

Memoranda on Behalf of the Committee of Fourteen
of the Seven Colorado River Basin States

In Explanation and Support of Resolution
Adopted by the Committee on
June 20, 1942

Relating to an Apportionment of
the Waters of the Colorado River
to Mexico

JULY 27, 1942

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Definitions of Units of Water Measurement

A second foot, or cubic second foot, is a unit of measurement of the rate of flow of water past a given point. It means a flow of one cubic foot of water in each second of time. It equals 7.48 U. S. gallons per second, 646,317 U. S. gallons, or 1.983 acre feet, per day, or 235,905,705 U. S. gallons, or 723.795 acre feet, per year.

An acre foot is a unit of measurement of volume of water. It means the volume which will cover one acre to a depth of one foot. It equals 43,560 cubic feet.

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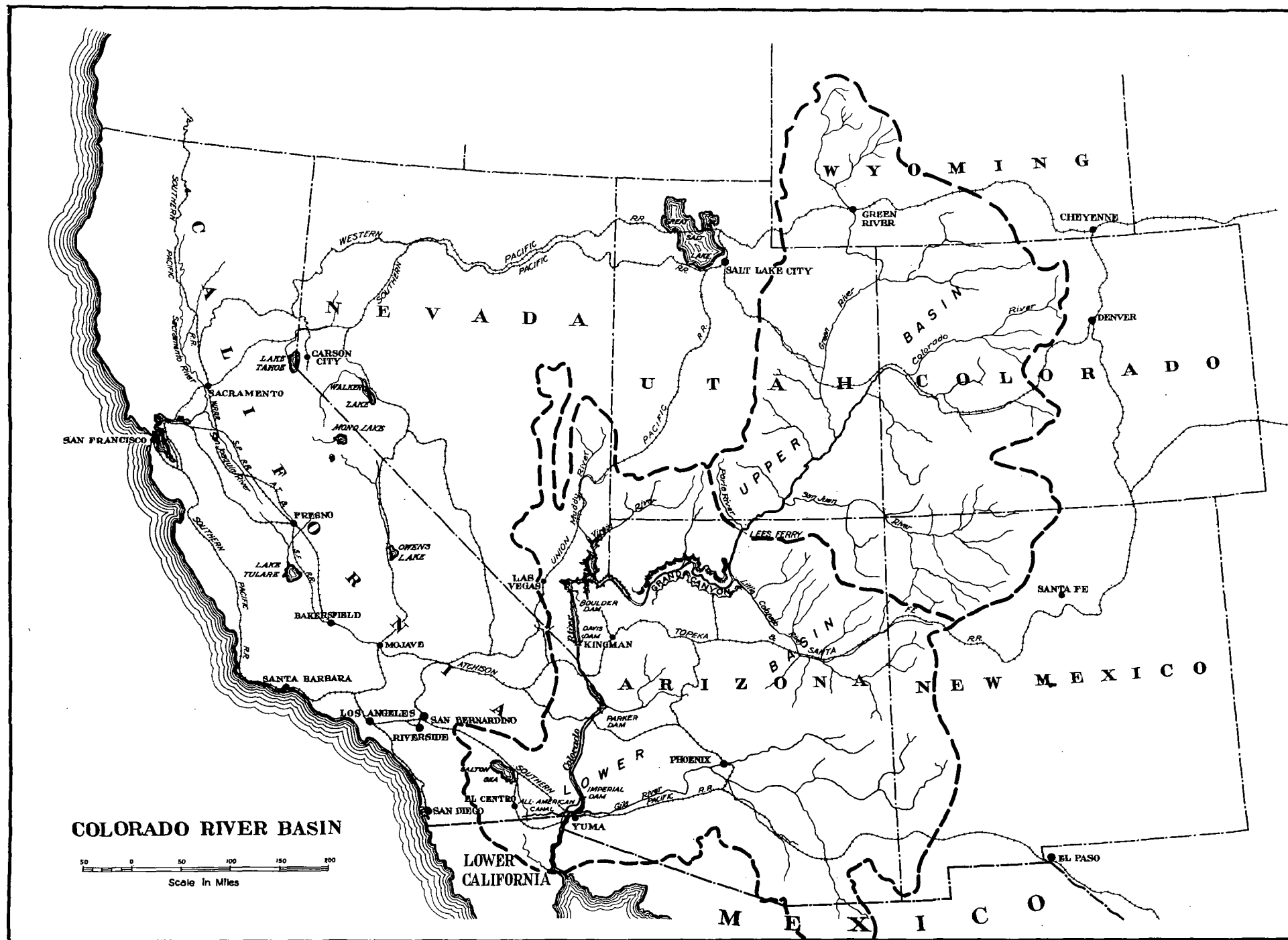
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PART ONE

Memorandum re Physical and Factual Data Affecting
a Treaty with Mexico for Apportionment of Colorado
River Water.

I.

THE COLORADO RIVER DRAINAGE BASIN

Description of Basin

The area of the drainage basin of the Colorado River in the United States comprises approximately one thirteenth of the total area of this country. It includes portions of the states of Wyoming, Colorado, Utah, New Mexico, Nevada, Arizona, and California, covering a total of 242,000 square miles. The basin in Mexico includes about 2,000 square miles, making the grand total area 244,000 square miles.

The river rises in Wyoming and Colorado and empties into the Gulf of California, a distance by river of over 1,200 miles. By far the major portion of the water supply comes from the upper part of the basin, the lower third of the basin being mostly a desert region with a very small rainfall. Mexico contributes no part of the water supply of the River.

A map of the Basin (Exhibit 1) is shown on the page opposite.

The Colorado River Compact

It had long been recognized that by reason of the tremendous possibilities of use and needs of the water of the River for irrigation, domestic, power, mining, and industrial purposes within the basin proper and adjacent areas in the United States, the available water supply would be insufficient. This led to a series of conferences between representatives of the seven basin states and the United States, resulting in an agreement, known as the Colorado River Compact, dated November 24, 1922, providing for a division of the water. (H. Rep. No. 918, 70th Cong., 1st Sess., March 15, 1928, p. 32). This Compact was subsequently ratified by six of the seven states and approved by the United States. The Compact, together with the Boulder Canyon Project Act (45 Stat. 1057) passed by Congress in 1928, as supplemented by the Boulder Canyon Project Adjustment Act adopted in 1940 (54 Stat. 744), is now considered the law of the River.

Nature has divided the basin into two parts, geographically. Between these parts the River and its tributaries are in deep canyons surrounded by high, rough terrain where irrigation is not possible. This division was recognized in the Compact, which separates the basin into two parts, the "Upper Basin" being that part of the area from

which the water drains into the Colorado River system above Lee Ferry, a point in the north central portion of Arizona. The "Lower Basin" is that part draining into the River below Lee Ferry. The "Colorado River System" is defined as that part of the Colorado River and its tributaries within the United States.

The Compact apportions in perpetuity from the Colorado River system to the Upper Basin and to the Lower Basin, respectively, the beneficial consumptive use of 7,500,000 acre feet per annum. In addition, the Lower Basin is given the right to increase its use by 1,000,000 acre feet per annum, making a total for that basin of 8,500,000 acre feet per annum.

Use of Compact Allocations

Although the "comprehensive plan" of development of the River (Section 15, Project Act; Section 2(d), Adjustment Act, supra.) has not been completed, it is known that substantially all if not the entire amount of water allocated to the Upper Basin under the Compact will be put to use. In fact, there is a question in the minds of some as to whether the allocation will prove to be sufficient to meet the demands. In recent years, the need of additional trans-mountain diversions has increased rapidly as a means of supplementing available water

supplies in areas outside of the River basin proper. As time passes, new uses for water are found in connection with mining and industrial developments. Projects which a few years ago were considered as infeasible because of costs are becoming feasible by reason of a change in economic conditions coupled with the use of the water for the development of power as a by-product.

The allocation to the Lower Basin under the Compact is not sufficient to meet even the requirements of present existing projects in that Basin, which are now constructed or under construction, without any allowance for other feasible projects now planned and which should be developed.

As has been stated many times heretofore and is of such vital importance that it is repeated here for emphasis, the total water supply of the Colorado River is not sufficient to meet the requirements of possible developments in the United States alone, even if there were no allocation of water to Mexico. This means that any allocation of water to Mexico will result in a sacrifice of projects in the United States. Putting it another way, for every acre of land irrigated in Mexico from the Colorado River, an acre of land in the United States must perpetually remain barren desert.



EXHIBIT 2.

II.
GEOGRAPHY AND HISTORY
OF DEVELOPMENT OF THE DELTA

It is most important that a full understanding be had of the various factors relative to the delta of the Colorado River, and their relation to the suggested plan for the allocation of the waters of the River between the United States and Mexico. As shown on the map opposite (Exhibit 2), the delta begins at approximately the intersection of the California-Mexico boundary with the River, and extends from that point to the west and north into Imperial and Coachella valleys, and to the south to the Gulf of California. It will be noted that high mesas, or mountains, confine the delta within rather definite limits.

Delta Formation

In its natural condition, the Colorado River was one of the largest silt-carrying streams in the world, its silt content being three times that of the Ganges, ten times that of the Nile, and seventeen times that of the Mississippi, with a total of some 140,000 acre feet of silt a year passing into the delta. This quantity is sufficient to cover 140,000 acres to a depth of one foot, each year.

Before the advent of man and his attempts to develop the delta, the River was free to flow as it pleased, and did from time to time flow, either to the west and north into Imperial Valley, or to the south into the Gulf. One of the outstanding characteristics of the River is that in the delta it always runs on a ridge. The reason for this is that, the main channel of the River not being large enough to accommodate the floods, the River overflows its banks during the flood season to a depth of from a few inches to several feet, the overflow depositing the coarser silt close to the River channel and the finer silt at varying distances beyond the channel. Thus the River gradually builds up its bed and banks until a height is reached such that it becomes unstable and one of the many side channels develops to a size sufficient to divert the entire flow. During the past ages, in this manner, the entire delta region was built up of silt to great depths.

Protective Levee System

Although development of Imperial Valley in California and Mexicali Valley in Mexico commenced in 1901, for several years thereafter some overflow during flood seasons continued to reach the Salton Sea. From 1905 to 1907 the entire flow of the River poured through a break

in the river bank into Salton Sea. Following the closure of the break, the construction of an extensive system of River protective levees in Mexico was undertaken.

Development of the Yuma Valley in Arizona was also started during this period, requiring the construction of a levee along the east side of the River the entire length of that valley, as shown on the map of the delta (Exhibit 2). This levee eliminated over 50,000 acres of the area theretofore available to the River for overflow and deposition of silt. The first levee was constructed on the west side of the River in Mexico in 1907-08. It extended from the California-Mexico boundary south for a distance of about twelve miles and was known as the C. D. Levee. This prevented overflow from the upper portion of the River in Mexico reaching the Mexicali and Imperial Valleys through the Alamo Canal.

