#### Tenth

#### Annual Report

## ARKANSAS RIVER COMPACT ADMINISTRATION

(1958)

For the Report-Year November 1, 1957, to October 31, 1958

#### LAMAR, COLORADO

December 9, 1958

#### THE ADMINISTRATION

CARL G. PAULSEN, Chairman and Representative of the United States HACKET SMARTT, Secretary and Treasurer

FELIX L. SPARKS, DAVID JENKINS AND HACKET SMARTT for Colorado

R. V. SMRHA, LOGAN N. GREEN AND CARL E. BENTRUP for Kansas

\*

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#### Annual Report of

#### ARKANSAS RIVER COMPACT ADMINISTRATION

(1958)

Report-Year November 1, 1957, to October 31, 1958

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, 1957, through October 31, 1958 as follows:

#### 1. Members of the Administration

Representative of the United States:

Carl G. Paulsen

Colorado Representatives:

Ivan C. Crawford, Denver, Colorado (Nov. 1, 1957-June 11, 1958)

Robert M. Gildersleeve, Denver, Colorado (June 12, 1958-July 14, 1958)

Felix L. Sparks, Denver, Colorado (July 15, 1958-October 31, 1958)

David Jenkins, Las Animas, Colorado Hacket Smartt, Lamar, Colorado

Kansas Representatives:

Carl É. Bentrup, Deerfield, Kansas Logan N. Green, Garden City, Kansas R. V. Smrha, Topeka, Kansas

#### 2. Officers of the Administration

Chairman:

Carl G. Paulsen

Vice-Chairman:

Logan N. Green of Garden City, Kansas

Secretary:

Harry C. Nevius of Lamar, Colorado (Nov. 1, 1957-Dec. 10, 1957)

Hacket Smartt of Lamar, Colorado (Dec. 10, 1957-Oct. 31, 1958)

Treasurer:

Harry C. Nevius of Lamar, Colorado (Nov. 1, 1957-Dec. 10, 1957)

Hacket Smartt of Lamar, Colorado (Dec. 10, 1957-Oct. 31, 1958)

#### 3. Standing Committees

Administrative and Legal Committees:

Logan N. Green of Kansas (Chairman)

David Jenkins of Colorado

#### Engineering Committee:

R. V. Smrha of Kansas, (Chairman)

Ivan C. Crawford of Colorado (Nov. 1, 1957-June 11, 1958)

Felix L. Sparks (Oct. 28, 1958-Oct. 31, 1958)

#### Operations Committee:

Carl E. Bentrup of Kansas (Chairman)

Hacket Smartt of Colorado

Carl G. Paulsen, Representative of the United States, is ex-officio member of all standing committees.

#### 4. Meetings

December 10, 1957	Lamar, Colorado	Annual Meeting
March 18, 1958	Lamar, Colorado	Regular Meeting
July 8, 1958	Lamar, Colorado	Special Meeting
July 22, 1958*	Lamar, Colorado	Regular Meeting
October 28, 1958	Lamar, Colorado	Special Meeting

<sup>\*</sup>Quorum not present-meeting not held.

#### 5. Fiscal

(a) Balance on hand October 31, 1957, Auditor's Report..\$1,299.20

#### (b) Receipts

State of Colorado, Dec. 2, 1957	\$1,800.00
State of Kansas, Dec. 31, 1957	1,200.00
State of Colorado, Aug. 26, 1958	1,800.00
State of Kansas, Sept. 4, 1958	1.200.00

6,000.00

\$7,299.20

(c) Disbursements by the Administration—November 1, 1957 to October 31, 1958:

No.	Date	Payee and Purpose	Amount
227	12-31-57	U. S. Geological Survey, Cooperative-Agreement \$	125.00
228	12,21,1	R W Rollins Audit and Service	65.00
229		Schoenith Office Equipment, Supplies	9.74
230 231		H. C. Nevius, Secy., Mileage	19.60
231		\$3.00 () A S I )	130.33
232		Secretary Salary, December (less \$1.50 O.A.S.I.)	65.17
233		Treasurer of U.S. Deposits by States	9.00
234		Mtn States T. & T. Co., November and December	
234		Service and Tolls	24.50
235	1- 3-58	Lamar Daily News Stationery	10.50
236	3- 1-58	Secretary Salary, January and February (less \$4.50	
		O A S I )	195.50
237		Treasurer of U. S., Deposits by States	9.00
238		U. S. Geological Survey, Cooperative Agreement	125.00
239		Peerless Printing Co., Annual Reports	554.0
240	3- 5-58	Mtn States T. & T. Co., January and February	
		Service and Tolls.	23.3
241	5- 3-58	Lamar Daily News, Printing & Cards	23.3
242		U. S. Geological Survey, Cooperative Agreement	125.0
243		U. S. Geological Survey, Cooperative Agreement Secretary Salary, March and April (less \$4.50	107.7
		O A S I )	195.5
244	5- 6-58	Mtn. States T. & T. Co., March and April Service	226
		and Tolls	25.6
245	7- 1-58	Mtn. States T. & T. Co., May and June Service	30.3
		and Tolls	18.0
246	6-30-58	Treasurer of U. S., Deposits by States	195.5
247	7. 1.58	Secretary Salary, May & June (less \$4.50 O.A.S.I.)	125.0
248	8-8-58	U. S. Geological Survey, Cooperative Agreement	1.47.0
249	9- 2-58	Mtn. States T. & T. Co., July and August Service	33.4
		and Tolls Secretary Salary, July and August (less \$4.50	22.
250			195.5
			9.0
251		Treasurer of U. S., Deposits by States Secretary Salary, September and October (less	2.00
252	10-31-58	\$4.50 O A S I )	195.5
252		\$4.50 O.A.S.I.) Mtn. States T. & T. Co., September and October	
253		Service and Tolls	35.1
254		U. S. Geological Survey, Cooperative-Agreement	125.0
255		Valley Agency Inc - Premium due on Bond	
2))		Valley Agency, Inc. — Premium due on Bond #1203007	25.0
256		Treasurer of U. S., Deposits by States	9.0
257		Hacket Smartt, Secy., Mileage \$34.72, Postage	
2)/		\$5.00, & Typing \$15.00	54.
			-
		Total Disbursements	\$2 786

- (e) On July 8, 1958, the Administration approved a budget for the fiscal year July 1, 1959 to June 30, 1960, for transmittal to the Governor of each of the States of Colorado and Kansas in accordance with Article VII-E (2) of the Compact as follows:

Personal Service	\$3,825.00
S1 200 00	)
Social Security	)
Gage Reports	1
Audit of Accounts	
Capital Outlay	
Maintenance and Operation.	300.00
Bond 25.00	1,675.00
Frinting	
Travel	
Tuning and Mali	
Investigation and Inspection	
Office Supplies 150.00	
Total Budget proposed for 1050.60	)
Total Budget proposed for 1959-60.	5,800.00
Estimated Carry-over as of June 30, 1959.	1,800.00
Total to be appropriated by Colorado and Kansas	24 000 00
To be appropriated by Colorado (60%)	\$4,000.00
To be appropriated by Colorado (60%)	2,400.00
To be appropriated by Kansas (40%)	1,600.00
	\$4,000.00

(f) Pursuant to provisions of the Compact (Article VIII-E (3)) and of the By-Laws of the Administration (Article VII (5)), the receipts and disbursements of the Administration have been audited for the period commencing November 1, 1957 through October 31, 1958, the end of the Report-year. The report of such audit is hereto attached as Appendix "A".

#### 6. Cooperative Studies and Activities

- (a) Article VIII-G (1) of the 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 waters 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 streamflow and related data. Under the By-Laws of the Administration, these cooperative studies and activities are assigned to the Engineering Committee of the Administration.
- (b) 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 Corps of Engineers has continued to operate John Martin Reservoir in

accordance with the provisions of the Compact. A new capacity table of John Martin Reservoir, adopted as of June 1, 1958, has been provided by the Corps of Engineers as a result of its resurvey of the sediment contents of the reservoir by sonic methods in 1957, but a complete analyses and report of this resurvey and study has not yet been made because of insufficient funds for such purposes. The United States Geological Survey has also continued the operation of the Compact gaging stations and the analyses and compilation of hydrologic data presented in this report and used in the administration of the Compact. To assist that agency in defraying the costs of operating the Compact gaging stations and performing other hydrologic work required in the administration of the Compact, the Administration entered into a cooperative agreement with the Geological Survey for the fiscal year ending June 30, 1959. Under the terms of this agreement, \$1,000 was provided by the Administration and an equal amount by the Geological Survey for the above purposes. To facilitate the operation of the John Martin Reservoir by the Corps of Engineers, the Geological Survey has provided a Stevens telemark recording gage at the gaging station below the dam which provides an instantaneous record at the dam of the stages of the river at this gaging station. This instrument is of advantage in determining water releases from the reservoir, especially when changes in such releases are requested by the Administration. The Geological Survey has also made other improvements to some of the Compact gaging stations during the current year, including the installation of a bubbler recording gage at the gaging station on the Arkansas River at Las Animas above the reservoir.

#### 7. Water Supply, Reservoir Operation and Hydrologic Data

At the beginning of the Compact Year on November 1, 1957, John Martin Reservoir contained 220,054 acre feet of stored water. At the beginning of the irrigation season on April 1, 1958, the reservoir storage had increased to 278,724 acre feet.

On June 1, 1958, the Corps of Engineers published a revised capacity table for the reservoir based upon a survey of August 1957. This revised table evidences that substantial sedimentation has occurred in the reservoir since it was placed in operation in 1943. The new capacity table computes the total capacity of the reservoir at 645,512 acre feet. Of this total capacity, 366,969 acre feet is allocated to the conservation pool with the remaining 278,543 acre feet allocated to flood control.

Above normal rains in the summer and fall of 1957, together with favorable snowfall during the winter months, accomplished an all-time high for storage in John Martin Reservoir, both at the close of the irrigation season on October 31, 1957 and at the beginning of the irriga-

tion year on April 1, 1958. Storage on October 31, 1957, reached 220,054 acre feet and by April 1, 1958, storage had increased to 278,724 acre feet.

Melting snows from the mountains brought the reservoir up to the 360,293 acre foot mark by July 27, 1958, the highest point in the history of the reservoir. With normal summer precipitation at this point the reservoir should have reached the top of the conservation pool at 366,969 acre feet. However, the summer of 1958 was both unusually hot and dry. Normal summer rains did not occur and releases of water for irrigation were correspondingly quite heavy. Storage in the reservoir had been reduced to 230,999 acre feet at the close of the irrigation season on October 31, 1958. Despite the dry summer, however, storage on October 31, 1958, again established an all-time high since the reservoir was first placed in operation in January 1943.

The reservoir operations progressed smoothly all season. Neither Colorado nor Kansas demanded any river flow in addition to stored water. Colorado made its first demand on the reservoir on April 23, 1958, and with the exception of five days in May, this demand existed for the balance of the irrigation season.

The stateline flow, with the exception of the first three days in July, took care of the Kansas needs until August 8. At that time Kansas required stored water for the balance of the season with the exception of the last four days of August and the period October 2-17.

In summary the outstanding storage success in John Martin reservoir for the past compact year is best illustrated by a compilation of historic storage in the reservoir, as follows:

Historic Storage in John Martin Reservoir (in acre feet)

April 1,	1943 48,803	October	31,	1943	0
	1944 26,165	October	31,	1944	5,522
April 1,	1945 52,264			1945	
April 1,	1946 55,700			1946	
April 1,	1947 63,917	October	31,	1947	0
April 1,	1948107,968	October	31,	19481	100,003
April 1,	1949142,797			19491	
April 1,	1950158,411			1950	
	1951 81,504			1951	
April 1,	1952 46,499			1952	
April 1,	1953 21,266			1953	
April 1,	1954 15,853			1954	
April 1,	1955 6,033			1955	
April 1,	1956 48,363			1956	
	1957 3,891			19572	
	1958278.724			19582	

#### 8. Gaging Stations

Stream-flow records were obtained at all of the Compact gaging stations. However, shifting of the channels on the Arkansas River and Purgatoire River near Las Animas and the Arkansas River near Coolidge, Kansas has increased the difficulty of maintaining current stage-discharge relations for operation.

At the July, 1958 meeting the U. S. Geological Survey submitted a report of the repairs or rehabilitation needed at the Compact gaging stations. This report included (1) a description of the proposed work, (2) estimate of costs and (3) that Agency's recommended priority based on the importance of the station and the necessity or urgency of the work. The total cost of this program was \$3,050. It was recommended that this work not be started until after July 1, 1959.

The radio equipment at the gage on the Arkansas River below John Martin Reservoir was replaced with a Telemark with a receiver in the Corps of Engineers office at Caddoa. Serviceable parts of this radio will be used to make temporary field repairs to the other radios. The two radios at the State-line stations will be sent to Denver during the 1958-59 non-irrigation season for complete testing and repairs as required.

For the fiscal year beginning July 1, 1958 and ending June 30, 1959, the Administration contributed \$1,000, matched by an equal amount by the U. S. Geological Survey, to assist that Agency in operating the Compact gaging stations. This was an increase of \$500 by each party over previous years and was to provide for increased costs, additional work required in preparing current records and to permit more intensive field work during critical periods.

#### 9. Findings of Fact by the Administration

The Administration has had no occasion, during the period covered by this report, to make any Findings of Fact under the provisions of the Arkansas River Compact.

#### 10. Changes in Personnel

Effective June 11, 1958, Dean Ivan C. Crawford resigned as Director of the Colorado Water Conservation Board and thereby vacated his position on the Arkansas River Compact Administration. Mr. Crawford had served on the Administration since March 1, 1953, and a resolution expressing appreciation for his services was adopted by the Administration at a meeting October 28, 1958. A copy of the resolution is included in this report as Appendix "C".

Mr. R. M. Gildersleeve was appointed Acting Director of the Colorado Water Conservation Board and by virtue of such appointment served as a member of the Compact Administration for the period June 12, 1958 through July 14, 1958.

On July 15, 1958, Mr. Felix L. Sparks was appointed Director of the Colorado Water Conservation Board and has served as a member of the Administration since that date.

Respectfully submitted,

#### ARKANSAS RIVER COMPACT ADMINISTRATION

BY:

CARL G. PAULSEN,
Representative of the United States and
Chairman of the Administration

FELIX L. SPARKS
DAVID JENKINS
HACKET SMARTT
Colorado Members of the Administration

R. V. SMRHA
LOGAN N. GREEN
CARL E. BENTRUP
Kansas Members of the Administration

Lamar, Colorado December 9, 1958.

#### APPENDICES

for

#### Annual Report of the Arkansas River Compact Administration

For the Report-Year November 1, 1957 to October 31, 1958

APPENDIX "A" -Auditor's Report.

APPENDIX "B-1" — Daily Discharges, Arkansas River near Pueblo, Colorado.

APPENDIX "B-2" —Daily Discharges, Arkansas River at Las Animas, Colorado.

APPENDIX "B-3" —Daily Discharges, Purgatoire River near Las Animas, Colorado.

APPENDIX "B-4" - Inflow into John Martin Reservoir.

APPENDIX "B-5" - Daily Contents, John Martin Reservoir.

APPENDIX "B-6" —Outflow from John Martin Reservoir.

APPENDIX "B-7" —Daily Discharges, Arkansas River at Colorado-Kansas Stateline.

APPENDIX "B-8" — Daily Discharges, Arkansas River at Garden City, Kansas.

APPENDIX "B-9" - Demands by Colorado for Water.

APPENDIX "B-10"-Demands by Kansas for Water.

APPENDIX "B-11"-Stateline Flow on Days of Kansas Demand.

APPENDIX "B-12"—Diversions by Ditches in Colorado Water Districts 14 and 17.

APPENDIX "B-13"—Diversions by Ditches in Colorado Water District 67.

APPENDIX "B-14"—Diversions by Ditches in Kansas, Stateline to Garden City.

APPENDIX "B-15"-Summary Tabulation.

APPENDIX "C" - Resolution concerning Ivan C. Crawford.

APPENDIX "D" —By-Laws of Arkansas River Compact Administration as amended.

PLATE I —Graphs showing inflow, outflow and storage at John Martin Reservoir and Stateline Flow for Report-Year.

