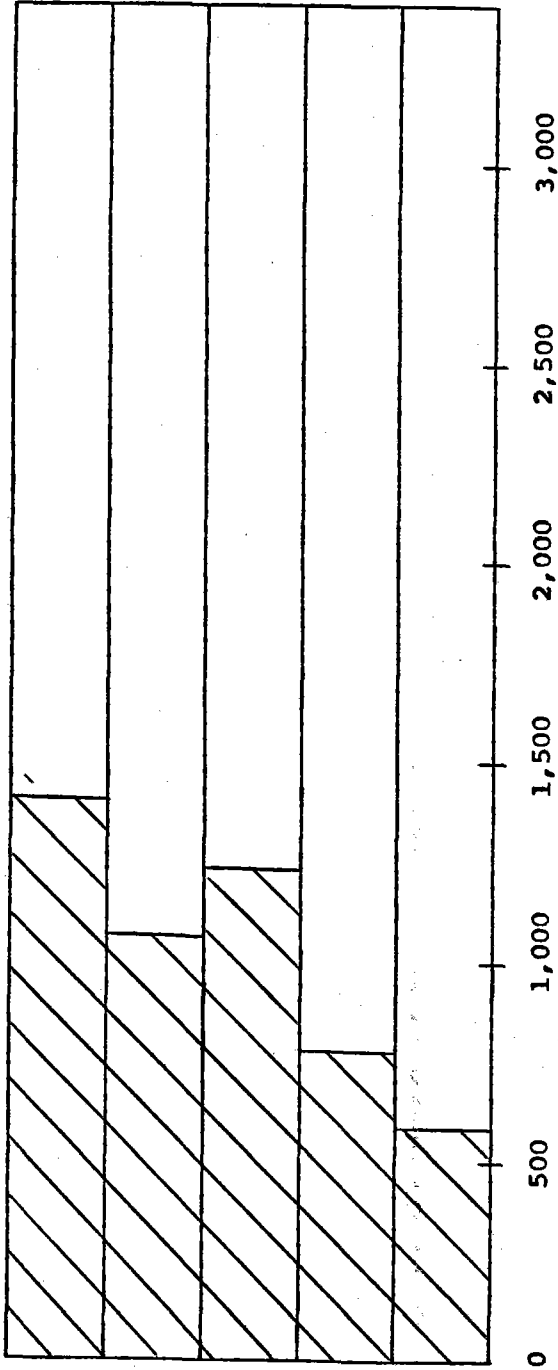
Division No. 2

EWING DITCH 1977

Source: Piney Creek, Division No. 5

Recipient: City of Pueblo

Year  
1973  
1974  
1975  
1976  
1977



ACRE FEET

5 YEAR COMPARISON



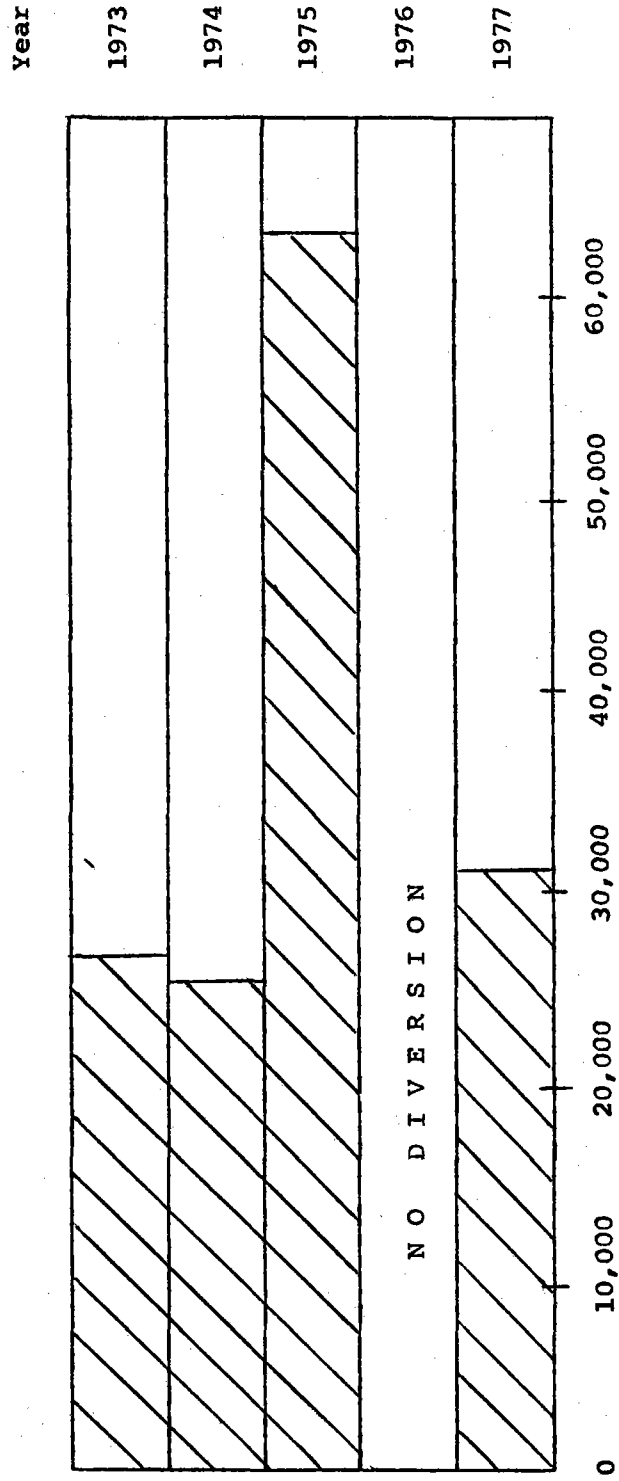
TRANSMOUNTAIN DIVERSION

Division No. 2

HOMESTAKE TUNNEL 1977

Source: Middle Fork Homestake Creek, Division No. 5

Recipient: Cities of Colorado Springs and Aurora



ACRE FEET

5 YEAR COMPARISON

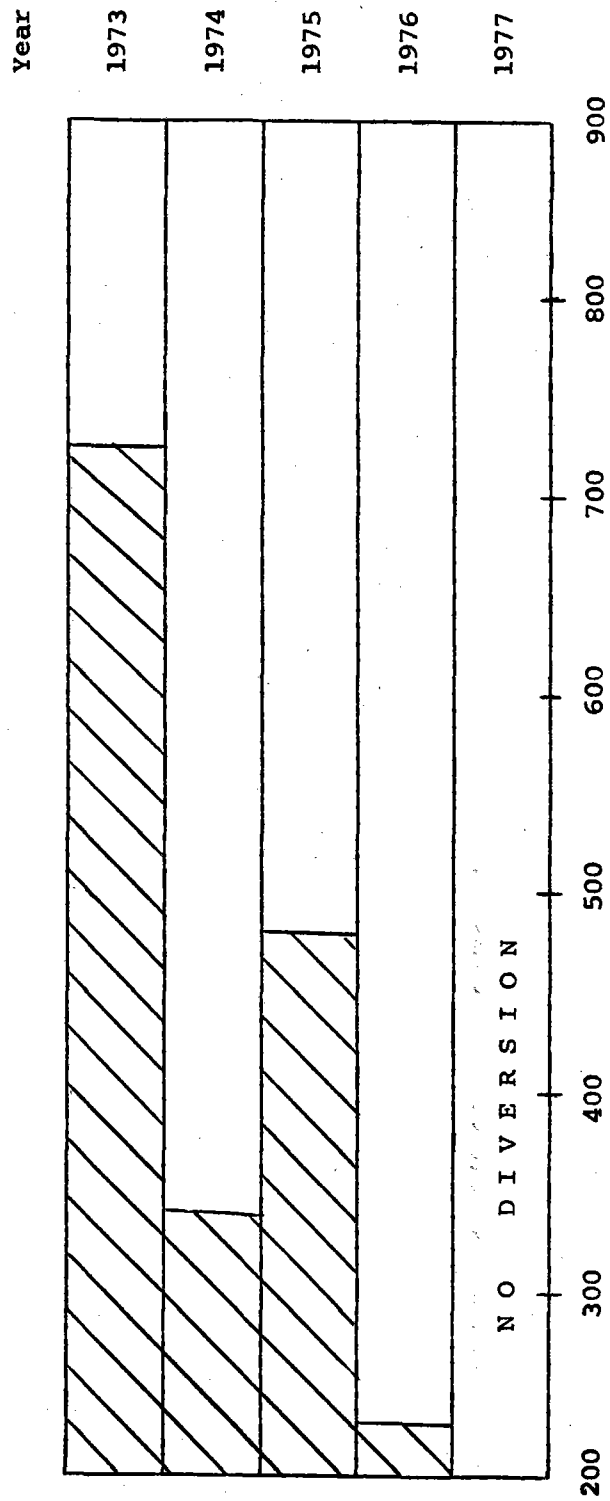
TRANSMOUNTAIN DIVERSION

Division No. 2

LARKSPUR DITCH 1977

Source: Tomici Creek, Division No. 4

Recipient: Catlin Canal Company



ACRE FEET  
5 YEAR COMPARISON

TRANSMOUNTAIN DIVERSION

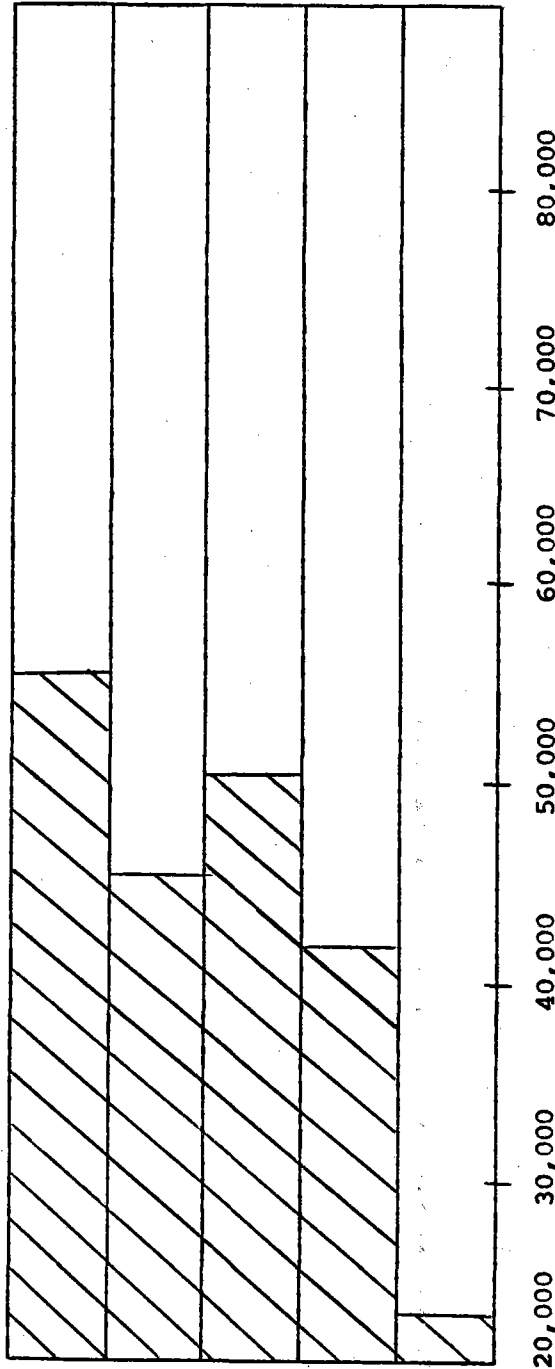
Division No. 2

TWIN LAKES TUNNEL 1977

Source: Roaring Fork River, Division No. 5

Recipient: Twin Lakes Reservoir and Canal Company

Year  
1973  
1974  
1975  
1976  
1977



ACRE FEET

5 YEAR COMPARISON

TRANSMOUNTAIN DIVERSION

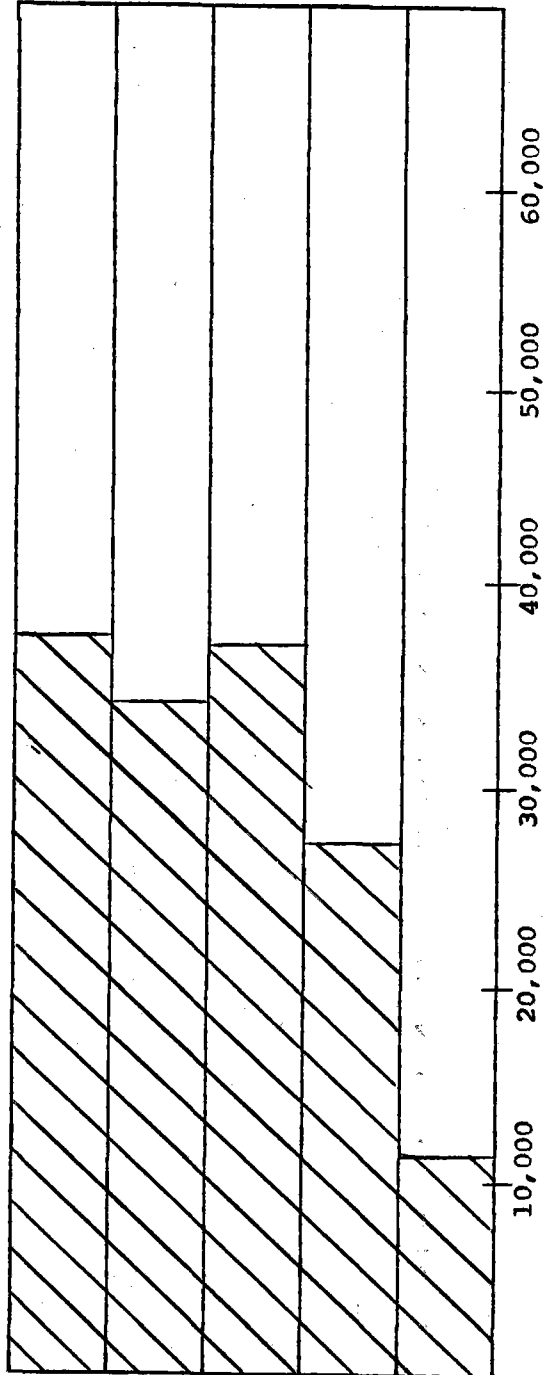
Division No. 2

BOUSTEAD TUNNEL 1977

Source: Fryngpan River

Recipient: U.S.B.R.

Year  
1973  
1974  
1975  
1976  
1977



ACRE FEET

5 YEAR COMPARISON

TRANSMOUNTAIN DIVERSION

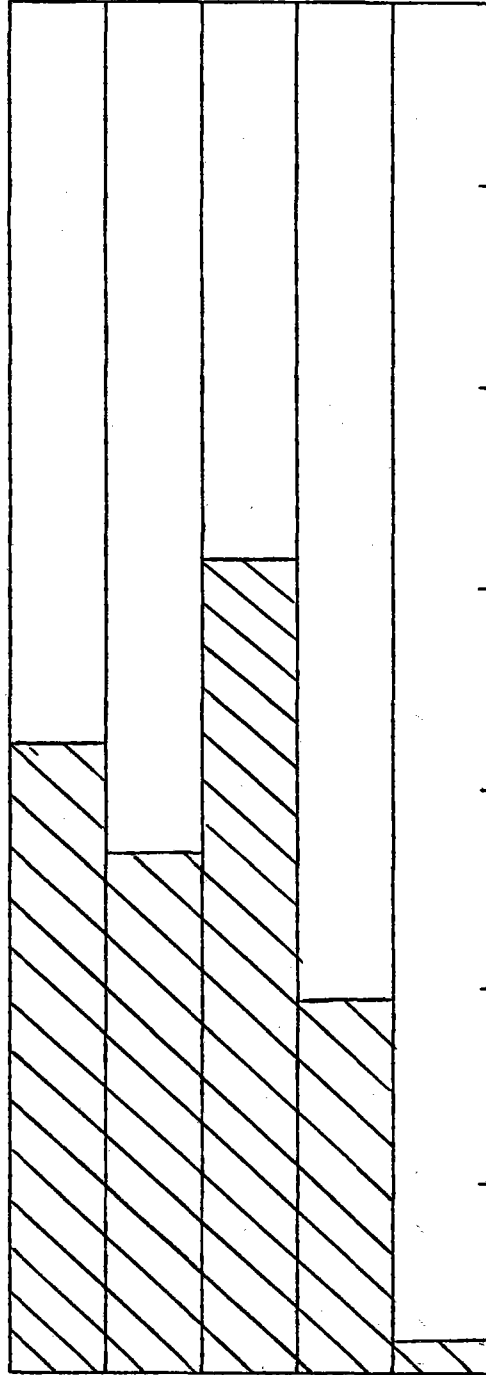
Division No. 2

BUSK IVANHOE 1977

Source: Ivanhoe Creek, Division No. 5

Recipient: Highline Canal Company and City of Pueblo

Year  
1973  
1974  
1975  
1976  
1977



3,000 4,000 5,000 6,000 7,000 8,000 9,000

ACRE FEET

5 YEAR COMPARISON

TRANSMOUNTAIN DIVERSION

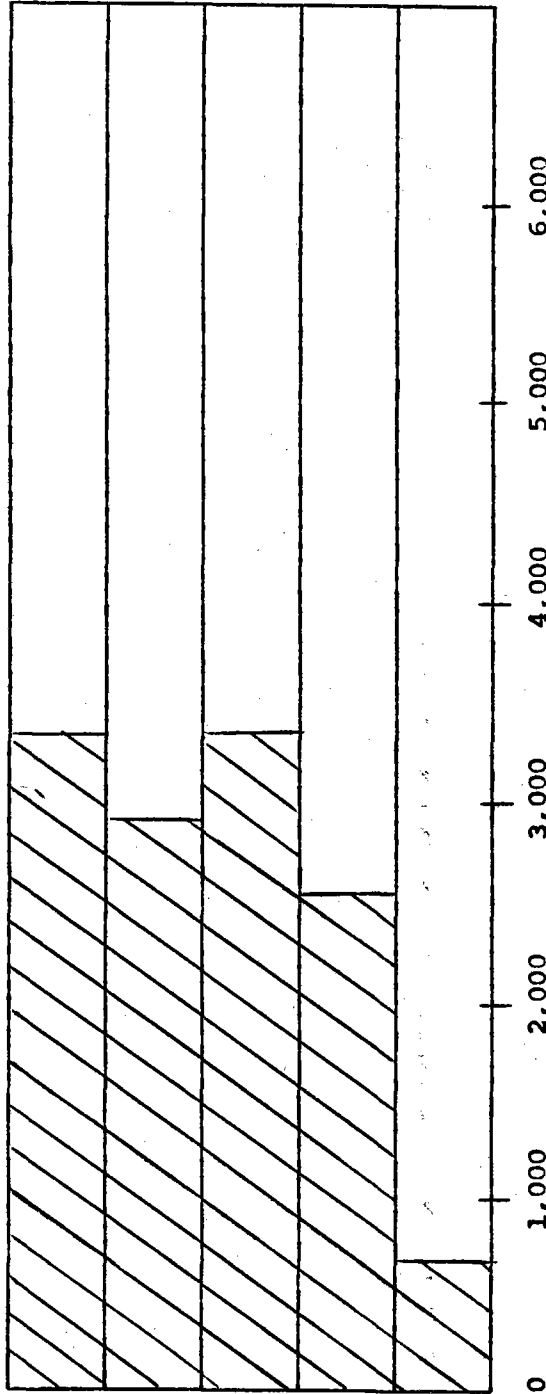
Division No. 2

WURTZ DITCH 1977

Source: Eagle River, Division No. 5

Recipient: City of Pueblo

Year  
1973  
1974  
1975  
1976  
1977



ACRE FEET

5 YEAR COMPARISON

### PRECIPITATION

Rainfall was 74% of normal on the main stem of the Arkansas and below normal on the Purgatoire. Although there were a couple of months of above normal rainfall, this amount was usually accumulated in one rain storm. In general, this year has been the driest in the last ten years. The crop yields were slightly down, but it wasn't a complete disaster, partly due to winter storage, and good management of the reservoir waters owned by the ditch companies.

### DAMS

The dam inspection unit from Denver was busy in Division 2. The total number of inspections number 118. Of this total number inspected, 83 were inspected by the Water Commissioners, and 35 were inspected by the Dam Inspection Personnel from Denver.

### FLOODS

There were a few flash floods which came out of the Fountain Creek, Apishipa, Huerfano, and Purgatoire Rivers which occurred during the months of July and August for the Arkansas Drainage area. All of the flash floods were below the Pueblo area, and there were no noteworthy floods above Pueblo. The Purgatoire River in the Trinidad area had a flood in the middle of August. There was enough water in which the Trinidad Reservoir and Dam was able to store.

IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT PERCENT NORMAL AS OF APR 1, 1977	SNOW DEPTH	WATER CONTENT AS OF APR 1, 1977	AVERAGE INCHES
BIGELOW DIVIDE	97%	21	6.3	6.5
COOPER HILL		-	-	11.3
EAST FORK	58%	22	5.7	9.8
FOUR MILE PARK	11%	3	0.6	5.1
FREMONT PASS	64%	37	10.4	16.2
GARFIELD	45%	21	5.8	13.0
HERMIT LAKE		9	3.4	-
MONARCH PASS	44%	26	7.5	17.1
TENNESSEE PASS	42%	21	4.4	10.6
TWIN LAKES TUNNEL	33%	16	3.5	10.7
WESTCLIFFE	71%	15	4.5	6.3
APISHAPA		18	6.5	-
CUCHARAS CREEK		23	6.9	-
LA VETA PASS	91%	23	6.7	7.4
BOURBON	74%	19	5.2	7.0

Streamflow should be in the near normal range. All the tributary streams as well as the mainstream of the Arkansas are being forecast to flow at least 105% of normal. All other conditions on the Arkansas are poor. Carry-over storage is poor and will be of limited value in augmenting supplies.



IRRIGATION DIVISION NO. 2

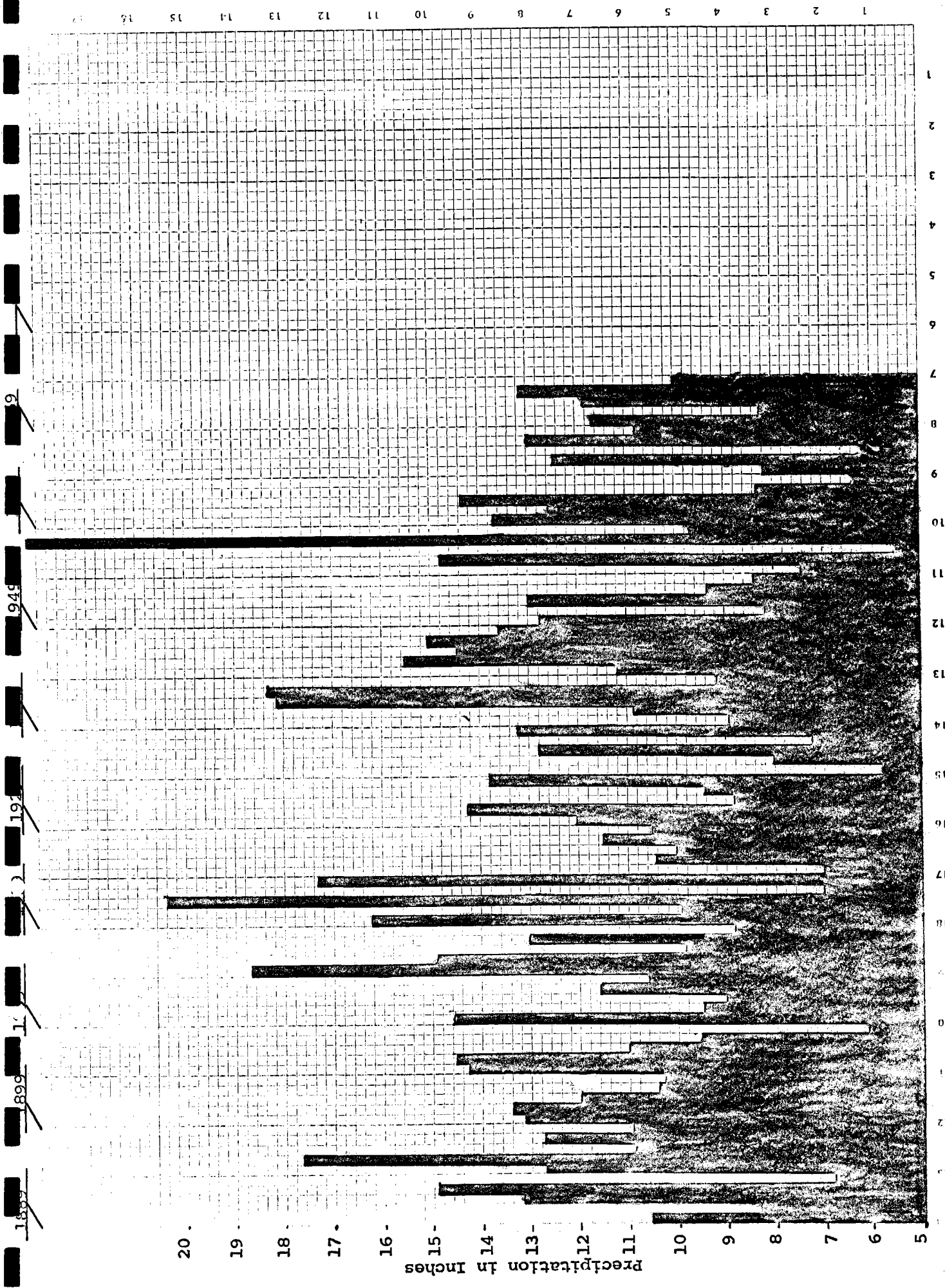
STATION	WATER CONTENT PERCENT NORMAL AS OF MAY 1, 1977	SNOW DEPTH	WATER CONTENT AS OF MAY 1, 1977	AVERAGE INCHES
BIGELOW DIVIDE	72%	8	2.6	3.6
COOPER HILL		0	0.0	12.1
EAST FORK	31%	6	2.3	7.5
FOUR MILE PARK		0	0.0	1.4
FREMONT PASS	70%	36	12.7	18.1
GARFIELD		0	0.0	8.6
HERMIT LAKE		0	0.0	-
MONARCH PASS	31%	11	5.0	16.3
TENNESSEE PASS		0	0.0	8.5
TWIN LAKES TUNNEL	38%	11	3.6	9.4
WESTCLIFFE		0	0.0	1.6
APISHAPA	73%	6	2.4	3.3
CUCHARAS CREEK		13	4.5	-
LA VETA PASS		0	0.0	2.1
BOURBON	8%	1	0.2	2.5

Streamflow should be in the near normal range. All the tributary streams as well as the mainstream of the Arkansas are being forecast to flow at least 105% of normal. All other conditions on the Arkansas are poor. Carry-over storage is poor and will be of limited value in augmenting supplies.

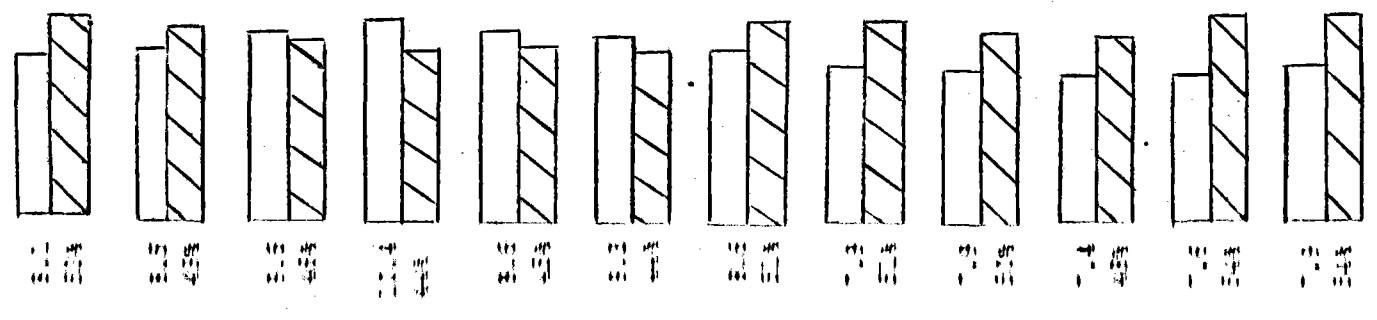
PRECIPITATION  
IRRIGATION DIVISION #2

STATION	April 1977	DEPART FROM NORMAL	May 1977	DEPART FROM NORMAL	June 1977	DEPART FROM NORMAL	July 1977	DEPART FROM NORMAL	August 1977	DEPART FROM NORMAL	September 1977	DEPART FROM NORMAL
Lamar	1.73	+ .38	4.06	+1.53	1.37	- .89	1.42	-.91	3.44	+1.10	.05	-1.04
Leadville	1.50		.19		.54		1.32		.85		.57	
Pueblo	2.56		.98		.58		2.14		1.32		.11	
Trinidad	1.79		1.25		1.25		4.31		4.08		.99	
Westcliffe	1.63	- .29	.21	-1.43	.54	- .55	2.22	-.24	3.10	+ .66	.76	- .20
Colorado Spgs.	2.57	+1.12	1.12	-1.00	3.87	+1.56	3.02	-.08	5.11	+2.53	.45	- .66

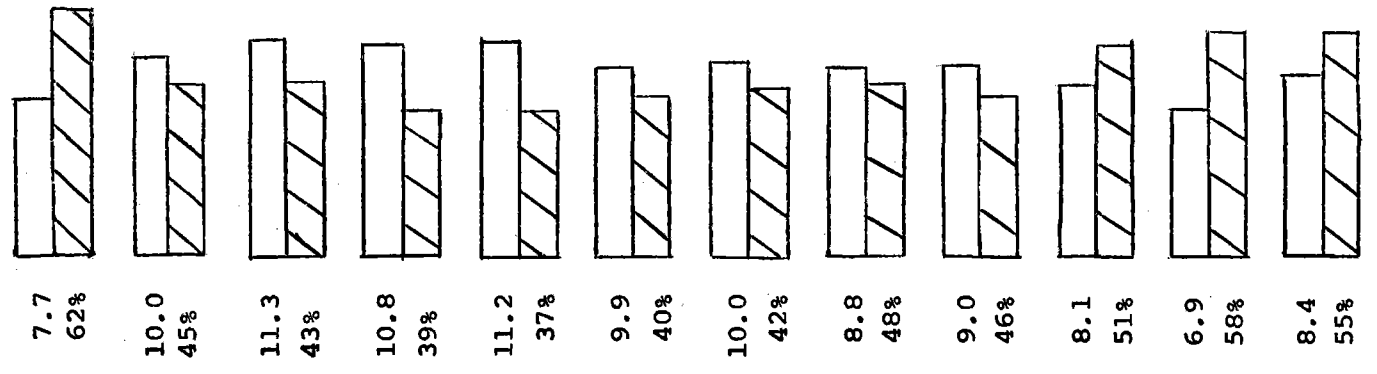
Pueblo, Colorado 1889 to Present



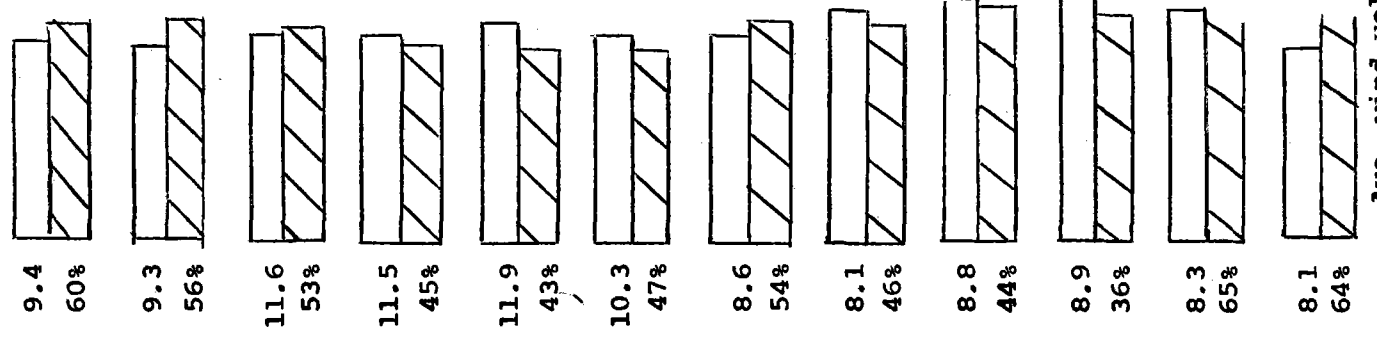
1973



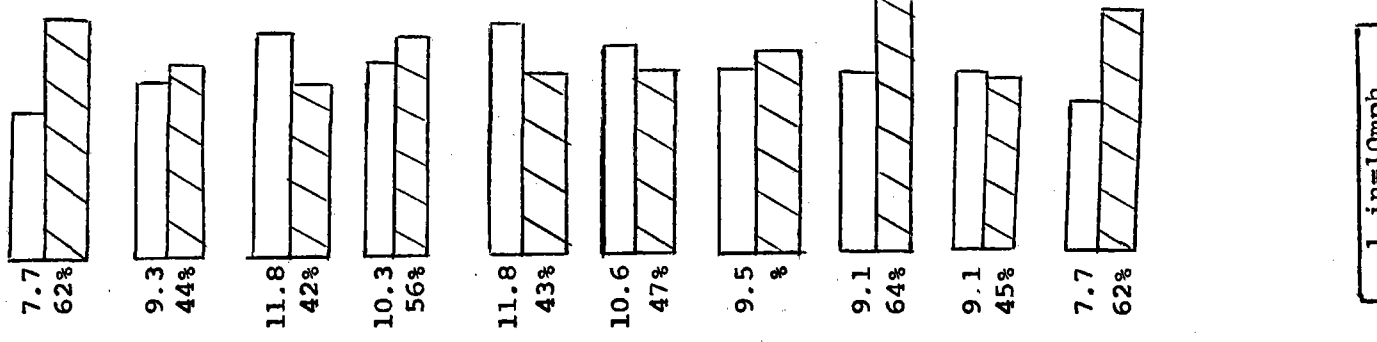
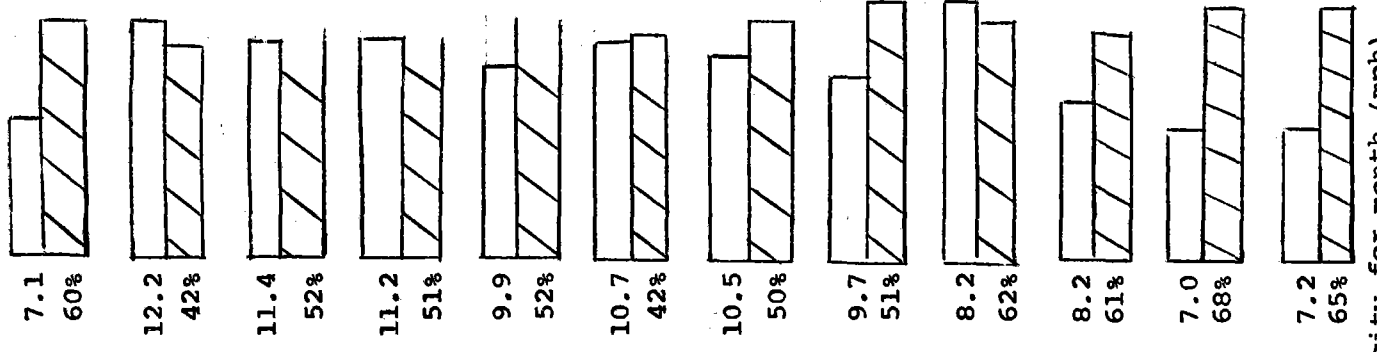
1974



