FORTIETH ANNUAL REPORT ARKANSAS RIVER COMPACT ADMINISTRATION (1988)

For The Report-Year
November 1, 1987 to October 31, 1988

307 South Fifth Street, Lamar, Colorado 81052

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THE ADMINISTRATION

FRANK G. COOLEY
Chairman and Representative of the United States

J. WILLIAM MCDONALD,
CARL G. GENOVA, and JAMES G. ROGERS
for Colorado

DAVID L. POPE,
CARL E. BENTRUP, and RONALD OLOMAN
for Kansas

307 South Fifth Street
Lamar, Colorado 81052

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Annnual Report Of
ARKANSAS RIVER COMPACT ADMINISTRATION
1988

Report-Year November 1, 1987 to October 31, 1988

TO: THE PRESIDENT OF THE UNITED STATES AND THE GOVERNORS OF THE STATES OF COLORADO AND KANSAS

Sirs:
Pursuant to Article VIII of the Arkansas River Compact, the Arkansas River Compact Administration submits its report for the Report-Year November 1, 1987 through October 31, 1988, as follows:

1. MEMBERS OF THE ADMINISTRATION

- Representative of the United States:
  Frank G. Cooley

- Colorado Representatives:
  J. William McDonald, Denver
  Carl G. Genova, Pueblo
  James G. Rogers, Lamar

- Kansas Representatives:
  David L. Pope, Topeka
  Carl E. Bentrup, Deerfield
  Ronald Olomon, Garden City

2. OFFICERS OF THE ADMINISTRATION (AS ELECTED DEC. 8, 1987)

- Chairman: Frank G. Cooley

- Vice Chairman: Carl E. Bentrup

- Recording Secretary: Bernice Carr

- Treasurer: James G. Rogers

- Operations Secretary: Robert Jesse, Nov. 1, 1987 to July 1, 1988
  William Howland, July 1, 1988 to Oct. 31, 1988 (acting)

3. STANDING COMMITTEES:

- Administrative and Legal Committee:
  Carl E. Bentrup (Chairman)
  J. William McDonald.

- Engineering Committee:
  David L. Pope (Chairman)
  Carl G. Genova

- Operations Committee:
  Ronald Olomon (Chairman)
  James G. Rogers

- The Representative of the United States is an ex-officio member of all standing committees.

4. MEETINGS

December 2, 1987	Engineering Committee Meeting
December 7, 1987	Operations Committee Meeting
December 8, 1987	Annual Meeting Lamar, Colorado

The minutes of the December 8, 1987, annual meeting are not included in this annual report. Transcripts of the meeting minutes were provided to the Compact Administration and to each state previously. Copies of the minutes are also available upon request from the Administration office in Lamar.

The Engineering Committee report of its December 2, 1987, meeting was published in the 1987 Annual Report. The minutes of the December 8, 1987, annual meeting contain a record of both the Engineering and Operations Committees' discussions.

5. FISCAL

The Administration's Fiscal Year (FY) runs from July 1 to June 30. The fiscal affairs of the Administration for compact year 1988 involve portions of the Administration's FY 1987-88 and FY 1988-89. The Treasurer reported on the financial status of the Administration for the relevant portions of those fiscal years at the annual meetings held on December 8,1987 and December 13,1988. Appendices A-1, A-2, and A-3 contain the documents submitted by the Treasurer during those reports.

At the December 8, 1987 annual meeting a budget for FY 1989-90 was adopted with anticipated expenses of $37,400. In addition, the previously adopted FY 1987-88 budget was revised to reflect anticipated expenditures through June 30, 1988 of $36,490; and the previously adopted FY 1988-89 budget was revised to reflect anticipated expenses of $38,395. Also at that meeting the Auditor's Report for FY 1986-87 was accepted as submitted. The Treasurer reported that the Administration had a cash balance of $66,853.77 as of December 1, 1987.

As of June 30, 1988 the Administration had a cash balance of $51,294. On December 1, 1988 the Administration had a cash balance of $60,045.85. These figures were provided in reports received at the December 13, 1988 annual meeting.

6. FACTS ABOUT THE JOHN MARTIN PROJECT:

The John Martin Reservoir Project was built by the United States Army Corps of Engineers. The project was authorized by Congress in the Flood Control Act of June 22, 1936, when the federal responsibility for flood control throughout the country was assigned to the Corps of Engineers. It is located on the Arkansas River, 58 miles upstream from the Colorado-Kansas stateline and 18 miles upstream from the city of Lamar, Colorado. Construction of the project began in the fall of 1939, but work was suspended by World War II from the spring of 1943 to the spring of 1946. The project was completed in October 1948 at a cost of about $15 million. The War Department Civil Appropriation Act of June 24,1940 changed the name of the project from Caddoa Reservoir Project to John Martin Reservoir Project, in honor of the late Congressman John A. Martin of Colorado. It is operated by the United States Army Engineer District, Albuquerque, New Mexico. Mr. Russell Smith has been the resident superintendent of the project since October 1976.

The John Martin Reservoir Project is a part of the comprehensive plan for the control of floods and the development of water resources in the Arkansas River basin. A survey of the reservoir made in 1986 and officially effective as of February 1, 1988 shows 259,562 acre-feet of storage capacity above elevation 3851.87 for flood control and protection of the fertile Arkansas River Valley below the dam. The reservoir also provides 348,683 acre-feet of storage space for conservation and recreation below elevation 3851.87.

John Martin Reservoir supplies water to the irrigated lands below the dam as far downstream as Garden City, Kansas. The top of the conservation pool, excluding recreation storage, is 3,851 feet above mean sea level, which provides 338,639 acre-feet of water for irrigation. Upon request of the Arkansas River Compact Administration, irrigation water for downstream water users is released through the outlet works in the base of the dam.

The release of stored flood waters in excess of the conservation and permanent (recreation) pool, above elevation 3,851.87 feet is planned so that, when combined with flows originating downstream from the dam, the capacity of the channel will not be exceeded. Downstream flood damages prevented by John Martin Dam already exceed the cost of the project and the total project benefits to date have surpassed the $115 million mark.

Recreation and favorable fish and wildlife habitats are also derived from this project. With reservoir lands open to all, there are many attractive public use areas for outdoor recreation, water sports, fishing and boating, or just relaxed living. A half mile segment of the historic Santa Fe Trail north of the reservoir has been enclosed by a fence. An appropriate sign marks this historic site. During construction some embankment material was obtained from a 75 acre tract of land immediately downstream of the dam. This excavated area, averaging 12 feet deep, filled with water and formed Lake Hasty, center of year-round recreation.

John Martin Dam consists of a concrete gravity structure 1,644 feet long and 120 feet high, and an earthfill structure 2,600 feet long. The concrete gravity structure contains a gated spillway provided with sixteen 30 foot by 64 foot tainter gates and their operating machinery. There are earthen wing dams on either side of the main dam. The north wing dam is 3,880 feet long, connecting to the earthfill structure of the main dam at the north abutment. The south wing dam is 5,807 feet long and connects to the south end of the concrete structure of the main dam. A bituminous-surfaced roadway, 21 feet wide, extends along the crest of the north wing dam, main dam, and south wing dam. The overall length of the structure is 2.6 miles. Detailed project data are shown below.

DAM

Total length, feet	13,945
Maximum height above streambed, feet	118
Width of roadway on dam, feet.	21

SPILLWAY

Total length, including piers, feet	1,174
Crest gates, 30' x 64'	16
Discharge capacity, cubic feet per second	639,200

OUTLET WORKS

Sluicing conduits, 6' x 7-1/2'	4
Regulating conduits, 4' x 4'	2

RESERVOIR

Capacity, acre-feet at elevation 3,870.00	608,245
Flood control storage, acre-feet storage	259,562
Conservation (irrigation) and recreation storage, acre-feet at elevation 3,851.87	348,683
Water surface at spillway crest, acres	8,975
Water surface at top of conservation pool, acres	11,645
Water surface at top of flood control pool, acres	17,151
Drainage area, square miles	18,915

7. COOPERATIVE STUDIES AND ACTIVITIES:

Article VIII G(l) of Arkansas River Compact requires the Administration to cooperate with the Chief Official of each of the states of Colorado and Kansas charged with the administration of water rights in their respective States, and with the Federal agencies in systematically determining and correlating the facts pertaining to the flow and diversion of the water of the Arkansas River and to the operation and siltation of John Martin Reservoir and other related structures. Article VIII G (2) requests the Director of the United States Geological Survey, the Commissioner of the United States Bureau of Reclamation, and the Chief of Engineers, United States Army, to cooperate and collaborate with the Administration and with appropriate State officials in such determinations and correlations of stream flow and related data. Under the By-Laws of the Administration, these cooperative studies and activities are assigned to the Engineering Committee of the Administration.

During the year covered by this report the Administration has received excellent cooperation from all agencies referred to in the foregoing provisions of the Compact. The United States Geological Survey has continued the operation of the compact gaging stations and the analysis and compilation of the hydrologic data presented in this report and used in the administration of the Compact.

The Corps of Engineers continued to operate the conservation pool of John Martin Reservoir in accordance with the terms of the Compact and the orders of the Administration. The area-capacity table for John Martin Reservoir issued by the Army Corps of Engineers and put into effect August 12, 1981 was replaced by a new area-capacity table effective on February 1, 1988.

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8. WATER SUPPLY, RESERVOIR OPERATIONS AND HYDROLOGIC DATA

Reservoir operations at John Martin follow the operating plan adopted by the Compact Administraion on April 24, 1980. This operating plan was revised on May 10, 1984 and December 11, 1984 but has not been revised since that time. Accordingly, a system of water storage accounts exists in John Martin Reservoir into which reservoir inflows are distributed for release at a later date. While these accounts have often been referred to as "Article II"and "Article III" accounts, the correct designation based on the organization of the operating plan resolution is "Section II" and "Section III" accounts. This report uses the term "Section" whenever referring to the accounts established pursuant to the operating plan.

General reservoir operations during compact year 1988 are described in Table 1, which follows:

TABLE 1
JOHN MARTIN RESERVOIR
OPERATION, COMPACT YEAR 1988 (AF)

Month	Contents Begin Mon	Inflow to Storage	Evapo-ration	Storage Release	Contents End Mon
Nov.	246,367.85	13,749.70	1,782.00	4,563.55	253,772.00
Dec.	253,772.00	17,405.00	1,193.00	0.00	269,984.00
Jan.	269,984.00	17,182.00	9.00	0.00	287,157.00
Feb.[1]	287,157.00	19,924.00	449.00	6,341.00	300,291.00
Mar.	300,291.00	14,243.58	4,366.00	6,234.58	303,934.00
Winter Subtotal		82,504.28	7,799.00	17,139.13	
Apr.[2]	303,934.00	15,993.48	4,916.00	31,630.48	283,381.00
May [3]	283,381.00	6,593.30	6,395.00	28,424.91	255,154.39
June [3]	255,154.39	0.00	6,849.00	37,373.15	210,932.24
July [3]	210,932.24	0.00	6,141.00	54,873.28	149,917.96
Aug.[3]	149,917.96	0.00	4,276.00	49,636.37	96,005.59
Sept.[3]	96,005.59	0.00	2,402.00	12,038.05	81,565.54
Oct. [3]	81,565.54	0.00	1,349.00	1,232.97	78,983.57
Summer Subtotal		22,586.78	32,328.00	215,209.21	
Year Total		105,091.06	40,127.00	232,348.34	

NOTES:

[1] The U.S. Army Corps of Engineers issued a new area-capacity table effective February 1, 1988. The release in February was not a physical release, only an adjustment to contents, necessary due to the reduction in storage space caused by sedimentation.

[2] Peak elevation for the year was reached on April 10,1988: Elev. 3848.50, Contents 310,748 AF.

[3] Conservation storage exhausted May 5, 1988. District 67 water rights thereafter were administered in priority and all inflow to John Martin passed directly through the reservoir pursuant to Section II.C of the "Resolution Concerning an Operating Plan for John Martin Reservoir."

The 1988 Arkansas River Compact Year and the winter season for John Martin Reservoir began at 0001 hour November 1, 1987 with 246,367.85 acre-feet in the reservoir, distributed as shown in Table 2, which follows:

TABLE 2
JOHN MARTIN RESERVOIR
CONTENTS DISTRIBUTION, NOVEMBER 1, 1987

Storage Component	Contents (AF)
1987 Summer Compact Water [1]	13,624.41
Section II Agreement Accounts [2]	223,200.50
Section III Agreement Accounts [3]	165.53
Flood Pool	0.00
Permanent Pool	9,377.41
Total Reservoir Contents	246,367.85

NOTES:

[1] 1987 summer compact water remained in conservation storage on November 1, 1987 because it was not possible to transfer all of the water stored during 1987 into agreement accounts at the transfer rate specified in the operating plan. The transfer of this compact stored water was suspended during the winter compact storage period. On March 31, 1988 the transfer to agreement accounts resumed.

[2] Includes transit loss account

[3] Amity=165.53 AF

On February 1, 1988 the U.S. Army Corps of Engineers issued a new area-capacity table based on 1986 surveys. This resulted in a capacity reduction of 6,341 acre-feet. Accounts were therefore proportionately reduced by 2,934 acre-feet in Colorado, 2,246 acre-feet in Kansas, 205 acre-feet in the Permanent Pool, and 956 acre-feet in the Conservation Pool.

Winter storage officially ended at 2400 hours on March 31,1988 with a total inflow to the reservoir of 82,504.28 acre-feet. Inflow was distributed to the accounts pursuant to the operating plan as shown in Table 3, which follows:

TABLE 3
JOHN MARTIN RESERVOIR
WINTER INFLOW DISTRIBUTION

Storage Component	Subtotal	Inflow (AF)
Winter Compact Water		52,735.99
Other Winter Water [1]		
Amity Canal, Section III	15,767.41	
Ft. Lyon Canal, Section III	0.00	
Las Animas Cons., Section III	2,786.97	
Transit Loss Account	9,990.82	
Other Winter Water Evap.	265.12	
Winter Water Contents Adjust	405.52	
Subtotal Other Winter Water	29,215.84	29,215.84
Amity Alternate Storage Decree		552.45
Total Winter Inflow		82,504.28

NOTES:

[1] Transferred to Section III accounts as shown at conclusion of winter water program March 16, 1988. Evaporation and adjustments for new area-capacity table were subtracted prior to transfer, transit loss account credited at time of transfer.

Releases of agreement account water occurred during the periods November 1-17 and March 15-31. Other than during these two periods, no water was physically released from the reservoir. Between March 16 and 18, the Amity stored under its alternate storage decree 552.45 acre-feet.Following the transfer of other winter water stored at John Martin Reservoir into the appropriate agreement accounts, the allocation of the reservoir contents on March 31, 1988 was as shown in Table 4, which follows:

TABLE 4
JOHN MARTIN RESERVOIR
CONTENTS DISTRIBUTION, MARCH 31, 1988

Storage Component	Contents (AF)
1987 Summer Compact Water	12,960.26
1988 Winter Compact Water	51,263.86
Section II Agreement Accounts [1]	211,666.13
Section III Agreement Accounts [2]	19,123.42
Flood Pool	0.00
Permanent Pool	8,920.33
Total Contents	303,934.00

NOTES:

[1] Includes Transit Loss Account

[2] Amity = 16,389.56 AF, Ft. Lyon = 0.00, Las Animas Cons. = 2,733.86 AF

The total contents according to the Corps of Engineers was 303,934 acre-feet which agrees exactly with the Operations Secretary Report values for this date.