#### APPENDIX "A"

\* \* \* \*

#### AUDITOR'S REPORT

ROBERT W. ROLLINS

Certified Public Accountant La Junta, Colorado

December 6, 1958

To the Representatives Arkansas River Compact Administration Lamar, Colorado

Gentlemen:

In accordance with your request, an examination has been made of the financial transactions of the Arkansas River Compact Administration for its "Report-Year" — November 1, 1957 to October 31, 1958. The results of the audit are expressed in the attached statement of cash receipts and disbursements, Schedule I, Page No. 17. The remarks which follow are offered as additional information and tend to describe the extent of the audit work performed.

#### General Comments

Schedule I, reflects the beginning balance of cash in bank, revenue assessments received from the States of Colorado and Kansas, expenditures by classification and the ending balance of cash in bank.

As provided for in the budget of the Administration's Meeting of October 26, 1956 and authorized for call in the Minutes of the Meeting of October 22, 1957, funds due from Colorado (60% share) of \$1,800.00 and Kansas (40% share) of \$1,200.00 were received for the budget year ending June 30, 1958 and placed on deposit with the First National Bank in Lamar, Colorado on the respective dates of December 2, 1957 and December 31, 1957. In like manner, per request of the Representatives in their Minutes of the July 8, 1958 Meeting, budget contributions for the year ended June 30, 1959, were received from Colorado and Kansas in the respective amounts of \$1,800.00 and \$1,200.00. According to the Administration's records, Colorado funds were deposited on August 26, 1958, while monies received from Kansas were put in the bank on September 4, 1958.

All disbursements were made by checks drawn on the Administration's account at the First National Bank in Lamar, Colorado. The individual checks were examined for amount, signature, and endorsement. Amounts so expended were substantiated by verification to payees' statements, authorization of payment as evidenced in minutes of the Compacts' meeting, or other supporting documents.

Consistent with prior years' practices, the Secretary's salary for the current year of \$1,200.00 has been reduced by the Old-Age and Survivor's Insurance deductions amounting to \$27.00. This figure of \$27.00 together with the Administration's contribution of like amount are shown under the classification of taxes on Schedule I.

Travel expense of the Secretary for the fiscal year ending October 31, 1958 amounted to \$54.32 or 679 miles at \$0.08 per mile.

Payments made to the U.S. Treasurer totaling \$54.00 during the year were accompanied by related returns referring to Old-Age and Survivor's Insurance information on the Secretary.

Cash in bank at October 31, 1958, per Schedule I, amounting to \$4,512.86 was reconciled to the amount directly confirmed by the First National Bank in Lamar, Colorado.

The following summary compares the Administration's financial position at October 31, 1958 with that of a year ago.

#### ARKANSAS RIVER COMPACT ADMINISTRATION

#### Lamar, Colorado

#### COMPARATIVE BALANCE SHEET

#### ASSETS

ASSE15			
	October 31, 1958	October 31 1957	
Cash in Bank Equipment (Portable typewriter)		\$1,299.20 92.50	\$3,213.66
Total Assets	\$4,605.36	\$1,391.70	\$3,213.66
Capital			·
Unexpended fund balance Expended fund balance for		\$1,299.20	\$3,213.66
equipment	92.50	92.50	-0-
TOTAL CAPITAL	.,\$4,605.36	\$1,391.70	\$3,213.66

Because the "Budget Year" covers the period July 1, 1957 to June 30, 1958, it has been necessary to combine related months of the last two "Report Years" in order to compare actual expenditures with the related budgeted items. Such a comparison is set forth for year review in the following summary.

#### Comparison of Disbursements With Budget Budget Year July 1, 1957 to June 30, 1958

Classification	Disbursements	Budget
Personal Services		
Secretary's salary	\$1,000.00(*)	\$1,200.00
share		50.00
Gage Reports		500.00
Professional services (audit of accounts)		75.00
Capital outlay	0	300.00
Maintenance and Operation		
Bond—Treasurer	25.00	25.00
Printing		600.00
Office publications	0	100.00
Travel expense—Secretary	55.04	150.00
Typing and mailing		200.00
Investigation and inspection		150.00
Telephone and telegraph		300.00
Office supplies and repairs		150.00
Totals		\$3,800.00

#### NOTES

- (\*) Secretary's salary for May and June 1958 totaling \$200.00 paid on July 1, 1958.
- (\*\*) Balance of \$125.00 paid Geological Survey on August 8, 1958.

According to the Minutes of the Meeting of July 23, 1957, the budgeted expenditures for the fiscal year ended June 30, 1959 were approved in the amount of \$3,800.00. Of this amount, \$800.00 is to come from an unexpended balance carry over at June 30, 1958, supplemented by an appropriation of \$3,000.00 from the States of Colorado and Kansas in the respective amounts of \$1,800.00 and \$1,200.00. You are reminded, these sums have been called and received and are discussed in detail on page no. 14 of this report. The Administration anticipates, as evidenced in the Meeting of July 8, 1958, budgeted expenditures for the period July 1, 1959 to June 30, 1960 will total some \$5,800.00. Of this figure, \$1,800.00 will come from unexpended funds of the Compact as of June 30, 1959, while the remaining balance of \$4,000.00 will be requested from the States of Colorado and Kansas on a 60% 40% basis.

Respectfully submitted, ROBERT W. ROLLINS, Certified Public Accountant

#### ARKANSAS RIVER COMPACT ADMINISTRATION Lamar, Colorado

### STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS NOVEMBER 1, 1957 TO OCTOBER 31, 1958 (Refer to comments in text of audit)

(Refer to comments in text of audit)	
CASH IN BANK AT NOVEMBER 1, 1957 (per audit)	\$1,299.20
RECEIPTS	
Revenue from assessments:  Colorado portion 60%\$3,600.00 <sup>(1)</sup> Kansas portion 40%	
TOTAL RECEIPTS	6,000.00
Total Available Funds	7,299.20
DISBURSEMENTS	
Salary of secretary\$1,200.00 Less: O.A. and S.I. deductions 27.00	
Sub-total 1,173.00	
Printing—Annual report	
Telephone and telegraph	
Travel expense of secretary 54.32 Audit fee (fiscal year ended	
October 31, 1957)	
Premium on secretary's bond. 25.00	
Typing and mailing	
Office supplies, stationery, etc	
Taxes—O.A. and S.I. payments Deduction from Employees\$27.00 Administration portion	
Stream-gaging expense of the U.S.	
Geological Survey 625.00	2 706 24
Total Disbursements	2,786.34
Cash in Bank at October 31, 1958	\$4,512.86
Cash on Deposit at First National Bank, Lamar, Colo	RADO
Per direct confirmation at October 31, 1958 \$4,736.74  Less: Outstanding checks of:  No. 253 Mountain States Tel.  and Tel	
Adjusted bank balance	\$4,512.86

Note

SCHEDULE I

<sup>(1)</sup> Receipts include States' respective contributions for the budget years ended June 30, 1958 and 1959.

#### APPENDIX "B-1"

\* \* \* \*

#### ARKANSAS RIVER NEAR PUEBLO, COLORADO

1 398 485 3 573 484 4 609 485 6 644 493 6 644 493 7 609 485 8 660 485 9 577 485 10 545 509 11 545 543 11 545 543 12 562 534 13 574 508 14 554 500 14 574 508 15 574 508 16 545 500 17 487 500 18 574 500 18 574 500 19 545 545 20 545 500 21 574 500 22 574 500 23 600 24 500 25 600 26 600 27 600 28 600 29 600 20 745 700 20 745 700 20 745 700 21 570 460 22 570 440 23 600 24 600 25 600 26 600 27 600 28 600 28 600 29 600 20 700 20	509 564 545 547 547 547 5487 6487 6487 6487 6487 6487 6487	382	MAK.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT
	564 5772 5772 5773 5773 5784 6119 6119		395	302	716	3540	614	234	349	154
	5 45 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	396	402	285	689	2820	665	190	269	158
	563 547 5772 547 487 483 419 419	389	395	279	757	2800	658	187	235	163
	545 5472 5473 487 487 419 462	410	374	242	195	2880	709	367	230	141
	545 545 487 433 419 462	439	374	248	807	3270	927	455	235	134
	545 487 433 419 462	404	374	231	837	2960	812	484	182	140
	487 433 419 462	376	360	223	837	3580	992	423	65	126
	433 419 462	369	381	223	1030	3840	1000	395	169	104
	419	369	375	229	1760	3740	842	400	156	96
	462	405	396	252	1320	2940	658	485	151	134
		432	353	276	974	2280	572	538	243	190
	581	470	339	268	923	1490	602	554	295	136
	617	446	304	268	972	1420	593	572	235	125
	479	439	274	281	951	1150	538	518	493	98
	446	410	280	287	1210	1020	520	509	485	83
	462	382	292	297	1260	1090	565	658	489	121
	439	376	292	320	1100	1180	622	801	500	114
	417	389	292	370	1210	1350	574	094	512	129
	425	388	286	503	166	1340	750	820	206	138
	439	389	286	554	516	1400	740	1080	470	129
	444	403	280	479	1060	1340	730	959	446	108
	461	410	274	447	1200	1470	899	179	411	148
	494	439	286	447	1560	1270	780	820	222	181
	485	486	274	486	2580	11110	938	758	138	181
	492	535	303	470	3500	1090	677	299	121	182
	431	502	324	433	3450	1140	647	562	138	209
	432	453	304	440	3620	1040	801	526	180	232
,	432	389	285	398	4010	603	874	508	146	256
	383		317	511	4280	404	160	508	139	281
	383		367	662	4250	267	388	499	139	306
1 526	382		374		4080		278	508		283
	14768	11677	10212	10711	53476	56214 2149	21494	17524	8349	4977
c ft 32920 30140	29290	23160	20260	21240	106100	111500	42630	34760	16560	0820
0	0	0	0	2310	5150	6770	21800	22450	5810	0
(b) ac. ft. 32920 30140	29290	23160	20260	18930	100950	104730	20830	12310	10750	9870

#### APPENDIX "B-2"

\* \* \* \*

#### ARKANSAS RIVER AT LAS ANIMAS, COLORADO

ARKANSAS RIVER AT LAS ANIMAS, COLORADO Report-Year Ending October 31, 1958 USGS Records—Provisional, subject to revision

TV	100	DEC.	AN.	FEB.	MAK.	ALK.	IVI	JOINE .	100	voor.		-
_	24	96	129	132	5.4	36	29	2980	58	28	22	16
	03	230	152	218	20	64	61	1790	58	29	18	12
l ce	131	330	170	126	44	98	25	984	5.2	27	16	12
. 4	06	325	162	108	45	86	50	714	65	18	14	13
20	30	315	135	129	48	61	14	510	330	20	91	13
9	56	310	135	108	56	75	13	728	2630	16	801	14
1	65	350	77	117	64	89	14	735	801	16	92	16
00	96	424	64	135	94	117	15	904	310	17	29	18
00	61	442	156	135	92	103	12	1030	108	17	22	20
	65	412	145	145	94	81	362	1000	09	20	20	20
	113	526	152	135	16	68	81	540	40	18	20	20
,	63	472	166	177	67	77	5.5	210	858	18	18	2.1
ı ce	53	478	1117	148	64	65	49	55	406	2.1	18	19
. 4	93	508	170	159	65	53	5.2	27	84	2.1	18	16
- 20-	66	466	138	145	50	42	450	25	38	22	19	20
. 9	63	260	114	135	65	69	009	55	25	23	25	19
1	78	210	148	145	86	41	417	138	593	27	26	18
00	80	128	159	173	77	57	159	75	105	26	27	14
19	67	134	129	159	67	25	214	46	20	32	22	14
0	69	110	177	142	55	2.2	81	138	34	30	18	13
	107	152	170	177	49	20	58	199	16	546	18	13
	107	173	129	77	56	20	132	84	112	395	14	14
	67	123	108	09	67	22	880	55	342	40	1.2	15
. +	61	117	218	58	58	14	395	27	16	28	12	16
20-	82	152	238	100	58	20	1750	44	621	22	11	16
9	26	132	123	58	75	20	2160	38	300	19	01	14
1	5.4	145	148	50	71	17	1780	38	114	16	10	16
00	69	132	166	84	65	20	1970	33	3.1	18	1.2	18
6	61	126	166		71	22	2100	20	61	18	12	18
0.	500	132	195		75	34	2530	14	18	19	4-1	16
FOTAL		130	132		65		2830		18	2.4		16
ec. ft.	2290	8040	4621	3535	2148	3140	19275	13236	8282	3160	1386	500
	111111	11111		010			0.000	200	0.11.0			

#### APPENDIX "B-3"

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#### PURGATOIRE RIVER NEAR LAS ANIMAS, COLORADO

# PURGATOIRE RIVER NEAR LAS ANIMAS, COLORADO

Report-Year Ending October 31, 1958 U S G S Records—Provisional, subject to revision

-0×4×0××0	3.3		JAIN.	CED.	MAK.	AFR.	MAY	ONE	JULY	ACC.	SEPT.	OCT
0×4×0×800	1	28	0.6	38	45	34	51	220	4.5	868	00	4.7
£4705800	35	3.1	8.0	35	44	25	56	214	6.7	889	0	15
4×9×850	17	28	8.0	40	37	29	49	195	6.7	324		4
~ o c s o c	2.4	35	8.0	40	30	25	64	189	22	122	7.7	4
91-850	43	40	7.0	37	25	25	69	142	537	94	6.7	. 4
L 8 6 0	47	29	8.0	3.2	23	29	43	105	3,410	142	884	4.2
800	53	25	91	23	26	45	32	1.370	1,390	106	89	4
00	62	27	20	20	. 30	53	33	628	456	80	30	4.0
0	58	35	35	17	. 28	09	33	830	633	4	10	100
	26	28	30	16	31	50	51	420	688	00	90	000
_	5.5	2.1	24	20	27	53	248	335	390	30	T 70	4.0
2	49	23	17	26	25	5.1	189	234	1,770	2.2	5.6	20
33	49	28	6.5	32	27	5.1	116	83	1,110	16	4 5	4.0
+	09	30	0.9	35	29	55	189	47	237	15	7	00
2	5.2	30	0.6	3.4	33	39	430	32	136	14	4.2	2.5
9	5.8	31	13	3.1	38	24	006	41	110		2 5	4.7
7	64	43	16	29	35	17	234	153	9.2	13	5.6	2.5
50	47	48	15	3.1	47	23	248	137	167	10	3.6	2. 4
6	26	20	13	33	49	69	255	220	360	86	5.6	2
0	44	38	14	32	49	248	183	2,370	282	1.190	4 2	13
_	51	40	19	25	49	201	153	220	2,450	220	2.6	16
2	45	32	24	22	49	220	248	254	1,770	2.280	4.5	200
33	2.1	33	23	22	45	220	400	170	920	1.440	35	10
+	53	36	21	19	40	132	371	108	270	294	3.5	000
25	2.1	40	20	18	34	220	1,850	89	306	254	25	000
9	15	45	19	23	29	126	1,270	64	440	130	00	10
7	23	47	24	37	3.1	121	430	41	721	148	7	9
00	35	35	25	46	35	16	480	19	33	08	6.4	36
6	25	33	25		39	5.8	440	11	192	09	4	8.8
0	28	1.5	43		37	53	504	6.7	119	42	4.0	4
OTAL		16	45		40		380		104	28		32
ic. ft. 1,	,407	1,020	570.5	813	1,106	2,447	9,999	8,926.7	19,232.9	9,692	1,150.2	355.7
		6,040	061,1	1,010	7,130	4,000	19,830			19,220		200

#### APPENDIX "B-4"

#### INFLOW INTO JOHN MARTIN RESERVOIR

## INFLOW INTO JOHN MARTIN RESERVOIR

Report-Year Ending October 31, 1958 U S G S Records—Provisional, subject to revision