1975



1976



1 in=10mph  
1 in=50%

Ave. wind velocity for month (mph)  
Ave. Relative Humidity for month (%)

DAMS  
IRRIGATION DIVISION #2

WATER DIST.	NAME OF RESERVOIR	STREAM	DAM HEIGHT	INSPECTION
10	Air Force Academy Dam			No
	City of Colo. Spgs. (Prospect, Northfield, #4, North Catamont, So. Catamont, Crystal Cr., Lake Moraine)			Yes
	Fountain Valley	Fountain		Yes
	Keeton Dam	Lit. Fountain	45'-50'	No
	Manitou	French Cr.	over 35'	Yes
	Mesa No. 1 & 2	Camp Cr.		No
	Spring Run #2	Spring Run		Yes
	Townsend Dam & Reservoir	Rock Cr.		No
	Woodmoor Country Club #4			Yes
11	Diamond			Yes
	Fooses Creek Dam			No
	Sugar Loaf	Lake Fork	over 35'	No
	Twin Lakes	Lake Cr.	over 35'	Yes
12	Clear Creek	Clear Cr.	over 35'	Yes
	Brush Hollow	Brush Hollow	over 35'	No
	Canon City Sed. Pond			No
	City of Colo. Spgs. (C.S. # 1,2,4,5,7, Penrose)			No
	Mt. Pisgah	Four Mile	over 35'	Yes
13	Park Center #8-10	Four Mile		No
	DeWeese Dye	Grape Cr.	over 35'	Yes
14	Comanche Reservoir			No
	St. Charles Mesa Dam	St. Charles		No
	Teller Dam	Turkey Cr.		No
	Pueblo Reservoir	Arkansas	190'	No
15	Heyden Beckwith	Greenhorn	over 35'	Yes
	Clennin	Lit. Granerous	over 20'	No
	Royce, Gene	Spring	over 15'	No
	St. Chas. (aka Lake Isabel)			Yes
	St. Charles #2-3	St. Charles		Yes
16	Andrietta	Bear Cr.	over 20'	No
	Bressan #1	Bear Cr.	over 30'	No
	Brunelli	Bear Cr.	over 30'	No
	Clark #2	Hill Arroya	over 30'	Yes
	Craeger Dam	Huerfano R.	over 30'	Yes

WATER DIST.	NAME OF RESERVOIR	STREAM	DAM HEIGHT	INSPECTION
16	Cucharas #5	Cucharas R.		No
	Daigre	Cucharas R.		Yes
	Holita	Cucharas R.		Yes
	Horseshoe			No
	Houchin So.	Spring	over 20'	No
	Houchin No.	Spring	over 20'	No
	Huerfano Valley	Huerfano R.		No
	Maria Stevens	Cucharas R.		Yes
	Martin Lakes			Yes
	Orlando	Huerfano		No
	Sharps Orchard	Ditch	over 20'	No
	Valdez			No
	Vertrees	Simpson Arroya	over 10'	Yes
	Walsenburg Water Syst.	Cucharas R.	over 20'	Yes
Wahatoya	Cucharas		Yes	
17	Henry	Arkansas	over 10'	Yes
	Holbrook	Arkansas		No
	Karval	Adobe		Yes
	Meredith	Arkansas	over 35'	Yes
	Horse Creek	Arkansas	over 35'	No
	Adobe	Arkansas	over 20'	No
	Dye	Arkansas	over 20'	No
18	Seven Lakes	Las Animas	over 20'	No
19	Model	Las Animas	over 20'	Yes
	North	North Fork	over 20'	Yes
	Trinidad Dam			No
67	Antelope	Big Sandy	over 35'	Yes
	Dingwell Ditch Reg.	E. Prowers	over 20'	Yes
		Arroya		
	Fort Lyon	Ditch	over 10'	Yes
	Nee Noshe		over 20'	No
	Queens (aka Nee Skah)	Kiowa Cr.	over 20'	No
	Ramah	Big Sandy	over 40'	Yes
	S-16	Big Sandy	over 20'	Yes
	Thurston Dam		over 8'	Yes
	Two Buttes	Two Buttes Cr.	over 100'	Yes
Verhoeff	E. Prowers	over 10'	Yes	
	Arroya			
	Wootten Dam			No

All reservoirs were looked at by the Division Office

The above information refers to inspections made by the Denver Office only.

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET	AMOUNT OF ACRE FEET	AMOUNT OF ACRE FEET
		NOVEMBER 1, 1976	APRIL 1, 1977	OCTOBER 31, 1977
Ambler Res. No. 2	Unnamed Springs	-	-	-
Callhan Reservoir	Fountain	300	300	300
Crystal Creek Res.	Crystal Creek	364	398	704
Fountain Valley #2	Fountain	948	5,146	0
Fountain Valley #3	Fountain	0	0	0
Manitou Reservoir	No. Branch French Dreek	853	853	853
Monument State	Monument Creek	est. 324	est. 324	est. 324
North Catamount	No. Fork Catamount	10,866	8,625	5,745
North Field No. 1		210	246	223
South Catamount.	So. Catamount	1,058	0	1,408
Spring Run	Spring Run	184	245	219
South Suburban Res.	So. Fork Cheyenne	194	211	226
Clear Creek Res.	Clear Creek	5,038	5,566	4,536
O'Haver	Gray's Creek	-	-	-
Sugar Loaf Res.	Lake Fork Creek	55,880	38,140	61,160
Twin Lakes Res.	Lake Creek	4,459	7,160	24,442
Brush Hollow	Beaver Creek	1,771	3,764	1,067
Colo. Springs #2	Beaver Creek	541	541	541
Colo. Springs #4	Beaver Creek	1,632	1,805	1,582
Colo. Springs #5	Beaver Creek	1,811	1,900	1,340
Colo. Springs #7	Beaver Creek	67	191	0
Colo. Springs #8	Beaver Creek	363	669	0
Lake Moraine	Beaver Creek	667	667	662
Mt. Pisgah	Four Mile Creek	687	1,073	738
Rosemont Penrose	Beaver Creek	2,435	2,502	2,413
Skaguay	Beaver Creek	1,593	1,593	1,593
DeWeese Dye	Grape Creek	4,322	4,322	1,523
Curiton	Springs	-	-	-
Greenview	Fountain	0	0	0
H.O.P. Reservoir	Springs	-	-	-
Pueblo Reservoir	Arkansas	46,508.42	91,458.55	33,970.15

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET		AMOUNT OF ACRE FEET	
		NOVEMBER 1, 1976	APRIL 1, 1977	APRIL 1, 1977	OCTOBER 31, 1977
Hayden Beckwith	Greenhorn	6,075	6,080	6,070	6,070
Lake Minnequa	St. Charles	1,106	1,148	719	719
Reservoir No. 2	St. Charles	2,358	2,345	2,408	2,408
Reservoir No. 3	St. Charles	8,048	7,281	7,460	7,460
Arnold Flood Water	Santa Clara	0	0	0	0
Bressan #1	Unnamed Arroya	-	-	-	-
Bressan #2	Unnamed Arroya	-	-	-	-
Brunelli #1&2	Bear Creek	-	-	-	-
Butte	Cucharas	0	0	0	0
Chicosa #4&5	Huerfano	-	-	-	-
Coler (Martin Lake)	Cucharas	0	0	2,039	2,039
Cucharas Valley	Cucharas	0	0	0	0
Dotson	Chicosa Creek	-	-	-	-
Holita	Cucharas	0	0	0	0
Huerfano Valley	Huerfano	-	-	-	-
La Joya	Cucharas	0	0	0	0
Maria Stevens	Cucharas	0	0	0	0
Martin Reservoir	Cucharas	1,906	2,274	2,039	2,039
Mosco	Poison Canon	-	-	-	-
Orlando	Huerfano	-	-	-	-
Sharps Orchid	Cucharas	0	0	0	0
Sierra Blanca	Decker Creek	-	-	-	-
Sunnyside	Santa Clara	-	-	-	-
Valdez	Santa Clara	-	-	-	-
Vories	Cucharas	-	-	-	-
Wilson	Sheer Creek	-	-	-	-
Zan	Apache Creek	-	-	-	-
Adobe	Arkansas	0	0	0	0
Dye	Arkansas	0	0	0	0
Henry	Arkansas	666	1,769	0	0
Holbrook #1	Arkansas	0	5,198	0	0
Horse Creek	Arkansas	0	7,542	0	0

*Handwritten initials*



<u>NAME OF RESERVOIR</u>	<u>SOURCE</u>	<u>AMOUNT OF ACRE FEET NOVEMBER 1, 1976</u>	<u>AMOUNT OF ACRE FEET APRIL 1, 1977</u>	<u>AMOUNT OF ACRE FEET OCTOBER 31, 1977</u>
Hermosa	San Francisco Creek	0	0	-
Monument	Middle Fork Purgatoire	1,106	1,350	1,375
Model	Purgatoire	0	0	1,000
North	Trinchera	3,176	3,232	3,789
Russel	Chanley Arroya	40	40	-
John Martin	Arkansas	809	20,687	0
Nee NoShee	Arkansas	0	0	0
Nee Skah	Arkansas	0	0	0
Thurston	Arkansas	0	1,044	626
Two Buttes	Two Buttes Creek	5,782	5,606	4,835

10

LIVESTOCK WATER TANKS

Applications Filed and Approved:

Water District 10 . . . . .	4
Water District 11 . . . . .	1
Water District 12 . . . . .	11
Water District 13 . . . . .	1
Water District 14 . . . . .	3
Water District 15 . . . . .	0
Water District 16 . . . . .	2
Water District 17 . . . . .	0
Water District 18 . . . . .	9
Water District 19 . . . . .	48
Water District 66 . . . . .	0
Water District 67 . . . . .	4
TOTAL . . . . .	83

All stock pond permits or applications are forwarded to our district Water Commissioners for site investigation and then for approval.

Last year (1976) the division had 93 applications.

## WATER RIGHTS TABULATION

Tabulation in Division 2 is generally in good shape, although there are still questions remaining in the area of water rights that were decreed in other than original adjudications and have been administered as though they were decreed in the original instead of a supplemental adjudication. The tabulations have been updated for all water cases that were pending and we are now trying to keep up with new judgement and decrees as they come in to the office. The next step is to correct the pre-tabulation which will come out in February. After all corrections are made, we will be ready to distribute the tabulation in July.

Abandonments that were compiled in the past were less than satisfactory, and we are now preparing a new list. This appears to be a larger job than we first believed. Every site should be visited and a search for each water right before we put it on the abandonment list should be made. This will take a lot of man hours and may require the services of another man.

Cases Filed in the Water Court

The following shows the number of cases filed from November 1969 through June 1977, and also the number of claims.

NOTE: The number of cases is an accurate figure; however, the number of claims is an estimated figure as it is impossible to determine from some applications just how many claims are made, but I state that the figures are reasonably close.

<u>1969</u>			
<u>MONTH</u>	<u>CASE NUMBERS</u>	<u>CASES</u>	<u>CLAIMS</u>
November	W-1 through W-18	18	22
December	W-19 through W-22	4	4
		22	26
	Sub-total..	22	26

<u>1970</u>			
January	None	0	0
February	W-23	1	4
March	W-24 through W-28	5	25
April	W-29 through W-31	3	7
May	W-32 through W-41	10	14
June	W-42 through W-60	19	105
July	W-61 through W-66	6	22
August	W-67 through W-74	8	15
September	W-75 through W-76	2	5
October	W-77 through W-78	2	2
November	W-79 through W-87	9	11
December	W-88 through W-114	27	62
		92	272
	Sub-total..	92	272

<u>1971</u>			
January	W-115 through W-123	9	40
February	W-124 through W-146	23	51
March	W-147 through W-195	49	90
April	W-196 through W-241	46	80
May	W-242 through W-266	25	36
June	W-267 through W-317	51	117
July	W-318 through W-348	31	77
August	W-349 through W-375	27	76
September	W-376 through W-395	20	38
October	W-396 through W-421	26	66
November	W-422 through W-460	39	90
December	W-461 through W-507	47	83
		393	844
	Sub-total..	393	844

<u>MONTH</u>	<u>CASE NUMBERS</u>	<u>CASES</u>	<u>CLAIMS</u>
<u>1972</u>			
January	W-508 through W-543	36	110
February	W-544 through W-609	66	167
March	W-610 through W-701	92	252
April	W-702 through W-811	110	307
May	W-812 through W-1144	333	680
June	W-1145 through W-3440	2298	5385
July	W-3441 through W-3679	239	467
August	W-3680 through W-3780	101	202
September	W-3781 through W-3815	35	86
October	W-3816 through W-3852	37	97
November	W-3853 through W-3875	25	49
December	W-3876 through W-3893	23	53
Sub-total..		3395	7855
<u>1973</u>			
January	W-3894 through W-3911	19	47
February	W-3912 through W-3922	11	35
March	W-3923 through W-3940	26	87
April	W-3941 through W-3954	18	72
May	W-3955 through W-3968	19	670
June	W-3969 through W-3983	20	119
July	W-3984 through W-3999	19	70
August	W-4000 through W-4015	21	64
September	W-4016 through W-4029	14	28
October	W-4030 through W-4039	12	460
November	W-4040 through W-4052	16	42
December	W-4053 through W-4062	12	234
Sub-total..		207	1928
<u>1974</u>			
January	W-4063 through W-4069	8	68
February	W-4070 through W-4086	20	633
March	W-4087 through W-4096	10	66
April	W-4097 through W-4107	11	95
May	W-4108 through W-4113	6	7
June	W-4114 through W-4126	13	821
July	W-4127 through W-4144	18	36
August	W-4145 through W-4156	14	15
September	W-4157 through W-4169	13	16
October	W-4170 through W-4185	17	44
November	W-4186 through W-4198	14	61
December	W-4199 through W-4214	16	60
Sub-total		160	1922

<u>MONTH</u>	<u>CASE NUMBERS</u>	<u>CASES</u>	<u>CLAIMS</u>
<u>1975</u>			
January	W-4215 through W-4222	8	25
February	W-4223 through W-4238	17	34
March	W-4239 through W-4245	9	9
April	W-4246 through W-4252	9	20
May	W-4253 through W-4263	11	31
June	W-4264 through W-4275	13	15
July	W-4276 through W-4280	6	10
August	W-4281 through W-4285	7	71
September	W-4286 through W-4324	40	70
October	W-4325 through W-4330	7	17
November	W-4331 through W-4359	29	33
December	W-4360 through W-4374	15	21

Sub-total.. 171 356

<u>1976</u>			
January	W-4375 through W-4386	13	29
February	W-4387 through W-4396	15	46
March	W-4397 through W-4412	22	125
April	W-4413 through W-4427	21	36
May	W-4428 through W-4482	68	323
June	W-4483 through W-4490	15	127
July	W-4491 through W-4500	11	15
August	W-4501 through W-4510	12	21
September	W-4511 through W-4519	27	38
October	W-4520 through W-4529	15	159
November	W-4530 through W-4534	13	17
December	W-4535 through W-4545	17	50

Sub-Total.. 249 986

<u>1977</u>			
January	W-4546 through W-4552	13	33
February	W-4553 through W-4559	15	20
March	W-4560 through W-4565	28	55
April	W-4566 through W-4575	17	383
May	W-4576 through W-4579	9	12
June	W-4580 through W-4588	14	22

Sub-Total.. 96 525

Total cases filed from 1969 through June 30, 1977 . . . . . 4785

Approximate number of claims for same period . . . . . 14714

Cases Terminated by the Water Court

<u>MONTH</u>	<u>NUMBER OF CASES TERMINATED</u>
<u>1970</u>	
May	2
June	1
July	4
August	17
September	5
October	5
November	1
December	15
	<hr/>
TOTAL....	50
<u>1971</u>	
January	0
February	4
March	16
April	9
May	15
June	13
July	47
August	46
September	26
October	43
November	25
December	30
	<hr/>
TOTAL....	274
<u>1972</u>	
January	2
February	31
March	25
April	39
May	38
June	1
July	5
August	76
September	47
October	40
November	167
December	110
	<hr/>
TOTAL....	581

MONTHNUMBER OF CASES TERMINATED1973

January	95
February	110
March	151
April	81
May	104
June	174
July	83
August	139
September	121
October	216
November	178
December	78

---

TOTAL....1,530

1974

January	137
February	77
March	157
April	99
May	112
June	152
July	59
August	100
September	64
October	68
November	75
December	99

---

TOTAL....1,199

1975

January	84
February	54
March	58
April	65
May	92
June	54
July	41
August	39
September	23
October	28
November	13
December	18

---

TOTAL.... 569



MONTH

NUMBER OF CASES TERMINATED

1976

January	9
February	10
March	37
April	40
May	9
June	21
July	12
August	10
September	6
October	31
November	30
December	40

TOTAL..... 255

1977

January	27
February	19
March	29
April	30
May	11
June	25

TOTAL..... 141

Cases Terminated 1970 . . . . .	50
Cases Terminated 1971 . . . . .	274
Cases Terminated 1972 . . . . .	581
Cases Terminated 1973 . . . . .	1,530
Cases Terminated 1974 . . . . .	1,199
Cases Terminated 1975 . . . . .	569
Cases Terminated 1976 . . . . .	255
Cases Terminated 1977 . . . . .	141

Total cases terminated through June 30, 1977 . . . . 4,599

## WINTER WATER STORAGE

The second year of winter water, which began November 15, 1976, was still an experimental concept which was not set out in a binding contract, but afforded the representatives of ditch companies to meet and evaluate the water stored in Pueblo Reservoir and off-channel facilities, and to make adjustments as might be prudent. The program would allow entities that stored water in Pueblo Reservoir to request their water to be delivered at a specific time, on a specific day, in an exact amount, and then be shut off until more water is needed.

The second year winter water program had only a few changes in the guideline adopted by the ditches a year ago prior to the inauguration of the first year program. But these changes came hard, as representatives of ditch companies met for eight months to make sure that their company would not be injured by the program.

The final program, with the four changes, generally followed the storage program of last year. Immediately below is last year's program.

1. That program specified that for a period of three months one-half of direct flow rights would be stored in Pueblo Reservoir, subject to call by the owning ditch. Electing not to store any winter water was the Rocky Ford Ditch, the senior ditch in the valley.
2. To compensate junior rights, which historically depended on winter flows, it was agreed that storage reservoirs would be guaranteed a single filling. The Otero Ditch, a junior without storage, would be guaranteed 600 acre feet of storage in the Pueblo Reservoir.
3. The Bureau of Reclamation agreed to forego payments toward the cost of constructing Pueblo Dam during the trial period. So all ditches storing water were given a free ride.

The changes that were made from the initial program are as follows:

1. The storage period was lengthened. The first year was for 90 days; the new program is for 107 days (Nov. 15 through March 1).
2. Increased depletion will be charged for transit loss. During the first year a flat percentage figure was charged to cover distance, evaporation, and loss in transit. The next year a sliding scale based on a USGS study will be used. The ditches more distant from Pueblo Reservoir will pay more than ditches closer to the reservoir.
3. Otero Ditch will get more water but not to exceed 2,000 acre feet. In a last minute compromise it was agreed that all ditches but two would let all storage water for the first two days be credited to Otero Ditch's account. The

Fort Lyon will participate pro rata in the accumulation of the first 600 acre feet, but not in the additional. The Rocky Ford, not storing any of its right, will not contribute at all.

4. The door was left open for the Amity to take delivery of Great Plains storage water in John Martin Reservoir rather than piggy-backed via the Fort Lyon to the Great Plains, which is in itself an exciting new use of John Martin. John Martin Reservoir was conceived originally as flood control only.

WINTER WATER STORAGE SUMMARY SHEET  
(Pueblo Reservoir)

<u>CANAL</u>	<u>ACTUAL STORAGE</u>
Bessemer . . . . .	5650.85 A.F.
West Pueblo . . . . .	256.27 A.F.
Riverside Dairy . . . . .	80.95 A.F.
Colorado . . . . .	9414.69 A.F.
Highline . . . . .	6963.37 A.F.
Oxford . . . . .	1119.66 A.F.
Otero . . . . .	1972.25 A.F.
Catlin . . . . .	8004.80 A.F.
Consolidated . . . . .	2305.07 A.F.

By an unanimous consent of the participating ditch companies, the program was extended to March 5, 1977. In the above summary, the figures that are shown have evaporation, reservoir runs, and Otero Water deducted to each account and represent what each account had in Pueblo Reservoir as of March 5, 1977 at 2400 hours.

Reservoir Runs:

Bessemer ran 33.75 A.F. in January.  
Colorado Canal ran 2481.37 A.F. in December.

WINTER WATER SUMMARY SHEET  
(Off Channel Storage)

Holbrook . . . . .	10040.00 A.F.
Ft. Lyon . . . . .	48968.67 A.F.
Amity (in John Martin) . . . . .	12255.00 A.F.

In this summary, the figures are from November 15, 1976 through March 5, 1977. The Amity Canal had their Winter Water delivered to John Martin; the storage began December 31, 1976 and ended February 18, 1977.

The first release of winter water from Pueblo Reservoir was on December 19, 1976 to the Colorado Canal. The release continued to various irrigation companies through September with the majority of the water being run during April, May, and June. All of the winter water had been run out of Pueblo Reservoir by September 28, 1977.

The following graphs show the amount and the time that the winter water was released from Pueblo Reservoir.

WINTER WATER TIME RELEASE  
 from  
 PUEBLO RESERVOIR FOR 1977

BESSEMER DITCH

CATLIN CANAL

COLORADO CANAL

CONSOLIDATED DITCH

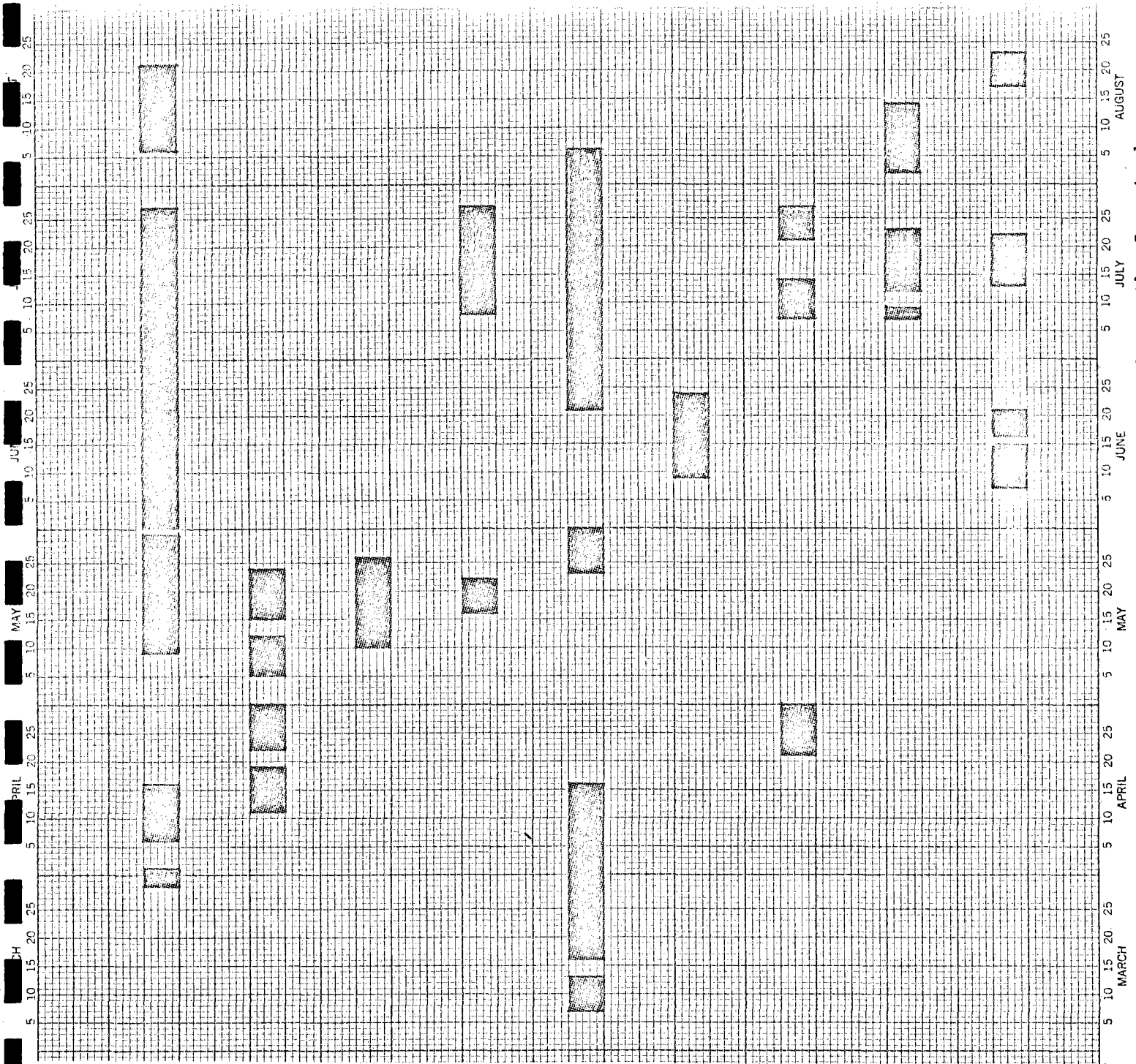
HIGHLINE CANAL

OTERO DITCH

OXFORD CANAL

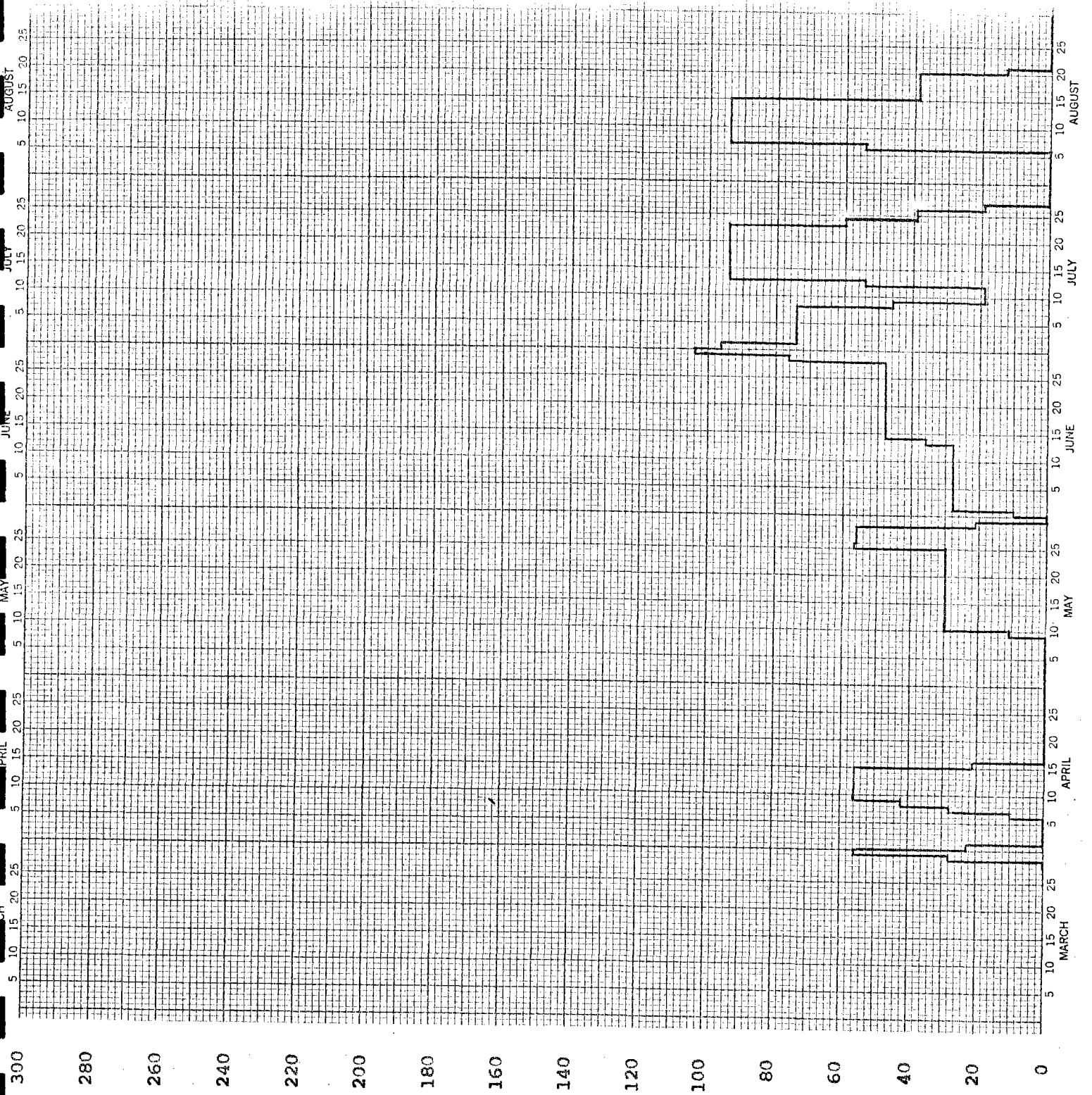
RIVERSIDE DAIRY DITCH

WEST PUEBLO DITCH



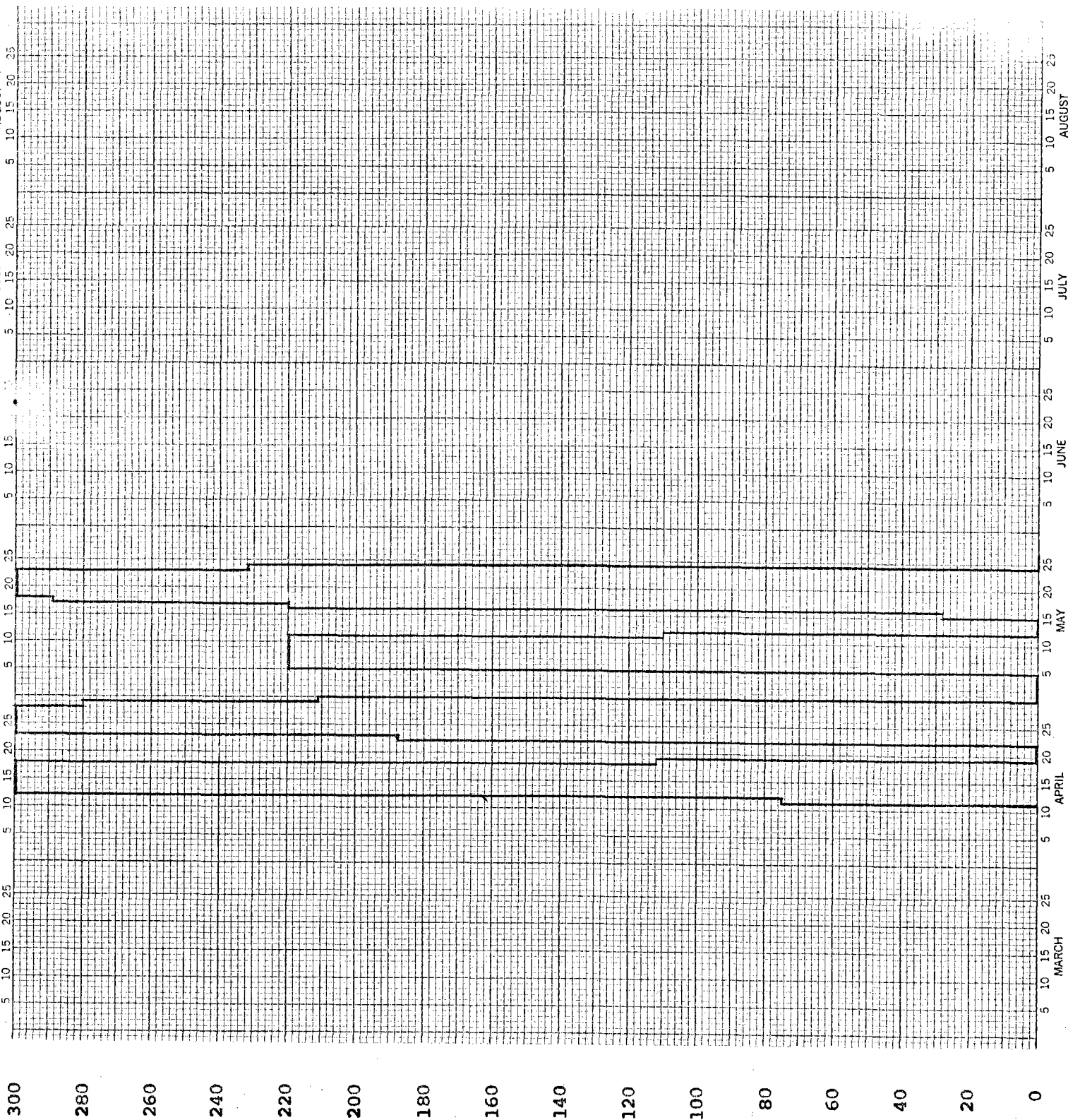
This does not show 149 acre feet which was run during the month of September.

