PART TWO

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I. Jurisdiction and Justiciability

None of the parties in this case questions the jurisdiction of the Supreme Court either over the parties or over the subject matter of the controversies which concern the mainstream of the Colorado River. Moreover, either explicitly or implicitly, all of the parties concede that it is appropriate for the Supreme Court to exercise its jurisdiction and adjudicate these mainstream controversies at this time. I agree with the parties that the Supreme Court has jurisdiction over the mainstream controversies which ought to be exercised in this case.[1]

The judicial power of the United States is extended by Article III, Section 2, of the Constitution to "all Cases . . . arising under this Constitution, the Laws of the United States . . . to Controversies to which the United States shall be a party . . . [and] to Controversies between two or more States. . . . In all Cases . . . in which a State shall be Party, the supreme Court shall have original Jurisdiction." It is settled beyond dispute that, under these provisions, a case such as the present one among several states and the United States over the use of water flowing in an interstate stream is within the original jurisdiction of the Supreme Court. *E.g., Colorado* v. *Kansas,* 320 U. S. 383 (1943); *Kansas* v. *Colorado,* 206 U. S. 46 (1907); *Kansas* v. *Colorado,* 185 U. S. 125 (1902); *Missouri* v. *Illinois,* 180 U. S. 208 (1901).

It is also well settled, however, that the Supreme Court will not exercise its original jurisdiction in suits between

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[1] I have concluded, however, that it would not be appropriate to adjudicate in this litigation controversies among the parties over the tributaries of the Colorado River in the Lower Basin, except for the controversies which concern the Gila River System. The reasons for these conclusions are explained *infra,* at pages 318-321, 323-325.

sovereign states unless there are compelling reasons for doing so. The Court has often reiterated the strict standard which must be met before it will adjudicate an interstate controversy. Thus in *New York* v. *New Jersey,* 256 U. S. 296, 309 (1921), the Court stated:

> "Before this court can be moved to exercise its extraordinary power under the Constitution to control the conduct of one State at the suit of another, the threatened invasion of rights must be of serious magnitude and it must be established by clear and convincing evidence."

See also *Colorado* v. *Kansas,* 320 U. S. 383 (1943); *Washington* v. *Oregon,* 297 U. S. 517, 522 (1936); *Arizona* v. *California,* 283 U. S. 423 (1931).

There are compelling reasons which justify an adjudication of the various claims presented in this case to water flowing in the Colorado River. On September 16, 1948, the Secretary of the Interior transmitted to the Congress a report from the Bureau of Reclamation which concluded that a proposed Central Arizona Project, designed to transport water from the Colorado River to an area in central Arizona, was feasible from both an engineering and a financial point of view. However, the Secretary's letter of transmittal warned that if Arizona's claims to mainstream water were not well founded, as was contended by California, then "there will be no dependable water supply available from the Colorado River for this diversion."[2] As previously noted, *supra,* pages 30-31, Arizona sought congressional authorization for this Central Arizona Project during the 79th, 80th, 81st and 82nd Congresses. Although some of Arizona's proposals were adopted by the Senate, none of them passed the House, and,

[2]Ariz. Ex. 70.

on April 18, 1951, the House Committee on Interior and Insular Affairs adopted a resolution that consideration of bills relating to the Central Arizona Project "be postponed until such time as use of the water in the lower Colorado River Basin is either adjudicated or binding or mutual agreement as to the use of the water is reached by the States of the lower Colorado River Basin."[3] About a year later Arizona instituted the present law suit.

It is apparent from these circumstances that Arizona will not be able to develop the Central Arizona Project without an adjudication by the Supreme Court as to the rights of the several parties to the water in the mainstream of the Colorado River. Congress has indicated it will not authorize construction of the Project until rights to mainstream water are adjudicated; nor can it be financed privately until such rights are fully established. In short, Arizona's utilization of the mainstream water which she argues has been apportioned to her in the Boulder Canyon Project Act is being frustrated by the conflicting claims of the other parties to this suit. This is reason enough for the Supreme Court to exercise its original jurisdiction. If the Supreme Court does not exercise its jurisdiction in this case on the ground that Arizona is not presently in a position to divert the water which she claims, Arizona will be faced with a dilemma: Congress will not authorize the Central Arizona Project until Arizona's right to mainstream water is determined, and the Supreme Court will not determine Arizona's right to the water until Congress authorizes the Project.

Moreover, without the Central Arizona or a similar project, Arizona will not be able to fully utilize the water

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[3] *Hearings on H. R. 1500 and H. R. 1501 Before the Committee on Interior and Insular Affairs, House of Representatives,* 82nd Cong., 1st Sess., pt. 2, pp. 739, 740-756 (1951).

which she claims has been set aside for her in the mainstream. Indeed, Arizona claims that California is already using some of the water to which Arizona is entitled. By increasing the water uses of existing facilities, California will be able to increase substantially her uses of this claimed water in the future. On the other hand, Arizona cannot use the water she claims without the construction of new facilities and she cannot develop new facilities unless her rights in the water are first established. Thus, refusal of the Supreme Court to adjudicate Arizona's rights in the mainstream water will, as a practical matter, have the effect of a decision in favor of California since Arizona will not be able to utilize the disputed water and California will. If Arizona's interpretation of the Boulder Canyon Project Act, which the United States substantially agrees with, is correct, and if California has *de facto* taken part of the water which was forever apportioned to Arizona, then Arizona can remedy the situation only by suit in the Supreme Court.

The circumstances related above are merely illustrative of conditions generally prevalent in regard to the Colorado River in the Lower Basin. The Basin has experienced a veritable population explosion in the past thirty years, accompanied by a comparable development in industry and agriculture.[4] Water uses have expanded rapidly; but the point has now been reached where increased use of water from the Colorado River is being frustrated by a bitter dispute as to the legal availability of such water for use in the several states. That dispute is now before the Court. There appears to be sufficient mainstream water available to satisfy the scale of present uses and enough to satisfy some degree of expansion. But, despite a present unsatis-

[4]A more detailed description of the conditions in the Lower Basin, summarized in this section of the Report, will be found in Part One.

fied demand for water in the Lower Basin, it is impossible to develop further uses of the water because of the cloud on its legal availability.

Because of the topography and geography of the region, Colorado River water can feasibly and economically be utilized only by the construction of great projects consisting of dams, pumping facilities, desilting basins, canals and other works, the cost of which is enormous. Needless to say, such projects cannot be financed unless there is assurance that water will be not only physically, but legally available for their operation. No such assurance of the legal availability of mainstream water for use in any particular state can today be given. This uncertainty can be removed only by an interstate compact or by the adjudication of the Supreme Court. Congress, in the Boulder Canyon Project Act, encouraged Arizona, California and Nevada to agree to a compact apportioning mainstream water among them, and even suggested a division which it approved in advance. For over thirty years, however, these states have been unable to agree. Time has not cooled the controversy among them, and it seems very unlikely that they will be able to agree in the foreseeable future.

Thus, adjudication of the present action is indispensable to a determination of the legal availability of mainstream water in the Lower Basin. It is an inescapable fact that unless this controversy among the three states and the United States is adjudicated, the full utilization of the Colorado River will be indefinitely delayed. Such a result would frustrate the purposes of Congress in authorizing the construction of Hoover Dam and would seriously hinder development of the entire area.

In addition, the Supreme Court's jurisdiction ought to be exercised in this case for another, related reason. There are a number of existing projects in the Lower Basin for

which plans have been developed calling for the increased use of mainstream water. These projects are already constructed, have irrigable but presently unirrigated lands within their service areas, and, at least some of them, already have delivery contracts with the Secretary of the Interior which provide for enough water to satisfy increased uses if such water is legally available under the interstate apportionment. No further governmental authorization and little additional financing is necessary to enable these projects to increase their mainstream uses. For example, the Imperial Irrigation District embraced 905,568 acres in 1956, of which only approximately 475,000 were irrigated. The District plans to irrigate a substantial part of these unirrigated lands primarily through existing facilities and pursuant to its existing water delivery contracts.[5] Similarly, the Coachella Valley County Water District and Palo Verde Irrigation District presently contain unirrigated land which can be irrigated largely through existing facilities and pursuant to existing delivery contracts.[6] Moreover, as of the close of the evidence in this case, the Metropolitan Water District planned a substantial increase in its diversions of mainstream water, under an existing water delivery contract. Arizona, however, argues that California is presently consuming more than its apportionment of mainstream water under the Project Act, and that existing uses in California should be limited and increased uses forever enjoined. Certainly Arizona's claim should be adjudicated so that the California agencies can make intelligent plans for their future development and operation.

Increased uses of mainstream water would also be rapidly developed in Arizona if the question of legal availability were resolved in her favor, although, as stated above,

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[5]Tr. 8216-8217 (Dowd); Calif. Exs. 275, 285.
[6]Calif. Ex. 318; Tr. 8771-8772 (Tabor); Calif. Ex. 356.

the full amount of the water she claims could not be utilized without a large new project. For example, the United States plans to contract for the delivery of mainstream water pursuant to the federal reclamation laws to the South Gila Valley near Yuma, Arizona. This area, serviced by the Yuma Irrigation District, is presently within the authorized limits of the Gila Reclamation Project. Additional congressional authorization and an appreciable expansion of existing works would not be necessary in order to develop new water uses in the South Gila Valley. California, however, argues that additional diversions of mainstream water for use in the State of Arizona are forbidden by the Colorado River Compact, the Boulder Canyon Project Act and principles of priority of appropriation. As in the case of the California projects, there is a natural reluctance to develop the land when there is a danger that users may be legally barred from applying water to its irrigation.

Manifestly, then, the various claims to mainstream water urged by the parties to this litigation ought to be decided by the Supreme Court so as to remove this controversy as the major obstacle to full development of the Lower Basin of the Colorado River.

II. Arizona's Motion for Leave to File Amended Pleadings

One question of pleading has survived the hearing. On August 13, 1958, shortly before conclusion of the hearing, Arizona moved before the Special Master for leave to file: (1) an amended bill of complaint; (2) an amended reply to the answers of the California defendants; (3) an amended answer to Nevada's petition of intervention; (4) an amended response to the appearance and statement of New Mexico; and (5) an amended response to Utah's complaint and answer in intervention. In short, Arizona desired leave to file substitute pleadings with respect to all parties except the United States.

This motion was opposed by California, Nevada, New Mexico and Utah.[7] The Solicitor General's view that the Special Master "probably does not have jurisdiction to finally rule on a motion to amend the original petition" was reported on his behalf by government counsel.[8] Arizona expressly disavowed any desire to offer any additional proof in support of its amended pleadings.

It is unnecessary to pass on the question of power raised by the view attributed to the Solicitor General. Since Arizona would not be prejudiced by rejection of the proposed amendments, it is unnecessary to receive them. Close inspection reveals that the proposed changes are intended to accomplish two purposes: (1) to conform the pleadings to the proof; and (2) to state legal theories different from those espoused in the original pleadings.

The first objective is superfluous. In a litigation of this character it would be strange to hold the parties strictly to their pleadings. See *Kansas* v. *Colorado,* 185 U. S. 125 (1902), wherein the Court said:

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[7]Tr. 22557-22582.
[8]Tr. 22582-22583.

> ". . . we are unwilling, in this case, to proceed on the mere technical admission made by the demurrer. Nor do we regard it as necessary, whatever imperfections a close analysis of the pending bill may disclose, to compel its amendment at this stage of the litigation."[9]

The second objective is likewise superfluous. The relevant legal principles govern the decision in the light of the facts established, regardless of the law pleaded by the parties.

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[9]185 U. S., at 147. See also United States v. Louisiana, 363 U. S. 1, 84 (1960); United States v. Texas, 339 U. S. 707, 715 (1950).

III. The Claims of the States to Water in the Mainstream of the Colorado River

I have concluded that the claims of Arizona, California and Nevada to water from Lake Mead and from the mainstream of the Colorado River below Hoover Dam are governed by the Boulder Canyon Project Act, 45 Stat. 1057 (1929), the California Limitation Act, Act of March 4, 1929, and the several water delivery contracts which the Secretary of the Interior has made pursuant to the authority vested in him by Section 5 of the Project Act. The Colorado River Compact, the doctrine of equitable apportionment, and the law of appropriation are all irrelevant to the allocation of such water among the three states.

A. The Colorado River Compact

Extensive argument was had on the origin, purposes and meaning of the Colorado River Compact. Some of the parties labored under the conviction that prolonged and faithful exegesis of the text of this historic instrument would somehow yield a solution to the problems of this litigation. The sentiment which promoted this line of thinking seemed to rise from a profound faith that the Compact, venerated for its great contribution to the growth of the Southwest, would in some unexpected manner come to the aid of the disputing states. Reflection has not confirmed these hopes. The Compact does not answer any of the vital questions which must be answered in the disposition of this suit. The Compact contributes some light on the supply of mainstream water, insofar as it regulates the extent to which the River may be depleted by the Upper Basin. Beyond that the Compact has no utility in the adjudication of this case.

The Colorado River Compact represents an accommodation of the conflicting interests of Upper and Lower Basins for the mutual benefit of both. The Lower Basin, especially California, was interested in reaching agreement over water rights among all the states in the entire River Basin so that congressional action could be obtained authorizing a dam on the Colorado River to control floods and to assure a constant supply of water (Ariz. Exs. 48, 51-53). Congress had expressed an interest in the problems of the Imperial Valley, Kincaid Act, 41 Stat. 600 (1920), and was aware of the flood control problems of the area (Fall-Davis Report, Ariz. Ex. 45). The Upper Basin, sympathetic as it may have been with the Lower Basin in its problems downstream, was nevertheless concerned lest construction of such a dam permit the Lower Basin to obtain a disproportionate amount of the water in the River by operation of the law of prior appropriation (Ariz. Exs. 49, 51). An agreement among the affected states could afford protection against this likely development. Thus, both the Upper and Lower Basins had an incentive to enter into a compact to achieve their respective desires (See Ariz. Ex. 51).

The main bone of contention between the two Basins was the division of water. It was foreseen that, once the River was regulated, the Lower Basin would develop more rapidly than the Upper Basin. The problem of the Compact commissioners, therefore, was to safeguard the Upper Basin against this rapid development with its threat of vesting in the Lower Basin appropriative rights enforcible against the Upper Basin, and at the same time to allow sufficient water to the Lower Basin to ensure development there (Ariz. Exs. 49, 55).

This brief history explains why the provisions of the Compact are addressed solely to the relations of basin to basin and not of state to state (See Ariz. Exs. 51, 55). Any

interpretation of the Compact must be confined by this limiting factor. And from this it also follows that the Compact offers no solution to this controversy among states with respect to their Lower Basin interests.[10]

The text of the Compact makes it abundantly clear that inter-basin, not interstate, relations were the subject matter of agreement. Article II of the Compact divides the entire Colorado River Basin into Upper and Lower Basins, and Article III(a) and (b) apportions the use of water between the two Basins and not among states. This apportionment is accomplished by establishing a ceiling on the quantity of water which may be appropriated[11] in each Basin as against the other. Although Article III(a) and (b) is not expressed in terms of appropriative rights, this is the purport of that Article. For example, it is clear that the Lower Basin may utilize and consume more than the 8,500,000 acre-feet of water per annum apportioned to it by subdivisions (a) and (b) of Article III of the Compact, if the water is actually available, but against the Upper Basin it can acquire appropriative rights to no greater quantity than is sufficient to satisfy a consumptive use of that magnitude. This becomes clear from the historical background of the Compact. Throughout the Colorado River Basin, when the Compact was negotiated, the law of prior appropriation governed acquisition of water rights. In 1922, before the opening of the Sante Fe meetings of the Compact commissioners, the Supreme Court had applied the law of prior appropria-

[10]The extent to which the Compact governs this litigation by reason of references thereto in the Project Act and the water delivery contracts is discussed *infra*.

[11]"To appropriate water means to take and divert a specified quantity thereof and put it to beneficial use in accordance with the laws of the state where such water is found, and, by so doing, to acquire under such laws, a vested right to take and divert from the same source, and to use and consume the same quantity of water annually, forever, subject only to the right of prior appropriations." Arizona v. California, 283 U. S. 423, 459 (1931).

tion as the guiding principle in an equitable apportionment suit on an interstate stream. *Wyoming* v. *Colorado*, 259 U. S. 419, decided June 5, 1922. As appears from the commissioners' reports, Article III(a) and (b) is intended to prevent the application of the priority rule between the two Basins, a result accomplished by placing limits on the acquisition of appropriative or other water rights in each Basin (Ariz. Exs. 49, 51). These limitations, which are 7,500,000 acre-feet and 8,500,000 acre-feet per annum for the Upper and Lower Basins respectively, are controlling until a further apportionment is had pursuant to Article III(f) and (g), which can in no event occur, under the terms of the Compact, prior to October 1, 1963.

Other provisions of the Compact also make clear that it governs inter-basin relations exclusively. Article III(c) divides between the two Basins the burden of delivering water to Mexico pursuant to a prospective treaty obligation of the United States. Article III(d) forbids the states of the Upper Division[12] to cause the flow of the River to be depleted below an aggregate of 75,000,000 acre-feet of water at Lee Ferry, the division point between the two Basins established in Article II(f), for any period of ten consecutive years. Similarly, Articles I and VIII contemplate inter-basin and not interstate operation of the Compact. Nothing in the Compact prescribes a division of water among the Lower Basin states.

I therefore conclude that the provisions of the Compact, unless made operative by relevant statutes or contracts, do not control the disposition of this case. Nevertheless, in view of the urgent arguments of the sovereign parties and against the eventuality that the Court may take a different view of the matter, I set forth my views regarding the meaning of some provisions of the Compact.

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[12]Those states are Colorado, New Mexico, Utah, and Wyoming.

The limits established by the Compact on the acquisition of appropriative rights are applicable to the mainstream of the Colorado River and to its tributaries. Arizona has contended otherwise, claiming that the Compact relates to the mainstream exclusively. To support this contention, Arizona advances a number of arguments:

1. That the events leading to the adoption of the Compact, already mentioned in this Report, reveal an intention to deal with mainstream problems rather than with problems on the tributaries;

2. That the Upper Basin could physically control and acquire rights, against the Lower Basin, in mainstream and Upper Basin tributary water only, and hence was not interested in Lower Basin tributaries;

3. That the Compact purports to apportion only part and not all of the water in the River System;

4. That the obligation specified in Article III(d) necessarily refers to mainstream water only;

5. That subdivisions (a) and (d) of Article III are correlative and that III(b) refers to additional mainstream water;

6. That Article VIII deals with mainstream water.

At best, these arguments suggest two things: (1) that some provisions of the Compact relate to mainstream water exclusively, and (2) that the Compact might have been limited to the mainstream in all of its provisions if the negotiators had chosen to have it so confined. However, the plain words of the Compact permit only one interpretation —that Article III(a), (b), (c), (f) and (g) deal with both the mainstream and the tributaries. Article II(a) states: "The term 'Colorado River System' means that portion of the Colorado River and its tributaries within the United States of America." Article III(a) apportions "from the Colorado River System . . . the exclusive bene-

ficial consumptive use . . . of water." Article III(b) allows the Lower Basin "to increase its beneficial consumptive use of *such waters*. . . ." "Such waters" can only refer to System waters, that is, to mainstream and tributary water as defined in Article II(a). In Article III(c), (f) and (g) System water is specified by name.

The various arguments of Arizona fail before this unmistakable language of the Compact. The historical fact that the Upper Basin was primarily concerned with the mainstream will not nullify language of the Compact that subjugates both mainstream and tributaries to its rule. Nor is the argument persuasive that because some provisions deal only with the mainstream, all provisions are so limited. It is certainly true that the second sentence of Article VIII deals with the mainstream only. It very clearly says so. The preceding and the following sentences, however, speak of the Colorado River System, indicating the draftsmen's intent to distinguish the two terms.

Article I states that "an apportionment of the use of part of the water of the Colorado River System is made" by the Compact, and Article VI speaks of "waters of the Colorado River System not covered by the terms of this Compact". From this Arizona would have me infer that tributaries are not subject to the limitations of Article III(a) and (b). The provisions of Articles I and VI can be given full effect without thus overriding the plain language of Article II(a). Article I is consistent with Article III(f) and (g) which provides for further equitable apportionment of the use of System water. The 1922 Compact apportioned the use of 16,000,000 acre-feet of water to the two Basins; a later compact could make a "further equitable apportionment" of remaining System water. Article VI demonstrates that the Compact governs inter-basin and not interstate relations. If a controversy should arise, for example, between two Lower Basin states over the mainstream, or over a tributary, that Article provides for alter-

native modes of adjusting the dispute. As between Lower Basin states "the waters of the Colorado River System [are] not covered by the terms" of the Compact. (Colorado River Compact, Art. VI(a); see Ariz. Exs. 46, 49.)

Lastly, Arizona argues that Article III(a) relates to the mainstream only because III(a) and III(d) are correlative, III(d) being III(a) multiplied by ten, and Article III(d) is clearly a mainstream measurement. This argument is unacceptable. Since Article III(a) imposes a limit upon appropriation whereas III(d) deals with supply at Lee Ferry, an interpretation which makes these two provisions correlative one to another is inadmissible. Since a substantial quantity of water is lost through reservoir evaporation and channel losses as it flows from Lee Ferry, the point where the III(d) obligation is measured, to the diversion points downstream from Hoover Dam, where most of the appropriations are made, 7,500,000 acre-feet of water at Lee Ferry will supply a considerably smaller amount of appropriations below Hoover Dam. Moreover, III(a) extends to appropriations on Lower Basin tributaries as well as the mainstream. Such appropriations cannot possibly have any relation to the quantitative measurement of the flow of water at Lee Ferry.

The Compact does affect the supply of water available to the Lower Basin. Two provisions of the Compact relate to supply, Article III(c) and Article III(d). Article III(d) presents no questions of interpretation. Under it, the Upper Division states may "not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years, reckoned in progressive series beginning with the first day of October . . . ."

With the storage provided by Lake Mead, and barring a drought unprecedented in the recorded history of the River, the Lower Basin has, under the guarantee of the Compact, available for use at Hoover Dam a minimum of 7,500,000 acre-feet of water per year, less transit losses

between Lee Ferry and the dam, evaporation loss from Lake Mead, and its share of the Mexican treaty obligation.

The Compact provides for the delivery of water by the states of the Upper Division at Lee Ferry, in addition to the supply guaranteed by III(d), when the obligation to Mexico cannot be satisfied "from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b) [of Article III of the Compact] . . . ." In that event, "the burden of such deficiency shall be equally borne by the upper basin and the lower basin, and whenever necessary the states of the upper division shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d)" of Article III. At the time the Compact was signed (1922) and when it became effective (1929), the United States was under no treaty obligation to Mexico and the Compact created no obligation. However, in 1944 the United States and Mexico negotiated a treaty, proclaimed in 1945, under which the United States has the duty to deliver 1,500,000 acre-feet annually to the United States of Mexico at the international boundary.[13]

Several questions arise regarding the effect of Article III(c), and the parties have offered various suggestions regarding its interpretation. These questions include: (1) what is the meaning of the word "surplus"? (2) If surplus is not sufficient to supply Mexico, how should the Upper Basin's further delivery obligation be measured under the language of Article III(c)? In my judgment, the various questions advanced by the parties concerning construction of this subdivision ought not to be answered in the absence of the states of the Upper Basin; nor need they be answered in order to dispose of this litigation affecting only Lower Basin interests. Under the interpretation which I propose of the Boulder Canyon Project Act and the water delivery contracts made by the Secretary of the Interior pursuant

[13]This obligation is subject to several qualifications; the treaty is discussed *infra* at pages 295-296.

thereto, it is unnecessary to predict the supply of water in the mainstream, in the Lower Basin, in order to adjudicate the present controversy.[14]

Arizona argues that Article III(b), relating exclusively to appropriations in the Lower Basin, imposes an additional delivery burden on the Upper Basin. She reasons that after the III(a) apportionment is exhausted, the Lower Basin

[14]Stream flow at Lee Ferry has historically exceeded the maximum delivery obligation under III (c) and III (d). Whether this condition will continue upon full development of the Upper Basin is a subject of dispute among the experts which need not be resolved here. Historic stream flows at Lee Ferry were as follows:

TEN-YEAR TOTALS OF COLORADO RIVER WATER AT LEE FERRY
(In Acre-Feet)

Ten-Year Period	Stream Flow in Acre-Feet	Ten-Year Period	Stream Flow in Acre-Feet
1896-1905	133,700,000	1923-1932	139,969,500
1897-1906	141,904,000	1924-1933	133,453,600
1898-1907	146,407,000	1925-1934	125,368,900
1899-1908	144,870,000	1926-1935	123,939,900
1900-1909	151,326,000	1927-1936	121,901,700
1901-1910	151,695,000	1928-1937	117,211,700
1902-1911	153,417,000	1929-1938	117,328,400
1903-1912	163,557,000	1930-1939	107,498,700
1904-1913	162,601,000	1931-1940	101,510,200
1905-1914	167,235,800	1932-1941	111,174,700
1906-1915	164,736,200	1933-1942	112,917,800
1907-1916	164,097,000	1934-1943	114,435,400
1908-1917	163,987,100	1935-1944	123,260,400
1909-1918	165,873,700	1936-1945	124,893,700
1910-1919	155,026,100	1937-1946	121,668,100
1911-1920	161,795,800	1938-1947	123,285,600
1912-1921	167,888,600	1939-1948	121,532,800
1913-1922	165,311,000	1940-1949	126,498,100
1914-1923	168,578,300	1941-1950	130,473,700
1915-1924	161,724,600	1942-1951	124,252,400
1916-1925	160,565,300	1943-1952	125,203,000
1917-1926	157,249,000	1944-1953	122,745,000
1918-1927	151,942,800	1945-1954	115,639,600
1919-1928	153,616,500	1946-1955	111,401,200
1920-1929	161,981,500	1947-1956	111,410,500
1921-1930	155,312,900	1948-1957	115,243,100
1922-1931	140,985,600	1949-1958	116,555,900

may, under Article III (b), increase its uses by 1,000,000 acre-feet and that the Upper Basin is obliged to furnish water for this increased III(b) use, subject only to the Upper Basin's first right to 7,500,000 acre-feet of water under Article III(a).

Article III(b) cannot be stretched so far. Whatever may account for its segregation as a separate provision of the Compact, there is nothing to suggest that III(b) imposes an affirmative duty on the Upper Basin. Rather, it imposes for the benefit of the Upper Basin, a ceiling on Lower Basin appropriations, albeit that the Lower Basin is privileged to have a higher ceiling than the Upper Basin.

It is my conclusion that Article III(b) has the same effect as Article III(a), and this conclusion is supported by the reports of the Compact commissioners, who spoke of III(a) and III(b) as apportioning 7,500,000 acre-feet to the Upper Basin and 8,500,000 acre-feet to the Lower Basin. (See Ariz. Exs. 46, 49, 53, 55, 57).

"Beneficial consumptive use" is a term used throughout the Compact although, regrettably, it is not defined in Article II or elsewhere in the document. In the early stages of the hearing, Arizona spent a vast amount of effort in seeking to establish the term as a word of art. She now contends that it has no special meaning and never did.

California argues that the term is used in the Compact as a word of art and means:

> "the loss of Colorado River System water in processes useful to man by evaporation, transpiration or diversion out of the drainage basin, or otherwise, whereby such water becomes unavailable for use within the natural drainage basin in the United States, or unavailable for delivery to Mexico in satisfaction of requirements imposed by the Mexican Treaty. The term includes but is not limited to incidental consumption of water such as evaporation and transpiration from water surfaces and banks

> of irrigation and drainage canals, and on or along seeped areas, when such incidental consumption is associated with beneficial consumptive use of water, even though such incidental consumption is not, in itself, useful."[15]

Further refinements of this definition are contained in a 70-page brief, labeled Appendix 1 of California's Opening Brief. Other parties have contributed suggestions for construing the term.

As used in the Compact, beneficial consumptive use was intended to provide a standard for measuring the amount of water each Basin might appropriate. This was necessary since Article III(a) and (b) imposed limits on appropriative rights. In early applications of the western law of appropriation, diversions were regarded as the measure of water use.[16] By 1922, however, it was recognized that the amount of water diverted for irrigation purposes was not necessarily the amount consumed and lost to the stream. Some water applied to the ground would usually reappear in the stream as return flow. The term beneficial consumptive use as employed in the Compact was intended to give each Basin credit for return flow. Thus whether the limits fixed by Article III(a) and (b) have been reached or exceeded is to be determined by measuring the amount of each Basin's total appropriations through the formula, diversions less return flows. In the Compact, "beneficial consumptive use" means consumptive use (as opposed to non-consumptive use, *e.g.* water power) measured by the formula of diversions less return flows, for a beneficial (that is, non-wasteful) purpose. This understanding of the term is reflected

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[15]Calif. Brief, Vol. II, p. A1-4.

[16]See Hutchins, Selected Problems in the Law of Water Rights in the West 331 (1942).

in several of the commissioners' reports. (See Ariz. Exs. 46, 52, 54, 57.)[17]

As the foregoing discussion indicates, I regard Article III(a) and (b) as a limitation on appropriative rights and not as a source of supply. So far as the Compact is concerned, Lower Basin supply stems from Article III (c) and (d). There are, of course, other sources of supply, for example, Lower Basin tributary inflow, but these are not dealt with as supply items in the Compact. Thus when referring to the Compact, it is accurate to speak of III(c) and III(d) water, but it is inaccurate and indeed meaningless to speak of III(a) and III(b) water. For Compact purposes, Article III(a) and (b) can refer only to limits on appropriations, not to the supply of water itself.

It is true that Congress in Section 4(a) of the Project Act, treated Article III(a) as a source of supply rather than as a limitation on appropriations. The Act speaks of "the waters apportioned to the lower basin States by paragraph (a) of Article III of the Colorado River compact . . . ." Later in this Report I shall develop at some length the meaning of this language and the confusion it has produced in this litigation. Suffice it now to say that the congressional meaning is different from the Compact meaning. One may properly speak of III(a) water in the Project Act sense, but not in the Compact sense. Much of the confusion in this case may be traced to this difference between the two writings, for the parties speak of III(a) water without differentiating between the Compact and the Project Act.

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[17]The term has since been adopted by branches of the engineering profession to express highly sophisticated formulae useful in the planning of irrigation projects. One such is the Blaney-Criddle formula U=KF—R. For an explanation of this formula, see Tr. 13417—13428 (Criddle). Such meanings have no bearing on the term as used in the Compact.

One other contention relating to the Compact may be noticed here. Under Section 4(a) of the Project Act, California, in addition to consuming a part of the so-called III(a) water, may share in "excess or surplus waters unapportioned by said Compact." California contends that III(b) uses are unapportioned by the Compact. The argument is based primarily on the fact that Article III(b) does not use the word "apportioned" which appears in Article III(a). Article III(b) gives the Lower Basin "the right to increase its beneficial consumptive use of" water by 1,000,000 acre-feet per annum. I have already indicated my view that subdivisions (a) and (b) of Article III operate in identical fashion; that the net effect of the two sections is to limit appropriations in the Upper Basin to 7,500,000 acre-feet and in the Lower Basin to 8,500,000 acre-feet. That both sections effect an apportionment is made clear by Article III(f), which provides for "further equitable apportionment of the beneficial uses of the waters of the Colorado River System unapportioned by paragraphs (a), (b) and (c)" of Article III. California argues that apportionment has no precise or consistent meaning in the Compact, since in the foregoing provision Article III(a) and (b) are lumped together with Article III(c) which, according to the argument, clearly does not apportion water to Mexico. California's argument has no merit. Article III(c), while apportioning no water to Mexico, does apportion the burden of a deficiency resulting from the Mexican obligation between the Upper and Lower Basins, and hence effects an apportionment. Moreover, as I have previously had occasion to observe, the reports of the Compact commissioners describe Article III(b) as an apportionment (See Ariz. Exs. 46, 49, 53, 55, 57).

By these observations I do not mean to rule on California's rights under Section 4(a) of the Project Act. That III(b) uses are apportioned for Compact purposes does not

control the interpretation of the statute, and I shall discuss its interpretation in this regard later in the Report.

B. The Boulder Canyon Project Act: Sections 1, 5, 6 and 8

The Boulder Canyon Project Act is in my view the source of authority for the allocation and delivery of water to Arizona, California and Nevada from Lake Mead and from the Colorado River below Lake Mead.[18] That the Congress intended the statute to be a source of such authority is made manifest in several sections. Section 1 of the Act authorizes the Secretary of the Interior "to construct, operate, and maintain" Hoover Dam for several purposes, including "for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses. . . ."

More specifically, Section 5 authorizes the Secretary "under such general regulations as he may prescribe to contract for the storage of water in said reservoir and for the delivery thereof at such points on the river . . . as may be agreed upon, for irrigation and domestic uses. . . ." To make its intention abundantly clear the Congress declared in Section 5 that: "No person shall have or be entitled to have the use for any purpose of the water stored as aforesaid except by contract as herein stated." The intention to exert authority over the allocation and distribution of water stored in Lake Mead can likewise be derived from Section 8(b) of the Act. That section contemplates that Arizona, California and Nevada, or any two of them, might negotiate a compact for the equitable division of Colorado River water but provides that such a compact shall be subject to water delivery contracts made by the Secretary of the Interior prior to congressional approval of such compact.

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[18]The Project Act does not govern the mainstream of the Colorado River above Lake Mead. See page 183, *infra*.

These provisions, together with the general operational scheme established in the Act and the purposes of the Act explicated in the legislative history, make it clear that the Project Act was designed by Congress to establish the authority for an allocation of all of the available water in Lake Mead and in the mainstream of the Colorado River downstream from Lake Mead among Arizona, California and Nevada, the only states having geographic access to this water. As to this water, principles such as equitable apportionment or priority of appropriation which might otherwise have controlled the interstate division of the River in its natural flow condition were rendered inapplicable by the Project Act.[19]

The Act itself clearly reserves to the United States broad powers over the water impounded in Lake Mead and delegates this power to the Secretary of the Interior, as agent of the United States. He is specifically authorized to impound the water of the Colorado River in Lake Mead and to exercise custody over the water so impounded through his control, management and operation of the dam and reservoir. No user, whether it be a state or an individual, may receive the impounded water unless the Secretary, by contract, agrees to release it for delivery to that user. Nothing in the Act purports to require the Secretary to agree to deliver specific quantities of water to any particular state or user, except that Section 6 requires him to satisfy water rights perfected as of June 25, 1929.[20] On the con-

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[19]Since the Project Act does not affect rights to water flowing in the Colorado River upstream from Lake Mead, see page 183, *infra*, the application of these principles to this reach of the River has not been abrogated by the Project Act.

[20]Section 6 of the Project Act directs that Hoover Dam be operated in "satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River compact. . . ." Article VIII states: "Present perfected rights . . . are unimpaired by this compact." The phrase "present perfected rights" means rights perfected when the Act became effective. A statute speaks as of its effective

trary, the Act clearly contemplates that water unappropriated as of that date is to be made available for use within a state only if the Secretary, within his discretion, contracts for the delivery of the water to that state. In short, no contract, no water, and the Secretary determines how much water he will contract to deliver to each state subject only to the limitations on his discretion expressed in the Project Act itself. Since Congress realized that the dam authorized by the Project Act would impound substantially all the water of the mainstream,[21] Congress legislated that the Project Act was to be the new source of power for the allocation of water so impounded. In Sections 8(b) and 4(a), Congress provided that the water could be divided by compact among the interested states. But failing such a compact, the water need not run to the sea nor be indefinitely stored in Lake Mead; in such event the water was to be divided by the Secretary of the Interior.

This conclusion, that the allocation of unappropriated water impounded in Lake Mead is governed by the Secretary's water delivery contracts, comports with the basic scheme established by Congress in the Project Act. It was

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date. See Cabunac v. National Terminals Corp., 139 F. 2d 853 (7th Cir. 1944); Zimmerman v. United States, 277 Fed. 965 (7th Cir. 1921). Under the terms of the Act, it became effective only when the conditions of Section 4(a) were satisfied and the President so proclaimed. The Presidential Proclamation was made on June 25, 1929.

It has been suggested that "present perfected rights" should be construed to mean rights perfected as of the date the Compact was signed, namely, November 22, 1922. This argument must be rejected. A compact, like a statute, speaks as of its effective date. The Colorado River Compact became effective only upon congressional consent thereto, and such consent was given in the Boulder Canyon Project Act. Thus, the Compact became effective when the Act took effect, which, as noted, was June 25, 1929.

[21] *See Hearings on H. R. 9826 Before the House Committee on Irrigation and Reclamation,* 69th Cong., 1st Sess. 163-164 (1926); Legislative History of Sections 4(a), 5 (1st Paragraph), and 8, Boulder Canyon Project Act as compiled by the State of Arizona [hereinafter cited as "Ariz. Legis. Hist."] p. 6.

apparent that water from Lake Mead would be utilized for a great variety of purposes in three different states, as well as on United States projects and in satisfaction of United States treaty obligations. A great many conflicting interests, as between different sovereigns and competing uses, would have to be resolved in order to operate the reservoir and dam. In this context, it is understandable that Congress designed the Project Act itself as the source of the authority and guiding standards necessary for the operation of the dam and reservoir, including the interstate division of the unappropriated water to be impounded by the dam, except only as the Act itself expressly provided otherwise. Congress obviously felt that once the water was within the custody and control of the United States, in default of interstate agreement, the duty would devolve upon the United States, and particularly the Secretary of the Interior, to provide for the allocation of the water.