- 2) 55 77 16 19												
		124	138	170	66	06	80	3,200	62	896	40	20
** T 10 V		261	160	253	102	10.4	75	2,000	65	717	30	16
±16.V	148	358	178	166	81	115	74	1,180	5.0	351	27	91
10 1		360	170	148	75	111	93	903	87	140	2.1	17
		355	142	166	73	86	83	652	867	114	23	17
		339	143	140	79	104	56	833	6,040	158	1,680	81
7		375	93	140	123	134	46	2,100	2,190	716	160	20
~		461	117	155	124	170	48	1,530	766	7.6	59	22
~		477	191	152	120	163	45	1,860	741	09	32	24
		440	175	161	125	1.3.1	413	1,420	748	58	28	2.4
		5.47	176	155	124	142	329	875	430	57	28	2.4
6		495	183	203	122	128	244	444	2,630	40	2.4	26
**		206	124	180	124	116	165	138	1,520	37	22	23
-		538	176	194	16	108	2.41	74	321	36	2.2	20
15		496	147	179	83	8.1	880	57	174	36	23	26
		291	127	166	103	93	1,500	96	135	34	3.1	23
17		253	164	174	121	200	651	291	685	40	32	2.4
		176	174	204	124	80	407	212	272	36	33	18
		184	142	192	116	94	469	266	380	118	28	20
-		148	191	174	104	270	264	2,510	316	1,220	22	25
		192	189	202	98	221	211	419	2,470	766	24	29
6		205	153	66	105	240	380	338	1,880	2,680	18	3.2
33		156	131	82	112	2+2	1,280	225	1,260	1,480	16	3
+		153	239	77	98	146	766	135	286	322	- 16	3.0
15		192	258	118	92	240	3,600	112	927	276	14	7-7
		177	142	81	104	146	3,430	102	740	149	14	2.7
7		192	172	87	102	138	2,210	79	835	164	14	33
~		167	191	130	100	1111	2,450	5.2	164	98	16	5
^		159	191		110	80	2,540	3.1	211	78	16	99
0	_	147	238		112	87	3,030	2.1	137	19	18	5
OTAL		146	177		105		3,210		122	52		25
c. ft. 3,6	3,697 9,	9,070	5,192	4,348	3,254	7.990	29,270	22,155	54.590	11,288	5,531	85-1
								THEV	FAP 244	AOO Acres	Root	

#### APPENDIX "B-5"

\* \*

#### CONTENTS OF JOHN MARTIN RESERVOIR

Report-Year Ending October 31, 1958
Corps of Engineers records—Provisional, subject to revision
Midnight contents in Acre Feet from capacity table dated March 1, 1956 (Nov. 1-May 31)
and
Midnight contents in Acre Feet from capacity table dated June 1, 1958 (June 1-Oct. 31)

CONTENTS OF JOHN MARTIN RESERVOIR

-0 m 4 v		DEC.	17.	FEB.	MAR.	APR.	MAY	JONE	JULY	AUG.	SEF 1.	
C1 C2 + 1	220143	227261	245730	261789	270990	278828	282066	338111	340854	357193	314731	264990
4 4 V	220232	227534	246112	262390	271092	278932	281856	341312	338454	357193	312980	263916
7 1	220411	228264	246686	262791	271297	279036	281751	342913	336739	356954	310901	262940
h	220589	228812	247453	263092	272014	279140	281647	343720	336510	356001	308737	261867
_	220947	229544	247837	263393	272218	279244	281437	344188	337768	355047	306596	260890
9	221126	230278	248607	263795	272936	279349	281228	344655	349442	354580	306061	260011
7	221483	231197	248800	264096	273449	279453	281123	346756	351544	353879	304456	259231
00	221842	231842	249090	264298	273758	279765	280914	348858	352011	352245	302316	258454
6	222111	232765	249476	264700	274170	280183	281123	351077	351894	350610	300389	257311
10	222380	233504	249862	265003	274273	280496	281542	352128	351894	348391	298477	256453
=	222740	234896	250250	265406	274376	280705	281437	352478	351544	345939	295965	255786
12	222920	236292	250540	265810	274582	281018	281228	351778	354813	343370	293662	255024
-3	223099	237694	250831	266315	274995	281228	281123	350376	355643	340854	291777	254261
14	223369	238725	251220	266618	275304	281437	283430	349208	355405	338340	289684	253499
25	223459	239759	251511	267124	275511	281647	284272	348041	354813	335824	288126	252736
16	224090	240512	251804	267631	275614	281751	287443	348274	353879	333309	286181	251974
17	224360	240983	252194	267936	275821	281856	289037	348625	353529	330818	284544	250545
18	224631	241550	252779	268240	276028	282066	290744	348274	353062	328357	283112	248743
10	224902	241644	253268	268646	276441	282276	291706	347457	352945	327462	281475	246882
20	224993	241928	253758	269053	276648	282485	292028	349558	352712	326567	279837	245207
2.1	225174	242402	253954	269460	276752	282695	292349	349558	354113	325224	278205	243533
2.2	225445	242875	254249	269664	276959	282905	293959	349442	356239	327014	276805	242323
23	225626	243065	254642	269868	277063	282905	296656	348858	357073	326343	275806	241113
2.4	225717	243350	255528	270071	277270	282695	297848	348041	359101	325560	274606	239811
25	226170	243825	256812	270278	277478	282590	305158	347223	359220	324105	273006	238358
26	226352	244110	258001	270479	277685	282695	310559	346406	360054	322987	271406	237086
27	226534	244300	259393	270786	277893	282800	314998	345705	360293	321868	270107	235451
28	226715	244776	259991	270888	278101	282695	319466	345005	359578	320749	268807	234179
29	226806	245062	260590		278308	282485	323851	344071	358862	319436	267431	232998
30	226988	245348	261089		278516	282171	328040	342684	358028	318123	266064	231817
2.5		245530	261388		278724		331915		357312	316810		230999

#### APPENDIX "B-6"

#### OUTFLOW FROM JOHN MARTIN RESERVOIR

OUTFLOW FROM JOHN MARTIN RESERVOIR Report-Year Ending October 31, 1958 U S G S Records—Provisional, subject to revision

DAY		NOV.	DEC.	IAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
-		-	5.8	30	5.8	0.9	0.9	240	5.2	758	530	764	578
, (		99	2.5	0.9	30	0.9	5.8	222	91	1,060	535	846	440
1 6		0.9	2. 2.	9.9	0.9	0.9	5.8	159	124	800	535	898	395
. 4	0	0.0	7.	7.2	0.9	5.0	5.5	103	196	640	535	940	371
- 15	1	7.3	2.5	7.2	0.9	5.8	0.9	134	280	373	540	1,020	367
		100	0.9	26	0.9	5.8	0.9	159	356	233	5+5	1,090	339
10		25	30	16	0.9	5.8	0.9	181	364	368	545	1,110	347
- 00		2.0	ir ir	200	0.9	5.8	9.9	196	368	452	700	1,130	355
00		200	. 2	200	0.9	2.8	0.9	184	396	476	975	1,090	363
10		0 00	5.2	7.8	0.9	0.9	0.9	216	424	500	1,120	1,050	367
		8	5.3	7.2	0.9	0.9	5.8	268	500	490	1,220	982	383
1.5		5.0	5.0	7.2	0.0	0.9	0.9	252	580	485	1,200	916	387
3 6		2. 2	5.0	7.2	5.8	0.9	5.8	248	640	490	1,190	892	367
1.4		9.9	5.0	7.2	0.9	0.9	5.8	204	670	490	1,180	853	359
. 5		9.9	5.0	9.9	0.9	5.8	5.8	16	949	495	1,140	832	355
9		9.9	5.2	9.9	5.8	5.8	5.5	11	682	490	1,160	804	351
17		0.9	5.2	9.9	5.8	5.8	5.8	9.6	376	490	1,170	725	266
000		200	5.0	9.9	5.8	5.8	5.8	9.6	295	490	1,180	701	853
10		2.5	5.2	9.9	5.8	5.8	0.9	0.6	444	490	1,180	701	876
30		5.5	5.2	0.9	5.8	5.8	5.8	40	444	490	1,170	701	744
21		5.2	5.5	0.9	5.8	5.8	5.8	85	440	490	1,180	701	629
22		20	5.2	9.9	5.8	5.5	5.5	36	436	490	1,180	629	588
3 10		5.2	5.5	9.9	5.5	5.2	74	95	432	490	1,080	534	611
24		2.0	5.5	0.9	5.5	5.5	16	95	404	525	1,000	534	617
10		00	5.2	5.5	5.5	5.5	72	16	376	555	991	594	623
36		0.9	5.5	5.5	5.5	5.5	99	56	368	570	811	009	629
27		9.9	5.5	5.8	3.00	5.5	64	9.6	372	565	629	294	671
30		0.9	5.8	5.8	0.9	5.8	163	14	376	540	641	617	629
00		2.8	20.00	5.8		0.9	260	36	392	530	641	653	635
30		5.5	0.9	5.8		0.9	260	5.2	485	535	641	683	629
31	A.T.		0.9	5.8		3.8		5.4		535	635		201
sec. ft	15	190.7	168.3	237.0	163.8	179.7	1,185.1 2,350	3,549.8	12,042 23,880	16,385	27,779	24,154	31,950
									THE Y	5AK 202	,600 Acre	e Feet.	