BESSEMER DITCH



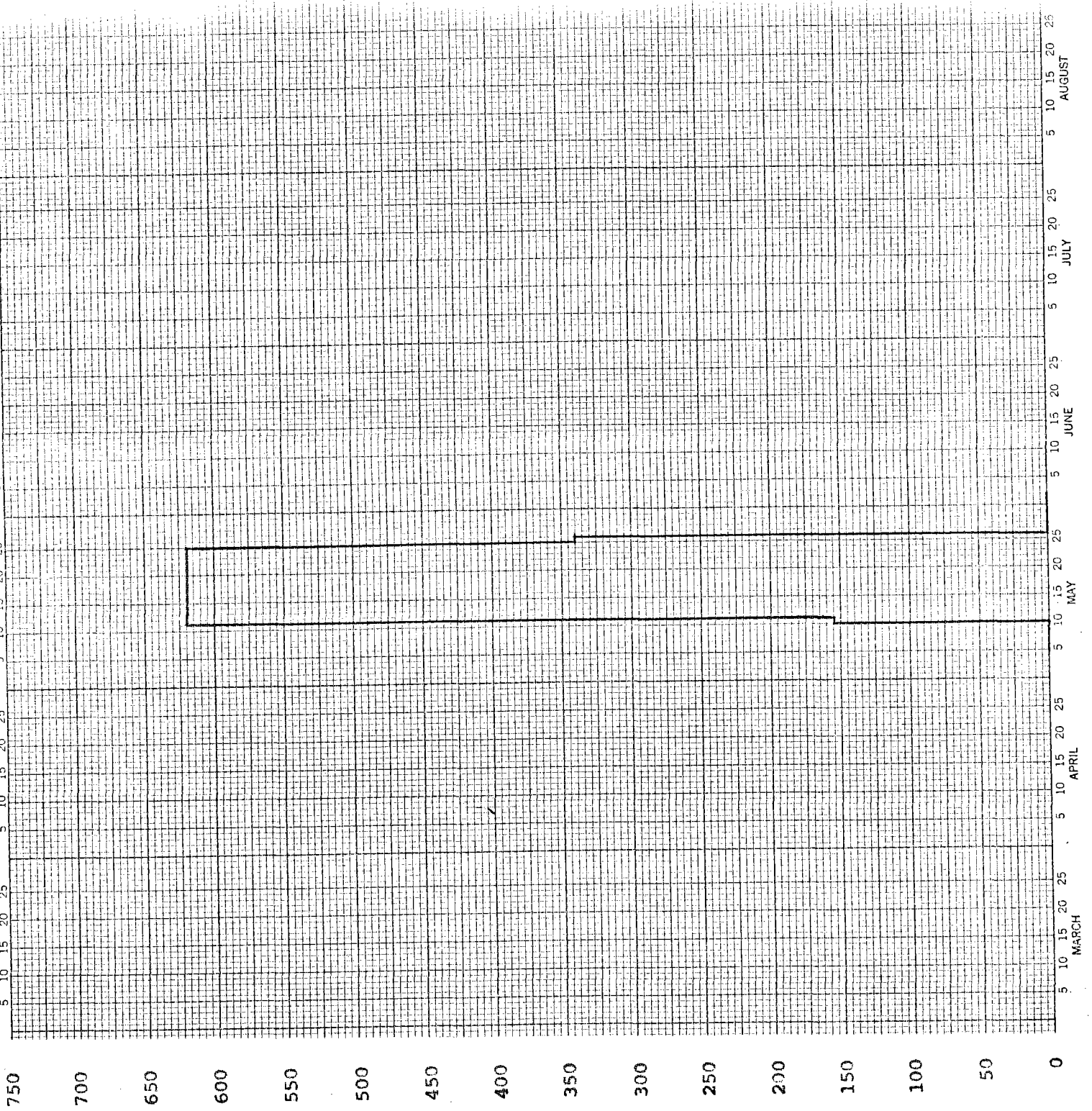
WINTER WATER  
TIME & QUANTITY  
RELEASES FROM  
PUEBLO RESERVOIR  
1977

CATLIN CANAL



WINTER WATER  
TIME & QUANTITY  
RELEASES FROM  
PUEBLO RESERVOIR  
1977

COLORADO CANAL



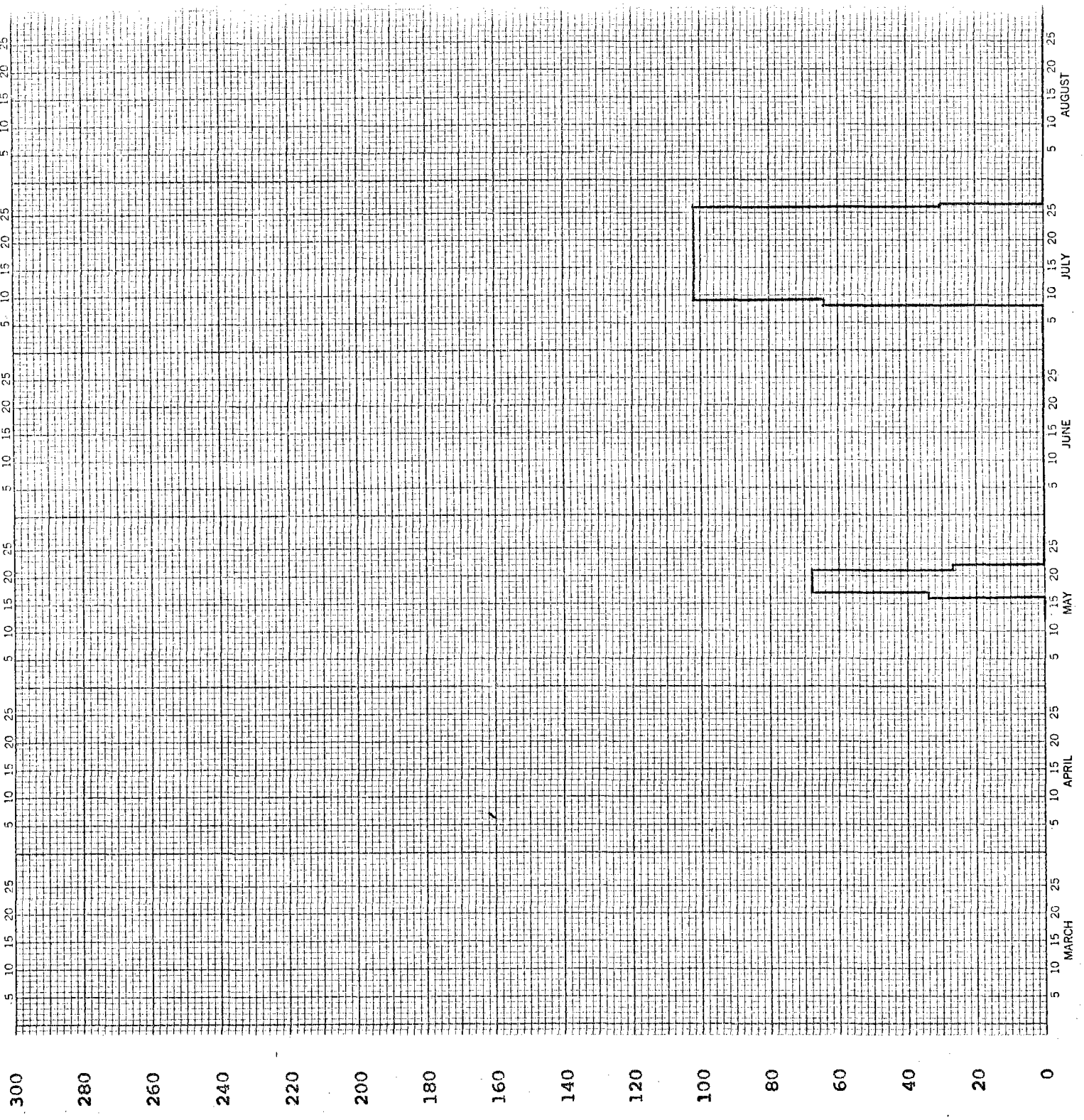
A.F.

WINTER WATER  
TIME & QUANTITY  
RELEASES FROM  
PUEBLO RESERVOIR  
1977

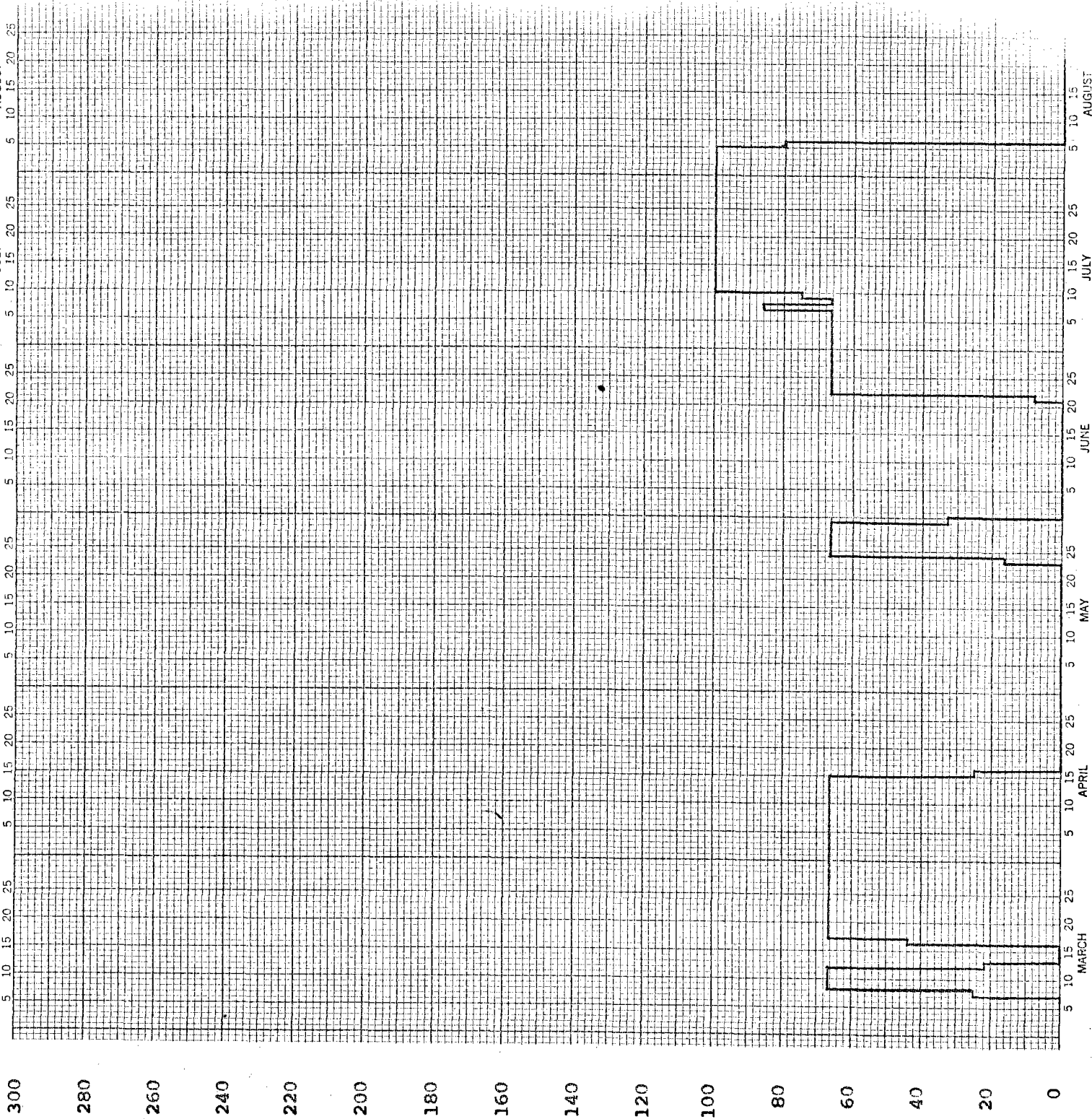


CONSOLIDATED DITCH

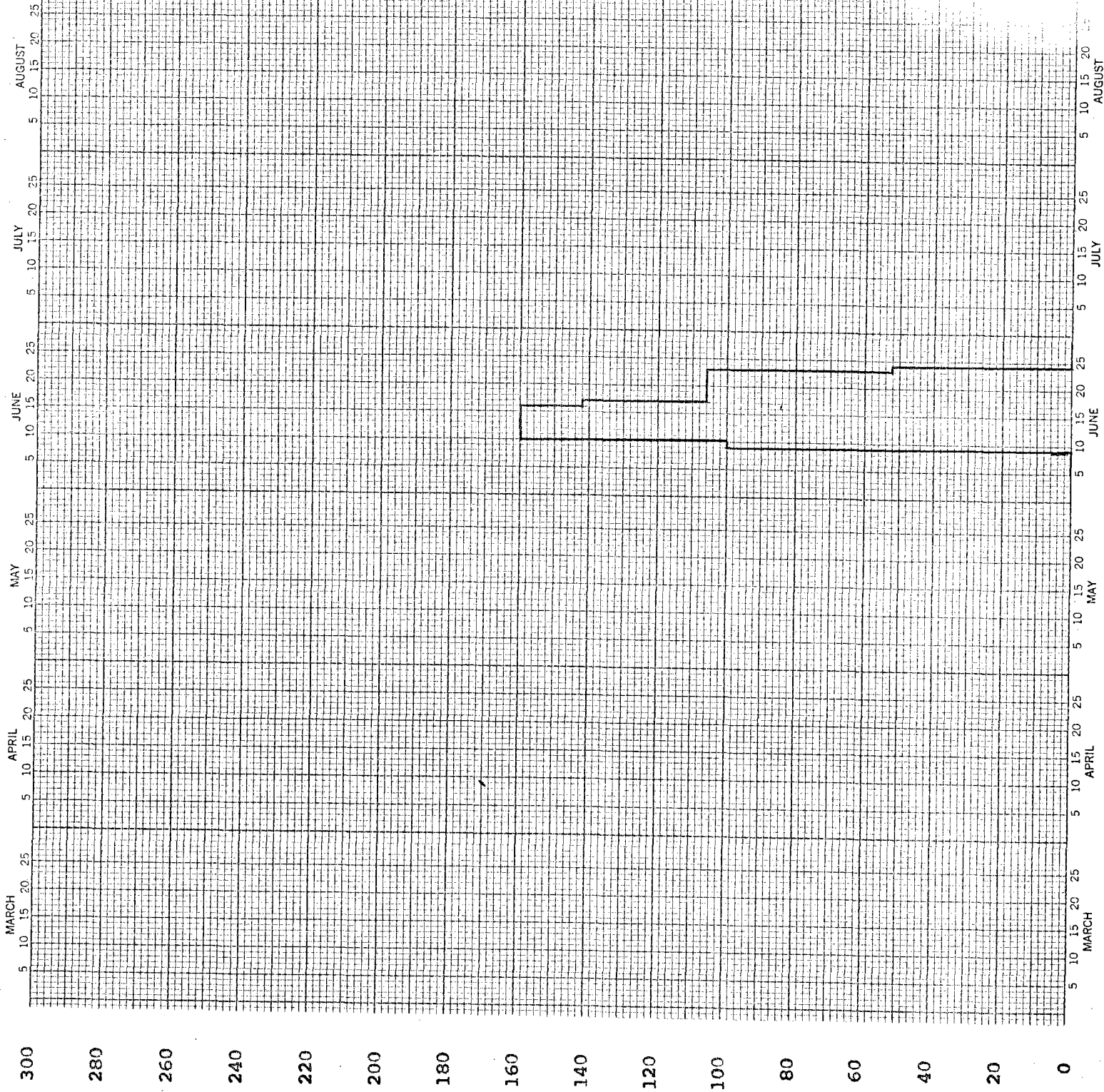
WINTER WATER  
TIME & QUANTITY  
RELEASES FROM  
PUEBLO RESERVOIR  
1977



HIGHLINE CANAL



WINTER WATER  
TIME & QUANTITY  
RELEASES FROM  
PUEBLO RESERVOIR  
1977

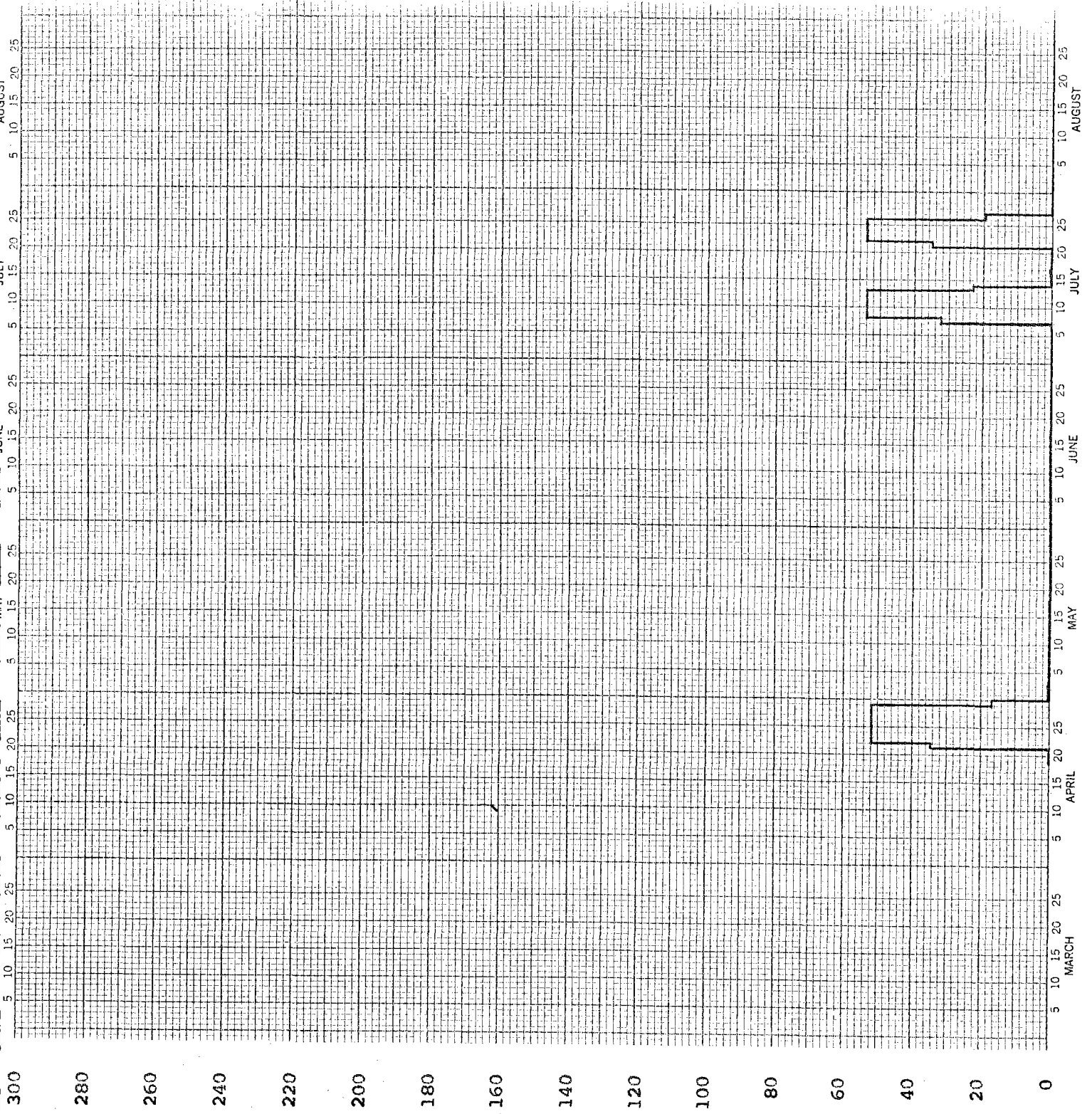


OTERO DITCH

A.F.

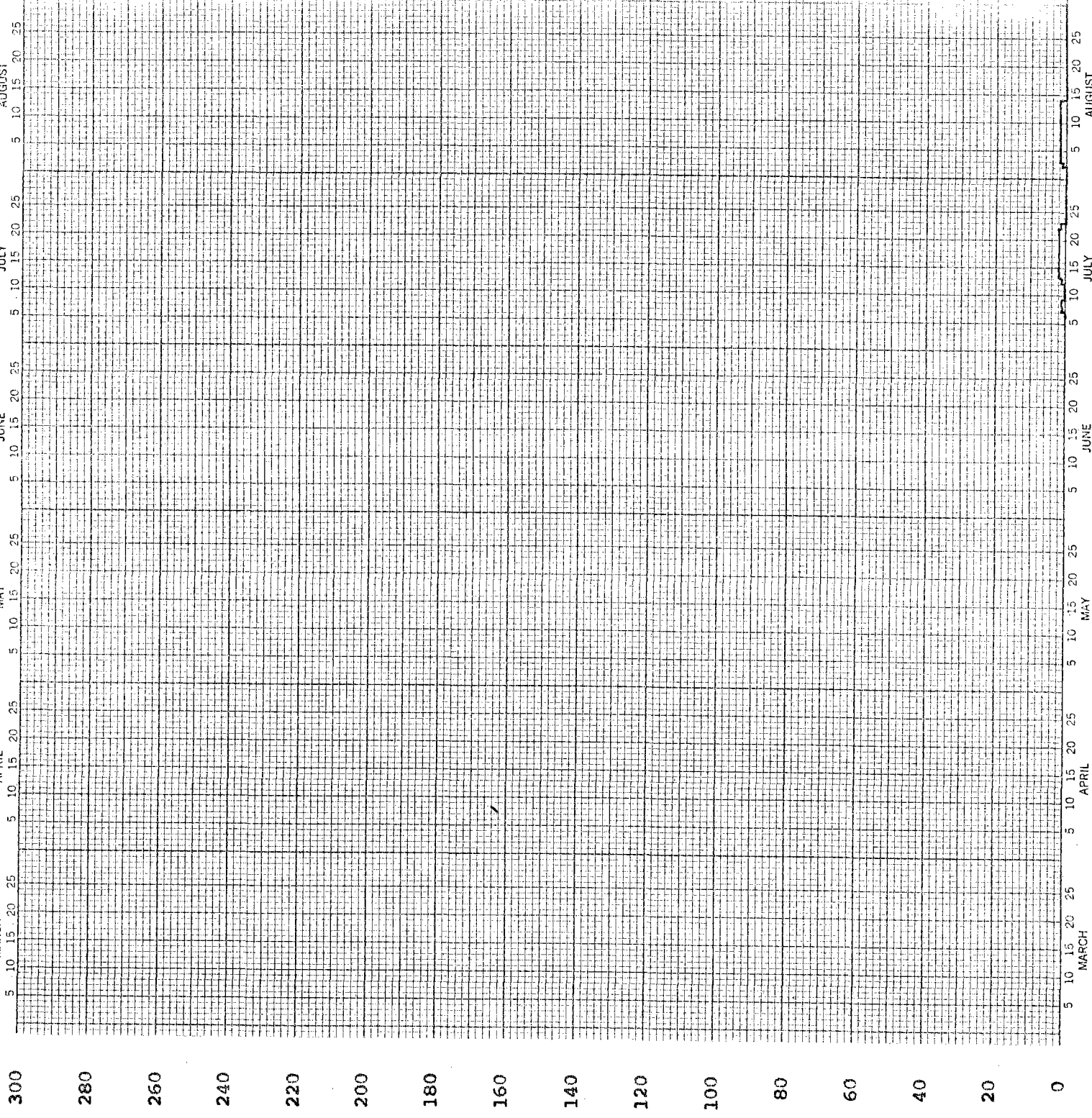
WINTER WATER  
 TIME & QUANTITY  
 RELEASES FROM  
 PUEBLO RESERVOIR  
 1977

OXFORD CANAL



WINTER WATER  
TIME & QUANTITY  
RELEASES FROM  
PUEBLO RESERVOIR  
1977

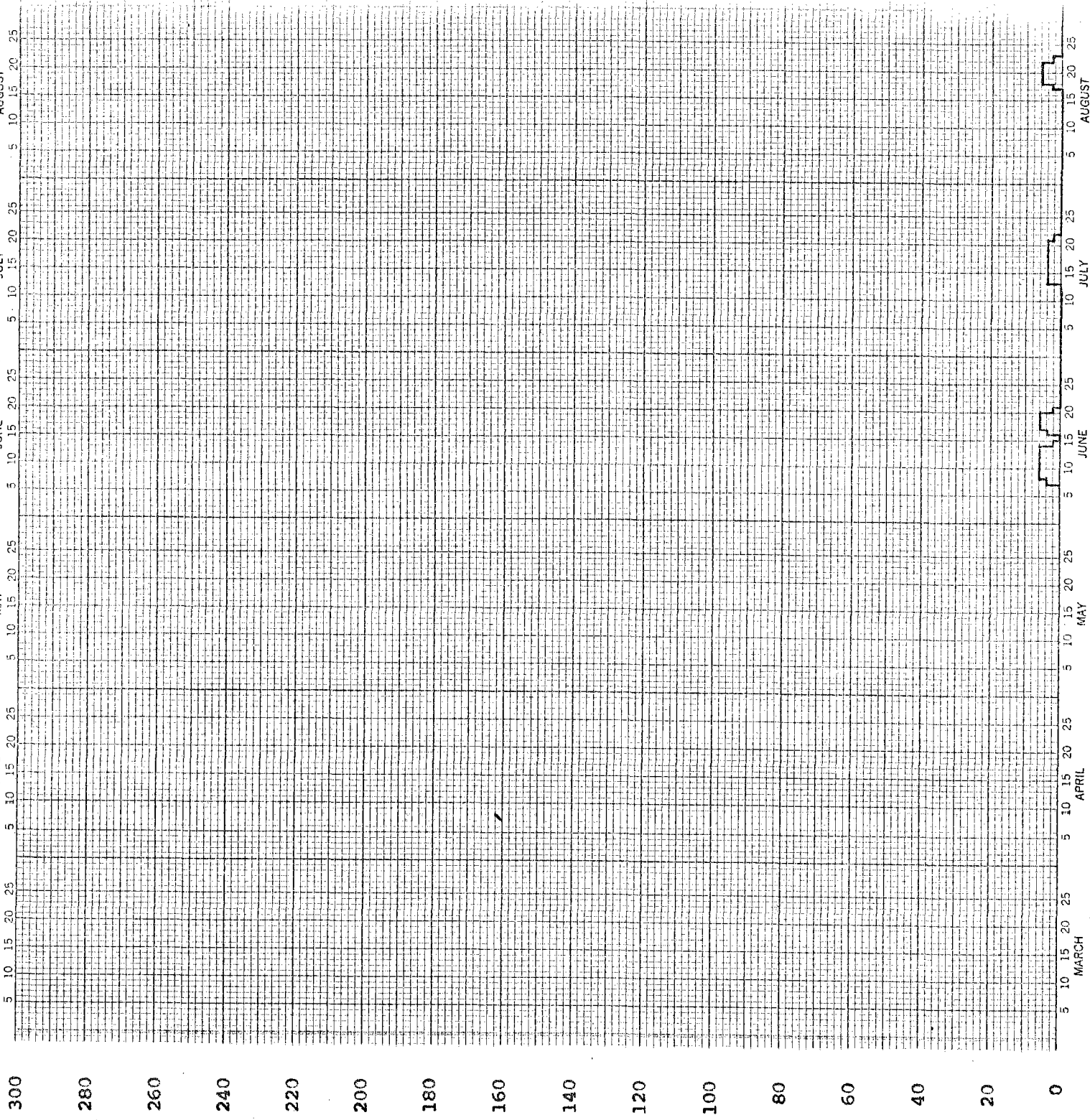
RIVERSIDE DAIRY DITCH



WINTER WATER  
TIME & QUANTITY  
RELEASES FROM  
PUEBLO RESERVOIR  
1977

They ran 2.02 acre feet from September 7 through September 13.  
They also ran 2.02 acre feet from September 21 through September 27.

WEST PUEBLO DITCH



WINTER WATER  
TIME & QUANTITY  
RELEASES FROM  
PUEBLO RESERVOIR  
1977

They ran 6.00 acre feet from September 14 through September 28.

## GROUND WATER ADMINISTRATION

In December 1976, Judge Gobin ruled on the amendment to the 1973 Pumping Rules and Regulations, rejecting the proposed amendment.

The decree reads:

WHEREFORE, IT IS ORDERED, ADJUDGED AND DECREED that the proposed Amendment to Rule 3 of the Rules and Regulations Governing the Use, Control and Protection of Surface and Groundwater Rights in the Arkansas River and Tributaries be disapproved and be of no force and effect and that the existing 1973 Rules and Regulations continue to be in effect except as provided herein; that any future proposed Amendments to said Rules and Regulations be no more stringent than necessary to prevent injury to surface diverters, promote maximization of beneficial use and recognize the contribution of the system of conjunctive use thereto; that wells that have been operating for more than eighteen years without curtailment be exempted from regulation to the extent of their unrestrained historic usage pursuant to C.R.S. 1973, 37-92-401(b) (VI); and that senior appropriators be confirmed in their right to make calls selectively, for protection of their priorities, to waters available in the river without making a concurrent call upon wells a condition precedent to the recognition of the surface call.

This decision has been appealed to the Supreme Court but a decision is not expected before Fall. On June 21, 1977, Judge Gobin granted a stay on the eighteen year and selective call provisions. After this stay was granted enforcement of the three-day pumping rule on all wells was resumed. An injunction was sought and granted on one violator.

A decision favorable to the Division Engineer was granted in the Booth Ordhard case. Judge Gobin granted an injunction preventing the irrigating of former Booth land by wells. However, the case has been appealed and Judge Gobin stayed his injunction.

The Division Office has continued its cooperative programs with the County Health Departments and it has been a relatively quiet year as far as 1042 wells are concerned.

SUMMARY OF WELLS  
IRRIGATION DIVISION NO. 2

WATER DISTRICT  
NO.

TYPE OF USE

	0	1	2	3	4	5	6	7	8	TOTAL
10	24	2,618	101	73	57	11	227	10	107	3,228
11	77	867	7	9	49	6	25	5	16	1,061
12	66	561	70	57	13	13	48	3	8	839
13	27	161	41	32	0	0	29	10	4	304
14	19	1,502	376	132	54	36	855	28	57	3,059
15	38	523	47	36	3	1	113	13	21	795
16	3	172	200	77	5	21	64	3	3	548
17	2	454	625	161	35	24	969	37	57	2,364
18	2	22	54	5	0	0	10	2	7	102
19	10	86	168	26	0	12	16	7	4	329
66	0	80	267	35	3	14	572	7	12	990
67	5	652	1,442	201	37	9	1,423	10	102	3,882
TOTAL	273	7,699	3,403	843	256	147	4,361	135	399	17,516

Type of Use (0) In House Use Only (2) Stock (4) Commercial (6) Industrial (8) Irrigation & Stock  
 (1) Domestic (3) Domestic & Stock (5) Industrial (7) Irrigation & Stock  
 (8) Municipal

Registered wells as of January 11, 1977.