In 1908, in order to shut off the overflow from Volcano Lake in Mexico into New River and thence through Imperial Valley into Salton Sea, construction of the Volcano Lake Levee from Cerro Prieto to the northeast was started. This was built along the low, flat ridge which is the divide between the part of the delta draining into Salton Sea and that draining into the Gulf of California. For a number of years prior to 1909, the main course of the River had been along the easterly side of the delta,

although there had been indications that a major diversion to the west was imminent, as shown by the increasing amount of flood water which reached Volcano Lake each year. The diversion was effected in 1909, and, at the end of the flood season for that year, the entire flow of the river was passing down the Bee River into Volcano Lake.

Recognizing the danger of this diversion to both Imperial Valley and Mexicali Valley, an attempt was made in 1911 to put the River back on its old course along the east side of the delta, and for this purpose the Ockerson Levee was constructed from the end of the C. D. Levee southerly along the west side of the old channel for some 25 miles. However, the flood of that year destroyed almost all of the new levee and the River continued to flow into Volcano Lake. This is important, as it illustrates the difficulty of trying to "strait-jacket" the River, under natural flow conditions, and prevent it from overflowing its banks, in the manner already described.

During the next series of years, up until 1921, the Volcano Lake Levee was raised and lengthened a number of times, the Saiz Levee was constructed to prevent overflow from the Bee River to the north reaching the Alamo Canal, and the Ockerson Levee, from its origin to the Bee River, was rebuilt and strengthened.

However, as the deposition of silt raised the Volcano Lake area, with a consequent increase in River elevation above that point, the danger to the land to the west made it necessary to divert the River without waiting for it to do so itself. In 1921-22, the Bee River Levee, Pescadero Dam and Pescadero Cut were completed and the River was turned southward out of Volcano Lake. Attempts were then made to cultivate land in Volcano Lake, requiring the construction of the Rodriguez Levee starting near the end of the Pescadero Levee.

In 1929, American interests attempted to develop the land lying to the east of Pescadero Cut in Mexico. For this purpose they constructed a levee along the south side of the Bee River, known as the San Luis Levee, together with a canal, called the Vacanora Canal, diverting from Bee River near Pescadero Dam, thence running to the south for a number of miles. This was a further attempt to strait-jacket the River. Although it was on not as large a scale as in 1911, it was with the same results; the first flood broke through the San Luis Levee at a number of points and into Vacanora Canal. By the end of the 1929 flood season, the entire flow of the River was passing down the new canal and it is still the main channel of the River. Although this made the proposed development impossible, it did relieve for a time conditions

along the Rodriquez Levee, as otherwise it is very doubtful if that levee could have been held against the rapid increase in the height of water each year as the Pescadero cone built up.

Subsequent to 1929, and prior to the control of the River in 1935 by Boulder Dam, there were no floods of serious magnitude, and little additional levee work was required because of the low flow. However, in this period conditions developed to the point where, had it not been for Boulder Dam, it would have been but a short time before another diversion of the River would have been necessary, as well as a raising and strengthening of the entire levee system.

To those familiar with the work, it was apparent that the fight to control the River in the delta by levees was a losing game. Not only did it mean an increasing cost but the security of the lands to the west decreased year by year.

The Colorado's process of silt deposition in the delta was a perpetual process of nature. Against such a process man can struggle for only a limited time. It was only a question of time when the increasing heights of the levees, forced by the silting of the delta, would have reached the point beyond which they could not practically be raised. The inevitable result would have been

a break of the river to the West and an inundation of the Mexicali and Imperial Valleys. In that event, it is hardly possible that the river could be crowded back on the higher plane of its course across the delta to the Gulf. It cannot be said, therefore, that agriculture in the Mexicali and Imperial Valleys could be permanently maintained without Boulder Dam.

Restriction of Delta Area - Live Delta

This outline has been given to show that, since development commenced, the effect of the construction of the protective levee system has been to restrict very greatly the delta available to the River; first by the Yuma and C. D. levees, then by the Volcano Lake Levee which shut off the Mexicali and Imperial Valleys, and later by the Saiz, Ockerson, Bee River, Pescadero and Rodriquez levees.

As a matter of fact, the River could not have been held in such a small restricted area. The elevations and topography of certain parts such as the Volcano Lake area, as well as other factors, were such that under natural flow conditions, the most that would have been possible would have been a limiting of the flood plain to the area lying south of the Volcano Lake Levee and Saiz Levee. Even this represented a reduction in the area of the delta

by the works of man from an original area of about 2,000,000 acres to one of less than 500,000 acres lying south of the Volcano Lake and Saiz levees.

Without Boulder Dam, it would have meant that no longer could the River have been permitted to wander at will over the restricted delta but instead, in order to handle the 140,000 acre feet of silt a year, it would have been necessary to divert the River from one part of the area to another, thus spreading the silt as much as possible and holding to a minimum the rate of building up. This was what was done intentionally by construction of the Pescadero cut and unintentionally by construction of the Vacanora Canal. In other words, the restricted delta would be like a living thing, growing and spreading year by year and, hence, the reason for calling it the "live" delta. Moreover, it would have been necessary continually to raise the entire protective levee system from the International Boundary to the lower end of the Volcano Lake Levee to keep pace with the silting up of the live delta. Not only would this have entailed an ever-increasing cost, but the danger of breaks would have threatened more seriously each year as the delta and the levees grew higher. In ten years' time the amount of silt carried by the River, if deposited evenly over the live delta, would have raised the entire area three and a half feet.

The foregoing shows why the construction of Boulder Dam was just as important for the storing of silt as for the storing of water. Certainly, no development of the land within the area of the live delta, other than of a most temporary type, would have been possible without Boulder Dam. Even with Boulder Dam, such development will still be subject to damage from floods and silt until the Gila River is fully controlled. Although the amount of silt has been reduced to a comparatively small quantity, still that quantity will continue to deposit over the live delta and must be considered in planning any development.

Development of Delta in Mexico

In view of the foregoing, the area in the Colorado River delta in Mexico may be considered as divided into two classes: (a) that part which would have been susceptible of reasonably permanent development without a controlled River, herein called the "Mexicali Valley", and (b) the live delta, being that part lying south of the Volcano Lake and Saiz levees, in which any permanent development is possible only with the River fully controlled.

The first class (a) is the area developed prior to the construction of Boulder Dam, in which, after deducting for rough land, salt areas, sloughs, river channels, and

other nonirrigable areas, there is a net of about 200,000 acres which might be cropped permanently. The development of this area was practically completed by 1920, the crop report for that year showing 190,000 acres under irrigation. Other than a small additional acreage temporarily put under crop in the Volcano Lake area in later years, 200,000 acres was the limit of the development prior to the construction of Boulder Dam.

The diversion requirements of water for this area have varied from a maximum of 745,000 acre feet in 1925 to a minimum of 228,000 acre feet in 1932. The consideration of the years following 1930 would not give a proper picture, owing to the reduction in acreage caused by the economic depression of the thirties. A more representative period would be that from 1920 to 1930, inclusive, during which the average diversion requirements of water totaled about 600,000 acre feet per year. This was what the Mexican lands received from the natural flow of the River, and during this period there was but one year of shortage (1924). In other words, under what might be termed full development of the class (a) area, an average of 600,000 acre feet per year was sufficient to meet the irrigation requirements. Therefore, it would seem that if in the future Mexico were to receive a delivery of 600,000 acre feet as and

when needed, she would have as a certainty all that she had been able to obtain on the average under natural flow conditions and the risk of loss in years of shortage would be eliminated. Thus the stability of her agriculture would be greatly enhanced.

The course of development of the lands in the live delta, the area designated as class (b), has been sporadic. Prior to the construction of Boulder Dam, a few thousand acres were temporarily irrigated in the Volcano Lake area; about eight thousand acres in Sonora lying on the East of the old river channel had been fairly regularly irrigated from drainage waters of the Yuma Project, Arizona; and attempts had been made to develop other areas in the live delta, which attempts were shortly frustrated by floods, river meanderings and silt. Following control of the River by Boulder Dam in 1935, considerable development of easily reclaimed areas in the live delta was undertaken. About 100 pumping plants have been installed at various points along the river, its side channels and sloughs. These installations and the canals and structures used to irrigate a large number of small, scattered tracts, are of a most temporary character. Irrigation has been carried on with great difficulty. The river channel has shifted in many places; even small increases in the regulated river flow from Boulder have flooded large areas;

on the other hand, reduction in flow has left pumping plants high and dry. The development has been of a speculative, hit and miss type, not to be compared with the permanent and costly projects constructed on the American side of the line. One major reason for this difference lies in the fact that the class (b) lands lie under the menace of total destruction by a heavy flash flood from the Gila River, which has been recorded at flows in excess of 200,000 second feet.

Diversion and Use of Water in Mexico

When the Imperial Valley irrigation system was constructed, it was found most practicable to construct a diversion intake on American soil, a short distance north of the California-Mexico boundary and then use as a main canal an old overflow channel of the river, called the "Alamo River". This channel passed through Mexico for sixty miles and thence back into California. In 1904 Mexico required the operating company to procure a "concession" authorizing use of the Mexican section of the canal. This concession required delivery to Mexican lands, when demanded, of one-half of the water being transported through Mexico. It was granted to a private Mexican corporation and was not an obligation of either the State of California or the United States.

As a matter of fact, Mexico would at times have received much less water from the natural flow than it did, had it not been for the provisions of this concession.

It will be noted that at any time that facilities might be provided whereby it was not necessary to transport water to the Imperial Valley through Mexico, the provisions of the concession would no longer be of avail to Mexico. Mexico could only enforce the concession against her creature, the private corporation. Such facilities, consisting of the Imperial Dam and All-American Canal, have now been provided.

During all of these years, as has been stated, the diversion of water for Mexico has been made in the United States. Although several attempts were made to divert water in Mexico, not one proved successful. Mexico is now faced with the problem of diverting such water as may be granted to her by the United States. For twenty miles below the California-Mexico (upper) boundary, the River forms a common boundary between Mexico and Arizona through which strip it winds from one side to the other. Experience has shown that a satisfactory diversion by Mexico is not possible at any point along this strip. Therefore, it may be said that not only must Mexico look to the United States for protection against floods and

silt, such as has been provided by Boulder Dam, but she must also look to the United States for any firm water which she receives from the Colorado River and for facilities by which that water can be diverted from the River. While it is no doubt true that Mexico will make some minor diversions from the River below the lower boundary (Arizona-Sonora), such diversions would be too low to irrigate any of the lands in class (a), above referred to.

Future Flood Control Works and Channelization of River

In the past, American interests have paid practically the entire cost of the construction and maintenance of the protective levee system in Mexico, expenditures for which total to date over \$8,000,000. Of this amount, the United States Government contributed \$1,100,000 for the construction of Ockerson Levee in 1911, previously referred to (which was a total loss). The balance of the funds was provided by private interests.

Until the past year, the Mexican Government never recognized any responsibility for the control of the River. Its only contribution was in the amount of \$40,000 made available in 1927 towards the cost of construction of the Rodriguez Levee. This levee could only be considered as of a temporary nature, to protect

immediately adjacent lands in Volcano Lake, and was never considered a part of the main levee system.

