

Eighteenth
Annual Report

ARKANSAS RIVER COMPACT
ADMINISTRATION
(1966)

For the Report Year November 1, 1965 to October 31, 1966

LAMAR, COLORADO

December 13, 1966

THE ADMINISTRATION

FRANCIS M. BELL, *Chairman and Representative of the United States*

ERNEST HOFMEISTER, GEORGE F. REYHER and FELIX L. SPARKS
for Colorado

CARL E. BENTRUP, LOGAN N. GREEN and ROBERT V. SMRHA
for Kansas

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Annual Report of
ARKANSAS RIVER COMPACT ADMINISTRATION
(1966)

Report-Year November 1, 1965 to October 31, 1966

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, 1965 through October 31, 1966 as follows:

1. *Members of the Administration*

Representative of the United States:

Francis M. Bell

Colorado Representatives:

Ernest Hofmeister, Lamar, Colorado

George F. Reyher, McClave, Colorado

Felix L. Sparks, Denver, Colorado

Kansas Representatives:

Carl E. Bentrup, Deerfield, Kansas

Logan N. Green, Garden City, Kansas

Robert V. Smrha, Topeka, Kansas

2. *Officers of the Administration*

Chairman:

Francis M. Bell

Vice-Chairman:

Carl E. Bentrup

Secretary:

Lane L. Hackett

Treasurer:

Ernest Hofmeister

3. Standing Committees

Administrative and Legal Committees:

Logan N. Green (Chairman)

George F. Reyher

Engineering Committee:

Robert V. Smrha (Chairman)

Felix L. Sparks

Operations Committee:

Ernest Hofmeister (Chairman)

Carl E. Bentrup

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

4. Meetings

December 21, 1965	Lamar, Colorado	Annual Meeting
June 8, 1966	Lamar, Colorado	Special Meeting

5. Fiscal

(a) Balance on Hand October 31, 1965.....\$ 7,934.25

(b) Receipts:

State of Colorado.....\$3,189.00

State of Kansas..... 2,126.00

5,315.00

(c) Total Funds Available.....\$13,249.25

(d) Disbursements by the Administration—November 1, 1965 to
October 31, 1966:

Date	Voucher No.	Payee and Purpose	Amount
12-21-65	443	Mountain States Telephone—Nov. 1965 Service.....	\$ 18.45
1- 6-66	444	U.S. Treasurer—Fourth Quarter Social Security 1965	21.75
1- 6-66	445	Hacket Smartt—Fourth Quarter Salary 1965.....	289.13
1- 6-66	446	A. Marvin Strait—Audit & Financial Statement for 1965	75.00
1- 6-66	447	Mountain States Telephone—December 1965 Service	19.44
2- 7-66	448	U.S.G.S.—Second Quarter Cooperative Agreement....	500.00
2- 7-66	449	Mountain States Telephone—January 1966 Service..	12.48
3- 7-66	450	Mountain States Telephone—February 1966 Service..	3.20
3- 7-66	451	Lamar Typewriter Company—Office Supplies.....	31.00
4- 4-66	452	Mountain States Telephone—March 1966 Service....	25.29
4- 4-66	453	U. S. Treasurer—First Quarter Social Security 1966	25.20
4- 4-66	454	Lane L. Hackett—First Quarter Salary 1966.....	287.40
4-18-66	455	U.S.G.S.—Third Quarter Cooperative Agreement....	4,500.00
4-18-66	456	Lane L. Hackett—Postage	6.20
5- 7-66	457	Mountain States Telephone—April 1966 Service....	22.16
5- 7-66	458	Peerless Printing Company—Printing Annual Report	748.00
6- 2-66	459	Mountain States Telephone—May 1966 Service.....	19.92
7- 1-66	460	U.S.G.S.—Fourth Quarter Cooperative Agreement....	500.00
7- 1-66	461	Void	
7- 1-66	462	Robinson Printing—Office Supplies.....	33.50
7- 1-66	463	Mountain States Telephone—June 1966 Service.....	17.32
7- 1-66	464	U. S. Treasurer—Fourth Quarter Social Security....	25.20
7- 1-66	465	Lane L. Hackett—Fourth Quarter Salary 1966.....	287.40
8- 2-66	466	Schoenith Office Equipment Co.—Office Supplies....	61.90
8- 2-66	467	Mountain States Telephone—July 1966 Service.....	21.87
8- 66		First National Bank—Service Charge.....	.35
9- 1-66	468	Mountain States Telephone—August 1966 Service....	21.35
9-27-66	469	Lane L. Hackett—First Quarter Salary & Travel Exp.	409.56
9-27-66	470	U. S. Treasurer—First Quarter Social Security.....	25.20
10- 3-66	471	Milne-Hill Agents, Inc.—Treasurer Bond.....	15.00
10- 3-66	472	Mountain States Telephone—September 1966 Service	16.27
10- 8-66	473	U.S.G.S.—First Quarter Cooperative Agreement.....	500.00
Total Disbursements			<u>\$8,539.54</u>

(e) Balance on Hand October 31, 1966.....\$4,709.71

(f) At the Annual Meeting held December 13, 1966 the Compact
Administration adopted the following budget for the Fiscal Year
July 1, 1966:

Personal Services	\$10,875.00
Secretary Salary	\$1,200.00
Social Security	75.00
Gage Reports	2,000.00
Professional Services (Audit of Accounts)	100.00
Stateline Gage Relays and Terminal Station	7,500.00
Capital Outlay	300.00
Maintenance and Operation	1,865.00
Bond, Treasurer	15.00
Printing	900.00
Official Publications	100.00
Travel Expense	200.00
Typing and Mailing.....	100.00
Investigation and Inspection.....	100.00
Telephone and Telegraph.....	300.00
Office Supplies	300.00

Total Proposed Budget 1967-1968.....\$12,740.00

Estimated Carry-over as of June 30, 1967..... 400.00

Total to be appropriated by Colorado and Kansas.... 12,340.00

in accordance with Article VIII E (1), the amount of such budget payable by the State of Colorado is sixty percent thereof, or \$7,404.00, and the amount payable by the State of Kansas is forty percent thereof, or \$4,936.00.

- (g) 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, 1965 through October 31, 1966 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 United States Geological Survey has continued the operation of the compact gaging stations and the analyses and compilation of the hydrologic data presented in this report and used in the administration of the Compact. The Corps of Engineers continued to operate the conservation pool of John Martin Reservoir in accordance with the terms of the compact and the orders of the Administration. However, on the grounds that the risks were too great, the Chief of Engineers was unwilling to comply with the Administration's request that releases from the flood control pool be terminated during the months of January and February.

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

At the beginning of the Compact Year, there were 375,433 acre-feet of water in storage in John Martin Reservoir. This was the greatest carryover of water in storage since the reservoir has been in operation. Inflow to the reservoir during the winter storage period amounted to 74,080 acre-feet. Releases during the same period were 74,800 acre-feet of which 9,520 acre-feet were released during the period November 1 through December 18 on demand of Colorado for 100 c.f.s. of river flow. The remainder of the winter releases were from storage in the flood pool of the reservoir. Water in the reservoir remained above the established conservation pool elevation throughout the winter and on March 31, 1966, there were 374,467 acre feet in storage.

The first release of stored water for the irrigation season was made beginning at 8:00 a.m. on April 5, 1966, to meet the demand of Colorado and was increased at 8:30 a.m. on April 8, 1966, to meet the initial demand by Kansas. Except for a brief period from 7:30 a.m. on August 13 to 8:00 a.m. on August 14 varied releases were continued through the irrigation season. At the end of the year on October 31, 1966, there remained 186,100 acre-feet of water in storage.

Inflow into John Martin Reservoir during the irrigation season totaled 110,440 acre-feet which is 67 per cent of the seventeen-year average.

Total diversions downstream from John Martin Reservoir during the period April 1 through October 31 by the ditches in Colorado Water District No. 67 were 186,735 acre-feet. Ditch diversions in Kansas for the same period amounted to 160,022 acre-feet or 90 per cent of the stateline flows during that time. The sum of the irrigation

season diversions in both states was the greatest since 1949-50 and was more than 50 per cent greater than the seventeen-year average.