NEW PERMITS ISSUED IN DIVISION 2  
1 NOV 76 to 31 OCT 77

New In House Use Only (0) . . . . .	355
Domestic (1), Stock (2), Domestic and Stock (3) . . . . .	458
New Commercial (4) (non-tributary) . . . . .	2
New Industrial (5) (non-tributary) . . . . .	0
New Irrigation (6) (non-tributary) . . . . .	4
New Municipal (8) (non-tributary) . . . . .	3
Replacements for Existing Wells . . . . .	142
Late Registrations of Exempt Wells . . . . .	74
Permits Issued to Unregistered Adjudicated Exempt Wells . . . . .	515
Permits Issued to Unregistered Adjudicated Non-Exempt Wells . . . . .	146
Denied Applications . . . . .	57

UNDERGROUND WATER  
IRRIGATION DIVISION NO. 2

Irrigation Division 2, composed of Water Districts 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 66, and 67, has of this date wells of all types in operation. Types of use are domestic, stock, domestic and stock, commercial, industrial, irrigation, irrigation and stock, and lastly, municipal. Tabulation showing the number of each type of well in each district is illustrated by the following table.

The principal aquifer area extends through a 150 mile reach of the Arkansas River Valley extending from Pueblo to the Kansas State line. This is a valley-fill aquifer which is adjacent to, underlies, and is in hydraulic connection with, the Arkansas River. The aquifer consists of unconsolidated deposits of gravel, sand, silt and clay. It ranges from one to fourteen miles in width and covers an area of about 500 square miles in parts of Pueblo, Otero, Crowley, Bent, and Prowers counties. The aquifer fills a "u-shaped" trough cut into the bedrock, which consists of shale, limestone, and sandstone of Cretaceous age. About two million acre feet of water is stored in the valley-fill deposits. Summary of the hydrologic character is shown below.

UNIT	THICKNESS	PHYSICAL CHARACTER	HYDROLOGIC CHARACTER
Dune Sand	0 - 100'	Very fine to coarse. Poorly sorted sand.	Commonly not saturated but transmits water readily from the surface to underlying aquifers. Source of water for a few domestic and stock wells.
Valley-fill deposits	0 - 300'	Boulders, cobbles, gravel, sand, silt, and clay. Generally grades from fine sand near the surface to coarse sand and gravel at the base.	Principal source of water for irrigation, public supply, and industrial wells. Irrigation well yields are as much as 3,150 gpm and average 650 gpm. Aquifer furnishes water to 1,348 irrigation wells.

UNIT	THICKNESS	PHYSICAL CHARACTER	HYDROLOGIC CHARACTER
Pierre Shale	0 - 2,200'	Shale and sandy shale.	Low-permeability confining bed; acts as a barrier to vertical movement of ground water. Now known to yield water to wells.
Niobrara Formation	0 - 700'	Chalky and marly limestone and calcareous shale.	Low permeability to confining bed; acts as a barrier to vertical movement of ground water. A few stock wells tapping fractured limestone yield less than 5 gpm.
Carlile Shale	0 - 200'	Calcareous shale, limestone, and sandstone.	Low-permeability confining bed; acts as a barrier to vertical movement of ground water. Now known to yield water to wells.
Greenhorn Limestone	0 - 150'	Limestone and chalky shale.	Low-permeability confining bed; acts as a barrier to vertical movement of ground water. A few stock wells tapping fractured limestone yield less than 5 gpm.
Granerous Shale	0 - 200'	Gypsiferous shale and sandstone.	Low-permeability confining bed; acts as a barrier to vertical movement of ground water. Now known to yield water to wells.
Dakota Sandstone	75 - 235'	Sandstone, sandy shale, siltstone, and shale.	Important source of water for domestic, stock and public water. Restricts vertical movement of water to and from the valley-fill deposits. Wells yield as much as 100 gpm and average 20 gpm.

GROUND-WATER WITHDRAWAL FROM THE  
VALLEY FILL AQUIFER BY IRRIGATION WELLS

(acre feet per year)

COUNTY	1964	1965	1966	1967	1968
Pueblo	25,000	16,000	23,000	19,000	21,000
Otero-Crowley	53,000	36,000	50,000	48,000	50,000
Bent	33,000	15,000	23,000	23,000	26,000
Prowers	74,000	45,000	34,000	42,000	55,000
Total	185,000	112,000	130,000	132,000	152,000

The above statistics are from a study made prior to the inception of the Rules and Regulations, and may have been based on a pumping season of a full 110 days. If the 1968 total withdrawal figure of 152,000 acre feet was based on full yield pumping for 110 days at 24 hours per day, the 1975 withdrawal would be 3/7 of that or 65,143 acre feet.

The above study appears to be the most recent. If the reader has knowledge of more recent data and wishes to share it with the Division Engineer's Office, it would be most appreciated.

ARKANSAS RIVER COMPACT

IRRIGATION DIVISION NO. 2

Mr. Frank G. Cooley is Chairman of the Arkansas River Compact Administration.

Storage began on November 1, 1976 and continued until April 1, 1977; the gates were not opened until April 11, 1977 by mutual agreement with Colorado and Kansas. At this time, there had been accumulated 20,750 acre feet of which 11,868 acre feet was winter water and 8888 acre feet was Compact water.

This amount was run out starting April 11, 1977 at 0800 hours through April 26, 1977 at 1100 hours.

Storage started on May 21, 1977 and ended the same day. On May 22, 1977, a release started and ended with a total accumulation of 1101 acre feet.

Storage started on August 10, 1977, and ended the same day with an accumulation of 1014 acre feet. Release started August 11 and ended that same day.

Storage started on August 18, 1977 and continued until August 21, 1977. A release started at 0800, August 22, and ended at 1700 hours, August 26, 1977 with 4873 acre feet.

Storage started on December 9 and continued through the end of 1977.

A special meeting of the Arkansas Compact was held in August in Trinidad where Division personnel conducted a tour of the Trinidad Dam and related structures.

The regular meeting of the Compact was held in Lamar where the two new Colorado members and one new Kansas member were introduced. Below are listed the Compact Commissioners (asterisk to denote new ones). The Catlin water transfer to the Permanent Pool did not work

Kansas

Guy E. Gibson  
Carl E. Bentrup  
W. F. Stoeckly\*

Colorado

Felix L. Sparks  
Leo Idler\*  
Kent A. Reyher\*

out in the Water Court. So as of now there is no Permanent Pool; however, planning is going ahead for alternatives. The proposed Muddy Creek gages have been installed, but no provision has been made to operate them. We have some tentative plans, but nothing to report at this time.

A very serious problem surfaced concerning the Compact Secretary and the Water Commissioner being the same person, with a formal protest by a large upstream canal, and the subsequent failure of the Secretary to implement provisions of the Compact and beginning storage on November 1, and the alledged mishandling of some summer rain peaks. This situation will need resolution soon.

PERSONNEL

Division No. 2

DIVISION OF WATER RESOURCES

<u>NAME</u>	<u>POSITION</u>	<u>DISTRICT</u>	<u>MONTHS WORKED</u>	<u>MILEAGE</u>
Robert W. Jesse	Division Engineer	Division 2	Full Time	19,502
James F. Kasic	Assistant Division Engineer	Division 2	Full Time	8,843
Kenneth J. Cooper	Assistant Division Engineer	Division 2	Full Time	5,896
Robert Ermel	Water Commissioner	District 10	Full Time	15,723
James Everett	Water Commissioner	District 11	Full Time	15,808
George Coffee	Deputy Water Commissioner	District 11	6 months	5,440
Larry Brown	Deputy Water Commissioner	District 11	7 months	3,916
George Wichmann	Water Commissioner	District 12	Full Time	21,464
James J. Javernick	Deputy Water Commissioner	District 12	4 Months	2,031
Juanita Tafoya	Deputy Water Commissioner (beginning August 1, 1976)	District 12	7 Months	4,762
Richard Sierka	Deputy Water Commissioner (beginning May 19, 1977)	District 12	2 Months	1,410
Gayle Patterson	Water Commissioner (Retired Feb. 28, 1977)	District 13	Full Time	5,137
Don Stuart	Deputy Water Commissioner Water Commissioner (beginning March 1, 1977)	District 13	4 Months Full Time	7,512

<u>NAME</u>	<u>POSITION</u>	<u>DISTRICT</u>	<u>MONTHS WORKED</u>	<u>MILEAGE</u>
Richard Squire	Deputy Water Commissioner (beginning May 20, 1977)	District 13	2 Months	804
Larry Young	Water Commissioner	District 15	Full Time	17,938
Robert Brgoch	Water Commissioner	District 16	Full Time	11,354
Augustine Garcia	Water Commissioner	District 16	12 Months	8,482
William Pattie	Water Commissioner	District 17	Full Time	18,111
Arlyn Davison	Water Commissioner (beginning June 1, 1977)	District 17	Full Time	2,247
George Watson	Deputy Water Commissioner	District 17	0	0
Leonard Trujillo	Water Commissioner	District 18	12 Months	5,186
Henry Marques	Water Commissioner	District 19	Full Time	19,628
John Ousimano	Deputy Water Commissioner	District 19	26 Days	1,202
Tony Pantano	Contract Employee	District 19	15 Days	542
Manuel Vigil	Deputy Water Commissioner	District 19	8 Days	550
Lane Hackett	Water Commissioner	Districts 66 & 67	Full Time	15,886
Robert Clodfelter	Deputy Water Commissioner	Districts 66 & 67	6 Days	175
George Ridenour	1042 Water Commissioner	Division 2	Full Time	8,296
David DeYoung	Hydrographer	Division 2	Full Time	14,641
Gary Largent	Hydrographer	Division 2	Full Time	25,489

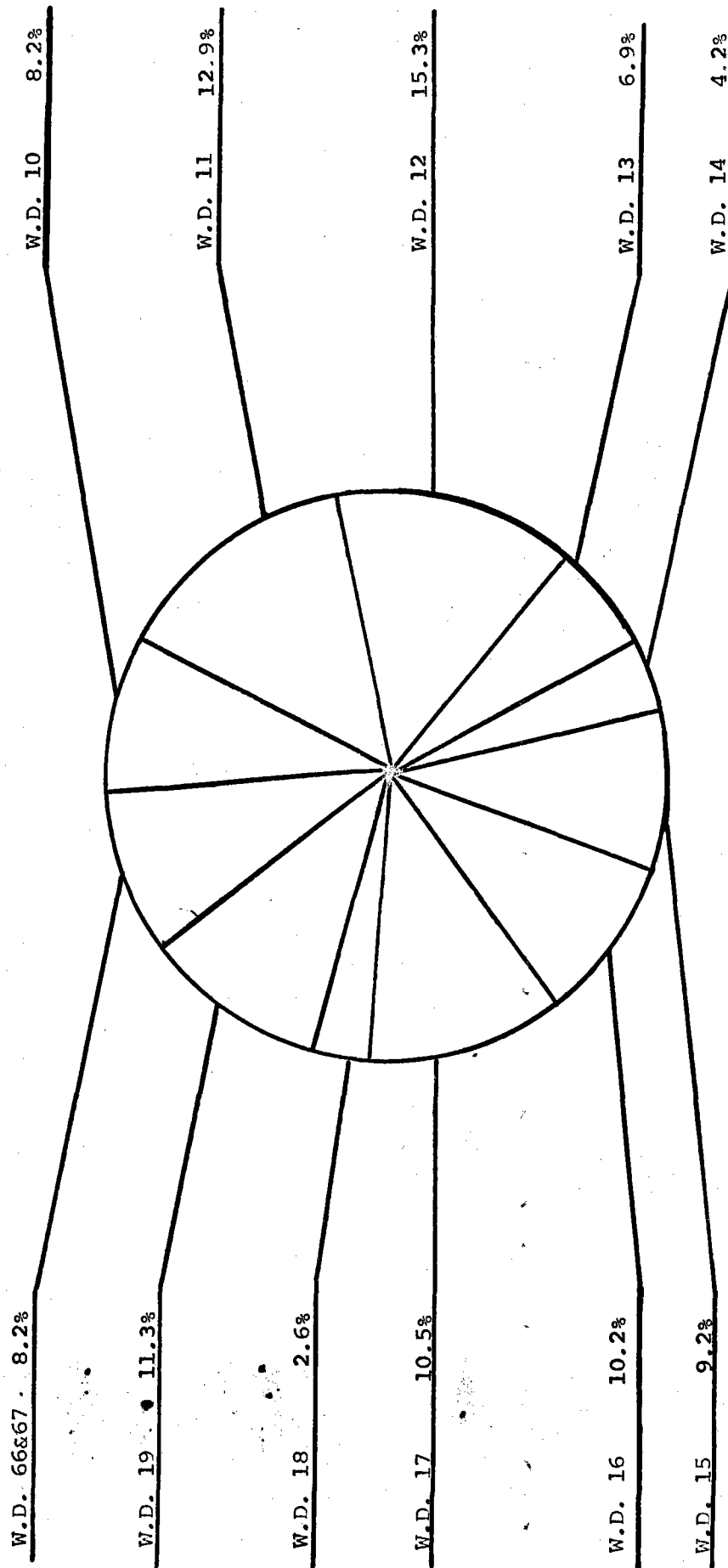


<u>NAME</u>	<u>POSITION</u>	<u>DISTRICT</u>	<u>MONTHS WORKED</u>	<u>MILEAGE</u>
David Lewis	Hydrographer (Terminated April, 1977)	Division 2	Full Time	10,738
Lynna Muse	Administrative Clerk Typist (beginning 9-1-77)	Division 2	Full Time	0

Paid Mileage 193,604

Mileage for State Vehicles 85,109

IRRIGATION DIVISION NO. 2  
Water District Mileage  
July 1, 1976 to June 30, 1977



Total Miles for Water District: 193,609

SOUTHEASTERN COLORADO  
WATER CONSERVANCY DISTRICT  
905 HIGHWAY 50 WEST  
P. O. BOX 440  
PUEBLO, COLORADO 81002

OFFICERS

Tom McCurdy, President, deceased September 20, 1977  
Keith Webb, President, P. O. Box 992, La Junta, Colorado 81050  
Raymond D. Nixon, Vice President, 2519 Prairie, Colorado Springs,  
Colorado 80909  
Leon C. Hook, Treasurer, 804 Rudd, Canon City, Colorado 81212  
Charles L. Thomson, General Manager, P. O. Box 440, Pueblo, Colorado  
81002  
Charles J. Beise, Attorney for the District, 1536 First National Bank  
Building, Denver, Colorado 80201  
George Everett, Secretary, deceased September 20, 1977  
Dr. Wendell Hutchinson, Secretary, 9104 U. S. Highway 50, Salida,  
Colorado 81201

DIRECTORS

George Everett, deceased September 20, 1977  
Glen Everett, 10615 County Road 150, Salida, Colorado 81201  
John P. Huebsch, 27 Oak Avenue, Colorado Springs, Colorado 80906  
John E. Javernick, 3205 Hale, Canon City, Colorado 81212  
Frank Milenski, R.R. 1, La Junta, Colorado 81050  
Tom McCurdy, deceased September 20, 1977  
Pete Peters, Route 1, Box 22, Manzanola, Colorado 81058  
Ralph Adkins, P. O. Box 316, Pueblo, Colorado 81003  
Kenneth Carter, Route 1, Ordway, Colorado 81063  
Robert E. Northrup, 501 Steward, Lamar, Colorado 81052  
Alvin Spady, Route 2, Las Animas, Colorado 81054  
Alfred Putnam, 305 St. Vrain Avenue, Las Animas, Colorado 81054  
Dave Ciruli, Route 4, Box 793, Pueblo, Colorado 81004

WATER RELATED ORGANIZATIONS

IRRIGATION DIVISION NO. 2  
Pueblo, Colorado

Avondale Water and Sanitation District, Roger Ruybal, Manager, P.O.  
Box 188, Avondale, Colorado 81022

Beaver Park Water Company, Penrose, Colorado 81240

Beehive Water Association, John F. Watters, Cheraw, Colorado 81030

Bent's Fort Water Association, 210 Main, La Junta, Colorado 81050

Boone, Colorado, Barbara Martin, Town Clerk, Boone, Colorado 81025

Town of Buena Vista, Mayor B. D. Case, East Main, P. O. Box B, Buena  
Vista, Colorado 81211

City of Canon City, Wayne R. Clark, City Engineer, Box 711, Canon City,  
Colorado 81212

Town of Cheraw, May, Cheraw, Colorado 81030

City of Colorado Springs, James Phillips, Director of Utilities, P. O.  
Box 1103; City of Colorado Springs, J.A. McCullough, P.O. Box 1103,  
Colorado Springs, Colorado 80947

Town of Crawley, May Howard Gilmore, Crowley, Colorado 81033

Crowley County Water Association, Harley Ruscher, President, P. O. Box  
487, Ordway, Colorado 81063

Town of Eads, Mayor, 1201 Hickman, Eads, Colorado 81036

East End Water Company, Harry Froese, Secretary, Route 2, La Junta,  
Colorado 81050

Eureka Water Company, Ralph Read, P. O. Box 5, Rocky Ford, Colorado 81067

Fayette Water Association, John Schweizer, Jr., Secretary, Route 1,  
Box 311, Rocky Ford, Colorado 81067

City of Florence, R. Herdon, City Manager, City Hall, Florence, Colorado  
81039

City of Fountain, Richard Brown, Jr., City Administrator, Fountain,  
Colorado 80817

Town of Fowler, May Murrell Scherrer, 302 Seventh, Fowler, Colorado 81039

Hasty Water Company, Earl Eckerett, Hasty, Colorado 81044

Highland Water and Supply Company, Frank Vance, President, Blende,  
Colorado 81004

Holbrook Center Soft Water, J. B. Shenk, Secretary, Cheraw, Colorado 81030

Town of La Junta, Mayor Vincent Grace, 1 East 14, La Junta, Colorado 81050

City of Lamar, Francis Hiigle, City Administrator, Box 270, Lamar,  
Colorado 81052

City of Las Animas, Loyde Gardner, Secretary, Route 1, Box 134, Las Animas,  
Colorado 81054

Town of Manzanola, Patricia Zwick, Town Clerk, Manzanola, Colorado 81058

Lombard Village Water Association, Levi Martinez, Attorney at Law,  
Thatcher Building, Pueblo, Colorado 81003

May Valley and Pleasant Valley Water Association, Leonard Courkamp,  
Wiley, Colorado 81092

McClave Water Association, Harold Falconburg, McClave, Colorado 81057

Newdale-Grand Valley Company, Ernest P. Campbell, President, Route 2,  
Box 292, Rocky Ford, Colorado 81067

Town of Olney Springs, Geoa Peterie, Olney Springs, Colorado 81062  
Town of Ordway, Clair Biddison, Mayor, Ordway, Colorado 81063  
Park Center Water District, George Smith, Clerk, P. O. Box 860, Canon  
City, Colorado 81212  
Patterson Valley Water Company, David E. Smith, Treasurer, Route 1,  
Rocky Ford, Colorado 81067  
Penrose Water District, P. O. Box 297, Penrose, Colorado 81240  
96 Pipeline Company, Warren B. Arbuthnot, President, Ordway, Colorado  
81063  
Town of Poncha Springs, Stuart Sexton, Mayor, Poncha Springs, Colorado  
81242  
Pueblo Board of Water Works, Larry Fontaine, Executive Director,  
P. O. Box 400, Pueblo, Colorado 81002  
Riverside Water Company, Edward T. Jung, Secretary, Route 1, Box 100,  
Rocky Ford, Colorado 81067  
City of Rocky Ford, Kenneth Bruch, City Administrator, 203 South Main  
Street, Rocky Ford, Colorado 81067  
City of Salida, Mayor Edward Touber, P. O. Box 417, Salida, Colorado  
81201  
Salt Creek Water and Sanitary District, Endalesio Garcia, 1022 Palo Alto  
Street, Pueblo, Colorado 81004  
Security Water District, Thomas K. Remple, 231 Security Boulevard, Security,  
Colorado 80911  
Southside Water Association, John Evers, President, RR 2, La Junta,  
Colorado 81050  
South Swink Water Company, Gladys Jensen, Secretary, P. O. Box 442, Swink,  
Colorado 81077  
St. Charles Mesa Water Association, Lee Simpson, Treasurer, 1397 South  
Aspen, Pueblo, Colorado 81006  
Stratmoor Hills, Fred Erickson, 1811 B Street, Stratmoor Hills, Colorado  
80906  
Town of Sugar City, Mayor Chris Giese, Sugar City, Colorado 81076  
Sugar City Pipeline Company, Henry Herman, Jr., Secretary, Sugar City,  
Colorado 81076  
Town of Swink, Mayor Art O'Neal, Swink, Colorado 81077  
Valley and Vroman Water Companies, Albert Stover, Secretary, Box 8,  
Manzanola, Colorado 81058  
West Grand Valley Water, Inc., Blaine Malott, Box 182, Rocky Ford,  
Colorado 81067  
West Holbrook Pipeline Company, Roy Wadleigh, Secretary, Route 2, Box 302,  
La Junta, Colorado 81050  
Widfield Homes Water and Sanitation, James C. Perry, Sr., 3 Widfield,  
Widfield, Colorado 80911  
Town of Wiley, Mayor R. W. Esgar, 405 Gordon, Wiley, Colorado 81092

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area \_\_\_\_\_ square miles.

Water stage recorder STEVENS A-35 CONTIN

Max. Discharge 605 Sec. ft. at 0200 Hrs on JUNE 8, 1977 G. H. 4.34 ft.  
Max. G. H. 4.34 ft. at 0200 Hrs on JUNE 8, 1977 Min. Daily Discharge 0 sec.-ft. on DAYS

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
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									XX	XXX		
31			XX	XXX					XX	XXX		

13580.49 Total  
37.1 Mean  
26.937 Run-off in  
494

**DIVISION OF WATER RESOURCES  
OFFICE OF STATE ENGINEER**

Rating Table Used STANDARD 1.5.1  
DATE 6-15-71

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge									
	0	S	0	12	2.73	288		0				1								
	0			0	2.67	278		0				2								
	0			0	2.58	263		0				3								
	0	S	0	20	2.62	270		0				4								
	0	.80	.01	40	2.68	280		0				5								
	0	1.05	0	62	2.78	297		0				6								
	0	1.38		97	2.72	287		0				7								
	0	1.78		145	3.28	387		0				8								
	0	2.08		187	2.87	312		0				9								
	0	2.01		177	2.44	241		0				10								
	0	1.70		135	2.07	185		0				11								
	0	1.57		119	1.61	124		0				12								
	0	1.66		130	1.17	74		0				13								
	0	1.67		131	.85	45		0				14								
	0	1.08		65	.73	35		0				15								
	0	.92		50	S	18		0				16								
	0	S		26		0		0				17								
	0	.26		6.7		0		0				18								
	0	S		10		0		0				19								
	0			0		0		0				20								
	0			0		0		0				21								
	0			0		0		0				22								
	0			0		0		0				23								
	0	S		56		0		0				24								
	0	1.52		113		0	S	20				25								
	0	1.42		101		0	S	27				26								
	0	1.13		70		0		0				27								
S	5.3	S		31		0		0				28								
.38	12	S		40		0		0				29								
S	17	S		153		0		0				30								
XX	XXX	2.57		262	XX	XXX		0			XX	XXX	31							
												Water Year								
34.3												1977								
2238.7												5704								
1.14												15.6								
72.2																				
113																				
1.62																				
68												11314								
4440																				
6712																				
93																				
17												387								
262												0								
387												0								
27																				
0																				
0																				

WATER EXTENSION DITCH

TENNESSEE, MASS.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area \_\_\_\_\_ square miles. Water stage recorder **STEVENS "F" WEEKLY**

Max. Discharge 6.2 Sec. ft. at 0400 Hrs. on MAY 11, 1977 G. H. 0.43 ft.  
 Max. G. H. 0.43 ft. at 0400 Hrs. on May 11, 1977 Min. Daily Discharge 0 sec.-ft. on MAY 11, 1977

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
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										XX	XXX	
31			XX	XXX						XX	XXX	

Calendar Year	1976
350.72	Total
0.96	Mean
696	Run-off in acre-feet
12	Maximum



DIVISION OF WATER RESOURCES  
OFFICE OF STATE ENGINEER

Sta. No. \_\_\_\_\_

Rating Table Used STANDARD 6 FT PIPING

DATE 6-22-71

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date			
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge												
			0	0.29	3.3							1											
			0	.28	3.2							2											
			0	.25	2.6							3											
			0	.22	2.1							4											
			0	.19	1.7							5											
			0	.17	1.4							6											
			0	.17	1.4							7											
		5	1.6	.18	1.6							8											
		0.25	2.6	.18	1.6							9											
		.25	2.6	.17	1.4							10											
		.27	3.0	.15	1.2							11											
		.24	2.5	.13	.93							12											
		.25	2.6	.12	.82							13											
		.21	2.0	.10	.61							14											
		.19	1.7	.08	.43							15											
		.22	2.1	.07	.35							16											
		.21	2.0	.07	.35							17											
		.22	2.1	.07	.35							18											
		.20	1.8	.06	.27							19											
		.18	1.6	.05	.20							20											
		.13	.93	.05	.20							21											
		.15	1.2	.03	.09							22											
		.21	2.0	0	0							23											
		.24	2.5	0	0							24											
		.23	2.3	0	0							25											
		.21	2.0	0	0							26											
		.21	2.0	0	0							27											
		.19	1.7	0	0							28											
		.18	1.6	0	0							29											
		.21	2.0	0	0							30											
XX	XXX	.26	2.8	XX	XXX							31											
												Water Year											
												1977											
												49.23		26.1									
												1.59		0.87								75.33	
												98		52								0.21	
												3.0		3.3								149	
												0		0								3.3	

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area \_\_\_\_\_ square miles.

Water stage recorder STEVENS "F" WEEKLY

Max. Discharge 22 Sec. ft. at 2100 Hrs. on May 8, 1977 G. H. 0.97 ft.  
 Max. G. H. 1.58 ft. at 2200 Hrs. on May 16, 1977 Min. Daily Discharge 0 sec.-ft. on MANY DAYS  
S - discharge subdivided

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	0.11	0.82										
2	.11	.82										
3	.12	.93										
4	.12	.93										
5	.12	.93										
6	.12	.93										
7	.11	.82										
8	.13	1.0										
9	.13	1.0										
10	.12	.93										
11	.12	.93										
12	.11	.82										
13	.11	.82										
14	.08	.52										
15	.06	.35										
16	.06	.35										
17	.06	.35										
18	.06	.35										
19	.06	.35										
20	.06	.35										
21	.06	.35										
22	.06	.35										
23	.06	.35										
24	.06	.35										
25	.06	.35										
26	.05	.27										
27	.05	.27										
28	S	.14										
29		0										
30		0								XX	XXX	
31		0	XX	XXX						XX	XXX	

1321.43	Total	16.73
3.61	Mean	.54
2621	Run-off in acres feet	33
44	Maximum	1.0



**BUSH - IVANHOE TUNNEL**

Creek near **LEADVILLE, COLO.**

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19**77**

Drainage area \_\_\_\_\_ square miles.

Water stage recorder **STEVENS "F" WEEKLY**

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	a	2.6										
2	.18	2.6 <sup>+</sup>										
3	.18	2.6										
4	.18	2.6										
5	.19	2.8										
6	20	3.0 <sup>+</sup>										
7	a	3.2										
8	.22	3.4 <sup>+</sup>										
9	.22	3.4										
10	.21	3.2										
11	.19	2.8										
12	.18	2.6										
13	.18	2.6										
14	.18	2.6										
15	.17	2.4 <sup>+</sup>										
16	a	2.2										
17		2.0										
18	a	1.8										
19	.14	1.8 <sup>+</sup>										
20	.13	1.7										
21	.13	1.7										
22	.13	1.7										
23	.13	1.7										
24	.12	1.5										
25	.11	1.4										
26	.12	1.5										
27	.12	1.5										
28	.11	1.4										
29	.11	1.4 <sup>+</sup>										
30		0							XX	XXX		
31		0	XX	XXX					XX	XXX		
2381.3	Total	65.7										
6.51	Mean	2.12										
4723	Run-off in acre-feet	130										
85	Maximum	3.4										

Max. Discharge 60 Sec. ft. at 0700 Hrs on JUNE 8, 1977 G. H. 1.48 ft. <sup>many days</sup>  
 Max. G. H. 1.48 ft. at 0700 Hrs on June 8, 1977 Min. Daily Discharge 0 sec.-ft. on \_\_\_\_\_  
 S - subdivided discharge

Calendar Year  
**1976**

DIVISION OF WATER RESOURCES  
OFFICE OF STATE ENGINEER

Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge									
			0	1.33	0 51	0.23	0.1 2.8	0.11	0.92	0.08	0.55	1								
		S	1.0	1.39	54	.21	2.4	.10	.79	.08	.55	2								
		.21	2.6	1.39	54	.20	2.2	.10	.79	.08	.55	3								
		.26	3.7	1.41	56	.20	2.2	.09	.67	.08	.55	4								
		.42	7.9	1.41	56	.22	2.6	.10	.79	.08	.55	5								
		.66	16	1.43	57	.22	2.6	.10	.79	.08	.55	6								
		.70	18	1.45	58	.20	2.2	.09	.67	.08	.55	7								
		.72	19	1.46	59	a	2.2	.08	.55	.08	.55	8								
		.76	21	1.44	58		2.0	.08	.55	.08	.55	9								
		.82	23	1.42	56	a	2.0	.06	.35	.08	.55	10								
		1.11	38	1.35	52	.18	2.0	.06	.35	.08	.55	11								
		1.05	35	1.15	40	.16	1.7	.06	.35	.11	.92	12								
		a	30	1.01	33	.14	1.4	.06	.35	.11	.92	13								
			26	.90	27	.11	.92	.07	.45	.11	.92	14								
			21	.81	22	.09	.67	.07	.45	.10	.79	15								
		a	18	a	18	.08	.55	.08	.55	.10	.79	16								
		.67	17	.61	14	.07	.45	.09	.67	.09	.67	17								
		.62	15	.55	12	.08	.55	.12	1.1	.08	.55	18								
		a	15	.50	9.8	.09	.67	.14	1.4	.08	.55	19								
			14	.45	8.2	.10	.79	.17	1.8	.08	.55	20								
			13	.42	7.3	.11	.92	.17	1.8	.08	.55	21								
			13	.39	6.5	.14	1.4	.17	1.8	.08	.55	22								
		a	14	.35	5.4	.22	2.8	.15	1.5	.11	.92	23								
		.74	20	.34	5.1	.23	3.0	.13	1.2	a	.79	24								
		.80	22	.35	5.4	.30	4.6	.12	1.1	a	.67	25								
		.81	23	.33	4.9	.28	4.1	.11	.92	.09	.67	26								
		.77	21	.32	4.6	.24	3.2	.10	.79	.08	.55	27								
		.71	18	.31	4.4	.22	2.6	.10	.79	.08	.55	28								
		.73	19	.28	3.7	.17	1.8	.09	.67	.08	.55	29								
		.93	28	.26	3.2	.15	1.5	.08	.55	.09	.67	30								
XX	XXX	1.16	41	XX	XXX	.13	1.2	.08	.55	XX	XXX	31								
												Water Year								
												1977								
		573.2		845.5		60.02		26.01		19.18		1589.61								
		18.5		28.2		1.94		.84		.64		4.36								
		1137		1677		119		52		38		3153								
		41		59		4.6		1.8		.92		59								









STATE OF COLORADO  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. \_\_\_\_\_

Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date	
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge										
		S	<sup>v</sup> .55	.42	<sup>oz</sup> 3.8	.26	<sup>oz</sup> 1.7	.17	<sup>oz</sup> .80	.14	<sup>o</sup> .72	1						J. SULLIVAN	D. DeYoung	12-14-77	
		.35	<sup>oz</sup> 2.8	.42	3.8	.25	1.6	.17	.80	.13	.64	2									
		.33	2.5	.42	3.8	.25	1.6	.17	.80	.14	.72	3									
		.31	2.3	.42	3.8	.26	1.7	.17	.80	.15	.80	4									
		.42	3.8	.42	3.8	.26	1.7	.18	.89	.15	.80	5									
		.48	4.7	.42	3.8	.26	1.7	.18	.89	.14	.72	6									
		.50	5.0	.42	3.8	.24	1.5	.17	.80	.13	.64	7									
		S	5.3	.43	3.9	.23	1.4	.17	.80	.13	.64	8									
		.51	5.2	.43	3.9	.23	1.4	.16	<sup>oz</sup> .72	.14	.72	9									
		.49	4.9	.42	3.8	.22	1.3	.15	<sup>oz</sup> .72	.14	.72	10									
		.53	5.5	.41	3.6	.22	1.3	.15	.72	.15	.80	11									
		.49	4.9	.40	3.5	.21	1.2	.16	.80	.15	.80	12									
		.43	3.9	.39	3.3	.22	1.3	.16	.80	.15	.80	13									
		.40	3.5	.38	3.2	.21	1.2	.16	.80	.14	.72	14									
		.36	2.9	<sup>22</sup> .37	3.1	.20	1.1	.17	.89	.14	.72	15									
		.37	3.1	.36	2.9	.19	1.0	.18	.98	.14	.72	16									
		.40	3.5	.35	2.8	.19	1.0	.18	.98	.14	.72	17									
		<sup>21</sup> .37	3.1	.34	2.6	.19	1.0	.18	.98	.13	.64	18									
		.36	2.9	.33	2.5	.20	1.1	.18	.98	.13	.64	19									
		.31	2.3	.33	2.5	.20	1.1	.18	.98	.13	.64	20									
		.30	2.2	.32	2.4	.20	1.1	.18	.98	.13	.64	21									
		.36	2.9	.32	2.4	.20	1.1	.18	.98	.13	.64	22									
		.40	3.5	.31	2.3	.21	1.2	.17	.89	.14	.72	23									
		.40	3.5	.31	2.3	.23	1.4	.17	.89	.14	.72	24									
		.39	3.3	.30	2.2	.22	1.3	.16	.80	.13	.64	25									
		.38	3.2	.29	2.0	.20	1.1	.16	<sup>oz</sup> .80	.13	.64	26									
		.37	3.1	.29	2.0	.19	1.0	.15	<sup>o</sup> .80	.13	.64	27									
		.36	2.9	.28	1.9	<sup>23</sup> .18	<sup>oz</sup> .89	.15	.80	.13	.64	28									
		.36	2.9	.27	1.8	.18	.89	.15	.80	.13	.64	29									
		.38	3.2	.27	<sup>oz</sup> 1.8	.18	.89	.15	.80	.13	<sup>o</sup> .64	30									
XX	XXX	.42	<sup>oz</sup> 3.8	XX	XXX	.17	<sup>oz</sup> .80	.15	<sup>o</sup> .80	XX	XXX	31									
		107.15		89.3		38.57		26.27		20.88										302.29	
		3.46		2.98		1.24		.85		.70										0.83	
		213		177		77		52		41										600	
		5.5		3.9		1.7		.98		.80										5.5	
		.55		1.8		.80		.72		.64										0	

# TWIN LAKES TUNNEL

Creek near TWIN LAKES, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Foot for the Year Ending September 30, 1977

Drainage area \_\_\_\_\_ square miles.