This conclusion is also supported by the legislative history of the Project Act. The congressional debates are almost unintelligible except on the premise that the legislators considered that they were providing, in the Project Act itself, the authority for the allocation of impounded water among the states. Thus Senator Pittman of Nevada carefully pointed out on the floor of the Senate that Section 4(a) of the Project Act provided the basis for an apportionment of the water stored in Lake Mead. See pages 176-177, *infra*. Section 4(a) authorized the three interested states themselves to enter into the compact therein defined for the division of this water. Alternatively, the states could, if they chose, formulate a different scheme of allocation subject to congressional approval. Section 8(b). But if the states would not agree to the one or the other, then Congress clearly intended that the limitation on California in Section 4(a) and the Secretary's water delivery contracts made pursuant to Section 5 would impose a federal apportionment on the states.

Senator Pittman explained why it was necessary for Congress to provide authority for the allocation of the water among the three states.

> "Mr. President, this question has been here now for seven years. The seven States have been attempting to reach an agreement. Apparently the Senate of the United States is about to reach an agreement as to what ought to be done. The Senate has already stated exactly what it thinks about the water. That might have been an imposition on some States. Why do we not leave it to California to say how much water she shall take out of the river or leave it to Arizona to say how much water she shall take out of the river? It is because it happens to become a duty of the United States Senate to settle this matter, and that is the reason."[22]

Senator Hayden of Arizona who, like Senator Pittman, was one of those most interested in the Project Act, emphasized a number of times that the bill provided a basis for the apportionment of water among Arizona, California and Nevada regardless of state law and interstate priorities, but that it would not affect intrastate water rights. Senator Hayden stated:

> "The only thing required in this bill is contained in the amendment that I have offered, that there shall be apportioned to each State its share of the water. Then, who shall obtain that water in relative order of priority may be determined by the State courts."[23]

The amendment referred to was the basis for a substitute amendment by Senator Phipps of Colorado which, in turn, was enacted as the first paragraph of Section 4(a) of the Project Act.

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[22]70 Cong. Rec. 471 (1928), Ariz. Legis. Hist. p. 84.

[23]70 Cong. Rec. 169 (1928), Ariz. Legis. Hist. p. 30. For similar statements by Senator Hayden see 70 Cong. Rec. 163 (1928), Ariz. Legis. Hist. p. 18.

The following colloquy also makes clear that Congress intended that the Secretary of the Interior, in the exercise of the discretion vested in him by Section 5, could, by means of water delivery contracts, effectuate an interstate allocation, in default of allocation by the states themselves.

> "Mr. Walsh of Montana. If the city of Los Angeles has this enormous appropriation of the waters of the Colorado River, a perfected appropriation of [*sic*] an inchoate appropriation, does it follow; if the Government erects this dam across the Colorado River and creates a great storage basin, that it must yield up that amount of water to the city of Los Angeles?
>
> "Mr. Johnson. I rather think so, just exactly as if it were a perfected right for irrigation purposes.
>
> "Mr. Walsh of Montana. Yes; but I always understood that the interest that stores the water has a right superior to prior appropriations that do not store.
>
> "Mr. Johnson. Possibly so. What is the point?
>
> "Mr. Walsh of Montana. The point is that apparently, if that is correct, then this expenditure is being made with no right in the Government of the United States to control the water which is stored, but that it must go to those appropriators.
>
> "Mr. Johnson. No; the bill provides that a contract in advance must be made for the storage of water by the Secretary of the Interior.
>
> "Mr. Walsh of Montana. A contract with whom?
>
> "Mr. Johnson. With those who utilize and take and appropriate the water.
>
> "Mr. Walsh of Montana. That is to say, the Government may dispose of the stored water as it sees fit?
>
> "Mr. Johnson. Yes; under the terms of this bill.
>
> "Mr. Walsh of Montana. Then how can it be said that the city of Los Angeles has a perfected interest?

"Mr. Johnson. It has a perfected right there unquestionably, but the bill requires the city of Los Angeles to conform to it, and the city of Los Angeles is perfectly willing to conform to it just exactly as if it had no perfected right.

"Mr. Walsh of Montana. Am I correct in the assumption, that the Government of the United States must distribute the water to the various appropriators in accordance with their several appropriations?

"Mr. Johnson. If they contract.

"Mr. Walsh of Montana. Yes; but to contract means a liberty of contract. That is what I want to know. Can the Secretary give the water to them or withhold it from them as he sees fit?

"Mr. Johnson. Certainly, because before he begins work upon the dam he has to have the contract in his possession for its payment, and he is the one who is to fix the sums that are to be paid.

"Mr. Walsh of Montana. Yes, but that is quite contradictory. It seems to me that the city of Los Angeles has no rights by virtue of this appropriation.

"Mr. Johnson. Certainly it has, but those rights unquestionably will be controlled by this bill.

* * *

"Mr. Walsh of Montana. I directed the inquiry merely for the purpose of trying to find out, if I can, under what kind of obligation the Government of the United States, should it build this dam, would be to those who have the appropriations.

"Mr. Johnson. The Government would be under no obligations until it makes its terms. I seem unable to make that plain. But here is everything in this scheme, plan, or design: Everything is dependent upon the Secretary of the Interior contracting with those who desire to obtain the benefit of the construction, and he is not to undertake any expenditure nor to undertake any construction until that shall have been accomplished.

"Mr. Walsh of Montana. Let us suppose the Arizona people are perfectly willing to meet the requirements and that the Los Angeles people are perfectly willing to meet the requirements and other people who have not even attempted to make any appropriation are perfectly able and willing to meet the requirements. Who then has the right?

"Mr. Johnson. The Secretary of the Interior and the Government have the right.

"Mr. Walsh of Montana. The Secretary of the Interior may utterly ignore those appropriations?

"Mr. Johnson. Possibly so.

"Mr. Walsh of Montana. That is what I am curious to find out about."[24]

Arizona v. *California,* 283 U. S. 423 (1931), does not, as California urges, conflict with the conclusion here recommended. In that case Arizona filed an original bill of complaint to enjoin the construction of the dam authorized by the Project Act on the ground, *inter alia,* that the Secretary of the Interior would operate the dam in such a manner as to invade "Arizona's quasi-sovereign right to prohibit or to permit appropriation, under its own laws, of the unappropriated water of the Colorado River flowing within the State." 283 U. S., at 451. The bill was dismissed "without prejudice to an application for relief in case the stored water is used in such a way as to interfere with the enjoyment by Arizona, or those claiming under it, of any rights already perfected or with the right of Arizona to make additional legal appropriations and to enjoy the same." 283 U. S., at 464. The Court's reason for dismissing the bill, stated at page 464, was:

"As we hold that the grant of authority to construct the dam and reservoir is a valid exercise of

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[24]70 Cong. Rec. 168 (1928), Ariz. Legis. Hist. pp. 26-29. See also the statements of Senator Pittman at 69 Cong. Rec. 10259 (1928), Ariz. Legis. Hist. pp. 13-14; and Senator Hayden at 70 Cong. Rec. 382, Ariz. Legis. Hist. pp. 56-56c.

> Congressional power, that the Boulder Canyon Project Act does not purport to abridge the right of Arizona to make, or permit, additional appropriations of water flowing within the State or on its boundaries, and that there is now no threat by Wilbur, or any of the defendant States, to do any act which will interfere with the enjoyment of any present or future appropriation, we have no occasion to consider other questions which have been argued."

I interpret *Arizona* v. *California* as holding nothing more than that the United States could, under the Constitution, construct a dam on the territory of Arizona and Nevada and impound the waters of the Colorado River, a navigable stream. Arizona's objections, that the dam might be operated in such a way as to trespass on her sovereignty, were dismissed as premature since it was by no means certain that the dam and other works would be so operated as to invade Arizona's rights. This is the only explanation of the dismissal without prejudice to a new application for relief if the dam were operated so as to adversely affect Arizona's appropriations from the Colorado River. The Court reasoned that the constitutional issues which might be raised, depending on how the Secretary operated the dam, were best left to await the outcome of its construction and operation. The Court recognized that when the dam impounded water this might affect Arizona's rights to appropriate it by reducing the supply which would flow on her borders, but the Court held that such an infringement was justified under the constitutional power of the Federal Government to regulate navigable streams. Thus the Court stated, at pages 462-463 of the opinion:

> "There is no allegation of definite physical acts by which Wilbur is interfering, or will interfere, with the exercise by Arizona of its right . . . . to make future appropriations by means of diversions below the dam, or limiting the enjoyment of rights

> so acquired, unless it be by preventing an adequate quantity of water from flowing in the river at any necessary point of diversion."

Beyond this the Court considered it unnecessary to go. The Court thus decided not to deal with the question, which must be answered in this litigation, of the extent of the Secretary's authority under the Project Act to control the allocation of water among the states. The fact that this and other questions are ripe for decision now, although they were not in 1931 when *Arizona* v. *California* was decided, gives some indication of the vast difference between the two cases. The prior case was decided before Hoover Dam was built and the sole issue was whether construction of the dam should be enjoined. The present case, of course, necessarily involves an adjudication of the claims and interests of the several states and the United States as they have developed during some twenty-five years of operation of Hoover Dam. For example, one of Arizona's primary fears in 1931 was that she would be required to conform to the Colorado River Compact in order to receive stored water; but she has since ratified the Compact, and, indeed, has relied on that ratification in this litigation. In short, *Arizona* v. *California* was concerned with different issues and different circumstances from those presented in this case.

The argument has been advanced that the Project Act, as I would construe it, constitutes an unconstitutional assumption of power by the United States. The argument does not survive scrutiny. Clearly the United States may construct a dam and impound the waters of the Colorado River, a navigable stream. *Arizona* v. *California*, 283 U. S. 423 (1931); see *United States* v. *Twin City Power Co.*, 350 U. S. 222 (1956); *United States* v. *Chandler-Dunbar Co.*, 229 U. S. 53 (1913); *United States* v. *Rio Grande Irrigation Co.*, 174 U. S. 690 (1899). Clearly, also, once the United States impounds the water and thereby obtains

physical custody of it, the United States may control the allocation and use of unappropriated water so impounded. *Ivanhoe Irrigation District* v. *McCracken,* 357 U. S. 275 (1958); *United States* v. *Gerlach Live Stock Co.,* 339 U. S. 725 (1950). Since Section 6 instructs the Secretary to satisfy property rights in mainstream water perfected as of June 25, 1929, the effective date of the Act, these rights are not in jeopardy. Rights that might be recognized as of that date under state law but that do not qualify as perfected rights under Section 6 do not receive this protection. See pages 306-309, *infra*. Despite this fact, however, there is no need to pass on questions of ownership of water in navigable streams or of the validity against the United States of rights therein recognized by state law. There has been no showing that non-perfected rights recognized by state law as of June 25, 1929, if any, have not been satisfied since Hoover Dam was constructed. If it develops that such rights are not satisfied in the future, that will be time enough to determine whether they are of such character as require compensation for their taking.

In order to sustain the Project Act as applied in this case, it need only be held that the United States may, under the Commerce clause of the Constitution, impound waters in a navigable stream and regulate the disposition thereof so long as perfected rights are satisfied, leaving open the question whether non-perfected rights recognized under state law must be compensated if they are not satisfied.

Not much can be said of the argument that the Project Act constitutes an unconstitutional delegation of legislative power to the Secretary of the Interior because there are insufficient standards to govern his allocation of the water impounded in Lake Mead. The premise is wrong. The Act imposes substantial limitations on the Secretary's discretion. He may not contract with California for more than 4,400,000 acre-feet out of 7,500,000 acre-feet of consumptive use of mainstream water nor for more than one-half

of surplus. Section 4(a). He must satisfy present perfected rights. Section 6. Contracts for water for irrigation and domestic uses must be for permanent service. Section 5. The Secretary, his permitees, licensees and contractors, "shall observe and be subject to and controlled by" the Colorado River Compact. Sections 8(a), 13(b) and 13(c). The Secretary and those claiming under him are subject to any compact between Arizona, California and Nevada, or any two of them, approved by Congress. Section 8(b).[25] The Secretary is subject to the provisions of the reclamation law in the operation and management of the works authorized by the Project Act, except as otherwise provided therein. Section 14.

The Secretary has in fact exercised his discretion, as will be more fully explained later, by making contracts which apportion the water available in Lake Mead substantially along the lines which Congress proposed in Section 4(a) of the Project Act as a fair and equitable division among Arizona, California and Nevada.

For these reasons I have concluded that the delegation of authority to the Secretary of the Interior to apportion Lake Mead water is constitutional and that the Secretary has exercised this authority in a reasonable manner.

Only two other contentions of the parties regarding the proper interpretation of the Secretary's authority under the Project Act need be discussed at this point. Arizona, while agreeing with the United States that the Project Act constitutionally delegates to the Secretary of the Interior the power to allocate mainstream water among the claimant states, argues that the second paragraph of Section 4(a) establishes a formula for the allocation which the Secretary is required precisely to follow, and that those clauses in her water delivery contract which deviate from the for-

[25]Compacts approved by Congress after January 1, 1929, are subject to contracts made by the Secretary prior to congressional approval of such compacts.

mula are void. This argument is premised on the language in Section 5 that "contracts respecting water for irrigation and domestic uses . . . shall conform to paragraph (a) of section 4 of this act." The second paragraph, Arizona points out, is included within Section 4(a). But the second paragraph of Section 4(a) is plain in that it merely *authorizes* a tri-state compact for the division of water; it does not compel it; nor does it condition approval of the Colorado River Compact upon acceptance of the proposed tri-state compact. Indeed, the second paragraph was specifically amended on the floor of the Senate to make the suggested division permissive rather than mandatory.[26] The suggested compact which Congress was willing to approve in advance is of no compelling force or effect since no such compact has ever been agreed to. In so far as Section 5 refers to the second paragraph of Section 4(a) it is for the purpose of requiring the Secretary to respect the compact if ratified by the states. See also Section 8(b). Arizona's contention in this respect must therefore be rejected.

Nevada contends that the congressional consent to the Colorado River Compact embodied in the Project Act includes consent to Article IV (a) of the Compact which declares that the Colorado River is no longer navigable. From this premise, she contends that Section 5 cannot empower the Secretary to divide and allocate water and that such a division can be accomplished in two ways only, by compact or adjudication. If Section 5 purports to provide a third method of apportionment, by contract, it is unconstitutional. Accordingly, Nevada argues that she is not bound by her contract limit of 300,000 acre-feet per annum and she seeks an equitable apportionment of the waters of the Lower Basin. This contention does violence to the Act. Section 1 of the Project Act authorized the construction

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[26]See 70 Cong. Rec. 459 (1928), Ariz. Legis. Hist. pp. 83-84.

of the dam for the purpose of "improving navigation" and Section 6 provides that the dam is to be used "First, . . . for improvement of navigation . . ." Congress thus rejected the declaration of non-navigability in Article IV (a) of the Compact. That Article specifically provides that: "If the Congress shall not consent to this paragraph, the other provisions of this compact shall nevertheless remain binding."

C. The Boulder Canyon Project Act: Section 4(a) and the California Limitation Act

The first paragraph of Section 4(a) establishes a limitation on California's consumptive use of mainstream water, and, as will be developed later, this limitation forms an integral part of the interstate allocation which the water delivery contracts have made. Section 4(a) provides, in part, that the Act shall not take effect and the proposed dam shall not be constructed unless and until (1) all seven of the interested states had ratified the Colorado River Compact, or:

> "(2) [I]f said States fail to ratify the said compact within six months from the date of the passage of this Act then, until six of said States, including the State of California, shall ratify said compact and shall consent to waive the provisions of the first paragraph of Article XI of said compact, which makes the same binding and obligatory only when approved by each of the seven States signatory thereto, and shall have approved said compact without conditions, save that of such six-State approval, and the President by public proclamation shall have so declared, and, further, until the State of California, by act of its legislature, shall agree irrevocably and unconditionally with the United States and for the benefit of the States of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, as an express covenant and in consideration of the passage

> of this Act, that the aggregate annual consumptive use (diversions less returns to the river) of water of and from the Colorado River for use in the State of California, including all uses under contracts made under the provisions of this Act and all water necessary for the supply of any rights which may now exist, shall not exceed four million four hundred thousand acre-feet of the waters apportioned to the lower basin States by paragraph (a) of Article III of the Colorado River compact, plus not more than one-half of any excess or surplus waters unapportioned by said compact, such uses always to be subject to the terms of said compact."

The reason that Congress imposed this limitation on California's consumptive use of mainstream water in the event that all seven states did not agree to the Colorado River Compact within six months of the date of enactment of the Project Act is apparent from the statutory language itself. It was for the benefit of the other six states.

Absent seven-state ratification of the Compact, the Upper Basin required protection against appropriations in the Lower Basin in excess of the Compact apportionment. The Upper Basin feared that Arizona might not ratify, in which event California, unless limited, would be able to appropriate from the mainstream substantially all of the Lower Basin apportionment, leaving Arizona free to make further appropriations from the mainstream outside the Compact ceilings. The limitation on California left a sufficient margin for exploitation by Arizona so as to secure the Upper Basin against undue encroachment by the non-ratifying state.

Similarly, Arizona and Nevada were concerned that California's rapid development would enable that state to appropriate most of the mainstream water available in the Lower Basin. The California limitation afforded these states protection against this eventuality. Unless California

agreed with them to an acceptable division of mainstream water such as that suggested in the second paragraph of Section 4(a), they could, simply by delaying ratification for six months, bring the limitation into effect.

Seven states did not ratify the Colorado River Compact within six months of the date of enactment of the Project Act. California, in compliance with the statutory condition, passed its Limitation Act on March 4, 1929.[27] The California Limitation Act recites that it was enacted in order to comply with Section 4(a) of the Project Act, and it limits California's diversions of Colorado River water in language that is substantially identical to the Project Act limitation.

The limitation on California's use of Colorado River water, contained in the Project Act and the California Limitation Act, and incorporated into the Secretary's water delivery contracts with California users, is valid and binding on California. California argues that if it be held that Arizona effectively ratified the Compact, then California should be absolved of the limitation upon her. California's argument is based upon the premise that her act of self-limitation was exacted of her only in the event of a six-state compact, not of a seven-state compact. However, the natural reading of the language of the statute does not support her contention. The condition stated is the failure of seven states to ratify within six months. That contingency occurred.

Nor is there much to be said for California's alternative argument that Arizona did not effectively ratify the Compact. This is founded on the premise that the Compact, having been proclaimed as a six-state compact, could not fifteen years later become a seven-state compact. The premise is unsound. It was not proclaimed as a six-state compact. It never became a six-state compact. Article XI

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[27]Calif. Stats. and Amendments to the Codes, ch. 16, pp. 38-39 (1929). For the complete text of the Limitation Act, see Appendix 4.

of the Compact was never stricken or amended. The Congress and six of the states "waived" compliance with Article XI. Certainly Congress contemplated the future adherence of Arizona. Section 13(a) of the Project Act provides: "[T]his approval shall become effective when the State of California and *at least* five of the other States mentioned, shall have approved or *may hereafter* approve said compact as aforesaid and shall consent to such waiver, as herein provided." (emphasis added) Nothing has been called to my attention to indicate that California or any of the other signatory states expressed itself differently.

Under ordinary contract law it may be that fifteen years is too long a time within which an invitation to agree may be said to remain open. But that is always a question of fact to be determined from all the circumstances reflecting the understanding of the parties. 1 Williston on Contracts § 54 (3rd ed. 1957); 1 Corbin on Contracts § 36 (1950). Considering what has already been said, coupled with the perpetual character of the Compact and the very long-range interests which it embraced, I do not think Arizona outwaited her invitation.

Interpretation of the limitation on California.

We turn now to the construction of the language of Section 4(a) of the Project Act and the substantially identical phraseology which appears in California's Limitation Act. Although the problems inherent in those words do not leap to the eye, nevertheless so troublesome are they, that each of the parties which has dealt with them has construed them quite differently, and none of the parties advocates a literal reading of all the statutory language.

What is meant by the words "waters apportioned to the lower basin States by paragraph (a) of Article III of the Colorado River compact"?

Article III(a) of the Compact reads as follows:

> "(a) There is hereby apportioned from the Colorado River System in perpetuity to the Upper Basin and to the Lower Basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist."

Read literally, the phrase in Section 4(a) limiting California to 4.4 million acre-feet "of the waters apportioned to the lower basin States by paragraph (a) of Article III" means that, of the 7,500,000 acre-feet apportioned to the entire Lower Basin, California's aggregate annual consumptive use shall not exceed 4,400,000 acre-feet.

What is meant by the words "excess or surplus waters unapportioned by said compact"?

Article III(f) reads as follows:

> "(f) Further equitable apportionment of the beneficial use of the waters of the Colorado River System unapportioned by paragraphs (a), (b), and (c) may be made in the manner provided in paragraph (g) at any time after October 1, 1963, if and when either Basin shall have reached its total beneficial consumptive use as set out in paragraphs (a) and (b)."

The word "surplus" occurs in Article III(c) where it is used as follows: ". . . waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b)."

Thus read literally, the phrase limiting California to one-half of any "excess or surplus waters unapportioned by said compact" means that California may consume half of any water above that referred to in Article III(a) and (b).

California would have us read the first phrase literally so that all uses, both from the mainstream and the tributaries, in the Lower Basin will be included in the accounting.

But not so the second phrase, for if the second is read literally she has no share in the uses specified in Article III(b).[28]

Arizona would have us read the second phrase literally so as to exclude California from the 1,000,000 acre-feet allotted, or as she says, apportioned, by Article III(b). But not so the first phrase. Arizona argues that Article III(a) of the Compact, despite its plain language to the contrary, was construed by the Congress and should now be construed as apportioning to the Lower Basin not System water but mainstream water.

Nevada reads the language so that it makes no difference how the "surplus" language in California's limitation is construed. She argues that California can have no more than 4,400,000 acre-feet out of the available water in the mainstream, and since there is in fact no surplus, which Nevada defines as the excess over 10,000,000 acre-feet (8,500,000 acre-feet for the Lower Basin and 1,500,000 for Mexico), the question of how the language is to be read is moot. Nevada overlooks that her reasoning has in fact excluded California from so-called III(b) water.

The United States once suggested a totally different reading. It construed the first mentioned phrase as if it read "apportioned to the lower basin states by paragraph (*d*) of Article III." Such a construction relates the phrase to the obligation of the states of the Upper Division not to cause a depletion of the River at Lee Ferry below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years. The United States considers "surplus" to be "the waters in the main stream available for use in the Lower Basin in excess of 7,500,000 acre-feet per year."[29]

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[28]That Article reads: "(b) In addition to the apportionment in paragraph (a), the Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by 1,000,000 acre-feet per annum."

[29]U. S. proposed conclusion 11.17.

The reason for such diversity of opinion is that the words of Section 4(a), despite their superficial simplicity, cannot bear their literal meaning. This becomes apparent in the attempt to apply the language of Section 4(a) to the factual situation in the Colorado River Basin.

First of all, Section 4(a), if read literally, authorizes a compact which would deprive two states, New Mexico and Utah, of the use of Lower Basin tributary waters which are presently being consumed in those states and which were being consumed there in 1928 when the Project Act was enacted. Section 4(a) contemplates the division of the water referred to therein only among the three states of the Lower Basin which have geographic access to water flowing in the mainstream of the Colorado River, namely, Arizona, California and Nevada. This becomes clear when we read the first and second paragraphs of Section 4(a) together. The first paragraph limits California to not more than "four million four hundred thousand acre-feet of the waters apportioned to the lower basin States by paragraph (a) of Article III of the Colorado River compact, plus not more than one-half of any excess or surplus waters unapportioned by said compact. . . ." The second paragraph authorizes a compact between Arizona, California and Nevada "which shall provide (1) that of the 7,500,000 acre-feet annually apportioned to the lower basin by paragraph (a) of Article III of the Colorado River compact, there shall be apportioned to the State of Nevada 300,000 acre-feet and to the State of Arizona 2,800,000 acre-feet for exclusive beneficial consumptive use in perpetuity, and (2) that the State of Arizona may annually use one-half of the excess or surplus waters unapportioned by the Colorado River compact. . . ." These two paragraphs are clearly correlative and contemplate allocation of all the available water among the three states. See pages 174-175, *infra*. Reading the two paragraphs together, it becomes apparent that the pro-

posed compact to which Congress gave advance approval in the second paragraph was for a division of the available annual supply of water so that of the first 7,500,000 acre-feet of consumptive use, 4,400,000 is allocated to California, 2,800,000 to Arizona and 300,000 to Nevada; any excess is divided half to California and half to Arizona. There is no water left for any other states.

Yet, if read literally, Section 4(a) applies to all of the water "apportioned to the lower basin states by paragraph (a) of Article III of the Colorado River compact." The water apportioned to the Lower Basin by Article III(a) of the Compact is water in the "Colorado River System," which is defined in Article II(a) of the compact as "that portion of the Colorado River and its tributaries within the United States of America." New Mexico and Utah are presently consuming water, as they were in 1928, from tributaries of the Colorado River in the Lower Basin. Thus, a literal reading of Section 4(a) would authorize Arizona, California and Nevada to enter into a compact for the division among themselves of all of the Lower Basin system water, including the water being used by New Mexico and Utah. The unlikelihood of such a congressional intention indicates that Section 4(a) should not be given its literal meaning.

Secondly, Section 4(a), if read literally, authorizes a compact which would prohibit the states of the Upper Basin from utilizing any of the water unapportioned by the Colorado River Compact despite the fact that Article III(f) of the Compact specifically contemplates a future apportionment of this water between the two Basins and Congress purported to ratify the Compact in the Project Act. The tri-state compact authorized by Congress in Section 4(a) provides for the division of all "waters unapportioned by the Colorado River compact" among Arizona and California. Yet that phrase, if given its literal Compact meaning, includes all unapportioned water throughout the entire

Colorado River Basin, in both the Upper and Lower Basins. See pages 194-195, *infra*. It is unlikely, particularly in view of Article III(f) of the Compact, that Congress intended to authorize Arizona and California to agree to divide among themselves all of the water in the Colorado River System unapportioned by the Compact, thus leaving nothing for the Upper Basin beyond its III(a) apportionment.

Finally, Section 4(a), if read literally, would prohibit California from consuming water from the Colorado River in excess of 4,400,000 acre-feet of consumptive uses per annum until consumptive uses throughout the Colorado River Basin totaled 16,000,000 acre-feet per annum, a figure which is approximately twice the present total of consumptive uses. Thus, California is limited by Section 4(a) to 4,400,000 acre-feet per annum plus "not more than one-half of any excess or surplus waters unapportioned by" the Colorado River Compact. Surplus waters unapportioned by the Compact, if taken literally, means water in excess of that "apportioned" in Article III(a) and (b), which means water in excess of 16,000,000 acre-feet of consumptive use in the Colorado River Basin.[30] Again it is extremely unlikely that Congress intended this literal result to apply.

For the reasons stated above, Section 4(a) of the Project Act cannot be given a literal interpretation. Such an interpretation would fly in the face of what must have been the congressional intention; it would make no practical sense whatsoever. This being the case, I have construed Section 4(a) so as to comport with the purposes of Congress in enacting it and to effectuate a result which makes sense when the section is applied to the factual situation existing in the Colorado River Basin.

[30]See p. 195, *infra*.

Interpretation of the phrase, waters apportioned by Article III(a).

I have concluded that Congress intended, in limiting California to 4.4 million acre-feet of "the waters apportioned to the lower basin States by paragraph (a) of Article III of the Colorado River compact," simply to limit California's annual uses[31] of water to 4.4 out of 7.5 million acre-feet. Congress referred to Article III(a) of the Compact solely as a shorthand way of saying "7,500,000 acre-feet per annum." This inappropriate reference to the Compact has been the cause of seeming inconsistency in the Act and of much confusion in its interpretation. Reflection has led to the conviction that the statutory language does not accurately express the true congressional intention.

Thus I hold that Section 4(a) of the Project Act and the California Limitation Act refer only to the water stored in Lake Mead and flowing in the mainstream below Hoover Dam, despite the fact that Article III(a) of the Compact deals with the Colorado River *System,* which is defined in Article II(a) as including the entire mainstream and the tributaries.

It is clear that Congress intended Section 4(a) of the Project Act to apply only to the mainstream, where the works authorized by the Act were to be constructed.[32] The United States cannot by its operation and control of Hoover

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[31]Measured by diversions less returns.

[32]It is true that certain sections of the Project Act apply to the Colorado River System. The explanation for this is that in those sections Congress was dealing with problems which had system-wide application. Thus Section 13 applies system-wide because it approved the Colorado River Compact, which itself applies system-wide. Similarly, Section 16 applies to the entire river system because it deals with a possible *future* comprehensive development plan for the entire river system. But it is clear that many other sections of the Project Act apply only to the mainstream, and this is understandable because in them Congress was dealing only with mainstream problems.

Dam regulate the flow of water in the tributaries, nor can it deliver water on any of these streams.

Certainly Congress intended that the water, to a portion of which California was limited by Section 4(a), would be mainstream water only. The very language of the Section—it refers to the Colorado River and not to the System—points in this direction. But more important, the second paragraph of Section 4(a) demonstrates that Congress considered the limitation on California to be part of an overall allocation of the entire quantity of water dealt with in that Section among three states only: of the first 7.5 million acre-feet—4.4 to California, 2.8 to Arizona, and .3 to Nevada; the balance to California and Arizona equally. This intention is clearly stated in the legislative history. Thus Senator Hayden of Arizona made the following comments about an amendment to the Project Act which he offered and which subsequently became the second paragraph of Section 4(a). The Phipps Amendment, which is referred to in the quotation, became the first paragraph of Section 4(a).

> "MR. HAYDEN. Mr. President, an examination of the amendment offered by the Senator from Colorado [Mr. Phipps] will disclose that it proposes that the State of California shall agree with the United States, for the benefit of the States of Arizona and Nevada, that the aggregate annual consumptive use of water from the Colorado River by the State of California shall not exceed 4,400,000 acre-feet. Further, that the State of California may have one-half of any excess of [*sic*] surplus waters unapportioned by the Colorado River compact.
>
> "The first part of my amendment is a mere corollary to the amendment offered by the Senator from Colorado. It provides that of the remainder of the seven and one-half million acre-feet there

> shall be apportioned to the State of Nevada 300,000 acre-feet, and to the State of Arizona 2,800,000 acre-feet, which, combined with 4,400,000 acre-feet which the State of California will use, completely exhausts the seven and one-half million acre-feet apportioned in perpetuity to the lower basin.
>
> "The second proposal in my amendment is that the State of Arizona may annually use one-half of the surplus or unapportioned water, which is likewise a corollary to the proposal made by the Senator from Colorado, which likewise disposes of the total quantity of surplus or unapportioned waters in the lower basin."[83]

To maintain that Congress intended to adopt, in Section 4(a), the Compact concept of apportioning all of the water uses in the entire Colorado River System, in the Lower Basin, requires that I attribute to Congress an intent to deprive two of the states having Lower Basin interests of any participation in the Lower Basin apportionment. Such a deprivation would have divested even perfected rights in New Mexico and Utah. In the light of the fact that Congress expressly protected perfected rights in Section 6, it is extremely unlikely that Congress intended to divest such rights in Section 4(a). Moreover, it is preposterous to suggest that such a result would have been accomplished with the active support of Senator Bratton [84] of New Mexico, one of the principal architects of Section 4(a). If Congress had intended to adopt the system wide method of accounting used in the Compact, it would have divided the III(a) and (b) apportionment of appropriative rights made by the Compact among all five states

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[83]70 Cong. Rec. 459-460 (1928), Availability of Article III(b) Waters For Use in California: Legislative History of Section 4(a) (submitted by the California Defendants) [hereinafter cited as "Calif. Legis. Hist."] pp. 148-149.

[84]In 1933 Senator Bratton was appointed to the Court of Appeals for the Tenth Circuit and, in 1953, he became Chief Judge.

having Lower Basin interests. Thus, Congress would have said: "The Lower Basin is entitled to a total appropriation in the amount of 8,500,000 acre-feet. This apportionment is divided among the *five* states having Lower Basin interests as follows," giving ceilings on appropriations within the Lower Basin for each of the five states. But Congress did no such thing. It dealt only with three of the five Lower Basin states, the three states which, significantly, are geographically accessible to mainstream water. This strongly indicates that the congressional intention was to provide only for the apportionment of mainstream water.

Furthermore, Senator Pittman made it perfectly clear that Section 4(a) of the Project Act was designed by Congress to apply only to the mainstream and to apportion water only among the three states that could utilize mainstream water. Thus Senator Pittman, in discussing the Phipps amendment, stated:

> "The Senate has already determined upon the division of water between those States. How? It has been determined how much water California may use, and the rest of it is subject to use by Nevada and Arizona. Nevada has already admitted that it can use only . . . 300,000 acre-feet. That leaves the rest of it to Arizona. As the bill now stands it is just as much divided as if they had mentioned Arizona and Nevada and the amounts they are to get . . . ."[35]

This statement by Senator Pittman obviously reflected the congressional understanding that the limitation on California in the first paragraph of Section 4(a), along with the fact that Nevada could use no more than 300,000 acre-feet of water from the mainstream because of physical limitations, as her representatives continually stated to the Congress, would leave the remaining water available to Ari-

[35] 70 Cong. Rec. 468 (1928), Ariz. Legis. Hist. p. 80.

zona, the only other state having access to mainstream water. Since the first paragraph limited California to 4,400,000 acre-feet of the 7,500,000 acre-feet of water "apportioned . . . by paragraph (a) of Article III," and Nevada could only use 300,000 acre-feet, there would be left 2,800,000 of the 7,500,000 acre-feet for Arizona if the apportionment were intended to be only of mainstream water among these three states. Senator Pittman confirmed this when he concluded that:

> "... Arizona today has practically allocated to it 2,800,000 acre-feet of water in the *main Colorado River*."[36] (emphasis added)

Similarly, since California was limited to one-half of "excess or surplus waters," and since Nevada represented that she could not utilize any of this water, Arizona became the inevitable beneficiary of the other half.

This construction of Section 4(a) as applying only to the mainstream of the Colorado River requires rejection of California's principal contention. The crux of her case lies in the view that the Project Act adopts and applies the Compact method of accounting. Thus California would total all uses of System water in the Lower Basin until the sum of 7,500,000 has been reached, after which she would assign all remaining uses to "excess or surplus waters unapportioned by said compact." There being no tributaries in California, the effect of this thesis is, of course, to exhaust the 7,500,000 apportionment with the help of tributary uses outside of California and to leave a large supply of mainstream water which California shares as "surplus." The effect of California's accounting system is disclosed in Part XII of her Proposed Findings and Conclusions. The California position is there revealed as follows:

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[36]70 Cong. Rec. 469 (1928), Ariz. Legis. Hist. p. 82.

1. Art. III(a) of the Compact apportioned 7,500,000 acre-feet of uses to the Lower Basin;

2. Congress limited California to not more than 4,400,000 acre-feet of uses from this apportionment;

3. California is using all of the 4,400,000 acre-feet;

4. Thus, 3,100,000 acre-feet of uses remain for other Lower Basin states out of the III(a) apportionment;

5. The 3,100,000 acre-feet of uses are exhausted in other states, as follows:

(1) Gila River	1,750,000
(2) Other tributaries	200,000
(3) Mainstream, other than California	1,150,000
Total	3,100,000;

6. Any water remaining in the *mainstream* in excess of 5,550,000 acre-feet (4,400,000 for California and 1,150,00 for others) is surplus, of which California may take as much as one-half.

Under this hypothesis California argues that she is privileged to take as surplus up to 978,000 acre-feet[87] from the mainstream in addition to taking 4,400,000 acre-feet, also from the mainstream, out of what she interprets to be the Article III(a) System apportionment. The effect of this argument is to give California 5,378,000 acre-feet out of the first 7,500,000 acre-feet available from the mainstream, leaving only 2,122,000 acre-feet for Arizona and Nevada.

[87]California arrives at this figure by dividing her contract amount of 5,362,000 acre-feet between 4,400,000 acre-feet of III(a) water and 962,000 acre-feet of surplus and by adding to the latter 16,000 acre-feet of other uses. See note 71, page 208, *infra*.

Nothing in the words or the legislative history of Section 4(a) lends countenance to this hypothesis. The second paragraph of Section 4(a) contemplates that Arizona could receive 2,800,000 acre-feet of the 7,500,000 acre-feet *in addition* to the exclusive use of the Gila River within her boundaries.[38] Under the California hypothesis, over one-half of Arizona's 2,800,000 acre-feet is used up by appropriations on the Gila.

After the prolonged dispute between Arizona and California, which was uniformly described as a difference over whether California should be limited to 4,200,000 or

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[38]The second paragraph of Section 4(a) authorizes a compact among Arizona, California and Nevada which would allocate 2,800,000 acre-feet plus one half of surplus to Arizona. It then further provides that "the State of Arizona shall have the exclusive beneficial consumptive use of the Gila River and its tributaries within the boundaries of said State. . . ." This language must mean that Arizona may consume Gila River water *in addition* to the 2,800,000 plus half of surplus. California's explanation of the language, that it ensures Arizona exclusive use of Gila River water *as part of* her 2,800,000 plus half of surplus, makes it redundant since that would necessarily be the result even without this language.