Since the completion of Boulder Dam American financing of the levee work has ceased, with the result that the Mexican Government has had to take it over. Reports state it is now spending an appropriation of 2,000,000 pesos - about \$400,000 - in raising and strengthening the River front levees. While the construction of Boulder Dam has almost entirely removed any possible future menace of floods to American lands, there still exists a serious menace to lands along the River in Mexico. Until there is flood control on the lower Gila the possibility of large flash floods, amounting to as much as 200,000 second feet, still exists. Also, there is a flood hazard from occasional releases from Boulder Dam of as much as 75,000 second feet, which may be necessary. Therefore, Mexico must not only continue to raise and strengthen the existing levees, but, if additional lands are developed, the levee system will have to be extended in order to protect those lands.

Furthermore, it will certainly prove very advantageous to Mexico to channelize the River from the upper boundary for a distance of some 30 or 40 miles below, in order to reduce the meandering of the River and

the danger this causes to the levees. Such work will also be of benefit in providing capacity for occasional large floods. It will lower the water surface in the River, which will be of benefit not only by protecting adjacent lands from floods, but also by reducing the amount of lateral seepage under such lands. The channelization work will involve not only the cost of the original construction, but also the cost of continuous maintenance in keeping down excessive growth of vegetation, and maintaining proper alignment.

Studies have been made by the United States Government of flood control on the lower Gila River, and a dam site has been located in the vicinity of Sentinel, Arizona. Construction of the dam has been temporarily deferred in view of the report of the War Department that values to be protected below that point did not justify the cost. It is not believed the War Department took into account values in Mexico, but, under an international agreement, they could be considered. The construction of such a dam would be of great value to lands in Mexico as well as to lands in the Lower Gila Valley and in the Yuma Valley, Arizona.

It is believed that these are all factors which should be given due consideration in any treaty discussions, and the participation of the United States in paying the costs should be a factor of considerable weight.

Use of Underground Storage

Mexico has another resource in the delta of the River which should be fully explored; that is, the possibility of natural storage underground. By reason of the porous nature of the soil and contributions both from surface flow and from underground flow out of the Colorado and Gila Rivers, the Yuma Valley, and other adjoining areas, there exists a large body of underground water available for use by pumping from wells.

This natural storage is referred to in the report dated March 22, 1930, to the Congress of the United States, submitted by the American Section of the International Water Commission, United States and Mexico (House Doc. No. 359, 71st Cong., 2d Sess., 1930, page 22), which makes the statement in reference to this storage that "Extensive tests with pumps of large capacity do not exhaust or materially lower the supply."

Several wells have been put down in the area. One known as the Williams Well, located near Cuervos Station, has been in use for a number of years in irrigating over a thousand acres of land. The well is about 200 feet deep, 18 inches in diameter and produces 10 second feet with a drawdown of about 15 feet, the lowest level of the water, when the well is in continuous use, being about 26 feet from the ground surface. Three other wells

have been in use for some years at a point a few miles below the upper end of the Saiz Levee, and show about the same drawdown. Another large well was drilled near the head of Pescadero Cut and gave fine results on test, but has never been put to continuous use. The extent of the underground basin has never been determined, but it is believed it covers as much as 200,000 acres and it is not improbable that it could produce, by proper development, a considerable quantity of water for several years at a time, during occasional periods of low flow in the River.

This is a resource which, it is believed, should be thoroughly explored and studied. It is available to Mexico, and should be considered as a part of the supply for irrigation use in Mexico. Many areas in the United States now and in the future will have to depend upon utilizing similar underground sources to supplement surface flow. Examples are, the Coachella Valley in California, which will have to supplement the water it receives from the All-American Canal by pumping from its underlying basin and the Salt River Valley in Arizona, where the use of underground water in large amounts has been necessary to preserve development of the Valley. Other examples are the lower Gila Valley in Arizona and Owens Valley in California. In view of these conditions,

it does not seem at all unreasonable to expect Mexico to make use of this resource as a part of the water supply made available to it, at least for stand-by purposes. By so doing, Mexico can maintain permanently a much larger agricultural acreage than if it depends solely on the surface flow of the River.

Power and Water Contracts

Boulder Dam and power plant have been constructed by the United States, as authorized under the Boulder Canyon Project Act. The cost of construction, operation and maintenance is to be repaid to the Government under contracts for water and power made pursuant to that Act and the Boulder Canyon Project Adjustment Act. The contractors must not only repay the cost of the works constructed by the United States, but must also bear the cost of their own works, which they have had to construct to utilize the power and water purchased. The aggregate of the amounts already invested exceeds \$400,000,000.

It is true that under the terms of the Acts and the contracts the use of water for power at Boulder Dam is subordinate to its use for irrigation within the United States. In harmony with this the contracts provide for a gradual diminution of the amount of firm power available each year, due to depletion by reason of additional

development above Boulder Dam. But there is nothing in the Acts or contracts which subordinates the use of Boulder water for power to its use for irrigation in Mexico, or which contemplates any diminution of the amount of power because of any future use of water in Mexico. On the contrary, the Acts and the contracts were expressly drawn on the theory that the benefits of the dam were to be enjoyed solely in the United States.

Mexico is receiving great benefits from Boulder Dam in the matter of flood protection, silt reduction, a regulated River flow and the resulting possibility of development of additional lands. However, Mexico is in no wise contributing to any part of the cost of these works. It would not seem that Mexico should be entitled to water for the additional lands, made possible of development by these works, which would interfere with or result in losses to those paying for the cost of the works. Any treaty made with Mexico should protect these rights and interests of agencies in the United States.

In explanation of the foregoing, it should be pointed out that the demand for Boulder power is slightly higher in the winter than in the summer, but as this difference is not great it may be considered that the demand is fairly constant throughout the year, requiring a constant release of water. Furthermore, under the power

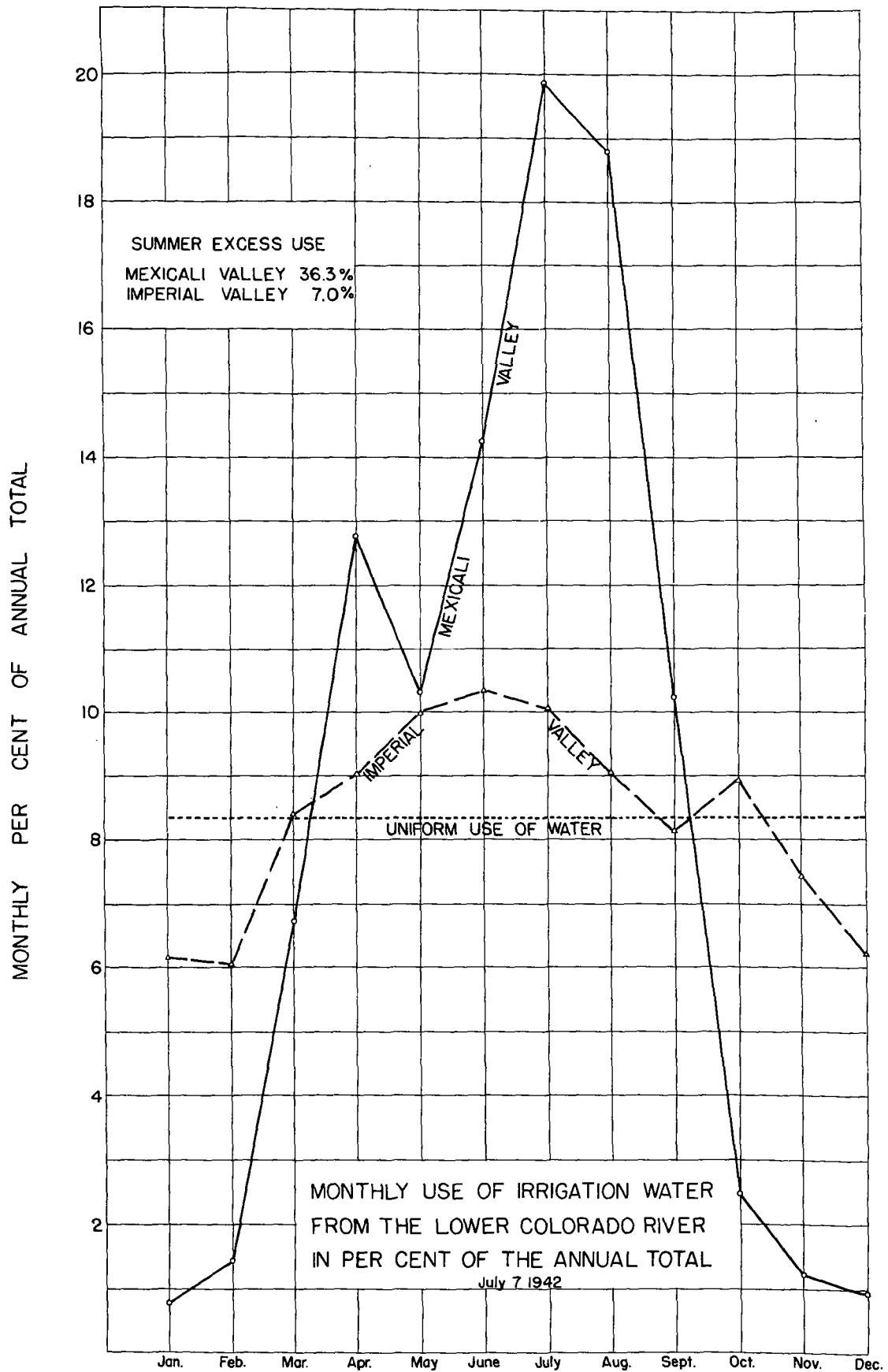


EXHIBIT 3.

contracts, the production of power at Boulder Dam is to be coordinated with that from other power sources in order to make the greatest possible economic use of all power facilities. This will mean that at certain times of the year when water must be released through power plants in other sections of the southwest, it will be withheld at Boulder Dam, and released there when the water supply is low at such other plants.

The irrigation demand for water is heavier in summer than winter months. This is much more pronounced in Mexico than in the United States, due to the type of farming economy practiced in Mexico. The chart opposite (Exhibit 3), shows the use of water each month in per cent of the total for the year, for Imperial Valley, California and Mexicali Valley, Mexico. These data are based on averages for a representative 10-year period, in each case. It will be noted that, for Imperial Valley, the minimum water use is 6.2 per cent in January and the maximum summer use 10.4 per cent in June, while for Mexico the respective amounts are 0.8 per cent in January and 19.9 per cent in July. The use in Imperial Valley during the months of April to September, inclusive, is but 7.0 per cent in excess of a uniform use but for Mexicali Valley, the excess is 36.3 per cent for the same period. The chart illustrates the relative conflict in the demand

for water between the two types of irrigation use, and a uniform use for power.