#### APPENDIX "B-7" \* \* \* \* \*

### ARKANSAS RIVER AT THE COLORADO-KANSAS STATELINE

Report Year Ending October 31, 1958
11.6

1	53   106   157   153   125   134   125   58   192     134   106   157   153   125   136   125   58   192     135   106   143   125   136   125   138   136   137     136   143   135   137   134   157   2410   156     148   153   130   131   134   157   2410   156     150   143   139   130   131   137   134   157     150   106   143   139   130   131   130   130     150   106   139   130   110   130   130     150   106   139   130   110   130   130     150   106   134   130   130   140     150   107   130   130   100   100     150   101   130   130   100   100     150   101   130   130   100   100     150   101   125   130   106   299   212   181     150   151   130   130   106   299   212   181     151   151   152   130   106   299   212   181     152   134   131   144   130   282   249   136     153   154   144   130   282   203   352     154   148   151   144   125   138     155   156   139   121   130   131     157   158   131   148   158   131     158   159   151   148   151   148   151     150   151   148   148   151   148   151     150   151   150   151   148   151     150   151   150   151   148   151     150   151   151   151   151   151   151     150   151   151   151   151   151   151     150   151   151   151   151									7	1000	ACC.	or Tric	
134   106   187   139   125   166   125   58   192   1124     110   117   143   125   188   294   286   163   139     121   114   143   125   136   125   139     122   114   143   125   134   157   241   165     298   106   148   153   130   171   166   1620   111   218     391   106   143   139   98   121   157   534   165   397     392   106   148   134   110   215   162   334   165   397     393   102   166   139   130   141   130   349   130   422     394   102   166   139   110   166   110   239   226   475     395   110   157   114   110   110   119   209   428   448     395   110   110   120   148   144     396   130   144   110   110   110   120   428   448     397   144   144   145   145   145   445     398   391   391   391   391   391   391     399   391   391   391   391   391   391     390   391   391   391   391   391   391     391   391   391   391   391   391   391     391   391   391   391   391   391     392   393   393   393   393     393   394   394   394   394   394     394   395   394   394   394   394     395   396   397   397   397     396   397   397   397   397     397   397   397   397     398   398   398   398   398     399   391   391   391   391     390   391   391   391     391   391   391     391   391   391     391   391   391     391   391   391     391   391   391     391   391     391   391   391     391   391     391   391     391   391     391   391     391   391     391   391     391   391     391   391     391   391     391   391     391   391     391   391	134   106   157   139   125   166   125   58   1921   1931   125   166   125   58   1931   194   143   125   188   294   286   163   194   143   135   137   134   157   2410   156   143   139   131   134   157   2410   156   143   139   131   134   157   2410   156   143   139   131		140	153	106	157	153	125	134	135	02	20.4	101	00
110	110	C1	156	134	106	157	130	361	291	200	02	100	77.	60
10.5	10.5	65	157	110	1117	147	1 2 2	100	001	(71	20	761	111/	43
98         104         144         134         125         176         220         489         137         186           98         106         143         125         117         134         157         2410         156         333         363	98         106         148         154         125         176         220         489         137           98         106         148         153         139         171         166         1620         111           98         106         148         125         117         136         167         2410         167           91         102         166         139         130         171         167         148         134         165         167         2410         167         168         168         169         168         168         169         168         168         169         168         168         169	7	1.42	100	111	1 2 7	143	671	188	294	286	163	139	350
98         106         148         153         130         171         166         1620         111         218           99         106         145         189         98         121         157         5410         156         333           91         106         145         189         98         121         157         5410         156         333           91         102         106         188         134         110         157         114         168         130         301         148         474           102         106         188         134         110         110         130         475         475         475         476         <	98         106         148         153         130         171         166         1620         111           99         106         143         125         117         134         167         2410         156           91         106         143         139         131         157         537         304           91         102         166         139         130         171         150         339         130           102         106         188         134         110         157         148         130         301         148           106         110         166         110         159         130         148         130         148         130         148         130         148         130         148         130         148         130         148         130         148         140         148         148         148         148         149         148         149         148         149         148         149         149         148         149         149         149         148         149         149         149         148         149         148         149         149 <t< td=""><td>· u</td><td>136</td><td>700</td><td>+11</td><td>143</td><td>134</td><td>125</td><td>176</td><td>220</td><td>489</td><td>137</td><td>186</td><td>27</td></t<>	· u	136	700	+11	143	134	125	176	220	489	137	186	27
98         106         143         125         117         134         187         2410         186         333           91         106         144         139         198         121         187         349         186         363           91         102         166         139         130         171         180         364         465         367           106         102         166         188         130         171         180         364         452           106         106         166         188         130         171         188         130         422         475           106         166         110         239         256         370         470         470           107         108         110         110         139         140         470         470         470           107         110         110         110         110         140         140         416         418         418         418         418         418         418         418         418         418         418         418         418         418         419         418         418         41	98         106         143         125         117         134         157         2410         156           91         106         145         139         98         121         157         535         304           91         102         166         139         130         171         150         334         165           102         106         188         134         117         188         130         301         148           106         110         193         110         110         139         301         148           106         134         114         110         139         95         256         370           107         110         110         139         114         110         139         428         370         428           110         110         139         130         144         110         140         436         470         436         470         436         470         470         470         470         470         470         470         470         470         470         470         470         470         470         470         470         470<	, ,	000	200	901	148	153	130	171	166	1620	1111	218	23
9.9         106         143         139         98         121         157         535         304         363           9.1         102         166         148         134         110         215         165         334         165         339         165         369         178         179         179         178         179         178         179         140         179	97         106         143         139         98         121         157         535         304           91         102         166         134         130         131         165         134         165           91         102         106         188         134         117         130         349         130           102         106         110         163         130         130         130         130         130         130         130         140	2 5	171	200	106	143	125	117	134	157	2410	156	333	22
91 102 166 139 130 215 162 334 165 397 100 100 100 110 110 110 110 110 110 11	91         91         91         148         134         110         215         162         334         165           102         106         188         130         171         130         349         130           102         106         110         188         130         148         130         301         148           106         110         193         110         110         130         226         370           102         120         134         114         110         139         95         256         370           102         125         139         114         110         139         95         256         370         428           110         110         139         130         106         119         209         428         410           110         110         139         130         106         878         183         608         410           110         110         139         110         492         888         183         508           110         110         125         130         110         492         888         183         183	- 0	011	36	106	143	139	86	121	157	535	304	363	20
91         102         166         139         130         171         130         349         130         422           102         106         188         134         117         188         130         301         148         454           106         110         193         110         119         239         226         475           79         106         134         114         110         139         95         256         370         470           102         110         151         166         108         239         410         416         416           102         110         150         166         108         239         410         416 <td< td=""><td>102         166         139         130         171         130         349         130           102         106         188         134         117         188         130         301         148           106         110         187         110         166         108         239         226           95         110         157         114         110         139         95         256         370           102         125         139         114         110         119         209         428           110         110         121         114         110         119         209         428           110         110         125         139         102         100         144         436         436           110         110         139         130         102         150         479         479         470           110         110         139         102         265         221         147         470         470         470         470         470         470         470         470         470         470         470         470         470         470         470&lt;</td><td>00</td><td>\$71</td><td>91</td><td>91</td><td>148</td><td>134</td><td>110</td><td>215</td><td>162</td><td>334</td><td>165</td><td>307</td><td>10</td></td<>	102         166         139         130         171         130         349         130           102         106         188         134         117         188         130         301         148           106         110         187         110         166         108         239         226           95         110         157         114         110         139         95         256         370           102         125         139         114         110         119         209         428           110         110         121         114         110         119         209         428           110         110         125         139         102         100         144         436         436           110         110         139         130         102         150         479         479         470           110         110         139         102         265         221         147         470         470         470         470         470         470         470         470         470         470         470         470         470         470         470<	00	\$71	91	91	148	134	110	215	162	334	165	307	10
102   106   188   134   117   188   130   301   148   457     106   110   193   110   110   156   110   239   226   475     107   108   134   114   110   139   95   256   370   470     107   108   134   114   110   119   209   428   448     108   110   121   114   110   119   209   428   448     110   110   125   130   106   878   181   291   472   469     110   110   125   130   106   878   183   508   464     110   110   125   130   100   222   479   474     110   110   125   130   106   295   212   181   646   424     110   110   125   139   102   265   221   190   541   417     130   140   125   139   91   210   218   178   505   420     131   132   134   114   98   235   203   352   472     132   134   114   98   232   203   352   472     134   171   148   130   125   134   286   312   299     134   171   148   130   125   138   84   264   231     130   153   125   134   148   62   237   177   339     134   148   148   125   134   148   62   237   177   339     135   157   125   139   125   143   180   10792   10651   96890   7570   23550   22180   21410   21130   13130   13180   21410   21130     130   125   13550   22180   21410   21130   21410   21130     130   133   1440   2440   2440   2440   2440   2440   2440     134   144   1	102   106   188   134   117   188   130   301   148   130   301   148   130   301   148   130   301   148   130   301   148   130   301   148   130   301   148   130   301   148   130   100	,	113	16	102	166	139	130	171	130	349	130	477	18/
106   110   193   110   166   110   239   226   475     107   114   110   189   95   256   370   470     108   124   114   110   119   209   428   448     102   125   139   114   110   1790   150   464   436     110   111   130   139   102   1000   1000   222   479   474     110   111   130   139   102   1000   1000   222   479   474     110   111   130   130   102   1000   1000   222   479   474     110   111   125   130   106   299   212   181   646   424     120   121   131   106   299   212   181   646   424     130   101   125   139   102   265   221   190   541   417     130   121   134   180   121   117   98   232   305   90   545   326     121   180   121   117   98   232   305   90   548     121   171   114   125   138   84   264   231   317     130   153   125   134   148   148   148   148     134   171   148   114   125   138   84   264   231   317     130   153   125   188   84   264   231   317     130   153   125   188   84   264   231   317     130   153   125   188   84   264   231   317     130   153   154   148   125   143     130   153   154   148   148   125   148     130   153   154   148   125   148     130   153   154   148   125   148     130   153   154   148   157   148     130   153   154   148   157   158   158     130   157   148   148   125   148     130   157   158   158   158   158     130   157   158   158   158     130   130   135   13850   22180   21410   21410     130   135   13550   22180   21410   21130     130   130   130   130   13130     130   130   130   130   13130     130   130   130   130     130   130   130   130     130   130   130   130     130   130   130   130     130   130   130   130     130   130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130   130     130   130	106   110   193   110   110   166   110   239   226   239   230   239   230   239   230   239   230   239   239   230   239	0.1		102	106	188	134	117	188	130	301	148	454	171
95         110         187         114         110         139         95         256         370         470           91         106         134         114         110         139         102         410         416           91         100         121         114         110         1790         150         428         448           102         120         139         110         1790         150         406         478         448           110         110         139         130         106         878         181         479	95         110         157         114         110         139         95         256         370           79         106         134         114         110         139         95         256         370           91         110         121         114         110         1790         179         428           102         125         139         134         110         1790         170         464         436           110         110         139         130         106         192         209         479           110         110         129         130         106         292         177         470           110         110         125         130         106         299         177         470           110         110         125         130         106         299         177         470           110         110         125         139         102         265         221         170         446         456           113         110         125         139         102         265         221         170         221         170         171         171 <td></td> <td>109</td> <td>106</td> <td>110</td> <td>193</td> <td>110</td> <td>110</td> <td>166</td> <td>110</td> <td>239</td> <td>326</td> <td>474</td> <td>186</td>		109	106	110	193	110	110	166	110	239	326	474	186
79         106         134         114         106         166         108         239         416         416           91         110         121         114         110         2110         119         209         428         448           110         110         139         130         102         100         150         472         448           110         110         139         130         102         1000         222         479         474           110         110         125         130         102         1000         1000         222         479         474           110         110         125         130         102         1000         1000         222         479         474           106         61         125         139         102         265         221         190         541         417           106         61         125         139         91         216         218         505         424           130         117         134         98         198         249         136         438         279           125         130         114<	79         106         134         114         106         166         108         239         410           102         125         139         114         110         210         119         209         428           110         110         139         130         106         878         181         291         472           110         110         139         102         100         1000         222         479           110         114         130         130         102         100         222         479           110         110         125         130         110         492         588         183         508           98         121         130         102         265         221         190         541           106         61         125         139         102         265         221         190         545           130         110         125         139         91         210         218         545           125         130         117         134         134         136         545         145           121         121         114	7.	120	56	110	157	114	110	139	95	256	370	470	177
91         110         121         114         110         2110         119         209         428         448           102         125         139         114         110         1790         150         464         458         448           110         110         139         110         1790         150         464         458         448           110         110         130         102         100         1000         222         479         474           110         110         125         130         102         200         177         470         474           106         61         125         139         102         265         221         190         424         424           106         61         125         139         102         265         221         190         541         417         417           130         110         125         139         91         216         218         505         420         420           134         180         117         114         130         215         130         565         326         130         141         41	91         110         121         114         110         2110         119         209         428           102         125         139         114         110         1790         150         464         436           110         110         139         130         106         878         181         291         479           110         110         125         130         100         1000         222         479           110         110         125         130         106         299         177         479           98         98         121         130         106         299         212         181         479           106         61         125         139         102         265         221         190         541           130         110         125         139         91         210         218         565           134         180         117         134         98         249         136         545           125         190         121         114         130         232         305         90         565           121         171	5 .	122	79	901	134	114	106	166	108	239	410	416	188
102   125   139   114   110   1790   150   464   436   458   458   110   110   110   139   130   106   878   181   291   472   469   110   110   113   130   102   1000   1000   222   479   474   474   474   474   475   470   4	102   125   139   114   110   1790   150   464   436   110   110   110   139   130   106   878   181   291   472   110   110   110   125   130   1102   1000   222   479   470   110   110   125   130   110   299   212   181   646   646   125   139   102   265   221   190   541   130   110   125   139   91   210   218   178   505   127   134   13	+ 4	127	10	110	121	114	110	2110	119	209	428	44.80	103
110   110   139   130   106   878   181   291   472   469   110   110   110   125   130   102   1000   1000   222   479   474   474   120   130   102   1000   1000   222   479   474   474   475   489   121   130   106   299   212   181   646   424   424   130   100   125   139   102   265   221   190   541   417   417   134   180   117   134   98   120   218   178   505   420   420   125   190   121   117   95   215   178   505   326   326   121   171   171   171   174   125   130   282   203   352   472   274   143   171   148   125   136   125   136   125   136   125   136   125   136   125   137   148   125   138   144   125   144   150   231   23	110	12	130	102	125	139	1.14	110	1790	150	464	436	3000	188
110	110	10	133	011	110	139	130	106	878	181	291	472	469	100
110	110	77	149	110	114	130	139	102	1000	1000	222	479	474	100
98 98 121 134 114 412 359 177 470 434 130 105 610 100 212 181 646 424 100 61 125 139 102 2165 221 190 541 417 130 110 125 139 91 210 218 178 505 420 125 130 117 117 95 219 136 545 326 125 190 121 117 95 215 178 505 326 121 117 114 130 282 203 352 472 279 121 171 114 130 282 203 352 472 279 134 171 148 114 125 136 136 438 296 438 299 134 171 166 125 134 148 62 286 312 299 137 130 153 130 125 188 84 264 231 317 130 153 154 163 125 143 157 143 158 159 143 159 143 189 189 189 189 189 189 189 189 189 189	98 98 121 134 114 412 359 177 470 106 519 130 1106 299 212 181 646 1106 110 125 139 102 265 212 190 541 130 110 125 139 91 210 218 178 505 121 130 110 125 130 121 117 95 215 150 150 518 121 121 180 134 171 171 171 171 171 171 171 171 171 17	10	4	110	110	125	130	110	492	588	183	508	164	204
98         74         121         130         106         299         212         181         646         424           106         61         125         139         102         265         221         190         541         417           130         110         125         139         102         265         221         190         541         417           125         180         117         117         98         249         136         545         396           121         180         121         117         97         215         779         90         545         396           121         180         134         114         130         282         305         90         518         279           123         171         148         114         125         442         158         296         438         299           134         171         148         114         125         134         244         231         312         299           134         148         114         125         188         84         264         231         299           139	98         74         121         130         106         299         212         181         646           106         61         125         139         102         265         221         190         541           130         110         125         139         102         265         221         190         541           134         180         117         134         98         198         249         136         545           121         180         121         117         95         215         759         90         565           121         171         114         98         232         307         90         565           121         171         114         98         232         203         352         472           143         171         144         180         282         203         352         472           134         171         166         125         134         282         136         234           130         153         125         188         84         264         231           130         157         143         163	200	145	86	86	121	134	114	412	359	177	470	434	310
100   61   125   139   102   265   221   190   541   417     130   110   125   139   91   210   218   178   505   420     134   180   121   117   95   215   759   90   545   326     121   180   121   117   95   215   779   90   545   326     121   171   114   180   282   203   352   472   274     134   171   148   114   125   442   158   296   438   299     134   171   166   125   134   282   136   286   312   299     130   153   130   121   148   62   237   177   339     125   157   8010   7960   6750   23550   13850   22180   21410   21130   188     130   125   1440   2420   2440   2440   2440   2440     140   140   140   140   2440   2440   2440     140   140   140   140   2440   2440   2440   2440     140   140   140   140   2440   2440   2440   2440     140   140   140   140   2440   2440   2440   2440   2440     140   140   140   2440	106   61   125   139   102   265   221   190   541   130   110   125   139   91   210   218   178   505   134   180   121   171   171   171   174   98   232   305   90   545   121   171   171   114   130   282   203   352   472   143   171   148   114   125   142   158   296   438   134   171   166   125   134   282   136   286   312   134   148   125   137   148   62   231   177   125   143   62   231   137   125   143   148   62   237   177   125   143   148   62   237   177   125   143   148   62   237   177   125   143   150   10792   100   10792   1	07	81.	86	74	121	130	106	299	212	181	646	424	53
130   110   125   139   91   210   218   178   505   420     134   180   117   134   98   198   249   136   545   396     125   190   121   117   95   2215   7759   90   565   326     121   171   171   114   98   232   203   352   472   279     134   171   148   114   125   1442   158   296   438   299     134   171   166   125   134   282   136   286   312   299     134   148   125   139   121   148   62   237   177   339     125   157   125   143   143   143   143     126   3819   4037   4012   3407   11721   6983   11180   10792   10651   99     6890   7570   8010   7960   6750   23550   13850   22180   21410   21130   188     134   144   145   145   145   145   145   145     145   145   145   145   145   145   145     150   150   150   150   150   150     150   150   150   150   150     150   150   150   150     150   150   150   150     150   150   150   150     150   150     150   150   150     150   150   150     150   150	130         110         125         139         91         210         218         178         505           134         180         117         134         98         198         249         136         545           125         190         117         114         98         232         249         136         545           121         171         171         114         98         232         307         90         518           121         171         171         114         180         282         203         352         472           134         171         166         125         134         282         136         438           134         174         188         84         264         231           130         153         130         121         148         62         237         177           125         157         125         143         163         11171         6983         11180         10792         10	170	7117	106	19	125	139	102	265	221	190	541	417	530
134   180   117   134   98   198   249   136   545   396   125   190   121   117   95   215   759   90   565   326   326   121   171   171   114   130   282   203   352   472   279   121   171   114   125   1442   158   296   438   299   134   171   166   125   134   282   136   286   312   299   134   148   125   139   121   148   62   237   177   339   125   157   177   339   143   3476   3819   4037   4012   3407   11721   6983   11180   10792   10651   96890   7570   8010   7960   6750   2350   13850   22180   21410   21130   188   188   22180   21410   21130   188   22180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   2180   21410   21130   21410   21130   2180   21410   21130   2180   21410   21130   21410   21130   21410   21130   21410   21130   21410   21130   21410   21130   21410   21130   21410   21130   21410   21130   21410   21130   21410   21130   21410   21130   21410   21130   21130   21410   21130	134   180   117   134   98   198   249   136   545   125   190   121   117   95   215   759   90   565   565   121   171   171   171   171   171   171   171   171   171   171   171   171   171   171   171   171   172   125   136   296   438   134   174   175   125   134   282   136   286   312   134   148   148   129   125   188   84   264   231   125   157   125   148   62   237   177   125   137   148   62   237   177   125   137   148   159   143   148   148   159   143   148   159   143   148   159   143   148   150   10792   100   1079	77	104	130	110	125	139	91	210	218	178	505	420	422
125   190   121   117   95   215   759   90   565   326     121   180   134   114   98   232   305   90   518   279     121   181   114   130   232   305   438   279     134   171   148   114   125   134   282   136   239     134   171   166   125   134   282   136   286   312   299     134   148   130   121   148   62   237   177   339     125   157   125   143   159   143     3476   3819   4037   4012   3407   11721   6983   11180   10792   10651   99     6890   7570   8010   7960   6750   23550   13850   22180   21410   21130   188     125   143   143   143   143   143     140   141   148   149   149   149     140   141   149   149   149   149     140   140   140   140   140   140   140     140   140   140   140   140   140     140   140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140   140     140   140   140	125   190   121   117   95   215   759   90   565   121   121   130   134   114   98   232   203   352   472   143   171   148   114   125   134   282   203   352   472   472   134   171   148   125   135   286   318   318   136   125   137   125   137   148   62   237   177   125   157   148   62   237   177   125   157   143	570	500	134	180	1117	134	86	198	249	136	545	396	305
121   180   134   114   98   232   305   90   518   279     121   171   171   114   130   282   203   352   472   274     143   171   166   125   134   282   136   286   312   299     134   171   166   125   134   282   136   286   312   299     135   153   130   121   148   62   237   177   339     125   157   177   3405   11721   6983   11180   10792   10651   99     6890   7570   8010   7960   6750   23550   13850   22180   21410   21130   188     121   122   123   123   123   123     122   123   123   123   123   123     123   12410   21130   13850   21410   21130     124   125   125   125   125     125   125   125   125   125     125   125   125   125   125     125   125   125   125     125   125   125   125     125   125   125   125     125   125   125   125     125   125     125   125	121   180   134   114   98   232   305   90   518   121   171   171   114   130   282   203   352   472   472   148   171   148   114   125   1442   158   296   438   438   134   171   166   125   134   282   136   286   312   312   130   153   130   121   148   62   237   177   125   157   125   143   159   143   159   143   159   143   159   143   159   143   10792   100	+70	500	125	190	121	1117	95	215	759	06	565	326	388
121   171   114   130   282   203   352   472   274     143   171   148   114   125   442   158   296   438   299     134   171   166   125   134   282   136   286   312   299     134   148   139   125   188   84   264   231   317     130   153   130   121   148   62   237   177   339     125   157   125   143   140   143   159   143     3476   3819   4037   4012   3405   11721   6983   11180   10792   10651   99     6890   7570   8010   7960   6750   23550   13850   22180   21410   21130   188     143   184   185   185   185   185   185     144   145   145   185   185   185     155   157   157   157   157   157     155   157   157   157   157   157     155   157   157   157   157   157     155   157   157   157   157     155   157   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157   157     155   157   157     157   157	121 171 171 114 130 282 203 352 472 143 143 171 184 114 125 442 158 296 438 134 148 125 136 286 312 134 148 159 125 136 286 312 130 153 130 121 148 62 237 177 125 157 125 143 62 237 177 125 157 125 143 150 10792 100	70	5	17	180	134	114	86	232	303	06	518	279	367
143   171   148   114   125   442   158   296   438   299   134   171   166   125   134   282   136   286   312   299   130   153   130   121   148   62   237   177   339   125   157   177   347   177   349   143   143   143   144	143   171   148   114   125   142   158   296   438   134   171   166   125   134   282   136   286   312   134   148   148   125   157   125   157   125   143   143   159   143   143   159   143	270		121	171	171	114	130	282	203	352	472	274	34
134   171   166   125   134   282   136   286   312   299   134   148   139   125   188   84   264   231   317   319   125   157   177   339   125   157   177   340   1721   6983   11180   10792   10651   99   6890   7570   8010   7960   6750   23550   13850   22180   21410   21130   188   188   240   2130	134 171 166 125 134 282 136 286 312 134 148 159 125 188 84 264 231 130 121 148 62 237 177 125 157 177 125 3476 3819 4037 4012 3405 11721 6983 11180 10792 100	170	+11	143	171	148	114	125	+42	158	296	438	299	3.41
134   148   139   125   188   84   264   231   317   319   125   188   148   62   237   177   339   125   159   143	134   148   139   125   188   84   264   231   130   153   130   121   148   62   237   177   125   157   125   143   159   143   159   143	070	901	134	171	991	125	134	282	136	286	312	299	335
130 153 130 121 148 62 237 177 339 125 157 125 143 159 143 3476 3819 4037 4012 3405 11721 6983 11180 10792 10651 9 6890 7570 8010 7960 6750 23250 13850 22180 21410 21130 18	130 153 130 121 148 62 237 177 125 159 143 62 237 177 125 143 159 143 159 143	676	01:	134	×+-		139	125	188	84	264	23.1	317	333
3476 3819 4037 4012 3405 11721 6983 11180 10792 10651 9 6890 7570 8010 7960 6750 23250 13850 22180 21410 21130 18	3476 3819 4037 4012 3405 11721 6983 11180 10792 10	30	171	130	153		130	121	148	62	237	1771	330	316
3476 3819 4037 4012 3407 11721 6983 11180 10792 10651 6890 7570 8010 7960 6750 23250 13850 22180 21410 21130	3476 3819 4037 4012 3405 11721 6983 11180 10792	TOTAL		125	157		125		143		159	143		328
3476 3819 4037 4012 3407 11721 6983 11180 10792 10651 6890 7570 8010 7960 6750 23250 13850 22180 21410 21130 1	3476 3819 4037 4012 3407 11721 6983 11180 10792			100										
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#### APPENDIX "B-8"