This is so because Gila River water flowing in Arizona can, as a matter of geography, be consumed only in that state, California or Mexico. California had no diversion works as of 1928 capable of diverting Gila River water for use in that state nor were there any contemplated at that time. Indeed, California has not used Gila River water since 1928, and she has no facilities for the diversion of that water today. Also another clause in the second paragraph of section 4(a), clause (4), specifically provides that Gila River water shall never be used to satisfy the Mexican treaty. Thus, even without the above quoted language, Gila River water could be consumed only in Arizona, and the language, if it is to be given some effect, must mean that Arizona may consume this water *in addition* to the 2,800,000 plus half of surplus allocated to it from the mainstream.

This necessary interpretation of the second paragraph of section 4(a) was recognized by Senators Johnson and Hayden during the debates in the Senate. Senator Johnson was interpreting the second paragraph when he stated that: "When Arizona says that she has but 2,800,000 acre-feet of water, to that must be added the Gila River with its 3,500,000 acre-feet. . . ." And Senator Hayden agreed with Senator Johnson that Arizona's use of Gila River water would be in addition to its allocation of mainstream water under the language of the second paragraph of section 4(a). 70 Cong. Rec. 466, Calif. Legis. Hist. p. 175.

4,600,000 out of the first 7,500,000 acre-feet of mainstream water, it would be remarkable indeed to discover at this late date that Congress intended to give California up to 5,378,000 acre-feet of the first 7,500,000 acre-feet of mainstream water and to assure Arizona of only 1,822,000 acre-feet.[39]

The one claim that can be made for the California contention is that it makes the congressional reference to the III(a) apportionment consistent with the Compact meaning, but at the expense of inconsistency between the first and second paragraphs of Section 4(a) of the Project Act itself, and in the face of every expression of intent made by any Senator who had anything to do with the legislation.[40] Accordingly, the California hypothesis is rejected.

California advances one more argument to support her contention that Section 4(a) should be interpreted as applying to both the mainstream and the tributaries. She strenuously urges "the contractual character of the California Limitation Act."[41] On the premise that Section 4(a) of the Project Act is "an offer to the Legislature of California of a statutory compact,"[42] California states that "the issue must be what the California Legislature understood from the words used [in Section 4(a)]."[43] California's conclusion then follows:

> "In enacting it [the Limitation Act], the California Legislature accepted a communicated offer plain on its face."[44]

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[39]Congress contemplated that the other 300,000 acre-feet would go to Nevada.

[40]In addition, California's position on Article III(a) is incompatible with her position on III(b). If the Project Act reference to III(a) is to be read literally, in a Compact sense, then "surplus" and "unapportioned" must be read literally, and California would be excluded from III(b) uses, since they are apportioned by the Compact. See pages 147, 150-151, *supra*, and 197-200, *infra*.

[41]Calif. Comment on Draft Report, p. 2.

[42]*Id.* at p. 5.

[43]*Id.* at p. 40.

[44]*Id.* at p. 5.

The plain meaning California ascribes to Section 4(a) is, of course, the adoption in the Project Act of the Compact method of system-wide accounting.

I cannot accept California's premise, nor if I did would I reach her conclusion.

California's premise is faulty in that it characterizes Section 4(a) as an offer and the California Limitation Act as an acceptance, which together constitute a binding contract or compact between the United States and California. This analysis misreads both the Project Act and the Limitation Act.

Properly analyzed, Section 4(a) is not an offer but a condition precedent to the effectiveness of the Project Act. Section 4(a) provides: "This Act shall not take effect and . . . no work shall be begun . . . in connection with the works or structures provided for in this Act . . . unless and until [California enacts the required legislation]." The meaning of the condition is necessarily determined by the congressional intent, just as the interpretation of other provisions of the statute is governed by such intent.

Whether the condition has been satisfied is determined by examining the California Limitation Act to see whether it meets the congressional requirement. The wording of the Limitation Act is substantially identical to the limitation provision of Section 4(a). But California did not stop with the enactment of the congressional words. It went further to provide that the statute was intended to satisfy the congressional condition and should be so construed. Specifically Section 2 of the California Limitation Act provides:

> "By this Act the State of California intends to comply with the conditions respecting limitation on the use of water specified in subdivision 2 of Section 4(a) of the said 'Boulder Canyon Project Act' and this act shall be so construed."

This language reflects an understanding that the construction of the dam and other works depended on California's compliance with the terms of the condition as imposed by Congress and as understood by Congress. The language "and this act shall be so construed," can have no other purpose.

However, even if the Project Act can be interpreted as an offer, it does not follow that the Limitation Act and Section 4(a) must be construed as adopting the Compact method of accounting. California contends that the intent of the California Legislature controls. But there is no evidence whatsoever that the California Legislature understood the Limitation Act to adopt the Compact accounting system. Indeed, there is no evidence of the California Legislature's understanding of the meaning of the Section 4(a) "offer" nor of its intention in its acceptance of that "offer". To fill this void, California argues that the Legislature "accepted a communicated offer plain on its face."[45] Thirty years of unabated controversy give unchallenged testimony that the language is *not* plain on its face.

As explained at pages 170-172, *supra,* it is impossible to interpret the language of Section 4(a) literally, and none of the parties in this case has suggested a literal interpretation. That the California Legislature was aware of this ambiguity in the statutory language is suggested by Section 2 of the California Limitation Act. Section 2 provides, in effect, that the Limitation Act is to be interpreted in the same way that Section 4(a) of the Project Act is ultimately interpreted, hardly a necessary clause if the California Legislature understood the Project Act to be "plain on its face".

Whether the congressional limitation be regarded as an offer or as a condition, California bound itself by that limitation when it adopted the California Limitation Act. It did so, aware of the risks of litigation, in return

[45]Calif. Comment on Draft Report, p. 5.

for a dam that would regulate the river and eliminate the threat of disastrous floods and for a canal wholly within the United States, free from control by a foreign power.

The water to a portion of which California is limited by Section 4(a) is that part of the mainstream which consists of Lake Mead and the River below. Water consumed from the mainstream above Lake Mead is not relevant in computing the limit that Section 4(a) places on California's use of mainstream water. The Project Act was concerned primarily with the construction and operation of Hoover Dam, and most of its provisions relate to this basic purpose. Hoover Dam gives the United States physical control over the water stored in Lake Mead and over the use of substantially all of the water in the mainstream below, but it does not enable the United States physically to control the use of water from the mainstream above Lake Mead. Consistently with this physical fact, the provisions of the Project Act do not purport to govern the mainstream above Lake Mead. Section 5 authorizes the Secretary of the Interior to contract for the delivery of water stored in Lake Mead at points which may be agreed upon along the Lake and the mainstream below; that section specifically applies only to water in Lake Mead and to water released therefrom. Also Sections 6 and 8 of the Project Act apply in terms to water controlled by the United States by means of Hoover Dam.

Section 4(a) must be interpreted within the context just described. Consistent with the other provisions of the Project Act, I interpret Section 4(a) as applying only to Lake Mead and the mainstream below. Water in the mainstream above Lake Mead is treated precisely like water in the tributaries above Lake Mead; it is a potential source of supply and is not within the scope of the Project Act unless and until it finds its way into Lake Mead.[45a]

[45a]Consistent with this interpretation of Section 4(a), the water delivery contracts of the Secretary of the Interior effectuate an apportionment of water in Lake Mead and the mainstream below. See DD. 225-228, *infra*.

The only water available for diversion from the mainstream of the Colorado River below Hoover Dam is the water released from Lake Mead and the tributary inflow from the Bill Williams River.[46] The annual inflow from the Bill Williams River, which varied during the period 1944 to 1951 from a minimum contribution to the mainstream of 7,300 acre-feet to a maximum contribution of 114,400 acre-feet,[47] is stored by Parker Dam, and is available for use in Arizona and California. Consumption of this water, after it reaches the mainstream, is chargeable to the state within which it is consumed under the Section 4(a) limitation and the Arizona water delivery contract. As an administrative matter, it would be impossible to reach a different result, for water from the Bill Williams commingles with water released from Lake Mead in the mainstream, and diversions of water below Parker Dam could not be broken down into water which was supplied from Lake Mead and water which was supplied from the Bill Williams. Since it is impossible to segregate water supplied from each source, it is impractical to treat the two sources differently.

Furthermore, even if such a demarcation were possible, Section 4(a) and the Arizona water delivery contract provide that consumption of the inflow from the Bill Williams is charged to the states. Article 7(1) of the Arizona contract specifically provides for this result. The Project Act treats the Bill Williams inflow as *de minimis* in comparison to releases from Lake Mead, and assumes that this inflow will not be accounted for separately. Indeed, the Section 4(a) limitation specifically limits Cali-

[46]The Gila River is the only other tributary which has its confluence with the mainstream below Lake Mead. It is already overappropriated, however, and the occasional inflow which it does supply to the mainstream cannot be captured for use in the United States by any existing works.

[47]See Part One, page 121.

fornia's use of water diverted from the Colorado River without excluding the water supplied from the Bill Williams River.

For these reasons I have concluded that the limitation on California's consumption of water from the Colorado River contained in Section 4(a) of the Project Act and the correlative apportionment of this water among Arizona, California and Nevada effectuated by the water delivery contracts, which apportionment is discussed *infra*, apply only to water diverted from Lake Mead and from the mainstream of the Colorado River below Lake Mead. Hereafter, reference to the "mainstream", except where otherwise specifically indicated, means Lake Mead and the Colorado River downstream from Lake Mead within the United States.

The limitation on California is measured at points of diversion.

The foregoing conclusion leaves open the question of the points of measurement for the application of the California limitation. The United States, as will more fully appear, once suggested Lee Ferry as the point of measurement. I come to a different conclusion.

The language of Section 4(a) of the Project Act makes plain its intention that the limitation on California's use of water from the Colorado River is to be measured in terms of consumptive use of water, which is defined as diversions from the River less return flow thereto. Thus Section 4(a) provides:

> ". . . the aggregate annual consumptive use (diversions less returns from the river) of water of and from the Colorado River for use in the State of California . . . shall not exceed four million four hundred thousand acre-feet . . . plus not more than one-half of any excess or surplus. . . ."

This language clearly states that California is limited to 4,400,000 acre-feet, not of water, but of the consumptive use of water measured by diversions less return flow. Congress did not purport in Section 4(a) to limit California to a portion of the water flowing at Lee Ferry or stored in Lake Mead. While Congress could have limited California to 4,400,000 acre-feet of consumptive use out of a body of water at some point along the River, no such point is specified in Section 4(a), and the more natural reading of the language is that Congress limited California to a portion of the total amount of consumptive uses made of mainstream water in the United States each year.

The most rational way to measure consumptive use of water as defined in Section 4(a) is to measure diversions made from the mainstream and to measure or calculate how much of the diverted water returns to the mainstream. Segregating water at Lee Ferry or Lake Mead cannot contribute to the measurement of "diversions less returns to the river." And the consistent administrative interpretation of Section 4(a) supports the conclusion that the limitation on California is not to be measured at Lee Ferry or at Lake Mead, but rather at points of diversion. All of the water delivery contracts entered into by the Secretary of the Interior on behalf of the United States, including the contracts with California users which incorporate the Section 4(a) limitation and the contracts with other states which are correlated to it, provide that the delivery obligation under each contract shall be measured at the points of diversion.

For the reasons stated, I interpret Section 4(a) as limiting California annually to 4,400,000 acre-feet of consumptive use of mainstream water out of the first 7,500,000 acre-feet of consumptive use annually of such water in Arizona, California and Nevada. Consumptive use is to be measured by diversions at each diversion point on the mainstream less returns to the mainstream, meas-

ured or estimated by appropriate engineering methods, available for use in the United States or in satisfaction of the Mexican treaty obligation.

Section 4(a) as here interpreted does not charge California for evaporation and channel losses on water in the mainstream which occur before the water is diverted for use within the state. California is charged only for the amount of water which she actually diverts and which does not return to the mainstream. Losses of water which occur before diversion are a diminution of the available supply under Section 4(a), not a consumptive use.

The United States at one time urged a different conclusion, namely, that Section 4(a) limits California to a part of the water flowing at Lee Ferry.[48] It would necessarily follow that this water must be segregated for California at Lee Ferry and traced downstream, through Lake Mead, to California's diversion works. This interpretation measures the Section 4(a) limitation, not to a portion of aggregate consumptive use, but to a portion of a body of water 650 miles upstream from some of California's diversion works, and 355 miles upstream from Hoover Dam, the operation of which the Project Act was designed to regulate. Furthermore, it charges California for evaporation and channel losses which occur before the water is diverted from the mainstream for use in California, despite the statutory language which limits California to a quantity determined by the measurement of "diversions less returns to the river."

The argument to justify overriding the statutory language in this manner is that Congress, in limiting California's consumption to a part of "the waters apportioned . . . by paragraph (*a*) of Article III of the Colorado River compact," really meant to say "paragraph (*d*) of

[48]The United States, in its Comment on the Draft Report, although it recognizes that this position is fairly implied from its opening brief, says that it altered its position in its reply brief.

Article III" of the Compact, which refers to the flow at Lee Ferry. The support for interpreting III(a) to mean III(d) is (1) that the 7.5 million acre-feet per annum, which is the figure found in Article III(a), is one-tenth of the 75 million acre-feet mentioned in Article III(d), and (2) that the Upper Basin governors, in a meeting held in Denver in the summer of 1927, recommended a division of III(d) water at Lee Ferry among Arizona, California and Nevada.

While there is some basis for this interpretation of Section 4(a), I have after careful reflection rejected it, for it requires that "Article III(a)" be interpreted to mean "Article III(d)," and I do not believe there is sufficient support for rewriting the statutory language in this manner.

As I have pointed out before, subdivisions (a) and (d) of Article III are not correlative despite the coincidence that the number mentioned in (d) happens to be ten times the number mentioned in (a). See page 144, *supra*. Moreover, the legislative history tends to demonstrate that Congress did not intend Article III(a) to mean Article III(d). It is true that the Upper Basin governors recommended a division of water at Lee Ferry in the following language:

> "1. Of the average annual delivery of water to be provided by the States of the upper division at Lees [*sic*] Ferry under the terms of the Colorado River compact: (a) To the State of Nevada, 300,000 acre-feet. (b) To the State of Arizona, 3,000,000 acre-feet. (c) To the State of California, 4,200,000 acre-feet."[49]

The recommendations of the governors' conference designated a body of water out of which the allocation would be made by reference to the contemplated deliveries

[49]70 Cong. Rec. 172 (1928), Ariz. Legis. Hist. p. 34.

derived from the Upper Division performance of its obligation under Article III(d) of the Compact.

However, Congress never clearly understood this, and, indeed, seems never to have considered the relationship of the limitation on California to some actual body of water. Thus Senator Pittman of Nevada reported the governors' recommendation as follows:

> ". . . when we assembled at Denver the governors of the four upper Colorado River basin states, trying to reconcile the differences on water between California and Arizona, finally made this proposition. California 4,200,000 acre-feet of water, Arizona 3,000,000, Nevada 300,000"[50]

This report by Senator Pittman did not adopt, or perhaps failed to grasp, that portion of the governors' resolution which expressly found the source of the allocated waters in the Article III(d) obligation of the Upper Division. Instead, Senator Pittman related the limitation to Article III(a), not III(d), as appears from the very next sentence of his statement, which reads as follows:

> "How did they get at that? Under what is called the seven-state agreement, we find this clause in Article III:
>
> " '(a) There is hereby apportioned from the Colorado River system in perpetuity to the upper basin and to the lower basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist.'
>
> "In other words, those State governors believed that there was only 7,500,000 acre-feet of water to divide, and they proposed to divide it, as I have said

[50] 69 Cong. Rec. 10259 (1928), Ariz. Legis. Hist. p. 14.

4,200,000 acre-feet to California, 3,000,000 acre-feet to Arizona, and 300,000 acre-feet to Nevada."[51]

Thus Senator Pittman used Article III(a) to define the area to which the limitation was to operate. He did so in apparent misunderstanding of the governors' recommendation. All subsequent discussion in the Senate flowed in the same channel.

One of the major issues in the Senate debates (Section 4(a) was adopted on the floor of the Senate and was not debated in the House) was whether California should be limited to 4.6 or 4.2 out of 7.5 million acre-feet per annum. This dispute was finally compromised at the enacted limitation of 4.4 million acre-feet. Throughout the debates on this subject the Senators clearly revealed an understanding that this limitation was to be applied against the 7.5 million acre-feet which they identified by reference to Article III(a). "Article III(a)" became a shorthand expression for the quantitative measurement of 7.5 million acre-feet. Similarly, the Senators participating in the debate used "Article III(b)" as a shorthand method of designating a quantity of one million acre-feet of water. The debates indicate that the Senate considered the water designated by "Article III(a) and (b)" as being undifferentiated. For example, Senator Hayden stated:

> "Mr. Hayden. I shall offer the amendment in a few moments.
>
> "At the time to which I have just referred the Senator from Nevada stated that at a conference held in the city of Denver during the summer of 1927, at the instance of the Governors of the States of New Mexico, Colorado, Utah, and Wyoming, there were present governors and commissioners from the States of Nevada, Arizona, and California. The subject of paramount importance, the subject

[51] *Ibid.*

that was the most discussed at that conference, was an adjustment of the differences between the States of Arizona and California with respect to an apportionment of the waters of the lower Colorado River Basin, in order that, if those two States might be brought into accord, the Colorado River compact, which affected the entire seven States, might be ratified and approved by all of the States.

"Each of the States in the lower basin was called upon to submit to the Denver conference a statement of the quantity of water they desired to obtain out of the Colorado River. At the time the conference was held it was thought that there were but seven and a half million acre-feet of water to divide, and upon that basis the senior Senator from Nevada stated to the Senate that the governors of the upper-basin States recommended that there be awarded to the State of California 4,200,000 acre-feet, to the State of Arizona 3,000,000 acre-feet, and to the State of Nevada 300,000 acre-feet.

"The Senator explained in his remarks how the four governors arrived at that apportionment, and said that it was done under article 3 of the Colorado River compact, paragraph (a) of which reads as follows:

* * * *

"The Senator then stated that subsequently it was discovered that there was an additional million acre-feet of water apportioned to the lower basin which could be divided. The idea of dividing that additional apportionment of water did not occur to the governors and the representatives of the lower basin States at the time of the Denver conference.

"The Senator then read to the Senate this provision of the compact, which is paragraph (b) of article 3:

> 'In addition to the apportionment in paragraph (a), the lower basin is hereby given the

right to increase its beneficial consumptive use of such waters by 1,000,000 acre-feet per annum.'

"Senator Pittman stated further that at conferences held in his office during the last session of Congress the suggestion had been made that the additional million acre-feet be divided equally between Arizona and California, and that if that were done the total quantity of water apportioned to the State of California under the Colorado River compact out of the total amount allocated to the lower basin would be 4,700,000 acre-feet, or 100,000 acre-feet more than California had asked for at Denver, and that by adding 500,000 acre-feet to the 3,000,000 acre-feet apportioned to Arizona on the basis recommended by the four upper basin governors that State would receive 3,500,000 acre-feet, or within 100,000 acre-feet of what had been requested by her commissioners at Denver.

"The Senator from Nevada then stated that, based upon the recommendations made by the upper basin governors plus an equal division of the additional 1,000,000 acre-feet, Mr. Francis B. Wilson, interstate river commissioner of the State of New Mexico, had prepared an amendment which the Senator asked to have printed in the Record. He did not offer it at that time, but merely asked to have it printed for the information of the Senate. I now offer that amendment to the bill."[52]

That amendment clearly stated that the limitation was 4.2 out of the 7.5 million acre-feet referred to in Article III(a) plus 500,000 out of the million acre-feet referred to in Article III(b). The Hayden amendment provided that California should be limited to:

". . . 4,200,000 acre-feet of the water apportioned to the lower basin by paragraph (a) of Article III of said compact, . . . 500,000 acre-feet of the water apportioned by the compact to the lower basin by

[52]70 Cong. Rec. 161-162 (1928), Calif. Legis. Hist. pp. 55-57.

> paragraph (b) of said Article III; and that the use by California of the excess or surplus waters unapportioned by the Colorado River compact shall never exceed annually one-half of such excess or surplus water. . . ."[53]

Senators Pittman and Hayden could not have referred to an extra million acre-feet of water to be divided among Arizona and California if they were thinking of Article III(d), which can be said to guarantee only an average of 7.5 million acre-feet of water per year. Since the Senators equated Article III(a) and III(b), they could not have equated III(a) and III(d), because III(d) has no relationship to III(b).

Furthermore, this suggested interpretation would create very difficult administrative problems. Even after each state's share of the flow at Lee Ferry and the Lower Basin tributary flow into the mainstream were segregated, it would be necessary to determine the channel and evaporation losses sustained by such water, as it flowed in the mainstream and was stored in Lake Mead, in order to calculate the amount left for each state to divert below Lake Mead. An accurate determination of the total losses on all the water flowing in the mainstream and stored in Lake Mead is extremely difficult if not impossible to make. Yet, even if such a determination were possible, it would not be possible to calculate the losses on each state's share of water simply by allocating total losses among the states in the same proportions as the total water is allocated among them. This is so because the amount of loss depends on such factors as volume and flow of water, and because the allocation of water among the three states varies depending on whether or not particular water is surplus.

On the other hand, it is unnecessary to compute losses on water flowing in the mainstream above Lake Mead

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[53] 70 Cong. Rec. 162 (1928), Ariz. Legis. Hist. p. 17.

or stored in Lake Mead, much less to allocate these losses among the states, if the California limitation and the correlative apportionment among the three states are measured by consumptive use and applied at the diversion points.

Interpretation of the phrase, excess or surplus waters.

I turn now to a consideration of the phrase "plus not more than one-half of any excess or surplus waters unapportioned by said compact." Our task of defining "excess or surplus waters unapportioned by said compact" is not aided by looking at the Compact. It uses the word "surplus" just once, in Article III(c), which provides that the Mexican burden "shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b)" of Article III. Article III(f) makes equally clear the uses of water that are "unapportioned" for Compact purposes, by providing for "further equitable apportionment of the beneficial uses of the waters of the Colorado River system unapportioned by paragraphs (a), (b) and (c)" of Article III. Thus by a literal Compact reading, the phrase would mean System water in excess of the aggregate of the apportionments of Article III(a), (b) and (c). But such a literal meaning is unacceptable.

In the Compact sense, surplus is System water; that is, it is water in both the mainstream and the tributaries, and is water in both the Upper and Lower Basins. If the Project Act is given a literal Compact meaning, one-half of such surplus could be appropriated by California. Moreover, the proposed tri-state compact authorized Arizona to agree with California and Nevada for Arizona to take the other half. It is incredible that the Senators of the other five states in the Basin intended this act of generosity. Not one word of the legislative history suggests such an intention. The Upper Basin Senators, who originated the first para-

graph of Section 4(a), and who supported the second paragraph, obviously did not intend to divide surplus in the entire System between two Lower Basin states.

It might be thought that appropriations of surplus would not be firm rights since these appropriations are subject to divestment in the event of a further equitable apportionment by compact after 1963, and therefore that Congress was not concerned about the matter. But congressional concern can not be brushed off so lightly. There is nothing to compel any state to ratify a compact making such further apportionment. Moreover, in answer to questions about the Compact propounded by Senator Hayden, Herbert Hoover stated that appropriations from surplus would doubtless be recognized in a future equitable apportionment.[54] Whether or not this position is, in fact, correct, it could hardly be expected that the Upper Basin Senators were willing to run the risk that it would prevail.

Surplus in a Compact sense means, in quantitative terms, water in the System in excess of appropriations of 16,000,000 acre-feet in the United States plus 1,500,000 acre-feet of water delivered to Mexico. Hence, appropriations from surplus could not commence until the 17,500,000 acre-feet were exhausted. Even putting aside the Mexican burden because it did not exist in 1928, it is not credible that Congress considered surplus in the Project Act sense to be water in the System in excess of 16,000,000 acre-feet. To attribute this view to Congress would ascribe to it an intent that no surplus would be available to Arizona and California until there were 16,000,000 acre-feet of appropriations, which, of course, did not exist in 1928 and seemed unlikely to occur in the foreseeable future.[55]

This is not to say that "surplus" and "unapportioned water" have no rational meaning as used in the Compact.

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[54]Special Master's Ex. No. 4, The Hoover Dam Documents, p. A36, Ariz. Ex. 55.

[55]*Ibid.*

On the contrary, their meaning is clear and consistent with other Compact provisions. The Compact puts an embargo upon the acquisition of appropriative rights in excess of the limits set by Article III(a) and (b). The first call upon any remaining water goes to supply Mexico. Thereafter, any remaining water anywhere in the System is available for further equitable apportionment after 1963. Thus a new compact might raise the III(a) and (b) limits from 16 million acre-feet as they presently stand to, for example, 20 million acre-feet. The Compact thus makes sense when it deals with surplus unapportioned water of the Colorado River System, although it specifies no point of measuring this water, because, for Compact purposes, the accounting is made at the point of diversion. In effect, Article III(a) and (b) establishes quotas of allowable appropriations. When these quotas have been exhausted, any remaining water in the System (surplus) may be further apportioned by compact so as to increase the quotas. But the phrase as used in the Compact makes no sense in the Project Act, and thus the Compact interpretation must be rejected.

Since I rejected the Compact definition of the phrase "excess or surplus waters unapportioned by said compact," its meaning must be derived from the Act itself and in harmony with the construction of the phrase "waters apportioned to the lower basin States by paragraph (a) of Article III." On the basis of my interpretation of the latter phrase, the words "excess or surplus waters" must necessarily mean all consumptive use in the United States in any year from the mainstream in the Lower Basin in excess of 7.5 million acre-feet. This is so because Congress intended that any consumptive uses in addition to the first 7.5 million acre-feet should be disposed of under the surplus accounting. In short, surplus was intended by Congress to complete the universe, the first part of which was the 7.5 million acre-feet. This universe consists of all consumptive

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use of water diverted from Lake Mead or the mainstream below.

Arizona and Nevada disagree. They argue that Section 4(a) bars California from any share of what is described as Article III(b) water. This argument is based on an interpretation of the words "excess or surplus waters unapportioned by said compact" as meaning water above the 8,500,000 acre-feet referred to in Article III(a) and (b) of the Compact. Thus Section 4(a), Arizona and Nevada contend, permits California to consume 4,400,000 of the 7,500,000 acre-feet "apportioned" in Article III(a), none of the million acre-feet "apportioned" in Article III(b), and half of the "excess or surplus" above the 8,500,000 acre-feet "unapportioned by" Article III(a) and (b).

This contention must be rejected. Questions regarding the proper interpretation of the words "surplus" and "apportioned" as used in the Compact aside, the legislative history of the Project Act makes it crystal clear that Congress did not intend to delimit an amount of water above 7.5 million acre-feet per annum which was not "excess or surplus water" and thus to which California could have no access. Rather, Congress intended that once the 7.5 million acre-feet of consumptive use were allocated, the surplus accounting would commence and California would be eligible to receive 50% of all other allocations.

As explained at pages 190-193, the amendment proposed by Senator Hayden, based on the suggestion of Senator Pittman, clearly apportioned half of the million acre-feet referred to in Article III(b) to California. So did an amendment suggested by Senator Bratton of New Mexico,[56] which was similar to the Hayden amendment. The amendment offered by Senator Phipps of Colorado,[57] which was ultimately enacted as the first paragraph of Section 4(a),

[56]Calif. Ex. 2013.
[57]70 Cong. Rec. 324 (1928), Ariz. Legis. Hist. pp. 48-48A.

was intended to adopt this feature of the Hayden and Bratton amendments. Indeed, it was recognized by all of the Senators participating in the debates that the only major difference between the three amendments having relevance to this case was the amount of water to which California would be limited out of the first 7,500,000 acre-feet; the Hayden amendment limited California to 4,200,000, the Bratton amendment to 4,400,000, and the Phipps amendment to 4,600,000. Thus Senator Bratton observed that, other than the difference of 200,000 acre-feet, his amendment and Senator Phipps' were "quite similar."[58] This is also made clear by the parliamentary maneuver in the Senate, carried out without opposition, substituting the Phipps amendment for the Hayden amendment in order to permit a vote on whether California should be limited to 4,200,000 acre-feet or 4,600,000 acre-feet.[59] Senators Hayden and Phipps specifically agreed that there were only three substantive differences between their amendments: (1) the difference between 4,200,000 and 4,600,000 acre-feet; (2) a provision, unrelated to this litigation, involving the Federal Power Commission; and (3) whether Congress would approve a six-state ratification of the Colorado River Compact. This definitively excludes the possibility that the Phipps amendment, unlike the Hayden amendment, could have been intended to exclude California from any part of the million acre-feet referred to in Article III(b). Since, under the Phipps amendment, California was limited to 50% of all water above 7.5 million acre-feet of consumptive use, and Nevada disclaimed any intention of taking more than her share of the 7.5 million acre-feet, the language of that amendment had exactly the same effect as the language of the Hayden amendment which specifically

[58]70 Cong. Rec. 333 (1928), Calif. Legis. Hist. p. 87.

[59]70 Cong. Rec. 382 (1928), Ariz. Legis. Hist. pp. 56-56C.

Senator Hayden's motion to change 4.6 to 4.2 lost; Senator Bratton's motion to change the figure to 4.4 carried. 70 Cong. Rec. 384-387 (1928).

gave California 500,000 acre-feet and Arizona 500,000 acre-feet of the million acre-feet referred to in Article III(b). The intended effect of the Phipps amendment, like the Hayden amendment, was to limit California to 4.4 out of the 7.5 million acre-feet referred to in Article III(a), plus 50% of the million acre-feet referred to in Article III(b), plus 50% of any additional water that might be available above 8.5 million acre-feet. In order to clarify that his amendment limited California to 4.4 out of 7.5 million acre-feet, not out of 8.5 million acre-feet as Arizona and Nevada in effect contend, Senator Phipps perfected his amendment, by adding the italicised language, to specify that the 4.4 million acre-foot limitation on California was from the water "apportioned to the lower basin States by *paragraph (a) of Article III of* the Colorado River compact."[60]

This conclusion is also supported by the following colloquy between Senator King of Utah and Senator Johnson of California:

> "MR. KING. If I may have the attention of the Senator from California and the Senator from Colorado, I direct attention to line 5, page 3, of the amendment offered by the Senator from Colorado. Let me read back a few words:
>
> > plus not more than one-half of any excess or surplus waters unapportioned by said compact.
>
> I was wondering if there might not be some uncertainty as to what surplus waters were therein referred to. I think it was the intention to refer to the surplus waters mentioned in paragraph (b) of article 3 of the compact, being the 1,000,000 acre-feet supposed to be unappropriated.
>
> MR. JOHNSON. No; that is not quite my understanding. It is by no means certain that there is any other, and it is by no means certain that there

[60] 70 Cong. Rec. 459-460 (1928), Ariz. Legis. Hist. pp. 64-67.

> is the 1,000,000; but the language referred to any other waters.
>
> MR. KING. Speaking for myself, I have no objection; but I was under the impression that the purpose was to link it with paragraph (b) so as to be sure that California was to receive one-half of the 1,000,000 acre-feet.
>
> MR. JOHNSON: Not necessarily. This gives one-half of the unapportioned water, and I think it is a better way to leave the matter.
>
> MR. KING. If it is sufficiently certain to suit the Senators of the lower basin, I have no objection.
>
> MR. JOHNSON. I think it is."[61]

Whatever Senator Johnson may have meant by his replies, he obviously was not suggesting that Senator King was incorrect in his assumption that California could share in so-called III(b) water.

This is apparent also from the second paragraph of Section 4(a) which allocates to Arizona half of the "excess or surplus waters unapportioned by the Colorado River compact." As pointed out by Senator Hayden, this language was corollary to the limitation on California in the first paragraph. See pages 174-175, *supra*. Thus if Article III(b) water was barred to California under the first paragraph, neither was it allocated to Arizona in the second paragraph. Since Nevada represented that she could not utilize this water, Arizona's and Nevada's construction would impute to Congress an intention to have one million acre-feet go to waste.

The reasons given compel the conclusion that "excess or surplus waters unapportioned by said compact" as used in Section 4(a) includes all consumptive use above the first 7.5 million acre-feet of mainstream water in the Lower Basin, in the United States, in one year.

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[61] 70 Cong. Rec. 459 (1928), Ariz. Legis. Hist. pp. 64-65.

D. Water Delivery Contracts Made By the Secretary of the Interior

Since Arizona, California and Nevada have not entered into compacts for the allocation of mainstream water pursuant to Sections 4 and 8 of the Project Act, the several water delivery contracts made by the Secretary of the Interior, on behalf of the United States, govern this allocation. The Secretary has contracted with the states of Arizona and Nevada. He has also entered into contracts with California users which incorporate a so-called Seven-party Agreement setting forth priorities among them. The Secretary has further contracted with a number of water users in Arizona and California for the delivery of water to federal reclamation projects, lands bordering these projects and special users in the Yuma, Arizona, area. All of the Secretary's contracts, except one Special Use contract, recite that deliveries under them are subject to the availability of the water under the Colorado River Compact and the Boulder Canyon Project Act.

After consideration of the arguments bearing on the validity of the Secretary's water delivery contracts, I am persuaded that, with the exception of a provision in the Arizona and Nevada contracts[62] and one Special Use contract,[62a] they are valid and binding both on the United States and the other contracting parties.

The contentions of the parties respecting the contracts may be divided into two categories: those respecting their own contracts; and those respecting the contracts of other parties.

Arizona contends that her contract is unenforceable to the extent that it departs from the statutory formula

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[62]Article 7(d) of the Arizona Contract and Article 5(a) of the Amended Nevada Contract, discussed *infra*, at pp. 237-247.

[62a]This contract, between the United States and the Arizona-Edison Company, Inc., is discussed at pp. 220-221, *infra*.

of the second paragraph of Section 4(a) of the Project Act. The provisions she regards as invalid are Article 7(b), (f) and (g), which provide for Arizona's recognition of rights in Nevada, New Mexico and Utah, and Article 7(d), which in effect reduces the quantity of water available for consumption in Arizona below Lake Mead by the amount that diversions in Arizona on tributaries and the mainstream itself above Lake Mead deplete the flow of water into the reservoir.[63]

I have rejected the contention that the second paragraph of Section 4(a) of the Act established a mandatory formula governing the amount of water Arizona must receive. See pages 162-163, *supra*. The contention respecting Article 7(d) is dealt with hereafter at pages 237-247.

Arizona does not contest the validity of the contracts of other parties except as she seeks to aid Nevada in contending that Nevada's contract is invalid to the extent that it reduces Nevada's diversions of Lake Mead water by the amount of Nevada's tributary uses.[64]

With respect to the California contracts, Arizona argues only that they must be read according to Arizona's construction of the limitation provision in Section 4(a) of the Project Act. This contention presents the same issues already disposed of by the discussion of the Act in the next preceding section of this Report.

California does not contest the validity of her contracts and indeed pays scant attention to them. California's view is that appropriative rights are decisive of the case and the contracts do not amount to appropriative rights but constitute only licenses to appropriate, which licenses must be perfected by beneficial use of the water. Similarly, California contends that the Arizona contract does not establish a water right in Arizona, is not a muniment of title,

[63]Ariz. Opening Brief, pp. 55-56.
[64]*Id.*, at 55.

and cannot be the basis of a decree in this suit. California's contentions appear in Appendix 4 of her brief, and in summary present these three points:

(1) The Arizona contract is dependent upon Arizona's ratification of the Colorado River Compact and Arizona has not effectively ratified the Compact. The reasons for the rejection of this contention appear *supra,* at pages 166-167 of this Report.

(2) No water right exists under the Arizona contract because "no right to the use of water can be acquired in the absence of a specific project, or use lawfully initiated and diligently prosecuted."[65] If this argument means that the possession of a water right is necessary before one is eligible for a delivery contract, it puts the cart before the horse. In effect it says, no contract without a water right. Under the Act, however, the reverse is true: no new water right without a contract. Congress certainly understood in 1928 that all of the water to be impounded in Lake Mead was not then appropriated. I cannot ascribe to the Congress an intention to bring all further development in the Lower Basin to a halt, as this contention would require me to do. On the other hand, if the California contention means only that a water delivery contract does not amount to a perfected water right, then it is not an attack on the contract at all. I do not think it necessary to decide whether the various contractees have water rights in addition to their contractual rights for the delivery of water from Lake Mead; I have not been shown any situation in which the distinction, if any, is material in this case. Since interstate rights and priorities are controlled by the delivery contracts themselves (see pages 151 *et seq., supra*) and since intrastate rights and priorities, including the question whether a contractual right constitutes a water right, are controlled by state law, with

[65] Calif. Appendix 4, p. 5.

which we are not concerned in this litigation (see pages 216-218, *infra*), there is no need to decide the question. California asserts a similar objection to the Nevada contract,[66] and it is overruled for the same reasons.

(3) A third objection to the Arizona contract raised by California rests on Article 7(1), which provides that deliveries of the water allocated to Arizona by her master contract will be made only to users who contract therefor with the Secretary. California argues that this exposes the contract merely as an agreement to agree and accordingly that is unenforceable. She also claims that the contract is unenforceable for vagueness, since essential terms are yet to be agreed upon. This argument will be considered when I reach my discussion of the terms of each of the contracts, at pages 206-207, *infra*.

