

1981

DIVISION ENGINEER'S REPORT

Division 2

INTRODUCTORY STATEMENT

ANNUAL DIVISION ENGINEER'S REPORT

IRRIGATION DIVISION NO. 2

1981

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 THIRTEEN WATER DISTRICTS (10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 66, 67 and 79) 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.

TABLE OF CONTENTS

Comments	1-2
Division 2 by Counties	3-17
County Summaries	18-19
Basin Yield Drainage in Acre Feet	20
Basin Yield - Commentary	21
Direct Flow Diversions - Municipalities.	22
Direct Flow Diversions - Water Districts	23
Direct Flow - Transmountains	24
Transmountain Diversions - Graphs.	25-33
Summary - Precipitation, Dams, Floods - Division 2	34-35
Water Content - Snow Depth	36-39
Precipitation.	40
Precipitation - Pueblo, Colorado	41
Wind - Humidity, Pueblo, Colorado.	42
Dam Inspection Summary	43
Dam Design Review Unit Summary	44
Reservoir Comparison - Acre Feet, Division 2	45-47
Livestock Water Tanks.	48
Water Rights Tabulation.	49-59
Winter Water Storage	60-75
Ground Water Administration.	76
Well Summary - Division 2.	77
New Permits Issued in Division 2	78

Principal Aquifer, Arkansas River Valley Pueblo, Colorado to Kansas State Line	79-80
Withdrawal in Acre Feet Per Year	81
Arkansas River Compact	82-95
Personnel Roster - Division 2.	96-98
Mileage Total Water Districts - Division 2	99
Officers and Directors of Southeastern Colorado Water Conservancy District.	100-101
1981 Annual Summary - Division 2	102

APPENDICES

Hydrographic Reports

DIVISION ENGINEER'S COMMENTS

Snow pack was from well below average to non-existent (for details see page 36). No flooding from snow melt was anticipated and none (not even local) occurred. The only flooding that occurred was in the extreme southern part of the Division, on the Purgatoire River, where at least three flood events occurred. The one above Trinidad Reservoir wiped out the City of Trinidad's potable water supply pipeline, the populace had to be supplied by water trucks from the Army. Service was restored in about 10 days and is now normal. It is speculated that the Reservoir above Trinidad saved in one year in flood damages, more than its entire cost of about \$46 million. Another of a series of torrential downpours in the Trinidad area caused the failure of a railway bridge which resulted in the locomotives falling into the water and two train men losing their lives.

There was no instance of regulation for flood control on the main Arkansas. What peaks there were, were passed through without problems.

Spring started off dry and warm. Had there been no winter stored water, some of the junior and swing ditches would not have been able to get a crop started.

Early summer was hot and dry with some of the farmers having to take the water away from their hay to serve the row crops, which resulted in a decreased yield on first and second cuttings. After the rains began in mid summer and thanks to the high-sustained flows in the Purgatoire, no serious crop losses were due to lack of water. We, however, enter 1982 with no significant carry over storage and a large deficit in soil moisture. Early Winter has been hot (near record highs) and dry (no significant precipitation) until late December when there was a very beneficial snow storm over the entire Valley and snow pack prospects in the mountains are improving. Problems were still had with insects, mainly grasshoppers and webworms, but were not as bad as was feared last year.

No significant fruit yield was had due to late frost and the February period of below zero that killed most of the buds.

No major dam problems insofar as the State administration were encountered structurally. However, the new U.S.B.R. Dam at Twin Lakes was completed and the first testing revealed excessive seepage to the extent major modifications will be needed before it can be placed in service. The old dam is still in place upstream and is operational. Problems of administration remain the current issue with the modification of the Operating Principles in John Martin and the Operations of Trinidad. And in a late event, the Arkansas River Compact Administration has raised the question of operation of Pueblo Reservoir and the Fry-Ark Project. The increasing stridency of the State of Kansas over the Arkansas River and its operations looks to portend a lawsuit between the two states. Each question raised seems to breed two more, and the answer for Kansas must in the end boil down to more water from Colorado. Other than making a change in our operations, in our chronically water short system, there is no way Colorado can give up even a drop of water without taking land now irrigated out of irrigation that has been historically irrigated.

There were three separate instances of out-of-priority storage in Black Hills Reservoir that came close to spilling. All three were released on order of the Division without incident and passed to downstream users. This Reservoir was decreed Junior to John Martin when its rights were transferred to Trinidad and has been a perennial problem as it cannot be breached and its outlet capacity is considerably less than inflow at times of major storms.

Ground Water Regulation was directed toward identifying and contacting non-members of the two well owners associations. In every case the non-members joined and we did not find any cases for violation of the Rules and Regulations on ground water pumping. The rules allow three days unregulated pumping and the majority of well users can comply. The ones who cannot, join the Association who by return flows from trans-mountain diversions or some other plan repair their injury to downstream diverters who are senior to them but not receiving their water rights.

The Water Court handed down some rulings of note. In one case, W-4764, The State vs. Amity, the water commissioner and, by implication, the Division Engineer, were found guilty of violating the 14th Amendment to the United States Constitution for not curtailing all diverters equally to supply Colorado's commitment to the Compact. The case is under appeal, but is noteworthy in that the Water Court does not seem to feel any obligation to Colorado's duty to supply the Compact.

The State Engineer and Division Engineer filed a suit against the U.S.B.R. for refusing to comply with an order concerning a release from Turquoise Lake. The case is in preliminary briefing before the U. S. District Court in Denver. This is going to be a landmark case with far reaching ramifications concerning State jurisdiction over Federal water rights.

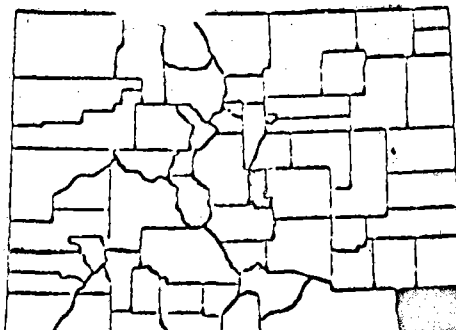
The amendment to CRS 37-92-302(4) which requires the Division Engineer to make a record of the Consultation with the referee has not been a problem and seems to have helped in relations with the Water Court. Our consultations have always been quite formal, and this did not change our practices. We, however, do lack somewhat in having our recommendations followed by the referee as these consultations are not binding. An approach would be if there were enacted legislation to the effect that if the Division Engineer's comments were not implemented, the case would automatically be protested or perhaps if the Division Engineer could cause the case be tried in Court instead of by the referee might be worth some consideration.

IRRIGATION DIVISION 2

BACA COUNTY

MAJOR CITY	Springfield
1980 POPULATION (Preliminary)	5366
URBAN POPULATION	no city over 2500
RURAL POPULATION	5366
COUNTY AREA	2565 sq. miles
TERRAIN	plains
ELEVATION (MAJOR CITY)	4356
MAJOR STREAM	Carrizo
MAJOR TRIBUTARY	none
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	* 85,610
AVERAGE GROWING SEASON	169 days
ANNUAL MEAN TEMPERATURE	5220
AVERAGE ANNUAL RAINFALL	14.73 inches
AVERAGE ANNUAL SNOWFALL	27.7 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	750
WATER RESOURCE PROJECTS	Under ground water
LAND OWNERSHIP:	
PRIVATE	1,393,500 Acres
FEDERAL	205,500 Acres
STATE	42,928 Acres
COUNTY AND MUNICIPAL	86 Acres

* 1980 Assessor's
Abstract

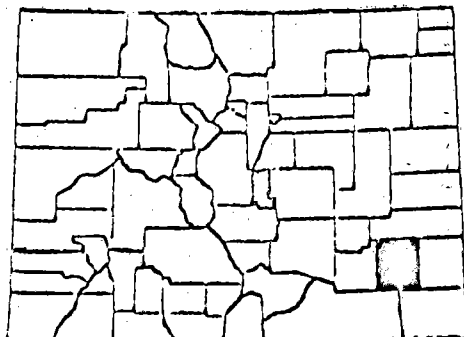


IRRIGATION DIVISION 2

BENT COUNTY

<u>MAJOR CITY</u>	Las Animas
<u>1980 POPULATION (Preliminary)</u>	5922
<u>URBAN POPULATION</u>	2818
<u>RURAL POPULATION</u>	3104
<u>COUNTY AREA</u>	1517 Sq. miles
<u>TERRAIN</u>	Plains
<u>ELEVATION (MAJOR CITY)</u>	3901
<u>MAJOR STREAM</u>	Arkansas
<u>MAJOR TRIBUTARY</u>	Purgatoire
<u>MAJOR WATER USE</u>	Irrigation
<u>IRRIGATED ACRES</u>	* 62,060
<u>AVERAGE GROWING SEASON</u>	158 days
<u>ANNUAL MEAN TEMPERATURE</u>	51.3
<u>AVERAGE ANNUAL RAINFALL</u>	12.25 inches
<u>AVERAGE ANNUAL SNOWFALL</u>	21.0 inches
<u>MAJOR SOURCE INCOME</u>	Agriculture
<u>NUMBER OF FARMS</u>	450
<u>WATER RESOURCE PROJECTS</u>	Fryingpan
<u>LAND OWNERSHIP:</u>	
PRIVATE	818,000 Acres
FEDERAL	10,233 Acres
STATE	142,673 Acres
COUNTY AND MUNICIPAL	147 Acres

* 1980 Assessor's
Abstract

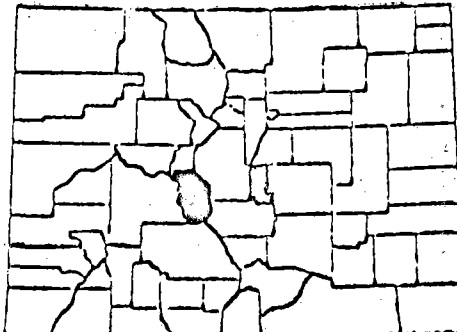


IRRIGATION DIVISION 2

CHAFFEE COUNTY

MAJOR CITY	Salida
1980 POPULATION (Preliminary)	13,219
URBAN POPULATION	7263
RURAL POPULATION	5956
COUNTY AREA	1039 Sq. miles
TERRAIN	Mountainous
ELEVATION (MAJOR CITY)	7036
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	So. Arkansas
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	* 12816
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

* 1980 Assessor's
Abstract

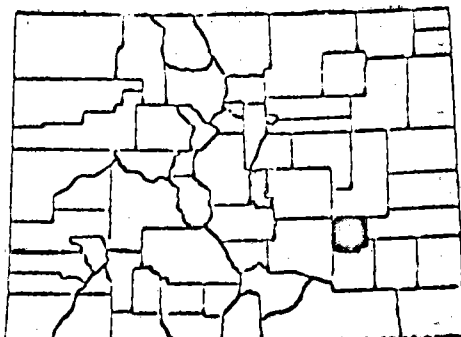


IRRIGATION DIVISION 2

CROWLEY COUNTY

<u>MAJOR CITY</u>	<u>Ordway</u>
<u>1980 POPULATION (Preliminary)</u>	<u>2961</u>
<u>URBAN POPULATION</u>	<u>no city over 2500</u>
<u>RURAL POPULATION</u>	<u>2961</u>
<u>COUNTY AREA</u>	<u>803 sq. miles</u>
<u>TERRAIN</u>	<u>Plains</u>
<u>ELEVATION (MAJOR CITY)</u>	<u>4312</u>
<u>MAJOR STREAM</u>	<u>Horse Creek</u>
<u>MAJOR TRIBUTARY</u>	<u>None</u>
<u>MAJOR WATER USE</u>	<u>Irrigation</u>
<u>IRRIGATED ACRES</u>	<u>* 30,000</u>
<u>AVERAGE GROWING SEASON</u>	<u>162 days</u>
<u>ANNUAL MEAN TEMPERATURE</u>	<u>51.4</u>
<u>AVERAGE ANNUAL RAINFALL</u>	<u>12.31 inches</u>
<u>AVERAGE ANNUAL SNOWFALL</u>	<u>21.2 inches</u>
<u>MAJOR SOURCE INCOME</u>	<u>Agriculture</u>
<u>NUMBER OF FARMS</u>	<u>400</u>
<u>WATER RESOURCE PROJECTS</u>	<u>Fryingpan</u>
<u>LAND OWNERSHIP:</u>	
PRIVATE	456,000 Acres
FEDERAL	5,043 Acres
STATE	52,711 Acres
COUNTY AND MUNICIPAL	897 Acres

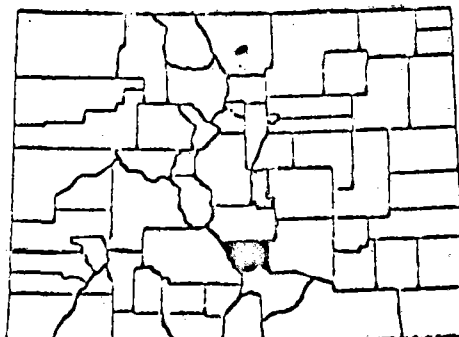
* 1980 Assessor's
Abstract



IRRIGATION DIVISION 2

CUSTER COUNTY

<u>MAJOR CITY</u>	Westcliffe
<u>1980 POPULATION (Preliminary)</u>	1509
<u>URBAN POPULATION</u>	no city over 2500
<u>RURAL POPULATION</u>	1509
<u>COUNTY AREA</u>	737 Sq. miles
<u>TERRAIN</u>	Mountain Valley
<u>ELEVATION (MAJOR CITY)</u>	7888
<u>MAJOR STREAM</u>	Grape Creek
<u>MAJOR TRIBUTARY</u>	Texas Creek
<u>MAJOR WATER USE</u>	Irrigation
<u>IRRIGATED ACRES</u>	28,033
<u>AVERAGE GROWING SEASON</u>	86 days
<u>ANNUAL MEAN TEMPERATURE</u>	43.7
<u>AVERAGE ANNUAL RAINFALL</u>	16.47 inches
<u>AVERAGE ANNUAL SNOWFALL</u>	88.1 inches
<u>MAJOR SOURCE INCOME</u>	Agriculture
<u>NUMBER OF FARMS</u>	180
<u>WATER RESOURCE PROJECTS</u>	U.S.G.S. Underground Study
<u>LAND OWNERSHIP:</u>	
PRIVATE	288,000 Acres
FEDERAL	186,695 Acres
STATE	11,989 Acres
COUNTY AND MUNICIPAL	452 Acres

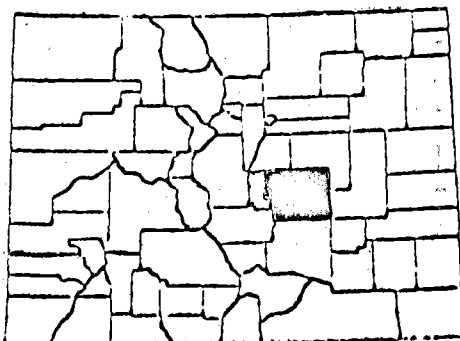


IRRIGATION DIVISION 2

EL PASO COUNTY

<u>MAJOR CITY</u>	<u>Colorado Springs</u>
<u>1980 POPULATION (Preliminary)</u>	<u>309,565</u>
<u>URBAN POPULATION</u>	<u>264,500</u>
<u>RURAL POPULATION</u>	<u>45,065</u>
<u>COUNTY AREA</u>	<u>2158 Sq. miles</u>
<u>TERRAIN</u>	<u>Foothills</u>
<u>ELEVATION (MAJOR CITY)</u>	<u>6012</u>
<u>MAJOR STREAM</u>	<u>Fountain</u>
<u>MAJOR TRIBUTARY</u>	<u>Monument</u>
<u>MAJOR WATER USE</u>	<u>Commercial & Irrigation</u>
<u>IRRIGATED ACRES</u>	<u>* 11,612</u>
<u>AVERAGE GROWING SEASON</u>	<u>148 Days</u>
<u>ANNUAL MEAN TEMPERATURE</u>	<u>48.0</u>
<u>AVERAGE ANNUAL RAINFALL</u>	<u>14.49 inches</u>
<u>AVERAGE ANNUAL SNOWFALL</u>	<u>35.0 inches</u>
<u>MAJOR SOURCE INCOME</u>	<u>Military, Manufacturing</u>
<u>NUMBER OF FARMS</u>	<u>750</u>
<u>WATER RESOURCE PROJECTS</u>	<u>Blue River, Fryingpan, Homestake</u>
<u>LAND OWNERSHIP:</u>	
PRIVATE	981,504 Acres
FEDERAL	187,866 Acres
STATE	192,482 Acres
COUNTY AND MUNICIPAL	14,839

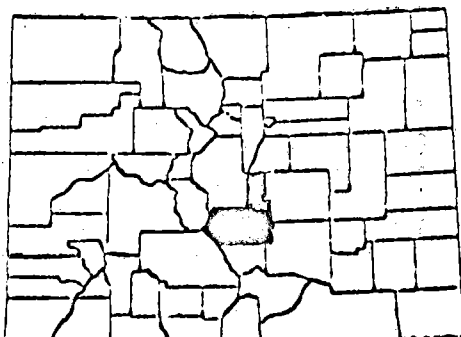
* 1980 Assessor's
Abstract



IRRIGATION DIVISION 2

FREMONT COUNTY

MAJOR CITY	Canon City
1980 POPULATION (Preliminary)	28,632
URBAN POPULATION	17,327
RURAL POPULATION	11,305
COUNTY AREA	1562 Sq. miles
TERRAIN	Foothills
ELEVATION (MAJOR CITY)	5332
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	Grape Creek
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	7034
AVERAGE GROWING SEASON	164 Days
ANNUAL MEAN TEMPERATURE	54.1
AVERAGE ANNUAL RAINFALL	12.66 inches
AVERAGE ANNUAL SNOWFALL	35.6 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	421
WATER RESOURCE PROJECTS	Fryingpan
LAND OWNERSHIP:	
PRIVATE	503,202 Acres
FEDERAL	441,445 Acres
STATE	65,326 Acres
COUNTY AND MUNICIPAL	7,985 Acres

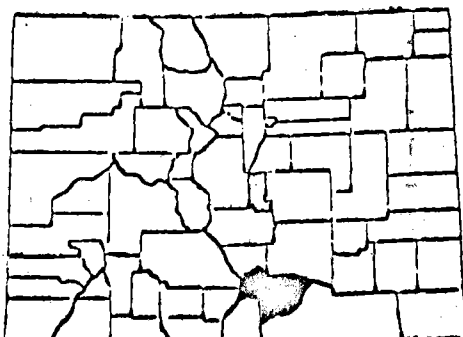


IRRIGATION DIVISION 2

HUERFANO COUNTY

MAJOR CITY	Walsenburg
1980 POPULATION (Preliminary)	6380
URBAN POPULATION	4526
RURAL POPULATION	1854
COUNTY AREA	1578 Sq. Miles
TERRAIN	Mesa, Tableland
ELEVATION (MAJOR CITY)	6,185
MAJOR STREAM	Huerfano River
MAJOR TRIBUTARY	Cucharas River
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	*13,691 Acres
AVERAGE GROWING SEASON	151 Days
ANNUAL MEAN TEMPERATURE	502
AVERAGE ANNUAL RAINFALL	14.13 inches
AVERAGE ANNUAL SNOWFALL	69 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

* 1980 Assessor's
Abstract

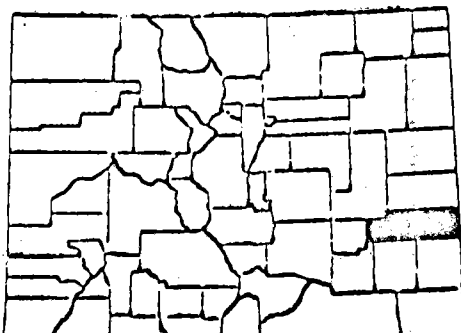


IRRIGATION DIVISION 2

KIOWA COUNTY

<u>MAJOR CITY</u>	Eads
<u>1980 POPULATION (Preliminary)</u>	1867
<u>URBAN POPULATION</u>	no City over 2500
<u>RURAL POPULATION</u>	1867
<u>COUNTY AREA</u>	1792 Sq. miles
<u>TERRAIN</u>	Plains
<u>ELEVATION (MAJOR CITY)</u>	4213
<u>MAJOR STREAM</u>	Big Sandy
<u>MAJOR TRIBUTARY</u>	none
<u>MAJOR WATER USE</u>	Irrigation
<u>IRRIGATED ACRES</u>	*4000
<u>AVERAGE GROWING SEASON</u>	156
<u>ANNUAL MEAN TEMPERATURE</u>	51.0
<u>AVERAGE ANNUAL RAINFALL</u>	13.78 inches
<u>AVERAGE ANNUAL SNOWFALL</u>	22.3 inches
<u>MAJOR SOURCE INCOME</u>	Agriculture
<u>NUMBER OF FARMS</u>	350
<u>WATER RESOURCE PROJECTS</u>	none
<u>LAND OWNERSHIP:</u>	
PRIVATE	1,074,000 Acres
FEDERAL	3,975 Acres
STATE	70,893 Acres
COUNTY AND MUNICIPAL	365 Acres

* 1980 Assessor's
Abstract

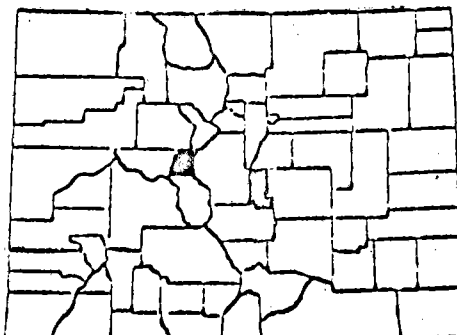


IRRIGATION DIVISION 2

LAKE COUNTY

<u>MAJOR CITY</u>	Leadville
<u>1980 POPULATION (Preliminary)</u>	8813
<u>URBAN POPULATION</u>	4832
<u>RURAL POPULATION</u>	3981
<u>COUNTY AREA</u>	380 Sq. miles
<u>TERRAIN</u>	Mountainous
<u>ELEVATION (MAJOR CITY)</u>	10,152
<u>MAJOR STREAM</u>	Arkansas
<u>MAJOR TRIBUTARY</u>	Lake Fork
<u>MAJOR WATER USE</u>	Irrigation
<u>IRRIGATED ACRES</u>	* 6036
<u>AVERAGE GROWING SEASON</u>	82 Days
<u>ANNUAL MEAN TEMPERATURE</u>	37.3
<u>AVERAGE ANNUAL RAINFALL</u>	18.45 inches
<u>AVERAGE ANNUAL SNOWFALL</u>	124.7 inches
<u>MAJOR SOURCE INCOME</u>	Mining
<u>NUMBER OF FARMS</u>	17
<u>WATER RESOURCE PROJECTS</u>	Fryingpan
<u>LAND OWNERSHIP:</u>	
PRIVATE	71,342 Acres
FEDERAL	170,000 Acres
STATE	1,795 Acres
COUNTY AND MUNICIPAL	1,620 Acres

* 1980 Assessor's
Abstract

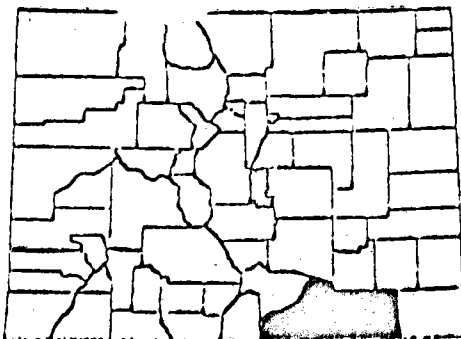


IRRIGATION DIVISION 2

LAS ANIMAS COUNTY

<u>MAJOR CITY</u>	Trinidad
<u>1980 POPULATION (Preliminary)</u>	14,894
<u>URBAN POPULATION</u>	10,647
<u>RURAL POPULATION</u>	4,970
<u>COUNTY AREA</u>	4793 Sq. Miles
<u>TERRAIN</u>	Foothills
<u>ELEVATION (MAJOR CITY)</u>	6025
<u>MAJOR STREAM</u>	Purgatoire
<u>MAJOR TRIBUTARY</u>	none
<u>MAJOR WATER USE</u>	Irrigation
<u>IRRIGATED ACRES</u>	18,352
<u>AVERAGE GROWING SEASON</u>	156 Days
<u>ANNUAL MEAN TEMPERATURE</u>	50.4
<u>AVERAGE ANNUAL RAINFALL</u>	15.03 inches
<u>AVERAGE ANNUAL SNOWFALL</u>	47.7 inches
<u>MAJOR SOURCE INCOME</u>	Agriculture, Coal Mining
<u>NUMBER OF FARMS</u>	200
<u>WATER RESOURCE PROJECTS</u>	Trinidad Dam
<u>LAND OWNERSHIP:</u>	
PRIVATE	2,748,827 Acres
FEDERAL	151,214 Acres
STATE	163,997
COUNTY AND MUNICIPAL	3,482 Acres

* 1980 Assessor's
Abstract

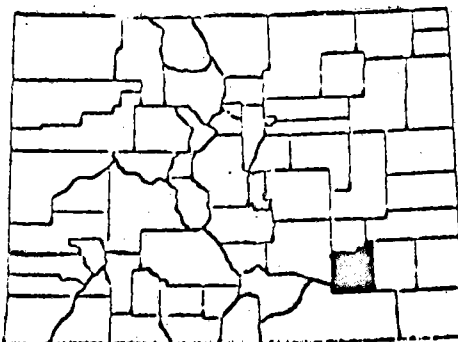


IRRIGATION DIVISION 2

OTERO COUNTY

<u>MAJOR CITY</u>	La Junta.
<u>1980 POPULATION (Preliminary)</u>	22393
<u>URBAN POPULATION</u>	13359
<u>RURAL POPULATION</u>	9034
<u>COUNTY AREA</u>	1267 Sq. Miles
<u>TERRAIN</u>	Plains
<u>ELEVATION (MAJOR CITY)</u>	4066
<u>MAJOR STREAM</u>	Arkansas
<u>MAJOR TRIBUTARY</u>	Horse Creek
<u>MAJOR WATER USE</u>	Irrigation
<u>IRRIGATED ACRES</u>	*81,237
<u>AVERAGE GROWING SEASON</u>	162 Days
<u>ANNUAL MEAN TEMPERATURE</u>	52.0
<u>AVERAGE ANNUAL RAINFALL</u>	12.31 inches
<u>AVERAGE ANNUAL SNOWFALL</u>	26.7 inches
<u>MAJOR SOURCE INCOME</u>	Agriculture
<u>NUMBER OF FARMS</u>	690
<u>WATER RESOURCE PROJECTS</u>	Fryingpan
<u>LAND OWNERSHIP:</u>	
PRIVATE	506,310 Acres
FEDERAL	169,004 Acres
STATE	120,572 Acres
COUNTY AND MUNICIPAL	2,050 Acres

* 1980 Assessor's
Abstract

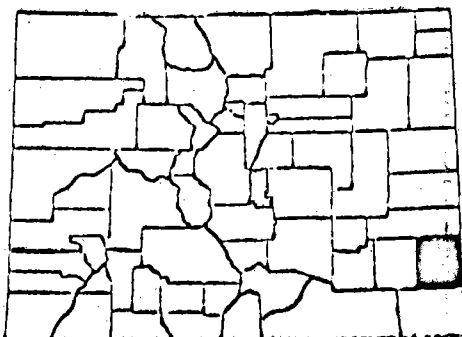


IRRIGATION DIVISION 2

PROWERS COUNTY

MAJOR CITY	Lamar
1980 POPULATION (Preliminary)	13038
URBAN POPULATION	9768
RURAL POPULATION	3270
COUNTY AREA	1626 Sq. Miles
TERRAIN	Plains
ELEVATION (MAJOR CITY)	3626
MAJOR STREAM	Arkansas
MAJOR TRIBUTARY	none
MAJOR WATER USE	Irrigation
IRRIGATED ACRES	* 140,645
AVERAGE GROWING SEASON	163 Days
ANNUAL MEAN TEMPERATURE	520
AVERAGE ANNUAL RAINFALL	15.20 inches
AVERAGE ANNUAL SNOWFALL	260 inches
MAJOR SOURCE INCOME	Agriculture
NUMBER OF FARMS	469
WATER RESOURCE PROJECTS	none
LAND OWNERSHIP:	
PRIVATE	996,652 Acres
FEDERAL	1,064 Acres
STATE	44,667 Acres
COUNTY AND MUNICIPAL	1,784 Acres

* 1980 Assessor's
Abstract

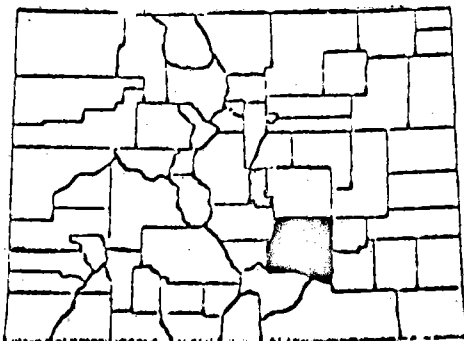


IRRIGATION DIVISION 2

PUEBLO COUNTY

<u>MAJOR CITY</u>	Pueblo
<u>1980 POPULATION (Preliminary)</u>	125,753
<u>URBAN POPULATION</u>	109,735
<u>RURAL POPULATION</u>	16,018
<u>COUNTY AREA</u>	2401 Sq. Miles
<u>TERRAIN</u>	Plains
<u>ELEVATION (MAJOR CITY)</u>	4696
<u>MAJOR STREAM</u>	Arkansas
<u>MAJOR TRIBUTARY</u>	Fountain
<u>MAJOR WATER USE</u>	Irrigation, Industry
<u>IRRIGATED ACRES</u>	* 30,081
<u>AVERAGE GROWING SEASON</u>	169 Days
<u>ANNUAL MEAN TEMPERATURE</u>	51.2
<u>AVERAGE ANNUAL RAINFALL</u>	12.14 inches
<u>AVERAGE ANNUAL SNOWFALL</u>	31.3 inches
<u>MAJOR SOURCE INCOME</u>	Industry
<u>NUMBER OF FARMS</u>	512
<u>WATER RESOURCE PROJECTS</u>	Fryingpan
<u>LAND OWNERSHIP:</u>	
PRIVATE	1,173,389 Acres
FEDERAL	76,712 Acres
STATE	232,519 Acres
COUNTY AND MUNICIPAL	3,045 Acres

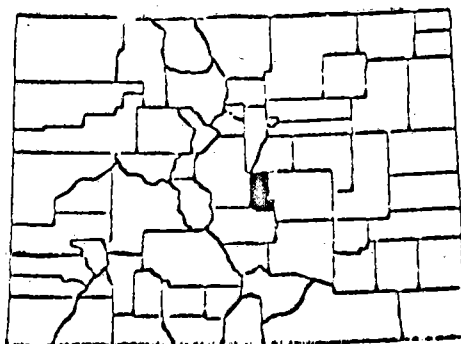
* 1980 Assessor's
Abstract



IRRIGATION DIVISION 2

TELLER COUNTY

<u>MAJOR CITY</u>	Cripple Creek
<u>1980 POPULATION (Preliminary)</u>	8019
<u>URBAN POPULATION</u>	3539
<u>RURAL POPULATION</u>	4480
<u>COUNTY AREA</u>	554 Sq. Miles
<u>TERRAIN</u>	Mountainous
<u>ELEVATION (MAJOR CITY)</u>	9949
<u>MAJOR STREAM</u>	Four Mile
<u>MAJOR TRIBUTARY</u>	none
<u>MAJOR WATER USE</u>	Irrigation, Commercial
<u>IRRIGATED ACRES</u>	865
<u>AVERAGE GROWING SEASON</u>	68 Days
<u>ANNUAL MEAN TEMPERATURE</u>	NA
<u>AVERAGE ANNUAL RAINFALL</u>	NA
<u>AVERAGE ANNUAL SNOWFALL</u>	NA
<u>MAJOR SOURCE INCOME</u>	Tourism, Agriculture
<u>NUMBER OF FARMS</u>	10
<u>WATER RESOURCE PROJECTS</u>	none
<u>LAND OWNERSHIP:</u>	
PRIVATE	195,257 Acres
FEDERAL	116,671 Acres
STATE	8,755 Acres
COUNTY AND MUNICIPAL	5,598 Acres



SUMMARY OF AGRICULTURAL LAND USE IN DIVISION 2

COUNTY	LAND AREA (1000 Acres)	NO. OF FARMS	LAND IN FARMS (1000 ACRES)		IRRIGATED ACRES
			TOTAL	CROP LAND (Dry Land & Irr.)	
Baca	1642	750	1393	950	85,610
Bent	971	450	818	145	62,060
Chaffee	665	170	160	24	12,816
Crowley	514	400	490	105	30,000
Custer	472	180	280	30	28,033
El Paso	1381	750	1050	200	11,612
Fremont	1000	550	493	30	7,032
Huerfano	1010	280	747	48	13,691
Kiowa	1147	350	1070	600	4,000
Lake	243	17	28	7	6,036
Las Animas	3068	600	2748	130	18,352
Otero	811	690	506	87	81,237
Park	*100	*20	*18	*4	*4,000
Prowers	1041	469	997	530	140,645
Pueblo	1537	512	1362	151	30,081
Teller	*213	*10	*93	*5	*332

*In Division 2

1980 Acres Harvested as per 1981 Colorado Agricultural Statistics

COUNTY	CORN		WHEAT		DRY BEANS	OATS	ALFALFA	GRAIN SORGHUMS	OTHER HAY	TOTAL HAY	BARLEY
	GRAIN	SILAGE	WINTER	SPRING							
BACA	6,900	200	230,000	400	---	---	5,200	159,500	4,700	9,900	300
BENT	5,900	100	27,000	---	---	100	26,000	27,500	1,700	27,700	400
CHAFFEE	---	---	---	---	---	---	5,800	---	5,000	10,800	---
CROWLEY	4,000	3,000	5,000	---	2,500	100	18,000	13,000	900	18,900	100
CUSTER	---	---	200	---	---	---	1,700	---	11,000	12,700	---
El Paso	1,000	2,000	7,100	100	1,600	500	7,200	2,200	12,000	19,200	500
Fremont	500	100	800	---	---	---	5,600	---	2,800	8,400	---
Huerfano	100	---	1,000	---	---	200	9,000	---	4,000	13,000	300
Kiowa	800	---	235,000	---	---	---	---	29,000	11,000	11,000	500
Lake	---	---	---	---	---	---	---	---	1,000	1,000	---
Las Animas	400	---	13,000	---	---	200	10,500	1,500	5,100	15,600	400
Otero	19,000	5,600	3,300	---	1,000	900	32,000	7,500	6,000	38,000	400
*Park	---	---	---	---	---	*100	---	---	*20,500	20,500	---
Prowers	7,200	8,200	163,000	---	---	300	56,000	40,000	6,300	62,300	7,600
Pueblo	12,000	3,800	6,700	100	10,500	200	12,000	10,000	5,500	17,500	500
Teller	---	---	---	---	---	---	300	---	4,600	4,900	---

ADMINISTRATIVE WATER YEAR 1981

Pertinent Basin Yield Statistics for Arkansas Drainage in Colorado
Division 2

Recorded Flow at Arkansas - Las Animas	59,735	A.F.	**
*Estimated Depletion by Irrigation above gage 1.5 A.F./Acre x 244,800 Acres = 367,200 A.F.	367,200	A.F.	
Recorded Flow at Purgatoire River - Las Animas	88,088	A.F.	
*Estimated Depletion by Irrigation above Gage 1.5 A.F./Acre x 20,000 Acres = 30,000 A.F.	30,000	A.F.	
Basin Yield including 49,482 A.F. Transmountain Import	545,023	A.F.	
	Less	49,482.6	A.F.
Native Basin Yield above Confluence of Arkansas and Purgatoire Rivers	495,541	A.F.	
Total Diversion in Division 2 (above John Martin)	1,083,109	A.F.	

*Estimate of irrigated acreage based on County Assessors records.

**U.S.G.S. records.

Commentary on Basin Yield and Water Budget Data

In Water Administrative Year 1981, the native basin yield for the Arkansas above the confluence of the Purgatoire including the Purgatoire was 495,541 acre feet. The Arkansas flow at Las Animas for 1981 was 59,735 acre feet compared to 287,140 acre feet for 1980. The Purgatoire flow at Las Animas for 1981 was 88,088 acre feet compared to 38,620 acre feet for 1980. The precipitation was less in 1981 than 1980 and the transmountain import was 75,722 acre feet less in 1981 than 1980.

The average precipitation over the area (17,920 square miles) was 11.66 inches. This gives a total volume of water of 11,143,849 acre feet for the basin; of this 11,143,849 acre feet, only 495,541 acre feet, 4.45%, is accounted for. The remaining 95.55% either evaporated, transpired or was retained in the soil.

The diverted water of 1,083,109 acre feet when compared with native yield plus transmountain water indicates the water was used 1.99 times.

COMPARATIVE WATER 1980,1981 DATA

	<u>1981</u>	<u>1980</u>
Basin Yield including Transmountain	545,023 A.F.	728,023 A.F.
Total Diverted (excluding W.D. 66 & 67)	1,083,109 A.F.	1,746,072 A.F.
Average Precipitation	11.66 Inches	13.35 Inches
Estimated Irrigated Acreage	264,800 Acres	264,800 Acres

DIVERSION DATA

<u>Recorded Diversion by Municipalities</u>	<u>Water Year 1981</u>
Municipal Diversion, Colorado Springs	30,670 A.F.
Municipal Diversion, Canon City	9,910 A.F.
Municipal Diversion, Pueblo	26,117 A.F.
Other	11,802 A.F.
Total Recorded Municipal Diversion	<u>78,499 A.F.</u>
Estimated Return Flow	52,333 A.F.
Estimated Depletion by Municipalities	26,166 A.F.