Water stage recorder STEVENS A-35 CONTINU

Day	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	a	0.39	a	.39	0.18	3.0	0.17	2.7	0.12	1.6	0.14	
2		.39		.39	a	3.0	.17	2.7	.12	1.6	.14	
3		.39		.39	.18	3.0	.15	2.2	.12	1.6	a	
4		.39		.39	.18	3.0	.16	2.5	.12	1.6	a	
5		.39		.39	.18	3.0	a	2.2	.12	1.6	.16	
6		.39		.39	.18	3.0	a	2.2	.12	1.6	.15	
7		.39		.39	.17	2.7	.15	2.2	.12	1.6	.15	
8		.39	a	.39	.17	2.7	.15	2.2	.12	1.6	.14	
9		.39	0.10	1.2	.17	2.7	.15	2.2	.12	1.6	.14	
10		.39	.10	1.2	.17	2.7	.15	2.2	.12	1.6	.14	
11		.39	.10	1.2	.17	2.7	.15	2.2	.12	1.6	.14	
12		.39	.10	1.2	.17	2.7	.15	2.2	.12	1.6	.14	
13		.39	.10	1.2	.17	2.7	.15	2.2	.12	1.6	.13	
14		.39	.12	1.6	.17	2.7	.15	2.2	.12	1.6	.13	
15		.39	.11	1.4	.17	2.7	.15	2.2	.12	1.6	.13	
16		.39	.12	1.6	.16	2.5	.15	2.2	.12	1.6	a	
17		.39	.17	2.7	.16	2.5	.15	2.2	.12	1.6		
18		.39	a	3.3	.17	2.7	.15	2.2	.12	1.6	a	
19		.39	a	3.8	.17	2.7	.14	2.0	.12	1.6	.14	
20		.39	.23	4.4	a	2.5	.14	2.0	.12	1.6	.14	
21		.39	.22	4.2		2.5	.13	1.8	.12	1.6	.14	
22		.39	.21	3.8		2.2	.13	1.8	.13	1.8	.14	
23		.39	.20	3.6	a	2.2	.14	2.0	.14	2.0	.13	
24		.39	.21	3.8	.15	2.2	.15	2.2	.14	2.0	.14	
25		.39	.22	4.2	.17	2.7	.15	2.2	.14	2.0	.14	
26		.39	.22	4.2	.17	2.7	a	2.0	.14	2.0	.14	
27		.39	.22	4.2	.17	2.7		1.8	.14	2.0	.14	
28		.39	.21	3.8	.17	2.7	a	1.6	.14	2.0	.14	
29		.39	.20	3.6	.17	2.7	.12	1.6	XX	XXX	.14	
30		.39	.19	3.3	.17	2.7	.12	1.6	XX	XXX	.14	
31	a	.39	XX	XXX	.17	2.7	.12	1.6	XX	XXX	.14	
21013.43		Total	12.09	66.62	83.2	65.1	47.4	61.				
52.4		Mean	0.39	2.22	2.68	2.10	1.69	1.12				
41680		Run-off in cubic feet	24	132	165	129	94	122				
			-	111	3.0	2.7	2.0	2.0				

Max. Discharge 550 Sec. ft. at 0200 Hrs on JUNE 9, 1977 G. H. 4.67 ft.  
 Max. G. H. 4.67 ft. at 0200 Hrs on JUNE 9, 1977 Min. Daily Discharge 0.39 sec.-ft. on MAY 24





STATE OF COLORADO  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. 09063700

Rating Table Used 12 FT PARSHALL FLOW

DATE 6-15-71

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge									
2.47	199	1.60	99	1.62	101	1.60	99					1								
2.42	192	1.61	100	1.62	101	1.62	101					2								
2.42	192	1.61	100	1.62	101	1.62	101					3								
2.46	197	1.61	100	1.63	102	1.61	100					4								
2.48	200	1.61	100	1.63	102	1.71	110					5								
a	201	1.61	100	1.64	103	1.85	125					6								
	200	1.61	100	1.65	104	1.84	124					7								
a	200	1.61	100	1.63	102	1.84	124					8								
2.48	200	1.61	100	1.60	99	1.83	123					9								
2.48	200	1.61	100	1.60	99	1.82	122					10								
2.48	200	1.61	100	1.60	99	1.81	121					11								
2.47	199	1.60	99	1.60	99	1.80	120					12								
2.50	203	1.59	98	1.60	99	1.79	119					13								
2.51	204	1.59	98	1.60	99	1.81	121					14								
2.50	203	1.59	98	1.60	99	1.82	122					15								
a	201	1.60	99	1.61	100	1.80	120					16								
2.48	200	1.60	99	1.61	100	1.79	119					17								
2.49	201	1.61	100	1.61	100	1.78	118					18								
2.51	204	1.62	101	1.61	100	1.78	118					19								
2.50	203	1.62	101	1.61	100	1.79	119					20								
2.49	201	1.62	101	1.62	101	1.77	117					21								
2.51	204	1.62	101	1.63	102	a	174					22								
2.51	204	1.61	100	1.63	102	5	154					23								
2.50	203	1.61	100	1.62	101	5	10					24								
1.94	135	1.61	100	1.62	101	.41	11					25								
1.61	100	1.61	100	1.62	101	.25	5.1					26								
1.61	100	a	100	1.61	100	.17	2.7					27								
1.61	100		100	1.61	100	5	-27					28								
1.61	100		100	1.60	99		0					29								
1.61	100		100	1.60	99		0					30								
XX	XXX	a	100	XX	XXX		0					31								
												Water Year		1977						
5441		3094		3015		2800.07						15653.07								
182		99.8		100		90.3						42.9								
10802		6137		5980		5554						31048.								
204		101		104		174						204								

# SUGAR LOAF RESERVOIR

Creek near **LEADVILLE, COLO.**

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area \_\_\_\_\_ square miles.

Water stage recorder \_\_\_\_\_

Day	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.		
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	
1	1.53 <sup>+11</sup>	243	1.57 <sup>+04</sup>	233	0.30 <sup>+01</sup>	4.3	0.33 <sup>+01</sup>	5.3	0.36 <sup>-01</sup>	5.7	a		
2	1.52	240	1.60 <sup>+03</sup>	240	0.32 <sup>+01</sup>	4.9	0.33	5.3	0.36	5.7	1.09 <sup>+02</sup>		
3	1.52	240	1.60	240	0.36 <sup>+02</sup>	7.0	0.33	5.3	0.36	5.7	1.09 <sup>+02</sup>		
4	1.52	240	1.60 <sup>+03</sup>	240	0.37	7.5	0.33 <sup>+01</sup>	5.3	0.36	5.7	1.09 <sup>+02</sup>		
5	1.53	243	1.60	240	0.37	7.5	a	5.3	0.36	5.7	a		
6	1.53 <sup>+11</sup>	243	1.60	240	0.37	7.5	a	5.7	0.35	5.3			
7	1.53	243	1.60	240	0.37	7.5	0.36 <sup>-01</sup>	5.7	0.35	5.3			
8	1.53	243	1.60	240	0.37	7.5	0.36	5.7	0.35	5.3			
9	1.53	243	1.60	240	0.37 <sup>+02</sup>	7.5	0.36	5.7	0.35	5.3	a		
10	1.53 <sup>+11</sup>	243	1.60	240	0.36 <sup>+03</sup>	7.5	0.36	5.7	0.35	5.3	1.02 <sup>+02</sup>		
11	1.54 <sup>+10</sup>	243	1.60	240	0.35	7.0	0.36	5.7	0.35	5.3	1.02		
12	1.54	243	1.60	240	0.35	7.0	0.36	5.7	0.35	5.3	1.02		
13	1.54	243	1.60	240	0.35	7.0	0.36	5.7	0.35	5.3	1.02		
14	1.54 <sup>+00</sup>	243	1.60	240	0.35	7.0	0.36	5.7	0.35	5.3	1.02		
15	1.55 <sup>+09</sup>	243	1.60	240	0.35 <sup>+03</sup>	7.0	0.36	5.7	0.35	5.3	1.07		
16	1.55	243	1.60	240	0.35	7.0	0.36	5.7	0.35	5.3	1.03		
17	1.55	243	1.61 <sup>+03</sup>	243	0.34 <sup>+03</sup>	6.5	0.36	5.7	0.35	5.3	.98		
18	1.55	243	1.62	247	0.32 <sup>+02</sup>	5.3	0.36	5.7	0.35 <sup>-01</sup>	5.3	.98		
19	1.55 <sup>+09</sup>	243	1.62	247	0.32 <sup>+02</sup>	5.3	0.36	5.7	5	13	.98		
20	1.56 <sup>+08</sup>	243	1.62	247	0.33 <sup>+01</sup>	5.3	0.36	5.7	0.57 <sup>-02</sup>	17	.98 <sup>+02</sup>		
21	1.56	243	1.62	247	0.33	5.3	0.36	5.7	0.57	17	5		
22	1.56	243	1.62	247	0.33	5.3	0.36	5.7	5	30	.62 <sup>-02</sup>		
23	1.56	243	1.62	247	0.33	5.3	0.36	5.7	0.83	44	.62 <sup>-02</sup>		
24	1.56	243	1.62	247	0.33	5.3	0.36 <sup>+01</sup>	5.7	0.86 <sup>-02</sup>	48	5		
25	1.55	240	1.62	247	0.33	5.3	0.36	5.7	0.87 <sup>-02</sup>	50	1.04 <sup>+02</sup>		
26	1.55 <sup>+08</sup>	240	1.62 <sup>+03</sup>	247	0.33	5.3	0.36	5.7	a	50	1.04		
27	1.48 <sup>+07</sup>	212	a	247	0.33	5.3	0.36	5.7		50	1.04		
28	1.46 <sup>+06</sup>	203		247	0.33	5.3	0.36	5.7	a	50	1.04 <sup>+02</sup>		
29	1.45	199		86	0.33	5.3	0.36	5.7	XX	XXX	5		
30	1.45	199	a	4.3	0.33	5.3	0.36	5.7	XX	XXX	.67 <sup>-02</sup>		
31	1.45 <sup>+06</sup>	199	XX	XXX	0.33 <sup>+01</sup>	5.3	0.36 <sup>-01</sup>	5.7	XX	XXX	.67 <sup>-02</sup>		
Total		7315		6883.0		171.4		174.7		466.4		212	
Mean		236		229		6.2		5.6		16.7		75.1	
Run-off in acre-feet		14484		12670		278		245		422		460	
Maximum		243		247		7.5		5.7		50		95	

Max. Discharge 285 Sec. ft. at 600 ft. on MAY 10 G. H. 1.75 ft. NOV. 30  
 Max. G. H. 285 ft. at 600 ft. on 10, 10 Min. Daily Discharge 4.3 sec.-ft. on Dec. 1

Estimated discharge for "a" and "b" days  
 V - Variance shift

34316.9  
 93.8  
 14484  
 243

DIVISION OF WATER RESOURCES  
OFFICE OF STATE ENGINEER

Sta. No. \_\_\_\_\_

Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th			
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge					
0.67 <sup>0.02</sup>	26	1.18 <sup>0.02</sup>	106	1.45 <sup>0.04</sup>	196	1.21 <sup>0.03</sup>	111	5	25	0.43	9.5	1				
a	33	1.18	106	1.52	219	1.27	129	.42	9.0	.43	9.5	2				
		1.18	106	1.53	222	1.27	129	.42	9.0	.43	9.5	3				
	62	1.18	106	1.53	222	1.27	129	.42	9.0	.43	9.5	4				
a	74	1.22 <sup>0.04</sup>	115	1.53	222	1.28 <sup>0.01</sup>	132	.43	9.5	.43	9.5	5				
.98 <sup>0.02</sup>	74	1.23	117	1.53	222	1.34 <sup>0.01</sup>	152	.43	9.5	.43	9.5	6				
.98 <sup>0.02</sup>	74	1.23	117	1.54	226	1.34	152	.43	9.5	.43	9.5	7	Quarter	Computed	Checked	Date
1.00	78	1.23	117	1.54	226	1.33	150	.43	9.5	.43	9.5	8				
1.01	80	1.57 <sup>0.01</sup>	216	1.59 <sup>0.04</sup>	243	1.33	150	.43	9.5	.43	9.5	9				
1.01	80	1.70 <sup>0</sup>	245	1.49 <sup>0.03</sup>	203	1.33	150	.43	9.5	.43	9.5	10	4th			
1.01	80	1.48	190	1.29 <sup>0</sup>	137	1.28	137	.43	9.5	.43	9.5	11	3rd			
1.06	87	1.42	172	1.08 <sup>0.02</sup>	85	1.26	132	.43	9.5	.43	9.5	12	3rd			
1.09	93	1.42	172	1.03 <sup>0.03</sup>	74	1.26	132	.43	9.5	.43	9.5	13	2nd			
1.09	93	1.36	155	1.03 <sup>0.03</sup>	74	1.26	132	.43	9.5	.43	9.5	14	2nd			
1.09	93	1.39	163	.97 <sup>0.01</sup>	62	1.23 <sup>0.04</sup>	125	.43	9.5	.43	9.5	15	1st			
1.09	93	1.40	166	.94 <sup>0.04</sup>	57	1.18	113	.43	9.5	.43	9.5	16	1st			
1.09	93	1.35	152	1.08	82	1.18	113	.43	9.5	.43	9.5	17	Quarter	Dis.appld.	Dis.check	Date
1.02 <sup>0</sup>	78	1.29 <sup>0</sup>	137	1.22	111	1.20	117	.43	9.5	.43	9.5	18	Quarter	Dis.appld.	Dis.check	Date
.99	72	1.21	117	1.22	111	1.22	122	.43	9.5	.43	9.5	19	Quarter	Dis.appld.	Dis.check	Date
1.03 <sup>0</sup>	80	1.21	117	1.10 <sup>0.05</sup>	84	1.23	125	.43	9.5	.43	9.5	20	4th			
1.08	87	1.22	120	1.02	69	1.24	127	.43	9.5	.43	9.5	21	4th			
1.10	91	1.22	120	1.05	74	1.27	134	.48	12	.43 <sup>0.04</sup>	9.5	22	3rd			
1.10	91	1.22	120	1.07	78	1.28	137	.43	9.5	.43	9.5	23	3rd			
1.10	91	1.22 <sup>0</sup>	120	1.09	82	1.28 <sup>0.01</sup>	137	.42	9.0	.43	9.5	24	2nd			
1.10	91	1.25 <sup>0.01</sup>	129	1.10	84	1.32 <sup>0.02</sup>	150	.42 <sup>0.03</sup>	9.0	.43	9.5	25	2nd			
1.10	91	1.27 <sup>0.02</sup>	137	1.10	84	1.18	115	.43	9.5	.43	9.5	26	1st			
1.10	91	1.27	137	1.10	84	1.00	79	.43	9.5	.43	9.5	27	1st			
1.13 <sup>0.01</sup>	97	1.27	137	1.10	84	.86 <sup>0.02</sup>	54	.43	9.5	.43	9.5	28	Quarter	G.H.copd.	G.H.check	Date
1.17	104	1.25	132	1.10	84	.83	50	.43	9.5	.43	9.5	29	Quarter	G.H.copd.	G.H.check	Date
1.18 <sup>0.02</sup>	106	1.24 <sup>0.01</sup>	129	1.10	84	.83	50	.43	9.5	.43 <sup>0</sup>	9.5	30	Quarter	G.H.copd.	G.H.check	Date
XX	XXX	1.32 <sup>0.03</sup>	152	XX	XXX	.83 <sup>0.02</sup>	50	.43	9.5	XX	XXX	31	Water Year			
												1977				
2439		4345		3885		3714		310		285		32335				
81		140		130		120		10		9.5		89				
1177		8607		7692		7354		614		564		64023				
1025		265		24		152		25		9.5						

LAKE CREEK above

Creek near TWIN LAKES RESERVOIR, COLO

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 77

Drainage area 75 square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.		
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	
1	1.65	42	a	22	a	15	a	12	a	8	a		
2	1.65	42		22	312	15		12		8			
3	1.67	44		22		15		12		8			
4	1.67	44	310	20		15		12		8			
5	1.64	42	1.35	20		15		12		7			
6	1.64	42	1.32	21		15	312	12		7			
7	1.59	37	1.34	20		13		12	316	7			
8	1.62	40	1.31	19		13		12		7			
9	1.64	42	1.29	19		13		12		7	318	6.5	
10	1.63	40	1.32	21		13		12		7			
11	1.61	39	1.32	19		13		11		7			
12	1.58	37	a	16		13		11		7			
13	1.57	36		19		13		11		7			
14	1.55	35		18		13		11		7			
15	1.53	34		21	313	13	12.5	12		7			
16	1.51	33		21		13		10		7			
17	1.50	32	311	21		13		10		7			
18	1.48	30		20		13		10		7			
19	1.39	29		16		13		10		7			
20	1.40	27		16		13		9		7			
21	1.42	28		17		13		9		7			
22	1.43	29		19		13		9		7			
23	1.42	28		19		13		9		7	314	6.5	
24	1.37	25		16		13	315	9	317	7			
25	1.39	25		15		13		9		7			
26	1.42	25		15		13		9		7			
27	1.42	25		15		12		9		7			
28	a	26		15		12		9		7			
29		26		15		12		9		7			
30		25	a	15		12		9	XX	XXX			
31	a	25	XX	XXX	a	12	a	8	XX	XXX	a		
50932		Total	1034		554		410		321		200		186
131.3		Mean	33.4		18.5		13.2		10.4		7.1		6
10		Run-off in	2017		1097		802		630		500		400
		Maximum	44		22		15		12		9		6

Max. Discharge 1230 Sec. ft. at 100ms on 7/11/79 G. H. 4.03 ft.  
 Max. G. H. 4.03 ft. at 100ms on 7/11/79 Min. Daily Discharge 6 sec.-ft. on 7/11/79  
 Discharge Estimate for "a" and "b" values  
 S - Sublimed discharge "a" - upstream discharge



APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge									
	7	2.14	01 113	<sup>3241</sup> 3.33	08 743	2.24	05 126	1.91	07 65	1.57	03 34	1								
	8	2.16	01 118	3.29	08 712	2.07	06 91	1.88	62	1.63	39	2								
	8	2.30	02 147	3.21	06 638	2.03	85	1.86	59	1.65	40	3								
	8	2.35	01 159	3.24	05 667	2.09	95	1.85	58	1.64	40	4								
	8	<sup>3221</sup> 2.5	02 145	3.35	08 759	2.14	104	1.88	62	1.66	42	5								
	9	2.52	207	3.36	01 767	2.04	86	1.83	55	1.62	38	6								
<sup>3201</sup>	10	5	238	3.35	08 759	2.03	85	1.80	52	1.60	36	7								
	10	2.89	348	3.72	02 1148	1.97	06 75	1.79	51	<sup>3101</sup> 1.58	03 34	8								
	10	2.80	309	3.74	02 1170	1.93	07 68	1.77	07 49	1.58	34	9								
	10	5	377	3.37	05 751	1.91	65	1.62	08 34	1.57	03 34	10								
	10	2.99	396	3.15	01 556	1.78	50	1.58	30	1.62	02 37	11								
	11	2.70	269	2.97	06 427	1.78	50	1.57	30	1.69	45	12								
	11	2.72	277	3.06	08 489	1.78	50	1.55	08 28	1.67	43	13								
	11	2.78	301	3.04	06 477	1.76	48	1.56	29	1.64	40	14								
	13	2.52	207	2.95	06 417	<sup>3221</sup> 1.75	07 46	1.57	08 20	1.64	40	15								
	15	2.33	154	<sup>3231</sup> 2.84	04 353	1.74	45	1.68	06 40	1.64	40	16								
	17	2.30	147	2.83	348	1.73	44	1.68	06 40	1.62	02 40	17								
	17	2.33	154	2.79	04 321	1.72	43	1.81	03 58	1.59	01 37	18								
	17	<sup>3231</sup> 2.31	02 149	2.73	02 297	1.74	07 115	1.77	04 52	1.58	36	19								
<sup>4111</sup>	17	2.17	05 111	2.64	00 254	1.94	06 71	1.88	02 68	1.58	01 36	20								
1.26	18	2.15	05 108	2.59	01 233	2.01	06 81	1.89	70	1.56	00 25	21								
1.30	20	2.20	05 118	2.41	04 170	2.21	05 120	1.90	71	<sup>3211</sup> 1.55	00 34	22								
1.37	25	2.38	01 170	2.37	05 156	2.32	144	1.87	02 69	1.57	36	23								
1.47	<sup>041</sup> 31	2.67	05 235	2.36	154	2.27	05 133	a	67	1.56	35	24								
1.55	<sup>03</sup> 37	2.68	08 229	2.37	156	2.21	06 118	<sup>3221</sup> a	64	1.54	00 24	25								
1.63	44	2.52	08 220	2.39	163	2.17	110	1.82	02 60	1.52	01 31	26								
1.61	<sup>03</sup> 42	2.47	01 201	2.39	162	<sup>3231</sup> 2.11	06 93	1.83	62	1.52	01 31	27								
1.77	67	2.43	00 185	2.38	159	2.09	113	1.81	57	1.50	02 29	28								
1.77	88	2.44	00 181	<sup>3241</sup> 2.36	05 154	2.03	102	1.77	57	1.49	02 23	29								
1.90	0 74	2.86	08 322	2.33	06 147	1.98	77	1.74	02 51	1.48	02 28	30								
XX	XXX	3.18	06 617	XX	XXX	1.94	06 71	1.59	08 25	XX	XXX	31								
668		7095		13716		2539		1614		1088		29425								
22.3		229		457		82		52		36		80.6								
1223		14048		27188		12227		3193		2154		5220								
		617		1170		111		71		45		1222								

Water Year 1977

LAKE CREEK below TWIN LAKES RES near GRANITE, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area \_\_\_\_\_ square miles.

Water stage recorder STEVENS "E" WEEKLY

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	0.76 <sup>03</sup>	57	0.51 <sup>03</sup>	29	a	0.35	a	0.18	a	0.18	a	
2	.75	56	.46 <sup>04</sup>	24		.35		.18		.18		6.
3	.75	56	.46 <sup>04</sup>	24		.35		.18		.18		6.
4	.67	46	a	24		.35		.18		.18		6.
5	.60	38	.46 <sup>04</sup>	24		.35		.18		.18		6.
6	.60	38	.45	23		.35		.18		.18		6.
7	.60	38	.45	23		.35		.18		.18		6.
8	.60	38	.45	23		.35		.18		.18		6.
9	.60	38	.45	23		.35		.18		.55	18	21 .04 3.6 6.
10	.59	37	.45	23		.35		.18		6.1		6.
11	.59 <sup>03</sup>	37	.45	23		.35		.18		6.1		6.
12	a	37	.45	23		.35		.18		6.1		6.
13		37	.44 <sup>04</sup>	22		.35		.18		6.1		6.
14	a	38	5	14		.35		.18		6.1		6.
15	.60 <sup>03</sup>	38	.10 <sup>05</sup>	.78		.35		.18		6.1		6.
16	.60	38	.10	.78		.35		.18		6.1		6.
17	.60	38	.10 <sup>05</sup>	.78		.35		.18		6.1		6.
18	.61	40	.10	.78		.35		.18		6.1		6.
19	.61	40	.10	.78		.35		.18		6.1		6.
20	.61 <sup>03</sup>	40	.10	.78		.35		.18		6.1		6.
21	.61	40	.10	.78		.35		.18		6.1		6.
22	.60	38	.10	.78		.35		.18		6.1		6.
23	.60	38	.09 <sup>05</sup>	.55		.35		.18		6.1		6.
24	.59	37	a	.55		.35		.18		6.1		6.
25	.58	36		.55		.35		.18		6.1		6.
26	.57	35		.55		.35		.18		6.1		6.
27	.56	34		.55		.35		.18		6.1		6.
28	.56	34		.35		.35		.18	a	6.1		6.
29	.56	34		.35		.35		.18		6.1		6.
30	.56	34	a	.35		.35		.18	XX	XXX		6.
31	.56 <sup>03</sup>	34	XX	XXX	a	.35	a	.18	XX	XXX	a	6.
57731	Total	1121	332.04	10.85	5.58	123.99	17					
163	Mean	38.1	11.1	.35	.18	4.4	5.7					
11202	Run-off in acre-feet	2278	657	21.5	11.05	245	351					
	Maximum	57	29	.35	.18	6.1	6.					

Max. Discharge 477 ft. at All day on June 16-17 G. H. 2.61  
 Max. G. H. 2.61 ft. at All day on June 16-17 Min. Daily Discharge .18 sec.-ft. on many days  
 Discharge 100000 For "E" and "B" days  
 5-Submerged days, V-10-APR SHORT

Calendar Year 1976

STATE OF COLORADO  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. \_\_\_\_\_  
 Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date	
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge										
a	4.6	a	40	a	93	0.71	04 49	0.87	04 70	0.63	03 42	1									
	4.6		65	<sup>21</sup> a	03 108	.71	49	.97	84	.80	62	2									
	4.6		65	1.21	123	.71	49	.97	84	.80	62	3									
	4.6		65	1.22	125	.71	49	.88	72	.80	62	4									
	4.6		65	1.23	03 127	.60	37	.82	64	.80	62	5									
	4.6		65	a	127	.42	20	.82	64	.80	62	6									
	4.6		65		130	.42	20	.82	64	.80	62	7									
	4.6		65		132	.42	20	.82	64	.80	62	8									
	4.6		93		132	.42	20	.82	64	.80	62	9									
	4.6		93		278	.42	20	.82	64	.80	62	10									
	4.6		93		303	.41	19	.81	62	.80	62	11									
	4.6		93		303	.41	19	.81	62	.81	64	12									
	4.6		93		303	.41	19	.81	62	.82	65	13									
	4.6		42		303	.41	19	.81	62	.82	65	14									
	4.6		42		405	.41	19	.81	62	.82	65	15									
	4.6		42		439	.41	19	.81	62	.82	65	16									
	18		42		439	.42	20	.81	62	.82	65	17									
	18		42		426	.42	20	.81	62	.82	65	18									
	18	<sup>20</sup> a	02 30		426	.42	20	.81	62	.82	65	19									
<sup>7</sup>	18.0		40		426	.42	20	.81	62	.82	65	20									
	18		40	a	251	.42	20	.81	62	.82	65	21									
	18		40	1.65	04 203	.42	20	.81	62	<sup>25</sup> .82	03 65	22									
	18		.76	S	136	.42	20	.95	81	.82	65	23									
	18		.88	02 74	1.00	89	.42	04 20	1.22	123	.82	65	24								
	110	a	74	1.00	89	S	38	<sup>24</sup> 7.18	04 117	.80	62	25									
	40		74	1.00	89	1.27	03 130	.96	83	.80	62	26									
	40		74	1.00	89	<sup>21</sup> 1.27	03 130	.95	81	.79	61	27									
	40		93	1.00	89	1.24	03 125	.95	81	.78	60	28									
	40		93	<sup>22</sup> a	04 89	1.11	04 106	.95	81	.78	60	29									
	40		93	.85	68	1.11	106	.95	81	.78	60	30									
XX	XXX	a	13	XX	XXX	1.11	04 106	S	01 44	XX	XXX	31									
													Water Year		1977						
477.6		2005		9452		1348		2210		1871		19174.16									
15.3		64.7		315		43.5		71.3		62.4		52.53									
1106		3970		12715		2669		4376		3705		37,965									
110		93		431		130		123		65		431									

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area 427 square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.		
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	
1	2.91 <sup>03</sup>	380	2.80 <sup>01</sup>	345	2.12 <sup>b</sup>	75	2.74 <sup>b</sup>	40	2.49 <sup>b</sup>	40	a		
2	2.90	375	2.87 <sup>03</sup>	390	2.09 <sup>253</sup>	70	2.81	40	2.52	40			
3	2.90	375	2.88	396	2.07	70	2.80	40	2.41	40			
4	2.90 <sup>03</sup>	375	2.87 <sup>253</sup>	390	2.08	70	2.81	40	2.37	40			
5	2.89 <sup>04</sup>	365	2.87	390	2.08	60	2.77	40	2.39	40			
6	2.89 <sup>253</sup>	365	2.86	385	2.15	60	2.91 <sup>253</sup>	40	2.37	40			
7	2.88	360	2.86	385	2.13	50	2.90	40	2.33 <sup>253</sup>	40			
8	2.88	360	2.86 <sup>03</sup>	385	2.08	50	2.88	40	2.35 <sup>b</sup>	40			
9	2.88	360	2.85 <sup>02</sup>	375	2.11	50	2.97	40	a	45	261	a	
10	2.88	360	2.83 <sup>01</sup>	360	2.13	50	2.82	40		40	3.47 <sup>b</sup>		
11	2.88	360	2.83	360	2.22	50	2.70	40		40	3.39		
12	2.88	360	2.83	360	2.17	50	2.72	40		40	3.53		
13	2.88 <sup>04</sup>	360	2.83	360	2.28	50	2.68	40		40	3.47		
14	2.87 <sup>03</sup>	360	2.84 <sup>01</sup>	365	2.21	50	2.69	40		40	3.39		
15	2.87	360	2.79 <sup>01</sup>	330	2.21 <sup>253</sup>	50	2.63	40		40	3.38		
16	2.86	355	2.78	325	2.20	50	2.66	40		40	3.43	11	
17	2.86	355	2.77 <sup>253</sup>	320	2.20	50	2.65	40		40	3.17		
18	2.86 <sup>03</sup>	355	2.79	330	2.20	50	2.66	40		40	3.10		
19	2.84 <sup>02</sup>	350	2.79	330	2.21	50	2.60	40		45	3.36		
20	2.83 <sup>253</sup>	345	2.78	325	2.35	50	2.48	40		50	3.35 <sup>b</sup>		
21	2.83	345	2.77	320	2.35	50	2.43	40		50	a		
22	2.83	345	2.77	320	2.33	45	2.50	40		65			
23	2.83	345	2.76	315	2.34	45	2.48	40		75	262	a	
24	2.83	345	2.75	310	2.51	45	2.35 <sup>253</sup>	40	260	85	2.12 <sup>b</sup>		
25	2.83	345	2.76	315	2.30	45	2.33	40		85	2.19		
26	2.84	350	2.77	320	2.91	45	2.36	40		75	2.19		
27	2.82 <sup>02</sup>	340	2.73	300	2.85	45	2.48	40		75	2.22		
28	2.76 <sup>0</sup>	320	2.72 <sup>01</sup>	295	2.70	45	2.55	40	a	85	2.23		
29	2.76	320	5	205	2.76	45	2.52	40	XX	85	2.29		
30	2.77	325	2.11 <sup>b</sup>	75	2.75	45	2.45	40	XX	XXX	2.14		
31	2.76 <sup>0</sup>	320	XX	XXX	2.83 <sup>b</sup>	40	2.41 <sup>b</sup>	40	XX	XXX	2.06 <sup>b</sup>		
Calendar Year		1976											
145687	Total	10935		9981		7600		7240		1433		3	
253	Mean	353		333		52		40		51		104	
10000	Run-off in acre-feet	21651		19742		3168		2455		2227		637	
10000	Maximum	330		340		75		40		90		125	