With moderate runoff the flood control pool was not utilized and there was no need for flood control operations during compact year 1988, as reflected in Table 5:

TABLE 5
JOHN MARTIN RESERVOIR
FLOOD POOL OPERATIONS (AF)

Month	Contents Begin Mon	Inflow to Storage	Evapo-ration	Storage Release	Contents End Mon
Nov.	0.00	0.00	0.00	0.00	0.00
Dec.	0.00	0.00	0.00	0.00	0.00
Jan.	0.00	0.00	000	0.00	0.00
Feb.	0.00	0.00	0.00	0.00	0.00
Mar.	0.00	0.00	0.00	0.00	0.00
Apr.	0.00	0.00	0.00	0.00	0.00
May	0.00	0.00	0.00	0.00	0.00
June	0.00	0.00	000	0.00	0.00
July	0.00	0.00	0.00	0.00	0.00
Aug.	0.00	0.00	0.00	0.00	0.00
Sept.	0.00	0.00	0.00	0.00	0.00
Oct.	0.00	0.00	0.00	0.00	0.00
Total		0.00	0.00	0.00	

The summer storage season began at 0001 April 1, 1988. Transfer of winter compact conservation storage into the agreement accounts began immediately. Three Colorado ditches began requesting water on April 1. All winter compact water was released into agreement accounts by April 21,1988. The release of 1987 summer compact carryover water and 1988 summer compact water inflows into agreement accounts began on April 21 and those waters were distributed and compact storage fully exhausted by May 5, 1988. Thereafter, pursuant to Section II. C of the "Resolution Concerning an Operating Plan for John Martin Reservoir," all inflows passed directly through John Martin until May 21,1988. On May 21 a short period of summer compact storage began and lasted until May 23, 1988. No other conservation storage inflows occurred during the remainder of compact year 1988. Summer operations of the conservation pool are shown in Table 6, which follows:

TABLE 6
JOHN MARTIN RESERVOIR
CONSERVATION POOL SUMMER OPERATION (AF)

Month	Contents Begin Mon	Inflow to Storage	Evapo-ration	Storage Release	Contents End Mon
Apr.	64,224.12	15,993.48	611.97	71,034.21	8,751.42
May	8,571.42	6,593.30	15.73	15,148.99	0.00
June	0.00	0.00	0.00	0.00	0.00
July	0.00	0.00	0.00	0.00	0.00
Aug.	0.00	0.00	0.00	0.00	0.00
Sept.	0.00	0.00	0.00	0.00	0.00
Oct.	0.00	0.00	0.00	0.00	0.00
Total		22,586.78	627.70	86,183.20	

Pursuant to the operating plan, water that was released from the conservation pool was placed in the agreement accounts and subsequently accounted for as shown in Table 7, which follows:

TABLE 7
JOHN MARTIN RESERVOIR
AGREEMENT ACCOUNTS SUMMER OPERATION (AF)[1]

Month	Contents Begin Mon	Inflow to Storage	Evapo-ration	Storage Release	Contents End Mon
Apr.	230,789.55	71,034.21	4,159.87	31,630.48	266,033.41
May	266,033.41	15,148.99	6,171.80	28,424.91	246,585.69
June	246,585.69	0.00	6,609.85	37,373.15	202,602.69
July	202,602.69	0.00	5,861.10	54,873.28	141,868.31
Aug.	141,868.31	0.00	3,997.22	49,636.37	88,234.72
Sept.	88,234.72	0.00	2,190.02	12,038.05	74,006.65
Oct.	74,006.65	0.00	1,223.08	1,232.97	71,550.60
Total		86,183.20	30,212.94	215,209.21	

NOTES:

[1] Agreement Accounts include the sum of accounts established in Sections II.D and III. A, B, and C of the Operating Plan Resolution, i.e., Colorado District 67 Ditches, Kansas, Transit Loss, and the Amity, Ft. Lyon, and Las Animas Consolidated Accounts.

Summer operations of the Section III accounts during compact year 1988 are summarized in Table 8. Pursuant to the "Resolution Concerning an Operating Plan for John Martin Reservoir," the Amity Canal is the only entity currently entitled to store Section III water during the summer storage season. The Ft. Lyon Canal and Las Animas Consolidated

Canal may however request releases of any accumulated Section III water during the summer season. The Ft. Lyon did not utilize its Section III account in 1988. The Las Animas Consolidated Section III account ran out of water on July 26, 1988. All Section III operations after July 26 were within the Amity account.

TABLE 8
JOHN MARTIN RESERVOIR
SECTION III ACCOUNTS, SUMMER OPERATION (AF)

Month	Contents Begin Mon	Inflow to Storage	Evapo-ration	Storage Release	Contents End Mon
Apr.	19,123.42	0.00	309.05	0.00	18,814.37
May	18,814.37	0.00	444.77	0.00	18,369.60
June	18,369.60	0.00	512.63	0.00	17,856.97
July	17,856.97	0.00	557.15	2,509.92	14,789.90
Aug.	14,789.90	0.00	512.19	0.00	14,277.71
Sept.	14,277.71	0.00	347.04	3,748.28	10,182.39
Oct.	10,182.39	0.00	160.80	1,178.05	8,843.54
Total		0.00	2,843.63	7,436.25	

Operations of the Kansas Account including the demands made by Kansas are summarized in Tables 9 and 10. These operations are detailed more fully in Appendices B-12, B-13, and B-16. The differences between quantities in Table 10 and Table X in the Annual Report of the Operations Secretary reflect the fact that Table 10 reports final, corrected USGS gaged flows, while Table X is prepared by the Operation Secretary immediately following the compact year when only provisional flow data is available.

Kansas called for releases from its account of 93,385.37 acre-feet in compact year 1988. The account was also reduced by its pro rata share, 2245.73 acre-feet, of the volume adjustment resulting from the introduction of the new area-capacity tables on February 1,1988. A Transit Loss Account release of 2,299.64 acre-feet was also made to support deliveries of Kansas Account water to the stateline. By annual agreement between the states the stateline flow attributed to Kansas demands for releases from John Martin Reservoir is calculated using a rundown period to account for the transit time between John Martin Reservoir and the stateline. To determine whether the requested delivery has been met, the states further agree that no part of the daily stateline flow exceeding 105% of Kansas' demand will be credited toward those deliveries. The total stateline flow on days of Kansas demands, calculated pursuant to the annual agreement was 117,360 acre-feet using provisional data, subsequently adjusted to 118,373 acre-feet when USGS discharge records were finalized. Of this flow, 110,480 acre-feet was credited as a delivery against the releases from the Kansas Account.

TABLE 9
JOHN MARTIN RESERVOIR
KANSAS ACCOUNT OPERATION (AF)

Month	Contents Begin Mon	Inflow to Storage	Evapo-ration	Storage Release	Contents End Mon
Nov.	98,571.81	4,334.46	737.85	0.00	102,168.42
Dec.	102,168.42	0.00	465.31	0.00	101,703.11
Jan.	101,703.11	0.00	3.39	0.00	101,699.72
Feb.[1]	101,699.72	0.00	149.80	2,245.73	99,304.19
Mar.	99,304.19	0.00	1,412.56	1,673.41	96,218.22
Apr.	96,218.22	28,413.64	1,723.07	12,250.14	110,658.65
May	110,658.65	6,059.60	2,698.64	2,677.74	111,341.87
June	111,341.87	0.00	3,061.66	12,409.32	95,870.89
July	95,870.89	0.00	2,647.86	33,461.07	59,761.96
Aug.	59,761.96	0.00	1,424.76	30,913.69	27,423.51
Sept.	27,423.51	0.00	748.01	0.00	26,675.50
Oct.	26,675.50	0.00	444.33	0.00	26,231.17
Total		38,807.70	15,517.24	95,631.10	

NOTES:

[1] Release in February reflects pro rata share of the reduction in storage capacity due to sedimentation shown in the new area-capacity table placed in use by the U.S. Army Corps of Engineers on February 1, 1988. Actual physical releases made during the period March through August totalled 93,385.37 AF. For purposes of determining annual deliveries to Kansas the 2,245.73 AF adjustment was deducted from Kansas' account in the same manner as monthly evaporation and not incorporated into Table 10.

TABLE 10
JOHN MARTIN RESERVOIR
KANSAS DEMANDS & RELEASES (AF)

Month	Demand/ Releases	Transit Loss Acct. Releases	Stateline Flow[1]	Credited Delivery [2,3]
Nov.	0.00	0.00	0.00	0.00
Dec.	0.00	0.00	0.00	0.00
Jan.	0.00	0.00	0.00	0.00
Feb.	0.00	0.00	0.00	0.00
Mar.	1,673.41	421.49	418.00	418.00
Apr.	12,250.14	192.16	20,912.00	18,788.00
May	2,677.74	595.05	8,171.00	7,656.00
June	12,409.32	892.59	10,735.00	10,348.00
July	33,461.07	0.00	38,646.00	34,475.00
Aug.	30,913.69	198.35	38,507.00	37,811.00
Sept.	0.00	0.00	984.00	984.00
Oct.	0.00	0.00	0.00	0.00
Total	93,385.37	2,299.64	118,373.00	110,480.00

NOTES:

[1] Stateline flow equals gaged flows at Frontier Ditch and Arkansas River at Coolidge, Kansas on days of Kansas demands, adjusted for transit times and an appropriate "rundown" period. Generally, deliveries begin 2 days after the release from John Martin Reservoir commences and continue for up to 7 days following the end of the release.

[2] The annual operating agreement for 1988 states in part:
"3. Credit for delivery to Kansas will stop at the stateline 7 days after the end of the run at John Martin Reservoir. No credit for over delivery will be carried forward to any subsequent run.
4. When the daily average flow at the stateline exceeds the demand, delivery will be credited at not to exceed 105% of the demand."

[3] Demands at the end of a month are partially satisfied by deliveries in the following month due to rundown period and transit time between John Martin Reservoir and the Kansas-Colorado stateline.

The operation of the Transit Loss Account in compact year 1988 was as shown in Table 11, which follows:

TABLE 11
JOHN MARTIN RESERVOIR
TRANSIT LOSS ACCOUNT SUMMARY (AF)

Month	Contents Beg Mon	Inflow to Storage	Evapo-ration	Storage Release	Contents End Mon
Nov.[1]	13,795.05	0.00	4.20	13,790.85	0.00
Dec.	0.00	0.00	0.00	0.00	0.00
Jan.	0.00	0.00	0.00	0.00	0.00
Feb.	0.00	0.00	0.00	0.00	0.00
Mar.	0.00	9,990.82	73.81	421.49	9,495.52
Apr.	9,495.52	0.00	151.73	192.16	9,151.63
May	9,151.63	0.00	211.63	595.05	8,344.95
June	8,344.95	0.00	227.76	892.59	7,224.60
July	7,224.60	0.00	242.81	0.00	6,981.79
Aug.	6,981.79	0.00	235.65	198.35	6,547.79
Sept.	6,547.79	0.00	178.60	0.00	6,369.19
Oct.	6,369.19	0.00	106.08	0.00	6,263.11
Total		9,990.82	1,432.27	16,090.49	

NOTES:

[1] Not a physical release from storage: transferred 4,334.27 AF (11/35) to Kansas Account and 9,456.58 AF (24/35) to Colorado ditch accounts pursuant to Section III of the 1980 Operating Plan and the annual operating agreement for 1988.

Releases to Colorado Ditches during the 1988 compact year are summarized as shown in Table 12, which follows:

TABLE 12
JOHN MARTIN RESERVOIR
SUMMARY OF RELEASES TO COLORADO DITCHES

Month	Release (AF)
Nov.	4,563.55
Dec.	0.00
Jan.	0.00
Feb.[1]	0.00
Mar	4,139.68
Apr.	19,188.18
May	25,152.12
June	24,071.24
July	21,412.21
Aug.	18,524.33
Sept.	12,038.05
Oct.	1,232.97
Totals [2]	130,322.33

NOTES:

[1] Each Colorado ditch account was also reduced by its pro rata share of the "paper release" on Feb. 1, 1988 to reflect changed reservoir capacity. The total reduction in Colorado ditch accounts on Feb.1 for this adjustment was 2,528.90 AF, plus 405.52 AF deducted from "other winter water" before transfer to Section III accounts in March.

[2] Releases included 1,419 AF of water released to the river for well augmentation.

The permanent pool in John Martin received no inflow in compact year 1988. As a result, the pool contents declined 1,944.44 acre-feet due to evaporation and adjustments made for the new area-capacity table. At the close of compact year 1988 the permanent pool contained 7,432.97 acre-feet. Permanent pool operations during the 1988 compact year were as shown in Table 13, which follows:

TABLE 13
JOHN MARTIN RESERVOIR
PERMANENT POOL OPERATIONS (AF)

Month	Contents Begin Mon	Inflow to Storage	Evapo-ration	Storage Release	Contents End Mon
Nov.	9,377.41	0.00	67.32	0.00	9,310.09
Dec.	9,310.09	0.00	42.41	0.00	9,267.68
Jan.	9,267.68	0.00	0.31	0.00	9,267.37
Feb. [1]	9,267.37	0.00	13.64	204.64	9,049.09
Mar.	9,049.09	0.00	128.76	0.00	8,920.33
Apr.	8,920.33	0.00	144.16	0.00	8,776.17
May	8,776.17	0.00	207.47	0.00	8,568.70
June	8,568.70	0.00	239.15	0.00	8,329.55
July	8,329.55	0.00	279.90	0.00	8,049.65
Aug.	8,049.65	0.00	278.78	0.00	7,770.87
Sept.	7,770.87	0.00	211.98	0.00	7,558.89
Oct.	7,558.89	0.00	125.92	0.00	7,432.97
Total		0.00	1,739.80	204.64	

NOTES:

[1] February release is to adjust to new area-capacity table. It is not an actual physical release of water.

At the close of the compact year on October 31, 1988 at 2400 hours the contents of John Martin Resevoir were allocated as shown on Table 14, which follows:

TABLE 14
JOHN MARTIN RESERVOIR
CONTENTS DISTRIBUTION OCTOBER 31, 1988 (AF)

Storage Component	Contents (AF)
Compact Water	0.00
Section II Agreement Accounts[1]	62,707.06
Section III Agreement Accounts[2]	8,843.54
Flood Pool	0.00
Permanent Pool	7,432.97
Total Contents	78,983.57

NOTES:

[1] Includes Transit Los Account
[2] Amity = 8,843.54 AF

The final contents agrees closely with the 78,988, acre-feet reported by the U.S. Army Corps of Engineers, and the 79,000 acre-feet (rounded) as published by the U.S. Geological Survey.

The technical data for this section were compiled by the Colorado Water Conservation Board staff using data from the Annual Report of the Operations Secretary of the Arkansas River Compact Administation, the U.S. Geological Survey, the Colorado Division of Water Resources, the Kansas Division of Water Resources and the minutes and correspondence of the Arkansas River Compact Administration.

9. GAGING STATION

The U.S. Geological Survey operates eight gaging stations as indicated in Appendix B under their "Collection of Basic Records" program and through funding agreements with the U.S. Army Corps of Engineers and the Arkansas River Compact Administration. For the federal fiscal year October 1, 1987 to September 30, 1988 the Administration approved a cooperative agreement with the U.S. Geological Survey totaling $21,620. The Administration contributed half of this total, an amount of $10,810, which was used for supplemental measurements at seven gaging sites; the operation of one station, Arkansas River near Granada, Colorado, operation of a telemark gage at John Martin Dam, maintenance of radio equipment, and the preparation of records for the annual report.

In general, streamflow records of satisfactory accuracy were obtained at the Compact stations. Emphasis was again placed on obtaining more field data, particularly in the form of discharge measurements at various stages of flow. Several more measuments were made at each site than are required under agreement with the Administration. Measurements made by personnel of the Colorado State Engineer were incorporated into the records. There were no critical problems at the stations during the year, with the exception of the continuing unstable channels and controls.

10. FINDINGS OF FACT BY THE ADMINISTRATION

There were no findings of fact made by the Administration during Compact year 1988.

11. INVESTIGATIONS

There were no investigations undertaken by the Administration during Compact year 1988.