Recorded Diversion by Industrial Use

Diversion by Minnequa Canal	88,241 A.F.
C.F.&I. Diversion from St. Charles	6,593 A.F.
Other	46,962 A.F.
Total Industrial Diversion	<u>141,796 A.F.</u>
Estimated Return Flow	94,531 A.F.
Estimated Depletion by Industry	47,265 A.F.

Recorded Diversion By Irrigation

Water District 10	65,292 A.F.
Water District 11	186,502 A.F.
Water District 12	151,275 A.F.
Water District 13	15,570 A.F.
Water District 14	188,770 A.F.
Water District 15	10,982 A.F.
Water District 16	8,208 A.F.
Water District 17	379,456 A.F.
Water District 18	12,652 A.F.
Water District 19	54,769 A.F.
Water Districts 66 & 67	156,902 A.F.
Water District 79	9,633 A.F.
Total Irrigation Diversion	<u>1,240,011 A.F.</u>

DIVERSION SUMMARY - DIVISION NO. 2

Direct Flow Diversion, 1981

Water Dist.	Active	Inactive N.A. N.U.	Number of Ditches Administered Close Freq.		Irrigation Direct Diversion A.F.	Number Acres Irrigated	A.F. Per Acre	Recreational and Industrial Use Diversion	Municipal Diversion A.F.	Transmountain Diversion A.F.*	Total Diversion A.F.
10	61	206	61	4	65292	11612	5.62	904	30670		96866
11	112	138	107	0	186502	18852	9.89				186502
12	250	93	184	52	151275	12580	12.0	126673	10477		288425
13	322	53	250	51	15570	28033	.56				15570
14	39	25	12	4	188770	30992	6.09	6959	28357		224086
15	106	42	70	18	10982	4600	2.39	6593	463		18038
16	81	79	40	37	8208	4700	1.75		5137		13345
17	40	62	36	7	379456	140000	2.71				379456
18	22	24	30	0	12652	7700	1.64	148			12800
19	70	137	80	13	54769	30000	1.83	519	3279		58567
66&67	48	116	40	6	156902	76837	2.04		116		157018
79	100	90	95	0	9633	5000	1.93				9633
Other											
TOTAL	1251	1065	1005	192	1240011	370906		141796	78499	49482	1460306

* Transmountain Water Accounted for in Districts used.

TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

Tabulation 1981

AMOUNT DIVERTED
10/1/80 to 9/30/81

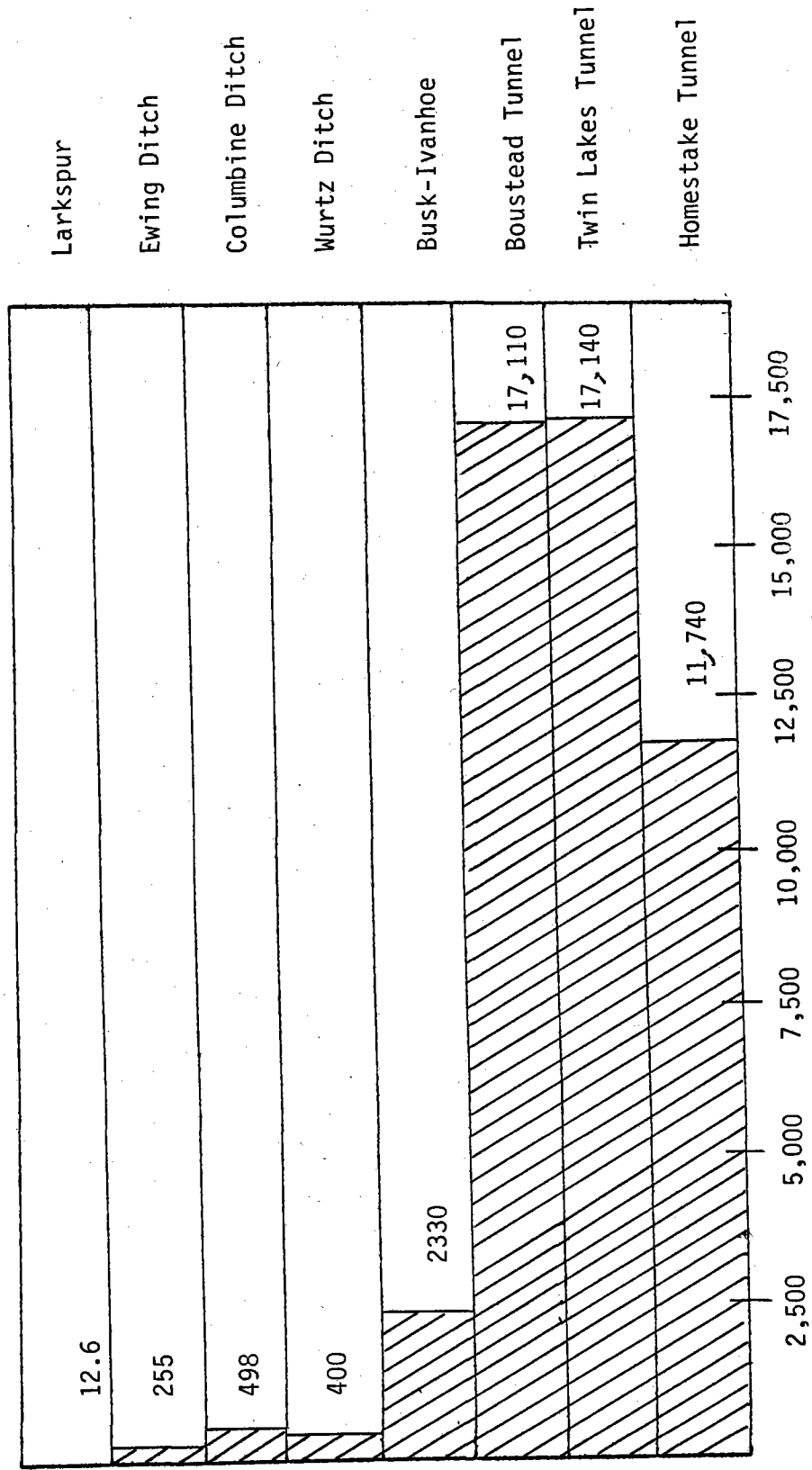
<u>NAME</u>	<u>SOURCE</u>	<u>RECIPIENT</u>	AMOUNT DIVERTED 10/1/80 to 9/30/81
Homestake Tunnel	Middle Fork Homestake Creek Division No. 5	Cities of Colorado Springs and Aurora	11,740 A.F.
Wurtz Ditch	Eagle River Division No. 5	City of Pueblo	400 A.F.
Ewing Ditch	Piney Creek	City of Pueblo	255 A.F.
Columbine Ditch	Eagle River Division No. 5	City of Pueblo	498 A.F.
Twin Lakes Tunnel	Roaring Fork River Division No. 5	Twin Lakes Reservoir and Canal Company	17,140 A.F.
Busk Ivanhoe Tunnel	Ivanhoe Creek Division No. 5	Highline Canal Co. and City of Pueblo	2,330 A.F.
Larkspur Ditch	Tomichi Creek Division No. 5	Catlin Canal Company	12.6 A.F.
Bousted Tunnel	Fryingpan River Division No. 5	U. S. Bureau of Reclamation	17,107 A.F.

TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

SUMMARY OF DIVERSION FOR

WATER YEAR 1981



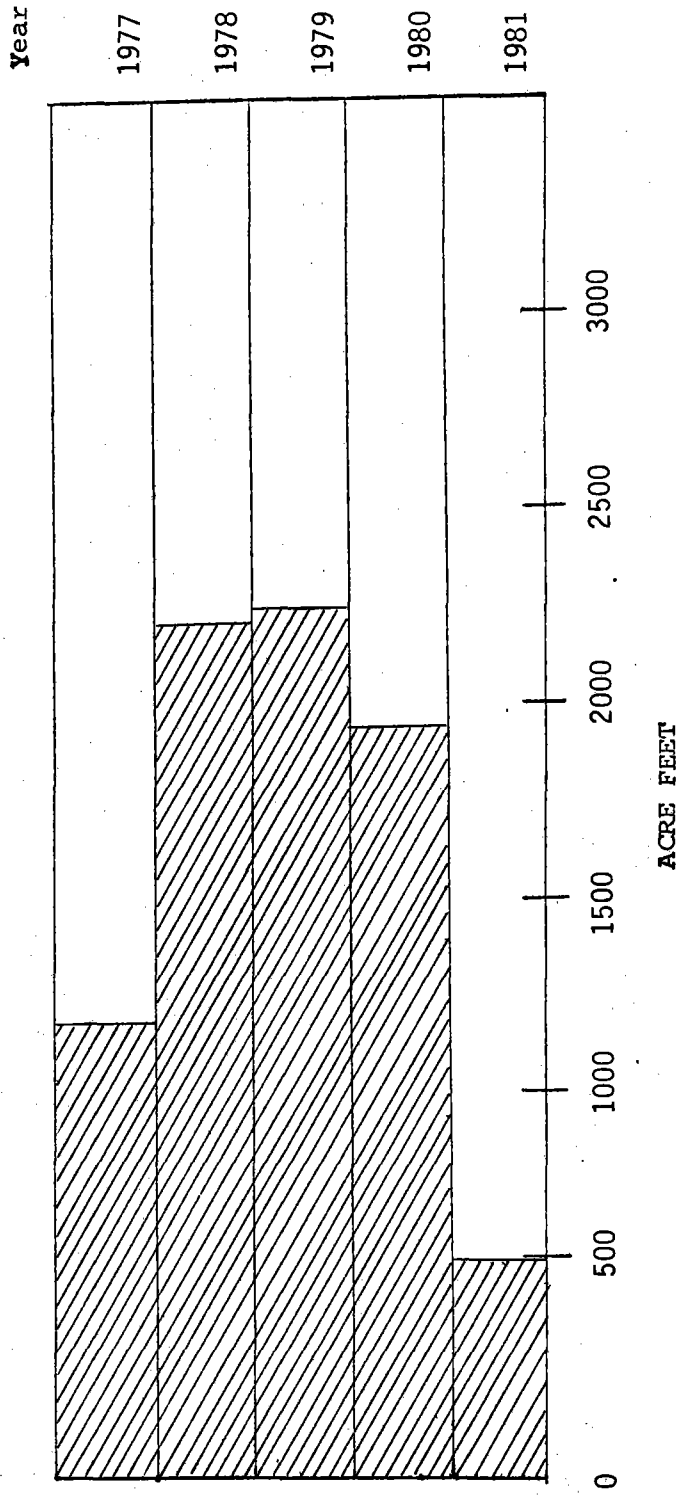
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

COLUMBINE DITCH

Source: Eagle River, Division No. 5

Recipient: City of Pueblo



5-YEAR COMPARISON

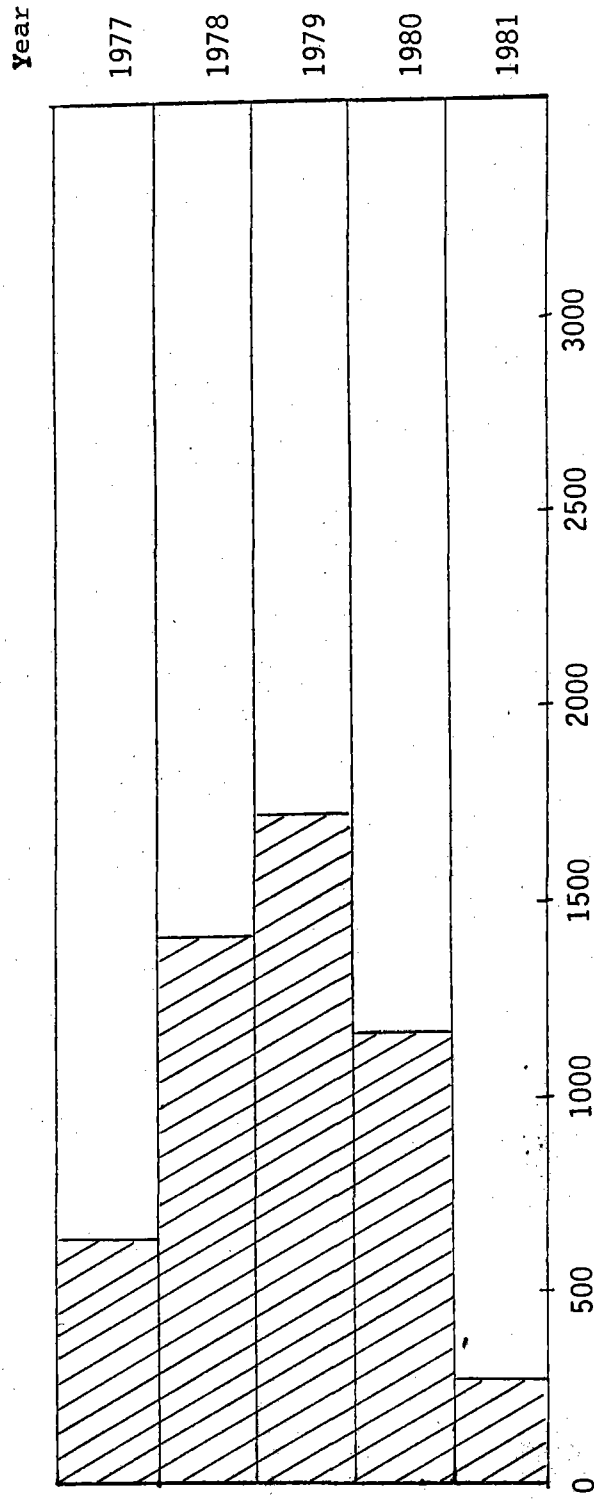
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

EWING DITCH

Source: Piney Creek, Division No. 5

Recipient: City of Pueblo



ACRE FEET

5-YEAR COMPARISON

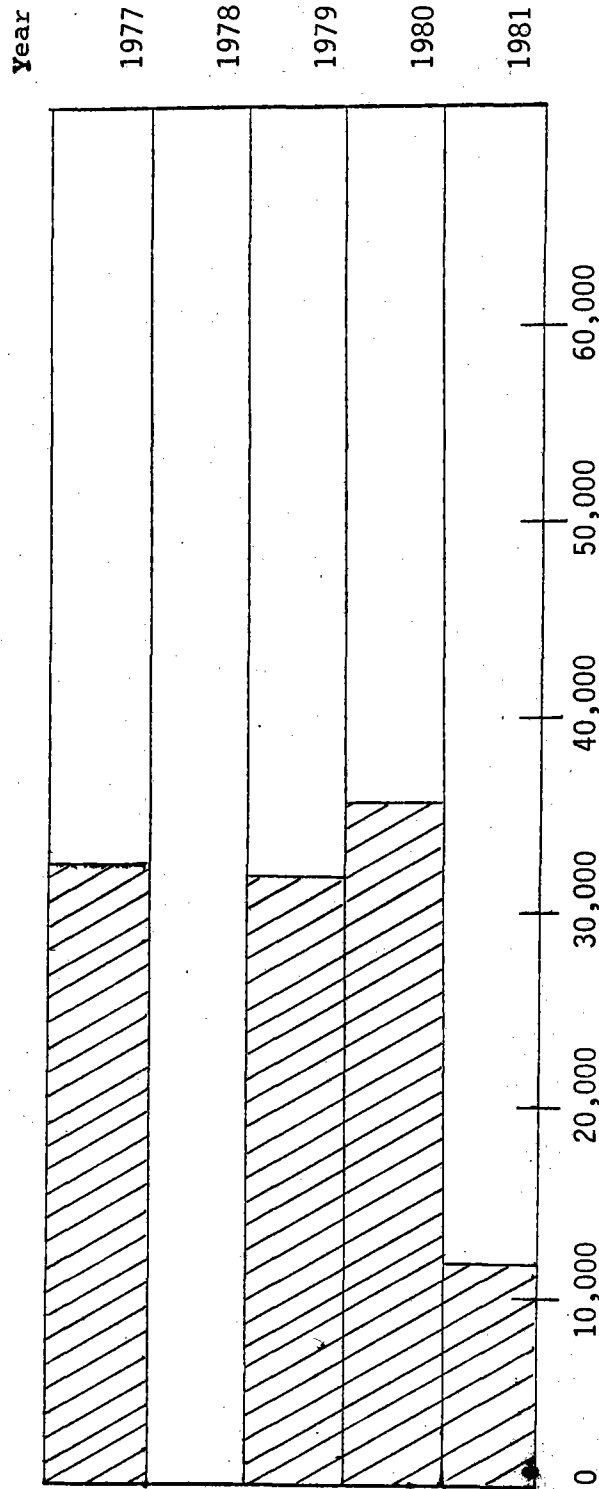
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

HOMESTAKE TUNNEL

Source: Middle Fork Homestake Creek, Division No. 5

Recipient: Cities of Colorado Springs and Aurora



ACRE FEET

5-YEAR COMPARISON

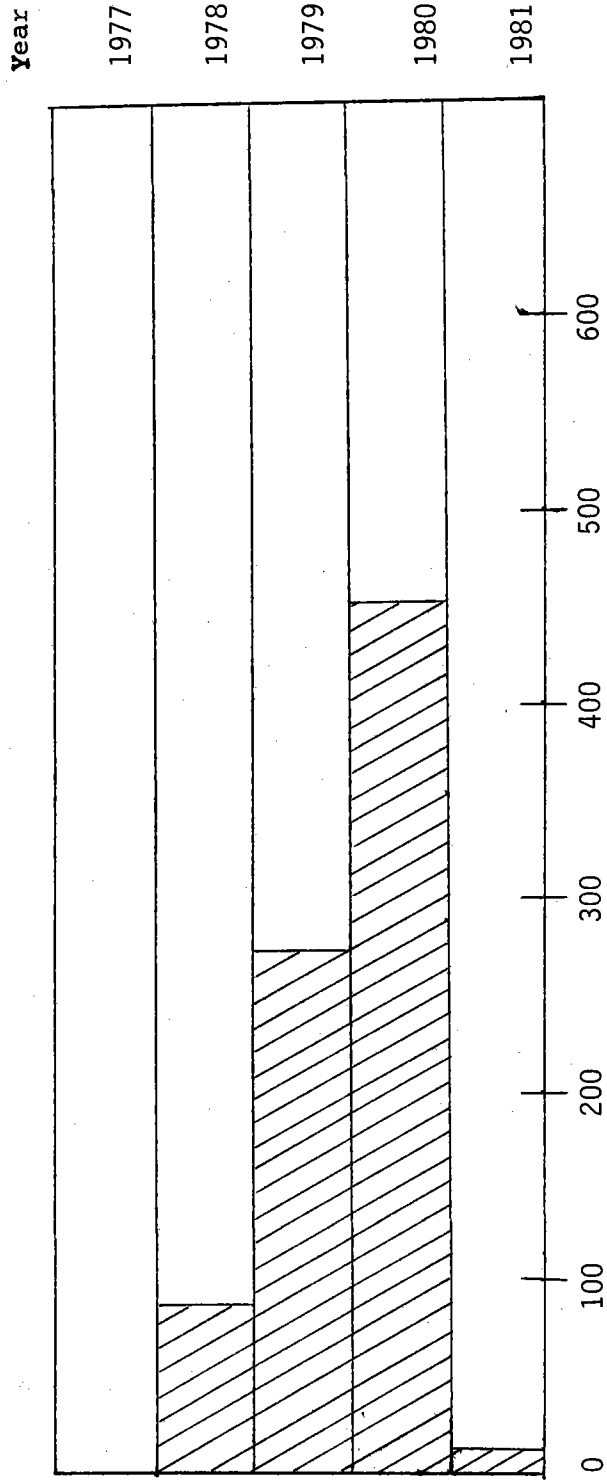
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

LARKSPUR DITCH

Source: Tomichi Creek, Division No. 4

Recipient: Catlin Canal Company



ACRE FEET

5-YEAR COMPARISON

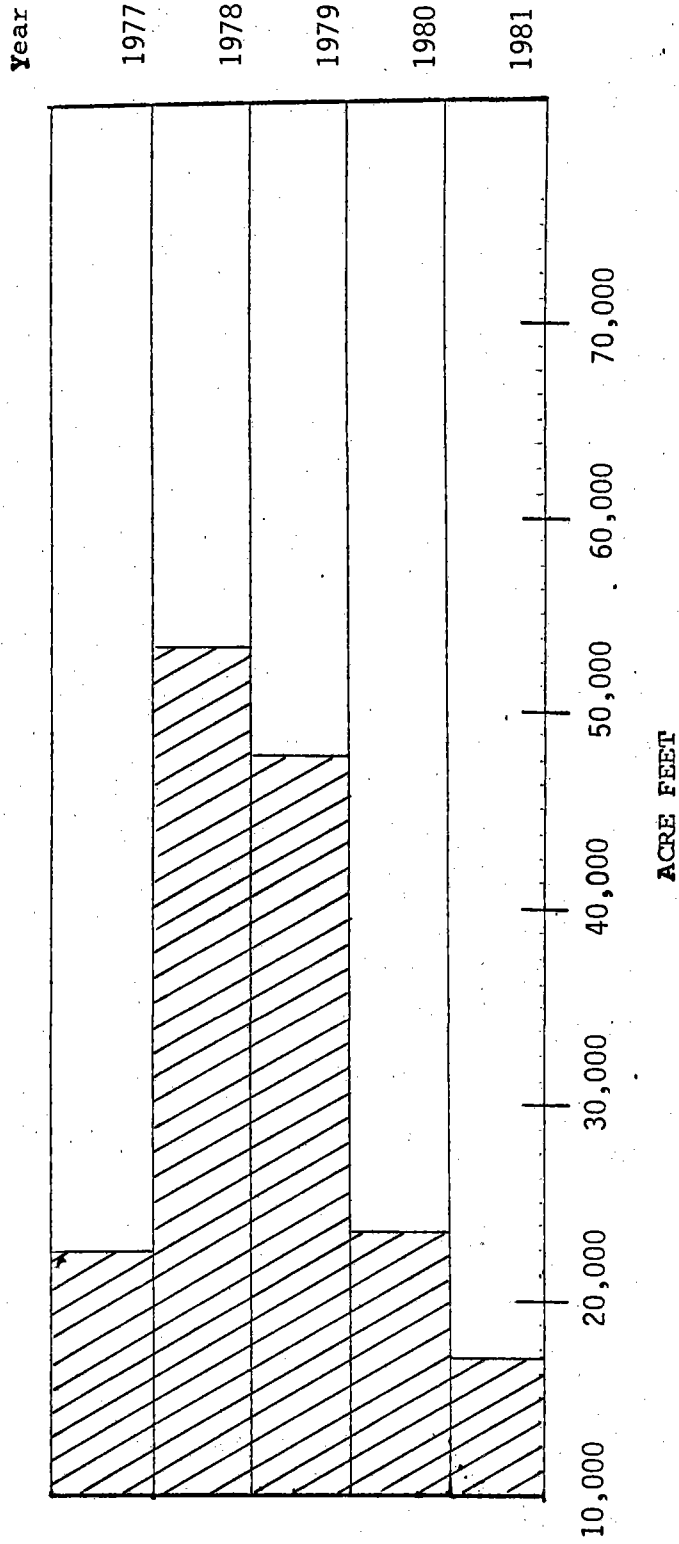
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

TWIN LAKES TUNNEL

Source: Roaring Fork River, Division No. 5

Recipient: Twin Lakes Reservoir and Canal Company



5-YEAR COMPARISON

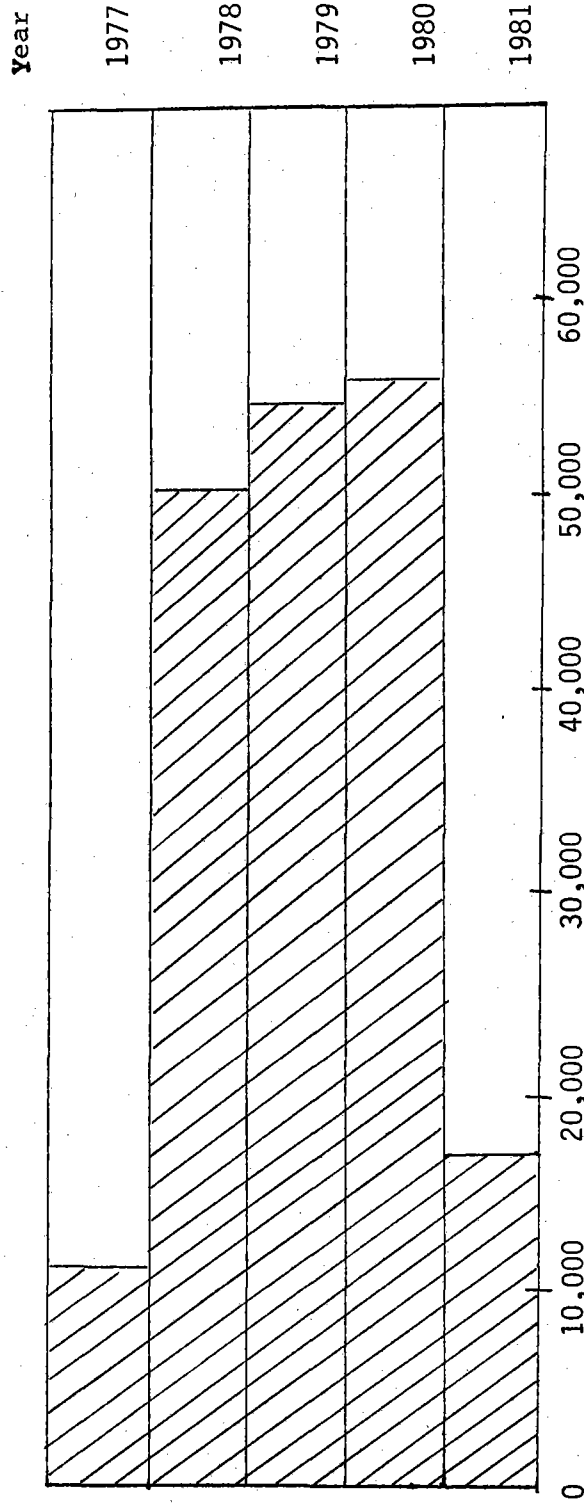
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

BOUSTEAD TUNNEL

Source: Fryingspan River

Recipient: U. S. Bureau of Reclamation



ACRE FEET

5-YEAR COMPARISON

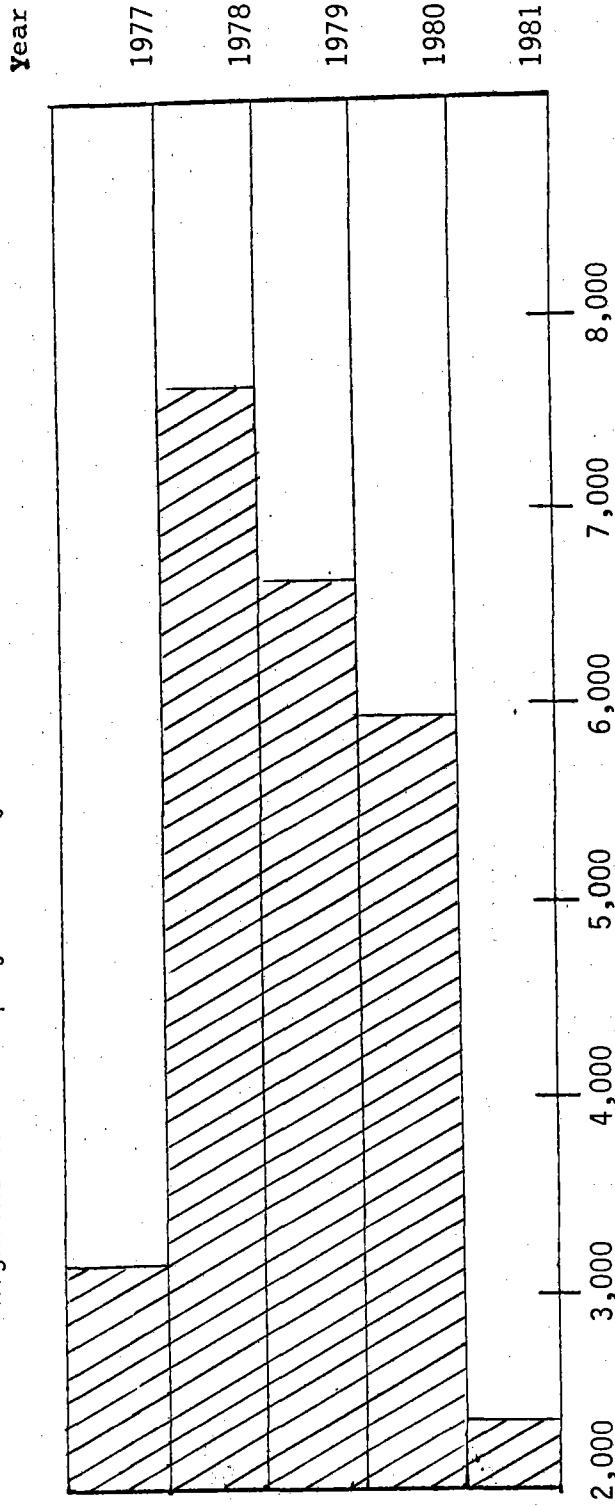
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

BUSK IVANHOE

Source: Ivanhoe Creek, Division No. 5

Recipient: Highline Canal Company and City of Pueblo



ACRE FEET

5-YEAR COMPARISON

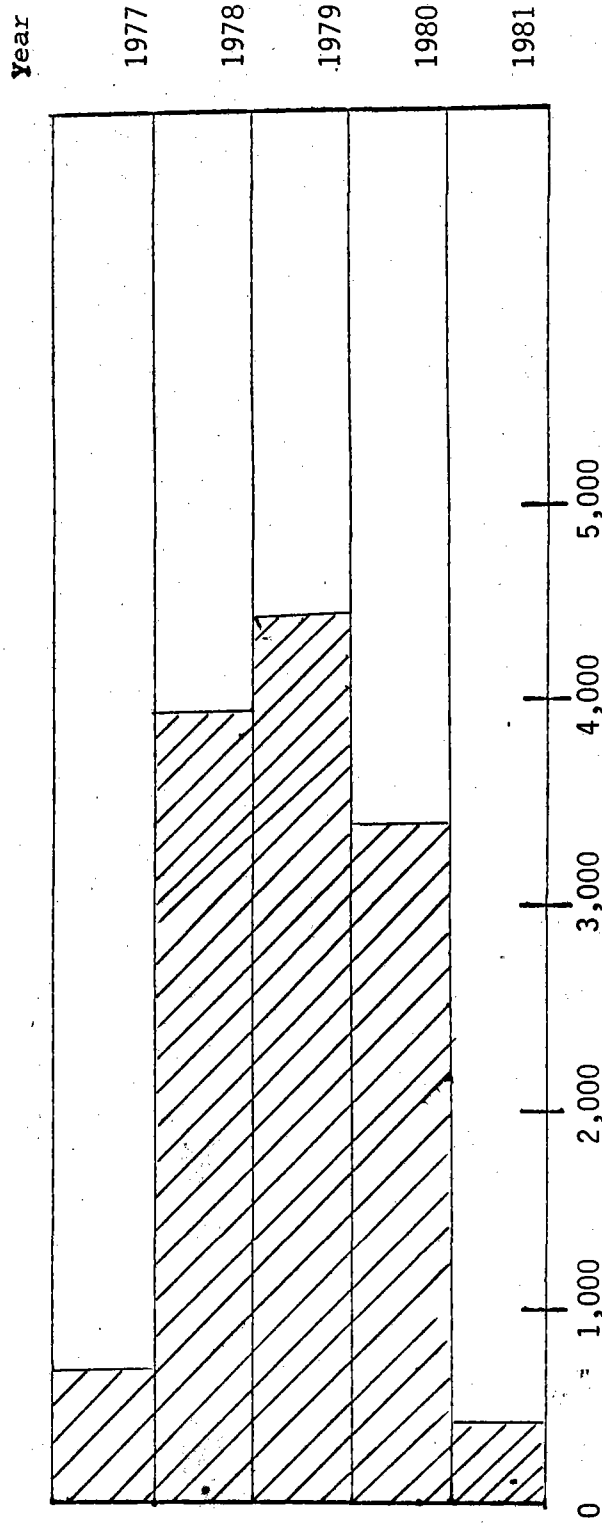
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

WURTZ DITCH

Source: Eagle River, Division No. 5

Recipient: City of Pueblo



ACRE FEET

5-YEAR COMPARISON

PRECIPITATION

Over all precipitation for Division 2 was 92% of normal this year. The majority of the moisture received came from flash floods on the Purgatoire River and its tributaries. The snowpack was minimal. Spring began with warm and dry weather, had there been no winter stored water some of the junior and swing ditches would not have been able to get a crop started.

In general, 1981 was an average irrigation year. Due to mid-summer rains and to high sustained flows on the Purgatoire, no serious crop damage occurred because of lack of water.

DAMS

There were 20 High Hazard, 10 Medium Hazard and 7 Low Hazard regular dam inspections in Division 2 during Water Year 1981. There were 2 High Hazard, 1 Medium Hazard and 5 Low Hazard construction dam inspections in Division 2 during Water Year 1981. A final construction inspection of Orlando #2 Reservoir was performed on December 15, 1980.

There were numerous dams checked by our water commissioners on their day to day routine. If a dam looked like it had a problem, we contacted the Denver Dam section, who immediately took the necessary action needed to insure the safety of the public.

The new U.S.B.R. Dam at Twin Lakes was completed and initial testing revealed excessive seepage. Major modifications will be needed before it can be placed in service. The old dam is still in place and is operational.

FLOODS

The only floods of any consequence occurred on the Purgatoire drainage. There were at least three separate events one of which washed out a trestle, destroying part of a train and killing two trainmen. An indirect measurement made at the Thatcher Gage on June 30, 1981 indicated that 25,000 c.f.s. flowed there as a result of the event of May 29, 1981. An indirect measurement made at the Thatcher Gage on July 21, 1981, indicated that 44,000 c.f.s. flowed there as a result of the event of July 30, 1981. The flood above Trinidad on the Purgatoire wiped out the city's potable water supply. The Army furnished trucks to deliver drinking water until service was restored 10 days later.

There were no other floods of any consequence in Division 2.

IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT PERCENT NORMAL AS OF Feb. 1 1981	SNOW DEPTH	WATER CONTENT AS OF Feb. 1 1981	AVERAGE INCHES
BIGELOW DIVIDE	0	0	0.0	4.9
COOPER HILL	46	17	3.2	6.9
EAST FORK	26	9	1.6	6.1
FOUR MILE PARK	36	10	1.4	3.9
FREMONT PASS	35	21	3.4	9.6
GARFIELD	28	13	2.4	8.6
HERMIT LAKE	20	4	1.3	6.4
MONARCH PASS	26	15	2.6	10.1
TENNESSEE PASS	17	7	1.1	6.3
TWIN LAKES TUNNEL	55	17	3.0	5.5
WESTCLIFFE	33	7	7.8	5.4
APISHAPA	18	4	0.9	5.0
CUCHARAS CREEK	-	6	1.2	-
LA VETA PASS	44	10	2.2	5.9
BOURBON	20	7	1.0	4.9

IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT PERCENT NORMAL AS OF Mar. 1 1981	SNOW DEPTH	WATER CONTENT AS OF Mar. 1 1981	AVERAGE INCHES
BIGELOW DIVIDE	39	11	2.2	5.6
COOPER HILL	49	21	4.2	8.5
EAST FORK	30	12	2.4	8.0
FOUR MILE PARK	33	8	1.6	4.9
FREMONT PASS	46	26	5.6	12.3
GARFIELD	38	19	4.2	11.0
HERMIT LAKE	21	5	1.6	7.6
MONARCH PASS	35	21	4.7	13.4
TENNESSEE PASS	24	9	2.0	8.2
TWIN LAKES TUNNEL	52	21	4.2	8.0
WESTCLIFFE	36	9	2.4	6.6
APISHAPA	6	2	2.4	6.4
CUCHARAS CREEK	-	9	2.3	-
LA VETA PASS	25	8	1.9	7.6
BOURBON	33	10	1.9	5.7

IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT PERCENT NORMAL AS OF Apr. 1 1981	SNOW DEPTH	WATER CONTENT AS OF Apr. 1 1981	AVERAGE INCHES
BIGELOW DIVIDE	103	30	7.4	7.2
COOPER HILL	57	31	6.2	10.8
EAST FORK	43	20	4.1	9.5
FOUR MILE PARK	64	14	3.2	5.0
FREMONT PASS	57	37	8.8	15.5
GARFIELD	55	26	7.0	12.8
HERMIT LAKE	53	13	4.7	8.9
MONARCH PASS	49	28	7.8	16.0
TENNESSEE PASS	38	16	3.8	10.0
TWIN LAKES TUNNEL	88	32	8.6	9.8
WESTCLIFFE	81	15	5.6	6.9
APISHAPA	58	12	4.5	7.7
CUCHARAS CREEK	-	21	6.4	-
LA VETA PASS	69	16	5.6	8.1
BOURBON	84	22	5.8	6.9

IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT PERCENT NORMAL AS OF May 1 1981	SNOW DEPTH	WATER CONTENT AS OF May 1 1981	AVERAGE INCHES
BIGELOW DIVIDE	0	0	0.0	4.7
COOPER HILL	49	22	5.7	11.7
EAST FORK	8	2	0.6	7.7
FOUR MILE PARK	0	0	0.0	1.6
FREMONT PASS	42	27	7.4	12.7
GARFIELD	0	0	0.0	9.5
HERMIT LAKE	0	0	0.0	6.8
MONARCH PASS	0	0	0.0	15.3
TENNESSEE PASS	0	0	0.0	7.4
TWIN LAKES TUNNEL	0	0	0.0	4.5
WESTCLIFFE	0	0	0.0	2.5
APISHAPA	0	0	0.0	3.7
CUCHARAS CREEK	0	0	0.0	6.2
LA VETA PASS	0	0	0.0	3.2
BOURBON	0	0	0.0	2.7

PRECIPITATION

Irrigation Division No. 2

	April 1981	Depart From Normal	May 1981	Depart From Normal	June 1981	Depart From Normal	July 1981	Depart From Normal	August 1981	Depart From Normal	September 1981	Depart From Normal
Lamar	0.31	-1.04	2.45	-0.08	1.33	-0.93	1.05	-1.28	1.49	-0.85		
Buena Vista	0.02	-1.05	0.85	-0.19	0.68	-0.06	3.06	+1.37	1.56	-0.29		
Pueblo	0.13	-1.16	0.76	-0.89	0.16	-1.20	1.28	-0.59	2.55	+0.59		
Trinidad	0.35	-0.96	3.47	+1.62	0.40	-1.06	6.55	+4.69	4.51	+2.60		
Westcliffe	0.05	-1.87	0.52	-1.12	1.49	+0.40	3.27	+0.81	8.18	+5.74		
Colorado Springs	0.13	-1.32	3.14	+1.02	1.98	-0.33	3.64	+0.54	5.24	+2.66		

23.2"

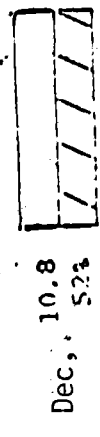
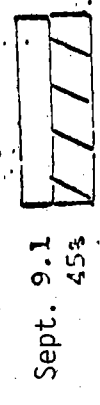
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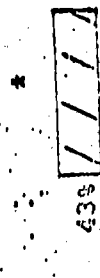
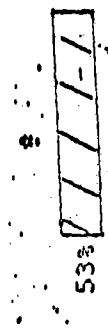
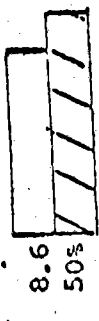
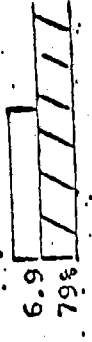
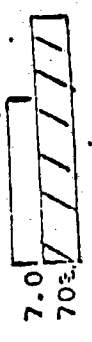
Precipitation in Inches
Pueblo, Colorado 1889 to Present

1 in = 17
1 in = 4

1977

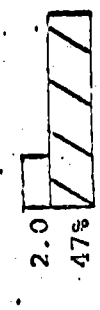
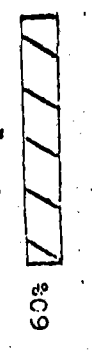
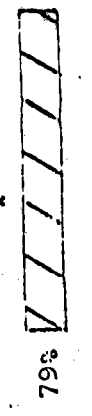


1978



*Information not available for wind velocity.

1979



1 in = 17
1 in = 4

velocity for month (mph)
relative humidity for month (%)

PHASE I DAM INSPECTION SUMMARY 1980 - 1981
 IRRIGATION DIVISION NO. 2

<u>W.D.</u>	<u>NAME</u>	<u>U.S. ARMY #</u>
10	Big Tooth Reservoir	C-191
10	Lake Moraine	OC-84
10	Northfield Reservoir	C-745
10	Rampart Reservoir	C-1225
10	Nichols Reservoir	C-383
10	Palmer No. 5	OC-80
10	Keeton Reservoir	C-289
10	Spring Run #2	C-4413
10	Palmer Lake No. 2	C-436
10	South Suburban Reservoir	C-428
10	Manitou Dam	C-426
10	Fountain Valley Dam	C-418
11	Evans Gulch #2	C-84
11	Northfold Reservoir	C-639
12	Mason Reservoir	C-234
12	McReynolds Reservoir Dam	-
12	Mount Pisgah Reservoir	C-2241/2
12	Mud Gulch Detention	C-469
12	Cotter Tailing Dam	C-2206
15	St. Charles No. 3	C-493
16	North Walsenburg Flood Control Dam	C-511
19	Fisher Peak F P 1	C-533
19	Fisher Peak F P 2	C-534
67	Raman Dam	C-1347
67	Limon Watershed L-1 Dam	C-751
67	Adobe Creek Reservoir Dam	C-513

DAM DESIGN REVIEW UNIT SUMMARY
IRRIGATION DIVISION NO. 2, 1981

<u>W.D.</u>	<u>NAME</u>	<u>TYPE</u>
15	Coal Washery Dam	Modification
12	Hansen Uranium Project	Report
10	Chapel Hills Detention Pond	New
12	Cotter Tailings Transfer	Colo. Health Dept. Review

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET NOVEMBER 1, 1980	AMOUNT OF ACRE FEET APRIL 1, 1981	AMOUNT OF ACRE FEET OCTOBER 31, 1981
Ambler Res. No. 2	Unnamed Springs	-	-	-
Callhan Reservoir	Fountain	300	300	300
Crystal Creek Res.	Crystal Creek	2601	1930	2040
Fountain Valley #2	Fountain	1759	3825	2205
Fountain Valley #3	Fountain	0	0	0
Manitou Reservoir	No. Branch French Creek	711	711	711
Monument State	Monument Creek	370	370	370
North Catamount	No. Fork Catamount	8878	5900	6420
North Field No. 1		258	235	249
South Catamount	So. Catamount	2000	1390	2070
Spring Run	Spring Run	223	237	218
South Suburban	So. Fork Cheyenne	215	109	219
Clear Creek Res.	Clear Creek	3392	5806	8055
O'Haver	Gray's Creek	-	-	-
Sugar Loaf Res.	Lake Fork Creek	81330	71334	80310
Twin Lakes Res.	Lake Creek	43683	46679	37249
Brush Hollow	Beaver Creek	477	1382	897
Colo. Springs #2	Beaver Creek	541	541	541
Colo. Springs #4	Beaver Creek	1831	1858	1806
Colo. Springs #5	Beaver Creek	1642	1851	1774
Colo. Springs #7	Beaver Creek	157	191	3.4
Colo. Springs #8	Beaver Creek	669	669	1.04
Lake Moraine	Beaver Creek	699	699	699
Mt. Pisgah	Four Mile Creek	2231	1343	631
Rosemont Penrose	Beaver Creek	2227	2540	2540
Skaguay	Beaver Creek	1270	1593	1818
DeWeese Dye	Grape Creek	1244	4322	1316
Curiton	Springs	-	-	-
Greenview	Fountain	0	0	0
H.O.P. Reservoir	Springs	-	-	-
Pueblo Reservoir	Arkansas	36644	92954	33160

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET NOVEMBER 1, 1980	AMOUNT OF ACRE FEET APRIL 1, 1981	AMOUNT OF ACRE FEET OCTOBER 31, 1981
Hayden Beckwith	Greenhorn	734	-	-
Lake Minnequa	St. Charles	1055	1172	1135
Reservoir No. 2	St. Charles	2411	2411	2419
Reservoir No. 3	St. Charles	7412	7394	6174
Arnold Flood Water	Santa Clara	-	-	-
Bressan #1	Unnamed Arroya	15	0	15
Bressan #2	Unnamed Arroya	15	0	15
Brunelli #1 & #2	Bear Creek	10	0	10
Butte	Cucharas	-	-	-
Chicosa #4 & #5	Huerfano	0	0	0
Coler (Lake Miriam)	Cucharas	1950	2115	2150
Cucharas Valley	Cucharas	17150	12332	12520
Dotson	Chicosa Creek	-	-	-
Holita	Cucharas	44	105	-
Huerfano Valley	Huerfano	0	-	-
La Joya	Cucharas	0	18	25
Maria Stevens	Cucharas	726	840	670
Martin Reservoir	Cucharas	2380	2430	2260
Mosco	Poison Cannon	-	2433	-
Orlando	Huerfano	-	0	0
Sharps Orchid	Cucharas	0	0	25
Sierra Blanca	Decker Creek	-	-	-
Sunnyside	Santa Clara	-	-	-
Valdez	Santa Clara	-	-	-
Vories	Cucharas	-	-	-
Wilson	Cheer Creek	-	-	-
Zan	Apache Creek	-	-	-
Adobe	Arkansas	35655	39573	0
Dye	Arkansas	0	0	0
Henry	Arkansas	0	7704	1015
Holbrook #1	Arkansas	0	5057	0
Horse Creek	Arkansas	0	19486	0

<u>NAME OF RESERVOIR</u>	<u>SOURCE</u>	<u>AMOUNT OF ACRE FEET NOVEMBER 1, 1980</u>	<u>AMOUNT OF ACRE FEET APRIL 1, 1981</u>	<u>AMOUNT OF ACRE FEET OCTOBER 31, 1981</u>
Hermosa	San Francisco Creek	0	0	0
Monument	Middle Fork Purgatoire	1584	1420	1584
Model	Purgatoire	0	0	0
North	Trinchera	3269	3175	3175
Trinidad Reservoir	Purgatoire	39680	43300	46916
John Martin	Arkansas	35209	75896	13817
Nee No Shee	Arkansas	3403	2700	0
Nee Skah	Arkansas	10847	9796	0
Thurston	Arkansas	1192	1490	874
Two Buttes	Two Buttes Creek	4858	3324	0

LIVESTOCK WATER TANKS

1981 Application Filed and Approved:

Water District 10	3
Water District 11	0
Water District 12	1
Water District 13	1
Water District 14	0
Water District 15	0
Water District 16	3
Water District 17	0
Water District 18	8
Water District 19	20
Water District 66	0
Water District 67	1
Water District 79	0
T O T A L	37

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

Last year (1980) the Division had 45 applications.

TABULATION

The 1981 Tabulation has been distributed to the Water Commissioners and the County Court Houses. To date there have been four protests of a clerical nature to the 1981 Tabulation.

The protest in W. D. 13 concerned the Tabulation of the May 13, 1893; the April 16, 1884; the Sept. 7, 1895; and the March 12, 1896 Adjudications. It was decided to treat all of these Adjudications as "original" and tabulate them accordingly. As of this date no protest to this decision has been filed in the Water Court.

The protest in W. D. 11 concerned the Adjudication type of the Younger 1, 2, 3 and Beaver Dam Ditches. After a hearing by the Division Engineer, it was decided that those rights are correctly tabulated as supplemental decrees. This decision is being contested in consolidated cases W-4799 and 81CW92.

The Governor signed House Bill 1504 into Law on June 19, 1981. Among other things, this law delays for two years the date when the Tabulation must be revised by the Division Engineer and Adjudicated by the Court.

Cases Filed in the Water Court

The following shows the number of cases filed from January: 1970 through Dec. 1981 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 state that the figures are reasonably close.

1970

<u>MONTH</u>	<u>CASE NUMBERS</u>	<u>CASES</u>	<u>CLAIMS</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
Sub-total . . .		<u>92</u>	<u>272</u>

1971

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
Sub-total . . .		<u>160</u>	<u>1922</u>

<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	5335
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 . .		<u>3395</u>	<u>7855</u>

<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	23
October	W-4030 through W-4039	12	460
November	W-4040 through W-4052	17	42
December	W-4053 through W-4062	12	234
Sub-total . .		<u>207</u>	<u>1928</u>

<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 . .		<u>160</u>	<u>1922</u>

<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
July	W-4589 through W-4595	16	29
August	W-4596 through W-4607	24	75
September	W-4608 through W-4609	15	56
October	W-4610 through W-4612	15	16
November	W-4613 through W-4624	18	60
December	W-4625 through W-4704	87	1089

Sub-total.. 217 1850

<u>MONTH</u>	<u>CASE NUMBERS</u>	<u>CASES</u>	<u>CLAIMS</u>
<u>1978</u>			
January	W-4705 through W-4709	18	31
February	W-4710 through W-4715	10	14
March	W-4716 through W-4724	13	13
April	W-4725 through W-4737	13	19
May	W-4738 through W-4740	22	42
June	W-4741 through W-4753	20	39
July	W-4754 through W-4759	18	35
August	W-4760 through W-4768	16	40
September	W-4769 through W-4777	12	15
October	W-4778 through W-4787	16	42
November	W-4788 through W-4794	16	30
December	W-4795	47	3402
		Sub-total 221	3722

<u>1979</u>			
January	79CW1 through 79CW12	12	32
February	79CW13 through 79CW32	20	39
March	79CW33 through 79CW47	15	26
April	79CW48 through 79CW72	25	47
May	79CW73 through 79CW91	19	33
June	79CW92 through 79CW104	13	30
July	79CW105 through 79CW137	33	74
August	79CW138 through 79CW149	12	15
September	79CW150 through 79CW153	4	343
October	79CW154 through 79CW164	11	45
November	79CW165 through 79CW168	4	36
December	79CW169 through 79CW188	20	37
		Sub-total 188	757

<u>1980</u>			
January	80CW1 through 80CW6	6	20
February	80CW7 through 80CW10	4	46
March	80CW11 through 80CW19	9	11
April	80CW20 through 80CW29	10	35
May	80CW30 through 80CW47	18	149
June	80CW48 through 80CW52	5	64
July	80CW53 through 80CW65	13	22
August	80CW66 through 80CW93	28	103
September	80CW94 through 80CW107	14	19
October	80CW108 through 80CW119	12	61
November	80CW120 through 80CW125	6	6
December	80CW126 through 80CW175	50	214
		Sub-total 175	750

<u>MONTH</u>	<u>CASE NUMBERS</u>	<u>CASES</u>	<u>CLAIMS</u>
	<u>1981</u>		
January	81CW1 through 81CW14	14	45
February	81CW15 through 81CW26	12	12
March	81CW27 through 81CW45	19	254
April	81CW46 through 81CW58	13	19
May	81CW59 through 81CW78	20	165
June	81CW79 through 81CW96	18	58
July	81CW97 through 81CW113	17	343
August	81CW114 through 81CW142	29	274
September	81CW143 through 81CW167	25	488
October	81CW168 through 81CW182	15	53
November	81CW183 through 81CW207	25	70
December	81CW208 through 81CW233	26	312
		Sub-total . . . 233	2093

Total of cases filed from 1970 through December, 1981 5526

Approximate number of claims for same period. 24,738

Cases Terminated by the Water Court

<u>MONTH</u>	<u>1970</u>	<u>NUMBER OF CASES TERMINATED</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

MONTH

NUMBER OF CASES TERMINATED

1973

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.... 1530

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.... 1199

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
July	28
August	16
September	18
October	8
November	13
December	22

TOTAL.... 246

1978

January	17
February	33
March	23
April	6
May	17
June	24
July	22
August	17
September	24
October	12
November	27
December	25

TOTAL.... 247

MONTH

NUMBER OF CASES TERMINATED

1979

January	12
February	7
March	24
April	6
May	9
June	8
July	15
August	9
September	7
October	13
November	16
December	28

TOTAL . . .154

1980

January	14
February	32
March	7
April	10
May	39
June	8
July	11
August	14
September	18
October	12
November	19
December	17

TOTAL . . .201

1981

January	9
February	59
March	10
April	7
May	39
June	23
July	27
August	11
September	18
October	13
November	17
December	22

TOTAL . . .255

Cases Terminated 1970	50
Cases Terminated 1971	274
Cases Terminated 1972	581
Cases Terminated 1973	1530
Cases Terminated 1974	1199
Cases Terminated 1975	569
Cases Terminated 1976	255
Cases Terminated 1977	246
Cases Terminated 1978	247
Cases Terminated 1979	154
Cases Terminated 1980	201
Cases Terminated 1981	255
Total cases terminated through December, 1981 . . .	<u>5561</u>

WINTER WATER STORAGE

The winter storage effort for 1980-81 was in its sixth year. This program is voluntary; whereby, downstream irrigators are able to store part of their direct flow rights in Pueblo Reservoir or in their own storage facility downstream. There was no charge for the entities that stored in Pueblo Reservoir for the year 1980-81.

It had appeared that the Winter Storage Program, which needs the unanimous consent of the affected canal companies, was defeated in the October meeting which broke up when the Amity Canal would not consent to changing the prior years' formula, which had given all water above 100,000 acre feet to the four storage entities. A letter from the Fort Lyon Canal Company reiterated the same demands for the four storage entities; Colorado, Holbrook, Fort Lyon and the Amity. Another meeting was held November 13, 1980 where a formula was developed to have a storage program for 1980-1981.

The 1980-1981 program began November 15, 1980 and continued through March 15, 1981 using the following formula:

By foregoing winter diversions, the water will be accounted for by diversions through headgates, locations or by storing in Pueblo Reservoir on a percentage basis of the total river production, for a 4-month period. A maximum of 30,000 acre feet will accrue to the accounts storing in Pueblo Reservoir.

Percentage Base 30000 A.F.

Bessemer	21.6%
High Line	29.0
Oxford	7.0
Otero	2.40
Catlin	29.0
Rocky Ford	0
Riverside	1.40
West Pueblo	-
Miscellaneous	-
Consolidated	9.60
	<u>100%</u>

Percentage Base on 70000 A.F.

Colorado	15.91%
Holbrook	12.67
Fort Lyon	54.52
Amity	16.90
	<u>100%</u>

In the event that the total river system produces over 122,750 acre feet, the following percentages will apply to these canals:

Colorado	26.0%
Holbrook	17.0
Fort Lyon	37.5
Amity	19.5
	<u>100%</u>

The canal companies had stored their water at the end of the Winter Water Program in the following facilities:

Bessemer.	Pueblo Reservoir	
Highline.	Pueblo Reservoir	
Oxford.	Pueblo Reservoir	
Catlin.	Pueblo Reservoir	
Consolidated.	Pueblo Reservoir	
Riverside	Pueblo Reservoir	
West Pueblo	Pueblo Reservoir	
Otero	Pueblo Reservoir	Own
Colorado.	Pueblo Reservoir	Own
Holbrook.	Pueblo Reservoir	Own
Fort Lyon.	Pueblo Reservoir	Own
Amity		John Martin
		John Martin

WINTER WATER STORAGE SUMMARY SHEET
(Pueblo Reservoir)

<u>CANAL</u>	<u>ACTUAL STORAGE</u>	
Bessemer	6480.00	A.F.
Colorado	7999.18	A.F.
High Line.	8700.00	A.F.
Oxford	2100.00	A.F.
Otero.	695.00	A.F.
Catlin	8700.00	A.F.
Holbrook	9472.27	A.F.
Fort Lyon.	2308.07	A.F.
West Pueblo.	120.00	A.F.
Consolidated	2880.00	A.F.
Riverside.	120.00	A.F.
Miscellaneous.	180.00	A.F.

WINTER WATER SUMMARY SHEET
(Off Channel Storage)

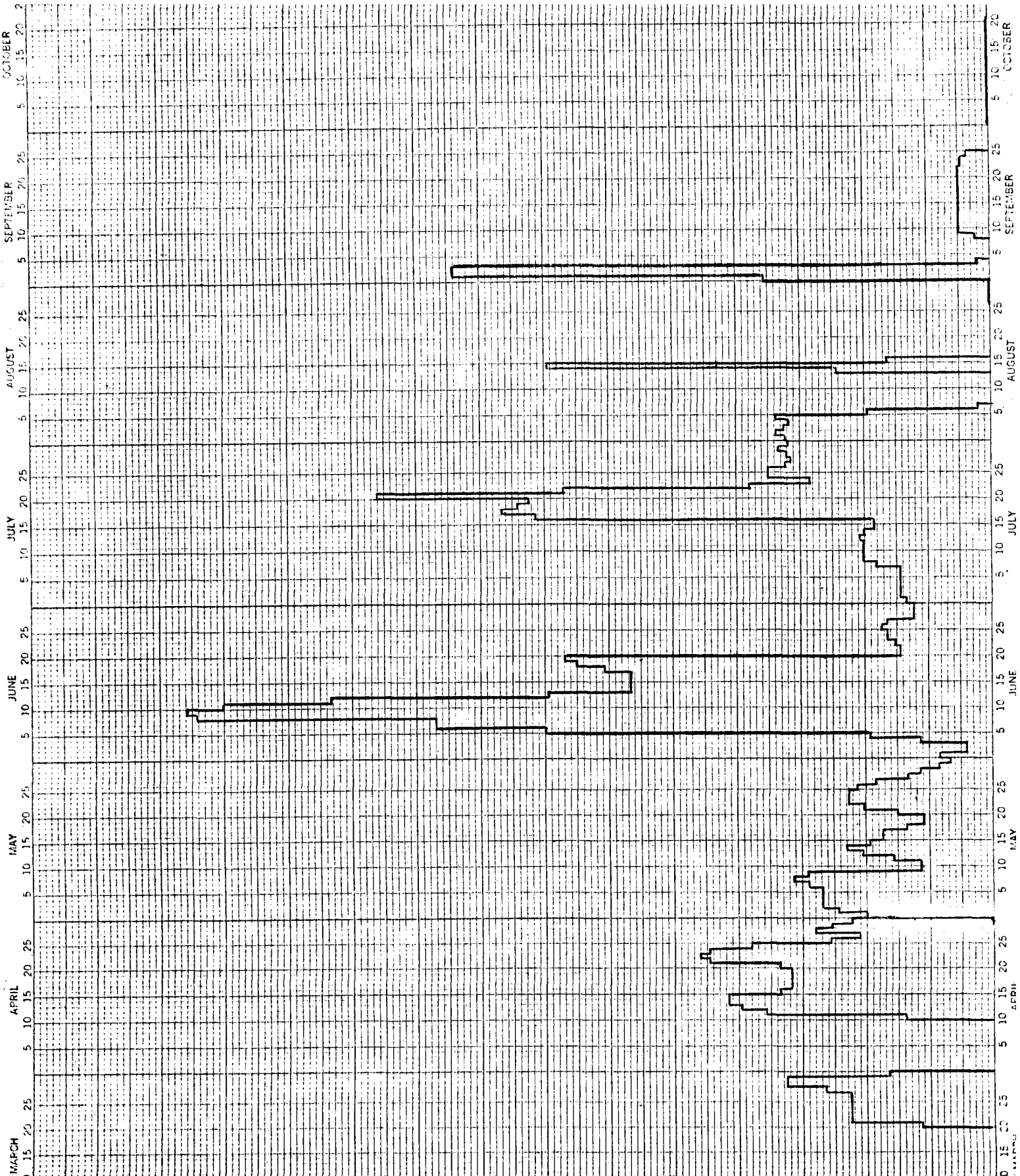
Otero	25.00	A.F.
Colorado.	10668.00	A.F.
Fort Lyon	48439.00	A.F.
Fort Lyon @ John Martin	1762.37	A.F.
Amity @ John Martin	22327.63	A.F.
Holbrook.	6228.00	A.F.

In this summary, the figures are from November 15, 1980 through March 14, 1981. The Amity Canal had their Winter Water delivered to John Martin; the storage began November 25, 1980 in John Martin and ended March 15, 1981.

The Fort Lyon Canal had some of their Winter Water credited to John Martin on March 15, 1981 to adjust their percentage to the total system. This water was exchanged with the Fort Lyon and John Martin by the end of May 1981.

The first release of Winter Water from Pueblo Reservoir was March 20, 1981 to the Catlin Canal. The release then continued to various irrigation companies through October 21, 1981 with the majority of the water being run during June and July.

The following graphs show the amount and the time the Winter Water was released from Pueblo Reservoir.



BLO WINTER WATER
 RELEASES FROM
 BLO RESERVOIR
 1980

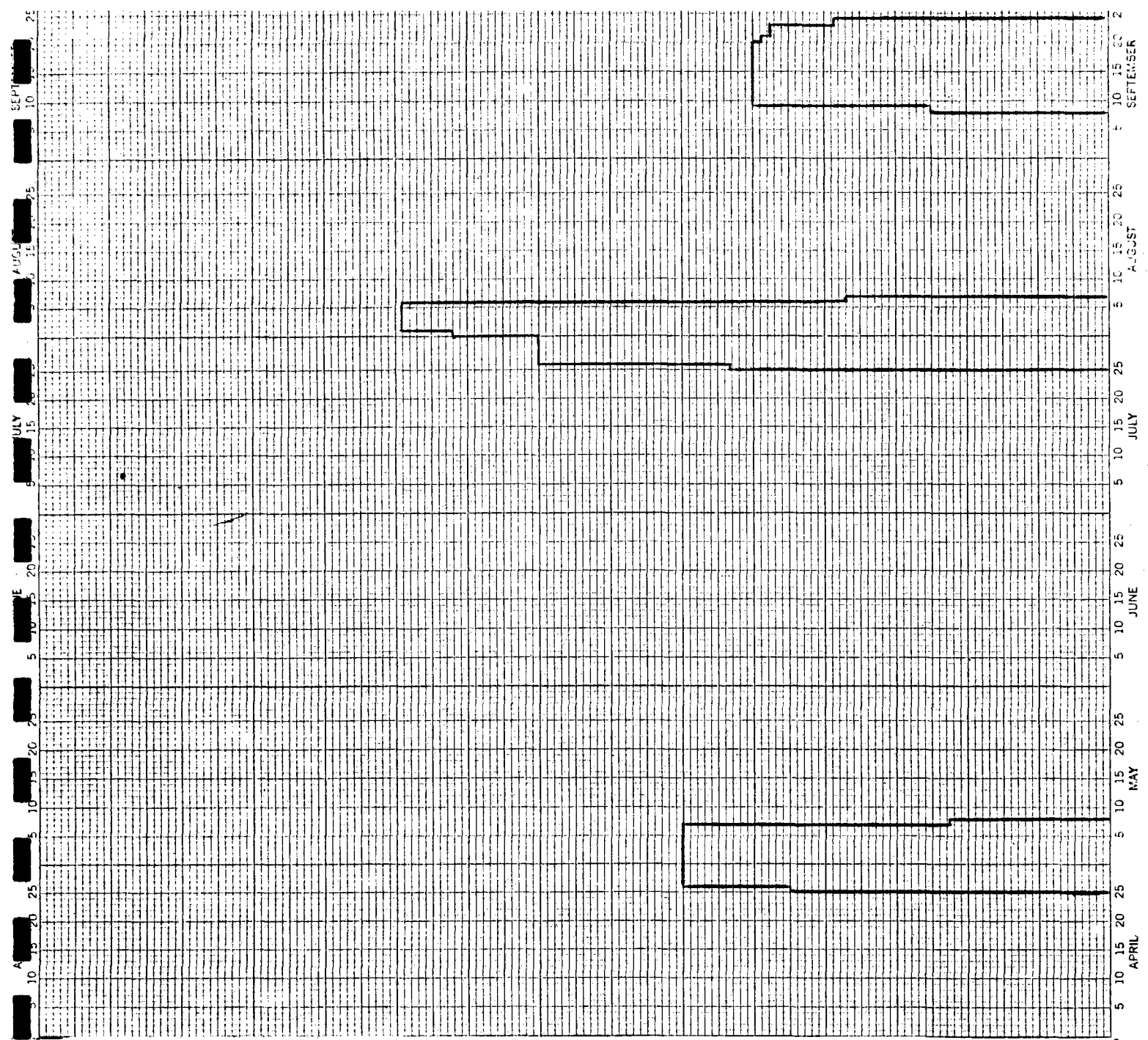
1300
 1200
 1100
 1000
 900
 800
 700
 600
 500
 400
 300
 200
 100

CONSOLIDATED CANAL

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

PUEBLO RESERVOIR
1981

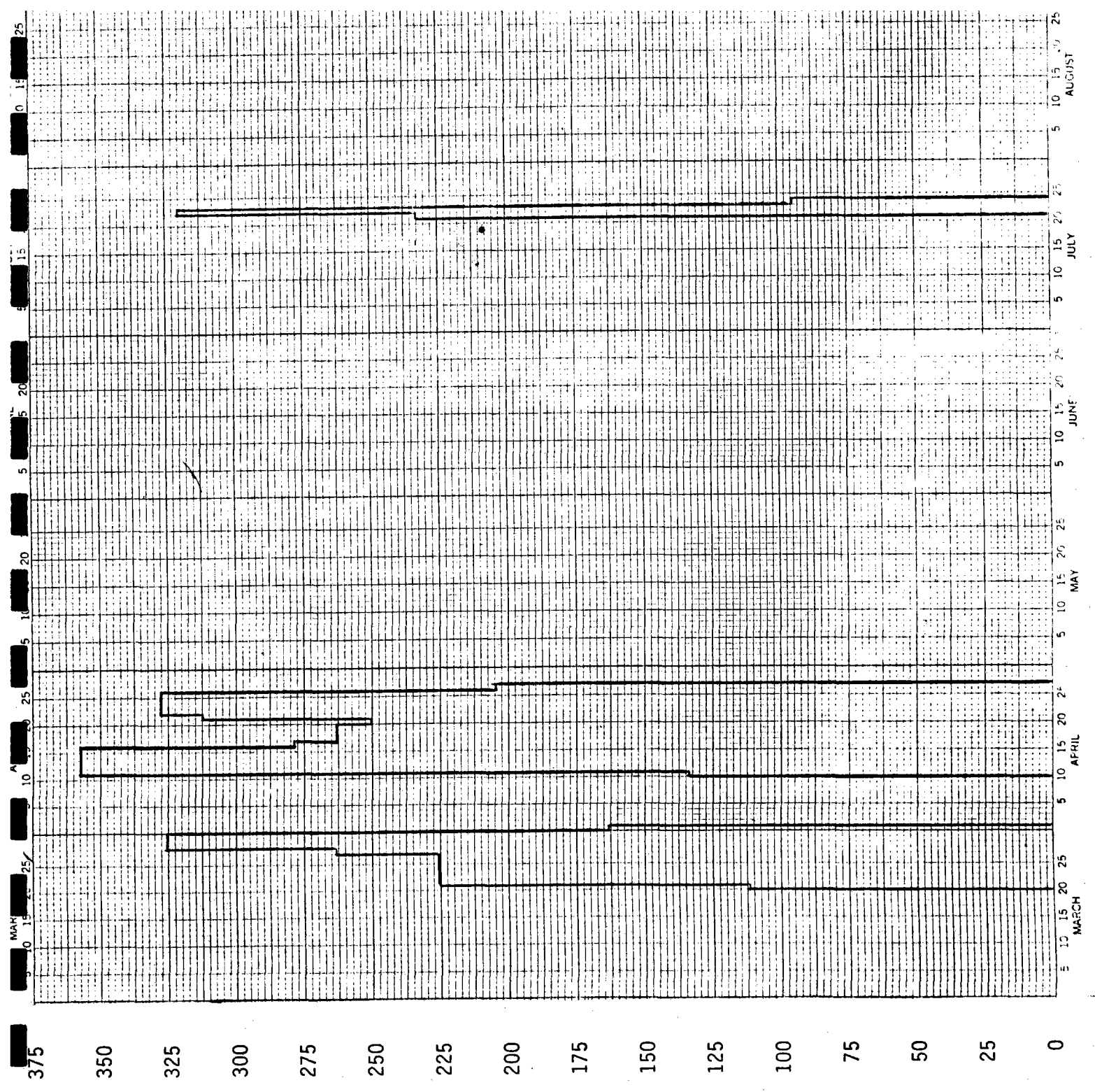
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CATLIN CANAL

WINTER WATER
TIME AND QUANTITY RELEASES
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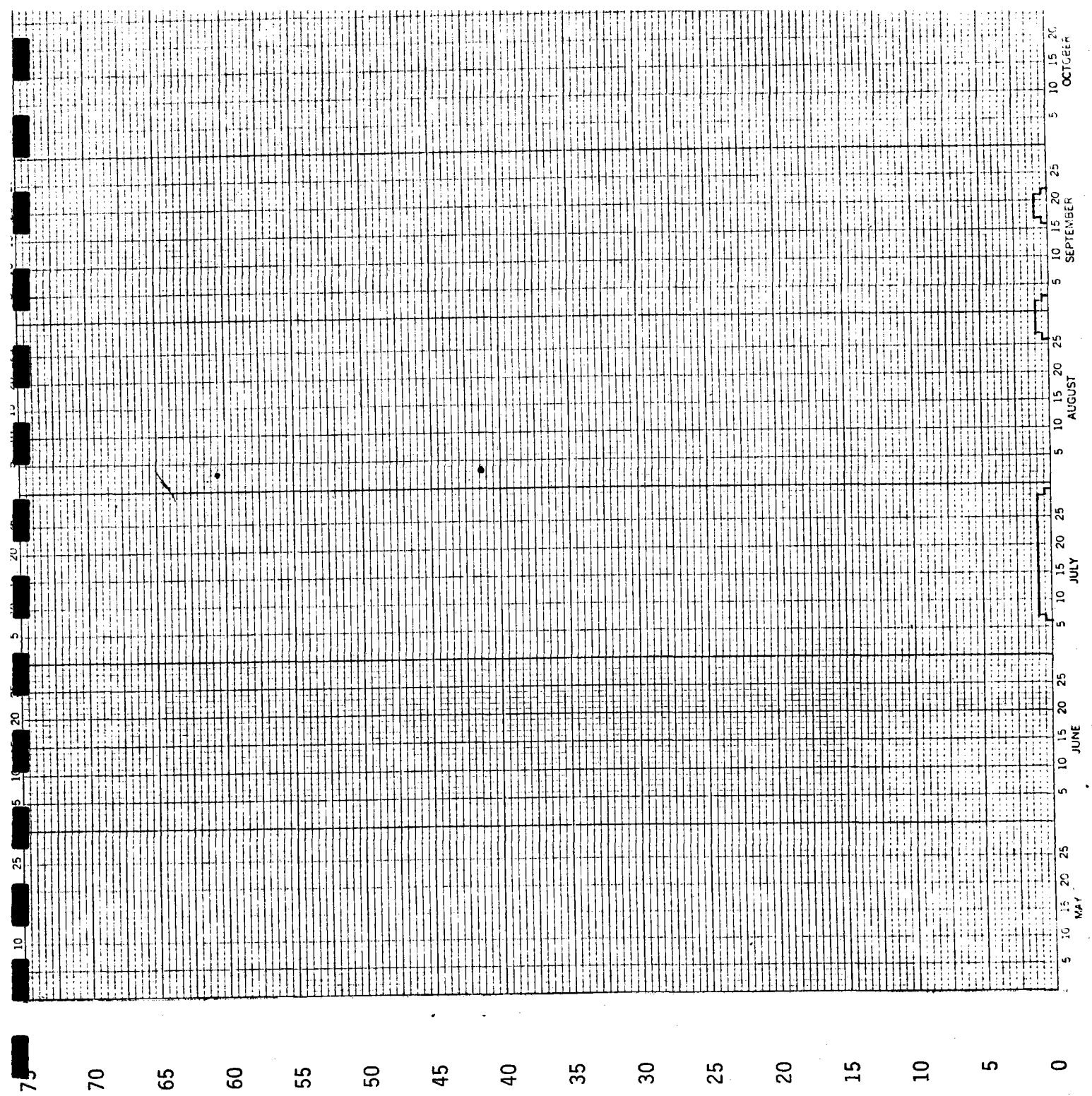
PUEBLO RESERVOIR
1981



