1982

DIVISION ENGINEER'S REPORT

Division 2

INTRODUCTORY STATEMENT

ANNUAL DIVISION ENGINEER'S REPORT

IRRIGATION DIVISION NO. 2

1982

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.

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DIVISION ENGINEER'S COMMENTS

Snow pack was near to, and in some cases above normal (see pages 43-46). No high water damage was encountered, the snow pack came off fairly slow, was timely and well utilized.

There were numerous rain peaks but none caused appreciable damage or great problems in administration, except the sheer number kept the staff on duty for very long hours. There was more than one flash peak that exceeded the U. S. Corps of Engineers' 6,000 cfs maximum at Avondale. However, no damage was observed or reported.

Attenuation of flood peaks by Pueblo Reservoir are being looked at by both the Division office and Kansas. Common sense says there must be some attenuation. However, we cannot detect any appreciable change in the gauge at Las Animas. Attached to this narrative is a linear regression of 1950 to 1981 of the Arkansas at Las Animas gauge.

The entire year was quite unusual in that summer precipitation was untimely and a great deal of hay was damaged before it could be gathered from the fields.

Some farmers reported that no cutting was harvested undamaged. Predictions of massive grasshopper and webworm infestations did not come to pass. However, a great number of acres of onions had to be harvested early due to a fungus, causing a drop in price. Consequently, there were significant onions dumped in the field. At the height of the vegetable harvest about one half of the St. Charles Mesa was devastated by a hail storm. From these acres, no crop at all was realized. Local observers report it to be the worst in history of modern man.

Again this year apiarists and silviculturists realized no harvest.

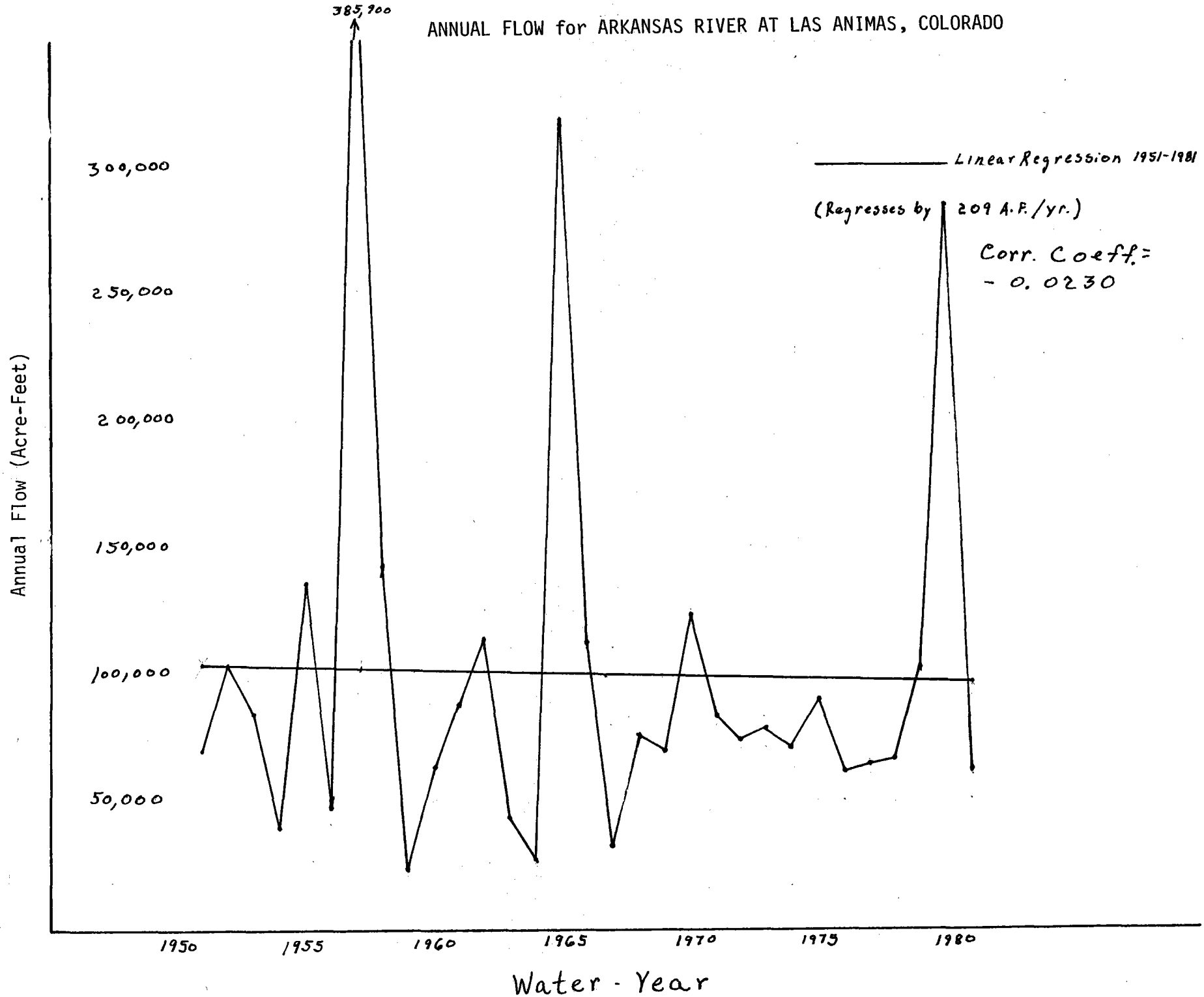
No problems were had with dams, except the near hysteria caused by the media concerning the Lawn Lake failure. It appears the Division probably should engage in a training program for handling of the Press. No modifications were made on Twin Lakes, so the new Dam is still not operational. The latest plans are to repair it this next year. The Mt. Elbert Power Plant is now in some limited operation but has yet to pump back any water. It is mainly the operation of this feature that has caused the law suit the State is now engaged in with the Bureau of Reclamation. This suit was heard in September, and the Water Judge astounded everyone by dismissing it. However, on re-hearing, he voided his dismissal and we filed an ammended complaint. If the State prevails it will be the first time the Federal Government has ever been enjoined by a State Court and will rank among some very important cases.

No problems were encountered with the operations of Trinidad. The out of priority water stored in the Black Hills is now routinely released at channel capacity. This has turned into one of the bright spots in Division 2 and except for the continuing carping of Kansas (see Resolutions) is working well.

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 of 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 transmountain diversions or some other plan repair their injury to other diverters who are senior to them but not receiving their water rights.

The Water Court operations was fairly routine last year and except for the Division Engineer and one assistant being subpoenaed frequently, was uneventful. The sitting Water Judge has retired as Water Judge and we have a new appointee Judge Babcock from La Junta. No one in water has had any experience with him but attorneys seem to feel he will be all right. The shorter drive from Pueblo to La Junta may ease the strain on the Division office. However, it would still be desirable to have the Water Judge be from Pueblo.

The mileage accounting and freeze on Water Commissioner travel caused great havoc in Division 2, and we lost a great deal of credibility with both water users and the commissioners themselves. No estimate was, or probably could be made of water improperly diverted during this time. It would possibly make more sense to lay-off some employees to allow the remaining ones to continue a reduced travel. This is of course heresay among employees and may be impossible under the personnel rules.


385,900
ANNUAL FLOW for ARKANSAS RIVER AT LAS ANIMAS, COLORADO
Linear Regression 1951-1981
(Regresses by 209 A.F./yr.)
Corr. Coeff. = - 0.0230
300,000
250,000
200,000
150,000
100,000
50,000
Annual Flow (Acre-Feet)
1950
1955
1960
1965
1970
1975
1980
Water - Year

RESOLUTION CONCERNING THE OPERATION OF TRINIDAD RESERVOIR

WHEREAS, by resolution dated September 25, 1980, the Arkansas River Compact Administration (Administration) went on record recognizing that the operation of Trinidad Reservoir in 1979 and 1980 raised a question as to whether the waters of the Arkansas River had been materially depleted in usable quantity or availability for use to the water users in Colorado and Kansas, and therefore recommending that the Chief Engineer, Kansas Division of Water Resources (Kansas Chief Engineer) confer with the Colorado State Engineer to make further inquiries into this question as expeditiously as possible; and

WHEREAS, by letter dated June 12, 1981, the Colorado State Engineer furnished to the Kansas Chief Engineer preliminary records for the Thatcher gauge on the Purgatoire River, Colorado, for the years 1969 through 1981 to assist the Kansas Chief Engineer in his inquiries into the operation of Trinidad Reservoir; and

WHEREAS, a meeting was held on July 1, 1981, in Topeka, Kansas, between the Kansas Chief Engineer and the Colorado State Engineer to discuss the operation of Trinidad Reservoir during the years 1979 and 1980, at which meeting the Kansas Chief Engineer stated that if Colorado could demonstrate that the Model Reservoir and Ditch water right had historically diverted more than 38,000 acre-feet in any two-year period, then Kansas would no longer contend that the 1979-1980 operations of Trinidad Reservoir violated Article IV, paragraph D, of the Arkansas River Compact (Compact); and

WHEREAS, by letter dated July 29, 1981, the Colorado State Engineer provided the Kansas Chief Engineer with records of the annual diversions by the Model Reservoir and Ditch water right for the period 1925 through 1976, which records demonstrated that the storage of 38,290 acre-feet in 1979 and 1980 was not anomalous in any way and had occurred in six previous two year periods; and

WHEREAS, at the August 6, 1981, special meeting of the Administration the commissioners from Kansas stated that they would, within the next several weeks, request additional information from the Colorado State Engineer on the administration of Trinidad Reservoir; and

WHEREAS, no request for additional information was thereafter made by the State of Kansas; and

WHEREAS, on August 30, 1982, at the request of the Kansas Attorney General, a meeting was held in Denver, Colorado, between the Colorado Attorney General, the Kansas Attorney General, the state members of the Administration, and the responsible water officials of both Kansas and Colorado, at which meeting the Colorado State Engineer gave an extensive presentation on the manner of administration of the Trinidad Reservoir and the Trinidad Project, and explained how the strict manner of administration of that project insured that the waters of the Arkansas River had not been and would not be materially depleted in usuable quantity and availability; and

WHEREAS, the Colorado Attorney General requested the Kansas Attorney General to review all of the factual data and to provide Colorado with any factual information which

would show that, by the operation of Trinidad Reservoir, the waters of the Arkansas River had been materially depleted in usuable quantity or availability for use to users in Colorado and Kansas; and

WHEREAS, the State of Kansas, through its responsible officials, has not provided to either the State of Colorado or the Administration any factual data to support the claim that the 1979 and 1980 operation of the Trinidad Reservoir has violoated Article IV, paragraph D, of the Compact.

NOW, THEREFORE, BE IT RESOLVED that the Arkansas River Compact Administration shall not consider further the allegations of the State of Kansas that the 1979 and 1980 administration of Trinidad Reservoir violated Article IV, paragraph D, of the Arkansas River Compact because the State of Kansas has failed to provide any factual evidence in support of its claims.

Entered this 14th day of December, 1982, at the regular annual meeting of the Arkansas River Compact Administration held in Lamar, Colorado.

Frank G. Cooley
Chairman

Leo Idler
Recording Secretary

RESOLUTION CONCERNING OPERATION OF TRINIDAD RESERVOIR

WHEREAS, on the 30th day of June, 1980, the Arkansas River Compact Administration found as follows:

1. It has come to the attention of the Arkansas River Compact Administration that 18,290 acre-feet of water stored under the Model Reservoir Water Right in Trinidad Reservoir during Compact Year 1979 was transferred to the joint use pool on September 28, 1979, by action of the Board of Directors of the Purgatoire River Water Conservancy District without objection from the Division Engineer for Division II, Colorado Division of Water Resources;

2. An additional 20,000 acre-feet was stored in Trinidad Reservoir under the Model Reservoir Right during Compact Year 1980;

3. The State of Kansas has questioned whether or not these actions are in conformity with the operating principles for Trinidad Reservoir; and

WHEREAS, pursuant to the above, the Compact Administration resolved that pursuant to Article VIII, ¶ H of the Arkansas River Compact, the Compact Administration should cause an investigation to be made of these circumstances; and

WHEREAS, pursuant to the above, the Compact Administration further resolved that this investigation should be accomplished on behalf of the Compact Administration by the Colorado Water Conservation Board and the Kansas Division of Water Resources, which entities should conduct said investigation as promptly as possible and report their determinations to the Compact Administration as soon as possible after the adoption of this resolution; and

WHEREAS, a report was submitted by Mr. Guy E. Gibson, Chief Engineer/Director, Division of Water Resources, Kansas State Board of Agriculture, and J. William McDonald, Director, Colorado Water Conservation Board, on the 25th day of September, 1980, pursuant to the Compact Administration's resolution of the 30th day of June, 1980; and

WHEREAS, said report found in part that 18,290 acre-feet of water was stored by the Purgatoire River Water Conservancy District under the Model Storage Right in Trinidad Reservoir in priority between April 15, 1979, and September 28, 1979; that the Purgatoire River Water Conservancy District

transferred this amount of water into the joint use pool of Trinidad Reservoir by resolution on September 28, 1979, thereby leaving the Model Storage account empty, and that this water was still physically located behind Trinidad Dam on June 30, 1980; and

WHEREAS, said report further found, in part, that 20,000 acre-feet of water was stored by the District under the Model Storage Right in Trinidad Reservoir in priority during the period April 16, 1980, through May 17, 1980. This water was physically stored behind Trinidad Dam and in the Model Reservoir account as of June 30, 1980;

NOW, THEREFORE, BE IT RESOLVED that pursuant to Article VIII, ¶ H of the Arkansas River Compact, the Compact Administration finds as follows:

1. The transfer of 18,290 acre-feet of water stored by the Purgatoire River Water Conservancy District under the Model Storage Right in Trinidad Reservoir in priority between April 15, 1979, and September 28, 1979, by resolution of the Purgatoire River Water Conservancy District Board on September 28, 1979, into the joint use pool of Trinidad Reservoir deprived Colorado and Kansas downstream water users of their equitable share of the waters of the Arkansas River, as defined in Article III, ¶ B of the Arkansas River Compact and, therefore, violates Article IV, ¶ D of the Arkansas River Compact, which provides: "[T]he waters of the Arkansas River, as defined in Article III, shall not be materially depleted in usable quantity or availability for the use to the water users in Kansas and Colorado under this contract by future development or construction." Said action also violates Condition 3 of the Kansas Conditions to the Operating Procedures of Trinidad Dam and Reservoir Project, which provides that "there will be no significant increase in water use which would result in the depletion of water yield to other Colorado and Kansas users."

2. The storage of 20,000 acre-feet of water by the District under the Model Storage Right in Trinidad Reservoir in priority during the period April 16, 1980, through May 17, 1980, was in violation of the court decree of the District Court in and for the County of Las Animas, Colorado, Civil Action No. 19793, dated April 15, 1965, which states in part: "The petitioners may store out of the waters of the Purgatoire or Las Animas Rivers in Trinidad Reservoir under

priority No. 10, appropriation priority No. 168, and water district No. 19, and the date of the appropriation January 22, 1980, up to 20,000 acre-feet of water in Trinidad Reservoir. . . . "

3. The joint use capacity in Trinidad Reservoir was never intended by the Congress of the United States nor the State of Kansas to provide additional storage space under the Model Reservoir right and, in practice, has been turned into such, in violation of the laws of the United States, the Arkansas River Compact, the District Court of Las Animas County, Colorado's, order of April 15, 1965, in Case No. 19793, the conditions of operations of the Trinidad Dam and Reservoir Project prescribed by House Document No. 325, 84th Congress, Second Session, January 30, 1956, as implemented by Article IV of the "Operating Principles of Trinidad Dam and Reservoir Project" which is appended to Volume 1 of the United States Bureau of Reclamations' Irrigation Report on said Project (revised September, 1964), as well as the five operating principles approved by the State of Kansas and attached to the Operating Principles, Trinidad Dam and Reservoir Project.

BE IT FURTHER RESOLVED, that the Compact Administration recommends to the Director of the Colorado Water Conservation Board that he issue an order for the release of 18,290 acre-feet of water from the Joint Use Pool of Trinidad Reservoir in such a manner as to be most beneficial to downstream Colorado and Kansas users, with such release being completed no later than ________________ (Kansas compact members should set the date), 1983.

BE IT FURTHER RESOLVED that the Compact Administration recommends to the Director of the Colorado Water Conservation Board that prior to the implementation of any future sale, change, transfer, or regulation of the waters of the Arkansas River, as defined in Article III, § B of the Arkansas River Compact, that may affect the flow of water into the John Martin Reservoir, the Arkansas River Compact Administration, established under Article VIII of the Arkansas River Compact, shall be consulted and the approval shall be obtained for said sale, exchange, transfer, or regulation.

ENTERED this 14th day of December, 1982, at the annual meeting of the Compact Administration held in Lamar, Colorado.

DIVISION 2 BY COUNTIES sheets not included in this report. Information for these will be available in mid-January. We will forward them to you for insertion after that time. (This includes pages 10-24.)

SUMMARY OF AGRICULTURAL LAND USE IN DIVISION 2

(1980 Census)

COUNTY	LAND AREA (1000 ACRES)	NO. OF FARMS	LAND IN FARMS (1000 ACRES) TOTAL	CROP LAND (Dry Land & Irr.)	IRRIGATED ACRES
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
Prowers	1041	469	997	530	140,645
Pueblo	1537	512	1362	151	30,081
Teller	*213	*10	*93	*5	*332

*In Division 2

1981 Acres Harvested as per 1982 Colorado Agriculatural Statistics

COUNTY	CORN GRAIN	CORN SILAGE	WHEAT WINTER	WHEAT SPRING	DRY BEANS	OATS	ALFALFA	GRAIN SORGUHMS	OTHER HAY	TOTAL HAY	BARLEY
BACA	7,200	500	126,000	400	300	300	5,100	182,000	4,200	9,300	1,300
BENT	5,000	600	150,000	---	---	200	26,000	15,000	2,000	28,000	2,000
CHAFFEE	---	---	---	---	---	---	7,800	---	5,000	12,800	100
CROWLEY	3,100	5,800	6,000	---	700	100	16,000	13,000	700	16,700	300
CUSTER	---	---	300	---	---	---	1,200	---	11.500	12,700	---
EL PASO	700	2,300	7,800	---	1,100	500	4,500	3,500	11,000	15,500	600
FREMONT	100	400	800	---	---	100	8,000	---	2,000	10,000	100
HUERFANO	100	---	1,600	---	---	200	6,200	---	4,100	10,300	100
KIOWA	900	---	246,000	---	---	---	---	26,000	13,000	13,000	700
LAKE	---	---	---	---	---	---	---	---	900	800	---
LAS ANIMAS	500	100	9,000	---	---	200	10,500	1,000	4,400	14,900	900
OTERO	15,300	6,000	7,700	---	2,500	600	32,000	11,500	8,800	38,000	1,100
PROWERS	6,000	5,400	155,000	---	---	200	56,000	35,500	4,800	60,800	11,500
PUEBLO	7,700	3,100	8,600	200	7,500	100	12,000	10,000	2,500	14,500	700
TELLER	---	---	---	---	---	---	300	---	3,500	3,800	---

ADMINISTRATIVE WATER YEAR 1982

Pertinent Basin Yield Statistics for Arkansas Drainage in Colorado Division 2

Recorded Flow at Arkansas - Las Animas	176,510 A.F. **
*Estimated Depletion by Irrigation above gage 1.5 A.F./Acre x 235,000 Acres = 352,500	352,500 A.F.
Recorded Flow at Purgatoire River - Las Animas	44,959 A.F. **
*Estimated Depletion by Irrigation above Gage 1.5 A.F./Acre x 30,000 Acres = 45,000 A.F.	45,000 A.F.
Basin Yield including 164,790 A.F. Transmountain Import	618,969 A.F.
Less	.164,790 A.F.
Native Basin Yield above Confluence of Arkansas and Purgatoire Rivers	454,179 A.F.
Total Diversion in Division 2 (above John Martin)	1,393,625 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 1982, the native basin yield for the Arkansas above the confluence of the Purgatoire including the Purgatoire was 454,179 acre feet. The Arkansas flow at Las Animas for 1982 was 176,510 acre feet compared to 59,735 acre feet for 1981. The Purgatoire flow at Las Animas for 1982 was 44,959 acre feet compared to 88,088 acre feet for 1981. The precipitation was more in 1982 than in 1981 and the transmountain import was 115,308 acre feet more in 1982 than 1981.

The average precipitation over the area (17,920 square miles) was 15.80 inches. This gives a total volume of water of 15,100,586 acre feet for the basin; of this 15,100,586 acre feet, only 454,179 acre feet, 3.01%, is accounted for. The remaining 96.99% either evaporated, transpired or was retained in the soil.

The diverted water of 1,393,625 acre feet when compared with native yield plus transmountain water indicates the water was used 2.25 times.