12. CHRONOLOGY OF EVENTS IN KANSAS V. COLORADO LITIGATION

The following is a partial list of significant pleadindgs and/or events in the pending lawsuit during compact year 1988:

Date	Filed by	Title
3-14-88	Special Master	Status Conference Memorandum and Order
5-13-88	Colorado	Brief and Motion to Stay, based on Kansas' alleged failure to exhaust administrative remedies.
6-14-88	Kansas	Response to Colorado's Motion to Stay
7-1-88	Colorado	Closing brief on Motion to Stay
9-28-88	Special Master	Memorandum re: Field Trip
10-21-88	Special Master	Decision denying Colorado's Motion to Stay

13. RESOLUTION HONORING ROBERT W. JESSE:

The following resolution honoring Robert W. Jesse for his service to the Administration and water users in the Arkansas Valley was adopted by the Administration at the December 13, 1988 annual meeting. Mr. Jesse served as the first Operations Secretary of the Administration until his retirement from the Colorado Division of Water Resources on July 1, 1988. This 1988 Annual Report contains data and records prepared by Mr. Jesse for the last time and is dedicated to his long service to the Administration. Fortunately for all, Mr. Jesse continues to remain active in the workings of the Arkansas River.

WHEREAS, Robert W. Jesse was an employee of the Colorado Division of Water Resources for 28 years; and

WHEREAS, Mr. Jesse served as the Colorado Division Engineer for the Arkansas River Basin from 1974 until his retirement from state government in 1988; and

WHEREAS, Mr. Jesse assisted the Arkansas River Compact Administration in numerous ways throughout his tenure as the Colorado Division Engineer; and

WHEREAS, Mr. Jesse served as the Administration's assistant secretary or Operations Secretary from 1980 until his retirement from state government; and

WHEREAS, Mr. Jesse performed with distinction his responsibilities as an officer of the Administration; and

WHEREAS, he conducted himself at all times with the utmost professionalism and sense of public duty.

NOW, THEREFORE, BE IT RESOLVED by the Arkansas River Compact Administration that it does hereby acknowledge with gratitude the outstanding service of Robert W. Jesse to the Administration and to the states of Colorado and Kansas, express its appreciation to Mr. Jesse for his dedication, and extend to him its best wishes for continued good health and happiness in all of his future endeavors.

BE IT FURTHER RESOLVED that this Resolution be entered into the records of the Administration and that the recording secretary be instructed to send a copy of Mr. Jesse.

BE IT FURTHER RESOLVED that the Administration honor Mr. Jesse for his many years of service by including his picture and appropriate dedicatory remarks in the Administration's annual report for Compact year 1988.

Entered this 13th day of December, 1988, at the annual meeting of the Arkansas River Compact Administration held in Lamar, Colorado.

Frank G. Cooley, Chairman
Carl E. Bentrup, Vice-Chairman

APPENDICES

Appendix A-1a
AUDITOR'S REPORT
Year end 6/30/87 (adopted 12/8/87)

crimond, farmer & company

certified public accountants

To the Representatives of
Arkansas River Compact Administration
Lamar, Colorado 81052

We have examined the statement of assets & liabilities arising from cash transactions of the Arkansas River Compact Administration as of June 30, 1987, and the statement of cash receipts and disbursements, changes in cash bblance and the statement of cash receipts and disbursements with budget comparison for the year ended June 30, 1987. Our examination was conducted in accordance with generally accepted auditing standards, and accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As described in note 1a of the notes to cash basis statements, the accompanying statements are prepared on the cash basis of accounting and accordingly they are not intended to be presented in conformity with generally accepted accounting principles.

In our opinion, the financial statement presents fairly the assets and liabilities arising from cash transactions of the Arkansas River Compact Administration as of June 30, 1987, and the results of cash transactions for the year then ended on a basis consistent with the previous year.

Crimond Farmer & Co

Certified Public Accountants

September 22, 1987
Lamar, Colorado

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF ASSETS & LIABILITIES ARISING FROM CASH TRANSACTIONS
June 30, 1987

ASSETS:	
Cash & Savings	$ 57,824
Equipment	23,634
Concrete Control	8,000
TOTAL ASSETS	89,458
LIABILITIES:	
Liabilities	0
CASH BASIS EQUITY:	
Expended:	
Equipment	23,634
Concrete Control	8,000
Unexpended:	57,824
TOTAL CASH BASIS EQUITY - NOTE 1a	89,458
TOTAL LIABILITIES & CASH BASIS EQUITY	$ 89,458

The accompanying notes are an integral part of the statements.

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS & DISBURSEMENTS & CHANGES IN CASH BALANCE
FOR YEAR ENDED JUNE 30, 1987

CASH BALANCE, JULY 1, 1986		$ 51,879
RECEIPTS:		
Revenue from Assessments:		
Colorado	16,800	
Kansas	11,200	
Interest	3,830	
Miscellaneous Income	85	
TOTAL RECEIPTS		31,915
DISBURSEMENTS:		
Treasurers Bond	100	
Geological Survey	11,185	
Equipment	1,641	
Rent	1,537	
Professional Fees	450	
Office Supplies	375	
Printing	165	
Secretary's Salary	2,950	
Payroll Taxes	300	
Telephone	1,084	
Annual Report	3,027	
Recording Secretary & Court Reporter	2,688	
Miscellaneous	29	
Travel & Meetings	439	
TOTAL DISBURSEMENTS		25,970
EXCESS OF DISBURSEMENTS OVER RECEIPTS		(5,945)
CASH BALANCE, JUNE 30, 1987		$ 57,824

The accompanying notes are an integral part of the statements.

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS & DISBURSEMENTS WITH BUDGET COMPARISON
FOR THE BUDGET YEAR JULY 1, 1986 TO JUNE 30, 1987

	BUDGET	ACTUAL	OVER(UNDER)
CASH BALANCE, JULY 1, 1986	$ 0	$ 51,879	$ 51,879
RECEIPTS:			
Revenues from Assessments:			
Colorado - 60%	16,800	16,800	0
Kansas - 40%	11,200	11,200	0
Miscellaneous Income	0	85	85
Interest	0	3,830	3,830
TOTAL RECEIPTS	28,000	31,915	3,915
TOTAL TO ACCOUNT FOR	28,000	83,794	55,794
DISBURSEMENTS:			
U.S. Geological Survey	12,500	11,185	1,315
Operations Secretary	6,100	2,950	3,150
Treasurers Bond	100	100	0
Telephone	2,000	1,084	916
Payroll Taxes	250	300	(50)
Recording Secretary & Court Reporter	6,600	2,688	3,912
Travel & Meeting	100	439	(339)
Professional Fees	400	450	(50)
Office Supplies	350	375	(25)
Printing	350	165	185
Annual Report	5,000	3,027	1,973
Miscellaneous	0	29	(29)
Equipment	0	1,641	(1,641)
Rent	0	1,537	(1,537)
Contingency	2,000	0	2,000
TOTAL DISBURSEMENTS	35,750	25,970	9,780
CASH BALANCE, JUNE 30, 1987	$ (7,750)	$ 57,824	$ 65,574

The accompanying notes are an integral part of the statements.

Appendix A-1b
AUDITOR'S REPORT
Year end 6/30/88 (adopted 12/13/88)

crimond, farmer & company

certified public accountants

To the Representatives of
Arkansas River Compact Administration
Lamar, Colorado 81052

We have examined the statement of assets & liabilities - cash basis of the Arkansas River Compact Administration as of June 30, 1988, and the statement of cash receipts and disbursements, changes in cash balance and the statement of cash receipts and disbursements with budget comparison for the year ended June 30, 1988. Our examination was conducted in accordance with generally accepted auditing standards, and accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

The financial statements have been prepared on the cash basis of accounting which is a comprehensive basis of accounting other than generally accepted accounting principles.

In our opinion, the financial statement presents fairly the assets and liabilities arising from cash transactions of the Arkansas River Compact Administration as of June 30, 1988, and the results of cash transactions for the year then ended on a basis consistent with the previous year.

Crimond, Farmer & Co

September 23, 1988
Lamar, Colorado

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF ASSETS & LIABILITIES - CASH BASIS
JUNE 30, 1988

ASSETS:	
Cash & Cash Equivalents	$ 51,294
Equipment	25,618
Concrete Control	8,000
TOTAL ASSETS	84,912
LIABILITIES:	
Liabilities	0
CASH BASIS EQUITY:	
Expended:	
Equipment	25,618
Concrete Control	8,000
Unexpended:	51,294
TOTAL CASH BASIS EQUITY - NOTE 1a	84,912
TOTAL LIABILITIES & CASH BASIS EQUITY	$ 84,912

The accompanying notes are an integral part of the statements.

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS & DISBURSEMENTS & CHANGES IN CASH BALANCE
FOR YEAR ENDED JUNE 30, 1988

CASH BALANCE, JULY 1, 1987		$ 57,824
RECEIPTS:		
Revenue from Assessments:		
Colorado	12,000	
Kansas	8,000	
Interest	3,197	
Miscellaneous Income	169	
TOTAL RECEIPTS		23,366
DISBURSEMENTS:		
Treasurers Bond	100	
Geological Survey	17,290	
Equipment	1,984	
Rent	600	
Professional Fees	1,224	
Office Supplies	220	
Printing	160	
Secretary's Salary	2,000	
Telephone	867	
Annual Report	3,263	
Recording Secretary & Court Reporter	2,188	
TOTAL DISBURSEMENTS		29,896
EXCESS OF DISBURSEMENTS OVER RECEIPTS		(6,530)
CASH BALANCE, JUNE 30, 1988		$ 51,294

The accompanying notes are an integral part of the statements.

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS & DISBURSEMENTS WITH BUDGET COMPARISON
FOR THE BUDGET YEAR JULY 1, 1987 TO JUNE 30, 1988

	BUDGET	ACTUAL	OVER(UNDER)
CASH BALANCE, JULY 1, 1987	$ 0	$ 57,824	$ 57,824
RECEIPTS:			
Revenues from Assessments:			
Colorado - 60%	12,000	12,000	0
Kansas - 40%	8,000	8,000	0
Miscellaneous Income	0	169	169
Interest	3,500	3,197	(303)
TOTAL RECEIPTS	23,500	23,366	(134)
TOTAL TO ACCOUNT FOR	23,500	81,190	57,690
DISBURSEMENTS:			
U.S. Geological Survey	17,290	17,290	0
Operations Secretary	6,100	2,000	4,100
Treasurers Bond	100	100	0
Telephone	2,000	867	1,133
Payroll Taxes	350	0	350
Recording Secretary & Court Reporter	3,500	2,188	1,312
Travel & Meeting	100	0	100
Professional Fees	450	1,224	(774)
Office Supplies	300	220	80
Printing	300	160	140
Annual Report	3,000	3,263	(263)
Equipment	2,000	1,984	16
Rent	0	600	(600)
TOTAL DISBURSEMENTS	35,490	29,896	5,594
CASH BALANCE, JUNE 30, 1988	$ (11,990)	$ 51,294	$ 63,284

The accompanying notes are an integral part of the statements.

ARKANSAS RIVER COMPACT ADMINISTRATION
NOTES TO CASH BASIS STATEMENTS
JUNE 30, 1988

Note 1 - Summary of significant accounting policies:

a. The Administration maintains financial records using the cash basis of accounting. By using the cash basis of accounting, certain key accounts needed to present financial position and results of operations are omitted; examples of these accounts are accounts receivable and accounts payable.

Appendix A-2a

TREASURER'S REPORT

12/8/87

ARKANSAS RIVER COMPACT ADMINISTRATION

307 South Fifth Street

LAMAR, COLORADO 81052

COLORADO
J. WILLIAM McDONALD, Denver
CARL GENOVA, Pueblo
JAMES G. ROGERS, Lamar
Treasurer

FRANK G. COOLEY
Chairman and Federal Representative
P.O. Box 98
Hooker, Colorado 81641

KANSAS
DAVID L. POPE, Topeka
CARL E. BENTRUP, Deerfield
Vice Chairman
RON OLOMON, Garden City

ARKANSAS RIVER COMPACT ADMINISTRATION

STATEMENT OF CASH RECEIPTS & DISBURSEMENTS & CHANGE IN CASH BALANCE

FROM JULY 1, 1987 TO DECEMBER 1, 1987

CASH BALANCE, JULY 1, 1987			$57,824.00
RECEIPTS:			
Kansas	$ 8,000.00		
Colorado	12,000.00		
Interest on Savings Acct. since July	199.75		
Miscellaneous	59.61		
TOTAL RECEIPTS		$20,259.36	
DISBURSEMENTS:			
Treasurer's Bond	$ 100.00		
U. S. Geological Survey	6,465.00		
Professional Fees	600.00		
Copying	153.36		
Rent	250.00		
Salaries	1,000.00		
Telephone	349.40		
Office supplies & Postage	33.80		
Operation's Secretary's Account	2,278.03		
TOTAL DISBURSEMENTS		11,229.59	
EXCESS RECEIPTS OVER DISBURSEMENTS			9,029.77
CASH BALANCE, DECEMBER 1, 1987			$66,853.77
CASH IN BANK	$ 164.16		
SAVINGS ACCOUNT	21,358.17		
CERTIFICATE OF DEPOSIT	45,331.44		
	$66,853.77		

Appendix A-2b

TREASURER'S REPORT

12/13/88

ARKANSAS RIVER COMPACT ADMINISTRATION
307 South Fifth Street
LAMAR, COLORADO 81052

COLORADO
J. WILLIAM McDONALD, Denver
CARL GENOVA, Pueblo
JAMES G. ROGERS, Lamar
Treasurer

FRANK G. COOLEY
Chairman and Federal Representative
P.O. Box 98
Meeker, Colorado 81641

KANSAS
DAVID L. POPE, Topeka
CARL E. BENTRUP, Deerfield
Vice Chairman
RON OLOMON, Garden City

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS & DISBURSEMENTS & CHANGES IN CASH BALANCE FOR YEAR ENDED JUNE 30, 1988

CASH BALANCE, JULY 1, 1987		$ 57,824
RECEIPTS:		
Colorado	12,000	
Kansas	8,000	
Interest	3,197	
Miscellaneous Income	169	
TOTAL RECEIPTS		23,366
DISBURSEMENTS:		
Treasurer's Bond	100	
U.S. Geological Survey	17,290	
Equipment	1,984	
Rent	600	
Professional Fees	1,224	
Office Supplies	220	
Printing	160	
Secretary's Salary	2,000	
Payroll Taxes	0	
Telephone	867	
Annual Report	3,263	
Recording Secretary & Court Reporter	2,188	
Miscellaneous	0	
Travel & Meetings	0	
TOTAL DISBURSEMENTS		29,896
EXCESS OF DISBURSEMENTS OVER RECEIPTS		(6,530)
CASH BALANCE, JUNE 30, 1988		$ 51,294

ARKANSAS RIVER COMPACT ADMINISTRATION
307 South Fifth Street
LAMAR, COLORADO 81052

COLORADO
J. WILLIAM McDONALD, Denver
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CARL E. BENTRUP, Deerfield
Vice Chairman
RON OLOMON, Garden City

ARKANSAS RIVER COMPACT ADMINISTRATION
STATEMENT OF CASH RECEIPTS & DISBURSEMENTS & CHANGES IN CASH
BALANCE FROM JULY 1, 1988, TO DECEMBER 1, 1988

CASH BALANCE			$51,294.00
RECEIPTS:			
Colorado	12,000.00		
Kansas	8,000.00		
Interest on Savings since July	240.17		
TOTAL RECEIPTS		$20,240.17	
DISBURSEMENTS:			
Treasurer's Bond	100.00		
U.S. Geological Survey	6,720.00		
Professional Fees	190.92		
Salaries	1,000.00		
Telephone	352.71		
Rent	250.00		
Bank Service Charge	2.00		
Office Supplies & Postage	46.85		
Operation's Secretary's Account	2,825.84		
TOTAL DISBURSEMENTS		$11,488.32	
EXCESS RECEIPTS OVER DISBURSEMENTS			$ 8,751.85
CASH BALANCE, DECEMBER 1, 1988			$60,045.85
CASH IN BANK		$ 243.12	
SAVINGS-Money Market Account		11,751.80	
CERTIFICATE OF DEPOSIT		48,050.93	
			$60,045.85