G. H. 378 ft. on TRIM 9 Sec. ft. at 2200  
 Min. Daily Discharge 40 sec.-ft. on TRIM 9  
 Discharge estimated for "a" and "b" days  
 "S" - Surrounded by "N" - Unsurrounded  
 253 - 253

STATE OF CALIFORNIA  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. 07086000

Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge									
1.96	b 85	2.71	o 295	3.22	o4 565	2.54	o 232	2.39	o 187	2.15	o3 120	1								
1.95	b 85	2.72	300	3.31	636	2.60	250	2.36	179	2.22	o4 134	2								
2.04	b 70	2.77	325	3.29	620	2.61	254	2.33	170	2.23	136	3								
2.05	b 70	2.76	320	3.33	652	2.63	262	2.31	165	2.28	148	4								
1.98	o2 92	2.73	o 305	3.33	652	2.65	270	2.28	157	2.25	140	5								
2.06	105	2.78	o 330	3.37	687	2.62	258	2.28	157	2.22	134	6								
2.23	o2 140	2.82	o1 355	3.40	714	2.63	o 262	2.25	150	2.21	131	7								
2.32	o1 165	2.92	o2 414	3.50	804	2.58	o1 241	2.25	150	2.20	o4 129	8								
2.38	o 184	3.12	o3 515	3.67	957	2.57	238	2.25	150	2.19	127	9								
2.43	o1 202	3.32	o4 273	3.69	o4 975	2.56	235	2.25	150	2.18	125	10								
2.48	o2 220	3.12	559	3.52	o5 813	2.53	o1 226	2.24	148	2.21	131	11								
2.43	205	3.04	504	3.39	o6 687	2.47	o2 205	2.23	145	2.24	138	12								
2.42	202	3.07	524	3.33	636	2.49	211	2.26	152	2.23	136	13								
2.40	o2 196	3.04	504	3.41	705	2.49	211	2.26	152	2.21	131	14								
2.44	o1 211	2.82	375	3.48	o6 768	2.48	o2 208	2.27	155	2.23	136	15								
2.44	211	2.75	340	3.43	723	2.42	190	2.33	170	2.22	134	16								
2.46	o1 217	2.68	305	3.42	714	2.40	184	2.33	170	2.21	131	17								
2.50	o1 232	2.62	278	3.47	o6 759	2.42	190	2.33	170	2.21	131	18								
2.49	o1 229	2.55	o5 250	3.45	o5 750	2.44	196	2.33	170	2.20	129	19								
2.43	o1 211	2.52	241	3.23	o2 588	2.47	205	2.32	168	2.20	129	20								
2.39	199	2.51	238	2.98	o1 432	2.50	214	2.31	162	2.19	127	21								
2.43	o1 211	2.48	229	2.97	o1 426	2.55	o2 229	2.32	165	2.22	o4 134	22								
2.47	o1 220	2.50	o5 235	2.82	o 350	2.72	o1 295	2.33	168	2.19	127	23								
2.47	220	2.62	o2 270	2.73	o1 310	2.82	o 350	2.47	211	2.18	125	24								
2.49	o1 226	2.73	o2 315	2.73	310	2.83	355	2.46	o 202	2.18	125	25								
2.56	o1 244	2.78	o1 335	2.73	315	2.98	438	2.33	o1 168	2.17	122	26								
2.59	254	2.82	355	2.72	305	2.85	o 365	2.33	168	2.17	122	27								
2.62	266	2.83	360	2.70	o1 295	2.72	305	2.33	168	2.17	122	28								
2.60	258	2.83	o1 360	2.67	o1 280	2.58	244	2.32	165	2.17	122	29								
2.62	o2 266	2.88	o 380	2.58	o 244	2.55	235	2.31	o1 162	2.18	o4 125	30								
XX	XXX	3.05	o2 468	XX	XXX	2.53	o 222	2.10	o1 123	XX	o1 XXX	31								
5736		11337		17170		7802		5283		3925		79952								
191		366		589		252		164		130		219								
11357		22447		34987		15448		10064		7732		158305								
266		723		975		438		203		148		975								
95		229		244		104		102		102		102								

CLEAR CREEK ABOVE Creek near CLEAR CREEK, 501

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 77

Drainage area 67.1 square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Day	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	1.13	41	0.97	24	a	14	a	10	a	10	a	
2	1.13	41	.97	24	472	14		10		10		
3	1.13	41	.97	24		14		10		10		
4	1.14	42	473 .94	22		14		10		10		
5	1.13	41	.95	23		14		10		10		
6	1.13	41	.96	24		14	472	10		10		
7	1.13	41	.94	22		13		10	474	10		
8	1.13	41	.93	21		13		10		10		
9	1.13	41	.93	21		13		10		10	476	
10	1.12	40	.98	26		13		10		10		
11	1.10	38	.94	22		13		10		10		
12	1.09	37	.90	17		13		10		10		
13	1.08	36	1.01	22		13		10		10		
14	1.07	35	1.01	20		13		10		10		
15	1.07	35	1.02	22	471	13		10		10		
16	1.06	33	1.02	22		13		10		10		
17	1.06	33	473 1.04	22		13		10		10		
18	1.06	33	.99	21		13		10		10		
19	1.05	32	.96	17		13		10		10		
20	1.04	31	.98	17		13		10		10		
21	1.06	33	.98	18		13		10		10		
22	1.05	32	1.01	21		13		10		10		
23	1.04	31	1.01	21		13		10		10	477	
24	1.03	30	1.00	17		13	473	10	475	10		
25	1.02	29	.96	14		13		10		10		
26	1.02	29	a	14		13		10		10		
27	1.02	29		14		13		10		10		
28	1.08	30		14		11		10	a	10		
29	1.10	30		14		10		10		10		
30	1.02	29	a	14		10		10	XX	10	XXX	
31	1.01	27	XX	XXX	a	10	a	10	XX	10	XXX	a
26.15	Total	1082	594	397	310	241	200					
54.1	Mean	34.9	19.8	13.8	10	8.60	6.45					
	Run-off in cu feet	2142	1178	737	614	478	376					
	Maximum	42	26	14	10.0	10.0	10.0					

Max. Discharge 229 Sec. ft. at 12:30 A.M. on June 10 G. H. 1.98 ft.  
 Min. Daily Discharge 6.0 sec.-ft. on Jan 10  
 Max. G. H. 1.98 ft. at  
 DISCHARGE ESTIMATED FOR "a" AND "b" DAYS  
 "a" - SUPPLEMENTARY DAYS "b" - VARIOUS DAYS

Calendar Year 1975



CLEAR CREEK below CLEAR

Creek near RESERVOIR near GRANITE, CO

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 77

Drainage area \_\_\_\_\_ square miles.

Water stage recorder STEVENS "E" RECORDER

Max. Discharge 210 Sec. ft. at ROCKY on JUNE 8 G. H. 276 ft.  
 Max. G. H. \_\_\_\_\_ ft. at ROCKY on JUNE 8 Min. Daily Discharge \_\_\_\_\_ sec.-ft. on \_\_\_\_\_

DISCHARGE ESTIMATED FOR "a" AND "b" DAYS  
 "a" - 100% OF STAGE  
 "b" - 100% OF STAGE

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	1.34 <sup>0</sup>	14	a	24	a	8.0	a	1.1	a	1.1	a	16
2	1.34	14		24		8.0		1.1		1.1		16
3	1.34	14		24		8.0		1.1		1.1		16
4	1.34	14		20		8.0		1.1		1.1		16
5	1.34 <sup>0</sup>	14		20		8.0		1.1		1.1		16
6	1.50 <sup>+04</sup>	29		20		7.0		1.1		1.1		16
7	1.56	34		20		7.0		1.1		1.1		16
8	1.56	34		20		7.0		1.1		1.1		16
9	1.56	34		20		7.0		1.1		8.0	52	16
10	1.56	34		20		7.0		1.1		8.0		16
11	1.56	34		17		7.0		1.1		8.0		16
12	1.55	33		17		7.0		1.1		8.0		16
13	1.55 <sup>+04</sup>	33		17		7.0		1.1		8.0		16
14	a	33		17		7.0		1.1		8.0		16
15	1.55 <sup>+04</sup>	33		7.4	51	1.1		1.1		8.0		16
16	1.55	33		7.4		1.1		1.1		8.0		16
17	1.55 <sup>+04</sup>	33	50	7.4		1.1		1.1		8.0		16
18	a	31		7.4		1.1		1.1		7.0		16
19	1.50 <sup>+05</sup>	30		7.4		1.1		1.1		7.0		16
20	1.50 <sup>+05</sup>	30		7.4		1.1		1.1		7.0		16
21	1.49 <sup>+05</sup>	29		7.4		1.1		1.1		7.0		16
22	a	9.5		8.0		1.1		1.1		7.0		16
23		9.5		8.0		1.1		1.1		7.0		16
24		9.5		8.0		1.1		1.1		7.0		16
25		9.5		8.0		1.1		1.1		7.0		16
26		9.5		8.0		1.1		1.1		7.0		16
27		20		8.0		1.1		1.1		16		16
28		30		8.0		1.1		1.1		16		16
29		30		8.0		1.1		1.1	a	16		16
30		30	a	8.0		1.1		1.1	XX	XXX		16
31	a	30	XX	XXX	a	1.1	a	1.1	XX	XXX	a	16

Total	774.5	404	121	34	192	49
Mean	25	13.5	3.9	1.1	6.9	16
Run-off in acre-feet	1576	807	248	67	380	982
Maximum	34	24	8.0	1.1	16	16



DIVISION OF WATER RESOURCES  
OFFICE OF STATE ENGINEER

Sta. No. \_\_\_\_\_

Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date	
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge										
a	16	a	15	a	60	1.48 <sup>03</sup>	26	a	75	a	0	1									
	16		15	51 a	69	1.52	30		100		0	2									
	16		15	1.88 <sup>03</sup>	68	1.52	30		143	a	20	3									
	16		15	1.81	60	1.37	17		143	1.62 <sup>04</sup>	40	4									
	16		15	1.78	56	1.40	19		143	1.62	40	5									
	15	51	15	1.96	79	1.60	37		143	5	35	6									
33	15		15	5	181	a	38		143	1.69	47	7									
	15		15	2.25	212	1.62	39		143	7.80 <sup>03</sup>	60	8									
	15		20	a	180	1.62	39		143	1.70	48	9									
	15	a	30	2.24	121	1.62	39		170	1.58 <sup>04</sup>	36	10									
	15	1.62 <sup>04</sup>	40	2.18	112	1.62	39	a	120	a	36	11									
	15	1.53	31	1.95	77	1.52 <sup>03</sup>	30	1.90 <sup>04</sup>	72		36	12									
	15	1.53	31	1.85	65	a	30	1.90	72		36	13									
	15	1.53	31	1.77	55		30	1.89	71		36	14									
	15	1.53	31	1.89	70		30	1.77	56		43	15									
	15	1.53	31	2.05	92		20	1.71	50		43	16									
	15	a	30	2.04	90		20	a	50		43	17									
	15		20	1.92	74		20	a	56		43	18									
	15	a	15	1.83	62		20	1.82	62		43	19									
	15	1.28	13	1.77	55		20	1.82	62		36	20									
	15	1.28	13	1.70 <sup>03</sup>	47		25	1.82	62		36	21									
	15	1.27	12	1.65 <sup>04</sup>	43		35	1.82	62	52	36	22									
	15	1.27	12	1.65	43		45	1.81	61		36	23									
	15	1.27 <sup>04</sup>	12	1.66	44		55	1.81	61		36	24									
	15	a	12	1.65	43		65	1.80	60		36	25									
	15		15	1.65	43		75	1.80	60		36	26									
	15		20	1.65	43		75	1.80	60		36	27									
	15		25	1.66	44	32	75	1.80	60		49	28									
	15		30	1.61 <sup>04</sup>	39		75	1.80	60		36	29									
a	15		40	1.41 <sup>03</sup>	20		75	1.68	66	a	36	30									
XX	XXX	a	50	XX	XXX	a	75	5	80	XX	XXX	31									
455		684		2257		1223		2617		1094		10366.5									
15		22		75		40		84		36											
701		1354		4877		2436		5182		2166											
16		50		212		75		170		60		170									

Water Year

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19\_\_\_\_

Drainage area \_\_\_\_\_ square miles.

Water stage recorder \_\_\_\_\_

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	1.40	3.1	1.73	20	1.89	28	1.76	20	1.75	18	1.73	b
2	S	5.0	1.74	20	1.90	29	1.74	19	1.75	18	1.71	14
3	1.07	.96	1.75	21	1.92	31	1.76	20	1.71	15	1.69	b
4	1.06	.91	1.75	21	1.90	29	1.72	19	1.73	13	1.71	14
5	1.06	.91	1.74	20	1.88	27	1.64	18	1.73	13	1.70	b
6	S	2.26	1.73	20	1.88	27	1.71	17	1.75	13	1.72	b
7	1.28	2.91	1.75	21	1.88	27	1.68	16	1.72	13	1.73	14
8	1.30	3.2	1.71	18	1.88	27	1.67	15	1.72	13	1.72	14
9	S	12	1.72	19	1.88	27	1.66	15	1.72	13	1.72	15
10	1.74	19.6	1.71	18	1.88	27	1.69	16	1.73	13	1.68	13
11	S	8.4	1.74	20	1.87	27	1.73	19	1.72	14	S	14
12	1.06	.91	1.75	21	1.88	27	1.71	18	1.71	13	S	14
13	1.04	.81	1.73	20	1.86	26	1.74	20	1.72	14	1.73	14
14	1.03	.76	1.78	23	1.86	25	1.72	18	1.73	14	1.72	15
15	S	1.12	1.76	22	1.83	24	1.74	20	1.73	14	S	14
16	S	4.68	1.75	21	1.85	24	1.75	20	1.73	14	1.72	15
17	S	4.84	1.83	27	1.85	24	1.76	21	1.73	14	1.69	14
18	1.42	5.5	1.94	37	1.85	24	1.78	22	1.73	14	1.68	15
19	S	3.22	1.93	36	1.81	24	1.79	23	1.72	14	S	14
20	1.07	.96	1.92	35	1.77	21	1.78	22	1.73	14	1.69	14
21	S	7.85	1.90	33	1.77	21	1.78	22	1.73	14	S	14
22	1.68	16	1.90	33	1.77	21	1.78	22	1.74	15	1.70	14
23	1.57	11	1.92	35	1.77	21	1.78	22	1.72	14	1.70	14
24	1.63	9.2	1.92	35	1.77	21	1.76	20	1.73	14	1.71	14
25	1.50	8.1	1.92	35	1.72	21	1.71	20	1.73	14	1.71	14
26	1.46	5.8	1.92	35	1.78	21	1.72	20	a	14	1.71	14
27	1.49	7.8	1.80	27	1.81	23	1.73	20	1.68	14	1.69	14
28	1.57	11	1.72	22	1.77	21	1.76	20	1.71	14	S	14
29	1.61	13	1.85	27	1.76	20	1.73	19	XX	14	S	14
30	1.75	21	1.93	32	1.76	20	1.72	18	XX	XXX	S	14
31	1.74	20	XX	XXX	1.75	20	1.74	18	XX	XXX	1.02	14

Max. Discharge \_\_\_\_\_ G. H. 2.32 ft.  
 Sec. ft. at 1700 hrs on Nov 22 20  
 Max. G. H. 2.32 ft. at 1700 hrs on Nov 22  
 Min. Daily Discharge .50 sec.-ft. on March 30  
 DISCHARGE ESTIMATED FOR "a" and "b" DAYS  
 "c" subdivided into "v" intervals

7571	Total	213	769	755	599	344	396
20.7	Mean	6.87	25.6	24.4	19.3	14.1	12.6
11.71	Run-off in acre-feet	422	1522	1425	1186	780	772
	Maximum	21	37	31	23	18	16



CHALK

Creek near MOUTH of NATHROP, CO

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area \_\_\_\_\_ square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	2.80	51	2.58	33	2.44	22	2.39	19	2.36	18	2.27	0
2	2.80	51	2.58	33	2.45	23	2.43	19	2.35	17	2.27	1
3	2.79	51	2.58	33	2.44	22	2.39	19	2.35	17	2.27	1
4	2.83	56	2.57	32	2.44	22	2.38	19	2.35	17	2.27	0
5	2.81	55	2.55	30	2.43	22	2.48	19	2.34	17	2.31	b
6	2.80	54	2.53	28	2.44	22	2.49	19	2.35	17	2.32	b
7	2.78	52	2.53	28	2.45	23	2.54	19	2.34	17	2.27	0
8	2.78	52	2.53	28	2.44	22	2.59	19	2.34	17	2.27	1
9	2.78	52	2.52	28	2.43	22	2.77	19	2.35	17	2.27	7
10	2.78	52	2.52	28	2.43	22	3.07	19	2.35	17	2.23	0
11	2.77	51	2.52	28	2.43	22	2.61	19	2.36	18	2.31	b
12	2.76	50	2.51	26	2.42	21	2.56	19	2.36	18	2.39	b
13	2.76	50	2.49	25	2.42	21	2.38	19	2.37	19	2.22	0
14	2.75	49	2.49	25	2.42	21	2.38	19	2.37	19	2.21	0
15	2.74	48	2.46	22	2.42	21	2.38	19	2.38	19	2.18	0
16	2.73	46	2.45	22	2.41	20	2.38	19	2.37	19	2.18	1
17	2.73	46	2.44	21	2.41	20	2.38	19	2.37	19	2.14	1
18	2.73	46	2.45	22	2.42	21	2.38	19	2.32	16	2.13	1
19	2.68	42	2.46	22	2.42	21	2.38	19	2.25	12	2.15	1
20	2.66	40	2.45	22	2.45	21	2.38	19	2.15	8.2	2.13	1
21	2.68	42	2.45	22	2.47	21	2.38	19	2.02	4.4	2.11	0
22	2.69	43	2.44	21	2.44	20	2.38	19	1.96	3.0	2.02	0
23	2.68	42	2.43	20	2.46	20	2.38	19	1.98	3.4	1.98	0
24	2.63	37	2.42	20	2.41	20	2.38	19	1.98	3.4	2.02	0
25	2.63	37	2.41	19	2.43	20	2.37	18	2.02	4.0	1.98	0
26	2.66	39	2.42	20	2.41	20	2.37	18	2.10	6.0	1.98	0
27	2.63	37	2.41	19	2.41	20	2.37	18	2.17	8.0	1.97	0
28	2.58	33	2.67	20	2.41	20	2.37	18	2.27	10	1.88	0
29	2.56	31	2.73	21	2.43	20	2.37	18	XX	XXX	1.91	0
30	2.59	33	2.44	22	2.40	20	2.37	18	XX	XXX	1.73	0
31	2.60	34	XX	XXX	2.48	20	2.37	18	XX	XXX	1.88	0
Total	1402		740		657		587		274		26	
Mean	4.5		2.5		2.1		1.7		1.4		2.9	
Run-off in cfs	2776		1465		1291		1152		752		521	
Maximum												

Max. Discharge \_\_\_\_\_ Sec. ft. at \_\_\_\_\_ on \_\_\_\_\_ G. H. \_\_\_\_\_ ft.  
 Max. G. H. \_\_\_\_\_ ft. at \_\_\_\_\_ on \_\_\_\_\_ Min. Daily Discharge \_\_\_\_\_ sec.-ft. on \_\_\_\_\_

**DIVISION OF WATER RESOURCES**  
**OFFICE OF STATE ENGINEER**

Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date	
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge										
1.87 <sup>01</sup>	1.6	1.93 <sup>0</sup>	2.4	S	01 54	2.22 <sup>01</sup>	10	2.03 <sup>02</sup>	3.8	2.15 <sup>04</sup>	6.8	1									
1.88	1.7	1.93	2.4 <sup>153</sup>	2.80 <sup>01</sup>	50	2.23	11	2.08	5.3	2.10 <sup>05</sup>	5.0	2									
1.89	1.8	1.95	2.8	2.76	46	2.18	9.0	2.13	7.6	2.09 <sup>05</sup>	4.7	3									
1.88 <sup>01</sup>	1.7	1.94	2.6	2.73	44	2.21	10	2.10	5.9	S	30	4									
1.91 <sup>0</sup>	2.2	1.97	3.0	2.73	44	2.33	16	2.14	7.2	2.63 <sup>06</sup>	32	5									
1.93	2.4	S	16	2.70 <sup>01</sup>	41	2.35	17	2.13	6.8	2.55 <sup>06</sup>	25	6									
1.92	2.3	S	38	S	65	2.32	16	2.12	6.5	2.47 <sup>06</sup>	19	7									
1.92	2.3	S	59	3.07 <sup>01</sup>	88	2.28	14	2.13	6.8	2.46 <sup>06</sup>	19	8									
1.91	2.2	S	70	3.02 <sup>01</sup>	80	2.29	14	2.12	6.5	2.53	23	9									
1.92	2.3	S	70	S	60	2.23	11	2.18	8.6	2.52	22	10									
1.93	2.4	S	47	2.63 <sup>01</sup>	33	2.22	11	2.46	23	2.52	22	11									
1.93	2.4	2.64	38	2.53	30	2.12	6.8	2.47	24	2.58	26	12									
1.97	3.0	2.58	34	2.45	25	2.06	5.0	2.43	22	2.60	27	13									
1.93	2.4	2.67	40	2.42	23	2.10 <sup>01</sup>	6.2	2.43	22	2.58	26	14									
1.98	3.2	2.44	26	2.37	20	2.27	13	2.46	23	2.53 <sup>06</sup>	23	15									
1.96	2.9	2.41	24	2.25 <sup>02</sup>	14	2.27	13	2.46	23	2.43 <sup>06</sup>	16	16									
1.95	2.8	2.38	22	2.18 <sup>01</sup>	9.6	2.23	11	2.46	23	2.43	16	17									
1.95	2.8	2.29	18	2.15	8.6	2.22	10	2.49	25	2.44	17	18									
1.96	2.9	2.21 <sup>0</sup>	10	2.13	7.6	2.24	12	2.50	26	2.44	17	19									
1.96	2.9	2.18	9.3	2.11	7.2	2.25	12	2.46	23	2.45	17	20									
1.95 <sup>0</sup>	2.8	2.11	6.8	2.08	6.2	2.30	14	2.42	21	2.38	14	21									
1.95	2.8	2.11	6.8	2.08	6.2	2.38	19	2.44	22	2.38	14	22									
1.94	2.6	2.27 <sup>0</sup>	14	2.07 <sup>01</sup>	5.9	2.60	33	S	14	2.39	14	23									
1.93	2.4	S	26	S	8.5	2.70	27	2.07	5.0	2.38	14	24									
1.93	2.4	2.45 <sup>01</sup>	23	2.22 <sup>0</sup>	11	2.67	29	2.08	5.3	2.37	13	25									
1.94	2.6	2.41	21	2.23	10	2.75 <sup>01</sup>	46	2.13 <sup>02</sup>	6.8	2.42	16	26									
1.93	2.4	2.46	25	2.26 <sup>0</sup>	13	2.67 <sup>01</sup>	38	2.21 <sup>03</sup>	4.3	2.50	20	27									
1.93	2.4	2.42	23	2.17 <sup>01</sup>	8.5	2.58 <sup>03</sup>	30	2.25	11	2.41	15	28									
1.93	2.4	2.43	23	2.16	8.2	2.48 <sup>03</sup>	24	2.23	10	2.37	13	29									
1.93 <sup>0</sup>	2.4	S	29	2.25 <sup>01</sup>	12	S	13	2.19	8.6	2.38	14	30									
XX	XXX	S	49	XX	XXX	1.99 <sup>02</sup>	3.2	2.20 <sup>03</sup>	8.0	XX	XXX	31									
73.1		780		848		528		421		540		7209									
2.4		25		28		17		14		18		19.75									
144		1544		1674		1045		834		1069		14214									

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19

Drainage area \_\_\_\_\_ square miles.

Water stage recorder \_\_\_\_\_

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	1.29	587	1.24	549	0.82	239	0.69	160	0.61	150	0.63	
2	1.28	579	1.23	541	.80	223	.66	150	.59	150	.61	
3	1.27	572	1.25	556	.81	223	.66	140	.60	150	.62	
4	1.34	634	1.23	541	.81	222	.65	130	.59	140	.63	
5	1.29	575	1.22	534	.81	222	.62	120	.60	160	.65	
6	1.28	587	1.20	519	.79	213	.61	120	.60	160	.61	
7	1.31	610	1.21	526	.77	203	.63	110	.61	160	.65	
8	1.30	603	1.21	526	.75	193	.62	100	.59	160	.63	
9	1.30	603	1.19	504	.73	184	.66	100	.60	165	.65	
10	1.32	618	1.18	497	.73	184	.65	110	.61	170	.64	
11	1.32	618	1.20	512	.72	179	.67	120	.61	170	.57	
12	1.30	595	1.19	524	.73	184	.70	120	.60	165	.57	
13	1.29	587	1.17	483	.71	174	.66	130	.60	165	.61	
14	1.29	587	1.18	490	.71	174	.66	120	.59	160	.59	
15	1.28	572	1.17	483	.70	170	.66	120	.61	160	.57	
16	1.28	572	1.13	448	.70	170	.71	120	.59	160	.59	
17	1.28	572	1.12	441	.69	170	.72	120	.59	160	.61	
18	1.31	587	1.17	476	.70	170	.67	120	.58	151	.57	
19	1.29	572	1.16	469	.69	170	.67	120	.58	151	.57	
20	1.27	556	1.14	455	.66	170	.67	120	.58	151	.59	
21	1.28	564	1.13	448	.67	170	.66	120	.57	143	.62	
22	1.29	572	1.12	441	.65	170	.63	120	.58	147	.60	
23	1.27	556	1.12	441	.66	170	.61	120	.57	143	.57	
24	1.25	541	1.11	434	.64	170	.61	120	.57	143	.56	
25	1.24	534	1.11	434	.62	170	.61	120	.57	140	.57	
26	1.26	556	1.13	448	.63	170	.61	130	.60	140	.57	
27	1.25	549	1.10	427	.66	170	.63	140	.58	147	.57	
28	1.21	519	1.07	407	.70	180	.64	150	.60	156	.57	
29	1.21	519	1.08	407	.68	170	.64	150	XX	XX	a	
30	1.25	556	.87	272	.67	120	.61	140	XX	XXX	.63	
31	1.24	549	XX	XXX	.63	170	.61	150	XX	XXX	.56	
Total	1782.1		1421.3		571.9		311.0		422.6		416.8	
Mean	5.75		4.74		1.84		1.26		1.56		1.51	
Run-off in inch-foot	2035.7		231.1		112.4		22.5		31.0		12.5	
Maximum	634		549		239		160		170		120	

Max. Discharge 1560 Sec. ft. at 700 ft. on June 10 G. H. 2.15 ft.  
 Max. G. H. 2.15 ft. at 700 on June 10 Min. Daily Discharge 100 sec.-ft. on July 29  
 Discharge estimated for "a" and "b" days  
 5. Submerged days, "11" - winter only

DIVISION OF WATER RESOURCES  
OFFICE OF STATE ENGINEER

Sta. No. \_\_\_\_\_

Rating Table Used No. 23

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th			
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge					
.66	126	0.83	278	1.37	618	0.81	266	0.72	208	0.62	160	1				
	126	.83	278	1.46	691	.82	272	.72	208	.61	159	2				
	126	.86	295	1.46	691	.87	301	.73	213	.62	160	3				
	128	.85	289	1.48	708	.86	295	.78	237	.72	208	4				
	128	.83	272	1.49	716	.87	301	.81	255	.75	223	5				
	130	.87	301	1.50	725	.88	312	.82	261	.72	208	6				
a	130	.93	337	1.65	856	.92	337	.80	250	.70	198	7				
.57	134	1.07	427	1.88	1075	.87	307	.73	213	.71	203	8				
.59	143	1.15	483	1.94	1135	.86	301	.78	237	.74	218	9				
.61	156	1.40	675	2.09	1292	.86	301	.83	266	.71	203	10				
.65	174	1.27	564	1.77	968	.83	289	.83	266	.70	198	11				
.62	160	1.13	463	1.59	802	.80	272	.82	255	.73	213	12				
.62	160	1.09	434	1.47	699	.76	250	.80	244	.75	223	13				
.61	156	1.13	463	1.44	675	.79	266	.80	244	.75	223	14				
.65	174	1.02	387	1.58	794	.81	278	.79	229	.81	261	15				
.63	165	.86	289	1.55	767	.78	261	.77	229	.82	266	16				
.63	165	.83	272	1.55	767	.74	239	.75	218	.82	266	17				
.65	174	.77	239	1.56	776	.73	234	.74	213	.82	266	18				
.69	198	.72	213	1.52	750	.73	234	.78	234	.82	266	19				
.70	203	.67	188	1.49	725	.75	244	.78	234	.81	261	20				
.65	184	.65	177	1.12	455	.82	283	.77	229	.80	255	21				
.65	184	.63	170	1.11	448	.83	287	.77	229	.80	255	22				
.65	184	.64	174	1.10	441	.90	331	.73	208	.78	250	23				
.67	193	.70	203	.96	420	1.07	441	.74	213	.78	250	24				
.69	203	.81	261	.74	343	1.08	448	.81	250	.78	250	25				
.71	213	.88	295	.94	343	1.15	497	.76	223	.77	244	26				
.74	237	.94	331	.94	343	1.08	448	.75	218	.78	244	27				
.76	237	1.03	387	.94	343	.95	383	.75	218	.78	244	28				
.78	250	1.07	414	.92	331	.85	289	.74	213	.78	244	29				
.79	255	1.06	407	.89	312	.80	255	.73	208	.77	237	30				
XX	XXX	1.20	497	XX	XXX	.74	218	.72	208	XX	XXX	31				

5190	10471	20009	9414	7140	6638	109561
173	338	667	304	230	221	300
1027	20774	39698	18677	14166	13170	216231
250	675	1212	497	266	266	1202

ARKANSAS

Creek near

WELLSVILLE, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area 1,485 square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Max. Discharge 1750 cfs. at 1000 ft. on 1/15/77 Min. Daily Discharge 155 sec.-ft. on Jan 9 77  
 G. H. 4.97 ft.  
 Max. G. H. 4.87 ft. at 1000 ft. on June 10, 77

Day	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	3.93	640	3.86	605	3.23	323	2.99	236	2.88	216	2.93	
2	3.92	635	3.84	595	3.20	311	2.96	222	2.88	216	2.89	
3	3.92	635	3.86	605	3.22	319	2.98	230	2.86	212	2.81	
4	4.07	710	3.85	600	3.22	319	2.94	216	2.86	212	2.92	
5	3.98	655	3.81	575	3.21	315	2.91	194	2.86	212	2.94	
6	3.94	635	3.78	565	3.20	315	2.91	194	2.87	216	2.87	
7	3.98	655	3.79	570	3.16	299	2.86	170	2.83	205	2.97	
8	3.96	645	3.78	565	3.18	307	2.82	155	2.82	202	2.97	
9	3.94	635	3.78	565	3.19	311	2.80	155	2.84	208	2.98	
10	3.96	645	3.77	560	3.17	311	2.89	174	2.85	212	2.98	
11	3.96	645	3.77	560	3.12	303	2.95	188	2.85	212	2.83	
12	3.93	635	3.76	555	3.15	315	2.96	191	2.83	205	5	
13	3.92	630	3.73	545	3.11	299	2.99	202	2.88	222	2.92	
14	3.92	630	3.76	560	3.12	303	2.95	188	2.88	222	2.89	
15	3.89	625	3.74	550	3.08	303	2.95	190	2.87	219	2.82	
16	3.88	620	3.68	526	3.07	299		190	2.88	222	2.83	
17	3.86	610	3.67	521	3.08	303		190	2.88	222	2.91	
18	3.89	625	3.73	550	3.07	299		200	2.88	222	2.84	
19	3.87	615	3.72	545	3.05	291		200	2.86	216	2.80	
20	3.85	605	3.70	535	2.97	261		200	2.83	205	2.83	
21	3.86	610	3.68	526	2.98	264		200	2.81	198	2.89	
22	3.87	615	3.67	521	2.96	258		200	2.83	205	2.85	
23	3.84	600	3.67	521	2.96	258		200	2.77	188	2.73	
24	3.82	590	3.64	508	2.97	261		200	2.73	174	2.71	
25	3.82	590	3.64	508	2.94	250		200	2.79	194	2.73	
26	3.83	595	3.69	530	2.94	250		210	2.77	188	2.75	
27	3.86	610	a	521	2.99	268	a	200	2.79	194	2.72	
28	3.83	595	a	503	3.02	279	2.90	222	2.81	202	2.72	
29	3.84	600	3.61	494	2.98	264	2.88	216	XX	XXX	2.65	
30	3.88	615	3.37	383	2.98	264	2.87	212	XX	XXX	5	
31	3.87	610	XX	XXX	2.97	261	2.88	216	XX	XXX	2.74	