COMPARATIVE WATER 1981, 1982 DATA

	1981	1982
Basin Yield including Transmountain	545,023 A.F.	618,969 A.F.
Total Diverted (excluding W.D. 66 & 67)	1,083,109 A.F.	1,393,625 A.F.
Average Precipitation	11.66 Inches	15.80 Inches
Estimated Irrigated Acreage	264,800 Acres	265,000 Acres

DIVERSION DATA

Recorded Diversion by Municipalities	Water Year 1982
Municipal Diversion, Colorado Springs	22,349 A.F.
Municipal Diversion, Canon City	4,275 A.F.
Municipal Diversion, Pueblo	23,816 A.F.
Other	52,301 A.F.
Total Recorded Municipal Diversion	102,741 A.F.
Estimated Return Flow	68,494 A.F.
Estimated Depletion by Municipalities	34,247 A.F.

Recorded Diversion by Industrial Use	
Diversion by Minnequa Canal	76,471 A.F.
C.F.&I. Diversion from St. Charles	10,285 A.F.
Other	47,622 A.F.
Total Industrial Diversion	134,378 A.F.
Estimated Return Flow	89,586 A.F.
Estimated Depletion by Industry	44,792 A.F.

Recorded Diversion by Irrigation	
Water District 10	38,017 A.F.
Water District 11	129,089 A.F.
Water District 12	140,241 A.F.
Water District 13	14,434 A.F.
Water District 14	251,750 A.F.
Water District 15	10,869 A.F.
Water District 16	22,935 A.F.
Water District 17	475,103 A.F.
Water District 18	13,064 A.F.
Water District 19	71,062 A.F.
Water Districts 66 & 67	212,828 A.F.
Water District 79	26,519 A.F.
Total Irrigation Diversion	1,405,911 A.F.

DIVERSION SUMMARY - DIVISION NO. 2

Direct Flow Diversion, 1982

Water Dist.	Active	Inactive N.A.	Inactive N.U.	Number of Ditches Administered Close	Number of Ditches Administered 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	38,017	11,612	3.27	1,078	22,349		61,444
11	112		138	107	0	129,089	18,852	6.85				129,089
12	250		93	184	52	140,241	12,580	11.15	114,759	9,055		264,055
13	322		53	250	51	14,434	28,033	0.51				14,434
14	39		25	12	4	251,750	30,992	8.12	7,646	25,978		285,374
15	106		42	70	18	10,869	4,600	2.36	10,285	177		21,331
16	81		79	40	37	22,935	4,700	4.88		4,862		27,797
17	40		62	36	7	475,103	140,000	3.39				475,103
18	22		24	30	0	13,064	7,700	1.70	117			13,181
19	70		137	80	13	71,062	30,000	2.37	493	3,743		75,298
66&67	48		116	40	6	212,828	76,837	2.77		12,344		225,172
79	100		90	95	0	26,519	5,000	5.30				26,519
Other										24,233**		
TOTAL	1,251		1,065	1,005	192	1,405,911	370,906	3.79	134,378	102,741	162,964	1,618,797

* Transmountain Water Accounted for in Districts used.

** City of Aurora

TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

Tabulation 1982

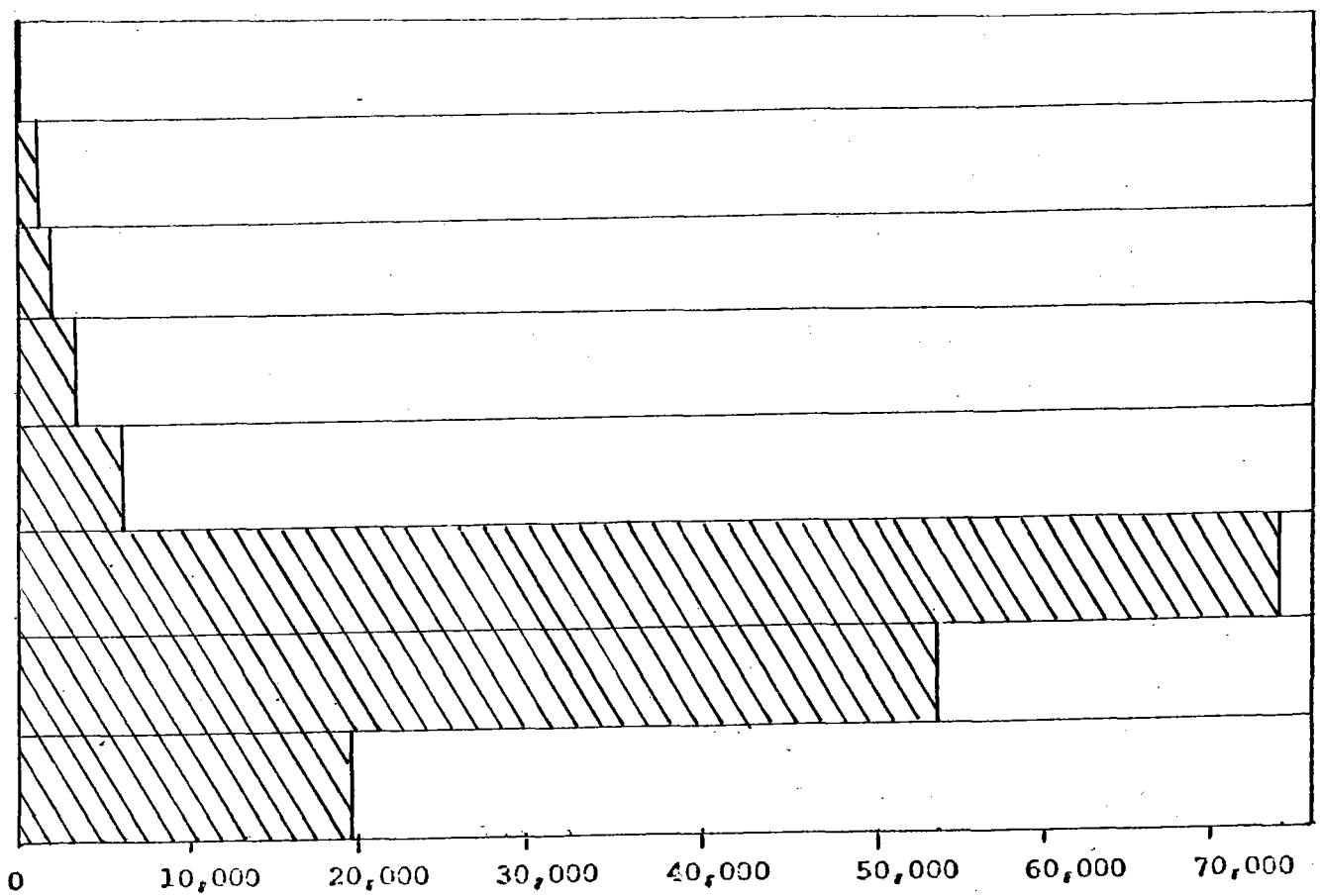
NAME	SOURCE	RECIPIENT	AMOUNT DIVERTED 10/1/81 to 9/30/82
Homestake Tunnel	Middle Fork Homestake Creek Division No. 5	Cities of Colorado Springs and Aurora	19,740 A.F.
Wurtz Ditch	Eagle River Division No. 5	City of Pueblo	3,673 A.F.
Ewing Ditch	Piney Creek	City of Pueblo	1,241 A.F.
Columbine Ditch	Eagle River Division No. 5	City of Pueblo	2,107 A.F.
Twin Lakes Tunnel	Roaring Fork River Divsion No. 5	Twin Lakes Reservoir and Canal Company	53,930 A.F.
Busk Ivanhoe Tunnel	Ivanhoe Creek Division No. 5	Highline Canal Co. and City of Pueblo	6,840 A.F.
Larkspar Ditch	Tomichi Creek Division No. 5	Catlin Canal Company	183 A.F.
Boustead Tunnel	Fryingpan River Division No. 5	U. S. Bureau of Reclaimation	75,250 A.F.

TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

SUMMARY OF DIVERSION FOR

WATER YEAR 1982



Larkspur
183

Ewing Ditch
1241

Columbine Ditch
2107

Wurtz Ditch
3673

Busk-Ivanhoe
6840

Boustead Tunnel
75250

Twin Lakes Tunnel
53930

Homestake Tunnel
19740

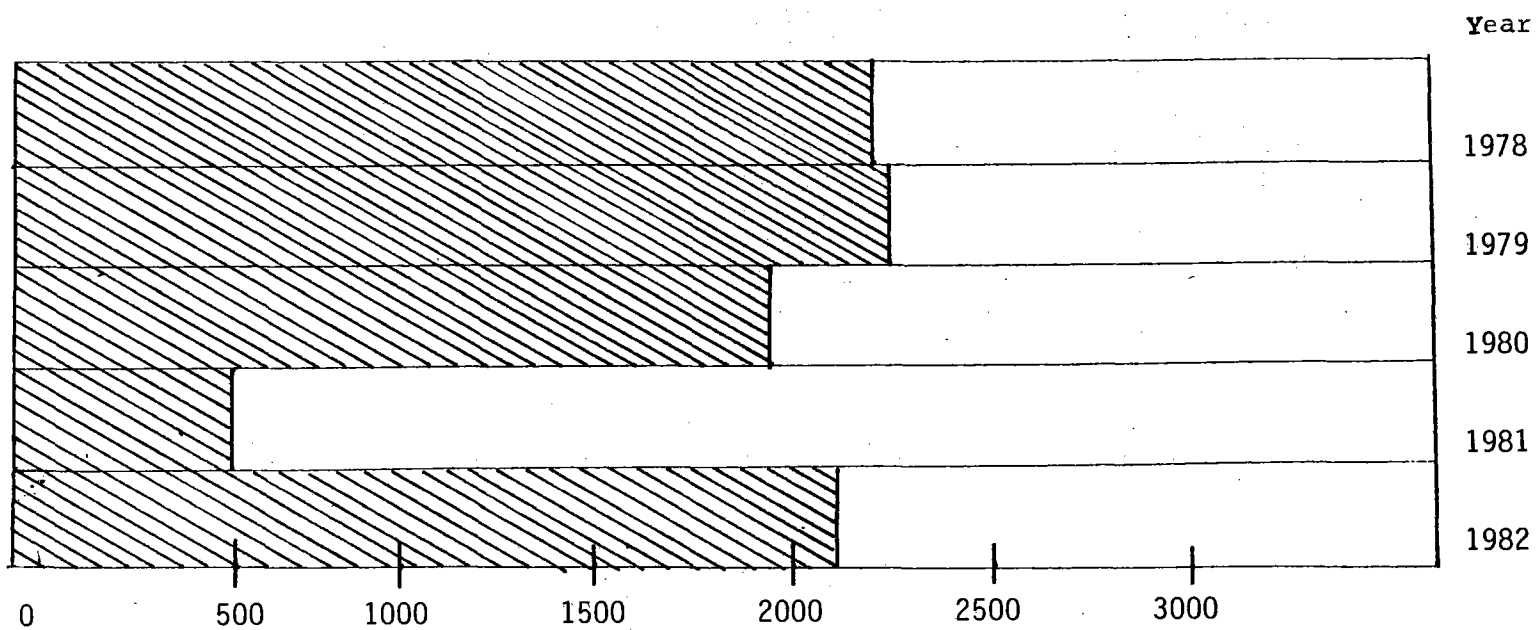
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

COLUMBINE DITCH

Source: Eagle River, Division No. 5

Recipient: City of Pueblo



ACRE FEET

5-YEAR COMPARISON

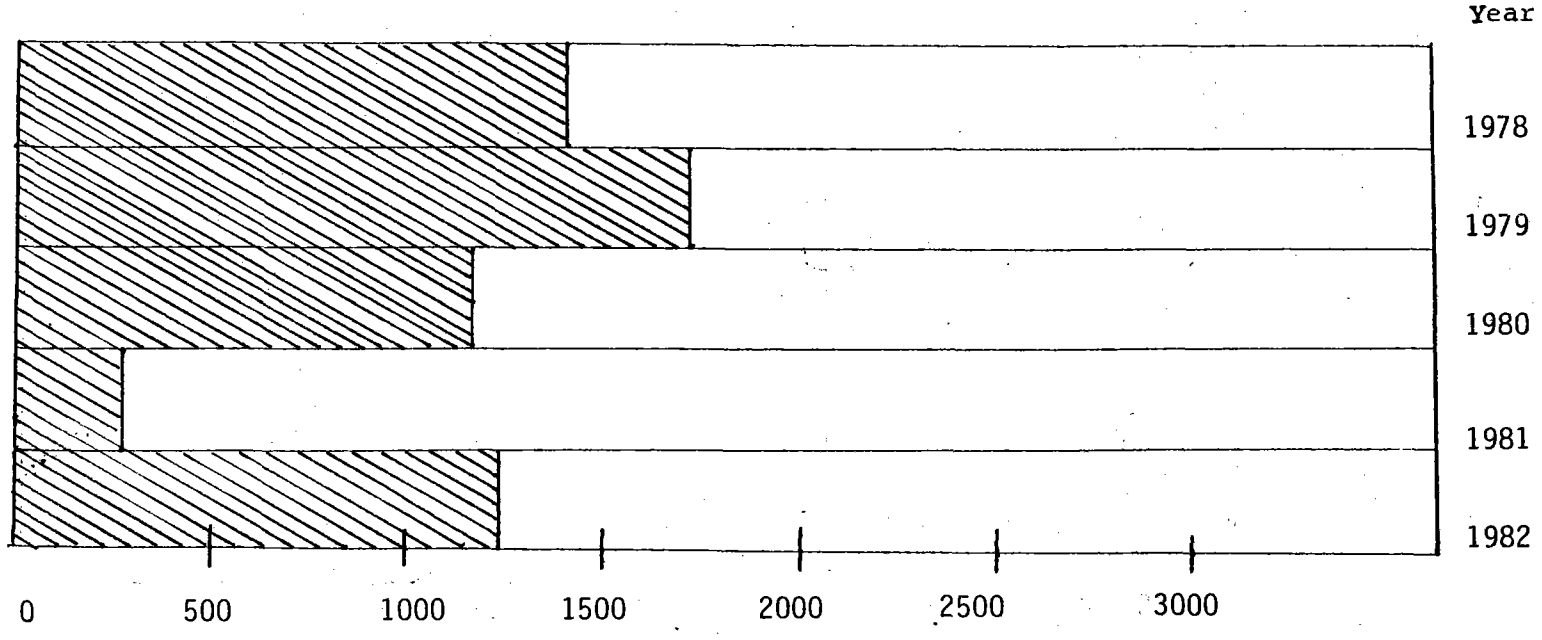
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

EWING DITCH

Source: Piney Creek, Division No. 5

Recipient: City of Pueblo



5-YEAR COMPARISON

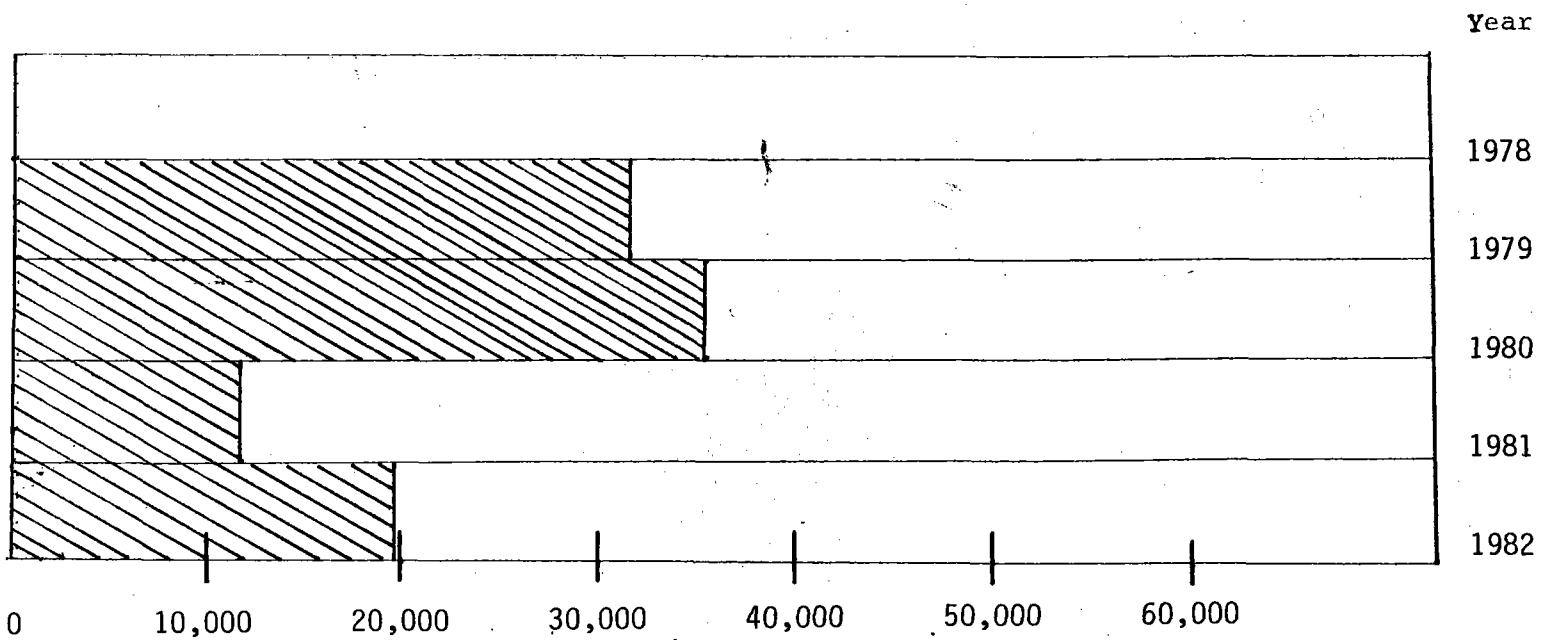
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

HOMESTAKE TUNNEL

Source: Middle Fork Homestake Cree, Division No. 5

Recipient: Cityies of Colorado Springs and Aurora



5-YEAR COMPARISON

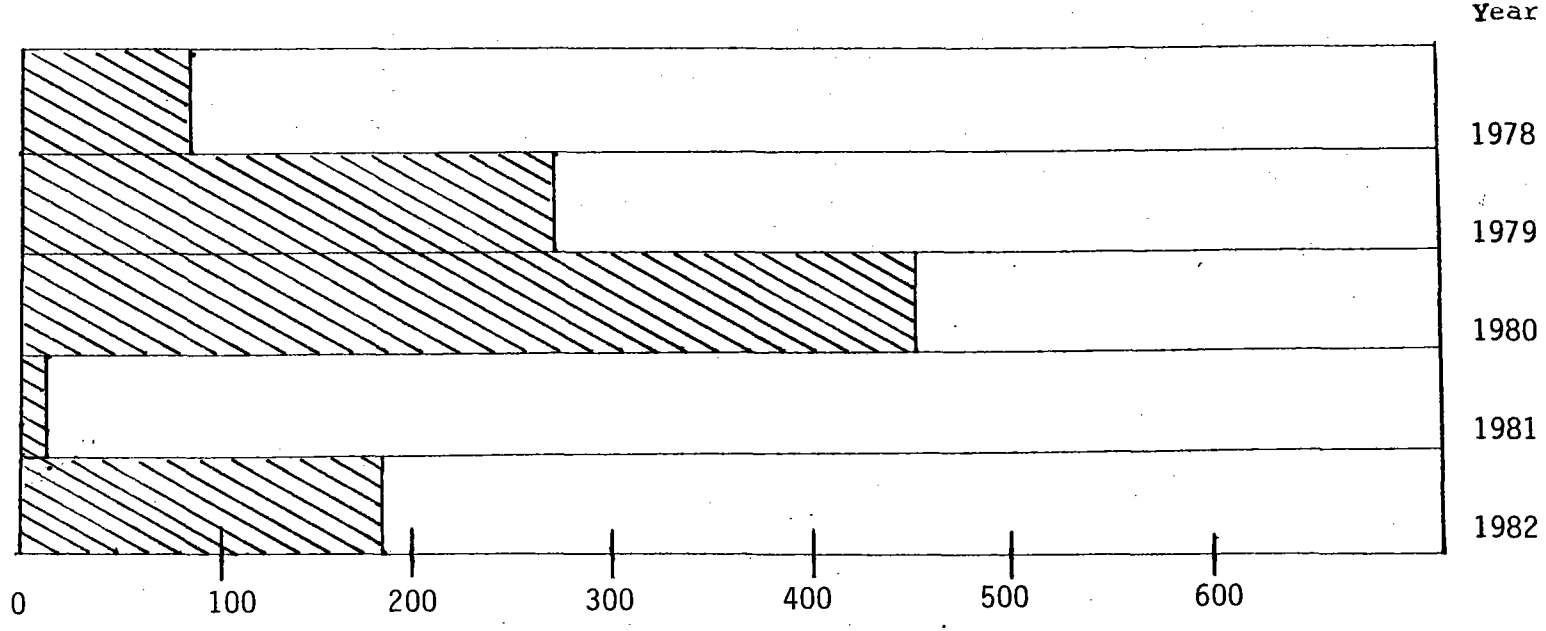
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