It is apparent from the foregoing that any allowance of water to Mexico, to be delivered as and when she needs it, means that some quantity of water must be retained behind Boulder Dam in winter, and be delivered to Mexico in the peak months of the summer. To the extent that the deliveries in summer exceed the uniform rate of release of water from Boulder, which is the optimum for power production, the excess deliveries will be of little use for generation of power. This definitely reduces the earnings of the power plants and the economic worth of the power contracts.

Such deficiencies in power production would have to be made up by steam or diesel generation, which would not only increase the cost to the power contractors, but would also, in effect, increase the cost of their facilities constructed to utilize Boulder Dam power. This would be a pro tanto impairment of the power contracts and might interfere with the ability of the contractors to make the payments required to amortize the cost of the Dam and power plant, which in turn would result in a loss to the United States Government.

Therefore it would seem that in negotiation of a treaty with Mexico consideration should be given, either to preventing or avoiding the impairment of the power contracts, or to providing just compensation to the power contractors for such impairment. Compensation for the impairment might be provided to the power contractors either by Mexico, or, if for reasons of comity the concession is deemed advisable, by the United States.

It will be noted that an arrangement is provided for in paragraph 5 of the Plan proposed by the Committee of Fourteen, for limiting the impairment of the power contracts by providing a limit of 4,000 second feet to the peak flows Mexico might order. Orders in excess of 4,000 second feet might be honored, after review, in the discretion of the officer in charge of power production at Boulder and other dams below that point. However, it should be pointed out that with proper use the suggested limitation to 4,000 second feet would be sufficient for at least 350,000 acres in Mexico, which is a 75% increase over the average area Mexico could expect safely to irrigate under natural flow conditions of the River.

III.
COMPARISON OF PREVIOUS OFFER TO
MEXICO WITH PLAN SUGGESTED BY THE
COMMITTEE OF FOURTEEN

Comparing the offer made to Mexico at the time negotiations were carried on in 1929, with the Plan suggested by the Committee of Fourteen, it should be pointed out that the prior offer by the United States was for a total of 750,000 acre feet per year delivered in the River at the International Boundary, and no more. This was a maximum figure, beyond which no water would be guaranteed to Mexico. It was all Mexico could look to with certainty upon which to base the development of lands in that country. Furthermore, the offer included a provision that at times of shortage "the amount of water to be delivered to Mexico will be diminished in the same proportion as deliveries in the United States." On the other hand, there was no provision for a guarantee of any additional amount, regardless of the flow available in the River. While, of course, Mexico would have been free to utilize the surplus water if found feasible, yet if such surplus flow did not come at the time of the year when Mexico could use it, it would be valueless to her.

Under the Plan suggested by the Committee of Fourteen, Mexico would be guaranteed water in accordance

with a sliding scale, depending upon releases from Boulder Dam. The basis is fixed as the delivery in the River at the upper boundary (California-Mexico) of 800,000 acre feet per annum when the release for the same year at Boulder Dam is 10 million acre feet. When the release for any year from Boulder Dam varies from 10 million acre feet, the guaranteed delivery to Mexico would also vary above or below 800,000 acre-feet in an amount equal to 15 per cent of the difference between the actual release and 10 million acre feet.

The following shows the amounts Mexico would be guaranteed per annum for various releases from Boulder Dam:

<u>Release from Boulder Dam in Acre Feet</u>	<u>Guaranteed Delivery to Mexico in Acre Feet</u>
15 000 000	1 550 000
14 500 000	1 475 000
14 000 000	1 400 000
13 500 000	1 325 000
13 000 000	1 250 000
12 500 000	1 175 000
12 000 000	1 100 000
11 500 000	1 025 000
11 000 000	950 000
10 500 000	875 000
10 000 000	800 000
9 500 000	725 000
9 000 000	650 000

Studies show that under 1950 conditions of use in the United States, releases from Boulder Dam in an average year, during a period such as 1897 to 1940, inclusive,

would total about 13 million acre feet. This would mean that Mexico would be guaranteed a delivery of 1,250,000 acre feet in such an average year. Actually, after deducting for estimated losses and uses in the United States, there would be available at the upper boundary, out of the 13 million acre feet, about 7 million acre feet. However, Mexico could make very little use of the large flow in the winter time because of the type of irrigation economy practiced, but would be free to use whatever part was possible. Even during the lowest years in a series of dry years, the release would not be less than 10 million acre feet out of which Mexico would be guaranteed a delivery of 800,000 acre feet, a much greater quantity than Mexico could expect to have in a similar dry year under natural flow conditions.

Looking into the distant future, studies show that under 1938 conditions of use in the United States, for the same period of 1897 to 1940, inclusive, the average releases from Boulder Dam will be 10,900,000 acre feet, which would guarantee Mexico a delivery of 935,000 acre feet, or 50 per cent more than Mexico received on the average in the past under natural flow conditions.

The various releases from Boulder Dam during the

40-year period under 1988 conditions are shown by these studies to be as follows:

<u>Number of Years</u>							<u>Release from Boulder Dam</u>	
For	1	out	of	44	years		8 500 000	acre feet
"	43	"	"	"	"	over	8 500 000	" "
"	33	"	"	"	"	"	9 000 000	" "
"	28	"	"	"	"	"	9 500 000	" "
"	24	"	"	"	"	"	10 000 000	" "
"	15	"	"	"	"	"	11 000 000	" "

The Plan provides that the guaranteed water shall be made available on Mexico's order, subject only to a limit of 4,000 second feet on the amount which could be ordered at any time. This does not mean that greater quantities would not be delivered but it does make the delivery subject to a review by the agency in charge of power generation as to the possible effect on power production.

The Plan recognizes the right in Mexico to use any water in the River between the upper and lower boundaries. This provision was also contained in the 750,000 acre feet offer, but in either case there would be no obligation on the part of the United States to make any of such water available.

Although in connection with the previous offer of 750,000 acre feet, there was some suggestion on the part of the United States as to a study of future flood control in the delta, the Plan suggested by the Committee of Fourteen not only makes this a definite recommendation,

but, in addition, provides that the United States share in the costs of both studies and construction of river control works in Mexico. Furthermore, the treaty would provide for the United States' sharing in the cost of a study to determine the amount and rate of flow of water from surface and subsurface sources which may be available for use in Mexico. It is believed that these studies should precede the final consummation of a treaty, in order that all of the resources which Mexico will have from the Colorado River may be more clearly presented.

The Plan also recommends that the United States agree to provide flood control on the lower Gila River, which would be of considerable benefit to Mexico and should be listed as one of the benefits which Mexico is to receive without cost.

Consideration of the foregoing will show that under the Plan suggested by the Committee of Fourteen, Mexico is guaranteed considerably more water and receives far greater benefits than under the old offer of 750,000 acre feet. Mexico receives a large share of the benefits made available by Boulder Dam and other control works on the River in the United States. Mexico pays no part of the cost of these works, yet without them the additional lands could not be developed, and in addition Mexico would be faced with very great expenditures to try to

protect even the lands which have been irrigated in the past under natural flow conditions.

PART TWO

Memorandum re International Law and Comity as Relating to Treaty with Mexico for Appor- tionment of Colorado River Water.

The purpose of this memorandum is to collect and examine the available declarations of policy of the United States, and of the states of the Colorado River Basin, as to the principles of both international law and international comity which should be considered in making a treaty with Mexico for apportionment of waters of the Colorado River. These declarations, made by responsible officers of the United States and of the states, relate to three distinct instances of international dealing on streams which flow from one country to the other. Reference is also made to certain treaties and declarations to which the United States is not a party.

I.

THE UPPER RIO GRANDE

The Rio Grande rises in Southern Colorado, flows southward about 400 miles through Colorado and New Mexico to El Paso, Texas, at which point it becomes the boundary between the United States and Mexico and runs eastward about 800 miles to the Gulf of Mexico. Irrigation in the Juarez Valley, lying in Mexico opposite the

El Paso Valley, commenced over 300 years ago. In 1895 it was carried on by diversion from a dam at El Paso and a ditch called the "Old Mexican Ditch." During the last decades of the nineteenth century irrigation from the upper Rio Grande of new projects in New Mexico and Southern Colorado reduced the flow of the stream into the Mexican Ditch to such extent that the Juarez Valley was unable to procure an adequate supply. This shortage continued to the point that the Juarez Valley became, in part, depopulated. Complaints were made by the Mexican government to the Department of State, including claims for damages caused by the Colorado and New Mexico diversions. The State Department requested an opinion of the Attorney General, which was rendered December 12, 1895 (21 Opinions Attorney General 274). The decision of the Attorney General was that Mexico had no legal right as a matter of international law to the continuance of the flow of the upper Rio Grande for the Juarez Valley; that the United States had, as a part of its territorial sovereignty, the supreme right to use the river as it saw fit; and hence that there was no obligation on the United States to pay damages. The essence of the opinion is stated:

"The case presented is a novel one. Whether the circumstances make it possible or proper to take any action from considerations of comity is

a question which does not pertain to this department; but that question should be decided as one of policy only, because, in my opinion, the rules, principles, and precedents of international law impose no liability or obligation upon the United States."

The Attorney General considered and rejected the contention that in such cases an international servitude exists, by which the lower country has a right, dominant over the upper country, to the continued flow of the stream.

The Mexican complaints continued. A plan was then developed for the building of the Elephant Butte Dam in New Mexico, which would conserve the waters of the upper Rio Grande, sufficiently, not only to increase the irrigable area in the United States, but to provide a safe yield of water for the existing needs of the Juarez Valley.

Correspondence between the American and Mexican governments, looking toward a treaty, took place over the period June 27, 1904, to December 20, 1906.

A letter to Federico Gamboa, charge d'affaires, dated May 1, 1905, from Alvey A. Adee, acting Secretary of State, stated:

"Sir:

"In answer to the inquiry contained in your courteous note No. 160, of the 26th ultimo, I beg to say that upon consideration of the question of

any legal liability on the part of the United States to the Government of Mexico by reason of the diversion of the waters of the Rio Grande River for the irrigation of lands of American citizens situated in the United States and to the detriment of citizens of Mexico by depriving the latter of water for the irrigation of their lands situated in Mexico, the department is unable to find any grounds in international law upon which such liability could be based.

"A careful examination of the law of nations on the subject has failed to disclose any settled and recognized right created by the law of nations by which it could be held that the diversion of the waters of an international boundary stream for the purpose of irrigating lands on one side of the boundary, and which would have the effect to deprive lands on the other side of the boundary of water for irrigation purposes, would be a violation of any established principle of international law. Nevertheless, the Government of the United States is disposed to govern its action in the premises in accordance with the high principles of equity and with the friendly sentiments which should exist between good neighbors."

Mr. Adee continues, saying that the Department is preparing a draft of treaty and that the United States is contemplating construction of Elephant Butte Dam, with the expectation that this work would hasten a satisfactory solution of the question (p. 398, Report of International Water Commission, United States and Mexico, House Doc. No. 359, 71st Cong., 2d Sess. 1930, herein-after cited as "H. Doc. 359").