Total	19360	16267	8935	6181	5321	6282
Mean						
Run-off in cubic feet						
Maximum						



STATE OF COLORADO  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. 07093700

Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th				
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge						
2.68 <sup>+</sup> <sub>04</sub>	177	3.11 <sub>05</sub>	299	3.96 <sub>05</sub>	686	3.10 <sub>06</sub>	295	2.95 <sub>03</sub>	247	S	03	202	1				
2.66	170	3.16 <sub>06</sub>	315	4.05 <sub>06</sub>	734	3.07	283	2.92	236	2.76		180	2				
2.63	161	3.16	315	4.06 <sup>287</sup> <sub>06</sub>	740	3.18	327	2.94	244	2.77		184	3				
2.61	155	3.16	315	4.08	752	3.19 <sub>05</sub>	331	3.02	272	2.92		236	4				
2.61	155	3.12 <sub>06</sub>	299	4.08	752	3.21 <sub>04</sub>	343	3.08	295	3.07		227	5				
2.61	155	3.18 <sup>281</sup> <sub>07</sub>	319	4.08 <sub>06</sub>	752	3.25	359	3.07	291	2.99		261	6				
2.62	158	3.30	367	4.24 <sub>05</sub>	854	3.28	371	3.07	291	2.95		247	7				
2.67 <sup>+</sup> <sub>04</sub>	174	3.55	476	4.53	1050	3.27	367	2.97	254	2.97		254	8				
2.75 <sup>+</sup> <sub>03</sub>	198	3.68	535	4.61	1100	3.21 <sub>04</sub>	343	2.99	261	3.02 <sup>293</sup> <sub>03</sub>		272	9				
2.77 <sup>+</sup> <sub>02</sub>	202	3.98	686	4.78 <sub>04</sub>	1220	3.19 <sub>03</sub>	339	3.12	311	2.98 <sub>03</sub>		252	10			JMS	
2.85 <sup>+</sup> <sub>01</sub>	226	3.88	635	4.47 <sub>01</sub>	1010	3.17	331	3.17	331	2.95 <sub>04</sub>		244	11				
2.82	216	3.65	521	4.27 <sub>03</sub>	884	3.13 <sub>03</sub>	315	3.12	311	3.00		261	12				
2.78	202	3.58	490	4.12 <sub>02</sub>	800	3.03 <sub>02</sub>	279	3.08	295	3.03		272	13			JMS	JMS
2.78	202	3.64	516	4.07 <sup>280</sup> <sub>02</sub>	770	3.06 <sub>02</sub>	291	3.08	295	3.04 <sub>04</sub>		275	14			JMS	JMS
2.83	219	3.50	454	4.20	848	3.10	307	3.08	295	3.12 <sub>05</sub>		302	15				
2.83	219	3.22 <sub>07</sub>	335	4.18	836	3.08	299	3.04	279	3.12		302	16			JMS	
2.80	208	3.17 <sub>05</sub>	323	4.16	824	3.00	265	3.01	268	3.12		302	17				
2.85 <sup>+</sup> <sub>01</sub>	226	3.06 <sub>03</sub>	287	4.17 <sup>283</sup> <sub>02</sub>	830	2.97	258	3.00	264	3.09		291	18			Dis.appld.	Date
2.91	244	2.97 <sub>01</sub>	261	4.16	824	2.97	258	3.03	275	3.09		291	19			Dis.check	Date
2.97	264	2.89 <sup>o</sup>	236	4.13 <sub>02</sub>	806	3.00 <sub>07</sub>	265	3.07	291	3.09		291	20				
2.88 <sup>o</sup>	233	2.85	222	3.69 <sub>07</sub>	540	3.13 <sub>03</sub>	315	3.05	282	3.09		291	21				
2.86 <sup>o</sup>	226	2.81	208	3.62 <sub>08</sub>	503	3.19	339	3.04	272	3.07		283	22				
2.86 <sup>o</sup>	226	2.81	208	3.61 <sub>08</sub>	498	3.23	355	3.01	268	3.07 <sup>294</sup> <sub>05</sub>		283	23				
2.90 <sub>01</sub>	236	2.89 <sup>o</sup>	236	3.40 <sub>10</sub>	395	3.52	480	2.99	261	3.05		275	24				
2.90 <sub>01</sub>	236	3.08 <sub>01</sub>	302	3.37 <sub>11</sub>	379	3.58	502	3.09	339	3.04		272	25				
2.93 <sub>02</sub>	244	3.24 <sub>02</sub>	363	3.37	379	3.65 <sup>291</sup> <sub>03</sub>	540	3.04 <sub>03</sub>	272	3.04		272	26				
2.99 <sub>03</sub>	261	3.34 <sub>02</sub>	404	3.35	371	3.62	526	3.00	264	3.06		272	27				
3.01 <sub>03</sub>	268	3.56 <sub>03</sub>	498	3.33	363	3.40	426	3.02	272	3.06		272	28				
3.07 <sub>04</sub>	287	3.64 <sub>04</sub>	530	3.31 <sub>11</sub>	355	3.22 <sup>281</sup> <sub>03</sub>	251	3.02	272	3.05		275	29				
3.07 <sub>04</sub>	287	3.60	512	3.25 <sub>12</sub>	327	3.09	299	3.00	264	3.02		264	30				
XX	XXX	3.72 <sub>04</sub>	570	XX	XXX	2.99 <sub>03</sub>	241	2.97 <sub>03</sub>	254	XX		XXX	31				
6435		12038		21100		10,632		2641		7988							

GRAPE

River at Creek near WESTCLIFFE, COLORADO

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 77

Drainage area 320 square miles.

Water stage recorder STEVENS A-35

Max. Discharge 435 Sec. ft. at 2000 ft. on Aug. 19 G. H. 2.55 ft.

Max. G. H. 2.55 ft. at 2000 ft. on Aug. 17 Min. Daily Discharge 2 sec.-ft. on MANY DAYS

DISCHARGE ESTIMATED ON "a" and "b" - Gage

"S" Submerged Gage "V" VARIABLE CHART

LISTING GAGES USED (GOSWAM'S NUMBERING SYSTEM)

Day.	OCT.		NOV.		DEC. '76		'77 JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	0.67	31	0.71	39	0.86	60	0.80	14	0.70	13	0.81	12
2	.64	28	.74	43	.94	40	.79	15	.59	12	.70	10
3	.62	26	.87	60	.97	32	.70	16	.56	12	.66	12
4	.82	49	.95	73	.90	25	.61	17	.54	11	.56	13
5	.82	49	.95	73	.85	21	.64	17	.51	11	.56	15
6	.76	43	.97	76	.74	18	.71	17	.54	10	.47	16
7	.89	60	.95	73	.66	16	.76	17	.51	9.4	.48	16
8	.88	60	.83	54	.68	15	.68	16	.52	9.6	.59	17
9	.75	43	.76	44	.65	14	.44	16	.56	9.8	.70	18
10	.68	36	.70	37	.60	14	.77	16	.55	10	.60	19
11	.66	33	.68	35	.58	13	.92	16	.54	11	.50	20
12	.65	32	.64	30	.56	13	.88	15	.55	12	.56	18
13	.64	31	.63	29	.64	12	.92	14	.56	12	.64	17
14	.63	30	.64	30	.72	12	.66	13	.54	13	.63	16
15	.62	29	.61	28	.73	10	.70	13	.54	15	.57	15
16	.62	29	.63	30	.91	9.4	.91	13	.57	16	.57	20
17	.62	29	.58	25	.91	9.0	.84	13	.57	18	.53	30
18	.61	28	.59	26	1.08	8.0	.99	13	.57	19	.50	45
19	.60	27	.63	31	0.92	7.4	.95	13	.57	21	.54	55
20	.60	27	.60	28	1.11	7.0	.85	13	.58	23	.52	58
21	.59	26	.60	28	1.25	7.2	.80	13	.50	25	.54	50
22	.60	27	.56	25	1.35	7.4	.75	14	.52	27	.56	44
23	.60	27	.55	24	1.35	8.0	.79	14	.47	30	.59	38
24	.58	25	.54	24	1.15	8.4	.70	15	.51	25	.60	35
25	.56	24	.54	24	0.90	8.8	.66	15	.63	22	.58	30
26	.55	23	.50	20	.76	10	.68	15	.62	19	.57	29
27	.61	23	.65	35	.84	10	.67	15	.72	16	.59	31
28	.65	30	.81	54	.78	11	.65	11	.87	14	.55	27
29	.65	30	.96	78	.86	12	.62	14	XX	XXX	.47	14
30	.67	35	.97	79	.84	13	.57	14	XX	XXX	.50	20
31	.68	36	XX	XXX	.84	13	.65	14	XX	XXX	.52	24
86872	Total	1075	1255	464.6	454	445.8	791					
23.7	Mean	33	42	15	14.6	15.9	25.5					
1720	Run-off in acre-feet	2072	2484	920	894	843	1466					
	Maximum	60	79	60	17	30	28					
	Minimum	22	20	7.0	13	9.4	10					

STATE OF COLORADO  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. 07095000

Rating Table Used

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date	
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge										
.51	23	0.65	38	0.27	6	0.21	2	0.29	8	a	8.6	1									
.49	21	.55	27	.30	8	.21	2	.28	8		8.4	2									
.52	24	.48	21	.29	7	.21	2	.28	8		8.2	3									
.53	24	.45	19	.30	8	.20	2	.28	8		8.2	4									
.55	26	.41	16	.26	6	.22	3	.27	7		8.0	5									
.56	27	.39	15	.27	6	.22	3	.24	6		7.8	6									
.55	26	.36	13	.34	9	.22	3	a	8.6	a	7.4	7									
.55	26	.37	13	.55	24	.21	3	.34	11		7.2	8									
.55	26	.40	16	.50	20	.20	3	.38	13		7.0	9									
a	26	.43	18	.33	8	.21	3	a	15		7.4	10									
	(31)	.42	17	.27	5	.19	3		16		8.0	11									
	(43)	.39	14	.25	5	.20	3		16		8.6	12									
	(55)	.37	13	.23	4	.20	3		17		9.6	13									
	(71)	.38	13	.21	3	.23	4		16		8.6	14									
1.10	107	.36	12	.19	2	.27	6		16		7.8	15									
.22	132	.33	10	.18	2	.25	5		17		7.0	16									
0.93	71	.29	8	.19	2	.26	5		18		6.6	17									
.76	44	.28	8	.20	3	.25	5		19		6.2	18									
.72	39	.27	7	.21	3	.22	4		17		6.0	19									
.98	78	.27	7	.20	3	.22	4		16		5.8	20									
.16	117	.28	8	.21	3	.24	5		16		5.8	21									
0.94	76	.28	8	.22	3	.24	5		14	a	5.9	22									
.72	44	.27	7	.21	3	.25	6	a	14	0.37	6	23									
.73	45	.26	7	.29	5	.27	7		12	.37	6	24									
.92	73	.25	6	.27	5	S	14		11	.38	7	25									
.73	46	.27	7	.24	3	S	26		10	.39	7	26									
.67	39	.28	7	.22	3	.44	19		9.0	.41	8	27									
.60	31	.27	7	.22	3	.39	15		9.0	.42	8	28									
.60	31	.28	7	.21	2	.33	11		9.0	.43	9	29									
.62	33	.28	7	.20	2	.34	12		8.8	.41	8	30									
XX	XXX	.26	6	XX	XXX	.30	9	a	8.6	XX	XXX	31									
1456		382		166		197		382		223.1		7751.5									
49		12		6		6		12.3		7.4		19.9									
2887		758		329		341		756		442		14358									
33		24		26		19		9.2		1.22											
6		2		2		2		5.5		2											



STATE OF CALIFORNIA  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. 07096500

Rating Table Used #21

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge									
5.04	167	5.16	219	5.62	482	5.27	276	4.87	137	4.93	182	1								
5.02	161	5.25	255	5.80	633	5.15	219	4.74	111	4.68	119	2								
4.98	150	5.20	238	5.88	713	5.19	234	4.66	95	4.59	103	3								
4.93	135	5.15	223	5.83	662	5.22	246	4.88	150	4.70	128	4								
4.87	121	5.10	208	5.84	672	5.24	255	5.03	198	4.90	185	5								
4.92	132	5.07	198	5.87	703	5.27	268	5.11	230	4.95	205	6								
4.94	137	5.13	219	5.92	756	5.26	263	5.12	234	4.83	169	7								
4.96	142	5.24	263	6.15	1052	5.29	276	5.07	215	4.90	191	8								
5.00	153	5.44	364	6.28	1260	5.28	272	5.01	194	4.90	191	9								
5.01	155	5.61	475	6.36	1406	5.27	268	5.05	208	5.03	238	10								
5.08	178	5.79	624	6.23	1176	5.12	205	5.16	250	4.97	215	11								
5.12	191	5.59	460	6.01	862	5.13	208	5.15	246	5.00	227	12								
5.07	175	5.45	370	5.87	703	5.14	212	5.12	234	5.07	255	13								
5.04	167	5.46	376	5.79	624	5.08	191	S	359	5.06	250	14								
5.15	205	5.49	394	5.84	672	5.17	223	5.38	358	5.07	255	15								
5.35	295	5.32	300	5.90	734	5.15	215	5.18	242	5.11	272	16								
5.25	255	5.14	223	5.88	713	5.12	205	5.22	259	5.11	272	17								
5.17	223	5.07	198	5.88	713	5.07	188	5.08	201	5.10	263	18								
5.20	234	4.97	167	5.91	745	5.03	175	5.05	191	5.10	263	19								
5.30	276	4.90	147	5.90	734	S	248	S	342	5.09	255	20								
5.33	290	4.83	130	5.78	615	5.35	300	S	289	5.07	238	21								
5.27	263	4.78	119	5.52	413	5.35	300	S	287	5.07	238	22								
5.22	242	4.67	97	5.50	400	5.32	286	5.12	215	5.06	230	23								
5.15	215	4.59	84	5.46	376	5.37	310	5.07	201	5.04	215	24								
5.15	215	4.80	123	5.33	305	5.52	394	5.06	201	5.04	215	25								
5.16	219	5.10	208	5.31	295	S	518	5.14	234	5.02	201	26								
5.15	215	5.28	281	5.30	290	5.72	537	5.05	205	5.02	201	27								
5.20	234	5.40	341	5.30	290	5.52	394	5.06	212	5.07	219	28								
5.19	230	5.52	413	5.30	290	5.32	290	5.05	212	5.04	208	29								
5.16	219	5.50	400	5.30	290	5.16	223	5.03	208	5.02	201	30								
XX	XXX	5.43	358	XX	XXX	5.04	185	5.00	201	XX	XXX	31								
												Water Year								
												1977								
5977		8475		19079		8384		6819		6174		123253								
200		273		653		270		220		213		233								
11868		16720		20777		16602		13522		12282		244200								
104		1122		127		259		272		1102										

ARKANSAS

Creek near PORTLAND, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area 4,280 square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Max. Discharge 4100 Sec. ft. at 1927 hpc on JULY 27 G. H. 6.36 ft.  
 Max. G. H. 6.76 ft. at 1907 on JULY 27 Min. Daily Discharge 124 sec.-ft. on AUGUST 2 (1925) Estimated discharge for "a" and "b" above.

See unattached pages, No. 1-10, for details.

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	2.90	693	2.78	658	a	(315)	a	(250)	1.58	227	1.55	224
2	2.83	658	2.75	642	2.07	322	a	(260)	1.57	219	1.65	233
3	2.78	636	2.74	636	2.08	329	a	(272)	1.54	210	1.54	210
4	2.93	729	2.74	631	2.07	325	a	(243)	1.52	209	1.50	209
5	3.00	777	2.72	629	2.05	322	a	(225)	1.46	198	1.55	209
6	2.87	699	2.70	609	2.05	322	a	(207)	1.53	208	1.57	210
7	2.87	705	2.70	609	2.00	307	1.57	204	1.54	207	1.54	199
8	2.87	705	2.72	614	1.97	296	1.55	199	1.49	185	1.62	209
9	2.85	699	2.71	609	2.04	325	1.45	172	1.50	190	1.62	209
10	2.83	687	2.68	592	2.00	310	1.59	210	1.52	192	1.71	222
11	2.83	693	2.65	582	1.93	289	1.65	223	a	(200)	1.66	209
12	2.80	675	2.67	592	1.90	283	1.72	247	a	(200)	1.43	160
13	2.75	653	2.64	582	1.94	300	1.67	234	a	(200)	1.45	160
14	2.73	642	2.64	582	1.90	289	1.72	247	a	(200)	1.60	172
15	2.72	631	2.63	582	1.87	283	1.68	237	1.49	180	1.55	171
16	2.73	636	2.60	565	1.85	279	1.67	234	1.51	196	1.49	171
17	2.73	631	2.54	535	1.83	276	1.67	234	1.52	199	1.43	160
18	2.73	631	2.53	535	1.83	279	1.73	250	1.54	204	1.50	170
19	2.78	653	2.56	545	1.81	276	1.80	269	a	(189)	1.40	150
20	2.73	620	2.54	535	1.74	264	1.76	263		(186)	1.38	150
21	2.68	592	2.52	520	1.60	250	1.75	263		(189)	1.44	160
22	2.69	604	2.52	520	1.67	247	1.70	250		(187)	1.45	160
23	2.71	614	2.49	505	1.63	243	1.72	263		(185)	1.37	150
24	2.67	598	2.47	495	1.70	242	1.70	259	a	(185)	a	150
25	2.60	560	2.50	510	1.73	252	1.57	219	1.45	175		160
26	2.66	570	2.62	535	1.65	228	1.51	202	1.40	160		160
27	2.75	642	2.60	535	1.70	243	1.55	210	1.40	165		160
28	2.77	653	a	(500)	1.72	250	1.57	219	1.45	175		160
29	2.75	648	a	(460)	1.70	243	1.56	216	XX	XXX		160
30	2.75	648	a	(450)	1.69	240	1.56	216	XX	XXX		160
31	2.80	700	XX	XXX	a	(240)	1.52	200	XX	XXX	1.40	160

277311	Total	20291	16930	8673	7214	5440	535
812	Mean	655	564	280	235	170	160
50277	Run-off in acre-feet	70247	35691	17203	11775	8770	110
	Maximum	777	658	329	272	187	211



CUCHARAS

Creek near Boyd Ranch near La Veta, Colo.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area 56 square miles.

Water stage recorder

Max. Discharge 56.0 Sec. ft. at 0830 on MARCH 18 G. H. 1.75 ft.  
 Max. G. H. 1.75 ft. at 0830 on MARCH 18 Min. Daily Discharge 5.15 sec.-ft. on 2100  
SEPT. 22 (83) - all "a" gages and "b" stage and "c" discharge.

S-discharge subdivided V-variable shift

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1		9.0	.96	8.8	a	13	a	8.2	a	7.5	a	6.0
2		8.6	.97	9.2		11		8.6		7.2	<sup>924</sup>	5.0
3		8.0	.97	9.2		10		9.0	<sup>924</sup>	6.8		6.0
4		10	<sup>919</sup> .96	8.8		9.6		9.4		6.7		6.4
5	<sup>917</sup>	10	.97	9.2		9.0		10		6.6		6.0
6	.96	10	.96	8.8		8.5		9.8		6.4		8.0
7	.98	11	.97	9.2		8.0		9.5		6.2		8.0
8	.99	11	.97	9.2		8.0		9.4		6.2		8.0
9	1.02	12	.97	9.2		7.5		9.2		6.4		8.0
10	1.00	11	.95	8.5		7.0		9.0		6.6		8.0
11	1.00	11	.95	8.5		7.0		8.4		6.9		8.4
12	.97	9.6	.92	7.4		7.0		7.8		7.1		8.0
13	.97	9.6	.98	7.4		7.0	<sup>923</sup>	7.4		7.4		8.0
14	.96	8.8	1.03	7.3	<sup>922</sup>	6.8		7.4		7.7		7.4
15	.95	8.2	.97	7.2		6.4		7.6		8.0	a	7.0
16	.95	8.2	<sup>924</sup> .99	(7.10)7.2		6.0		7.7	<sup>925</sup>	8.2	<sup>927</sup>	8.0
17	.95	8.2	1.08	7.2		5.4		7.8		8.8	1.07	8.0
18	.96	8.5	1.00	7.2		5.0		7.9		9.6	1.35	2.0
19	.95	8.2	a	7.2		4.5		8.0		10	1.50	3.4
20	.95	8.2		7.2		4.0		8.0		11	1.52	2.0
21	<sup>918</sup> .95	8.2		7.2		4.3		8.2		12	1.47	3.0
22	.94	7.8		7.2		4.6		8.4		13	1.20	1.0
23	.93	7.4		7.2		4.9		8.6		15	1.12	1.0
24	.93	7.4		7.2		5.4		8.8		13	1.07	1.0
25	.93	7.4		7.2		6.0		9.0		12	1.07	1.0
26	.92	7.1		7.2		6.2		8.8		10	1.07	1.0
27	.93	7.4	a	7.2		6.4		8.6		8.6	1.08	1.0
28	5	9.0	.98	7.2		6.8		8.4	a	7.4	1.07	1.0
29	1.00	10	.98	7.2		7.2		8.3	XX	XX	1.25	1.0
30	1.03	12	<sup>921</sup> a	17		7.6		8.2	XX	XXX	<sup>929</sup> 1.27	1.0
31	1.00	10	XX	XXX	a	8.0	a	8.0	XX	XXX	1.13	1.0

5123	Total	283	246	218	262	242	378
14.0	Mean	9.1	8.2	7.0	8.4	8.6	12.2
1042	Run-off in acre-feet	560	487	432	519	477	748
	Maximum	12	2.2	1.0	2.0	2.0	3.6





# HUERFANO

Creek near MANZANARES CROSSING near Red

Daily Gage Height, in Feet, and Discharge in Second-Foot for the Year Ending September 30, 1977

Drainage area 73 square miles.

Water stage recorder STEVENS A-35 CONTIN

ft. on JULY 27 G. H. 20.000 Sec. ft. at 20.000  
 Max. Discharge 4.8 sec.-ft. on Dec 20  
 Min. Daily Discharge 0.0 sec.-ft. on JULY 27  
 Max. G. H. 20.000 ft. at 20.000

Flood on JULY 26 1977  
 STATION 1057  
JULY 27 1977

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	a	17	1.35 <sup>05</sup>	15	a	19	a	10	a	12	a	9.0
2		16	1.34	14		17		11	863	11		8.0
3		15	1.35	15		15		12		10		8.0
4		20	1.35 <sup>05</sup>	15		13		12		9.6		9.0
5		20	1.34	11		12		13		9.4		10
6		18	1.34	14		12		13		9.0		10
7	a	20	1.33	14		10		13		8.6		11
8	1.42 <sup>03</sup>	20	1.33	14		10		13		8.6		11
9	1.41	19	1.32	14		10		13		8.6		12
10	1.40	18	1.33	14		9.5		13		8.4		13
11	1.38	18	1.32	14		9.5		13		8.2		14
12	1.38	18	1.31 <sup>05</sup>	13		9.3		12		8.4		13
13	1.38	18	1.34 <sup>0</sup>	12		9.0	862	12		8.4		13
14	1.37	17	1.30	10		9.0		12		8.6		10
15	1.37	17	1.32	0		7.5		11		8.6		9.0
16	1.37	17	1.30 <sup>00</sup>	8.5		7.0		11	864	8.6	066	10
17	1.36	16	1.35	8.8		6.4		11		9.4		18
18	1.36	16	1.29 <sup>0</sup>	8.8		5.8		12		10		24
19	1.34	16	a	8.8		5.2		12		11		34
20	1.34	16		8.8		4.8		12		12		3
21	1.34 <sup>00</sup>	16		8.8	861	5.0		12		14		24
22	1.34	16		8.8		5.6		12		15		2
23	1.35	16		8.8		6.0		13		16		14
24	1.35	16		8.8		6.5		13		16		12
25	1.34	16		8.8		7.0		13		14		11
26	1.34	16		8.8		7.5		13		12		11
27	1.35 <sup>05</sup>	16		8.8		8.0		13		11		12
28	1.40 <sup>01</sup>	18		8.8		8.4		12		a	10	15
29	1.37 <sup>05</sup>	16		12		8.8		12		XX	XXX	18
30	1.37 <sup>05</sup>	16	a	21		9.4		12		XX	XXX	14
31	1.36 <sup>05</sup>	16	XX	XXX	a	9.8	a	12		XX	XXX	a

8510	Total	530	242	224	278	296	455
23.25	Mean	17.1	11.6	9.2	12.2	10.6	14.7
16800	Run-off in acre-feet	1042	624	562	748	536	901
	Maximum						
	Minimum						



ARKANSAS

Creek near

NEPESTA, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area 9,345 square miles.

Water stage recorder STEVENS A-35

Max. Discharge 3397 Sec. ft. at 730MS on Aug 19, 1977 G. H. 6.11 ft.  
 Max. G. H. 38.00 ft. at 730MS on Aug 22, 1977 Min. Daily Discharge 110 sec.-ft. on  
 DISCHARGE ESTIMATED FOR "a" and "b" DAYS  
 "c" - estimated value

Day.	OCT.		NOV.		DEC. 1976		1977 JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	4.53	583	4.40	384	5.12	391	4.32	278	4.38	283	4.34	278
2	4.37	465	4.38	365	5.00	401	4.33	285	4.40	500	4.37	270
3	4.33	437	4.44	351	4.59	410	4.33	275	4.39	280	4.37	279
4	4.41	495	4.52	457	4.51	285	4.32	270	4.35	285	4.36	285
5	4.44	532	4.66	590	4.47	34	4.30	261	4.34	270	4.31	281
6	4.58	631	4.73	583	4.46	3	4.28	27	4.33	271	4.21	205
7	4.55	607	4.72	575	4.44		4.27	27	4.35	275	4.28	260
8	4.52	585	4.70	562	4.42		4.27	27	4.35	275	4.32	265
9	4.51	575	4.61	550	4.42		4.56	270	4.35	275	4.28	270
10	4.55	601	4.54	531	4.41		4.91	664	4.35	275	4.27	270
11	4.57	615	4.50	524	4.39		4.93	27	4.37	274	4.35	271
12	4.55	597	4.48	410	4.37		4.86	27	4.38	275	4.40	27
13	4.53	580	4.54	453	4.35		4.83	27	4.38	27	4.42	300
14	4.55	591	4.43	389	4.37		4.78	27	4.37	290	4.38	277
15	4.55	591	4.31	311	4.40		4.78	27	4.37	264	4.39	277
16	4.50	523	4.29	300	4.41		4.74	260	4.37	299	4.36	256
17	4.48	510	4.29	290	4.37		4.76	27	4.36	27	4.34	280
18	4.42	485	4.27	285	4.33		4.79	538	4.36	288	4.34	283
19	4.46	501	4.31	317	4.31		4.71	412	4.35	283	4.34	273
20	4.48	515	4.31	317	4.23		4.40	27	4.34	278	4.33	275
21	4.50	523	4.32	300	4.22		4.35	245	4.31	261	4.31	275
22	4.50	515	4.32	290	4.25		4.35	275	4.29	27	4.30	260
23	4.52	523	4.32	290	4.29		4.38	266	4.28	27	4.30	265
24	4.48	505	4.32	285	4.37		4.38	275	4.27	27	4.30	265
25	4.40	470	4.34	300	4.42		4.35	27	4.28	250	4.26	180
26	4.40	470	4.35	300	4.37		4.33	27	4.32	27	4.24	170
27	4.47	500	4.39	310	4.38		4.31	27	4.31	27	4.20	170
28	4.45	490	5.12	317	4.39		4.34	27	4.33	27	4.15	170
29	4.45	480	5.33	330	4.36		4.30	27	XX	XXX	4.10	110
30	4.43	470	5.25	316	4.34		4.31	275	XX	XXX	4.11	110
31	4.40	301	XX	XXX	4.33		4.34	270	XX	XXX	4.15	110

3397	Total	16258	11780	9709	1127	7887	7087
21	Mean	524	393	313	367	299	227
3116	Run-off in acre-feet	22191	23324	19284	2128	15520	1710
	Maximum	631	583	410	672	305	200
	Minimum	371	300	230	240	245	115

DIVISION OF WATER RESOURCES  
OFFICE OF STATE ENGINEER

Sta. No. 0711000  
Rating Table Used 31-9 2-14-75

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date	
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge										
4.17	10 144	4.23	11 272	4.26	04 210	3.97	08 136	S	V 72.5	3.53	37 88	1									
4.20	01 160	4.32	12 329	4.24	05 196	4.07	07 173	4.05	23 240	3.42	38 65	2									
4.16	11 144	4.34	10 329	4.67	4 44	4.00	07 144	3.62	76	S	V 131	3									
4.15	11 140	4.42	05 347	4.67	4 44	3.88	06 100	3.45	47	3.48	38 79	4									
4.15	11 140	4.50	01 372	4.73	4 86	3.89	06 100	3.38	40	3.36	37 54	5									
4.12	11 129	4.58	4 24	4.75	5 00	3.97	06 129	3.40	42	3.35	52	6									
4.08	07 115	4.42	3 23	4.76	05 50.8	4.20	14 220	S	12.8	3.42	63	7									
4.05	0A 122	4.35	2 83	4.92	07 615	4.24	03 235	3.62	23 76	3.45	70	8									
4.02	01 122	4.38	01 300	5.05	10 698	4.26	02 240	S	V 604	3.45	37 70	9									
4.02	01 122	4.48	03 335	5.37	10 998	4.23	01 220	S	V 1030	3.46	35 67	10									
4.01	0 122	4.70	11 424	5.45	10 80	4.18	0 191	S	V 430	3.46	35 67	11									
4.04	03 144	4.70	11 424	5.50	11 40	4.08	01 151	3.90	24 173	3.45	30 57	12									
4.32	0 261	4.71	12 424	5.30	13 896	4.03	01 125	3.53	25 62	3.45	30 57	13									
4.42	03 300	4.43	03 305	S	14 954	4.03	01 125	S	V 70	3.56	28 74	14									
4.48	06 317	4.35	07 329	5.04	13 664	4.03	01 125	3.68	27 103	3.78	26 133	15									
5.14	08 794	4.36	10 341	4.87	10 552	4.05	0 136	S	V 477	3.83	25 148	16									
4.75	11 607	4.59	4 93	4.91	07 591	4.01	0 122	S	V 201	3.82	144	17									
4.82	11 486	4.59	4 93	4.90	02 591	3.98	01 115	S	358	3.80	136	18									
S	V 1011	4.49	10 424	4.92	01 615	3.93	01 100	S	162	3.77	125	19									
5.60	20 1140	4.56	10 472	4.87	06 583	3.83	02 67	S	1011	3.77	25 125	20									
5.42	23 916	4.78	10 639	4.77	04 522	3.77	01 62	S	1265	3.72	24 106	21									
5.05	10 698	4.61	07 486	4.70	03 479	S	V 724	S	532	3.74	112	22									
4.84	03 631	4.53	05 294	4.40	01 300	5.00	07 723	4.41	508	3.74	112	23									
4.81	10 664	4.21	04 225	4.21	0 205	4.47	03 329	a	164	3.73	109	24									
4.75	10 680	4.09	02 160	4.20	02 210	S	V 574	a	(118)	3.65	86	25									
4.64	12 545	3.99	0 115	4.18	03 205	S	V 1980	3.5	99	3.58	24 70	26									
4.63	11 530	4.01	0 122	3.99	05 133	4.01	07 653	S	V 88	3.60	24 74	27									
4.58	10 486	4.03	129	3.92	06 112	S	V 507	3.98	33 256	3.66	20 86	28									
4.54	10 458	4.20	01 196	3.97	07 133	S	V 492	3.78	34 164	3.69	27 94	29									
4.46	11 410	4.35	01 272	3.98	08 140	4.00	06 140	3.71	35 140	3.67	22 86	30									
XX	XXX	4.35	01 272	XX	XXX	3.83	10 97	3.59	26 103	XX	XXX	31									
11538		11831		15204		9198		10491		2740		12486									
385		382		507		297		338		91		342									
22245		23425		222104		18212		20772		5725		24723									
1140		639		1140		723		1265		148		1265									

ARKANSAS

Creek near BELOW CATLIN DAM near POWELL

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1977

Drainage area 10,901 square miles.