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#### ARKANSAS RIVER AT GARDEN CITY, KANSAS

ARKANSAS RIVER AT GARDEN CITY, KANSAS Report-Year Ending October 31, 1958 U S G S Records—Provisional, subject to revision

119 668 104 989 117 989 118 389 280 313 378 272 1590 252 1625 200 417 150 417 150 417 150 417 150 417 150 417 150 417 150 417 150 418 127 56 250 56 250 57 49 270 56 289 47 242 43 191 51 172 76 289 47 286 49 286 49 286 49 287 47 288 48 288	127	DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
135   132   155   146   165   57   382   104   989   22     122   139   163   159   157   140   180   131   147   180   131   132   132   145   150   102   174   188   389   20     130   132   153   154   156   150   102   174   188   389   20     131   132   169   194   142   75   174   1590   228   315     132   133   169   194   142   75   174   1590   228   310     134   135   137   167   198   172   104   180   128   128     135   137   167   198   172   104   180   128     131   132   133   182   184   182   187   181     132   133   134   156   158   176   292   81     134   142   153   174   176   212   176   235   49     135   135   137   157   157   158   159     136   139   174   159   2070   206   235   49     127   128   141   181   181   181   181     128   142   163   172   174   179   184   182     129   150   176   165   172   174   173   182     130   151   174   183   535   200   228   47   218     131   132   133   134   141   157   174   183   545   313   182   645     130   140   150   176   165   177   215   241   31     131   132   133   134   140   148   159   150   150     132   140   148   152   174   183   545   218   354   314     134   140   148   163   170   175   215   218   354   314     139   163   152   174   83   535   200   228   44   33   18     140   159   152   174   180   66   375   218   354   314   33   146     140   159   152   154   154   155   155   156   24     140   159   152   154   154   1713   10678   5348   671   671     140   159   150   150   150   150   150   150     150   150   150   150   150   150   150   150     150   150   150   150   150   150   150   150     150   150   150   150   150   150   150   150     150   150   150   150   150   150   150   150     150   150   150   150   150   150   150   150     150   150   150   150   150   150   150   150     150   150   150   150   150   150   150     150   150   150   150   150   150   150     150   150   150   150   150   150   150     150   150   150   150   150   150     150   150   150   150   150	135   135   155   146   165   57   382   104   989   22     122   139   163   159   150   102   172   280   313   20     123   139   163   159   150   102   172   280   313   20     124   139   169   189   146   188   178   188   272   33     125   137   165   198   152   124   180   228   30     119   137   167   203   182   124   180   417   500   229     114   135   132   203   182   187   182   417   500   229     115   137   167   203   182   187   182   417   500   229     116   137   167   203   182   187   182   417   180     117   137   130   198   174   219   311   111   13     118   142   142   146   178   169   218   176   219   210     120   142   146   178   169   218   167   270   56   11     121   139   147   159   2070   200   235   449     122   140   139   167   159   130   194   289   447   28     123   144   148   165   172   215   216   216     124   150   150   176   157   167   218   218     125   140   148   167   172   218   247   218     130   140   148   169   175   218   247   218     140   176   176   177   218   249   240     140   176   178   180   66   375   218   334   334     140   176   170   200   200   200   200     140   159   150   1050   1050   218   314     140   150   150   1050   2805   141   1712   10678   5348     140   159   200   2005   2005   2105   2105     140   159   200   2005   2005   2105   2105     140   150   2005   2005   2105   2105     140   150   2005   2005   2005   2105     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005     140   150   2005   2005   2005   2005   2005     140   140   140   2005   2005   2005   2005   2005     140   140   140   2005   2005   2005   2005   2005     140	-	86	127	144	159	142	176	5.7	265	119	899	22	25
122   139   163   159   157   80   313   117   700   21     125   138   163   159   157   80   313   117   700   21     126   138   172   163   159   157   174   288   389   20     127   137   169   189   146   83   178   378   272   33     128   137   169   189   146   83   178   378   272   33     118   137   167   200   172   107   172   625   200   29     119   137   167   200   172   107   172   625   200   29     114   135   132   203   182   184   180   417   150   23     114   135   132   203   182   184   180   417   150   23     114   135   132   203   182   184   180   417   150   23     114   137   130   198   174   205   191   331   111   13     120   140   140   140   160   218   161   270   56   11     121   140   140   148   163   170   170   200   235   49   22     122   140   139   147   159   180   194   289   47   28     123   144   148   163   170   215   242   44   20     124   130   150   170   215   246   242   44   20     125   150   150   170   215   246   247   21     130   151   170   170   20   20   20     130   140   148   169   70   386   286   344   33   15     140   150   150   170   386   286   344   33   15     140   150   150   170   386   286   344   33   15     140   150   150   170   386   286   344   33   15     140   150   150   100   200   200   201   200   201     140   150   150   100   200   200   201   200   201     140   150   150   100   200   200   201   200   201     140   150   150   100   200   200   201   200   201     140   150   150   100   200   200   200   201   200   201     140   150   150   100   200   200   200   200   200   200   200     140   150   150   150   100   200	122   139   163   159   157   80   313   117   700   21     125   138   163   159   157   80   313   117   700   21     130   130   172   176   150   102   174   80   378   272   33     131   169   189   146   83   178   272   33     132   133   169   189   142   27   174   189   272   280     133   164   189   172   203   182   180   228   200     134   135   132   203   182   184   182   268   127   18     134   135   132   203   182   184   182   368   127   18     135   136   198   174   205   191   311   111   13     136   144   142   132   191   176   218   167   270   86     124   139   130   139   174   159   130   194   289   47   28     125   140   139   174   179   170   176   272   43     126   150   176   165   172   176   175   176   176     127   150   150   176   175   176   176   176   176     130   150   176   176   176   176   176   176     130   150   176   176   176   176   176   176     130   150   176   176   176   176   176   176     130   150   176   176   176   176   176   176     130   150   176   176   176   176   176   176     130   150   176   176   176   176   176     140   148   152   174   83   54   33   15     140   140   148   165   176   176   176   176     140   176   176   176   176   176   176     140   176   176   176   176   176   176     140   176   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176   176     140   176   176   176   176     140   176   176   176   176   176     140   176   176   176	2	83	135	132	155	146	165	57	382	104	686	22	17
125   128   172   163   150   102   174   88   389   20     124   139   169   194   142   75   174   189   378   272     124   139   169   194   142   75   174   189   272   345     124   139   169   194   142   75   174   189   272   345     119   137   167   203   182   124   180   417   150   23     114   135   132   203   182   187   182   368   127   18     115   137   130   198   174   205   187   181   348   127   18     116   135   132   191   176   212   176   292   81   11     120   142   132   191   176   212   176   292   81   11     121   137   130   174   159   200   235   49   22     122   140   139   174   159   200   235   49   22     123   144   148   163   179   1160   218   242   43     124   135   136   147   148   164   148   164   148   164   148   164   148   164   148   164   148   164   148   144   148   164   148   144   14	125   128   172   163   150   102   174   88   389   20     127   137   169   194   142   178   178   280   313   20     124   139   169   194   142   75   174   1590   252   245     118   137   167   203   182   124   180   2417   150   23     114   135   157   203   182   124   180   417   150   23     114   135   157   203   182   124   180   417   150   23     115   137   130   293   182   187   182   368   127   18     116   135   132   293   182   187   182   368   127   18     117   137   130   293   174   212   176   292   81   14     118   142   142   146   176   212   176   292   81   14     120   140   139   174   159   2070   200   235   49   22     125   140   139   174   159   2070   200   235   49   22     126   152   176   165   172   975   429   191   51   29     127   114   157   172   215   545   313   182   62   20     128   140   148   163   172   215   545   313   182   62   20     130   150   176   125   176   205   206   228   447   218     140   176   176   175   215   247   313   15     140   176   170   205   62   241   173   200   244     140   174   200   595   348   354   33   15     140   174   200   205   62   4412   14141   7132   10678   5348   671     140   159   8000   10980   8750   28050   2180   0610   1330    THE YEAR   128,200   Acre Feet.	٠٠.	86	122	139	163	159	157	80	313	117	700	21	17
130   130   172   176   150   102   172   280   313   20     127   137   169   189   146   75   174   1590   272   45     118   137   167   198   172   107   172   625   200   229     119   137   167   203   182   187   182   368   127   18     114   135   132   203   182   187   182   368   127   18     114   135   132   203   182   187   182   368   127   18     114   135   132   203   182   187   182   368   127   18     114   135   132   203   182   187   182   368   127   18     114   135   132   203   182   187   182   368   127   18     115   137   130   198   174   179   200   235   49     120   142   132   176   163   218   161   257   51   18     121   140   139   147   159   170   218   242   43     122   140   139   147   172   215   242   47   21     123   144   148   163   172   275   276   280   286   49     124   137   103   150   176   224   224     125   150   157   167   284   646   228   447   20     130   140   148   169   70   386   286   344   33   15     140   148   169   70   386   286   344   33   15     140   150   172   174   173   1067   278   260     140   150   170   191   171	130   130   172   176   150   102   172   280   313   20     124   137   167   198   146   83   178   378   272   33     124   137   167   198   152   107   172   625   200   229     119   137   167   198   152   107   172   625   200   229     114   135   157   203   182   187   182   368   127   18     114   135   132   203   182   187   182   368   127   18     115   137   130   198   174   205   191   331   111   13     114   142   132   203   182   187   182   368   127   18     120   142   142   130   198   174   205   191   270   36   11     121   140   142   143   163   163   189   161   252   51   18     125   144   148   163   159   1160   218   242   43   25     127   157   167   284   646   378   220   90   25     128   150   176   167   284   646   378   220   20     130   150   176   205   206   207     130   150   176   205   207   208   42   18     140   148   169   172   796   286   344   37   15     140   148   169   170   386   286   344   37   15     140   140   148   169   70   386   286   344   37   15     140   140   148   169   70   386   286   247   20     140   140   148   169   70   386   286   344   37   15     140   159   150   109   50   50   50   50     140   159   150   109   50   50   50     140   150   8000   10980   8750   28050   14150   21180   10810   10310    THE YEAR   128,200 Acre Feer.	4	88	125	128	172	163	150	102	174	88	389	20	20
127         137         169         189         146         83         178         378         272         33           124         139         169         189         142         75         174         1890         252         45           119         137         167         194         142         172         169         288         30           119         137         167         200         172         107         172         625         208         30           114         135         132         203         182         187         180         228         30           114         135         130         198         174         205         191         311         111         130         198         174         205         181         181         181         181         181         181         181         181         181         181         181         181         181         181         181         181         181         181         182         181         182         181         181         182         181         181         182         182         181         182         181         18	127   137   169   189   146   83   178   378   272   33   184   185   187	25	9.5	130	130	172	176	150	102	172	280	313	20	20
124         139         169         194         142         75         174         1890         255         45           118         137         167         203         152         169         169         208         30           119         137         167         203         182         124         180         228         30           114         135         152         203         182         184         180         417         150         23           114         135         132         203         182         187         180         228         30         111 <td< td=""><td>  124   139   169   194   142   75   174   1590   255   45   118   137   167   198   152   169   1280   228   30   119   137   157   203   182   124   180   417   150   23   114   135   132   203   182   124   180   417   150   23   112   137   130   198   174   215   182   368   127   18   111   113   114   142   132   191   176   212   176   292   81   14   142   132   191   176   218   167   270   56   111   113   118   142   132   176   163   208   161   257   56   111   118   142   139   174   159   2070   207   238   161   257   56   111   124   139   139   167   159   1390   194   289   47   28   127   144   148   163   172   174   476   172   476   4</td><td>9</td><td>93</td><td>127</td><td>137</td><td>169</td><td>189</td><td>146</td><td>83</td><td>178</td><td>378</td><td>272</td><td>33</td><td>24</td></td<>	124   139   169   194   142   75   174   1590   255   45   118   137   167   198   152   169   1280   228   30   119   137   157   203   182   124   180   417   150   23   114   135   132   203   182   124   180   417   150   23   112   137   130   198   174   215   182   368   127   18   111   113   114   142   132   191   176   212   176   292   81   14   142   132   191   176   218   167   270   56   111   113   118   142   132   176   163   208   161   257   56   111   118   142   139   174   159   2070   207   238   161   257   56   111   124   139   139   167   159   1390   194   289   47   28   127   144   148   163   172   174   476   172   476   4	9	93	127	137	169	189	146	83	178	378	272	33	24
118   137   167   198   152   92   169   1280   228   30   119   137   167   200   172   107   172   625   200   229   114   135   132   203   182   187   180   417   150   23   114   135   132   203   182   187   180   417   150   23   114   135   132   203   182   187   180   331   111   113   114   142   132   191   176   205   218   176   218   176   205   218   176   218   176   205   218   2	118   137   167   198   152   92   169   1280   228   30   119   137   167   200   172   107   172   625   200   29   29   114   135   132   203   182   124   180   447   150   29   114   135   132   203   182   184   182   368   127   18   111   13   114   142   137   130   198   174   205   191   331   111   13   13   114   142   142   142   146   178   169   218   161   252   81   14   18   142   163   176   163   208   161   252   51   18   18   122   140   139   174   159   2070   200   235   49   222   124   139   139   154   159   150   194   289   47   28   127   144   148   163   172   172   174   175   17	1	87	124	139	169	194	142	75	174	1590	252	45	19
119   137   167   200   172   107   172   625   200   29   114   135   157   203   182   184   180   417   150   23   114   137   130   198   174   207   191   331   111   13   13   130   198   174   207   191   331   111   13   13   130   198   174   207   191   331   111   13   13   130   198   174   207   212   270   56   11   118   140   140   140   150   170   170   170   235   49   22   20   21   22   20   21   22   20   21   22   20   20   22   20   20   22   20	119   137   167   200   172   107   172   625   200   29     114   135   135   203   182   124   180   417   150   23     114   135   132   203   182   184   180   417   150   23     115   137   130   198   174   205   191   331   111   113     116   142   132   191   176   212   176   292   81   14     120   142   146   178   169   218   167   270   56   11     118   142   140   139   174   159   2070   200   235   49   22     121   139   139   174   159   2070   200   235   49   22     122   140   139   167   159   1300   235   49   22     124   139   167   167   274   476   172   76   32     125   152   176   167   167   284   646   218   220   20     127   152   150   176   127   775   476   172   76   21     130   190   152   172   215   545   318   18     131   103   150   176   206   209   228   44   33   15     130   140   148   169   70   386   286   344   33   15     140   176   206   62   421   159   265   26     140   176   206   62   421   179   260   24     140   159   8000   10980   8750   2808   14150   10678   5348   671     130   150   150   150   1000   10010   1330     141   159   141   1713   10678   5348   671     150   150   150   176   176   176   176   176     150   150   176   176   176   176   176   176     150   150   176   176   176   176   176   176     150   150   176   176   176   176   176   176     150   150   176   176   176   176   176   176     150   150   176   176   176   176   176     150   150   176   176   176   176   176     150   176   176   176   176   176   176     176   177   177   177   177   177   177   177   177   177     176   177   17	20	109	118	137	167	198	152	92	169	1280	228	30	16
114         135         155         203         182         124         180         417         150         23           114         135         132         203         182         187         182         187         187         187         187         187         187         187         187         187         187         187         187         187         187         187         187         187         187         188         187         188         187         188         187         188         187         188         187         188         187         188         187         188         187         188         187         188         187         188         188         187         188	114   135   155   203   182   124   180   417   150   23   114   135   132   203   182   187   182   368   127   18   114   142   130   198   176   212   176   292   81   14   142   146   178   169   218   167   270   56   11   11   113   114   142   142   146   178   169   218   167   270   56   11   18   122   140   139   174   159   1390   194   289   47   28   125   144   148   163   159   1390   194   289   47   28   125   144   148   163   159   1160   218   242   43   25   125   144   148   163   159   170   274   476   172   276   175	6	114	119	137	167	200	172	107	172	625	200	29	16
114         135         132         203         182         187         182         368         127         18           112         137         130         198         174         205         191         331         111         13           114         137         136         198         174         205         191         331         111         113           120         142         146         178         169         218         167         270         56         11           122         140         139         174         159         2070         200         235         49         22           124         139         174         159         2070         200         235         49         22           124         139         167         159         130         194         289         47         28           125         144         148         167         172         975         476         172         27           125         152         167         167         284         646         378         220         20           125         150         176	114   135   132   203   182   187   182   368   127   18	10	114	1114	135	155	203	182	124	180	417	150	23	1.4
112         137         130         198         174         205         191         331         111         13           114         142         132         191         176         212         176         292         81         14           120         142         146         178         163         298         161         270         56         11           122         140         139         174         159         2070         200         235         49         22           124         139         167         159         2070         208         47         28           125         140         139         167         159         2070         208         47         28           125         144         148         163         172         975         429         191         51         29           127         152         167         169         172         772         476         172         27         429         191         51         29           127         152         167         169         172         215         475         176         172         176	112   137   130   198   174   205   191   331   111   13   131   132   132   132   134   135   136   137   130   138   176   212   176   292   81   14   142   132   134   145   153   176   218   167   270   56   11   11   13   132   140   139   174   159   2070   200   235   49   228   124   139   139   174   159   1300   194   289   47   28   125   144   148   165   172   772   476   172   772   476   172   772   476   172   772   476   172   772   476   172   772   476   172   772   476   172   772   476   172   772   476   172   776   476   172   776   476   172   174   175	=	118	114	135	132	203	182	187	182	368	127	18	15
114         142         132         191         176         212         176         292         81         14           120         142         146         178         169         218         167         270         56         11           120         142         146         178         169         218         167         270         56         11           124         139         174         159         2070         200         235         49         22           124         139         167         159         1300         194         289         47         28           125         144         148         163         159         1160         218         242         47         28           125         144         148         165         172         742         176         32           127         140         157         172         772         476         172         76         32           127         144         155         172         245         37         32         32           130         150         176         284         646         378 <t< td=""><td>  114   142   132   191   176   212   176   292   81   14     120   142   133   191   176   218   167   270   56   11     121   142   153   174   179   2070   200   235   49   22     122   140   139   167   179   1390   194   289   47   28     124   139   139   167   179   1390   194   289   47   28     125   144   148   163   172   975   429   191   51   29     127   152   167   169   172   476   172   476     127   152   167   169   172   476   172   476     127   150   157   167   284   646   378   220   90   25     127   193   150   176   125   545   313   182   62   20     130   150   176   125   545   313   182   62   20     131   103   150   176   96   971   222   382   47   21     132   140   178   169   66   375   218   354   37   15     133   140   176   200   59   375   218   354   37     140   174   200   59   372   130   265   26   23     140   159   8600   10980   8770   28070   14150   21180   10610   1330    THE YEAR   128.200 Acre Feet.</td><td>1.2</td><td>118</td><td>112</td><td>137</td><td>130</td><td>198</td><td>174</td><td>205</td><td>191</td><td>331</td><td>111</td><td>13</td><td>15</td></t<>	114   142   132   191   176   212   176   292   81   14     120   142   133   191   176   218   167   270   56   11     121   142   153   174   179   2070   200   235   49   22     122   140   139   167   179   1390   194   289   47   28     124   139   139   167   179   1390   194   289   47   28     125   144   148   163   172   975   429   191   51   29     127   152   167   169   172   476   172   476     127   152   167   169   172   476   172   476     127   150   157   167   284   646   378   220   90   25     127   193   150   176   125   545   313   182   62   20     130   150   176   125   545   313   182   62   20     131   103   150   176   96   971   222   382   47   21     132   140   178   169   66   375   218   354   37   15     133   140   176   200   59   375   218   354   37     140   174   200   59   372   130   265   26   23     140   159   8600   10980   8770   28070   14150   21180   10610   1330    THE YEAR   128.200 Acre Feet.	1.2	118	112	137	130	198	174	205	191	331	111	13	15
120         142         146         178         169         218         167         270         56         11           118         142         163         176         163         298         161         272         51         18           122         140         139         174         159         1300         194         289         47         28           124         139         167         159         1300         194         289         47         28           125         144         148         163         172         975         429         191         51         29           127         176         167         172         975         476         172         97         429         191         51         29           127         176         167         172         97         476         172         97         476         176         32         176         176         176         176         176         177         476         189         22         176         176         176         176         180         176         176         180         176         180         176	120	13	113	114	142	132	191	176	212	176	292	81	1+	15
118         142         163         176         163         298         161         252         51         18           122         140         139         174         159         2070         235         49         22           124         139         139         167         159         100         235         49         22           125         144         148         163         172         975         429         191         51         28           127         152         172         975         476         172         43         25           127         176         167         172         975         476         172         32           127         176         167         284         646         378         220         90         25           130         150         176         125         776         286         49         22           130         150         176         127         776         476         172         20           130         150         176         127         776         286         49         21           131         10	118	1+	113	120	142	146	178	169	218	167	270	56	11	16