RIVERSIDE DAIRY

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

PUEBLO RESERVOIR
1981

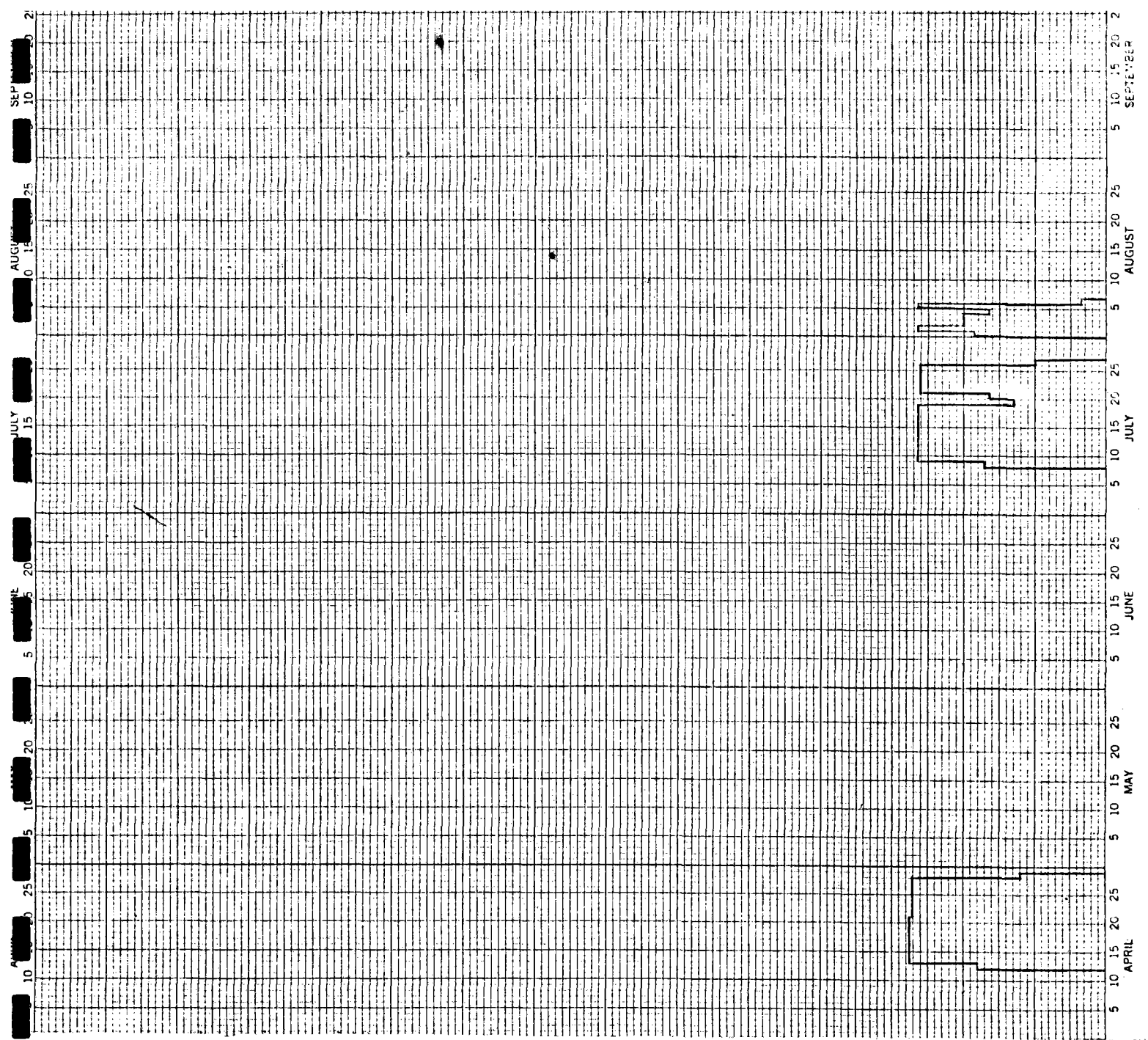


OXFORD CANAL

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

PUEBLO RESERVOIR
1981

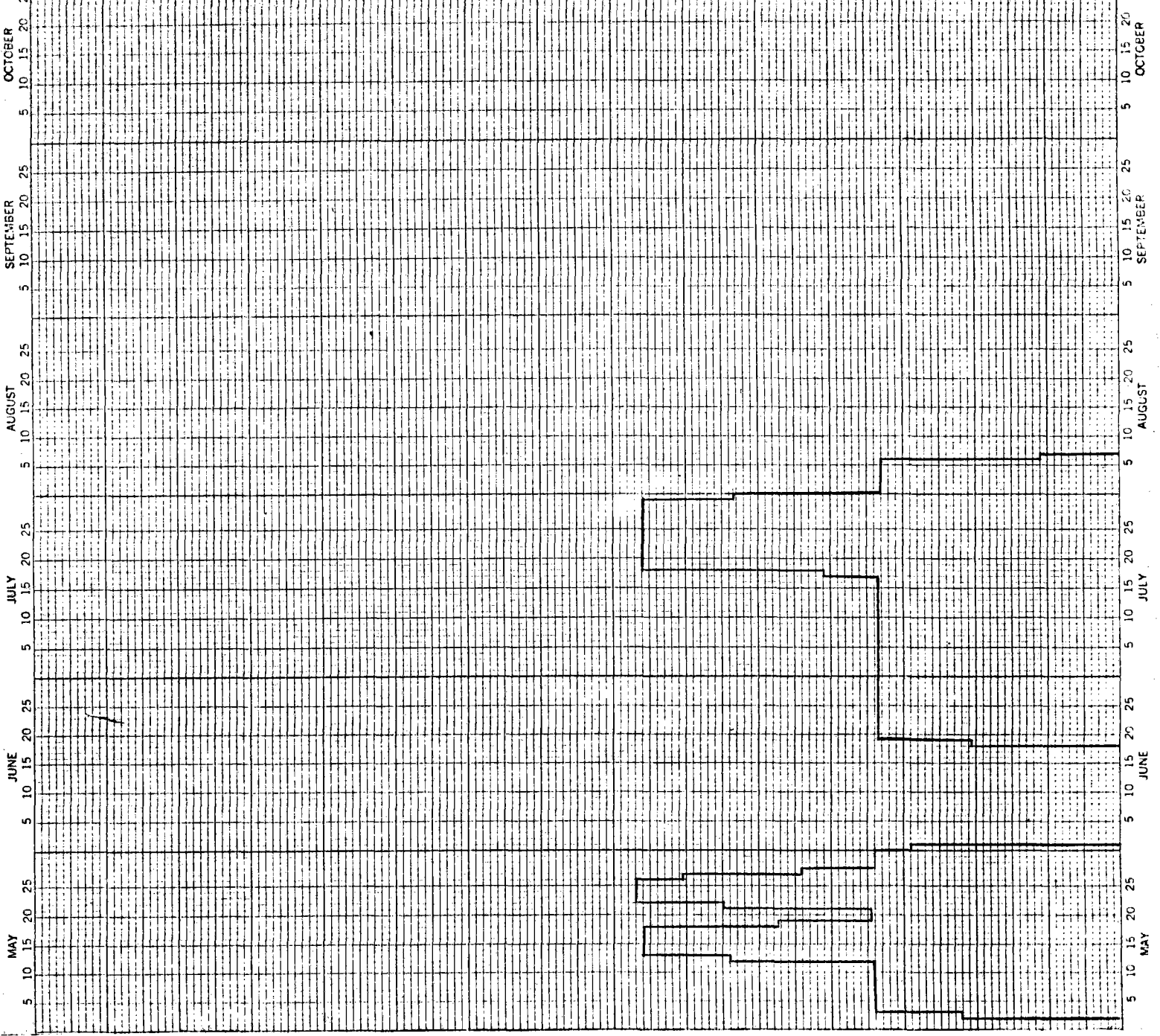
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HIGHLINE CANAL

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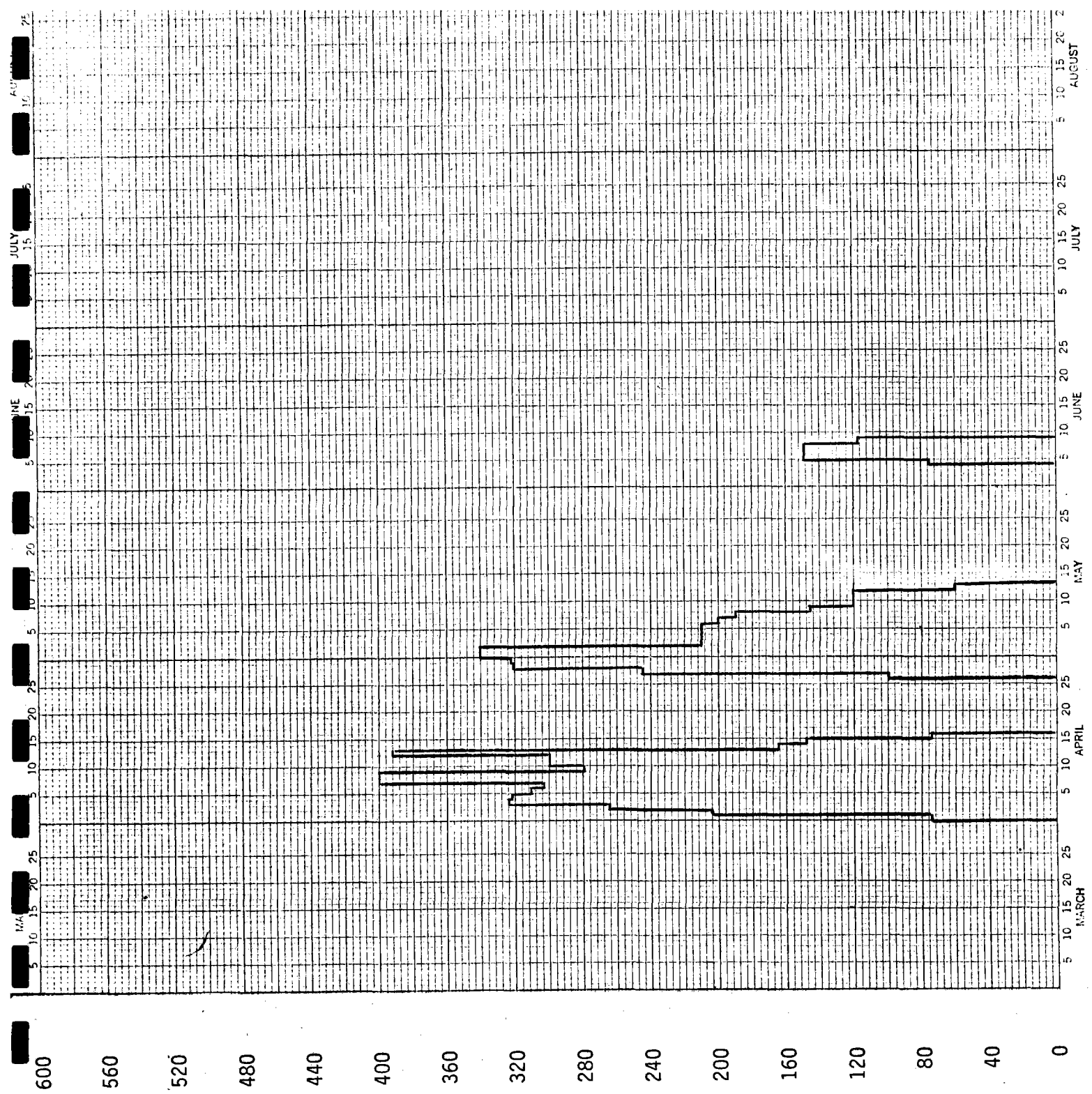
WINTER WATER
TIME AND QUANTITY RELEASES
FROM
PUEBLO RESERVOIR
1981



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WINTER WATER
TIME AND QUANTITY RELEASES
FROM

PUEBLO RESERVOIR
1981

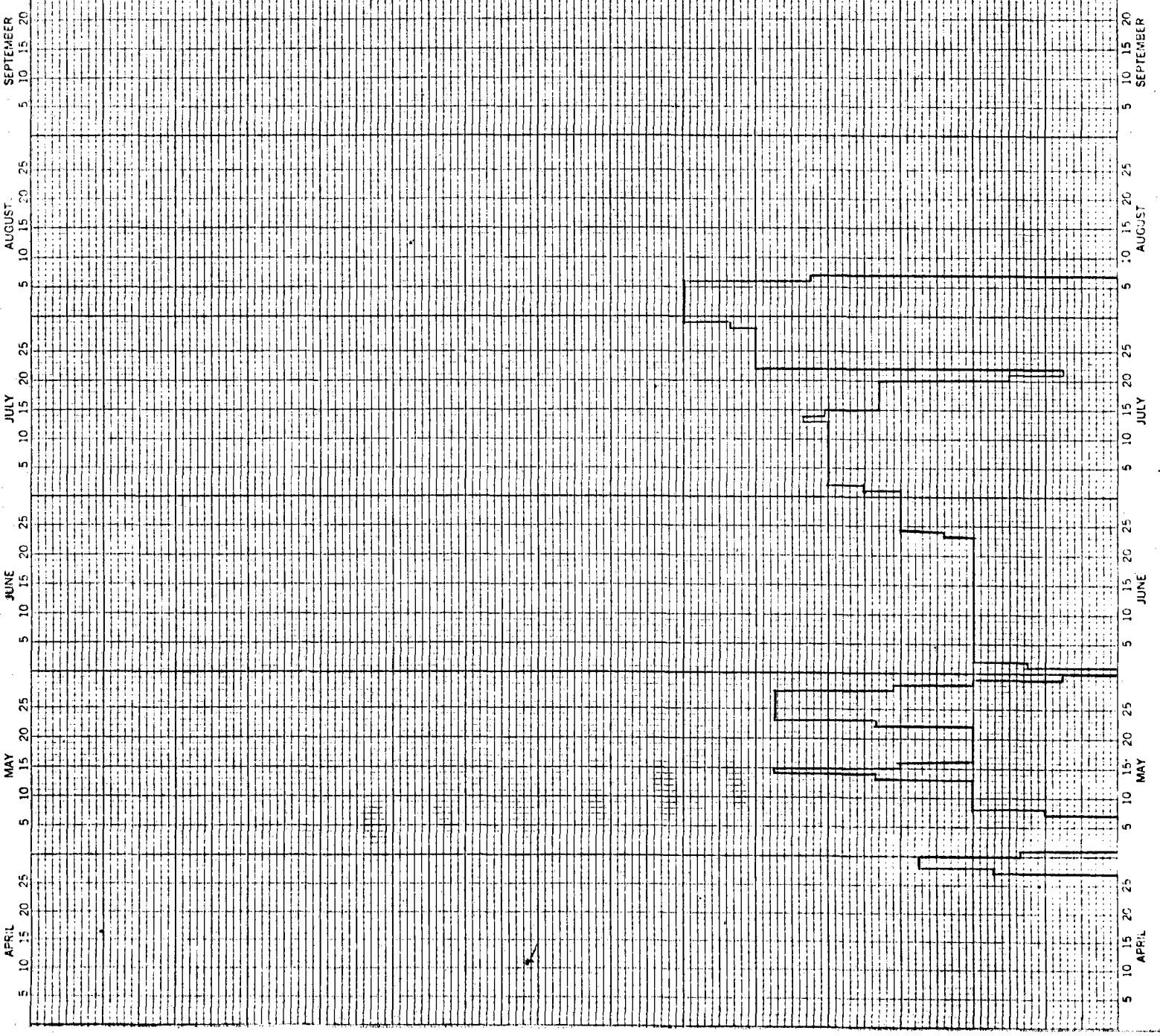


BESSEMER CANAL

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WINTER WATER
TIME AND QUANTITY RELEASES
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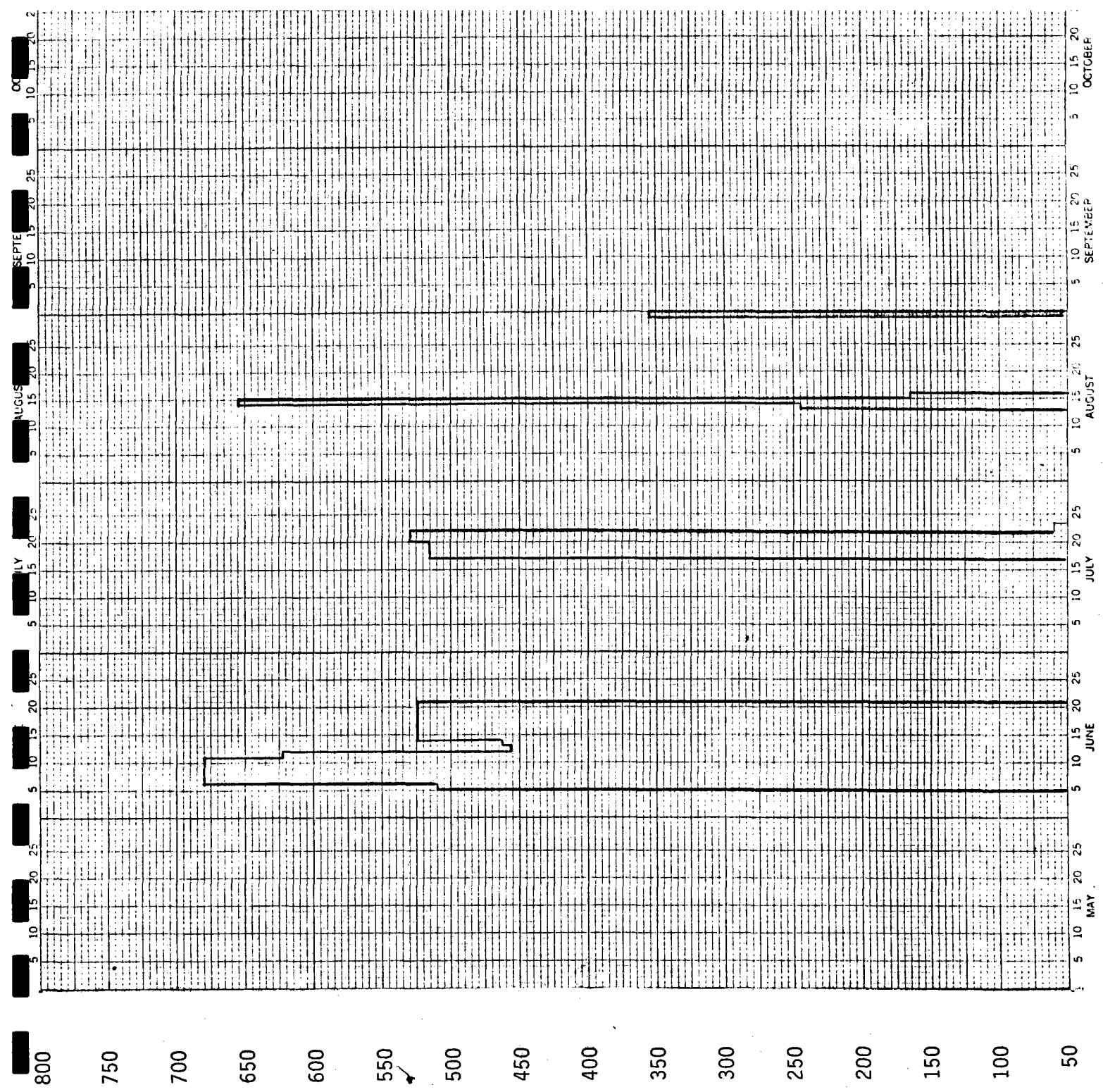
PUEBLO RESERVOIR
1981



COLORADO CANAL

WINTER WATER
TIME AND QUANTITY RELEASES
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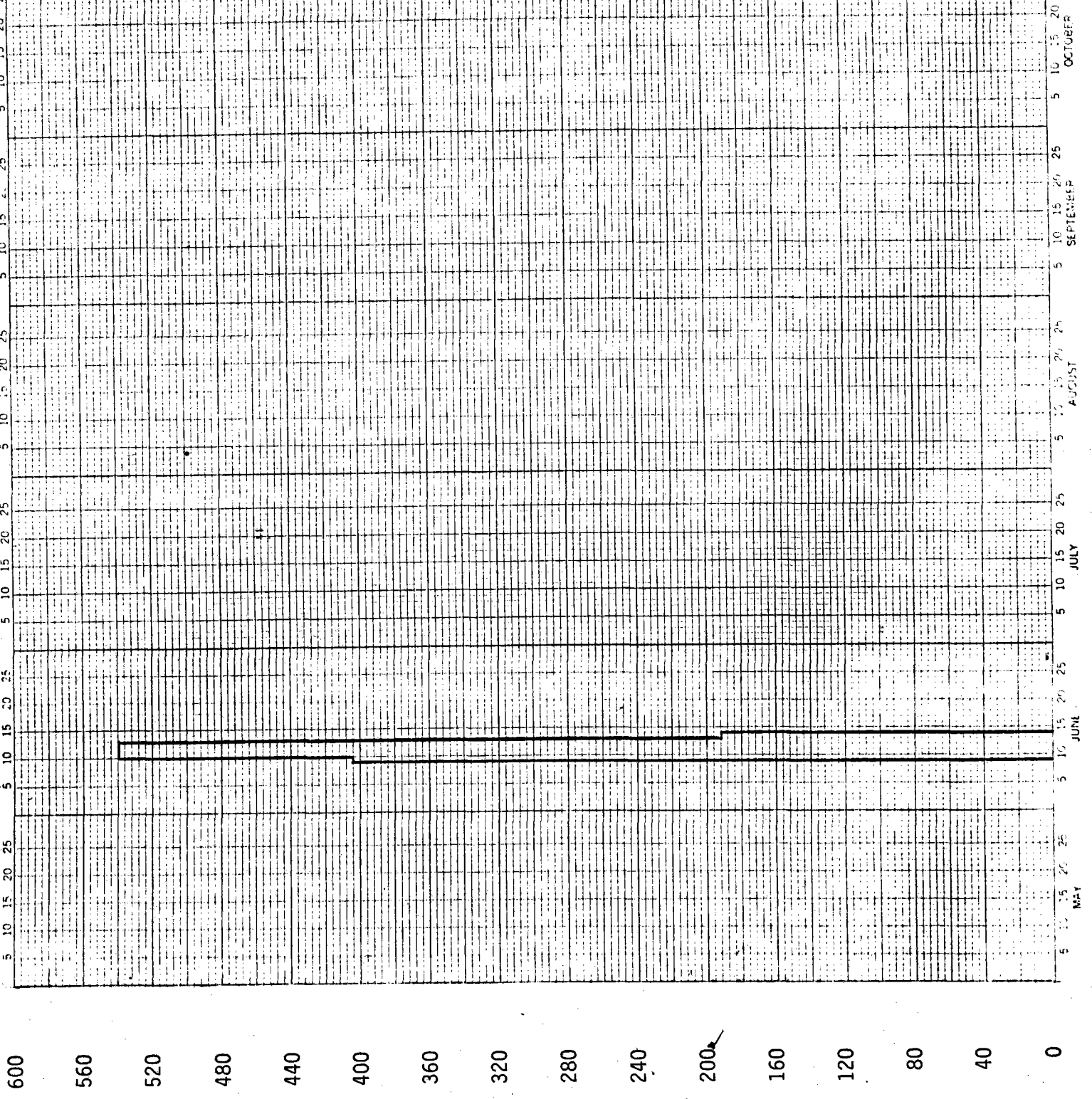
PUEBLO RESERVOIR
1981



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WINTER WATER
TIME AND QUANTITY RELEASES
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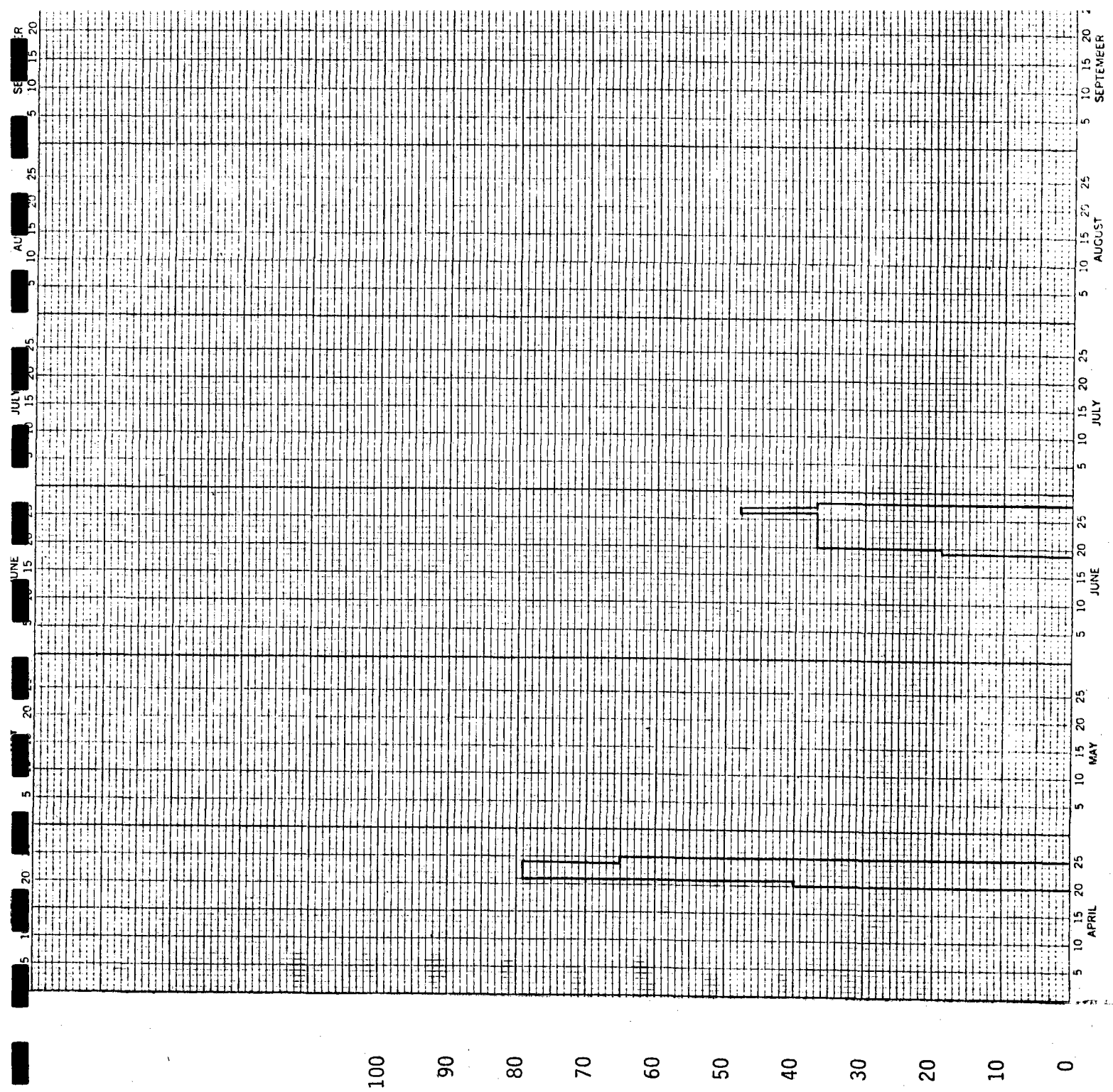
PUEBLO RESERVOIR
1981



OTERO, CANAL

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

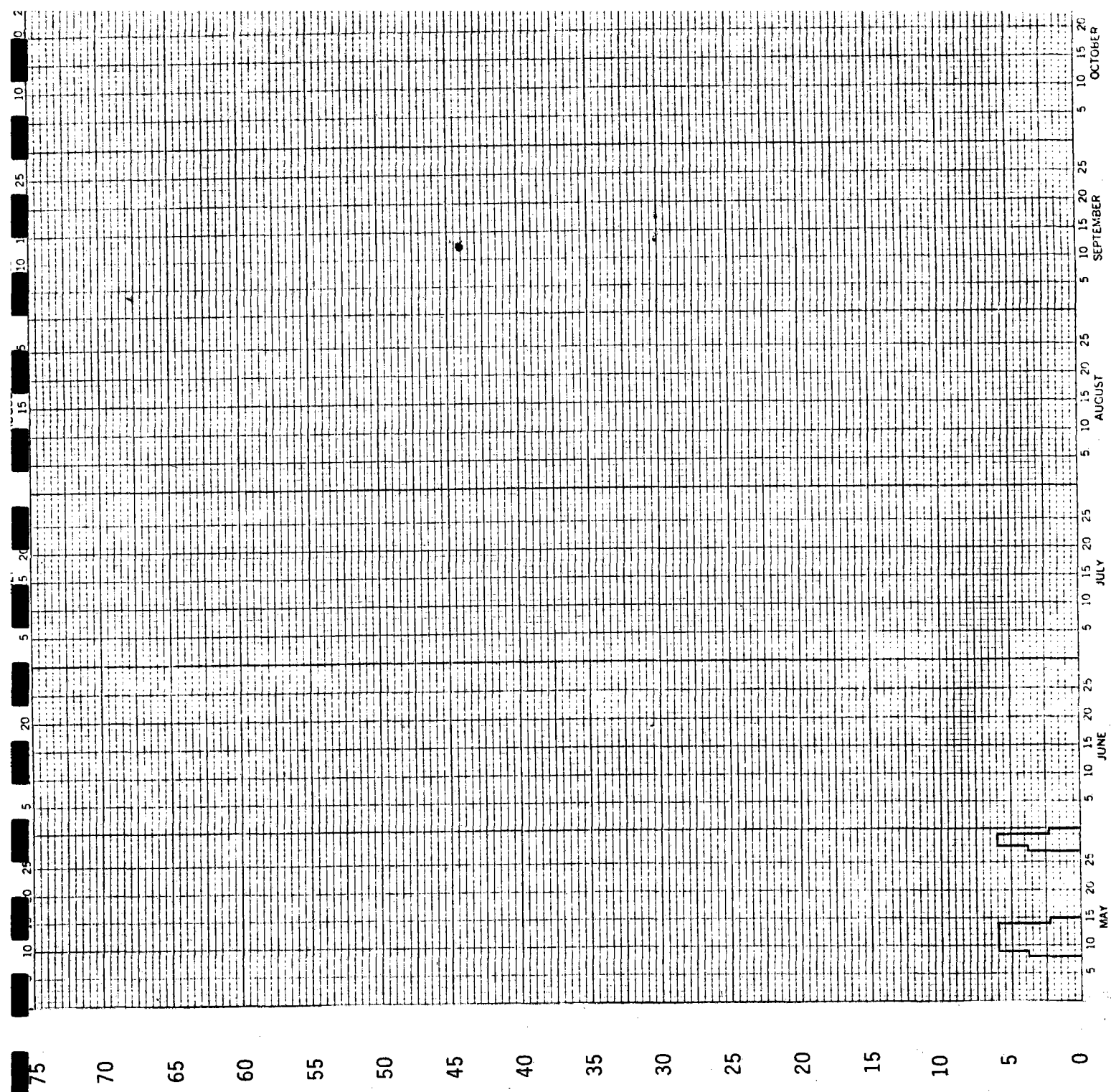
PUEBLO RESERVOIR
1981



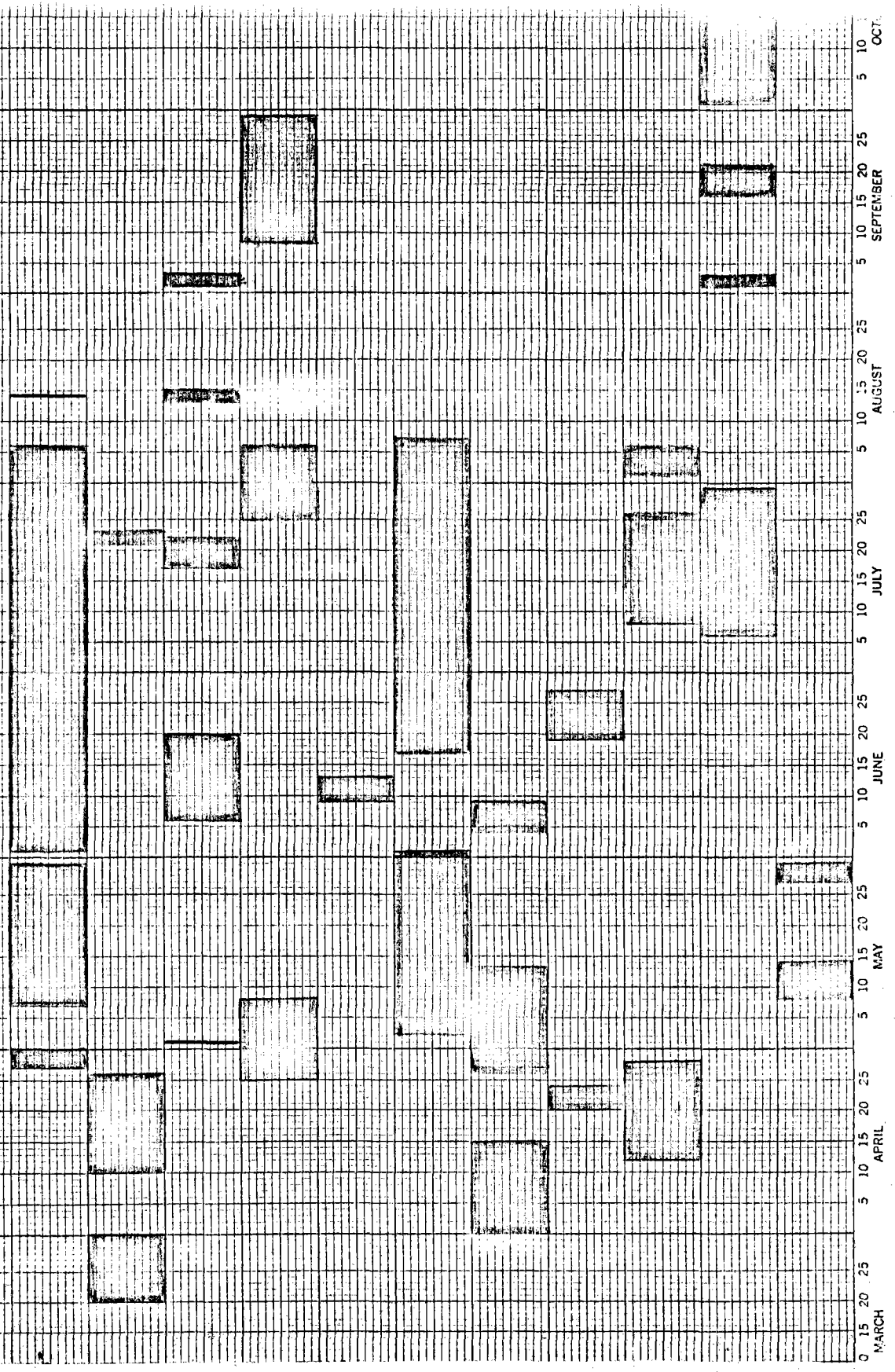
WEST PUEBLO DITCH

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

PUEBLO RESERVOIR
1981



WINTER WATER
 TIME RELEASE FROM
 PUEBLO RESERVOIR
 FOR 1981



GROUND WATER ADMINISTRATION

The initial focus of Pumping Rules and Regulations was on contacting owners of wells who had dropped out of a Plan of Augmentation. The 29 well owners who were contacted either rejoined a well association, or refrained from pumping on Thursdays, Fridays, Saturdays or Sundays, or agreed to limit pumping to 72 hours per week.

In July, the focus of ground water administration shifted to the alluvial wells on Horse Creek and Steel Fork Creek. The problem was, how to treat wells that are far removed from the Arkansas River and how to administer senior surface rights on Horse Creek that are also some distance from the Arkansas River and generally junior to the Arkansas River Call. For now, the wells will be subject to the Pumping Rules and Regulations. The Box Springs "call" on the Steel Fork Creek decrees will continue to be considered futile. A public meeting, chaired by Leonard Mercer was held to discuss making Horse Creek and its tributaries a designated Ground Water Basin. Any action on this designation is at least two years in the future.

Approximately 15,000 miles were driven in field checking Late Registrations.

SUMMARY OF WELLS
IRRIGATION DIVISION NO. 2

WATER DIST.
NO.

	TYPE OF USE								TOTAL	
	0	1	2	3	4	5	6	7		8
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	320
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
 (1) Domestic (3) Domestic & Stock (5) Industrial (7) Irrigation & Stock
 (8) Municipal

77 the preceding table is of January 1977 which predates the formation of Water District 79.

NEW PERMITS ISSUED IN DIVISION 2

1 NOV 80 to 31 OCT 81

New In-House-Use Only (0)	432
Domestic (1), Stock (2), Domestic and Stock (3)	722
New Non-Tributary, Non-Exempt wells	11
Replacements for existing adjudicated wells	23
Denied applications	16
New Decreed Non-Exempt wells.	0

UNDERGROUND WATER
IRRIGATION DIVISION NO. 2

Irrigation Division 2, composed of water Districts 10, 11, 12, 13, 14, 15, 16, 17, 66, 67 & 79, has 17,516 completed wells of all types in operation. Types of use are domestic, stock, domestic and stock, commercial, industrial, irrigation, irrigation and stock, and 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.
Pierre Shale	0 - 3,300'	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.

UNIT	THICKNESS	PHYSICAL CHARACTER	HYDROLOGIC CHARACTER
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	1 - 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	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.
Graneréous 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-FULL 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.



DIVISION OF WATER RESOURCES

DEPARTMENT OF NATURAL RESOURCES
ROBERT W. JESSE
IRRIGATION DIVISION ENGINEER
1906 W. NORTHERN AVENUE
PUEBLO, COLORADO 81004
OFFICE: 542-3368 HOME: 545-2873

MEMORANDUM

TO: Operations Committee
Arkansas River Compact Administration

FROM: Robert W. Jesse
Division Engineer *Robert Jesse*
Colorado Division of Water Resources

SUBJECT: Operation of John Martin Reservoir During Compact
Water Year 1981

DATE: November 12, 1981

Winter Storage in John Martin Reservoir

November 1, 1980 - April 19, 1981

Winter Storage in John Martin Reservoir began at 0001 Hour, November 1, 1980. At that time the Conservation Pool was empty. The Reservoir contained 35,395 A.F. This water was distributed: 27,160.34 A.F. Agreement Accounts; 8,234.66 A.F. in the Permanent Recreation Pool. Winter storage ended at 0036 Hours, April 19, 1981. During this period a total of 46,760.49 A.F. was stored. This water was allocated to various accounts as specified in the Operating Plan, adopted by the Arkansas River Compact Administration on April 24, 1980. Table I thru Table V show amounts stored in, amounts released from, and evaporation losses from, the various accounts. Table VI shows the allocation of the total contents of the Reservoir at 2400 Hours, April 19, 1981.