Senor Gamboa replied August 11, 1905, enclosing an opinion by two Mexican jurists to the effect that Mexico was entitled under international law to one-half of the

water of the Rio Grande and saying in part:

"My Government should also be glad if the Government of the United States would, in regard to the purely abstract point of law, and in addition to the two documents above mentioned and herewith inclosed, take into consideration the doctrine set up by H. R. Farnham, M. L., in his work 'The Law of Waters and Water Rights' (pages 29 and 63 of Volume I) for on that doctrine rest the opinions of the two Mexican jurists above named." (H. Doc. 359, p. 399.)

To this letter Secretary Elihu Root replied by letter of December 19, 1905, addressed to Mexican Ambassador, Joaquin D. Casasus:

"EXCELLENCY: Referring to Mr. Gamboa's note No. 19, of August 11 last, with respect to the project of a treaty for the final settlement of the controversy touching the distribution of the waters of the Rio Grande River for the purposes of irrigation, the department has to say that it is unable to admit the soundness of the legal position stated in the said note and in the opinion of Messrs. Vallarta and Gamboa, accompanying it, by which a liability on the part of the United States is sought to be established for the diversion of the waters of the Rio Grande by inhabitants of the United States for irrigation purposes.

"It is stated in Mr. Gamboa's note that the opinions of Messrs. Vallarta and Gamboa rest on the doctrine announced by H. P. Farnham in his work on the Law of Waters and Waterrights, pages 29 and 63 of Volume 1 being cited. Inasmuch as Mr. Farnham cited no decision and no text in support of the doctrine of international law announced by him, and inasmuch as the department has been unable to find any solid foundation for such opinion, a personal letter was written to Mr. Farnham inquiring upon what authority he had founded his statement of opinion, to which inquiry Mr. Farnham answered in substance that the expressions contained in the text were merely his personal opinions, deduced from a comparison of

treaties, text writers, and decisions.

"It is, however, not intended to reopen any argument on the legal questions involved; but it appears to be necessary to say thus much in reaffirmance of the department's position, taken in accordance with the advice of Attorney General Harmon, of the nonliability of the United States Government for the claims for indemnity heretofore brought forward by Mexico on account of the afore-said diversion of waters. The question, moreover, appears to have become academic, since both Governments have announced their purpose to deal with the question on principles of the highest equity and comity between neighboring States. Accordingly the Department submits herewith a copy of a letter from the Secretary of the Interior, dated the 6th ultimo, inclosing a copy of one from the Director of the Geological Survey with the suggestions or bases for a projected treaty between the United States and Mexico, which is intended to treat the question on a basis of absolute equity. If the project is satisfactory to the Mexican Government, the department would be pleased to submit, or to have the Mexican Government submit, for signature and ratification, a formal draft of a treaty on the bases indicated.

"Accept, etc.

Elihu Root."

(H. Doc. 359, p. 402.)

The further official correspondence on the subject of the proposed treaty (H. Doc. 359, pp. 403-419), consistently emphasizes the characterization of the treaty as one "providing for an equitable division of the waters of the Rio Grande."

The treaty is entitled "Convention between the United States and Mexico -- Equitable Division of the Waters of the Rio Grande" (Treaty Series No. 455). It was signed

at Washington, May 21, 1906. The preamble recites that it is a convention "providing for an equitable distribution of the waters of the Rio Grande for irrigation purposes." Article I provides that:

"After the completion of the proposed storage dam near Engle, New Mexico, and the distributing system auxiliary thereto, and as soon as water shall be available in said system for the purpose, the United States shall deliver to Mexico a total of 60,000 acre-feet of water annually, in the bed of the Rio Grande at the point where the head works of the Acequia Madre, known as the Old Mexican Canal, now exist above the city of Juarez, Mexico."

Article II provides for delivery of such water in the same proportions through the year as the water supply furnished in the United States in the vicinity of El Paso and according to an agreed schedule. The article concludes:

"In case, however, of extraordinary drought or serious accident to the irrigation system in the United States, the amount delivered to the Mexican Canal shall be diminished in the same proportion as the water delivered to lands under said irrigation system in the United States."

Article III provides that the delivery shall be without cost to Mexico.

Article IV reads:

"The delivery of water as herein provided is not to be construed as a recognition by the United States of any claim on the part of Mexico to the said waters; and it is agreed that in consideration of such delivery of water, Mexico waives any and all claims to the waters of the

Rio Grande for any purpose whatever between the head of the present Mexican Canal and Fort Quitman, Texas, and also declares fully settled and disposed of, and hereby waives, all claims heretofore asserted or existing, or that may hereafter arise, or be asserted, against the United States on account of any damages alleged to have been sustained by the owners of land in Mexico, by reason of the diversion by citizens of the United States of waters of the Rio Grande."

Article V states:

"The United States, in entering into this treaty, does not thereby concede, expressly or by implication, any legal basis for any claims heretofore asserted or which may be hereafter asserted by reason of any losses incurred by the owners of land in Mexico due or alleged to be due to the diversion of the waters of the Rio Grande within the United States; nor does the United States in any way concede the establishment of any general principle or precedent by the concluding of this treaty. The understanding of both parties is that the arrangement contemplated by this treaty extends only to the portion of the Rio Grande which forms the international boundary, from the head of the Mexican Canal down to Fort Quitman, Texas, and in no other case."

The intent of the convention was to provide a regulated flow of water to the Juarez Valley equal to the amount beneficially used in that area from the natural flow of the river, prior to the construction of the Elephant Butte Dam, although no express provision of the convention so states.

It is submitted that:

1. Throughout the discussions leading up to the convention of 1906 the Department of State consistently adhered, in the face of an opposite opinion in Mexico, to

its position that under international law, Mexico had no legal right to the waters of the river.

2. From the diplomatic correspondence and the terms of the convention the conclusion is inescapable that the provision giving Mexico a fixed amount of water equal to her prior uses from natural flow (subject to diminution in time of shortage), coupled with a reservation to the United States of all remaining water, including flood waters conserved by the proposed dam, amounted, in the view of both nations, to an equitable division.

3. Although in Article V the United States does not "concede the establishment of any general principle or precedent by the concluding of this treaty," the convention should obviously be a guide, in considering a specific case which is parallel in its essential features to that of the Upper Rio Grande.

II.

THE CANADIAN BOUNDARY WATERS TREATY

A. The St. Mary and Milk Rivers

These rivers rise in Montana, the former in the Rockies and the latter in the foothills, and flow across the Canadian boundary into Alberta. The St. Mary flows into the Saskatchewan and thence to Lake Winnipeg. The

Milk returns to Montana after about one hundred miles and joins the Missouri.

Complaints from each side of the boundary against diversions planned on the other side led, among other things, to the negotiation of the Treaty signed March 3, 1909 (Treaty Series, No. 548). By this treaty certain arrangements, largely as to navigation and power, were made as to all boundary waters between the United States and Canada. Article VI contains special provisions as to the use for irrigation of the St. Mary and Milk Rivers. Roughly, the waters of the two streams were divided equally between the two nations. An International Joint Commission was created, with certain quasi-judicial and administrative authority.

A question was soon raised as to what waters of the Milk and St. Mary systems were covered by the treaty. After hearings extending from 1915 to 1921, the Commission held, on October 4, 1921, that Article VI should be interpreted as applying only to waters which naturally cross the boundary. The decision states "Each country shall be apportioned such waters of the said rivers and of any tributaries thereof as rise in that country but do not naturally flow across the international boundary." (C. J. Chacko, "The International Joint Commission," p.233.)

This sustained the contention of the United States that it did not by the terms of the treaty cede any rights in certain tributaries of the two streams.

The case of the St. Mary and Milk Rivers was more complex than that of the upper Rio Grande. As to the St. Mary, the United States is the upper country, Canada the lower. As to the headwaters of the Milk, the same is true. But as to the sections of the Milk running through Alberta and back into Montana, the situation is the reverse. Also, by the treaty, the right was specifically recognized in the United States to divert some of the headwaters of the St. Mary into the Milk in western Montana, use the channel of the Milk through Canada as a conduit and divert the water for irrigation in Eastern Montana. Without a treaty Canada would have had the power to intercept this water.

It is submitted that:

1. The double physical relationship of the two nations, plus the desire of the United States to divert from one stream to the other, furnished considerations by reason of which an equal apportionment of the two streams worked out to be equitable.

2. Where Article VI of the treaty was not applicable, i. e., tributary waters which did not naturally flow across the boundary, the decision of the Commission,

that such waters belong to the country in which they rise, was in direct line with the Judson Harmon opinion and the views of the State Department throughout the negotiation of the convention on the upper Rio Grande.

B. The Niagara River

Article V of the Canadian Boundary Waters Treaty contains special provisions as to diversion of water from the Niagara River for power generation. Canada was permitted to divert for this purpose 36,000 cubic second feet; the United States, 20,000 cubic second feet. These disproportionate allocations resulted from the facts that the two nations already had power installations at Niagara Falls of the above aggregate capacity, and that Canada had the larger share.

Article V commences:

"The High Contracting Parties agree that it is expedient to limit the diversion of waters from the Niagara River so that the level of Lake Erie and the flow of the stream shall not be appreciably affected. It is the desire of both parties to accomplish this object with the least possible injury to investments which have already been made in the construction of power plants on the United States side of the river under grants of authority from the State of New York and on the Canadian side of the river under licenses authorized by the Dominion of Canada and the Province of Ontario."

It is submitted that:

The provisions regarding the Niagara constitute an apt precedent that a treaty regarding water diversion

should do "the least possible injury to investments which have already been made in the construction of power plants," or, indeed any investments for water or power utilization already made in either country at the appropriate critical date.

C. The General Provision as to Boundary Waters.

Article II of the treaty states the general rule as to control of boundary waters, not provided for by Articles V and VI, or other special cases. The article commences:

"Each of the High Contracting Parties reserves to itself or to the several State Governments on the one side and the Dominion or Provincial Governments on the other as the case may be, subject to any treaty provisions now existing with respect thereto, the exclusive jurisdiction and control over the use and diversion, whether temporary or permanent, of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters; "

It is submitted that:

Article II is a direct and general recognition, so far at least as irrigation in the arid West is concerned, of the principle of exclusive sovereignty declared in the Judson Harmon opinion.

III.

THE COLORADO RIVER

Reference is made to Part I above for description

of the geography of the Colorado River Basin.

Irrigation on the Lower Colorado River commenced with a small diversion for the Palo Verde Valley, California, about 1878, followed by appropriations commencing in 1895 for a large diversion completed in 1901, for the Imperial Valley in California and the Mexican extension thereof known as the Mexicali Valley. After preliminary efforts for irrigation of the Yuma Valley in Arizona by pumping from the river, a dependable supply of irrigation water was furnished that valley by construction of Laguna Dam, completed in 1912.