122         140         139         174         159         2070         235         49         22           124         139         139         167         159         1390         194         289         47         28           125         144         148         163         172         975         191         28         47         28           125         152         167         169         172         975         429         191         51         29           127         167         167         284         646         378         220         90         25           127         167         167         284         646         378         220         90         25           130         150         176         125         796         289         286         49         21           137         103         150         176         125         796         289         286         49         21           137         103         152         174         83         535         200         228         47         21           140         148         169         7	122   140   139   174   159   2070   200   235   49   22     124   139   139   167   159   1390   194   289   47   28     125   144   148   163   172   172   429   191   51   29     127   152   167   169   172   772   476   172   76   32     125   150   157   167   284   646   378   220   90   25     127   114   155   172   215   545   313   182   62   20     130   99   150   176   125   796   228   47   21     137   109   152   174   83   535   200   228   47   21     139   163   152   172   775   421   364   222   47   20     139   163   152   180   66   375   218   354   37   15     140   176   205   62   421   159   295   38   18     140   176   200   59   372   130   265   26   23     140   159   8600   10980   8770   28050   14180   10610   1330	15	118	118	142	163	176	163	298	161	252	5.1	18	15
124         139         139         167         159         1390         194         289         47         28           125         144         148         163         159         1160         218         242         43         25           125         144         148         163         172         772         476         172         76         32           127         150         157         167         284         646         378         220         90         25           127         170         172         215         545         313         182         62         20           127         114         157         172         215         545         313         182         62         20           130         150         176         125         796         289         47         21           137         109         150         174         83         535         200         228         47         20           139         140         148         169         70         386         286         344         33         15           140         148         1	124   139   139   167   159   1390   194   289   47   28   125   144   148   163   179   1160   218   242   43   25   127   144   148   165   172   772   476   172   775	16	125	122	140	139	174	159	2070	200	235	49	22	16
125         144         148         163         159         1160         218         242         43         25           125         152         176         165         172         975         429         191         51         29           127         152         167         167         284         646         578         220         90         25           127         114         155         172         215         545         313         182         62         20           130         150         176         125         796         289         286         49         21           137         103         150         176         125         796         289         286         49         21           137         103         150         176         125         796         289         286         49         21           137         109         152         174         83         535         200         228         47         20           139         163         152         174         421         564         222         47         20           140         1	125         144         148         163         159         1160         218         242         43         25           125         152         176         165         172         975         429         191         51         29           127         152         167         165         284         646         378         220         90         25           127         114         155         172         215         545         313         182         62         20         25           130         150         176         125         796         289         286         49         21           137         103         150         176         96         971         222         382         47         21           137         109         152         172         75         421         364         222         47         20           139         163         152         180         66         375         218         354         37         15           140         176         205         62         421         159         295         38         18           140 </td <td>17</td> <td>134</td> <td>124</td> <td>139</td> <td>139</td> <td>167</td> <td>159</td> <td>1390</td> <td>194</td> <td>289</td> <td>47</td> <td>28</td> <td>15</td>	17	134	124	139	139	167	159	1390	194	289	47	28	15
125         152         176         165         172         975         429         191         51         29           127         152         167         169         172         772         476         172         76         32           125         150         167         167         215         545         313         182         62         20           127         114         157         172         215         545         313         182         62         20           130         150         176         125         796         289         286         49         21           137         103         150         176         125         796         289         286         49         21           137         109         152         174         83         535         200         228         47         21           139         163         152         174         88         536         286         344         33         15           140         148         169         70         386         286         384         37         15           140         174<	125         176         165         172         975         429         191         51         29           127         152         167         169         172         772         476         172         76         32           125         150         167         167         172         215         476         172         76         32           127         114         155         176         125         796         289         286         49         21           130         160         176         176         96         971         222         382         47         21           137         109         152         174         83         535         200         228         47         20           139         140         148         169         77         421         364         222         47         20           139         163         152         180         66         375         218         364         33         15           140         176         200         50         421         159         295         38         18           140         174 <td>00</td> <td>139</td> <td>125</td> <td>144</td> <td>148</td> <td>163</td> <td>159</td> <td>1160</td> <td>218</td> <td>242</td> <td>43</td> <td>25</td> <td>16</td>	00	139	125	144	148	163	159	1160	218	242	43	25	16
127         152         167         169         172         772         476         172         76         32           125         150         157         167         284         646         378         220         90         25           130         199         150         176         125         796         289         286         49         21           137         103         150         176         96         971         222         382         47         21           137         109         152         174         83         535         200         228         47         21           139         140         148         169         70         386         286         344         33         15           140         148         169         70         386         286         344         33         15           140         176         207         62         421         159         295         38         18           140         174         200         59         372         130         265         26         23           140         174         200 <td>127         152         167         169         172         476         172         76         32           125         150         157         167         284         646         378         220         90         25           127         144         155         172         176         215         545         313         182         62         20           130         99         150         176         125         796         289         286         49         21           137         103         150         176         96         971         222         386         47         21           140         118         152         174         83         535         200         228         47         20           139         160         176         96         971         222         47         20           139         163         169         70         386         384         33         15           140         148         169         70         386         386         344         33         15           140         176         180         62         421</td> <td>19</td> <td>142</td> <td>125</td> <td>152</td> <td>176</td> <td>165</td> <td>172</td> <td>975</td> <td>429</td> <td>191</td> <td>51</td> <td>29</td> <td>14</td>	127         152         167         169         172         476         172         76         32           125         150         157         167         284         646         378         220         90         25           127         144         155         172         176         215         545         313         182         62         20           130         99         150         176         125         796         289         286         49         21           137         103         150         176         96         971         222         386         47         21           140         118         152         174         83         535         200         228         47         20           139         160         176         96         971         222         47         20           139         163         169         70         386         384         33         15           140         148         169         70         386         386         344         33         15           140         176         180         62         421	19	142	125	152	176	165	172	975	429	191	51	29	14
125         150         157         167         284         646         378         220         90         25           127         114         155         172         215         545         313         182         62         20           130         190         150         176         125         796         289         286         49         21           137         103         150         176         122         382         47         21           137         109         152         174         83         535         200         228         42         18           140         118         152         172         77         421         364         222         47         20           139         140         148         169         70         386         286         344         33         15           140         176         180         66         377         218         354         37         15           140         174         200         59         372         180         66         23         44         33         18           140         174	125         150         157         167         284         646         378         220         90         25           127         114         155         172         215         545         313         182         62         20           130         199         150         176         215         545         313         182         62         20           130         150         176         96         971         222         49         21           137         109         152         174         83         535         200         228         42         18           140         118         152         172         77         421         364         222         47         20           139         140         148         169         76         386         286         344         33         15           140         176         205         62         421         159         295         38         18           140         176         200         59         372         130         265         26         23           140         159         234         441 <td>20</td> <td>146</td> <td>127</td> <td>152</td> <td>167</td> <td>169</td> <td>172</td> <td>772</td> <td>476</td> <td>172</td> <td>76</td> <td>32</td> <td>18</td>	20	146	127	152	167	169	172	772	476	172	76	32	18
127         114         155         172         215         545         313         182         62         20           130         99         150         176         125         796         289         286         49         21           137         103         152         174         83         537         202         228         47         21           137         109         152         174         83         537         202         228         47         21           139         140         148         169         70         386         286         344         33         15           139         163         152         180         66         375         218         354         37         15           140         176         200         59         372         130         265         26         23           140         174         200         59         372         130         265         26         23           140         174         200         59         372         130         265         26         23           140         179         201	127         114         155         172         215         545         313         182         62         20           130         99         150         176         125         796         289         286         49         21           137         103         150         176         176         96         971         222         382         47         21           139         118         152         172         75         421         364         222         47         18           139         140         148         169         70         386         286         344         33         15           139         163         152         180         66         375         218         354         37         15           140         176         200         59         375         218         354         37         15           140         174         200         59         372         130         265         23           140         159         200         59         372         130         265         26         23           140         159         191	2.1	146	125	150	157	167	284	646	378	220	06	25	18
130         99         150         176         125         796         289         286         49         21           137         103         150         176         96         971         222         382         47         21           137         109         152         174         83         500         228         42         21           140         118         152         172         75         421         364         222         47         20           139         140         148         163         70         386         286         344         33         15           139         163         152         180         66         375         218         354         37         15           140         176         207         62         421         159         295         38         18           140         174         200         59         372         130         265         26         23           140         159         191         307         260         24         26         23           140         159         184         37         144	130         99         150         176         125         796         289         286         49         21           137         103         150         176         96         971         222         382         47         21           137         109         152         174         83         535         200         228         47         21           139         140         148         169         70         386         286         344         37         15           139         163         152         180         66         375         218         354         37         15           140         176         205         62         421         159         295         38         18           140         174         200         59         372         130         265         23           140         159         191         307         260         24         23           140         159         191         307         260         23         3           1820         8510         8536         14150         21180         10610         1330	22	139	127	114	155	172	215	545	313	182	62	20	56
137         103         150         176         96         971         222         382         47         21           137         109         152         174         83         535         200         228         42         18           140         118         152         172         77         344         222         47         20           139         140         148         169         70         386         286         344         33         15           140         176         205         62         421         159         295         38         18           140         174         200         59         372         130         265         26         23           140         159         191         307         260         24         23           3942         4288         4336         5536         4412         14141         7132         10678         5348         671         6           7820         8510         8600         10980         8750         28050         14150         21180         10610         1330         12	137         103         150         176         96         971         222         382         47         21           137         109         152         174         83         535         200         228         47         21           140         118         152         172         77         421         364         222         47         20           139         140         148         169         70         386         384         37         15           140         176         205         62         421         159         295         38         18           140         174         200         59         372         130         265         26         23           140         159         191         307         260         24         26         23           140         159         191         307         260         24         26         23           7820         8510         8600         10980         8770         28050         14150         21180         10610         1330           7820         8510         10880         10500         14150         21180	23	130	130	66	150	176	125	964	289	286	49	21	28
137         109         152         174         83         535         200         228         42         18           140         118         152         172         75         421         364         222         47         20           139         140         148         169         70         386         286         344         33         15           139         163         152         180         66         375         218         354         37         15           140         176         207         62         421         159         295         38         18           140         159         191         307         265         26         23           140         159         191         307         260         24           3942         4288         4336         5536         4412         14141         7132         10678         5348         671         6           7820         8510         8600         10980         8750         28050         14150         21180         10610         1330         12	137         109         152         174         83         535         200         228         42         18           140         118         152         172         75         421         364         222         47         20           139         164         148         169         76         386         344         33         15           140         176         205         62         421         159         295         38         18           140         176         206         59         372         130         265         26         23           140         159         191         307         260         24         26         23           3942         4288         4336         5536         4412         14141         7132         10678         5348         671           7820         8510         8600         10980         8750         28050         14150         21180         10610         1330           7820         8510         8600         10980         8750         28050         14150         21180         0610         1330           7820         782         78	24	127	137	103	150	176	96	971	222	382	47	21	30
140     118     152     172     75     421     364     222     47     20       139     140     148     169     70     386     286     344     33     15       139     163     152     180     66     375     218     354     37     15       140     176     205     62     372     130     265     38     18       140     174     200     59     372     130     265     26     23       140     159     191     307     260     24       3942     4288     4336     5736     4412     14141     7132     10678     5348     671     6       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330     12	140         118         152         172         75         421         364         222         47         20           139         140         148         169         70         386         286         344         33         15           139         163         152         180         66         375         218         354         37         15           140         176         205         62         421         159         295         38         18           146         174         200         59         372         130         265         26         23           140         159         191         307         260         24         260         24           304         428         4336         5536         4412         14141         7132         10678         5348         671           7820         8510         8600         10980         8750         28050         14150         21180         10610         1330         1           7820         8510         8600         10980         8750         28050         14150         21180         0610         1330         1	25	130	137	109	152	174	83	535	200	228	42	18	26
139         140         148         169         70         386         286         344         33         15           139         163         152         180         66         375         218         354         37         15           140         176         207         62         421         159         295         38         18           140         174         200         59         372         130         265         26         23           140         159         307         260         24         26         23           3942         4288         4336         5736         4412         14141         7132         10678         5348         671         6           7820         8510         8600         10980         8750         28050         14150         21180         10610         1330         12	139     140     148     169     70     386     286     344     33     15       139     163     152     180     66     375     218     354     37     15       140     176     207     62     421     159     295     38     18       146     174     200     59     372     130     265     26     23       140     159     191     307     260     24       3942     428     4336     5536     4412     14141     7132     10678     5348     671       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330     1       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330     1	26	130	140	118	152	172	75	421	364	222	47	20	20
139     163     152     180     66     375     218     354     37     15       140     176     205     62     421     159     295     38     18       146     174     200     59     372     130     265     26     23       140     159     191     307     260     24     26     23       3942     4288     4336     5536     4412     14141     7132     10678     5348     671     6       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330     12	139     163     152     180     66     375     218     354     37     15       140     176     205     62     421     159     295     38     18       146     174     174     200     59     372     130     265     23       140     159     191     307     260     24       3942     4288     4336     5536     4412     14141     7132     10678     5348     671       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330     1       THE YEAR     128.200 Acre Feet.	27	127	139	140	148	169	70	386	286	344	33	15	20
140     176     205     62     421     159     295     38     18       146     174     200     59     372     130     265     26     23       140     159     191     307     260     24     23       3942     4288     4336     5536     4412     14141     7132     10678     5348     671     6       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330     12	140         176         205         62         421         159         295         38         18           146         174         200         59         372         130         265         26         23           140         159         191         307         260         24         26         23           3942         4288         4336         5536         4412         14141         7132         10678         5348         671           7820         8510         8600         10980         8750         28050         14150         21180         10610         1330           7820         7820         7820         7820         7820         78200         7656         78200         7656	28	128	139	163	152	180	99	375	218	354	37	15	2.1
146     174     200     59     372     130     265     26     23       140     159     191     307     260     24     23       3942     4288     4336     5736     4412     14141     7132     10678     5348     671     6       7820     8510     8600     10980     8750     28070     14150     21180     10610     1330     12	146     174     200     59     372     130     265     26     23       140     159     191     307     260     24     23       3942     4288     4336     5736     4412     14141     7132     10678     5348     671       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330       7820     8520     8520     8520     8520     8520     8520     8520	29	130	140	176		205	62	421	159	295	38	18	2.1
140     159     191     307     260     24       3942     4288     4336     5536     4412     14141     7132     10678     5348     671     6       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330     12	140     159     191     307     260     24       3942     4288     4336     5536     4412     14141     7132     10678     5348     671       7820     8510     8600     10980     8750     28050     14150     21180     10610     1330     1       THE YEAR     128.200 Acre Feet.	30	127	146	174		200	65	372	130	265	26	23	22
3942 4288 4336 5536 4412 14141 7132 10678 5348 671 7820 8510 8600 10980 8750 28050 14150 21180 10610 1330 1	3942 4288 4336 5536 4412 14141 7132 10678 5348 671 7820 8510 8600 10980 8750 28050 14150 21180 10610 1330 1 THE YEAR 128.200 Acre Feet.	3.1		140	159		191		307		260	24		2.1
3942 4288 4336 5536 4412 14141 7132 10678 5348 671 7820 8510 8600 10980 8750 28050 14150 21180 10610 1330 1	3942 4288 4336 5536 4412 14141 7132 10678 5348 671 7820 8510 8600 10980 8750 28050 14150 21180 10610 1330 1 THE YEAR 128.200 Acre Feet.	TOTAL												
7820 8510 8600 10980 8750 28050 14150 21180 10610 1330 1	7820 8510 8600 10980 8750 28050 14150 21180 10610 1330 1 THE YEAR 128.200 Acre Feet.	sec. ft.	3532	3942	4288	4336	5536	4412	14141	7132	10678	5348	671	626
	YEAR 128,200 Acre	ac. ft.	7010	7820	8510	8600	10980	8750	28050	14150	21180	10610	1330	1240