TABLE I
COMPACT WATER

	Contents Beginning of Month A.Ft.	Inflow A.Ft.	Evaporation A.Ft.	Releases A.Ft.	Contents End of Month A.Ft.
November	0	5,544.68	31.17	0	5,513.51
December	5,513.51	4,897.00	77.33	0	10,333.18
January	10,333.18	4,423.00	104.21	0	14,651.97
February	14,651.97	3,325.00	221.10	0	17,755.87
March	17,755.87	4,977.00	434.76	0	22,298.11
April 19	22,298.11	1,901.81	252.46	23,947.46	(2400 hrs. 4/19) 0
Totals		25,068.49	1,121.03	23,947.46	

TABLE II
Amity Canal Winter Water

	Contents Beginning of Month A.Ft.	Inflow A.Ft.	Evaporation A.Ft.	Releases A.Ft.	Contents End of Month A.Ft.
November	0	1,599.00	1.51	0	1,597.49
December	1,597.49	6,924.00	48.77	0	8,472.72
January	8,472.72	6,532.00	96.79	0	14,907.93
February	14,907.93	4,180.00	231.67	0	18,856.26
March	18,856.26	2,457.00	425.85	1,586.13	19,301.28
April 19	19,301.28	0	0	19,301.28	(2400 hrs. 4/19) 0
Totals		21,692.00	804.59	20,887.41	

TABLE III
Ft. Lyon Canal Winter Water

	Contents Beginning of Month A.Ft.	Inflow A.Ft.	Evaporation A.Ft.	Releases A.Ft.	Contents End of Month A.Ft.
November	0	0	0	0	0
December	0	0	0	0	0
January	0	0	0	0	0
February	0	0	0	0	0
March	0	1,586.13	16.33	0	1,569.80
April 19	1,569.80	0	16.90	549.43	(2400 hrs. 4/19) 1,003.47
Totals		1,586.13	33.23	549.43	

TABLE IV
Agreement Water

	Contents Beginning of Month A.Ft.	Inflow A.Ft.	Evaporation A.Ft.	Releases A.Ft.	Contents End of Month A.Ft.
November	27,160.34	0	351.25	550.68	26,258.41
December	26,258.41	0	254.22	0	26,004.19
January	26,004.19	0	214.57	0	25,789.62
February	25,789.62	0	351.46	0	25,438.16
March	25,438.16	0	543.78		24,894.38
April 19	24,894.38	43,798.17	858.95	6,490.81	(2400 hr. 4/19) 61,342.79
Totals		43,798.17	2,574.23	7,041.49	

TABLE V
Permanent Recreation Pool

	Contents Beginning of Month A.Ft.	Inflow A.Ft.	Evaporation A.Ft.	Releases A.Ft.	Contents End of Month A.Ft.
November	8,234.66	0	108.07	0	8,126.59
December	8,126.59	0	78.68	0	8,047.91
January	8,047.91	0	66.43	0	7,981.48
February	7,981.48	0	108.77	0	7,872.71
March	7,872.71	0	168.28	0	7,704.43
April 19	7,704.43	0	127.69	0	(2400 hrs. 4/19) 7,576.74
Totals		0	657.92	0	

TABLE VI
Allocation of Reservoir Contents
In Acre Feet
@ 2400 Hr. April 19, 1981

Total Contents	Agreement Water	Compact Water	Amity Winter Water	Ft. Lyon Winter Water	Permanent Pool Water
69,923.00	61,342.79	0	0	1,003.47	7,576.74

SUMMER STORAGE IN JOHN MARTIN RESERVOIR

April 19, 1981 - October 31, 1981

Conservation Pool

Summer storage began at 0036 Hour, April 19, 1981. At that time the Conservation Pool was empty. During the Summer season, storage in the Conservation Pool totalled 67,463.33 Acre Feet. This was all released into accounts in accordance with the Operating Plan, adopted April 24, 1980. The Conservation Pool was empty at 2400 Hours, October 31, 1981, the end of the Compact Water Year.

TABLE VII

Summer Operations of Conservation Pool

	Contents, A.Ft. Beginning Date Shown	Inflow, A.Ft.	Evaporation, A.Ft.	Release, A.Ft.	Contents, A.Ft. End of Month
April 19	0	0	0	0	0
May 1	0	3707.73	0	1750.00	1957.73
June 1	1957.73	1780.76	4.27	3734.22	0
July 1	0	10954.14	29.53	10924.61	0
August 1	0	48811.81	287.32	47500.00	1024.49
Sept. 1	1024.49	2208.89	2.55	3230.83	0
October 1	0	0	0	0	0
Totals		67463.33	323.67	67139.66	

TABLE VIII

Storage In and Releases From Conservation Pool

Beginning of Storage		Ending of Storage		Beginning of Release		Ending of Release	
Hour	Day	Hour	Day	Hour	Day	Hour	Day
0300	May 31	2050	June 1	0300	May 31	2050	June 1
0800	July 4	1906	July 9	0800	July 4	1906	July 9
0600	Aug. 8	1410	Sept. 1	0600	Aug. 8	1410	Sept. 1
1100	Sept. 8	1737	Sept. 9	1700	Sept. 8	1737	Sept. 9

TABLE IX

Summer Operation of Permanent Recreation Pool

	Contents, A.Ft. Beginning Date Shown	Inflow A.Ft.	Evaporation, A.Ft.	Release, A.Ft.	Contents, A.Ft. End of Month
April 20	7576.74	0	85.18	0	7491.56
May 1	7491.56	0	285.71	0	7205.85
June 1	7205.85	0	437.83	0	6768.02
July 1	6768.02	0	409.35	0	6358.67
Aug. 1	6358.67	31.35	323.30	0	6066.72
Sept. 1	6066.72	0	304.04	0	5762.68
Oct. 1	5762.68	0	202.04	0	5560.64
Totals		31.35	2047.45	0	

Releases for Irrigation

All waters stored in the Conservation Pool were first transferred to Agreement Accounts in accordance with the Operating Plan, dated April 24, 1980. Water was then released upon order by the Water Commissioner or the Division Engineer.

State of Kansas

Releases to the State of Kansas were made upon request from their Account. In addition, releases were made from both the Transit Loss Account and the Sisson Ditch Account to assist delivery of the Kansas demand to Coolidge, Kansas.

TABLE X

Releases to State of Kansas, A.Ft.

	Kansas Agreement Account	Kansas Transit Loss Account	Sisson Ditch Account	Total Release to Kansas
April	0	0	0	0
May	0	0	0	0
June	0	0	0	0
July	17125.80	1437.60	360.18	18923.58
August	16050.00	0	341.00	16391.00
Sept.	3259.22	0	8.50	3267.72
Oct.	0	0	0	0
Totals	36435.02	1437.60	709.68	38582.30

State of Colorado

Releases to the State of Colorado were made upon individual request of the various ditches in Colorado. Orders were placed with Water Commissioners who then transmitted them to the Operations Secretary of the Compact Administration. Appropriate transit losses using U.S.G.S. Transit Loss Study Reach 6 were deducted to calculate headgate diversions.

TABLE XI

Releases to State of Colorado

MONTH	ACRE-FEET
April	16662.00
May	17853.18
June	5807.21
July	10327.71
August	15025.56
September	11762.44
October	3037.84
Total	80475.94

Contents of the Reservoir at 2400 Hours, October 31, 1981 was 13712.89 A.Ft.

TABLE XII

Allocation of Contents @ 2400 Hours, Oct. 31, 1981

Conservation Pool	Agreements Accounts	Permanent Pool	Total
0	8152.25 A.Ft.	5560.64 A.Ft.	13712.89 A.Ft.

CONCLUSIONS

Attached are copies of the monthly sheets, which were sent out weekly. All weekly sheets should be discarded and replaced with the monthly summation sheets.

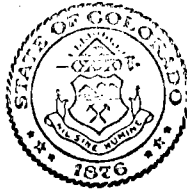
A new Area Capacity Table was received and implemented on August 12, 1981.

In August 1981, 31.35 A.F. was stored in the Permanent Pool from the Muddy Creek decrees.

Attached is the report of the ad hoc Committee to report on gauge stations.

All letter orders for releases, changes and stops are on file in the Division Engineer's office and the Army Corps of Engineers' office.

RICHARD D. LAMM
Governor



J.A. DANIELSON
State Engineer

DIVISION OF WATER RESOURCES

DEPARTMENT OF NATURAL RESOURCES
ROBERT W. JESSE
IRRIGATION DIVISION ENGINEER
1906 W. NORTHERN AVENUE
PUEBLO, COLORADO 81004
OFFICE: 542-3368 HOME: 545-2873

September 23, 1981

MEMORANDUM

TO: Jeris Danielson, State Engineer
Howard Corrigan
Leo Idler
Kent Reyher
Jerry Hughes
Bill McDonald
Mike Mocek
Bill Howland
Dave Aschkinasi
Frank Cooley

SUBJECT: August 22, 1981 Meeting

As directed by Mr. Cooley at the August Compact meeting, attached is my recommendations and perceptions of the August 27 meetings.

It looks like an increase in Compact cost to U.S.G.S.

If you have any further ideas, comments or want to add or delete anything, please get back to me as soon as possible so I can have a report ready for the Operations Committee.

RWJ/eg

Robert W. Jesse

REPORT TO A.R.C.A. OPERATIONS COMMITTEE ON GAGING STATIONS

At the August meeting, the Compact asked the Division Engineer for Division 2 to act as Chairman of an ad hoc committee to report on the gage stations operated by the Compact. A meeting was held at 2:00 p.m. on August 27, 1981 in Lamar (notice attached).

Present were representatives from the United States Geological Survey, Army Corps of Engineers, Colorado Attorney General's Office, Colorado Water Conservation Board, Water Commissioners for Kansas, both Colorado Compact Commissioners and the Division Engineer from Colorado.

Recommendations to Operations Committee:

0712400 Arkansas River at Las Animas

Should drop requirement of monthly computation of records (see Note C, Exhibit "A"), and request 4 instead of 8 extra measurements, and retain the 3 flood measurements. Should have telephone accessible telemark installed.

08130500 Arkansas below John Martin

Should drop monthly computation of records (see Note C, Exhibit "A"), and request 4 instead of 8 extra measurements. Should have telephone telemark installed.

Arkansas at Granada

Should have 4 extra measurements and 3 flood measurements.

07128500 Purgatoire R. near Las Animas

Should drop requirement of monthly computation of records (see Note C, Exhibit "A"), and request 4 instead of 8 extra measurements, and retain the 3 flood measurements. Should have telephone accessible telemark installed.

John Martin Reservoir

No change.

Radio Relay Stations (3 in Colorado)

Telemarks should be operated for Water Year 1982 with these radios. And, if Telemeters are superior, evaluate radio network in Colorado in December.

KANSAS DISTRICT

07137500 Arkansas near Coolidge

Drop monthly record computations.

07137000 Frontier Ditch

Drop monthly record computations.

Radio Relay Stations (5 in Kansas)

Telemarks should be operated in Water Year 1982 with these radios. And, if telemeters are superior, evaluate radio network in Kansas in December 1982.

SUMMARY

It was felt that telephone telemarks should be installed in the State of Colorado operated gages at Nine Mile on the Purgatoire and the La Junta gage on the Arkansas.

It is further felt that a report and inquiry such as this be submitted each year to the Operations Committee.

COMSAT Program as demonstrated should be watched closely, as it seems to be the ultimate answer to all data collection and, if implemented and within Compact budget capabilities, would replace all radio, telephone and data computation systems.

Above recommendations were sent to all present and their replies are appended.

Attachments: 8/27/81 meeting notice
Exhibit "A"
10/5/81 Memo from Colorado Water Conservation Board
9/28/81 Letter from Howard Corrigan



KANSAS STATE BOARD OF AGRICULTURE

W. W. DUITSMAN, Secretary

FIELD OFFICE, DIVISION OF WATER RESOURCES
HOWARD C. CORRIGAN, Water Commissioner

1513 E. Fulton
P. O. Box 618, GARDEN CITY, KANSAS 67846
Telephone (316) 276-2901

GUY E. GIBSON, Chief Engineer
DIVISION OF WATER RESOURCES
TOPEKA • • KANSAS

September 28, 1981

Mr. Robert W. Jesse
Irrigation Division Engineer
Division of Water Resources
1906 W. Northern Avenue
Pueblo, Colorado 81004

Dear Mr. Jesse:

I am in receipt of your letter dated September 23, 1981 concerning your recommendations and perceptions of the August 27 meeting held as directed by Mr. Cooley at the August Compact meeting in reference of investigation of the gauge stations operated by the Compact.

I would like to go on record as opposing any drop in monthly record computations on either the Arkansas River near Coolidge or the Frontier Ditch at the Stateline. These records are used constantly by this office. Also I find nowhere in your letter the concern in the operating cost differences by the U.S.G.S. in operating the Kansas gauge stations as to the Colorado gauge stations.

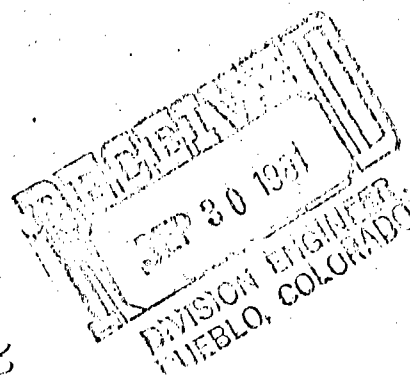
It should be noted that I have no Exhibit "A" attached to my letter.

Yours truly,


Howard C. Corrigan
Water Commissioner

HCC:ss

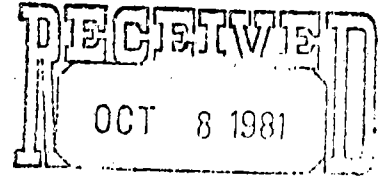
- cc: Jeris Danielson, State Engineer
- cc: Leo Idler
- cc: Kent Reyher
- cc: Jerry Hughes
- cc: Bill McDonald
- cc: Bill Howland
- cc: Frank Cooley
- cc: Carl Bentrup
- cc: Ronald Olomon
- cc: Guy E. Gibson



MEMORANDUM

COLORADO WATER CONSERVATION BOARD

J. William McDonald
Director



DIVISION ENGINEER
PUEBLO, COLORADO

TO: E. I. Jencsok
FROM: Thomas W. Perry IV
DATE: October 5, 1981
SUBJECT: Arkansas River Compact - Gaging Station Network
Ad Hoc Committee Findings

In my estimation, Mr. Jesse's perceptions are correct. The three flood measurements in the control section for the Arkansas River below John Martin Dam (08130500) may not be necessary as this station measures regulated flow, exclusively.

TWP:mwp
cc: Robert W. Jesse
Division 2 Engineer

EXHIBIT "A"

FY 1982 (October 1981 - September 1982)

SUMMARY OF PROGRAM

USGS/Arkansas River Compact Administration

Station number	Station Name	Coop. or Support	Notes	Funds
Colorado District				
07124000	Arkansas R. at Las Animas	Federal	A	\$ 4,050
		Compact	B,C	2,440
07130500	Arkansas R. below John Martin Reservoir	Federal	A	4,050
		Compact	B,C,D	3,240
07133000	Arkansas River at Lamar	Federal	A	4,050
		Compact	B,C	2,440
	Arkansas R. at Granada	Compact	A,B,C,D	6,440
07128500	Purgatoire R. near Las Animas	Federal	A	4,050
		Compact	B,C	2,440
	John Martin Reservoir	Compact	D	800
	Radio relay stations (3 in CO)	Compact	E	1,600
	Compact Net Total, Colorado District			\$19,400
Kansas District				
07137500	Arkansas R. near Coolidge	Federal	A	4,800
		Compact	B,C	3,260
07137000	Frontier Ditch	Federal	F	2,600
		Compact	C	700
	Radio relay stations (5 in KS)	Compact	E	2,530
	Compact Net Total, Kansas District			\$ 6,490
	COMPACT GRAND TOTAL			\$25,890

Note A. Funding includes basic station O & M with about 12 discharge measurements per year.

Note B. Funding includes about 8 additional routine discharge measurements per year (March-November) and about 3 flood measurements per year.

Note C. Funding includes monthly (current) record processing.

Note D. Funding includes \$800 for maintenance of telemark.

Note E. Funding includes maintenance, repair or replacement of radio antennas, Texas Instruments Silent 700, and DARDC's.

Note F. Funding includes only check discharge measurements (no routine measurements are made).

PERSONNEL

Division No. 2

DIVISION OF WATER RESOURCES

<u>NAME</u>	<u>POSITION</u>	<u>DISTRICT</u>	<u>MONTHS WORKED</u>	<u>MILEAGE</u>	<u>ALLOCATED</u>
Robert W. Jesse	Division Engineer	Division 2	Full Time	15,927	12 Months
James F. Kasic	Assistant Division Engineer	Division 2	Full Time	3,072	12 Months
Kenneth J. Cooper	Assistant Division Engineer	Division 2	Full Time	5,469	12 Months
Robert Ermel	Water Commissioner	District 10	Full Time	14,786	12 Months
Bruce Smith	Water Commissioner	District 11	Full Time	14,803	12 Months
Larry Brown	Deputy Water Commissioner	District 11	143 Days	3,775	7 Months
John Jackson	Deputy Water Commissioner	District 11	131 Days	5,773	6 Months
George Wichmann	Water Commissioner	District 12	Full Time	16,538	12 Months
Louis D. Engelhart	Deputy Water Commissioner	District 12	124 Days	4,277	6 Months
Richard Sierka	Deputy Water Commissioner	District 12	88 Days	4,314	6 Months
Don Stuart	Water Commissioner	District 13	Full Time	11,021	12 Months
Richard Squire	Deputy Water Commissioner	District 13	97 Days	2,425	4 Months

<u>NAME</u>	<u>POSITION</u>	<u>DISTRICT</u>	<u>MONTHS WORKED</u>	<u>MILEAGE</u>	<u>ALLOCATED</u>
Larry Young	Water Commissioner	District 15	Full Time	8,906	12 Months
Robert Brgoch	Water Commissioner	District 16	Full Time	14,013	12 Months
George Coffee (Terminated May, 1981)	Water Commissioner	District 17	Full Time	4,868	12 Months
Don Taylor (Began May, 1981)	Water Commissioner	District 17	Full Time	6,779	12 Months
Leonard Trujillo	Water Commissioner	District 18	124 Days	4,397	6 Months
Henry Marques	Water Commissioner	District 19	Full Time	10,386	12 Months
Tony Pantano	Deputy Water Commissioner	District 19	120 Days	7,257	5 Months
Lane Hackett	Water Commissioner	Dist. 66 & 67	Full Time	14,460	12 Months
Augustine Garcia	Water Commissioner	District 79	152 Days	5,971	8 Months
George Ridenour	1042 Water Commissioner	Division 2	Full Time	13,401	12 Months
Lou Schultz	Hydrographer	Division 2	Full Time	17,881	12 Months
Scott Jensen (Terminated March, 1981)	Hydrographer	Division 2	Full Time	3,699	12 Months
William Howland	Engineering Technician	Division 2	Full Time	18,379	12 Months

<u>NAME</u>	<u>POSITION</u>	<u>DISTRICT</u>	<u>MONTHS WORKED</u>	<u>MILEAGE</u>	<u>ALLOCATED</u>
Tom Simpson	Engineering Technician	Division 2	Full Time	18,777	12 Months
Michael Fairbanks (Began Sept., 1981)	Engineering Technician	Division 2	Full Time	763	12 Months
Esther Gonzales	Senior Secretary	Division 2	Full Time	240	12 Months
Helen Bever	Key Punch Operator	Division 2		0	--

Paid Mileage 168,330

Mileage for State Vehicles 83,967

SOUTHEASTERN COLORADO
WATER CONSERVANCY DISTRICT

905 Highway 50 West
P. O. Box 440
Pueblo, Colorado 81002

OFFICERS

Raymond D. Nixon, President, 2519 Prairie, Colorado Springs,
Colorado 80909

Keith I. Webb, Vice President, P. O. Box 992, La Junta, Colorado 81050

Leon C. Hook, Treasurer, 804 Rudd, Canon City, Colorado 81212

Charles L. Thompson, General Manager, P. O. Box 440, Pueblo,
Colorado 81002

Charles J. Beise, Attorney for the District, 1600 Colorado National
Building, 950 17th Street, Denver, Colorado 80202

Dr. Wendell Hutchinson, Secretary, 9104 U. S. Highway 50, Salida
Colorado 81201

DIRECTORS

Keith I. Webb, P. O. Box 992, La Junta, Colorado 81050

Dr. Wendell Hutchinson, 9104 U. S. Highway 50, Salida, Colorado 81201

Robert Northrup, Box 392, Lamar, Colorado 81052

John Javernick, 3205 Hale, Canon City, Colorado 81212

Kenneth Carter, Route 1, Ordway, Colorado 81063

Raymond Nixon, 2519 Prairie, Colorado Springs, Colorado 80909

John Huebsch, 27 Oak Avenue, Colorado Springs, Colorado 80906

Glenn Everett, 10615 County Road 150, Salida, Colorado 81201

Frank Milenski, 23064 Rd. B, La Junta, Colorado 81050

Alferd Putnam, 305 St. Vrain Avenue, Las Animas, Colorado 81054

Leon C. Cook, 804 Rudd, Canon City, Colorado 81212

Ralph Adkins, P. O. Box 316, Pueblo, Colorado 81003

Alvin Spady, Route 2, Las Animas, Colorado 81054

Pete Peters, Lane 14 - 3150, Manzanola, Colorado 81058

Lee Simpson, 26280 Williams Lane, Pueblo, Colorado 81006

1981 ANNUAL SUMMARY - DIVISION 2
 (Acre Feet (11-1-80 thru 10-31-81))

Dists.	No. Registered Non-Exempt Wells	No. Reported Ditch ¹ Structures	IRRIGATION		
			Directed Diversions To Irrigation	Diversions To Storage	Storage To Irrigation
10	412	69	65,292		
11	101	103	186,502	190	
12	85	32	151,275	6,449	3,112
13	43	155	15,570		
14	1,100	37	188,770	40,270	40,270
15	151	63	10,982		3,859
16	54	83	8,208		
17	1,122	44	379,456	22,789	3,060
18	19	26	12,652		
19	39	64	54,769	45,163	
66	608		(W.D. 66&67)		
67	1,581	60	156,902	84,754	15,760
79	46	41	9,633		
Total	5,361	977	1,240,011	199,615	66,061

¹Ditch structures which reported diverting water. There were many more ditches that were observed by the Water Commissioners that did not divert any water.

Dists.	CURRENT YEAR Acres Irrigated*	TRANSMOUNTAIN		MUNICIPAL Direct Diversions	INDUSTRIAL Direct Diversions
		Diversion to Export	Diversion to Import		
10	11,612			30,670	904
11	18,852	12,395	49,482	10,477	126,673
12	12,580				
13	28,033				
14	30,992			28,357	6,959
15	4,600				6,593
16	4,700				
17	140,000				
18	7,700				148
19	30,000				519
66 & 67	76,837				
79	5,000				
Other				8,995	
Total	370,906	12,396	49,482	78,499	141,796

*Revised - based on County Assessors Offices.

**City of Aurora

Purgatoire

NIVEI

near Titcher, Colo.

Daily Gage Height, in Feet, and Discharge in Second-Foot for the Year Ending September 30, 19 81

Drainage area _____ square miles.

Water stage recorder Stevens A.D.R.

Day.	OCT.		NOV.		DEC. '80		JAN. '81		FEB.		MAR.	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1		11		30		29		24	b	21		18
2		11		29		28		24		18		20
3		11		27		27		24		18		21
4		11		27		26		24		20		29
5		10		27		24		24	(27)	19		32
6		10	290	27		22		24		19		28
7	a	9.3		27		22	294 25	25		19		26
8	a	8.7		26		22		24		18		25
9		7.5		26		23		23		19		23
10		7.3		25		17		b	22	78		22
11		10		25	272	21		25		18		21
12		10		26		28		21		17	278	22
13		12		26		32		21		18		26
14		14		27		30		18		19		23
15		13		29		28		19		b	21	22
16		12		30		26		20		23		20
17		22		29		26		23		23		19
18		22		27		26		21		22		20
19		22		26		25		19	297 (22)	22		20
20		26		27		25		19		20		21
21		28	271	28		22		19		21		22
22		28		29		25	295	18		21		24
23	287	29		30	293	26		18		21		22
24		29		30		25		18		21		21
25		28		30		18		19		20		21
26		29		25		31		20		20		20
27		30		26		26		19		19		19
28		30		34		25		19		18		17
29		30		32		25		19	XY	XXX		18
30		29		30		24		20	XX	XXX		19
31		29	XX	XXX		24		b	21	XX	XXX	22
7,754.2	Total	578.8		837		778		654		553		683
75.8	Mean	18.7		27.9		25.1		21.1		19.8		22.0
55,100	Run-off in acre-feet	4,150		1660		1,540		1,300		1,100		1,350
3.120	Maximum	30		34		32		25		23		32
5.2	Minimum	7.3		25		17		18		17		17

Max. Discharge 44,670 on N.A. on July 2 - 5. H. 34.84 ft.
 Max. G. H. 21.54 ft. at N.A. on July 3 - 1.3 Min. Daily Discharge 4.2 sec.-ft. on Apr. 19 74
 "a" - discharge estimated for no gage-height record. "b" - ice aff-
 ciated gage height all days subdivided.

Calendar Year
1980

Purgatoire

Trinidad, Colo.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1981

Drainage area 795 square miles.

Water stage recorder Stevens A-35

Max. Discharge 4072 sec. ft. at 2300 hrs on August 11, 1981 G. H. 6.30 ft.
 Max. G. H. 6.30 ft. at 2300 hrs on Aug 11, 1981 Min. Daily Discharge 0.40 sec.-ft. on Feb. 2, 1981
 S - discharge subdivided; V - variable shift. Discharge estimated for "a" - no gage-height record and "b" - ice affected days.
 "RR" = Record Taken from Reservoir Release Records

Day	OCT.		NOV.		DEC. '80		JAN. '81		FEB.		MAR.			
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge		
1	0.91	18	2.48	1.4	0.42	7.2	0.41	0.65	S	14	4.05	0.41	0.90	
2	S	33	.46	1.2	.42	1.2	.40	0.60	0.42	16	0.80	.39	0.85	
3	1.26	44	.43	1.4	.43	1.2	.41	0.65	.45	17	0.65	S	1.2	
4	1.25	43	.47	1.2	S	9.1	.41	0.65	.48	18	0.50	.47	1.2	
5	1.25	43		1.2	.95	16	.42	17	739	19	0.45	.42	0.85	
6	1.26	44	732	1.2	S	8.1	.43	16	0.80	.45	0.45	.41	0.7	
7	1.25	43	.46	1.2	.45	1.0	736	.40	16	0.70	.47	0.40	.42	0.85
8	1.25	43	.45	1.1	.45	1.0	.42	0.80	.42	19	0.45	.41	0.90	
9	1.25	43	.46	1.2	.43	1.0	.40	0.76	S	Y	6.0	.40	0.85	
10	1.25	43	.46	1.2	.45	1.0	.41	0.75	S	Y	10	.41	0.90	
11	1.26	44	.45	1.1	734	1.0	.42	0.80	.43	16	0.85	S	1.8	
12	1.14	33	.46	1.2	.44	0.95	.40	0.76	.41	15	.80	740	.45	1.1
13	1.06	34	.48	1.4	.44	0.95	.40	0.70	.41	18	.80	.43	1.0	
14	1.07	28	S	2.2	.43	0.85	.40	16	0.70	.40	15	.75	.43	1.0
15	S	6.2	1.32	4.1	.43	0.85	.39	15	0.70	.39	12	.75	.42	0.8
16	0.54	3.5	S	2.0	.43	0.85	.40	0.75	S	V	5.0	.41	1.7	0.70
17	.54	3.5	0.49	2.0	.42	0.75	.40	0.75	0.86	13	1.0	.40	1.2	0.65
18	.52	3.0	.47	1.7	.42	0.75	.40	0.75	S	5.4	.43	.75	.43	0.75
19	.52	3.0	.46	1.6	.41	0.65	.40	15	0.75	739	13	0.90	.41	0.65
20	.52	3.0	.44	1.4	.43	0.75	.39	14	0.75	.39	.80	.41	0.65	0.7
21	.51	2.8	733	1.4	.42	0.65	.39	0.75	.44	1.0	.45	.45	.45	0.7
22	.50	2.7	.43	1.2	.42	0.65	737	.40	14	0.80	.41	0.75	.44	0.7
23	731	2.7	.44	1.4	.42	0.65	.41	0.85	.39	.80	.42	1.1	.42	0.7
24	.52	2.8	.43	1.2	.41	0.60	.39	0.75	.39	.80	S	.91	.42	0.7
25	.54	3.0	.44	1.4	.42	0.65	.38	0.70	.38	.75	.44	0.7	.44	0.7
26	.50	2.2	.43	1.2	.41	0.65	.38	0.70	.38	.75	741	.42	1.1	0.7
27	.50	2.1	.45	1.4	.41	0.65	.38	0.70	.38	.75	S	1.1	.42	0.7
28	.49	1.8	.44	1.4	.41	0.65	.38	0.70	.38	13	.75	S	.90	0.7
29	.48	1.6	.44	1.4	.41	0.65	.38	0.70	XX	XXX	.45	.80	.45	0.7
30	.48	1.6	.43	1.2	.40	0.60	S	2.9	XX	XXX	.46	.80	.46	0.7
31	.47	1.4	XX	XXX	.40	0.60	S	1.4	XX	XXX	.47	.80	.47	0.7

206.25	Total	582.9	118.7	56.15	107.66	57.10	22.46
1.27	Mean	18.8	4.0	1.81	0.96	2.04	0.89
10.13	Run-off in acre-feet	1100	236	111	58.8	113	51.5
4.0	Maximum	44	41	16	5.7	10	16
0.2	Minimum	1.4	1.1	0.60	0.60	0.45	0.40

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Sta. No. 07124500

Rating Table Used #17 since 10/1/79

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										
0.41	0.60	2.00	175	S	15	1.90	161	S	102	1.76	135	1									
0.40	.55	1.98	171	S	30	1.92	166	1.77	127	1.77	137	2									
0.40	.55	1.97	173	1.12	33	S	34	S	110	1.75	150	3									
0.40	.70	2.00	175	1.04	27	S	11	1.72	100	1.23	152	4									
0.40	.75	2.00	175	1.05	28	1.05	28	1.72	119	1.27	161	5									
0.40	.80	S	154	1.05	28	1.05	28	S	122	1.29	166	6									
0.40	.50	1.95	159	1.04	27	1.57	3.0	1.79	115	S	178	7									
0.40	.60	1.96	161	1.21	30	1.56	2.8	1.02	33	S	371	8									
0.40	.55	1.98	166	S	156	S	14	S	166	3.04	608	9									
0.40	.55	1.97	163	S	178	1.33	3.5	S	235	3.37	810	10									
0.40	.50	1.95	159	S	162	1.35	3.4	S	210	3.77	1110	11									
0.40	.50	1.97	163	1.78	133	1.36	3.8	S	610	3.82	150	12									
0.40	.55	1.97	163	1.88	157	1.43	5.2	3.08	598	3.83	1582	13									
0.40	.55	1.96	161	1.88	157	1.46	3.6	3.19	661	S	691	14									
0.40	.61	1.93	154	1.88	157		1.07	3.27	709	2.28	278	15									
0.40	.86	1.92	158	1.82	157		1.94	S	869	1.23	262	16									
0.40	.84	1.93	154	1.91	163		1.64	S	415	2.20	802	17									
0.40	1.07	1.94	157	1.90	161		1.64	S	22	1.27	190	18									
0.40	1.14	1.92	152	1.91	163		1.63	1.03	16	1.85	187	19									
0.40	1.33	1.89	146	1.91	161		1.65	1.03	16	1.85	157	20									
0.40	1.43	1.87	141	1.90	161		1.65	1.03	16	1.71	127	21									
0.40	1.54	1.87	141	1.84	148		1.67	1.03	16	1.60	107	22									
0.40	1.57	1.88	143	1.84	148		1.08	1.04	17	1.66	117	23									
0.40	1.78	1.90	148	1.87	144		1.67	1.04	17	1.70	125	24									
0.40	1.87	1.90	148	1.91	163		1.67	1.03	16	1.69	123	25									
0.40	1.85	1.89	145	1.90	161	S	24	1.02	16	1.68	121	26									
0.40	1.85	1.87	137	1.90	161	S	58	1.02	16	1.68	121	27									
0.40	1.85	1.85	137	1.87	157	1.02	30	1.02	16	1.53	96	28									
0.40	1.85	1.98	163	1.89	157	S	225	1.01	16	1.40	77	29									
0.40	1.85	1.86	145	1.87	157	2.90	505	1.00	15	1.40	77	30									
0.40	1.85	S	41	XX	XXX	S	138	S	76	XX	XXX	31									
												Water Year		1981							
2328		4628		3752		1028		5658		7867		29945.67									
77.6		149		129		109		182		312		82									
468		910		1355		6713		11223		12379		38707									
25		115		178		505		807		1158		1158									
320		41		3		2.8		15		77		0.40									

Van Bremer Arroyo

near Model, Colorado

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 81

Drainage area _____ square miles.