At the same time as the initiation of the Rio Grande convention, consideration was given to a treaty on the Colorado River. Acting Secretary Adee's letter to Federico Gamboa, dated May 1, 1905, concludes as follows:

"A somewhat similar question arises on the Colorado River, which disembogues in the Gulf of California. The department is also taking steps to prepare a draft of a treaty to submit to the Mexican Government for the solution of the question growing out of the use of the waters of the Colorado River for irrigating purposes, and hopes that both treaties can be negotiated on terms reasonably satisfactory to each Government and in accordance with the principles above mentioned." (H. Doc. 359, p. 399).

The discussion of a treaty on the Colorado River was dropped by reason of the extraordinary conditions existing in 1905-1906 by reason of the break in

the River bank by which the entire flow of the River was diverted for a considerable time into the Imperial Valley. (H. Doc. 359, p. 404).

Negotiations for a treaty or convention with Mexico on the Colorado River were resumed from 1908 to 1910, at which time they were interrupted by the Madero Revolution. Louis C. Hill, the American Commissioner, described the progress made in these negotiations in a letter to Hon. Charles E. Hughes, Secretary of State, dated March 26, 1923. (Cong. Rec. 70th Cong., 1st Sess., p. 9806).

"My dear Mr. Secretary: Having read in a recent Congressional Record Secretary Fall's and your letters on the Colorado River compact, it may be of interest to your department to know what was informally agreed upon as fair to both countries by the Mexican Commissioner for the Division of the Waters of the Colorado and myself, then American commissioner.

"The revolution in Mexico prevented any formal recommendation by the commissioners to their respective Governments. The tentative agreement was about as follows:

"(1) Mexico and the United States to abrogate such parts of the treaty of Guadalupe Hidalgo as conflicted.

"(2) The two Nations to divide the low-water flow of the Colorado equally between them. (Mexico's share of ~~this~~ would be less than 1500 second-feet and hence less than will irrigate the lands in Mexico now irrigated by Colorado River.)

"(3) The United States to build reservoirs if ~~it~~ so desires to impound all the remaining water of Colorado River for the purposes, among others, of

irrigating all the land which can be irrigated by Colorado River waters either by gravity or by pumping.

"(4) That Mexico be permitted by paying her pro rata part of the cost of the reservoirs and their operation to have the use of such remaining water as can not be utilized in the United States.

"This was considered by the Mexican representative as a most fair and friendly proposal.

"It gave to Mexico nothing the United States could use but at the same time shared with Mexico the storage facilities on the upper river, facilities which do not exist in Mexico.

Very respectfully,

L. C. Hill."

Negotiations were later renewed and drafts and counter-drafts of conventions on equitable distribution were exchanged, but these negotiations were brought to an unsuccessful close on May 8, 1913, when General Huerta refused to consider the Colorado River question further until the United States recognized his administration. (Charles A. Timm, "The International Boundary Commission, United States and Mexico", p. 195; University of Texas Publication No. 4134, September 8, 1941: Senate Doc. 163, 70th Cong., 1st Sess.).

The Congress, by act of May 13, 1924, (43 Stat. 118) authorized the appointment of commissioners for negotiation of a treaty for equitable division of the waters of the Lower Rio Grande. In 1927 it developed

that Mexico would not agree to study the Rio Grande unless the Colorado River were also included, and the act of 1924 was amended on March 3, 1927 (44 Stat. 1403), so as to provide for investigation of the Rio Grande, Colorado and Tia Juana rivers by a joint commission.

The act, as amended, authorized the President to appoint commissioners to cooperate with Mexican representatives "in a study regarding the equitable use of the waters of the lower Rio Grande and of the lower Colorado Rivers, for the purpose of securing information on which to base a treaty," etc. This commission met at various times from February 27, 1928, until November 9, 1929. After gathering extensive physical data respecting the three rivers, the two sections of the commission disagreed, but fully stated the views of their respective nations as to the principles involved. The proceedings of the commission were set out and documented in the report of the American Section (H. Doc. 359). This report was submitted to the Secretary of State and to the President, and by him to the Congress. No action contradicting the views of the American Section expressed in this report appears to have been taken by the executive or legislative branches of the United States Government.

The views of the American Section on several issues pertinent to a treaty on the Colorado River are

set out in its report (H. Doc. 359).

At the second session of the Commission (H. Doc. 359, p. 5)

"The United States section pointed out the similarity between the condition in regard to the lands on the lower Colorado River and the situation affecting those on the Rio Grande in the vicinity of El Paso for whose benefit the convention was made. It therefore proposed, as an equitable division of the waters of the Colorado, to deliver to Mexico the greatest amount which had been delivered to irrigators in that country from the stream in any one year. That year was 1928, during which time Mexican irrigators received 750,000 acre-feet of water. The certainty of delivery of this water by the United States was conditioned on the construction by the United States of Boulder Dam within its territory, until which time the existing unregulated flow of the river must continue."

On September 7, 1929, the American Section replied to a statement by the Mexican Section, in part as follows: (p. 8).

"2. The American section notes that the Mexican section does not recognize the similarity between the case which occurred in the El Paso Valley and was settled by the convention of May 21, 1906, and the present situation upon the lower Colorado River. Certainly there is similarity in the following conditions: On both streams the water involved in the settlements comes from the United States. In both cases storage of the water and regulation of the streams are factors. It would only require the construction of Boulder Dam and the withholding of water from Mexico to make these cases not only similar but identical.

"It is true that article 5 of the Rio Grande convention states that the action there taken shall not be regarded as a precedent and that the United States does not recognize any legal basis which would give the owners of land in Mexico a right to

water which may be in the Rio Grande before it reaches the international boundary. To apply the principle there laid down and accepted by Mexico would be to prevent Mexico from making any claim whatever to the waters of the Colorado. The American section has not, however, regarded this as a precedent, but proposes, because of similarity in conditions, to recommend the granting to Mexico, as an act of comity and friendship, but not as a right, the largest amount of water which it had ever taken in any one year.

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"The American section proposes to recognize the claim of Mexico for the largest amount of water ever applied in irrigation or to other beneficial uses under this contract in any one year, and it believes, as stated heretofore, that this is a just and generous settlement of this question.

"6. The American section desires to state further that the new status which will be created by the construction of Boulder Dam and the regulation of the Colorado River, will not operate to the injury of Mexico. On the contrary, the regulation of this river is absolutely essential to the continued safe and profitable irrigation of lands in the delta of the Colorado, both in the United States and Mexico. The protection of these lands by means of levees against conditions created by the floods of the Colorado and the immense volumes of silt carried down and deposited in the channel of the stream is too costly and hazardous to be continued. Either an immense storage work like that which the United States is to build must be constructed, or an overflow of appalling dimensions will destroy the homes and farms in the delta of the Colorado on both sides of the international boundary."

The American Section in its memorandum of August 29, 1929 (p. 45) stated:

"The protection now afforded irrigated lands from floods is by levees, which involves a large yearly expenditure, and is attended by such hazards, that the limits of safe and profitable development

have almost, if not quite, been reached. Furthermore, the fluctuations in discharge, which, over a period of years, have ranged from 220,000 cubic feet per second, at high water, to 1,200 cubic feet per second, at low water, renders any extension of the irrigated area, on the lower Colorado, without regulation, both hazardous and undesirable. It is the low water flow of this river which now determines the safe and profitable limits of irrigation.

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"Another menace to permanent irrigation without storage on the lower part of the river, in both Mexico and the United States, is the immense amount of silt carried down and deposited in the bed of the stream, where the land has to be protected from overflow by levees. The silt deposit is causing the bed of the river to rise and this requires a continual increase in the height of these levees. Within a few years protection by levees of these lands will become impracticable because of cost and risk. The reservoir at Boulder Dam will solve this problem for many generations, because it will catch and hold nearly all of this silt."

A subcommittee designated to study the Colorado

River reported: (p. 65)

"The Government of the United States has consistently held to the doctrine laid down by the Supreme Court of this country when it said:

" 'The jurisdiction of the Nation within its own territory is necessarily exclusive and absolute. It is susceptible of no limitation not imposed by itself. Any restriction upon it, deriving validity from an external source, would imply a diminution of its sovereignty to the extent of the restriction, and an investment of that sovereignty to the same extent in that power which could impose such restriction. All exceptions, therefore, to the full and complete power of a nation within its own territories must be traced up to the consent of the nation itself.' (Schooner Exchange v. McFadden, 7 Cranch, p. 136).

"It has always been held that a nation has a full right within its own territories of those resources which might be necessary for its development or for the comfort of its people. Any granting of a portion of such resources to another nation must be regarded as a voluntary act of friendship and comity. It may be good policy between nations to make a concession of this nature, but such an act can not be claimed as an acknowledgment of any right upon the part of the nation to which it is made.

"On the assumption that it may be an act of friendship and an evidence of good will to a neighboring nation for the United States to concede a portion of the waters of the Colorado River to Mexico, the question arises as to the basis on which that concession should be made and the amount which can be allotted consistent with a due regard to the proper development of each country and the best interests of the citizens of each nation.

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"Were the flow of the Colorado River sufficient in quantity to supply the various sections of both countries desiring its waters for future development, our task would be easy and simple. Unfortunately the demands are far beyond the volume which the river can provide, and these demands are so far-reaching and of so great importance to the people of the United States that they are now preparing to spend \$400,000,000 in order to secure a full utilization of such water as the river carries. It does not appear that the United States is required, even in proof of its friendship and good wishes for Mexico, to limit its own growth and abridge the comfort of its own citizens that a neighboring nation may be correspondingly benefited. Neither does it seem an act of neighborly kindness to itself appropriate the waters of the river to such an extent that people who have developed lands in Mexico and placed them under cultivation would be deprived of water and the lands forced back into wilderness. To avoid such a condition and to prevent loss to the holders of land in Mexico, the United States section believes that the commission should recommend to the Governments of the two countries that the amount of water to be allotted to Mexico each year be the largest amount which has

to this time been given to that country in any one calendar year. This quantity is practically 750,000 acre-feet. This quantity of water will permit of the undiminished continuance of the greatest agricultural activity which has as yet occurred in this part of Mexico. The United States section regrets that it can not see its way to recommend a larger amount to Mexico, but believes that it is going as far as it properly can when it saves the existing users of water in Mexico from loss, and feels that if it recommended an additional amount it would be recommending an injury to its own country. The section, in taking this action, is as liberal as any country has ever been or as the Supreme Court of the United States has been in determining questions of this character between the States. The section further invites attention to the fact that for an indefinite time in the future the amount of water entering Mexico will be in excess of 750,000 acre-feet."

From the foregoing it appears that the views of the American Section of the International Water Commission on the question of international law were consistent with the opinion of Attorney General Harmon and the opinions of Acting Secretary Adee and Secretary Root.

Setting aside the point of law and viewing the question as one of comity and good neighborliness, the American Section was positive and clear that it was equitable to allow Mexico a guarantee of the quantity which it had been putting to beneficial uses from natural flow, before the construction of Boulder Dam. The section was, however, firm that the benefits of the expenditures of the United States in construction of river improvements belonged, in equity, to the United

States and should not be divided with Mexico, observing, however, that for many years, at least, Mexico would, by reason of such improvements, actually receive more than the stipulated amount.