ARKANSAS RIVER COMPACT ADMINISTRATION

307 South Fifth Street
LAMAR, COLORADO 81052

COLORADO
J. WILLIAM McDONALD, Denver
CARL GENOVA, Pueblo
JAMES G. ROGERS, Lamar
Treasurer

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Chairman and Federal Representative
P.O. Box 98
Hooker, Colorado 81641

KANSAS
DAVID L. POPE, Topeka
CARL E. BENTRUP, Deerfield
Vice Chairman
RON OLOMON, Garden City

DECEMBER 12, 1988

Bills Due and Pending:

U S West Communications (Telephone)	$ 50.00
AT&T (Phone rental)	17.66
Lower Ark. Water Assn. (Rent)	50.00
Gutenberg's (Printing 1988 Compact Report)	86.99
Colorado Mobile (Operations Sec.)	129.78
Computer Products (Inv. 3621)	62.98
Crimond, Farmer & Co. (Audit & copying)	576.80
First National Bank (Petty cash-Postage)	30.00
Division of Water Resources (Access fees-Satellite)	7,000.00
Total	$8,004.21

REVISED FY 1987-88 BUDGET
(July 1, 1987 - June 30, 1988)

EXPENDITURES

A.	SALARIES AND CONTRACTUAL SERVICES:		
	1. Treasurer	$ 1,000	
	3. Recording Secretary	1,000	
	2. Operations Secretary	6,100	
	4. Auditor's Fees	450	
	5. Court Reporter's Fees	1,500	
	6. Payroll Taxes	350	
			$10,400
B.	GAGING STATIONS:		
	1. U.S. Geological Survey Cooperative Agreements for federal FY 1987	$10,290	
	2. St. of Colorado Satellite System	7,000	
			$17,290
C.	OPERATING EXPENSES:		
	1. Treasurer's Bond	$ 100	
	2. 1985 Annual Report (Printing)	3,000	
	3. Telephone	2,000	
	4. Office Supplies/Postage	300	
	5 Printing/Copying	300	
	6. Meetings	100	
	7. Travel	0	
			$ 5,800
D.	OFFICE EQUIPMENT:		$ 2,000
E.	CONTINGENCY:		1,000
F.	TOTAL		$36,490

INCOME

A.	ASSESSMENTS		
	1. Colorado (60%)	$12,000	
	2. Kansas (40%)	8,000	
			$20,000
B.	INTEREST EARNINGS		3,500
C.	MISCELLANEOUS		0
D.	TOTAL		$23,500

EXPENDITURES FROM SURPLUS $12,990

Adopted by the Arkansas River Compact Administration at its December 8, 1987, Annual Meeting.

Treasurer

1878E

REVISED FY 1988-89 BUDGET
(July 1, 1988 - June 30, 1989)

JAN 13 1988

EXPENDITURES

A.	SALARIES AND CONTRACTUAL SERVICES:		
	1. Treasurer	$ 1,000	
	3. Recording Secretary	1,000	
	2. Operations Secretary	6,100	
	4. Auditor's Fees	450	
	5. Court Reporter's Fees	1,500	
	6. Payroll Taxes	350	
			$10,400
B.	GAGING STATIONS:		
	1. U.S. Geological Survey Cooperative Agreements for federal FY 1988	$10,695	
	2. St. of Colorado Satellite System	7,000	
			$17,695
C.	OPERATING EXPENSES:		
	1. Treasurer's Bond	$ 100	
	2. 86-87 Annual Reports (Printing)	6,500	
	3. Telephone	2,000	
	4. Office Supplies/Postage	300	
	5 Printing/Copying	300	
	6. Meetings	100	
	7. Travel	0	
			$ 9,300
D.	EQUIPMENT		0
E.	CONTINGENCY:		1,000
E.	TOTAL		$38,395

INCOME

A.	ASSESSMENTS		
	1. Colorado (60%)	$12,000	
	2. Kansas (40%)	8,000	
			$20,000
B.	INTEREST EARNINGS		3,000
C.	MISCELLANEOUS		0
D.	TOTAL		$23,000
EXPENDITURES FROM SURPLUS			$15,395

Adopted by the Arkansas River Compact Administration at its December 8, 1987, Annual Meeting.

Treasurer

1881E

FY 1989-90 BUDGET
(July 1, 1989 - June 30, 1990)

EXPENDITURES

A.	SALARIES AND CONTRACTUAL SERVICES:		
	1. Treasurer	$ 1,000	
	3. Recording Secretary	1,000	
	2. Operations Secretary	6,100	
	4. Auditor's Fees	500	
	5. Court Reporter's Fees	1,500	
	6. Payroll Taxes	350	
			$10,450
B.	GAGING STATIONS:		
	1. U.S. Geological Survey Cooperative Agreements for federal FY 1989	$11,500	
	2. St. of Colorado Satellite System	8,000	
			$19,500
C.	OPERATING EXPENSES:		
	1. Treasurer's Bond	$ 100	
	2. 1988 Annual Report (Printing)	3,500	
	3. Telephone	2,000	
	4. Office Supplies/Postage	400	
	5 Printing/Copying	300	
	6. Meetings	150	
	7. Travel	0	
			$ 6,450
D.	EQUIPMENT		0
E.	CONTINGENCY:		1,000
F.	TOTAL		$37,400

INCOME

A.	ASSESSMENTS		
	1. Colorado (60%)	$12,000	
	2. Kansas (40%)	8,000	
			$20,000
B.	INTEREST EARNINGS		2,000
C.	MISCELLANEOUS		0
D.	TOTAL		$22,000
EXPENDITURES FROM SURPLUS			$15,400

Adopted by the Arkansas River Compact Administration at its December 8, 1987, Annual Meeting.

Treasurer

1881E-2

B-1

Report-Year ending October 31, 1988
USGS Records, Gaging Station #07099400
Daily mean discharge, cubic feet per second

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	412	104	453	560	120	367	526	912	1940	1690	463	234
2	412	105	455	462	120	348	608	691	1600	1830	443	234
3	412	108	455	407	120	346	603	720	1220	1780	396	234
4	420	109	441	348	120	380	581	804	950	1650	360	240
5	425	110	414	313	120	490	565	1050	1410	1340	298	251
6	428	110	404	310	121	618	545	1780	1880	656	284	264
7	430	110	401	317	208	664	530	2020	1760	504	321	286
8	434	111	399	348	306	520	598	1820	1300	758	350	315
9	438	112	402	393	332	414	681	1590	1550	898	317	328
10	428	111	403	437	317	464	649	1540	1760	726	303	314
11	417	114	428	452	310	472	643	1620	1640	709	301	335
12	414	116	446	430	310	474	623	1620	1610	678	300	356
13	415	118	446	416	310	474	411	1600	1490	699	439	321
14	332	118	445	421	468	470	392	1520	1480	688	528	313
15	95	118	428	422	536	442	601	1390	912	748	389	330
16	95	118	421	395	467	406	781	1140	834	736	370	335
17	98	119	420	348	442	406	936	1020	860	764	360	312
18	96	122	419	292	352	469	994	1050	889	853	378	300
19	95	123	474	187	347	508	1090	1050	1040	886	346	303
20	96	123	507	110	347	477	1170	1020	1100	848	318	306
21	96	333	507	111	348	429	1150	1180	1100	796	352	314
22	98	456	484	113	347	378	1000	1340	992	956	373	320
23	102	484	468	115	346	535	847	1430	802	1020	324	322
24	106	504	468	118	370	576	687	1490	721	998	277	289
25	105	510	467	120	397	459	496	1380	1070	902	267	264
26	105	511	464	120	375	279	489	1270	1520	846	274	251
27	100	512	495	120	374	359	620	1160	1560	892	280	222
28	100	475	544	119	384	427	765	1240	1490	961	280	204
29	102	451	558	119	387	419	939	1530	1480	788	280	197
30	103	449	556	---	363	421	1120	1950	1520	675	253	198
31	--	451	558	---	379	---	1160	---	1650	465	---	211
TOTAL												
sec. ft.	7409	7415	14230	8423	9843	13491	22800	39927	41130	28740	10224	8703
ac. ft.	14696	14708	28225	16707	19524	26759	45224	79195	81581	57006	20279	17262

THE YEAR 421,166 acre-feet

ARKANSAS RIVER AT LAS ANIMAS, COLORADO

B-2

Report-Year ending October 31, 1988
USGS Records, Gaging Station #007124000
Daily Mean discharge, cubic feet per second

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	59	281	170	280	138	74	36	35	26	153	80	40
2	56	280	160	250	143	246	42	32	127	151	51	41
3	61	281	160	260	134	432	48	32	347	192	49	46
4	70	276	160	270	127	324	41	32	183	209	53	47
5	71	223	150	260	126	161	40	34	140	191	93	41
6	82	212	140	250	125	70	43	36	109	162	92	41
7	82	200	140	270	114	60	41	34	149	105	67	55
8	77	189	150	280	112	55	37	34	170	77	59	72
9	93	173	160	280	144	52	36	43	195	76	36	78
10	83	167	200	250	146	59	38	37	198	53	28	81
11	90	172	250	234	134	57	41	33	184	35	26	93
12	98	172	270	259	139	54	44	32	291	29	26	100
13	81	172	285	243	143	53	38	32	209	26	27	99
14	102	175	270	270	143	52	32	30	187	23	28	98
15	150	174	300	257	122	50	29	32	147	20	28	109
16	225	170	300	207	72	43	27	33	105	19	28	111
17	168	170	280	190	80	43	27	35	89	23	27	113
18	133	190	250	190	149	49	26	36	121	21	27	113
19	117	200	210	200	119	50	26	35	136	21	26	109
20	209	180	200	230	157	46	34	33	116	26	29	113
21	244	190	200	230	96	43	48	31	74	38	45	106
22	239	200	220	200	70	46	68	29	81	77	58	116
23	236	209	230	191	77	50	35	29	137	86	68	123
24	239	186	230	194	74	48	32	49	145	65	71	126
25	278	167	200	179	73	43	33	68	123	46	80	129
26	298	160	250	158	71	40	31	38	140	47	101	131
27	307	160	300	161	68	40	28	67	118	40	79	127
28	300	170	350	146	61	43	28	46	103	64	57	121
29	294	170	400	145	61	46	27	29	151	53	45	122
30	292	190	400	---	58	41	26	27	114	61	39	125
31	---	180	350	---	56	---	29	---	92	76	---	125
TOTAL												
sec. ft.	4834	6039	7335	6534	3332	2470	1111	1093	4507	2265	1523	2951
ac. ft.	9588	11978	14549	12960	6609	4899	2204	2168	8940	4493	3021	5853

THE YEAR 87,262 acre-feet

B-3

Report-Year ending October 31, 1988
USGS Records, Gaging Station #07128500
Daily mean discharge, cubic feet per second

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	42	44	30	43	44	27	9.7	74	69	6.6	9.2	25
2	42	40	26	40	40	36	33	72	105	4.8	50	29
3	46	41	24	40	44	82	84	59	123	3.8	12	14
4	41	45	24	45	44	67	59	53	44	4.9	6.3	26
5	42	49	26	50	45	69	31	54	23	6.2	4.7	20
6	37	49	28	49	50	132	23	34	14	5.4	3.9	23
7	35	48	26	48	49	166	32	24	8.2	5.4	5.3	29
8	37	49	23	53	46	148	43	19	7.8	7.1	5.6	30
9	31	47	23	55	46	124	77	15	54	18	4.1	28
10	36	47	25	56	45	101	42	35	35	46	3.7	31
11	42	47	29	57	44	93	21	9.3	85	218	2.9	32
12	46	45	26	59	44	73	14	6.9	61	109	2.8	27
13	42	43	25	71	45	57	10	6.6	32	39	5.4	21
14	36	38	26	77	45	43	9.2	8.9	15	14	6.2	17
15	37	17	26	69	60	35	8.5	10	8.7	21	24	17
16	41	28	27	85	82	30	7.9	10	7.3	14	44	17
17	43	35	29	77	78	30	6.9	9.6	16	9.5	19	17
18	43	37	28	67	76	28	6.8	27	9.3	8.6	9.9	15
19	43	37	25	65	51	25	7.1	21	9.6	17	6.3	16
20	45	36	25	56	44	26	11	9.1	7.8	9.6	6.3	17
21	46	35	26	61	67	47	336	7.5	19	21	6.3	27
22	46	38	25	58	64	63	1050	8.0	12	11	5.2	15
23	45	40	25	56	60	45	604	6.8	9.2	8.2	8.7	15
24	46	36	23	52	51	27	439	5.0	7.9	5.0	13	17
25	46	33	23	51	35	21	423	4.6	6.3	2.9	42	25
26	48	16	23	51	20	17	317	4.9	6.1	2.4	155	17
27	48	22	24	49	15	14	258	33	5.9	2.4	65	17
28	47	30	26	45	21	13	168	12	29	4.2	36	20
29	45	35	25	44	24	12	140	13	34	4.0	26	18
30	48	35	32	---	17	10	93	18	9.1	2.9	24	18
31	---	30	40	---	16	---	80	---	6.0	2.9	---	16
TOTAL												
sec.ft.	1272	1172	813	1629	1412	1661	4444	670	879	635	613	656
ac.ft	2523	2325	1613	3231	2801	3295	8815	1329	1744	1260	1215	1301

THE YEAR 31,452 acre-feet

Appendix B-4

RIVER FLOW INTO JOHN MARTIN RESERVOIR

B-4

Report-Year ending October 31, 1988
USGS Records 1/
Daily Mean Discharge, cubic feet per second

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	101	325	200	323	182	101	46	109	95	160	89	65
2	98	320	186	290	183	282	65	104	232	156	101	70
3	107	322	184	300	178	514	132	91	470	196	61	60
4	111	321	184	315	171	391	100	85	227	214	59	73
5	113	272	176	310	171	230	71	88	163	197	98	61
6	119	261	168	299	175	202	66	70	123	167	96	64
7	117	248	166	318	163	226	73	58	157	110	72	84
8	114	238	173	333	158	203	80	53	178	84	65	102
9	124	220	183	335	190	176	113	58	249	94	40	106
10	119	214	225	306	191	160	80	72	233	99	32	112
11	132	219	279	291	178	150	62	42	269	253	29	125
12	144	217	296	318	183	127	58	39	352	138	29	127
13	123	215	310	314	188	110	48	39	241	65	32	120
14	138	213	296	347	188	95	41	39	202	37	34	115
15	187	191	326	326	182	85	38	42	156	41	52	126
16	266	198	327	292	154	73	35	43	112	33	72	128
17	211	205	309	267	158	73	34	45	105	32	46	130
18	176	227	278	257	225	77	33	63	130	30	37	128
19	160	237	235	265	170	75	33	56	146	38	32	125
20	254	216	225	286	201	72	45	42	124	36	35	130
21	290	225	226	291	163	90	384	38	93	59	51	133
22	285	238	245	258	134	109	1118	37	93	88	63	131
23	281	249	255	247	137	95	639	36	146	94	77	138
24	285	222	253	246	125	75	471	54	153	70	84	143
25	324	200	223	230	108	64	456	73	129	49	122	154
26	346	176	273	209	91	57	348	43	146	49	256	148
27	355	182	324	210	83	54	286	100	124	42	144	144
28	347	200	376	191	82	56	196	58	132	68	93	141
29	339	205	425	189	85	58	167	42	185	57	71	140
30	340	225	432	---	75	51	119	45	123	64	63	143
31	---	210	390	---	72	---	109	---	98	80	---	141
TOTAL												
sec.ft.	6106	7211	8148	8163	4744	4131	5555	1763	5386	2900	2136	3607
ac.ft.	12111	14303	16162	16191	9410	8194	11019	3497	10684	5753	4236	7154

THE YEAR 118,714 acre-feet

1/ The riverflow into John Martin Reservoir is the sum of the daily flows of the Arkansas River near Las Animas (Appendix B-2) and the Purgatoire River near Las Animas (Appendix B-3). Sums have been rounded to nearest cfs.