Water stage recorder Stevens A-35

Max. Discharge. 3900 Sec. ft. at 0200 hrs on May, 30, 1981 G. H. 8.22 ft. May
 Max. G. H. 8.22 ft. at 0200 hrs on May 30, 1981 Min. Daily Discharge 0.03 sec.-ft. on days
 "0" - days of no record, "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	0.27	0.12	0.27	0.12	0.27	0.12	0.28	0.12	0.28	0.12	0.27	0.12
2	.27	0.12	.27	0.12	.27	0.12	.28	0.12	.28	0.12	.27	0.12
3	.27	0.12	.27	0.12	.27	0.12	.28	0.12	.28	0.12	.28	0.12
4	.27	0.12	.27	0.12	.27	0.12	.28	0.12	.27	0.15	.27	0.12
5	.27	0.12	.28	0.15	.27	0.12	.28	0.15	²³⁴ .29	0.15	.27	0.12
6	.27	0.12	²²⁸ .28	0.15	.27	0.12	.27	0.15	.28	0.12	.28	0.12
7	.27	0.12	.28	0.15	.29	0.15	²³² .29	0.15	.28	0.12	.28	0.12
8	²²⁶ .27	0.12	.28	0.15	.29	0.15	.27	0.15	.28	0.12	.27	0.15
9	.27	0.12	.28	0.15	.29	0.15	.29	0.15	.29	0.15	.27	0.12
10	.27	0.12	.28	0.15	.29	0.15	.27	0.15	.29	0.15	.27	0.12
11	.27	0.12	.28	0.15	²³⁰ .29	0.15	.29	0.15	.29	0.15	.27	0.12
12	.26	0.09	.28	0.15	.29	0.15	.29	0.15	.29	0.15	²³⁶ .27	0.12
13	.26	0.09	.28	0.15	.30	0.18	.29	0.15	.28	0.12	.27	0.12
14	.26	0.09	.28	0.15	.30	0.18	.27	0.15	.28	0.12	.27	0.12
15	.26	0.09	.28	0.15	.30	0.18	.27	0.15	.27	0.09	.27	0.12
16	.26	0.09	.28	0.15	.30	0.18	.29	0.15	.28	0.12	.27	0.12
17	.27	0.12	.28	0.15	.30	0.18	.29	0.15	.28	0.12	.26	0.09
18	.27	0.12	.28	0.15	.29	0.15	.29	0.15	.28	0.12	.27	0.09
19	.27	0.12	.27	0.12	.29	0.15	.27	0.15	²³⁵ .28	0.12	.27	0.12
20	.27	0.12	.27	0.12	.30	0.18	.27	0.15	.27	0.09	.27	0.12
21	.27	0.12	²²⁹ .27	0.12	.30	0.18	.28	0.12	.25	0.03	.27	0.12
22	.27	0.12	.27	0.12	.29	0.15	²³³ .28	0.12	.25	0.03	.27	0.12
23	²²⁷ .27	0.12	.27	0.12	²³¹ .29	0.15	.28	0.12	.25	0.03	.27	0.12
24	.27	0.12	.27	0.12	.27	0.12	.28	0.12	.25	0.03	.27	0.12
25	.27	0.12	.27	0.12	.29	0.15	.28	0.12	.26	0.03	.27	0.12
26	.27	0.12	.27	0.12	.29	0.15	.27	0.09	.26	0.03	²³⁷ .27	0.12
27	.27	0.12	.28	0.15	.28	0.12	.27	0.09	.25	0.03	.27	0.12
28	.27	0.12	.28	0.15	.28	0.12	.28	0.12	.24	0.03	.27	0.12
29	.27	0.12	.28	0.15	.28	0.12	.27	0.09	XX	XXX	.27	0.12
30	.27	0.12	.27	0.12	.28	0.12	.27	0.09	XX	XXX	.27	0.12
31	.27	0.12	XX	XXX	.28	0.12	.28	0.12	XX	XXX	.27	0.12

3.57	Total	3.57	4.11	4.53	4.05	3.92	4.47
0.12	Mean	0.12	0.14	0.15	0.13	0.10	0.14
7.08	Run-off in acre-feet	7.08	8.15	8.97	8.73	5.71	8.80
0.15	Maximum	0.15	0.15	0.18	0.15	0.15	0.15
0.03	Minimum	0.03	0.12	0.12	0.09	0.03	0.03

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Sta. No. 07126100

Rating Table Used No. 3, Since 10/1/74

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					
	0.00	0.25	0.00	a	1.40	0.25	0.00	a	3.0	0.25	0.00	1	3rd			
					.15				1.0	0.25		2				
					3.0	0.25	0.00		2.0	0.25		3	2nd			
					1.0	S	3.80		0			4				
					3	2.30	0.00		0			5	1st			
					0	0.37			0	0.25	0.00	6	Quarter	Computed	Checked	Date
						2.25	0.00		9.00	S	14.3	7				
									8.00	1.45	4.24	8				
				a	0				6.00	0.90	0.00	9	4th			
				0.25	0.00				3.00	0.70		10				
									1.50	0.50		11	3rd			
									7.5	0.38		12				
									3.0	0.30		13	2nd			
									1.0	0.48		14				
									5	0.31		15	1st			
									0	0.25	0.00	16				
								a	5.00	0.25		17	Quarter	Dis.appld.	Dis.check	Date
								a	03 15	0.25		18				
									1.09	0.29		19				
									0.87	0.00		20	4th			
									0.75			21				
				0.25					0.66			22	3rd			
				0.25					0.58			23				
									0.25	0.39		24	2nd			
									0.25	0.00		25				
								a*	5.00	S	5.13	26	1st			
									1.00	S	18.1	27				
		0.25	0.00						1.00	0.79	0.00	28	Quarter	G.H.copd.	G.H.check	Date
		a*	6.3	0.25					3.0	0.59		29				
a	0.00		16.40	0.25	0.00		1.00	0.45		0.25	0.00	30	Water Year			
XX	XXX	a	7.3	XX	XXX	a	1.80	0.30	0.00	XX	XXX	31	1981			
0.00		1776		228		1013.8		3968.57		18.54			6,504.86			
0.00		57.3		7.6		32.7		111.9		0.62			17.82			
0.00		3,520		452		2,010		6,880		36.8			12,900			
0.00		1,640		140		500		900		14.3			1640			
0.00		0.00		0.00		0.00		0.00		0.00			0.00			

Cucharas

River

at Boyd Ranch, near Loveta, Colorado

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1981

Drainage area 56 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	1.12	7.1	1.14	7.8	1.12	7.2	6.8	6.0	6.0	7.2		
2	1.13	7.8	1.15	8.2	1.14	7.0	7.0	4.7	7.2	7.2		
3	1.13	7.8	1.12	8.2	1.12	7.0	7.0	5.0	6.2	6.2		
4	1.13	7.8	1.12	7.8	1.12	8.6	7.2	5.0	7.2	7.2		
5	1.12	7.1	1.12	7.8	1.11	7.0	7.2	5.0	7.2	7.2		
6	1.12	7.1	1.14	7.2	1.10	8.6	7.0	5.2	7.6	7.6		
7	1.12	7.1	1.14	7.2	1.10	8.0	6.2	5.1	7.8	7.8		
8	1.12	7.1	1.14	7.8	1.09	8.0	6.2	5.2	7.6	7.6		
9	1.12	7.1	1.13	7.8	1.10	7.8	6.6	5.0	7.2	7.2		
10	1.12	7.1	1.12	7.8	1.10	7.6	6.9	5.1	7.2	7.2		
11	1.13	7.1	1.14	7.2	1.10	8.0	6.4	5.2	7.6	7.6		
12	1.13	7.1	1.14	7.2	1.10	7.8	6.6	5.1	7.6	7.6		
13	1.13	7.1	1.16	7.2	1.10	7.6	6.8	6.8	8.1	8.1		
14	1.13	7.8	1.13	7.2	1.10	8.0	6.8	7.2	8.2	8.2		
15	1.13	8.6	1.13	7.2	1.10	8.0	6.1	7.6	8.6	8.6		
16	1.13	10	1.13	7.2	1.10	8.2	6.0	7.1	8.6	8.6		
17	1.13	15	1.13	7.2	1.10	8.2	6.6	7.1	8.2	8.2		
18	1.13	12	1.13	7.1	1.10	8.6	6.8	7.6	8.1	8.1		
19	1.13	10	1.13	8.2	1.10	7.0	7.0	7.0	7.1	7.1		
20	1.13	8.0	1.13	7.2	1.10	7.6	6.8	7.2	9.0	9.0		
21	1.13	7.0	1.13	7.2	1.10	7.1	7.0	6.2	7.2	7.2		
22	1.13	7.5	1.13	7.2	1.10	7.6	7.1	5.2	8.2	8.2		
23	1.13	8.0	1.13	7.2	1.10	7.6	7.2	5.2	7.2	7.2		
24	1.13	8.5	1.13	7.2	1.10	7.1	8.2	6.2	7.1	7.1		
25	1.13	7.0	1.13	7.2	1.10	7.0	8.2	5.2	8.2	8.2		
26	1.13	7.1	1.13	7.2	1.10	7.1	6.0	7.1	9.6	9.6		
27	1.13	8.5	1.13	7.2	1.10	8.0	5.2	7.2	8.2	8.2		
28	1.13	8.5	1.13	7.2	1.10	7.8	6.0	7.2	7.1	7.1		
29	1.13	7.0	1.13	7.2	1.10	7.8	6.0	XX	XXX	7.1		
30	1.16	8.5	1.13	7.2	1.10	7.1	5.5	XX	XXX	7.1		
31	1.15	7.2	1.13	7.2	1.10	7.0	6.2	XX	XXX	7.1		

Calendar Year	1980	1981	1982	1983	1984	1985
Total	252.6	260.1	260.7	260.7	260.7	260.7
Mean	8.14	8.10	8.14	8.14	8.14	8.14
Run-off in acre-feet	512	520	521	521	521	521
Maximum	15	2.5	7.0	7.0	7.0	7.0
Minimum	7.2	7.2	5.6	5.6	5.6	5.6

Max. Discharge 43 Sec. ft. at 2400 hrs on JULY 2, 1981 on G. H. 2.05 ft. at 2400 hrs on JULY 2, 1981 Min. Daily Discharge 5.1 sec.-ft. on MARCH 2, 1981

a- NO record days, b- ice effected days, S- discharge subdivided days.

G. H. 2.05 ft. on JULY 2, 1981

Huerfano

near Manzanares Crossing

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 81

Drainage area 7.3 square miles.

Water stage recorder Stevens A-35

ft. on G. H. sec.-ft. on
 on Min. Daily Discharge
 ft. at
 Max. Discharge
 S-discharge subdivided; V-variable shift; discharge estimated for "a"-no gage-height record, and "b"-ice effect.

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	1.86	16	1.85	16	1.80	14	1.75	9.8	1.91	9.4	1.78	16
2	1.87	16	1.84	15	1.78	13	1.78	11	1.87	9.1	1.79	16
3	1.87	16	1.84	15	1.80	14	1.75	9.8	1.75	9.3	1.77	15
4	1.87	16	1.84	15	1.80	14	1.75	9.8	1.77	9.4	1.78	15
5	1.86	16	1.85	15	1.80	14	1.75	10	1.75	9.3	1.77	15
6	1.86	16	1.85	15	1.80	14	1.75	9.3	1.75	9.6	1.77	15
7	1.84	16	1.84	14	1.81	14	1.78	8.9	1.80	9.5	1.76	15
8	1.85	15	1.84	14	1.77	12	1.77	9.8	1.80	9.8	1.75	14
9	1.85	15	1.83	13	1.79	13	1.76	9.8	1.80	9.9	1.75	14
10	1.85	15	1.83	13	1.80	14	1.77	9.8	1.80	9.1	1.75	13
11	1.85	14	1.83	13	1.81	13	1.80	10.7	1.80	8.9	1.68	12
12	1.85	14	1.83	12	1.80	13	1.77	9.8	1.78	9.2	1.76	12
13	1.85	14	1.83	12	1.79	13	1.81	9.8	1.80	9.4	1.77	12
14	1.85	14	1.82	12	1.78	12	1.80	9.7	1.80	9.4	1.75	13
15	1.88	16	1.80	12	1.79	13	1.81	9.8	1.80	9.6	1.75	12
16	1.87	16	1.82	13	1.79	13	1.77	9.6	1.80	9.5	1.78	13
17	1.86	15	1.82	13	1.79	13	1.85	9.6	1.80	9.7	1.71	12
18	1.87	16	1.85	15	1.79	13	1.79	9.4	1.80	9.6	1.69	11
19	1.86	16	1.84	14	1.78	12	1.80	9.5	1.60	9.9	1.73	10
20	1.85	16	1.85	14	1.75	11	1.80	9.5	1.67	10.1	1.72	9.5
21	1.86	16	1.85	15	1.78	13	1.80	9.4	1.68	9.8	1.71	9.5
22	1.86	16	1.84	15	1.78	13	1.80	9.6	1.75	9.7	1.73	10
23	1.86	16	1.85	14	1.77	12	1.71	9.8	1.70	9.6	1.73	9.5
24	1.85	15	1.81	14	1.76	12	1.68	9.9	1.71	9.7	1.73	10
25	1.85	16	1.80	14	1.78	12	1.80	9.8	1.71	13	1.71	9.5
26	1.85	16	1.87	17	1.77	12	1.80	9.7	1.74	11.2	1.74	11
27	1.86	17	1.83	18	1.78	13	1.80	9.7	1.74	11.2	1.75	11
28	1.86	17	1.83	15	1.78	11	1.80	9.6	1.80	17.3	1.75	10
29	1.85	17	1.81	14	1.77	11	1.80	9.9	XX	XXX	1.75	11
30	1.85	17	1.81	14	1.75	9.8	1.81	9.9	XX	XXX	1.75	11
31	1.85	16	XX	XXX	1.75	9.8	1.70	9.5	XX	XXX	1.75	11

14373	Total	467	485	412	300.3	284.	379
39.3	Mean	15.7	14.2	12.5	9.69	10.2	12.2
8509	Run-off in acre-feet	966	842	596	563	751	
1.78	Maximum	17	18	14	11	11.3	10.5
5.6	Minimum	14	12	9.3	8.3	8.9	9.5

STATE OF COLORADO
DIVISION OF WATER RESOURCES
OFFICE OF STATE ENGINEER

Sta. No. 07111000

Rating Table Used No. 14 in use since

10/1/78

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge							
1.72	10	2.19	36	2.28	50	2.34	26	1.95	20	1.99	23	1						
1.77	12	2.17	35	2.26	48	2.31	27	1.94	20	1.94	20	2						
1.78	12	2.18	36	2.28	50	2.32	25	1.93	22	1.93	20	3						
1.77	10	2.15	34	2.25	45	2.30	23	1.92	24	1.92	20	4						
1.76	12	2.14	30	2.24	42	2.29	22	1.91	22	1.91	17	5						
1.77	13	2.15	28	2.25	47	2.30	20	1.92	25	1.92	20	6						
1.78	13	2.15	23	2.25	49	2.31	20	1.94	21	1.94	23	7						
1.79	13	2.15	22	2.25	52	2.32	20	1.93	24	1.93	25	8						
1.79	15	2.17	20	2.27	52	2.33	20	1.92	40	1.92	24	9						
1.78	18	2.18	18	2.28	51	2.34	19	1.91	39	1.91	22	10						
1.78	18	2.18	19	2.28	47	2.34	19	1.91	53	1.91	26.9	11						
1.77	17	2.17	22	2.23	45	2.31	19	1.92	54	2.00	25.9	12						
1.78	17	2.17	20	2.28	41	2.36	18	1.92	46	1.98	24.7	13						
1.77	16	2.16	20	2.26	36	2.35	18	1.91	40	1.96	23.5	14						
1.77	16	2.16	20	2.26	34	2.35	21	1.91	35	1.93	21.5	15						
1.77	16	2.16	20	2.26	29	2.36	22	1.93	34	1.93	21.5	16						
1.78	17	2.17	19	2.27	28	2.37	33	1.94	39	1.92	21.0	17						
1.77	17	2.17	18	2.27	26	2.37	33	1.94	35	1.89	19.0	18						
1.77	17	2.17	18	2.27	25	2.37	33	1.94	30	1.88	18.5	19						
1.78	18	2.18	18	2.28	25	2.37	33	1.94	27	1.86	17.7	20						
1.78	18	2.18	18	2.28	25	2.37	33	1.94	24	1.85	17.3	21						
1.78	19	2.18	18	2.28	24	2.37	33	1.94	23	1.83	16.5	22						
1.78	20	2.18	18	2.28	24	2.37	33	1.94	22	1.82	16.1	23						
1.78	22	2.18	17	2.28	25	2.37	33	1.94	20	1.82	16.1	24						
1.78	23	2.18	17	2.28	23	2.37	33	1.94	19	1.81	15.7	25						
1.78	23	2.18	17	2.28	21	2.37	33	1.94	15	1.81	15.7	26						
1.78	24	2.18	17	2.28	22	2.37	33	1.94	15	1.80	15.3	27						
1.78	31	2.17	32	2.27	20	2.37	33	1.94	25	1.79	14.5	28						
1.78	32	2.17	37	2.27	23	2.37	33	1.94	23	1.79	14.5	29						
1.78	34	2.15	36	2.27	26	2.37	33	1.94	23	1.78	10.7	30						
XX	XXX	2.17	37	XX	XXX	2.37	33	XX	23	XX	XXX	31						
													Water Year		1981			
565		753		1012		719		921		590		6868						
18.8		24.3		35.2		23.2		35.7		19.7		18.1						
1120		1490		2010		1430		1570		1170		13,623						
34		37		52		50		54		26.9		54						
10		17		20		15		18		10.7		8.3						

Arkansas

Creek near below Catlin Dam

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 81

Drainage area _____ square miles.

Water stage recorder STEVENS A-35

Max. Discharge 816.56 ft. on Aug. 12, 1981 on Aug. 12, 1981 G. H. 7.83 ft.
 Max. G. H. 7.83 ft. at 1500 hrs on Aug. 12, 1981 Min. Daily Discharge 58 sec.-ft. on April 14, 1981
 S = Subdivided days, 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	2.93	268	2.91	239	2.91	345	3.00	330	2.98	310	2.12	64
2	2.56	199	2.96	256	2.92	330	3.01	325	2.78	260	2.12	64
3	2.27	124	2.96	236	2.81	310	3.02	330	2.92	2516	2.14	91
4	2.31	133	2.64	215	2.88	305	3.02	330	2.98	246	2.45	113
5	2.21	111	2.53	192	2.88	305	3.05	335	3.04	32.5	2.69	165
6	2.16	102	2.54	181	2.90	305	3.05	335	3.03	320	2.58	135
7	2.14	100	2.55	184	2.89	300	3.02	320	3.00	305	2.56	131
8	2.25	122	2.52	192	2.91	300	2.99	305	3.00	305	2.54	121
9	2.32	136	2.62	202	2.92	305	2.98	300	3.02	315	2.53	124
10	2.34	142	2.66	215	2.96	288	2.97	296	2.95	312	2.52	122
11	2.34	142	2.62	202	2.90	288	2.96	296	2.95	310	2.52	122
12	2.38	155	2.91	228	2.91	292	2.95	292	3.00	319	2.51	119
13	2.38	155	2.96	246	2.92	296	2.91	296	3.30	315	2.49	115
14	2.36	150	2.96	246	2.92	300	2.96	310	2.45	300	2.45	161
15	2.37	152	2.95	320	2.97	325	2.95	310	3.35	300	2.49	111
16	2.39	158	2.97	330	2.95	315	2.97	305	3.04	325	2.42	161
17	2.37	155	2.98	335	2.95	315	2.98	310	3.01	310	2.47	205
18	2.40	162	2.98	325	2.96	320	2.97	305	2.97	292	2.91	253
19	2.38	158	2.90	305	2.95	315	2.97	315	2.95	261	2.86	242
20	2.46	178	2.93	320	2.92	305	2.96	320	2.97	292	2.82	222
21	2.37	155	2.91	310	2.93	310	3.04	340	2.87	253	2.66	161
22	2.39	160	2.91	310	2.93	310	3.01	325	2.66	167	2.65	173
23	2.44	170	2.92	315	2.91	315	2.99	315	2.66	161	2.97	215
24	2.53	187	2.92	315	2.92	310	2.97	305	2.66	161	2.97	222
25	2.54	192	2.94	330	2.90	300	2.96	300	2.62	170	2.95	206
26	2.50	181	2.90	310	2.91	305	2.97	305	2.33	96	2.97	215
27	2.61	208	2.94	330	2.92	300	2.97	305	2.24	82	2.97	215
28	2.65	218	2.93	325	2.97	325	3.00	320	2.21	78	2.94	205
29	2.69	232	2.96	345	2.97	335	2.97	315			2.97	222
30	2.91	239	2.98	356	2.97	325	3.02	330	XX	XXX	2.97	215
31	2.68	228	XX	XXX	3.00	330	3.02	330	XX	XXX	2.98	215

Calendar Year 1980

Total	
Mean	
Run-off in acre-feet	
Maximum	
Minimum	

STATE OF COLORADO
DIVISION OF WATER RESOURCES
OFFICE OF STATE ENGINEER

Sta. No. 07119700

Rating Table Used #3 rated Feb 12, 1973

Gage height	APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Date	
	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height								
187	2.81	176	3.05	27	292	2.86	25	222	3.04	53	195	2.62	15	288	1					
155	2.91	215	2.93		246	2.81		212	3.08	53	208	2.71	16	288	2					
164	3.02	246	3.25	57	394	2.87		215	S v	1301	2.62	15	288	3						
195	3.09	268	S v		223	2.82		215	S v	352	2.59			276	4					
181	3.06	256	4.07	76	1000	2.86		222	4.26	76	170	2.70		325	5					
168	3.07	260	4.02		1000	2.83		212	S v	296	2.67	15	310	6						
145	3.06	256	4.02		1000	2.82		215	S v	2012	S v			361	7					
117	3.07	260	4.02	76	1050	2.88		236	S v	652	S v			357	8					
104	3.02	246	4.67	78	1660	3.01	75	284	2.17	78	271	2.77	17	288	9					
92	2.87	197	4.68		1740	2.71	76	178	S v	706	3.11	54	447	10						
85	2.62	128	4.65		1700	2.44		113	S v	2552	2.93	08	325	11						
92	2.40	85	5.16		1950	2.42		107	S v	4627	2.88	12	284	12						
65	2.39	81	4.71		1780	S		191	5.19	87	1973	2.95	16	296	13					
59	2.47	92	4.22	78	1180	2.80	75	205	3.22	30	524	3.13	14	383	14					
82	2.55	111	3.92	71	178	3.13		325	S	586	5.21	17	378	15						
122	2.67	138	3.62		629	S		309	S v	975	2.79	16	236	16						
135	2.76	162	3.52	27	572	3.07	76	315	S v	3347	2.69			202	17					
106	2.62	145	2.87	79	276	S v		404	S v	1214	2.78			232	18					
106	2.81	104	2.87		212	2.45	75	435	3.25	36	616	2.71	16	208	19					
104	2.48	100	2.17		264	S v		751	3.57	56	844	2.70	12	212	20					
102	2.41	87	2.81		225	2.67	71	424	3.72	09	656	2.71		222	21					
102	2.33	76	2.87		320	3.63		530	S v	351	2.72			225	22					
95	2.1	71	2.54		272	2.54		418	2.66	12	292	2.72	12	225	23					
85	2.22	71	5.16	54	205	5.18	75	571	2.97	15	478	2.66	52	212	24					
90	2.31	74	3.26		272	3.2	71	335	2.54	12	325	2.72	17	225	25					
82	2.40	87	2.82		250	3.22	71	315	2.45	11	246	2.71	12	222	26					
76	2.32	104	2.37		256	3.1	71	350	5.20	12	541	2.66	12	212	27					
100	2.81	110	2.47		252	3.22	71	305	S v	745	2.66	15	212	28						
148	5.14	202	2.90	37	202	2.7		253	2.65	15	300	2.52	16	222	29					
173	S v	1064	S v		266	2.2		210	2.52		250	5.22	16	202	30					
XXX	S v	334	XX		XXX	2.2		241	2.57	15	268	XX		XXX	31					

Water Year
1981

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Sta. No. _____
 Rating Table Used # 2, rated JUNE 15, 1971

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	MLF	
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge				
2.19	203	-0-	0	2.51	252	1.72	138	1.93	52	1.56	118	1	3rd		
2.64	128	-0-	0	2.53	255	1.58	120	2.16	198	1.74	140	2	2nd		
0.88	47	0.12	1.9	2.53	255	1.57	119	2.25	212	1.50	111	3	1st		
2.30	8.4	0.67	30	2.53	255	1.92	169	2.59	218	0.95	53	4	Quarter	MLF	
2.23	5.5	1.12	69	2.53	255	2.17	200	1.78	145	0.59	25	5	Quarter	Computed	Checked
2.23	5.5	1.63	126	2.51	252	2.37	230	1.76	193	0.69	32	6	Quarter	MLF	Date
2.01	0	1.60	123	2.53	255	1.67	131	2.48	247	1.10	67	7	Quarter	Checked	Date
-0-	0	1.19	76	2.53	255	1.12	69	2.49	249	1.67	131	8	4th		
0-	0	0.46	17	2.54	257	0.50	19	2.13	194	1.41	100	9	4th	MLF	
-0-	0	0.35	11	2.55	259	0.02	0	2.09	188	1.54	115	10	3rd		
0-	0	0.01	0	2.55	259	-0-	0	2.14	195	1.51	112	11	3rd		
2.59	25	-0-	0	2.53	255	-0-	0	1.86	156	1.51	112	12	2nd		
1.54	115	-0-	0	a	248	0.39	13	1.88	159	1.51	112	13	1st		
2.84	153	-0-	0		248	0.07	0.8	1.89	160	1.51	112	14	Quarter	MLF	
1.82	151	-0-	0		248	0.01	0	1.99	174	1.50	111	15	Quarter	Dis.appl'd.	Dis.check
2.83	152	-0-	0		248	0	0	1.78	145	1.48	108	16	1st	MLF	Date
2.81	149	-0-	0		248	0.85	45	1.75	142	1.14	71	17	Quarter	Dis.appl'd.	Dis.check
1.82	151	-0-	0		200	2.23	209	2.05	182	1.33	91	18	4th		
2.83	152	-0-	0		0	2.79	299	2.06	184	1.66	130	19	4th	MLF	
1.81	149	-0-	0	a	31	2.88	314	1.93	166	1.93	166	20	4th	MLF	
2.79	147	-0-	0	0.75	36	2.49	249	1.96	170	1.40	99	21	3rd		
2.83	152	-0-	0	0.46	17	2.06	184	2.11	191	1.08	65	22	2nd		
1.83	152	-0-	0	0.68	31	2.01	177	2.16	198	1.28	86	23	1st		
2.83	152	-0-	0	0.09	1.2	1.86	156	2.14	195	1.31	89	24	Quarter	MLF	
1.83	152	-0-	0	0.09	1.2	1.83	152	2.16	198	1.19	76	25	Quarter	Dis.appl'd.	Dis.check
2.84	153	-0-	0	1.72	138	2.13	194	1.75	142	0.91	50	26	1st	MLF	
1.83	152	-0-	0	1.61	124	2.29	218	2.04	181	0.79	40	27	Quarter	G.H.cop'd.	G.H.check
0.95	168	-0-	0	1.96	170	1.72	169	2.19	203	0.74	36	28	Quarter	G.H.cop'd.	G.H.check
2.03	0.2	0.85	45	2.11	191	2.30	219	2.19	203	0.58	24	29	4th		
-0-	0	2.37	230	2.02	178	2.78	297	2.17	200	0.48	18	30	Water Year		
XX	XXX	2.49	249	XX	XXX	2.19	203	1.81	149	XX	XXX	31	1981		

ARKANSAS

Creek near NEPEL

Daily Gage Height, in Feet, and Discharge in Second-Foot for the Year Ending September 30, 1981

Drainage area square miles.

Water stage recorder STEVENS A-35

ft. G. H. 2.7

Sec. ft. at 2250

ft. at 2250

Min. Daily Discharge 200

Max. G. H. 4.0

Max. Discharge 4100

10 - 30000 4000 2000 1000 500 200 100 50 20 10 5 2 1

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	4.15	349	4.29	492	a	307	4.22	365	4.16	323	3.86	122
2	4.02	327	4.30	499	a	296	4.09	294	4.13	300	3.83	133
3	3.96	288	4.26	451	4.03	294	4.11	305	4.12	294	3.83	133
4	3.92	261	4.20	404	4.03	288	4.12	311	4.12	294	3.97	182
5	3.90	245	4.15	392	4.05	300	4.11	305	4.12	294	3.76	133
6	3.88	230	4.19	384	4.02	298	4.13	319	4.11	288	3.83	122
7	3.91	240	4.19	398	4.02	298	4.16	335	4.10	283	3.83	122
8	3.92	240	4.18	391	4.03	298	4.16	335	4.13	300	3.99	166
9	3.91	230	4.20	404	4.03	298	4.13	311	4.13	300	3.95	94
10	3.94	240	4.19	398	4.04	298	4.13	311	a	280	3.98	163
11	4.01	292	4.21	410	4.04	298	a	311	a	270	3.99	166
12	4.01	266	4.21	410	4.06	283	a	309	a	265	3.94	91
13	3.97	240	4.15	365	4.04	266	a	301	a	260	3.95	94
14	3.99	245	4.11	341	4.04	266	a	317	a	260	3.98	88
15	4.00	245	a	325	4.04	266	a	317	a	265	3.98	186
16	3.99	235	a	327	4.07	288	a	314	a	253	4.09	230
17	3.99	230	a	321	4.09	300	a	316	a	244	4.18	288
18	4.04	250	a	321	4.12	300	a	318	a	240	4.25	335
19	4.12	288	a	325	4.12	300	a	321	a	244	4.26	341
20	4.15	300	a	316	4.12	300	a	323	a	224	4.24	329
21	4.15	300	a	318	4.13	305	a	320	a	191	4.29	349
22	4.13	305	a	316	4.14	311	4.14	319	a	188	4.32	384
23	4.13	305	a	321	4.15	319	4.13	311	a	179	4.35	404
24	4.19	359	a	321	4.12	300	4.13	311	a	159	4.38	391
25	4.20	365	a	318	a	290	4.13	311	3.83	133	4.33	391
26	4.15	353	a	325	4.12	300	4.12	305	3.88	148	4.34	398
27	4.14	347	a	310	4.14	311	4.12	305	3.90	160	4.29	365
28	4.19	398	a	310	4.13	305	4.12	305	3.84	136	4.39	419
29	4.19	398	a	315	4.13	305	4.16	323			4.48	500
30	4.21	419	a	315	4.13	305	4.16	323	XX	XXX	4.46	486
31	4.24	439	XX	XXX	4.14	311	4.16	323	XX	XXX	4.40	444

103,991	Total	9,205	12,703	9,088	9,788	6,775	5,857
1107	Mean	297	359	293	316	212	354
221,260	Run-off in acre-feet	12,260	13,335	18,241	19,111	12,438	18,000
430	Maximum	421	479	311	305	323	500
238	Minimum	240	305	266	294	153	88

ARKANSAS

ARLINGTON, MISSOURI

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1981

Drainage area 4670 square miles.

Water stage recorder Stevens A-35 Continuo

Max. Discharge 2430 Sec. ft. at 2330 on June 10, 1981 G. H. 4.74 ft. on June 10, 1981 Min. Daily Discharge 61 sec.-ft. on Nov. 22, 1980
S-discharge subdivided. V-variable shift. Discharge estimated for "a"-no gage height record.

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	1.68	23 254	1.95	23 352	0.83	17 62	0.87	19 70	0.86	21 72	1.26	22 146
2	1.67	250	1.86	316	.83	62	.86	69	.87	73	1.26	146
3	1.63	238	1.76	282	.83	62	.86	69	.86	72	1.19	132
4	1.63	238	1.63	238	.83	62	.87	70	.87	73	0.87	75
5	1.58	223	1.68	23 254	.84	63	.87	70	.87	21 73	.87	75
6	1.55	215	1.79	292	.85	65	.87	70	.86	22 73	.87	75
7	1.54	23 212	1.83	306	.85	65	.86	69	.86	73	.86	73
8	1.57	220	1.80	296	.84	63	.85	68	.87	75	.87	75
9	1.70	260	1.75	278	.86	66	.86	69	.87	75	.87	75
10	1.82	302	1.79	292	.86	66	.87	70	.87	75	.87	75
11	1.82	302	1.79	292	.85	65	.87	70	.87	75	.86	73
12	1.78	288	1.74	274	.86	66	.86	69	.86	73	.86	73
13	1.76	282	1.67	23 250	.86	66	.86	69	.86	73	.87	22 75
14	1.68	254	S	V 160	.86	66	.86	69	.86	73	1.12	23 120
15	1.63	238	0.92	17 75	.86	66	.86	69	.86	73	1.33	24 164
16	1.71	264	.92	75	.86	66	.87	70	.86	73	1.42	25 188
17	1.83	306	.92	75	.87	17 68	.87	19 70	.85	22 72	1.58	26 232
18	1.89	328	.93	17 76	.86	66	.88	20 73	.85	72	1.66	27 260
19	1.93	344	.88	69	.86	66	.88	73	S	131	1.68	27 268
20	1.93	23 344	.83	62	.87	17 68	.87	72	1.83	302	1.76	29 296
21	1.96	356	.83	62	.88	18 70	.88	73	1.61	229	1.85	328
22	2.06	396	.82	61	.88	70	.88	73	1.51	202	1.85	328
23	2.09	409	.83	62	.87	69	.87	72	1.44	185	1.87	336
24	2.02	380	.83	62	.87	69	.86	20 70	1.41	178	1.85	328
25	1.93	344	.84	63	.87	69	.88	21 75	1.42	180	1.87	336
26	1.93	344	.84	63	.87	18 69	.89	76	1.33	160	1.88	344
27	1.97	360	.85	65	.86	19 69	.88	75	1.24	142	1.87	336
28	1.99	368	.84	63	.86	69	.87	21 73	1.24	22 142	1.91	352
29	1.99	368	.84	63	.86	69	.86	72	XX	XXX	1.91	352
30	2.01	376	.83	17 62	.86	19 69	.86	72	XX	XXX	1.89	344
31	2.01	23 376	XX	XXX	.86	19 69	.86	21 72	XX	XXX	1.69	27 272

357,097	Total	9,439	4,940	2,060	2,201	3,169	6,347
976	Mean	304	165	66.5	71.0	113	205
708,300	Run-off in acre-feet	18,720	9,800	4,090	4,370	6,290	12,660
5340	Maximum	409	352	70	76	302	352
47	Minimum	212	61	62	68	72	72

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Sta. No. 07099400
 Rating Table Used No. 10 - Oct. 1, 1980
to Sept. 30, 1981

Gage height	APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Date
	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge								
4.22	192	2.62	2.62	2.72	750	2.22	486	2.54	656	2.56	668	1							
4.32	168	2.60	2.60	2.70	739	2.19	472	2.20	486	2.47	620	2							
4.6	136	2.68	2.68	2.66	717	2.30	530	2.17	472	S	476	3							
4.08	120	2.84	2.84	3.04	937	2.49	635	S	578	1.30	166	4							
4.00	105	2.92	2.92	3.33	1130	2.43	605	2.56	678	1.36	180	5							
4.88	84	2.76	2.76	3.58	1320	2.76	794	2.37	580	S	414	6							
4.86	81	2.61	2.61	3.92	1620	2.87	865	2.41	600	2.04	404	7							
4.86	81	2.44	2.44	4.51	2140	2.72	778	2.70	756	2.03	400	8							
4.76	97	2.26	2.26	4.64	2330	2.44	615	2.86	847	2.36	555	9							
5	164	2.02	2.02	4.57	2240	2.40	590	2.88	859	2.30	525	10							
4.72	282	2.06	2.06	4.54	2400	2.49	625	3.47	1250	2.30	525	11							
4.80	310	2.13	2.13	4.50	2170	2.49	625	S	737	2.36	555	12							
4.88	340	2.15	2.15	4.02	1690	2.57	656	S	541	2.53	640	13							
4.94	364	2.25	2.25	3.74	1440	2.71	734	2.82	817	2.37	560	14							
4.96	372	2.29	2.29	4.53	1270	2.71	734	S	429	2.00	384	15							
4.96	372	S	S	3.34	1120	2.83	800	S	823	1.87	328	16							
4.96	372	1.27	1.27	2.52	1250	3.02	913	S	794	1.97	368	17							
4.94	364	1.31	1.31	2.47	1210	a	883	S	574	2.06	404	18							
4.91	352	1.29	1.29	2.75	756		1260	1.86	340	2.00	376	19							
4.92	356	1.30	1.30	2.75	756	4.50	1420	1.88	348	1.88	324	20							
4.97	376	1.33	1.33	2.33	535	3.56	1290	1.79	313	1.83	306	21							
4.94	364	1.32	1.32	2.31	525	3.12	973	1.76	302	1.83	306	22							
4.94	364	1.35	1.35	2.08	418	2.96	877	1.94	372	1.83	306	23							
4.89	344	1.44	1.44	2.23	486	2.72	739	1.91	360	1.78	288	24							
4.81	313	1.55	1.55	2.50	620	2.70	728	1.62	254	1.69	257	25							
5	262	1.67	1.67	2.69	728	2.97	605	1.49	215	1.68	254	26							
5	508	1.71	1.71	2.75	761	2.39	565	1.64	260	1.66	247	27							
4.6	590	1.77	1.77	2.51	630	2.75	761	1.79	313	1.58	223	28							
4.50	610	1.87	1.87	2.38	565	2.85	823	1.87	344	1.50	202	29							
4.58	656	2.18	2.18	2.28	515	2.55	656	S	624	1.52	208	30							
XX	XXX	2.64	2.64	XX	XXX	2.46	610	2.63	706	XX	XXX	31							
9,099		12,638		33,768		23,647		17,228		11,469		136,005							
303		408		1126		763		556		382		373							
18,050		25,070		66,980		46,900		34,170		22,750		269,800							
656		847		2400		1420		1250		668		2400							
51		132		418		472		215		166		61							

ARKANSAS

FOUNTAIN, CO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1981

Drainage area 4280 square miles.

Water stage recorder Stevens A-35 Contin

Max. Discharge 3840 Sec. ft. at 1900 on Aug 15, 1981 G. H. 6.12 ft.
 Max. G. H. 6.12 ft. at 1900 on Aug 15, 1981 Min. Daily Discharge _____ sec.-ft. on _____
 S-discharge subdivided, V-variable shift. Discharge estimated for "a"-no gage height record and "b"-ice effect.