Reservoir releases during the irrigation season were 280,430 acre-feet. Demands for irrigation water during the season were 280,503 acre-feet. Total diversions were 66,327 acre-feet greater than the irrigation releases for the season. Runoff from the area below the reservoir and return flows provided 19 per cent of the water diverted during the irrigation season.

Releases from the reservoir averaged 250 c.f.s. from November 1, 1965, to March 31, 1966, and 661 c.f.s. from April 1, 1966, to October 31, 1966. Stateline flows for corresponding periods averaged 333 c.f.s. and 418 c.f.s. respectively.

The total discharge for the year at Garden City was 146,140 acre-feet of which 114,180 acre-feet or 78 per cent occurred as winter flows.

8. Gaging Stations

Streamflow records of satisfactory accuracy were obtained at the Compact stations. Emphasis was continued on performing additional field work and providing streamflow data to the Administration and to State officials as required.

It will be noted that the computed daily demands by Colorado and Kansas in Appendices B-10 and B-11 do not always agree with the actual measured releases at the gaging station, as shown in Appendix B-6. Part of this discrepancy is the result of the lag in time involved in adjusting the outlet gates in the dam and when the outflow is measured at the gage. The rest of the discrepancy is due primarily to the rating table changes, caused by a shifting channel, being unavailable at the time of changes in releases. Relocating the gage nearer to the dam and installation of an artificial control section would minimize the variations in the records.

The gaging station on the Purgatoire River near Las Animas was operated at temporary sites during the year. It was not practicable to install the radio equipment at the temporary locations. However, the station was moved back to the former site at the new Highway 101 bridge and the radio equipment put in operation during November 1966.

The station on the Arkansas River near Coolidge was moved downstream about 1500 feet to the highway bridge. This change was necessary because of the extensive erosion at the old site during the June 1965 flood.

Conditions at the station on the Arkansas River at Las Animas worsened during the year and it was necessary to construct a low dike across the by-pass channel to continue operations at the present site. The station will be moved upstream to the new Highway 50 bridge when the low-water channel at that point has stabilized.

The Administration approved a cooperative agreement with the U. S. Geological Survey for fiscal year July 1, 1967, to June 30, 1968, in the amount of \$11,500; \$5,750 for each party. Four thousand dollars of the total is for operation of the gaging stations and \$7,500 for procurement and installation of new FM radio equipment to complete the Administration network.

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.

Respectfully submitted,

ARKANSAS RIVER COMPACT ADMINISTRATION
BY:

FRANCIS M. BELL

Representative of the United States and
Chairman of the Administration

ERNEST HOFMEISTER

GEORGE F. REYHER

FELIX L. SPARKS

Colorado Members of the Administration

CARL E. BENTRUP

LOGAN N. GREEN

ROBERT V. SMRHA

Kansas Members of the Administration

Lamar, Colorado
December 13, 1966

APPENDICES
for
Annual Report of the
Arkansas River Compact Administration

For the Report-Year November 1, 1965 to October 31, 1966

- 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 Lamar, Colorado.
- APPENDIX "B-8" —Daily Discharges, Arkansas River at Colorado-Kansas Stateline.
- APPENDIX "B-9" —Daily Discharges, Arkansas River at Garden City, Kansas.
- APPENDIX "B-10"—Demands by Colorado for Water.
- APPENDIX "B-11"—Demands by Kansas for Water.
- APPENDIX "B-12"—Stateline Flow on Days of Kansas Demand.
- APPENDIX "B-13"—Divisions by Ditches in Colorado Water Districts 14 and 17.
- APPENDIX "B-14"—Divisions by Ditches in Colorado Water District 67.
- APPENDIX "B-15"—Divisions by Ditches in Kansas, Stateline to Garden City.
- APPENDIX "B-16"—Summary Tabulation.
- APPENDIX "C" —Agreement on Distribution of Water to Ditches in Colorado.
- PLATE I—Graphs showing inflow, outflow and contents of John Martin Reservoir and Stateline Flow for Report-Year.

APPENDIX "A"

* * * *

AUDITOR'S REPORT

A. MARVIN STRAIT

* * * *

Certified Public Accountant
Johnson-Strait Building
Lamar, Colorado 81052

December 9, 1966

To the Representatives
Arkansas River Compact Administration
Lamar, Colorado

Gentlemen:

We have examined the receipts and disbursements and changes in fund balances, of the Arkansas River Compact Administration for the fiscal year ended October 31, 1966. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

We submit herewith the following financial statements:

EXHIBIT A—Statement of Receipts and Disbursements and Changes in Fund Balances for the Fiscal Year ended October 31, 1966.

SCHEDULE 1—Statement of Receipts and Disbursements compared with Budget for the Budget Year July 1, 1965 to June 30, 1966.

COMMENTS

EXHIBIT A

The receipts and disbursements, on a cash basis, are shown in Exhibit A. The assessments for the current year were received in August of 1966.

The disbursements were all supported by vouchers, cancelled checks, and authorization for payment in the minutes of the Compact's meetings.

Schedule 1

The receipts and disbursements for the budget year of July 1, 1965, to June 30, 1966, as compared with budgeted items for that year are shown in Schedule 1. This differs from the report year of November 1, 1965, to October 31, 1966, and is the result of combining the receipts and disbursements for the appropriate months of the current and previous report years. The difference between the budget item of Surface Water Investigations, U. S. Geological Survey and the active expenditures is due to the final payment being paid July 1, 1966. This transaction caused the cash disbursements to not agree with the current years budget, but were in conformity with budgeted items when compared with their respective years budgets.

Financial position of the Administration as compared with last year is shown below:

COMPARATIVE BALANCE SHEET

	October 31, 1965	October 31, 1966
ASSETS		
Cash in Bank.....	\$7,934.25	\$4,709.71
Equipment	767.50	767.50
Total Assets	<u>\$8,701.75</u>	<u>\$5,477.21</u>
 LIABILITIES AND FUND BALANCES		
Expended Fund Balance, Equipment.....	\$ 767.50	\$ 767.50
Unexpended Fund Balance.....	7,934.25	4,709.71
Total Liabilities and Fund Balances.....	<u>\$8,701.75</u>	<u>\$5,477.21</u>

OPINION

In our opinion the Statement of Receipts and Disbursements and Changes in Fund Balances presents fairly the financial position of the Arkansas River Compact Administration at October 31, 1966, and the results of operations for the fiscal year then ended on a basis consistent with that of the previous year.

Respectfully submitted,

A. MARVIN STRAIT

EXHIBIT A

ARKANSAS RIVER COMPACT ADMINISTRATION

STATEMENT OF RECEIPTS AND DISBURSEMENTS AND CHANGES IN FUND BALANCE FOR THE FISCAL YEAR ENDED

OCTOBER 31, 1966

CASH IN BANK, NOVEMBER 1, 1965.....\$ 7,934.25

FUND BALANCE, NOVEMBER 1, 1965.....\$ 7,934.25

RECEIPTS:

Revenue from Assessments:

Colorado\$ 3,189.00

Kansas 2,126.00

TOTAL RECEIPTS 5,315.00

TOTAL AVAILABLE\$13,249.25

DISBURSEMENTS:

Surface Water Investigations, Cooperative
Gage Replacements and Rehabilitations—
U. S. Geological Survey.....\$ 6,000.00

Secretary Salary 1,200.00

Printing 748.00

Telephone and Telegraph..... 197.75

Legal and Audit 75.00

Travel 122.16

Office Supplies 64.50

Payroll Tax 49.03

Capital Outlay 61.90

Treasurer's Bond 15.00

Typing and Mailing 6.20

TOTAL DISBURSEMENTS 8,539.54

FUND BALANCE, OCTOBER 31, 1966.....\$ 4,709.71

SCHEDULE 1

ARKANSAS RIVER COMPACT ADMINISTRATION

STATEMENT OF RECEIPTS AND DISBURSEMENTS COMPARED WITH BUDGET FOR BUDGET YEAR JULY 1, 1965 TO JUNE 30, 1966

	<u>Actual</u>	<u>Budgeted</u>
CASH IN BANK, JULY 1, 1965.....	\$1,661.12	\$1,880.00
RECEIPTS:		
Revenue from Assessments:		
Colorado Portion—60%\$4,332.00		4,332.00
Kansas Portion—40% 2,888.00		2,888.00
TOTAL RECEIPTS	7,220.00	\$7,220.00
TOTAL TO ACCOUNT FOR	\$8,881.12	\$9,100.00
DISBURSEMENTS:		
Surface Water Investigations—		
U. S. Geological Survey.....\$1,500.00		\$2,000.00
Printing	748.00	748.00
Secretary Salary	900.00	1,200.00
Telephone and Telegraph	214.69	300.00
Auditing	75.00	75.00
Payroll Tax	34.35	50.00
Office Supplies	31.00	150.00
Typing and Mailing.....	21.20	100.00
Treasurer's Bond	15.00	15.00
Travel—Secretary and Employees	12.25	150.00
Investigation & Inspection.....		60.00
Official Publications		50.00
Cooperative Gage Replacement		
& Rehabilitation	4,000.00	4,000.00
Capital Outlay		300.00
TOTAL DISBURSEMENTS..	7,551.49	\$9,100.00
CASH IN BANK—JUNE 30, 1966.....	<u>\$1,329.63</u>	<u>\$ —0—</u>