Nevada complains about her water delivery contracts, but does not contest those of the other parties. Nevada's theory, if adopted, would, however, nullify all of the contracts, at least so far as they purport to fix the quantities of water to which the parties are entitled. As was pointed out earlier in this Report, Nevada regards the Project Act as an unconstitutional delegation of judicial power if construed to empower the Secretary to make contracts fixing the allotment of water to each state. See pages 163-164. She avoids the constitutional problem by regarding the contracts as "neither floors nor ceilings. The contracts are merely service or delivery contracts for such amounts of water as each of the states shall ultimately be judicially determined to be entitled, in the absence of a compact among the states."[67] The answer to this contention was given in upholding the Project Act and sustaining the power of the Secretary to allocate the unappropriated water impounded in Lake Mead.

[66]Calif. Response to Nevada, pp. 51-53.
[67]Nev. Answering Brief, p. 46.

In the alternative, Nevada argues that if the contracts are held to govern, Nevada is not bound by the amendment to Article 5(a) contained in her supplemental contract of 1944. That amendment provides for delivery from Lake Mead of "so much water, *including all other waters diverted for use within the State of Nevada from the Colorado River system,* as may be necessary to supply the state a total quantity not to exceed three hundred thousand (300,000) acre-feet each calendar year." Nevada contends that the debit imposed by the italicized words for use of tributary water was beyond the Secretary's authority to impose on Nevada under the Project Act.[68] This contention is considered *infra,* at pages 237-247.

Finally, the United States asserts the validity of all of the water delivery contracts and declares that Arizona and Nevada are bound by the provisions to which they object.[69] The only reservation made by the United States is its claim that the contracts are subject to certain paramount rights of the United States. These claims of superiority are dealt with in the section of the Report commencing at page 254.

1. *The Arizona Contract.* A water delivery contract between the United States and the State of Arizona was entered into on February 9, 1944.[69a]

Subdivisions (a) and (b) of Article 7 specify the quantity of water Arizona is to receive, subject to certain deductions set forth in Article 7(d), (f) and (g). Article 7(a) promises the delivery, from storage in Lake Mead, of so much water as may be necessary to supply a maximum of 2,800,000 acre-feet of consumptive use in the state each year, and Article 7(b) grants an additional amount denominated as one-half of surplus, both subject to the availability thereof

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[68]Nev. Reply Brief, pp. 9-12.

[69]U. S. Brief, pp. 7-22.

[69a]The complete text of the contract appears in Appendix 5, page 399.

for use in Arizona under the Colorado River Compact and the Boulder Canyon Project Act. Article 7(f) reserves to the United States the right to contract with Nevada for the delivery to her of 4% of surplus with a consequent reduction in Arizona's share. The contract nowhere defines "surplus," and I construe the word as used in the contract to mean the same thing as it does in Section 4(a) of the Boulder Canyon Project Act. In addition, by Article 7(g), Arizona recognizes rights in New Mexico and Utah to "equitable shares" of Lower Basin water, but no amount is specified in the contract. Article 7(d) provides in part that the obligation to deliver water "shall be subject to such reduction on account of evaporation, reservoir and river losses, as may be required to render this contract in conformity with said compact and said act." As I construe this provision, questions of allocation of losses are expressly left undetermined by the contract; such determination is to be made on the basis of the Compact and Project Act, without reference to other terms of the contract.

Article 7(1) contemplates the making of further contracts between the Secretary of the Interior and the users of the water allocated for use in Arizona under the master contract with the State. California contends that this provision renders the agreement illusory, that it becomes an unenforceable agreement to agree. I do not think Article 7(1) has this far-reaching effect. The Secretary's water delivery contracts should not be viewed as ordinary, private agreements for the sale of goods. Indeed, none of the contracts satisfies the elementary rules governing private agreements. For example, the Imperial Irrigation District contract does not obligate the District to take any water at all, nor is any charge made for the water delivered. What then, is the consideration for the Secretary's promise to deliver the water? Something of the same difficulty is encountered in the Nevada contract. Although that agreement specifies a

charge of 50 cents per acre-foot, it does not oblige Nevada to take any water. Such an agreement might fail for lack of consideration under the principles governing ordinary private contracts. The *Restatement of Contracts* illustrates the point in Section 79, illustration 3:

> "A offers to deliver to B at $2 a bushel as many bushels of wheat, not exceeding 5,000, as B may choose to order within the next thirty days. B accepts, agreeing to buy at that price as much as he shall order of A within the specified time. B's acceptance involves no promise by him and is not sufficient consideration."

If the *Restatement* requirements were to apply to the contracts made by the Secretary, many, if not all of them, would fail.

The answer then to the California contention is that Section 5 water delivery contracts are not contracts in the ordinary sense. They are arrangements whereby the Secretary, acting for the United States, consents to the release of water from his custody. The contracts set the terms upon which the Secretary will release the water. The Secretary is bound by those terms, as are the contractees, not because of the legal chemistry of offer, acceptance and consideration, but because they are part of the statutory scheme provided for in the Boulder Canyon Project Act. Hence, Article 7(1) does not render the Arizona contract nugatory, any more than failure of consideration destroys the Imperial Irrigation District contract or the Nevada contract.

I hold that the Arizona contract is valid, except for a provision in Article 7(d) which is discussed hereafter at pages 237-247.

2. *The California Contracts.* There is no water delivery contract between the United States and the State of Cali-

with Section 4(a) applies only to water diverted from Lake Mead and the mainstream below. The argument advanced by the United States and California, that diversions from the mainstream between Lake Mead and Lee Ferry are chargeable under the apportionment, cannot be sustained.

As heretofore explained, page 183, *supra,* diversions from this reach of the River are outside the scope of the Section 4(a) limitation on California. Furthermore, Section 4(a), even if applicable to the mainstream above Lake Mead, cannot limit diversions by Arizona and Nevada because it is solely a limitation on California. Since Arizona and Nevada are the only states geographically in a position to divert water from the mainstream between Lake Mead and Lee Ferry, the water delivery contracts between those states and the United States are the only authority on the basis of which diversions from this reach of the river could be limited.

But the Arizona and Nevada contracts do not limit diversions in those states above Lake Mead. This is consistent with Section 5 of the Project Act which authorizes the Secretary to enter into contracts only for the delivery of "water in said reservoir," *i.e.,* Lake Mead.

Thus the Arizona water delivery contract, in paragraph 7(a), purports to affect only deliveries of water "from storage in Lake Mead," not diversions above Lake Mead. It is true that paragraph 7(d) of the Arizona contract provides that the United States' obligation to deliver water from Lake Mead or the mainstream below "shall be diminished to the extent that consumptive uses now or hereafter existing in Arizona above Lake Mead diminish the flow into Lake Mead. . . ." But even this paragraph does not purport to limit Arizona's diversions from the mainstream above Lake Mead. If, for example, Arizona diverted 3,000,000 acre-feet from this stretch of

the mainstream this would not be a violation of paragraph 7(d) although the Secretary could reduce Arizona's consumptive uses of water below Lake Mead to the extent of such uses. At any rate, for the reasons detailed at pages 237-247, *infra*, paragraph 7(d) is invalid, and thus it cannot limit Arizona's diversions from the mainstream above Lake Mead. Similarly, nothing in the Nevada water delivery contract purports to limit diversions by that state above Lake Mead, except for part of Article 5(a) which is invalid for the same reasons that Article 7(d) of the Arizona contract is invalid.

One of the proposed plans for the Central Arizona Project contemplated the diversion of water at Bridge Canyon or Marble Canyon, both of which are on the mainstream between Lake Mead and Lee Ferry. California and the United States are concerned lest Arizona be permitted to divert a substantial quantity of water for the Central Arizona Project from one of these sites in addition to the water apportioned to her from Lake Mead and the mainstream below. But this cannot occur without the specific authorization of Congress. First of all, there is no indication that the Central Arizona Project can be financed other than by Congress. Secondly, under the Rivers and Harbors Act, 33 U. S. C. §§ 401 *et seq.* (1958), the dam necessary for the Project could not be constructed in the Colorado River without the approval of Congress. *United States* v. *Arizona*, 295 U. S. 174 (1935); *Wisconsin* v. *Illinois*, 278 U. S. 367, 411-414 (1929).

When Congress, in the Project Act, authorized the construction of Hoover Dam, it focused its attention on the problem of how the water impounded and released by that dam should be distributed, authorizing the Secretary of the Interior to apportion that water among the interested states. Congress did not focus its attention on the diver-

sion of water above Lake Mead. If Congress authorizes a dam and diversion works on the mainstream above Lake Mead, its attention will then be directed to the problem of apportioning the water diverted by those structures. At that time Congress can determine whether or not Arizona's diversions above Lake Mead shall be chargeable to her under the present contractual apportionment.[86]

California strenuously urges that the contractual apportionment explained in this section of the Report is contrary to the "bargain" she made with Congress in enacting the California Limitation Act. According to California, she was assured of 4.4 million acre-feet out of the first 7.5 million acre-feet of consumptive uses of water diverted throughout the entire Colorado River System in the Lower Basin. She calls this "III(a) water," referring to the allocation of 7.5 million acre-feet of system-wide consumptive uses made to the Lower Basin by Article III(a) of the Colorado River Compact. The apportionment suggested in this Report, of course, allocates to California 4.4 million acre-feet out of 7.5 million acre-feet of mainstream uses only. Since California, which has no tributaries, would receive substantially more water under a system-wide apportionment, see pp. 177-178, *supra*, she claims that the suggested mainstream apportionment diminishes the fruits of her bargain. Since consumptive use of water from the Gila River System in Arizona accounts for most of the tributary uses in the Lower Basin, the real thrust of California's argument is that Arizona's mainstream uses should be curtailed, for the benefit of California uses. to the extent of Arizona uses on the Gila River.

California has never clearly designated the ground on which she bases her claim to 4.4 million acre-feet out of a

[86]The doctrine of equitable apportionment may affect diversions in this reach of the River. See pages 316-318, *infra*.

Lower Basin system-wide apportionment. There are only four possible sources for this claim: (1) the law of prior appropriation or equitable apportionment, (2) the Colorado River Compact, (3) the Boulder Canyon Project Act, or (4) the water delivery contracts executed by the Secretary of the Interior under Section 5 of the Project Act. None of these sustains California's position.

(1) Prior Appropriation and Equitable Apportionment. Since the doctrines of prior appropriation and equitable apportionment were rendered inapplicable to the Colorado River below Lake Mead by the Project Act, see pp. 151-162, *supra,* California's claim to Colorado River water cannot be grounded on them. But even if those doctrines did apply, they would not support California's claim.

The appropriation doctrine holds merely that a junior appropriator can neither demand nor withhold water required for beneficial use by a senior appropriator. Under this rule, the total quantity of uses in any state is immaterial to the rights of appropriators in other states. It is true that junior appropriators on tributaries can be shut down if the water they would consume has been appropriated by senior appropriators on a mainstream. But that rule of the law of appropriation does not justify California's claim that Gila River water uses are to be charged to Arizona so as to reduce Arizona's claims to the mainstream, since it does not appear that California users have any appropriative rights in waters of the Gila River, their points of diversion all being upstream from the confluence of the Gila with the mainstream.

This result is not changed by the modification of strict priority of appropriation that has been made by the Supreme Court in equitable apportionment suits. None of the equitable apportionment cases establishes an accounting system

comparable to the one that California urges for adoption here. Perhaps the simplest way to demonstrate this is to assume that the Project Act and the Colorado River Compact do not exist. In an equitable apportionment suit over mainstream water between Arizona and California, the Gila River would not be in issue because its waters have not been appropriated by California and there are no diversion works in California which permit the utilization of this water in that state. The Supreme Court has never yet based an apportionment of one stream on the water available to one party but not to the other, from another stream. Presumably the apportionment would be based on the supply in the main Colorado River, not that river and the Gila, which California cannot use.

(2) The Colorado River Compact. As explained at pp. 139-141, *supra*, the Compact operates inter-basin and not interstate. It does not purport on its face and it cannot be construed to affect rights between Arizona and California. Although the Compact in Article III(a) and (b) apportions system waters to each Basin, it gives no direction regarding which uses are III(a) or III(b) or some other category, as among states of either Basin. The Upper Basin states recognized that the Compact did not control the intra-basin division of water when, in 1948, they apportioned by compact their share of Colorado River Basin water among themselves. How the Lower Basin states should divide their Compact apportionment, their surplus and the water not covered by the Compact was left to those states, as they themselves recognized in their various efforts to reach agreement and as Congress recognized in the second paragraph of Section 4(a).

(3) The Boulder Canyon Project Act. Nothing in the Project Act establishes an apportionment of all Lower Basin

uses, both mainstream and tributary. The only section which purports to effect a specific allocation of water is Section 4(a), and that, as explained at pp. 173-183, *supra,* applies only to the mainstream. But even if Section 4(a) applied to the entire river system, it would not support California's claim.

The first paragraph of Section 4(a) is a limitation on California, not a grant to her, and hence cannot be a source of her rights to water as against the other Lower Basin states. The critical words in the first paragraph state that consumptive uses of water in California "shall not exceed" certain quantities per annum. This provision, that California's uses "shall not exceed" the specified quantity, does not mean that she is entitled to that quantity. California relies on the language in the first paragraph which states that the amount of water to which she is limited shall include "all water necessary for the supply of any rights which may now exist. . . ." She argues that this is a grant to her. But even if it were a grant, the language would give California only water to which she had rights derived from another source and would not constitute an independent basis for claiming water as against the other Lower Basin states. Furthermore, the natural reading of these words indicates not a grant, but a double limitation: California's consumptive uses shall not exceed 4.4 million acre-feet of 7.5 million acre-feet, and this is true despite her claims in 1928 that her existing rights exceeded 4.4 million acre-feet.

The second paragraph of Section 4(a) authorizes a compact which was never consummated and hence it cannot be a source of California's right to water as against the other Lower Basin states. Moreover, that paragraph makes clear that Arizona uses of Gila River water are in addition to the apportionment authorized therein. See note 38, p. 179.

(4) The Water Delivery Contracts. The water delivery contracts which the Secretary of the Interior has entered into with the California defendants constitute the only possible basis for California's claim to mainstream water. Those contracts do allocate water to California, see pp. 221-225, *supra,* but only from a three-state apportionment limited to the mainstream.

The California contracts, together with the Arizona and Nevada contracts, constitute an apportionment among the three states. California's major contention, that Arizona is to be charged for her uses of Gila River water under the tri-state apportionment, fails before the clear language of the Arizona water delivery contract. Paragraph 7 of that contract explicitly apportions to Arizona "from storage in Lake Mead at a point or points of diversion on the Colorado River" 2.8 million acre-feet plus half of surplus. Paragraph 7(1) also provides that: "All consumptive uses of water by users in Arizona, *of water diverted from Lake Mead or from the main stream of the Colorado River below Boulder Dam* . . . shall be deemed, when made, a discharge pro tanto of the obligation of this contract." (Emphasis added) Nothing in the Arizona water delivery contract can be interpreted, even with the most vivid imagination, as charging Arizona for her consumptive uses of Gila River water. Rather, the language of that contract explicitly and unmistakably allocates water to Arizona only from the mainstream, leaving her free to consume water from the Gila in addition to the contractual apportionment.

Thus far the Report has described that part of the contractual allocation scheme that governs two distinct supply situations: (1) where there is sufficient mainstream water to satisfy 7.5 million acre-feet of consumptive use in the United States in one year; and (2) where there is surplus because of sufficient water to satisfy uses in excess of the

7.5 million acre-feet. The contractual allocation scheme also determines each state's apportionment in the event of insufficient mainstream water to supply 7.5 million acre-feet of consumptive use in one year. In such event, the allocation scheme requires each state to share the burden of the shortage ratably. This is to say that the contracts, executed by the Secretary in conformity with the apportionment contemplated by Congress in Section 4(a), apportion to each state a pro rata share of the available water. The interstate ratios are determined by the contractual apportionment to each state of the first 7.5 million acre-feet of consumptive uses. Thus in the event of shortage, to Arizona is apportioned by her contract $\frac{2.8}{7.5}$ of the aggregate consumptive use in the three states; to California is apportioned by her contracts $\frac{4.4}{7.5}$ of such use; and to Nevada is apportioned by her contract $\frac{.3}{7.5}$ of such use. Priority of appropriation is nullified by the Project Act and by the contracts, and this ratable apportionment is substituted in lieu thereof.[87]

It is demonstrable that the Project Act and the water delivery contracts contemplate a pro rata allocation of mainstream water among Arizona, California and Nevada in times of short supply. As explained above, the three states' apportionments are on a parity whenever the annual supply is sufficient to satisfy 7.5 million acre-feet or more of consumptive use in the United States. Thus California and Arizona are each allocated 50% of surplus, under existing contracts, and necessarily without regard to priority of appropriation. Even if, hypothetically, California were to

[87]As is explained hereafter (pp. 306 *et seq., infra*) Section 6 of the Act makes an exception to this rule.

have appropriations of 5 million acre-feet which are prior in time to any of Arizona's and some of these California appropriations were unsatisfied, the two states would nevertheless share surplus equally. And there is, with one exception, nothing in the Project Act or the Secretary's delivery contracts which suggests that a similar parity as between the states does not prevail if there is less than 7.5 million acre-feet of consumptive use to be apportioned among them.

That single exception, the command in Section 6 that "present perfected rights" shall be satisfied, further emphasizes that Congress did not intend that principles of priority of appropriation should apply in times of short supply to control the interstate allocation of mainstream water. The purpose of Section 6, as explained more fully at pages 306 *et seq.*, is to protect mainstream uses in existence at the time the Project Act was enacted against the possibility that their water would be impounded by the proposed dam and delivered to other uses developed after the dam was constructed. Since these early uses are prior in time to uses developed in reliance on Hoover Dam, there would be no need to protect them against this possibility if priority of appropriation governed the interstate delivery of water in periods of short supply.

Furthermore, the priority scheme established by Section 6, which is based on "perfected rights," is in certain particulars inconsistent with principles of priority of appropriation. Thus, it is quite possible that a right "perfected" as of June 25, 1929, and thus protected by Section 6 is junior in priority to a right recognized under state law but not "perfected" as of that date. In such a case, Section 6 would reverse the order of state priorities. If Congress had intended priority of appropriation to retain interstate significance after the enactment of the Project Act, it might

be expected that it would have suggested that priority of appropriation was still to govern in circumstances in which it was not inconsistent with Section 6.

Moreover, the Project Act approved the Colorado River Compact, and thus the Compact provides the background for the enactment of the Project Act. The Compact treats the Upper and Lower Basins on a parity one to the other in regard to the division of water; priority of appropriation is not an operative factor under the Compact. Thus subdivisions (a) and (b) of Article III apportion consumptive use of water to each Basin in fixed quantities with the manifest intention that priority of appropriation as between Basins shall be irrelevant to the apportionment. It is true that the greater development in the Lower Basin may have been taken into account when that Basin was apportioned an extra million acre-feet, but, the division having been made, each Basin's apportionment is, under the Compact, of the same quality, regardless of priority of appropriation. This is made clear by Article III(c) which provides that, if there is not enough water in excess of the III(a) and (b) apportionment to fulfill United States treaty obligations to Mexico, "then the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin . . . ." The respective Basins do not bear the loss of water in such a period of short supply on the basis of priority of appropriation, but on the basis of parity.

As I have pointed out, the second paragraph of Section 4(a) gives advance approval to a compact among Arizona, California and Nevada containing an allocation of water which was substantially effectuated by the contractual allocation established by the Secretary. Under this proposed compact, each state's apportionment would be of equal quality, precisely like the inter-basin apportionment in the Colorado River Compact. Surely Congress did not intend

that such an interstate compact would give California superior priorities to water because of the earlier dates of her uses. A compact is ordinarily thought of as an agreement between sovereigns with the rights of each standing on equal footing. The sensible interpretation of the proposed compact is that California's more advanced development was taken into account in allocating to her a larger share of water than to her sister states, and that once the ratio of 4.4 to 2.8 to .3 was established, it would be applied to all of the water consumed, regardless of dates of appropriation. Since Congress intended the second paragraph of Section 4(a) to be correlative to the first paragraph, the latter must be interpreted in the same manner as the former, to provide for a pro rata apportionment in periods of shortage.

In short, Congress contemplated inequality in the quantities allocated to each of the states, but parity in their rank. Interstate priorities were rejected. The principle of sovereign parity was established.

As pointed out above, it is patent that the Secretary was profoundly influenced in his water delivery contracts by the apportionment suggested in Section 4(a). Therefore, it must be concluded that these contracts embody the pro rata system of apportionment that is incorporated in Section 4(a). None of the contracts suggests that a system other than pro rata distribution is to be applied. Although the Secretary's contracts with California users specify a system of priorities among them, they do not mention interstate priorities, nor do any of the Secretary's other water delivery contracts. Indeed, in order to apply an interstate priority system it would be necessary for the Secretary to establish the priority date for each use diverting water from the mainstream as against all of the other uses diverting such water. So far as appears, the

Secretary has not considered it necessary to compile such a complicated list in order to deliver water pursuant to his contracts. Furthermore, as noted at pages 233-234, *supra,* the contracts adopt a pro rata system of distribution of surplus.

6. *Deductions for Uses above Lake Mead Invalid.* The contractual allocation scheme detailed above, which has been deduced from the Secretary's water delivery contracts, does not take into account the provisions of Article 7(d) of the Arizona contract and Article 5(a) of the amended Nevada contract which reduce the Secretary's obligation to deliver water from Lake Mead for use in those states to the extent that consumption of water in those states diminishes the flow of water into Lake Mead.[88] These provisions are in violation of the Project Act; they are unenforceable. They are contrary to the command of Section 5 that "contracts respecting water for irrigation and domestic uses shall be for permanent service . . .," they violate Section 18, which directs that state law shall govern intrastate water rights and priorities, and they result in an allocation of mainstream water totally out of harmony with the limitation on California contained in Section 4(a).

These contract provisions require that deliveries of water from the mainstream to users in Arizona and Nevada be reduced as depletions in those states above Lake Mead increase, regardless of the supply of water in Lake Mead. For example, assume that annual deliveries from Lake

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[88]Article 7(d) of the Arizona contract clearly states that the Secretary's delivery obligation is reduced to the extent that consumption diminishes the flow into Lake Mead. Article 5(a) of the Nevada contract is worded differently, however, and could be interpreted as reducing the delivery obligation to Nevada by the total amount of tributary diversions in that state regardless of the effect on the flow into Lake Mead. Since I have concluded that these provisions are unenforceable, it is unnecessary to differentiate between the two versions, and I have treated Article 7(d) and Article 5(a) as synonymous for purposes of the following discussion.

Mead to users in Nevada aggregate 300,000 acre-feet of consumptive use, the full contract allotment. It will be noted that the present Nevada contract does not call for delivery of any surplus. If thereafter a consumptive use from the Virgin River in Nevada were to occur which reduced the flow into Lake Mead by 50,000 acre-feet, the Secretary's obligation, under his contract to deliver water to Nevada from Lake Mead, would be reduced by this amount, and this would result in the cancellation of deliveries to those junior-most Nevada users who had been receiving the last 50,000 acre-feet under the contract, even though the supply of Lake Mead water was sufficient to satisfy all demands.[89] This would be true despite the fact that the Secretary has absolutely no control over consumptive uses on the Virgin River. For these junior Nevada users, the Nevada contract cannot be regarded as one for permanent service.

Since Section 5 requires the Secretary's water delivery contracts to be "for permanent service," the contract provisions in question are in violation thereof. The requirement of permanent service has no antecedent in the prior Reclamation Acts, and the legislative history sheds very little light on its meaning. Clearly a contract for a stated term of years would not be for "permanent service." However, the general context suggests that Congress intended to do more than outlaw term contracts. This requirement was placed in the Project Act also to ensure that deliveries of water from Lake Mead would be on a stable and annually re-

[89]Consumption of water on any particular tributary above Lake Mead affects the supply of water in Lake Mead and hence the amount of water that can be released for consumption each year. But it is only one of many factors that affect supply, and is clearly not among the most important ones, which are the mainstream flow into Lake Mead and storage from prior years. Thus, it is quite likely that the Secretary would be able to release the same amount of water for consumption from the mainstream in successive years despite an intervening project which depleted the flow into Lake Mead from one of the tributaries.

curring basis, insofar as this is possible under the physical conditions existing in the River Basin. Because of the topography and geography of the Lower Basin, water from the mainstream can be feasibly diverted and utilized for irrigation only by the construction of immense projects consisting of dams, pumping facilities, canals and other necessary works. Needless to say, the cost of such projects is enormous, and they can be financed only if a relatively constant and dependable supply of water seems likely to be available once they are completed. Similarly, existing projects cannot be economically operated unless a dependable supply of water is available.

There will necessarily be some uncertainty of supply of mainstream water because of the very large fluctuation in the flow of water into Lake Mead each year.[90] Legislation could not, of course, affect the geography of the region or the amount of precipitation. But the primary purpose of the Project Act in providing for the construction of Hoover Dam was to regulate this erratic flow so as to provide, so far as physically possible, a stable supply of water on the basis of which the economy of the Lower Basin could be developed.[91] While Congress could not legislate away the uncertainties of supply created by nature, it could reduce them by means of the great reservoir and by pursuing a policy of permanent service contracts. In conformity with this purpose, the requirement of permanent service in Section 5 seems to have been intended to instruct the Secretary to contract for water deliveries in such a way as to assure users, as far as is physically possible, of a stable supply of water. Having authorized the dam to overcome the physical conditions which resulted in uncertainty of supply, Congress did not want the Secretary's contracts

[90]See Part One, pp. 117-120.

[91]Hoover Dam cannot be entirely successful in this regard. See Part One, pp. 107-110.

to generate new causes of uncertainty. Congress undoubtedly realized that unless Hoover Dam and Lake Mead were operated so as to make deliveries of water as dependable as possible it would be extremely difficult to develop new projects, existing projects might fail, and the effective utilization of the River would be seriously impaired.

But the provisions charging Arizona and Nevada for depletions above Lake Mead create this very uncertainty of supply that Hoover Dam and the Section 5 command were explicitly designed to avoid. For under these provisions, deliveries to projects below Lake Mead would be reduced on the basis of fluctuating factors which neither the Secretary nor the downstream users can control.[92]

It is true that deliveries to users in a particular state below Lake Mead are reduced, under Articles 7(d) and 5(a), only as consumption within that state on the System above Lake Mead increases, and thus, in a sense, the total amount of water used within the state remains relatively constant. But Section 5 clearly requires that individual users be assured permanent service, regardless of overall state allocations. Furthermore, Section 5 deals with the mainstream only and thus it must have been intended to require permanent service in regard to mainstream deliveries regardless of consumption on the tributaries.

These provisions also violate Section 18 of the Project Act. That section, set forth and discussed at pages 216-218, *supra,* provides in effect that state law shall govern water rights and priorities intrastate. The example given above illustrates the violation of Section 18. The example assumed

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[92]It may be that in some instances a user below Lake Mead could obtain an injunction under state law prohibiting consumption of water above Lake Mead because of the collateral effect on deliveries to that user. However, nothing has been brought to my attention to indicate that this would be true in all, or even some, cases. Besides, Section 5 requires that the Secretary's contracts themselves must ensure permanent service.

that, after the full 300,000 acre-feet of Nevada's Lake Mead water had been appropriated and put to beneficial use, a project was developed on the Virgin River in Nevada that depleted the flow into Lake Mead annually by 50,000 acre-feet. Under the law of prior appropriation, the Virgin River project would be junior to all users of the 300,000 acre-feet. The contract provisions, if enforced, would reverse this order of priority. The users of the last 50,000 acre-feet of mainstream water under the Nevada contract would be deprived of water, while the Virgin River project continued to use water, despite the fact that the tributary user was, under state law, junior to the mainstream users. No more flagrant violation of Section 18 can be conceived. The Secretary has attempted, by his contracts, to intervene within the States of Nevada and Arizona to dictate who shall receive water and in what order of priority. Moreover, in this attempt, the Secretary has adopted a rule of priority exactly the reverse of the state rules; the contract provisions would displace senior downstream users for the benefit of junior upstream users.

Since the Secretary's power to make water delivery contracts under Section 5 of the Project Act is limited by Section 18 of the Act, and since the provisions in question violate Section 18, those provisions must be stricken on this ground also.

In addition to violating Sections 5 and 18 of the Project Act, Articles 7(d) and 5(a) are inconsistent with the Section 4(a) limitation on California's use of mainstream water, and indeed, defeat the basic purpose of the delivery contracts themselves; namely, to provide for the allocation in fixed proportions among Arizona, California and Nevada of all the mainstream water released for use in the United States.

Congress intended, in Section 4(a), to provide for an apportionment of the first 7,500,000 acre-feet of consump-

tive use of mainstream water plus a further apportionment of surplus water in the mainstream. Consumption of water diverted from the Lower Basin tributaries is irrelevant to the Section 4(a) apportionment. The Secretary's water delivery contracts, except for the provisions in question, substantially adopt and effectuate the congressional apportionment. Except for these provisions, the several water delivery contracts provide for the disposition of all the 7,500,000 acre-feet and all surplus. See pages 222-224, *supra*. But Articles 7(d) and 5(a) defeat the mainstream allocation, otherwise completely provided for in the contracts, by introducing System, *i.e.*, tributary, considerations in a mainstream apportionment. To enforce these provisions would distort the mainstream apportionment and leave some mainstream water undisposed of.

The resulting incomplete allocation may be demonstrated by the following example: Assume that the Secretary decided to release in a particular year enough mainstream water to permit consumption of 7.7 million acre-feet in the three states. Assume, also, that Arizona's diversions from the Little Colorado River depleted the flow into Lake Mead by .1 million acre-feet. Under the interstate apportionment established by the Section 4(a) limitation on California and the delivery contracts with Arizona and Nevada, of the first 7.5 million acre-feet of mainstream consumption, Arizona would be allocated 2.8 million acre-feet, California 4.4, and Nevada .3. Of the .2 million acre-feet constituting surplus, Arizona and California would each be allocated one-half. Thus to California would be apportioned a total consumption of 4.5 million acre-feet for the year in question. She could not consume more than this amount because of the Section 4(a) limitation, which is based on mainstream considerations only. To Nevada would be apportioned a total consumption of .3 million acre-feet, and she could not utilize more than this since that constitutes

her full contractual allotment. To Arizona would be apportioned a total consumption of 2.9 million acre-feet. But if Article 7(d) of her contract were applied in this situation, the Secretary's delivery obligation of 2.9 million acre-feet would be reduced by the amount of the depletion of the flow into Lake Mead, and Arizona could consume only a total of 2.8 million acre-feet from the mainstream. Thus, although 7.7 million acre-feet were released for consumption within the three states for the year, only 7.6 million acre-feet could be utilized under the statutory and contractual limitations. 100,000 acre-feet of water released for consumption could not be used.

The United States suggests that the solution for this dilemma is simply to consider the uses above Lake Mead as part of the total supply of available consumptive uses under the apportionment, and to charge them to Arizona and Nevada. Thus the United States, in the example, would add the 100,000 acre-feet of depletions from the Little Colorado to the total of available consumptive uses from the mainstream, giving a total of 7.8 million acre-feet of available consumptive uses, and 300,000 acre-feet of surplus. The United States then would allocate this total supply among the three states according to the apportionment formula, giving California 4,550,000 acre-feet of consumptive uses, Arizona 2,950,000 (including the 100,000 from the Little Colorado), and Nevada 300,000.[93]

There are two flaws in this suggestion. First of all, the United States would equate consumptive use measured by diversions less returns, which is the apportionment measurement, with depletion of the flow into Lake Mead, which is the measurement under Article 7(d) of the Arizona contract. But the two measurements are not similar; for example, 100,000 acre-feet of consumptive use on the Little

[93]Letter of the Solicitor General commenting on the Draft Report, p. 8

Colorado will result in a depletion of the flow into Lake Mead by a substantially smaller quantity of water.

Secondly, the United States' suggestion would violate the interpretation of Section 4(a) proposed in this Report, an interpretation to which the United States herself agrees. Thus Section 4(a) limits California to 4.4 plus half of surplus out of the total consumptive use of water diverted from the *mainstream;* it establishes a mainstream, not a system-wide, method of accounting. But the United States' suggestion would import tributary considerations into the Section 4(a) limitation. In the example, there are only 7.7 million acre-feet of consumptive uses of water diverted from the mainstream and Section 4(a) would limit California to 4,500,000 acre-feet of this. However, the United States' solution, because it takes tributary uses into account, would result in California receiving 4,550,000 acre-feet of consumptive use, 50,000 acre-feet more than she is permitted to take under Section 4(a).

The reason for the existence of this body of available water which cannot be utilized by any of the interested states under the contractual apportionment created by the provisions in question is quite clear. Articles 7(d) and 5(a) dictate that Arizona and Nevada cannot receive mainstream water to the extent that they deplete the tributaries above Lake Mead. But California cannot use this water that is denied to her sister states because the statutory limitation on her consumption is based on consumption of mainstream water only. Under Section 4(a), California cannot receive more mainstream water because of depletions on the tributaries even though, under the Arizona and Nevada contracts, those states receive less. In other words, because of the lack of correlation between the Arizona and Nevada contracts on one hand and the California contracts on the other, all of the apportioned water physically available for consumption cannot be legally utilized.

It is significant that under the apportionment suggested in Section 4(a) itself all of the available water could be consumed in the three states. This is because Congress intended the limitation on California in the first paragraph and the allocations to Arizona and Nevada in the second paragraph to correlate perfectly; both were to apply to mainstream water only. Indeed, it seems that the Secretary himself intended the delivery contracts to provide for the apportionment of all of the available mainstream water among Arizona, California, and Nevada, since that apportionment was based on the one suggested by Congress in Section 4(a) of the Project Act.

It is unlikely that the Secretary intended that the formula established by his contractual apportionment would call for the delivery of water to California which California could not receive under the Section 4(a) limitation, and, conversely, that Arizona and Nevada would not be able to receive, under their contracts, water which California could not use under the statutory limitation. But this is precisely the result of applying the provisions in the Arizona and Nevada contracts which inject System considerations into the scheme for apportioning mainstream water. Rather, the Secretary seems to have intended that California should receive, out of the available supply, all of the water she was eligible to receive under the statutory limitation, at least until the 5,362,000 acre-feet of consumptive uses per annum called for in the existing delivery contracts with California users is provided, and that Arizona and Nevada would receive all of the rest.

Perhaps it was not apparent at the time that the Arizona and Nevada contracts were entered into that, because of Articles 7(d) and 5(a), they would not correlate with the California contracts. Certainly it is clear that none of the interested parties intended that the Arizona and Nevada contracts would waive the limitation on California's con-

sumption contained in the Project Act, or that they would operate so as to prevent Arizona and Nevada users from eventually consuming the full amount of water that was barred to California. The Arizona and the amended Nevada contracts were executed within six weeks of each other, and Article 10 of the Arizona contract specifically provides that the entire contract, and Article 7 in particular, "is without prejudice to, any of the respective contentions of said states [which term includes Nevada] and water users as to (1) the intent, effect, meaning, and interpretation of said compact and said act . . . (5) what limitations on use, rights of use and relative priorities exist as to the waters of the Colorado River system. . . ." And in a memorandum issued by Secretary of the Interior Ickes on February 10, 1944, the day following the execution of the Arizona contract, he stated that "Article 10 was purposely designed to prevent Arizona, or any other state, from contending that the proposed contract, or any provision of the proposed contract, resolves any issue on the amounts of waters . . . available to the respective states under the compact and the act. It expressly reserves for future judicial determination any issue involving the intent, effect, meaning and interpretation of the compact and act."[94]

Whatever the reason for the incorporation of Articles 7(d) and 5(a) into the contracts, it is apparent that, in light of the interpretation here proposed for Section 4(a), those provisions defeat the basic purpose of the delivery contracts in that they, and they alone, prevent the contracts from establishing a rational and easily administered scheme for the apportionment of all the available mainstream water among the three interested states.

In this posture, failure to give effect to the provisions charging Arizona and Nevada for depletions above Lake

[94]Special Master's Exhibit No. 4, The Hoover Dam Documents, p. A568.

Mead is consistent with the general scheme of the delivery contracts and enables the Secretary to operate Lake Mead efficiently. It would be unconscionable to uphold a delivery scheme which required, on a permanent basis, that water flowing in the mainstream and available for use could not be consumed in any of the three states.

As a final matter, it should be pointed out that voiding these provisions does not impair the Secretary's control and management of Hoover Dam and Lake Mead, nor does it leave California helpless to protect her interests. The Secretary will still be able to control the supply of water in Lake Mead since it is within his reasoned discretion to determine how much water is to be released for use in the three states each year. And California will be able to protect herself against undue depletions on the tributaries and the mainstream above Lake Mead by compact, or, if the necessity arises, by suit.