B-5

Report-Year ending October 31, 1988
Corps of Engineers Records, collected by USGS 1/2/
Midnight contents John Martin Reservoir (AF)

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	246281	254437	270371	281636	300719	304256	282251	254773	208894	147903	95478	81562
2	246281	255007	270863	282353	301253	306088	281430	254485	206346	145516	94716	81380
3	246188	255766	271159	283072	301682	307385	280203	253910	204240	143425	93807	81243
4	246095	256241	271653	283897	302217	308359	279185	253431	201734	141884	93004	80970
5	245909	256906	272147	285240	302432	309010	278474	253240	199498	140090	91906	80788
6	246002	257666	272739	285654	302753	309444	277258	252952	197117	138504	91212	80788
7	245816	258331	273134	286069	303075	309987	275744	252473	194592	136797	90474	80788
8	245723	258806	27[illegible]28	286796	303397	310639	274739	251805	192247	134906	89591	80924
9	245723	259376	274023	287628	303612	310748	273637	251137	190721	132836	88763	80924
10	245723	259851	274418	288671	303826	310748	273137	250279	189280	130718	87845	80970
11	245909	260136	274911	289193	304364	310639	271841	249517	187686	129189	86885	81015
12	245909	260516	275306	289925	304579	310531	270651	248377	186336	127544	86123	81015
13	245909	260994	275898	290659	304794	309878	268870	247240	184754	125598	85414	81015
14	246002	261575	276491	291394	304902	308684	267884	245823	183100	123545	85178	81061
15	246188	261865	276985	292025	305010	307926	266804	245257	181452	120960	84801	81015
16	246188	261865	277775	292655	305333	306520	265921	244410	179033	118951	84473	81061
17	246560	262348	278367	293288	305657	305549	264453	243190	177016	117323	83959	81015
18	246932	262638	279355	294132	305657	304579	263088	241786	174625	114940	83541	80879
19	247118	263604	279947	294978	306088	302860	261823	240481	172938	112943	82986	80879
20	247583	264668	280342	295719	306304	301896	260658	239645	170809	111320	82617	80743
21	248141	265248	280850	296567	306628	299758	259689	237330	168776	109659	82295	80381
22	248606	265828	281664	297098	306736	297204	258336	234571	166615	108132	82065	80336
23	248978	266504	282072	297629	306844	294766	258819	232016	165581	106237	82157	80381
24	249535	266794	282479	298160	306736	292130	258819	228575	164332	104370	82111	80200
25	250279	267375	282987	298586	306520	290135	258916	225253	162363	102532	82065	80020
26	251116	267954	283495	299012	306412	288254	258626	222846	160629	100984	82157	79840
27	252157	268148	284106	299438	306520	287003	258239	220277	158978	99822	82249	79570
28	252632	268631	284614	299864	306520	285758	257660	216848	157055	98827	82065	79435
29	253202	269017	285530	300185	305872	284413	256408	213973	154439	97839	81974	79211
30	253677	269404	286445	---	304471	282456	255927	211638	152405	97168	81699	79077
31	---	269984	287158	---	303934	---	255638	---	150039	96039	---	78988

1/ Difference between published U. S. Geological Survey and Compact report figures is due to rounding procedures. Figures in this table are rounded to the nearest acre-foot.

2/ Contents determined from area capacity tables. New table based on 1988 survey placed in use on February 1, 1988, and contents adjusted accordingly.

Appendix B-5a

CONTENTS OF JOHN MARTIN RESERVOIR CONSERVATION POOL

B-5a

CONTENTS OF JOHN MARTIN RESERVOIR
CONSERVATION POOL AT 2400 HOURS
REPORT YEAR ENDING OCTOBER 31, 1988
SOURCE: OPERATIONS SECRETARY, ARKANSAS RIVER COMPACT ADMINISTRATION
(rounded to the nearest acre-foot)

DAY	NOV.	DEC.	JAN.	FEB.	MAR	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	13951	23973	34091	42797	53983	62519	6929	0	0	0	0	0
2	14363	24237	34307	43191	58442	62172	5291	0	0	0	0	0
3	14601	24685	34524	43586	54855	61144	3513	0	0	0	0	0
4	14870	25129	34795	44038	55203	59730	1826	0	0	0	0	0
5	15066	25482	35066	31325	55493	58033	239	0	0	0	0	0
6	15526	25796	35391	44890	55784	56226	0	0	0	0	0	0
7	15703	26124	35662	45232	56078	54474	0	0	0	0	0	0
8	15973	26479	35879	45631	56385	52737	0	0	0	0	0	0
9	16323	26766	36096	46088	56695	50812	0	0	0	0	0	0
10	16613	27081	36313	46694	56962	48785	0	0	0	0	0	0
11	17100	27315	36584	47034	57226	46701	0	0	0	0	0	0
12	17403	27544	36801	47465	57399	44552	0	0	0	0	0	0
13	17705	27777	37125	47889	57561	42383	0	0	0	0	0	0
14	18115	28098	37450	48319	57721	40141	0	0	0	0	0	0
15	14117	28322	37774	48709	57953	38085	0	0	0	0	0	0
16	18868	28449	38153	49102	58405	35887	0	0	0	0	0	0
17	19143	28519	38532	49450	58843	33692	0	0	0	0	0	0
18	19410	28752	39020	49922	59279	31627	0	0	0	0	0	0
19	19566	29467	39345	50395	59750	29311	0	0	0	0	0	0
20	20039	30377	39618	50857	60311	27131	0	0	0	0	0	0
21	20430	30803	39897	51453	60980	24915	2065	0	0	0	0	0
22	20663	31228	40176	51751	61433	22640	339	0	0	0	0	0
23	20805	31750	40455	52058	61879	20407	0	0	0	0	0	0
24	21140	32080	40735	52372	62105	18565	0	0	0	0	0	0
25	21651	32408	41014	52685	62334	16820	0	0	0	0	0	0
26	22210	32646	41293	52915	62680	15181	0	0	0	0	0	0
27	22950	32872	41628	53183	63247	13516	0	0	0	0	0	0
28	23102	33100	41963	53456	63627	11877	0	0	0	0	0	0
29	23360	33327	42410	53648	63808	10226	0	0	0	0	0	0
30	23624	33548	42856	-----	63955	8571	0	0	0	0	0	0
31	-----	33874	43303	-----	64224	-----	0	-----	0	0	-----	0

Notes: Values are the sum of winter compact water and summer compact water as reported by the Operations Secretary.
New capacity table placed in use on February 1, 1988 and contents adjusted accordingly.

Appendix B-6

OUTFLOW FROM JOHN MARTIN RESERVOIR
ARKANSAS RIVER BELOW JOHN MARTIN RESERVOIR

B-6

Report-Year ending October 31, 1988
USGS Records, Gaging Station #07130500
Daily mean discharge, cubic feet per second

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	182	8.3	4.0	6.8	6.3	162	630	353	1330	1050	503	143
2	163	8.3	4.2	6.8	6.3	95	620	325	1330	1040	511	143
3	147	7.9	4.5	6.8	6.3	6.3	623	300	1330	1190	510	143
4	146	7.0	5.2	6.8	6.3	6.2	562	277	1330	1190	509	143
5	151	5.7	5.5	6.8	6.3	5.5	625	277	1270	1080	511	140
6	152	5.3	6.0	6.8	6.3	16	623	272	1270	998	474	110
7	150	5.8	5.5	6.8	6.3	48	626	273	1300	993	446	87
8	146	5.5	5.5	6.8	6.3	95	623	354	1160	1080	455	81
9	137	5.3	6.0	6.8	7.4	109	625	425	1050	1140	458	81
10	134	5.1	6.0	6.8	7.3	116	640	488	1050	1100	457	81
11	134	4.8	6.5	6.8	6.3	215	662	523	993	1060	453	97
12	142	4.8	6.5	6.8	5.8	152	643	542	980	1060	449	113
13	143	4.8	6.6	6.7	5.8	451	625	581	1050	1050	418	129
14	143	4.8	6.6	5.8	5.8	699	630	586	1090	1050	374	137
15	143	4.8	6.6	5.8	72	713	627	582	1100	1040	289	137
16	134	4.7	6.6	5.8	113	704	628	569	1150	1040	249	137
17	55	4.2	6.4	5.8	113	693	645	599	1160	1050	247	160
18	9.8	4.0	6.0	5.8	110	767	653	622	1160	1080	249	175
19	9.3	4.0	6.0	5.8	107	779	963	618	1160	990	203	175
20	7.4	4.0	6.0	5.8	107	747	1130	616	1110	853	184	194
21	7.3	4.6	6.0	5.8	107	1000	1090	1120	997	845	181	206
22	7.3	4.7	6.3	5.8	107	1360	765	1480	902	911	184	206
23	7.3	4.4	6.7	5.8	108	1350	465	1500	877	1020	172	206
24	7.3	4.4	6.8	5.8	107	1340	405	1520	880	1010	140	229
25	7.3	4.4	6.8	5.8	118	1320	403	1530	879	1000	138	265
26	7.3	4.7	6.8	6.1	128	956	438	1520	879	799	137	279
27	7.3	4.8	6.8	6.3	129	644	484	1440	1050	572	138	265
28	8.2	4.8	6.8	6.3	131	628	513	1400	1160	566	135	254
29	8.3	4.8	6.8	6.3	357	637	522	1400	1170	518	134	253
30	8.3	4.5	6.8	---	662	635	536	1360	1170	392	134	254
31	---	4.2	6.8	---	511	---	450	---	1150	500	---	175
TOTAL												
sec.ft.	2504	159	190	183	3176	16449	19474	23452	34487	29267	9442	5198
ac.ft.	4967	316	376	363	6299	32626	38627	46517	68405	58051	18728	10310

THE YEAR 285,585 acre-feet

B-7

Report-Year ending October 31, 1988
USGS Records, Gaging Station #07133000
Daily mean discharge, cubic feet per second

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	30	47	37	39	34	181	58	13	796	538	32	10
2	28	45	37	42	35	175	86	12	807	561	30	10
3	15	47	37	38	35	113	186	12	809	651	32	10
4	15	47	35	37	35	74	54	12	805	691	31	10
5	15	45	35	35	34	34	51	12	774	652	26	10
6	15	44	35	36	33	17	36	12	728	574	22	12
7	15	45	33	40	33	15	30	12	727	545	21	12
8	14	46	33	37	33	15	28	12	673	559	21	12
9	18	46	35	42	33	15	33	12	491	611	21	11
10	28	45	35	40	32	15	30	12	480	615	20	11
11	33	45	35	38	32	29	28	12	471	549	20	11
12	26	44	36	40	32	37	23	11	383	520	19	12
13	16	44	36	38	29	43	19	14	372	519	34	12
14	16	44	36	41	24	361	15	29	423	511	38	12
15	16	40	36	39	20	472	13	57	431	507	809	13
16	23	47	38	39	33	484	13	200	452	496	149	13
17	41	45	37	38	22	501	12	43	515	503	65	13
18	62	44	36	38	29	493	13	40	530	526	47	14
19	46	43	37	37	19	380	88	29	734	553	35	15
20	41	43	36	36	15	362	562	25	535	369	28	15
21	38	43	35	36	15	380	608	127	457	340	24	15
22	38	42	35	35	15	775	547	731	365	336	20	15
23	38	42	36	35	14	735	169	806	310	513	32	15
24	42	42	36	35	14	743	69	804	303	526	20	15
25	46	42	36	34	14	732	27	833	287	516	12	14
26	47	43	33	34	14	590	17	858	275	469	12	14
27	47	40	31	33	14	170	15	849	325	137	11	14
28	46	40	33	34	14	94	15	789	496	96	11	14
29	48	40	35	34	14	79	15	805	530	84	11	14
30	47	39	36	---	282	71	14	808	549	55	11	13
31	---	38	40	---	416	---	14	---	542	38	---	13
TOTAL												
sec.ft.	950	1347	1101	1080	1418	8185	2888	7991	16375	14160	1664	394
ac.ft.	1884	2672	2184	2142	2813	16235	5729	15850	32480	28086	3301	781

THE YEAR 114,157 acre-feet

B-8

Report-Year ending October 31, 1988
USGS Records, Gaging Station #07134180
Daily mean discharge, cubic feet per second

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	101	176	132	149	133	385	95	51	739	505	73	50
2	101	176	123	140	131	288	83	42	759	512	59	50
3	99	174	123	137	132	297	112	38	773	551	55	48
4	100	175	126	140	131	251	97	34	755	630	54	42
5	103	176	120	148	131	205	75	25	759	659	51	44
6	103	170	120	135	130	155	65	24	718	619	43	47
7	101	169	120	142	129	116	55	25	712	563	35	50
8	99	169	120	146	127	94	50	24	700	545	33	49
9	96	164	120	146	126	82	49	23	572	589	30	48
10	99	161	130	150	126	79	46	23	501	613	27	46
11	108	163	135	139	121	81	47	23	476	591	28	47
12	120	160	142	146	118	99	48	22	424	548	27	45
13	115	157	135	148	120	93	46	25	367	523	30	44
14	113	155	138	151	121	162	37	35	382	512	88	44
15	112	149	140	151	116	365	30	37	391	501	467	43
16	112	143	145	150	117	433	26	76	393	484	434	42
17	126	152	148	148	138	467	26	88	437	483	191	42
18	135	158	148	146	119	502	24	55	458	501	130	45
19	145	157	146	144	121	444	28	48	658	554	102	45
20	144	158	128	143	112	383	172	40	622	491	82	46
21	149	154	118	142	107	326	427	33	510	389	76	42
22	148	153	123	142	111	535	524	233	424	354	68	46
23	144	154	139	139	104	691	334	550	350	405	61	44
24	147	152	145	137	86	731	181	624	298	492	71	43
25	166	147	140	138	83	769	99	670	275	513	63	39
26	173	145	138	137	87	726	65	714	260	507	57	38
27	179	139	141	137	92	380	49	757	249	343	53	36
28	177	142	138	136	87	197	40	733	367	189	49	38
29	177	143	142	133	86	127	37	736	461	139	49	39
30	176	145	149	---	138	109	35	751	498	116	49	41
31	---	141	152	---	362	---	48	---	512	92	---	41
TOTAL												
sec.ft.	3868	4877	4164	4140	3842	9572	3050	6560	15800	14513	2635	1364
ac.ft.	7672	9674	8259	8212	7621	18986	6050	13012	31339	28787	5227	2705

THE YEAR 147,544 acre-feet

B-9a

Report-Year ending October 31, 1988
USGS Records, Gaging Station #07137500
Daily mean discharge, cubic feet per second

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	237	239	193	214	196	464	234	507	732	664	228	218
2	236	237	189	213	195	410	254	429	744	653	202	215
3	237	233	188	205	195	401	290	373	743	699	188	212
4	238	231	186	203	195	392	343	346	737	709	178	216
5	239	230	184	206	195	358	295	350	759	725	169	222
6	229	229	180	205	194	317	249	353	754	691	168	235
7	235	228	170	205	197	288	249	300	733	652	162	235
8	227	227	150	208	192	266	212	280	722	643	152	239
9	265	226	147	210	191	243	206	254	680	841	145	220
10	302	226	143	213	194	228	199	232	593	720	140	211
11	251	222	147	204	189	233	201	219	557	705	136	209
12	251	219	150	204	180	228	187	235	519	698	124	202
13	253	218	164	211	178	251	170	264	460	633	136	194
14	270	215	170	215	181	242	174	275	541	621	207	203
15	283	211	200	214	180	382	181	243	474	607	767	203
16	281	213	218	216	177	482	178	232	468	599	772	202
17	295	206	214	213	188	513	173	266	471	572	517	195
18	308	212	218	211	207	531	166	238	511	576	425	193
19	319	215	211	209	204	531	166	222	595	680	390	204
20	278	215	191	206	199	492	181	218	701	638	343	199
21	260	216	189	206	192	501	407	217	578	534	305	192
22	255	215	188	209	185	496	558	212	537	505	258	187
23	246	217	206	202	189	658	561	400	490	499	235	183
24	237	211	213	199	193	708	366	608	466	581	248	182
25	234	204	213	198	195	724	260	557	456	594	241	170
26	243	204	208	200	190	713	195	624	447	603	233	163
27	246	200	207	199	201	608	165	688	446	574	230	164
28	246	199	208	199	200	373	157	710	460	416	222	169
29	242	203	212	195	198	295	155	703	601	344	218	182
30	240	207	219	---	191	251	176	734	613	299	223	185
31	---	202	221	---	281	---	529	---	643	270	---	186
TOTAL												
sec.ft.	7683	6730	5897	5992	6042	12579	7837	11289	18231	18545	7962	6190
ac.ft	15240	13350	11700	11890	11980	24950	15540	22390	36160	36780	15790	12278