APPENDIX "B-1"

ARKANSAS RIVER NEAR PUEBLO, COLORADO

ARKANSAS RIVER NEAR PUEBLO, COLORADO
Report-Year ending October 31, 1966
U S G S Records—Provisional, subject to revision
(Colorado State Engineer)

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	475	462	480	420	326	148	594	1340	1020	1520	170	118
2	475	462	453	396	325	166	655	1390	876	2790	214	122
3	466	471	427	374	288	184	686	1360	854	2370	207	113
4	456	383	446	345	287	231	730	1460	742	2630	188	124
5	428	435	436	373	279	216	907	1240	650	1600	632	141
6	419	453	408	367	250	174	1130	1020	562	1250	612	141
7	401	444	407	366	272	160	1350	940	492	1050	612	128
8	394	435	442	366	279	231	1580	883	630	944	653	134
9	370	435	442	354	258	223	1650	816	1100	980	661	134
10	369	444	433	342	267	230	1420	816	1050	755	610	165
11	369	453	415	334	274	251	1320	964	948	670	386	172
12	377	444	406	338	267	355	1160	1240	946	717	191	134
13	377	435	390	356	253	574	1020	1070	890	459	148	119
14	385	444	392	348	242	593	771	1010	984	866	136	134
15	393	462	384	338	236	556	715	1040	1120	778	155	188
16	379	471	400	348	223	527	546	1200	1190	744	199	201
17	481	471	403	336	242	488	472	1440	996	755	179	214
18	527	462	421	333	242	542	454	1520	984	700	154	234
19	540	480	363	342	195	563	489	1380	995	670	160	236
20	421	471	413	359	181	623	547	1260	1620	978	148	221
21	386	471	405	351	187	613	624	1250	2400	689	136	194
22	368	508	379	335	197	573	811	1310	1520	754	121	228
23	359	527	367	335	187	582	992	1430	1670	688	116	234
24	375	498	372	325	160	622	989	1480	1310	755	112	234
25	417	471	394	317	160	587	895	1440	1050	698	142	188
26	471	480	476	326	160	546	917	1380	830	649	121	179
27	480	462	430	326	148	536	1040	1530	766	521	425	158
28	426	498	410	327	148	574	1020	1250	993	307	181	157
29	426	498	400		166	556	965	1040	1050	287	139	164
30	426	498	430		160	584	917	1090	1050	222	109	181
31		527	450		148		1000		627	182		163
TOTAL												
sec. ft.	12636	14455	12874	9777	7007	12788	28366	36589	31915	28978	8017	5253
ac. ft.	25060	28670	25540	19390	13900	25360	56260	72570	63300	57480	15900	10420
(a) ac. ft.	0	0	0	0	0	15210	8070	15600	15710	12180	7620	0
(b) ac. ft.	25060	28670	25540	19390	13900	10150	48190	56970	47590	45300	8280	10420
(a) Less upstream reservoir and transmountain water												
(b) Corrected total Ac. Ft.												
THE YEAR 413,800 Acre-feet												
CORRECTED 339,500 Acre-feet												

APPENDIX "B-2"

* * * *

ARKANSAS RIVER AT LAS ANIMAS, COLORADO

ARKANSAS RIVER AT LAS ANIMAS, COLORADO

Report Year ending October 31, 1966
U S G S Records—Provisional, subject to revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	240	196	169	270	208	25	17	17	14	62	18	52
2	230	236	151	330	154	20	16	18	14	36	17	45
3	230	240	142	360	133	18	17	18	14	226	18	40
4	264	230	133	360	80	20	16	16	14	50	32	38
5	268	222	172	360	70	25	16	12	14	56	21	35
6	272	205	154	370	70	28	14	11	14	64	20	33
7	233	196	90	380	80	36	14	12	15	60	19	30
8	208	181	70	430	64	60	12	10	15	70	18	28
9	208	163	62	500	60	52	12	12	15	36	19	26
10	222	184	74	440	62	45	12	15	15	41	18	23
11	226	181	72	430	43	36	22	15	16	49	18	23
12	222	169	66	450	40	49	23	15	11	36	16	25
13	230	181	50	460	50	50	20	15	16	56	18	25
14	216	193	50	470	64	49	17	14	23	145	21	25
15	199	216	56	470	62	45	17	12	47	84	24	56
16	193	240	40	400	54	52	15	12	58	40	19	45
17	193	240	23	360	43	60	15	12	28	33	18	29
18	193	382	35	438	38	52	14	12	20	35	18	23
19	187	338	193	347	41	38	14	12	14	30	24	21
20	190	347	220	420	43	47	15	12	15	33	20	20
21	181	312	180	474	36	47	28	17	17	45	18	30
22	175	347	210	450	23	36	22	12	195	1500	17	35
23	181	316	220	438	35	23	17	10	1770	1110	16	29
24	172	296	210	382	94	22	17	11	3710	73	16	29
25	184	292	310	352	100	22	18	12	1140	47	15	32
26	193	226	350	329	60	20	17	14	169	33	14	26
27	199	288	360	252	45	23	20	16	133	29	2770	28
28	199	324	330	219	35	35	18	16	104	29	1020	28
29	193	230	300		30	21	17	16	82	28	98	25
30	181	236	270		26	16	16	16	70	21	61	22
31		226	250		26		17		104	18		22
TOTAL												
sec. ft.	6282	7633	5012	10941	1969	1072	525	412	7886	4175	4441	948
ac. ft.	12460	15140	9940	21700	3910	2130	1040	817	15640	8280	8810	1880

THE YEAR 101,700 acre-feet

APPENDIX "B-3"

* * * *

PURGATOIRE RIVER NEAR LAS ANIMAS, COLORADO

PURGATOIRE RIVER NEAR LAS ANIMAS, COLORADO

Report-Year ending October 31, 1966

U S G S Records--Provisional, subject to revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	44	33	30	18	62	8.9	4.7	2.0	1.7	338	76	103
2	39	28	35	19	62	7.3	4.5	1.7	1.7	188	300	76
3	39	28	40	19	50	6.6	4.5	1.5	1.7	928	124	68
4	35	24	40	19	50	7.0	3.9	1.2	1.5	729	124	68
5	39	24	35	20	54	7.3	3.4	.9	1.5	1080	64	61
6	34	23	32	20	57	7.0	3.1	1.7	1.5	962	37	55
7	32	24	29	21	36	6.3	3.1	1.8	1.7	792	25	48
8	29	24	40	21	62	5.7	3.1	1.7	1.7	383	25	30
9	30	31	42	23	57	5.0	4.5	1.8	87	334	14	22
10	30	37	33	25	50	4.7	10	1.8	15	224	14	19
11	31	39	37	30	71	5.0	4.7	1.8	5.3	176	21	18
12	31	39	28	35	71	8.9	4.2	1.8	3.9	185	7.2	15
13	32	43	50	40	54	6.3	3.6	3.1	3.6	1060	145	12
14	35	46	50	45	42	7.0	3.1	2.1	3.2	508	64	19
15	37	43	40	40	50	7.6	2.6	2.0	52	282	37	32
16	37	41	40	35	36	6.3	2.3	2.0	201	140	1000	38
17	36	39	34	32	26	6.3	2.1	2.0	46	623	814	56
18	34	38	29	30	30	5.3	2.1	2.0	18	250	195	54
19	32	38	29	25	31	6.0	2.6	24	7.4	45	126	50
20	30	39	29	35	21	7.3	2.6	44	6.8	35	84	50
21	30	39	30	50	16	7.3	2.6	7.6	736	115	62	34
22	30	38	30	75	36	4.7	2.3	3.9	582	2330	54	30
23	31	35	30	80	54	5.7	2.3	3.1	2180	670	43	32
24	32	31	30	89	50	5.0	2.3	2.6	1160	140	31	36
25	35	29	27	86	52	4.7	2.3	2.1	940	65	19	31
26	40	26	25	102	31	3.6	2.3	1.8	520	55	11	34
27	43	24	23	86	20	3.4	2.6	1.7	324	45	7540	32
28	40	24	22	57	12	8.9	2.3	1.8	234	40	1250	38
29	37	25	20		13	5.3	2.3	1.7	452	45	215	37
30	36	29	19		16	4.7	2.3	1.7	320	31	149	30
31		28	18	15	15		2.3		1150	17		31
TOTAL												

