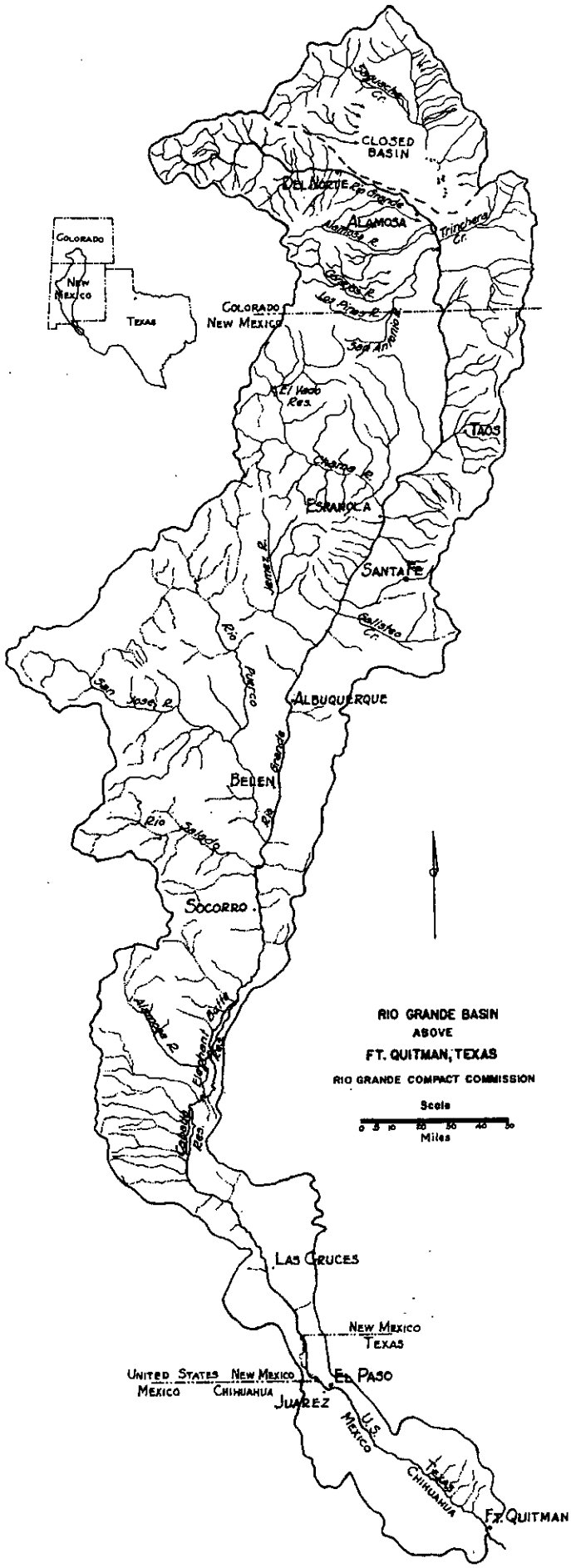
Twelfth Annual Report

of the

RIO GRANDE COMPACT COMMISSION

1950

TO THE GOVERNORS OF
Colorado, New Mexico and Texas


CLOSED BASIN
Rio Grande
ALAMOSA
Trinchera Cr.
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Los Pinos R.
COLORADO
NEW MEXICO
TEXAS
COLORADO
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San Antonio
El Vado Res.
TAOS
Chama R.
ESPANOLA
Jemez R.
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San Jose R.
ALBUQUERQUE
Rio Grande
BELEN
Rio Salado
SOCORRO
Alamosa R.
Elephant Butte Res.
Rio Grande
LAS CRUCES
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UNITED STATES
MEXICO
NEW MEXICO
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Scale
0 5 10 20 30 40 50
Miles

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COLORADO
M. C. HINDERLIDER
STATE ENGINEER
DENVER, COLO.

TEXAS
LOUIS A. SCOTT
FIRST NAT'L BANK BLDG.
EL PASO, TEXAS

Rio Grande Compact Commission

NEW MEXICO
JOHN H. BLISS
STATE ENGINEER
SANTA FE, NEW MEXICO

UNITED STATES
BERKELEY JOHNSON, CHAIRMAN
POST OFFICE BOX 277
SANTA FE, NEW MEXICO

SECRETARY
RIO GRANDE COMPACT COMMISSION
POST OFFICE BOX 277
SANTA FE, NEW MEXICO

February 24, 1951

His Excellency, Allan Shivers
Governor of the State of Texas,
Austin, Texas.

His Excellency, Dan Thornton,
Governor of the State of Colorado,
Denver, Colorado.

His Excellency, Edwin L. Mechem,
Governor of the State of New Mexico,
Santa Fe, New Mexico.

Sirs:

The Twelfth Annual Meeting of the Rio Grande Compact Commission was held in Santa Fe, New Mexico, on February 23 and 24, 1951.

During this meeting the Commission reviewed previous computations of evaporation losses from reservoirs and reviewed the records of stream flow during 1950 at all Compact Index Stations and found that:

(a) The accrued credit of Colorado on December 31, 1949 was actually 141,700 acre feet.

(b) The accrued debit of New Mexico on December 31, 1949 was actually 281,900 acre feet.

(c) The accrued overdraft on Project Storage on December 31, 1949 was actually 4,100 acre feet.

(d) During the calendar year 1950 the amount of water delivered by Colorado was 36,700 acre feet less than the scheduled quantity and Colorado relinquished 60,000 acre feet of credit water to relieve the shortage of water in New Mexico and Texas. After required adjustments for evaporation losses, Colorado had an accrued credit of 25,000 acre feet on December 31, 1950.

(e) During the calendar year 1950, the amount of water delivered by New Mexico was 16,600 acre feet in excess of the quantity scheduled. After required adjustments for evaporation losses, New Mexico had an accrued debit of 263,100 acre feet on December 31, 1950. The

amount of holdover storage was 29,700 acre feet at that time, hence, the accrued debit of New Mexico is 33,400 acre feet greater than the maximum permitted by the Compact.

(f) During the calendar year 1950, the release of usable water from Project Storage was 68,900 acre feet less than the normal release of 790,000 acre feet. After required adjustments for evaporation losses, the accrued under-release of usable water was 60,100 acre feet on December 31, 1950.

The expenses for administration of the Compact during the fiscal year ending June 30, 1950 were $18,663 of which $7,800 was borne by the United States and the balance of $10,863 was borne equally by the three States.

Pertinent data and records are available in the files of the Commission in the office of the District Engineer, U. S. Geological Survey, Santa Fe, New Mexico.

Respectfully yours,

Louis A. Kelly
Commissioner for Texas

[illegible]
Commissioner for Colorado

John H. Bliss
Commissioner for New Mexico

RIO GRANDE COMPACT

The State of Colorado, the State of New Mexico, and the State of Texas, desiring to remove all causes of present and future controversy among these States and between citizens of one of these States and citizens of another State with respect to the use of the waters of the Rio Grande above Fort Quitman, Texas, and being moved by consideration of interstate comity, and for the purpose of effecting an equitable apportionment of such waters, have resolved to conclude a Compact for the attainment of these purposes, and to that end, through their respective Governors, have named as their respective Commissioners:

For the State of Colorado	M. C. Hinderlider
For the State of New Mexico	Thomas M. McClure
For the State of Texas	Frank B. Clayton

who, after negotiations participated in by S. O. Harper, appointed by the President as the representative of the United States of America, have agreed upon the following articles, to-wit:

ARTICLE I

(a) The State of Colorado, the State of New Mexico, the State of Texas and the United States of America, are hereinafter designated "Colorado," "New Mexico," "Texas," and the "United States," respectively.

(b) "The Commission" means the agency created by this Compact for the administration thereof.

(c) The term "Rio Grande Basin" means all of the territory drained by the Rio Grande and its tributaries in Colorado, in New Mexico, and in Texas above Fort Quitman, including the Closed Basin in Colorado.

(d) The "Closed Basin" means that part of the Rio Grande Basin in Colorado where the streams drain into the San Luis Lakes and adjacent territory, and do not normally contribute to the flow of the Rio Grande.

(e) The term "tributary" means any stream which naturally contributes to the flow of the Rio Grande.

(f) "Transmountain Diversion" is water imported into the drainage basin of the Rio Grande from any stream system outside of the Rio Grande Basin, exclusive of the Closed Basin.

(g) "Annual Debits" are the amounts by which actual deliveries in any calendar year fall below scheduled deliveries.

(h) "Annual Credits" are the amounts by which actual deliveries

in any calendar year exceed scheduled deliveries.

(i) "Accrued Debits" are the amounts by which the sum of all annual debits exceeds the sum of all annual credits over any common period of time.

(j) "Accrued Credits" are the amounts by which the sum of all annual credits exceeds the sum of all annual debits over any common period of time.

(k) "Project Storage" is the combined capacity of Elephant Butte Reservoir and all other reservoirs actually available for the storage of usable water below Elephant Butte Reservoir and above the first diversion to lands of the Rio Grande Project, but not more than a total of 2,638,860 acre-feet.

(l) "Usable Water" is all water, exclusive of credit water, which is in project storage and which is available for release in accordance with irrigation demands, including deliveries to Mexico.

(m) "Credit Water" is that amount of water in project storage which is equal to the accrued credit of Colorado, or New Mexico, or both.

(n) "Unfilled Capacity" is the difference between the total physical capacity of project storage and the amount of usable water then in storage.

(o) "Actual Release" is the amount of usable water released in any calendar year from the lowest reservoir comprising project storage.

(p) "Actual Spill" is all water which is actually spilled from Elephant Butte Reservoir, or is released there-from for flood control in excess of the current demand on project storage and which does not become usable water by storage in another reservoir; provided, that actual spill of usable water cannot occur until all credit water shall have been spilled.

(q) "Hypothetical Spill" is the time in any year at which usable water would have spilled from project storage if 790,000 acre-feet had been released therefrom at rates proportional to the actual release in every year from the starting date to the end of the year in which hypothetical spill occurs; in computing hypothetical spill the initial condition shall be the amount of usable water in project storage at the beginning of the calendar year following the effective date of this Compact, and thereafter the initial condition shall be the amount of usable water in project storage at the beginning of the calendar year following each actual spill.

ARTICLE II

The Commission shall cause to be maintained and operated a

stream gaging station equipped with an automatic water stage recorder at each of the following points, to-wit:

(a) On the Rio Grande near Del Norte above the principal points of diversion to the San Luis Valley;

(b) On the Conejos River near Mogote;

(c) On the Los Pinos River near Ortiz;

(d) On the San Antonio River at Ortiz;

(e) On the Conejos River at its mouth near Los Sauces;

(f) On the Rio Grande near Lobatos;

(g) On the Rio Chama below El Vado Reservoir;

(h) On the Rio Grande at Otowi Bridge near San Ildefonso;

(i) On the Rio Grande near San Acacia;

(j) On the Rio Grande at San Marcial;

(k) On the Rio Grande below Elephant Butte Reservoir;

(l) On the Rio Grande below Caballo Reservoir.

Similar gaging stations shall be maintained and operated below any other reservoir constructed after 1929, and at such other points as may be necessary for the securing of records required for the carrying out of the Compact; and automatic water stage recorders shall be maintained and operated on each of the reservoirs mentioned and on all others constructed after 1929.

Such gaging stations shall be equipped, maintained and operated by the Commission directly or in cooperation with an appropriate Federal or State agency, and the equipment, method and frequency of measurement at such stations shall be such as to produce reliable records at all times.

ARTICLE III

The obligation of Colorado to deliver water in the Rio Grande at the Colorado-New Mexico State Line, measured at or near Lobatos, in each calendar year, shall be ten thousand acre-feet less than the sum of those quantities set forth in the two following tabulations of relationship, which correspond to the quantities at the upper index stations:

DISCHARGE OF CONEJOS RIVER

Quantities in thousands of acre-feet

Conejos Index Supply (1)	Conejos River at Mouths (2)
100	0
150	20
200	45
250	75
300	109
350	147
400	188
450	232
500	278
550	326
600	376
650	426
700	476

Intermediate quantities shall be computed by proportional parts.

(1) Conejos Index Supply is the natural flow of Conejos River at the U. S. G. S. gaging station near Mogote during the calendar year, plus the natural flow of Los Pinos River at the U. S. G. S. gaging station near Ortiz and the natural flow of San Antonio River at the U. S. G. S. gaging station at Ortiz, both during the months of April to October, inclusive.

(2) Conejos River at Mouths is the combined discharge of branches of this river at the U. S. G. S. gaging stations near Los Sauces during the calendar year.

DISCHARGE OF RIO GRANDE EXCLUSIVE OF CONEJOS RIVER

Quantities in thousands of acre-feet

Rio Grande at Del Norte (3)	Rio Grande at Lobatos less Conejos at Mouths (4)
200	60
250	65
300	75
350	86
400	98
450	112
500	127

Rio Grande at Del Norte (3)	Rio Grande at Lobatos less Conejos at Mouths (4)
550	144
600	162
650	182
700	204
750	229
800	257
850	292
900	335
950	380
1,000	430
1,100	540
1,200	640
1,300	740
1,400	840

Intermediate quantities shall be computed by proportional parts.