Water stage recorder STEVENS A-35

Max. Discharge 5630 Sec. ft. at 0800 on 16 AUG. G. H. 5.90 ft.  
 Max. G. H. 5.90 ft. at 0800 on AUG. 10 Min. Daily Discharge 47 sec.-ft. on 21 July

Day.	OCT.		NOV.		DEC. 1976		1977 JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	2.95 <sup>353</sup>	22 510	2.74	13 335	2.98	02 383	a	12 290	a	310	a	12
2	2.68	16 320	2.75	12 335	3.00	03 388	1	15 290		305		22
3	2.69	1 325	2.76	11 335	3.00 <sup>358</sup>	04 383	a	15 292		280		2
4	2.81	388	2.76	10 330	2.96	02 372	360	15 310	362	12 270		12 16
5	2.73	345	2.76 <sup>356</sup>	09 325	2.92	01 366	2.67	1 310	2.67	280		11
6	2.83	400	2.75	09 320	2.89	09 366	2.65	1 300	2.66	292		12
7	2.89	435	2.74	08 320	2.87	06 366	2.62	288	2.65	288		12
8	2.97 <sup>354</sup>	16 424	2.74	08 320	2.84	09 366	2.67	15 310	2.65	288		17
9	2.92	16 453	2.74	07 325	2.81	11 361	a	16 560	362	12 284		2
10	2.90	17 447	2.74	07 325	2.78	11 361	3.47	1 877	2.65	13 288	366	11
11	2.88	13 441	2.72	12 320	2.75	16 356	3.43	1 866	2.67	13 300	2.50	12 2
12	2.86	13 429	2.72	12 320	2.72	19 356	3.36	16 778	2.65	13 305	2.37	13
13	2.84	19 423	2.72	13 325	2.69	17 350	a	17 704	2.62	14 315	2.32	13
14	2.82	10 417	2.72	12 325	2.66	24 350	1	1 640	2.62	1 315	2.31	14 1
15	2.79	20 400	2.71	12 325	2.63	26 345	1	1 600	2.62	1 310	2.29	15
16	2.77	21 394	2.71	14 325	2.62	28 350	1	17 593	2.62	1 315	2.25	15 16
17	2.75	22 388	2.71	15 330	2.54 <sup>357</sup>	30 320	1	13 590	2.64	14 310	2.18	15
18	2.72	22 372	2.71	15 330	2.53	28 305	1	1 602	2.67	1 305	2.12	16 1
19	2.71	23 372	2.72 <sup>357</sup>	16 340	2.52	26 292	1	1 580	2.65	14 296	2.00	20 2
20	2.70	23 366	2.71	15 330	2.51	24 280	1	14 500	2.64	13 288	2.00	21 2
21	2.68	24 361	2.73	13 330	2.49	22 264	1	11 440	2.61	13 276	2.37	21 2
22	2.67 <sup>355</sup>	25 361	2.76	12 340	2.48	20 253	1	1 355	2.58	12 260	2.37	22
23	2.67	25 361	2.78	10 340	2.51	19 260	a	11 300	2.56	1 253	2.46	22 2
24	2.67	25 361	2.81	09 350	2.55	19 276	361	20 290	2.54 <sup>365</sup>	12 246	2.22	21 2
25	2.68	23 356	2.92	07 345	a	19 290		290	2.50	12 246	2.20	20 2
26	2.68	23 356	2.94	16 350		18 320		280	a	1 250		1 1
27	2.69	11 350	2.86	04 350		18 322		280		1 250		1
28	2.70	19 345	2.91	23 361		17 330		290	a	12 245	2.00	17
29	2.72	17 345	2.92	21 366		17 320		280	XX	XXX	2.17	16
30	2.73	15 340	2.95	0 378		17 301		290	XX	XXX	2.17	16
31	2.74	14 340	XX	XXX	a	14 290	a	300	XX	XXX	2.61	12 1

179433	Total	11,985	10,050	10,242	33,987	1,970	5,7
490	Mean	387	335	330	1096	285	186
23769	Run-off in acre-feet	23769	19,931	20,312	67,423	15,800	11,7
	Maximum	510	378	388	877	315	24

STATE OF COLORADO  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. 07119700

Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date	
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge										
2.20	13 148	2.28	20 187	a	21 190	2.05	12 111	a	03 660	a	17 66	1									
2.27	12 150	2.07 <sup>373</sup>	16 128	a	21 185	2.19	08 133	a	02 205	a	17 60	2									
2.22	12 150	2.07	19 131		20 180	2.16	07 124		04 63	1.91	16 64	3									
2.18	11 138	2.07	21 135		20 260	2.00	03 87		12 50	1.55	16 84	4									
2.17	10 133	2.07 <sup>374</sup>	21 212		20 290	1.90 <sup>387</sup>	01 62		19 50	1.48	15 72	5									
2.15	09 126	2.42	08 260		19 330	2.16	02 113		27 50	a	14 56	6									
2.11	08 115	2.27	21 218	2.82	19 370	2.15	02 111	a	34 90	a	13 54	7									
2.07	06 104	2.27	25 232		18 400	S	V 258	1.95 <sup>375</sup>	22 160	a	12 62	8									
2.00	04 95	2.12 <sup>375</sup>	20 192	a	17 430	2.28	10 160	S	V 642	a	12 64	9									
2.02	03 90	2.11	35 181	2.92	13 472	2.31	11 170	S	V 2304	a	11 62	10									
2.02	01 87	2.34	31 242	3.19	07 586	2.21	12 140	S	V 1831	a	16 58	11									
1.99	01 79	2.48	28 284	3.31	05 648	2.12 <sup>388</sup>	13 128	2.93	0 366	a	11 54	12									
2.01	02 81	2.31 <sup>376</sup>	25 212	3.19 <sup>381</sup>	01 530	1.97	05 85	S	V 158	1.10	11 132	13									
2.07	01 95	2.22	26 187	3.17	02 524	1.93 <sup>389</sup>	03 76	a	20 60	1.30	03 58	14									
2.14	04 113	2.07	27 150	S	03 468	1.92	02 75	a	21 90	1.56	05 100	15									
S	03 355	2.26 <sup>377</sup>	28 205	2.62	04 246	1.99	01 79	S	V 174	1.85 <sup>391</sup>	08 173	16									
S	11 310	2.46	22 253	2.45	06 195	1.98	01 78	2.44	07 195	1.81	06 158	17									
2.37	14 195	2.44	16 225	2.47	07 205	1.89	06 58	S	22 449	1.66	04 117	18									
S	18 658	2.20 <sup>378</sup>	17 160	2.50	05 218	1.88	06 57	S	29 1631	1.53	03 92	19									
S	21 922	2.26	07 148	2.52	07 236	1.83 <sup>379</sup>	03 48	S	32 1293	1.47	01 79	20									
3.27	24 769	2.52	05 215	2.35	11 181	1.82	08 47	S	35 1860	1.56	07 90	21									
2.87	28 498	2.30	03 148	2.27	12 162	S	V 744	S	38 1619	1.70	08 113	22									
2.51	31 310	2.13 <sup>379</sup>	01 106	2.25	13 160	S	V 448	S	40 762	1.60	06 92	23									
2.58	34 361	1.99	06 90	2.12 <sup>385</sup>	15 133	2.15	03 113	S	42 282	1.64	04 95	24									
2.45	37 310	1.87	11 79	2.36	15 195	S	V 134	S	44 152	1.54	03 78	25									
2.22	36 239	a	15 110	2.41	15 212	S	V 1550	a	46 110	1.45	01 60	26									
2.24	35 222	2.19	17 155	2.27	14 168	S	V 638		48 90	1.40	03 53	27									
2.40	37 276	2.11	19 140	2.05	14 115	S	V 150		50 190	1.18	08 62	28									
2.37	37 246	2.17	20 162	2.04	13 111	a	11 120		52 150	1.06	06 71	29									
2.40	35 242	a	22 190	2.05 <sup>386</sup>	13 113	a	11 90		54 120	1.54 <sup>400</sup>	04 65	30									
XX	XXX	a	22 230	XX	XXX	a	09 82	a	11 80	XX	XXX	31									
7617		5567		8513		6284		15,942		2446		126,365									
254		180		284		203		514		82		346									
15106		11,040		16,883		12,462		31616		4851		250,607									
122		884		648		1550		2304		173											

ARKANSAS

Creek near LA JUNIA, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Foot for the Year Ending September 30, 1977

Drainage area 12,210 square miles.

Water stage recorder STEVENS A-35

Day.	OCT.		NOV.		DEC. 1976		1977 JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	5.53	593	4.50	51	4.77	72	4.96	174	5.20	203	4.38	17
2	5.33	429	4.44	37	4.54	28	4.96	195	5.25	227	4.40	12
3	5.21	350	4.46	40	4.42	19	5.00	171	5.21	204	4.39	15
4	5.23	363	4.46	39	4.42	18	5.02	195	5.26	217	4.38	14
5	5.20	344	4.54	51	4.42	18	5.09	187	5.20	195	4.39	13
6	5.19	339	4.49	42	4.42	18	5.01	162	5.14	174	4.54	20
7	5.28	376	4.55	51	4.42	18	4.96	213	4.58	28	4.77	5
8	5.34	436	5	61	4.41	17	5.17	208	4.36	15	4.51	10
9	5.41	485	4.43	29	4.42	18	5.10	187	4.39	16	4.61	10
10	a	(370)	4.55	45	4.42	18	5	170	4.40	16	4.73	39
11		(334)	4.55	45	4.42	18	6.04	185	4.41	17	4.92	10
12		(376)	4.50	36	4.41	18	6.08	180	4.41	17	5.04	11
13	5.26	389	4.59	47	4.40	18	6.01	190	4.42	17	4.57	10
14	5.22	363	4.58	45	4.38	18	5.98	170	4.41	16	4.55	2
15	5.27	(363)	4.47	28	4.38	20	5.94	200	4.44	18	4.60	14
16	5.17	(339)	4.41	23	4.38	20	5.94	185	4.44	18	4.70	45
17	a	(422)	4.41	23	4.37	20	5.92	190	4.43	16	4.75	46
18	5.26	376	4.41	23	4.37	20	6.07	205	4.43	16	4.57	47
19	5.05	275	4.39	20	4.37	17	6.01	205	4.41	14	4.77	3
20	5.10	300	4.38	20	4.36	16	5.93	200	4.42	14	4.60	10
21	5.07	290	4.37	20	4.35	17	5	200	4.44	18	4.69	19
22	5.07	290	4.36	10	4.36	17	5.12	217	4.45	14	4.58	20
23	5.07	290	4.35	19	4.35	16	5.15	221	4.43	13	4.58	10
24	5.08	290	4.35	17	4.31	14	5.16	231	4.43	12	4.60	10
25	5.08	290	4.36	20	4.29	13	5.14	217	4.43	13	4.60	10
26	5.09	290	4.40	21	4.30	13	5.10	195	4.42	13	4.59	20
27	5.24	305	4.64	25	4.26	11	5.19	231	4.40	12	4.59	10
28	5.25	305	4.82	21	4.25	10	5.25	255	4.39	12	4.57	10
29	5.27	305	5.38	302	5	47	5.22	236	XX	XXX	4.54	16
30	5.26	363	4.96	177	5.02	179	5.23	236	XX	XXX	4.54	16
31	5	147	XX	XXX	4.88	144	5.24	236	XX	XXX	4.54	16
Total		11023	1446	914	6313	1570	920					
Mean		356	48	29	204	56	30					
Run-off in acre-feet		21924	2867	1312	12500	3104	1932					
Maximum		593	322	179	255	227	177					
Minimum		177	17	10	162	17	10					

Max. Discharge 6310 Sec. ft. at 1300 on Aug 15  
 Max. G. H. 8.02 ft. at 1300 on Aug 19 Min. Daily Discharge 6.4 sec.-ft. on SEPT. 9

DISCHARGE ESTIMATED FOR "H" AND "K" GAGES  
 G. H. 8.02 ft. on SEPT. 9

6- subdivided into "N" and "O" gages



STATE OF COLORADO  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. 07123000

Rating Table Used \_\_\_\_\_

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge									
4.54 <sup>53</sup>	16	5.15 <sup>28</sup>	231	4.41 <sup>45</sup>	14	4.41 <sup>46</sup>	14	4.55 <sup>40</sup>	25	4.19 <sup>15</sup>	18	1								
4.52	16	4.98 <sup>29</sup>	154	4.40 <sup>44</sup>	14	4.41	14	S	43	4.21 <sup>15</sup>	20	2								
4.52 <sup>53</sup>	16	4.80 <sup>31</sup>	88	4.39 <sup>43</sup>	14	4.41	14	4.67 <sup>42</sup>	36	4.20 <sup>16</sup>	18	3								
4.49 <sup>54</sup>	14	4.70 <sup>33</sup>	58	4.39 <sup>42</sup>	15	4.41 <sup>46</sup>	14	4.55 <sup>41</sup>	24	4.20	18	4								
4.50	14	4.50 <sup>34</sup>	26	4.49 <sup>41</sup>	20	4.44 <sup>18</sup>	14	4.41 <sup>40</sup>	16	4.20	18	5								
4.52	15	4.69 <sup>35</sup>	51	4.70 <sup>38</sup>	47	4.41 <sup>47</sup>	16	4.36 <sup>39</sup>	15	4.20 <sup>16</sup>	18	6								
4.53 <sup>54</sup>	16	4.65 <sup>36</sup>	42	4.69 <sup>37</sup>	47	4.44 <sup>46</sup>	15	4.37 <sup>38</sup>	16	4.19 <sup>20</sup>	16	7								
4.52	15	4.50 <sup>37</sup>	23	4.72 <sup>23</sup>	88	4.44 <sup>45</sup>	16	4.35 <sup>37</sup>	15	4.18 <sup>24</sup>	14	8								
4.53	16	4.46 <sup>37</sup>	20	4.80 <sup>35</sup>	78	4.53 <sup>44</sup>	20	S	35	4.08 <sup>41</sup>	6.4	9								
4.55	16	4.46 <sup>38</sup>	20	4.87 <sup>37</sup>	91	4.43 <sup>45</sup>	16	S	34	4.08 <sup>40</sup>	6.6	10								
4.55	16	4.45 <sup>41</sup>	18	5.26 <sup>39</sup>	231	4.62 <sup>41</sup>	34	S	33	4.12 <sup>39</sup>	7.6	11								
4.52	15	4.58 <sup>41</sup>	27	5.70 <sup>40</sup>	485	4.81 <sup>40</sup>	67	S	32	4.14 <sup>38</sup>	8.2	12								
4.52 <sup>55</sup>	15	4.76 <sup>41</sup>	54	5.68 <sup>40</sup>	464	4.80 <sup>39</sup>	67	4.73 <sup>30</sup>	72	4.14 <sup>37</sup>	8.4	13								
4.54 <sup>50</sup>	18	4.71	43	5.50 <sup>41</sup>	344	4.76 <sup>37</sup>	62	4.46 <sup>29</sup>	27	4.13 <sup>36</sup>	8.4	14								
4.68	32	4.52	22	5.57 <sup>41</sup>	389	4.72 <sup>37</sup>	54	4.42 <sup>28</sup>	24	4.12 <sup>35</sup>	8.4	15								
4.57	26	4.44 <sup>41</sup>	18	5.33 <sup>41</sup>	255	4.81 <sup>38</sup>	72	S	27	4.14 <sup>33</sup>	9.8	16								
S	218	4.42 <sup>39</sup>	18	4.98 <sup>40</sup>	116	4.74 <sup>39</sup>	54	S	26	4.12	8.6	17								
4.97 <sup>38</sup>	136	4.58 <sup>37</sup>	30	S	296	4.76 <sup>40</sup>	56	S	24	4.10	8.2	18								
4.63 <sup>26</sup>	58	4.55 <sup>35</sup>	27	5.17 <sup>38</sup>	195	4.75 <sup>40</sup>	54	S	1	4.10	8.7	19								
4.77 <sup>21</sup>	720	4.72 <sup>37</sup>	54	5.03 <sup>36</sup>	147	4.78 <sup>41</sup>	58	S	1	4.10	8.7	20								
4.85 <sup>17</sup>	848	4.68 <sup>36</sup>	97	4.92 <sup>39</sup>	100	4.78 <sup>41</sup>	58	S	24	4.10	8.7	21								
4.55	485	4.94 <sup>35</sup>	119	4.68 <sup>40</sup>	40	S	305	5.01 <sup>23</sup>	191	4.09	8.0	22								
5.33 <sup>31</sup>	306	4.75 <sup>34</sup>	67	4.60 <sup>40</sup>	29	S	275	4.94 <sup>22</sup>	166	4.08	7.8	23								
4.29 <sup>37</sup>	255	4.65 <sup>33</sup>	47	4.60 <sup>40</sup>	29	5.24 <sup>29</sup>	199	4.92 <sup>22</sup>	158	4.06 <sup>31</sup>	7.4	24								
4.24	204	4.50	27	4.55 <sup>41</sup>	24	S	382	4.93 <sup>22</sup>	162	4.04 <sup>35</sup>	6.4	25								
5.07 <sup>37</sup>	158	4.48 <sup>32</sup>	26	4.53 <sup>42</sup>	22	S	260	4.78 <sup>21</sup>	113	4.07	7.4	26								
4.77 <sup>31</sup>	80	4.45 <sup>38</sup>	20	4.55 <sup>43</sup>	23	S	410	4.41 <sup>20</sup>	30	4.11	8.0	27								
4.49 <sup>22</sup>	39	4.41 <sup>36</sup>	18	4.49 <sup>44</sup>	18	5.39 <sup>20</sup>	344	S	10	4.11	8.0	28								
4.70 <sup>26</sup>	75	4.52 <sup>41</sup>	22	4.40 <sup>45</sup>	14	S	85	4.58 <sup>19</sup>	43	4.11	8.0	29								
S	499	4.45 <sup>47</sup>	15	4.41 <sup>46</sup>	14	S	226	4.47 <sup>17</sup>	43	4.11 <sup>26</sup>	8.0	30								
XX	XXX	4.43 <sup>46</sup>	15	XX	XXX	4.72 <sup>35</sup>	58	4.25 <sup>16</sup>	20	XX	XXX	31								
												Water Year								
												1977								
4357		1497		3663		3363		5332		314		40718								
145		48		122		108		172		10.5		112								
2477		2946		7253		6659		10557		100		80672								
100		100		1137		440		1522		100		100								

# PURGATOIRE

Creek near TRINIDAD, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 77.

Drainage area \_\_\_\_\_ square miles.

Water stage recorder \_\_\_\_\_

Max. Discharge 2003 Sec. ft. at 1600 hrs. on July 25 G. H. 49.3 ft.  
 Max. G. H. 4.93 ft. at 1600 hrs. on July 25 Min. Daily Discharge 2.3 sec.-ft. on Nov. 27  
 Discharge computed for "b" stages "b" days  
 "S" - subtract stage "W" - variable stage

Day.	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1	1.96	<sup>-23</sup> 40	2.04	<sup>-47</sup> 23	1.51	<sup>-31</sup> 4.0	1.71	<sup>b</sup> 11	<sup>647</sup> 1.70	<sup>b</sup> 10	1.71	<sup>b</sup> 11
2	1.92	<sup>-23</sup> 40	2.04	23	1.65	<sup>b</sup> 9.2	1.71	11	1.71	11	<sup>649</sup> 1.75	<sup>-4</sup> 13
3	1.92	<sup>-23</sup> 36	2.06	25	1.83	21	1.72	11	1.65	8.3	1.63	7.5
4	2.12	<sup>-23</sup> 60	<sup>635</sup> 2.04	<sup>-49</sup> 22	1.87	25	1.75	12	1.60	6.7	1.63	7.
5	<sup>633</sup> 1.89	<sup>-23</sup> 34	2.03	22	1.86	24	1.77	14	1.60	7.1	1.67	10
6	1.88	<sup>-24</sup> 31	2.02	21	1.83	22	1.74	<sup>b</sup> 12	1.66	10	1.68	11
7	1.91	<sup>-25</sup> 33	2.01	21	1.79	19	<sup>640</sup> 1.70	9.7	1.67	11	1.76	<sup>b</sup> 17
8	1.89	<sup>-25</sup> 31	2.00	20	1.84	23	1.67	<sup>b</sup> 8.8	1.65	11	1.81	<sup>-28</sup> 21
9	1.88	<sup>-26</sup> 29	1.98	18	1.90	29	1.65	8.3	1.70	14	1.79	<sup>-27</sup> 2
10	1.88	<sup>-26</sup> 29	1.98	18	1.87	26	1.70	11	1.75	18	1.77	<sup>-26</sup> 20
11	1.86	<sup>-28</sup> 25	1.97	<sup>-49</sup> 18	1.75	17	1.73	13	1.80	23	5	<sup>-25</sup> 19
12	1.85	<sup>-30</sup> 23	1.98	<sup>b</sup> 21	1.68	13	1.75	14	1.80	24	5	<sup>-24</sup> 24
13	1.85	<sup>-32</sup> 21	1.85	12	1.75	18	1.76	<sup>b</sup> 15	1.75	21	5	<sup>-23</sup> 27
14	1.86	<sup>-34</sup> 21	1.84	12	<sup>638</sup> 1.74	17	<sup>641</sup> 1.74	<sup>-32</sup> 14	1.72	19	5	<sup>-22</sup> 24
15	1.84	<sup>-36</sup> 18	1.90	16	1.75	17	1.70	<sup>b</sup> 11	1.58	14	5	<sup>-21</sup> 20
16	1.85	<sup>-38</sup> 17	<sup>636</sup> 1.82	12	1.74	16	1.71	12	<sup>648</sup> 1.67	<sup>-20</sup> 16	<sup>650</sup> 1.75	<sup>-20</sup> 23
17	1.88	<sup>-40</sup> 18	1.75	8.3	1.77	18	1.70	11	1.77	25	1.72	21
18	1.91	<sup>-42</sup> 18	1.90	18	1.77	18	1.71	12	1.70	18	5	<sup>-20</sup> 15
19	1.94	<sup>-43</sup> 20	1.95	21	1.75	16	1.73	12	1.70	18	5	<sup>-21</sup> 15
20	1.92	<sup>-44</sup> 18	1.90	18	1.72	14	1.74	12	1.66	14	5	15
21	<sup>634</sup> 1.96	<sup>-44</sup> 22	1.88	18	1.72	14	<sup>642</sup> 1.74	12	1.64	12	5	<sup>-21</sup> 18
22	1.97	<sup>-44</sup> 21	1.84	16	1.70	12	1.78	14	1.70	15	5	<sup>-21</sup> 16
23	1.98	<sup>-44</sup> 22	1.80	14	1.69	12	1.80	16	1.53	6.7	1.66	<sup>-22</sup> 15
24	2.03	<sup>-45</sup> 25	1.70	8.8	1.74	14	1.75	12	1.57	8.3	1.68	<sup>-23</sup> 16
25	2.01	<sup>-45</sup> 24	1.74	11	1.75	15	<sup>643</sup> 1.63	6.3	1.57	8.3	1.68	16
26	2.05	<sup>-46</sup> 26	1.65	<sup>b</sup> 7.5	1.75	15	1.62	<sup>b</sup> 6.7	1.65	9.7	1.68	16
27	2.07	<sup>-46</sup> 28	1.46	<sup>-37</sup> 2.3	1.85	21	1.67	<sup>b</sup> 9.7	1.49	2.5	1.69	<sup>-21</sup> 16
28	S	24	1.59	<sup>-32</sup> 6.0	1.80	17	1.67	9.7	1.56	<sup>b</sup> 6.7	1.68	15
29	2.11	<sup>-47</sup> 29	1.55	<sup>-32</sup> 4.7	1.75	14	<sup>645</sup> 1.65	11	XX	XXX	5	11
30	2.05	<sup>-47</sup> 24	<sup>637</sup> 1.49	<sup>-31</sup> 3.5	1.77	15	<sup>646</sup> 1.67	8.8	XX	XXX	<sup>631</sup> 5	<sup>-25</sup> 7.1
31	2.03	<sup>-47</sup> 22	XX	XXX	1.69	<sup>b</sup> 9.7	1.67	<sup>b</sup> 8.8	XX	XXX	5	<sup>-25</sup> 12

13000	Total	829	461.3	525	350	388.2	499
35.6	Mean	26.74	15.38	16.93	11.28	13.15	16.1
25, 170	Run-off in acre-feet	1611.4	913.4	1031.3	692.6	709	981.6
	Maximum	110	25	29	16	24	22
	Minimum	17	2.3	4.0	6.3	3.5	2.5

STATE OF COLORADO  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. 07124500

Rating Table Used #16, 5-11-77

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Computed	Checked	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge									
1.67	29 11	2.12	7.38 41	2.08	7.34 41	1.41	7.23 31	5	✓ 393	1.64	7.38 105	1								
5	✓ 8.1	2.12	7.38 41	2.17	7.34 52	1.40	7.23 30	5	47	1.61	7.38 96	2								
5	7.33 9	2.02	7.39 30	2.17	52	1.43	33	5	7.63 44	5	✓ 133	3								
5	7.8	1.98	26	2.28	67	1.58	7.32 48	1.03	7.62 32	5	✓ 86	4								
5	13	1.99	27	2.29	69	5	7.20 40	5	✓ 48	5	✓ 105	5								
72	12	2.02	30	2.35	79	1.62	7.12 48	1.15	7.19 41	5	✓ 80	6								
1.66	9	2.02	30	5	✓ 88	1.58	7.17 42	1.13	7.27 39	1.06	7.58 31	7								
1.71	11	2.01	7.31 29	5	✓ 58	1.44	7.16 27	1.09	7.59 36	.97	7.49 24	8								
1.68	10	1.90	7.38 21	1.65	7.08 40	5	7.16 29	5	✓ 28	.94	21	9								
1.74	13	2.06	7.37 36	1.75	7.10 54	5	✓ 26	5	✓ 65	.98	25	10								
1.83	19	2.14	45	1.82	7.12 67	1.34	7.15 18	5	✓ 36	.96	23	11								
1.84	20	2.16	47	1.95	7.13 92	1.40	7.15 23	1.17	7.55 39	.96	7.59 23	12								
1.78	16	2.17	48	1.90	7.14 85	1.29	7.14 14	1.13	35	5	7.60 72	13								
1.79	16	2.19	51	1.83	7.15 74	1.25	7.14 12	1.10	32	5	7.31 80	14								
2.02	37	2.13	44	1.78	7.16 67	5	✓ 22	1.14	36	1.64	7.62 50	15								
1.98	33	2.02	7.37 32	1.76	7.16 64	5	✓ 25	5	7.55 162		30	16								
1.89	25	1.92	7.36 24	1.73	7.16 60	1.33	7.07 14	5	352		30	17								
1.85	21	1.92	7.26 24	1.73	7.16 60	1.23	7.01 8.3	5	235		30	18								
1.94	29	1.95	7.32 26	1.71	7.17 58	1.21	7.09 7.5	5	7.35 98		30	19								
2.09	44	5	✓ 44	1.63	7.11 51	1.31	7.09 12	a	80		30	20								
2.06	40	2.08	7.38 41	1.56	7.13 47	5	7.08 70		72		25	21								
1.92	25	1.88	22	1.51	7.14 42	5	✓ 192		65		25	22								
1.80	16	1.87	7.25 21	1.60	7.25 54	5	✓ 216		60		25	23								
1.78	14	1.88	22	1.60	54	5	7.25 72		55		25	24								
1.80	16	1.92	25	1.67	64	5	✓ 211	a	49		25	25								
1.82	17	1.91	25	1.62	7.25 57	5	✓ 157	1.24	7.30 41		20	26								
1.76	13	1.90	24	1.57	7.25 49	5	7.44 103	1.04	22		20	27								
1.92	21	1.86	21	1.47	7.25 37	1.53	7.45 74	1.00	19			28								
2.04	34	1.98	31	1.45	7.25 35	5	✓ 71	5	37			29								
2.05	35	1.98	31	1.44	7.25 34	5	✓ 52	1.60	96	a	20	30								
XX	XXX	2.01	7.24 34	XX	XXX	1.17	7.00 48	1.65	7.50 108	XX	XXX	31								
													Water Year		1977					
598		992		1752		1776		2087		1332		11975								
17.4		32.0		58.4		57.3		80.4		44.4		32.8								
1187.3		1961		3469		3516		4944		2637		23110								
57		57		57		57		57		133		57								
71		71		71		71		71		20		71								

Purgatoire Creek near Nine-Mile Dam SUBJECT TO REVISION

Daily Gage Height, in Feet, and Discharge in Second-Foot for the Year Ending September 30, 19 77

Drainage area 2900 square miles.

Water stage recorder STEVENS A-35

Day	OCT.		NOV.		DEC.		JAN.		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1		<sup>357</sup> (22)		1.8		0		0		4.0		
2		22		2.8		1				10		
3		22		3.3		<sup>362</sup> (0)				11		
4		42		2.8		1			<sup>371</sup> (11)			
5		60		<sup>360</sup> 3.5				4.0		11		
6		80		3.3				4.0		14		
7		100		2.5				<sup>365</sup> (5.6)		15		
8		<sup>367</sup> (114)		2.1				5.8		16		
9		100		1.2						<sup>372</sup> (16)		
10		80		0.8						16		<sup>374</sup>
11		70		1.7						16		
12		60		1.8				6.0		17		
13		50		1.0				<sup>366</sup> (6.3)		19		
14		40		3.5		0		5.0		14		
15		30		3.0		5		3.0		12		
16		20		3.3		<sup>363</sup> 10		3.3		12		
17		10		3.9		(30)		<sup>367</sup> (3.3)		11		
18		0		<sup>361</sup> 5.8		27				11		
19		0		7.2		24				10		
20		0		5.6		23				10		
21		0		0				<sup>368</sup> (3.3)		9.6		
22		<sup>359</sup> (0.05)						7.0		9.6		<sup>375</sup>
23		(0.05)						10		7.6		
24								<sup>367</sup> (12)		<sup>373</sup> (9.6)		
25								12		9.6		
26								12		9.0		
27								8.0		8.0		
28								5.0		8.0		
29								2.5		XXX		
30				0		<sup>364</sup> (23)		2.1	XX	XXX		
31		(0.05)	XX	XXX		23		<sup>370</sup> (2.1)	XX	XXX		<sup>376</sup>
Total		922.5		72		372		150		321		16
Mean		29.8		2.38		12		4.84		11.46		5.4
Run-off in acre-feet		1830		141.8		737.8		297.5		636.4		333
Maximum		114		7.2		30		12		16		

Max. Discharge 294 1350 Sec. ft. at 11:18 on 26 July G. H. — ft. —  
 Max. G. H. (114) ft. at — on — Min. Daily Discharge 0 sec.-ft. on —  
Oct 18-21, Nov 21-30, Dec 1-14, Jan 1-6, Sept 20-30

Calendar Year 1976

STATE OF COLORADO  
 DIVISION OF WATER RESOURCES  
 OFFICE OF STATE ENGINEER

Sta. No. 07126500

Rating Table Used

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th			
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge					
	(3.7)		4.5		14		1.84		14		19	1	3rd			
	(3.5)		4.5		12		1		18		18	2	2nd			
	(3.9)		3.5		12		1.84		45		18	3	1st			
	(4.5)		2.6		11		5.6		39		18	4	4th			
	(3.7)		<sup>379</sup> (2.0)		10		<sup>383</sup> (0.1)		<sup>386</sup> 25		18	5	Quarter	Computed	Checked	Date
	<sup>377</sup> (3.5)		2.0		9.0				18		18	6				
	3.1		2.0		7.0				40		18	7				
	2.0		2.5		5.0				18		17	8				
	1.8		2.5		3.0				17		<sup>389</sup> 17	9	4th			
	1.8		2.5		2.0				17		17	10	3rd			
	1.7		3.0		2.0				16		17	11	2nd			
	2.1		3.5		1.5				16		17	12	1st			
	1.7		3.0		<sup>381</sup> 1.2				16		18	13	4th			
	1.8		3.7		2.0		<sup>384</sup> (0.1)		19		19	14	3rd			
	2.6		2.1		4.0		0.1		<sup>387</sup> 19		19	15	2nd			
	3.5		1.2		4.5				35		18	16	1st			
	3.2		1.0		2.8				37		18	17	4th	Dis.appld.	Dis.check	Date
	2.1		1.4		1.8				24		10	18	3rd			
	2.6		2.0		2.0				17		5	19	2nd			
	3.7		2.6		2.0		0.1		17		0	20	1st			
	<sup>378</sup> 3.5		3.2		2.0		0.9		17			21	4th			
	2.8		4.0		3.0		2.0		28			22	3rd			
	2.0		<sup>380</sup> (4.6)		4.0		5.0		28			23	2nd			
	2.0		4.7		<sup>382</sup> (7.7)		100		28			24	1st			
	2.0		3.8		7.4		1000		18			25	4th			
	2.0		3.2		6.7		<sup>385</sup> 1350		18			26	3rd			
	2.0		2.6		9.7		100		18			27	2nd			
	6.7		2.2		7.0		33		18			28	1st	G.H.copd.	G.H.check	Date
	5.6		2.0		2.6		20		<sup>388</sup> (18)		0	29	4th			
	5.6		1.8		1.8		14		18		0	30	3rd			
XX	XXX		1.6	XX	XXX		14		18	XX	XXX	31	Water Year 1977			
91		480		162.1		2697		694		316		6446				
3.03		15.48		5.40		87.0		22.4		10.5		17.7				
180.5		951.9		321.48		5348.7		1376.3		626.7		35.02				
6.7		47				1350		45		18		1350				