Fourth

Annual Report

ARKANSAS RIVER COMPACT ADMINISTRATION

(1952)

For the Report-Year November 1, 1951 to October 31, 1952

LAMAR, COLORADO

December 9, 1952

THE ADMINISTRATION

HANS KRAMER, Representative of the United States and Chairman HARRY C. NEVIUS, Secretary and Treasurer

HARRY B. MENDENHALL, HARRY C. NEVIUS and CLIFFORD H. STONE for Colorado

WILLIAM E. LEAVITT, R. V. SMRHA and ROLAND H. TATE for Kansas.

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Annual Report of

ARKANSAS RIVER COMPACT ADMINISTRATION

(1952)

Report-Year November 1, 1951 to October 31, 1952

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, 1951 through October 31, 1952 as follows:

1. Members of the Administration

Representative of the United States: Hans Kramer (Brig. General U. S. A.—Ret.)

Colorado Representatives:

Harry B. Mendenhall, Rocky Ford, Colorado Harry C. Nevius, Lamar, Colorado *Clifford H. Stone, Denver, Colorado.

Kansas Representatives:

William E. Leavitt, Garden City, Kansas R. V. Smrha, Topeka, Kansas Roland H. Tate, Garden City, Kansas.

2. Officers of the Administration

Chairman—Hans Kramer (Brig. General U. S. A.-Ret.), as required by Article VIII C of the Compact Vice-Chairman—William E. Leavitt of Garden City, Kansas Secretary—Harry C. Nevius of Lamar, Colorado. Treasurer—Harry C. Nevius of Lamar, Colorado

3. Standing Committees

Administrative and Legal Committee:

*Clifford H. Stone of Colorado and Roland H. Tate of Kansas.

Engineering Committee:

R. V. Smrha of Kansas and Harry C. Nevius of Colorado.

Operations Committee:

Harry B. Mendenhall of Colorado and William E. Leavitt of Kansas

Hans Kramer, Representative of the United States, is ex-officio member of all standing committees.

*Deceased, October 22, 1952.

5

4. Meetings

December 11, 1951	Lamar, Colorado	Annual Meeting
March 25, 1952	Lamar, Colorado	Regular Meeting
May 13, 1952	Lamar, Colorado	Special Meeting
July 22, 1952	Lamar, Colorado	Regular Meeting
October 28, 1952	Lamar, Colorado	Special Meeting

5. Fiscal

- (a) Balance on hand, October 31, 1951, Auditor's Report..\$2,624.91
- (b) Assessments of March 25, 1952 due after July 1, 1952: State of Kansas, Aug. 22.....\$1,200.00 State of Colorado, Sept. 25...... 1,800,00

\$3,000.00 3,000.00

(c) Disbursements by the Administration Nov. 1, 1951 to Oct. 31, 1952:

Vouche	T	A Committee of the Comm	
No.	Date	Payee and Purpose	Amount
58	12-10-51	Mt. States T & T Co. Nov. Service, Tolls	\$ 8.55
59	12-10-51	Secretary Salary, Nov	. 100.00
60	12-10-51	Butler Stationery Co., Office Supplies	6.74
61	12-11-51	R. W. Rollins, Audit Administration Records	65.00
62	2- 9-52	Prowers County Clerk, Photo-stat. copies	
63	2- 9-52	Mt. States T & T Co., Dec. and Jan. Serv. & Tolls	
64	2- 9-52	Colo. Blue Print Co., Blueprints	12.50
65	2- 9-52	Peerless Printing Co., Annual Reports	. 485.00
66	2-9-52	Secretary Salary, Dec. & Jan. (less F.I.C.A.)	182.00
67	3-15-52	Mt. States T & T Co., Feb. Service & Tolls	. 9.80
68	3-15-52	Secretary Salary, February	. 100.00
69	3-22-52	Lamar Daily News, Supplies	. 24.35
70	5-10-52	Mt. States T & T Co., March & April Serv. & Tolls	. 20.50
71	5-10-52	Secretary Salary, March & April	. 200.00
72	6-30-52	Mt. States T & T Co., May & June Serv. & Tolls	
73	6-30-52	Secretary Salary, May & June (less F.I.C.A.)	
74	6-30-52	Secretary, Cash Adv. \$14.43, Mileage \$49.00	
75	6-30-52	Mt. States T & T Co., June & July Add Tolls	
76	9-27-52	Western Union Tel. Co., July & Aug. Telegrams	
77	9-27-52	Mt. States T & T Co., July & Aug. Serv. & Tolls	
78	9-27-52	Secretary Salary, July & Aug	200.00
79	10-25-52	J. L. Wade, Agt. Nat'l. Surety Corp., Sec. Bond	. 50.00
80	10-25-52	Mt. States T & T Co., Sept. Tolls & Serv	
81	10-25-52	Secretary Salary, Sept	. 100.00
82	10-31-52	Secretary Salary, Oct. (less F.I.C.A. \$6.00)	94.00
83	10-31-52	Western Union Tel Co., Oct. Telegrams	
84	10-31-52	Mt. States T & T Co., Oct. Serv. & Tolls	. 20.60
		\$2	,177.96

(d) Balance on hand October 31, 1952.....

^{*}Fiscal year closes June 30, 1953.

(e) On October 28, 1952 the Administration approved a budget for the fiscal year July 1, 1953 to June 30, 1954, for transmittal to the Governor of each of the States of Colorado and Kansas in accordance with Article VIII E (2) of the Compact as follows:

Personal Services	\$1,800.00
Secretary Salary \$1,200.00 Gage Reports 500.00)
Gage Reports500.00)
Professional Services	2
(Audit of Accounts) 100.00)
Capital Outlay	300.00
Maintenance and Operation	\$1,700.00
Bond, Treasurer 50.00	
Printing 600.00	
Official Publications 100.00)
Travel Expense—Secretary	
)
and Employees) .
Investigations—Inspections)
Telephone-Telegraph 300.00)
Telephone—Telegraph 300.00 Office Supplies 150.00)
TOTAL BUDGET proposed for 1953-54	\$3,800.00
Estimated carry-over as of June 30, 1953	1,400.00
Total to be appropriated by Colorado-Kansas	\$2,400.00
To be appropriated by Colorado 60%	\$1,440.00
To be appropriated by Colorado 60%	960.00
	\$2,400.00

(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, 1951 through October 31, 1952 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 and with the Federal agencies in a systematic determination and correlation of the facts as to the flow and diversion of the waters of the Arkansas River and as 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 Reclamation, and the Chief of Engineers, United States Army, to collaborate with the Administration and with appropriate State officials in such determination and correlation of stream flow and related data. The carrying out of these cooperative studies and activities is assigned, under the By-Laws of the Administration, to the Engineering Committee.

(b) During the period covered by this report the Administration has had the benefit of excellent cooperation from all agencies and officials referred to in the above provisions of the Compact. The United States Geological Survey has proceeded with the establishment and operation of Compact gaging stations, an activity which is covered in detail in Paragraph 8 of this report. The United States Geological Survey has also continued the compilation of hydrologic data which are presented in this report and which have been utilized in the administration of the Compact. The Corps of Engineers has continued to operate John Martin Reservoir in accordance with the provisions of the Compact, The Corps of Engineers made a sediment survey and established new area-capacity tables for John Martin Reservoir.

7. Water Supply, Reservoir Operation and Hydrologic Data

The Compact year considered in this report, beginning on November 1, 1951, commenced with 22,800 acre-feet of water in storage in the John Martin Reservoir. The third successive exceedingly dry winter period resulted in the accumulation of additional water in the reservoir only to the extent of 28,900 acre-feet. At the end of the winter storage season on March 31, 1952, the amount of water impounded in the reservoir was 51,700 acre-feet. This was the smallest quantity in the reservoir for that time of year since the Compact has been in effect. The outlook at that time, nevertheless, appeared rather favorable based on reports of surveys indicating more than twice the normal amount of snow in the watershed. The indicated water supply, however, failed to materialize. The combined discharge of the Arkansas and Purgatoire rivers near Las Animas amounted to 107,790 acre-feet during the irrigation season from April 1, 1952 to October 31, 1952. This was only slightly less than for the same period in the preceding year. Nearly 40 per cent of it occurred during the month of June and about 50 per cent after that time.