LARKSPUR DITCH

Source: Tomichi Creek, Division No. 4

Recipient: Catlin Canal Company



5-YEAR COMPARISON

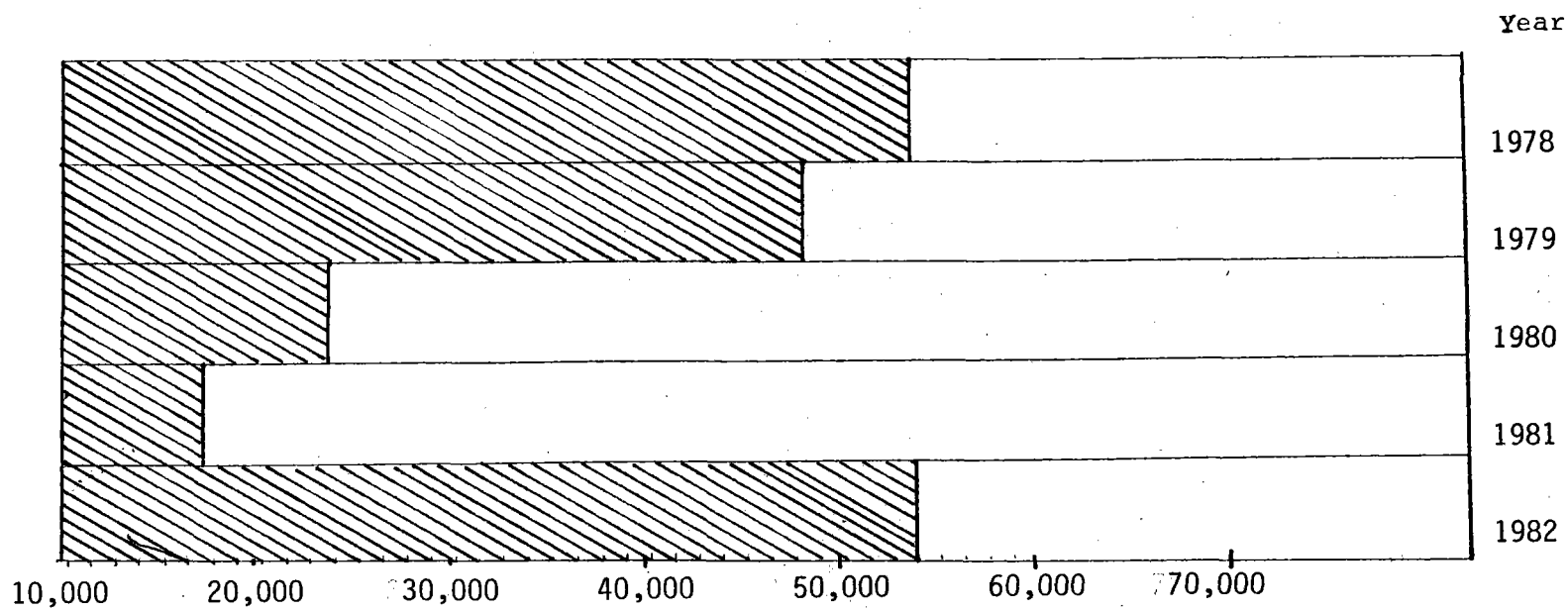
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

Twin Lakes Tunnel

Source: Roaring Fork River, Division No. 5

Recipient: Twin Lakes Reservoir and Canal Company



ACRE FEET

5-YEAR COMPARISON

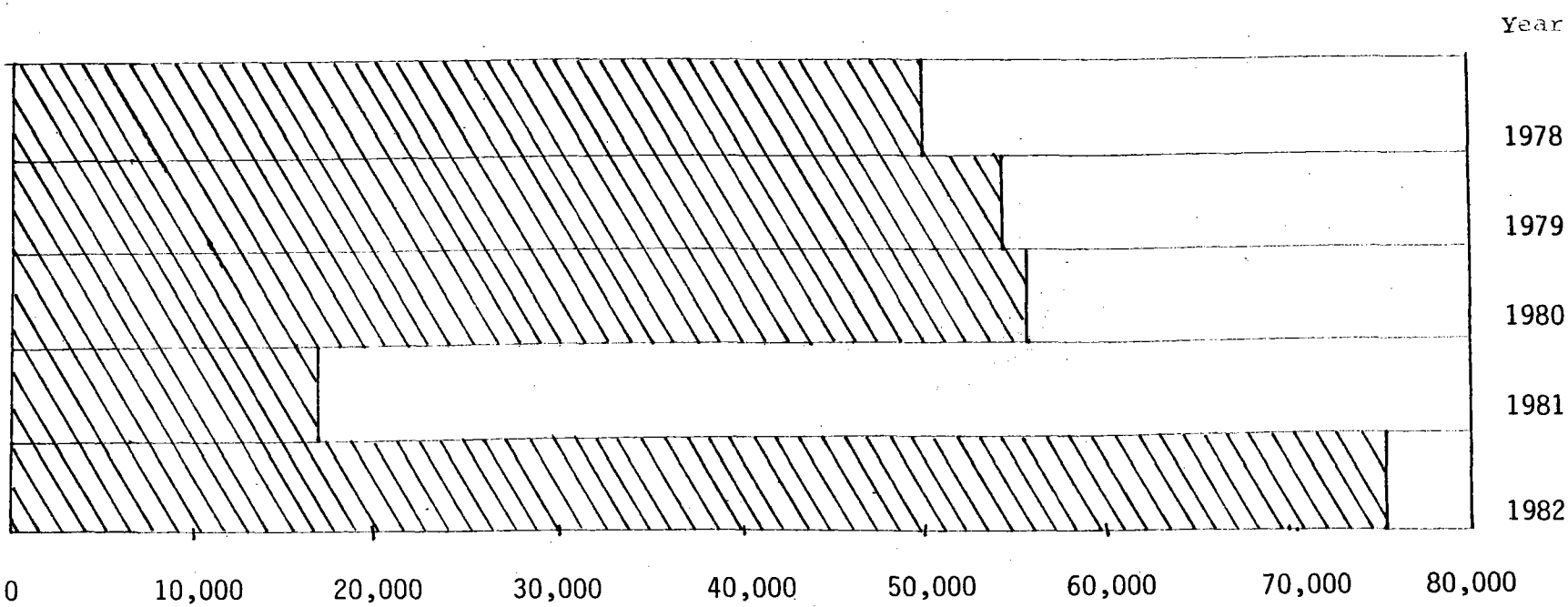
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

BOUSTEAD TUNNEL

Source: Fryingpan River

Recipient: U. S. Bureau of Reclamation



5-YEAR COMPARISON

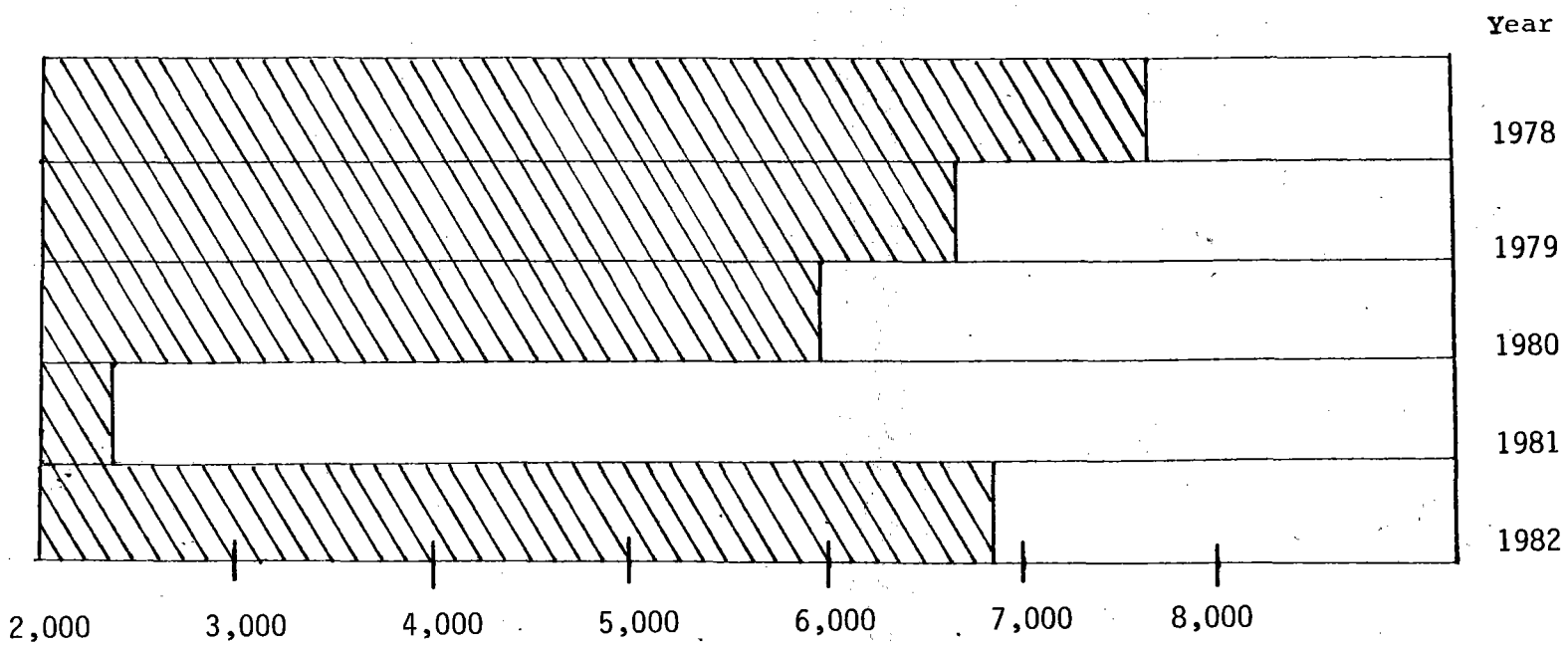
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

BUSK IVANHOE

Source: Ivanhoe Creek, Division No. 5

Recipient: Highline Canal Company and City of Pueblo



5-YEAR COMPARISON

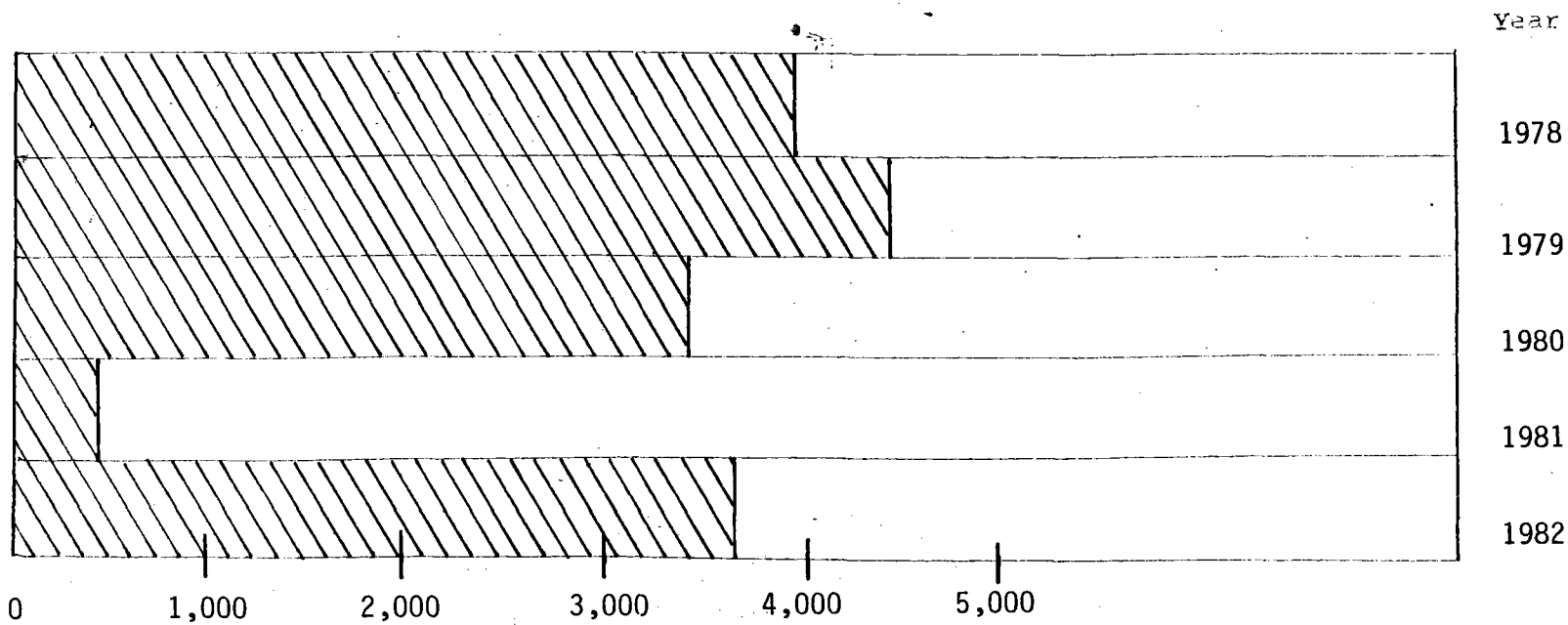
TRANSMOUNTAIN DIVERSION

DIVISION NO. 2

WURTZ DITCH

Source: Eagle River, Division No. 5

Recipient: City of Pueblo



5-YEAR COMPARISON

PRECIPITATION

Precipitation for Division 2 was 132% of normal this year. The majority of the moisture received came in the form of flash floods during the months of July, August and September. During this period of high precipitation, reservoirs in the area had an opportunity to store water in their facilities. This water stored will be utilized by the farmers in Water Year 1983.

In general, 1982 was an above average irrigation year. Due to the timing of the showers in Spring and heavy rains mixed with hail in the last part of August and September, there was serious damage done to the crops throughout the Arkansas Valley.

DAMS

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 to insure the safety of the public.

The new U.S.B.R. Dam at Twin Lakes was not used during the year because of the excessive seepage. The U.S.B.R. is in the process of letting out bids in 1983 to correct the seepage problem. During the year the old Twin Lakes Dam and gate were used.

FLOODS

Most of the flooding in Division 2 occurred in late July and August, due to the flash rains all along the Front Range. There was damage done when flash rain accompanied with hail occurred early in September. Many of the crops were damaged during the rain storms which occurred southeast of the Pueblo area.

The Fountain River required close scrutiny by Division personnel during July and August as it was near flood level during the heavy rain storms. The peak flow occurred on August 21, which yielded a discharge of 9,360 c.f.s. at the Pinon gauge.

The rainfall along the Front Range kept the Arkansas high during the latter part of the irrigation season and also permitted storage in reservoirs during July, August and September. The flood produced a peak discharge of 9,640 A.F. at the Nepesta station.

The Purgatoire River also had a flash flood on July 30th. The flood produced a peak discharge of 10,800 A.F. at Thatcher and a peak discharge of 5,380 A.F. at Las Animas on July 31st.

IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT PERCENT NORMAL AS OF Feb 1, 1982	SNOW DEPTH	WATER CONTENT AS OF Feb 1, 1982	AVERAGE INCHES
BIGELOW DIVIDE	104	18	5.1	4.9
COOPER HILL	141	38	9.7	6.9
EAST FORK	133	32	8.1	6.1
FOUR MILE PARK	123	22	4.8	3.9
FREMONT PASS	143	48	13.7	9.6
GARFIELD	116	34	10.0	8.6
HERMIT LAKE	86	18	5.5	6.4
MONARCH PASS	107	38	10.8	10.1
TENNESSEE PASS	135	33	8.5	6.3
TWIN LAKES TUNNEL	195	40	10.7	5.5
WESTCLIFFE	115	20	6.2	5.4
APISHAPA	70	14	3.5	5.0
CUCHARAS CREEK	-	19	5.0	-
LA VETA PASS	73	18	4.3	5.9
BOURBON	76	18	3.7	4.9

IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT PERCENT NORMAL AS OF Mar. 1 1982	SNOW DEPTH	WATER CONTENT AS OF Mar. 1,1982	AVERAGE INCHES
BIGELOW DIVIDE	141	27	7.9	5.6
COOPER HILL	129	40	11.0	8.5
EAST FORK	114	32	9.1	8.0
FOUR MILE PARK	104	19	5.1	4.9
FREMONT PASS	120	48	14.8	12.3
GARFIELD	117	39	12.9	11.0
HERMIT LAKE	96	21	7.3	7.6
MONARCH PASS	105	44	14.1	13.4
TENNESSEE PASS	115	34	9.4	8.2
TWIN LAKES TUNNEL	150	39	12.0	8.0
WESTCLIFFE	91	21	6.0	6.6
APISHAPA	117	23	7.5	6.4
CUCHARAS CREEK	135	32	8.4	6.2
LA VETA PASS	100	24	7.6	7.6
BOURBON	111	32	6.3	5.7

IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT PERCENT NORMAL AS OF Apr. 1 1982	SNOW DEPTH	WATER CONTENT AS OF Apr. 1 1982	AVERAGE INCHES
BIGELOW DIVIDE	126	28	9.3	7.4
COOPER HILL	120	51	13.0	10.8
EAST FORK	107	36	10.2	9.5
FOUR MILE PARK	106	20	5.3	5.0
FREMONT PASS	114	57	17.6	15.5
GARFIELD	127	54	16.2	12.8
HERMIT LAKE	110	32	9.8	8.9
MONARCH PASS	113	61	18.1	16.0
TENNESSEE PASS	-	69	23.5	-
TWIN LAKES TUNNEL	142	46	13.9	9.8
WESTCLIFFE	138	30	9.5	6.9
APISHAPA	103	22	7.9	7.7
CUCHARAS CREEK	103	30	9.8	9.5
LA VETA PASS	69	32	5.6	8.1
BOURBON	123	28	8.5	6.9

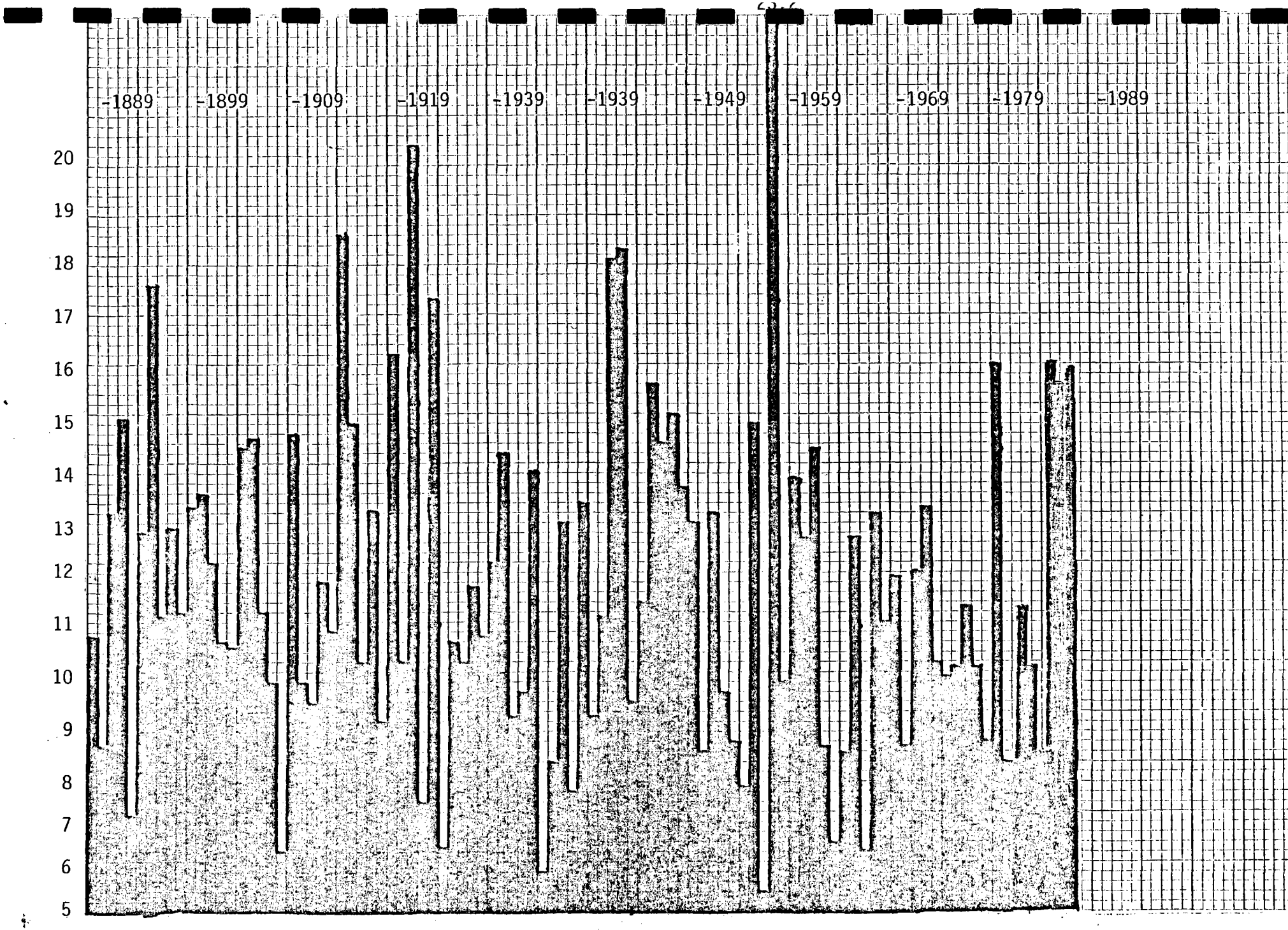
IRRIGATION DIVISION NO. 2

STATION	WATER CONTENT PERCENT NORMAL AS OF May 1 1982	SNOW DEPTH	WATER CONTENT AS OF May 1 1982	AVERAGE INCHES
BIGELOW DIVIDE	102	11	4.8	4.7
COOPER HILL	140	48	16.4	11.7
EAST FORK	118	26	8.6	7.3
FOUR MILE PARK	12	1	0.2	1.6
FREMONT PASS	114	58	20.2	17.7
GARFIELD	120	27	11.4	9.5
HERMIT LAKE	43	8	2.9	6.8
MONARCH PASS	108	41	16.6	15.3
TENNESSEE PASS	135	34	10.0	7.4
TWIN LAKES TUNNEL	136	41	12.9	9.5
WESTCLIFFE	72	4	1.8	2.5
APISHAPA	0	0	0.0	3.7
CUCHARAS CREEK	98	16	5.3	5.4
LA VETA PASS	0	0	0.0	3.2
BOURBON	89	7	2.4	2.7