On December 21, 1928, the Congress adopted the Boulder Canyon Project Act (45 Stat. 1057). In section 1 of the act Congress authorized the construction of Boulder Dam "for the purpose of * * * * providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States," etc.

Section 5 of the Act authorizes the Secretary of the Interior to contract for the storage behind Boulder Dam and delivery of water. The section contains this provision:

"No person shall have or be entitled to have the use for any purpose of the water stored as aforesaid except by contract made as herein stated."

Section 13 (a) of the Act approved the Colorado River Compact of November 24, 1922.

The Colorado River Compact (H. Rep. No. 918, accompanying H. R. 5773, 70th Cong., 1st Sess., March 15, 1928, p. 32), provides, in Article I, that it was entered into, among other things, "to secure the expeditious agricultural and industrial development of the Colorado River Basin," etc., which basin is defined,

in Article II (b), as comprising certain "territory within the United States of America."

Article III (c) provides, "If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River system, such waters shall be supplied" from certain sources.

Section 20 of the Boulder Canyon Project Act states, "Nothing in this Act shall be construed as a denial or recognition of any rights, if any, in Mexico to the use of the waters of the Colorado River system." This clause is, properly understood, not in conflict with the provision of Section 1 that Boulder Dam is to be built and water stored therein for "beneficial uses exclusively within the United States" or the provision of Section 5 requiring Secretarial contracts. The last-mentioned clauses are to be understood as declaring the policy of the United States that the waters stored and conserved by Boulder Dam belong to and shall be administered by the United States. These clauses constituted notice to the world, including Mexico, that the expenditures made by the United States for water conservation at Boulder Dam were intended to be for the exclusive benefit of the United States. It should be

noted that Mexico, prior to the enactment of the Project Act, repeatedly protested to the State Department against the building of Boulder Dam.

Section 20, being general in form, is therefore to be understood as leaving open and undetermined only the question whether by comity Mexico should be given a share of the natural flow of the Colorado River, since Sections 1 and 5 specifically declare the policy of the United States as to the stored and conserved flood waters.

In addition to the provisions abovementioned, the Project Act contains specific provisions regarding the manner of amortizing the cost of Boulder Dam.

Section 1 provides "for the generation of electrical energy as a means of making the project herein authorized a self-supporting and financially solvent undertaking, * * * . "

Section 4 (b) requires that before any money is appropriated for the project "the Secretary of the Interior shall make provision for revenues by contract, * * * adequate in his judgment to insure * * * the repayment, within fifty years from the completion of said works, of all amounts" expended, with interest.

The Secretary of the Interior did, in 1930, procure the contracts for power necessary to amortize

the cost of the project. He has now, in fact, contracted for delivery of all the power to be generated at Boulder Dam.

It is submitted that:

1. In the successive negotiations between the United States and Mexico on the Colorado River between 1905 and 1930 the responsible representatives of the United States consistently recognized and declared the substantial similarity of conditions affecting the treaty on the Upper Rio Grande and one on the Colorado.

2. Likewise, in each of the negotiations, it was recognized by the United States that the stipulated allotment to Mexico should be limited to her use from the natural flow of the Colorado prior to construction of Boulder Dam or, conversely, that the United States was entitled to the benefits flowing from her possession of storage sites and her construction of Boulder and other dams.

3. The principle of international law stated in the opinion of Attorney General Harmon and the principle of comity followed in the convention on the Upper Rio Grande were definitely adhered to throughout the successive negotiations and were apparently the turning point on which the United States determined to drop negotiations in 1930.

4. The Congress, in the Boulder Canyon Project Act, emphatically declared its intention that the stored waters in Boulder Reservoir, as distinguished from natural flow, should be used exclusively in the United States, pursuant to contracts executed by the Secretary of the Interior.

IV.

OFFICIAL VIEWS OF THE STATES

At a conference of the Governors of the seven States of the Colorado River Basin, held in Denver in August, 1927, the Governors unanimously adopted a memorial to the President and Secretary of State, the essence of which is as follows:

"Now, therefore, and to the end that no unfortunate misunderstanding may arise between the United States of America and the United States of Mexico, and that no false encouragement may be given to present or future developments along the Colorado River in the United States of Mexico, we, the governors of all seven of the Colorado River States, with our interstate river commissioners and advisors in conference assembled in the city of Denver on this 26th day of August, 1927, do hereby in great earnestness and concern make common petition ~~that~~ a note be dispatched to the Govern-

ment of the United States of Mexico calling attention to that Government to the fact that neither it nor its citizens or alien investors have any legal right as against the United States of America or its citizens to a continuance of the flow of the Colorado River for beneficial purposes and that the United States of Mexico can expect no such continuance except to the extent that, as a matter of comity, the two Governments may declare hereafter by treaty and that especially under no circumstances can the United States of Mexico hope to use water made available through storage works constructed or to be constructed within the United States of America, or hope to found any right upon any use thereof." (Hearings, House Committee on Irrigation and Reclamation on H. R. 5773, Part 2, p. 202, January, 1928).

In passing, it may be noted that the report of the American Section of the International Boundary Commission recognized the desirability of such action, when it made the following suggestion (H. Doc. 359, p. 23):

"In the absence of any agreement as to principle governing the division of water across the international boundary, it is believed that the position which the United States holds with regard to such division, and the recognition of rights in either country to water across the boundary, should be officially stated and notice given to Mexico through the appropriate channel. The interests of both countries will be served by an early agreement as to the extent to which existing uses of water on both the Rio Grande and Colorado on both sides of the international boundary are to be recognized, but in the absence of such agreement it is believed that the United States should give notice to Mexico that no rights to water in the Colorado based on future development and extension of existing uses, will be recognized until an agreement covering all three streams has been reached."

At a conference of official representatives of all the Colorado River Basin States, held at Phoenix, Arizona, June 22-23, 1938, at which the initial resolution was adopted for the organization of the Committee of Fourteen, a resolution was unanimously adopted the substance of which is:

"THEREFORE, BE IT RESOLVED that the Governors of the seven Colorado River Basin states recommend to the appropriate officers of the Federal Government that they request such officers to give notice to the Government of the Republic of Mexico that in harmony with the policy so declared in the Boulder Canyon Project Act, it is the policy and purpose of the Government of the United States of America to reserve for use within the boundaries of the United States of America all waters of the Colorado River which may be stored or impounded therein to the end that the Government of the United States of Mexico, the citizens of that republic, and the owners of Mexican lands may have direct and timely notice and warning that the use by them of any of such waters as may temporarily flow into Mexico shall establish no right, legal or moral, to the continued use of such waters." (Mimeographed transcript, p. 151.)

On May 26, 1941, the Committee of Fourteen, through its subcommittee of seven, submitted to the State Department a resolution unanimously adopted by it, stating in substance:

(1) That there is no legal right in Mexico to the use of any Colorado River water.

(2) That the United States should not by a treaty with Mexico impair its ability to meet its obligations under the Boulder Canyon Project Act.

(3) That all of the water of the Colorado River can be put to beneficial use by communities within the United States and projects to use such water are under way.

(4) That the seven states are opposed to negotiation of any treaty granting water to Mexico made usable by Boulder Dam and other works, or more water than she used before storage commenced at Boulder Dam in 1935, referring to the 750,000 acre-foot proposal made by the American Section in 1929.

This resolution was later unanimously approved by the Committee of Fourteen.

It is submitted that:

1. The record shows that the interested States have uniformly and unanimously accepted and relied on the established doctrine of the United States, that Mexico has no right, under international law or comity, to the stored waters of the Colorado.

2. The record shows that the States have constantly insisted that the waters conserved by Boulder Dam must be reserved for "beneficial uses exclusively within the United States."

V.

OTHER DECLARATIONS ON INTERNATIONAL LAW AND COMITY

This study of international law and comity in treaty making has been centered on examination of instances and declarations in which the United States has participated.

This is so, chiefly for the reason that there is apparently no such thing as a body of precepts, universally accepted by all nations as having the force of law. Each nation chooses to accept or reject, for its own guidance, particular doctrines of so-called international law. Since this memorandum concerns what the United States should do in acting on a treaty, emphasis is laid herein on international law as interpreted and applied by the United States.

Study has been given to two memoranda, consisting largely of excerpts from and references to treaties relating principally to consumptive use of waters of international streams. One was prepared by the International Boundary Commission, dated May 21, 1942, and entitled "Memorandum on Precedents as to Equitable Distribution of International Waters." The other was prepared by the Department of State, dated May 26, 1942, and entitled "Use of International Streams" (Reference No. 876-1821).

The memoranda discuss some eleven instances of treaties between various nations in which more or less consideration is given to the use of international rivers for irrigation. Of these, the United States was a party to two, the Rio Grande Convention of 1906 and the Canadian Boundary Waters Treaty of 1909. In the treaties examined it appears to be the consistent

practice of nations to recognize existing prior uses of the natural flow for irrigation in both nations. On the other hand, there is a great diversity in the provisions governing the privilege of future expansion of irrigation, ranging from the Rio Grande Treaty, in which the upper nation retained 100 per cent right of expansion, through the Milk-St. Mary Treaty, in which the right of expansion of both countries was equal, to the Nile Treaty of 1929, in which the lower nation (Egypt) retained 100 per cent privilege of expansion.

It is clear that the number of treaties examined, in which provisions for irrigation appear, is too small to serve as a safe basis for generalization of principles of international law or comity. The subject is one which has only recently attained large significance, as the art and science of engineering have developed to the point that large-scale water conservation and utilization works are possible. One of the frankest statements on the subject is made by Professor Herbert A. Smith: "As the problem of the economic use of rivers grows in practical importance it becomes more and more desirable that it should be governed by legal principles sufficiently definite to afford some practical guidance in the decision of particular cases, but the need for rules does not justify any writer in

asserting that they actually exist, until they have been enacted by the only legislative process which the law of nations, in its present form, will recognize." (The Economic Uses of International Rivers, 1931, page 150).

The conclusion is inescapable that the particular provisions of treaties respecting irrigation have been largely the consequence of bargaining processes. The importance of the particular irrigation use to the particular nation, coupled with the other advantages which it expects to obtain from the treaty, and the various detriments to which it assents, form a complex whole, governed by political, economic, historical, and many other considerations.

About twenty works of text writers on international law have been examined. In most of them very slight attention is given to consumptive use of international rivers. In a few, some recitation is attempted of the things which nations have embodied, in treaties, and in still fewer, attempts are made at independent theorization based on such research. This theorization leads to opposite results (e. g. 1 Oppenheim, International Law, 5th. Edition, 1937, pages 370-371; Fenwick, International Law, 2nd. Edition, 1934, page 294).

It is submitted that:

1. The only reliable index to international law as interpreted and applied by the United States is the acts and declarations of the United States and its responsible officers.

2. The instances in which treaties have been made, by other nations than the United States, respecting consumptive use of water for irrigation are too few, and the provisions of such treaties are too varying to afford adequate foundation for generalization of rules of international law or comity.