Releases from the reservoir were begun on April 7, 1952, and continued until May 31, 1952. Demands to meet Colorado needs were continuous throughout this period while, because of rains, Kansas demands for water at the Stateline did not require additional releases for periods from April 22 to 26, and from April 30 to May 10. At midnight on May 12, 1952, the water remaining in the reservoir amounted to 20,200 acre-feet. At a special meeting of the Administration on May 13, 1952 the Operations Committee reported that it estimated the reservoir would be empty by May 27, 1952. Based upon this estimate action was taken as reported in Paragraph 9 below. On May 31, 1952, the administration of decreed rights of water users in Colorado reverted to the office of the State Engineer of Colorado. As a result of action by all interests concerned, there was left by common consent a pool of 1,170 acre-feet at elevation 3779 for the preservation of fish in the reservoir. This pool fluctuated between 2,420 acre-feet as a maximum and 750 acre-feet as a minimum. Efforts to maintain the fish pool subsequently presented questions of jurisdiction as to operation of the

reservoir gates and resulted in problems of administration of water rights along the river. The experience was unsatisfactory to the extent that water users withdrew their consent to the maintenance of the fish pool. On August 28, 1952, the reservoir gates were opened and the fish pool was discharged. The gates were left open and the reservoir remained empty to October 31, 1952, the end of the period covered by this report.

Releases from the reservoir during the period April 1 to May 31, 1952, amounted to 59,260 acre-feet. Stateline flows during the corresponding period amounted to 23,750 acre-feet. During the period June 1 to October 31, 1952, discharge of the Arkansas River, reported as outflow from John Martin Reservoir, was 94,270 acre-feet and Stateline flow was 28,680 acre-feet.

The inflow, outflow and storage at the John Martin Reservoir and Stateline flow for the report year are shown in graphs on Plate I. Hydrologic data as listed below are presented in Appendix B:

- B-1. Daily discharges, Arkansas River near Pueblo, Colorado, monthly totals corrected for transmountain water.
- B-2. Daily discharges, Arkansas River at Las Animas, Colorado.
- B-3. Daily discharges, Purgatoire River near Las Animas, Colorado.
- B-4. Inflow into John Martin Reservoir.
- B-5. Daily contents, John Martin Reservoir.
- B-6. Outflow from John Martin Reservoir.
- B-7. Daily discharges, Arkansas River at the Colorado-Kansas Stateline.
- B-8. Daily discharges, Arkansas River at Garden City, Kansas.
- B-9. Demands by Colorado for water.
- B-10. Demands by Kansas for water.
- B-11. Stateline flows on days of Kansas Demand.
- B-12. Diversions by ditches in Colorado Water Districts 14 and 17.
- B-13. Diversions by ditches in Colorado Water District 67.
- B-14. Diversions by ditches in Kansas, Stateline to Garden City.

8. Gaging Stations

Except for reconstruction of the station on the Purgatoire River near Las Animas, all construction and repair work originally planned for the Compact gaging stations has been completed. Materials have been purchased for replacing this station and the work is scheduled to be done during the winter of 1952-1953.

Prior to the beginning of the 1952 irrigation season radio stage transmitters were installed at the station below John Martin Reservoir and at the two Stateline stations. Because of occasional battery failures, gage reports were not received with complete regularity but, in general, operation was satisfactory. Power lines were constructed to all three of the stations late in the report-year. It is expected that the use of commercial power will not only prevent failures due to battery trouble, but will also improve the signal strength and increase the efficiency of the installations.

9. Findings of Fact by the Administration

(a) The Administration, at a special meeting called for the purpose on May 13, 1952, considered the amount of water remaining in the conservation pool of John Martin Reservoir together with the prospective releases and inflow.

As the result of such consideration, the Administration passed a resolution, which is attached hereto as Appendix "C", making findings of fact and giving notice to the State Engineer of Colorado, under the provisions of Article V-F of the Compact, regarding the impending exhaustion of water in the conservation pool. The notification to the State Engineer as to the effective date for the commencement of priority administration of water rights was subsequently modified, by communications from the Secretary in behalf of the Administration on May 23, 26 and 28, 1952.

In view of the provision in Article V-A of the Compact that "Winter storage in John Martin Reservoir shall commence on November 1st of each year and continue to and include the next succeeding March 31st," the Administration, at its meeting on October 28, 1952, passed a motion to notify the State Engineer of Colorado that the notice of May 13, 1952, as modified, was rescinded effective November 1, 1952. The rescinding of this notice was without reference to the findings of fact made on May 13, 1952, it being the sense of the Administration that further findings in the premises would be made at the regular meeting in March, 1953 (just prior to the commencement of the next irrigation season on April 1, 1953) in the light of conditions then existing.

(b) Under the provisions of Article IV-D of the Compact, the Administration gave consideration to the Survey Report, Fountain River Watershed, Colorado, 1951, prepared by the Department of Agriculture. As the result of such consideration, the Administration adopted and transmitted to the Secretary of Agriculture a statement setting forth its views, but withholding its final comments pending the correction of certain deficiencies in the project report. The Administration's statement, which was ratified at the meeting on July 22, 1952, is attached hereto as Appendix "D". In view of the studies still to be made in this matter, findings of fact thereon have been deferred.

10. Change in Personnel of Administration

The untimely death on October 22, 1952 of Clifford H. Stone of Colorado was a grievous loss to the membership of the Administration. The sentiments of the Administration were expressed in a resolution adopted October 28, 1952 which is attached hereto as Appendix E. No successor to his office as Director of the Colorado Water Conservation Board having been appointed by the end of the report-year, Mr. Stone's place on the Administration remained vacant as of October 31, 1952. Mr. R. M. Gildersleeve was designated by the Colorado Water Conservation Board on November 1, 1952 as its Acting Director; as such, he became a member of the Administration under the provisions of

Article VIII-C and participated in the annual meeting on December 9, 1952 at which this report was adopted.

Respectfully submitted,
ARKANSAS RIVER COMPACT ADMINISTRATION
By:

HANS KRAMER, Representative of the United States and Chairman

HARRY B. MENDENHALL
HARRY C. NEVIUS
R. M. GILDERSLEEVE
Colorado Members of the Administration

WILLIAM E. LEAVITT
R. V. SMRHA
ROLAND H. TATE
Kansas Members of the Administration

Lamar, Colorado December 9, 1952

APPENDICES

for

Annual Report of the Arkansas River Compact Administration

For the Report-Year Nov. 1, 1951 to Oct. 31, 1952

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 Flows 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 "C" —May 13, 1952 Resolution Regarding John Martin Reservoir.

APPENDIX "D" —Administration Preliminary Statement on Survey Report, Fountain River Watershed.

APPENDIX "E"-Resolution Concerning Clifford H. Stone.

PLATE 1—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, 1952

To the Representatives Arkansas River Compact Administration Lamar, Colorado

Gentlemen:

As requested by you, an examination has been made of the financial transactions of the Arkansas River Compact Administration for its third "Report year"—November 1, 1951 to October 31, 1952. The results of this audit are submitted in the attached Statement of Cash Receipts and Disbursements—Schedule I. The following remarks are offered as additional information and also tend to describe the extent of the auditing work performed.

General Comments

Schedule I reflects all cash activity of the Administration for the year under review. Revenue assessments received from the States of Colorado and Kansas, expenditures by classification together with respective beginning and ending cash in bank balances are detailed on the above mentioned Statement of Cash Receipts and Disbursements.