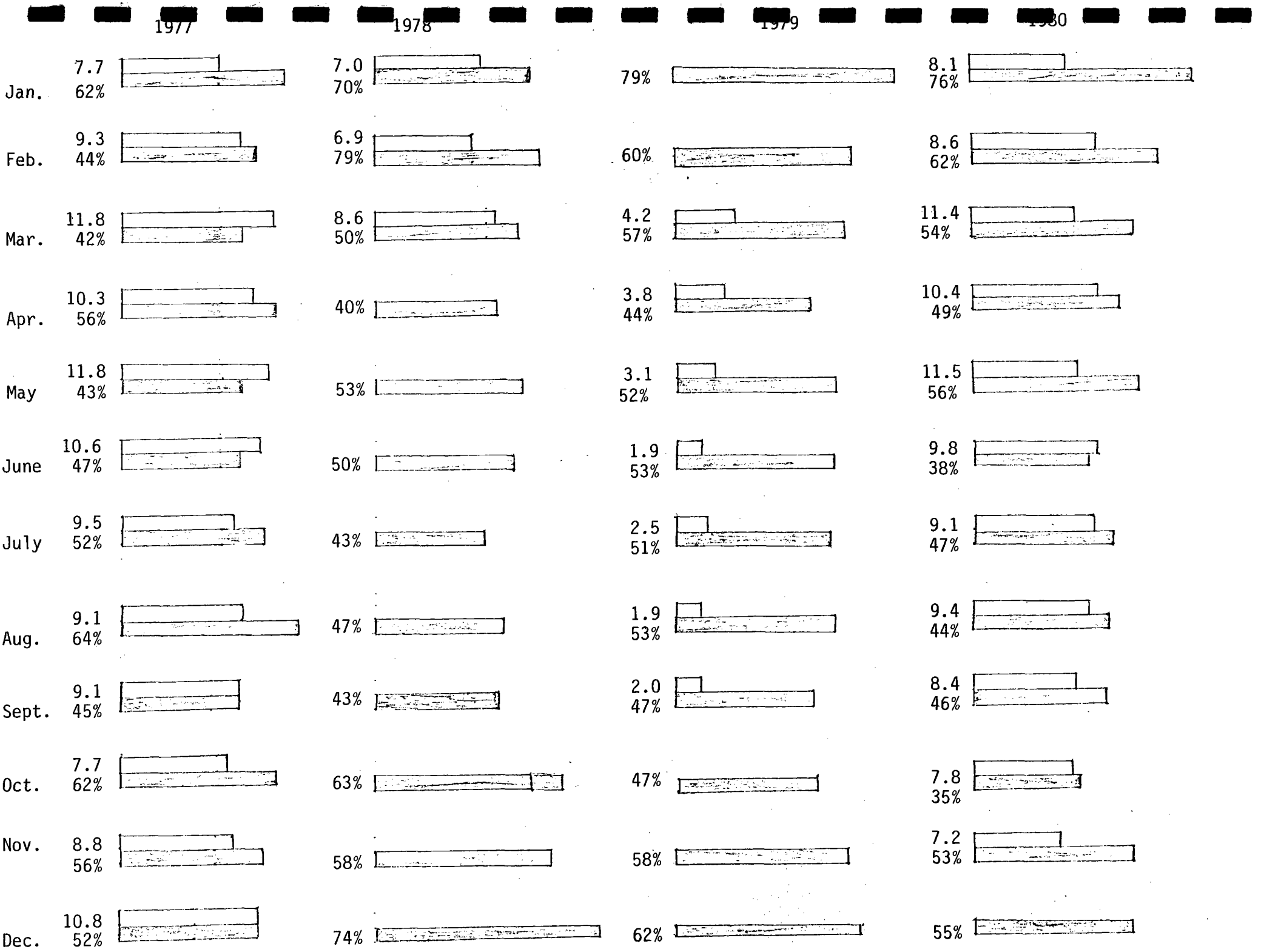
PRECIPITATION

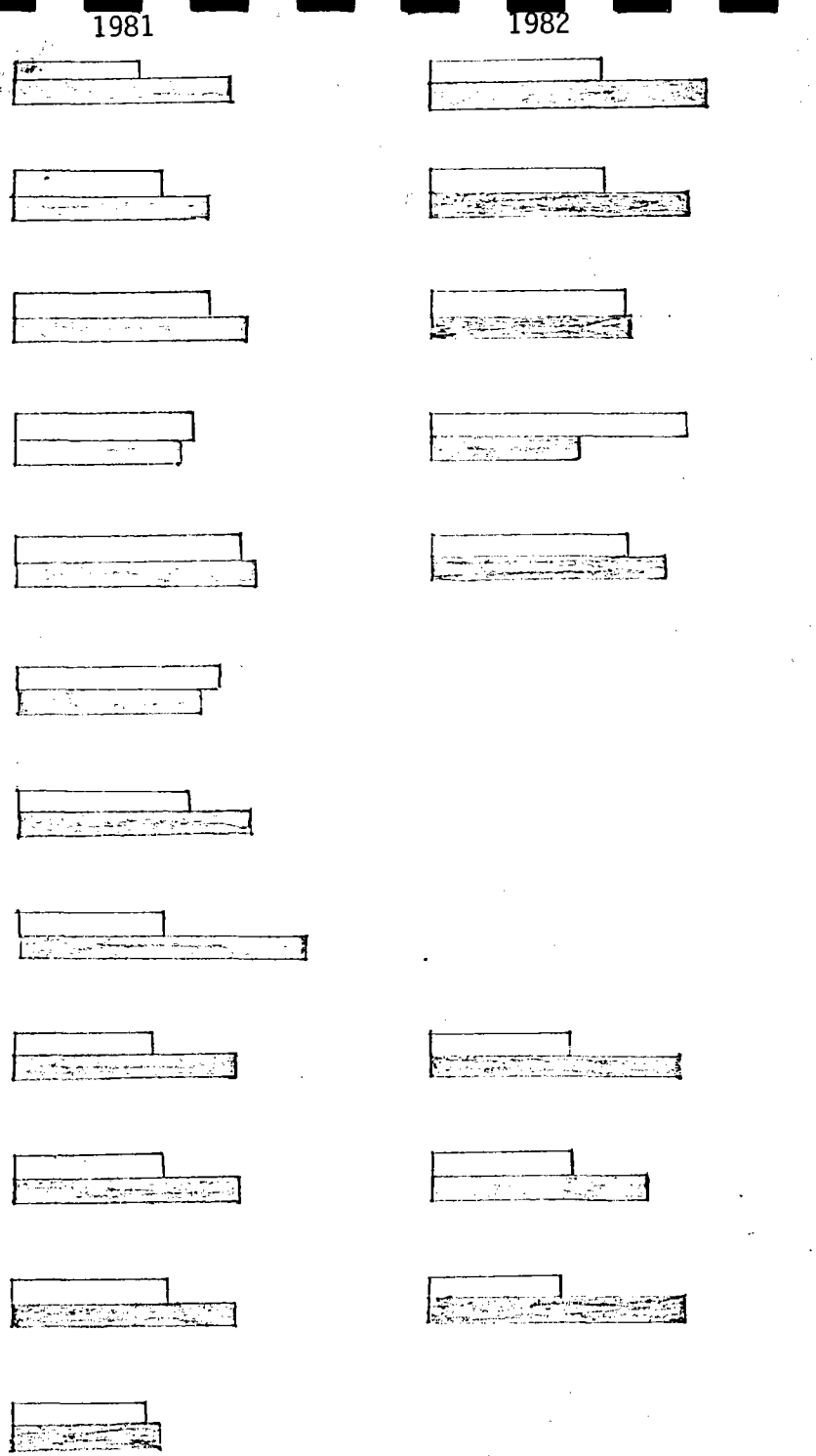
Irrigation Division No. 2

	April 1982	Depart From Normal	May 1982	Depart From Normal	June 1982	Depart From Normal	July 1982	Depart From Normal	August 1982	Depart From Normal	September 1982	Depart From Normal
Lamar	0.45	-0.90	3.96	+1.43	2.96	+0.70	2.78	+0.45	0.87	-1.47		
Buena Vista	0.34	-0.73	1.48	+0.44	0.70	-0.04	1.68	-0.01	2.55	+0.70		
Pueblo	0.13	-1.16	2.28	+0.63	1.71	+0.35	2.71	+0.84	4.35	+2.39		
Trinidad	0.28	-1.03	3.14	+1.29	2.81	+1.35	1.80	-0.06	1.15	-0.76		
Westcliffe	0.55	-1.37	1.47	-0.17	1.02	-0.07	2.00	-0.46	3.91	+1.47		
Colorado Springs	0.76	-0.64	3.07	+0.95	3.81	+1.50	3.64	+0.54	5.37	+2.79		



Precipitation in Inches
Pueblo, Colorado 1889 to Present


1977
1978
1979
1980
Jan.
7.7
62%
7.0
70%
79%
8.1
76%
Feb.
9.3
44%
6.9
79%
60%
8.6
62%
Mar.
11.8
42%
8.6
50%
4.2
57%
11.4
54%
Apr.
10.3
56%
40%
3.8
44%
10.4
49%
May
11.8
43%
53%
3.1
52%
11.5
56%
June
10.6
47%
50%
1.9
53%
9.8
38%
July
9.5
52%
43%
2.5
51%
9.1
47%
Aug.
9.1
64%
47%
1.9
53%
9.4
44%
Sept.
9.1
45%
43%
2.0
47%
8.4
46%
Oct.
7.7
62%
63%
47%
7.8
35%
Nov.
8.8
56%
58%
58%
7.2
53%
Dec.
10.8
52%
74%
62%
55%



1 INCH = 10 mm
1 INCH = 50 °C

FROM: J. SCHURER

TO: DIVISION 2

SUMMARY OF INSPECTIONS BY THE FIELD ENGINEERING UNIT IN FY 81 - 82 IN YOUR DIVISION.

ANNUAL SAFETY INSPECTIONS BY HAZARD RATING

HIGH	MODERATE	LOW
31	20	7

CONSTRUCTION INSPECTIONS BY HAZARD RATING

HIGH	MODERATE	LOW
2	1	1

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET NOVEMBER 1, 1981	AMOUNT OF ACRE FEET APRIL 1, 1982	AMOUNT OF ACRE FEET OCTOBER 31, 1982
Ambler Res. No. 2	Unnamed Springs			
Callhan Reservoir	Fountain	300	300	300
Crystal Creek Res.	Crystal Creek	2040	1590	2663
Fountain Valley #2	Fountain	2205	3825	3645
Fountain Valley #3	Fountain	0	0	0
Maintou Reservoir	No. Branch French Creek	711	711	711
Monument State	Monument Creek	370	370	370
North Catamount	No. Fork Catamount	6420	5213	11190
North Field No. 1		249	255	249
South Catamount	So. Catamount	2070	1162	2398
Spring Run	Spring Run	218	198	145
South Suburban	So. Fork Cheyenne	214	189	205
Clear Creek Res.	Clear Creek	8055	9056	6993
O'Haver	Gray's Creek			
Sugar Loaf Res.	Lake Fork Creek	80310	41980	99930
Twin Lakes Res.	Lake Creek	37249	29698	47297
Brush Hollow	Beaver Creek	847	3111	3892
Colo. Springs #2	Beaver Creek	541	541	541
Colo. Springs #4	Beaver Creek	1806	1965	1965
Colo. Springs #5	Beaver Creek	1774	2050	1802
Colo. Springs #7	Beaver Creek	34	191	76
Colo. Springs #8	Beaver Creek	104	669	621
Lake Moraine	Beaver Creek	699	699	699
Mt. Pisgah	Four Mile Creek	631	931	456
Rosemont Penrose	Beaver Creek	2540		
Skaguay	Beaver Creek	1818	2065	456
DeWeese Dye	Grape Creek	1316	4322	1372
Curiton	Springs			
Greenview	Fountain			
H.O.P. Reservoir	Springs			
Pueblo Reservoir	Arkansas	33160	110205	69140

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET NOVEMBER 1, 1981	AMOUNT OF ACRE FEET APRIL 1, 1982	AMOUNT OF ACRE FEET OCTOBER 31, 1982
Hayden Beckwith	Greenhord	630	905	905
Lake Minnequa	St. Charles	1135	864	1071
Reservoir No. 2	St. Charles	2419	2348	2364
Reservoir No. 3	St. Charles	6174	7418	7186
Arnold Flood Water	Santa Clara			
Bressan #1	Unnamed Arroya	10	10	5
Bressan #2	Unnamed Arroya			
Brunelli #1 & #2	Bear Creek	30	10	30
Butte	Cucharas			
Chicosa #4 & #5	Huerfano	0	0	35
Coler (Lake Miriam)	Cucharas	2081	2115	2201
Cucharas Valley	Cucharas	12520	5440	12620
Dotson	Cucharas			
Holita	Cucharas	0	0	0
Huerfano Valley	Huerfano		5375	25
La Joya	Cucharas	25	25	25
Maria Stevens	Cucharas	670	1202	1081
Martin Reservoir	Cucharas	1160	2560	2524
Mosco	Poison Canon			
Orlando	Huerfano	0	359	861
Sharps Orchid	Cucharas	25	25	25
Sierra Blanca	Decker Creek			
Sunnyside	Santa Clara			
Valdez	Santa Clara	1000	600	1000
Vories	Cucharas			
Wilson	Cheer Creek			
Zan	Apache Creek			
Adobe	Arkansas	0	5204	0
Dye	Arkansas	0	1939	172
Henry	Arkansas	1015	5375	5058
Hobrook #1	Arkansas	0	5472	4103
Horse Creek		0	16865	0

NAME OF RESERVOIR	SOURCE	AMOUNT OF ACRE FEET NOVEMBER 1, 1981	AMOUNT OF ACRE FEET April 1, 1982	AMOUNT OF ACRE FEET October 31, 1982
Hermosa	San Francisco Creek	0	0	0
Monument	Middle Fork Purgatoire	1584	1584	1584
Model	Purgatoire	0	0	0
North	Trinchera	3175	3269	3269
Trinidad Reservoir	Purgatoire	46916	49520	45099
John Martin	Arkansas	13816	69643	12254
Nee No Shee	Arkansas	0	0	3400
Nee Skah	Arkansas	0	0	3334
Thurston	Arkansas	874	1190	1192
Two Buttes	Two Buttes Creek	0	0	7528

LIVESTOCK WATER TANKS

1982 Applications Filed and Approved:

Water District 10	0
Water District 11	0
Water District 12	0
Water District 13	0
Water District 14	0
Water District 15	0
Water District 16	1
Water District 17	0
Water District 18	2
Water District 19	29
Water District 66	0
Water District 67	2
Water District 79	1
T O T A L	35

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

Last year (1981) the Division had 37 applications.

TABULATION

To date there have been forty protests of a clerical nature to the 1981 Tabulation.

There is still the controversy concerning the Tabulation of decrees issued after 1890 in District 11. After considerable research and re-consideration, it was decided to tabulate approximately 100 decrees issued between 1890 and 1907 as "original" instead of "supplemental". The issue may still not be resolved.

Cases Filed in the Water Court

The following shows the number of cases filed from January 1973 through December 1982 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.

	1973	CASES	CLAIMS
January	W-3894 through W-3911	19	47
February	W-3912 through W-3922	11	35
March	W-3923 through W-3940	26	87
April	W-3941 through W-3954	18	72
May	W-3955 through W-3968	19	670
June	W-3969 through W-3983	20	119
July	W-3984 through W-3999	19	70
August	W-4000 through W-4015	21	64
September	W-4016 through W-4029	14	28
October	W-4030 through W-4039	12	460
November	W-4040 through W-4052	17	42
December	W-4053 through W-4062	12	234
	Sub-total . .	207	1928

	1974		
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	W4199 through W-4214	16	60
	Sub-total . .	160	1922

MONTH	CASE NUMBERS	CASES	CLAIMS
	1975		
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
	1976		
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
	1977		
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

MONTH	CASE NUMBERS	CASES	CLAIMS
	1978		
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 W04768	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
	1979		
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
	1980		
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

MONTH	CASE NUMBERS	CASES	CLAIMS
	1981		
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 91CW182	15	53
November	81CW183 through 81CW207	25	70
December	81CW208 through 81CW233	26	312
	Sub-total..	233	2093
	1982		
January	82CW1 through 82CW16	16	246
February	82CW17 through 82CW35	19	905
March	82CW36 through 82CW74	39	146
April	82CW75 through 82CW85	11	27
May	82CW86 through 82CW89	4	11
June	82CW90 through 82CW104	15	56
July	82CW105 through 82CW112	8	32
August	82CW113 through 82CW130	18	35
September	82CW131 through 82CW169	39	49
October	82CW170 through 82CW180	11	125
November	82CW181 through 82CW193	13	258
December	82CW194 through 82CW216	23	47
	Sub-total. .	216	1937

Total of cased filed from 1973 through December, 1982 2,037

Approximate number of claims for same period. 16,301

Cases Terminated by the Water Court

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

MONTH	NUMBER OF CASES TERMINATED
1982	
January	9
February	12
March	12
April	5
May	14
June	7
July	14
August	20
September	16
October	12
November	13
December	7
TOTAL . . .	141

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
Cases Terminated 1982	141
Total cases terminated through December 1982.	4797

WINTER WATER STORAGE

The 1981-82 Winter Storage Program was in the sixth voluntary storage program, which was worked out by the ditches in the last seven years. Only once (1977-78) did the ditches fail to agree to a voluntary winter storage program. This voluntary winter program is where downstream irrigators are able to store a percentage of their direct flow rights in Pueblo Reservoir or in their own storage facility downstream without a court decree. This was the first year that entities had to pay $3.20/A.F. for water that was stored during 1981-82 in Pueblo Reservoir.

A last minute proposal proved to be just what was needed to bring about the winter water storage program for another year. The representatives hammered at one another for three hours on Friday, November 13, 1981, and were about to call it quits several times when a new proposal was drawn up. The final proposal, which was passed only through the abstention of several groups, called for the program to begin Sunday, November 15, 1981, and continue for at least 112 days (until March 8) using a 30-70 percent split on the first 100,000 acre feet, and the next 2750 acre feet going to the Amity Canal. When water stored reached 95,000 acre feet in the total system, a meeting of the Board would be called to again look at the questions of the winter program length, split and ceiling.

The 1981-82 Program began November 15, 1981 and continued through March 15, 1982, for 120 days, not the 112 days as per agreed at the bginning of the Winter Water Program. The 1982 Winter Program used the following formula:

A. By foregoing winter diversions, the water will be accounted for by diversions through headgates or by storing in Pueblo Lake on a percentage basis of the total river production.

B. The four storage ditches divided 70 percent of river flow up to a total flow of 100,00 A.F.

C. Six direct flow ditches divided 30 percent of river flow, up to a total of 100,000 A.F.

D. The next 2,750 A.F. went to the Amity Canal.

E. Any excess flow (above 102,750 A.F.) was divided up later by the Committee which decided to give the Colorado Canal 2250 A.F.