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	2.09 ¹⁸	368	2.36 ¹⁷	480	2.32 ¹⁰	429	2.21 ¹⁰	384	1.91 ¹¹	276	1.77 ¹⁰	228
2	2.12 ¹⁹	384	2.41	505	2.31 ¹⁰	424	2.21	384	1.79	237	1.82 ⁰⁹	240
3	2.13	388	2.38	490	²⁶⁶ 2.37 ⁰⁹	447	2.20	380	1.83	250	1.82	240
4	2.15 ¹⁹	396	2.37	485	2.37	447	2.20	380	1.89	269	1.83	243
5	2.09 ²⁰	376	²⁶⁸ 2.38 ¹⁷	490	2.36	442	2.20	380	1.89	269	²¹² 1.78 ⁰⁹	228
6	²⁶⁷ 2.05 ²⁰	360	2.35	475	2.34	434	2.20	380	1.89	269	1.77 ⁰⁹	225
7	2.04	356	2.28	442	2.34	434	2.17	368	1.87	263	1.87 ⁰⁸	253
8	2.05	360	2.23	420	2.34	434	2.17 ¹⁰	368	1.83	250	1.84	243
9	2.04	356	2.24	424	2.28	408	2.12 ¹¹	352	1.89	269	1.82	237
10	2.02	348	2.23	420	2.25	396	2.07	333	1.85 ¹¹	256	1.78	225
11	2.05	360	2.18 ¹⁷	400	2.25	396	2.07	333	1.65 ⁶	185	1.79 ⁰⁸	228
12	2.07	368	2.32 ¹⁶	456	2.27	404	2.04	322	1.80 ¹¹	240	1.81 ⁰⁷	231
13	2.07	368	2.27	434	2.35	438	2.02	314	1.90	272	1.80	228
14	2.07	368	2.32	456	2.30	416	²⁶⁹ 2.02 ¹¹	314	1.94	286	1.78	222
15	2.14	396	2.33	460	2.28	408	1.96	293	1.91	276	1.77	219
16	2.25	442	2.25	424	2.30	416	1.94	286	1.88	266	1.79 ⁰⁷	225
17	2.30	465	2.20	404	²⁶⁷ 2.29 ⁰⁹	412	1.93	283	²⁷¹ 1.86 ¹¹	259	1.84 ⁰⁶	237
18	2.38	505	²⁶⁵ 2.20 ¹⁶	404	2.28	408	1.93	283	1.86	259	1.90	256
19	2.42	525	2.34 ¹⁵	460	2.32	424	1.96	293	1.85	256	²⁷³ 1.84 ⁰⁶	237
20	²⁶³ 2.40 ²⁰	515	2.33	456	2.32	424	1.92	279	1.84 ¹¹	253	1.88	250
21	2.43	530	2.34 ¹⁵	460	2.31	420	1.92	279	1.98 ¹⁰	296	1.90 ⁰⁶	256
22	2.47	550	2.30 ¹⁴	438	2.30	416	1.97	296	1.89	266	1.86 ⁰⁵	240
23	2.47	550	2.32 ¹⁴	447	2.30 ⁰⁹	416	1.99	303	1.79	234	1.84	234
24	2.47	550	2.39 ¹³	475	2.27 ¹⁰	408	1.97	296	1.78	231	1.82 ⁰⁵	228
25	2.46	545	2.34 ¹²	447	2.25	400	1.99	303	1.77	228	1.75 ⁰⁴	204
26	2.46	545	2.32 ¹²	438	2.29	416	1.96	293	1.79	234	1.69 ⁰⁹	188
27	2.46 ²⁰	545	2.27 ¹¹	412	2.29	416	1.90	272	1.77	228	1.71 ⁰³	191
28	2.61 ¹⁹	620	2.28 ¹¹	416	2.27	408	²⁷⁰ 1.94 ¹¹	286	1.74 ¹⁰	219	1.73	196
29	2.56 ¹⁹	592	2.32 ¹⁰	429	2.28	412	1.97	296	XX	XXX	1.72 ⁰³	194
30	2.48 ¹⁸	545	2.33 ¹⁰	434	²⁶⁸ 2.27 ¹⁰	408	1.99	303	XX	XXX	1.69 ⁰²	183
31	2.44 ¹⁸	525	XX	XXX	2.21 ¹⁰	384	1.95 ¹¹	289	XX	XXX	²¹¹ 1.71 ⁰²	188

<u>386,315</u>	Total	14,101	13,381	12,945	9,925	7,096	6,997
<u>1056</u>	Mean	455	446	418	320	253	226
<u>766,300</u>	Run-off in acre-feet	27,970	26,540	25,680	19,690	14,070	13,880
<u>6990</u>	Maximum	620	505	447	384	296	
<u>250</u>	Minimum	348	400	384	272	185	

STATE OF COLORADO

DIVISION OF WATER RESOURCES

OFFICE OF STATE ENGINEER

Sta. No. 01041000

Rating Table Used No. 1 Oct. 1, 1980

to Sept. 30, 1981

Gage height	APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	S.D.J.	L.R.S.	G.E. Brees	Date		
	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge													
70	185	2.11	279	3.17	860	2.40	480	2.68	614	S	V	685	1											
76.4	170	2.27	336	3.04	777	2.38	470	2.57	555	2.67	626	2												
64	170	2.43	400	3.13	834	2.78	681	2.67	609	2.74	664	3												
63	168	2.73	540	3.28	932	2.62	592	2.53	535	2.10	356	4												
65.5	149	2.66	505	3.20	880	2.49	525	2.84	705	2.59	582	5												
64	130	2.45	408	3.27	925	2.41	485	2.80	681	2.49	535	6												
64.3	129	2.27	336	3.77	1290	2.35	456	2.99	789	2.60	592	7												
64.1	125	2.15	293	4.08	1550	2.32	442	2.94	753	2.33	456	8												
63.6	118	1.96	231	4.06	1560	2.16	376	3.07	828	2.43	505	9												
63.0	110	1.74	170	4.05	1570	2.23	404	3.20	906	2.42	500	10												
62.8	109	1.67	153	3.49	1550	2.36	460	3.22	918	2.49	535	11												
63.4	116	1.63	145	3.86	1430	2.50	525	2.94	741	2.69	642	12												
64.9	141	1.64	147	3.63	1250	2.62	587	S	831	2.59	587	13												
64.9	141	1.58	135	3.34	1030	2.48	515	2.47	485	2.46	520	14												
64.7	137	1.55	130	3.13	892	2.27	416	S	779	2.39	485	15												
65.1	145	1.80	185	2.87	729	2.22	396	2.81	664	2.50	540	16												
64.4	130	1.79	183	2.46	505	S	V	468	2.63	565	2.55	565	17											
64.1	124	1.68	155	2.39	470	S	V	533	S	V	662	2.49	535	18										
64.1	124	1.63	145	2.42	485	2.65	598	2.39	456	2.34	460	19												
64.0	122	1.61	141	2.64	598	2.53	535	2.27	404	2.11	364	20												
62.1	96	1.56	132	3.39	1070	2.45	495	2.25	396	2.11	364	21												
62.2	97	1.52	125	3.30	1000	2.55	545	2.20	376	2.03	333	22												
65.6	143	1.62	145	2.73	648	2.85	711	2.17	364	1.99	318	23												
65.5	141	1.87	207	2.77	670	3.12	880	2.00	300	1.95	303	24												
63.4	106	1.92	222	2.77	670	3.27	977	1.97	289	1.92	310	25												
62.5	94	1.87	207	2.93	765	3.31	1000	2.03	310	1.92	293	26												
62.7	95	1.96	237	2.54	550	3.49	1130	2.14	352	1.91	272	27												
65.0	121	2.16	310	2.28	424	3.29	990	2.11	340	1.81	256	28												
65.5	191	2.49	452	2.36	460	3.15	899	2.04	314	1.81	247	29												
65.9	228	2.94	699	2.43	495	3.03	821	1.91	269	1.89	250	30												
XX	XXX	3.07	789	XX	XXX	2.76	658	S	V	302	XX	XXX	31											

Computed: S.D.J. L.R.S. L.R.S.
Checked: G.E. Brees
Date: 11-12-81

Computed: S.D.J. L.R.S. L.R.S.
Checked: G.E. Brees
Date: 11-10-81

Dis. appl.: S.D.J. L.R.S. L.R.S.
Dis. check: G.E. Brees
Date: 11-10-81

Water Year 1981

4,055	8,542	26,869	19,050	17,092	13,680	153,733
135	276	896	615	551	456	421
8,040	16,940	53,290	37,790	33,900	27,130	304,900
228	789	1570	1130	918	685	1570
94	130	424	376	269	247	94

ARKANSAS

CANON CITY, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1981

Drainage area 3117 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	5.38 ⁰²	345	5.53 ⁰⁵	393	5.70 ⁰⁴	512	5.62 ¹⁰	418	5.37 ⁰⁴	307	5.32 ⁰⁴	280
2	5.41	363	5.60 ⁰⁶	431	5.63 ⁰³	470	5.62	418	a	280	5.33	285
3	5.41	363	5.57 ⁰⁷	405	5.58 ⁰³	438	5.62	418		300	5.35	296
4	5.43	375	5.58	412	5.60	451	5.62	418		320	5.35	296
5	5.37	340	5.58 ⁰⁷	412	5.58	438	5.62	418		330	5.31 ⁰⁴	275
6	5.36 ⁰²	334	5.57	405	5.58	438	5.62	418		330	5.33	285
7	5.35	329	5.53	381	5.58	438	5.60	405		320	5.37	307
8	5.34	323	5.53	381	5.58	438	5.60	405		300	5.36	301
9	5.33	318	5.52	375	5.53	405	5.54	369		320	5.34	290
10	5.33	318	5.49	357	5.52	399	5.52	357		310	5.33	285
11	5.35	329	5.50	363	5.55	418	5.52	357	a	240	5.35	290
12	5.35	329	5.59	418	5.57	431	5.49	340	5.53 ^b	290	5.35	296
13	5.36	334	5.56 ⁰⁷	399	5.62	464	5.49	340	5.50 ^b	320	5.34	290
14	5.36 ⁰²	334	a	390	5.57	431	5.47 ¹⁰	329	5.44 ⁰⁴	345	5.33	285
15	5.42 ⁰¹	363		400	5.57	431	5.40 ⁰⁸	301	5.39	318	5.33	285
16	5.46	387		380	5.58	438	5.36 ⁰⁷	285	5.39	318	5.33	285
17	5.44 ⁰¹	375		370	5.58 ⁰³	438	5.37	290	5.37 ⁰⁴	307	5.40	323
18	5.53 ⁰	425	5.66 ^a	400	5.57 ⁰³	431	5.38	296	5.37	307	5.40	323
19	5.55	438	5.65 ⁰⁷	457	5.61 ⁰⁵	444	5.37	290	5.36	301	5.35 ⁰⁴	296
20	5.54 ⁰	431	5.63 ⁰⁷	444	5.60	438	5.37 ⁰⁷	290	5.35	296	5.35	296
21	5.56 ⁰¹	438	5.65 ⁰⁶	464	5.59	431	5.41 ⁰⁶	318	5.37	307	5.35	290
22	5.57	444	5.66	470	5.59	431	5.41	318	5.30	270	5.32	280
23	5.56	438	5.68 ⁰⁶	484	5.60 ⁰⁵	438	5.42	323	5.28	260	5.32	280
24	5.56	438	5.71 ⁰⁵	512	5.56 ⁰⁶	405	5.43	329	5.31	275	5.30	270
25	5.57	444	5.70	505	5.55 ⁰⁶	399	5.42 ⁰⁶	323	5.32	280	5.25	245
26	5.56	438	5.69	498	5.58 ⁰⁷	412	5.39 ⁰⁵	312	5.34	290	5.22	230
27	5.58 ⁰¹	451	5.67	484	5.58	412	5.39 ⁰⁵	312	5.32	280	5.22	234
28	5.72 ⁰²	540	5.66 ⁰⁵	477	5.57 ⁰⁷	405	5.41 ⁰⁴	329	5.30 ⁰⁴	270	5.20	220
29	5.64 ⁰³	477	5.69 ⁰⁴	505	5.61 ⁰⁹	418	5.42	334	XX	XXX	5.20	227
30	5.58 ⁰⁴	431	5.69 ⁰⁴	505	5.65 ¹⁰	438	5.42	334	XX	XXX	5.19	220
31	5.56 ⁰⁴	418	XX	XXX	5.62 ¹⁰	418	5.40 ⁰⁴	323	XX	XXX	5.18 ⁰⁴	220

Max. Discharge 1680 on June 7, 1981 G. H. 6.98 ft. on June 7, 1981 Min. Daily Discharge 167 sec.-ft. on Apr. 24, 1981
 Max. G. H. 6.98 ft. at 2.230 on June 7, 1981
 Discharge estimated for "a" - no gage height record and "b" - ice effect.

Calendar Year 1980
 360,1615 Total
 985 Mean
 715,300 Run-off in acre-feet
 6830 Maximum
 301 Minimum

360,1615	Total	12,110	12,877	13,398	10,717	8,391	8,613
985	Mean	391	429	432	346	300	278
715,300	Run-off in acre-feet	24,020	25,540	26,570	21,260	16,640	17,000
6830	Maximum	540	512	512	418	345	301
301	Minimum	318	357	399	285	240	

Grape

Creek near

Westcliffe

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 81

Drainage area 320 square miles.

Water stage recorder Stevens A-35

ft. G. H. on _____ sec.-ft. on _____
 Min. Daily Discharge _____
 "S" - discharge subdivided; V - Variable shift; discharge
 estimated for "a" - no gage-height record and "b" - ice effect.

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	0.49	7.4	0.57	14	0.71	10	0.61	14	0.6	15	0.69	20
2	.50	8.0	.57	14	.77	10	.62	15	0.6	14	.69	20
3	.50	8.0	.57	14	.67	10	.62	15	0.90	15	.69	20
4	.50	8.0	.57	14	.68	10	.62	15	.91	15	.77	19
5	.50	8.0	.57	14	.67	11	.63	16	.88	15		20
6	.50	8.0	.56	12	.63	11	.61	14	.75	17		19
7	.50	8.0	.55	12	.65	11	.67	12	.72	18		19
8	.50	8.0	.54	12.3	.67	11	.67	19	.70	19		19
9	.51	8.7	.55	2.3	.67	11	<u>700</u>	21	.71	19	.63	19
10	.52	9.8	.55	2.3	<u>698</u>	13	.68	20	.73	20	.61	20
11	.52	9.3	.54	2.3	.67	14	.65	17	<u>702</u>	20	.67	20
12	.52	9.3	<u>696</u>	11	.67	14	.63	15	.70	21	.70	21
13	.52	9.3	.56	14	.67	14	.62	15	.85	22	.73	21
14	<u>694</u>	9.3	.56	14	.67	14	.67	19	.77	23	.70	21
15	.54	12	.57	12	.67	15	.71	21	.77	23	.74	21
16	.55	12	.62	10	.67	15	.74	27	.77	22	.79	21
17	.54	12	.61	10	.63	15	.74	27	.70	21	.79	21
18	.54	12	.72	10	.62	15	.69	31	.68	19	.77	21
19	.54	12	.57	10	.62	15	.63	15	.68	19	.57	21
20	.53	12	.77	9.0	.61	13	.63	15	.85	19	.68	21
21	.55	12	.77	9.0	.62	13	.66	15	.70	20	.68	21
22	.56	12	.72	8.5	<u>697</u>	13	.67	19	.62	17	.63	21
23	.55	12	.64	8.0	.62	17	.66	18	.50	20	.60	21
24	.54	12	.63	8.0	.63	18	.67	19	.71	22	<u>701</u>	25
25	.55	12	.64	8.0	.62	20	.65	17	.72	24	.72	21
26	.56	13	<u>697</u>	7.5	.64	19	.69	15	<u>703</u>	21	.61	21
27	.58	15	.66	8.0	.64	13	.70	18	.67	19	.67	17
28	.58	15	.67	9.0	.64	13	.77	17	.67	17	.62	15
29	<u>695</u>	14	.62	9.0	.65	13	<u>701</u>	17	XX	XXX	.75	21
30	.58	15	.66	9.0	.61	14	.67	16	XX	XXX	.62	21
31	.57	14	XX	XXX	.62	14	.67	15	XX	XXX	.62	21

Total	340.3	315.2	411	555	536	778
Mean	10.3	10.5	14.2	17.9	1.91	25.1
Run-off in acre-feet	625	625	875	1101	1063	1543
Maximum	15	14	20	24	24	43
Minimum	7.4	8.0	10	14	17	15

Calendar Year
1980

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Sta. No. 07095000
 Rating Table Used No. 7, since 10/20/66

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	LRS	MLF	11/12
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge					
0.47	32	0.47	5.8	0.45	4.7	0.52	8.9	0.48	6.90	0.87	58.0	1	3rd			
0.47	26	0.47	5.8	0.46	5.2	0.52	2.9	0.48	6.90	0.77	26.9	2	2nd			
0.47	21	0.47	5.8	0.47	5.8	0.52	9.8	0.48	6.90	0.77	21.4	3	2nd			
0.45	18	0.45	4.7	0.47	5.6	0.48	6.4	0.48	5.80	0.77	23.6	4	1st	LRS	MLF	11/12
0.45	17	0.45	4.7	0.47	6.0	0.48	5.8	0.48	5.20	0.70	19.2	5	1st	LRS	MLF	11/12
0.45	18	0.45	4.7	0.47	6.3	0.48	5.2	0.48	6.40	0.70	19.2	6	Quarter	Computed	Checked	Date
0.45	17	0.45	4.7	0.47	6.1	0.48	5.2	0.48	10.7	0.87	81	7	Quarter	Computed	Checked	Date
0.45	16	0.45	4.7	0.47	5.8	0.48	8.9	0.48	67.6	0.77	53.6	8	4th			
0.45	16	0.45	4.7	0.47	4.9	0.48	5.2	0.48	26.9	0.77	39.0	9	4th	LRS	MLF	11/12
0.48	18	0.48	6.4	0.47	4.2	0.48	5.2	0.48	67.1	0.77	47.4	10	4th	LRS	MLF	11/12
0.49	13	0.49	6.9	0.47	4.0	0.48	4.7	0.48	59.8	0.87	39.0	11	3rd			
0.46	12	0.46	5.2	0.47	4.0	0.48	6.4	0.48	45.0	0.89	41.4	12	3rd			
0.45	12	0.45	4.7	0.47	3.8	0.48	6.9	0.48	33.5	0.83	35.7	13	2nd			
0.45	11	0.45	5.2	0.47	3.6	0.48	5.8	0.48	22.5	0.79	30.2	14	2nd			
0.47	11	0.47	5.8	0.47	3.6	0.48	7.4	0.48	20.3	0.76	28.0	15	1st	LRS	MLF	11/12
0.47	11	0.47	5.8	0.47	3.3	0.48	6.9	0.48	12.6	0.76	28.0	16	1st	LRS	MLF	11/12
0.45	8.9	0.45	4.7	0.47	3.0	0.48	6.9	0.48	92.6	0.77	29.1	17	Quarter	Dis.appld.	Dis.check	Date
0.45	8.9	0.45	4.7	0.47	2.7	0.48	6.4	0.48	42.0	0.73	25.8	18	Quarter	Dis.appld.	Dis.check	Date
0.46	9.8	0.46	5.2	0.47	2.5	0.48	5.8	0.48	73.8	0.71	23.6	19	4th	LRS	MLF	11/12
0.46	8.9	0.46	5.2	0.47	2.5	0.48	5.2	0.48	37.9	0.70	22.5	20	4th	LRS	MLF	11/12
0.46	8.9	0.46	5.2	0.47	1.8	0.48	5.2	0.48	32.4	0.69	21.4	21	4th	LRS	MLF	11/12
0.47	8.9	0.47	3.6	0.48	2.8	0.48	4.7	0.48	21.4	0.68	20.3	22	3rd			
0.47	8.9	0.47	4.2	0.48	3.0	0.48	5.2	0.48	20.3	0.67	19.2	23	3rd			
0.47	8.9	0.47	4.2	0.48	2.5	0.48	4.7	0.48	16.1	0.67	19.2	24	2nd			
0.47	6.9	0.47	4.2	0.48	1.0	0.48	5.8	0.48	14.3	0.67	19.2	25	2nd			
0.47	5.8	0.47	4.2	0.48	6.4	0.48	15.2	0.48	14.3	0.67	19.2	26	1st	LRS	MLF	11/12
0.47	6.9	0.47	4.2	0.48	4.2	0.48	11.6	0.48	19.2	0.63	15.2	27	1st	LRS	MLF	11/12
0.47	6.4	0.47	3.6	0.48	4.2	0.48	8.0	0.48	68.1	0.61	14.3	28	Quarter	G.H.copd.	G.H.check	Date
0.47	5.8	0.47	4.7	0.48	5.8	0.48	8.0	0.48	30.2	0.60	13.4	29	Quarter	G.H.copd.	G.H.check	Date
0.47	5.2	0.47	4.7	0.48	6.9	0.48	6.9	0.48	18.1	0.60	13.4	30	Quarter	G.H.copd.	G.H.check	Date
XX	XXX	0.45	5.2	XX	XXX	0.48	6.9	XX	XXX	XX	XXX	31	Water Year			1981
175.7		153.4		138.7		214.7		1067.1		864.3		5779.4				
12.5		4.94		4.62		6.92		39.4		28.8		15.8				
7.5		30.4		275		4.26		2116		1714		11463				
3.2		6.9		11		15.2		126		81		126				
5.8		4.2		1.8		5.2		6.9		13.4		1.8				

ARKANSAS

Greek near WELLSVILLE

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 81

Drainage area 1485 square miles.

Water stage recorder STEVENS A-35 Continuous

Max. Discharge 1730 Sec. ft. at 1300 hrs on JUNE 9, 1981 G. H. 5.49 ft.
 Max. G. H. 5.49 ft. at 1300 hrs on JUNE 9, 1981 Min. Daily Discharge 167 sec.-ft. on April 5, 1981

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	3.49	431	3.61	472	3.56	444	3.44	400	3.07	268	2.89	221
2	3.52	444	3.61	472	3.54	436	3.43	395	3.03	258	2.86	211
3	3.52	444	3.61	472	3.54	436	3.44	400	3.05	264	2.89	221
4	3.46	413	3.57	454	3.53	431	3.43	395	3.08	275	2.90	236
5	3.45	408	3.58	458	3.52	426	3.42	391	3.06	263	2.88	222
6	3.43	400	3.53	436	3.51	422	3.43	375	3.04	261	2.90	236
7	3.42	395	3.49	418	3.51	422	3.42	391	3.01	250	2.94	244
8	3.40	387	3.48	413	3.49	408	3.36	371	3.03	258	2.92	236
9	3.37	375	3.49	416	3.45	391	3.29	347	3.10	283	2.90	230
10	3.39	383	3.49	416	3.45	391	3.28	343	3.06	272	2.92	236
11	3.40	387	3.62	480	3.46	395	3.27	339	2.89	219	2.92	236
12	3.40	387	3.54	444	3.53	426	3.26	335	3.01	261	2.92	236
13	3.40	387	3.52	436	3.50	413	3.23	327	3.08	287	2.89	230
14	3.40	387	3.55	449	3.51	418	3.19	315	3.07	283	2.88	226
15	3.50	426	3.50	426	3.48	404	3.12	291	3.08	287	2.87	222
16	3.51	431	3.45	404	3.49	408	3.13	295	3.08	287	2.95	254
17	3.56	454	3.44	400	3.48	404	3.13	295	3.09	291	3.01	275
18	3.62	476	3.56	454	3.50	413	3.13	295	3.09	291	2.97	264
19	3.62	476	3.58	462	3.51	418	3.12	291	3.08	287	2.97	264
20	3.65	490	3.59	467	3.50	413	3.14	291	3.06	299	2.97	272
21	3.69	508	3.56	454	3.49	408	3.16	303	3.00	258	2.97	264
22	3.68	503	3.57	458	3.51	418	3.17	307	2.98	236	2.95	256
23	3.67	498	3.59	467	3.50	413	3.18	311	2.96	247	2.95	256
24	3.67	498	3.60	472	3.46	400	3.19	315	2.97	250	2.90	241
25	3.66	494	3.58	462	3.46	400	3.16	303	2.94	240	2.85	222
26	3.65	490	3.53	436	3.49	418	3.10	295	2.92	233	2.86	226
27	3.74	530	3.53	436	3.49	408	3.10	295	2.87	219	2.85	222
28	3.80	560	3.54	440	3.49	408	3.14	287	2.88	222	2.84	219
29	3.62	476	3.59	456	3.50	422	3.18	299			2.80	205
30	3.58	458	3.59	456	3.44	400	3.11	299	XX	XXX	2.97	202
31	3.53	436	XX	XXX	3.43	395	3.11	299	XX	XXX	2.98	196

392,728	Total	13,532	13,394	12,809	10,143	7,334	7,293
409	Mean	446	446	413	327	262	235
11,110	Run-off in acre-feet	27,110	26,510	25,110	20,120	11,450	11,110
560	Maximum	560	470	444	400	211	215
375	Minimum	375	400	391	295	219	198

Calendar Year 1980

STATE OF COLORADO
DIVISION OF WATER RESOURCES
OFFICE OF STATE ENGINEER

Sta. No. 07093700
 Rating Table Used No. 4 Rated 1-30-76
Oct 1, 1980 Thru Sept 30, 1981

Age height	APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Date
	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height							
76	191	3.69	512	4.14	896	3.83	555	3.99	665	3.98	660	1							
77	202	3.84	580	4.27	927	4.08	680	3.99	665	4.21	794	2							
78	212	4.12	710	4.54	962	4.07	675	3.94	640	3.49	426	3							
79	206	4.20	752	4.66	1050	3.92	605	4.22	800	3.81	575	4							
80	167	3.96	680	4.55	969	3.89	590	4.29	842	3.91	625	5							
81	180	3.81	546	4.81	1170	3.83	560	4.27	830	3.89	615	6							
82	174	3.90	494	5.08	1620	3.83	560	4.34	872	3.49	426	7							
83	180	3.48	404	5.50	1540	3.68	494	4.39	902	3.48	422	8							
84	194	3.28	331	5.11	1650	3.73	516	4.42	920	3.47	418	9							
85	212	3.19	299	5.01	1580	3.78	540	4.48	962	3.49	426	10							
86	226	3.14	233	5.21	1490	3.93	615	4.13	746	3.89	535	11							
87	258	3.10	272	5.12	1400	4.02	660	3.65	498	3.80	570	12							
88	250	3.02	247	4.87	1190	3.97	635	3.87	383	3.81	575	13							
89	230	3.04	254	4.60	1000	3.86	580	3.28	339	3.72	530	14							
90	219	3.19	315	4.42	890	3.75	526	3.55	454	3.74	540	15							
91	219	3.12	291	4.52	655	3.67	498	3.51	436	3.79	565	16							
92	198	3.00	250	3.72	605	3.70	503	3.47	426	3.78	560	17							
93	194	2.98	244	3.83	595	3.92	610	3.51	436	3.70	521	18							
94	198	2.98	244	3.74	610	3.92	640	3.47	418	3.46	413	19							
95	191	2.98	244	4.69	1070	3.92	610	3.41	391	3.71	391	20							
96	205	3.11	244	4.84	1170	3.97	635	3.33	359	3.41	391	21							
97	258	3.00	260	4.11	878	4.26	800	3.28	337	3.37	375	22							
98	268	2.94	279	4.07	676	4.38	872	3.25	327	3.22	355	23							
99	240	3.57	319	4.22	764	4.76	1130	3.21	311	3.32	355	24							
100	222	3.15	303	4.24	776	4.53	976	3.26	331	3.27	339	25							
101	226	3.24	339	4.13	710	4.65	1060	3.31	351	3.23	323	26							
102	258	3.14	418	4.01	560	4.68	1650	3.21	351	3.20	311	27							
103	343	3.16	550	3.77	565	4.50	962	3.32	355	3.17	307	28							
104	375	3.14	574	3.89	585	4.48	948	3.26	331	3.23	323	29							
105	444	3.15	902	3.91	515	4.17	782	3.24	323	3.24	331	30							
XX	XXX	3.17	914	XX	XXX	4.13	546	3.87	615	XX	XXX	31							
6947		13,173		29,147		21,643		16,618		14,005		166,338							
232		425		919		618		536		467		456							
13,120		26,130		54,310		42,130		32,460		27,730		327,700							
449		914		1650		1130		962		744		1650							
167		244		560		494		311		307		167							

Arkansas

River at
Creek near

Salida

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 81

Drainage area 1218 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	0.92	378	0.98	486	0.87	335	0.81	323	0.66	215	0.	178
2	0.93	384	0.99	410	0.89	335	0.81	323	0.65	210	0.	168
3	0.93	384	0.96	464	0.88	341	0.81	323	0.65	210	0.	171
4	0.87	359	0.95	398	0.85	323	0.81	323	0.65	215	0.	171
5	0.87	349	0.95	398	0.86	323	0.81	323	0.64	205	0.	171
6	0.87	349	0.90	359	0.87	335	0.81	311	0.63	196	0.61	171
7	0.87	349	0.89	353	0.87	335	0.81	311	0.63	196	0.61	176
8	0.86	341	0.88	349	0.85	323	0.87	288	0.64	205	0.62	173
9	0.85	335	0.89	353	0.83	317	0.83	261	0.66	210	0.61	168
10	0.85	335	0.90	359	0.81	305	0.83	261	0.66	210	0.62	173
11	0.86	341	0.99	417	0.82	311	0.83	261	0.66	196	0.62	173
12	0.86	341	0.93	398	0.86	335	0.81	245	0.64	191	0.62	173
13	0.85	335	0.92	392	0.83	317	0.81	245	0.67	205	0.61	171
14	0.85	335	0.94	384	0.82	311	0.87	220	0.65	191	0.61	168
15	0.89	359	0.89	353	0.83	317	0.84	205	0.65	205	0.62	173
16	0.86	353	0.82	305	0.84	323	0.64	205	0.67	205	0.66	200
17	0.94	391	0.87	335	0.83	317	0.66	215	0.67	205	0.63	210
18	0.98	417	0.92	365	0.84	323	0.64	265	0.67	265	0.66	210
19	0.98	417	0.91	359	0.85	329	0.64	205	0.67	205	0.66	210
20	0.99	424	0.90	353	0.85	329	0.67	220	0.66	200	0.67	210
21	1.01	437	0.89	349	0.85	329	0.67	220	0.64	191	0.67	210
22	1.01	437	0.88	341	0.86	341	0.67	220	0.61	193	0.67	210
23	0.97	424	0.90	353	0.87	349	0.67	220	0.63	182	0.67	210
24	0.99	424	0.91	359	0.84	335	0.67	225	0.63	182	0.67	210
25	0.99	424	0.89	349	0.83	329	0.67	225	0.63	182	0.67	210
26	0.99	424	0.87	335	0.84	335	0.65	210	0.62	171	0.67	210
27	1.07	479	0.85	323	0.85	329	0.66	215	0.65	168	0.67	210
28	1.07	479	0.86	329	0.82	323	0.67	220	0.62	171	0.67	210
29	0.99	424	0.88	341	0.83	329	0.84	235			0.67	210
30	0.96	404	0.88	341	0.82	329	0.67	220	XX	XXX	0.67	210
31	0.93	384	XX	XXX	0.84	329	0.67	220	XX	XXX	0.67	210

Max. Discharge 1810 Sec. ft. at 1100 hrs. on June 9, 1981 Min. Daily Discharge 160 sec.-ft. on April 5, 1981
 Max. G. H. 2.47 ft. at 1100 hrs. on June 9, 1981
 S-discharge subdivided "0" - discharge estimated for no gage height record

Calendar Year
1980

289,244	Total	12,510	16,904	19,145	7703	5491	6,789
790	Mean	387	363	327	248	196	219
573,700	Run-off in acres-feet	21,320	21,630	24,120	15,270	15,310	13,470
5,500	Maximum	479	476	349	323	215	210
185	Minimum	335	305	305	205	117	163

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Rating Table Used No. 23 rated 2-20-78
 Oct 1, 1980 thru Sept 30 1981

Date	APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	TCS	Date
	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height				
4/16	167	1.02	465	1.57	566	1.13	545	1.24	631	1.24	631	1				
4/17	172	1.16	530	1.45	552	1.24	631	1.23	623	1.40	767	2				
4/18	176	1.36	627	1.77	955	1.28	664	1.20	597	0.98	384	3				
4/19	176	1.36	714	1.83	1325	1.18	563	1.46	821	1.13	545	4				
4/20	175	1.22	563	1.72	765	1.14	568	1.47	835	1.16	568	5				
4/21	174	1.12	515	1.62	1225	1.13	545	1.47	835	1.15	560	6				
4/22	165	0.95	415	1.45	1150	1.12	528	1.55	815	0.90	371	7				
4/23	165	0.98	315	1.25	1650	1.02	465	1.52	930	0.90	371	8				
4/24	166	0.81	265	1.15	1410	1.05	486	1.62	970	0.90	371	9				
4/25	178	0.98	218	1.09	1750	1.10	522	1.63	970	0.92	378	10				
4/26	191	0.95	256	1.21	1520	1.14	552	1.31	714	0.84	508	11				
4/27	210	0.92	215	1.11	1490	1.26	647	0.98	437	1.09	515	12				
4/28	265	0.83	225	1.07	1215	1.22	615	0.85	353	1.10	522	13				
4/29	196	0.92	215	1.08	1520	1.13	545	0.99	317	1.04	477	14				
4/30	191	0.91	272	1.04	1380	1.07	500	0.92	398	1.08	508	15				
5/1	191	0.92	220	1.04	1517	1.03	492	0.93	404	1.10	522	16				
5/2	178	0.69	205	1.19	571	1.05	486	0.92	398	1.08	528	17				
5/3	173	0.89	205	1.20	597	1.12	583	0.93	404	1.03	472	18				
5/4	173	0.89	205	1.20	615	1.20	615	0.90	374	0.89	378	19				
5/5	193	0.91	205	1.22	1190	1.17	575	0.89	365	0.89	365	20				
5/6	191	0.89	205	1.23	1250	1.23	623	0.89	341	0.89	365	21				
5/7	220	0.96	205	1.27	848	1.17	803	0.85	323	0.85	353	22				
5/8	225	0.96	205	1.28	906	1.56	911	0.97	317	0.81	327	23				
5/9	210	0.97	256	1.41	976	1.82	1180	0.93	311	0.82	335	24				
5/10	176	0.97	255	1.40	935	1.64	990	0.85	223	0.80	323	25				
5/11	176	0.82	255	1.20	680	1.92	1070	0.83	211	0.98	311	26				
5/12	285	0.91	255	1.41	530	1.93	1020	0.85	353	0.97	305	27				
5/13	265	0.92	210	1.42	552	1.62	976	0.83	335	0.97	325	28				
5/14	221	0.88	255	1.16	568	1.41	960	0.91	317	0.70	323	29				
5/15	211	0.87	216	1.17	575	1.34	940	0.98	311	0.81	325	30				
5/16	XXX	0.72	272	XX	XXX	1.19	906	1.19	591	XX	XXX	31				
6070	11,934		21,942		21,170		14,126		13,065		151,244					
202	385		998		673		520		435		415					
12,640	22,246		51,210		41,710		31,490		25,700		200,200					
371	176		176		1170		920		767		1570					
760	176		520		1160		211		305		165					

CHALK

river at Creek near NATHROP, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 81

Drainage area _____ square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Max. Discharge 214 Sec. ft. at 2050 hrs. on June 25 1981
 Max. G. H. 392 ft. at 2050 hrs. on June 25 1981 Min. Daily Discharge 3.30 sec.-ft. on DAYS
 Discharge estimated for "a" no gage height record

G. H. 341 ft. SEVERAL 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	2.38	22	2.30	21	2.37	23	2.34	21	a	13	1.99	10
2	2.36	21	2.29	20	2.38	24	2.34	21		11	1.99	10
3	2.33	20	2.28	19	2.37	23	2.36	22		12	2.00	10
4	2.32	19	2.29	20	2.37	23	2.34	22		11	2.01	11
5	2.30	19	2.27	19	2.36	22	2.35	22		10	2.04	11
6	2.29	18	2.29	19	2.35	22	2.33	22		10	2.08	11
7	2.27	18	2.27	19	2.35	22	2.33	22		11	2.16	15
8	2.26	17	2.27	19	2.35	22	2.32	21		12	a	14
9	2.25	16	2.28	19	2.34	21	2.32	21		12	2.13	14
10	2.23	16	2.28	19	2.33	21	2.32	21		10	a	14
11	2.21	16	2.28	19	2.33	21	2.31	21		11		14
12	2.19	15	2.23	16	2.34	21	2.27	19		12		14
13	2.18	14	2.18	14	2.33	21	2.22	18		11		16
14	2.20	16	2.18	14	2.33	21	2.22	15		11		16
15	2.27	19	2.18	14	2.32	20	2.22	18		11		16
16	2.22	17	2.21	15	2.34	21	a	20		11		17
17	2.21	16	2.24	16	2.32	20	2.29	22		11		17
18	2.20	16	2.31	19	2.33	21	a	23		11		16
19	2.20	16	2.32	20	2.33	21	2.22	22	2.01	11		16
20	2.20	16	2.31	19	2.33	21	2.22	22	2.01	11	a	14
21	2.21	16	2.32	20	2.30	19	2.25	25	2.01	11	2.13	14
22	2.20	16	2.31	19	2.30	19	a	26	2.02	11	a	13
23	2.21	16	2.32	20	2.32	20	2.34	26	2.02	11	2.23	12
24	2.18	15	2.33	21	2.32	20	a	24	2.01	11	a	12
25	2.17	14	2.34	21	2.34	21	2.22	22	1.99	10	2.09	11
26	2.18	15	2.34	21	2.33	21	2.22	22	1.98	9.6	1.99	6.0
27	2.22	16	2.33	21	2.33	21	2.22	22	1.97	9.2	1.98	5.5
28	2.28	19	2.36	22	2.33	21	2.22	22	1.97	9.2	1.98	5.5
29	2.30	21	2.37	23	2.34	21	2.20	18			1.98	5.0
30	2.27	20	2.36	22	a	21		17	XX	XXX	1.98	5.2
31	2.29	20	XX	XXX	2.18	21	a	15	XX	XXX	1.98	5.0

2080.0	Total	535	590	656	659	305	311.4
6.61	Mean	17.3	19.0	21.2	21.0	10.9	12.0
13.00	Run-off in acre-feet	1,060	1,130	1,300	1,370	635	704
3.5	Maximum	22	23	24	26	15	17
5.0	Minimum	14	14	19	15	9.2	5.0

COTTONWOOD

Creek

BUENA VISTA, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1981

Drainage area _____ square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Max. Discharge 40 Sec. ft. at 0950 hrs on Nov 24, 1980
 SEVERAL
 G. H. 179 ft. on DAYS
 Max. G. H. 2.29 (ICE) ft. at 1450 hrs. on Feb 2, 1981 Min. Daily Discharge 0.38 sec.-ft. on DAYS
 S-DISCHARGE SUBDIVIDED, V-VARIABLE SHIFT, DISCHARGE ESTIMATED FOR "Q" NO GAGE
 HEIGHT RECORD AND "b" ICE EFFECTED GAGE HEIGHT