As provided for in the budget of the Minutes of the Administration's Meeting of October 30, 1951, funds due from Kansas (40% share) of \$1,200.00 and Colorado (60% share) of \$1,800.00 were received for the fiscal year ending June 30, 1953 and deposited in the First National Bank in Lamar on the respective dates of August 22, 1952 and September 25, 1952.

All disbursements were made by checks drawn on the Administration's account at the depository previously mentioned. The individual checks were examined for amount, signature and endorsement. Amounts so expended were substantiated by verification of each payment to payee's statement, authorization by the Administration as evidenced in Minutes of Representatives' Meetings or other supporting evidence. Minutes of the October 28, 1952 Meeting were not reviewed as they were unavailable for examination at this time.

Salary of the secretary amounting to \$1,200.00 has been reduced by \$33.00, because of the deduction of Old-Age and Survivors Insurance deductions for the period January 1, 1951 to October 31, 1952. The agreement between the Federal Security Administration and the Arkansas River Compact Administration dated October 27, 1952 has been reviewed and appears to be in order. The Administration provides its secretary (and other subsequent employees) with social security ben-

efits, in a manner as available to the various States. The related quarterly reports due the Federal Security Authority starting January 1, 1951 have been prepared by the writer and instructions for filing same have been discussed with Mr. Harry C. Nevius. It should be remembered the Administration contributes a similar amount, or 11/2% of employee's salary, thus matching the employee's deduction. As of October 31, 1952, the combined amount due by the Administration for O. A. and S. I. of its employee is \$66.00. Since the records of the Administration are handled on a cash basis, this data is reflected accordingly.

Premiums of \$50.00 paid in October 1952 for the secretary-treasurer's bond covers the period of twelve months ending September 12, 1953. Renewal of bond No. 1203007, carried with the National Surety Corporation, per vendor's statement, extends the \$10,000.00 protection

feature accordingly.

Travel expense of secretary amounting to \$49.00 represents 700 miles of business travel at \$0.07 a mile incurred during April, May

As shown on Schedule I, cash in bank at October 31, 1952 of and June of 1952. \$3,446.95 was reconciled to the amount confirmed by the First National

The financial position of the Administration at October 31 for the year under review and the previous one is expressed in the following schedule:

ARKANSAS RIVER COMPACT ADMINISTRATION Lamar, Colorado

Comparative Balance Sheets

40 Dun		
October 31, 1952 \$3,446.95 ter) 92.50	October 31, 1951 \$2,624.91 92.50	Increase \$822.04
\$3,539.45	\$2,717.41	\$822.04
n \$ 33.00		\$ 33.00
\$3,413.95	\$2,624.91 92.50	\$789.04
\$3,506.45	\$2,717.41	\$789.04
tal\$3,539.45	\$2,717.41	\$822.04
	October 31, 1952 \$3,446.95 ter) 92.50 \$3,539.45 \$3,413.95 quip't 92.50 \$3,506.45 tal\$3,539.45	October 31, 1952 1951 1951 \$2,624.91 92.50 \$2,717.41 \$2,624.91 92.50 \$2,717.41 \$2,624.91 92.50 \$2,717.41 \$2,50 \$2,50 \$2,717.41

Special Comments

It should be remembered the original budget for 1951-1952 was considered void, and no revised estimate was ever prepared. In view of these facts, the expenditures for the period July 1, 1951 to June 30, 1952 are compared below with the revised budget as adopted for the fiscal year ending June 30, 1953.

ARKANSAS RIVER COMPACT ADMINISTRATION Lamar, Colorado

Comparison of Disbursements to Budget* Fiscal Year July 1, 1951 to June 30, 1952

Classification	Disbursements	Budget July 1,1952 to June 30,1953
Salary of secretary	\$1,200.00	\$1,200.00
Gage reports		500.00
Professional services		100.00
Capital outlay	92.50	300.00
Bond, treasurer		50.00
Printing		600.00
Official publications		100.00
Travel expense—Secretary, etc		150.00
Typing and mailing		200.00
Investigation and inspection		150.00
Telephone and telegraph	235.75	300.00
Office supplies		150.00
Totals	\$2,266.07	\$3,800.00*

The Secretary-Treasurer of the Administration advises provision has been made in the Minutes of the October 28, 1952 Meeting for the use of the excess of funds at June 30, 1953, approximating \$1,400.00 which will reduce the assessments from the States for the fiscal year July 1, 1953 to June 30, 1954 to \$2,400.00.

The writer has been advised it will be the Administration's policy to maintain a budget aggregating \$3,800.00, but that any excess of amounts budgeted over actual disbursements will always be used to reduce the subsequent year's revenue assessments of the States accordingly.

Respectfully submitted,

ROBERT W. ROLLINS, Certified Public Accountant.

D. J

^{*}You are again reminded that the expenditures for the fiscal year ending June 30, 1952 are compared with the budgeted figures for the future year. The excess of revenue over disbursements at June 30, 1952 of some \$800.00 together with the combined assessments made and collected from Colorado and Kansas in the Summer of 1952 amounting to \$3,000.00 provided the funds for the \$3,800.00 budget.

(SCHEDULE I)

ARKANSAS RIVER COMPACT ADMINISTRATION Lamar, Colorado

Statement of Cash Receipts and Disbursements November 1, 1951 to October 31, 1952

(Refer to comments in text of audit)

Cash in bank at November 1, 1951 (per audit)	••	\$2,624.91
Receipts		•
Revenue from assessments Coloralo portion 60% Kansas portion 40%	\$1,800.00 1,200.00	
Total Receipts		3,000.00
Total Available Funds		\$5,624.91
Disbursements		
Salary of Secretary\$1,200.00		
Less: O.A. and S.I. deduction	1,167.00	
Printing—Annual reports	485.00	
Telephone and telegraph	297.94	
Audit fee-Fiscal Year-Oct. 31, 1951	65.00	
Office supplies and stationery	58.02	
Premium on secretary-treasurer bond	50.00	
Travel expense of secretary		
(mileage basis)	49.00	
Typing and mailing	6.00	
Total Disbursements	\$2,177.96	
Cash in bank at October 31, 1952		\$3,446.95
Cash on deposit at First National Bank in Lamar		
(Per direct confirmation)	A	
on October 31, 1952	\$3,741.52	-
Less: Outstanding checks of: No. 79 I. L. Wade, Nat'l. Surety\$ 50.00		
No. 80 Mt. States Tel. & Tel. Co 25.65		
No. 81 Harry C. Nevius		
No. 82 Harry C. Nevius		
No. 83 Western Union Tele. Co 4.32	-	
No. 84 Mt. States Tel. & Tel. Co 20.60	294.57	\$3,446.95
2000		Ψυ, 110.27

Note—All outstanding checks at October 31, 1952 cleared in November of 1952.

^{*\$33.00} of the cash in bank at October 31, 1952 represents an amount held in trust, pending payment to Federal Reserve Bank of Old-Age and Survivors Insurance obligations. This amount arose from 1½% deduction from the secretary's monthly salary—Effective January 1, 1951 to October 31, 1952.