THE YEAR 228,048 acre-feet

Appendix B-9b

FRONTIER DITCH NEAR COOLIDGE, KANSAS

B-9b

Report-Year ending October 31, 1988
USGS Records, Gaging Station #07137000
Daily mean discharge, cubic feet per second

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	27	.00	.00	.00	.00	.00	25	.93	38	1.0	35	9.8
2	33	.00	.00	.00	.00	.00	13	.29	39	.56	31	14
3	35	.00	.00	.00	.00	.00	.00	.00	37	.30	31	18
4	37	.00	.00	.00	.00	.00	18	.00	38	.02	27	23
5	39	.00	.00	.00	.00	.00	9.2	.00	38	4.0	26	12
6	33	.00	.00	.00	.00	.00	18	.00	38	25	24	.21
7	33	.00	.00	.00	.00	.00	16	.00	39	27	22	.01
8	33	.00	.00	.00	.00	.15	27	.00	38	31	17	.00
9	33	.00	.00	.00	.00	.06	23	.00	37	35	18	.00
10	31	.00	.00	.00	.00	.00	18	.00	34	24	19	.00
11	26	.00	.00	.00	.00	.00	21	.00	33	28	13	.00
12	26	.00	.00	.00	.00	.00	24	.00	34	31	16	.00
13	17	.00	.00	.00	.00	.00	34	.00	36	24	31	.00
14	.93	.00	.00	.00	.00	.00	34	.00	42	22	24	.00
15	.65	.00	.00	.00	.00	.00	33	.00	42	24	22	.00
16	.47	.00	.00	.00	.00	.00	33	.00	48	28	.46	.00
17	.19	.00	.00	.00	.00	.00	29	8.0	49	38	.35	.00
18	.00	.00	.00	.00	.00	.00	31	28	51	43	.10	.00
19	.00	.00	.00	.00	.00	.00	37	20	56	49	.00	.00
20	.00	.00	.00	.00	.00	.00	39	23	53	42	16	.00
21	.00	.00	.00	.00	.00	.00	47	22	48	38	24	.00
22	.00	.00	.00	.00	.00	.00	44	15	49	35	20	.00
23	.00	.00	.00	.00	.00	22	40	45	50	35	25	.00
24	.00	.00	.00	.00	.00	35	40	45	50	39	27	.00
25	.00	.00	.00	.00	.00	34	45	47	50	38	23	13
26	.00	.00	.00	.00	.00	34	43	46	48	35	19	29
27	.00	.00	.00	.00	.00	35	34	41	43	34	19	31
28	.00	.00	.00	.00	.00	37	36	35	41	31	15	47
29	.00	.00	.00	.00	.00	34	40	35	38	35	13	28
30	.00	.00	.00	---	.00	29	34	37	15	37	11	30
31	---	.00	.00	---	.00	---	4.8	---	1.5	34	---	26
TOTAL												
sec.ft.	405	.00	.00	.00	.00	260	890	448	1254	868	569	281
ac.ft	804	.00	.00	.00	.00	516	1770	889	2490	1720	1130	557

THE YEAR 9,876 acre-feet

B-9c

Report-Year ending October 31, 1988
USGS Records [1]
Daily mean discharge, cubic feet per second

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	264	239	193	214	196	464	259	508	770	665	263	228
2	269	237	189	213	195	410	267	429	783	654	233	229
3	272	233	188	205	195	401	290	373	780	699	219	230
4	275	231	186	203	195	392	361	346	775	709	205	239
5	278	230	184	206	195	358	304	350	797	729	195	234
6	262	229	180	205	194	317	267	353	792	716	192	235
7	268	228	170	205	197	288	265	300	772	679	184	235
8	260	227	150	208	192	266	239	280	760	674	169	239
9	298	226	147	210	191	243	229	254	717	876	163	220
10	333	226	143	213	194	228	217	232	627	744	159	211
11	277	222	147	204	189	233	222	219	590	733	149	209
12	277	219	150	204	180	228	211	235	553	729	140	202
13	270	218	164	211	178	251	204	264	496	657	167	194
14	271	215	170	215	181	242	208	275	583	643	231	203
15	284	211	200	214	180	382	214	243	516	631	789	203
16	281	213	218	216	177	482	211	232	516	627	772	202
17	295	206	214	213	188	513	202	274	520	610	517	195
18	308	212	218	211	207	531	197	266	562	619	425	193
19	319	215	211	209	204	531	203	242	651	729	390	204
20	278	215	191	206	199	492	220	241	754	680	359	199
21	260	216	189	206	192	501	454	239	626	572	329	192
22	255	215	188	209	185	496	602	227	586	540	278	187
23	246	217	206	202	189	680	601	445	540	534	260	183
24	237	211	213	199	193	743	406	653	516	620	275	182
25	234	204	213	198	195	758	305	604	506	632	264	183
26	243	204	208	200	190	747	238	670	495	638	252	192
27	246	200	207	199	201	643	199	729	489	608	249	195
28	246	199	208	199	200	410	193	745	501	447	237	216
29	242	203	212	195	198	329	195	738	639	379	231	210
30	240	207	219	---	191	280	210	771	628	336	234	215
31	---	202	221	---	281	---	534	---	645	304	---	212
TOTAL												
sec.ft. 8088	6730	5897	5992	6042	12839	8727	11737	19485	19413	8531	6471	
ac.ft 16043	13349	11697	11885	11984	25467	17310	23281	38648	38505	16921	12835	

THE YEAR 237,925 acre-feet

[1] The daily stateline flows are the sum of the flows of the Arkansas River near Coolidge, Kansas, USGS Gaging Station #07137500 (Appendix B-9a) and the Frontier Ditch, USGS Gaging Station #07137000 (Appendix B-9b) rounded to the nearest cfs

Appendix B-10

TRANSFER OF WATER FROM JOHN MARTIN RESERVOIR CONSERVATION POOL INTO AGREEMENT ACCOUNTS

B-10

Transfer of Compact Water from the John Martin Reservoir Conservation Pool
Into Agreement Accounts 1/, 2/
Report-Year ending October 31, 1988
Source: Operations Secretary, Arkansas River Compact Administration
(acre-feet)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	0.00	0.00	0.00	0.00	0.00	2,479.38	1,983.50	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	2,479.38	1,983.50	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	2,479.38	1,983.50	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	2,479.38	1,983.50	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	2,479.38	1,983.50	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	2,479.38	286.35	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	2,479.38	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	2,479.38	1,239.69	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	2,479.38	1,983.50	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	2,479.38	1,721.95	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	2,107.47	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	1,983.50	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	1,983.50	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	1,983.50	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	1,983.50	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00	1,983.50	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	----	0.00	1,983.50	0.00	0.00	0.00	0.00	0.00	0.00
31	-----	0.00	0.00	-----	0.00	-----	0.00	-----	0.00	0.00	-----	0.00
TOTAL	0.00	0.00	0.00	0.00	0.00	71,034.21	15,148.99	0.00	0.00	0.00	0.00	0.00

THE YEAR: 86,183.20 ACRE-FEET

1/ All conservation pool water was apportioned into Colorado and Kansas Accounts as follows:
40% to Kansas and 60% to Colorado, as described in the 1980 Colorado-Kansas Operating Plan Resolution, and 35% of all "other water" delivered to John Martin Reservoir to the Kansas transit loss account.

2/ Values reported are "JMR Agreement Water Inflow" from the Operations Secretary 1988 report.

B-11

Demands by Colorado for Agreement Account Water in John Martin Reservoir
Report-Year Ending October 31, 1988
Source: Operations Secretary, Arkansas River Compact Administration
(acre-feet)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	348.96	0.00	0.00	0.00	0.00	304.55	1,219.18	179.31	1,190.29	641.03	870.34	0.00
2	309.63	0.00	0.00	0.00	0.00	151.39	1,214.46	165.15	756.48	590.80	806.96	0.00
3	286.02	0.00	0.00	0.00	0.00	0.00	1,219.48	193.46	720.18	532.61	745.67	63.58
4	286.02	0.00	0.00	0.00	0.00	0.00	1,224.19	215.54	717.65	507.20	745.67	165.23
5	286.02	0.00	0.00	0.00	0.00	0.00	1,218.89	215.54	709.78	191.33	730.81	224.45
6	277.29	0.00	0.00	0.00	0.00	21.82	975.09	150.85	782.58	0.00	593.32	173.63
7	272.05	0.00	0.00	0.00	0.00	95.95	802.39	112.02	850.69	0.00	495.62	0.00
8	272.05	0.00	0.00	0.00	0.00	187.88	802.39	370.94	858.08	291.51	609.81	0.00
9	267.06	0.00	0.00	0.00	0.00	217.10	885.21	552.10	861.17	452.55	742.83	0.00
10	264.06	0.00	0.00	0.00	0.00	217.10	821.63	614.10	861.17	410.64	781.54	0.00
11	264.06	0.00	0.00	0.00	0.00	392.21	753.67	642.00	696.19	437.23	781.54	0.00
12	264.06	0.00	0.00	0.00	0.00	294.80	816.35	692.63	487.54	470.56	781.54	0.00
13	264.06	0.00	0.00	0.00	0.00	392.32	1,004.33	747.89	449.34	481.00	771.27	0.00
14	264.06	0.00	0.00	0.00	0.00	518.42	1,094.55	762.82	391.16	481.00	284.37	0.00
15	264.06	0.00	0.00	0.00	149.33	563.78	1,094.55	747.88	357.62	964.42	251.68	0.00
16	264.06	0.00	0.00	0.00	238.93	563.78	1,031.21	728.95	357.62	1,129.70	327.54	0.00
17	110.03	0.00	0.00	0.00	238.93	563.78	993.20	927.75	357.62	805.22	282.45	0.00
18	0.00	0.00	0.00	0.00	238.93	744.96	993.20	1,050.62	782.59	673.84	282.45	0.00
19	0.00	0.00	0.00	0.00	238.93	811.07	1,077.91	1,050.62	1,017.34	750.05	282.45	0.00
20	0.00	0.00	0.00	0.00	238.93	728.50	1,032.74	1,050.62	960.22	784.12	282.45	0.00
21	0.00	0.00	0.00	0.00	238.93	935.20	1,089.95	1,257.07	887.29	784.12	282.45	0.00
22	0.00	0.00	0.00	0.00	238.93	1,241.10	1,079.28	1,421.82	570.27	553.67	305.29	0.00
23	0.00	0.00	0.00	0.00	232.59	1,270.95	849.66	1,461.42	367.66	415.40	0.00	0.00
24	0.00	0.00	0.00	0.00	228.78	1,270.95	0.00	1,347.53	355.52	425.34	0.00	0.00
25	0.00	0.00	0.00	0.00	244.37	1,333.59	0.00	1,276.59	663.10	536.49	0.00	0.00
26	0.00	0.00	0.00	0.00	259.96	1,408.88	0.00	1,276.59	857.84	802.43	0.00	0.00
27	0.00	0.00	0.00	0.00	259.96	1,308.32	0.00	1,240.07	811.89	987.05	0.00	88.27
28	0.00	0.00	0.00	0.00	259.96	1,221.74	398.51	1,210.69	672.03	987.05	0.00	141.22
29	0.00	0.00	0.00	0.00	236.56	1,217.83	637.61	1,206.19	654.04	905.50	0.00	141.22
30	0.00	0.00	0.00	----	271.03	1,210.21	542.78	1,202.48	703.63	677.13	0.00	141.22
31	----	0.00	0.00	----	324.63	----	279.71	----	703.63	855.34	----	94.15
Total	4,563.55	0.00	0.00	0.00	4,139.68	19,188.18	25,152.12	24,071.24	21,412.21	18,524.33	12,038.05	1,232.97

THE YEAR: 130,322.33 ACRE-FEET

DEMANDS BY KANSAS FOR AGREEMENT ACCOUNT WATER IN JOHN MARTIN RESERVOIR

B-12

Demands by Kansas for Agreement Account Water in John Martin Reservoir
(Does not include transit loss account releases)
Report-Year Ending October 31, 1988
Source: Operations Secretary, Arkansas River Compact Administration
(acre-feet)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,289.28	1,289.28	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,289.28	1,351.26	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,289.28	1,388.45	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,289.28	1,388.45	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,289.28	1,388.45	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,289.28	1,388.45	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,289.28	1,388.45	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,074.40	1,388.45	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	892.58	1,388.45	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	892.58	1,289.28	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	892.58	1,190.10	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	892.58	1,190.10	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	390.50	0.00	0.00	1,016.54	1,190.10	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	694.22	0.00	0.00	1,090.92	1,190.10	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	694.22	0.00	0.00	1,090.92	1,190.10	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	694.22	0.00	0.00	1,090.92	1,190.10	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	694.22	0.00	0.00	1,090.92	1,190.10	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	694.22	0.00	0.00	1,092.92	1,190.10	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	694.22	557.86	0.00	1,092.92	1,041.34	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	694.22	892.58	0.00	1,092.92	793.40	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	925.63	892.58	805.80	904.97	793.40	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	1,388.45	334.72	1,289.28	793.40	975.22	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	1,388.45	0.00	1,289.28	793.40	1,190.10	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	1,388.45	0.00	1,289.28	793.40	1,190.10	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	1,388.45	0.00	1,289.28	793.40	1,190.10	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	520.67	0.00	1,289.28	793.40	570.26	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,289.28	1,103.32	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,289.28	1,289.28	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	363.64	0.00	0.00	1,289.28	1,289.28	0.00	0.00	0.00
30	0.00	0.00	0.00	----	793.40	0.00	0.00	1,289.28	1,289.28	0.00	0.00	0.00
31	----	0.00	0.00	----	516.37	---	0.00	---	1,289.28	0.00	---	0.00
Total	0.00	0.00	0.00	0.00	1,673.41	12,250.14	2,677.74	12,409.32	33,461.07	30,913.69	0.00	0.00