3. The opinions expressed by text writers are in conflict and do not have the authority attached to decisions of responsible diplomatic representatives of nations.

PART THREE

Memorandum re Application of Physical and Factual Data and Legal Factors to the Consideration of a Treaty with Mexico for Apportionment of Colorado River Water.

The purpose of this memorandum is to apply to the consideration of a treaty with Mexico, for apportionment of Colorado River water, some of the principal points developed in Parts One and Two above.

1. The drainage basin of the Colorado River system includes 244,000 square miles, of which 2,000 square miles lie in Mexico. Mexico contributes none of the water of the system.

2. All waters of the Colorado River system and much more could be practicably used in the United States.

3. Since any allotment to Mexico means the sacrifice of a corresponding amount of development in the United States, the extent of such sacrifice should be limited to that which the United States is bound, under some principle, to concede. It should not be determined solely by processes of bargaining.

4. There is no rule of international law which requires the United States to accord any assurance of Colorado River water to Mexico.

5. The only obligation resting on the United States in the premises is to observe due comity toward

Mexico. This obligation is one of equity and good conscience.

6. Under the principle of comity, the United States should make available to Mexico all values which it can furnish without undue or imprudent sacrifice of its own interests.

7. The United States has entered into contracts for delivery of water and power from the Boulder Canyon Project to certain public and private agencies. It has also made commitments for the construction of water and power projects, both above and below Boulder Dam and some of such projects are under construction. The principle of comity requires that the United States act in good faith and equitably toward its own citizens and agencies, in other words, toward itself, as well as toward the foreign country. It should not, therefore, disable itself from carrying out its solemn contracts and commitments made for the benefit of its own communities.

8. The agencies and communities interested in the contracts and commitments above mentioned, have, in reliance on the statutes and official acts of the United States, invested upwards of \$500,000,000 in construction of works and facilities with which to utilize water and power. They have obligated themselves to pay for these works over long periods in the future and have mortgaged

their homes, farms and factories to secure the debt. The United States, acting in good faith and good conscience toward them, should not disable them from carrying out their contracts with it, or paying their obligations, by taking away from them and conceding to another nation the water and power which it has contracted or committed itself to deliver to them.

9. Conceding that, under the principle of comity, the United States should not take away from Mexico the water which she has heretofore enjoyed and upon which she has based her established and relatively permanent economy, the United States would, on that theory, be justified in conceding to Mexico the equivalent of her actual average uses of water from the natural flow of the river. By reason of Mexico's lack of storage sites, this was the limit of her benefits from the River, other than underground flow, prior to the closure of Boulder Dam in 1935.

10. Under no view of comity is the United States bound to share with Mexico the benefits of the construction of Boulder Dam and other works constructed by the United States on the river, except when, as in the case of flood control, such benefits can be shared without material sacrifice. The sites of these works are natural advantages which belong to the United States as

a territorial sovereign. She has paid the cost of the works and has furnished the engineering genius and the energy which has made them possible. Mexico has contributed nothing to them and has no moral claim upon them.

11. The United States has constructed the Boulder Canyon Project and local agencies have invested hundreds of millions of dollars in construction of their facilities, upon the faith of the provision of the Boulder Canyon Project Act that the stored waters of the River are for "beneficial uses exclusively within the United States." Any material allotment to Mexico of stored water would amount to partial repeal by a treaty of a most important provision of an Act of Congress. Whether or not the Executive and the Senate have the power to repeal such a provision by treaty, such power, in any equitable view, should be exercised with the full understanding of the consequences and the utmost circumspection.

12. Insofar as advantages from the construction of works in the United States can be accorded to Mexico without material sacrifice, the United States should in every way facilitate the realization by Mexico of such advantages. The United States should go farther and assist Mexico by further planning and construction of flood control, levee and channelization works which will make the quantity of water conceded to Mexico most useful to her. Such a course will so enhance

the utility to Mexico of a given quantity of water as to make it more valuable than a much larger numerical quantity, without such cooperation.

13. Full investigation of the complex and somewhat obscure physical phases of the Colorado River, particularly as to underground flow, return flow and other values which can be availed of by Mexico, should be undertaken at once and completed before a final commitment on a treaty is made.

14. By reason of her inability to divert water within her territory and her urgent necessity to obtain rights of diversion within the United States and controlled delivery at the boundary, Mexico will very shortly be compelled to seek a treaty. Orderly and wise practice in approaching the negotiation of a treaty requires as a preliminary the completion of adequate engineering investigations. There is no factor compelling the United States to forego such investigation. On the other hand, the interests of Mexico will impel her, shortly, to accept a reasonable treaty.

15. In studying the gross agricultural acreage which can be developed in Mexico, it should be recognized that, by use in years of shortage of water pumped from her underground basin, Mexico can stabilize and constantly maintain an acreage equivalent, at least, to

that which can be irrigated by the average amount of surface water allotted to her on the sliding scale.

16. The plan proposed by the Committee of Fourteen is far more beneficial to Mexico than the offer made by the United States to Mexico in 1929. It includes values which can be reasonably accorded to Mexico. However, it requires the United States to rely upon engineering estimates and assumptions which may not be realized. It therefore involves the taking of serious possible risks by the United States. It represents the limit to which the United States can fairly be expected to go.

17. The Rio Grande Convention of 1906 furnishes the most apt parallel available for guidance in the study of a treaty on the Colorado. The same nations are the contracting parties; all the water involved originates in the United States; the construction of large storage for conservation and regulation of flood waters is the factor sine que non; other physical factors are closely parallel. The two situations are, in the words of the American Section of the International Water Commission, "not only similar but", with the construction of Boulder Dam and the withholding of water from Mexico, become "identical". The Convention of 1906 was agreed by both nations to be fair and equitable. The Plan proposed by the Committee of Fourteen is distinctly more generous to Mexico than the Convention of 1906.

The following comments are submitted as to the particular provisions of the Plan proposed by the Committee of Fourteen:

Paragraph 1. This paragraph obviates capricious or wasteful demands by Mexico for water. This is a principle recognized by the Colorado River Compact and is in line with the well-established practice of all arid countries in dealing with a precious and indispensable resource.

Paragraph 2. This paragraph defines the basic allocation, which is measured on the estimated average release from Boulder Dam under 1988 conditions.

Paragraph 3. This paragraph defines the sliding scale, by reason of which Mexico would fare ratably with the United States, dependent on precipitation of rain and snow, which is beyond the control of either.

Paragraph 4. This paragraph defines the adjustment which would be made, should Mexico arrange for deliveries of water at other points than in the river, i. e., from the Yuma Project canals at the Arizona-Sonora boundary, or from the All-American Canal at the California-Baja California boundary.

Paragraph 5. This paragraph requires deliveries of water as and when ordered by Mexico. However, a limit of 4,000 second feet of peak flow is provided for, subject

to the discretion of the Secretary of the Interior, to safeguard the power contracts executed by him.

Paragraph 6. This paragraph entitles Mexico to the use of any water available in the river between the upper and lower boundaries, in addition to the stipulated quantity provided on the sliding scale. It is a quit-claim, without warranty, of any water the United States cannot use.

Paragraph 7. This paragraph is a waiver by Mexico of water in excess of the agreed amounts. It parallels a provision of the Rio Grande Convention.

APPENDIX "A"

Resolution of Committee of Fourteen,
El Paso, Texas

June 20, 1942.

The Committee of Fourteen, representing the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming, in meeting assembled in the City of El Paso, Texas, on June 17, 18, 19 and 20, 1942, after having considered the reports of the sub-committees, legal and engineering, and after having considered the letter from Honorable Cordell Hull, Secretary of State, presented by Honorable Herbert Bursley on June 17, 1942; and

WHEREAS said letter suggested that this Committee, representing the seven Colorado River Basin States, submit to the State Department a plan for the allocation of the waters of the Colorado River between the United States and Mexico;

WHEREAS this committee has given full and careful consideration of the matters presented to it and has concluded that it approves the continuance of conversations with the Republic of Mexico upon the considerations hereinafter recited;

RESOLVED it is the sense of this Committee, representing all seven states of the United States in the

Colorado River Basin, acting unanimously,

A. We submit herewith the following plan which we believe to be equitable, fair and just as a basis for the apportionment of the waters of the Colorado River between the two nations:

1. Mexico shall not demand, nor shall the United States be required, to make available any water which Mexico cannot reasonably apply to beneficial use for irrigation and domestic purposes.
2. The United States will make available in the river at the upper boundary (California-Mexico) 800,000 acre feet of water of the Colorado River system each calendar year that the releases from Lake Mead, as estimated by the Secretary of the Interior, total 10,000,000 acre feet.
3. For annual estimated releases from Lake Mead above or below 10,000,000 acre feet, the United States will make available at the upper boundary a total which will vary from 800,000 acre feet in an amount which is 15% of the difference between the estimated releases and 10,000,000 acre feet, such amount to be deducted from the 800,000 acre feet

when the estimated releases are less than 10,000,000 acre feet, and added when the estimated releases are greater than 10,000,000 acre feet.

4. Any amount of water delivered to Mexico at any point or points other than in the river at the upper boundary shall be equated to and charged against the amount herein specified to be made available at the upper boundary, considering any losses that may be occasioned by delivery at such other points.
5. The water to be made available to Mexico shall be in such amounts and at such times as may be requested by Mexico, provided that flows ordered by Mexico in excess of 4,000 second feet shall be subject to the decision of the Secretary of the Interior, or whoever may be charged with the control of power production at Boulder Dam and other dams below that point on the Colorado River, as to the availability of such excess flow without adversely affecting the use of water for power production in accordance with contracts for such power, made under the Boulder Canyon Project Adjustment Act.

6. Mexico may use any water available in the river between the upper and lower boundaries, but with no obligation on the part of the United States to make available any of such water.
7. Mexico must waive all rights and claims to the use of water of the Colorado River system not provided for herein.

B. WE RECOMMEND:

1. That the United States cooperate with Mexico in the making of studies to determine the amount and rate of flow of water from surface and sub-surface sources which may be available below the upper boundary for use in Mexico.
2. That the United States cooperate with Mexico in studies and in construction of improvements to the river channel below the upper boundary.
3. That the United States provide flood control on the Lower Gila River for the protection of lands in the United States and Mexico.

C. WE ASK:

1. That in negotiating the treaty the Department

of State recognize that within the United States the Colorado River Compact and the Boulder Canyon Project Act as amended by the Boulder Canyon Adjustment Act are the law governing the Colorado River and that it recognize the allocations and contracts for water and power made thereunder.

2. That the Department use in negotiating the treaty such services and advice of qualified experts upon the subject as the interested States of the Basin may offer.
3. That the interested States be advised of the terms of any proposed treaty and be permitted to comment thereon, before any firm commitment has been made.

We express our gratitude for the opportunities for information and consultation which have been afforded us by the Department of State and for the separate handling of the negotiations upon the Colorado River and the Rio Grande, and will most respectfully appreciate the continuance of these policies.