APPENDIX "B-1"

ARKANSAS RIVER NEAR PUEBLO, COLORADO

			ARKA)	Ž 0	SAS RIVER NEAR PUEBLO Report Year Ending October 31, G S Records—Provisional, Subject (Colorado State Engineer)	EAR Pt ding Oct ovisional, State Er	PUEBLO, ctober 31, 1 al, Subject to Engineer)	, COLOR 1972 to Revision	АДО			
DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	382	266	259	167	122	169	682	2160	2320	1400	\$\$1	228
6	295	253	263	167	110	159	644	2310	2340	1450	206	234
· co	230	239	279	167	138	137	662	2250	1860	1820	462	203
4	185	226	249	216	154	128	764	2470	1740	1600	418	207
χ.	208	227	242	221	154	136	911	2480	1780	1500	393	208
9	241	233	255	221	142	124	1510	2810	1840	1360	378	208
7	217	244	328	215	128	154	1700	3250	2220	1300	348	201
œ	191	238	338	215	125	<u>3</u>	1760	4130	2120	1330	348	195
0	187	284	323	215	125	170	1630	4240	1840	1290	324	173
10	190	264	307	506	116	44	1430	3610	1880	1270	236	178
11	189	334	298	203	103	299	1090	3450	2400	1230	317	185
12	188	328	297	198	156	300	1160	3590	2300	1260	288	185
13	194	301	348	197	239	314	1070	3410	2040	1230	310	194
14	195	256	273	214	197	314	1220	3250	1760	1220	674	193
15	189	227	215	208	165	300	1390	3310	1650	1240	777	205
16	240	766	204	197	154	447	1660	3760	1490	1250	746	204
17.	246	292	204	202	148	897	1950	4010	1380	1230	1777	187
18	258	396	217	226	123	935	2040	3630	1260	1120	176	100
19	314	362	223	231	95	821	1670	3430	1160	1100	202	182
20	308	268	248	218	84	807	1270	3070	1210	1070	253	161
21	294	293	235	213	106	1600	1220	3050	1210	1300	760	687
22	286	340	244	232	175	1080	1120	3000	1160	1600	303	500
23	307	360	280	238	13.	594	1060	3060	1260	1020	84.6	103
24	315	370	280	248	135	\$29	931	3140	2700	831	236	167
25	322	340	247	290	135	459	777	3080	1010	769	268	503
56	307	230	229	208	113	442	90	2560	474	9/9	147	701
27	279	310	217	182	125	776	(8)	2200	0011	1/.6	699	2
28	273	350	211	150	, c	450	xx	2300	1410	000	77.0	701
29	279	357	199	155	9;	700	675	0007	0071	070	077	70.
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APPENDIX "B-2"

ARKANSAS RIVER AT LAS ANIMAS, COLORADO

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APPENDIX "B-3"

PUGATOIRE RIVER NEAR LAS ANIMAS, COLORADO

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
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9	42	24	8.0	4.4	7.2		3.8		8,	- 00 4	5.7	32
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1.7	4	15	T3	4.2	5.0		8		5.1	2.2	1	2.3
13	45		16	4.	8		00		8.	6.1	934	
14	47	8.7	17	4.4	4.4		8.7		. 4	4	894	2,2
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28	77	11	4.4	17	00		9		2.0	21	9	4
67	71	15	4	17	7.2		0		2.6	8	3.6	4.5
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APPENDIX "B-4"

INFLOW INTO JOHN MARTIN RESERVOIR

;			S D	G S Re	cords—Pr	G S Records—Provisional, Subject to Revision	Subject to	Revision	LOLY	AUG.	SEPT.	OCT.
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31	2	45	26		30		332		453	558		97
TOTAL										1		
Sec. Ft.	2164	1463	2076	1551	1406	2677	3353	21355	10956 10074	10074	4913	1019
Ac F	4290	2900	4120	3076	2790	5310			21/30	75,52		0404
Arkansas	River at	Las Animas		rgatoire	River near	plus Purgatoire River near Las Animas	as.		יםו מטו	1K 12477		

APPENDIX "B-5"

DAILY CONTENTS JOHN MARTIN RESERVOIR

			DAILY	CONT	DAILY CONTENTS JOHN MARTIN RESERVOIR (Acre Peet)	JOHN MA	ARTIN]	RESERV	OIR			
		٠,	Corps of	Report f Enginee	Report Year Ending October 31, 1952 Engineers Records—Provisional, Subject to Revision	Jing Octo	ober 31, 1 onal, Subj	952 ect to Rev	ision			
DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	<u>0</u>
-	22000	29100	35200	41400	47600	46500*	29400	1530	1290	1350	0	
٠ ,	23000	29200	35300	41700	47700	46600	28700	1810	1590	1420	0 (
4 14	23200	29400	35500	41900	47800	46700	27900	1550	2240	1390	0	
c 4	23400	29600	35600	42000	47900	46800	27200	1200	1050	1690	0	
- \	23800	00766	34700	43500	48000	46800	26400	1130	1290	1360	0	
٠ ٧	24000	29800	35800	43600	48200	46900	25700	1120	1660	1290	0 (
) F	24200	30000	36000	43800	48400	46500	24900	1570	1850	850	-	
- c	24400	30100	36200	44000	48600	45800	24200	2260	1600	068	o (
	24500	30200	36400	44100	48700	44800	23400	2420	1270	750	0 (
, 5	24600	30300	36800	44200	48700	43900	22500	2410	1440	950	0	
	24000	30500	37000	44400	49100	43600	21500	1770	1400	1270	O	
112	25100	3000	37300	44600	49100	42900	20200	1140	1220	1170	0	
7.	25500	31400	37600	44800	49100	42200	19000	1170	1660	1190	0	
۲. ۲.	25700	31500	38000	44900	49400	41500	17800	1740	1400	1250	0	
- 2-	26000	31700	38200	45100	49600	40600	16500	2030	1500	1160	oʻ	
14	26200	31800	38400	45300	49700	39900	15400	2040	1290	1170	0 '	٠
2.5	26400	32000	38600	45500	49900	38800	14200	2100	1150	1180	0 (
. Z	26600	32200	38900	45700	49900	37700	13200	2110	1090	1230	0	
2 2	26800	32400	39100	45800	\$0000	36300	13000	1950	950	1180	0 (
20	27100	32500	39300	45,000	50000	35200	12100	1700	1010	1340	0	
2.1	27200	32700	39500	46000	50300	34400	10900	1170	1160	1230	0	
22	27400	32800	39500	46200	50300	35000	9710	1540	066	1100	-	
23	27600	33000	39600	46400	50500	35500	88.10	300	040	0011	0	
24	27800	33200	39800	46400	50700	35000	8480	1240	840	1360	0	
2,5	28000	33400	40100	46500	\$0900	34400	7620	1000	970	1340	> 0	
26	28200	33600	40300	46600	\$1100	33700	0999	1160	1290	1280	0 (
27	28300	33800	40600	47100	\$1200	32700	5250	1180	1120	440	0	
28	28500	34000	40800	47300	51300	31600	4080	1700	1240	φ.	> (
262	28700	34300	40900	47400	\$1500	30700	2950	2000	1800	0 (Ö	
30	28900	34700	41200		71600	30000	1880	1200	1620	0 0	o	
31		35000	41300		\$1700*		1170		1140	>		

(*Revised capacity table adopted, effective April 1, 1952).

APPENDIX "B-6"