F. This amount was provided by reservoirs above Pueblo Dam which were not directly involved in the voluntary storage program. A division of river flow above 105,000 of water was decided on Febrary 10, 1982, which gave the four storage ditches 75 percent of river flow after 105,000 A.F.

G. Gave the six ditches with direct flow rights 25 percent of the river flow after 105,000 A.F.

Percentage Base on 30% of 100,000 A.F.

Bessemer	23.19%
Highline	31.15
Oxford	7.51
Otero	2.57
Catlin	34.09
Riverside - West Pueblo	1.49
*Rocky Ford	0
*Consolidated	0

* Did not participate, but did not object to Program. They took water directly in their headgate.

Percentage Base on 70% of 100,000 A.F.

Colorado Canal	15.91%
Holbrook Canal	12.68
Fort Lyon	54.51
Amity	16.90

The next 2750 A.F. in the total system went to the Amity Canal Company. They the Colorado Canal received 2250.00 A.F. from Reservoir companies.

Percentage Base on 25% over 105,000 A.F.

Bessemer	23.19%
Highline	31.15
Oxford	7.51
Otero	2.57
Catlin	34.09
Riverside - West Pueblo	1.49

Percentage Base on 75% over 105,000 A.F.

Colorado	17.07%
Holbrook	14.05
Fort Lyon	50.88
Amity	18.00

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
Riverside. . . . . .Pueblo Reservoir
West Pueblo. . . . . .Pueblo Reservoir
Colorado . . . . . .Pueblo Reservoir . . . .Own
Holbrook . . . . . .Pueblo Reservoir . . . .Own
Fort Lyon. . . . . .Own
Amity. . . . . .John Martin

1981-82

Winter Water Storage Summary Sheet
(Pueblo Reservoir)

CANAL	ACTUAL STORAGE
Bessemer	8218.84 A.F.
Highline	11039.96 A.F.
Oxford	2661.64 A.F.
Catlin	12081.94 A.F.
Riverside	150.00 A.F.
West Pueblo	378.00 A.F.
Otero	910.85 A.F.
Colorado	8586.08 A.F.
Holbrook	1213.14 A.F.

Winter Water Summary Sheet
(Off Channel Storage)

Colorado	7556.00 A.F.
Holbrook	10868.00 A.F.
Fort Lyon	51620.69 A.F.
Amity	19560.00 A.F.

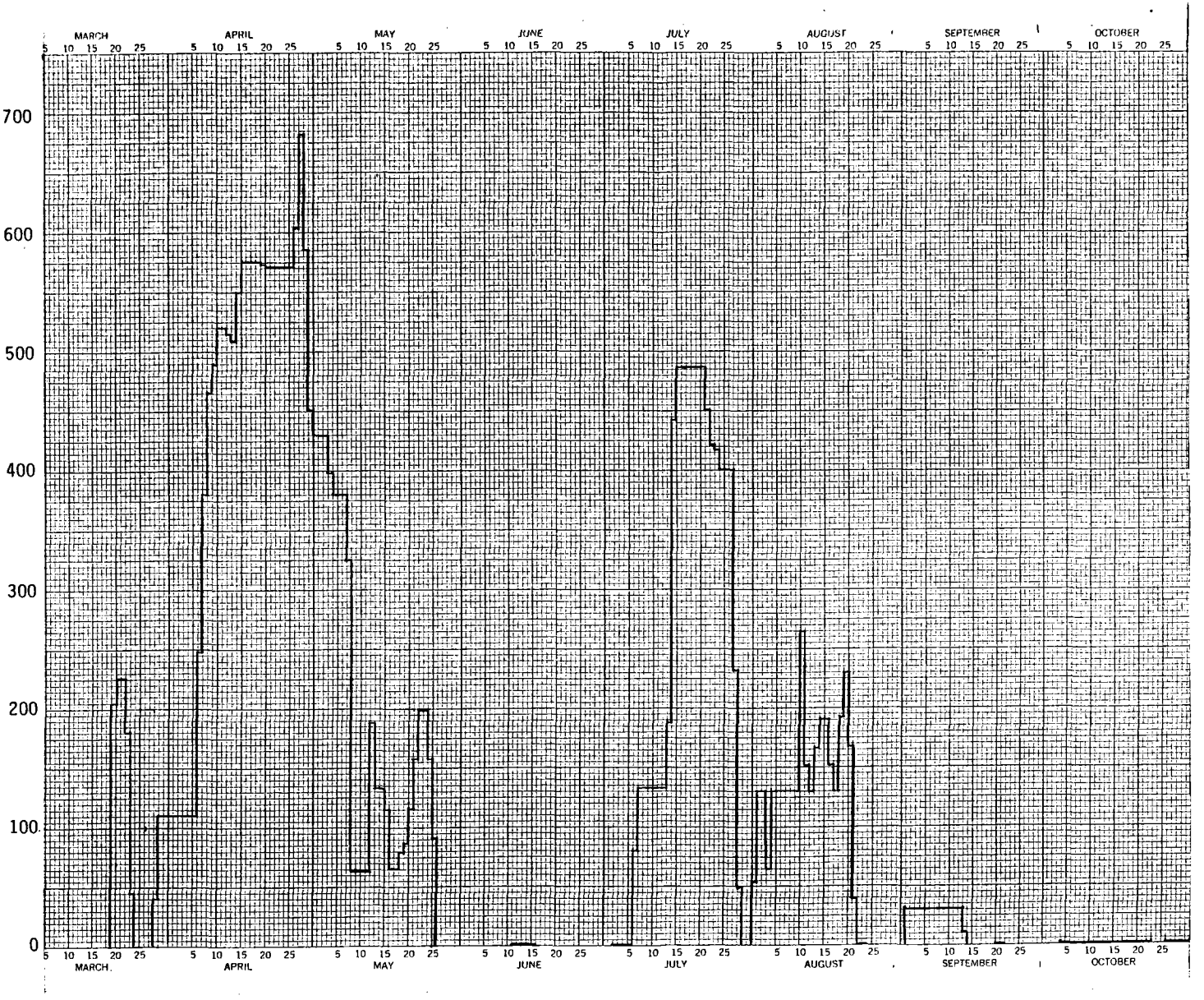
In this summary, the figures are from November 15, 1981 through March 14, 1982. The Amity Canal had their Winter Water delivered to John Martin, the storage began December 1, 1981 in John Martin and ended March 15, 1982.

The first release of Winter Water from Pueblo Reservoir was March 19, 1982 to Catlin Canal. The release then continued to various irrigation companies through November 1, 1982, with the majority of the water being run during April to the first part of May and July.

There was a major policy issued which stated: "All winter storage water shall be considered Project Water if not furnished to the District within 18 months from the commencement of the Winter Storage period but not later than May 1 of the year following the end of the Winter Storage period in which it was stored." Prior to this, you had to run all Winter Water out by November 1 of the year you stored it, or it would revert to Project Water.

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

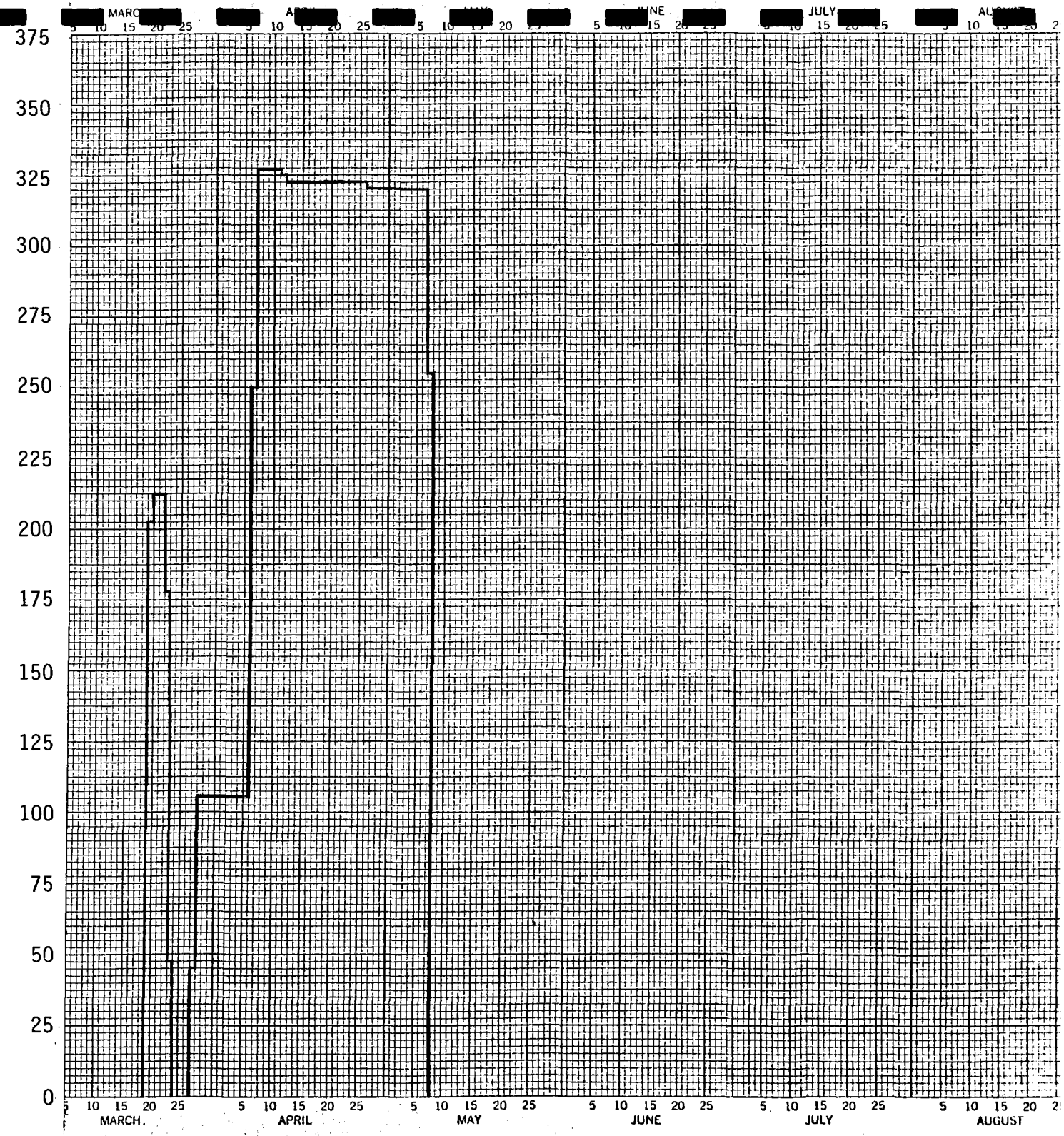
TOTAL WINTER WATER RELEASES FROM PUEBLO RESERVOIR FOR 1982