(3) Rio Grande at Del Norte is the recorded flow of the Rio Grande at the U. S. G. S. gaging station near Del Norte during the calendar year (measured above all principal points of diversion to San Luis Valley)corrected for the operation of reservoirs constructed after 1937.

(4) Rio Grande at Lobatos less Conejos at Mouths is the total flow of the Rio Grande at the U. S. G. S. gaging station near Lobatos, less the discharge of Conejos River at its Mouths, during the calendar year.

The application of these schedules shall be subject to the provisions hereinafter set forth and appropriate adjustments shall be made for (a) any change in location of gaging stations; (b) any new or increased depletion of the runoff above inflow index gaging stations; and (c) any transmountain diversions into the drainage basin of the Rio Grande above Lobatos.

In event any works are constructed after 1937 for the purpose of delivering water into the Rio Grande from the Closed Basin, Colorado shall not be credited with the amount of such water delivered, unless the proportion of sodium ions shall be less than forty-five percent of the total positive ions in that water when the total dissolved solids in such water exceeds three hundred fifty parts per million.

ARTICLE IV

The obligation of New Mexico to deliver water in the Rio Grande at San Marcial, during each calendar year, exclusive of the months of July, August and September, shall be that quantity set forth in the following tabulation of relationship, which corresponds to the quantity at the upper index station:

DISCHARGE OF RIO GRANDE AT OTOWI BRIDGE AND AT SAN MARCIAL EXCLUSIVE OF JULY, AUGUST AND SEPTEMBER

Quantities in thousands of acre-feet

Otowi Index Supply (5)	San Marcial Index Supply (6)
100	0
200	65
300	141
400	219
500	300
600	383
700	469
800	557
900	648
1000	742
1100	839
1200	939
1300	1042
1400	1148
1500	1257
1600	1370
1700	1489
1800	1608
1900	1730
2000	1856
2100	1985
2200	2117
2300	2253

Intermediate quantities shall be computed by proportional parts.

(5) The Otowi Index Supply is the recorded flow of the Rio Grande at the U. S. G. S. gaging station at Otowi Bridge near San Ildefonso (formerly station near Buckman) during the calendar year, exclusive of the flow during the months of July, August, and September, corrected for the operation of reservoirs constructed after 1929 in the drainage basin of the Rio Grande between Lobatos and Otowi Bridge.

(6) San Marcial Index Supply is the recorded flow of the Rio Grande at the gaging station at San Marcial during the calendar year exclusive of the flow during the months of July, August, and September.

The application of this schedule shall be subject to the provisions hereinafter set forth and appropriate adjustments shall be made for (a) any change in location of gaging stations; (b) depletion

after 1929 in New Mexico at any time of the year of the natural runoff at Otowi Bridge; (c) depletion of the runoff during July, August and September of tributaries between Otowi Bridge and San Marcial, by works constructed after 1937; and (d) any transmountain diversions into the Rio Grande between Lobatos and San Marcial.

Concurrent records shall be kept of the flow of the Rio Grande at San Marcial, near San Acacia, and of the release from Elephant Butte Reservoir to the end that the records at these three stations may be correlated. (Note: See Resolution of the Commission at page 15).

ARTICLE V

If at any time it should be the unanimous finding and determination of the Commission that because of changed physical conditions, or for any other reason, reliable records are not obtainable, or cannot be obtained, at any of the stream gaging stations herein referred to, such stations may, with the unanimous approval of the Commission, be abandoned, and with such approval another station, or other stations, shall be established and new measurements shall be substituted which, in the unanimous opinion of the Commission, will result in substantially the same results, so far as the rights and obligations to deliver water are concerned, as would have existed if such substitution of stations and measurements had not been so made. (Note: See Resolution of the Commission at page 15).

ARTICLE VI

Commencing with the year following the effective date of this Compact, all credits and debits of Colorado and New Mexico shall be computed for each calendar year, provided, that in a year of actual spill no annual credits nor annual debits shall be computed for that year.

In the case of Colorado, no annual debit nor accrued debit shall exceed 100,000 acre-feet, except as either or both may be caused by holdover storage of water in reservoirs constructed after 1937 in the drainage basin of the Rio Grande above Lobatos. Within the physical limitations of storage capacity in such reservoirs, Colorado shall retain water in storage at all times to the extent of its accrued debit.

In the case of New Mexico, the accrued debit shall not exceed 200,000 acre-feet at any time, except as such debit may be caused by holdover storage of water in reservoirs constructed after 1929 in the drainage basin of the Rio Grande between Lobatos and San Marcial. Within the physical limitations of storage capacity in such reservoirs, New Mexico shall retain water in storage at all times to the extent of its accrued debit. In computing the magnitude of accrued credits or debits, New Mexico shall not be charged with any greater debit in any

one year than the sum of 150,000 acre-feet and all gains in the quantity of water in storage in such year.

The Commission by unanimous action may authorize the release from storage of any amount of water which is then being held in storage by reason of accrued debits of Colorado or New Mexico; provided, that such water shall be replaced at the first opportunity thereafter.

In computing the amount of accrued credits and accrued debits of Colorado or New Mexico, any annual credits in excess of 150,000 acre-feet shall be taken as equal to that amount.

In any year in which actual spill occurs, the accrued credits of Colorado, or New Mexico, or both, at the beginning of the year shall be reduced in proportion to their respective credits by the amount of such actual spill; provided that the amount of actual spill shall be deemed to be increased by the aggregate gain in the amount of water in storage, prior to the time of spill, in reservoirs above San Marcial constructed after 1929; provided, further, that if the Commissioners for the States having accrued credits authorize the release of part, or all, of such credits in advance of spill, the amount so released shall be deemed to constitute actual spill.

In any year in which there is actual spill of usable water, or at the time of hypothetical spill thereof, all accrued debits of Colorado, or New Mexico, or both, at the beginning of the year shall be cancelled.

In any year in which the aggregate of accrued debits of Colorado and New Mexico exceeds the minimum unfilled capacity of project storage, such debits shall be reduced proportionally to an aggregate amount equal to such minimum unfilled capacity.

To the extent that accrued credits are impounded in reservoirs between San Marcial and Courchesne, and to the extent that accrued debits are impounded in reservoirs above San Marcial, such credits and debits shall be reduced annually to compensate for evaporation losses in the proportion that such credits or debits bore to the total amount of water in such reservoirs during the year.

ARTICLE VII

Neither Colorado nor New Mexico shall increase the amount of water in storage in reservoirs constructed after 1929 whenever there is less than 400,000 acre-feet of usable water in project storage; provided, that if the actual releases of usable water from the beginning of the calendar year following the effective date of this Compact, or from the beginning of the calendar year following actual spill, have aggregated more than an average of 790,000 acre-feet per annum, the time at which such minimum stage is reached shall be adjusted to compensate for the difference between the total

actual release and releases at such average rate; provided, further, that Colorado, or New Mexico, or both, may relinquish accrued credits at any time, and Texas may accept such relinquished water, and in such event the state, or states, so relinquishing shall be entitled to store water in the amount of the water so relinquished.

ARTICLE VIII

During the month of January of any year the Commissioner for Texas may demand of Colorado and New Mexico, and the Commissioner for New Mexico may demand of Colorado, the release of water from storage reservoirs constructed after 1929 to the amount of the accrued debits of Colorado and New Mexico, respectively, and such releases shall be made by each at the greatest rate practicable under the conditions then prevailing, and in proportion to the total debit of each, and in amounts, limited by their accrued debits, sufficient to bring the quantity of usable water in project storage to 600,000 acre-feet by March first and to maintain this quantity in storage until April thirtieth, to the end that a normal release of 790,000 acre-feet may be found from project storage in that year.

ARTICLE IX

Colorado agrees with New Mexico that in event the United States or the State of New Mexico decides to construct the necessary works for diverting the waters of the San Juan River, or any of its tributaries, into the Rio Grande, Colorado hereby consents to the construction of said works and the diversion of waters from the San Juan River, or the tributaries thereof, into the Rio Grande in New Mexico, provided the present and prospective uses of water in Colorado by other diversions from the San Juan River, or its tributaries, are protected.

ARTICLE X

In the event water from another drainage basin shall be imported into the Rio Grande basin by the United States or Colorado or New Mexico, or any of them jointly, the State having the right to the use of such water shall be given proper credit therefor in the application of the schedules.

ARTICLE XI

New Mexico and Texas agree that upon the effective date of this Compact all controversies between said States relative to the quantity or quality of the water of the Rio Grande are composed and settled; however, nothing herein shall be interpreted to prevent recourse by a signatory state to the Supreme Court of the United States for redress should the character or quality of the water, at the point of delivery, be changed hereafter, by one signatory State to the injury of another. Nothing herein shall be construed as an admission by any signatory state that the use of water for irrigation causes increases

of salinity for which the user is responsible in law.

ARTICLE XII

To administer the provisions of this Compact there shall be constituted a Commission composed of one representative from each State, to be known as the Rio Grande Compact Commission. The State Engineer of Colorado shall be ex-officio the Rio Grande Compact Commissioner for Colorado. The State Engineer of New Mexico shall be ex-officio the Rio Grande Compact Commissioner for New Mexico. The Rio Grande Compact Commissioner for Texas shall be appointed by the Governor of Texas. The President of the United States shall be requested to designate a representative of the United States to sit with such Commission, and such representative of the United States, if so designated by the President, shall act as Chairman of the Commission without vote.

The salaries and personal expenses of the Rio Grande Compact Commissioners for the three States shall be paid by their respective States, and all other expenses incident to the administration of this Compact, not borne by the United States, shall be borne equally by the three States.

In addition to the powers and duties hereinbefore specifically conferred upon such Commission, and the members thereof, the jurisdiction of such Commission shall extend only to the collection, correlation and presentation of factual data and the maintenance of records having a bearing upon the administration of this Compact, and by unanimous action, to the making of recommendations to the respective States upon matters connected with the administration of this Compact. In connection therewith, the Commission may employ such engineering and clerical aid as may be reasonably necessary within the limit of funds provided for that purpose by the respective States. Annual reports compiled for each calendar year shall be made by the Commission and transmitted to the Governors of the signatory States on or before March first following the year covered by the report. The Commission may, by unanimous action, adopt rules and regulations consistent with the provisions of this Compact to govern their proceedings.

The findings of the Commission shall not be conclusive in any court or tribunal which may be called upon to interpret or enforce this Compact.

ARTICLE XIII

At the expiration of every five year period after the effective date of this Compact, the Commission may, by unanimous consent, review any provisions hereof which are not substantive in character and which do not affect the basic principles upon which the Compact is founded, and shall meet for the consideration of such questions

on the request of any member of the Commission; provided, however, that the provisions hereof shall remain in full force and effect until changed and amended within the intent of the Compact by unanimous action of the Commissioners, and until any changes in this Compact are ratified by the legislatures of the respective states and consented to by the Congress, in the same manner as this Compact is required to be ratified to become effective.

ARTICLE XIV

The schedules herein contained and the quantities of water herein allocated shall never be increased nor diminished by reason of any increase or diminution in the delivery or loss of water to Mexico.

ARTICLE XV

The physical and other conditions characteristic of the Rio Grande and peculiar to the territory drained and served thereby, and to the development thereof, have actuated this Compact and none of the signatory states admits that any provisions herein contained establishes any general principle or precedent applicable to other interstate streams.

ARTICLE XVI

Nothing in this Compact shall be construed as affecting the obligations of the United States of America to Mexico under existing treaties, or to the Indian Tribes, or as impairing the rights of the Indian Tribes.

ARTICLE XVII

This Compact shall become effective when ratified by the legislatures of each of the signatory states and consented to by the Congress of the United States. Notice of ratification shall be given by the Governor of each State to the Governors of the other States and to the President of the United States, and the President of the United States is requested to give notice to the Governors of each of the signatory states of the consent of the Congress of the United States.

IN WITNESS WHEREOF, the Commissioners have signed this Compact in quadruplicate original, one of which shall be deposited in the archives of the Department of State of the United States of America and shall be deemed the authoritative original, and of which a duly certified copy shall be forwarded to the Governor of each of the signatory States.

Done at the City of Santa Fe, in the State of New Mexico, on the 18th day of March, in the year of our Lord, One Thousand Nine Hundred and Thirty-Eight.

(Sgd.) M. C. HINDERLIDER

(Sgd.) THOMAS M. McCLURE

(Sgd.) FRANK B. CLAYTON

APPROVED:
(Sgd.) S. O. HARPER

RATIFIED BY:

Colorado, February 21, 1939
New Mexico, March 1, 1939
Texas, March 1, 1939

Passed Congress as Public Act No. 96, 76th Congress,
Approved by the President May 31, 1939.