sec. ft. 1040 1009 996 1177 1287 185.1 100.6 128.9 9060.2 12815 12670.2 1259
ac. ft. 2060 1980 2330 2570 367 200 256 17970 25420 25130 2500

THE YEAR 82,760 acre-feet

APPENDIX "B-4"

* * * *

INFLOW INTO JOHN MARTIN RESERVOIR

INFLOW INTO JOHN MARTIN RESERVOIR

Report-Year ending October 31, 1966
U S G S Records—Provisional, subject to revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	284	229	199	288	270	34	22	19	16	400	94	155
2	269	264	186	349	216	27	20	20	16	224	317	121
3	269	268	182	379	183	25	22	20	16	1150	142	108
4	299	254	173	379	130	27	20	17	16	779	156	106
5	307	246	207	380	124	32	19	13	16	1140	85	96
6	306	228	186	390	127	35	17	13	16	1030	57	88
7	265	220	119	401	116	42	17	14	17	852	44	78
8	237	205	110	451	126	66	15	12	17	453	43	58
9	238	194	104	523	117	57	16	14	102	370	33	48
10	252	221	107	465	112	50	22	17	30	265	32	42
11	257	220	109	460	114	41	27	17	21	225	39	41
12	253	208	94	485	111	58	27	17	15	221	23	40
13	262	224	100	500	104	56	24	18	20	1120	163	37
14	251	239	100	515	106	56	20	16	26	653	85	44
15	236	259	96	510	112	53	20	14	99	366	61	88
16	230	281	80	435	90	58	17	14	259	180	1020	83
17	229	279	57	392	69	66	17	14	74	656	832	85
18	227	420	64	468	68	57	16	14	38	285	213	77
19	219	376	222	372	72	44	17	36	21	75	150	71
20	220	386	249	455	64	54	18	56	22	68	104	70
21	211	351	210	524	52	54	31	25	753	160	80	64
22	205	385	240	525	59	41	24	16	777	3830	71	65
23	212	351	250	518	89	29	19	13	3950	1780	59	61
24	204	327	240	471	144	27	19	14	4870	213	47	65
25	219	321	337	438	152	27	20	14	2080	112	34	63
26	233	252	375	431	91	24	19	16	689	88	25	60
27	242	312	383	338	65	26	23	18	457	74	10300	60
28	239	348	352	276	47	44	20	18	338	69	2270	66
29	230	255	320		43	26	19	18	534	73	313	62
30	217	265	289		42	21	18	18	390	52	210	52
31		254	268		41		19		1250	35		53
TOTAL												
sec. ft.	7322	8642	6008	12118	3256	1257	624	545	16945	16998	17102	2207
ac. ft.	14520	17140	11920	24040	6460	2490	1240	1080	33610	33720	33920	4380

THE YEAR 184,500 acre-feet

APPENDIX "B-5"

* * * *

CONTENTS OF JOHN MARTIN RESERVOIR

CONTENTS OF JOHN MARTIN RESERVOIR

Report-Year ending October 31, 1966

Midnight contents in Acre Feet from capacity table dated Nov. 1, 1962

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	375674	375312	375312	375795	375312	374346	376707	276758	219915	187706	196285	198773
2	375916	375433	375071	375916	375433	374346	336427	274899	218565	186712	195736	198371
3	375674	375433	375071	375795	375674	374105	335296	273138	216878	188012	195031	197788
4	375674	375795	375312	375554	375554	374105	334165	271278	215276	188088	194012	197387
5	375795	375674	375554	375674	375554	373743	333148	269223	213673	188873	192759	196989
6	375795	376037	375795	375674	375554	373018	332243	267266	211442	190017	191427	196676
7	375795	376037	375795	375795	375554	372293	330548	265473	208641	190644	190095	196363
8	375554	375795	375916	376037	375191	370965	328320	263544	206271	190879	188547	196128
9	375554	375554	375795	375795	374588	369636	326110	261445	203975	190330	187171	195736
10	375433	375674	375795	375433	374467	368308	324231	259537	201243	189547	186024	195422
11	375554	375795	375916	375674	374467	368358	322021	257723	198753	188547	184800	197109
12	375433	375554	375674	376037	374346	366134	319811	255768	196128	187782	183652	194718
13	375554	375433	375554	376037	374467	364926	317519	254000	193464	190565	182659	194326
14	375674	375433	375554	375554	374467	363379	315468	252604	190879	192054	181440	193621
15	375674	375433	375795	375554	374467	361843	313309	250556	188700	192211	180545	192994
16	375433	375433	375795	375554	374709	360306	311150	248974	186483	192132	180022	192916
17	375674	375554	375674	375674	374829	358652	308991	246963	184341	192838	181664	193072
18	375674	375795	375554	375554	374829	357116	306858	244967	181817	192916	180918	192916
19	375674	375916	376037	375674	374829	355579	304539	242879	179500	192681	180395	192916
20	375795	375916	376278	375795	374829	354279	302432	240883	177111	193542	179723	192681
21	375916	375795	376037	375554	374829	353097	300430	238632	175991	193151	179052	192132
22	375916	375916	375554	375312	374467	351930	298427	236420	174946	196128	178305	191819
23	375916	376278	375554	375433	374226	350774	296241	234384	182429	200521	177708	191427
24	375916	376158	375554	375433	374226	349271	293773	232349	188088	201083	177186	190801
25	375916	376037	375916	375433	374467	347883	291510	230317	192238	201002	176588	190330
26	375795	375916	376037	375674	374467	346265	289350	228332	192211	200681	175991	189704
27	375674	375795	376037	375554	374467	344415	287190	226605	191192	200360	187782	189083
28	375554	375795	375916	375191	374829	342565	285180	224791	189860	200280	198512	188394
29	375312	375795	375554	374829	341062	34062	283073	223237	188853	199797	199074	187629
30	375312	375674	375554	374588	339366	374588	280966	221518	187782	198753	198994	186865
31	375312	375554	375795	374467	374467	374467	278758	188241	197307			186100

APPENDIX "B-6"