#### APPENDIX "B-9"

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#### DEMANDS BY COLORADO FOR WATER

DEMANDS BY COLORADO FOR WATER Report-Year Ending October 31, 1958 (Arkansas River Compact Administration Records)

DAY	NOV.	DEC.	IAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
_							240	50	615	550	099	400
·							225	100	089	550	089	400
3 11							150	125	049	550	680	400
7 4							110	205	325	550	089	400
- 20							140	305	215	550	089	400
, ,							160	375	250	550	089	385
20							185	375	360	550	089	375
- 0							200	375	455	550	089	375
00							180	400	490	550	655	375
10							230	415	500	705	089	375
11							260	530	500	800	099	375
13							260	009	500	800	630	375
7 7							260	650	200	800	620	360
1.4							190	670	500	800	590	350
10								670	500	775	590	350
116								670	500	720	570	350
17								315	500	700	515	350
0								260	500	700	480	350
10								400	500	700	460	350
20							40	400	500	700	450	350
21							80	400	500	700	450	350
23							06	400	500	700	430	350
22						09	06	400	500	670	410	350
200						70	06	370	530	650	410	350
25						09	06	360	580	650	410	350
26						09	40	360	009	650	410	400
27						09	0	360	009	650	410	435
30						190	20	360	570	650	410	435
000						265	40	360	550	650	410	435
30						265	50	485	550	650	410	435
31							50		250	059		435
TOTAL	-										Hall State	1
sec. ft.						7.030	3,470	23 300	30.920	20,420	32.690	23,345
at. 11.						0.00		THE V	THE VEAR 159 680 Ac	680 Ac	Πţ	
										1000		

#### APPENDIX "B-10"

\* \* \* \*

#### DEMANDS BY KANSAS FOR WATER

5,740

710 7,825 10,900 1,410 15,520 21,620 THE YEAR 49,940 Ac. Ft.

OCT.

DEC. JAN. FEB. MAR. MAY JUNE JULY AUG. SEPT.  170 400 300 140 300 140 365 400 400 400 400 400 400 400 400 400 40							Company of the state of the sta			
170 400 140 150 400 400 400 400 400 500 500 5	NOV. DEC.	IAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
150 400 400 400 400 500 500 500 500 500 5								170		200
150 400 400 400 400 500 500 500 5								400		300
								140		300
										300
										365
										400
										400
									150	400
									400	-100
									400	400
									400	001
									400	400
						21			400	400
									400	400
									400	400
									465	400
									500	400
									500	400
									500	400
									500	400
									200	400
									500	355
									435	300
									400	300
									400	330
									175	350
350										350
350										350
										350

#### APPENDIX "B-11"

\* \* \* \*

#### STATELINE FLOW ON DAYS OF KANSAS DEMAND\*

NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
											104
											437
											350
								489		186	27.0
								1630		210	1
								0701		017	
								2410		333	
										363	
										397	
										422	
										454	
									226	475	
									370	470	
									410	914	
									428	448	
									436	25.00	
									472	469	
									479	474	
									508	464	
									470	434	
									646	424	537
									541	417	530
									505	420	422
									545	396	395
									595	326	388
									518	279	367
									472	274	341
									438	299	341
									312	299	335
									231	317	333
										339	316
											328
								4.519	8 572	17.001	2009
											1000

## APPENDIX "B-12"

# DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICTS 14 AND 17

Report-Year Ending October 31, 1958
Source of Information, A.V.D.A. Reports—Reservoir Water is that from Upstream Reservoirs above Pueblo (Acre Feet)

Bessemer (River)         3,435         349         258         849         2,049         7,934         11,212         18,099         6,236         3,269         4,526         4,366         6,288           Res. or Imported         0         0         0         0         0         0         0         0         0         1,07         1,07         1,07         4,366         67,561           West Potal Disputed         3,435         349         258         849         2,049         1,020         1,172         1,07         1,	ON		٠	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				849	2,049	7.934	11,212	18,099	6,236	3,269	4,526	4,366	62,582
West Deallo (River)         3.435         349         258         849         2,049         7,934         11,212         18,099         8.200         6,264         4,546         4,366           Booth-Chrand (River)         0         0         0         0         141         1184         173         1,97         1,071         1,071           Booth-Chrand (River)         0         0         0         0         0         0         1,144         1,174         1,174         1,177         1,107         1,107           Booth-Chrand (River)         0	-							0	1,904	7,777	07		4,713
West Pueblo (River)         0         0         0         141         184         178         184         187         188         188         2440         307         321         602         2747         182         2440         307         321         602         2747         182         360         9         0         0         0         0         2747         183         2440         307         360         0	- 1		_	849	2,049	7.934	11,212	18,099	8,200	6,264	4,546	4,366	67,561
Booth-Orchard Gr. (Riv.)         0         313         1,020         1,174         1,107         1,107         1,017         1,107 <td></td> <td></td> <td></td> <td>0</td> <td>0</td> <td>141</td> <td>184</td> <td>178</td> <td>184</td> <td>184</td> <td>178</td> <td>184</td> <td>1.233</td>				0	0	141	184	178	184	184	178	184	1.233
Excelsior (River) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3		_	0	313	1,020	1,154	1,172	1,107	1,107	1,071	1,107	8,051
Colorado Canal (Riv.)         Calorado Canal (Riv.)         Calorado Canal (Riv.)         Colorado Canal (Riv.)			_	0	0	879	1,488	2,440	307	139	38	0	5,291
Res. or Imported			11.52	1,018	799	2,747	10,391	14,384	\$10	321	0	0	67,229
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Res. or Imported		_	0	0	2,281	4.122	5.950	20,140	16,116	5,578	0	54,187
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				1,018	799	5,028	14,513	20,334	20,650	16,437	5,578	0	121,416
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			- 1	4,151	5,008	6.387	14,884	15,479	7.555	4,796	3,685	3.671	79,663
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			_	0	0	0	938	722	1,240	2.152	147	0	5.199
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			24.	4,151	5,008	6,387	15.822	16,201	8,795	6,948	3.832	3,671	84,862
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				778	522	2,313	2,485	5.861	5,000	2,374	1,252	859	23,732
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			_	0	0	0	1,468	1.868	66	0	0	0	3.435
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				3,927	7,091	10,163	12,125	16,905	13,563	6,077	2,638	1,269	90,679
$\begin{array}{cccccccccccccccccccccccccccccccccccc$			_	0	0	0	0	0	0	3,703	0	0	3,703
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				3,927	7,091	10,163	12,125	16,905	13,563	9,780	2,638	1,269	94,382
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				6.839	2,898	2,819	8,660	10,324	5,304	952	294	0	54,982
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				89	1,726	4,217	5,000	6,192	4,834	6,147	3,800	4,451	42,344
$\begin{array}{cccccccccccccccccccccccccccccccccccc$				0	0	0	7,500	0	6,768	2,729	0	0	17,632
) $1,432$ $1,289$ $258$ $0$ $244$ $2,249$ $3,669$ $5,708$ $5,258$ $2,638$ $2,426$ $1,609$ $1,609$ $1,343$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$				27.388	32,321	16,153	45,062	49,521	28,161	13,303	11,230	10,621	307,263
343         0         0         0         250         1,250         1,484         1,587         1,638         1,454         875           74,927         49,192         50,478         45,039         52,971         57,272         126,532         149,615         86,473         45,674         32,592         29,012           0         0         0         0         2,281         5,060         6,672         23,344         24,966         5,745         0           74,927         49,192         50,478         45,039         52,971         59,553         131,592         156,287         109,817         70,640         38,337         29,012			_	0	244	2,249	3.669	5,708	5,258	2,638	2,426	1,609	26,780
or Imported			0	0	0	250	1,250	1,484	1,587	1,638	1,454	875	8,881
74,927 49,192 50,478 45,039 52,971 59,553 131,592 156,287 109,817 70,640 38,337 29,012	or Imported		6) 0	45,039	\$2,971	57,272	5,060	149,615 6,672	86,473	45,674 24,966	32,592	29,012	799,777
		1	10	45,039	52,971	59,553	131,592	156,287	109,817	70,640	38,337	29,012	867,845

APPENDIX "B-13"

\* \*

# DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICT 67

Report-Year Ending October 31, 1958 Source of Information A.V.D.A. Reports

(Acre Feet)

30	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	THE
Ft. Bent Canal	543		0	0	0	0	928	3,043	3,993	5,425	4,780	2,747	21,695
Keesee Ditch	0		0	0	0	0	133	504	1,079	1,168	797	579	4,260
Amity Canal	214		0	0	0	756	1.853	15,162	20,751	24,143	19,827	17,532	100,238
Lamar Canal	1,749		764	613	0	742	2,771	4,030	6,192	9,094	7.533	4,786	39,383
Hyde Ditch	121		0	0	0	0	103	301	399	424	298	307	2.024
Manvel Canal	0		0	0	0	0	290	0	526	823	833	486	2,958
X. Y. & Graham Canal	722		0	0	0	28	438	424	1,849	1,944	1.622	1.109	8.334
Buffalo Canal 1	1,303		1,067	379	0	0	006	1,936	1,787	3,235	2.733	2.255	16,702
Sisson Canal	0		0	0	0	0	0	0	0	486	89	0	575
TOTAL	4,652	2,721	1,831	992	0	1,526	7,416	25,400	36,576	46,742	38.512	29.801	196.169

APPENDIX "B-14"

\* \*

# DIVERSIONS BY DITCHES IN KANSAS

Report Year Ending October 31, 1958

(Acre-Feet)