CATLIN CANAL

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

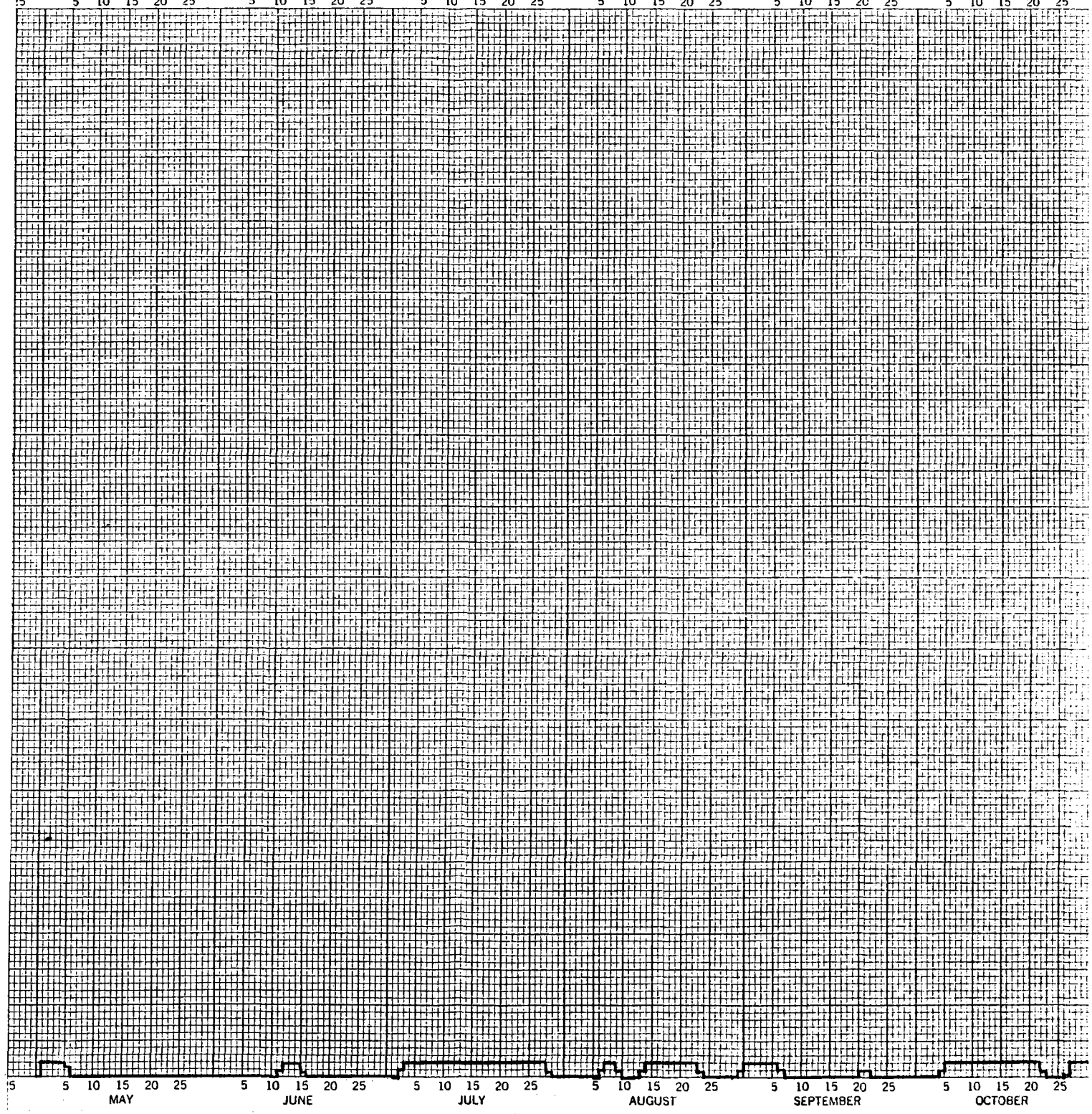
PUEBLO RESERVOIR
1982



RIVERSIDE DAIRY

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

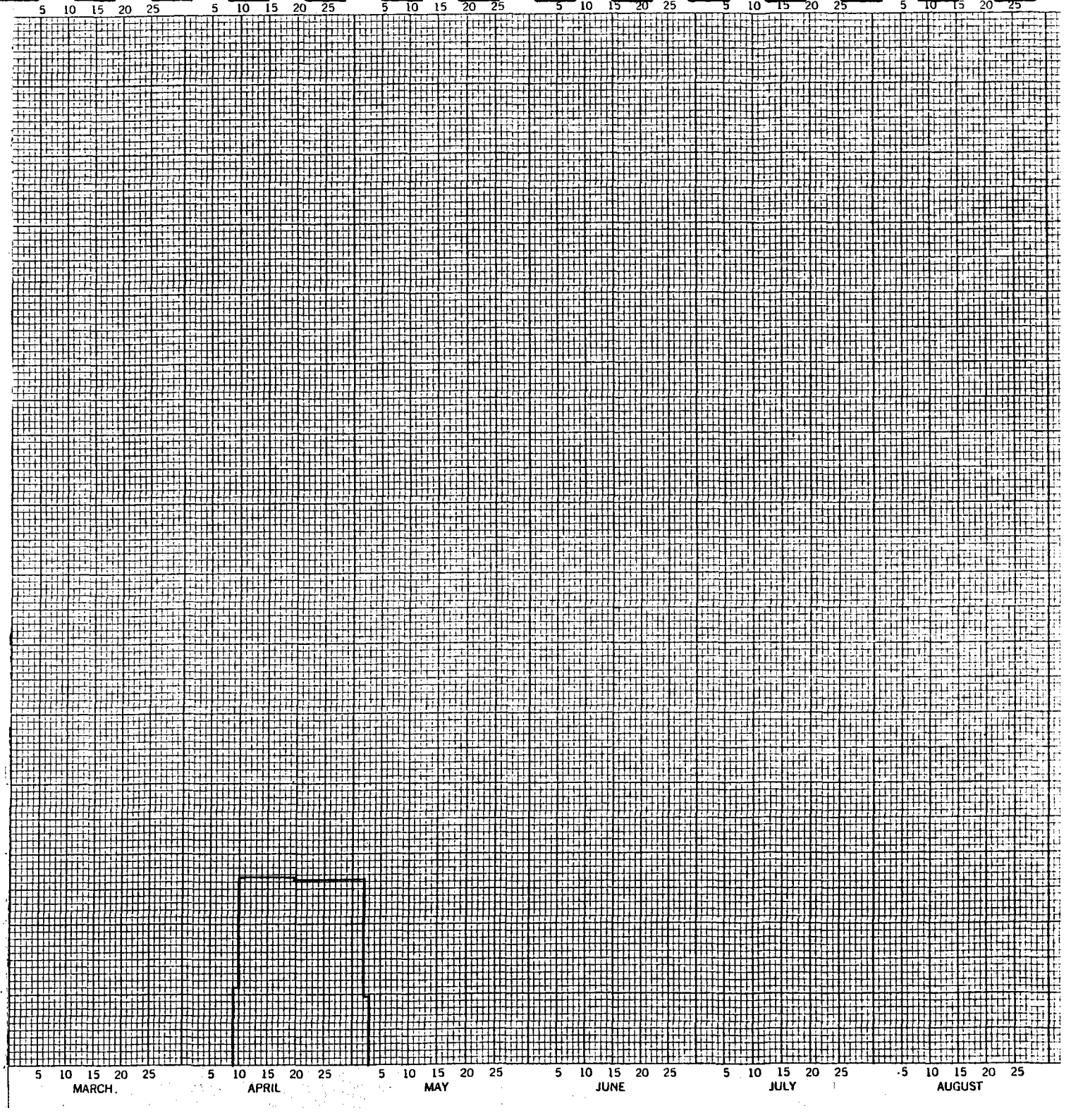
PUEBLO RESERVOIR
1982



OXFORD CANAL

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

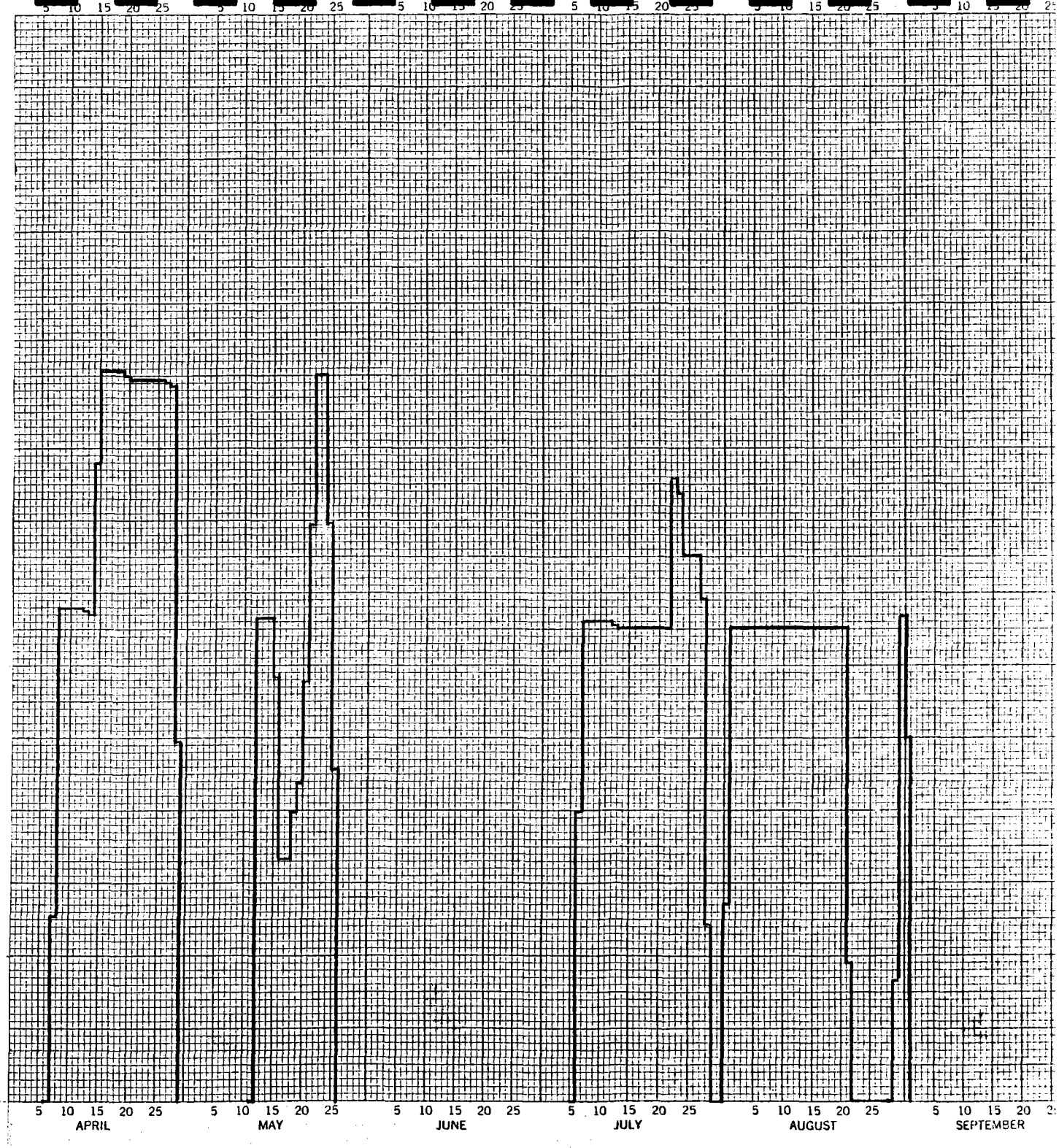
PUEBLO RESERVOIR
1982



HIGHLINE CANAL

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

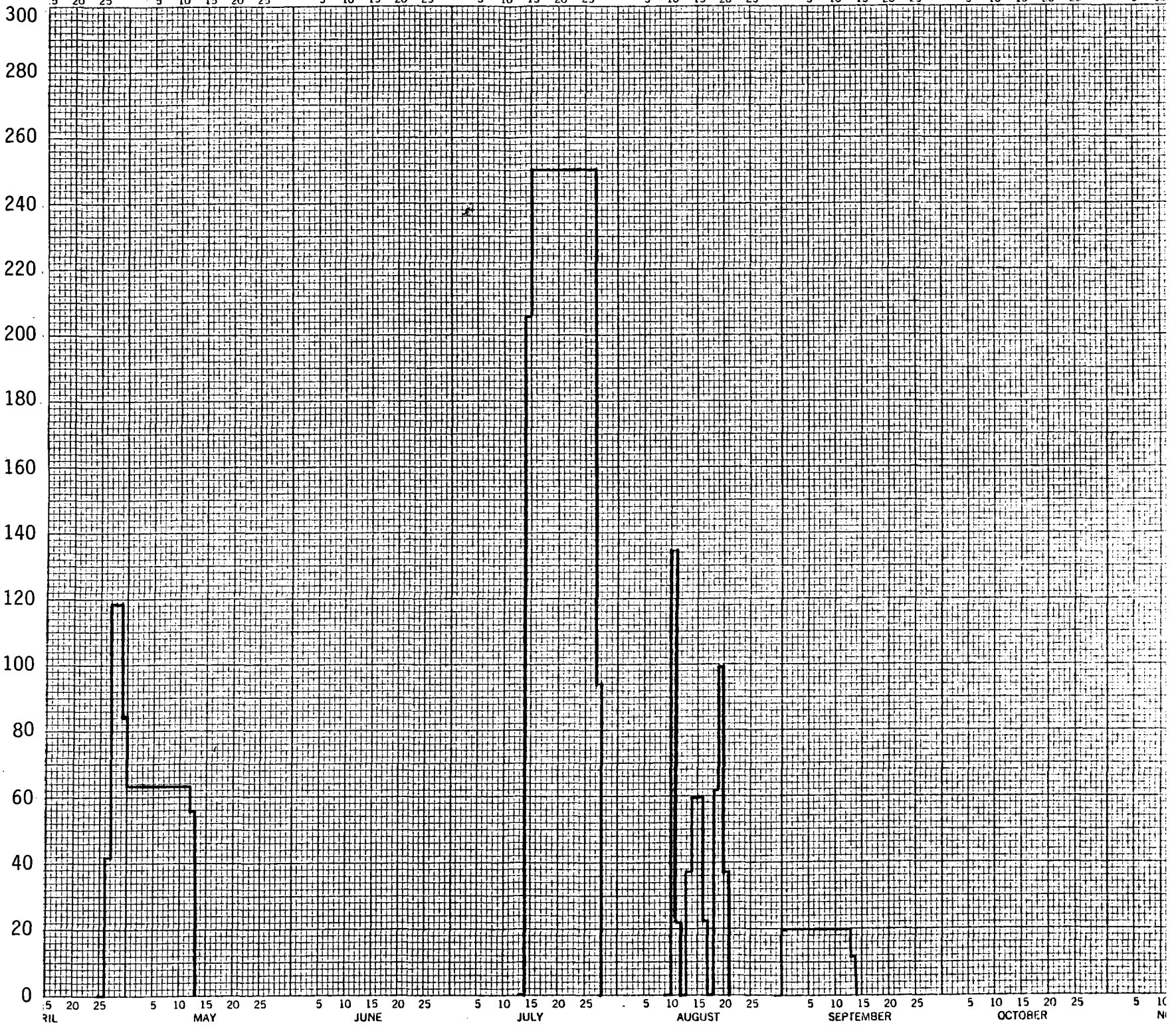
PUEBLO RESERVOIR
1982



BESSEMER CANAL

WINTER WATER
TIME AND QUANTITY
RELEASES FROM

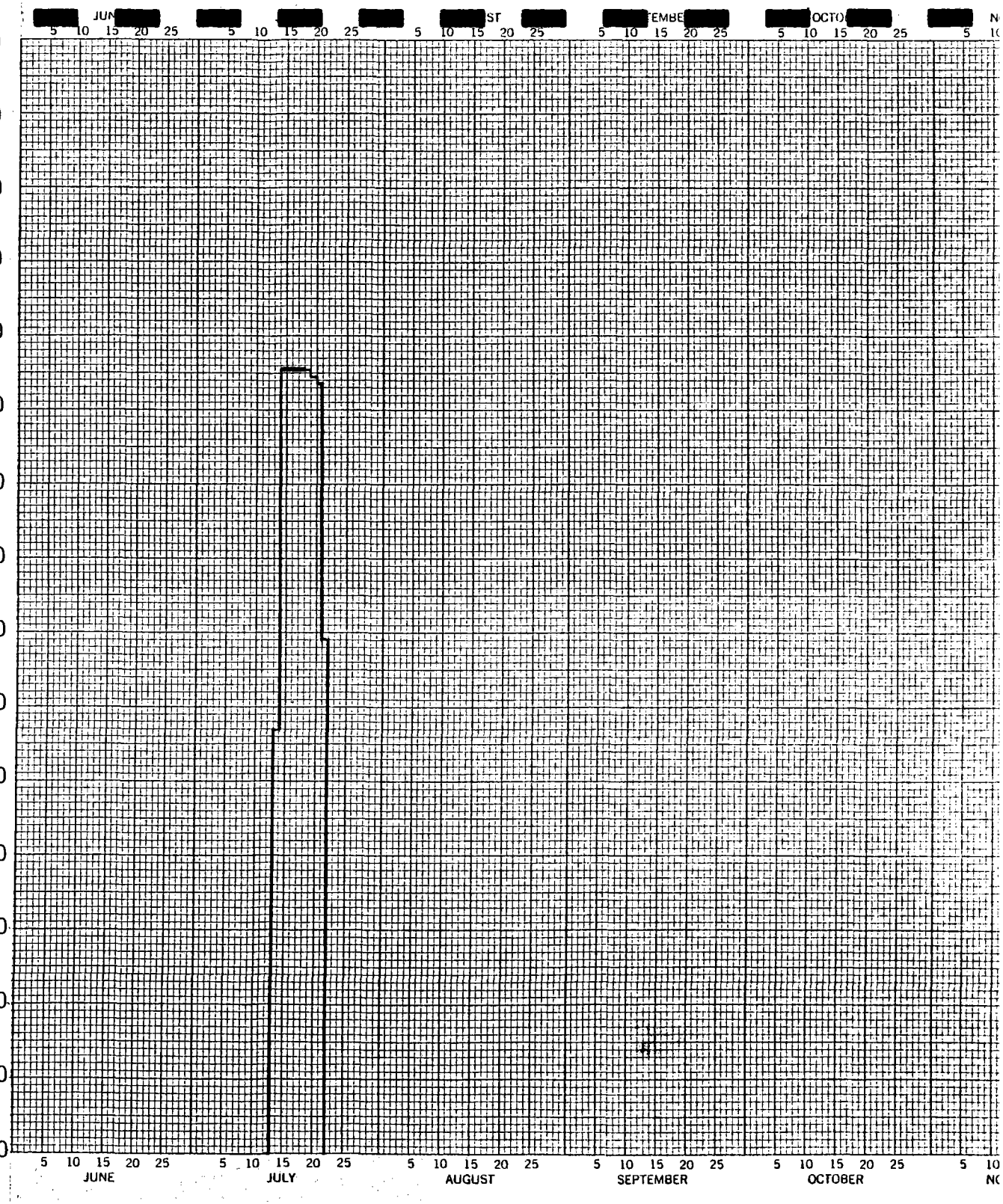
PUEBLO RESERVOIR
1982



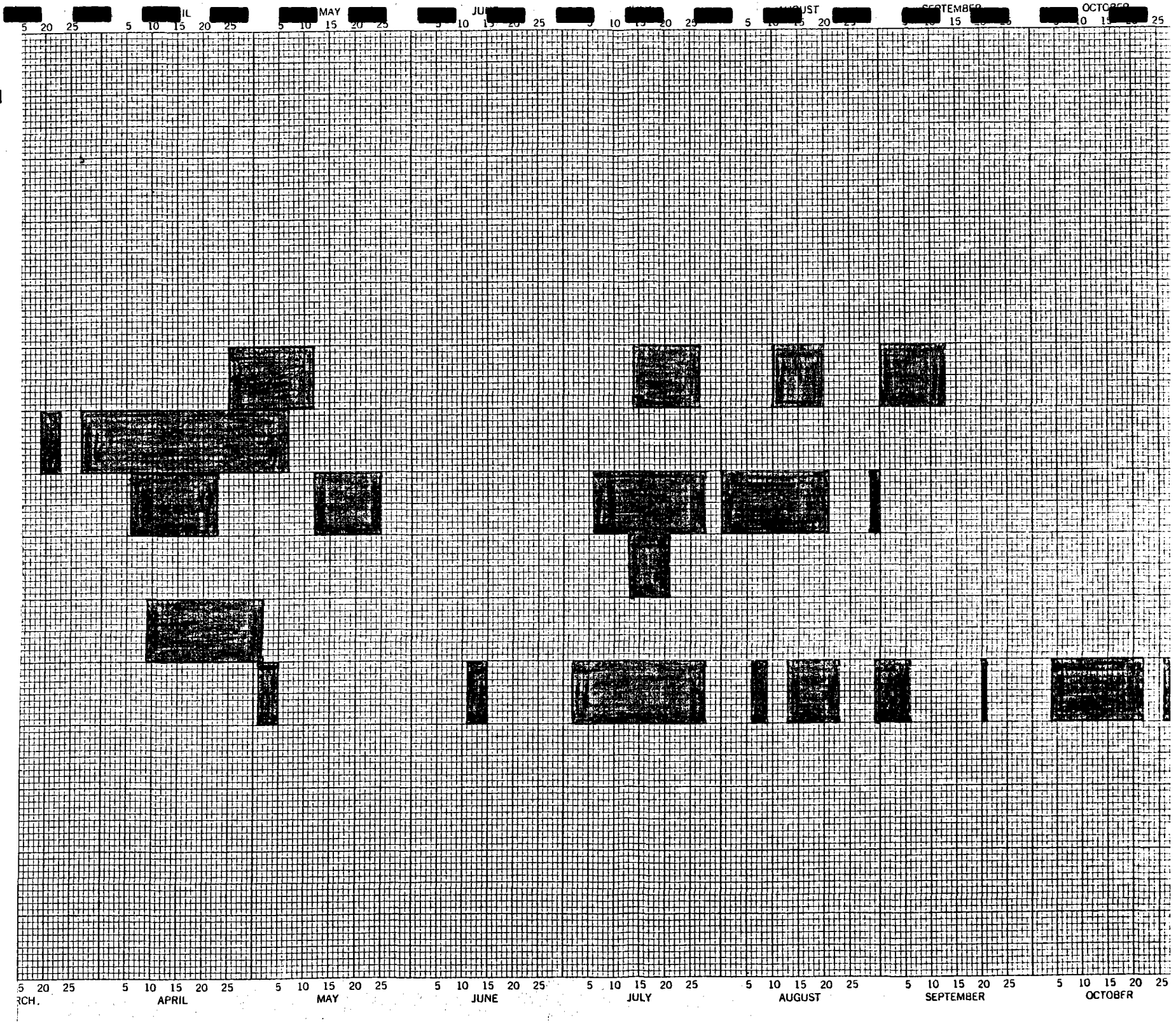
OTERO CANAL

WINTER WATER
TIME AND QUANTITY RELEASES
FROM

PUEBLO RESERVOIR
1982



INTER WATER
IME RELEASE FROM
UEBLO RESERVOIR
OR 1982



GROUND WATER ADMINISTRATION

The main effort in Pumping Rules and Regulations administration was in contacting well owners who were not members of an Augmentation Plan. All of the well owners who were contacted signed statements of compliance forms. The mileage reduction curtailed Ground Water Administration. An increasing amount of off-the-street traffic has been noted, and required an increasing amount of office time.

In the course of our administration, two irrigation wells were found to have been drilled without permits, and the driller who drilled them had his license suspended for a year.

In April 1982, three reports were received of a well being drilled in an area where no permits have been issued for several years. This well was found to be without a permit but a test hole authorization was given after the report. The State Engineer ordered the "test hole" to be plugged in August 1982. This well is now involved in two court cases, 82CW186 and and 82CW196. Case 82CW196 is a Complaint for Permanent Injunction by the State Engineer.

The most significant court action concerning ground water in 1982 in Division 2 was Judge Statler's ruling in the Public Service Co. case, 80CW52. The Trial started on June 22, 1982 and testimony was concluded on June 28, 1982. The case involves the sale of surface and ground water rights to Public Service Company of Colorado and Change in Use from Irrigation to Industrial. One of the most noteworthy aspects of this case as far as the State Engineer is concerned is stated in Paragraph 19 of the decretal portion which states: "The water appropriated by the Water Rights described in paragraphs 7.2 and 7.4 above is available for withdrawal by the Wells, subject to the rules and regulations of the State Engineer entitled "Rules and Regulations Governing the Use, Control and Protection of Surface and Ground Water Rights in the Arkansas and its Tributaries," dated November 16, 1972 and effective February 19, 1973. The ground Water Rights herein transferred will be administered in the future subject to such rules and regulations of the State Engineer as may be promulgated in accordance with law." The minority shareholders and the United States have filed a motion to amend other parts of the Ruling.

There was no action in the Huston Case, 79CW1 in Division Two this year.

SUMMARY OF WELLS

IRRIGATION DIVISION NO. 2

WATER DIST. NO.

TYPE OF USE

	0	1	2	3	4	5	6	7	8	TOTAL
10	159	3,281	131	150	72	13	268	12	128	4,228
11	461	1,055	15	43	81	8	36	5	17	1,737
12	456	766	91	141	18	14	76	3	15	1,613
13	137	203	69	73	0	0	36	10	4	536
14	81	1,893	422	279	66	39	939	28	60	3,826
15	120	621	57	80	6	1	128	13	23	1,053
16	12	211	300	161	5	21	90	3	8	817
17	13	529	792	269	43	26	1,077	36	73	2,901
18	4	45	90	29	0	0	13	2	7	190
19	45	133	219	46	0	13	25	7	6	507
66	0	86	317	50	5	15	636	5	13	1,159
67	15	756	1,675	376	49	9	1,581	11	114	4,607
79	4	7	3	7	0	0	0	0	0	21
TOTAL	1,506	9,597	4,181	1,703	345	159	4,905	135	468	23,170

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

The preceding table is as of October 1982.

NEW PERMITS ISSUED IN DIVISION 2

1 NOV 81 to 31 OCT 82

New In-House-Use Only (0)	328
Domestic (1), Stock (2), Domestic and Stock (3)	582
New Non-Tributary, Non-Exempt wells	1
Replacements for existing adjudicated wells	24
Denied applications	25
New Decreed Non-Exempt wells	2

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 anc 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-FILL AQUIFER BY IRRIGATION WELLS

(acre feet per year)

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

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

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

OPERATIONS SECRETARY'S COMMENTS

1982 was above average in snow pack as well as summer precipitation. A table of precipitation is enclosed in this Report.

No significant problems in administration were encountered during the year. The COMSAT Program was used extensively and was found to be quite valuable, although some improvement is still needed in communicating the latest shifts to the COMSAT.

All deliveries to Kansas were made on schedule, and the Secretary had excellent cooperation from Kansas Water Resources in Garden City.

During the year, State hydrographers made a total of 32 stream measurements on the Compact gauges and a total of 323 visits or personal gauge readings to verify gauge heights or make estimates of ice affected flows.

Also enclosed in this Report is a table showing the computed inflow to John Martin. This is a computation and includes all measured as well as un-measured inflow using the Daily Change in Contents.

FINANCIAL STATUS

OF

OPERATIONS SECRETARY

1982 Contract between Colorado State Engineer Jeris Danielson and Arkansas River Compact Administration.

Salary for Secretary:

May	$ 952.00
June	952.00

Office Supplies:

Calculators (2)	$260.95
Misc. Supplies	58.70

Telephone:

Installation of COMSAT Terminal Jack	$270.65
TOTAL	$2494.30

Contract allocated $2500 to the Operations Secretary. All invoices and a copy of the Contract are hereto attached.

INVOICE

M. Helen Bever
1914 Sherwood Lane
Pueblo, Colorado 81005

Secretary, month of May $952.00

INVOICE

M. Helen Bever
1914 Sherwood Lane
Pueblo, Colorado 81005

Secretary, month of June $952.00

M. Helen Bever

CALCULATORS — COMPUTERS & TERMINALS — COPIERS — TYPEWRITERS — DICTATION & PHONE ANSWERING EQUIPMENT — CASH REGISTERS — OFFICE SUPPLI

LEWAN & associates office products

LEWAN & A OCIATES, INC.
P.O. Box 22855
Denver, CO 80222

SALES ORDE

☐ 1243 So. Colorado Blvd. Denver, CO 80222 ☐ 759-5440 ☐ 759-5211	☐ 4261 E. Mississippi Ave. Glendale, CO 80222 759-9633	☐ 2008 So. University Blvd. Denver, CO 80210 778-0202	☐ 516 North Tejon Colo. Springs, CO 80 475-8100
☐ 1608 So. College Ave. Ft. Collins, CO 80525 484-6822	☐ 1728 — 28th Street Boulder, CO 80301 447-0890	☑ 156 West 29th Street Pueblo, CO 81008 542-6361	☐ 1780 Westland Ro Cheyenne, WY 82 635-0503

CUSTOMER ORDER NUMBER	DATE	BR	DIV	SALES REPRESENTATIVE NAME	NUMBER	
	6-7-82	07	54	Pueblo Ofc	412	L071770

CUSTOMER	ACCOUNT NUMBER	PHONE
Arkansas River Compact Administration	new	542-3363

☑ SALE
☐ TRIAL
☐ LOAN
☐

ATTENTION:

DELIVERED TO:

BILLING ADDRESS	SHIPPING ADDRESS
1906 West Northern	

CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE	SHIPPED VIA
Pueblo	CO	81004				

QUANTITIES ORDERED	SHIPPED	B/O	UNIT	PRODUCT NUMBER	DESCRIPTION	UNIT PRICE	AMOUNT
1	1		ea	UU-5217	SN 526450		139 4
1	1		ea	HP-11C	SN 2225A06269		121 5

UPS DATA W	C	PICK	MEMO:	CHARGE ✓	SUB-TOTAL	260 9
		PACK		PAID: CASH / CC / CHECK / NO.	SALES TAXES CODE 33 RATE 0%	—
					DELIVERY	

BRANCH	DIVISION	CUSTOMER SERVICE PLAN: FROM.	THRU	QTY.	UNIT RATE	

CALL TAKEN DATE & TIME	BY	ORDERED BY		DATE RECEIVED	TOTAL	
			Thank You	6-7-82		260 9

R/O	DATE	This agreement is subject to the terms and conditions as set forth herein and on the reverse side hereof, which the customer acknowledges having read and accepted.	ACCEPTED BY: [signature]	BATCH

SALES REPRESENTATIVE

SLS - L

LEWAN & ASSOCIATES office products

LEWAN & ASSOCIATES, INC.