RESOLUTION ADOPTED BY RIO GRANDE COMPACT COMMISSION AT THE ANNUAL MEETING HELD AT EL PASO, TEXAS, FEBRUARY 22-24, 1948, CHANGING GAGING STATIONS AND MEASUREMENTS OF DELIVERIES BY NEW MEXICO

R E S O L U T I O N

Whereas, at the Annual Meeting of the Rio Grande Compact Commission in the year 1945, the question was raised as to whether or not a schedule for delivery of water by New Mexico during the entire year could be worked out, and

Whereas, at said meeting the question was referred to the Engineering Advisers for their study, recommendations and report, and

Whereas, said Engineering Advisors have met, studied the problems and under date of February 24, 1947, did submit their Report, which said Report contains the findings of said Engineering Advisors and their recommendations, and

Whereas, The Compact Commission has examined said Report and finds that the matters and things therein found and recommended are proper and within the terms of the Rio Grande Compact, and

Whereas, the Commission has considered said Engineering Advisors' Report and all available evidence, information and material and is fully advised:

Now, Therefore, Be it Resolved:

The Commission finds as follows:

(a) That because of change of physical conditions, reliable records of the amount of water passing San Marcial are no longer obtainable at the stream gaging station at San Marcial and that the same should be abandoned for Compact purposes.

(b) That the need for concurrent records at San Marcial and San Acacia no longer exists and that the gaging station at San Acacia should be abandoned for Compact purposes.

(c) That it is desirable and necessary that the obligations of New Mexico under the Compact to deliver water in the months of July, August, September should be scheduled.

(d) That the change in gaging stations and substitution of the new measurements as hereinafter set forth will result in substantially the same results so far as the rights and obligations to deliver water are concerned, and would have existed if such substitution of stations and measurements had not been so made.

Be it Further Resolved:

That the following measurements and schedule thereof shall be substituted for the measurements and schedule thereof as now set forth in Article IV of the Compact:

"The obligation of New Mexico to deliver water in the Rio Grande into Elephant Butte Reservoir during each calendar year shall be measured by that quantity set forth in the following tabulation of relationship which corresponds to the quantity at the upper index station:

DISCHARGE OF RIO GRANDE AT OTOWI BRIDGE
AND ELEPHANT BUTTE EFFECTIVE SUPPLY

Quantities in thousands of acre-feet

Otowi Index Supply (5)	Elephant Butte Effective Index Supply (6)
100	57
200	114
300	171
400	228
500	286
600	345
700	406
800	471
900	542
1000	621
1100	707
1200	800
1300	897
1400	996
1500	1095
1600	1195

DISCHARGE OF RIO GRANDE AT OTOWI BRIDGE
AND ELEPHANT BUTTE EFFECTIVE SUPPLY

Quantities in thousands of acre-feet

Otowi Index Supply (5)	Elephant Butte Effective Index Supply (6)
1700	1295
1800	1395
1900	1495
2000	1595
2100	1695
2200	1795
2300	1895
2400	1995
2500	2095
2600	2195
2700	2295
2800	2395
2900	2495
3000	2595

Intermediate quantities shall be computed by proportional parts.

(5) The Otowi Index Supply is the recorded flow of the Rio Grande at the U. S. G. S. gaging station at Otowi Bridge near San Ildefonso (formerly station near Buckman) during the calendar year, corrected for the operation of reservoirs constructed after 1929 in the drainage basin of the Rio Grande between Lobatos and Otowi Bridge.

(6) Elephant Butte Effective Index Supply is the recorded flow of the Rio Grande at the gaging station below Elephant Butte Dam during the calendar year plus the net gain in storage in Elephant Butte Reservoir during the same year or minus the net loss in storage in said reservoir, as the case may be.

The application of this schedule shall be subject to the provisions hereinafter set forth and appropriate adjustments shall be made for (a) any change in location of gaging stations; (b) depletion after 1929 in New Mexico of the natural runoff at Otowi Bridge; and (c) any transmountain diversions into the Rio Grande between Lobatos and Elephant Butte Reservoir."

Be it Further Resolved:

That the gaging stations at San Acacia and San Marcial be and the same are hereby abandoned for Compact purposes.

Be it Further Resolved:

That this Resolution has been passed unanimously and shall be effective January 1, 1949, if within 120 days from this date the Commissioner for each State shall have received from the Attorney General of the State represented by him, an opinion approving this Resolution, and shall have so advised the Chairman of the Commission, otherwise, to be of no force and effect.

(Note: The following paragraph appears in the Minutes of the Annual Meeting of the Commission held at Denver, Colorado, February 14-16, 1949:

"The Chairman announced that he had received, pursuant to the Resolution adopted by the Commission at the Ninth Annual Meeting on February 24, 1948, opinions from the Attorneys General of Colorado, New Mexico and Texas that the substitution of stations and measurements of deliveries by New Mexico set forth in said resolution was within the powers of the Commission").

RULES AND REGULATIONS FOR ADMINISTRATION OF THE RIO GRANDE COMPACT

A Compact, known as the Rio Grande Compact, between the states of Colorado, New Mexico and Texas, having become effective on May 31, 1939 by consent of the Congress of the United States, which equitably apportions the waters of the Rio Grande above Fort Quitman and permits each State to develop its water resources at will, subject only to its obligations to deliver water in accordance with the schedules set forth in the Compact, the following Rules and Regulations have been adopted for its administration by the Rio Grande Compact Commission; to be and remain in force and effect only so long as the same may be satisfactory to each and all members of the Commission, and provided always that on the objection of any member of the Commission, in writing, to the remaining two members of the Commission after a period of sixty days from the date of such objection, the sentence, paragraph or any portion or all of these rules to which any such objection shall be made, shall stand abrogated and shall thereafter have no further force and effect; it being the intent and purpose of the Commission to permit these rules to obtain and be effective only so long as the same may be satisfactory to each and all of the Commissioners.

GAGING STATIONS /1

Responsibility for the equipping, maintenance and operation of the stream gaging stations and reservoir gaging stations required by the provisions of Article II of the Compact shall be divided among the signatory states as follows:

(a) Gaging stations on streams and reservoirs in the Rio Grande Basin above the Colorado-New Mexico boundary shall be equipped, maintained, and operated by Colorado in cooperation with the United States Geological Survey.

(b) Gaging stations on streams and reservoirs in the Rio Grande Basin below Lobatos and above Caballo Reservoir shall be equipped, maintained and operated by New Mexico in cooperation with the U. S. Geological Survey to the extent that such stations are not maintained and operated by some other Federal Agency.

(c) Gaging stations on Elephant Butte Reservoir and on Caballo Reservoir, and the stream gaging stations on the Rio Grande below those reservoirs shall be equipped, maintained and operated by or on behalf of Texas through the agency of the U. S. Bureau of Reclamation.

/1 Amended at Eleventh Annual Meeting, February 23, 1950.

The equipment, method and frequency of measurements at each gaging station shall be sufficient to obtain records at least equal in accuracy to those classified as "good" by the U. S. Geological Survey. Water stage recorders on the reservoirs specifically named in Article II of the Compact shall have sufficient range below maximum reservoir level to record major fluctuations in storage. Staff gages may be used to determine fluctuations below the range of the water stage recorders on these and other large reservoirs, and staff gages may be used upon approval of the Commission in lieu of water stage recorders on small reservoirs, provided that the frequency of observation is sufficient in each case to establish any material changes in water levels in such reservoirs.

RESERVOIR CAPACITIES /2

Colorado shall file with the Commission a table of areas and capacities for each reservoir in the Rio Grande Basin above Lobatos constructed after 1937; New Mexico shall file with the Commission a table of areas and capacities for each reservoir in the Rio Grande Basin between Lobatos and San Marcial constructed after 1929; and Texas shall file with the Commission tables of areas and capacities for Elephant Butte Reservoir and for all other reservoirs actually available for the storage of water between Elephant Butte and the first diversion to lands under the Rio Grande Project.

Whenever it shall appear that any table of areas and capacities is in error by more than five per cent, the Commission shall use its best efforts to have a re-survey made and a corrected table of areas and capacities to be substituted as soon as practicable. To the end that the Elephant Butte effective supply may be computed accurately, the Commission shall use its best efforts to have the rate of accumulation and the place of deposition of silt in Elephant Butte Reservoir checked at least every three years.

ACTUAL SPILL /3

(a) Water releases from Elephant Butte in excess of Project requirements, which is currently passed through Caballo Reservoir, prior to the time of spill, shall be deemed to have been Usable Water released in anticipation of spill, or Credit Water if such release shall have been authorized.

(b) Excess releases from Elephant Butte Reservoir, as defined in (a) above, shall be added to the quantity of water actually in storage in that reservoir, and Actual Spill shall be deemed to have

/2 Amended at Eleventh Annual Meeting, February 23, 1950.

/3 Adopted at Fifth Annual Meeting, February 24, 1943.

commenced when this sum equals the total physical capacity of that reservoir, to the level of the uncontrolled spillway i.e.-2,219,000 acre feet in 1942.

(c) All water actually spilled at Elephant Butte Reservoir, or released therefrom, in excess of Project requirements, which is currently passed through Caballo Reservoir, after the time of spill, shall be considered as Actual Spill, provided that the total quantity of water then in storage in Elephant Butte Reservoir exceeds the physical capacity of that reservoir at the level of the sill of the spillway gages, i.e.-1,830,000 acre feet in 1942.

(d) Water released from Caballo Reservoir in excess of Project requirements and in excess of water currently released from Elephant Butte Reservoir, shall be deemed Usable Water released, excepting only flood water entering Caballo Reservoir from tributaries below Elephant Butte Reservoir.

EVAPORATION LOSSES /4

The Commission shall encourage the equipping, maintenance and operation, in cooperation with the United States Weather Bureau or other appropriate agency, of evaporation stations at Elephant Butte Reservoir and at or near each major reservoir in the Rio Grande Basin within Colorado constructed after 1937 and in New Mexico constructed after 1929. The net loss by evaporation from a reservoir surface shall be taken as the difference between the actual evaporation loss and the evapo-transpiration losses which would have occurred naturally, prior to the construction of such reservoir. Changes in evapo-transpiration losses along stream channels below reservoirs may be disregarded.

Net losses by evaporation, as defined above, shall be used in correcting Index Supplies for the operation of reservoirs upstream from Index Gaging Stations as required by the provisions of Article III and Article IV of the Compact.

In the application of the provisions of the last unnumbered paragraph of Article VI of the Compact:

(a) Evaporation losses for which accrued credits shall be reduced shall be taken as the difference between the gross evaporation from the water surface of Elephant Butte Reservoir and rainfall on the same surface.

(b) Evaporation losses for which accrued debits shall be reduced shall be taken as the net loss by evaporation as defined in the first paragraph.

/4 Amended at Tenth Annual Meeting, February 14, 1949.

In determination of Hypothetical Spill and in the application of the provisions of Article VII of the Compact, the correction for change in evaporation losses shall be taken as the difference between the gross loss by evaporation from Elephant Butte Reservoir, which would have occurred if 790,000 acre feet of usable water had been released from Project Storage each year and the corresponding losses which actually did take place.

ADJUSTMENT OF RECORDS

The Commission shall keep a record of the location, and description of each gaging station and evaporation station, and, in the event of change in location of any stream gaging station for any reason, it shall ascertain the increment in flow or decrease in flow between such locations for all stages. Wherever practicable, concurrent records shall be obtained for one year before abandonment of the previous station.

NEW OR INCREASED DEPLETIONS

In the event any works are constructed which alter or may be expected to alter the flow at any of the Index Gaging Stations mentioned in the Compact, or which may otherwise necessitate adjustments in the application of the schedules set forth in the Compact, it shall be the duty of the Commissioner specifically concerned to file with the Commission all available information pertaining thereto, and appropriate adjustments shall be made in accordance with the terms of the Compact; provided, however, that any such adjustments shall in no way increase the burden imposed upon Colorado or New Mexico under the schedules of deliveries established by the Compact.

TRANSMOUNTAIN DIVERSIONS

In the event any works are constructed for the delivery of waters into the drainage basin of the Rio Grande from any stream system outside of the Rio Grande Basin, such waters shall be measured at the point of delivery into the Rio Grande Basin and proper allowances shall be made for losses in transit from such points to the Index Gaging Station on the stream with which the imported waters are comingled.

QUALITY OF WATER

In the event that delivery of water is made from the Closed Basin into the Rio Grande, sufficient samples of such water shall be analyzed to ascertain whether the quality thereof is within the limits established by the Compact.

SECRETARY /5

The Commission, subject to the approval of the Director, U.S. Geological Survey, to a cooperative agreement for such purposes shall employ the U. S. Geological Survey on a yearly basis, to render such engineering and clerical aid as may reasonably be necessary for administration of the Compact. Said agreement shall provide that the Geological Survey shall:

(1) Collect and correlate all factual data and other records having a material bearing on the administration of the Compact and keep each Commissioner advised thereof.