* * * *

OUTFLOW FROM JOHN MARTIN RESERVOIR

OUTFLOW FROM JOHN MARTIN RESERVOIR

Report Year ending October 31, 1966

U S G S Records—Provisional, Subject to Revision

U S G S Records—Provisional, Subject to Revision												
DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	144	221	378	197	282	107	780	907	708	618	789	361
2	172	178	336	272	120	38	612	870	720	572	678	361
3	230	140	233	474	109	13	511	876	732	583	600	365
4	186	124	68	495	130	13	501	882	732	583	600	303
5	215	142	8.1	383	130	198	506	888	744	589	600	261
6	283	183	36	383	130	336	506	876	1010	583	600	253
7	283	243	164	383	167	340	798	882	1190	589	684	249
8	269	290	120	459	323	549	994	876	1190	583	750	204
9	243	283	118	744	359	702	1000	888	1190	583	654	159
10	186	256	118	732	236	702	1000	900	1240	589	566	196
11	175	256	147	480	127	702	956	894	1250	594	566	223
12	192	256	162	383	122	702	1070	900	1260	549	560	223
13	175	256	130	560	104	732	1070	858	1250	117	560	223
14	178	256	85	642	85	774	1040	768	1170	151	560	223
15	178	259	85	490	66	774	1040	804	1160	243	560	223
16	178	259	83	428	8.1	780	1050	810	1150	233	560	155
17	180	262	83	378	7.1	780	1080	949	1140	212	572	111
18	178	262	83	428	11	780	1100	1030	1190	212	572	85
19	180	262	85	354	75	774	1070	1030	1220	227	572	54
20	180	294	127	378	93	672	1030	1030	1250	297	438	184
21	183	331	373	600	30	600	1030	1010	1260	340	408	257
22	186	331	307	618	87	654	986	1000	1270	301	408	181
23	206	331	212	495	77	678	1070	994	1270	286	336	261
24	240	354	197	490	51	690	1090	900	1040	286	259	303
25	252	393	140	490	49	684	1090	858	956	283	262	303
26	280	388	183	495	49	744	1080	852	986	280	259	303
27	297	388	249	594	49	768	1040	864	956	236	259	322
28	297	383	345	538	49	774	1030	768	870	212	262	361
29	294	378	323		142	774	1030	684	798	236	383	404
30	266	378	215		262	780	1040	708	792	433	418	418
31		378	183		224		1030		792	708		418
TOTAL												
sec. ft.	6506	8715	5376.1	13363	3753.2	17614	29230	26556	32486	12308	15241	7947
ac. ft.	12900	17290	10660	26510	7440	34940	57980	52670	64440	24410	30230	15760
THE YEAR 355,200 acre-feet												

APPENDIX "B-7"

* * * *

ARKANSAS RIVER AT LAMAR, COLORADO

ARKANSAS RIVER AT LAMAR, COLORADO Report-Year ending October 31, 1966 U S S Records—Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	4.7	11	195	170	518	152	359	399	192	371	403	204
2	6.5	9.5	202	210	217	80	304	318	185	290	439	188
3	7.0	10	167	280	165	41	115	347	180	276	391	192
4	7.0	11	88	450	238	20	75	395	171	282	391	196
5	6.5	27	57	430	211	18	53	407	160	268	287	114
6	8.5	27	37	400	154	18	43	430	185	276	395	99
7	9.0	25	67	450	137	22	61	423	367	276	403	102
8	8.0	22	180	500	232	57	379	407	415	371	363	99
9	8.5	19	141	600	383	324	509	379	443	391	347	37
10	9.0	15	139	760	387	339	500	403	473	391	335	19
11	9.0	11	141	660	192	339	435	425	518	383	307	13
12	9.0	10	185	540	150	387	478	425	536	359	300	13
13	8.5	23	195	450	148	395	514	427	570	883	293	13
14	9.0	23	139	686	133	478	514	363	504	192	282	22
15	9.0	22	119	585	121	478	509	339	468	64	279	48
16	8.5	26	119	520	102	478	486	343	468	48	272	130
17	9.0	29	131	480	67	478	491	379	411	29	268	46
18	8.5	27	120	420	50	447	545	560	468	10	272	33
19	8.0	27	110	470	44	415	514	580	451	5.5	272	19
20	7.5	29	110	420	75	435	491	565	527	6.5	268	17
21	7.0	30	150	527	81	431	491	560	478	300	220	11
22	6.5	117	220	758	65	351	451	560	565	127	211	7.4
23	7.0	158	205	545	97	431	491	540	560	83	205	6.5
24	6.0	160	195	522	88	451	595	500	522	33	100	7.4
25	6.0	182	175	522	59	447	555	415	435	.9	57	6.5
26	5.0	188	155	527	51	451	550	407	451	11	33	6.5
27	11	190	190	634	47	443	536	395	415	20	70	6.5
28	16	190	220	680	45	407	451	375	415	12	211	8.4
29	20	190	310		44	379	455	229	371	9.5	123	8.4
30	16	192	260		152	367	455	208	375	19	205	8.4
31	195	190			268		478		375	272		6.0
TOTAL												
sec. ft.	261.2	2215.5	4912	14196	4721	9559	12883	12503	12694	6059.4	8102	1687.0
ac. ft.	518	4390	9740	28160	9360	18960	25550	24800	25180	12020	16070	3350

THE YEAR 178,100 acre-feet

APPENDIX "B-8"

* * * *

ARKANSAS RIVER AT THE COLORADO-KANSAS STATELINE

ARKANSAS RIVER AT THE COLORADO-KANSAS STATELINE

Report Year ending October 31, 1966

U S G S Records—Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	159	245	439	280	748	300	432	601	248	574	284	328
2	153	233	439	290	632	270	464	555	231	491	479	385
3	155	208	431	310	463	220	434	503	215	390	512	359
4	168	175	401	330	384	180	283	457	210	345	464	357
5	210	143	338	380	345	170	227	417	210	408	453	345
6	227	127	269	450	345	160	212	437	175	355	449	292
7	230	124	239	510	352	170	198	459	168	321	431	254
8	269	124	230	600	345	220	175	462	323	519	459	208
9	275	141	260	700	384	250	292	460	430	509	556	182
10	263	175	260	800	459	325	503	443	462	505	488	196
11	251	215	257	840	463	432	565	534	473	554	391	176
12	233	239	254	770	376	496	542	534	464	577	349	170
13	233	251	251	682	338	513	530	487	467	1040	365	171
14	251	269	272	663	328	518	551	496	479	972	335	151
15	236	275	282	829	310	535	524	459	445	482	332	145
16	233	300	260	696	282	535	531	404	440	350	375	166
17	215	278	230	650	251	547	542	385	440	346	482	245
18	224	314	210	557	233	553	564	701	457	262	448	249
19	230	272	205	546	215	595	613	1150	465	208	441	216
20	239	254	175	557	212	601	626	651	662	174	408	182
21	230	272	190	511	230	662	597	611	611	684	385	157
22	221	334	230	590	208	607	586	625	687	578	346	166
23	212	384	270	760	198	541	483	613	783	399	329	262
24	208	348	310	676	195	589	490	619	798	364	309	258
25	212	338	300	670	208	546	563	545	719	301	247	196
26	251	342	280	676	200	490	569	478	619	291	220	189
27	278	362	260	722	198	487	568	466	601	273	229	186
28	278	384	230	801	198	486	552	453	751	234	216	201
29	275	401	220		195	498	524	409	632	205	260	130
30	254	415	240		195	457	548	304	563	173	235	139
31		431	260		224		620		536	145		130
TOTAL	6873	8373	8492	16846	9714	12953	14908	15718	14764	13029	11277	6791
sec. ft.	13630	16610	16840	33410	19270	25690	29570	31180	29280	25840	22370	13470

THE YEAR 277,200 acre-feet
The daily discharges shown are the sum of the flows of the Arkansas River near Coolidge, Kansas, and the Frontier ditch.

APPENDIX "B-9"

* * * *

ARKANSAS RIVER AT GARDEN CITY, KANSAS

ARKANSAS RIVER AT GARDEN CITY, KANSAS Report Year ending October 31, 1966 U S G S Records—Provisional, Subject to Revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1	362	336	445	165	779	113	33	12	103	41	76	36
2	350	336	460	183	786	110	33	13	75	32	68	38
3	343	336	470	204	744	106	39	16	56	27	66	45
4	332	332	480	230	628	98	36	15	42	24	108	54
5	329	322	475	251	540	94	32	15	36	16	126	78
6	326	304	460	269	450	88	27	18	39	24	66	92
7	326	287	420	310	440	81	22	20	26	43	54	102
8	332	271	382	405	425	75	18	20	16	43	47	105
9	336	259	346	455	415	73	14	19	14	36	43	90
10	343	256	328	490	415	73	13	20	11	30	39	81
11	354	259	314	534	430	83	13	21	12	54	32	78
12	358	271	305	622	455	73	13	19	24	100	29	63
13	354	290	314	720	465	49	13	26	16	272	27	49
14	343	304	318	702	430	44	12	21	13	520	26	41
15	340	308	310	708	405	44	10	15	24	640	26	41
16	336	312	314	726	390	44	9.0	11	16	676	28	42
17	322	322	310	774	380	42	7.0	9.0	13	508	30	51
18	322	336	297	744	365	42	6.6	7.6	9.8	390	29	63
19	315	346	285	732	370	42	6.2	7.0	8.0	295	46	83
20	315	358	281	702	360	42	6.2	12.2	8.0	263	58	116
21	315	350	240	672	355	42	6.2	11.3	76	241	61	132
22	312	374	189	649	330	39	5.7	60	132	229	92	132
23	312	382	121	627	315	44	5.3	53	43	325	124	127
24	308	395	132	702	310	48	4.9	60	50	355	147	127
25	304	420	180	712	300	44	4.5	49	47	281	135	165
26	301	400	189	712	291	39	4.1	48	114	233	116	168
27	294	382	198	724	278	38	9.0	58	108	194	95	141
28	301	386	159	751	227	38	20	126	126	177	76	121
29	315	405	174	168	168	36	18	77	117	152	58	113
30	326	425	171	147	147	33	16	90	61	129	40	100
31		435	171	129	129	13	13	50	100	100	95	95
TOTAL												
sec. ft.	9836	10499	9238	15475	12522	1817	469.7	1160.6	1485.8	6450	1968	2769
ac. ft.	19510	20820	18320	30690	24840	3600	932	2300	2950	12790	3900	5490