OUTFLOW FROM JOHN MARTIN RESERVOIR

61	DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAX	JUNE	JULY	AUG.	SEPT.	C
11	-	61	4	4	4	4	4	424	581	454	430	392	-
8 4 4 4 430 510 568 496 88 88 4 6 6 4 4 4 4 4 4 4 4 4 4 4 4 4	7	11	X	4	4	4	4	424	555	386	436	2 5	
8 4 6 6 4 4 436 454 802 510 8 6 4 6 4 4 454 326 6 6 4 6 5 4 6 4 4 454 326 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	m •	∞ (4	4	4	₹.	4	430	\$10	568	496	181	œ
8 4 6 6 4 4 454 386 247 575 65 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4 1	00 , 1	4	•	4	4	4	436	454	802	510	144	
6 4 5 4 4 4 5 4 326 336 503 6 4 5 4 4 466 448 326 454 510 7 4 4 66 448 657 542 326 7 4 4 466 448 657 542 326 7 4 4 466 448 657 542 326 7 4 4 4 408 677 816 297 272 8 6 4 4 4 4 408 697 620 414 226 8 6 4 4 4 4 408 697 620 414 226 9 7 4 7 68 699 893 436 116 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	.	OOV	4		4	4	4	454	386	245	555	122	
\$ 4 4 666 448 326 454 510 \$ 5 4 4 466 448 326 454 408 \$ 5 4 4 466 448 655 525 \$ 5 4 4 4 466 654 816 295 255 \$ 5 4 4 4 408 657 620 414 225 \$ 5 4 4 4 408 657 620 414 225 \$ 6 4 4 4 408 657 620 414 225 \$ 6 4 4 4 408 657 620 414 225 \$ 6 4 4 4 408 657 620 414 225 \$ 7 4 4 4 408 657 650 893 436 114 \$ 7 868 669 893 436 114 \$ 7 869 659 893 436 116 \$ 7 8 8 657 648 657 649 \$ 7 8 8 657 649 \$ 7 8 8 657 649 \$ 7 8 8 657 649 \$ 7 8 8 657 649 \$ 7 8 8 657 649 \$ 7 8 8 657 649 \$ 7 8 8 677 670 \$ 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	. 0	0	4	۲.	4	4	4	454	326	336	503	101	•
7 4 66 442 419 594 408 7 4 4 66 448 655 542 326 7 4 4 4 46 448 655 542 326 7 5 4 4 4 414 55 816 235 7 6 4 4 4 4 4 816 235 7 7 8 8 16 235 7 7 8 8 16 235 7 7 8 8 16 235 7 8 8 18 235 7 8 8 18 235 7 8 8 18 236 7 8 8 18 236 7 8 8 18 236 7 8 8 18 236 7 8 8 18 236 7 8 8 18 236 7 8 8 18 236 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		· •	4	×.	4	4	222	448	326	424	510	71	
7 4 466 448 655 542 326 5 4 4 4 442 454 816 295 252 5 4 4 4 4 408 676 788 436 235 5 4 4 4 4 408 676 788 436 235 5 4 4 4 4 408 697 620 414 226 6 4 4 4 4 484 690 893 436 116 5 3 4 4 4 484 690 893 436 116 5 4 4 4 4 6 690 893 436 116 7 4 7 660 634 1000 364 117 8 3 4 4 6 690 634 1000 364 117 8 3 4 4 6 690 634 1000 364 117 8 3 4 4 6 690 634 1000 364 117 8 3 4 4 6 690 634 1000 364 117 8 3 4 4 6 690 634 1000 364 117 8 3 4 6 690 634 1000 364 117 8 4 7 600 634 1000 1130 392 11 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	× ×	I C 1	4	,	4	4	466	442	419	594	408	98	\ <u>`</u>
7 4 4 442 454 816 295 252 5 4 4 4 414 555 816 336 215 5 4 4 4 408 697 620 436 235 6 4 4 4 4 408 697 620 436 185 6 5 4 4 4 4 408 697 670 436 185 5 5 4 4 4 4 4 60 697 670 436 116 5 5 4 4 4 4 4 600 637 670 364 116 5 7 4 7 600 634 1000 364 117 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	کار	1 0 1	4	1	4	4	466	448	655	542	326	. 4 . ∞	•
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7 4 4 4 4 6 8 676 788 436 235 6 6 4 4 4 4 6 8 697 620 414 226 6 4 4 4 4 660 697 670 436 185 185 1 6 6 6 4 4 4 4 660 697 670 474 207 670 670 474 207 670 670 474 207 670 670 670 474 207 670 670 670 670 474 207 670 670 670 670 670 670 670 170 170 170 170 170 170 170 170 170 1	٠,	۲,	4	<u>د</u>	4	4	414	555	816	336	215	4.60	4
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6 4 4 4 419 690 490 436 185 1 6 4 4 4 460 697 676 454 207 6 5 4 4 4 4 460 697 676 454 207 5 3 4 4 4 4 657 648 928 436 116 5 4 4 4 657 648 928 419 135 7 4 4 690 634 1000 364 174 7 6 6 9 9 3 7 275 107 8 7 6 9 9 3 7 275 107 8 8 7 275 107 8 9 8 8 8 1 107 8 9 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	m -	ς,	4	4	₹.	₹.	408	697	620	414	226	192	*
6 4 4 4 4 460 697 676 454 207 676 454 207 676 454 207 676 454 893 436 14I 5 3 4 4 4 657 648 893 436 116 7 3 4 4 4 657 648 928 419 1137 7 4 4 690 634 1000 364 174 7 669 937 277 1077 137 11673 18207 19200 11300 9972 5	4.1	, O	4	4	₹.	₹	419	069	490	436	185	1230	. 4
5 4 4 4 484 690 893 436 116 5 3 4 4 4 669 893 436 116 5 4 4 4 690 634 1000 364 117 4 4 690 634 1000 364 174 4 4 4 600 711 830 261 122 4 4 4 600 711 830 261 122 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 <td>·</td> <td>۰ o</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>460</td> <td>469</td> <td>949</td> <td>424</td> <td>207</td> <td>009</td> <td></td>	·	۰ o	4	4	4	4	460	469	949	424	207	009	
7 4 4 4 5 568 669 893 436 116 5 5 3 4 4 4 657 648 928 419 135 4 4 5 4 600 711 830 261 122 4 5 4 4 600 711 830 261 122 4 5 4 4 4 4 5 704 816 336 107 4 5 4 4 5 697 659 935 277 107 4 5 4 6 600 711 830 261 122 4 6 7 704 816 336 107 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	o r	01	4	4	₩.	4	484	069	863	436	141	226	•
7 4 4 657 648 928 419 137 5 4 4 4 680 634 1000 364 174 4 3 4 4 600 711 830 261 122 4 4 4 600 711 830 261 122 4 4 4 4 573 704 878 230 306 4 3 4 4 4 4 35 704 878 230 306 4 4 4 4 4 4 36 657 577 97 572 4 4 4 4 4 4 4 600 AL 4 4 4 4 4 600 711 830 261 1330 AL 5 62 634 497 168 207 AL 6 7 7 562 634 497 168 207 AL 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	÷ 0	. ₹	4 4	4	₹	cn.	768	699	893	436	116	138	
A.I. 217 112 137 11673 18205 1930 364 174	o c	^ 1	, U	4.	4	4	655	648	928	419	135	110	
4 4 697 669 935 275 107 4 3 4 4 4 600 711 830 261 122 4 4 4 4 3 408 704 878 230 306 4 3 4 3 408 704 878 230 306 4 4 4 4 4 42 697 540 185 392 4 4 4 4 4 4 4 557 575 95 572 4 4 4 4 4 4 7 562 634 495 168 207 4 4 4 4 7 562 634 402 408 6 7 764 68 707 707 171 493 6 7 764 68 707 171 493 6 7 762 634 722 987 168 207 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	. .	^ -	4	4.1	4	4	069	634	1000	364	174	74	•
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A.		4 -	· 0 ·	4 -	ᅻ .	4	009	711	830	261	122	36	· vo
AL AL To be a series of the		+ ~	4 4	4	4	4	353	704	816	336	107	8	9
AL AL A 442 697 540 187 392 4 4 4 4 4 4 4 4 4 4 6 57 575 97 572 4 4 4 4 4 4 4 18 641 662 270 151 493 AL AL AL AL AL AL AL AL AL A		† ¬	o e	4.	4		408	704	858	230	306	107	9
AL A 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		t, T		4 .	· O	4	442	269	540	185	392	107	9
AL A. A. A. A. A. A. A. A. A.		4 ~	4 ,	4 1	4	∢ :	436	655	555	95	572	107	v
A.I. 217 122 137 1115 137 11673 18205 19200 11300 9972 57		† •	4 s	4	4	4	436	655	436	58	414	116	Ŷ.
AL Ft. 215 122 135 115 137 11673 18205 19200 11300 9972 57		4 -	· .	4	4	ल्ड ्	548 8	655	348	151	336	132	1
AL 4 4 4 4 7 562 634 495 168 207 4 4 4 4 4 4 522 985 402 408 AL 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		4 -	4	4	4	8	641	299	270	151	493	122	· 2
AL 75 122 137 115 137 11673 18205 19200 11300 9972 57		4 -	4	4	4	_	562	634	495	168	207	128	· 1
AL AL 215 122 135 115 137 11673 18205 19200 11300 9972 57		4.	4	4		4	424	522	985	402	408	48	. ₹
A.L. 215 122 135 115 137 11673 18205 19200 11300 9972	. E		4	4-		4		567		581	448)	4
137 11673 18205 19200 11300 9972	777	2	· · · · · ·		;	1							
1. 4.50 64.2 // 178 772 773 72160 1.6110 1.0000 0.1.1.	Ac. Pt.	426	242	268	113	137	11673	18205	19200	11300	9972	\$246	1816