SALES ORDER

P.O. Box 22055
Denver, CO 80222
1243 So. Colorado Blvd.
Denver, CO 80222
☐ 759-5440 ☐ 759-5211

☐ 4261 E. Mississippi Ave.
Glendale, CO 80222
759-9033

☐ 2008 So. University Blvd.
Denver, CO 80210
778-0202

☐ 516 North Tejon
Colo. Springs, CO 8090
475-8100

☐ 1608 So. College Ave.
Ft. Collins, CO 80525
484-8822

☐ 1720 — 28th Street
Boulder, CO 80301
447-0890

☑ 156 West 29th Street
Pueblo, CO 81008
542-6351

☐ 1780 Westland Road
Cheyenne, WY 8200
635-0503

CUSTOMER ORDER NUMBER	DATE	SALES REPRESENTATIVE BR	DIV	NAME	NUMBER	
	6-8-82	07	54	Pueblo Ofc	492	L071774

CUSTOMER: Arkansas River Compact Administration (new)
ACCOUNT NUMBER:
PHONE: 542-3368
ATTENTION:
DELIVERED TO:
BILLING ADDRESS: 1900 West Northern
SHIPPING ADDRESS:
CITY: Pueblo STATE: CO ZIP CODE: 81004
CITY: STATE: ZIP CODE:
SHIPPED VIA:

☑ SALE ☐ TRIAL ☐ LOAN ☐

QUANTITIES ORDERED	SHIPPED	B/O	UNIT	PRODUCT NUMBER	DESCRIPTION	UNIT PRICE	AMOUNT
1	1			OS-SUPPLIES			19 9(
2	2		RL	ZEL-51051D		1.40	8(
8	8		ea	GEN-T387		4.75	38 0(

UPS DATA: W C
PICK
PACK
MEMO: RETURN POLICY
1. REFUNDS - Must be made within 3 days.
2. EXCHANGES - Must be made within 10 days.
3. ALL Returns must be accompanied by sales receipt and must be in new condition complete with Box, Accessories, etc., or a restocking charge will be applied.

CHARGE ✓
PAID: CASH / CC / CHECK NO.
SUB-TOTAL 58 7(
SALES TAXES CODE 33 RATE 0% T E
DELIVERY

BRANCH DIVISION
CUSTOMER SERVICE PLAN: FROM, THRU
QTY. UNIT RATE

CALL TAKEN DATE & TIME BY
ORDERED BY: Thank You
DATE RECEIVED: 6-8-82
TOTAL 58 7(

R/O
DATE
This agreement is subject to the terms and conditions as set forth herein and on the reverse side hereof, which the customer acknowledges having read and accepted.
ACCEPTED BY: E. Gonzales
BATCH

CUSTOMER COPY

LS - L

ARKANSAS RIVER COMPACT ADMINISTRATION
Principal Office - Court House, Lamar, Colorado

No. 526

FIRST NATIONAL BANK IN LAMAR
LAMAR, COLORADO
82-87/1021

PAY Two Hundred and Seventy Dollars and 65/00 DATE June 5, 1982 AMOUNT $ 270.65

TO THE ORDER OF Bell Telephone

Leo Jolley TREASURER
Carl E Bentrup CHAIRMAN — VICE CHAIRMAN

⑈1021⑈0087⑈ 000 254⑈

Rocky Mountain Bank Note

PAYEE: DETACH THIS STATEMENT BEFORE DEPOSITING CHECK

Arkansas River Compact Administration - Lamar, Colorado

DATE	INVOICE NO.	DESCRIPTION	AMOUNT	DISCOUNT OR DEDUCTION	NET AMOUNT
June 5,82		Install Telephone Comsat terminal jack			$270.65

RECEIVED
JUN 16 1982
DIVISION ENGINEER
PUEBLO, COLORADO

2 1 9999 0715 82

H

MAY 22 1982
303 545 2301
CURR CHGS 270.65
ARE DUE BY JUN 16

TOTAL DUE 270.65

MOUNTAIN BELL
DENVER CO 80244

COLO STATE GOVT
IRRIGATION DIV ENGR
1906 W NORTHERN AV
PUEBLO CO 81004

PLEASE RETURN THIS PAGE WITH YOUR PAYMENT - IF PAYING IN PERSON BRING ENTIRE STATEMENT-DO NOT FOLD MUTILATE OR STAPLE
THANK YOU

B 235 53 2

21 025452301023S4 1253071582 0000000000 0002706505 87

CONTRACT

THIS AGREEMENT is made this 3rd day of May, 1982, by and between the State Engineer of the State of Colorado for the use and benefit of the Colorado Division of Water Resources (State Engineer), 1313 Sherman Street, Room 818, Denver, Colorado 80203, and the Arkansas River Compact Administration, 1001 South Main, Lamar, Colorado 81052.

WHEREAS, the Division Engineer, Water Division II in the Colorado Division of Water Resources serves as Operations Secretary for the Arkansas River Compact Administration; and

WHEREAS, the Arkansas River Compact Administration has previously approved of the use of up to $2,500.00 of its funds for the maintenance of the office of the Operations Secretary for the six month period ending June 30, 1982.

NOW THEREFORE, it is hereby agreed that:

1. The Division Engineer, in his capacity as the Operations Secretary, shall:

   A. Regulate the gates of John Martin Reservoir in accordance with the Arkansas River Compact and any operating plans or procedures adopted thereunder; and

   B. Keep accurate daily records on the water stored in John Martin Reservoir, including all matters appurtenant thereto such as the amount of water residing in or being transferred to special reservoir accounts, evaporation of water from the reservoir which is to be prorated among such accounts, and the determination of transit losses and the procedures for computing such in all matters regarding water being transferred to or from said reservoir and accounts therein; and

   C. Prepare accurate reports of deliveries of water which reports shall be presented to the Administration's operations committee.

2. In consideration of the services to be performed by the Division Engineer as Operations Secretary, the Arkansas River Compact Administration shall:

   A. Pay a secretary for the office of the Operation's Secretary at a rate of $952.00 per month for the months of May and June, 1982; and

   B. Pay $596.00 for the installation of a telephone, computer access, and incidental office expenses; and

   C. Make all disbursements upon receipt of a properly prepared invoice from the Operations Secretary.

Colorado Division of Water Resources

By _____
Jeris A. Danielson,
State Engineer

Arkansas River Compact Administration

By _____
Frank Cooley,
Chairman

RECEIVED
JAN 7 1983
DIVISION ENGINEER
PUEBLO, COLORADO

Delivery of Water To Kansas, 1982

I

Release began @ John Martin Reservoir	6-21-82	1100 Hr.
Release ended @ John Martin	7-5-82	1744 Hr.

Kansas Account - - - - - - - -	14,281.03	A.Ft.
Transit Loss Account - - - -	1,628.08	A.Ft.
Other- - - - - - - - - - - -	0	A.Ft.
TOTAL - - - -	15,909.11	A.Ft.

Arrived @ Frontier Ditch Headgate	6-23-82	0001 Hr.
Arrived @ Coolidge Gage	6-23-82	0300 Hr.
Runout ended @ Coolidge Gage	7-12-82	1744 Hr. #

Total Delivered @ Frontier -	1,296 A.Ft.
Total Delivered @ Coolidge Gage	15,305 A.Ft.
Total Combined Delivery_ _ _ _ _	16,601 A.Ft. *

II

Release begain @ John Martin Reservoir	8-4-82	1000 Hr.
Release Ended @ John Martin Reservoir	8-14-82	2011 Hr.

Kansas Account - - - - - - - - - - - -	8,659.03 A.Ft.
Transit Loss Account - - - - - - - - -	1,808.33 A.Ft.
Other- - - - - - - - - - - - - - - - - -	336.96 A.Ft.
TOTAL- - - - - - - -	10,804.32 A.Ft.

Arrived @ Frontier Ditch Headgate	8-5-82	1900 Hr.
Arrived @ Coolidge Gage	8-5-82	2200 Hr.
Runout Ended @ Coolidge Gage	8-20-82	2011 Hr. # (Compund Release. Only 6 Day Runout taken.)

Total Delivered @ Frontier - - - -	949 A.Ft.
Total Delivered @ Coolidge Gage - - -	7,761 A.Ft.
Total Combined Delivery- - - - - - -	8,710 A.Ft.

Runout ends seven days after end of release @ John Martin. (Agreement of 3-12-82)

* No credit taken for flow total over 500 cfs.

III

Release Began @ John Martin Reservoir	8-25-82	1200 Hr.
Release Ended @ John Martin Reservoir	9-1-82	1319 Hr.

Kansas Account - - - - - - - - - - - -	7,054.89 A.Ft.
Transit Loss Account - - - - - - - - -	1,293.28 A.Ft.
Other- - - - - - - - - - - - - - - - - -	270.03 A.Ft.
TOTAL- - - - - - - -	8,518.20 A.Ft.

Arrived @ Frontier Ditch Headgate	8-26-82	2200 Hr.
Arrived @ Coolidge Gage	8-27-82	0100 Hr.
Runout Ended @ Coolidge Gage	9-8-82	1319 Hr. #

Total Delivered @ Frontier - - - -	663 A.Ft.
Total Delivered @ Coolidge Gage - - -	6,455 A.Ft.

IV

Release began @ John Martin Reservoir	9-14-82	1000 Hr.
Release ended @ John Martin Reservoir	9-17-82	2114 Hr.

Kansas Account - - - - - - - - - - - -	2,774.40 A.Ft.
Transit Loss Account - - - - - - - - -	0 A.Ft.
Other- - - - - - - - - - - - - - - - -	0 A.Ft.
TOTAL- - - - - - - - -	2,774.40 A.Ft.

Arrived @ Frontier Headgate	9-15-82	1700 Hr.
Arrived @ Coolidge Gage	9-15-82	2000 Hr.
Runout Ended @ Coolidge Gage	9-24-82	2114 Hr. #

Total Delivered @ Frontier (to 0700 Hr. 9-23) - -	318 A.Ft.
Total Delivered @ Coolidge Gage (to 0700 Hr. 9-23) -	3,283 A.Ft.
Total Combined Delivery (to 0700 Hr. 9-23)- - - -	3,601 A.Ft. *

(NOTE: Deliveries for releases No. I, II & III calculated from USGS Flow Sheets. Delivery for release No. IV calculated from COMSAT data.)

Runout ends seven days after end of release @ John Martin. (Agreement of 3-12-82)

* No credit taken for flow total over 500 cfs for release No. III nor over 400 cfs for Release No. IV.

Operation of John Martin Reservoir
During Compact Water Year 1982

Winter Storage in John Martin Reservoir
November 1, 1981 - April 17, 1982

Winter storage in John Martin Reservoir began at 0001 Hour, November 1, 1981. At that time the Conservation Pool was empty. The Reservoir contained 13,712.89 A.F. This water was distributed as follows: 8,152.25 A.F. in Agreement Accounts and 5,560.64 A.F. in the Recreation Pool. Winter storage ended at 1428 Hour, April 17, 1982. During this period a total of 44,426.80 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. The following tables reflect the status of various accounts during Winter Storage.

TABLE I

COMPACT WATER

	Contents Beg. of Month A.Ft.	Inflow A.Ft.	Evaporation A.Ft.	Releases A.Ft.	Contents End of Month A.Ft.
November	0	4,750.25	62.77	0	4,687.48
December	4,687.48	4,734.00	113.81	0	9,307.67
January	9,307.67	5,389.00	153.44	0	14,543.23
February	14,543.23	4,321.00	296.05	0	18,568.18
March	18,568.18	5,555.00	558.18	0	23,565.00
April 1-17	23,565.00	2,064.55	312.34	25,317.21	2400 Hrs. 4/17 0
TOTALS		26,813.80	1,496.59	25,317.21	

TABLE II

AMITY CANAL WINTER WATER

	Contents Beg. 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	4,743.00	37.42	0	4,705.58
January	4,705.58	5,027.00	91.27	0	9,641.31
February	9,641.31	5,122.00	209.98	0	14,553.33
March	14,553.33	2,721.00	433.69	0	16,840.64
April 1-17	16,840.64	0	14.09	16,826.55	(2400 Hrs. 4/17) 0
TOTALS		17,613.00	786.45	16,826.55	

TABLE III

AGREEMENT WATER

	Contents Beg. of Month A.Ft.	Inflow A.Ft.	Evaporation A.Ft.	Releases A.Ft.	Contents End of Month A.Ft.
November	8,152.25	0	212.13	192.14	7,747.98
December	7,747.98	0	124.67	0	7,623.31
January	7,623.31	0	100.25	0	7,523.06
February	7,523.06	0	134.21	0	7,388.85
March	7,388.85	0	193.78	0	7,195.07
April 1-17	7,195.07	42,143.76	637.12	3,749.55	(2400 Hrs. 4/17) 44,952.16
TOTALS		42,143.76	1,402.16	3,941.69	

TABLE IV

PERMANENT RECREATION POOL

	Contents Beg. of Month A.Ft.	Inflow A.Ft.	Evaporation A.Ft.	Releases A.Ft.	Contents End of Month A.Ft.
November	5,560.64	0	148.10	0	5,412.54
December	5,412.54	0	87.10	0	5,325.44
January	5,325.44	0	70.04	0	5,255.40
February	5,255.40	0	93.76	0	5,161.64
March	5,161.64	0	135.35	0	5,026.29
April 1-17	5,026.29	0	101.45	0	(2400 Hrs. 4/17) 4,924.84

TABLE V

ALLOCATION OF RESERVOIR CONTENTS

IN ACRE FEET

@ 2400 Hr. April 17, 1982

Total Contents	Agreement Water	Compact Water	Amity Winter Water	Permanent Pool Water
49,877.00	44,952.16	0	0	4,924.84

Summer Storage in John Martin Reservoir

April 17, 1982 - October 31, 1982

Conservation Pool

Summer storage began at 1428 Hour, April 17, 1982. At that time the Conservation Pool was empty. During the summer season, storage in the Conservation Pool totalled 62,250.23 A.Ft. This was all released into accounts in accordance with the Operating Plan, adopted April 24, 1980. The Conservation Pool was empty at 2400 Hour, October 31, 1982.

TABLE VI

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 17	0	0	0	0	0
May 1	0	0	0	0	0
June 1	0	12,064.32	8.56	12,055.76	0
July 1	0	9,991.11	4.10	4,000.00	5,987.01
Aug. 1	5,987.01	29,781.21	187.61	35,580.61	0
Sept. 1	0	6,944.43	7.77	6,936.66	0
Oct. 1	0	3,469.16	1.01	3,468.15	0
TOTALS		62,250.23	209.05	62,041.18	

TABLE VII

STORAGE IN AND RELEASES FROM CONSERVATION POOL

Beginning of Storage Hour	Day	Ending of Storage Hour	Day	Beginning of Release Hour	Day	Ending of Release Hour	Day
1330	June 3	0628	June 6	1330	June 3	0628	June 6
0900	June 19	1124	June 22	0900	June 19	1124	June 19
1000	June 27	1040	June 28	1000	June 27	1040	June 28
2400	July 29	0953	Aug. 8	2400	July 29	0953	Aug. 8
0001	Aug. 12	1229	Aug. 13	0001	Aug. 12	1229	Aug. 13
0900	Aug. 22	0536	Aug. 31	0900	Aug. 22	0536	Aug. 31
0800	Sept. 14	1914	Sept. 17	0800	Sept. 14	1914	Sept. 17
0930	Oct. 1	0916	Oct. 3	0930	Oct. 1	0916	Oct. 3

TABLE VIII

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 18	4,924.84	0	72.12	0	4,852.72
May 1	4,852.72	0	241.14	0	4,611.58
June 1	4,611.58	103.28	234.03	0	4,480.83
July 1	4,480.83	0	370.69	0	4,110.14
Aug. 1	4,110.14	0	330.26	0	3,779.88
Sept. 1	3,779.88	22.99	265.76	0	3,537.11
Oct. 1	3,537.11	0	162.91	0	3,374.20
TOTALS		126.27	1,676.91	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 Operations Secretary of the Compact Administration.

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 IX

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	9,541.67	1,291.66	0	10,833.33
July	4,739.36	336.42	0	5,075.78
August	15,159.03	3,101.61	506.99	18,767.63
September	3,329.29	0	0	3,329.29
October	0	0	0	0
TOTALS	32,769.35	4,729.69	506.99	38,006.03

(Added to the minutes of the meeting of 12-14-82 was the statement that 32,769+ A.F. was released and 40,000+ A.F. from all sources arrived at State Line.)

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. Appropriate transit losses using U.S.G.S. transit loss data for Reach 6 were deducted from diversions.

TABLE X

RELEASES TO STATE OF COLORADO

Month	Acre-Feet
April	16,171.54
May	11,672.93
June	4,319.61
July	3,081.56
August	19,316.79
September	3,575.42
October	814.66
TOTAL	58,952.51

TABLE XI

ALLOCATION OF CONTENTS @ 2400 HOUR, OCT. 31, 1982

Conservation Pool	Agreement Accounts	Permanent Pool	Total
0	8,866.80	3,374.20	12,241.00

Other Water	Kansas	Colorado Ditches
0	1,326.83	7,539.97

PRECIPITATION IN INCHES

	Leadville	Salida	Pueblo	Trinidad	Las Animas	Lamar	Garden City Kansas
Nov. 1981	0.87	0.03	0.04	0.38	0.13	0.53	
Dec.	2.41	0.17	0.67	0.44	0.48	0.38	
Jan. 1982	1.65	0.09	0.54	0.20	Trace	0.04	
Feb.	0.38	0.07	0.31	0.68	0.91	0.60	
Mar.	1.66	Buena Vista 0.26	0.33	0.44	0.46	0.51	
April	0.82	↓ 0.34	0.13	0.28	0.30	0.45	
May	1.16	↓ 1.48	2.28	3.14	1.71	3.96	
June	Sugarloaf 0.88	↓ 0.70	1.75	2.77	4.81	3.11	
July	↓ 2.41	↓ 1.68	2.71	1.80	2.03	2.78	
Aug.	↓ 3.36	↓ 2.55	4.35	2.73	0.68	0.87	
Sept.	Leadville 1.77	↓ 2.12	2.24	2.97	1.47	1.47	
Oct	Not Avaialable	Not Available	0.37	Not Available	Not Available	Not Available	

JOHN MARTIN RESERVOIR

Computed Inflow A.F.