THE YEAR 146,100 acre-feet

APPENDIX "B-10"

* * * *

DEMANDS BY COLORADO FOR WATER RELEASES FROM CONSERVATION POOL

DEMANDS BY COLORADO FOR WATER RELEASES FROM CONSERVATION POOL

Report-Year ending October 31, 1966
(U. S. Army Corps of Engineers, and Arkansas River Compact Administration Records)
(Provisional, subject to revision)

Units in Second Feet

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.
1							425	435	500	370	400	100	157 Closed: 8:30 a.m.
2							480	400	500	300	310	100	
3							500	400	500	300	250	100	
4							500	400	500	300	250	35	Closed: 8:30 a.m.
5							500	400	500	300	250	0	
6							235	500	400	500	300	250	0
7							350	500	400	597	300	250	0
8							350	532	400	650	300	313	0
9							285	550	400	650	235	350	114
10							250	550	400	650	267	350	175
11							250	550	400	650	300	350	208
12							250	550	400	650	300	350	225
13							250	600	335	650	0*	350	225
14							250	600	300	650	134*	350	225
15							250	600	300	650	200	350	225
16							250	600	300	650	200	350	144
17							250	600	430	650	200	350	100
18							250	600	500	713	200	350	79
19							300	600	500	750	232	318	60
20							230	600	500	750	315	235	190
21							175	600	500	750	350	200	241
22							240	600	500	750	301	200	160
23							275	600	500	750	275	223	251
24							275	600	500	685	275	250	300
25							275	600	500	650	275	250	300
26							322	600	500	650	275	250	300
27							397	537	500	650	228	250	333
28							425	500	500	583	200	250	383
29							425	500	500	500	235	218	432
30							425	500	500	500	226	166	450
31							500	500	500	330			450
TOTALS							7484	17156	13000	19428	7978	8683	6130
Sec. ft.							14841	34020	25779	38526	15820	17218	12156
Ac. Ft.													THE YEAR: 158,360

APPENDIX "B-11"

* * * *

DEMANDS BY KANSAS FOR WATER RELEASES FROM CONSERVATION POOL

DEMANDS BY KANSAS FOR WATER RELEASES FROM CONSERVATION POOL

Report-Year ending October 31, 1966

(U. S. Army Corps of Engineers, and Arkansas River Compact Administration Records)
(Provisional, subject to revision)
Units in Second Feet

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1							350	500	200	300	400	250
2						Closed: 8:15 a.m.	119	500	200	300	400	250
3								500	200	300	400	250
4							0	500	200	300	400	250
5							0	500	200	300	400	250
6							0	500	200	300	400	250
7							0	500	395	300	400	250
8					Open: 9:00 a.m.	284	500	500	500	300	400	250
9					Open: 8:30 a.m.	325	450	500	500	365	400	88
10						500	450	500	500	333	300	
11						500	450	500	500	300	200	
12						500	450	500	500	300	200	
13						500	482	500	500	300	200	
14						500	500	500	500	93*	200	
15						500	500	500	500	0	200	
16						500	500	500	500	0	200	
17						500	500	500	500	0	200	
18						500	500	500	500	0	200	
19						450	500	500	500	0	200	
20						425	500	500	500	0	200	
21						425	500	500	500	0	200	
22						425	500	500	500	0	200	
23						425	500	500	500	0	110	
24						425	500	406	370	0	0	
25						425	500	350	300	0	0	
26						425	500	350	300	0	0	
27						378	500	350	300	0	0	
28						350	500	249	300	0	0	
29						350	500	200	300	0	163	
30						350	500	200	300	260**	250	
31						350	500	200	300	400		
TOTALS							10178	12535	13605	12365	4451	6623
Sec. Ft.							20183	24857	26979	24520	8826	13133
Ac. Ft.											1838	THE YEAR:
											3645	122,143

APPENDIX "B-12"

* * * *

STATELINE FLOW ON DAYS OF KANSAS DEMAND*

STATELINE FLOW ON DAYS OF KANSAS DEMAND*

Report Year ending October 31, 1966

U S G S Records—Provisional, subject to revision

DAY	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.
1							432	601	248	574	479	385
2							464	555	231	491	512	359
3							434	503	215	390	464	357
4							283	457	210	345	453	345
5							227	417	210	408	453	292
6								437	175	355	449	254
7								459	168	321	431	208
8								462	323	519	459	182
9							503	460	430	509	556	196
10								443	462	505	488	176
11						432	565	534	473	554	391	
12						496	542	534	464	577	349	
13						513	530	487	467	1040	365	
14						518	551	496	479	972	335	
15						535	524	459	445	482	332	
16						535	531	404	440	350	375	
17						547	542	385	440		482	
18						553	564	701	457		448	
19						595	613	1150	465		441	
20						601	626	651	662		408	
21						662	597	611	611		385	
22						607	586	625	687		346	
23						541	483	613	783		329	
24						589	490	619	798		309	
25						546	563	545	719		247	
26						490	569	478	619		220	
27						487	568	466	601			
28						486	552	453	751			
29						498	524	409	632			
30						457	548	304	563			
31							620		536			
TOTAL						10688	14031	15718	14764	8392	10053	2754
sec. ft.						21200	27830	31180	29280	16650	19940	5460
ac. ft.								THE YEAR	151,500	Acre-feet		

*Three days' time is allowed for water released from John Martin Reservoir to reach State line.

APPENDIX "B-13"

* * *

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICTS 14 AND 17

Report-Year ending October 31, 1966

Source of Information: A.V.D.A. Reports and Annual Report of Fort Lyon Canal Co.
Reservoir Water is that from Upstream Reservoirs above Pueblo, Colorado

(Units in Acre-Feet)