APPENDIX "B-7"

ARKANSAS RIVER AT THE COLORADO-KANSAS STATELINE

DAV 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	NOV.											
	273	DEC.	IAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	0CT.
−0m4×0F∞	273	,	į	70,	184	148	201	191	83	33	158	7.
01 m 4 x 10 t- 00		194	173	4 6	101	2 7 7	25	237	168	32	141	17
w 4 50 0 50 00	285	184	158	68	011	101	1 2 2	010	0	46	132	73
0.4 × 0 F ∞	281	167	4	184	1.78	971	X 6		7	40	12.5	89
· ~ O ~ ~	040	173	120	158	158	110	13.7	20	5 7	Ş	Ĺ	8
~ v. c. ∞		25	120	173	184	110	138	$\overline{132}$	4+ ;	} {	10	2 2
or «	707	173	3	29	194	95	141	113	55	5.5	† c	2 £
r- 00	797	: :		200	081	č	129	99	62	26	C.	2 1
00	250	10/	4 5 6	5	107	110	11.8	26	.62	48	89	7.1
	233	184	240	47	1	11	300	5.5	89	20	5 1	89
. 6	237	144	230	194	187	21.	901		74	47	50	88
<u>-</u>	222	153	225	178	178	061	2,0	i	1,4	44		71
<u>-</u>	714	162	222	167	162	223	8	2 :	107		47	74
	7.7	211	210	153	189	220	66	7.5	80	1 (Ý
71	770	100	200	173	173	196	113	72	3	4. ; V (1 0	ò
13	01.	0 1	200	(4)	180	192	181	13	62	20	0.0	36
4.	171	173	100	2 4	781	163	221		67	46	97	2.0
15	166	130	777	9 1	7 7	. Y	251	5.2	79	36	165	20 I
16	178	140	677	25	000	7 .	208	56	63	39	80	76
17	153	180	777	701	3	174	00%	16	54	49	79	6
18	162	226	203	148	178	+	046	20	4	45	73	8
0	173	180	189	140	178	+77	000	36	0	4.2	71	92
20	178	165	167	148	167	407	0 6 7	1 0	, 4	1875	93	00
210	184	144	167	162	173	319	867	701	; ;	451	106	80
22	200	150	153	173	194	425	707	95	9 5	100	0	00
77.	200	160	205	158	21.1	293	320	31	, ,	200	o oc	
97	001	120	162	194	205	174	320	7.7	99	17.5	90	20
+10	107	081	100 100 100	216	189	153	305	2,2	9	***	6	יי
(7)	7 7	001	000	126	178	148	276	8	30	101	10	2 0
07	0 ;	200	i i	104	180	200	246	53	2.1	138		9:
27	173	200	17.0	1	70	117	230	62	29	135	75	4 x
. 28	178	777	701	1000	7 7	140	7.25	63	30	248	73	8
29	184	230	184	7007	571	346	27.	Š	36	162	75	8
30	205	240	178		701	7		;	4	205		9
31		210	178	:	791		K +7		`	1		
TOTAL					-			000		4870	7527	
P.	6203	5545	\$824	5020	5644	5350	4700	7507	1400	9680	5010	4880
_	2300	11000	11550	0966	11190	10010	12110	TH	5	108430 A	r Fr	

APPENDIX "B-8"

ARKANSAS RIVER AT GARDEN CITY, KANSAS

NOV. DEC. JAN. FEB. MAR. APR. APR. MAY 307 287 350 287 115 98 102 280 265 235 287 115 57 106 290 245 210 270 150 41 98 102 290 245 210 270 150 41 98 102 297 226 270 150 33 38 38 38 300 220 177 290 197 36 72 300 277 267 250 197 36 72 300 277 267 250 197 38 41 48 300 277 267 270 137 40 120 137 41 48 300 277 280 270 137 47 47 47 47 47 47<				ARKA	ANSAS U S G S	ARKANSAS RIVER Report Year U S G S Records—		AT GARDEN CITY, Ending October 31, 1972 -Provisional, Subject to Re-	ITY, 1952 19 Ber	KANSAS			
305 285 350 285 115 98 102 36 10 5 7 209 265 235 285 115 45 106 31 9 28 7 299 265 235 115 45 106 31 4 14 4 14	DAY	NOV.	DEC.		FEB.		APR	MAY	TUNE	- 1	AUG.	TGES	5
287 287 287 117 59 102 350 10 5 7 290 245 236 236 117 45 105 31 36 28 11 45 10 5 28 7 28 11 45 10 5 28 11 45 10 5 28 28 11 45 10 5 28 11 4 11 4 11 4 11 5 11 4 11 5 11 4 11 5 11 4 11 5 11 4 11 5 11 4 11 5 11 4 11 5 11 5 11 4 11 5 11 4 11 5 11 4 11 5 11 4 11 4 11 10 5 11 4 11 11 4 11		305	285	350	285	118	8	3	, ;				3
290 265 235 235 115 47 100 31 9 28 7 290 245 210 270 195 41 98 21 4 14 7 300 326 150 270 195 41 98 21 4 14 7 300 326 157 286 197 38 14 10 10 5 300 275 285 137 31 41 13 12 4 14 7 300 275 286 137 11 41 41 15 12 7 14 4 300 275 286 137 10 11 41 45 6 19 3 4 4 10 10 5 11 4 4 10 10 5 14 4 4 11 4 4 11 <td< td=""><td></td><td>285</td><td>285</td><td>305</td><td>286</td><td>115</td><td>0 2</td><td>701</td><td>36</td><td>01</td><td>٠,</td><td>7</td><td></td></td<>		285	285	305	286	115	0 2	701	36	01	٠,	7	
290 247 210 270 110 41 102 26 5 21 8 295 255 175 270 110 41 11 5 11 7 300 250 175 290 195 36 16 4 11 5 300 250 175 250 195 36 16 4 11 5 300 275 286 125 12 4 10 5 11 5 11 5 11 5 11 7 14 4 4 10 10 5 11 5 11 5 11 5 11 5 11 5 11 5 11 5 11 5 11 5 11 4 4 11 5 11 4 4 11 4 11 4 4 11 4 4 11 <t< td=""><td></td><td>290</td><td>265</td><td>235</td><td>200</td><td>117</td><td>Ç,</td><td>100</td><td>31</td><td>δ</td><td>28</td><td>7</td><td>4</td></t<>		290	265	235	200	117	Ç,	100	31	δ	28	7	4
297 297 770 270 170 41 98 21 4 144 7 300 326 170 270 190 33 38 16 4 114 7 300 320 177 297 190 33 38 16 4 11 5 300 275 287 120 127 38 41 12 9 12 4 11 7 31 4 10 10 8 6 12 4 14 10 10 8 6 10 9 12 4 14 7 31 4 11 10 10 8 6 10 10 10 10 10 11 4 11 11 4 11 4 11 4 11 4 11 4 11 4 11 4 11 4 11 4 11		290	245	210	070	(T)	4	$\frac{102}{102}$	56	3 ~	21	9 0	7
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2.7 2.87 2.87 3.1 41 13 12 8 6 2.45 2.86 1.26 41 48 12 7 13 4 2.45 2.86 1.20 41 48 12 7 13 4 2.76 3.26 1.36 1.31 41 65 9 5 14 4 4 2.77 3.76 1.36 2.37 4 1.8 14 4 4 1.8 1.4 4		36	087	175	295	190	33	300	14	10		v	-
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255 220 320 210 255 48 41 12 3 26 4 270 280 305 175 255 52 41 11 3 8 4 280 359 135 195 76 41 11 3 8 4 280 400 295 135 106 38 11 3 8 4 360 287 135 135 186 363 144 15 8445 7537 8967 4894 5671 1842 1866 363 249 663 114.3 16750 14970 17780 9710 11250 3650 3700 720 494 1320 227 THE YEAR 80960 Ac. Ft.		255	210	310	120	265	۱ نه ۲۰) t	<u>.</u>	n (90	o,	01
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APPENDIX "B-9"