(2) Inspect all gaging stations required for administration of the Compact and make recommendations to the Commission as to any changes or improvements in methods of measurement or facilities for measurement which may be needed to insure that reliable records be obtained.

(3) Report to each Commissioner by letter on or before the fifteenth day of each month, except January a summary of all hydrographic data then available for the current year - on forms prescribed by the Commission - pertaining to:

(a) Deliveries by Colorado
(b) Deliveries by New Mexico
(c) Operation of Project Storage

(4) Make such investigations as may be requested by the Commission in aid of its administration of the Compact.

(5) Act as Secretary to the Commission and submit to the Commission at its regular meeting in February a report on its activities and a summary of all data needed for determination of debits and credits and other matters pertaining to administration of the Compact.

COSTS /6

In February of each year the Commission shall adopt a budget for the ensuing fiscal year beginning July first.

/5 The substitution of this section for the section titled "Reports to Commissioners" was adopted at Tenth Annual Meeting, February 22, 1948.

/6 Amended at Eleventh Annual Meeting, February 23, 1950.

Such budget shall set forth the total cost of maintenance and operating of gaging stations, of evaporation stations, the cost of engineering and clerical aid, and all other necessary expenses excepting the salaries and personal expenses of the Rio Grande Compact Commissioners.

Contributions made directly by the United States and the cost of services rendered by the United States without cost shall be deducted from the total budget amount; the remainder shall then be allocated equally to Colorado, New Mexico and Texas.

Expenditures made directly by any State for purposes set forth in the budget shall be credited to that state; contributions in cash or in services by any State under a cooperative agreement with any Federal agency shall be credited to such state, but the amount of the Federal contribution shall not so be credited; in event any State, through contractual relationships, causes work to be done in the interest of the Commission, such State shall be credited with the cost thereof, unless such cost is borne by the United States.

Costs incurred by the Commission under any cooperative agreement between the Commission and any U. S. Government Agency, not borne by the United States, shall be apportioned equally to each State, and each Commissioner shall arrange for the prompt payment of one-third thereof by his State.

The Commissioner of each state shall report at the annual meeting each year the amount of money expended during the year by the state which he represents, as well as the portion thereof contributed by all cooperating federal agencies, and the Commission shall arrange for such proper reimbursement in cash or credits between states as may be necessary to equalize the contributions made by each state in the equipment, maintenance and operation of all gaging stations authorized by the Commission and established under the terms of the Compact.

It shall be the duty of each Commissioner to endeavor to secure from the Legislature of his state an appropriation of sufficient funds with which to meet the obligations of his state, as provided by the Compact.

MEETING OF COMMISSION /7

The Commission shall meet in Santa Fe, New Mexico in February of each year for the consideration and adoption of the annual report for the calendar year preceding, and for the transaction of any other business consistent with its authority; provided, that the Commission may agree to meet elsewhere. Other meetings as may be deemed necessary shall be held at any time and place set by

/7 Amended at Eleventh Annual Meeting, February 23, 1950.

mutual agreement, for the consideration of data collected and for the transaction of any business consistent with its authority.

No action of the Commission shall be effective until approved by the Commissioner from each of the three signatory States.

(Signed) M. C. HINDERLIDER

M. C. Hinderlider
Commissioner for Colorado

(Signed) THOMAS M. McCLURE

Thomas M. McClure
Commissioner for New Mexico

(Signed) JULIAN P. HARRISON

Julian P. Harrison
Commissioner for Texas

Adopted December 19, 1939.

RECORDS OF DELIVERIES AND RELEASES

At the Annual Meeting of the Compact Commission in February of each year, the records of deliveries and releases for the year just ended are examined and the computations of debits and credits based thereon are reviewed and formally adopted. The records and computations for 1950 as adopted by the Commission are reproduced on the next three pages.

The delivery of water in the Rio Grande at the Colorado - New Mexico state line was obtained from records of stream flow adjusted in accordance with the provisions of Article III of the Compact: the obligation of Colorado to deliver water at the state line was computed as prescribed in Article III. The Reduction of Credits, item C6, prescribed in Article VI, was computed in accordance with the Rules and Regulations.

The delivery of water by New Mexico to Project Storage was computed from actual stream flow record and record of operation of Elephant Butte Reservoir and was adjusted as prescribed in Article IV of the Compact; the scheduled delivery was computed as prescribed in the Resolution of the Commission adopted at the Tenth Annual Meeting, and published in this Report. Item NM4, Reduction of debits by Evaporation, is in accordance with the provisions of the last paragraph of Article VI of the Compact and by the Rules and Regulations.

The actual release from Project Storage during the year was measured at stations below Caballo Dam: the Actual Net Evaporation Loss and Evaporation Loss if No Departure were computed as provided in Article VI of the Compact and by the Rules and Regulations.

RIO GRANDE COMPACT

DELIVERIES BY COLORADO AT STATE LINE

CC1330

YEAR 1950

Quantities in Thousands of Acre Feet to Nearest Hundred

MONTH	CONEJOS INDEX SUPPLY										RIO GRANDE INDEX SUPPLY								DELIVERIES			
	MEASURED FLOW				ADJUSTMENTS				SUPPLY		ADJUSTMENTS						SUPPLY					
	CONEJOS AT MOGOTE	LOS PINOS NEAR ORTIZ	SAN ANTONIO AT ORTIZ	TOTAL	STORAGE AT END OF MONTH	CHANGE IN STORAGE	OTHER ADJUSTMENTS	NET ADJUSTMENT	SUPPLY IN MONTH	ACCUMULATED TOTAL	ACCRUED FLOW NEAR DEL NORTE	STORAGE AT END OF MONTH	CHANGE IN STORAGE	TRANSMOUNTAIN DIVERSIONS	OTHER ADJUSTMENTS	NET ADJUSTMENT	SUPPLY IN MONTH	ACCUMULATED TOTAL	CONEJOS RIVER AT MOUTH NEAR LOS SAUCES	RIO GRANDE LESS CONEJOS RIVER	RIO GRANDE AT LOBATOS	ACCUMULATED TOTAL AT LOBATOS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	———	———	———	———		———	———	———	———	⊖	———	0.3	———	———	———	———	———	⊖	———	———	———	⊖
JAN	2.7	———	———	2.7	0	0	0	0	2.7	2.7	12.3	.3	0	0	0	0	12.3	12.3	3.2	15.3	18.5	18.5
FEB	3.0	———	———	3.0	0	0	0	0	3.0	5.7	12.1	.3	0	0	0	0	12.1	24.4	3.3	20.0	23.3	41.8
MAR	5.2	———	———	5.2	0	0	0	0	5.2	10.9	17.4	.3	0	0	0	0	17.4	41.8	2.6	13.6	16.2	58.0
APR	30.8	20.0	6.4	57.2	0	0	0	0	57.2	68.1	66.9	.4	+ .1	0	0	+ .1	67.0	108.8	6.2	4.9	11.1	69.1
MAY	51.3	18.0	2.3	71.6	0	0	0	0	71.6	139.7	113.6	.4	0	0	0	0	113.6	222.4	6.7	6.2	12.9	82.0
JUN	43.9	8.4	.2	52.5	0	0	0	0	52.5	192.2	122.5	.4	0	-.1	0	-.1	122.4	344.8	7.6	12.8	20.4	102.4
JUL	14.2	2.0	.1	16.3	0	0	0	0	16.3	208.5	55.6	.3	- .1	-.1	0	-.2	55.4	400.2	.1	1.6	1.7	104.1
AUG	4.3	.7	0	5.0	0	0	0	0	5.0	213.5	25.1	.3	0	0	0	0	25.1	425.3	0	2.0	2.0	106.1
SEPT	3.2	.8	.1	4.1	0	0	0	0	4.1	217.6	13.4	.3	0	0	0	0	13.4	438.7	.1	2.4	2.5	108.6
OCT	3.4	.9	.1	4.4	0	0	0	0	4.4	222.0	14.5	.3	0	0	0	0	14.5	453.2	1.0	2.8	3.8	112.4
NOV	2.3	———	———	2.3	0	0	0	0	2.3	224.3	8.6	.3	0	0	0	0	8.6	461.8	.9	5.5	6.4	118.8
DEC	2.1	———	———	2.1	0	0	0	0	2.1	226.4	8.3	.3	0	0	0	0	8.3	470.1	2.2	11.1	13.3	132.1
YEAR	166.4	50.8	9.2	226.4	———	0	0	0	226.4	———	470.3	———	0	-.2	0		470.1	———	33.9	98.2	132.1	———

REMARKS: At a Special Meeting in Denver, Colorado, July 2, 1950, the Commission authorized the relinquishment of Colorado credit water in Project Storage as follows: 25.0 July 31; 20.0 Aug. 31, and 15.0 Sept. 30; total 60.0.

See Minutes for correction of Accrued Credit Jan. 1, 1950

SUMMARY OF DEBITS AND CREDITS

	ITEM	DEBIT	CREDIT	BALANCE
C1	Balance at Beginning of Year (144.7-3.0 Correction)	———	———	Cr. 141.7
C2	Scheduled Delivery from Conejos River	60.8	———	Cr. 80.9
C3	Scheduled Delivery from Rio Grande	118.0	———	Dr. 37.1
C4	Actual Delivery at Lobatos plus 10 000 Acre Feet	———	142.1	Cr. 105.0
C5	Reduction of Debits % Evaporation	———	———	
C6	Reduction of Credits % Evaporation	20.0	———	Cr. 85.0
C7	Accrued Credits Relinquished to Proj. Stor.	60.0		Cr. 25.0
C8	Balance at End of Year	———	———	Cr. 25.0

RIO GRANDE COMPACT

DELIVERIES BY NEW MEXICO AT ELEPHANT BUTTE

YEAR 1950

Quantities in Thousands of Acre Feet to Nearest Hundred

MONTH	NATURAL FLOW AT OTOWI BRIDGE							TOTAL WATER STORED IN NEW MEXICO ABOVE SAN MARCIAL AT END OF MONTH	ELEPHANT BUTTE EFFECTIVE SUPPLY					
	RECORDED FLOW AT OTOWI BRIDGE	STORAGE IN RESERVOIRS LOCATED TO OTOWI			OTHER ADJUSTMENTS PER ARTICLE IV	OTOWI INDEX SUPPLY			STORAGE IN ELEPHANT BUTTE RESERVOIR		RECORDED FLOW BELOW ELEPHANT BUTTE DAM	ADJUSTMENT OF MEASUREMENTS	ACTUAL EFFECTIVE SUPPLY	
		TOTAL AT END OF MONTH	CHANGE GAIN (+) LOSS (-)	EVAPORATION DURING MONTH		DURING MONTH (2+4+5+6)	ACCUMULATED TOTAL		AT END OF MONTH	CHANGE GAIN (+) LOSS (-)			DURING MONTH (11+12+13)	ACCUMULATED TOTAL
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	—	159.9	—	—	—	—	-0-	162.7	621.0	—	—	—	—	-0-
JAN	44.3	161.6	+ 1.7	0.0	-	46.0	46.0	164.9	607.5	-13.5	55.3	0	41.8	41.8
FEB	121.7	92.0	-69.6	.2	-	52.3	98.3	95.3	650.6	+43.1	50.6	0	93.7	135.5
MAR	114.4	25.3	-66.7	.2	-	47.9	146.2	28.3	655.9	+ 5.3	71.5	0	76.8	212.3
APR	65.6	63.1	+37.8	.2	-	103.6	249.8	65.8	616.6	-39.3	68.0	0	28.7	241.0
MAY	40.0	88.2	+25.1	.4	-	65.5	315.3	90.5	541.5	-75.1	78.0	0	2.9	243.9
JUN	55.9	77.2	-11.0	.6	0.1 a/	45.6	360.9	79.0	457.5	-84.0	84.1	0	.1	244.0
JUL	42.8	65.7	-11.5	.2	-	31.5	392.4	67.2	397.9	-59.6	72.7	0	13.1	257.1
AUG	38.9	36.1	-29.6	.1	-	9.4	401.8	37.3	354.5	-43.4	53.8	0	10.4	267.5
SEPT	23.4	30.2	- 5.9	.1	-	17.6	419.4	31.0	333.4	-21.1	26.3	0	5.2	272.7
OCT	23.1	25.0	- 5.2	.1	-	18.0	437.4	25.5	329.5	- 3.9	8.3	0	4.4	277.1
NOV	21.1	27.0	+ 2.0	.1	-	23.2	460.6	27.6	323.2	- 6.3	8.7	0	2.4	279.5
DEC	29.2	29.4	+ 2.4	0	-	31.6	492.2	29.7	335.4	+12.2	6.4	0	18.6	298.1
YEAR	620.4	—	-130.5	2.2	0.1 a/	492.2	—	—	—	-285.6	583.7	0	298.1	—