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	218 0.93	.01 7.0	1.62	.04 27	1.92	.04 34	1.64	.04 28	1.50	b 18	1.51	.01 18
2	0.95	7.3	1.55	22	1.92	34	1.64	28	1.48	17	1.53	19
3	0.97	7.5	1.51	20	1.90	34	1.64	28	1.50	18	1.53	19
4	0.96	7.4	1.53	21	222 1.93	.04 35	1.64	28	1.50	18	1.50	19
5	0.98	7.0	1.52	21	1.92	34	1.64	28	1.51	19	228 1.45	.01 15
6	0.92	6.9	220 1.52	.04 21	1.92	34	1.63	.04 28	1.65	18	1.49	17
7	0.91	6.8	1.52	21	1.93	35	1.64	b 26	1.72	18	1.52	18
8	0.91	6.8	1.52	21	1.90	.04 33	1.63	26	1.83	19	1.50	17
9	0.92	6.9	1.54	22	1.90	b 33	1.62	25	1.85	19	1.50	17
10	0.89	6.6	1.56	23	1.69	b 32	1.63	26	1.83	19	1.50	17
11	0.88	6.4	1.56	23	1.90	.04 33	1.60	24	1.82	18	1.49	17
12	0.84	6.0	1.57	24	1.91	34	1.60	23	1.83	19	1.48	16
13	0.86	6.2	1.59	25	1.69	32	1.60	23	1.83	19	1.49	16
14	0.86	6.2	1.59	25	1.69	32	1.59	b 23	1.84	20	1.46	16
15	1.05	8.5	1.55	22	1.69	32	225 1.59	.01b 23	1.69	b 19	1.43	14
16	1.05	8.5	1.54	.04 22	1.68	31	1.60	.01 24	1.55	.01 20	1.44	15
17	1.14	.01 9.1	1.54	b 22	1.67	30	1.58	b 22	1.55	20	1.46	16
18	1.37	b 13	1.63	28	223 1.67	.04 30	1.58	22	1.49	19	1.46	16
19	1.40	14	1.63	31	1.68	31	1.58	22	227 1.52	.01 18	1.42	14
20	1.45	16	221 1.67	.04b 30	1.65	29	1.59	22	1.51	18	1.46	16
21	1.43	15	1.92	34	1.65	29	1.57	22	1.51	18	1.44	15
22	1.44	15	1.93	b 35	1.66	30	1.57	b 22	1.48	16	1.45	15
23	219 1.43	15	1.93	.04 35	1.65	29	1.57	.01 22	1.50	17	1.46	16
24	1.38	13	1.99	.01 38	1.65	29	1.57	22	1.50	17	229 1.46	.01 16
25	1.39	13	1.69	b 32	1.65	29	1.56	.01 21	1.51	18	1.45	15
26	1.44	.01 16	1.90	b 33	1.65	29	1.55	b 21	1.51	18	1.44	15
27	1.46	.01 16	1.91	b 34	1.64	28	1.55	b 21	1.49	17	1.42	.01 14
28	1.55	.02 21	1.93	.04 35	1.64	28	1.56	.01 21	1.49	.01 17	1.35	.03 12
29	1.65	.01 29	1.93	35	1.64	28	226 1.56	.01 21			1.32	12
30	1.65	29	1.93	.04 35	1.64	28	1.55	b 21	XX	XXX	1.31	12
31	1.64	.04 28	XX	XXX	224 1.64	.04 28	1.53	b 20	XX	XXX	1.31	.03 12

20.528.8	Total	394.9	817	967	733	511	484
56.1	Mean	12.1	27.2	31.2	23.6	18.2	15.6
46.720	Run-off in acre-feet	1113	1120	1120	1120	1120	1120
3.2	Maximum	29	33	35	28	20	19
3.2	Minimum	6.0	20	28	20	16	12

STATE OF COLORADO
DIVISION OF WATER RESOURCES
OFFICE OF STATE ENGINEER

Sta. No. _____
 Rating Table Used NO. 2 RATED 6-8-79

Gage height	APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day	4th	TCS	Date								
	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height												
125	12	a	0.77	1.42	10	12	0.30	0.71	0.18	0.42	0.18	0.47	1											
122	12		0.71	1.43	10	12	0.89	0.57	0.18	0.42	0.18	0.47	2											
126	12		0.66	1.33	07	12	0.34	1.0	0.18	0.42	0.44	2.0	3											
124	12		0.61	1.26	10		0.22	0.42	0.17	0.38	0.35	1.4	4											
127	11		0.56	0.95	6.6		0.44	1.7	0.17	0.38	0.30	1.0	5											
126	11	232	0.56	1.41	13		0.46	1.9	0.29	0.79	0.39	1.6	6											
122	9.9	0.46	0.56	1.50	15		0.36	1.2	S	V	2.7	5.6	7											
120	9.7	0.46	0.56	1.53	16		0.40	1.4	0.39	1.5	0.69	4.0	8											
120	9.7	0.52	0.88	1.44	13		0.42	1.6	0.34	1.2	0.89	6.0	9											
120	9.7	0.64	1.7	1.09	7.2		0.47	2.1	0.69	4.0	241 0.85	5.6	10											
118	9.4	0.54	0.91	0.80	3.4		0.22	0.47	S	0.6	9.8	6.4	11											
118	9.4	0.46	0.61	0.50	0.71		0.30	0.88	0.57	3.0	1.07	8.1	12											
121	6.7	0.46	0.61	0.47	0.56		0.47	2.0	0.25	0.61	1.05	7.9	13											
128	2.3	0.46	0.61	0.46	0.51		0.47	2.2	239 0.40	1.5	0.92	6.3	14											
0.60	1.5	0.46	0.61	0.48	0.61		0.45	1.9	0.33	1.0	0.79	4.9	15											
0.60	1.5	0.46	0.61	0.47	0.56	237 0.32	0.6	0.99	0.74	4.4	0.65	3.5	16											
0.60	1.5	0.46	0.61	0.48	0.61	0.53	2.5	0.67	0.6	3.7	0.61	3.2	17											
0.59	1.4	0.46	0.61	0.50	0.71	0.73	4.3	0.82	0.4	1.1	S	V	6.0	18										
0.58	1.4	0.46	0.61	0.46	0.51	0.54	2.6	0.23	0.61	S	V	5.1	19											
0.52	0.88	0.45	0.56	0.46	0.51	0.21	0.5	0.47	0.52	2.6	0.37	1.6	20											
0.50	0.77	233 0.44	0.51	0.46	0.51	0.24	0.61	0.37	1.4	0.32	1.2	21												
0.50	0.77	0.44	0.51	0.47	0.56	0.38	1.4	0.26	0.77	0.17	0.42	22												
0.49	0.71	0.44	0.51	0.47	0.56	0.40	1.6	0.22	0.56	242 0.27	1.0	23												
0.49	0.71	0.44	0.51	0.47	0.56	0.23	0.56	0.44	1.9	0.19	0.51	24												
0.49	0.71	0.46	0.61	0.47	0.56	0.40	1.6	0.73	0.4	4.5	0.24	0.77	25											
0.50	0.77	0.61	1.8	0.47	0.66	0.85	0.5	5.7	0.25	0.2	0.82	0.21	0.61	26										
0.54	0.99	0.58	1.6	0.53	0.88	S	V	11	0.18	0.47	0.28	0.99	27											
0.52	0.88	1.33	0.77	0.72	2.7	0.41	1.8	240 0.16	0.2	0.38	0.38	1.6	28											
0.52	0.88	1.34	0.8	236 0.65	3.2	0.19	0.47	0.16	0.38	0.18	0.47	29												
0.52	0.88	1.12	0.74	0.26	1.0	238 0.17	0.47	0.16	0.38	0.24	0.77	30												
XX	XXX	1.51	1.4	XX	XXX	0.13	0.42	0.17	0.2	0.12	XX	XXX	31											
152.99													60.95		136.88		61.67		52.71		87.48		4,441.38	
5.10													1.77		11.56		1.77		1.76		2.48		12.2	
30.8													1.21		2.72		1.22		1.05		1.77		8910	
12													1.4		1.6		1.1		9.8		8.1		38	
2.71													0.51		0.51		0.42		0.38		0.42		0.38	

ARKANSAS

River at

BUENA VISTA, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1981

Drainage area 611 square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Max. Discharge 1650 Sec. ft. at 1050 hrs. on June 9, 1981 G. H. 4.24 ft.
 Max. G. H. 4.24 ft. at 1050 hrs. on June 9, 1981 Min. Daily Discharge 84 sec.-ft. on Mar 9, 1981
 S-discharge subdivided. Discharge estimated for "a"-no gage height record
 and "b"-ice effect.

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	²⁹² 1.74	275	1.61	245	1.33	163	1.32	⁺ 172	1.18	b 112	0.83	⁺ 86 92
2	1.74	275	1.58	236	1.22	161	1.32	172	1.00	120	0.83	92
3	1.71	266	1.58	236	²³⁵ 1.32	⁺ 161	1.32	172	1.02	110	0.84	94
4	1.60	233	1.56	230	1.27	151	1.32	172	1.01	105	0.83	92
5	1.60	233	1.54	221	1.27	151	1.30	168	1.01	105	²⁴² 0.80	⁺ 86 88
6	1.60	233	²³⁴ 1.47	⁺ 205	1.28	153	1.31	170	0.94	110	0.83	92
7	1.60	233	1.45	200	1.28	153	1.29	⁺ 165	1.05	120	0.85	⁺ 86 96
8	1.56	221	1.45	200	1.23	143	1.15	0 136	1.17	b 120	0.82	⁺ 85 90
9	1.54	215	1.45	200	1.24	145	1.13	132	0.94	⁺ 107	0.79	⁺ 84 84
10	1.54	215	1.50	200	1.23	⁺ 143	1.12	131	0.95	⁺ 108	0.85	⁺ 84 92
11	1.54	215	1.65	⁺ 207	1.27	⁺ 161	1.15	136	0.95	b 115	0.82	⁺ 83 86
12	1.53	212	1.51	⁺ 212	1.33	0 172	1.11	129	1.08	⁺ 105	0.81	85
13	1.54	215	1.53	218	1.24	0 153	1.12	0 131	0.93	⁺ 105	0.81	85
14	1.54	215	1.52	⁺ 215	1.28	⁺ 163	²³⁹ 0.95	⁺ 100	0.93	105	0.81	85
15	1.61	236	1.38	⁺ 178	1.26	157	0.93	97	0.95	108	0.85	91
16	1.62	239	1.36	172	1.26	151	0.90	92	0.96	110	1.02	118
17	1.79	292	1.37	175	²³⁷ 1.26	⁺ 159	0.90	⁺ 92	0.93	113	1.01	⁺ 83 117
18	1.79	292	1.47	⁺ 200	1.35	180	0.87	b 42	²⁴¹ 0.98	⁺ 113	a	110
19	1.78	287	1.36	⁺ 170	1.35	180	0.93	97	1.00	⁺ 118		110
20	1.79	292	²³⁵ 1.38	⁺ 175	1.33	175	1.07	110	0.93	107		115
21	1.79	292	1.37	172	1.33	175	1.05	118	0.85	94		115
22	1.79	292	1.37	172	1.33	175	1.03	120	0.83	⁺ 91		110
23	²³³ 1.76	⁺ 282	1.38	175	1.34	178	1.03	120	0.87	⁺ 99		110
24	1.77	286	1.37	170	1.31	170	1.02	b 120	0.88	100	²⁴³ a	0 108
25	1.76	282	1.37	172	1.34	172	1.02	⁺ 120	0.87	99	0.97	105
26	1.76	⁺ 282	1.34	165	1.34	172	1.03	b 120	0.85	96	1.00	110
27	1.99	⁺ 370	1.40	180	1.33	175	1.10	115	0.83	92	1.03	115
28	1.77	292	1.36	170	1.33	175	1.06	b 120	0.83	⁺ 92	1.01	112
29	1.60	239	1.35	168	1.33	175	²⁴⁰ 1.04	⁺ 124			0.97	105
30	1.49	208	1.33	⁺ 162	²³⁸ 1.29	⁺ 165	1.04	b 120	XX	XXX	1.01	112
31	1.48	⁺ 205	XX	XXX	1.33	⁺ 175	1.08	b 112	XX	XXX	0.97	0 105

210.178	Total	7926	5869	5104	3981	2985	3121
596	Mean	256	196	165	128	107	101
442.107	Run-off in acre-feet	15,140	11,691	10,120	7,960	5,120	6,110
100	Maximum	370	257	180	172	120	115
97	Minimum	205	165	143	92	91	84

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Sta. No. 07087200

Rating Table Used No. 4 dated 12-19-74

Oct. 1, 1980 - Sept. 30, 1981

Gage height	APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	3rd	2nd	1st	Quarter	Date
	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height							
0.95	102	a	460	a	800	2.27	504	2.43	575	2.57	645	1							
1.03	132		520		880	2.40	560	2.41	565	5	639	2							
1.09	125		690	2.48	980	2.34	532	2.45	525	1.78	317	3							
1.05	118		700	3.17	966	2.28	508	2.25	785	2.36	540	4							
1.03	107		600	3.18	972	2.26	500	2.23	775	2.32	524	5							
1.02	113	2.46	520	3.60	1230	2.24	472	2.22	770	2.06	420	6							
1.04	117		470	4.12	1590	2.16	460	2.24	780	1.61	260	7							
1.06	120		380	4.00	1510	2.02	404	2.29	852	1.60	257	8							
1.08	124		300	4.09	1570	2.12	444	3.06	900	1.63	266	9							
1.22	149		280	4.03	1530	2.23	488	2.78	750	1.83	324	10							
1.28	161	a	260	3.94	1470	2.44	580	2.38	550	2.51	428	11							
1.27	159	1.55	245	3.78	1350	2.48	600	1.70	227	2.07	424	12							
1.19	143	1.47	221	3.47	1160	2.35	536	1.44	210	2.08	428	13							
1.17	140	1.50	230	3.19	978	2.13	448	2.52	268	2.00	396	14							
1.22	149	1.59	257	2.91	815	2.07	432	1.79	320	2.14	452	15							
1.22	131	1.51	233	2.51	615	2.01	400	1.76	310	2.15	456	16							
1.09	125	1.49	227	2.15	525	2.13	448	1.78	317	2.09	432	17							
1.10	127	1.47	221	2.46	590	2.38	550	1.79	320	1.95	373	18							
1.10	127	1.47	221	2.64	680	2.35	536	1.73	300	1.69	275	19							
1.08	124	1.48	224	3.58	1210	2.33	523	1.67	278	1.73	287	20							
1.02	170	2.47	227	3.52	1180	2.58	650	1.53	236	1.71	282	21							
1.03	185	1.51	233	S	734	2.22	770	1.53	236	1.66	266	22							
1.05	180	1.50	230	2.79	755	3.09	918	1.52	233	1.61	251	23							
1.09	188	1.48	224	2.81	765	3.32	1060	1.52	233	1.63	260	24							
1.45	205	1.53	239	2.77	745	3.16	960	1.57	242	1.57	242	25							
1.08	212	1.68	286	2.46	590	3.23	1000	1.65	272	1.50	221	26							
1.07	242	1.95	380	2.22	484	3.77	966	1.71	272	1.49	218	27							
1.07	314	a	450	2.07	512	3.05	874	2.54	263	1.50	221	28							
1.07	340		580	2.50	524	2.77	346	1.57	242	1.59	257	29							
a	390		790	2.02	524	2.63	675	1.87	342	1.58	251	30							
XX	XXX	a	840	XX	XXX	2.52	625	2.45	525	XX	XXX	31							
5019		11,738		28,284		19,314		13,699		10,616		117,556							
167		379		943		623		442		353		322							
9960		23,280		56,100		38,310		27,110		21,056		233,200							
370		540		1570		1060		700		645		1590							
22		221		424		400		210		218		24							

CLEAR

River at
Creek near ABOVE CLEAR CREEK RESERVOIR

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 81

Drainage area 67 square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Max. Discharge 359 Sec. ft. at 2200 hrs. on June 7, 1981 G. H. 1.92 ft. MANY DAYS
 Max. G. H. 1.92 ft. at 2100 hrs. on June 7 1981 Min. Daily Discharge 9.0 sec.-ft. on DAYS
 Discharge estimated for "a" no gage height record and "b" ice affected gage height

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	0.50	28	0.37	19	a	15	a	16	a	11	a	9.0
2	0.50	28	0.37	19		15		14		11		9.0
3	0.50	28	0.36	18	564	15		14		11		9.0
4	0.49	27	0.36	18		15		14		11		9.0
5	0.49	27	0.36	18		15		14		11	570	9.0
6	0.49	27	563 0.36	18		15		12		10		9.0
7	0.48	26	0.36	18		15		11		10		9.0
8	0.47	25	0.36	18		15		11		10		9.0
9	0.47	25	0.35	18		15		11		10		9.0
10	0.46	24	0.34	17		15		11		10		9.0
11	0.46	24	0.34	17		15		11		10		9.0
12	0.45	23	0.35	18		15		11		10		9.0
13	0.45	23	0.35	18		15		11		10		9.0
14	0.45	23	a	18		15	567	11		10		9.0
15	0.50	26		18		15		11		10		9.0
16	0.48	24		18		15		11		9.0		10
17	0.47	23		18		15		11		9.0		10
18	0.47	23		18	565	16		11	569	9.0		10
19	0.46	22	563	18		16		11		9.0		10
20	0.46	22		18		16		11		9.0		10
21	0.46	22		17		16		11		9.0		10
22	561 0.45	22		17		16		11		9.0		10
23	0.44	21		17		16		11		9.0	571	10
24	0.47	22		17		16		11		9.0		10
25	0.45	22		17		16		11		9.0		10
26	0.44	21		16		16		11		9.0		10
27	0.44	21		16		16		11		9.0		10
28	0.45	21		16		16	568	11	a	9.0		10
29	0.49	21		16		16		11				10
30	0.41	18	a	16	566	16		11	XX	XXX		10
31	0.38	20	XX	XXX	a	16	a	11	XX	XXX	a	10

28,772	Total	729	525	479	359	272	295
77.2	Mean	23.5	17.5	15.5	11.6	9.71	9.52
55,897	Run-off in acre-feet	1450	1040	950	712	540	585
28	Maximum	28	19	16	16	11	10
18	Minimum	18	16	15	11	9.0	9.0

ARKANSAS

River at
Creek near

GRANITE, COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 19 81

Drainage area 427 square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Max. Discharge 1790 Sec. ft. at 0700 hrs. on JUNE 9, 1981 G. H. 4.48 ft.
 Max. G. H. 4.48 ft. at 0700 hrs. on JUNE 9, 1981 Min. Daily Discharge 120 sec.-ft. on JAN. 28, 1981
 S - discharge subdivided, discharge estimated for "a" no gage height record
 AND "b" ICE EFFECT 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	2.73	274	2.42	165	2.65	244	2.59	226	2.33	143	2.17	125
2	2.73	274	2.54	196	2.63	241	2.59	226	2.35	148	2.17	125
3	2.73	274	2.57	205	⁸⁵⁰ 2.63	241	2.58	223	2.36	150	2.18	127
4	2.73	274	2.67	232	2.62	233	2.58	223	a	150	2.18	127
5	2.73	274	2.57	232	2.63	241	2.58	223	a	150	⁸⁵⁰ 2.19	129
6	2.73	274	⁸⁴⁸ 2.67	232	2.63	241	2.58	223	a	120	2.19	129
7	2.72	270	2.66	229	2.63	241	2.55	214	a	130	2.21	131
8	2.70	258	2.65	226	2.60	229	2.46	182	a	140	2.20	129
9	2.69	254	2.62	220	2.61	232	2.44	176	a	130	2.22	131
10	2.69	254	2.64	223	2.59	223	a	176	a	140	2.19	123
11	2.69	254	2.53	193	2.60	226	a	160	a	140	2.19	123
12	2.69	254	2.54	196	2.59	223	a	160	a	140	2.24	131
13	2.68	250	2.55	199	2.59	223	a	140	a	130	2.24	131
14	2.69	⁸⁵⁰ 254	2.59	211	2.59	223	⁸⁵³ a	186	a	120	2.24	131
15	2.73	266	2.63	223	2.59	223	2.30	136	2.16	114	2.31	143
16	2.74	270	2.62	220	2.59	223	2.30	136	2.18	118	2.35	152
17	2.77	278	2.62	220	⁸⁵¹ 2.60	226	2.30	136	2.17	116	2.37	157
18	2.77	278	2.63	223	2.62	232	2.32	140	⁸⁵⁵ 2.16	114	2.36	155
19	2.77	278	⁸⁴⁹ 2.66	232	2.62	232	2.30	136	2.22	129	2.36	155
20	2.77	278	2.67	235	2.60	229	2.32	140	2.22	129	2.35	152
21	2.78	282	2.66	232	2.60	229	2.32	140	2.22	129	2.37	150
22	⁸⁴⁹ 2.77	278	2.65	232	2.59	226	2.30	136	2.26	140	2.35	152
23	2.76	274	2.65	232	2.59	226	2.28	131	2.20	129	⁸⁵⁷ 2.35	152
24	2.77	278	2.65	235	2.58	223	2.26	127	2.20	129	2.32	145
25	2.76	274	2.64	232	2.59	226	2.26	129	2.19	127	2.31	143
26	2.76	274	2.64	235	2.59	226	2.29	134	2.18	127	2.33	147
27	2.77	278	2.65	238	2.60	229	2.26	127	2.18	127	2.33	147
28	2.46	176	2.64	238	2.60	229	⁸⁵⁴ 2.23	120	2.17	125	2.32	145
29	2.44	176	2.65	241	2.59	226	2.24	123			2.31	143
30	2.43	160	2.65	244	⁸⁵² 2.58	223	2.32	140	XX	XXX	2.28	136
31	2.40	160	XX	XXX	2.57	229	2.31	138	XX	XXX	2.26	131

199,876	Total	7952	6671	7123	4955	3684	4,299
547	Mean	256	222	230	160	132	139
376,500	Run-off in acre-feet	15,910	13,230	14,130	9,830	7,310	8,530
320	Maximum	262	244	244	226	150	157
32	Minimum	160	193	223	120	114	123

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Sta. No. 07086000

Rating Table Used No. 9 RATED 12-10-66

Oct 1, 1980 Thru Sept 31 1981

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	TCS		
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge					
32	145	3.28	566	3.68	894	3.16	492	3.35	596	3.48	750	1				
44	179	3.42	678	3.73	939	3.25	545	3.33	580	S	612	2				
43	176	3.59	731	3.70	1000	3.19	504	3.43	669	S	407	3				
40	168	3.48	732	3.75	957	3.16	486	3.44	867	3.31	604	4				
41	170	3.31	522	3.82	1020	3.14	494	3.63	858	3.28	580	5		TCS		
43	176	3.60	510	4.02	1220	3.03	408	3.63	853	S	391	6				
43	176	3.08	444	4.16	1380	2.94	360	3.65	876	2.74	274	7		Computed	Checked	Date
45	182	2.89	345	4.31	1570	3.03	402	3.66	885	2.75	278	8				
50	196	2.78	295	4.34	1600	3.08	432	3.44	897	2.78	210	9				
57	217	2.77	290	4.30	1550	3.17	486	3.47	914	2.92	360	10		TCS		
58	220	2.74	278	4.23	1470	3.17	486	S	437	3.10	462	11				
56	214	2.70	262	4.10	1320	3.16	486	2.54	205	3.10	462	12				
52	202	2.70	262	3.86	1080	3.21	510	2.45	177	3.00	402	13				
52	202	2.73	274	3.70	939	3.07	426	S	277	2.92	360	14				
53	205	2.74	278	3.43	696	3.03	402	2.58	220	2.99	396	15		TCS		
45	172	2.71	266	3.21	524	3.01	390	2.62	232	2.97	385	16				
43	176	2.71	266	3.19	510	3.16	480	2.65	241	2.92	366	17		Dis.appld.	Dis.check	Date
44	179	2.70	262	3.23	538	3.27	566	2.66	244	2.78	290	18				
44	179	2.70	262	3.42	687	3.24	531	2.63	235	2.70	258	19				
50	196	2.71	266	3.63	921	3.24	531	2.62	232	2.72	266	20		TCS		
66	223	2.72	270	3.67	912	3.45	687	2.62	232	2.70	258	21				
63	232	2.73	274	S	753	3.63	849	2.63	235	2.63	250	22				
59	226	2.73	274	3.54	795	3.85	1040	2.61	227	2.70	258	23				
63	232	2.72	270	3.53	776	3.90	1080	2.64	233	2.70	258	24				
67	244	2.76	286	3.36	652	3.79	984	2.76	282	2.65	241	25				
70	254	2.87	340	3.17	498	3.83	1020	2.82	300	2.60	226	26		TCS		
72	305	3.06	438	3.07	450	3.81	1000	2.81	305	2.60	226	27				
90	345	3.34	612	3.11	470	3.75	948	2.77	286	2.63	235	28				
00	396	3.66	876	3.16	492	3.66	807	2.75	278	2.64	254	29				
12	462	3.70	912	3.15	486	3.47	696	3.10	462	2.70	252	30				
XX	XXX	3.70	912	XX	XXX	3.39	628	3.38	660	XX	XXX	31		Water Year	1981	
6653		13,419		27,117		19,190		13,541		10,651		125,195				
222		433		907		619		444		355		344				
13,200		26,620		53,790		38,060		27,330		21,130		249,000				
462		912		1600		1080		885		750		1600				
445		262		450		390		179		226		114				

LAKE

Creek

Below TWIN LAKES RES.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1981

Drainage area _____ square miles.

Water stage recorder _____

ft. MANY
 G. H. on July 23, 1981
 Sec. ft. at 850 on _____
 Max. Discharge 15 sec.-ft. on DAYS
 Min. Daily Discharge 15
 Discharge estimated for "a" no gage height record

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	42	a	26	a	15	a	15	a	15	a	15
2		42		26		15		15		15		15
3		42		26		15		15		15		15
4		42		26		15		15		15		15
5		42		26		15		15		15		15
6		42		26		15		15		15		15
7		42		26		15		15		15		15
8		26		26		15		15		15		15
9		26		26		15		15		15		15
10		26		26		15		15		15		15
11		26		33		15		15		15		15
12		26		33		15		15		15		15
13		26		33		15		15		15		15
14		26		33		15		15		15		15
15		26		26		15		15		15		15
16		26		15		15		15		15		15
17		26		15		15		15		15		15
18		26		15		15		15		15		15
19		26		15		15		15		15		15
20		26		15		15		15		15		15
21		26		15		15		15		15		15
22		26		15		15		15		15		15
23		26		15		15		15		15		15
24		26		15		15		15		15		15
25		26		15		15		15		15		15
26		26		15		15		15		15		15
27		26		15		15		15		15		15
28		26	46	15		15		15	a	15		15
29		26		15		15		15		15		15
30		26	a	15		15		15	XX	XXX		15
31	a	26	XX	XXX	a	15	a	15	XX	XXX	a	15

47,082.4	Total	918	643	465	465	425	415
128	Mean	29.6	21.4	15	15	15	15
45,230	Run-off in acre-feet	1,320	1,285	922	922	893	795
	Maximum	42	33	15	15	15	15
	Minimum	26	15	15	15	15	15

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Sta. No. _____

Rating Table Used NONE

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	TCS	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge				
a	15	a	325	a	426	a	274	a	400	a	624	1			
	15		381		428		287		596		407	2			
	15		415		502		281		557		318	3			
	15		309		425		270		656		457	4			
	15		282		451		276		660		410	5		TCS	
	15		281		566		235		660		245	6			
	15		224		614		200		681		131	7			
	15		143		775		221		694		131	8			
	32		143		677		214		694		146	9			
	44		143		718		236		512		243	10		TCS	
	47		143		717		308		232		260	11			
	47		143		608		308		46		245	12			
	33		143		468		336		15		166	13			
	30		172		452		220		134		173	14			
	77		148		262		213		63		197	15			
	103		140		233		204		68		197	16		TCS	
	103		140		250		242		87		203	17		Dis.appld.	Dis.check
	103		140		333		305		87		142	18			
	103		140		567		305		87		69	19			
	72		137		640		302		95		64	20			
	112		137		640		499		98		61	21			
	118		137		445		639		98		61	22			
	118		137		537		850		98	48	96	23			
	118		137		537		846		116		133	24			
	118		137		379		773		146		118	25			
	118		173		237		743		157		111	26			
	152		224		231		705	47	157		111	27			
	132		311		231		755		143		127	28		G.H.copd.	G.H.check
	230		395		260		560		172		141	29			
a	266		346	a	1714		423		377	a	159	30			Water Year
XX	XXX	a	344	XX	XXX	a	438	a	522	XX	XXX	31			1981
2446		6570		13,800		15,193		3847		5978		53,716			
815		212		760		407		285		200		147			
4232		10,030		24,380		25,120		17,650		11,260		101,910			
25		415		745		850		694		624		855			
33		137		222		200		15		61		15			

LAKE

RIVER at
Creek near ABOVE TWIN LAKES RES. COLO.

Daily Gage Height, in Feet, and Discharge in Second-Feet for the Year Ending September 30, 1981

Drainage area 75 square miles.

Water stage recorder STEVENS A-35 CONTINUOUS

Max. Discharge 1320 Sec. ft. at 1850 hrs. on JUNE 9, 1981 G. H. 4.08 ft. ^{1.6}
 MANY
 Max. G. H. 4.08 ft. at 1850 hrs. on JUNE 9, 1981 Min. Daily Discharge 8.0 sec.-ft. on DNYS
S-DISCHARGE SUBDIVIDED - V-VARIABLE SHIFT - DISCHARGE ESTIMATED FOR "A"
NO GAGE HEIGHT AND "b" ICE EFFECTED GAGE HEIGHT.

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	1.23	32	a	17	a	11	a	12	a	8.0	a	8.0
2	1.21	30	1.01	b 17		11		10		8.0		8.0
3	1.20	29	0.96	16	408	11		10		8.0		8.0
4	1.19	28	0.93	14		11		10		8.0		8.0
5	1.19	28	0.91	14		11		10		8.0	414	8.0
6	1.18	28	405 1.05	14		11		8.0		8.0		8.0
7	1.17	27	1.03	14		11		8.0		8.0		8.0
8	1.16	26	1.02	14		11		8.0		8.0		8.0
9	1.15	25	1.05	14		11		8.0		8.0		8.0
10	1.15	25	1.05	13		11		8.0		8.0		8.0
11	1.15	25	1.05	13		11		8.0		8.0		8.0
12	1.15	25	1.06	14		11		8.0		8.0		8.0
13	1.18	28	1.06	14		11		8.0		8.0		8.0
14	1.19	28	1.02	b 14		11	411	8.0		8.0		8.0
15	1.23	32	a	14		11		8.0		8.0		8.0
16	1.20	29		14		11		8.0		8.0		10
17	1.20	29		14	409	11		8.0		8.0		10
18	1.20	o 29		14		12		8.0	413	8.0		10
19	1.16	b 26	406	14		12		8.0		8.0		10
20	1.16	24		14		12		8.0		8.0		10
21	1.13	24		13		12		8.0		8.0		10
22	404 1.10	21		13		12		8.0		8.0		10
23	1.06	22		13		12		8.0		8.0	415	10
24	1.13	23		12		12		8.0		8.0		10
25	1.12	23		12		12		8.0		8.0		10
26	1.13	21		12		12		8.0		8.0		10
27	1.13	b 21		12		12		8.0		8.0		10
28	a	21	407	12		12	412	8.0	a	8.0		10
29	a	21		12		12		8.0		8.0		10
30	a	17	a	12	410	12		8.0	XX	XXX		10
31	a	18	XX	XXX	a	12	a	8.0	XX	XXX	a	10

Calendar Year	1980						
50,659	Total	988	411	355	260	224	23
138	Mean	25.4	13.7	11.5	8.39	8.0	9.03
10,500	Run-off in acre-feet	1560	215	164	516	1111	555
1660	Maximum	32	17	12	12	8.0	10
9.5	Minimum	17	12	11	8.0	8.0	8.0

STATE OF COLORADO
DIVISION OF WATER RESOURCES
OFFICE OF STATE ENGINEER

Sta. No. 07084500

Rating Table Used NO. 17

DATED 2-27-81

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	TCS			
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge						3rd
2	10	2.64	334	3.23	624	2.47	228	1.96	115	1.80	94	1					
	10	2.64	357	3.31	680	2.64	290	1.83	96	1.74	86	2					
	10	2.64	334	3.34	702	2.56	260	1.88	105	1.74	86	3					
	10	2.42	250	3.34	702	2.48	232	1.87	104	1.72	84	4					
	10	2.32	215	3.58	862	2.36	193	1.81	94	1.70	81	5		TCS			
	10	418 2.26	196	3.77	1016	2.33	184	1.77	89	1.70	81	6					
	10	2.17	171	3.82	1050	2.22	155	1.73	84	1.77	90	7					
	10	2.07	145	3.82	1050	2.22	155	1.72	82	1.76	89	8					
0.82	15 10	1.98	122	3.87	1100	2.30	176	1.72	82	1.77	90	9					
	9 10	1.93	111	3.87	1100	2.46	225	1.77	89	427 1.84	102	10		TCS			
0.86	18 12	1.93	111	3.82	1050	2.35	190	1.87	107	1.86	105	11					
0.87	07 12	1.84	93	3.71	955	2.33	184	1.85	104	1.87	107	12					
0.88	06 12	1.80	88	3.52	800	2.50	239	425 1.87	107	1.96	124	13					
0.90	05 12	1.80	88	3.15	539	2.55	257	1.85	104	1.98	128	14					
0.93	04 13	1.83	91	2.98	437	2.32	187	1.90	113	1.94	120	15					
0.93	03 13	1.82	90	2.87	380	423 2.34	193	2.01	138	1.90	109	16		TCS			
0.94	02 16	1.83	91	2.87	380	2.49	242	1.96	126	1.86	102	17					
1.03	01 21	1.82	90	421 2.92	405	2.57	272	1.88	109	1.83	94	18					
1.13	0 24	1.90	104	2.87	380	2.45	232	1.82	98	1.80	90	19					
1.13	24	419 1.93	109	2.99	443	2.33	196	1.79	93	1.78	88	20		TCS			
1.14	25	1.92	107	3.03	467	2.23	171	1.77	90	1.79	89	21					
1.16	26	1.89	102	3.02	461	2.16	152	1.80	94	1.75	82	22					
417 1.14	25	1.84	102	2.95	420	2.10	138	1.77	90	428 1.70	76	23					
1.26	34	1.98	120	2.87	385	2.06	128	1.75	88	1.68	74	24					
1.34	46	2.15	158	2.80	352	2.06	128	1.75	88	1.83	91	25					
1.53	61	2.30	196	2.75	330	2.30	193	1.74	86	1.78	85	26		TCS			
1.63	73	2.54	275	2.72	318	2.37	215	426 1.75	88	1.54	56	27					
1.8	135	2.72	443	2.72	318	2.23	176	1.71	82	1.51	53	28					
1.83	02 190	3.11	539	2.65	290	2.13	152	1.69	80	1.61	62	29					
1.85	03 235	3.13	564	422 2.52	246	424 2.07	138	1.79	93	1.75	77	30					
XX	XXX	3.24	631	XX	XXX	2.03	128	1.80	94	XX	XXX	31					
1,109		6,427		18,236		6,009		3,012		2,695		39,806					
37.0		207		608		194		97.2		89.8		109					
2,200		12,750		36,170		11,420		5,970		5,350		78,960					
335		631		1100		270		138		128		1100					
10		88		246		128		80		53		80					

Larkspur Ditch

River at
Creek near Marshall Pass, Colo.

Daily Gage Height, in Feet, and Discharge in Second-Foot for the Year Ending September 30, 1981

Drainage area TRANS. Mtn. Div. square miles.

Water stage recorder STEVENS F WEEKLY

daily Max. Discharge 290 ft. at Sec. ft. at on July 25, 1981 G. H. MANY
 Max. G. H. 0 ft. at Min. Daily Discharge 0 sec.-ft. on DAYS
Discharge ESTIMATED - NO gage height record for WATER YEAR 1981

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		FLOW		FLOW		FLOW		FLOW		FLOW		FLOW
14		FLOW		FLOW		FLOW		FLOW		FLOW		FLOW
15		FLOW		FLOW		FLOW		FLOW		FLOW		FLOW
16		NO		NO		NO		NO		NO		NO
17		NO		NO		NO		NO		NO		NO
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30									XX	XXX		
31			XX	XXX					XX	XXX		
178.29	Total	0		0		0		0		0		0
0.49	Mean											
354	Run-off in acre-feet											
7.0	Maximum											
0	Minimum											

Calendar Year
1980

STATE OF COLORADO
 DIVISION OF WATER RESOURCES
 OFFICE OF STATE ENGINEER

Sta. No. 09115000

Rating Table Used NONE

APR.		MAY		JUNE		JULY		AUG.		SEPT.		Day.	4th	TCS	Date
Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge				
					0		0		0			1	3rd		
					0		1.01		0			2	2nd		
				a	1.01		0		0			3	1st	TCS	
				a	1.13		0		0			4	Quarter		
					0		0		0			5	4th	TCS	
					0		0		0			6	3rd		
					0		0		0			7	2nd		
					0	a	0.83		0			8	1st	Computed	
					0		0	a	0.76			9	Quarter	Checked	Date
					0		0		0			10	4th	TCS	
					0		0		0			11	3rd		
					0		0		0			12	2nd		
	No FLOW				0		0		0			13	1st		
					0		0		0			14	Quarter	TCS	
					0		0		0			15	4th		
					0		0		0			16	3rd		
	No FLOW				0		0		0			17	2nd		
					0	a	2.27		0			18	1st	TCS	
					0		0		0			19	Quarter	Dis.appld.	Date
					0		0		0			20	4th	Dis.check	
					0		0		0			21	3rd		
					0		0		0			22	2nd		
					0		0		0			23	1st		
					0	a	2.90		0			24	Quarter	G.H.compd.	Date
					0	a	1.76		0			25	4th	G.H.check	
					0		0		0			26	3rd		
					0		0		0			27	2nd		
					0	a	0.88		0			28	1st		
					0		0		0			29	Quarter		
					0		0		0			30	4th		
XX	XXX			XX	XXX		0		0		XX	XXX	31	Water Year	
	0		0		2.14		9.70		0.76		0				12.60
					0.07		0.31		0.02						0.03
					4.24		19.2		1.51						25.0
					1.13		2.90		0.76						2.90
					0		0		0						0