	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	THE YEAR
Bessemer (River)	8,448	2,913	0	0	3,790	4,224	5,433	4,654	5,864	7,712	4,579	4,365	51,982
Res. or Imported	0	0	0	0	0	740	873	88	855	0	823	0	3,379
Total: Bessemer	8,448	2,913	0	0	3,790	4,964	6,306	4,742	6,719	7,712	5,402	4,365	55,361
West Pueblo (River)	0	0	0	0	0	169	196	190	286	188	90	18	1,141
Booth-Orchard Gr. (Riv)	960	407	0	0	286	1,075	1,107	1,071	1,107	1,107	1,071	1,107	9,298
Excelsior (River)	0	0	0	0	0	0	101	61	244	514	40	0	960
Collier (River)	0	0	0	0	0	0	111	61	155	57	0	0	384
Colorado Canal (River)	559	1,983	0	0	809	0	0	0	2,687	3,536	813	0	10,387
Res. or Imported	0	0	0	0	0	12,195	7,042	14,555	12,578	10,712	6,647	0	63,729
Total: Colo. Canal	559	1,983	0	0	809	12,195	7,042	14,555	15,265	14,248	7,460	0	74,116
Highline (River)	5,519	4,073	4,593	2,620	5,977	3,391	4,793	5,259	8,372	8,701	3,958	3,613	60,869
Res. or Imported	0	0	0	0	0	0	0	464	1,757	962	0	0	3,183
Total: Highline	5,519	4,073	4,593	2,620	5,977	3,391	4,793	5,723	10,129	9,663	3,958	3,613	64,052
Oxford Farmers (River)	1,077	819	365	232	1,660	809	4519	6,201	2,927	3,752	1,285	1,354	25,000
Res. or Imported	0	0	0	0	0	0	0	111	0	0	0	0	111
Otero Canal (River)	0	0	0	0	200	0	0	0	188	603	0	0	991
Catlin Canal (River)	1,227	1,527	2,554	805	6,098	2,023	12,305	14,936	9,623	11,581	2,181	5,420	70,280
Res. or Imported	0	0	0	0	0	1,981	0	0	0	0	0	0	1,981
Total: Catlin Canal	1,227	1,527	2,554	805	6,098	4,004	12,305	14,936	9,623	11,581	2,181	5,420	72,261
Holbrook (River)	7,133	4,281	0	0	2,439	0	0	0	4,603	4,765	272	0	23,493
Rocky Ford (River)	3,442	2,576	1,176	62	3,119	5,771	6,391	6,578	5,110	5,307	4,503	3,952	47,987
Ft. Lyon Storage (Riv)*	0	0	0	0	0	0	0	0	4,608	2,928	1,413	0	8,949
Ft. Lyon Canal (River)	24,323	25,774	26,820	18,466	15,021	9,746	21,228	24,194	18,106	32,136	14,550	13,592	243,956
Las Animas Cons. (Riv.)	1,368	966	371	274**	1,666	754	4,022	4,488	6,080	5,776	3,078	2,318	31,161
Las Animas Town (Riv.)	250	18	0	0**	0	0	0	0	0	0	0	0	268
TOTAL	54,306	45,337	35,879	22,459	41,069	27,962	60,206	67,693	69,960	88,663	37,833	35,739	587,106
River	54,306	45,337	35,879	22,459	41,069	27,962	60,206	67,693	69,960	88,663	37,833	35,739	587,106
Res. or Imported	0	0	0	0	0	14,916	7,915	15,218	15,190	11,674	7,470	0	72,383
GRAND TOTAL	54,306	45,337	35,879	22,459	41,069	42,878	68,121	82,911	85,150	100,337	45,303	35,739	659,489

* 40,183 A.F. diverted through storage canal for main canal Nov. 1 - Dec. 20, 1965 during repairs on Horse Creek Flume.

** Las Animas Town Ditch priority transferred to Las Animas Consolidated Canal on March 2, 1966.

APPENDIX "B-14"

* * * *

DIVERSIONS BY DITCHES IN COLORADO WATER DISTRICT 67

Report Year ending October 31, 1966

Source of Information A.V.D.A. Reports

Units in Acre-Feet

NAME OF DITCH	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	THE YEAR
Fort Bent Canal	218	0	0	0	0	1,115	3,205	3,092	3,990	2,140	1,824	1,505	17,089
Keesee Ditch	0	0	0	0	0	0	81	595	799	266	305	450	2,496
Amity Canal	10,772	10,873	1,269	0	0	12,558	22,077	18,216	26,154	10,974	9,314	9,866	132,073
Lamar Canal	2,362	2,840	500	0	405	3,147	6,574	7,240	7,387	3,419	4,248	2,633	40,755
Hyde Ditch	297	9	0	0	0	0	53	359	373	311	179	208	1,789
Manvel Canal	0	0	0	0	0	0	0	0	0	0	0	0	0
X. Y. and Graham Canals	0	0	0	0	0	0	476	1,582	1,983	924	982	399	6,346
Buffalo Canal	0	0	0	0	0	1,503	3,478	2,207	2,881	1,832	2,177	1,654	15,732
Sisson-Stubbs Canal	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	13,649	13,722	1,769	0	405	18,323	35,944	33,291	43,567	19,866	19,029	16,715	216,280

APPENDIX "B-15"

* * * *

DIVERSIONS BY DITCHES IN KANSAS

Report-Year ending October 31, 1966

(Acre-Feet)

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

Other Ditches, Kansas Division of Water Resources Records

	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	THE YEAR
Frontier Ditch	0	0	0	0	0	76	2,050	1,030	1,590	1,990	1,960	277	8,973*
Alamo Canal	0	0	0	0	0	253	700	297	0	0	0	0	1,250
Ft. Aubrey Canal	0	0	0	0	0	0	1,589	396	931	899	643	0	4,458
Total Stateline	0	0	0	0	0	0	0	0	0	0	0	0	0
to Syracuse	0	0	0	0	0	0	0	0	0	0	0	0	0
Amazon Canal	0	0	0	0	0	329	4,339	1,723	2,521	2,889	2,603	277	14,681
South Side Ditch	0	0	0	0	0	9,324	9,346	7,402	7,525	8,144	8,146	5,667	55,554
Great Eastern Canal	0	0	0	0	0	2,273	5,032	5,026	4,444	7,188	5,629	4,467	34,059
Farmers Ditch	0	0	0	0	1,806	5,173	3,540	9,118	4,659	0	2,033	0	26,329
Garden City Canal	0	0	0	0	0	5,177	5,236	4,822	5,655	1,785	4,082	1,335	28,092
Total Syracuse	0	0	0	0	0	0	246	874	1,050	621	322	0	3,113
to Garden City	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Stateline	0	0	0	0	1,806	21,947	21,400	27,242	23,333	17,738	20,212	11,469	147,147
to Garden City	0	0	0	0	0	0	0	0	0	0	0	0	0
* 4,660 acre-feet returned directly to river.					1,806	22,276	27,739	28,965	25,854	20,627	22,815	11,746	161,828

APPENDIX "B-16"

* * * *

SUMMARY TABULATION

(Acre-Feet)

	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	THE APP. YEAR	FROM APP. NO.
Arkansas River at Las Animas, Colo.	12460	15140	9940	21700	3910	2130	1040	817	15640	8280	8810	1880	101700	B-2
Purgatoire River near Las Animas, Colo. ...	2060	2000	1980	2330	2550	367	200	256	17970	25420	25130	2500	82760	B-3
Inflow to John Martin Reservoir	14520	17140	11920	24040	6460	2490	1240	1080	33610	33720	33920	4380	184500	B-4*
Reservoir contents at end of month	375312	375554	375795	375191	374467	339366	278758	221518	188241	197307	198994	186100	186100	B-5
Net change in reservoir storage	-121	+242	+241	-604	-724	-35101	-60608	-57240	-33277	+9066	+1687	-12894	-189333	B-5
Outflow from John Martin Reservoir	12900	17290	10660	26510	7440	34940	57980	52670	64440	24410	30230	15760	355200	B-6
Diversions in District 67, Colo.	13649	13722	1769	0	405	18323	35944	33291	43567	19866	19029	16715	216280	B-14
Flow at Colorado-Kansas Stateline	13630	16610	16840	33410	19270	25690	29570	31180	29280	25840	22370	13470	277200	B-8
Diversions in Kansas ..	0	0	0	0	1806	22276	27739	28965	25854	20627	22815	11746	161828	B-15
Arkansas River at Garden City, Kansas..	19510	20820	18320	30690	24840	3600	932	2300	2950	12790	3900	5490	146100	B-9

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

APPENDIX "C"

* * * *

AGREEMENT

WHEREAS, the following named ditches, to-wit:

Fort Bent Ditch	Manvel Ditch
Kessee Ditch	X Y and Graham Ditches
Amity Canal	Buffalo Canal
Lamar Canal	Sisson-Stubbs Ditch
	Hyde Ditch

heretofore entered into a distribution agreement pursuant to Paragraph V F of the Arkansas River Compact; and

WHEREAS, pursuant to the provisions of said Agreement, same heretofore has been terminated and no longer exists; and

WHEREAS, it is the desire of all of said ditches to enter into a new agreement;

NOW, THEREFORE, the undersigned, in consideration of the execution of agreements by all the other ditches above named, *identical in content* to the within agreement, does agree as follows:

(1) That at such times as the maximum withdrawals permitted Colorado under said Compact have been reached, then the total water to be delivered from such withdrawals and releases shall be distributed and delivered as follows:

Fort Bent Ditch.....9.9%	XY and Graham Ditches..5.1%
Kessee Ditch2.3%	Sisson-Stubbs Ditch1.2%
Hyde Ditch1.3%	

(2) As to the remaining ditches, to-wit, the Buffalo Canal, Amity Canal, Lamar Canal and Manvel Ditch, said distribution and delivery shall be as follows:

To the Amity Canal....50.2%	To the Manvel Canal.....2.9%
To the Lamar Canal....21.1%	To the Buffalo Canal....51 c.f.s.