DEMANDS BY COLORADO FOR WATER

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	SEPT.					•		DECRE	٠																					٠				Ac. Ft.	
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	JULY							COLORADO DITCHES ON DECREED	PRIO																								c	U O THE YEAR	
DEMANDS BY COLORADO FOR WATER Report Year Ending October 31, 1952	JUNE					-		COLORA															٠											P 00	
ANDS BY COLORADO FOR WARPORT Year Ending October 31, 1952	MAY	440	435	440	450	450	450	450	450	460	465	465	465	465	465	465	465	465	465	465	465	500	500	500	500	480	480	480	480	460	440	350		14310 28380	
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APPENDIX "B-10"

DEMANDS BY KANSAS FOR WATER

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	SEPT.					ž																	:			•						•		Ac. Ft.
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	JULY					RESERVOIR EMPTY																									,		00	THE YEAR
TER (Cords)	JUNE				٠					•	•	•	•			•																	00	ı
WA 1953																													•					
FOR ber 31, nistratio	MAY	0	· C	0	_	0	0	0	0	0	0	250	250	250	250	. 250	250	230	250	250	250	250	250	0.7	2.0	200	250	220	250	250	250	•	5250 10410	
DEMANDS BY KANSAS FOR WATER Report Year Ending October 31, 1972 (Arkansa River Compact Administration records)	APR.	c	· c	· C	· C	0	· c	20°	200	200	200	200	200	200	200	200	200	200	8	200	200	200	-	>	o c	9 0	250	220	250	0			3750 7440	
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APPENDIX "B-11"

STATELINE FLOWS ON DAYS OF KANSAS DEMAND*

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	N. FEB. MAR. APR. MAY JUNE	JUNE	JULY	AUG.	SEPT.	5
							201 152	191 237 219				
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. 0 = 0	:	-				150 223 220						
d wi 4						196	181					
× , v g :						156	251					. •
r_ so c						174 224	399 378					
283						319	290 238					
122	* * * * * * * * * * * * * * * * * * *				. is	293	326				-	
4 .83	•					174	302 302 276	•	*,			
9.7.2 8.7.2							246 230					
32333					÷	246	235 271 249		÷			
TOTAL Sec. Ft. Ac. Ft.	•					3574 7090	5306 10420	647 1280	TOT	TOTAL 18790 Ac. Ft.	10 Ac. Pt.	

Three days time is allowed for water released from John Martin Reservoir to reach the Stateline.

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICTS 14 AND 17

Report Year Ending October 31, 1952
(Acre Feet)
Source of Information, A.V.D.A. Reports—Reservoir Water is That from Upstream Reservoirs above Pueblo

	NOV.	DEC.		FEB.	MAR.	APR.	MAY		JULY	ľ	SEPT.	50	THE
Bessemer (River) Res. or Imported	,	1		682	4,366	4,332	4,181	خاا	6,264	1	4,225	4,354	56,668
Total				682	4,366	4,992	4,915	4	8,565	1 -	4,556	4,354	63,154
West Pueblo (River) Booth-Orchard Gr. (Riv.) Excelsior (River) Res. or Imported	873 0 0	210 0 0	5. 0 0 0 0	482 1,137 0	93 1,099 0	179 1,071 62 238	214 1,131 395 79	446 1,287 1,745	204 1,111 219 305	184 1,107 1113 280	179 1,016 0	177 1,000 0 0	1,682 10,387 4,211 902
Total				1,137	0	300	474	_	\$24		0	1.0	5,113
Colorado Canal (River) Res. or Imported	- 1			00	476	270 6,188	3,003 2,876	_	0 17,207		0 4,834	00	41,341 57,849
Total				0	476	6,458	5,879		17,207		4,834	0	99,190
Res. or Imported	4,136 0			\$,109 0	3,227	5,240. 0	10,836 0		6,394	6,165 2,705	3,999 952	3,550	78,555
Total Orford (Birms)	4,136			5,109	3,227	5,240	10,836		7,267	8,870	4,951	3,550	83,085
Carotte (MVCI)	706			1,716	766	2,087	5,425	6,032	5,187	3,084	817	819	27,563

APPENDIX "B-12" (Continued)

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICTS 14 AND 17

					,								
	NOV.	DEC.	IAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	THE
Otero (River)Res. or Imported	00	ا نا نا	629	00	00	2,822		5,310	4,056	3,025	00	0	7,606 10,978
Total	0		629	0	0			5,562	4,056	3,025	0 7	0 4 0 1 1	18,584
Catlin (River) Res. or Imported	7,751		4,064 0	8,707	6,173 0			0	14,73	0	0,	0	1,190
Total	7,751		4,064	8,707	6,173			15,138	14,759	14,582	7,646	4,011	108,509
Holbrook (River) Res. or Imported	81 0	2,307	4,814 0	916 0	1,140	1,351-1,628	4,308	16,782 0	996	627	0.0	00	33,092
Total	8		4,814	716	1,140			16,782	996	627	0	0	34,720
Rocky Ford (River)	3,743		1,396	3,382	2,715			6,276	6,292	5,486	5,359 0	5,234 0	\$2,224 1,488
Ft. Lyon Storage (Kiver) Ft. Lyon Canal (River)	16,826		12,664	12,048	11,587			52,735	27,164	16,669	9,735	10,024	233,167
Las Animas Cons. (Riv.) Las Animas Town (Riv.)	196		O O ,	737	1,364			1,938	1,964	1,855	1,428	639	11,307
TOTAL River Res. or Imported	40,964	38,829	32,200	34,334	33,082 476	40,887	96,519 4,512	178,975 6,980	74,380 24,742	58,337 27,234	36,695 6,117	32,045	697,247 83,563
29	41,740	38,829	32,200	34,334		53,613	101,031	185,955	99,122	85,571	42,812	32,045	780,810

APPENDIX "B-13"

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICT 67

Report Year Ending October 31, 1952 (Acre Feet)
Source of Information A.V.D.A. Reports

	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAX	JUNE	JULY	AUG.	SEPT	130	YEAR
	1												
rt. Bent Canal	129	0	0	0	0	2.146	4.165	4.225	2.011	2.432	1 020	757	18 68
Keesee Ditch		0	0	C	_	640	1,016	070	0	100		2	100
A		•	•		,	È :	7,010	À C	À 70	700	Š	147	· · ·
Canal	20	>	>	Þ	0	11,026	17.459	20,797	11.970	9.931	1.790	× ×	78.67
Lamar Canal		1,519	984	920	952	4 48 5	6.700	200	4 788	ACA 7	200	240	
Linda Direct		•		•				2	\$	7,	702'0	1,0,1	16,7
Type Price		671	>	-	0	139	379	432	371	399	145	220	2 17
Manvel Canal		0	0	c	C	707	470	449	1				
A Company of the		4			•	1		5		7.7	007	>	
of Granam Canal	1,400	766	200	-	-	1,091	1,716	1.779	466	1.121	1.081	1468	7
buttalo Canal	633	615	615	575	79	1.162	2.52	3.200	7.487	2.061	2 450	1 056	4
						1			î	200	1,10	1,7	10,01
TOTAL	4 623	3 200	2 104	1 405	1011	0000	36376	7000	30				
				1111	1,021	766,03	14,13	440,70	140,47	24,230	14,077	7.982	177.05