REMARKS: a/ Stock tanks

SUMMARY OF DEBITS AND CREDITS

	ITEM	DEBIT	CREDIT	BALANCE	
NM 1	Balance at Beginning of Year	—	—	Dr	280.4
NM 2	Scheduled Delivery at Elephant Butte	281.5	—	Dr	561.9
NM 3	Actual Elephant Butte Effective Supply	—	298.1	Dr	263.8
NM 4	Reduction of Debits % Evaporation	—	2.2	Dr	261.6
NM 5	Reduction of Credits % Evaporation	0.0	—	Dr	261.6
NM 6	Correction of Item NM1 in 1946 Summary	1.5		Dr	263.1
NM 7					
NM 8	Balance at End of Year	—	—	Dr	263.1

RIO GRANDE COMPACT

RELEASE AND SPILL FROM PROJECT STORAGE

GC1332

YEAR 1950

Quantities in Thousands of Acre Feet to Nearest Hundred

MONTH	TOTAL PROJECT STORAGE CAPACITY AVAILABLE AT END OF MONTH	USABLE WATER IN STORAGE			UNFILLED CAPACITY OF PROJECT STORAGE AT END OF MONTH	CREDIT WATER IN STORAGE			FLOOD WATER IN STORAGE IN CABALLO RESERVOIR AT END OF MONTH	TOTAL WATER IN PROJECT STORAGE AT END OF MONTH	RIO GRANDE BELOW CABALLO DAM							
		ELEPHANT BUTTE RESERVOIR	CABALLO RESERVOIR	TOTAL AT END OF MONTH		COLORADO CREDIT WATER	NEW MEXICO CREDIT WATER	TOTAL AT END OF MONTH			MEASURED FLOW AT CABALLO GAGING STATION	INTERVENING DIVERSIONS TO CANALS	TOTAL RELEASE AND SPILL	SPILL FROM STORAGE			USABLE RELEASE	
														CABALLO FLOOD WATER	CREDIT WATER	USABLE WATER	NET DURING MONTH	ACCUMULATED TOTAL
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	2,530.0	490.9	194.7	685.6	1,844.4	130.1	0	130.1	0	815.7	———	———	———	———	———	———	———	0
JAN	2,530.0	462.8	240.4	703.2	1,826.8	144.7	0	144.7	0	847.9	0.5	0	0.5	0	0	0	0.5	0.5
FEB	2,530.0	505.9	270.1	776.0	1,754.0	144.7	0	144.7	0	920.7	14.3	0	14.3	0	0	0	14.3	14.8
MAR.	2,530.0	511.2	220.8	732.0	1,798.0	144.7	0	144.7	0	876.7	120.4	.1	120.5	0	0	0	120.5	135.3
APR.	2,530.0	471.9	194.4	666.3	1,863.7	144.7	0	144.7	0	811.0	94.4	.2	94.6	0	0	0	94.6	229.9
MAY	2,530.0	396.8	171.3	568.1	1,961.9	144.7	0	144.7	0	712.8	98.9	.3	99.2	0	0	0	99.2	329.1
JUN	2,530.0	312.8	146.2	459.0	2,071.0	144.7	0	144.7	0	603.7	107.1	.3	107.4	0	0	0	107.4	436.5
JUL	2,530.0	278.2	134.2	412.4	2,117.6	119.7	0	119.7	0	532.1	97.7	.2	97.9	0	0	0	97.9	534.4
AUG	2,530.0	254.8	55.5	310.3	2,219.7	99.7	0	99.7	0	410.0	138.9	.5	139.4	0	0	0	139.4	673.8
SEPT	2,530.0	248.7	43.1	291.8	2,238.2	84.7	0	84.7	0	376.5	46.8	.2	47.0	0	0	0	47.0	720.8
OCT	2,530.0	244.8	54.6	299.4	2,230.6	84.7	0	84.7	0	384.1	.1	0	.1	0	0	0	.1	720.9
NOV	2,530.0	238.5	63.8	302.3	2,227.7	84.7	0	84.7	0	387.0	.1	0	.1	0	0	0	.1	721.0
DEC	2,530.0	250.7	70.6	321.3	2,208.7	84.7	0	84.7	0	406.0	.1	0	.1	0	0	0	.1	721.1
YEAR	———	———	———	———	———	———	———	———	———	———	719.3	1.8	721.1	0	0	0	721.1	———

REMARKS: At Special Meeting in Denver, Colorado, July 2, 1950, Texas accepted accrued credits relinquished by Colorado as follows: 25.0, July 31, 20.0 Aug. 31 and 15.0 Sept.30.

ACCRUED DEPARTURE FROM NORMAL RELEASE

	ITEM	DEBIT	CREDIT	BALANCE	
P1	Accrued Departure at Beginning of Year	———	———	Cr	14.3
P2	Actual Release during Year	721.1	———	Dr	706.8
P3	Normal Release for Year	———	790.0	Cr	83.2
P4	Actual Evaporation from Elephant Butte Reservoir	145.7	———	Dr	62.5
P5	Evaporation Loss if No Accrued Departure	———	141.0	Cr	78.5
P6	Adjustment of prior Computations of Evap.	18.4		Cr	60.1
P7	Accrued Departure at End of Year	———	———	Cr	60.1

TIME OF HYPOTHETICAL SPILL None occurred

WATER SUPPLY

The year 1950 was one more in a series of abnormally dry years that has continued, with one exception, since 1942. As a result of the accumulated deficiency, the annual run-off at Otowi Bridge, adjusted for the operation of El Vado Reservoir, was the lowest of record; also the nine year accumulated flow at Otowi is the lowest of any other such period since 1892.

Accuracy of Records

The Rules and Regulations of the Commission state that the equipment, method, and frequency of measurements at each gaging station shall be sufficient to obtain records at least equal in accuracy to those classified as "good" by the U.S. Geological Survey. Within the physical limitations of stream gaging the agencies obtaining the records at Compact gaging stations has complied with these regulations.

Each station description includes a statement concerning the accuracy of that record. "Excellent" indicates that, in general, the daily records are accurate within 5 percent; "good", within 10 percent; "fair", within 15 percent; "poor", 16 or greater percent. These standards of accuracy are the same as those followed by the U.S. Geological Survey.

Acknowledgements

The water supply data contained in this report have been furnished by various Federal and State Agencies.

The office of the State Engineer of Colorado furnished records of discharge for the following:

Rio Grande near Del Norte, Colorado
Rio Grande near Lobatos, Colorado
Conejos River near Mogote, Colorado
Conejos River near Los Sauces, Colorado
San Antonio River at Ortiz, Colorado
Los Pinos River near Ortiz, Colorado

Records of Transmountain Diversions and of storage in Troutvale Reservoir No. 2, Squaw Lake, and Fuchs Reservoir were also supplied by the office of the State Engineer of Colorado.

The U.S. Geological Survey supplied the record for Rio Grande below Elephant Butte Dam and, in cooperation with the New Mexico Interstate Streams Commission, also furnished the following records:

Rio Grande at Otowi Bridge near San Ildefonso, New Mexico

Rio Chama below El Vado Dam, New Mexico
Santa Fe Creek near Santa Fe, New Mexico
Storage in Carson Reservoir near Stong, New Mexico
Storage in McClure Reservoir near Santa Fe, New Mexico

In cooperation with the New Mexico Interstate Stream Commission and the Middle Rio Grande Conservancy District the U.S. Geological Survey furnished the record of storage in El Vado Reservoir near Tierra Amarilla, New Mexico.

The United Pueblos Agency, Albuquerque, New Mexico, supplied the records of storage for the following:

Acomita Reservoir near San Fidel, New Mexico.
New Lagunas Reservoir at Laguna, New Mexico.
Paguate Reservoir near Laguna, New Mexico.

The U.S. Bureau of Reclamation, El Paso, Texas furnished the following records:

Discharge of Rio Grande below Caballo Dam, New Mexico.
Storage in Elephant Butte Reservoir.
Storage in Caballo Reservoir.

The Rio Grande Compact Commission gratefully acknowledges the cooperation received from these agencies.

MONTHLY SUMMARY OF DISCHARGE

RIO GRANDE NEAR DEL NORTE, COLORADO

Location.- Water-stage recorder in Sec. 29, T. 40 N., R. 5 E., 5 miles upstream from Pinos Creek, and 6 miles west of Del Norte, at State Bridge. From 1889 to September 1907, station maintained at site 4 miles downstream. Records are comparable.

Drainage Area.- 1,320 square miles. Zero of gage is 7,982.21 feet above mean sea level, datum of 1929.

Records Available.- October 11, 1889 to December 31, 1950.

Extremes.- Maximum discharge during year, 3,290 second-feet June 2 (gage height 3.53 feet); minimum daily discharge 77 second-feet December 29.

1889-1950; Maximum discharge 18,000 second-feet October 5, 1911 (from rating curve extended above 6,000 second-feet); minimum daily, 77 second-feet December 29, 1950.

Remarks.- Records considered excellent above 350 second-feet and good below, except those for period of ice effect, January 1, March 3, November 9, 10, 16, 17, which were computed on basis of 4 discharge measurements, weather records, and are fair. Diversions for irrigation above station, total capacity 117,600 acre-feet, and by several smaller ones.

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	6,206	230	160	200	12,310
February	6,118	320	175	218	12,130
March	8,787	300	225	283	17,430
April	33,725	2,260	412	1,124	66,890
May	57,290	2,810	1,120	1,848	113,600
June	61,740	3,120	1,120	2,058	122,500
July	28,024	1,160	488	904	55,580
August	12,662	603	275	408	25,110
September	6,772	335	154	226	13,430
October	7,305	500	165	236	14,490
November	4,334	189	81	144	8,600
December	4,156	189	77	134	8,240
Year 1950	237,119	3,120	77	650	470,300

RIO GRANDE NEAR LOBATOS, COLORADO

Location.- Water-stage recorder in Sec. 22, T. 33 N., R. 11 E., 6 miles north of Colorado-New Mexico State line, 7 miles downstream from Culebra Creek, at highway bridge 10 miles east of Lobatos.

Drainage Area.- 7,700 square miles (includes 2,940 square miles in closed basin). Zero of gage is 7,426.79 feet above mean sea level, datum of 1929.

Records Available.- June 1899 to September 1913 and October 1933 to December 1950 in reports of Geological Survey. June 1899 to December 1950 in reports of State Engineer.

Extremes. - Maximum discharge during year, 6,820 second-feet March 30 (gage height 6.34 feet); minimum daily discharge 0 second-feet July 16-August 6.

1899-1950; Maximum discharge 13,100 second-feet June 8, 1905, from rating curve extended above 8,000 second-feet; minimum daily discharge 0 second-feet July 16-August 6, 1950.

Remarks.- Records considered excellent except those for periods of ice effect January 1 to March 3, which were computed on basis of 4 discharge measurements, weather records, and are fair. Diversions for irrigation above station. Flow regulated by many reservoirs on headwaters. Diversion dam upstream several miles from gage broke causing peak flow March 30. Same diversion dam caused period of no flow in July and August.

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	9,320	330	265	301	18,490
February	11,733	496	315	419	23,270
March	8,149.6	729	.8	263	16,160
April	5,597	474	94	187	11,100
May	6,496	363	89	210	12,880
June	10,299	1,010	94	343	20,430
July	853	83	0	27.5	1,690
August	1,037.8	100	0	33.5	2,060
September	1,255	92	15	41.8	2,490
October	1,907	80	28	61.5	3,780
November	3,255	215	32	108	6,460
December	6,689	298	119	21.6	13,270
Year 1950	66,591.4	1,010	0	182	132,080

MONTHLY SUMMARY OF DISCHARGE

RIO GRANDE AT OTOWI BRIDGE NEAR SAN ILDEFONSO, NEW MEXICO

Location.- Water-stage recorder, lat. 35° 52' 25", long. 106° 08' 35", in San Ildefonso Pueblo Grant, 250 feet downstream from highway bridge, 1 3/4 miles southwest of San Ildefonso Pueblo, 2½ miles downstream from Rio Pojoaque and 7 miles west of Pojoaque. Datum of gage is 5,488.48 feet above mean sea level, datum of 1929.

Drainage Area.- 14,300 square miles (includes 2,940 square miles in closed basin in northern part of San Juan Valley, Colorado).

Records Available.- February 1895 to December 1905, June 1909 to December 1950.

Extremes.- Maximum discharge during year 4,590 second-feet July 8 (gage height 6.04 feet); minimum daily 166 second-feet August 5.

1931-1950; Maximum discharge 22,500 second-feet May 16, 1941; maximum gage height, 13.70 feet May 14, 1941; minimum daily discharge, 128 second-feet June 21, 1934.

Remarks. - Records good except those for periods of no gage height record, which are fair. Flow partly regulated by El Vado Reservoir. Diversion above station for irrigation.