7. *United States Uses Charged to States.* All consumption of mainstream water within a state is to be charged to that state, regardless of who the user may be. Thus, consumption of mainstream water on United States Indian Reservations, National Parks, Forests, Monuments, and Recreation Areas, lands under the control of the Bureau of Land Management, reclamation projects, wildlife refuges, and other United States projects within the Lower Basin, all of which will be treated subsequently, is chargeable to the state within which the use is made. All of the parties seem to agree to this accounting, and it is required by the contracts and the Project Act. Article 7(1) of the Arizona contract specifically provides that Arizona's apportionment includes the consumptive use of all water diverted from the mainstream "whether made under this contract or not." Similarly, Section 4(a) of the Project Act limits diversions of water "for use in the

State of California" and nothing indicates that this language does not include all uses, including federal uses. The Nevada contract was intended to be correlative with the Arizona and California contracts and hence should be interpreted in the same manner. Furthermore the Nevada contract provides for the delivery of "so much water . . . as may be necessary to supply the state a total quantity not to exceed [300,000 acre-feet per annum]." Clearly this "total quantity" includes all mainstream water consumed in Nevada by any user.

E. California's Offer of Proof.

In connection with the oral argument on the Draft Report, California made an Offer of Proof, consisting of about 60 papers, which, she asserts, show thirty years of legislative and administrative interpretation of the Project Act contrary to the conclusions reached in the Report. California contends that these papers, if admitted in evidence, would establish:

(1) That state and federal officials concerned with the administration of the Project Act construed Section 4(a) to be applicable to the tributaries as well as to the mainstream, as California contends, see pp. 177-178;

(2) That the Secretary of the Interior had no intention of apportioning water when he entered into water delivery contracts with the several California defendants and with Arizona and Nevada.

Careful consideration of the Offer of Proof leads to the conclusion that the papers proffered do not establish either of these contentions.

First, as to the correct interpretation of Section 4(a), the papers tend to show only that Arizona and California have for over thirty years disagreed over the meaning of

this provision, and that neither of the states, through its officials, has exhibited a uniform consistency in positions taken regarding its meaning. Arizona's changes of position are fully documented in the several litigations affecting the River. Similarly, the exigencies of the moment seem to affect the interpretation of the Project Act advanced by California. For example, in opposing ratification of the Mexican Water Treaty, Mr. James H. Howard (then as now counsel for Metropolitan Water District) advanced these contentions:

> MR. HOWARD. Section 5 of the Boulder Canyon Project Act announced that the Secretary of the Interior was authorized to contract for the storage and delivery of water from the Boulder project, and it provided that those contracts should be for permanent serivce. It was also provided that no right in the stored waters of Boulder should be acquired by a method other than contract with the Secretary of the Interior. The value of that clause to the State of California may not be immediately apparent, but I want to develop that it is important.[95]
>
> * * *
>
> MR. HOWARD. No. The statement is, in fact, that California will never claim more than 4,400,000 acre-feet plus one-half of the waters apportioned by the compact.
>
> THE CHAIRMAN. You are right. There is nothing in this act, as I see it, in that clause, that guarantees to give California that; it merely requires California to acquit anybody of any claim in connection with that; is not that true?
>
> MR. HOWARD. Yes; the act does not give California any water.
>
> THE CHAIRMAN. How much water of that 4,400,000 acre-feet——

[95] Senate Hearings on Mexican Water Treaty, Committee on Foreign Relations, vol. 8, 79th Cong., 1st Sess. (1945), pp. 865-66.

SENATOR JOHNSON of California. Let him answer.

THE CHAIRMAN. He has already answered, but I will let him answer again.

MR. HOWARD. *That is a limitation, I take it, not a grant. The grant to California came in contracts with the Secretary of the Interior, authorized by the Boulder Canyon Project Act. It is upon those contracts that we rely for our affirmative right to water.*[96] (Italics added.)

* * *

THE CHAIRMAN. I do not like to interrupt you, but this contract with the Secretary of the Interior is more in the nature of a license to use so much water, is it not?

MR. HOWARD. No, sir; these are contracts.

THE CHAIRMAN. Is there any binding obligation on the Secretary to deliver that amount of water?

MR. HOWARD. Yes; there is.[97]

* * *

SENATOR MILLIKIN. Let me ask a question, please. Is there a compact at the present time between Nevada, Arizona, and California, and the lower basin States?

MR. HOWARD. No, sir; there is none.

SENATOR MILLIKIN. You have not decided on your allocation of water among yourselves?

MR. HOWARD. No. We have a rather complicated situation there, sir. In a way, the California Limitation Act constitutes a substitute for such an apportionment. That is, they held our side down, but there was no agreement between California and Arizona in the matter.

* * *

[96] *Id.*, at 876.
[97] *Id.*, at 880.

> MR. HOWARD. The Secretary of the Interior and the State of Arizona have entered into a contract which in a way is a substitute already, a three-State compact.[98]

The purpose in 1945 was, of course, to convince Congress that it would be a breach of the California contracts to allocate any Lake Mead water to Mexico; hence, the reliance on the contract as a grant. In the posture of this litigation, however, California rejects the contracts as a source of right, since the contracts clearly relate to mainstream water and not to tributary water.

A further example of inconsistency is found in the testimony of Attorney General Kenny of California. His opposition to the Mexican Treaty was based on the proposition that California would be deprived of some of its 4.4 million acre-feet. General Kenny stated:

> SENATOR WILEY. Then is the nub of this argument that you are presenting (1) that you are getting the water, 4,400,000 acre-feet; (2) that you feel, if this treaty should become the law of the land, your rights will be prejudiced and that you will not get that water?
>
> MR. KENNY. Definitely.[99]

In oral argument in this case, on the other hand, California advanced the contention that the apportionment formula adopted in this Report errs in that it permits, in times of shortage, some of California's 4.4 million acre-feet to go to Mexico, whereas, according to California, Congress intended in the Project Act that water to be forever free from the Mexican Treaty burden. Since Congress ratified the Mexican Treaty despite General Kenny's admonition that it subjected California's 4.4 to diminution in order to

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[98] *Id.*, at 886.
[99] *Id.*, at 379

fulfill the treaty obligation, it is somewhat inconsistent for California to argue in this litigation that Congress intended her 4.4 to be free from this obligation.

My conclusion is that both Arizona and California have, with respect to the meaning of Section 4(a), taken various positions from time to time as their immediate interests dictated and that the Offer of Proof fails to show a consistent interpretation of the Act by either.

So far as United States government officials are concerned, the dominant note sounded in the proffered papers is the avowed refusal of these officials to take sides in the Arizona-California controversy. The papers show a firm refusal of federal officials to state the effect of the Compact and the Project Act on the rights of Arizona and California. One need not burrow through all the papers to discover that this has been the position of the Interior Department. It is explicitly set forth in Article 10 of the Arizona contract.

From this hands-off attitude of the Secretary, California argues her second proposition that the Secretary could not have intended his contracts to apportion the water in Lake Mead. This proposition is in error. The circumstances of the time and the terms of the contracts show that the Secretary did intend to make an apportionment. The situation facing the Secretary was clear. He had to apportion the water because it was physically in Lake Mead and nobody could use it unless he did so. He had a dam capable of storing nearly 30 million acre-feet. He had clear authority under Section 5 to contract for the use of that water; indeed he was directed by the statute to make contracts, both for power and irrigation, to pay for the dam. Moreover, if contracts were not made, the water would be wasted, for no person was, according to the Act, entitled to the use of water without a contract. It would have been impractical for the Secretary to await judicial resolution of the Arizona-California controversy, since the Supreme Court had held

the United States to be an indispensable party in such litigation[99a] and the United States had refused to join as a party. Nor could the Secretary apportion water on a temporary basis, pending such an adjudication, since Section 5 of the Project Act required his contracts to be for permanent service. Accordingly, the Secretary made contracts for delivery of the water, necessarily intending thereby to allocate it.

California's Offer of Proof does not contradict this conclusion. It shows only that the contracts were intended not to be the basis for any contention respecting the meaning of the Compact or the Project Act in future litigation. Although the Secretary was forced to interpret the Project Act in order to make the contracts, he did not want his interpretation to influence future judicial construction of the Compact and the Act. The Secretary's contractual allocation scheme was to govern water deliveries to the several states unless and until it was held invalid by this Court, but the fact that he made the allocation was not to be evidence of its validity. If the scheme was valid, it was to prevail forever, unless changed as authorized by Section 8(b) of the Project Act.

Thus California's Offer of Proof shows no more than what is made explicit by Article 10 of the Arizona contract; it fails to show that the Secretary did not intend his contracts to apportion water. Since California's Offer of Proof, assuming the competence of the proffered papers, fails to establish any proposition that would affect the disposition of the issues in this litigation, it would not be provident to reopen the hearings for the purpose of receiving them as well as any evidence which might then be tendered by the other parties in contradiction.

[99a] Arizona v. California, 298 U. S. 558 (1936).

IV. The Claims of the United States to Water in the Mainstream of the Colorado River

The United States claims, in addition to control of the mainstream by reason of the Boulder Canyon Project Act and its ownership and management of the various dams and works which regulate mainstream water, the use of water in the Lower Basin for a variety of its projects and needs. The United States urges that it has reserved water for the use of the various Indian Reservations, National Forests, Parks, Recreational Areas, Monuments, Memorials and lands under the control of the Bureau of Land Management located in the Lower Basin. The United States also claims the right to fulfill its treaty obligations by delivering 1,500,000 acre-feet of water per annum in the Colorado River at the Mexican border, and by consuming water on wildlife refuges and management areas located in the Lower Basin. Finally, the United States claims the right to deliver water from Lake Mead to Boulder City, Nevada, pursuant to a federal statute.

A. Indian Reservations

The United States argues that it has reserved water flowing in the Colorado River and its tributaries in the Lower Basin for the needs of all of the Indian Reservations located within the Lower Basin. Thus the United States claims that each Indian Reservation has the right to divert and consume the amount of water necessary to irrigate all irrigable acreage on the Reservation and to satisfy related needs, subject only to the priority of appropriative rights established before a particular Reservation was created and water reserved for its benefit.

Arizona argues that the rights of the various Indian Reservations on the tributaries ought not to be adjudi-

cated in this case.[1] I agree with Arizona that there is no need in this litigation to adjudicate the rights or priorities of Indian Reservations diverting water from the Lower Basin tributaries, except for the Gila River. For the reasons detailed at pages 318-321, 323-324, *infra,* it would be inappropriate at this time to apportion water in any of these tributaries, except the Gila River. Moreover, it would certainly be inappropriate to attempt a determination of the rights and priorities between each Indian Reservation and the myriad individual users who divert water from these tributaries.[2] As to Indian Reservations on the Gila River System, I have made recommendations concerning the United States claims in a subsequent section of this Report at pages 332-334.

As to the mainstream Indian Reservations, I have concluded that it is necessary to determine their water rights, and I have done so in the Findings of Fact and Conclusions of Law which conclude this section of the Report. The United States claims it has reserved mainstream water for Indian Reservations under federal law, independently of the state law of appropriation, in quantities sufficient to irrigate all the irrigable acreage in each of the Reservations and to satisfy related uses. Arizona and California resist this claim. Arizona asserts that the quantity of water reserved for an Indian Reservation is no more than that amount necessary to satisfy the requirements of Indians living on the Reservation at any particular time. California also denies that the United States intended to reserve water for all irrigable lands on an Indian Reservation.[3]

This disagreement presents a justiciable controversy between the United States and the States of Arizona and California which ought to be adjudicated in this case in order

[1]Ariz. Answering Brief, pp. 92-108.
[2]See Tr. 13796-13810.
[3]Calif. Brief, pp. 177-195; Calif. Response to U. S., pp. 112-127.

water delivery contracts to indicate that he has surrendered it. But once water is released for consumption in the United States, the delivery contracts oblige the Secretary to apportion certain quantities to each state.

The aggregate delivery obligation under the Secretary's contracts with California users constitutes a duty similar to the one which the Secretary has undertaken to Arizona and Nevada. Those contracts call for total deliveries of sufficient water to satisfy 5,362,000 acre-feet of consumptive use per annum, subject to the availabilty thereof for use in California under the Project Act. These contracts mean that the Secretary is required to apportion to California users, in accordance with the system of priorities stated in all of the California contracts, 4.4 million acre-feet of the first 7.5 million acre-feet of consumptive use of water from the mainstream in one year, plus one-half of any additional uses apportioned in that year, until a maximum of 5,362,000 acre-feet per annum is consumed in California. As in the case of the Arizona and Nevada contracts, however, I find nothing which indicates that the Secretary has relinquished his discretion to determine in the light of his multiple obligations how much water is to be released from the reservoir for consumptive use in the United States.

The water delivery contracts substantially effectuate the apportionment contemplated by Congress in Section 4(a) of the Project Act. It can be no accident that the obligation to deliver 2.8 million acre-feet per annum found in Arizona's contract and the obligation to deliver .3 million acre-feet found in Nevada's contract, when added to the 4.4 million acre-feet to which California is limited out of 7.5 million acre-feet, total that 7.5 million acre-feet. Similarly, it is more than fortuitous that Arizona and Nevada, under their contracts, may share in the half of surplus which California cannot receive under the Section 4(a) limitation. The Secretary's intention must have been that Ari-

zona's 2.8, Nevada's .3 and the 4.4 to which California is limited would all come from the same 7.5 million acre-feet, and that Arizona's 46% of surplus, Nevada's 4% and the 50% to which California is limited would come out of any available water in addition to the 7.5 million acre-feet per annum. This is precisely the way that Senator Pittman interpreted Section 4(a) on the floor of the Senate; he assumed that California would receive the full 4.4 million acre-feet which was the maximum she could receive out of 7.5 million acre-feet and that Arizona would receive 2.8 and Nevada .3 million acre-feet to round out the full 7.5. Senator Pittman also assumed that California would receive all of the 50% of surplus that she was eligible to receive and that Arizona would receive the rest. See pages 176-177, *supra*. This seems also to have been the understanding of Senator Hayden and of other Senators who participated in the debate. See pages 174-175, *supra*. This correlation demonstrates that the Secretary obligated himself in his contracts with the California agencies to satisfy 5,362,000 acre-feet of consumptive use out of the water allocated to California under the three-state apportionment.

It is true that the California contracts do not in terms call for the delivery of half of surplus and therefore that they do not expressly apportion to California the maximum amount of water she can receive under her limitation. This does not impugn the conclusion that the water delivery contracts substantially effectuate the apportionment contemplated by Congress. The fact that the Secretary based the contractual apportionment on Section 4(a) and that he was careful to ensure that Nevada's 4% of surplus was to come from Arizona's share demonstrates that he intended to reserve 50% of surplus for California in making the contractual apportionment. The Secretary made no master contract with the State of California, but rather made a number of contracts for specific quantities of water with

the several California users. So far as appears, California users have not requested contracts for additional water out of surplus, probably for the reason that they have never been in a position to utilize the full amount of their present allotments. This explains why California's share of surplus has not yet been fully contracted for. In years in which "surplus" exceeds twice 962,000 acre-feet,[85] the Secretary is not required by his existing contracts with California users to deliver to them out of such surplus more than the 962,000 acre-feet. New contracts can, of course, change this situation.

Since the Secretary has intentionally bound himself to a contractual apportionment substantially (although not precisely) along the lines suggested by Congress as fair and equitable in the two paragraphs of Section 4(a) of the Project Act, that section has been used as a guide for interpreting and defining the contractual allocation. Applying this gloss to the contracts, I interpret them as establishing the following water delivery scheme: The Secretary, in his discretion, decides how much water is to be released from mainstream reservoirs in any particular period. The amount available for consumption in the United States in any one year will be the amount so released less the amount necessary to satisfy higher priorities. The contracts do not limit the Secretary's discretion; they operate only upon mainstream water which is available for consumption in the United States. They require that this water be apportioned as follows: of the first 7.5 million acre-feet of consumptive use in one year, 4.4 for use in California, 2.8 in Arizona and .3 in Nevada; of the remaining consumptive uses during that year, 50% for use in California and 50% in Arizona, subject to the possibility that Arizona's share

[85]The 5,362,000 acre-feet for which California users have contracted must be satisfied as follows: 4,400,000 acre-feet out of the first 7,500,000 acre-feet; and 962,000 acre-feet out of surplus.

may be reduced to 46% if the Secretary contracts to allocate 4% of surplus for use in Nevada.

The Section 4(a) limitation which is incorporated into the California contracts measures California's apportionment in terms of consumptive use, see pages 185-187, *supra*, and the delivery contract between the United States and Arizona also specifies that Arizona's apportionment is measured by consumptive use. The Nevada delivery contract is not so specific, but it must be interpreted in the same manner since it was intended to correlate to the California contract and the prospective Arizona contract and also to approximate the apportionment suggested in Section 4(a). Consumptive use means, in all of the contracts, diversions from the mainstream less return flow thereto. Thus a state is not charged for water diverted by it which ultimately finds it way back to the Colorado River and which is available for use within the United States or which is available for delivery to Mexico in satisfaction of obligations imposed by the Mexican treaty.

It should also be pointed out that the apportionment made by the delivery contracts applies to water stored in Lake Mead and flowing in the mainstream below Lake Mead. In other words, a state is charged for consumption of water released from Lake Mead and water which flows into the mainstream below Lake Mead from the Bill Williams River. The Section 4(a) limitation which is incorporated in the California contracts clearly provides for this result, see pages 184-185, *supra*, as does Article 7(1) of the Arizona delivery contract. Nevada, of course, does not have access to the inflow from the Bill Williams River; under her contract she is charged for all the mainstream water she utilizes.

Furthermore, it is clear that the mainstream apportionment among Arizona, California and Nevada effectuated by the Secretary's water delivery contracts in conjunction

fornia. Rather, the Secretary of the Interior has contracted with a number of agencies within the State, incorporating in each such contract the so-called Seven-party Agreement among all the users which governs their priorities *inter sese* to California's share of water from the Colorado River.[70]

In her answer to the bill of complaint, California alleges that the Secretary's contracts with the California users call for the delivery of sufficient water to satisfy 5,362,000 acre-feet of consumptive use per year.[71] No party contests this allegation.[72] Since all of the California contracts contain the proviso that the Secretary's water delivery obligation is "subject to the availability thereof for use in California under the Colorado River Compact and the Boulder Canyon Project Act," the amount of water legally available to California depends upon the interpretation of Section 4(a) of the Project Act. California can in no event demand more water than her contracts permit, and she may receive less under Section 4(a) of the Project Act.

No other questions are raised by the parties regarding the California contracts, and they need not be further considered.

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[70]The Seven-party Agreement is incorporated in Article (6) of the Palo Verde contract, printed in Appendix 8, page 423.

[71]California's Answer to the Bill of Complaint, pp. 1, 33.

The California Proposed Findings of Fact barely mention the California contracts, but it may be inferred from California's Proposed Conclusion of Law 7A:201, Table 2 at Note 4, that California adheres to the allegation of the answer that the contracts call for a total of 5,362,000 acre-feet of water. California claims, in addition, 16,000 acre-feet of "water for existing projects . . . for which no water right, either under state law appropriations or federal water delivery contracts, was proved but which is chargeable to the state" and for United States wildlife refuges.

[72]Ariz. Proposed Finding of Fact No. 122: "Those contracts call for delivery for use in California of an aggregate of 5,362,000 acre-feet of water." See also United States Proposed Conclusion of Law No. 1.4.

I hold that the California contracts are valid and that the California defendants are entitled to demand water in the amounts specified in the recommended decree.

3. *The Nevada Contract.* The United States entered into a contract with the State of Nevada and its Colorado River Commission on March 30, 1942.[72a] Therein the United States undertook "subject to the availability thereof for use in Nevada under the Colorado River Compact and the Boulder Canyon Project Act" to deliver from storage in Lake Mead "so much water as may be necessary to supply the state a total quantity not to exceed 100,000 acre-feet each calendar year."

On January 3, 1944, the same parties entered into a supplemental contract which increased the quantity of water to be delivered to 300,000 acre-feet described in the following words: "so much water, including all other waters diverted for use within the State of Nevada from the Colorado River system, as may be necessary to supply the State a total quantity not to exceed Three Hundred Thousand (300,000) acre-feet each calendar year."[72b]

I have heretofore noted various contentions respecting this contract and it is unnecessary to review them here.

Nevada would disavow her contract, claiming that the Supreme Court, in an equitable apportionment suit, can award her water in excess of the contract maximum of 300,000 acre-feet. Projecting her needs to the year 2,000, Nevada prays for an apportionment of approximately 530,000 acre-feet of water per year.[73] Having determined that a contract with the Secretary of the Interior is a pre-

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[72a]The complete text of the contract appears in Appendix 6, page 409.

[72b]The complete text of the contract appears in Appendix 7, page 419.

[73]Nev. Petition of Intervention, p. 25. See also Nev. Answering Brief, pp. 26-27, 94-96.

requisite for the delivery of water from Lake Mead, and that to the Secretary has constitutionally been delegated power to allocate the unappropriated water impounded in Lake Mead, I must reject Nevada's prayer for water in excess of 300,000 acre-feet, unless and until the Secretary sees fit to amend the Nevada contract to allow an increase in the amount of water delivered to her.

It should be noted that the Nevada contract, unlike the Arizona contract, does not require additional subcontracts between each water user and the Secretary of the Interior. On the contrary, the State of Nevada is free to determine who shall use the water, subject only to the Secretary's approval of the points of diversion.

I hold the Nevada contract to be valid, with the exception of a provision in Article 5(a) which is discussed hereafter at pages 237-247.

4. *Contracts For Reclamation Projects, Adjoining Lands and Miscellaneous Special Uses.* The United States has entered into water delivery contracts with various users in Arizona and California pursuant to the Reclamation Act of 1902, 32 Stat. 388, and acts amendatory thereof, 43 U. S. C. §§ 371 *et seq.* (1958), which obligate the United States to deliver water from the mainstream to lands on federal reclamation projects. The United States has also contracted with users in the Yuma, Arizona, area to deliver water to lands bordering federal reclamation projects pursuant to the Warren Act, 36 Stat. 925 (1911), 43 U. S. C. §§ 523-525 (1958), and to various special users pursuant to the Miscellaneous Special Use Act of February 25, 1920, 41 Stat. 451, 43 U. S. C. § 521 (1958).

There are four federal reclamation projects located within the Lower Basin to which the Secretary is obligated to deliver water from the mainstream. These projects are described in detail at pages 50-58, 60-61, *supra.*

One is the Yuma Reclamation Project which is located on both sides of the Colorado River downstream from Yuma, Arizona; the Valley Division is on the Arizona side of the River and the Reservation Division on the California side. The Valley Division is serviced by the Yuma County Water Users' Association. The non-Indian landowners on the Reservation Division have entered into individual water right application contracts with the United States for the irrigation of the particular acreage which they severally own.

A second project is the Yuma Auxiliary Reclamation Project which is located in Arizona, south of Yuma and east of the Valley Division of the Yuma Project. The Yuma Auxiliary Project is serviced by the Unit B Irrigation and Drainage District.

A third is the Gila Reclamation Project located in Arizona near the confluence of the Gila and Colorado Rivers. It contains three areas: North Gila Valley, Yuma Mesa, and Wellton-Mohawk. The North Gila Valley Unit is serviced by the North Gila Valley Irrigation District, the Yuma Mesa Division by the Yuma Mesa Irrigation and Drainage District, and the Wellton-Mohawk Division by the Wellton-Mohawk Irrigation and Drainage District. The South Gila Valley, while not presently operated as a federal reclamation project, is within the authorized limits of the Gila Project. It is serviced by the Yuma Irrigation District.

The fourth federal reclamation project constitutes the All-American Canal System and the Coachella Distribution System in California. The All-American Canal System is serviced by the Imperial Irrigation District; the Coachella Distribution System by the Coachella Valley County Water District.

The contracts which the United States has made for delivery of water to these Reclamation Act projects, to lands bordering these projects and to special users are as follows:

(1) Contract dated June 15, 1951 between the United States and the Yuma County Water Users' Association for delivery of water to the Valley Division of the Yuma Project in such quantities "as may be ordered by the Association and as may be reasonably required and beneficially used for the irrigation of the irrigable lands situate within the division . . . subject to the availability of such water for use in Arizona under the provisions of the Colorado River Compact and the Act of December 21, 1928 (45 Stat. 1057). . . ."[74]

(2) Water right application contracts providing for the delivery of water to non-Indian users on the Reservation Division of the Yuma Project located in California.[75] Substantially all of the non-Indian users on the Reservation Division have so contracted with the United States.

(3) Contract dated December 22, 1952 between the United States and Unit B Irrigation and Drainage District for the delivery of water to the Yuma Auxiliary Project in such quantities "as may be reasonably required and beneficially used for the irrigation of those irrigable lands which are situate within the . . . limited auxiliary project . . . subject to the availability of such water for use in Arizona under the provisions of the Colorado River Compact and the Act of December 21, 1928 (45 Stat. 1057). . . ."[76]

(4) Contract dated May 12, 1953 between the United States and the North Gila Valley Irrigation District for the delivery of water to the North Gila Valley Unit of the Gila Reclamation Project in such quantities "as may be ordered by the District and as may be reasonably required and beneficially used for the irrigation of the irrigable land situate within the District . . . subject to the

[74]Ariz. Ex. 92.
[75]Calif. Ex. 379.
[76]Ariz. Ex. 94.

availability of such water for use in Arizona under the provisions of the Colorado River Compact and the Act of December 21, 1928 (45 Stat. 1057) and subject to: (a) The availability of the water for the division under the provisions of . . . the Act of July 30, 1947 (61 Stat. 628). . . ."[77]

(5) The United States is planning to enter into a contract with the Yuma Irrigation District providing for the delivery of water from the Colorado River for use in the South Gila Valley.

(6) Contract dated May 26, 1956 between the United States and the Yuma Mesa Irrigation and Drainage District providing for the delivery of water to the Yuma Mesa Division of the Gila Project in such quantities "as may be ordered by the District . . . and as may be reasonably required and beneficially used for the irrigation of not to exceed 25,000 irrigable acres situate therein; subject to the availability of such water for use in Arizona under the provisions of the Colorado River Compact and the Act of December 21,1928 (45 Stat. 1057) and subject to: (a) The availability of the water for the division under the provisions of . . . the Act of July 30, 1947 (61 Stat. 628). . . ."[78]

(7) Contract dated March 4, 1952 between the United States and the Wellton-Mohawk Irrigation and Drainage District for the delivery of water to the Wellton-Mohawk Division of the Gila Project in such quantities "as may be ordered by the District . . . and as may be reasonably required and beneficially used for the irrigation of not to exceed 75,000 irrigable acres . . . subject to the availability of such water for use in Arizona under the provisions of the Colorado River Compact and the Act of December 21, 1928 (45 Stat. 1057) and subject to: (a) The availability

[77]Ariz. Ex. 95.
[78]Ariz. Ex. 96.

of the water for the division under the provisions of . . . the Act of July 30, 1947 (61 Stat. 628). . . ."[79]

(8) Contracts concluded between 1951 and 1956 under the Warren Act for the delivery of water from the facilities of the Yuma, Yuma Auxiliary, and Gila reclamation projects by the United States to individual users on lands bordering the reclamation projects.[80]

(9) Contracts concluded between 1945 and 1956 under the Miscellaneous Special Use Act of February 25, 1920 for the delivery of water from the facilities of the Yuma, Yuma Auxiliary, and Gila reclamation projects by the United States to various special users in the Yuma, Arizona, area.[80a]

(10) Contracts between the United States and the Imperial Irrigation District and between the United States and the Coachella Valley County Water District for delivery of water to those districts in the amounts and with the priorities stated in the Seven-party Agreement among various California users, subject to the availability thereof for use in California under the Colorado River Compact and the Boulder Canyon Project Act.[81]

The United States seeks a decree adjudging that it has the right and power to release for diversion from the mainstream of the Colorado River the amount of water necessary to fulfill the contractual obligations detailed above. Arizona objects. She argues that, under the Project Act, the Secretary of the Interior must contract for the delivery of water directly with each state, and that the division of each state's allotment of water among individual users is controlled by the state. Arizona says that the

[79]Ariz. Ex. 93.
[80]Ariz. Exs. 163, 165.
[80a]*Ibid.*
[81]Ariz. Exs. 34, 35.

Secretary has contracted to deliver certain amounts of water to Arizona and it is for the State to decide which projects within Arizona will receive the State's allotment of water. Thus Arizona argues that the Secretary of the Interior cannot deliver water from the mainstream pursuant to his Reclamation Act delivery contracts unless the State agrees to the intrastate allotment.

California joins Arizona in seeking to accomplish the same result, but on different grounds. California suggests that the Reclamation Acts give the Secretary of the Interior power only to build dams and diversion works, not to vest rights to water in individual owners of land on the reclamation projects. California argues that even though the contracts be valid, they, by themselves, do not give individual landowners, water users' associations, or project lands the right to receive water. That right, California states, vests under state law, and it would not be appropriate to decide in this case the various rights and priorities under state law.

Arizona's objection to the United States' claims is not well taken. I interpret the Boulder Canyon Project Act as empowering the Secretary of the Interior to contract for delivery of mainstream water to states and to individual users, whether private or public. The Project Act does not require or even suggest that the delivery contracts must be made only with states. It is certainly within the discretion of the Secretary, under the Project Act, to contract directly with individual users in the various states for the delivery of water. He is not confined to contracting with each state and permitting the state to allocate its share of the water to various individual users. Section 5 of the Project Act states that "no person" shall receive water without a contract. Assuming that the word "person" includes a state, it certainly includes entities other than states. If additional support were necessary for this proposition,

the action of the Secretary in entering into contracts with political subdivisions in California[82] immediately after enactment of the Project Act is evidence of the contemporaneous understanding. Indeed, in the case of California, the Secretary has made no contract with the State itself.

The Secretary's contract with Arizona obligates him to deliver a certain quantity of water for use within the state, but this contract leaves it to the Secretary to decide with which users within Arizona he will contract for the delivery of all or part of Arizona's allotment. Article 7(1) of that contract specifically provides that deliveries of water to Arizona users "shall be made for use within Arizona to such individuals, irrigation districts, corporations or political subdivisions . . . as may contract therefor with the Secretary, and as may qualify under the Reclamation Law. . . ." In other words, the Secretary has agreed with the State of Arizona that he will deliver a certain amount of water to Arizona users, but he has reserved to himself discretion to decide with which users he will contract. This being the case, the Secretary is free, subject to statutory limitations, to contract with users in Arizona qualifying under the reclamation law for delivery to them of certain amounts of water out of the total amount allocated to Arizona. This is precisely what the Secretary has done in the contracts which are before us in this case.

California's objection to the United States claims is on a different footing. For reasons hereinafter stated, I am of the view that state law governs intrastate rights and priorities to water diverted from the Colorado River. The application of such law presents issues which have not been tried and it would be inappropriate in any event to determine in this litigation the water rights of the various federal reclamation projects, adjoining lands and special users under the relevant state law.

[82]For a representative California contract see Appendix 8.

Section 18 of the Project Act provides:

> "Nothing herein shall be construed as interfering with such rights as the states now have either to the waters within their borders or to adopt such policies or enact such laws as they may deem necessary with respect to the appropriation, control, and use of waters within their borders, except as modified by the Colorado River compact or other interstate agreement."

Under this section, Congress has specifically declined to give the Secretary of the Interior authority to deliver water to users within a state in disregard of the state's water law. Although a contract with the Secretary is necessary under Section 5 of the Project Act for a user to receive mainstream water, the user must also, under Section 18, be under no disability to receive such water under the applicable state law. And, state law governs priorities between various users within a state who have delivery contracts with the Secretary.[83] This is apparent from the language of Section 18 and is corroborated by the legislative history. See page 155, *supra*.

This scheme is similar to the one employed by Congress in the federal reclamation laws, to which the Project Act is specifically stated to be supplementary. Section 8 of the Reclamation Act of 1902 provides:

> ". . . that nothing in this act shall be construed as affecting or intended to affect or to in any way interfere with the laws of any state or territory relating to the control, appropriation, use, or distribution of water used in irrigation . . . and the Secretary of the Interior, in carrying out the provisions of this act, shall proceed in conformity with such laws. . . ."

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[83] All I hold is that under the Project Act state law governs intrastate water rights; I do not pass on whether other federal statutes such as the Gila Project Reauthorization Act, 61 Stat. 628 (1947), supersede state law in particular cases.

Under the Reclamation Acts the Secretary is authorized to build dams and irrigation canals and to store and deliver water. Nobody may receive the stored water without a delivery contract. But the water rights of lands in reclamation projects are, under Section 8, governed, at least to some extent, by state law. *Ickes* v. *Fox,* 300 U. S. 82 (1937), on remand, *Fox* v. *Ickes,* 137 F.2d 30 (D.C. Cir. 1943); *Nebraska* v. *Wyoming,* 325 U.S. 589, 612-615 (1945). And, as the Supreme Court has but recently indicated, the water rights and priorities as between a reclamation project and other users within the same state are governed by state law. See *Ivanhoe Irrigation District* v. *McCracken,* 357 U. S. 275, 291 (1958). The fact that the Project Act is denominated as a supplement to the Reclamation Acts buttresses the conclusion, apparent from the plain language of Section 18 itself, that state law governs rights and priorities among intrastate users.

The various delivery contracts made by the Secretary for delivery of water to reclamation projects, adjoining lands and special users are, with one exception, authorized by the Reclamation Acts, the Miscellaneous Special Use Act and the Project Act and are therefore valid. How much water a particular project or user may receive out of a state's total apportionment as against other users in the state who also have or may in the future obtain delivery contracts with the Secretary of the Interior must be decided under state law. The relevant issues for such a decision have not been tried and it would be impossible to determine here all of the relevant rights and priorities under the applicable state laws which would affect a project's water rights. Furthermore, persons who are the most concerned with this decision are other users or potential users in the states, who are not parties to this suit. Therefore, I have declined to accept the United States' invitation to determine the right of any reclamation

project or other user to receive water as against competing users in the same state.

California contends that the Warren Act contracts and the Special Use contracts described at page 214, *supra,* are invalid because they are not for permanent service as required by Section 5 of the Project Act.[83a] All of the Warren Act contracts and all but three of the Special Use contracts recite that they are made pursuant to the Project Act and further recite that they are for permanent service.[84] Nothing in the Warren Act or in the Miscellaneous Special Use Act prevents contracts made pursuant thereto from being for permanent service. Hence, as to all but three Special Use contracts, no problem is presented with respect to the requirements of Section 5.

Of these three Special Use contracts, one, dated June 12, 1951, is between the Bureau of Reclamation and the Department of the Army and provides that the Bureau will supply water from the Gila Gravity Main Canal of the Gila Project for the use of an Army test station.[84a] This contract states, in paragraph 4, that it "shall extend so long as the Army requires said service." Another of the three contracts, dated November 1, 1953, is between the Bureau of Reclamation and the Department of the Air Force and provides that the Bureau will supply water from the facilities of the Gila Project for the use of the Air Force base at Yuma, Arizona.[84b] This contract states, in paragraph 8, that it "shall extend from the date hereof until such time as Air Force no longer requires said service and so advises Bureau." Both of these contracts conform to Section 5 and are valid. Both specifically state that they are made pursuant to the Project Act and that deliveries of water under

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[83a]The permanent service requirement of Section 5 is discussed at pp. 237-240, *infra.*

[84]The contracts are reproduced in Ariz. Ex. 165.

[84a]Ariz. Ex. 165, Contract No. 176r-696.

[84b]Ariz. Ex. 165, Contract No. 14-06-300-330.

them are governed and limited by the Project Act. Furthermore, although neither specifically uses the words "permanent service", both provide for continued deliveries for as long as the user needs water. As is true of all Warren Act and Special Use contracts, the contractees' rights to receive water are "subordinate to the rights of" lands within the reclamation project, but this merely establishes priority; it does not violate the permanent service requirement of Section 5.

The third contract, dated June 12, 1945, is between the United States and the Arizona Edison Company, Inc. and provides for the delivery of water from the Yuma Main Canal of the Yuma Project for the municipal water supply of Yuma, Arizona.[84c] This contract is the only one of all of the Warren Act and Special Use contracts in evidence which does not state that it was made pursuant to the Project Act. It provides, in paragraph 13, that "the term of this contract shall extend from the date hereof to and including December 31, 1970." Paragraph 14 provides:

> "It is understood and agreed that the furnishing of water hereunder to the Company shall not be taken or construed as binding the United States after the termination of this contract to furnish water to the said Company or to any one claiming through or under it, nor shall it under any circumstances become the basis of a permanent water right."

It is clear that this contract between the United States and the Arizona Edison Company, Inc. is not for permanent service; it unequivocally states that deliveries of water under it shall end on December 31, 1970, and that the United States shall be under no obligation to continue deliveries beyond that date. It is equally clear that it is a con-

[84c] Ariz. Ex. 165, Contract No. 176r-40.

tract for the delivery of water stored in Lake Mead and flowing in the mainstream below. The only water in the Yuma Main Canal of the Yuma Project, and thus the only water which can be delivered under this contract, is mainstream water which has been diverted at Imperial Dam. See pages 35, 50-51, *supra*. Since Section 5 of the Project Act commands that no person may receive mainstream water "except by contract made as herein stated", and since the Arizona Edison contract is not "as herein stated" because it is not for permanent service, the contract is invalid and the Secretary may not deliver water pursuant to it.

Water deliveries under the Arizona Edison contract have constituted a "supplemental water supply" for the City of Yuma. If the city requests a Section 5 contract to replace the deliveries which have been made under the Arizona Edison contract nothing has been called to my attention which would prevent the Secretary of the Interior from entering into such a contract if he so desired.