THE YEAR: 93,385.37 ACRE-FEET

Appendix B-13

STATELINE FLOW ON DAYS OF KANSAS DEMANDS

Arkansas River at the Stateline
Stateline Flows on Days of Kansas Demands1/
Report-Year Ending October 31, 1988
Source: Operations Secretary, Arkansas River Compact Administration
(cubic feet per second)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	-	-	-	-	-	463.83	259.14	-	769.85	664.99	263.17	-
2	-	-	-	-	-	409.88	267.20	-	782.96	653.89	232.92	-
3	-	-	-	-	-	400.81	289.89	-	779.93	698.76	-	-
4	-	-	-	-	-	392.24	-	-	774.89	708.85	-	-
5	-	-	-	-	-	357.95	-	-	797.08	729.01	-	-
6	-	-	-	-	-	-	-	-	792.03	715.91	-	-
7	-	-	-	-	-	-	-	-	771.87	679.10	-	-
8	-	-	-	-	-	-	-	-	759.77	674.06	-	-
9	-	-	-	-	-	-	-	-	716.91	876.23	-	-
10	-	-	-	-	-	-	-	-	627.17	744.14	-	-
11	-	-	-	-	-	-	-	-	589.87	733.05	-	-
12	-	-	-	-	-	-	-	-	553.06	729.01	-	-
13	-	-	-	-	-	-	-	-	496.09	656.92	-	-
14	-	-	-	-	-	-	-	-	582.81	642.80	-	-
15	-	-	-	-	-	382.15	-	-	515.75	631.21	-	-
16	-	-	-	-	-	481.98	-	-	515.75	627.17	-	-
17	-	-	-	-	-	513.23	-	-	519.79	610.03	-	-
18	-	-	-	-	-	530.88	-	-	562.14	619.11	-	-
19	-	-	-	-	-	530.88	-	-	650.87	729.01	-	-
20	-	-	-	-	-	492.06	109.91	-	754.22	680.11	-	-
21	-	-	-	-	-	501.13	454.25	-	626.17	572.22	-	-
22	-	-	-	-	-	496.09	601.97	56.97 *	585.83	539.95	-	-
23	-	-	-	-	-	680.11	600.96	445.17	539.95	533.90	-	-
24	-	-	-	-	-	743.13	405.85	652.89	515.75	620.12	-	-
25	-	-	-	-	-	757.75	305.02	603.98	506.18	632.22	-	-
26	-	-	-	-	-	747.16	237.96	670.03	495.08	637.76	-	-
27	-	-	-	-	-	642.80	199.14	729.01	489.03	608.02	-	-
28	-	-	-	-	-	409.88	193.09	745.15	501.13	447.19	-	-
29	-	-	-	-	-	329.22	195.11	738.09	638.77	379.13	-	-
30	-	-	-	-	-	279.81	-	770.86	628.18	335.77	-	-
31	-	-	-	-	210.74 *	-	-	-	644.82	304.01	-	-
Total												
CFS	0.00	0.00	0.00	0.00	210.74	10,542.98	4,119.49	5,412.15	19,483.74	19,413.66	496.09	0.00
AC-FT	0.00	0.00	0.00	0.00	418.00	20,912.00	8,171.00	10,735.00	38,646.00	38,507.00	984.00	0.00

THE YEAR: 118,373.00 ACRE-FEET

1/ The stateline flow is the sum of the discharge of the Arkansas River near Coolidge, Kansas and diversions by the Frontier Ditch, occurring on days of Kansas demand, including the applicable rundown period. Based on final published USGS data, see Appendices 9a, 9b, and 9c.

*/ Indicates a partial day discharge only.

B-14a

Diversion by Ditches in Colorado Water District 14
Report-Year ending October 31, 1988
Source: Water Commissioner's Monthly Reports
(acre-feet)

NAME OF CANAL 1/	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Bessemer (River)	1,921.40	0.00	0.00	0.00	2,044.39	4,296.46	4,609.46	14,012.44	5,926.30	6,834.74	4,306.97	4,380.96	48,333.12
Res. or Imported	0.00	0.00	0.00	0.00	0.00	3,061.99	6,521.60	739.25	6,277.01	6,744.88	476.44	73.49	23,894.66
Total Bessemer	1,921.40	0.00	0.00	0.00	2,044.39	7,358.45	11,131.06	14,751.69	12,203.31	13,579.62	4,783.41	4,454.45	72,227.78
Minnequa-Ft. Union	5,454.63	3,154.40	1,612.31	5,926.70	7,204.07	5,129.33	5,051.97	4,152.46	7,475.81	7,235.81	5,855.29	4,593.79	62,846.57
West Pueblo	52.48	0.00	0.00	0.00	31.74	0.00	57.12	141.64	163.36	131.72	50.42	61.49	689.97
Excelsior	0.00	0.00	0.00	0.00	0.00	0.00	0.00	226.12	0.00	0.00	0.00	0.00	226.12
Collier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	174.55	245.95	55.54	0.00	0.00	476.04
Colorado Canal (River)	0.00	0.00	0.00	0.00	5.79	2,459.42	2,270.77	9,593.79	122.24	579.58	0.00	0.00	15,031.59
Res. or Imported	0.00	0.00	0.00	0.00	883.57	1,053.74	2,845.37	4.58	2,714.34	6,742.35	0.00	0.00	14,243.95
Total: Colo. Canal	0.00	0.00	0.00	0.00	889.36	3,513.16	5,116.14	9,598.37	2,836.58	7,321.93	0.00	0.00	29,275.54
Highline (River)	4,218.77	0.00	0.00	0.00	2,987.37	6,273.59	7,104.38	16,784.56	7,113.39	6,779.42	5,535.47	6,886.12	63,683.07
Res. or Imported	0.00	0.00	0.00	0.00	1,264.48	2,163.17	3,613.01	588.84	6,859.44	6,039.27	579.89	0.00	21,108.10
Total: Highline	4,218.77	0.00	0.00	0.00	4,251.85	8,436.76	10,717.39	17,373.40	13,972.83	12,818.69	6,115.36	6,886.12	84,791.17
Oxford Farmer's (River)	879.54	0.00	0.00	0.00	1,101.91	2,662.35	3,676.87	6,751.22	4,305.40	2,531.18	1,295.76	1,023.72	24,227.95
Res. or Imported	0.00	0.00	0.00	0.00	0.00	0.00	792.55	0.00	281.01	1,944.31	297.53	171.50	3,486.90
Total: Oxford Farmer's	879.54	0.00	0.00	0.00	1,101.91	2,662.35	4,469.42	6,751.22	4,586.41	4,475.49	1,593.29	1,195.22	27,714.85
River District #14	12,526.82	3,154.40	1,612.31	5,926.70	13,375.27	20,821.15	22,770.57	51,836.78	25,352.45	24,147.99	17,043.91	16,946.08	215,514.43
Res. or Import Dist. #14	0.00	0.00	0.00	0.00	2,148.05	6,278.90	13,772.53	1,332.67	16,131.80	21,470.81	1,353.86	244.99	62,733.61
Total: District #14	12,526.82	3,154.40	1,612.31	5,926.70	15,523.32	27,100.05	36,543.10	53,169.45	41,484.25	45,618.80	18,397.77	17,191.07	278,248.04

1/ "River" refers to direct flow diversions of native Arkansas River flows
"Res." refers to diversions of stored water released from reservoirs
"Imported" refers to diversions of non-native (transbasin) water brought into the Arkansas basin for the use of the structure diverting it.

B-14b

Diversions by Ditches in Colorado
Water District 17
Report-Year ending October 31, 1988
Source: Water Commissioner's Monthly Reports
(acre-feet)

NAME OF CANAL	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Otero (River)	0.00	0.00	0.00	0.00	79.36	442.26	343.60	2,189.13	562.88	471.82	0.04	0.00	4,089.09
Res. or Imported	0.00	0.00	0.00	0.00	0.00	0.00	308.46	214.91	462.06	630.59	307.88	0.00	1,923.90
Total Otero	0.00	0.00	0.00	0.00	79.36	442.26	652.06	2,404.04	1,024.94	1,102.41	307.92	0.00	6,012.99
Catlin Canal (River)	5,136.35	0.00	0.00	0.00	5,502.17	10,503.64	8,294.96	16,523.98	12,427.78	10,480.30	9,515.82	9,501.62	87,886.62
Res. or Imported	0.00	0.00	0.00	0.00	0.00	0.00	3,865.48	0.00	4,009.52	5,568.36	620.10	0.00	14,063.46
Total: Catlin	5,136.35	0.00	0.00	0.00	5,502.17	10,503.64	12,160.44	16,523.98	16,437.30	16,048.66	10,135.92	9,501.62	101,950.08
Holbrook (River)	4,433.14	0.00	0.00	2,326.76	3,302.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10,062.25
Res. or Imported	0.00	0.00	0.00	0.00	991.63	1,885.32	4,124.01	6,778.97	3,153.05	6,277.44	0.00	0.00	23,210.42
Total: Holbrook	4,433.14	0.00	0.00	2,326.76	4,293.98	1,885.32	4,124.01	6,778.97	3,153.05	6,277.44	0.00	0.00	33,272.67
Rocky Ford	2,503.73	1,054.63	0.00	0.00	1,320.22	2,924.63	5,404.60	6,698.08	6,195.16	5,939.61	3,683.88	1,977.03	37,701.57
Ft. Lyon Storage	3,467.16	17,688.65	32,009.72	23,911.09	884.64	0.00	0.00	0.00	2,136.23	0.00	0.00	0.00	80,097.49
Ft. Lyon (River)	21,561.58	0.00	0.00	0.00	14,362.38	30,284.87	22,873.19	44,802.72	25,074.06	14,057.92	11,240.57	10,442.39	194,699.68
Res. or Imported	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kicking Bird*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total: Ft. Lyon-K.B.	25,028.74	17,688.65	32,009.72	23,911.09	15,247.02	30,284.87	22,873.19	44,802.72	27,210.29	14,057.92	11,240.57	10,442.39	274,797.17
Las Animas Consol.	1,554.75	0.00	0.00	0.00	1,419.45	2,908.68	3,441.59	5,535.97	6,121.44	4,355.11	2,904.88	3,111.14	31,353.01
River - District #17	38,656.71	18,743.28	32,009.72	26,237.85	26,870.57	47,064.08	40,357.94	75,749.88	52,517.55	35,304.76	27,345.19	25,032.18	445,889.71
Res. or Imported #17	0.00	0.00	0.00	0.00	991.63	1,885.32	8,297.95	6,993.88	7,624.63	12,476.39	927.98	0.00	39,197.78
Total District #17	38,656.71	18,743.28	32,009.72	26,237.85	27,862.20	48,949.40	48,655.89	82,743.76	60,142.18	47,781.15	28,273.17	25,032.18	485,087.49
River Dist. #14-#17	51,183.53	21,897.68	33,622.03	32,164.55	40,245.84	67,885.23	63,128.51	127,586.66	77,870.00	59,452.75	44,389.10	41,978.26	661,404.14
Res. or Imp. Dist. #14-#17	0.00	0.00	0.00	0.00	3,139.68	8,164.22	22,070.48	8,326.55	23,756.43	33,947.20	2,281.84	244.99	101,931.39
Total Dist. #14-#17	51,183.53	21,897.68	33,622.03	32,164.55	43,385.52	76,049.45	85,198.99	135,913.21	101,626.43	93,399.95	46,670.94	42,223.25	763,335.53

*Bifurcation from Fort Lyon

B-14a

Diversion by Ditches in Colorado Water District 14
Report-Year ending October 31, 1988
Source: Water Commissioner's Monthly Reports
(acre-feet)

NAME OF CANAL 1/	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Bessemer (River)	1,921.40	0.00	0.00	0.00	2,044.39	4,296.46	4,609.46	14,012.44	5,926.30	6,834.74	4,306.97	4,380.96	48,333.12
Res. or Imported	0.00	0.00	0.00	0.00	0.00	3,061.99	6,521.60	739.25	6,277.01	6,744.88	476.44	73.49	23,894.66
Total Bessemer	1,921.40	0.00	0.00	0.00	2,044.39	7,358.45	11,131.06	14,751.69	12,203.31	13,579.62	4,783.41	4,454.45	72,227.78
Minnequa-Ft. Union	5,454.63	3,154.40	1,612.31	5,926.70	7,204.07	5,129.33	5,051.97	4,152.46	7,475.81	7,235.81	5,855.29	4,593.79	62,846.57
West Pueblo	52.48	0.00	0.00	0.00	31.74	0.00	57.12	141.64	163.36	131.72	50.42	61.49	689.97
Excelsior	0.00	0.00	0.00	0.00	0.00	0.00	0.00	226.12	0.00	0.00	0.00	0.00	226.12
Collier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	174.55	245.95	55.54	0.00	0.00	476.04
Colorado Canal (River)	0.00	0.00	0.00	0.00	5.79	2,459.42	2,270.77	9,593.79	122.24	579.58	0.00	0.00	15,031.59
Res. or Imported	0.00	0.00	0.00	0.00	883.57	1,053.74	2,845.37	4.58	2,714.34	6,742.35	0.00	0.00	14,243.95
Total: Colo. Canal	0.00	0.00	0.00	0.00	889.36	3,513.16	5,116.14	9,598.37	2,836.58	7,321.93	0.00	0.00	29,275.54
Highline (River)	4,218.77	0.00	0.00	0.00	2,987.37	6,273.59	7,104.38	16,784.56	7,113.39	6,779.42	5,535.47	6,886.12	63,683.07
Res. or Imported	0.00	0.00	0.00	0.00	1,264.48	2,163.17	3,613.01	588.84	6,859.44	6,039.27	579.89	0.00	21,108.10
Total: Highline	4,218.77	0.00	0.00	0.00	4,251.85	8,436.76	10,717.39	17,373.40	13,972.83	12,818.69	6,115.36	6,886.12	84,791.17
Oxford Farmer's (River)	879.54	0.00	0.00	0.00	1,101.91	2,662.35	3,676.87	6,751.22	4,305.40	2,531.18	1,295.76	1,023.72	24,227.95
Res. or Imported	0.00	0.00	0.00	0.00	0.00	0.00	792.55	0.00	281.01	1,944.31	297.53	171.50	3,486.90
Total: Oxford Farmer's	879.54	0.00	0.00	0.00	1,101.91	2,662.35	4,469.42	6,751.22	4,586.41	4,475.49	1,593.29	1,195.22	27,714.85
River District #14	12,526.82	3,154.40	1,612.31	5,926.70	13,375.27	20,821.15	22,770.57	51,836.78	25,352.45	24,147.99	17,043.91	16,946.08	215,514.43
Res. or Import Dist. #14	0.00	0.00	0.00	0.00	2,148.05	6,278.90	13,772.53	1,332.67	16,131.80	21,470.81	1,353.86	244.99	62,733.61
Total: District #14	12,526.82	3,154.40	1,612.31	5,926.70	15,523.32	27,100.05	36,543.10	53,169.45	41,484.25	45,618.80	18,397.77	17,191.07	278,248.04

1/ "River" refers to direct flow diversions of native Arkansas River flows
"Res." refers to diversions of stored water released from reservoirs
"Imported" refers to diversions of non-native (transbasin) water brought into the Arkansas basin for the use of the structure diverting it.