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	22,334	817	652	720	44,300
February	61,352	2,780	694	2,191	121,700
March	57,660	2,340	1,360	1,860	114,400
April	33,075	1,700	694	1,102	65,600
May	20,142	1,050	371	650	39,950
June	28,164	1,700	574	939	55,860
July	21,593	1,900	220	697	42,830
August	19,628	1,190	166	633	38,930
September	11,776	1,070	213	393	23,360
October	11,668	844	249	376	23,140
November	10,652	508	273	355	21,130
December	14,739	580	359	475	29,230
Year 1950	312,783	2,780	166	857	620,400

RIO GRANDE BELOW ELEPHANT BUTTE DAM, NEW MEXICO

Location.- Water-stage recorder, lat. 33° 09' 05", long. 107° 12' 10", in N½ Sec. 25, T. 15 S., R. 4 W., (projected), 3,800 feet downstream from Elephant Butte Dam.

Records Available.- October 1916 to December 1950.

Average Discharge.- 34 years, 1186 second-feet.

Extremes. - Maximum daily discharge during year, 1,720 second-feet July 12; minimum daily discharge 5.2 second-feet September 23.

Remarks.- Records good. Many diversions above station for irrigation. Flow regulated by Elephant Butte Reservoir.

Month	foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	27,884	1,010	656	899	55,310
February	25,510	1,030	669	911	50,600
March	36,059	1,530	722	1,163	71,520
April	34,287	1,540	804	1,143	68,010
May	39,342	1,480	772	1,269	78,030
June	42,416	1,660	916	1,414	84,130
July	36,626	1,720	660	1,181	72,650
August	27,146	1,330	391	876	53,840
September	13,260	990	52	442	26,300
October	4,163	325	12	134	8,260
November	4,359	455	33	145	8,650
December	3,210	290	12	104	6,370
Year 1950	294,262	1,720	12	806	583,700

MONTHLY SUMMARY OF DISCHARGE
RIO GRANDE BELOW CABALLO DAM, NEW MEXICO

Location.- Water-stage recorder, lat. 32° 53' 05", long. 107° 17' 30" in NE¼ SW¼ Sec. 30, T. 16 S., R. 4 W., 600 feet upstream from Bojarquez bridge, 4,200 feet downstream from Caballo Dam. 1 1/3 miles upstream from Percha diversion dam, 3 miles northeast of Arrey and 5 miles south of Caballo. Datum of gage is 4,140.9 feet above mean sea level. Prior to January 1, 1946 at datum 5.00 feet higher.

Records Available.- January 1938 to December 1950.

Extremes. - Maximum daily discharge during year, 3,080 second-feet March 25; minimum daily discharge 0.8 second-foot October 22-November 1.

1938-49: Maximum daily discharge 7,650 second-feet May 20, 1942; minimum daily discharge that of October 22-November 1, 1950.

Remarks. - Records good. Considerable diversion above station for irrigation. Flow regulated by Caballo Reservoir.

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	274.7	16	4.6	8.85	544
February	7,216	1,320	13.	258	14,310
March	60,689	3,080	873	1,958	120,370
April	47,590	2,920	1,120	1,586	94,390
May	49,857	2,800	919	1,608	98,890
June	54,010	2,350	1,020	1,800	107,130
July	49,288	2,610	653	1,590	97,760
August	70,050	2,930	1,300	2,260	138,940
September	23,577.3	2,340	2.4	786	46,770
October	36.4	1.5	.8	1.17	72
November	42.7	1.6	.8	1.42	85
December	36.0	1.4	1.0	1.16	71
Year 1950	362,667.1	3,080	.8	994	719,200

BONITA DITCH BELOW CABALLO DAM, NEW MEXICO

Location. - Diverts directly from the reservoir for the irrigation of lands on the right bank of the river. The total release from Project Storage, as used in computations of the Compact Commission, is the combined flow of Bonita Ditch and Rio Grande below Caballo Dam.

Month	foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	-	-	-	-	0
February	-	-	-	-	0
March	-	-	-	-	94
April	-	-	-	-	200
May	-	-	-	-	323
June	-	-	-	-	274
July	-	-	-	-	145
August	-	-	-	-	518
September	-	-	-	-	228
October	-	-	-	-	0
November	-	-	-	-	0
December	-	-	-	-	0
Year 1950					1,782

MONTHLY SUMMARY OF DISCHARGE

CONEJOS RIVER NEAR MOGOTE, COLORADO

Location.- Water stage recorder, lat. 37° 03', long. 106°, in SE-1/4, Sec. 34, T. 33 N., R. 7 E., three quarters of a mile downstream from Fox Creek and 5½ miles west of Mogote.

Drainage Area.- 282 square miles.

Records Available.- September 1899 to March 1900; April 1903 to October 1905 at site one mile downstream; March 1907 to October 1911 at site 3 miles upstream; January 1912 to December 1950 at present site.

Extremes.- Maximum discharge during year, 1,490 second-feet June 1 (gage height 3.83 feet); minimum daily discharge 23 second-feet, Nov. 16.

1899-1900, 1903-05, 1907-1950; Maximum discharge 9,000 second-feet October 5, 1911 (gage height 8.50 feet, site and datum then in use), from rating curve extended above 3,500 second-feet; minimum discharge 18 second-feet (discharge measurement) December 19, 1939.

Remarks.- Records considered good except for period of ice effect which is fair. No diversion regulation above station.

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	1,341	54	30	43.3	2,660
February	1,524	85	38	54.4	3,020
March	2,646	141	51	85.4	5,250
April	15,546	971	169	518	30,840
May	25,866	1,270	437	834	51,300
June	22,107	1,280	369	737	43,850
July	7,147	341	138	231	14,180
August	2,166	130	39	69.9	4,300
September	1,617	102	36	53.9	3,210
October	1,700	123	41	54.8	3,370
November	1,150	49	23	38.3	2,280
December	1,074	48	26	34.6	2,130
Year 1950	83,884	1,280	23	230	166,400

CONEJOS RIVER NEAR LOS SAUCES, COLORADO

Location.- Two water-stage recorders (two channels), lat. 37° 23', long. 105° 45', in Sec. 2, T. 35 N., R. 11 E., half a mile upstream from mouth and 2 miles north of La Sauces. Datum of gage (north channel) is 7,495.02 feet above mean sea level (Colorado State Highway Department bench mark.)

Drainage Area.- 887 square miles.

Records Available.- March 1921 to December 1950.

Extremes.- Maximum discharge during year 796 second-feet June 5; minimum daily discharge 0 second-feet August 29.

1921-1950; Maximum discharge 3,890 second-feet May 15, 1941; no flow July 21 to September 8, 1934, August 29, 1950.

Remarks.- Records considered good above 10 second-feet and poor below. Diversions for irrigation above station.

Month	foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	1,631	59	48	52.6	3,240
February	1,646	65	50	58.8	3,260
March	1,323	52	13	42.7	2,620
April	3,119	450	11	104	6,190
May	3,378	246	17	109	6,700
June	3,819.7	566	1.3	127	7,580
July	29.6	1.6	.2	.95	59
August	17.0	1.1	0	.55	34
September	74.0	11	.5	2.47	147
October	499.3	23	2.0	16.1	990
November	453.7	26	3.4	15.1	900
December	1,116	40	24	36.0	2,210
Year 1950	17,106.3	566	0	469	33,930

MONTHLY SUMMARY OF DISCHARGE

SAN ANTONIO RIVER AT ORTIZ, COLORADO

Location.- Water-stage recorder, lat. 37° 00', long. 106° 02', in New Mexico, in Sec. 19, T. 32 N., R. 9 E., a quarter of a mile south of Colorado-New Mexico State line, half a mile south of Ortiz and half a mile upstream from Los Pinos Creek.

Drainage Area.- 110 square miles.

Records Available.- January to October 1915, May to October 1920, October 1924 to December 1950.

Extremes.- Maximum discharge during year, 300 second-feet April 24 (gage height 2.53 feet); no flow at times.

1915, 1919-20, 1924-1950; Maximum discharge 1,750 second-feet April 15, 1937 (gage height 5.36 feet), from rating curve extended above 1,100 second-feet; no flow at times.

Remarks.- Records considered good above 20 second-feet and fair below. A few small diversions above station for irrigation.

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	62	-	-	2.0	123
February	98	-	-	3.5	194
March	378.2	30	4.4	12.2	750
April	3,198	234	28	107	6,340
May	1,159.0	97	8.2	37.4	2,300
June	114.6	19	0	3.82	227
July	64.0	24	0	2.06	127
August	15.3	2.5	0	.49	30
September	31.6	6.1	0	1.05	63
October	60.4	6.1	.6	1.95	120
November	124.8	8.8	1.1	4.16	248
December	77.5	-	-	2.5	154
Year 1950	5,383.4	234	0	14.7	10,680

LOS PINOS RIVER NEAR ORTIZ, COLORADO

Location.- Water-stage recorder, lat. 36° 58', long. 106° 03', in New Mexico, in N½ Sec. 34, T. 32 N., R. 8 E., 1 mile south of Colorado-New Mexico State line, 2 miles southwest of Ortiz and 2½ miles upstream from mouth.

Drainage Area.- 167 square miles.

Records Available.- **January 1914 to November 1920,** October 1924 to **December 1950.** (No winter records most years).

Extremes.- Maximum discharge during year, 876 second-feet April 23 (gage height 3.66 feet); minimum daily 4.6 second-feet November 12.

1914-20, 1924-1950; Maximum discharge 3,160 second-feet May 12, 1941; minimum 4.6 second-feet November 12, 1950.

Remarks.- Records considered good except those during periods of ice effect January 1 to March 16, December 1-31, which were computed on basis of 6 discharge measurements and weather records and are fair. Diversions for irrigation above station.

Month	foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	480.5	-	-	15.5	953
February	490.0	-	-	17.5	972
March	1,158	53	24	37.4	2,300
April	10,074	671	48	336	19,980
May	9,101	507	210	294	18,050
June	4,217	254	49	141	8,360
July	999	52	18	32.2	1,980
August	376.0	22	7.8	12.1	746
September	388.7	24	7.8	13.0	771
October	461.8	39	9.9	14.9	916
November	411.5	27	4.6	13.7	816
December	558	-	-	18	1,110
Year 1950	28,715.5	671	-	78.7	56,950

MONTHLY SUMMARY OF DISCHARGE

RIO CHAMA BELOW EL VADO DAM, NEW MEXICO

Location. - Water-stage recorder, lat. 36° 34' 50", long. 106° 43' 30", in NW¼ Sec. 15, T. 27 N., R. 2 E., (projected) 1.5 miles downstream from El Vado Dam, 217 miles upstream from Rio Nutrias and 13 miles southwest of Tierra Amarilla.

Records Available.- October 1935 to December 1950.

Extremes.- Maximum discharge during year 1,670 second-feet Feb. 2 (gage height 4.18 feet); minimum daily 1.8 second feet September 29-30.

1935-50: Maximum discharge 6,010 second-feet May 17, 1941 (gage height 6.89 feet); maximum gage height 9.63 feet May 30, 1937, site and datum then in use; minimum daily discharge 0.9 second-feet Dec. 30, 1946.

Remarks.- Records good above 10 second-feet, fair below. Diversions above station for irrigation. Flow regulated by El Vado Reservoir.

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	493	18	13	15.9	978
February	39,598	1,580	13	1,414	78,540
March	39,130	1,400	1,060	1,262	77,610
April	9,653.5	1,020	6.2	322	19,150
May	5,977	785	12	193	11,860
June	12,525	425	405	418	24,840
July	7,351.9	410	8.2	237	14,580
August	15,512	1,210	7.8	500	30,770
September	3,072.7	910	1.8	102	6,090
October	2,779.9	586	1.2	89.7	5,510
November	112.2	4.1	3.4	3.74	223
December	109.0	3.8	3.1	3.52	216
Year 1950	136,314.2	1,580	1.2	373	270,400

SANTA FE CREEK NEAR SANTA FE, NEW MEXICO

Location.- Water-stage recorder and concrete control, lat. 35° 41' 15", long. 105° 50' 35", in NE¼SE¼ Sec. 23, T. 17 N., R. 10 E., about 0.4 mile downstream from McClure Dam (name changed) and 5½ miles east of Santa Fe. Prior to October 1, 1947 at site 0.3 mile upstream at different datum.

Records Available.- May to June 1910 at site 3 miles downstream. January 1910 to December 1950.

Acreage Discharge. - 21 years (1930-50), 7.72 second-feet.

Extremes.- Maximum daily discharge during year 13 second-feet June 16-26; minimum daily 1.2 second-feet December 3-13.

1930-1950: Maximum discharge, 418 second-feet April 23, 1942 (gage height 3.51 feet, site and datum then in use) from rating curve extended above 150 second-feet; minimum daily, 0.2 second-feet Dec. 3-14, 16-29, 1943.

Remarks.- Records good except those for periods of no gage height record, which are fair. Flow regulated by McClure Reservoir. No diversion above station.