5. *The Contractual Allocation System.* The water delivery contracts into which the Secretary has entered with the states of Arizona and Nevada and with the California users constitute an allocation of mainstream water. Although the Arizona contract is written in terms of the "maximum" amount to be delivered and the Nevada contract in terms of "a total quantity not to exceed" the specified amount, I think that the Secretary has delivery obligations under these contracts. Otherwise they would be illusory and would make little sense. Of course, the Secretary is not required to drain Lake Mead dry in fulfilling demands for delivery of water. In the exercise of a reasoned discretion he will decide how much water is to be released from the reservoir each year, and his decision may be based on any reasonably relevant factors. Clearly he has this power under Sections 1, 5 and 6 of the Project Act, and I can find nothing in the

that the Secretary may know how much water he may release for consumption on each Indian Reservation. Thus in periods when there is insufficient water for the Secretary to fulfill all of his delivery obligations to users in a particular state, he will have to satisfy them according to priority. In such a case it will be necessary for him to know the rights and priorities of Indian Reservations as against other users within the state.[4] What these rights and priorities are can be determined only by resolving the controversy between the United States and the States of Arizona and California over the validity and scope of the reservations of mainstream water which the United States claims to have made. Indeed, if the Indian Reservations can acquire water rights only pursuant to state law, the Secretary may be prohibited from delivering any mainstream water to some of them since, so far as the evidence shows, some of the Reservations have never complied with the formalities required by the applicable state law in order to obtain a water right. Furthermore, the claims of the United States to water from the Colorado River for the benefit of Indian Reservations are of such great magnitude that failure to adjudicate them would leave a cloud on the legal availability of substantial amounts of mainstream water for use by non-Indian projects.

Since the Secretary cannot know how to operate Hoover Dam and the mainstream works below unless the controversy between the United States and the States of Arizona and California is resolved, since failure to adjudicate it will leave non-Indian users in doubt as to the water available for their use, and since this controversy has been prop-

[4]It should be noted that, under similar circumstances, the Secretary may need to know the water rights intrastate of other users. In the case of the California agencies who are parties to this suit these rights are set out in the Seven-party Agreement. Such rights of other users not parties to this suit obviously cannot be determined herein.

erly presented in this case, it is appropriate to adjudicate it here.

The United States claims are sustained.

It has been established that the United States has the power to reserve water for the benefit of an Indian Reservation, created out of public lands, and that such a reservation of water creates a water right good against subsequent appropriators even if they beneficially use the water before the Reservation uses it. In short, the United States has the power to create a water right appurtenant to such lands without complying with state law. *Winters* v. *United States,* 207 U. S. 564 (1908), involved a suit by the United States on behalf of the Fort Belknap Indian Reservation, which was created by treaty between the United States and various Indian tribes on May 1, 1888. The land set apart for the Indians under the treaty was arid, but susceptible of sustaining agriculture if irrigated from the Milk River, a non-navigable stream which formed the northern border of the Reservation. The Court found that it was the intention of the United States and the Indians that the Indians should settle on the Reservation and change from a nomadic to a "pastoral and civilized people." 207 U. S., at 576. Subsequent to the establishment of the Indian Reservation, the defendants in the case acquired lands along the Milk River upstream from the Reservation under the Desert Land Act, 19 Stat. 377 (1877), by settling on the land and putting it to productive use by irrigation with water diverted from the Milk River. Some of the defendant farmers diverted water from the Milk River and obtained appropriative rights thereto under the Desert Land Act and the local law of Montana as early as 1895. 143 Fed. 740, 742 (1906). According to the opinion of the Circuit Court of Appeals, the Indians were diverting, at the time of trial, 5,000 miners' inches of water, most of which they began to use after appropriative rights of some of the defendants

had vested. The United States successfully sued to enjoin the upstream farmers from interfering with the flow of water to the Fort Belknap Reservation.

The Supreme Court affirmed the trial court's holdings that "there was reserved to said Indians the right to use the water of Milk River to an extent reasonably necessary to irrigate the lands included in the reserve created by the said treaty . . .," and that the defendants would be enjoined from interfering with the flow of 5,000 miners' inches of Milk River water to the Reservation. 143 Fed., at 743. The Supreme Court thus held that the reservation of water was effective as of the date that the Fort Belknap Reservation was created, 207 U. S., at 577, and that the appropriative rights obtained by the defendants subsequent to the time that the water was reserved but prior to the time that it was put to use on the Reservation were subordinate to the Reservation's rights.

The Supreme Court supported this result with the following reasoning, at p. 577:

> "The power of the Government to reserve the waters and exempt them from appropriation under the state laws is not denied, and could not be. . . . That the Government did reserve them we have decided, and for a use which would be necessarily continued through the years."

The *Winters* case has been cited many times as establishing that the United States may, when it creates an Indian Reservation, reserve water for the future needs of that Reservation, and that appropriative water rights of others established subsequent to the reservation must give way when it becomes necessary for the Indian Reservation to utilize additional water for its expanding needs. *United States* v. *Powers,* 305 U. S. 527 (1939); *United States* v. *Ahtanum Irrigation District,* 236 F.2d 321 (9th Cir. 1956), *cert. denied,* 352 U. S. 988 (1957); *United States*

v. *Walker River Irrigation District,* 104 F.2d 334 (9th Cir. 1939); *Conrad Investing Co.* v. *United States,* 161 Fed. 829 (9th Cir. 1908). In the *Winters* case the United States exercised its power to reserve water by a treaty; but the power itself stems from the United States' property rights in the water, not from the treaty power. Since the United States has the power to reserve water, by treaty, against appropriation under state law, there is no reason why it lacks the power to do so by statute or executive order. In the *Walker River* case, the Court of Appeals squarely held that the United States had reserved water for an Indian Reservation which had been created by executive order.

It is unnecessary, for the purposes of this case, to explore the origin or limits of such power to reserve water against subsequent appropriators. The authorities cited above sufficiently sustain the validity of such a reservation to preserve the Indians' rights here under consideration.

The question to be decided, therefore, as to each Indian Reservation which can divert water from the mainstream of the Colorado River is whether the United States exercised the power to reserve such water for the Reservation's future needs. As stated in the *Walker River* case, 104 F. 2d, at 336:

> "The power of the Government to reserve the waters and thus exempt them from subsequent appropriation by others is beyond debate. . . . The question is merely whether in this instance the power was exercised."

The United States need not expressly reserve waters for the benefit of an Indian Reservation; an implied reservation is effective. Indeed, in all of the cases cited above, including *Winters* v. *United States* itself, the intent to reserve water was never explicitly stated at the time the Indian Reservation was established; rather that intent was implied from the circumstances surrounding the creation of

United States intended to reserve mainstream water for the reasonable future needs of the following Indian Reservations: Chemehuevi, Cocopah, Yuma, Colorado River and Fort Mohave. As to each it is apparent that it was intended that the Indians would settle on the Reservation land and develop an agricultural economy. The land, however, is too arid to support such an economy without irrigation from the Colorado River. It would be unconscionable for the United States to have coerced or induced Indians onto a Reservation without providing the water necessary to make the lands habitable. I refuse to accept this possibility as to any of the mainstream Indian Reservations since there is no evidence as to any of them that such was the case. As the Court of Appeals stated in the *Walker River* case, at page 339: "It would be irrational to assume that the intent was merely to set aside the arid soil without reserving the means of rendering it productive."

Also, wherever I have found an intent to reserve water, I have inferred, absent evidence to the contrary, that the reservation was not limited to the needs of the population then resident upon the land, nor to the acreage being irrigated when the Reservation was created. I have concluded that enough water was reserved to satisfy the future expanding agricultural and related water needs of each Indian Reservation. Invariably the United States intended that the Indian tribes settled on a Reservation would remain there for generations, and the possibility that other Indians would be settled on the Reservation could not be excluded. Certainly the possibility of expanding populations, expanding agricultural development, and hence expanding water needs must have been apparent at the time each Reservation was created. It is unreasonable to attribute to the United States an intention or an expectation that the Indians would remain stagnant or die out when they were settled on a Reservation. Since the Indians could remain

on these Reservations and develop their society and economy only if water from the Colorado River was available to meet their future needs, I have found that the United States, when it reserved water, reserved it for all of such needs.

This conclusion comports with the holdings in the three cases decided by the Court of Appeals for the Ninth Circuit which are cited above. As that Court stated in *United States* v. *Ahtanum Irrigation District,* 236 F.2d 321, 327 (9th Cir. 1956):

> "It is plain from our decision in the *Conrad Investing Co.* case, *supra,* that the paramount right of the Indians to the waters of Ahtanum Creek was not limited to the use of the Indians at any given date but this right extended to the ultimate needs of the Indians as those needs and requirements should grow to keep pace with the development of Indian agriculture upon the reservation."

The conclusion reached here is also consistent with the holding in the *Winters* case that the upstream farmers could not interfere with uses on the Indian Reservation which were initiated subsequent to the farmers' diversions.

The suggestion is unacceptable that the United States intended that the Indians would be required to obtain water for their future needs by acquiring appropriative rights under state law. The Indians were not an agricultural people and it was necessary for them to develop their agricultural skills after settling on the Reservations. It must have been apparent that if they were thrown into competition with the more advanced non-Indians in a race to acquire rights to water by putting it to beneficial use, they would have lost the match before it was begun. Rather than assuming that the United States intended to put the Indians in the position of having to leave their Reservations as their water needs increased if they were unable to satisfy these needs by acquiring appro-

priative rights under state law, I have concluded that reservations of water by the United States included enough to supply expanding needs regardless of state water law.

This brings us to the question of quantity. This is sharply debated, and many conflicting views have been advanced. I have concluded that the United States effectuated the intention to provide for the future needs of the Indians by reserving sufficient water to irrigate all of the practicably irrigable lands in a Reservation and to supply related stock and domestic uses. The magnitude of the water rights created by the United States is measured by the amount of irrigable land set aside within a Reservation, not by the number of Indians inhabiting it. At the times of the creation of the five Indian Reservations in question, it was impossible to predict the future needs of the Indians who might inhabit them. Indeed, in some instances it was not clear which Indian tribes would ultimately be settled on a particular Reservation. What the United States did, in withdrawing public lands for these Indian Reservations, was to establish areas that could be used in the indefinite future to satisfy the needs of Indian tribes in the United States as those needs might develop. It follows from this that the United States intended to reserve enough water to make the lands productive, in other words, enough to irrigate all of the practicably irrigable acreage. Only by reserving water in this manner could the United States ensure that the Reservation lands would be usable when needed to support an Indian economy. This conclusion is also supported by the fact that the irrigable land originally withdrawn for each of the five Indian Reservations was considerably more extensive than was necessary to support the Indians who inhabited the Reservations immediately after their establishment. The only explanation for this withdrawal of excess irrigable acreage is that the United States intended it to be utilized in the future.

It must have been apparent that unless the United States reserved water for the land at the time of withdrawal, there might be no water left to appropriate at the time that the land was needed for the purposes for which it was withdrawn.

Arizona argues that the United States reserved water for the Indians themselves and not for the lands withdrawn for a Reservation. Arizona seems to envisage that the United States intended to create water rights in gross which would fluctuate in magnitude as the Indian population and needs fluctuated, the water right being measured by the amount of water needed at any particular time by the Indians actually inhabiting a particular Reservation. As pointed out above, the more sensible conclusion is that the United States intended to reserve enough water to irrigate all of the practicably irrigable lands on a Reservation and that the water rights thereby created would run to defined lands, as is generally true of water rights.

But even if Arizona were correct in her contention, the most feasible way to give full effect to the water rights created by the United States, as Arizona defines them, would be to decree to each Reservation enough water to irrigate all of the practicably irrigable acreage. It is clear that the water rights of the five Reservations in question cannot be fixed at present uses for this would defeat the basic purpose of reserving water to meet future requirements. Even if, as Arizona argues, the reservation of water was in gross for Indians and not Reservation lands, the Indians' needs may well increase in the future and these increased needs would have to be provided for. Thus, under the Arizona theory, there are two possible methods of framing the decree in this action, other than in terms of irrigable acreage.

One possibility would be to adopt an open-end decree, simply stating that each Reservation may divert at any

particular time all the water reasonably necessary for its agricultural and related uses as against those who appropriated water subsequent to its establishment. However, such a limitless claim would place all junior water rights in jeopardy of the uncertain and the unknowable. Financing of irrigation projects would be severely hampered if investors were faced with the possibility that expanding needs on an Indian Reservation might result in a reduction of the project's water supply. Moreover, it would not give the United States any certainty as to the extent of its reserved rights, which would undoubtedly hamper the United States in developing them. Since, under the Arizona theory, United States water rights vary with changes in Indian population, the planning of works to serve future needs would be difficult because the United States could never know whether sufficient water to operate the works economically would be legally available.

The other possibility, which would avoid the serious disadvantage of creating uncertainty as to the extent of the reserved rights, would be to predict the ultimate needs of each Reservation and to decree that much water for its future uses. The shortcoming of this solution, however, lies in the difficulty of predicting the future needs of Indian Reservations. Failure to foresee expanding requirements would result in a forfeiture of the Indians' water rights and would stultify development of the Reservations. Whether it is ever possible accurately to predict the future needs of an Indian Reservation, it is clearly not possible in this case where the attention of the parties has been directed to a great many complex and important issues quite apart from those relating to the Indians. Whatever might be possible in a case involving solely the issue of the reserved rights of a

single Indian Reservation,[5] it would not be possible to predict future Reservation needs in this litigation.

Therefore, the most feasible decree that could be adopted in this case, even accepting Arizona's contention, would be to establish a water right for each of the five Reservations in the amount of water necessary to irrigate all of the practicably irrigable acreage on the Reservation and to satisfy related stock and domestic uses. This will preserve the full extent of the water rights created by the United States and will establish water rights of fixed magnitude and priority so as to provide certainty for both the United States and non-Indian users.

The amount of water reserved for the five Reservations, and the water rights created thereby, are measured by the water needed for agricultural, stock and related domestic purposes. The reservations of water were made for the purpose of enabling the Indians to develop a viable agricultural economy; other uses, such as those for industry, which might consume substantially more water than agricultural uses, were not contemplated at the time the Reservations were created. Indeed, the United States asks only for enough water to satisfy future agricultural and related uses. This does not necessarily mean, however, that water reserved for Indian Reservations may not be used for purposes other than agricultural and related uses. The question of change in the character of use is not before me. I hold only that the amount of water reserved, and hence the magnitude of the water rights created, is determined by agricultural and related requirements, since when the water was reserved that was the purpose of the reservation.

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[5]Even in such cases, courts have not attempted to bind the Indians on the basis of a prediction as to future needs. See Conrad Investment Co. v. United States, 161 Fed. 829 (9th Cir. 1908).

The water rights established for the benefit of the five Indian Reservations and enforced in the recommended decree are similar in many respects to the ordinary water right recognized under the law of many western states: They are of fixed magnitude and priority and are appurtenant to defined lands. They may be utilized regardless of the character of the particular user. Thus Congress has provided for the leasing of certain Reservation lands to non-Indians,[6] and these lessees may exercise the water rights appurtenant to the leased lands. *Skeem* v. *United States,* 273 Fed. 93, 96 (9th Cir. 1921). The measurement used in defining the magnitude of the water rights is the amount of water necessary for agricultural and related purposes because this was the initial purpose of the reservations, but the decree establishes a property right which the United States may utilize or dispose of for the benefit of the Indians as the relevant law may allow. See *United States* v. *Powers,* 305 U. S. 527 (1939).

[6]See 26 Stat. 794 (1891), 31 Stat. 229 (1900), 39 Stat. 128 (1916), 41 Stat. 1232 (1921) and, the general leasing statute presently in force, 69 Stat. 539 (1955), 25 U. S. C. § 415 (Supp. 1959), 25 U. S. C. §§ 415a-d (1958).

1. *Chemehuevi Indian Reservation*

FINDINGS OF FACT

1. The Chemehuevi Indian Reservation was established by an order of withdrawal from entry made by the Secretary of the Interior dated February 2, 1907.[7]

2. In withdrawing lands for the Chemehuevi Indian Reservation the United States intended to reserve rights to the use of so much water from the Colorado River as would be necessary to irrigate all of the practicably irrigable acreage therein and to satisfy related uses.[8]

3. There are 1,900 acres of irrigable Reservation land all located within the State of California which, together with related uses, have a maximum annual diversion requirement of 11,340 acre-feet.[9]

CONCLUSION OF LAW

For the benefit of the Chemehuevi Indian Reservation, the United States has the right to the annual diversion of a maximum of 11,340 acre-feet of water from the Colorado River or to the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 1,900 acres and for the satisfaction of related uses, whichever is less, with a priority of February 2, 1907.

2. *Cocopah Indian Reservation*

FINDINGS OF FACT

1. The Cocopah Indian Reservation was established by an Executive Order of September 27, 1917.[10]

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[7]U. S. Ex. 1201. This withdrawal was made pending congressional approval. Although the United States has not furnished evidence of such congressional action, I have assumed, absent evidence to the contrary, that approval was given.

[8]U. S. Exs. 1201, 1204, 1205, 1207.

[9]U. S. Ex. 1210.

[10]U. S. Ex. 1001.

2. In withdrawing lands for the Cocopah Indian Reservation the United States intended to reserve rights to the use of so much water from the Colorado River as would be necessary to irrigate all of the practicably irrigable acreage therein and to satisfy related uses.[11]

3. Colorado River water is delivered to the Reservation lands through the facilities of the Yuma Reclamation Project.[12]

4. There are 431 acres of irrigable Reservation land all located within the State of Arizona which, together with related uses, have a maximum annual diversion requirement of 2,744 acre-feet.[13]

CONCLUSION OF LAW

For the benefit of the Cocopah Indian Reservation, the United States has the right to the annual diversion of a maximum of 2,744 acre-feet of water from the Colorado River or to the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 431 acres and for the satisfaction of related uses, whichever is less, with a priority of September 27, 1917.

3. *Yuma Indian Reservation*

FINDINGS OF FACT

1. The Yuma Indian Reservation was established by an Executive Order of January 9, 1884.[14]

2. In withdrawing lands for the Yuma Indian Reservation the United States intended to reserve rights to the use

[11] *Ibid.*, U. S. Exs. 258, pp. 386-387; 510, p. 301; 513, p. 152.
[12] Tr. 14020 (Rupkey); U. S. Ex. 1006.
[13] U. S. Ex. 1009.
[14] U. S. Ex. 1101.

of so much water from the Colorado River as would be necessary to irrigate all of the practicably irrigable acreage therein and to satisfy related uses.[15]

3. There are 7,743 acres of irrigable Reservation land all located within the State of California which, together with related uses, have a maximum annual diversion requirement of 51,616 acre-feet.[16]

CONCLUSION OF LAW

For the benefit of the Yuma Indian Reservation, the United States has the right to the annual diversion of a maximum of 51,616 acre-feet of water from the Colorado River or to the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 7,743 acres and for the satisfaction of related uses, whichever is less, with a priority of January 9, 1884.

4. *Colorado River Indian Reservation*

FINDINGS OF FACT

1. The Colorado River Indian Reservation was established by an Act of March 3, 1865 (13 Stat. 541, 559) which set apart 75,000 acres in the Territory of Arizona for an Indian Reservation.[17]

2. By an Executive Order of November 22, 1873, adjoining bottom lands in the Territory of Arizona were added to the Reservation.[18]

3. By an Executive Order of November 16, 1874, the Reservation was enlarged to include lands on the westerly side

[15] *Ibid.*, U. S. Exs. 258, p. 387; 512, p. 20.
[16] U. S. Ex. 1121.
[17] U. S. Ex. 501.
[18] U. S. Ex. 503.

of the Colorado River in the State of California. The boundaries were defined as follows:

> "Beginning at a point where the La Paz Arroyo enters the Colorado River, 4 miles above Ehrenberg; thence easterly with said arroyo to a point south of the crest of La Paz Mountain; thence with said crest of mountain in a northerly direction to the top of Black Mountain; thence in a northwesterly direction across the Colorado River to the top of Monument Peak, in the State of California; thence southwesterly in a straight line to the top of Riverside Mountain, California; thence in a southeasterly direction to the point of beginning. . . ."[19]

4. On January 31, 1876, the United States Indian Agent reported to the Commissioner of Indian Affairs that the boundaries as defined by the Executive Order of 1874 crossed the Colorado River twice and cut off a large tract of land on the east side of the River which was being settled by non-Indians for unlawful and improper purposes. The Agent requested that an Executive Order be obtained making the Colorado River the boundary line. The Commissioner of Indian Affairs and the Secretary of the Interior approved the recommendation that the boundary be redefined.[20]

5. Thereafter, on May 15, 1876, an Executive Order issued which redefined the boundaries of the Reservation and which contained the following description of the western boundary:

> ". . . thence southwesterly in a straight line to the top of Riverside Mountain, California; thence in a direct line toward the place of beginning *to the*

[19]U. S. Ex. 504.
[20]U. S. Exs. 505A, 505B, 505C.

west bank of the Colorado River; thence down said west bank to a point opposite the place of beginning. . . ." (italics added)[21]

6. The southern boundary of the Reservation was subsequently adjusted by an Executive Order of November 22, 1915.[22]

7. In withdrawing lands for the Colorado River Indian Reservation the United States intended to reserve rights to the use of so much water from the Colorado River as would be necessary to irrigate all of the practicably irrigable acreage therein and to satisfy related uses.[23]

8. Except at one point, the Colorado River now flows east of its 1876 course.[24]

9. The "Olive Lake Cut-off" was constructed across the neck of a large loop in the existing channel of the Colorado River in 1920. By 1921, the entire river flow passed through the new channel.[25]

10. As a result of this cut-off the River now flows east of its 1920 course.[26]

11. There are 2,058 acres of irrigable Reservation land lying west of the present west bank of the Colorado River and east of the west bank of the River as it existed in 1920 prior to the "Olive Lake Cut-off."[27]

12. The "Ninth Avenue Cut-off" was constructed across the neck of a loop in the existing channel of the Colorado

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[21]U. S. Ex. 505.
[22]U. S. Ex. 506.
[23]See U. S. Exs. 501, 503-507, 513.
[24]See U. S. Ex. 560.
[25]Tr. 20121-20128 (Engle).
[26]U. S. Ex. 592.
[27]Tr. 20211-20212 (Rupkey); U. S. Ex. 592.

River in 1943. By February, 1944, 80-90% of the River flowed through the cut and, after August 1944, substantially all of the river flow passed through the new channel. As a result of this cut-off the River now flows east of its 1943 course.[28]

13. There are 222 acres of irrigable Reservation land lying west of the present west bank of the Colorado River and east of the west bank of the River as it existed in 1943 prior to the "Ninth Avenue Cut-off."[29]

14. There are 5,933 acres of irrigable Reservation land in the Northern West Side Area to the north of the intersection of the Reservation's westerly boundary and the west bank of the Colorado River.[30]

15. Thus there is an aggregate of 8,213 acres of irrigable Reservation land west of the present west bank of the Colorado River which, together with related uses, have a maximum annual diversion requirement of 54,746 acre-feet.[31]

16. There are 99,375 acres of irrigable Reservation land east of the present west bank of the Colorado River which, together with related uses, have a maximum annual diversion requirement of 662,402 acre-feet.[32]

17. Thus there is an aggregate of 107,588 acres of irrigable Reservation land which, together with related uses, have a maximum annual diversion requirement of 717,148 acre-feet.

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[28]Tr. 20171-20181 (Wilson); U. S. Exs. 590-592.
[29]Tr. 20215 (Rupkey); U. S. Ex. 592.
[30]Calif. Ex. 3546; U. S. Ex. 570.
[31]*Ibid.*
[32]*Ibid.* This includes 461 acres of land formed by accretion. Tr. 20216 (Rupkey); U. S. Ex. 592.

CONCLUSIONS OF LAW

1. The Executive Order of 1876 established the west bank of the Colorado River as the western boundary of the Colorado River Indian Reservation.

2. The Executive Order of 1876 established a boundary which changes as the course of the Colorado River changes, except when such changes are due to avulsion.

3. In the case of avulsion, the boundary remains at the west bank of the River as it existed immediately prior to the avulsive change.

4. The west bank, along which the boundary line is drawn, is the fast land along the west side of the Colorado River which serves to confine the waters within the bed and tends to preserve the course of the River. In the case of avulsion, the west bank, along which the boundary line is drawn, is the fast land along the west side of the former course of the River which served to confine the waters within the bed and tended to preserve the course of the River immediately prior to the avulsive change.

5. The 1920 "Olive Lake Cut-off" was an avulsion and worked no change in the western boundary of the Colorado River Indian Reservation.

6. The 1943 "Ninth Avenue Cut-off" was an avulsion and worked no change in the western boundary of the Colorado River Indian Reservation.

7. For the benefit of the Colorado River Indian Reservation, the United States has the right to the annual diversion of a maximum of 717,148 acre-feet of water from the Colorado River or to the quantity of mainstream water necessary to supply the consumptive use required for irriga-

tion of 107,588 acres and for the satisfaction of related uses, whichever is less, with priority dates of March 3, 1865 for lands reserved by the Act of March 3, 1865 (13 Stat. 541, 559); November 22, 1873, for lands reserved by the executive order of said date; November 16, 1874, for lands reserved by the executive order of said date, except as later modified; May 15, 1876 for lands reserved by the executive order of said date; November 22, 1915 for lands reserved by the executive order of said date.[33]

BOUNDARY DISPUTE—OPINION

A dispute concerning a portion of the west boundary of the Colorado River Indian Reservation arose between the United States and California when the United States sought to establish irrigable acreage within that Reservation. An Executive Order of May 15, 1876,[34] established the "west bank of the Colorado River" as the boundary of the Reservation. The United States contends that this language established a permanent, unchanging boundary defined by the west bank of the River as it existed in 1876.[35] California contends that the language established a changing boundary, defined by the west bank of the River as it may exist at any point of time.[36] Since the Colorado River has in this area moved eastward since 1876, California's contention, if sustained, would reduce the amount of irrigable acreage within the Reservation below the amount claimed by the United States.

In the alternative, the United States contends that if the west bank of the River as it presently exists is held to be the correct boundary, then certain land west of the present

[33]The evidence does not permit greater specificity regarding priority.
[34]U. S. Ex. 505.
[35]U. S. Brief, pp. 31-35.
[36]Calif. Proposed Findings and Conclusions 18D: 112-18D: 209.

west bank should nevertheless be held to be within the Reservation, since two changes in the course of the river were caused by avulsion. The United States points to two artificial changes made in the channel of the River, both of which eliminated large loops or horseshoes in the river and caused its channel to move to the east. If the United States contention is accepted, the irrigable acreage in the Reservation will be somewhat greater than California concedes.

I hold that California is correct in its assertion that the present boundary of the Reservation is the west bank of the River as it now exists, but that the United States is correct in claiming that the two artificial channel changes were avulsive and that such changes did not affect the Reservation's western boundary.

The call in the Executive Order of 1876 "to the west bank of the Colorado River; thence down said west bank" clearly established the west bank of the River as the boundary line. *Alabama* v. *Georgia,* 64 U. S. (23 How.) 505 (1859); *Howard* v. *Ingersoll,* 54 U. S. (13 How.) 380 (1851). That bank is defined as the fast land along the west side of the Colorado River which serves to confine the waters within the bed and tends to preserve the course of the River.[37] See *Oklahoma* v. *Texas,* 260 U. S. 606, 631-32 (1923); *Howard* v. *Ingersoll, supra,* at 416.

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[37]The United States claims 1800 acres lying on the west side of the present channel of the River but east of the 1876 west bank (*i.e.* the lands in question lie roughly between the old channel and the present channel of the River). This contention seems to be based on the proposition that the 1876 west bank and the present west bank are the same, because in an unregulated state, the River would extend to the 1876 line. See U. S. Finding 4.4.102; Tr. 20068-20069. However, it is clear that the flow of the River does not now in fact extend to the 1876 line. *Id.* See also U. S. Exs. 560, 562. Since "bank" is defined as the fast land that serves to confine the waters of the stream to its bed, the 1876 line does not represent the present west bank of the River. Hence the 1800 acres, which lie west of the present west bank of the River, are outside the boundaries of the Reservation, and the claim of water therefor is disallowed.

It is equally clear that the boundary established along the west bank changes as the course of the River changes, except in cases of avulsion. In *Oklahoma* v. *Texas, supra,* the Court defined the south bank of the South Fork of the Red River, which was the boundary between Oklahoma and Texas. After setting forth its definition of the south bank the Court said:

> "The boundary as it was in 1821, when the treaty became effective, is the boundary of today, subject to the right application of the doctrine of erosion and accretion and of avulsion to any intervening changes."[38]

There is substantial evidence that the Executive Order of 1876 did not intend to establish a fixed boundary and, certainly, a flexible boundary is not inconsistent with the purpose of the Order, which was to prevent the acquisition by non-Indians of land proximate to Indian land on the east side of the River.[39] The evidence establishes that various officers and departments of the United States have considered the Colorado River itself and not the 1876 meander line to be the western boundary of the Reservation.[40]

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[38]260 U. S., at 636. *Cf.* Railroad Co. v. Schurmeir, 74 U. S. (7 Wall.) 272 (1868); United States v. Boynton, 53 F.2d 297 (9th Cir. 1931); United States v. 11,993.32 Acres of Land More or Less, 116 F. Supp. 671 (D. N. D. 1953).

[39]See U. S. Exs. 505A, 505B, 505C.

[40]Various maps prepared by agencies of the United States (General Land Office; Office of Indian Affairs; Indian Irrigation Service) show no Indian land west of the River in the disputed area. Calif. Exs. 3532-3534.

In acquiring land for the construction of Palo Verde Dam, the Palo Verde Irrigation District was required by Congress to furnish easements over land other than that owned by the United States or within the Reservation. The United States was required to pay for Indian land conveyed by the Secretary of the Interior. 68 Stat. 1045 (1954). A portion of the land over which an easement was granted by Palo Verde lay east of the 1876 meander line and west of the course of the River. A portion of the land paid for by the United

Evidence of such an understanding by officers and departments of the United States may properly be considered in determining the intent of the Executive Order of 1876. See *Stewart* v. *United States,* 316 U. S. 354 (1942); *cf. United States* v. *Hill,* 120 U. S. 169 (1887). In *Stewart* v. *United States,* Mr. Justice Roberts, in interpreting the extent of a Mexican grant under which the United States claimed title, considered various maps and charts prepared by United States officers and departments subsequent to the grant as probative of the amount of land to which the United States obtained title.

Finally, the understanding of the various officers and departments of the United States that the 1876 Executive Order did not establish a fixed boundary at the 1876 meander line was apparently shared by the defendant Palo Verde Irrigation District which has, for various periods of time beginning in 1927, assessed lands within the disputed area for purposes of taxation.[41] It is also worthy of note that no evidence was introduced to demonstrate that the United States has ever asserted title to the area in controversy prior to this litigation.

It having been concluded that the west bank of the River, as presently located, is the boundary of the Reservation, the question arises of avulsive changes in the course of the River since 1876. An avulsive change is a sudden,

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States and conveyed by the Secretary lay west of the 1876 meander line and east of the course of the River. Tr. 20269-20274; Calif. Exs. 3535-3537. It is at this point that the River flows west of the 1876 meander line. Calif. Ex. 3537.

In 1934 the California Department of Public Works obtained a right of way for construction of what later became United States Highway 95. Although the State was required to pay for Indian land traversed by the project, California was not required to pay for land lying in the disputed area. The United States officials involved in the various stages of the transaction were the Secretary of Agriculture, the Secretary of the Interior, the Commissioner of the General Land Office and the Superintendent of the Colorado River Indian Agency. Tr. 20305-20309; Calif. Exs. 3543-3543G.

[41] Tr. 20435-20439 (Shipley); Calif, Ex. 3547.

perceptible change in the course of a river; it does not affect existing boundaries. See, e.g., *Missouri* v. *Nebraska,* 196 U. S. 23 (1904); *Nebraska* v. *Iowa,* 143 U. S. 359 (1892). The doctrine of avulsion includes both natural changes in course and changes caused by artificial means. *Arkansas* v. *Tennessee,* 246 U. S. 158, 173 (1918); *cf. County of St. Clair* v. *Lovingston,* 90 U. S. (23 Wall.) 46, 68 (1874).

The United States seeks to invoke the doctrine of avulsion with respect to two artificial changes in the course of the Colorado River in the area in question. I find that in the period 1920-1921, a man-made change in the Olive Lake reach of the River caused the River to change course to the east, and I further find that a similar artificial change in the course of the River was made in the period 1943-1944 by the so-called "Ninth Avenue Cut-Off" in the Palo Verde Valley. Both of these changes being avulsive, the land that now lies west of the present west bank of the River but east of the west bank as it existed before these changes occurred is Reservation land and should be counted in determining the amount of irrigable acreage within the Reservation.

With reference to these avulsive changes, California requests that the findings, conclusions and decree specifically disclaim any intention to pass on land titles of occupants of these areas. Of necessity, a determination of the amount of irrigable acreage within the Reservation and the consequent award of a quantity of water based on this determination requires adjudication of the boundaries of the Reservation. The findings herein made are therefore binding on the parties. Nevertheless, in the hearings and in this Report, I did not inquire into or determine the right of any occupant, whoever he might be, to the possession of lands within the questioned areas.

5. *Fort Mohave Indian Reservation*

FINDINGS OF FACT

1. The Hay & Wood Military Reserve at Camp Mohave was created by an Executive Order of March 30, 1870, as follows:

> "The reservations at Camps *Mojave, Verde, Date Creek, McDowell, Grant, Bowie* and *Crittenden,* Arizona, as described in the accompanying plats and notes of survey—approved by the *Secretary of War,* are made for military purposes, and the *Secretary of the Interior* will cause the same to be noted in the General Land Office to be reserved as military posts."[42]

2. The western boundary of the Reserve was defined by the notes of survey as follows:

> "Thence S. 76° 17′ 28″ W.228.50 chains to a post marked U. S. in mound of earth near the left bank of the Colorado River. Thence N.23° 01′ 32″ W.362.70 chains to a post marked U. S. in a mound of earth near the left bank of the Colorado River. Thence S.88° 45′ 32″ E.369.00 chains to the post at the point of commencement. The said boundaries containing 9114.81 acres, more or less."[43]

3. When laid out, the call to the artificial monuments and the calls for specified courses and distances conflict. Adherence to the latter would require a boundary line in the foothills to the west of the Colorado River. The call to monuments would fix a line at or near the left or east bank of the River.[44]

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[42]U. S. Ex. 1323.

[43]*Ibid.*

[44]Tr. 20240; Calif. Ex. 2616, pp. 8-9.

4. An Executive Order of September 18, 1890, transferred the Fort Mohave Military Reservation, which included the Hay & Wood Military Reserve, to the Department of the Interior for Indian school purposes.[45] This Reservation is presently known as the Fort Mohave Indian Reservation.

5. An Executive Order of February 2, 1911, which superseded an Order of December 1, 1910, reserved additional lands for the Reservation.[46]

6. In 1896, pursuant to the Swamp and Overflowed Lands Act [9 Stat. 519 (1850); 43 U. S. C. §§ 982-984 (1958)], the United States conveyed lands to California, some of which lay in the area in dispute in this case. These lands were subsequently conveyed to private owners prior to 1928.[47]

7. In 1923, pursuant to the Act of July 27, 1866 (14 Stat. 292), the United States conveyed certain lands in the disputed area to the Southern Pacific Railroad.[48]

8. In 1928, the United States Field Surveying Service, under the direction of the General Land Office, surveyed the boundaries of the Fort Mohave Indian Reservation. The survey was approved by the General Land Office in 1931.[49]

9. The 1928 General Land Office survey resolved the conflict between the call to the monuments and the calls for specified courses and distances in favor of the former.[50]

10. The locations of the monuments defining the western boundary of the Hay & Wood Reserve, which now con-

[45]U. S. Ex. 1303.
[46]U. S. Exs. 1304-1305.
[47]Calif. Ex. 3511.
[48]Tr. 20367-20369 (Pratt); Calif. Ex. 3512.
[49]Calif. Exs. 2611, 2616.
[50]Calif. Ex. 2616, pp. 4, 7-9.

stitutes part of the western boundary of the Fort Mohave Indian Reservation, were established by the 1928 General Land Office survey by reference to a survey map of the Reserve, dated 1870, and set forth in California Exhibit 3501.[51]

11. The 1870 map of the Hay & Wood Reserve, to which reference was made in surveying the western boundary of the Reserve in 1928, is one of the plats which accompanied the Executive Order of March 30, 1870.[52]

12. In withdrawing lands for the Fort Mohave Indian Reservation the United States intended to reserve rights to the use of so much water from the Colorado River as would be necessary to irrigate all of the practicably irrigable acreage therein and to satisfy related uses.[53]

13. There are 14,916 acres of irrigable Reservation land in the State of Arizona which, together with related uses, have a maximum annual diversion requirement of 96,416 acre-feet.[54]

14. There are 2,119 acres of irrigable land in the State of California and within the exterior boundaries of the Reservation as determined by the 1928 General Land Office survey, exclusive of the tract covered by the patents referred to in Finding 6. A portion of the 2,119 acres may be land which has accreted to patented land which was riparian to the Colorado River at the time of patent and such land shall not be included within the Reservation. The 2,119 acres, together with related uses, have a maximum annual diversion requirement of 13,698 acre-feet, said maximum diversion requirement to be reduced by the

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[51]Calif. Exs. 2616, pp. 3, 8-9; 3501.
[52]See Tr. 20343-20346 (Pratt); U. S. Ex. 1323.
[53]See U. S. Exs. 520, 1205, 1303-1305, 1308-1310.
[54]Calif. Ex. 3517; U. S. Ex. 1322.

quantity of 6.4 acre-feet per acre of irrigable accreted lands owned by owners of such patented lands.[55]

15. There are 1,939 acres of irrigable Reservation land in the State of Nevada which, together with related uses, have a maximum annual diversion requirement of 12,534 acre-feet.[56]

16. There is, in the aggregate, a maximum of 18,974 acres of irrigable Reservation land which, together with related uses, have a maximum annual diversion requirement of 122,648 acre-feet. There should be subtracted from this 18,974 acres of irrigable land the number of irrigable acres within the exterior boundaries of the Reservation as determined by the 1928 General Land Office survey that have accreted to patented lands and that are owned by the owners of such patented lands, and the diversion requirement of 122,648 acre-feet is to be reduced by the amount of 6.4 acre-feet per acre of such land that is irrigable.[56a]

CONCLUSIONS OF LAW

1. The General Land Office had jurisdiction to survey the boundaries of the Fort Mohave Indian Reservation.

2. The General Land Office survey of 1928 is conclusive as to the western boundary line of the Hay & Wood Reserve of the Fort Mohave Indian Reservation.