B-14b

Diversions by Ditches in Colorado
Water District 17
Report-Year ending October 31, 1988
Source: Water Commissioner's Monthly Reports
(acre-feet)

NAME OF CANAL	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Otero (River)	0.00	0.00	0.00	0.00	79.36	442.26	343.60	2,189.13	562.88	471.82	0.04	0.00	4,089.09
Res. or Imported	0.00	0.00	0.00	0.00	0.00	0.00	308.46	214.91	462.06	630.59	307.88	0.00	1,923.90
Total Otero	0.00	0.00	0.00	0.00	79.36	442.26	652.06	2,404.04	1,024.94	1,102.41	307.92	0.00	6,012.99
Catlin Canal (River)	5,136.35	0.00	0.00	0.00	5,502.17	10,503.64	8,294.96	16,523.98	12,427.78	10,480.30	9,515.82	9,501.62	87,886.62
Res. or Imported	0.00	0.00	0.00	0.00	0.00	0.00	3,865.48	0.00	4,009.52	5,568.36	620.10	0.00	14,063.46
Total: Catlin	5,136.35	0.00	0.00	0.00	5,502.17	10,503.64	12,160.44	16,523.98	16,437.30	16,048.66	10,135.92	9,501.62	101,950.08
Holbrook (River)	4,433.14	0.00	0.00	2,326.76	3,302.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10,062.25
Res. or Imported	0.00	0.00	0.00	0.00	991.63	1,885.32	4,124.01	6,778.97	3,153.05	6,277.44	0.00	0.00	23,210.42
Total: Holbrook	4,433.14	0.00	0.00	2,326.76	4,293.98	1,885.32	4,124.01	6,778.97	3,153.05	6,277.44	0.00	0.00	33,272.67
Rocky Ford	2,503.73	1,054.63	0.00	0.00	1,320.22	2,924.63	5,404.60	6,698.08	6,195.16	5,939.61	3,683.88	1,977.03	37,701.57
Ft. Lyon Storage	3,467.16	17,688.65	32,009.72	23,911.09	884.64	0.00	0.00	0.00	2,136.23	0.00	0.00	0.00	80,097.49
Ft. Lyon (River)	21,561.58	0.00	0.00	0.00	14,362.38	30,284.87	22,873.19	44,802.72	25,074.06	14,057.92	11,240.57	10,442.39	194,699.68
Res. or Imported	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kicking Bird*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total: Ft. Lyon-K.B.	25,028.74	17,688.65	32,009.72	23,911.09	15,247.02	30,284.87	22,873.19	44,802.72	27,210.29	14,057.92	11,240.57	10,442.39	274,797.17
Las Animas Consol.	1,554.75	0.00	0.00	0.00	1,419.45	2,908.68	3,441.59	5,535.97	6,121.44	4,355.11	2,904.88	3,111.14	31,353.01
River - District #17	38,656.71	18,743.28	32,009.72	26,237.85	26,870.57	47,064.08	40,357.94	75,749.88	52,517.55	35,304.76	27,345.19	25,032.18	445,889.71
Res. or Imported #17	0.00	0.00	0.00	0.00	991.63	1,885.32	8,297.95	6,993.88	7,624.63	12,476.39	927.98	0.00	39,197.78
Total District #17	38,656.71	18,743.28	32,009.72	26,237.85	27,862.20	48,949.40	48,655.89	82,743.76	60,142.18	47,781.15	28,273.17	25,032.18	485,087.49
River Dist. #14-#17	51,183.53	21,897.68	33,622.03	32,164.55	40,245.84	67,885.23	63,128.51	127,586.66	77,870.00	59,452.75	44,389.10	41,978.26	661,404.14
Res. or Imp. Dist. #14-#17	0.00	0.00	0.00	0.00	3,139.68	8,164.22	22,070.48	8,326.55	23,756.43	33,947.20	2,281.84	244.99	101,931.39
Total Dist. #14-#17	51,183.53	21,897.68	33,622.03	32,164.55	43,385.52	76,049.45	85,198.99	135,913.21	101,626.43	93,399.95	46,670.94	42,223.25	763,335.53

*Bifurcation from Fort Lyon

B-15

Diversion by Ditches in Water District 67
Report-Year Ending October 31, 1988
Source: Water Commissioner's Monthly Reports
(acre-feet)

NAME OF CANAL	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Fort Bent	529.34	0.00	0.00	0.00	0.00	1,140.51	3,586.17	3,328.31	4,232.79	4,189.15	2,517.06	688.27	20,211.60
Kessee Ditch	399.85	0.00	0.00	0.00	0.00	745.80	942.16	1,088.94	1,152.41	1,259.52	1,057.21	162.65	6,808.54
Amity	3,699.23	0.00	0.00	0.00	0.00	8,810.71	23,835.72	15,112.29	20,315.01	18,478.29	12,724.15	6,573.32	109,548.72
Lamar	1,662.17	0.00	0.00	0.00	3,481.04	5,670.83	8,100.61	10,096.02	10,419.33	6,547.53	4,690.90	4,347.83	55,016.26
Hyde	0.00	0.00	0.00	0.00	0.00	85.29	398.68	285.62	573.23	406.62	319.34	301.49	2,370.27
Manvel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,549.11	729.93	45.62	47.60	2,372.26
X,Y, & Graham	563.35	0.00	0.00	0.00	0.00	1,342.83	2,419.87	2,645.19	3,010.95	2,897.89	1,910.11	1,557.05	16,347.24
Buffalo	197.68	0.00	0.00	0.00	55.54	2,711.44	4,068.16	3,637.74	4,819.91	3,607.99	2,761.03	2,021.19	23,880.68
TOTAL DIST. 67	7,051.62	0.00	0.00	0.00	3,536.58	20,507.41	43,351.37	36,194.11	46,072.74	38,116.92	26,025.42	15,699.40	236,555.57
Trans Mtn. Diversions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRAND TOTAL	7,051.62	0.00	0.00	0.00	3,536.58	20,507.41	43,351.37	36,194.11	46,072.74	38,116.92	26,025.42	15,699.40	236,555.57

DIVERSIONS BY DITCHES IN KANSAS STATELINE TO GARDEN CITY

B-16

Diversions by Ditches in Kansas Stateline to Garden City
Report-Year Ending October 31, 1988
Source: Kansas Division of Water Resources Records
(Acre-Feet)

NAME OF CANAL	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Frontier Ditch	804.00	0.00	0.00	0.00	0.00	516.00	1,765.00	889.00	2,486.00	1,721.00	1,128.00	557.00	9,866.00 *
Ft. Aubrey Canal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL STATELINE TO SYRACUSE	804.00	0.00	0.00	0.00	0.00	516.00	1,765.00	889.00	2,486.00	1,721.00	1,128.00	557.00	9,866.00 *
Amazon Canal	284.00	0.00	0.00	0.00	0.00	8,081.00	1,131.00	4,629.00	12,008.00	8,912.00	0.00	6,034.00	41,079.00
Great Eastern Canal	4,437.00	0.00	0.00	0.00	2,344.00	3,544.00	3,340.00	2,854.00	8,890.00	9,433.00	1,484.00	1,166.00	37,492.00
South Side Ditch	1,071.00	0.00	0.00	0.00	0.00	879.00	3,552.00	920.00	5,450.00	5,921.00	1,021.00	1,728.00	20,542.00
Farmers Ditch	789.00	0.00	0.00	0.00	137.00	5,018.00	2,394.00	101.00	3,802.00	4,947.00	2,051.00	1,914.00	21,153.00
Garden City Canal	107.00	0.00	0.00	0.00	0.00	373.00	345.00	274.00	633.00	629.00	87.00	202.00	2,650.00
TOTAL SYRACUSE TO GARDEN CITY	6,688.00	0.00	0.00	0.00	2,481.00	17,895.00	10,762.00	8,778.00	30,783.00	29,842.00	4,643.00	11,044.00	122,916.00
TOTAL STATELINE TO GARDEN CITY	7,492.00	0.00	0.00	0.00	2,481.00	18,411.00	12,527.00	9,667.00	33,269.00	31,563.00	5,771.00	11,601.00	132,782.00

* 3533.00 acre-feet returned directly to the river

Transmountain Diversions Into the Arkansas Basin 1/
Report-Year Ending October 31, 1988
Source: Division Engineer Colorado Water Division #2
(acre-feet)

STRUCTURE 2/	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY (3)	JUNE	JULY	AUG.	SEPT.	OCT.	TOTAL
Twin Lake Tunnel 2/	271.0	117.0	89.0	81.0	89.0	370.0	8,000.0	20,110.0	3,310.0	56.0	35.0	13.0	32,541.0
Homestake Tunnel 3/	0.0	0.0	7,300.0	7,670.0	7,800.0	0.0	0.0	0.0	0.0	2,450.0	4,050.0	5,290.0	34,560.0
Wurtz Ditch	0.0	0.0	0.0	0.0	0.0	7.1	625.0	1,080.0	159.0	7.9	0.0	0.0	1,879.0
Larkspur Ditch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	41.0	27.0	16.0	0.0	130.0
Ewing Ditch	0.0	0.0	0.0	0.0	0.0	1.4	183.0	355.0	138.0	60.0	4.2	0.0	741.6
Columbine Ditch	0.0	0.0	0.0	0.0	0.0	0.0	220.0	1,160.0	144.0	34.0	0.0	0.0	1,558.0
Boustead Tunnel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12,010.0	2,310.0	0.0	0.0	0.0	14,320.0
Busk-Ivanhoe System/Carlton Tunnel	0.0	0.0	0.0	0.0	0.0	0.0	857.0	2,640.0	507.0	99.0	51.0	51.0	4,205.0
Blue River Project 4/	0.0	0.0	0.0	0.0	0.0	14.0	1,337.0	7,464.0	1,691.0	322.0	0.0	0.0	10,828.0
TOTAL	271.0	117.0	7,389.0	7,751.0	7,889.0	392.5	11,222.0	44,865.0	8,300.0	3,055.9	4,156.2	5,354.0	100,762.6

NOTES

(1) Transmountain water diverted into the Arkansas Basin through a facility is generally deliveried to some type of storage prior to use. The values reported reflect water as it is diverted into the basin, generally to storage, and not necessarily measured as flows below Pueblo, Colorado.

(2) Structure ownership as follows:
Twin Lakes: Colorado Springs 54.65%, Pueblo 23.14%, Pueblo West 11.56%, Aurora 4.9%, other 5.75%
Homestake: Colorado Springs 50%, Aurora 50%
Ewing, Columbine, and Wurtz: Pueblo 100%
Larkspur: Catlin Consolidated Company 100%
Boustead: Southeastern Colorado Water Conservancy District 100%
Busk Ivanhoe/Carlton: Pueblo 50%, Aurora 49%, Others 1%
Blue River: Colorado Springs 100%

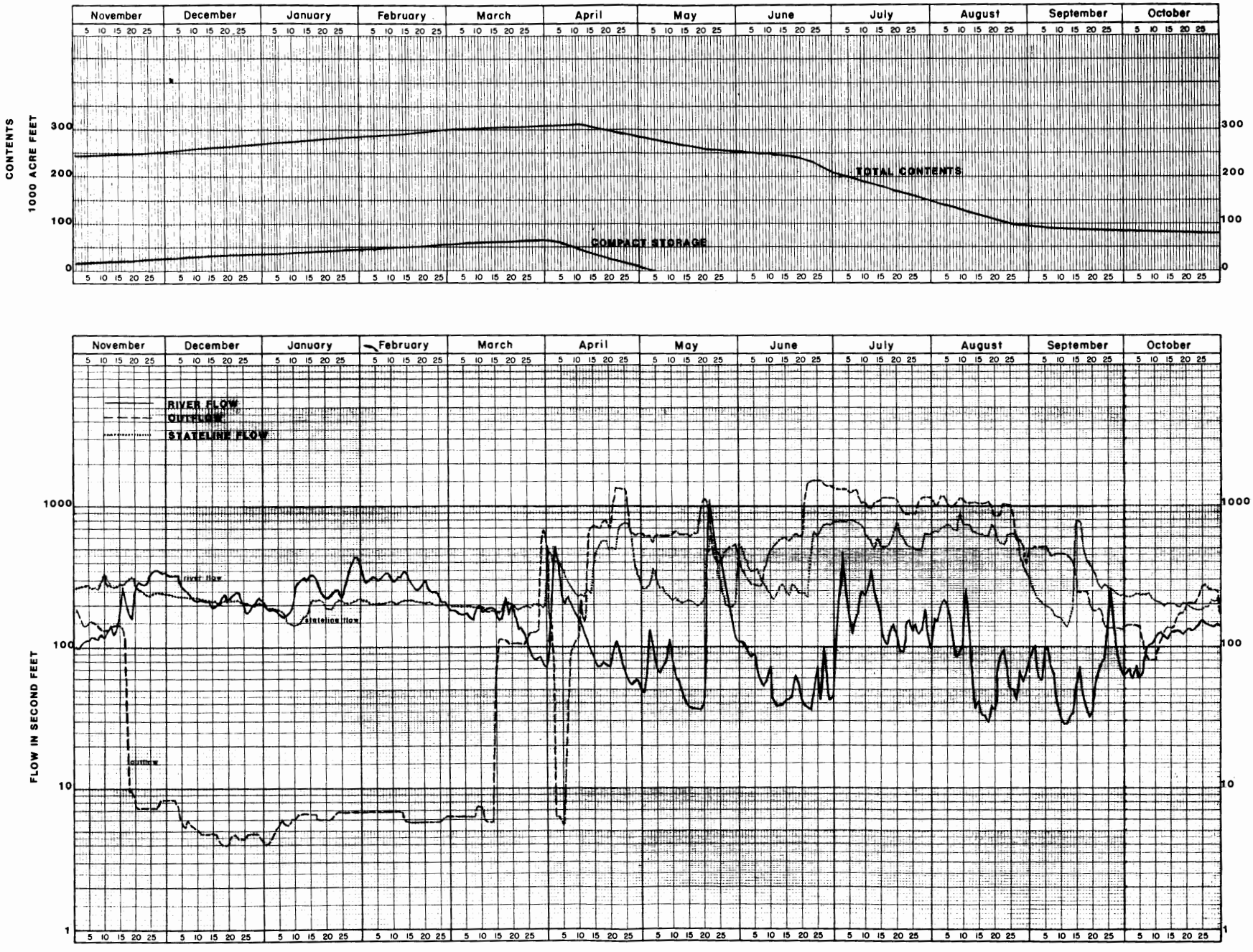
(3) Aurora diversion from Twin Lake, Busk-Ivanhoe, and Homestake Tunnels are used in the South Platte River Basin. Total imports for 1988 should be reduced by 15906 af to reflect transmountain water that Aurora used in the South Platte River Basin.

(4) Values show amount of water "delivered into Colorado Springs potable water system" from the Blue and So. Platte Rivers by either direct flow or transmountain exchange. Includes 149 af shown in Table 1 of 1988 Blue River report prepared by USBR.

B-18

Summary Tabulation
Report Year
November 1, 1987 to October 31, 1988
Source: Colorado Water Conservation Board

LOCATION	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
Arkansas River at Las Animas - cfs	4,834	6,039	7,335	6,534	3,332	2,470	1,111	1,093	4,507	2,265	1,523	2,951	43,994
- a.f.	9,588	11,978	14,549	12,960	6,609	4,899	2,204	2,168	8,940	4,493	3,021	5,853	87,262
Purgatoire River near Las Animas - cfs	1,272	1,172	813	1,629	1,412	1,661	4,444	670	879	635	613	656	15,857
- a.f.	2,523	2,325	1,613	3,231	2,801	3,295	8,815	1,329	1,744	1,260	1,215	1,301	31,452
River flow into JMR - cfs	6,106	7,211	8,148	8,163	4,744	4,131	5,555	1,763	5,386	2,900	2,136	3,607	59,851
- a.f.	12,111	14,303	16,162	16,191	9,410	8,194	11,019	3,497	10,684	5,753	4,236	7,154	118,714
End of Month Contents JMR - a.f.	253,677	269,984	287,158	300,185	303,934	282,456	255,638	211,638	150,039	96,039	81,699	78,988	
Net Change in Reservoir contents - a.f. Increase	7,303	16,307	17,174	13,027	3,749	---	---	----	---	---	---	---	---
Decrease	---	---	---	---	---	- 21,478	-26,818	-44,000	-61,599	-54,000	-14,340	-2,711	-167,386
Outflow from JMR - cfs	2,504	159	190	183	3,176	16,449	19,474	23,452	34,487	29,267	9,442	5,198	143,981
- a.f.	4,967	316	376	363	6,299	32,626	38,627	46,517	68,405	58,051	18,728	10,310	285,585
Diversion in Colorado Dist. 67, - a.f.	7,052	0	0	0	3,537	20,507	43,351	36,195	46,073	38,117	26,025	15,699	236,556
Arkansas River at Stateline - cfs	8,088	6,730	5,897	5,992	6,042	12,839	8,727	11,737	19,485	19,413	8,531	6,471	119,952
- a.f.	16,043	13,349	11,697	11,885	11,984	25,467	17,310	23,281	38,648	38,505	16,921	12,835	237,925
Diversion by Ditches in Kansas Stateline to Garden City - a.f.	7,492	0	0	0	2,481	18,411	12,527	9,667	33,269	31,563	5,771	11,601	132,782



INFLOW, OUTFLOW AND CONTENTS OF JOHN MARTIN RESERVOIR AND STATELINE FLOW

Report Year, November 1, 1987 – October 31, 1988

PLATE I