Frontier Ditch, U.S.G.S. Records

Other Ditches, Kansas Division of Water Resources Records

	1014	San	77.	aaa	94.50	adv	MAN	TNE	TITEN	AUG	SEPT.	OCT.	YEAR
	NOV.	DEC.	JAN.	LED.	MAIN.	WIN.		1	James C				
S Brontier Ditch		0	0	0	0	0	0	852	1,270	2,350	1,650	1,190	8,032
Alemo Canal		0	0	0	0	0	0	0	0	0	0	0	0
Ft. Aubrey Canal	0	0	0	0	0	36	0	0	165	369	393	672	1,635
Total Stateline to Syracuse	720	0	С	0	0	36	0	852	1,435	2,719	2,043	1,862	6,667
Amazon Canal	0	0	0	0	0	0	0	1,220	819	5,730	4,630	4,910	17,309
South Side Ditch	6.570	817	0	0	0	0	0	3,430	2,300	2,970	2,490	6,500	25,077
Crost Fastern Canal		0	0	0	0	1,990	2,450	0	0	1,430	5,190	1,040	12,100
Farmers Ditch	478	0	0	0	0	0	0	0	2,030	5,500	4,140	3,500	15,648
Garden City Canal	415	0	0	0	0	0	0	0	232	651	626	857	2,781
Total Syracuse to Garden City	7,463	817	0	0	0	1,990	2,450	4,650	5,381	16,281	17,076	16,807	72,915
Total Stateline to Garden City	8,183	817	0	0	0	2,026	2,450	5,502	6,816	19,000	19,119	18,669	82,582

APPENDIX "B-15"

\* \*

## SUMMARY TABULATION

(Acre-Feet)

	Z	OV.	NOV. DEC.	JAN.	FEB.	MAR.		APR. MAY	IUNE	IULY	AUG.	SEPT.		OCT. YEAR	APP.
Arkansas River at Las Animas Colo		9.2	02021							,					
Purgatoire River near		7.40	0.661 0474	2170	7010	4700		38230	3140 38230 26250 16430	16430	3160	2750		992 131900 B- 2	B
Las Animas, Colo		2790	2020	1130	1610	2190	4850	19830	19830 17710 38150	38150		2280	706	706 112500 B- 3	è
Reservoir contents at				10100			0667	00000	43340	24290	77290	20.70	1690	244400	Š
end of month	2269 orage +69	988 2	45539	261388 +15849	270888 +9500	278724 +7836	282171	331915	342684	357312 +14628	316810	266064	230999	230999	B, 5 B, 5
Reservoir		378	334	470	325		356 2350	7040	23880	32500		47910	31950	202600	B, 6
Diversions in District 67, Colo Flow at Colorado-Kansas		552	2721	1831	992		1526		25400	36576	46742	38512	29801 196169	196169	B-13
Stateline	-	7310	0689	7570	8010	8010 7960	6750	23250	23250 13850	22180		21130	18150	18150 164500 I	B, 7
Diversions in Kansas Arkansas River at		83	817	0	0	0		2450	5502	6816	19000	19118	18669	82582	B-14
Garden City, Kansas		7010	7820	8510		8600 10980	8750	28050	28050 14150 21180	21180	10610	1330	1240	1240 128200	B, 8

\* Because of computation rules, figures in B-4 are not necessarily the exact sum of B-2 and B-3.

#### APPENDIX "C"

#### RESOLUTION

It is always a source of regret when any organization loses the services and association of a faithful and efficient member.

With this in mind, this administration wishes to express such regret occasioned by the absence of Dean Ivan C. Crawford from our deliberations.

Dean Crawford has served long and well and will be remembered by each of us as a proficient, cooperative and understanding public servant, as well as a cordial and pleasant personality.

He leaves us with the best wishes of each member of this administration for his future health and happiness.

This resolution shall be spread upon the minutes of this administration and the secretary is directed to send a copy thereof to Dean Crawford.

#### APPENDIX "D" BY-LAWS OF

#### ARKANSAS RIVER COMPACT ADMINISTRATION

(As Amended to October 31, 1958)

#### \* \* \* \* \* \* \* PREAMBLE

Pursuant to Article VIII B (1) of the Arkansas River Compact, these by-laws were adopted by the Arkansas River Compact Administration on the 14th day of November, 1949, namely:

#### ARTICLE I

#### THE ADMINISTRATION

- The Arkansas River Compact Administration is herein referred to as "the Administration".
- 2. Membership of the Administration shall consist of three representatives from each of the States of Colorado and Kansas, designated or appointed as provided by the Arkansas River Compact and the law of each of such States, and, if designated by the President, one representative of the United States of America.
- 3. The credentials of each such representative shall be filed with the Secretary of the Administration.
- 4. Each representative shall advise in writing the Secretary of the Administration as to his address, to which all official notices and other

communications of the Administration shall be sent and shall further promptly advise in writing the Secretary as to any change in such address.

#### ARTICLE II OFFICERS

1. The officers of the Administration shall be:

Chairman Vice Chairman Secretary Treasurer

- 2. The representative of the United States of America shall be the Chairman of the Administration. The Chairman shall preside at meetings of the Administration. His duties shall be such as are usually imposed on such an officer and such as may be assigned to him by these bylaws or by the Administration from time to time.
- 3. The Vice-Chairman shall be a member of the Administration. He shall be elected at the annual meeting of the Administration, and shall hold office until the next annual meeting of the Administration and until his successor is elected. In the case of a vacancy in the office of Vice-Chairman, the Administration at its next meeting, whether regular or special, shall elect a Vice-Chairman to serve for the unexpired term; and the election of a Vice-Chairman may be made at any meeting of the Administration prior to the holding of its first annual meeting, and in such case he shall hold office until such annual meeting. The Vice-Chairman shall perform all duties of the Chairman when the latter is unable for any reason to act or when, for any reason, there is a vacancy in the office of the Chairman. In addition, the Vice-Chairman shall perform such other duties as may be assigned to him by these by-laws or by the Administration from time to time.
- 4. The Secretary may or may not be a member of the Administration. He shall be elected by the Administration at its annual meeting and shall serve until the next annual meeting and until his successor is elected, except that he may be elected at any meeting of the Administration prior to the holding of the first annual meeting, and in such case shall hold office until such annual meeting. In the case of a vacancy in the office of Secretary, the Administration shall, at its next meeting, whether regular or special, elect a Secretary to serve for the unexpired term. The Secretary shall perform such duties as are usually imposed on such an officer and such as may be assigned to him by these by-laws or by the Administration from time to time. He shall furnish a bond for the faithful performance of his duties if the Administration so directs. The cost of such bond shall be paid by the Administration.
- 5. The Treasurer may or may not be a member of the Administration; and the office of Secretary and Treasurer may be held by the same person if directed by the Administration. He shall be elected at the

annual meeting of the Administration and shall hold office until his successor is elected and shall have qualified, except a treasurer may be elected prior to the first annual meeting of the Administration and in such case shall hold office until such annual meeting. He shall receive, hold, disburse and keep records of all funds of the Administration; and he shall furnish a bond for the faithful performance of his duties in such amount as the Administration may direct. The cost of such bond shall be paid by the Administration. In the case of a vacancy in the office of Treasurer, the Administration shall, at its next meeting, whether regular or special, appoint a successor to serve for the unexpired term.

6. The Administration may employ such engineering, legal, clerical, and other personnel as, in its judgment, may be necessary. They shall receive such compensation and perform such duties as may be fixed by the Administration. Such employees shall not be considered as employees

of either Colorado or Kansas.

#### ARTICLE III

#### PRINCIPAL OFFICE

 The principal office and place of business of the Administration shall be located in the City of Lamar, Colorado.

The principal office shall be open for business on such hours and days as the Administration may from time to time direct.

3. All books and records of the Administration shall be kept in the principal office of the Administration.

#### ARTICLE IV

#### MEETINGS

1. The annual meeting of the Administration shall be held on the second Tuesday in December of each year.

 The Administration shall hold regular meetings on the fourth Tuesdays in March and July of each year.<sup>1</sup>

3. (a) Special meetings of the Administration may be called by the Chairman or, in the case of a vacancy in the office of Chairman or inability of the Chairman to act, by the Vice-Chairman. Upon the written request of two or more representatives, it shall be the duty of the Chairman, or Vice-Chairman, as the case may be, to call such a meeting.

(b) Special telephonic meetings of the Administration may be held by telephonic communications between the several members of the Administration in respect to all matters arising under Article VF of the Compact: Provided that such special telephonic meetings may be called by the Chairman, Vice-Chairman or any member of the Operations Committee, and in any case at least two representatives of each State shall participate personally in such special telephonic meetings and con-

<sup>&</sup>lt;sup>1</sup> As amended March 24, 1950.

cur in the action taken as a result of any such meeting. And provided further, that the Secretary of the Administration shall prepare minutes of any special telephonic meeting and such minutes shall be acted upon by the Administration at the next regular meeting or special meeting held under sub-section (a) hereof.<sup>2</sup>

- 4. Notices of all annual and regular meetings of the Administration shall be sent by the Secretary, or in the case of a vacancy in the office of Secretary, or the inability of the Secretary to act, by the Chairman or Vice-Chairman, as the case may be, to the members of the Administration by ordinary mail at least ten days in advance of such annual or regular meetings. Notices of special meetings shall be given by the Secretary to the members of the Administration by the most expeditious method so as to allow as much time prior to such special meetings as conditions permit.
- 5. All annual and regular meetings of the Administration shall be held at the principal office of the Administration. Unless otherwise agreed to in advance by all members of the Administration, special meetings shall be held at the office of the Administration.
- 6. The Administration shall keep a record of the proceedings of all its meetings. The minutes of such proceedings shall be preserved in a suitable manner as directed by the Administration. Minutes of proceedings until approved by the Administration shall not be official and shall be furnished only to members of the Administration, its employees, and committees. Distribution of official minutes shall be made by the Secretary in accordance with directives of the Administration.
- 7. A quorum for any meeting of the Administration and the casting of votes by representatives of the States on the Administration shall be in accord with Paragraph D of Article VIII of the Arkansas River Compact; and any action by the Administration shall be determined by vote as required by such Paragraph D of Article VIII of the Compact.
- 8. At each meeting of the Administration, the order of business, unless otherwise agreed, shall be as follows:

Call to order:

Reading of minutes of last meeting;

Approval of minutes of last meeting;

Report of Chairman;

Report of Secretary;

Report of Treasurer;

Report of Committees:

Unfinished business:

New business:

Adjournment.

All meetings of the Administration, except executive sessions, shall be open to the public.

<sup>&</sup>lt;sup>2</sup> As amended December 22, 1953.

- 10. Any meeting of the Administration may be adjourned or continued from time to time and from the place set for the meeting to another place.
- 11. Public notice of all annual, regular, and special meetings shall be given in an appropriate manner, determined by the Administration, except in cases where the Administration determines to hold an executive session.

#### ARTICLE V COMMITTEES

1. There shall be the following standing committees:

Administrative and Legal Committee Engineering Committee

Operations Committee

- Each of such committees shall be made up of two representatives
  of the Administration and the Chairman shall be ex-officio member of all
  committees. In all committee action a vote shall be taken by States with
  each State having one vote.
  - 3. The standing committees shall have the following duties:
    - (a) The Administrative and Legal Committee shall advise the Administration with respect to budgets and accounting, office personnel, equipment, records, and legal matters; and shall prepare the draft of the annual report of the Administration.
    - (b) The Engineering Committee shall advise the Administration on all engineering matters; and shall compile all pertinent engineering data and records.
    - (c) The Operations Committee shall advise the Administration concerning, and shall have direct supervision over, rules and regulations governing the storage and releases of water from John Martin Reservoir and over such other Arkansas River interstate administration and operation between the States of Colorado and Kansas as come within the purview of the Arkansas River Compact, subject at all times to the provisions of such compact and the directives of the Administration thereunder. This committee shall be responsible for maintaining appropriate relations, under the direction of the Administration, with the chief officials of each of the States of Colorado and Kansas charged with the administration of water rights, and for maintaining appropriate relations with interested Federal agencies. The Operations Committee shall also be responsible, under directives and orders of the Administration, for supervision over the employees of the Administration engaged in the interstate administration of the waters of the Arkansas River pursuant to the Arkansas River Compact.

- 4. The Chairman of each Committee shall be designated by the Administration.
- 5. The Administration may, from time to time, create special committees composed of such members of the Administration and others as it may determine and assign to such committees such tasks as the Administration may designate.
- 6. Each committee shall make a report to the Administration at each annual and regular meeting and shall make such further reports as may be directed by the Administration. Unless otherwise authorized, all such reports shall be in writing and filed with the Secretary of the Administration.

#### ARTICLE VI

#### RULES AND REGULATIONS

- 1. The Administration shall adopt Rules and Regulations necessary for the administration of the Arkansas River Compact, consistent therewith and with these by-laws.
- 2. All proposals for Rules and Regulations, or for changes in them, shall be presented to the Administration in writing and shall not be acted on at the meeting when first presented, but shall go over for action at a designated subsequent meeting of the Administration.
- 3. Following the presentation to the Administration, public notice of all proposed Rules and Regulations and changes in Rules and Regulations shall be given by two publications, at least one week apart, in some newspaper of general circulation in the area of each State affected by the Arkansas River Compact. The representatives on the Administration from each State shall designate the newspaper in their State in which such publication shall be made. No Rule or Regulation and no change in any Rule or Regulation shall be effective until a date specifically stated in the published notice, which date shall be at least ten days after the last publication.
- 4. The provisions, contained in this Article, for Rules and Regulations and notice thereof shall not be effective in the case of any notice which is otherwise required under the Arkansas River Compact or in any case where, in the judgment of the Administration, effective administration and the public interest under the Arkansas River Compact, require more expeditious action.
- 5. It shall be the duty of the Secretary to see that the necessary notices are published as herein required.
- It shall be the duty of the Secretary to compile the Rules and Regulations of the Administration and to prepare copies for distribution to the public under such terms and conditions as the Administration may prescribe.

#### ARTICLE VII

#### FISCAL

- 1. All funds of the Administration shall be received by the Treasurer and deposited by him to the credit of the Administration in a depository or depositories designated by the Administration.
- Disbursement of such Administration funds shall be made by check signed by the Treasurer and countersigned by the Chairman or Vice-Chairman of the Administration.
- 3. The Administration shall annually adopt and transmit to the Governor of each State its budget covering anticipated expenses for the ensuing fiscal year, and the amount thereof payable by each State.<sup>3</sup>
- 4. The fiscal accounts of the Administration and its employees shall not be subject to the auditing and accounting procedures of either the States of Colorado or Kansas; provided, that each State shall have the right to make an examination and audit of the accounts of the Administration at any time.
- 5. All receipts and disbursements of the Administration shall be audited yearly by a certified public accountant to be selected by the Administration, and the report of audit shall be included in the annual report of the Administration.
- 6. The Treasurer shall prepare and keep an up-to-date inventory of all the property of the Administration.
- 7. The fiscal year of the Administration shall begin July 1 of each year and end June 30 of the next succeeding year.

#### ARTICLE VIII ANNUAL REPORT

- The report year referred to in this Article for the making of the annual report shall commence on November 1 and end on the succeeding October 31.
- 2. The Administration shall make and transmit on or before January first of each year to the Governors of the States of Colorado and Kansas and to the President of the United States a report covering its activities for the preceding report year. The annual report shall include, among other things, the following:
  - (a) The receipts and expenditures of all funds of the Administration and all pertinent financial data.
  - (b) All hydrologic data relating to the Arkansas River which the Administration deems pertinent.
  - (c) Statements as to cooperative studies of water supplies made during the preceding year, including cooperative studies and activities with any Federal agency.

<sup>3</sup> As amended December 11, 1956.

- (d) All findings of fact made by the Administration during the preceding year.
- (e) Such other pertinent matters as the Administration may deem advisable.

#### ARTICLE IX

#### SEAL

- 1. The official seal of the Administration shall be circular in form with the words "Arkansas River Compact Administration" imprinted around the border and the word "Seal" in the center thereof.
- 2. The Secretary of the Administration shall have custody of the seal of the Administration.

#### ARTICLE X

#### MISCELLANEOUS

- 1. The Administration and its Secretary on request shall furnish to the Governor of each of the States of Colorado and Kansas any information within its possession at any time, and shall always provide free access by the public to its records. Except in the case of the Governor of each of the States of Colorado and Kansas, or interested Federal agencies, the cost of furnishing information shall be paid by the person seeking it at such rates as may be fixed by the Administration.
- 2. All contracts and other instruments in writing required to be signed for and on behalf of the Administration, except matters relating to the receipt and disbursement of funds, shall be signed by the Chairman or Vice-Chairman and Secretary. The seal of the Administration shall be affixed thereto.

#### ARTICLE XI

#### AMENDMENTS TO BY-LAWS

1. Amendments to the By-Laws may be made at any meeting of the Administration, provided notice of the proposed amendment shall have been given in the notice of the meeting.