3. The call to artificial monuments prevails over conflicting calls for courses and distances or acreage specified in the notes of survey accompanying the Executive Order of March 30, 1870.

4. The General Land Office survey of 1928 adequately located the western boundary of the Hay & Wood Reserve

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[55]Calif. Ex. 3517; Tr. 20375-20376. See also Calif. Ex. 3515; U. S. Exs. 1320, 1322.

[56]Calif. Ex. 3517; U. S. Ex. 1322.

[56a]The evidence does not permit greater specificity regarding irrigable acreage.

by reference to the artificial monuments called for and, therefore, established the correct western boundary of that portion of the Fort Mohave Indian Reservation.

5. Lands lying between the correct western boundary of the Reserve and the Colorado River which have been patented pursuant to congressional authorization, as well as any accretions thereto to which the owners of such land may be entitled, shall not be included in the irrigable acreage of the Fort Mohave Indian Reservation.

6. For the benefit of the Fort Mohave Indian Reservation, the United States has the right to the annual diversion of a maximum of 122,648 acre-feet of water from the Colorado River or to the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 18,974 acres and for the satisfaction of related uses, whichever is less, with priority dates of September 18, 1890, for lands transferred by the executive order of said date; February 2, 1911 for land reserved by the executive order of said date: provided, however, that lands conveyed to the State of California pursuant to the Swamp and Overflowed Lands Act [9 Stat. 519 (1850)], as well as any accretions thereto to which the owners of such land may be entitled, and lands patented to the Southern Pacific Railroad pursuant to the Act of July 27, 1866 (14 Stat. 292) shall not be included within the above described rights.[57]

BOUNDARY DISPUTE—OPINION

A dispute concerning the western boundary of the Hay & Wood Reserve of the Fort Mohave Indian Reservation arose when the United States attempted to establish irrigable acreage within the Reservation. The Hay & Wood

[57]The evidence does not permit greater specificity regarding priority.

Reserve was initially established as a military post by an Executive Order of 1870,[58] and the western boundary thereof was described in notes of survey accompanying the order. When laid out on the ground the calls in the notes of survey conflict. The call to artificial monuments in the notes of survey would place the western boundary on a line near the east bank of the Colorado River, but the call for courses and distances in the notes of survey would place the boundary farther west, in foothills west of the River. In 1928, a General Land Office survey resolved this conflict in favor of the call to the artificial monuments, thus establishing the boundary on the east side of the Colorado River. California contends that the 1928 survey correctly establishes the western boundary of the Hay & Wood Reserve portion of the Reservation.[59] The United States contends that the proper boundary is farther west, as prescribed by the calls for courses, distances and acreage given in the 1870 notes of survey.[60] The California contention is sustained. In my view the 1928 General Land Office survey is conclusive of the boundary location, and, in any event, the 1928 survey is the best evidence of the proper location of the boundary and, therefore, the correct boundary is as determined therein.

It has been established beyond question that a General Land Office survey, when made within the jurisdiction of that department, is conclusive and cannot be collaterally assailed. *United States* v. *Coronado Beach Co.*, 255 U. S. 472 (1921); *Stoneroad* v. *Stoneroad*, 158 U. S. 240 (1895); *Knight* v. *United States Land Assoc.*, 142 U. S. 161 (1891); *Cragin* v. *Powell*, 128 U. S. 691 (1888); *Smelting Co.* v. *Kemp*, 104 U. S. (14 Otto) 636 (1881);

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[58]U. S. Ex. 1323.

[59]Calif. Proposed Conclusion 18E:204.

[60]Memorandum of United States Re Fort Mohave Indian Reservation Boundary (December 1958) (*passim*); see U. S. Finding 4.5.8.

Beard v. *Federy,* 70 U. S. (3 Wall.) 478 (1865). In *Cragin* v. *Powell, supra,* the Court said:

> " . . . the power to make and correct surveys of the public lands belongs to the political department of the government and that, whilst the lands are subject to the supervision of the General Land Office, the decisions of that bureau in all such cases . . . are unassailable by the courts, except by a direct proceeding; and that the latter have no concurrent or original power to make similar corrections, if not an elementary principle of our land law, is settled by such a mass of decisions of this court that its mere statement is sufficient."[61]

It is equally clear that the 1928 survey was made within the jurisdiction of the General Land Office. At the time of the survey that department was vested with authority to supervise the surveying and sale of the public lands of the United States. Rev. Stat. § 453 (1875). Moreover, by Section 6 of the Act of April 8, 1864, the Congress provided that:

> " . . . hereafter, when it shall become necessary to survey any Indian or other reservations, or any lands, the same shall be surveyed under the direction and control of the general land-office, and as nearly as may be in conformity to the rules and regulations under which other public lands are surveyed."[62]

A General Land Office survey of an Indian Reservation made pursuant to this statute has been held not subject to collateral attack. *French* v. *United States,* 49 Ct. Cls. 337 (1914).

Even if the 1928 survey is not conclusive as to the correct western boundary of the Hay & Wood Reserve, it nevertheless constitutes the best and most substantial

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[61] 128 U. S., at 698-99.
[62] 13 Stat. 41 (1864); 25 U.S.C. § 176 (1958).

evidence of the western boundary as established by the Executive Order of March 30, 1870, and the accompanying notes of survey.

Because the description of the western boundary is internally inconsistent justification exists for resort to applicable rules of construction. These rules are clear. Generally, monuments, whether artificial or natural, prevail over courses and distances or acreage for the purpose of determining the location of a boundary,[63] and quantity is less reliable than any other element of description, particularly where the words "more or less" are added.[64] The 1928 Survey applied these principles, giving control to the call for monuments in the 1870 notes of survey. Thus, if the 1928 survey properly located these monuments, it correctly established the boundary of the Reservation.

The field notes of the 1928 survey[65] demonstrate that the surveyor, in attempting to establish the width of the Colorado River as of 1869 for purposes of locating the monuments, referred to "the official map" of the Hay & Wood Reserve. He then restored the monuments for the purposes of the survey with the aid of that "official map."[66] The "official map" could only have been the 1870 map of the Reserve which is California Exhibit 3501. The surveyor was aware of the 1869 survey upon which the 1870 map was based.[67] Indeed, he indicated knowledge of only one other survey[68] and that survey purports only to represent

[63]United States v. Investment Co., 264 U. S. 206 (1924); Ayers v. Watson, 113 U. S. 594 (1885); Land Co. v. Saunders, 103 U. S. (13 Otto) 316 (1880); Higueras v. United States, 72 U. S. (5 Wall.) 827 (1864); Kruger & Birch Inc. v. DuBoyce, 241 F.2d 849 (3d Cir. 1957); County of St. Clair v. Lovingston, 90 U. S. (23 Wall.) 46, 62 (1874) (dictum); Patton on Titles §§ 149-50 (1957); 6 Thompson on Real Property § 3327 (1940).

[64]6 Thompson on Real Property § 3344 (1940).

[65]Calif. Ex. 2616.

[66]Calif. Ex. 2616, pp. 8-9.

[67]Calif. Ex. 2616, p. 3.

[68]*Ibid.*

certain lands in the State of Arizona.[69] Other evidence compels the conclusion that the "official map" (California Exhibit 3501) referred to in making the 1928 survey was the Fort Mohave plat accompanying the Executive Order of March 30, 1870.[70]

Because the 1928 General Land Office survey located the western boundary of the Reserve by reference to the map set forth as California Exhibit 3501, which map accompanied the Executive Order of March 30, 1870, it can safely be said that the 1928 survey adequately identified the location of the monuments and that the boundary line set forth therein is the correct western boundary of the Hay & Wood Reserve of the Fort Mohave Indian Reservation.

Manifestly, lands within the disputed area which have been patented pursuant to Congressional authorization cannot be considered as part of the irrigable acreage of the Reservation, title having passed from the United States. See *United States* v. *State Investment Co.*, 264 U. S. 206, 212 (1924).

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[69]Tr. 20326-20328 (Pratt); Calif. Ex. 3518.

[70]U. S. Ex. 1323.

The map is dated February 1870; the survey upon which it was based was made in 1869; and the letter requesting withdrawal, dated March 12, 1870, transmitted a plat of the Hay & Wood Reserve. *Ibid.* Moreover, California Exhibit 3501 was drawn by military engineers at the Head Quarters Department, California, and the letter requesting withdrawal was written by the United States Military Commander at San Francisco. In addition, the courses and distances and acreage specified in a table on the map correspond exactly to those set forth in the notes of survey accompanying the Executive Order of 1870. Tr. 20343-20344 (Pratt). *Compare* Calif. Ex. 3501 *with* U. S. Ex. 1323. Finally, the southwest and northwest corners of the tract shown on the map correspond to courses and distances specified in the notes of survey and the plat could be prepared from the description given in the notes of survey. Tr. 20344-20346 (Pratt).

6. *Coachella Indian Reservations*

FINDINGS OF FACT

1. An agreement between the Coachella Valley County Water District and the Secretary of the Interior provides:

> "After any major part of such irrigation distribution system and drainage works has been turned over to the District for care, operation and maintenance, the District shall deliver water to the lands within Improvement District No. 1 that are listed on Schedule A [the Indian lands] and that can be irrigated through such part of the system under the same conditions, rules, regulations, to the same extent, without discrimination, and for the same charges, including standby charges, as water is delivered by the District to other lands similarly located within the District. . . ."[71]

2. The agreement became effective upon the enactment of the Act of August 28, 1958. (72 Stat. 968)

3. There is no evidence that any major part of the extension of the irrigation system has been turned over to the District as provided in the agreement above cited.

4. There is no evidence that the District has repudiated the agreement or has in any way threatened to violate it.

CONCLUSION OF LAW

There is no controversy between the United States and the Coachella Valley County Water District with respect to an obligation to deliver water to the Indian Reservations within said District which requires adjudication at this time.

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[71]U. S. Ex. 2510C.

OPINION

The United States claims the right to the use of a certain quantity of Colorado River water, through the facilities of the Coachella Valley County Water District, for the irrigation of a specified number of irrigable acres of the Cabazon, Augustine and Torres-Martinez Indian Reservations located within the District.[72] This claim is based upon the Boulder Canyon Project Act, various federal statutes and several contracts to which the Coachella Valley County Water District is a party.

It is clear that the geographic relationship of these Reservations to the Colorado River—they are outside the River's drainage basin—leaves no room for a presumption, absent a specific showing, that the United States intended to reserve water from the Colorado River for use on these Reservations. Indeed, the United States does not rely on the "reservation" theory in claiming water for these Reservations.

The Boulder Canyon Project Act does not specifically invest the Coachella Reservations, or indeed any Indian Reservation, with rights to water from the Colorado River. Nor can any such rights be reasonably inferred from the Act's authorization of the Secretary of the Interior to deliver water to the Coachella Valley.

The same conclusion follows upon examination of two contracts between the Coachella Valley County Water District and the United States dated 1934 and 1947. The 1934 contract[73] provides for the construction of Imperial Dam and the All-American Canal for the benefit, *inter alia,* of lands within the Coachella Valley. The 1947 contract[74] provides for the construction of distribution and drainage

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[72]See U. S. Proposed Conclusion 4.9.
[73]Ariz. Ex. 36
[74]Calif. Ex. 309.

works for the benefit of lands within the Coachella Service Area. Neither of these contracts purports in any manner to deal with water rights of the Coachella Indian Reservations and they cannot form the basis for assertion of such rights.

The Act of August 25, 1950, 64 Stat. 470[75] is of no aid either. That statute directs the Secretary of the Interior to designate the lands of the Coachella Reservations which could be irrigated by the facilities of the Coachella Valley County Water District and authorizes him to enter into a contract with the District for the benefit of the Indian lands. The Act does not create rights to water in favor of the Indians; it merely serves as a preliminary step towards possible acquisition of rights. It is apparent, therefore, that up to and including 1950 the Coachella Reservations had no enforceable right to water from the Colorado River.

In 1957 the Coachella Valley County Water District entered into an agreement[76] with the Secretary of the Interior whereby the Secretary undertook to construct irrigation distribution works connected to the District's system to serve Indian lands designated by the Secretary. Paragraph 5 of the contract provides as follows:

> "After any major part of such irrigation distribution system and drainage works has been turned over to the District for care, operation, and maintenance, the District shall deliver water to the lands within Improvement District No. 1 that are listed on Schedule A and that can be irrigated through such part of the system under the same conditions, rules, and regulations, to the same extent, without discrimination, and for the same charges, . . . as water is delivered by the District to other lands similarly located within the District. . . ."

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[75]Calif. Ex. 254.
[76]U. S. Ex. 2510C.

The agreement was to become effective when the Congress authorized the Secretary to fulfill the obligations undertaken by him. Authorization was given by the Act of August 28, 1958.[77]

From the foregoing it is clear that rights of the Coachella Reservations to water from the Colorado River can be derived only from the 1957 contract between the Secretary and the District. But there has been no showing that the Indian distribution system has been constructed. Nor has it been established that "any major part of such irrigation distribution system . . . has been turned over to the District. . . ." The obligation of the District to deliver water to the Coachella Reservations under the contract with the Secretary, therefore, cannot be said to have matured. Thus, there is no occasion on the facts and circumstances presented for a determination of what rights may accrue to the Coachella Reservations should the District become obligated to deliver water to them in the future.

B. National Forests, Recreation Areas, Parks, Memorials, Monuments and Lands Administered By the Bureau of Land Management

The United States claims water rights for its "forests, parks, monuments, memorial, recreation area and lands under the jurisdiction of the United States Bureau of Land Management in the lower Colorado River Basin," both under state law and by reservation of water for each project when that project was established.[78] I have concluded that it is not necessary or appropriate to determine various water rights under state law in this litigation, see pages 216-218, *supra*, nor to determine water rights on

[77]72 Stat. 968.
[78]U. S. Brief, pp. 56-61.

tributaries other than the Gila River, see pages 318-321, 323-324, *infra*. The United States' interests on the Gila are disposed of in a subsequent section of this Report.

Therefore, it is necessary to treat here only the single national recreation area which presently diverts water from the Colorado River. Except for the Lake Mead National Recreation Area, no National Forests, Parks, Monuments, Memorials or lands administered by the Bureau of Land Management divert water from the mainstream of the Colorado River.[79] The United States does not claim water specifically from the Colorado River for any of its Forests, Parks, Monuments, Memorials, or lands administered by the Bureau of Land Management; rather it proposes conclusions of law to the effect that the United States establishments have rights to the water generally available in the Lower Basin.[80] I think it would be inappropriate to predict which of such federal establishments might attempt to utilize water from the mainstream in the future. It may well be that none of the others will ever need to use mainstream water and there would be no point in determining their rights to this water until it appears that it may be necessary to exercise those rights.

It is necessary to adjudicate the water rights of the Lake Mead National Recreation Area for the same reason that the rights of the mainstream Indian Reservations must be adjudicated. I conclude that the United States had the power to reserve water in the Colorado River for use in the Lake Mead National Recreation Area for the same reasons that it could reserve such water for Indian Reservations. Although the authorities discussed above which establish the reservation theory all involved Indian Reserva-

[79]See U. S. Exs. 2700-2722, 2800-2821, 2900-2911; U. S. Proposed Conclusion 11.4.

[80]U. S. Proposed Conclusions 8.1, 9.1, 10.1.

tions, the principles seem equally applicable to lands used by the United States for its other purposes. If the United States can set aside public land for an Indian Reservation and, at the same time, reserve water for the future requirements of that land, I can see no reason why the United States cannot equally reserve water for public land which it sets aside as a National Recreation Area. *Cf. F.P.C.* v. *Oregon*, 349 U. S. 435 (1955). Certainly none of the parties has suggested a tenable distinction between the two situations.

In determining whether the United States intended to reserve water for the future reasonable needs of the Lake Mead National Recreation Area, I have followed the course outlined in regard to Indian Reservations. Since the purposes of the Recreation Area could not be fully carried out without the use of water from the mainstream of the Colorado River, I have found that the United States intended to reserve such water for use within the Recreation Area. Furthermore, having found that the United States intended to reserve water for the Area, I have assumed, since there is no evidence to the contrary, that the reservation was for reasonable future requirements. As in the case of Indian Reservations, it is not likely that the United States intended that any future development of the Area would have to depend on appropriative rights to water obtained under state law.

I have not set maximum limits on the amount of mainstream water that the Lake Mead National Recreation Area can consume as I did in the case of the Indian Reservations. First, it would be very difficult to predict accurately the future requirements of the Area. Indeed, even to attempt such a prediction would require more evidence than the parties have introduced in this litigation. Second, there is no need whatsoever to predict future needs or to put an outside limit on the amount of water that can be diverted from the mainstream. The pres-

ent consumption of water diverted from the mainstream on the Lake Mead National Recreation Area is less than 300 acre-feet per annum.[81] Furthermore, from all that appears, its future requirements, whatever they may precisely be, will be of the same general order of magnitude as present uses. Unlike the mainstream Indian Reservations, the potential future uses of the Recreation Area do not cast a cloud on the continuing availability of any appreciable amount of water. This being the case, I have concluded that it would be unwise to attempt to limit the Area to a specific quantity of mainstream water for its future needs.

FINDINGS OF FACT

1. The Lake Mead National Recreation Area in Arizona and Nevada is the only one of the National Forests, Parks, Recreation Areas, Monuments, Memorials and lands administered by the Bureau of Land Management currently diverting water from the mainstream of the Colorado River in the Lower Basin.[82]

2. Executive Orders dated May 3, 1929 (No. 5105) and April 25, 1930 (No. 5339) withdrew lands in Arizona and Nevada pending determination as to the advisability of including such lands in a national monument. In 1936, the Congress appropriated funds for the operation of the Boulder Canyon Project Area which included these lands. 49 Stat. 1794. Lake Mead National Recreation Area was established on the basis of agreements between the Bureau of Reclamation and the National Park Service, dated October 13, 1936 and July 18, 1947, governing administration of the Boulder Canyon Project Area.[83]

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[81]U. S. Ex. 2802.
[82]See U. S. Exs. 2700-2722, 2800-2821, 2900-2911.
[83]U. S. Ex. 2802.

3. In withdrawing lands now constituting the Lake Mead National Recreation Area the United States intended to reserve rights to the use of so much water from the Colorado River as might thereafter be reasonably needed by the National Park Service for appropriate purposes.[84]

4. There is not sufficient evidence to make a finding of the ultimate water requirements of the Lake Mead National Recreation Area in Arizona and Nevada.

CONCLUSION OF LAW

The United States has the right to divert water from the mainstream of the Colorado River in quantities reasonably necessary to fulfill the purposes of the Lake Mead National Recreation Area in Arizona and Nevada with priority dates of May 3, 1929, for lands reserved by the executive order of said date (No. 5105), and April 25, 1930, for lands reserved by the executive order of said date (No. 5339).

C. United States Obligations Under the Mexican Water Treaty and Treaties for the Protection of Wildlife

Pursuant to a treaty between the United States and Mexico, dated February 3, 1944,[85] the United States is obligated to deliver to Mexico 1,500,000 acre-feet of water per annum in the limitrophe section of the Colorado River.[86] All of the parties to this litigation concede, as they must, that the Secretary may deliver this amount of water from the mainstream.

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[84]Executive Order 5105 (May 3, 1929); Executive Order 5339 (April 25, 1930); 49 Stat. 1794 (1936).

[85]59 Stat. 1219 (1945), Ariz. Ex. 4.

[86]This obligation may vary in certain circumstances; it is more precisely defined in Articles 10, 11 and 15 of the treaty.

The treaty obligation has priority over other water rights in the Basin. If the United States, in fulfilling this treaty obligation, divests water rights, compensation may be due. In this connection, however, Article III(c) of the Compact may be significant.[87] The question of compensation is not before me because there has been no claim of a taking under the treaty.

The United States also claims the right to divert certain quantities of water from the Colorado River for use on the Havasu Lake National Wildlife Refuge, the Imperial National Wildlife Refuge and the proposed Cibola Valley Waterfowl Management Area. The United States urges that these refuges and management areas were or will be established in fulfillment of its treaty obligations under a Convention dated August 16, 1916, between the United States and Great Britain for the protection of migratory birds[88] and a Convention dated February 7, 1936 between the United States and Mexico for the protection of migratory birds and game mammals.[89] Congress has enacted legislation to give effect to both of these Conventions.[90] The Executive Orders establishing the several

[87]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 first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d)."

[88]39 Stat. 1702 (1916), U. S. Ex. 2601.

[89]50 Stat. 1311 (1937), U. S. Ex. 2605.

[90]40 Stat. 755 (1918), U. S. Ex. 2602; 45 Stat. 1222 (1929), U. S. Ex. 2603; 49 Stat. 1555 (1936), U. S. Ex. 2606.

refuges are detailed in the Findings of Fact which conclude this section of the Report.

Although the United States undoubtedly has the power to take property, including water rights, in order to fulfill its treaty obligations, there is no indication that it has chosen to do so in order to operate the two wildlife refuges currently diverting water from the Colorado River. The Executive Orders creating these refuges simply reserve public lands owned by the United States for use as a wildlife refuge. Nothing in these orders purports to authorize the Secretary of the Interior to utilize water from the Colorado River previously appropriated by others.

Rather, the intention of the United States, as expressed in the Executive Orders, was to reserve enough of the unappropriated water available in the River to satisfy the reasonable requirements of the Refuges. I have previously concluded that the United States had the power to reserve unappropriated water in the Colorado River for the future requirements of Indian Reservations and a National Recreation Area and I can perceive no material distinction between them and wildlife refuges. Furthermore, it is abundantly clear that the Havasu Lake National Wildlife Refuge and the Imperial National Wildlife Refuge could not successfully be operated without diverting water from the Colorado River. Thus I find that the United States intended to reserve water from the mainstream for the reasonable future needs of these Refuges.

The United States suggests that it will need to divert no more than 41,839 acre-feet of water per annum and consumptively use no more than 37,339 acre-feet per annum for the Havasu Refuge. The United States also suggests it will need to divert no more than 28,000 acre-feet per annum and consumptively use no more than 23,000 acre-feet per annum for the Imperial Refuge. I find that diver-

sions and consumptive use in these amounts are reasonably necessary for the operation of the Refuges and that the necessary water was reserved by the United States for the Refuges when they were created. Thus I hold that the United States may divert and consume the stated quantities of water from the Colorado River as against all appropriations made subsequent to the dates that the water was reserved. If the United States requires water appropriated by others before these Refuges were created, it will have to take the necessary steps to acquire it.

Since lands within the proposed Cibola Valley Waterfowl Management Area have not as yet been withdrawn for this purpose, the United States has not reserved water for use on this management area.

1. *Havasu Lake National Wildlife Refuge.*

FINDINGS OF FACT

1. An Executive Order of January 22, 1941 (No. 8647) established the Havasu Lake National Wildlife Refuge and set apart approximately 37,370 acres of land owned by the United States in Mohave and Yuma Counties, Arizona and San Bernardino County, California, as a refuge and breeding ground for migratory birds and other wildlife.[91]

2. On February 11, 1949, the Assistant Secretary of the Interior, by Public Land Order 559, added approximately 1,677 acres in Arizona and approximately 1,080 acres in California to the Havasu Lake National Wildlife Refuge.[92]

3. In withdrawing lands for the Havasu Lake National Wildlife Refuge the United States intended to reserve rights

[91]U. S. Ex. 2607.
[92]U. S. Ex. 2610.

to the use of so much water from the Colorado River as might be reasonably needed to fulfill the purposes of the Refuge.[93]

4. The Fish and Wildlife Service of the United States Department of Interior has formulated a development plan for the Havasu Lake National Wildlife Refuge.[94]

5. Annual diversions of 41,839 acre-feet and annual consumptive use of 37,339 acre-feet of water from the Colorado River will satisfy the estimated water requirement of the development plan for the Havasu Lake National Wildlife Refuge.[95]

CONCLUSION OF LAW

The United States has the right to the annual diversion of a maximum of 41,839 acre-feet or to the annual consumptive use of 37,339 acre-feet (whichever is less) of water from the Colorado River for use in the Havasu Lake National Wildlife Refuge, with a priority of January 22, 1941 as to land reserved by Executive Order No. 8647, and a priority of February 11, 1949 as to land reserved by Public Land Order 559.

2. *Imperial National Wildlife Refuge.*

FINDINGS OF FACT

1. An Executive Order of February 14, 1941 (No. 8685) established the Imperial National Wildlife Refuge and set apart approximately 51,090 acres of land owned by the United States in Yuma County, Arizona and Imperial

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[93]U. S. Exs. 2607, 2610; see U. S. Exs. 2601-2603; 2605-2606.
[94]U S. Ex. 2618.
[95]U. S. Ex. 2619.

County, California, as a refuge and breeding ground for migratory birds and other wildlife.[96]

2. In withdrawing lands for the Imperial National Wildlife Refuge the United States intended to reserve rights to the use of so much water from the Colorado River as might be reasonably needed to fulfill the purposes of the Refuge.[97]

3. The Fish and Wildlife Service of the United States Department of Interior has formulated a development plan for the Imperial National Wildlife Refuge.[98]

4. Annual diversions of 28,000 acre-feet and annual consumptive use of 23,000 acre-feet of water from the Colorado River will satisfy the estimated water requirement of the development plan for the Imperial National Wildlife Refuge.[99]

CONCLUSION OF LAW

The United States has the right to the annual diversion of a maximum of 28,000 acre-feet or to the annual consumptive use of 23,000 acre-feet (whichever is less) of water from the Colorado River for use in the Imperial National Wildlife Refuge with a priority of February 14, 1941.

D. United States Water Rights Limited by Each State's Apportionment

It has previously been concluded that consumptive uses of mainstream water by the United States on federal establishments are chargeable to the state within which the use occurs. See pages 247-248, *supra*. As a corollary to this proposition, I have also concluded that United States' uses

[96]U. S. Ex. 2608.
[97]*Ibid;* see U. S. Exs. 2601-2603.
[98]Tr. 15693 (Taylor); U. S. Ex. 2621.
[99]U. S. Ex. 2621; Tr. 15,737 (Taylor).

in each state are limited by the apportionment to the state in which the uses occur.[1] Thus the United States receives water in accordance with its priorities, and if the state apportionment is insufficient to satisfy all uses within the state, including federal uses, junior rights, whether acquired under state or federal law, must yield to senior rights within the state. In other words, United States projects must be fitted into a schedule of priorities along with other uses within a state, and the state's mainstream apportionment will be used to satisfy uses within the state, beginning with the senior priority. If the apportionment is not sufficient to satisfy all uses, junior priorities will not receive water.

This conclusion is required by the Project Act and the Secretary's water delivery contracts. The Project Act's limitation on California's consumption is written in terms of "the *aggregate* annual consumptive use . . . in the state of California," which language clearly includes all uses, both federal and state. Furthermore, the second paragraph of Section 4(a) contemplates a compact which apportions total consumptive use of mainstream water in the Lower Basin: Arizona is to receive 2.8 million acre-feet plus half of surplus and Nevada is to receive .3 million acre-feet. With California permitted (and expected) to take the other 4.4 million acre-feet of consumptive use plus half of surplus, total annual consumptive use is accounted for. See pages 174-177, 222-224, *supra*. Nothing is left out of the accounting; nothing remains, therefore, for the United States, except as its uses come within a state's apportionment. The Project Act, in short, contemplates a division of total uses among three parties, Arizona, California and Nevada. No separate provision is made for the United States. If Congress had intended the apportionment to be made among

[1]Such federal uses as constitute "present perfected rights" within the meaning of Section 6 are, like other perfected rights within the state, an exception to this rule.

four parties rather than the three it named, surely it would have said so.

As noted before, the Secretary's contracts substantially effectuate the apportionment authorized by Congress, and therefore should be construed in conformity with the congressional intent. Moreover, the Arizona contract, by its express terms, requires this result. Article 7(1) of the contract provides as follows: "All consumptive uses of water by users in Arizona, of water diverted from Lake Mead or from the mainstream of the Colorado River below Boulder [Hoover] Dam, whether made under this contract or not, shall be deemed, when made, a discharge pro tanto of the obligation of this contract." This provision requires federal uses in Arizona to be limited by the contractual apportionment. The Secretary, having apportioned total consumptive use of mainstream water among the three states, has safeguarded himself by this contract provision, which says in substance: the contract apportionment is the maximum that can be consumed in Arizona, whoever the user may be, whether or not a contractee.

Although the Nevada contract is not as explicit in limiting United States' uses to the state's apportionment as is the language of the California limitation and the Arizona contract, the Nevada contract was intended to carry out the apportionment contemplated by Congress and to correlate Nevada's apportionment to those of the other two states. Hence, the same result must follow as to United States' uses in Nevada.

In the light of my earlier conclusion that consumptive uses by the United States are to be charged to the states, and of the provisions and purposes of the Project Act and water delivery contracts, I hold that the uses of the United States within each state are limited by that state's apportionment, except to the extent that such uses are protected by Section 6 of the Project Act.

E. Boulder City, Nevada

By an Act of September 2, 1958, 72 Stat. 1726, Congress provided that the Secretary of the Interior shall:

> "supply water to . . . [Boulder City, Nevada] for domestic, industrial, and municipal purposes. . . . Such delivery shall be subject to the availability of water for use in the State of Nevada under the provisions of the Colorado River compact and the Project Act and . . . shall be in accordance with the terms of . . . [Nevada's water delivery contract]."

The United States claims the right to deliver water from Lake Mead to Boulder City for the purposes recited in the statute. Since the offices of the Boulder Canyon Project, Region Three of the Bureau of Reclamation and a number of other United States agencies are located in Boulder City, the United States has a substantial interest in the deliveries of such water. Nevada has acquiesced in water deliveries under this statute and I hold that the United States may deliver water to Boulder City pursuant to its terms.

The statute in effect instructs the Secretary to deliver water to Boulder City as if he had contracted for such deliveries. Thus these deliveries are clearly limited under the statute by the total amount of water available to Nevada under the Secretary's contractual apportionment. Boulder City's priorities are to be determined in the same manner as those of all other Nevada users, under Nevada law, and the city may receive only as much of Nevada's 300,000 acre-feet as is available after senior priorities have been satisfied. Conversely, consumption of mainstream water by Boulder City is chargeable to Nevada for purposes of applying the interstate apportionment. The Act of September 2, 1958 states that deliveries to Boulder City "shall be in accordance with the terms of . . . [the Nevada delivery con-

tract]." That contract specifically limits the "use in Nevada" of all water delivered from Lake Mead to 300,000 acre-feet per annum and thus deliveries to Boulder City, being for use in Nevada, are chargeable to the state under the contract. Nevada has not objected to this charge.

V. Mainstream Allocation: Conclusion

It may be useful at this point to summarize the apportionment which controls the consumption of water diverted from Lake Mead and from the mainstream of the Colorado River below Lake Mead for use in Arizona, California and Nevada under the decree recommended in this Report.

The Secretary of the Interior determines the total amount of water to be released from Lake Mead and from the several reservoirs on the mainstream of the Colorado River below Hoover Dam for consumptive use in Arizona, California and Nevada. That determination is solely within the Secretary's reasoned discretion and presumably is based on the amount of water in Lake Mead and the reservoirs below, the amount necessary to satisfy the United States treaty obligations to Mexico, necessities of "river regulation, improvement of navigation, and flood control," predictions as to future supply, and other relevant conditions in the River Basin. The only specific limitation on his discretion is that he must follow the priorities set forth in Section 6 of the Project Act. The supply of water available for consumptive use in the three states, then, is neither more nor less than the quantity of water that the Secretary annually releases for this purpose.

Of the mainstream water released for consumptive use in the United States, the first 7,500,000 acre-feet of annual consumptive use is apportioned as follows: 2,800,000 acre-feet for use in Arizona; 4,400,000 acre-feet in California; 300,000 acre-feet in Nevada.

If sufficient mainstream water is released in one year to satisfy more than 7,500,000 acre-feet of consumptive use in the three states, such additional consumptive use is surplus and is apportioned as follows: 50% to California[1a]

[1a] Subject, at the present time, to a total maximum consumption in California of 5,362,000 acre-feet under existing contracts. See pp. 208, 223-224, *supra*.

and 50% to Arizona, unless and until the Secretary makes a contract with Nevada for 4% of surplus, in which event, to Nevada shall be apportioned 4% of surplus and to Arizona 46% of surplus.

In the event that insufficient water is released from the mainstream reservoirs to satisfy 7,500,000 acre-feet of consumptive use in the United States in one year, the supply must be prorated among the three mainstream states. Each state's allocation is that proportion of the consumptive uses which can be satisfied by the available water which its apportionment of the first 7,500,000 acre-feet of mainstream consumption bears to the aggregate apportionment to all three states. Thus, if in one year water is available to satisfy an aggregate of only 6,000,000 acre-feet of consumptive use in the three states, each state's apportionment will be determined by the ratios described above, *viz:*

$\frac{2.8}{7.5}$ x 6 million acre-feet to Arizona;

$\frac{4.4}{7.5}$ x 6 million acre-feet to California;

$\frac{.3}{7.5}$ x 6 million acre-feet to Nevada.

The Secretary of the Interior is required to make deliveries of water in accordance with the apportionments outlined above; the one exception to this requirement is prescribed by Section 6 of the Project Act, which directs that the dam and reservoir be operated in "satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River compact. . . ." I have heretofore construed "present perfected rights" to mean rights perfected as of June 25, 1929, the effective date of the Project Act. See note 20, page 152, *supra.*

Before turning to the meaning of the term "perfected rights" as used in the Act, it should be noted that if California receives in one year 4,400,000 acre-feet of consump-

tive use or more, her perfected rights are deemed by Section 4(a) to be satisfied. That section limits California to 4,400,000 acre-feet of consumptive use plus half of surplus, which shall include "all water necessary for the supply of any rights which may now exist." I construe this language to mean that California's consumptive use may not exceed the specified amount, whatever her "present perfected rights" might have been in 1929. In short, Section 4(a) limits the operation of Section 6 in the case of California.

No such statutory provision limits the protection extended by Section 6 to Arizona and Nevada. It is clear from the evidence, however, that if water is made available to satisfy an aggregate of 7,500,000 acre-feet of consumptive use in one year, the Arizona and Nevada apportionments will substantially exceed the amount of "present perfected rights" in the respective states.

In the event that sufficient water is not made available to satisfy an aggregate consumptive use of 7,500,000 acre-feet in the United States in one year, Section 6 may come into play. California will not be allotted as much as 4.4 million acre-feet of consumptive use and can, therefore, rely on the protection afforded by Section 6 until she receives sufficient water to satisfy present perfected rights, up to the maximum of 4.4 million acre-feet fixed by Section 4(a). Since it is possible for these circumstances to occur, it becomes necessary to interpret the phrase "perfected rights" in Section 6.

Neither the Compact nor the Project Act defines "perfected rights." It seems clear, however, that the term was not used in either of these enactments to refer to notices of appropriation which had not yet become the foundation of a going economy—mere paper filings on the River. The use of the term "perfected rights" rather than the more familiar "appropriative rights" suggests that Congress intended to limit the protection of Section 6 to rights of a more sub-

stantial character than paper filings sometimes recognized as an appropriative right under state law. Congress was concerned that those who were actually using water from the Colorado River and who relied on such water for their existing needs should not be deprived of it because of the proposed dam. But Congress was aware that many paper appropriations had been filed and claims of various sorts made to Colorado River water which, whatever their legal status under state law, were worthless as a practical matter unless and until the dam was built. Congress was not concerned to protect such claims. Projects and water uses developed by virtue of the construction of the dam did not need to be protected against its consequences.[2] Of course, a water right is not a "present perfected" right within the meaning of Section 6 unless it is recognized under the applicable state law, for if it cannot be vindicated under state law there would be no reason to protect it in the Project Act.

Hence I conclude that a water right is a "present perfected right" and is within the protection of Section 6 only if it was, as of the effective date of the Project Act (June 25, 1929), acquired in compliance with the formalities of state law and only to the extent that it represented, at that time, an actual diversion and beneficial use of a specific quantity of water applied to a defined area of land or to a particular domestic or industrial use.