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in Acre-feet
January	128.8	5.5	2.4	4.15	255
February	71.7	4.2	-	2.56	142
March	77.5	-	-	2.5	154
April	75.0	-	-	2.5	149
May	79.6	3.5	2.4	2.57	158
June	269.2	13	3.5	8.97	534
July	236.0	12	4.4	7.61	468
August	135.2	4.8	3.7	4.36	268
September	112.0	3.9	3.3	3.73	222
October	92.8	3.3	2.5	2.99	184
November	52.6	2.5	1.3	1.75	104
December	101.6	6.3	1.2	3.28	202
Year 1950	1,432.0	13	1.2	3.92	2,840

STORAGE IN RESERVOIRS

SQUAW LAKE RESERVOIR - Dam and staff gage located in approximate Sec. 12, T. 39 N., R. 4 W., N.M.P.M., on Squaw Lake. Total capacity of reservoir, 158 acre-feet as determined by original survey. Water used for irrigation of lands below the Del Norte gaging station.

TROUTVALE NO. 2 RESERVOIR - Dam and staff gage located in Sec. 10, T. 41 N., R. 3 W., N.M.P.M., on South Clear Creek. Total capacity of reservoir, 435 acre-feet as determined by original survey. Water is used for fish culture with only occasional sale for irrigation.

FUCHS RESERVOIR - Dam and staff gage located in Secs. 2 and 11, T. 37 N., R. 4 E., N. M.P.M., on Pinos Creek. Total capacity of reservoir, approximately 249 acre-feet. Water used for irrigation of lands adjacent to Pinos Creek

Last Day of	SQUAW LAKE			TROUT VALE NO. 2			FUCHS					
	Gage-Height Ft.	Contents Ac.-Ft.	Change Ac.-Ft	Gage-Height Ft.	Contents Ac.-Ft.	Change Ac.-Ft.	Gage-Height Ft.	Contents Ac.-Ft.	Change Ac.-Ft.			
Dec.'49	0	0		7.6	257		6.9	50				
Jan.'50	1.5	25	+25	7.6	257	0	6.9	50	0			
Feb.	2.0	34	+ 9	7.6	257	0	9.1	80	+ 30			
Mar.	3.0	50	+16	7.6	257	0	12.1	130	+ 50			
Apr.	5.5	95	+45	7.6	257	0	17.2	237	+107			
May	8.5	149	+54	7.6	257	0	17.2	237	0			
June	8.5	149	0	7.6	257	0	16.3	219	- 18			
July	4.0	68	-81	7.6	257	0	12.6	139	- 80			
Aug.	0	0	-68	7.6	257	0	0	0	-139			
Sep.	0	0	0	7.6	257	0	0	0	0			
Oct.	0	0	0	7.6	257	0	0	0	0			
Nov.	5	8	+ 8	7.6	257	0	2.3	7	+ 7			
Dec.	1.0	16	+ 8	7.6	257	0	4.8	27	+ 20			
			+16			0			+ 27			

CARSON RESERVOIR - Dam and water-stage recorder located in NW$\frac{1}{4}$ Sec. 12, T. 25 N., R. 10 E., on Aguaje de la Petaca. Total capacity of reservoir 5,684 acre-feet as determined by survey of 1941. Water used for irrigation of lands of the Carson Reclamation District. Completed 1940.

EL VADO RESERVOIR - Dam and water-stage recorder (staff gage only below elevation 6,878.0 feet) located in SE$\frac{1}{4}$ Sec. 4, T. 27 N., R. 2 E., on Rio Chama. Total capacity of reservoir, 197,530 acre-feet at elevation 6,902.0 feet (top of spillway gates) as determined by survey of 1944.

MCCLURE (formerly GRANITE POINT) RESERVOIR ENLARGEMENTS - Dam and staff gage in SW$\frac{1}{4}$ Sec. 24, T. 17 N., R. 10 E., in Santiago Ramirez Grant, on Santa Fe Creek. Original reservoir, capacity 561 acre-feet, was completed in 1926 and is not subject to Compact administration; in 1935 permanent flash boards were installed in spillway increasing capacity to 650 acre-feet; in 1947 both dam and spillway were raised increasing total capacity to 2,614 acre-feet.

NICHOLS RESERVOIR - Dam, staff gage and water-stage recorder located in NE$\frac{1}{4}$ Sec. 21, T. 17 N., R. 10 E., on Santa Fe Creek. Total capacity of reservoir, 796 acre-feet as determined by original survey in 1942. Water is for municipal use in Santa Fe. Completed in 1942.

Last Day of	CARSON			EL VADO			MC CLURE (GRANITE POINT) 1935 and 1949 ENLARGEMENTS			NICHOLS		
	Gage-Height Ft.	Contents Ac.-Ft.	Change Ac.-Ft	Gage-Height Ft.	Contents Ac.-Ft.	Change Ac.-Ft.	Gage-Height Ft.	Contents Ac.-Ft.	Change Ac.-Ft.	Gage-Height Ft.	Contents Ac.-Ft.	Change Ac.-Ft
Dec'49	0	0		6889.6	159,900		-	1,830		166.9	682	
Jan.'50	0	0	0	90.2	161,600	+1,700	81.2	1,630	- 200	167.8	710	+ 28
Feb.	0	0	0	60.2	92,010	-69,590	79.8	1,550	- 80	167.4	689	- 12
Mar.	0	0	0	09.2	25,320	-66,690	78.3	1,470	- 80	164.3	606	- 92
Apr.	0	0	0	42.4	63,080	+37,760	78.9	1,500	+ 30	158.1	447	-159
May	0	0	0	58.1	88,220	+25,140	79.5	1,540	+ 40	150.4	286	-161
June	0	0	0	51.6	77,180	-11,040	70.4	1,080	- 460	151.9	315	+ 29
July	0	0	0	44.2	65,700	-11,480	61.5	724	- 356	158.4	454	+139
Aug.	0	0	0	20.7	36,080	-29,620	56.1	556	- 168	151.2	302	-152
Sep.	0	0	0	14.7	30,180	- 5,900	50.2	403	- 153	145.2	205	- 97
Oct.	0	0	0	08.8	24,990	- 5,190	43.9	271	- 132	132.2	68	-137
Nov.	0	0	0	11.2	27,030	+ 2,040	40.0	204	- 67	128.3	42	- 26
Dec.	0	0	0	13.8	29,350	2,320	-	46	- 158	123.1	20	- 22
Year			0			-130,550			-1784			-662

STORAGE IN RESERVOIRS
1950

ACOMITA RESERVOIR - Dam and Staff gage located in SE¼ Sec. 29, T. 10 N., R. 7 W., on San Fidel Arroyo; water for reservoir is diverted from Rio San Jose. Total capacity of reservoir, 850 acre-feet as determined by original survey in 1937. Water is used for irrigation of lands on Acoma and Laguna Indian Reservation. Completed 1938.

NEW LAGUNA RESERVOIR - Dam and Staff gage located in SW¼ Sec. 1, T. 9 N., R. 6 W., on Rio San Jose. Total capacity of reservoir, 683 acre-feet as determined by survey in 1938. Water used for irrigation of lands on Laguna Indian Reservation. Completed 1934.

PAGUATE RESERVOIR - Dam and Staff gage located in NE¼ Sec. 26, T. 10 N., R. 5 W., on Paguate Creek. Total capacity of reservoir 976 acre-feet as determined by original survey. Water used for irrigation of lands on Laguna Indian Reservation. Completed 1938.

Last Day of	ACOMITA			NEW LAGUNA			PAGUATE					
	Gage-Height Ft	Contents Ac.-Ft.	Change Ac.-Ft.	Gage-Height Ft.	Contents Ac.-Ft.	Change Ac.-Ft.	Gage-Height Ft.	Contents Ac.-Ft	Change Ac.-Ft.			
Dec.'49	-	790		-	220		-	0				
Jan.'50	-	833	+ 43	-	210	-10	-	0				
Feb.	-	840	+ 7	-	170	-40	-	0				
Mar.	-	844	+ 4	-	130	-40	-	0				
Apr.	-	687	-157	-	90	-40	-	0				
May	-	491	-196	-	50	-40	-	0				
June	-	350	-141	-	10	-40	-	0				
July	-	293	- 57	-	0	-10	-	0				
Aug.	-	256	- 37	-	0	0	-	0				
Sep.	-	219	- 37	-	0	0	-	0				
Oct.	-	0	-219	-	0	0	-	86				
Nov.	-	260	+260	-	0	0	-	48				
Dec.	-	265	+ 5	-	0	0	-					
Year			-525			-220						

ELEPHANT BUTTE RESERVOIR - Dam and gages located in NW¼ Sec. 30, T. 13 S., R. 3 W., on Rio Grande. Total capacity of reservoir, 2,197,600 acre-feet as determined by survey in 1946. Water is used for power development and irrigation in New Mexico and Texas.

CABALLO RESERVOIR - Dam and gages located in SW¼ Sec.19, T. 16 S., R. 4 W., on Rio Grande. Total capacity of reservoir, 345,870 acre-feet as determined by original survey. Water is used to irrigate lands in New Mexico and Texas.

PROJECT STORAGE - The combined storage of Elephant Butte and Caballo Reservoirs. Total Project Storage capacity, 2,543,470 acre-feet in Caballo Reservoir is for flood control.

Contents in thousands of acre-feet

Last Day of	ELEPHANT BUTTE			CABALLO			PROJECT STORAGE					
	Gage-Height Ft.	Contents Ac.-Ft	Change Ac.-Ft	Gage-Height Ft.	Contents Ac.-Ft	Change Ac.-Ft	Gage-Height Ft.	Contents Ac.- Ft	Change Ac.-Ft.			
Dec.'49	4339.71	620.9		4166.41	194.7			815.6				
Jan.'50	38.73	607.8	- 13.1	71.82	240.4	+ 45.7		848.2	+ 32.6			
Feb.	41.81	650.5	+ 42.7	74.87	270.1	+ 29.7		920.6	+ 72.4			
Mar.	42.18	656.2	+ 5.7	69.68	220.8	- 49.3		877.0	- 43.6			
Apr.	39.39	616.9	- 39.5	66.38	194.4	- 26.4		811.1	- 65.9			
May	33.78	541.7	- 75.0	63.44	171.3	- 23.1		713.0	- 98.1			
June	27.00	457.5	-84.2	60.10	146.2	- 25.1		603.7	-109.3			
July	21.76	397.8	- 59.7	58.35	134.2	- 12.0		532.0	- 71.7			
Aug.	17.65	354.5	- 43.3	42.74	55.5	- 78.7		410.0	-122.0			
Sep.	15.55	333.4	- 21.1	38.96	43.1	- 12.4		376.5	- 33.5			
Oct.	15.15	329.5	- 3.9	42.51	54.6	+ 11.5		384.1	+ 7.6			
Nov.	14.51	323.2	- 6.3	44.96	63.8	+ 9.2		387.0	+ 2.9			
Dec.	15.75	335.4	+ 12.2	46.65	70.6	+ 6.8		406.0	+ 19.0			
Year			-285.5			-124.1						

TRANSMOUNTAIN DIVERSIONS
1950

WEMINUCHE PASS (East Ditch) Fuchs

Bristol 8-day recorder and 3-foot wooden Parshall flume. Ditch crosses Continental Divide at Lat. 37° 41' N., Long. 107°19' W., in Sec. 4, T. 39 N., R.4 W, (projected survey), 25 miles southwest of Creede, Colorado. Diversion originates on North Fork of the Rio de los Pinos, a tributary to the San Juan River; empties into Weminuche Creek, a tributary of the Rio Grande. Diversion is from Rio Grande above the Del Norte gaging station.

Month	Second-foot-days	Maximum	Minimum	Mean	Discharge in Acre-Feet
May	-	-	-	-	0
June	-	-	-	-	199
July	-	-	-	-	114
August	-	-	-	-	48
Sept.	-	-	-	-	0
Total	-	-	-	-	361

WEMINUCHE PASS (West Ditch) FABER-LOHR

Bristol 8-day recorder and 4-foot wooden rectangular flume. Ditch crosses Continental Divide at Lat. 37° 41' N., Long. 107°19'W., in Sec. 4 T. 39 N., R. 4 W., (projected survey), 25 miles southwest of Creede, Colorado. Diversion originated on left bank of Rincon La Vaca Creek, a tributary of the Rio de los Pinos in the San Juan River Basin; empties into Weminuche Creek, a tributary of the Rio Grande. Diversion is from Rio Grande above the Del Norte gaging station.

Month	Second-foot-days	Maximum	Minimum	Mean	Discharge in Acre-feet
May	-	-	-	-	0
June	-	-	-	-	621
July	-	-	-	-	214
August	-	-	-	-	104
Sept.	-	-	-	-	37
Total	-	-	-	-	976

TABOR

Bristol 8-day recorder and 3-foot steel Parshall flume. Ditch crosses Continental Divide at Lat. 37° 56' N., 107°11' W., in Sec. 34, T. 43 N., R. 3 W., (projected survey), adjacent to Colorado State Highway No. 149, 14 miles northwest of Creede, Colorado. Diversion originates from right bank of Cebolla Creek, a tributary to the Gunnison River; empties into Deep Creek, a tributary to Clear Creek in the Rio Grande Basin. Diversion is from Rio Grande above the Del Norte gaging station.