It is agreed that at anytime Colorado reaches maximum withdrawal permitted under the above circumstances, when the Buffalo Canal is receiving less than 51 c.f.s., then in that event, said deficiency will be supplied solely by the Amity Canal, the Lamar Canal and the Manvel Ditch, as hereinafter set forth, and none of the other ditches herein named will in any way be reduced below the percentages set forth in Paragraph (1) herein, at any time when they are demanding such percentage.

Should said deficiency exist, then in that event in order to supply same, the Amity Canal agrees to decrease its demand from 50.2% to no lower than 49.5%; the Lamar Canal agrees to decrease its demand

from 21.1% to no lower than 19.8%; and the Manvel Canal agrees to decrease its demand from 2.9% to no lower than 2.4%. Provided, however, should the *maximum decrease* by the three decreasing ditches not be required to satisfy such deficiency of the Buffalo Canal, then the required decrease shall be made pro-rata between the three decreasing ditches in the same ratio as the maximum decreases set forth above bears to each other.

The undersigned further agrees that the Compact Administration and the State Engineer shall administer this agreement, according to its terms, when such agreement has been duly signed by all the ditches named herein.

This Agreement shall be in full force and effect until revoked by written Notice by the undersigned, which said written notice shall be given to the Arkansas River Compact Administration, the State Engineer, and each Ditch Company first named herein, not later than 30 days after the end of the summer irrigation season, that is to say, December 1st of any year; and nothing herein shall be construed so as to permit the revocation of this agreement after said date for the next succeeding irrigation season.

Dated at _____, Colorado this _____ day of _____

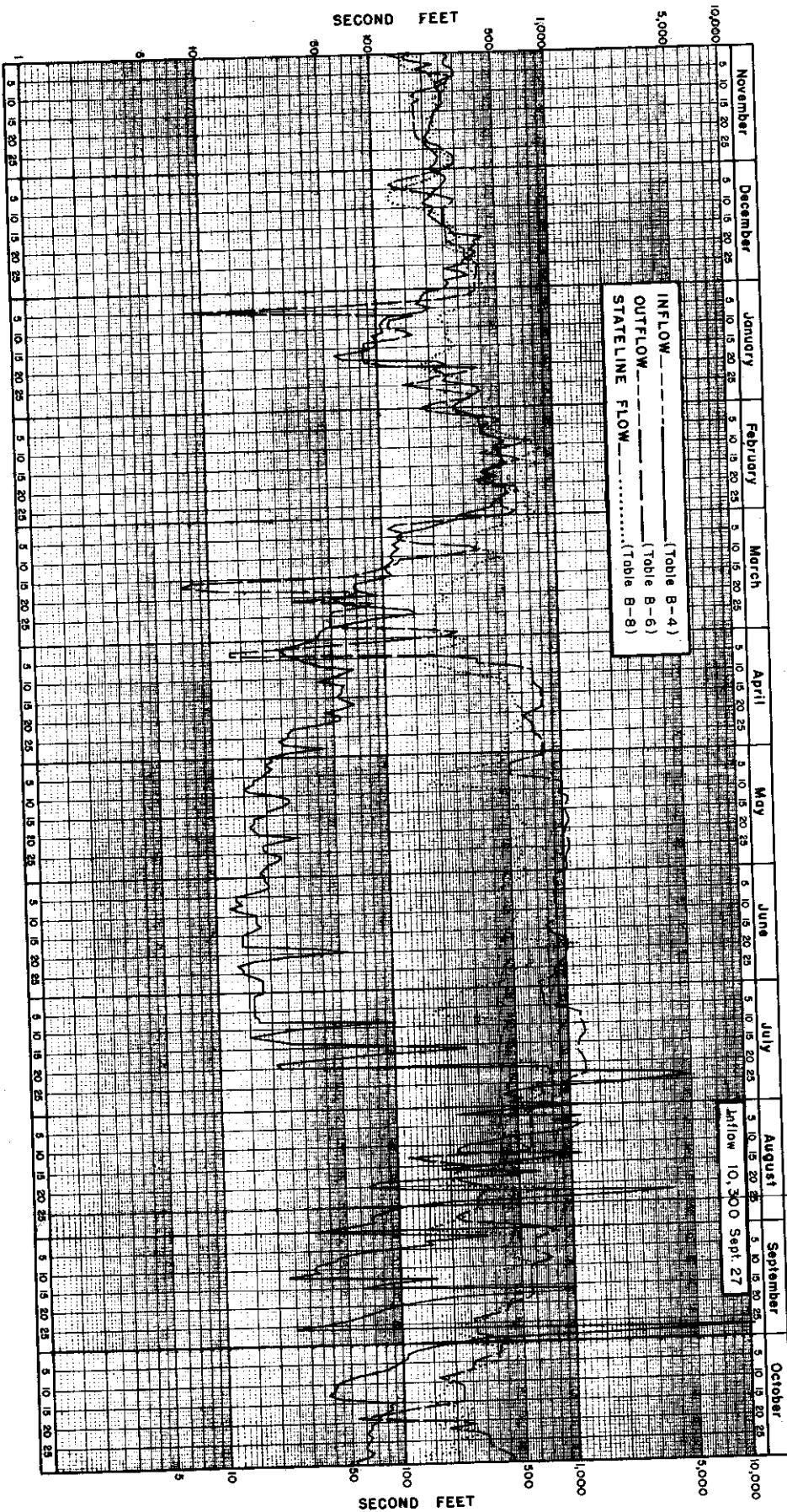
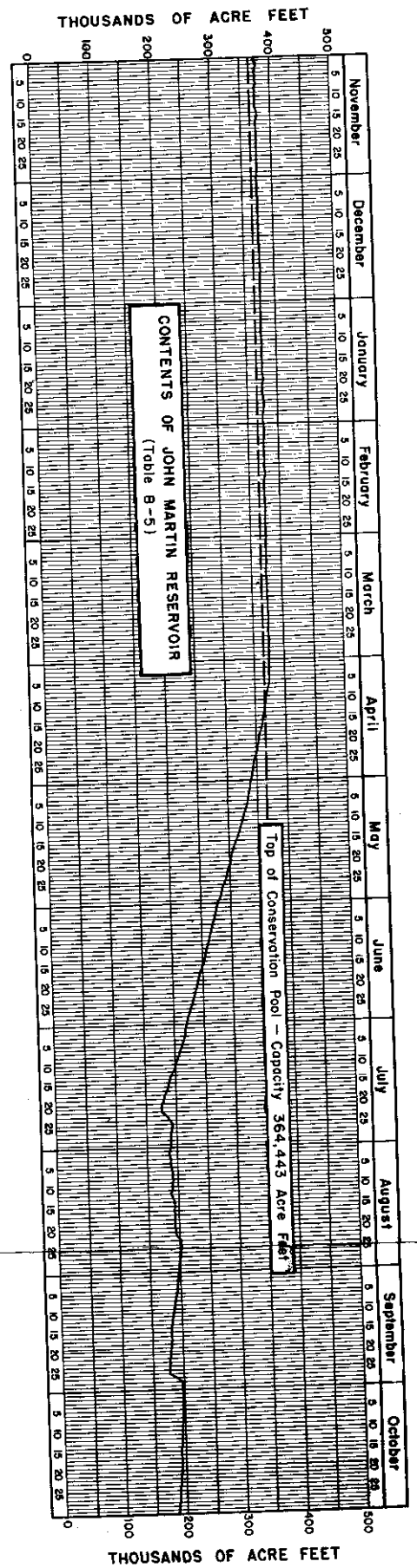
By _____
President

Attest:

Secretary

This agreement was signed for the ditch companies on the dates following:

Amity.....	April 6, 1966
Buffalo.....	April 11, 1966
Fort Bent.....	April 9, 1966
Keesee.....	May 8, 1966
Hyde.....	March 2, 1966
Lamar.....	April 2, 1966
Manvel.....	April 13, 1966
Sisson & Stubbs.....	April 6, 1966
XY & Graham.....	April 23, 1966



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

Report Year, November 1, 1965 - October 31, 1966