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.
1	112	237	397	493	384	194	5	1,128	1,199	3,999	1,241	1,305
2	200	394	374	337	248	250	0	858	1,091	1,780	1,174	1,066
3	152	372	401	182	181	98	62	2,730	1,133	801	1,048	1,029
4	176	394	401	152	316	325	141	2,194	1,109	308	1,109	886
5	131	320	290	120	384	0	59	1,226	987	738	1,090	953
6	96	388	289	213	113	155	39	600	1,010	343	7,026	865
7	144	363	318	214	45	162	77	725	1,204	609	1,060	762
8	84	388	235	277	723	49	38	771	1,156	693	779	726
9	177	364	317	281	419	35	0	733	1,324	776	974	705
10	159	314	184	318	487	201	167	531	1,142	952	1,104	628
11	139	315	187	350	913	70	94	855	1,318	1,411	1,123	727
12	161	340	215	320	432	97	223	814	1,204	2,587	1,315	794
13	142	358	215	288	46	157	219	951	1,232	806	2,356	835
14	142	331	272	352	81	201	73	836	985	652	2,840	703
15	122	279	330	611	959	125	200	877	992	1,020	1,244	583
16	122	305	272	416	188	38	445	947	907	1,394	1,150	679
17	327	332	301	676	187	64	386	1,032	1,093	1,565	837	642
18	348	252	300	562	328	26	318	1,737	1,043	1,237	898	661
19	164	331	444	463	117	152	393	1,408	1,027	1,210	975	652
20	184	305	449	230	82	25	286	1,048	1,082	994	1,073	668
21	164	334	345	330	187	90	319	1,860	978	1,375	1,223	990
22	123	366	375	430	223	96	296	998	1,020	3,796	1,211	988
23	143	366	256	296	118	126	314	1,338	832	5,910	1,239	980
24	143	151	345	364	83	94	276	1,230	672	3,856	1,249	906
25	168	70	376	230	153	6	330	1,404	578	1,917	1,255	978
26	87	231	465	363	188	203	360	1,219	554	724	886	896
27	220	313	465	297	119	135	418	1,639	583	617	760	825
28	154	312	345	368	153	21	830	1,325	544	614	713	768
29	199	232	573		337	258	797	700	1,158	478	954	769
30	131	258	388		121	0	1,007	1,376	2,702	267	1,230	731
31		285	358		85		958		6,369	739		614
TOTAL	4,814	9,600	10,482	9,533	8,400	3,453	9,130	35,090	38,228	44,168	41,136	25,314

PERSONNEL

Division No. 2

DIVISION OF WATER RESOURCES

NAME	POSITION	DISTRICT	MONTHS WORKED	MILEAGE	ALLOCATED
Robert W. Jesse	Division Engineer	Division 2	Full Time	15,367	12 Months
James F. Kasic	Assistant Division Engineer	Division 2	Full Time		12 Months
Kenneth J. Cooper	Assistant Division Engineer	Division 2	Full Time		12 Months
Robert Ermel	Water Commissioner	District 10	Full Time	8,445	12 Months
Bruce Smith	Water Commissioner	District 11	Full Time	10,405	12 Months
Larry Brown	Deputy Water Commissioner	District 11	152 Days	3,025	7 Months
John Jackson	Deputy Water Commissioner	District 11	110 Days	2,464	6 Months
George Wichmann	Water Commissioner	District 12	Full Time	10,600	12 Months
Louis D. Engelhart	Deputy Water Commissioner	District 12	138 Days	3,479	6 Months
Richard Sierka	Deputy Water Commissioner	District 12	85 Days	2,464	6 Months
Don Stuart	Water Commissioner	District 13	Full Time	8,103	12 Months
Richard Squire	Deputy Water Commissioner	District 13	82 Days	1,741	4 Months

NAME	POSITION	DISTRICT	MONTHS WORKED	MILEAGE	ALLOCATED
Larry Young	Water Commissioner	District 15	Full Time	8,023	12 Months
Robert Brgoch	Water Commissioner	District 16	Full Time	9,442	12 Months
Don Taylor	Water Commissioner	District 17	Full Time	9,673	12 Months
Leonard Trujillo	Water Commissioner	District 18	130 Days	2,940	6 Months
Henry Marques	Water Commissioner	District 19	Full Time	8,214	12 Months
Tony Pantano	Deputy Water Commissioner	District 19	122 Days	4,420	5 Months
Lane Hackett	Water Commissioner	Dist. 66 & 67	Full Time	9,440	12 Months
Augustine Garcia	Water Commissioner	District 79	174 Days	5,214	8 Months
George Ridenour	1042 Water Commissioner	Division 2	Full Time	10,045	12 Months
Lou Schultz	Hydrographer	Division 2	Full Time	13,608	12 Months
William Howland	Engineering Technician	Division 2	Full Time	15,140	12 Months
Tom Simpson	Engineering Technician	Division 2	Full Time	11,610	12 Months
Michael Fairbanks	Engineering Technician	Division 2	Full Time	9,078	12 Months
Esther Gonzales	Senior Secretary	Division 2	Full Time	0	12 Month
Helen Bever	Administrative Clerk Typist	Division 2	Full Time	0	12 Months

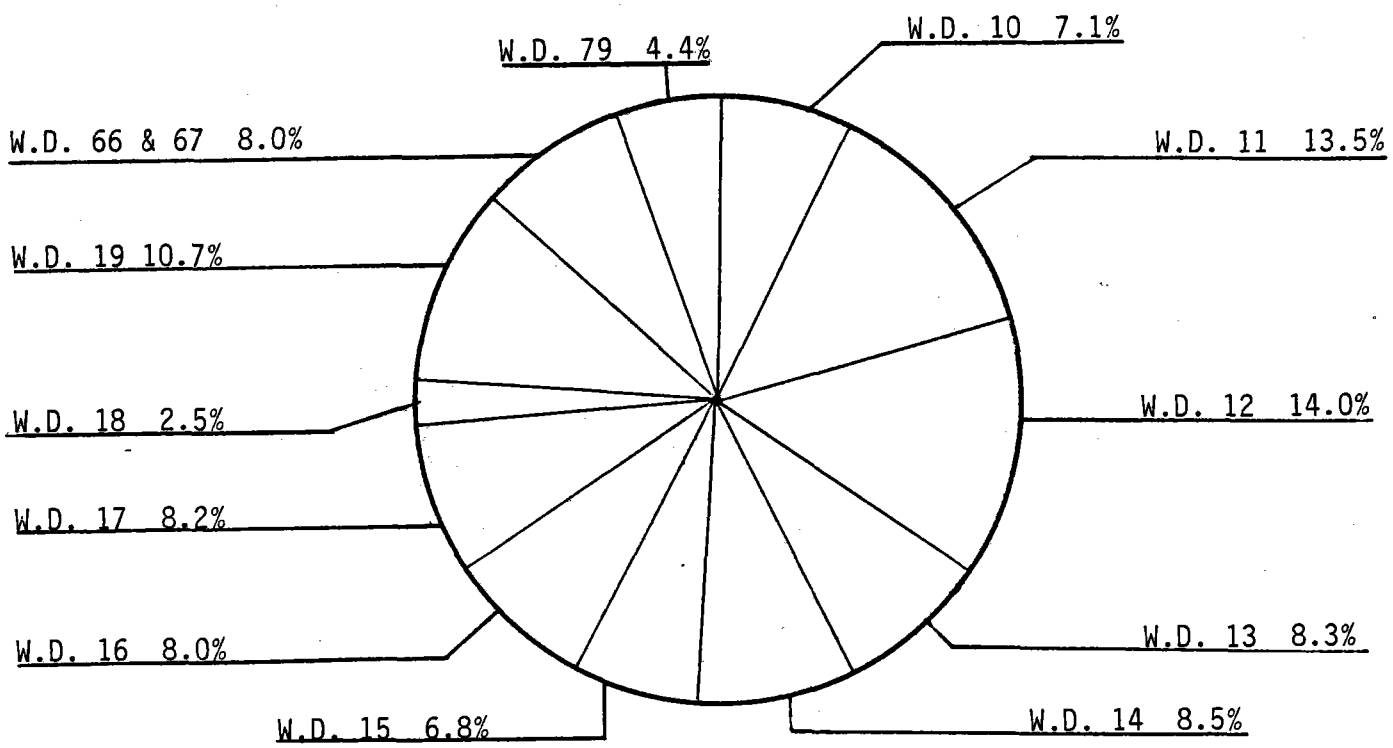
Paid Mileage 118,137

Mileage for State Vehicles 64,803

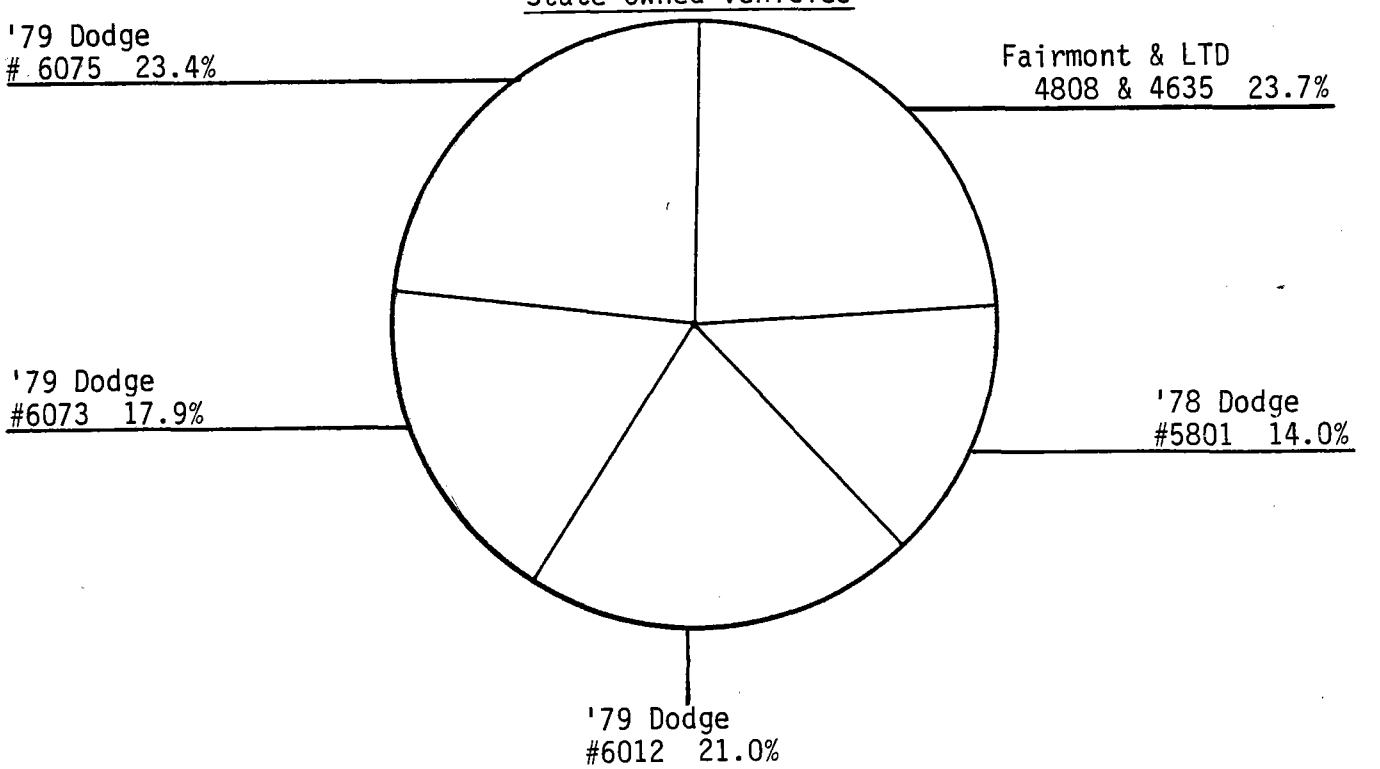
IRRIGATION DIVISION NO. 2

Water Division Mileage

Water Commissioners' Mileage Reimbursed



State-Owned Vehicles



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

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Raymond Nixon, 2519 Prairie, Colorado Springs, Colorado 80909

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

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

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Alvin Spady, Route 2, Las Animas, Colorado 81054

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

Lee Simpson, 26280 Williams Lane, Pueblo, Colorado 81006

1982 ANNUAL SUMMARY - DIVISION 2

(Acre Feet (11-1-81 thru 10-31-82)

				IRRIGATION	
Dists.	No. Registered Non-Exempt Wells	No. Reported Ditch[1] Structures	Directed Diversions To Irrigation	Diversions To Storage	Storage To Irrigation
10	493	65	38,017		
11	147	107	129,089		139
12	126	236	140,241	7,488	6,634
13	50	301	14,434		
14	1,132	16	251,750	35,036	32,918
15	171	88	10,869		100
16	127	77	22,935		
17	1,255	43	475,103	84,259	31,404
18	22	30	13,064		
19	51	93	71,062 ✓	31,033	57,281
66	674	46	(W.D. 66 & 67)		
67	1,744		212,828	130,883	53,020
79	46	95	26,519		
Total	6,012	1,197	1,405,911	288,698	181,496

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

	CURRENT YEAR	TRANSMOUNTAIN		MUNICIPAL	INDUSTRIAL
		Diversion to Diversion			
Dists.	Acres Irrigated*	Export	Import	Direct Diversions	Direct Diversions
10	11,612	24,233	162,964	22,349	1,078
11	18,852				
12	12,580			9,055	114,759
13	28,033				
14	30,992			25,978	7,646
15	4,600				10,285
16	4,700				
17	140,000				
18	7,700				117
19	30,000				493
66 & 67	76,836				
79	5,000				
Other				52,301**	
Total	370,906	24,233	162,964	109,683	134,378

*Revised - based on County Assessors Offices. **Includes City of Aurora Water 24233 A.F.

STATION	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Lake Fork Creek below Sugar Loaf Res.	473	176	191	610	522	317	274	940
Lake Creek above Twin Lakes Res.	3,030	1,570	1,090	994	688	783	1,510	15,370
Lake Creek below Twin Lakes Res.	7,800	6,130	10,090	11,650	14,800	15,730	7,200	20,390
Arkansas River @ Granite	14,760	11,780	14,450	16,340	18,560	22,310	13,180	33,250
Clear Creek above Clear Creek Res.	1,950	1,110	952	853	678	645	887	4,800
Clear Creek below Clear Creek Res.	1,371	196	123	123	111	840	8,351	6,313
Arkansas River @ Buena Vista	14,280	9,030	11,890	15,900	17,420	16,860	15,940	37,120
Cottonwood Creek @ Buena Vista	730	1,010	944	614	662	543	144	618
Chalk Creek @ Nathrop	1,460	956	1,120	871	829	802	159	1,900
Arkansas River @ Salida	22,110	16,530	18,390	20,250	22,130	21,390	17,460	37,090
Arkansas River near Wellsville	23,670	19,710	22,440	25,250	26,000	24,610	18,930	40,550
Grape Creek near Westcliffe	860	1,150	950	830	910	1,920	700	780
Arkansas River @ Canon City	19,230	16,280	22,200	23,240	22,980	27,740	15,710	32,170
Arkansas River @ Portland	20,930	18,080	21,610	24,990	26,330	25,980	14,540	36,300
Beaver Creek near Portland	1,290	754	100	97	97	82		
Arkansas River below Pueblo	16,120	13,180	4,370	5,400	5,510	13,310	25,050	43,500
Arkansas River near Nepesta	21,100	26,500	18,900	22,100	12,200	21,000	20,700	37,200
Arkansas River near Fowler	12,100	22,300	17,900	20,500	14,400	8,300	8,370	25,400
Huerfano River near Redwing	860	780	820	690	550	590	810	1,770
Cucharas River @ Boyd Ranch, near La Veta	576	547	430	400	340	470	840	2,060
Purgatoire River @ Trinidad	1,950	130	461	230	659	639	5,560	10,150
Luning Arroyo near Model	0	0	0	0	0	0	0	9.7
Van Bremer Arroyo near Model	14	15	17	18	17	17	14	13
Purgatoire River near Thatcher	1,690	2,310	1,930	1,840	1,620	1,500	580	3,920
Arkansas River at La Junta								
Purgatoire River at Las Animas								
Purgatoire River at Nine Mile Dam								
Muddy Creek @ Muddy Creek Res.								
Rule Creek off Highway 101								

STATION	Jun.	Jul.	Aug.	Sep.	TOTAL	CFS Peak Discharge
Lake Fork Creek below Sugar Loaf Res.	936	1,125	850	188	6,575	56
Lake Creek above Twin Lakes Res.	60,620	39,640	12,960	6,380	144,600	N/A
Lake Creek below Twin Lakes Res.	67,300	42,480	29,130	11,710	244,400	1,640
Arkansas River @ Granite	85,090	59,830	43,880	22,450	355,900	1,790
Clear Creek above Clear Creek Res.	17,920	13,530	6,400	4,530	54,250	446
Clear Creek below Clear Creek Res.	9,251	13,120	8,317	3,431	51,550	
Arkansas River @ Buena Vista	99,270	74,780	51,210	23,730	387,400	2,270
Cottonwood Creek @ Buena Vista	7,020	4,750	2,730	2,710	22,480	
Chalk Creek @ Nathrop	13,510	8,180	6,460	4,590	40,840	362
Arkansas River @ Salida	111,100	91,640	68,840	39,020	486,000	2,270
Arkansas River near Wellsville	122,700	93,320	73,340	42,810	533,300	3,130
Grape Creek near Westcliffe	1,040	720	3,450	5,650	19,000	206
Arkansas River @ Canon City	117,700	93,190	74,130	47,230	511,800	2,900
Arkansas River @ Portland	130,000	101,600	86,980	60,030	567,400	2,300
Beaver Creek near Portland					N/A	N/A
Arkansas River below Pueblo	120,500	115,900	95,220	62,840	521,000	5,240
Arkansas River near Nepesta	119,000	119,500	122,800	73,500	614,600	9,640
Arkansas River near Fowler	42,400	116,000	121,300	60,100	528,700	13,140
Huerfano River near Redwing	3,390	2,140	2,670	2,830	17,900	100
Cucharas River @ Boyd Ranch, near La Veta	3,800	2,440	2,240	2,000	16,100	
Purgatoire River @ Trinidad	9,600	10,750	13,040	12,520	65,690	1,862
Luning Arroyo near Model	1.2	143	70	250	470	91
Van Bremer Arroyo near Model	354	555	31	13	1,080	1,346
Purgatoire River near Thatcher	9,220	7,750	9,100	11,740	53,190	
Arkansas River at La Junta						
Purgatoire River at Las Animas						
Purgatoire River at Nine Mile Dam						
Muddy Creek @ Muddy Creek Res.						
Rule Creek off Highway 101						

RICHARD D. LAMM
Governor

J.A.DANIELSO
State Engine

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

December 1, 1982

Mr. Guy E. Gibson, P. E.
Chief Engineer-Director
Division of Water Resources
109 S. W. Ninth Street
Topeka, KS 66612

Dear Mr. Gibson:

In response to your letter of November 19, 1982 regarding the U.S.G.S. Proposal for next year, yours was the first indication I had of any such Proposal. And, as you requested, I will offer you the following comments.

In my Annual Report, I report we made 32 measurements and over 300 observations at the Compact gauges. We do, in our administration, use the gauges but must by necessity, compute a daily inflow. This in some cases does not correspond to the record as computed and reported by the U.S.G.S. at the end of the year, but does represent the actual amount delivered. The U.S.G.S. end of year record is a way to compare but does not in some cases show what was actually delivered. We must constantly remain aware of the relative accuracy of stream flow gauging stations. These Compact gauges are neither more nor less accurate than any other gauge, and care must be exercised to not draw conclusions more precise than the instrument from which the data was derived. In my Annual Operations Report, I have a table of these computed inflows. As Operations Secretary, we get very little value from extreme peak inflow measurements, but instead are vitally interested in exact shifts at times when releases are being made to both Colorado ditches and deliveries to Kansas. Since we have the COMSAT Program, we do not use the radio network and, as I have been able to find from my staff, could do without this feature even without COMSAT due mainly to a redundancy of features and the relative unreliability of the system as a whole. I would like to see the maintenance of the Granada Base gauge for at least one more year. It is equipped with COMSAT and we can get discharges on demand. The telephone lines could be put on vacation.

Due to the new operations of John Martin, the State Line gauge has become criticial to the delivery to Kansas. We need and in fact must have the shifts both immediately before and during delivery of John Martin water to the State Line. Also, this information has to be known to the Operations Secretary as soon as a shift is determined, and the shift must not be adjusted after the water delivery computation has been made, since this could change an apparent correct delivery to an over or under-delivery which would have been beyond the control of the operator of the dam. We have had some difficulty in getting these shifts added to COMSAT or being reported immediately to the Operations Secretary's representative as soon as collected. This is most critical during a delivery of Compact water to Kansas.

I am sorry I did not make myself clear over the phone about the meeting with Mr. Corrigan. The meeting I referred to was held last year, when Mr. Cooley appointed me chairman of an ad-hoc committee to examine the U.S.G.S. Proposal. We did in fact meet, and made a series of recommendations which as I understand, were not incorporated. Among these recommendations, was one that would have the Committee review the Proposal this year. This recommendation met the same fate as the Committee was not offered the opportunity to review the new Proposal.

I hope these comments will be of value and I look forward to the Annual Meeting on the 14th.

Sincerely,

Robert W. Jesse

Robert W. Jesse
Division Engineer

RWJ/eg

KANSAS STATE BOARD OF AGRICULTURE

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HARLAND E. PRIDDLE
Secretary

November 19, 1982

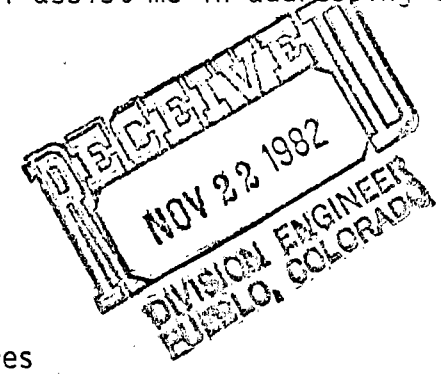
Mr. Bob Jesse, Division Engineer
Division of Water Resources
1906 West Northern
Pueblo, Colorado 81004

Dear Mr. Jesse:

In accordance with our telephone conversation on November 8, 1982, I am enclosing copies of a letter from Frank G. Cooley, dated September 1, 1982; letter from Jerry L. Hughes, dated August 24, 1982; and Water Resources Program, Arkansas River Valley, Colorado, Fiscal Year 1983.

As indicated in our telephone conversation, is there need for additional information as proposed or is there sufficient information available from the U. S. Corps of Engineers gaging stations, weather bureau gaging stations, etc? I understand that you as representative from the State of Colorado for the administration of water rights make far more measurements at the southwest station referred to than the U. S. Geological Survey does. Further it is my understanding that you as Operations Secretary for the Compact actually use different records for John Martin Reservoir than that published by the U. S. Geological Survey. In light of the economic conditions with reference to the State of Kansas budgetory process, I feel we need to re-examine our program and eliminate any duplication of effort or measurements that are not needed to operate the Compact.

You informed me you met with Howard Corrigan and others regarding this matter. To date I have not had a report from Mr. Corrigan regarding this matter. Since you are Operations Secretary for the Compact, I would appreciate your comments or information you can furnish me regarding the above that will assist me in addressing this matter at the annual meeting of the Compact.



Very truly yours,

Guy E. Gibson

Guy E. Gibson, P.E.
Chief Engineer-Director

GEG:nw
Enclosures

cc: Frank G. Cooley
Jerry L. Hughes
Carl E. Bentrup
Ronald Olomon
Howard C. Corrigan
Pat Regan