APPENDIX "B-14"

DIVERSIONS BY DITCHES IN KANSAS

Report Year Ending October 31, 1952 (Acre Feet)
Frontier Ditch, U.S.G.S. Records
Other Ditches, Division of Water Resources Records

												-	2111
	NOV	DEC.	IAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	YEAR
									1	10			•
Frontier Ditch	505	0	0	0	0	779	1,240	955		1,280	0,71	1,110	
Alamo Canal	0	0	0	0	0:	0	0	0 ;	٠ :	> ;	,	1 100	
Ft. Aubrey Canal	0	0	0	0	407	1.443	1,195	1,318	1,2,1	407	1,7,41	1,200	6,0
Total Stateline to				•		6		e c	7 103	1 713	1771	3 008	
Syracuse	505	0	0	0	407	2,222	2,435	617'7	701,7	7, 7	77.7	2,0	
Amazon Canal		0	0	0		<u>~</u>	7,879	>	> <	;	2	1	
Sauth Side Dirch		955	Ģ	989		450	2,411	475	>	177	٠ د	۰ د	
County State County				4 1 1 2 2		2.527	2.982	2.077		1,439	0	0	
Great Eastern Canal		o d	· c	10		4.470		62.1	533	2.894	1,524	452	
Farmers Ditch		> •)	*		•	1,50	1040	409	230	174	283	
Garden City Canal		0	0)		4X4	70/	1,0,1	7	1			
Total Syracuse to										1007	2 614	2054	44 243
Garden City	. 381	955	0	4,906	3,091	8,820	484,4	4,77)	0.17	ć, '	r.0.7	2,0	•
Total Stateline to					•		•	,	•	207 9		6 153	K1 848
Garden City	. 886	955	0	4,906	3,498	11,042	12,419	0,498	3,374	6,44,0		9,1,0	

MAY 13, 1952 RESOLUTION REGARDING JOHN MARTIN RESERVOIR

WHEREAS, Article VF of the Arkansas River Compact which became effective on May 31, 1949, provides as follows:

"In the event the Administration finds that within a period of fourteen (14) days the water in the conservation pool will be or is liable to be exhausted, the Administration shall forthwith notify the State Engineer of Colorado, or his duly authorized representative, that commencing upon a day certain within said fourteen (14) day period, unless a change of conditions justifies cancellation or modification of such notice, Colorado shall administer the decreed rights of water users in Colorado Water District 67 as against each other and as against all rights now or hereafter decreed to water users diverting upstream from John Martin Dam on the basis of relative priorities in the same manner in which their respective priority rights were administered by Colorado before John Martin Reservoir began to operate and as though John Martin Dam had not been constructed. Such priority administration by Colorado shall be continued until the Administration finds that water is again available in the conservation pool for release as provided in this Compact, and timely notice of such finding shall be given by the Administration to the State Engineer of Colorado or his duly authorized representative. Provided, that except as controlled by the operation of the preceding provisions of this paragraph and other applicable provisions of this Compact, when there is water in the conservation pool the water users upstream from John Martin Reservoir shall not be affected by the decrees to the ditches in Colorado Water District 67. Except when administration in Colorado is on a priority basis the water diversions in Colorado Water District 67 shall be administered by Colorado in accordance with distribution agreements made from time to time between the water users in such District and filed with the Administration and with the State Engineer of Colorado or, in the absence of such agreement, upon the basis of the respective priority decrees, as against each other, in said District."

NOW, THEREFORE, acting pursuant to the above quoted provision of the Arkansas River Compact, and in the exercise of the powers set forth in Article VIII of such Compact, the Arkansas River Compact Administration finds:

That, based upon the present quantity of water stored in, and anticipated release of water from, and inflow to, the John Martin Reservoir, the conservation pool thereof, within a period of fourteen (14) days

from this 13th day of May, 1952, will be, or is liable to be, exhausted. NOTIFICATION: In further compliance with the above quoted provision of the Arkansas River Compact, the Arkansas River Compact

Administration hereby notifies the State Engineer of Colorado as follows: That, commencing on the 24th day of May, 1952, unless a change of conditions justifies cancellation or modification of this notice, he is required, under the terms of the Compact, to administer the decreed rights of the water users in Colorado in the manner and for a period of time determined in accordance with the provisions set forth in the above quoted Article VF of the Compact.

The above findings have been made, and notification thereof given, at a special meeting of the Arkansas River Compact Administration held at Lamar, Colorado, on the 13th day of May, 1952.

APPENDIX "D"

ADMINISTRATION PRELIMINARY STATEMENT ON SURVEY REPORT, FOUNTAIN RIVER WATERSHED

The Arkansas River Compact Administration has given consideration to the Survey Report, Fountain River Watershed, Colorado, 1951, tion to the Survey Report, Fountain River Watershed, Colorado, 1951, tion to the Survey Report, Fountain River Watershed, Colorado, 1951, the tion to the State of Colorado contained in letter of the Colorado Water Conservation Board to the from the Director of the Colorado Water Conservation Board to the Colorado May 15, 1952.

Secretary of Agriculture, dated May 13, 1932.

The Arkansas River Compact Administration concurs in general with the comments contained in the communication referred to above. The Administration is particularly concerned, under the following The Administration is particularly concerned, under the provisions of Article IV-D of the Arkansas River Compact with the provisions of Article IV-D of the water supply of the Arkansas effect of the proposed development on the water supply of the Arkansas

withis Compact is not intended to impede or prevent future beneficial development of the Arkansas River Basin in Colorado and Kansas by Federal or State agencies, by private enterprise, or by combinations thereof, which may involve construction of dams, which may involve construction of dams, by combinations thereof, which may involve construction of dams, by combinations thereof, which may involve construction of dams, and control, as well as the improved or prolonged functioning of and control, as well as the improved or prolonged functioning existing works: Provided, that the waters of the Arkansas River, as defined in Article III, shall not be materially depleted in usable quantity or availability for use to the water users in Colorado and Kansas under this compact by such future development or con-

As pointed out in Colorado's official comments, the project report fails to make a definitive evaluation of the effects of the water supply ures upon the usable quantity and availability of the water supply under the above terms of the Arkansas River Compact. Administration this deficiency in the report, the Arkansas River Compact authorization to joins with the State of Colorado in objecting to the authorization of the proposed development and withholds final comments until satisfactory data for evaluation are supplied.

APPENDIX "E"

RESOLUTION CONCERNING CLIFFORD H. STONE

(Adopted October 28, 1952)

In the untimely and unexpected passing of Judge Clifford H. Stone, Director of the Colorado Water Conservation Board, the Arkansas River Compact Administration has lost a valued and esteemed member, who was recognized as an authority on water and as a conservation leader on local, state, regional, national and international levels.

Judge Stone, who has served on this Administration since it was established in 1949, contributed immensely from his wide experience and knowledge, to the solution of difficult problems which have confronted this Administration. All members of this Administration recognize and appreciate the extraordinary understanding and patience which Judge Stone contributed to their deliberations.

In the work of this Administration, as well as in all of his other associations and contacts, Judge Stone was a painstaking, conscientious, and tireless worker, who sacrificed his own time and well-being for the common good of all.

The Administration deeply mourns the passing of Judge Stone, whose devotion to duty and responsibility symbolized every high qualification for public service.

Now therefore, be it resolved by the Arkansas River Compact Administration that this statement be placed upon the record, and a copy be sent to Judge Stone's family; to the Colorado Water Conservation Board; and to the Governor of Colorado.