Month	Second-foot-days	Maximum	Minimum	Mean	Discharge in acre-feet
May	-	-	-	-	0
June	-	-	-	-	197
July	-	-	-	-	58
August	-	-	-	-	0
September	-	-	-	-	0
Total	-	-	-	-	255

SQUAW PASS

Bristol 8-day recorder and 2-foot wooden Parshall flume. Ditch crosses Continental Divide at Lat. 37° 36' N., Long. 107°13' W., 24 miles southwest of Creede, Colorado. Diversion intercepts headwaters of Williams Creek, a tributary of Huerto Creek in the San Juan Basin; empties into Squaw Creek, a tributary of the Rio Grande above the Del Norte gaging station. Diversion is from Rio Grande below the Del Norte gaging station.

Month	Second-foot-days	Maximum	Minimum	Mean	Discharge in acre-feet
May	-	-	-	-	0
June	-	-	-	-	135
July	-	-	-	-	73
August	-	-	-	-	0
September	-	-	-	-	0
Total	-	-	-	-	208

TREASURE PASS

Bristol 8-day recorder and 2-foot wooden Parshall flume. Ditch crosses Continental Divide at Lat. 37° 29' N., Long. 106°48' W., in Sec. 32, T. 38 N., R. 2 E., (projected survey), adjacent to U. S. Highway No. 160 on the summit of Wolf Creek Pass, 17 miles southwest of South Fork, Colorado. Diversion originates on Wolf Creek, a tributary to South Fork in the Rio Grande Basin. Diversion is from the Rio Grande below the Del Norte gaging station.

Month	Second-foot-days	Maximum	Minimum	Mean	Discharge in acre-feet
May	-	-	-	-	0
June	-	-	-	-	69
July	-	-	-	-	0
August	-	-	-	-	0
September	-	-	-	-	0
Total	-	-	-	-	69

PIEDRA PASS

Bristol 8-day recorder and 2-foot metal Parshall flume. Ditch crosses Continental Divide at Lat. 37° 35' N., Long. 107°00' W., in Sec. 4, T. 38 N., R. 1 W., (projected survey), 20 miles south of Creede, Colorado. Diversion originates on the headwaters of the Piedra River, a tributary to the West Fork of the San Juan River in the San Juan Basin; empties into South River, a tributary to the Rio Grande. Diversion is from the Rio Grande above the Del Norte gaging station.

Month	Second-foot-days	Maximum	Minimum	Mean	Discharge in acre-feet
May	-	-	-	-	0
June	-	-	-	-	0
July	-	-	-	-	0
August	-	-	-	-	0
September	-	-	-	-	0
Total	-	-	-	-	0

EVAPORATION

The last paragraph of Article VI of the Compact states in part, --- "such credits and debits shall be reduced annually to compensate for evaporation losses in the proportion that such credits or debits bear to the total amount of water in such reservoirs during the year."

To provide the data needed for the computation of such evaporation losses the Commission has encouraged the establishment and operation of evaporation stations near each major reservoir in the basin and at other selected locations.

Evaporation and other climatological data collected at the several stations in Colorado and New Mexico are tabulated on the next page. At some of the stations it was not possible to obtain evaporation records throughout the winter period.

The measurements of evaporation were made in accordance with standard practice for the type of pan in use. Measurements of precipitation were made in standard 8-inch rain gages, which were supplemented at some of the stations by recording rain gages.

Records for the evaporation stations at Agricultural College, Elephant Butte Dam and El Vado Dam antedated the creation of the Commission; the station at Bosque del Apache was established for the U.S. Fish and Wildlife Service. All others were established at the request of the Commission.

The Rio Grande Compact Commission gratefully acknowledges the cooperation of the U. S. Weather Bureau for furnishing the climatological records contained in this report.

EVAPORATION AND PRECIPITATION
1950

WAGON WHEEL GAP, COLORADO - In Minderal County, elevation 8,500 feet, lat. 37°46', long. 106° 49', near Creede. Standard Class A pan anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages.

CONEJOS DAM, COLORADO - In Conejos County, elevation 8,500 feet, lat. 37°04', long. 106° 16', 15 miles west of Antonito. Standard Class A pan, anemometer, maximum and minimum thermometers, and standard 8-inch rain gage.

SAN LUIS LAKES, COLORADO - In Alamosa County, elevation 7,530 feet, lat. 37° 39', long. 105° 48', Standard Class A pan, anemometer, maximum and minimum thermometers and standard 8-inch rain gage.

EL VADO DAM, NEW MEXICO - In Rio Arriba County, elevation 6,796 feet, lat. 36° 36', long. 106° 44', at El Vado Dam near Tierra Amarilla. Standard Class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages.

SANTA FE, NEW MEXICO - In Santa Fe County, elevation circa 6900 feet, lat. 35° 40', long. 105° 58', 1½ miles southwest of Santa Fe. Standard Class A pan, anemometer, maximum and minimum thermometers and standard 8-inch rain gage.

BOSQUE DEL APACHE, NEW MEXICO - In Socorro County, elevation 4,520 feet, lat. 33°46', long. 106°54', 7 miles south of San Antonio, Standard Class A pan, anemometer, maximum and minimum thermometers, standard 8-inch rain gage.

ELEPHANT BUTTE DAM, NEW MEXICO - In Sierra County, elevation 4,576 feet, lat. 33° 09', long. 107° 11', 4 miles northeast of Hot Springs. Standard Class A pan, anemometer, maximum and minimum thermometers and standard 8-inch rain gage.

CABALLO DAM, NEW MEXICO - In Sierra County, elevation 4,190 feet, lat. 32° 54', long. 107° 18', at Caballo Dam and 16 miles south of Hot Springs. Standard Class A pan, anemometer, maximum and minimum thermometers, standard 8-inch and recording rain gages.

AGRICULTURAL COLLEGE, NEW MEXICO - In Dona Ana County, elevation 3,909 feet, lat. 32°17' long. 106°45', 3 miles south of Las Cruces, at State College. Standard Class A pan, anemometer, maximum and minimum thermometers, standard 8-inch rain gage.

STATION		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
WAGON WHEEL GAP, COLO.	EVAP.	-	-	-	-	-	9.81	6.88	6.87	5.62	-	-	-	-
	PRECIP.	.53	.17	.13	.25	.10	.64	1.39	.43	1.24	.45	.20	.25	5.78
CONEJOS DAM, COLO.	EVAP.	-	-	-	-	-	-	5.00	5.80	-	-	-	-	-
	PRECIP.	4.18	1.14	1.25	1.36	.30	.87	4.10	1.12	2.76	1.09	1.29	.35	19.81
SAN LUIS LAKES, COLO.	EVAP.	-	-	4.65	7.78	9.57	11.03	-	-	6.39	5.94	-	-	-
	PRECIP.	.01	.19	.04	.07	.06	1.15	1.39	1.01	1.07	.13	T	.09	5.21
EL VADO DAM, N. MEX.	EVAP.	-	-	-	-	-	11.16	8.33	8.25	-	-	-	-	-
	PRECIP.	1.17	.54	.84	.60	.11	.90	1.29	.33	1.66	.20	.36	-	-
SANTA FE, N. MEX.	EVAP.	-	-	-	-	9.82	10.20	-	-	-	-	-	-	-
	PRECIP.	1.04	-	.05	.29	.03	-	4.22	1.47	1.22	.27	T	T	-
BOSQUE DEL APACHE, N.M.	EVAP.	4.13	4.76	9.92	12.29	14.91	14.55	10.95	11.38	7.97	6.51	6.04	3.91	107.32
	PRECIP.	T	.04	.08	.10	.01	.33	2.35	2.18	1.40	.81	0.00	0.00	6.53
ELEPHANT BUTTE DAM, N.M.	EVAP.	5.42	5.28	10.61	13.64	16.64	19.08	12.57	12.94	11.18	8.64	5.91	4.21	126.12
	PRECIP.	0.00	T	0.00	.05	0.00	.28	3.50	.44	2.51	.50	0.00	0.00	7.28
CABALLO DAM, N. M.	EVAP.	5.12	5.51	10.74	13.47	16.58	18.20	11.42	13.49	11.16	8.12	5.72	4.25	123.78
	PRECIP.	0.00	.03	.04	.03	0.00	.04	3.14	.10	1.48	.58	0.00	0.00	5.44
AGRICULTURAL COLLEGE, N. M.	EVAP.	3.80	4.73	9.15	11.59	13.25	14.37	10.99	11.43	8.63	6.81	-	4.00	-
	PRECIP.	.11	.48	T	T	.06	.25	2.41	.51	1.14	.38	0.00	0.00	5.34

BUDGET
for
FISCAL YEAR ENDING JUNE 30, 1952
ADOPTED AT ELEVENTH ANNUAL MEETING
FEBRUARY 24, 1951

ITEM	Total Cost	Borne by United States	Borne by States		
			Colorado	New Mexico	Texas
Gaging Stations					
In Colorado	$ 3,500	$ 1,700	$ 1,800		
In New Mexico - Above Caballo Reservoir	8,000	5,600		$ 2,400	
" " " - Caballo Reservoir and below	2,200	100			$ 2,100
Sub-total	$13,700	$ 7,400	$ 1,800	$ 2,400	$ 2,100
Administration					
U.S.G.S. Contract	4,000	400	1,200	1,200	1,200
Other expenses	1,200		400	400	400
Sub-total	$ 5,200	$ 400	$ 1,600	$ 1,600	$ 1,600
Total of Budget	$18,900				
Borne by United States	7,800	$ 7,800			
Balance - Borne by States	11,100		$ 3,400	$ 4,000	$ 3,700
Shares of Each State	11,100		3,700	3,700	3,700
Cash Adjustment			Dr $ 300	Cr $ 300	$ 0

COST OF OPERATION
for
FISCAL YEAR ENDING JUNE 30, 1950

ITEM	Total Cost	Borne by United States	Borne by States		
			Colorado	New Mexico	Texas
Gaging Stations					
In Colorado	$ 3,500	$ 1,700	$ 1,800		
In New Mexico - Above Caballo Reservoir	8,000	5,600		$ 2,400	
" " " - Caballo Reservoir and below	2,200	100			$ 2,100
Sub-total	$13,700	$ 7,400	$ 1,800	$ 2,400	$ 2,100
Administration					
U.S.G.S. Contract	4,900	400	1,500	1,500	1,500
Other expenses	63			63	
Sub-total	$ 4,963	$ 400	$ 1,500	$ 1,563	$ 1,500
Total Cost of Operation	$18,663	$ 7,800	$ 3,300	$ 3,963	$ 3,600
Borne by United States	7,800				
	10,863				
Balance - Borne by States			3,300	3,963	3,600
Shares of States			3,621	3,621	3,621
Cash Adjustment			Dr $ 321	Cr $ 342	Dr $ 21

ERRATA

The Minutes of the Sixth Annual (Sixteenth) Meeting of the Rio Grande Compact Commission state in part:

> "---factual data used in the compilation of reports of the Commission which factual data had been revised and published by the U.S.G.S. ----- subsequent to use by the Compact Commission in computing debits and credits should be published in succeeding reports of the Commission together with proper explanatory notes."

The Rio Grande Compact provides that the Annual Report of the Commission for each calendar year shall be transmitted to the Governors of the signatory states before March first of the following year. Although every effort is made to furnish correct data to the Commission for use in their report, the limited time available to the collecting agency does not permit a thorough analysis of the data and they are necessarily subject to revision.

The Commission bases all computations of debits and credits on volumes in thousands of acre-feet, expressed to the nearest hundred. A check was made of all records published in these annual reports against those published by the U.S.G.S. and it was found that in most instances the changes were not of sufficient magnitude to affect the computations of debits and credits; other changes were of items not used by the Commission; but whenever a corrected value affected the computations of credits or debits, such revisions are listed hereafter. The effect of changes or revisions on the credits, debits or departures from normal release have been adjusted from time to time by appropriate correction entries.

The figures shown in the following list are the corrected values in run-off in acre-feet for the periods indicated.

Rio Grande near Del Norte, Colorado

1945 December 7,350; year 538,400.

Rio Grande near Lobatos, Colorado

1943 December 14,820; year 183,500.

1945 December 14,890; year 276,800.

Rio Grande at Otowi Bridge, near San Ildefonso, New Mexico

1945 Year 1,131,500.

Rio Grande at San Marcial, New Mexico

1944 May 324,300; June 259,800; year 1,024,500.

1945 May 380,500, November 21,150, year 814,400.

Rio Grande below Caballo Dam, New Mexico

1946 October 10,690; year 763,600.

Conejos River near Mogote, Colorado

1945 December 2,520; year 239,100.

Conejos River near Los Sauces, Colorado

1944 October 1,860; December 2,690, year 223,600.

Los Pinos River near Ortiz, Colorado

1943 May 26,390.