It has been suggested by the Imperial Irrigation District that state law would treat as "perfected" the right to take water in an amount measured by the capacity of existing works, even though such amount of water had never yet been actually diverted and applied to beneficial use. It is highly unlikely that Congress intended to adopt this broader

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[2]See 70 Cong. Rec. 167-169 (1928), Ariz. Legis. Hist., pp. 22-31.

definition. Congress must have realized that following construction of Hoover Dam new diversion works would be built for most downstream uses. The Project Act authorized not only the erection of the dam but also the construction of the All-American Canal to serve Imperial and Coachella Valleys, thus relieving them of dependence on diversions through Mexico. Since the Project Act authorized structures designed to replace existing diversion works, it is unlikely that Congress intended to define perfected rights in terms of the carrying capacity of these obsolete works. More natural is a congressional intention to protect, as present perfected rights, those uses which were actually in existence and which were the basis of a going economy. As stated before, the congressional intention was to insure that persons actually applying water to beneficial use would not have their uses disturbed by the erection of the dam and the storage of water in the reservoir.

Under the proposed definition of perfected rights a question arises with respect to water reserved from the mainstream for use on federal establishments in the Lower Basin. I have held that the United States has the power to reserve water for the reasonable future needs of federal establishments and that certain statutes, executive orders and other orders of withdrawal were intended to exercise this power. The water rights created by such a federal reservation do not depend upon state law or upon the actual diversion and beneficial use of a specific quantity of water. On the contrary, they are superior to subsequent appropriations under state law, although the subsequent appropriator may be first to divert and use the water. See pages 257 *et seq., supra.*

The question that arises is whether a reservation of water by the United States before June 25, 1929, is accorded the protection given by Section 6 to present perfected rights,

even though, as of that date, the rights were not acquired under state law and all the water reserved had not been put to beneficial use. I have concluded that they are so protected.

Although not acquired in conformity with state law, these rights are protected by Section 6, since their creation and existence are valid independent of state law.

Moreover, they receive this protection although none or only part of the reserved water had been put to use as of June 25, 1929. The fundamental nature of a reserved water right is that it is fully vested at the time of its creation; nothing further need be done to perfect it. It differs radically from appropriative rights under state law, which may be initiated by a filing but which must be perfected by actual diversion and beneficial use of water within a reasonable time after the filing. Thus a reserved water right created before June 25, 1929, is, by its very nature, "perfected" as of that date. Furthermore, failure to include reserved water rights within the protection of Section 6 could have the effect of divesting them. For example, I have concluded that the United States reserved the right to divert annually a maximum of 11,340 acre-feet of mainstream water for the Chemehuevi Indian Reservation, with a priority of February 2, 1907. The Reservation was not consuming all of this water in 1929. If the right is not considered a present perfected right under Section 6, then present perfected rights acquired under California law would have seniority, even though initiated after 1907. Thus, in certain times of shortage, water would be supplied in satisfaction of the California rights and the Reservation would not receive the full amount of its reserved water, despite its needs.

To hold that Congress did not include reserved water within the protection of Section 6 would require a holding

that Congress, without saying so expressly, and without ever considering the matter,[3] intended to nullify, in times of shortage, the very purpose of the reservation. The cases cited at pp. 258-259, *supra*, demonstrate that reservation of water was made by the United States to assure an adequate supply of water for the future needs of the federal establishments, in order that they could fulfill their purposes. It would frustrate this intent to deny the United States the use of this reserved water in times of shortage.

I do not believe that Congress, when directing that the dam be operated in "satisfaction of present perfected rights", intended these consequences, and accordingly, I conclude that water rights reserved before June 25, 1929, for federal establishments are "perfected rights" within the meaning of Section 6.

In the unlikely event that water is so short that a state's apportionment is insufficient to satisfy present perfected rights therein, the Secretary must deliver water to satisfy such rights from the other states' apportionments. Each of the other two states contributes water from its apportionment for this purpose in the proportion that its apportionment of the first 7.5 million acre-feet of mainstream consumption bears to the aggregate apportionment to the two states. In the example stated, in which annual consumptive use was limited to 6 million acre-feet, California's apportionment would be $\frac{4.4}{7.5}$ x 6 million acre-feet or 3,520,000 acre-feet of consumptive use. If, hypothetically, California has present perfected rights of 3,600,000 acre-feet, she would be entitled under Section 6 of the Project Act to consumption of 3,600,000 acre-feet, and thus, ex-

[3]The legislative history reveals nothing concerning the status of federal water rights as perfected rights.

ceed her apportionment by 80,000 acre-feet of consumptive use. Arizona and Nevada would have to contribute water to supply this 80,000 acre-feet in proportion to their interstate ratios; that is, Arizona would contribute $\frac{2.8}{3.1}$ of the water necessary to supply the 80,000 acre-feet of consumption in California, and Nevada would contribute $\frac{.3}{3.1}$ of this water.

Of course, if two states' apportionments were not sufficient to satisfy present perfected rights in those states in one year, the third state would have to contribute all of the necessary water. In the extremely improbable event that releases do not satisfy the rights perfected in any of the states as of the effective date of the Act, deliveries must be made in accordance with the priority of "present perfected rights" regardless of state lines.

The water apportioned to each state is delivered to users within the state according to the provisions of the several delivery contracts. No user may consume mainstream water unless there is a contract with the Secretary providing for the delivery of such water.[3a] Under the Project Act, state law governs rights and priorities among users within a single state, except for federal establishments for which water has been reserved independent of state law. As to such establishments, the priorities recommended herein control.

Water consumed on Indian Reservations, National Forests, Parks, Monuments, Memorials, Recreation Areas, lands under the control of the Bureau of Land Management, Federal Reclamation Projects, Wildlife Refuges and Management Areas, and in Boulder City, Nevada, is

[3a] Of course the Secretary need not contract with himself, and hence no contracts are required for Indian Reservations and similar federal establishments.

chargeable to the state within which the water is consumed, and this consumption is included within each state's apportionment. Conversely, each state's apportionment is an overriding limitation on all consumptive use within the state, including uses claimed by the United States for federal establishments.

Consumptive use is measured at the several points of diversion in each state by a determination of the amount of water diverted from the mainstream less return flow thereto available for consumptive use in the United States or in satisfaction of the Mexican treaty obligation. The Secretary must keep an account of diversions for each state. He must compute, as accurately as possible, the amount of usable return flow from water diverted and credit this amount to each state. Reservoir evaporation, channel and other losses sustained prior to the diversion of water from the mainstream are not chargeable to the states but are to be treated as diminution of supply. Only after water is diverted from the mainstream are losses on it chargeable to a state as consumption.

The interstate allocation outlined above is based on the conclusion that the Secretary has used his water delivery contracts in conjunction with the Section 4(a) limitation on California to effectuate an apportionment among Arizona, California and Nevada of all of the water he determines to release in any year from Lake Mead and from downstream reservoirs for consumption in the United States. Of the first 7.5 million acre-feet of annual consumptive use of water from Lake Mead and the mainstream below, the Secretary has forever allocated $\frac{2.8}{7.5}$ to Arizona. Of the excess consumption, he has allocated to Arizona 50%, subject to reduction to 46% if he contracts to allocate 4% to Nevada. Similarly, out of the first 7.5 million acre-

feet of such use, he has forever allocated $\frac{4.4}{7.5}$ to California plus 50% of any excess each year up to a total annual consumption in California of 5,362,000 acre-feet. Finally, of such 7.5 million acre-feet, he has forever allocated $\frac{.3}{7.5}$ to Nevada.

However, until a state is prepared to apply to beneficial use all of its apportioned water, it has no cause for complaint if the water within its allocation is consumed elsewhere. Thus if, in any one year, water apportioned for consumptive use in a state will not be consumed in that state, whether for the reason that there are no delivery contracts outstanding for the full amount of the state's apportionment, or that users cannot apply all of such water to beneficial uses, or for any other reason, nothing herein shall be construed as prohibiting the Secretary of the Interior from releasing such apportioned but unused water during such year for consumptive use in the other states. No rights to the recurrent use of such water shall accrue by reason of the use thereof.[4]

California and Nevada have suggested that it would be useful for the Court to provide for a permanent commission or commissioner to administer the decree. I do not regard this as necessary. In view of the control of the mainstream vested in the Secretary of the Interior, he will in effect administer the decree.

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[4]For comparable provisions see Colorado River Compact, Article III(e); Boulder Canyon Project Act, Section 4(a), second paragraph, subdivision 5.

VI. Claims to Water in the Tributaries

There are five principal tributaries of the Colorado River in the Lower Basin. They are: the Virgin River System, the Kanab and Johnson Creek System, the Little Colorado River System, the Bill Williams River, and the Gila River System. All but the Gila River make regularly recurring contributions to mainstream supply.[5] Inflow from the Virgin and Little Colorado Rivers and from Kanab Creek is stored in Lake Mead. Inflow from the Bill Williams River is impounded by Parker Dam and stored in Lake Havasu. The Gila River empties into the mainstream near the Mexican border, and there is no dam capable of impounding its inflow.

The controversies arising over tributary water may be divided into two general categories. First, there is the controversy between mainstream states and tributary states regarding rights in tributary supply.[6] California expressed concern in this litigation that increased uses on the tributaries will decrease mainstream supply. The mainstream state-tributary state controversy is treated in subdivision A of this section of the Report. Second, there are controversies among the tributary states *inter sese*. These controversies, which concern the Virgin, Little Colorado and Gila River systems, and Johnson and Kanab Creeks, present the usual questions that arise in the traditional equitable apportionment suit. They are dealt with in subdivision B herein. Present tributary uses do not exhaust the available water supply in any of the tributaries, except the Gila River System; therefore the considerations that apply to the Gila differ from those applicable to the other tributaries. For

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[5]See Part One, pp. 119-123.

[6]It should be noted that two states, Arizona and Nevada, are both mainstream states (*i.e.*, they share in mainstream supply) and tributary states (*i.e.*, their tributaries contribute to mainstream supply and users therein divert water from the tributaries).

this reason, the discussion in subdivision B is divided into two parts.

A. Controversies Between Mainstream States and Tributary States

Absent the Colorado River Compact and the Boulder Canyon Project Act, it is clear that principles of equitable apportionment would control the disposition of a controversy between downstream states using mainstream water and upstream tributary states. See *Nebraska* v. *Wyoming,* 325 U. S. 589, 617-619 (1945); *Colorado* v. *Kansas,* 320 U. S. 383, 393-394 (1943); *New Jersey* v. *New York,* 283 U. S. 336, 342-343 (1931). Thus, junior uses on the tributaries might well be enjoined for the benefit of senior uses on the mainstream. *Nebraska* v. *Wyoming, supra,* at 665. Therefore, unless the Compact, the Project Act or the Secretary's delivery contracts made pursuant to Section 5 of the Project Act have somehow displaced the law that would otherwise be applicable, the principles of equitable apportionment still control rights of mainstream states in water of the tributaries of the Colorado River in the Lower Basin.

The Compact does not govern the relations, ***inter sese,*** of the states having Lower Basin interests.[7] Therefore, it could not have displaced the principles of equitable apportionment as decisive of the question of rights in Lower Basin tributary supply.

It is equally clear that the Project Act and the California Limitation Act have not rendered the principles of equitable apportionment inapplicable to the tributaries or the mainstream above Lake Mead. The limitation in Section 4(a) of the Project Act applies only to California. It does not affect possible claims by Arizona and Nevada to tributary water. With respect to California, Section

[7]See pp. 139-141, *supra.*

4(a) is concerned with consumption and not with supply and therefore does not affect any rights of that state to demand that tributary water be permitted to flow into the mainstream. Furthermore, it has been demonstrated that Section 4(a) regulates the mainstream only. Nothing in that section may reasonably be said to affect the question of tributary supply. It is difficult to believe that Congress, including the California senators who voted for the Project Act, and the California Legislature which passed the Limitation Act, intended that California should waive all claims to the substantial tributary contributions to the mainstream supply. It is unlikely that they intended that the states in the Lower Basin through which the tributaries flowed could consume all of the water in those tributaries without regard for California's claims, needs or existing uses.

Similarly, the contracts for delivery of mainstream water which the Secretary of the Interior has made with Arizona, Nevada and the California defendants have no bearing on the question of tributary supply. The contracts are solely for delivery of water after it has found its way into the mainstream; they do not affect inflow into the mainstream. Nor can they reasonably be construed to include the waiver of any rights mainstream states may have to tributary inflow.

In the light of the foregoing, the conclusion is inescapable that principles of equitable apportionment still control rights of mainstream states in waters of the tributaries of the Colorado River in the Lower Basin. At the present time the tributaries which empty into the Colorado River in the Lower Basin, other than the Gila River, make a substantial contribution to the supply of water in the mainstream. Once this tributary water commingles with the mainstream water it is governed by the Project Act and the Secretary's water delivery contracts and may be consumed only according to the interstate apportionment created by them. The mainstream users most certainly

have a substantial interest in tributary inflow, for the greater the quantity of water entering the mainstream, the greater the quantity of water likely to be available for use by them.

There is, however, no occasion at this time to apportion water of the tributaries of the Colorado River in the Lower Basin between mainstream and tributary states. An equitable apportionment of the tributaries at the instance of mainstream states could only accomplish either or both of two objects: (1) the enjoining of existing junior tributary uses for the benefit of senior mainstream uses; (2) the enjoining of increased uses on the tributaries for the benefit of existing mainstream uses.

There is no basis in the record for closing down existing tributary uses. The mainstream states have neither asked that present tributary uses be limited nor presented evidence that would justify such a limitation.

Nor, indeed, have they asked that increased future uses on the tributaries be enjoined. Arizona expressly declares that adjudication of rights in tributary water would be premature and unwarranted.[8] California proposes to treat present tributary inflow as part of the dependable supply in the mainstream, but does not seek a determination of rights in this water.[9] Similarly, Nevada does not ask that increased uses on the tributaries be enjoined; on the contrary she seeks a decree in favor of tributary users as against the mainstream interests.[10]

Even if the mainstream states had asked for an injunction against increased tributary uses, it would be inappropriate to adjudicate the request at this time. Mainstream users are presently enjoying the use of tributary inflow, and there is no indication that such enjoyment is in imme-

[8]Ariz. Proposed Conclusions 20-22.
[9]See Calif. Proposed Decree, pp. 7-9.
[10]Nev. Proposed Conclusion 33.

diate danger of being interfered with. There is no evidence that there will be, in the immediately forseeable future, any substantial increase in uses on the tributaries. Indeed, except for the proposed Dixie Project on the Virgin River in Utah, there is no evidence of any pending proposals or plans for the construction of specific works involving the increased use of water on any of the tributaries. At best, the evidence shows only vague general hopes for growth and development on the tributaries.

The Dixie Project itself cannot be considered an immediate threat to the continuation of present tributary inflow into the mainstream. There is no evidence that the Dixie Project will be developed except as a federal reclamation project, yet its authorization by the United States is far from certain. The Regional Director of the Bureau of Reclamation for Region Three has twice issued favorable reports on the proposed project to the Commissioner of Reclamation, but the latter has not yet approved it.[11] So far as the evidence shows, the proposed project has not even been brought to the attention of the Secretary of the Interior or of Congress,[12] and congressional approval is required before the project can be developed. Moreover, the Regional Director's approval of the Dixie Project was conditioned on Utah fulfilling certain conditions which have not yet been met.[13]

In this state of the record, principles established by the Supreme Court dictate that mainstream rights to tributary inflow ought not now be adjudicated. As the Court has stated:

> " 'Before this court can be moved to exercise its extraordinary power under the Constitution to control the conduct of one State at the suit of another, the threatened invasion of rights must be of serious

[11]Calif. Exs. 2901, 2902; Utah Exs. 31, 31A.
[12]Tr. 17925-17937, 17949-17954 (Bingham); Calif. Ex. 2904.
[13]*Ibid.*

> magnitude and it must be established by clear and convincing evidence.' New York v. New Jersey, 256 U. S. 296, 309; North Dakota v. Minnesota, 263 U. S. 365, 374; Connecticut v. Massachusetts, 282 U. S. 660, 669; Missouri v. Illinois, 200 U. S. 496, 521."[14]

There has been no showing that, at the present time, tributary users are threatening mainstream rights to continued tributary inflow within the meaning of this principle.

Furthermore, it is clear that up to the present time, no existing mainstream project has been refused water, the delivery of which it has demanded. That this condition will continue at least until another large project using mainstream water is constructed cannot, on this record, be doubted. Should this condition change in the future then will be the time to consider the problem.

Since, then, there is no occasion to determine mainstream rights to tributary inflow at the present time, since such an occasion may never arise, and since, even if it should arise, a more intelligent determination can be made in the future, it would violate precedent to adjudicate these rights in this case. See *Nebraska* v. *Wyoming,* 325 U. S. 589, 608 (1945); *Colorado* v. *Kansas,* 320 U. S. 383, 398 (1943); *New York* v. *Illinois,* 274 U. S. 488, 489-490 (1927); *Missouri* v. *Illinois,* 200 U. S. 496, 521 (1906); *cf. Arizona* v. *California,* 283 U. S. 423, 463-464 (1931).

One other aspect of the mainstream-tributary controversy requires comment. Three tributary states, New Mexico, Nevada and Utah, seek a decree confirming existing uses and reserving to them rights to water for use in the future. Tributary users are not now being challenged by mainstream states in the enjoyment of their existing uses and therefore there is no controversy over their continued enjoyment. Moreover, since no new tributary uses appear

[14]Washington v. Oregon, 297 U. S. 517, 522 (1936).

imminent, it is unnecessary to determine whether there is water available for such uses. The Supreme Court has clearly stated that it will not exercise its original jurisdiction to apportion water in an interstate stream in order to reserve it for consumption at an unspecified time in the future by one state against the possibility that another state might utilize the water first. See cases cited at page 320, *supra*.

Even assuming that an equitable apportionment of tributary water between mainstream and tributary uses would be appropriate, it is extremely doubtful that the evidence is sufficient to form the basis for decision. Arizona is an important tributary state and yet there is little evidence of the extent or seniority of her uses on tributaries other than the Gila. Moreover, the full effect of the decree in this case upon the Lower Colorado River Basin may not be immediately apparent. Undoubtedly, a more "equitable" apportionment might be achieved if apportionment is postponed at least until all practical consequences of the decree are ascertained.

B. Controversies Among the Tributary States Inter Sese

1. *Tributaries Other Than the Gila River.*

Controversies among the tributary states have arisen over four tributary systems which flow into the Colorado River in the Lower Basin, namely, the Little Colorado River System, the Virgin River System, Johnson and Kanab Creeks, and the Gila River System. The latter is dealt with in the next following section of this Report. Controversies over the other three can be disposed of on a single ground and are dealt with together in this section.

The Little Colorado River rises in Arizona at the New Mexico border and flows through the State of Arizona, joining the Colorado River upstream from Grand Canyon. Rio Puerco, the Zuni River, Black Creek and Carrizo Creek, the principal tributaries of the Little

Colorado River which originate in the State of New Mexico, join the Little Colorado River in Arizona. The Little Colorado River System drains a total of 26,930 square miles.[15]

The Virgin River rises in Utah, and flows through that state and the states of Arizona and Nevada, entering the Colorado River at Lake Mead. Important tributaries of the Virgin in Utah are the North Fork of the Virgin River, North Creek and the Santa Clara River. The principal tributary of the Virgin in Nevada was the Muddy River, which now flows directly into Lake Mead. Meadow Valley Wash is a Nevada tributary of the Muddy River. The Virgin River System drains 11,000 square miles.[16]

Kanab and Johnson Creeks rise in the eastern portion of the Lower Colorado River Basin in Utah, each having an individual drainage basin within Utah. Johnson Creek has its confluence with Kanab Creek in the State of Arizona. Kanab Creek flows into the Colorado River at Grand Canyon, midway between Lake Mead and the confluence of the Colorado and Little Colorado Rivers.[17]

The States of Nevada, New Mexico and Utah have asked for a decree confirming present uses and reserving water for future requirements on various interstate tributaries of the Colorado River flowing within their borders. Nevada asserts rights in the Virgin River System; New Mexico asserts rights in the Little Colorado and Gila Systems; and Utah asserts rights in the Virgin River System as well as in Kanab and Johnson Creeks. Arizona, the only other tributary state in the Lower Basin, does not ask that any of her rights in the tributaries be adjudicated in this case, other than the Gila. The United States claims

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[15]Ariz. Exs. 106, 1000, p. 11; N. M. Ex. 400.
[16]Ariz. Ex. 1000, p. 11; Nev. Ex. 1; Utah Ex. 1.
[17]Tr. 17814 (Bingham); Ariz. Ex. 77, p. 60; Utah Ex. 1.

rights to the use of water from these tributaries for Indian Reservations and other federal establishments.[18]

As stated above, the Supreme Court will not apportion the waters of an interstate stream unless the state seeking the adjudication establishes "by clear and convincing evidence" that there exists a substantial conflict over the present use of the water. The burden is on the state seeking the adjudication to prove the necessity for it. See cases cited at page 320, *supra*.

Neither Nevada, New Mexico nor Utah has met this burden as to any of the tributaries except the Gila River. None of the downstream tributary states contests existing upstream uses on any of the tributaries. Arizona, a downstream state on each of the tributaries, maintains that existing upstream uses on the tributaries do not interfere with her uses,[19] and she does not challenge existing uses on any of the tributaries. Nor does Nevada, the only other downstream state, contest existing upstream uses on the Virgin River System in Utah.

Thus Nevada, New Mexico (except as to the Gila) and Utah are, in effect, asking for a declaratory decree confirming their respective existing tributary uses despite the fact that such uses are unchallenged. Such a decree would be wholly without precedent. Indeed, an unbroken line of decisions requires that jurisdiction not be exercised. See *e.g., Colorado* v. *Kansas,* 320 U. S. 383 (1943); *New York* v. *Illinois,* 274 U. S. 488 (1927); *Missouri* v. *Illinois,* 200 U. S. 496 (1906).

It is equally clear that rights of tributary users *inter sese* to make increased uses of tributary water in the future ought not to be adjudicated. There is presently unused tributary water regularly flowing into the mainstream from all of the tributaries except the Gila. The record

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[18]See U. S. Proposed Conclusions 4.1, 4.2, 4.3, 4.12, 4.13, 4.21, 4.22.2, 8.1, 9.1.

[19]Ariz. Proposed Findings 159, 161, 163-164.

indicates that none of the tributary states will be able to utilize this water in the immediate future, and Supreme Court precedent requires that it not be reserved for one user against the possibility that another may appropriate it first. See cases cited at page 320, *supra*.

The considerations set forth above also control disposition of the claims of the United States. Present United States uses on the tributaries, other than the Gila, are not contested by any of the parties to this suit, and the record indicates that there is no danger of insufficient water to supply them in the future. No substantial increased United States uses appear imminent. If such uses are developed in the future, and other tributary users contest them, it will then be time to determine the extent of United States rights in the tributaries. Unlike the mainstream, the tributaries are not subject to the legal and physical control of the Secretary of the Interior, and hence with them there is no necessity of determining priorities so that the Secretary may know how to discharge his duties. There is, therefore, no occasion for declaring the extent of rights to water in the tributaries asserted for the benefit of Indian Reservations and National Forests, Parks, Recreation Areas, Memorials, and Monuments as well as lands administered by the Bureau of Land Management.

2. *The Gila River System.*

The interstate reaches of the Gila River System consist of parts of three streams, the Gila River proper and its tributaries, the San Francisco River and San Simon Creek. All of these streams have their headwaters in or near New Mexico, flow for a distance through that state and then enter Arizona.

The State of New Mexico seeks in this action a decree apportioning a quantity of water from the Gila River System sufficient to satisfy present and future requirements

for water in that part of the Gila River drainage basin located in New Mexico.[20]

Both Arizona and the United States oppose New Mexico's claims. First, they assert that New Mexico present uses are junior to those of the other parties and should not be confirmed out of priority.[21] Second, they maintain that actual present uses in New Mexico are substantially less than those claimed by New Mexico.[22] Third, they argue that confirmation of estimated New Mexico future requirements is completely unjustified.[23]

The Gila River System is overappropriated; the supply of water presently available and which seems likely to be available in the future is not sufficient to satisfy the needs and demands of existing projects. Under such circumstances, it is appropriate to adjudicate the controversy among New Mexico, Arizona and the United States over the right to water in the Gila System. *Nebraska* v. *Wyoming,* 325 U. S. 589 (1945). None of the parties opposes such an adjudication.

As noted in this Report, neither the Colorado River Compact nor the Boulder Canyon Project Act bears upon the question of the apportionment of water in the Lower Basin tributaries, see pages 316-317, *supra*, and hence they are of no help in deciding this controversy over the Gila River System. The doctrine of equitable apportionment is decisive of this controversy, as all the parties agree, although they differ as to its proper application.[24]

a. Present Uses

New Mexico seeks a confirmation of existing uses in that state from the Gila River System. Despite the fact

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[20]N. M. Brief, Point III.
[21]Ariz. Answering Brief, pp. 82-86; U. S. Reply Brief, pp. 54-60.
[22]Ariz. Special Appendix, pp. 1-8; U. S. Reply Brief. pp. 54-59.
[23]Ariz. Special Appendix, pp. 9-13; U. S. Reply Brief, pp. 60-61.
[24]Ariz. Opening Brief, pp. 62-63; N. M. Brief, pp. 4-5, 10-33; U. S. Brief, pp. 42-43.

that many of these uses are junior in time to uses downstream in Arizona, I conclude that they should not be disturbed.

Although priority of appropriation has been characterized as the guiding principle of equitable apportionment in the arid regions of the United States, *Nebraska* v. *Wyoming,* 325 U. S. 589 (1945); *Wyoming* v. *Colorado,* 259 U. S. 419 (1922), it is by no means necessarily conclusive of the rights in dispute. In *Nebraska* v. *Wyoming, supra,* at 618, the Court said:

> "Priority of appropriation is the guiding principle. But physical and climatic conditions, the consumptive use of water in the several sections of the river, the character and rate of return flows, the extent of established uses, the availability of storage water, the practical effect of wasteful uses on downstream areas, the damage to upstream areas as compared to the benefits to the downstream areas if a limitation is imposed on the former—these are all relevant factors. They are merely an illustrative, not an exhaustive catalogue. They indicate the nature of the problem of apportionment and the delicate adjustment of interests which must be made."

It is worthy of note that the Court, in an equitable apportionment suit, has never reduced junior upstream existing uses by rigid application of priority of appropriation. Indeed, the tendency has been to protect existing uses wherever possible. See *Washington* v. *Oregon,* 297 U. S. 517 (1936); *Kansas* v. *Colorado,* 206 U. S. 46 (1907).

In *Nebraska* v. *Wyoming, supra,* at 621-622, junior upstream existing uses were confirmed despite the fact that the North Platte, as the Gila is here, was overappropriated. The Court stated:

> "We are satisfied that a reduction in present Colorado uses is not warranted. The fact that the same amount of water might produce more in

> lower sections of the river is immaterial. [citations omitted] The established economy in Colorado's section of the river basin based on existing use of the water should be protected. [citations omitted] Appropriators in Colorado junior to Pathfinder have made out-of-priority diversions of substantial amounts. Strict application of the priority rule might well result in placing a limitation on Colorado's present use for the benefit of Pathfinder. But as we have said, priority of appropriation, while the guiding principle for an apportionment is not a hard and fast rule. Colorado's countervailing equities indicate it should not be strictly adhered to in this situation."

It is clear that the agricultural economy of the Gila River Basin in New Mexico is dependent upon water from the system and that reduction of present uses will result in commensurate contraction of that economy. Furthermore, some of the water which is used beneficially in New Mexico would be lost enroute to users in Arizona.[25] In addition, it seems that New Mexico uses only a relatively small portion of the water she contributes to the Gila River System.[26] I am satisfied, therefore, that a reduction of present New Mexico uses is not warranted. The presently irrigated acreage figures for lands in New Mexico outside the Virden Valley, set forth in the Findings of Fact and recommended decree, represent a compromise between Arizona and New Mexico to which the United States has interposed no objection. This compromise has been adopted in the decree.

This does not mean, however, that priorities as to present uses are entirely without force. On the contrary, the Gila Decree, *United States* v. *Gila Valley Irrigation District, et al* (Globe Equity No. 59),[26a] which adjudicated priorities

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[25]Tr. 1403 (Gookin).
[26]See Ariz. Ex. 77, table 23.
[26a]Ariz. Ex. 103.

on an interstate reach of the Gila River, including the Virden Valley in New Mexico, is not abrogated. Certainly confirmation of present uses requires adherence to the priorities presently being administered under that Decree. The major justification for refusing to reduce existing junior uses is to avoid disrupting going economies. Since the economy of the Virden Valley is largely based on the Gila Decree, enforcement of that decree will not disrupt the existing economy. Furthermore, the State of New Mexico is bound by that Decree to the extent that her citizens, whom she represents *parens patriae* in this suit, are bound. See *Brooks* v. *United States,* 119 F.2d 636. 643 (9th Cir.), cert. *denied,* 313 U. S. 594 (1941); *cf. Hinderlider* v. *La Plata,* 304 U. S. 92 (1938); *Wyoming* v. *Colorado,* 286 U. S. 494 (1932). If this were not the case then the rights of individual citizens, when asserted by them, would be limited by the Gila Decree, whereas their rights would not be so limited if asserted by the State as their representative.

The so-called Greenlee County and Cave Creek Decrees[27] are not binding upon New Mexico as they purport only to adjudicate water rights appurtenant to land located within Greenlee County and Cochise County, Arizona.

The decree in this cause will, of necessity, limit uses of both underground and surface water, as New Mexico's proof of irrigated acreage included acreage irrigated from surface and underground sources without distinction. This would be the proper course in any event since it appears that there is such a close relationship between surface and underground waters in this part of the System that failure to limit uses of underground water might well provide New Mexico an opportunity for further reduction of the surface flow of the Gila River System by allowing unrestricted depletion of underground sources.[28]

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[27]Ariz. Exs. 301-302A.

[28]See Tr. 2659-2660, 2674-2675 (Turner); 17745-17746 (Reynolds).

Two questions have been raised with respect to the use of underground, pumped water on lands in the Virden Valley in New Mexico. One question is whether lands specified in the Gila Decree may be irrigated by pumped water in addition to the surface diversions from the Gila River permitted by the Decree. The resolution of this question, which requires an interpretation of the Gila Decree, is best left to the court which rendered and administers that Decree. It is sufficient in this case to hold that the Gila Decree governs all uses of water on lands in the Virden Valley specified in the Decree, and that the interpretation of the Decree is left to the United States District Court for the District of Arizona. The recommended decree is to be so construed.

The other question is whether the use of underground, pumped water on lands in the Virden Valley which are not specified in the Gila Decree should be prohibited. Arizona and New Mexico have stipulated that there are 380.81 acres of land within the Virden Valley which are not specified in the Gila Decree and which are presently being irrigated with water from the underground water sources of the Gila River. The United States does not dispute this figure.

Arizona and New Mexico have compromised this question by agreeing that these non-decree lands, or other lands or uses in the Virden Valley to which their water rights may be transferred, may consumptively use not more than 838.2 acre-feet of underground water per annum "unless and until such uses are adjudged by a court of competent jurisdiction to be an infringement or impairment of rights confirmed by the Gila Decree." The United States objects to this compromise, asserting that the use of this water may reduce the surface supply in the Gila River available for storage in the San Carlos Reservoir, which in turn would reduce the water available for the Gila River Indian Reservation.

Despite this opposition from the United States, I have decided to adopt the Arizona-New Mexico settlement. The total quantity of ground water involved is only 838.2 acre feet. While I have found that pumping of ground water in the Gila River System basin affects the surface supply, there is no evidence regarding the extent that out-of-decree pumping in the Virden Valley affects United States interests in Arizona. The maximum effect would be in the amount of the 838.2 acre-feet, and in all probabilty the diminution of surface supply available to the Gila River Indian Reservation would be much less. Moreover, the United States is not foreclosed. It is protected from injury if it can show that pumping from lands outside the Gila Decree impairs rights confirmed to it under the Decree. For similar reasons I have also adopted in the recommended decree a compromise between Arizona and New Mexico which permits the domestic use of a maximum of 265 acre-feet per annum of water diverted from the Gila River or its underground sources in the Virden Valley in addition to the uses confirmed by the Gila Decree, "unless and until such uses are adjudged by a court of competent jurisdiction to be an infringement or impairment of rights confirmed by the Gila Decree."

Both San Simon Creek and the San Francisco River have their confluence with the Gila River in Arizona. In order to ensure that Arizona users on the Gila and on those tributaries of the Gila will not be adversely affected by increased use, diversions from one of these streams may not be transferred to any of the other streams, nor may uses for irrigation purposes within any area on one of the streams be transferred for use for irrigation purposes to any other area on that stream.[29] The recommended decree so provides.

[29]The areas on the San Francisco River System are: Luna, Apache Creek-Aragon, Reserve, and Glenwood (including Mule Creek). The Luna, Apache Creek-Aragon, and Reserve areas are

b. Future Uses

New Mexico also claims the right to water for future requirements. It is here, however, that priority of appropriation has its greatest effect. It would be unreasonable in the extreme to reserve water for future use in New Mexico when senior downstream appropriators in Arizona remain unsatisfied. It was so held as to Colorado's claim in *Nebraska* v. *Wyoming,* 325 U. S. 589 (1945).

New Mexico seeks to mitigate the effect of her claim by attempting to establish that, should additional water storage facilities be constructed sometime in the uncertain future, increased uses in New Mexico would not diminish the supply for downstream Arizona users.[80] To formulate a decree on the basis of such hypothetical facts would not be prudent. In *Nebraska* v. *Wyoming, supra,* at 620, the Court said:

> "There is no reliable basis for prediction. But a controversy exists; and the decree which is entered must deal with conditions as they obtain today. If they substantially change, the decree can be adjusted to meet the new condition."

Of course, the decree will provide for modification should a change of condition warrant it.

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as shown on Arizona Exhibit 334. Glenwood (including Mule Creek) embraces the area delineated on Arizona Exhibit 334 as the Glenwood area and in addition thereto all of the San Francisco River System in New Mexico to the south of the Glenwood area as shown on said Exhibit 334.

The areas on the Gila River System are: Upper Gila, Cliff-Gila and Buckhorn-Duck Creek, Red Rock, and Virden Valley. The Red Rock area is as shown on Arizona Exhibit 328. The Cliff-Gila and Buckhorn Duck-Creek area is as shown on Arizona Exhibit 328 and in addition thereto embraces all areas on Mangas Creek and tributaries thereto. The Upper Gila area embraces the entire Gila River System upstream from the Cliff-Gila and Buckhorn-Duck Creek area as herein defined. The Virden Valley is that portion of the Gila River System in New Mexico (excluding the San Francisco River and San Simon Creek and their tributaries) downstream from the area delineated as Red Rock on Arizona Exhibit 328.

[80]N. M. Proposed Findings 18-21.

c. United States Claims

The United States asserts rights to water from sources within the drainage of the Gila River System for use on various Indian Reservations as well as on National Forests, Parks, Monuments and lands administered by the Bureau of Land Management.

A number of Indian Reservations and several other federal establishments are situated on tributaries of the Gila which flow exclusively within the State of Arizona. The United States claims on these Arizona tributaries assume the posture of claims against other individual users within the State of Arizona. It would be inexpedient in this case to adjudicate such purely local claims. Moreover, there is no such collision between competing uses on these tributaries as to warrant judicial interference in this litigation. And even if there were such a dispute, it would not be necessary or helpful to resolve it in order to make the apportionment between Arizona and New Mexico.

Different considerations govern the claims of the United States to water from the Gila River and its interstate tributaries. These streams are overappropriated. The controversy with respect to them is real and immediate; and the disposition of these claims materially affects the interstate allocation as between Arizona and New Mexico. Thus New Mexico's claim for confirmation of existing uses out-of-priority conflicts with the United States claim that it has reserved water of the Gila River and its interstate tributaries for the use of its establishments downstream in Arizona.

There are three Indian Reservations on behalf of which the United States claims the right to water from the Gila River proper; they are the Gila River, the San Carlos and the Gila Bend Indian Reservations.[81] The United States

[81] See U. S. Proposed Conclusions 4.21, 4.22.2, 4.23.4.

does not claim any rights to divert water for Indian Reservations from the San Francisco River and San Simon Creek, the other two interstate streams of the Gila System. The interests of both the Gila River Indian Reservation and San Carlos Indian Reservation were represented by the United States in *United States* v. *Gila Valley Irrigation District, et al.* (Globe Equity No. 59)[32] and the United States concedes that rights to divert water from the mainstream of the Gila River asserted on behalf of these Reservations are governed by the Gila Decree.[33] However, rights of the Gila Bend Indian Reservation, which is located below the confluence of the Salt and Gila Rivers approximately 40 miles southwest of Phoenix, are not subject to the Gila Decree.

Assuming *arguendo* that this Reservation has the senior priority on the Gila River, proper application of the principles of equitable apportionment would still compel a finding that reduction of present New Mexico uses for its benefit would be unwarranted. The Gila is a wasting stream below Ashurst-Hayden Dam, see note 45, page 338, *infra.* Water required to be released at potential points of use in New Mexico would have to travel through part of that state and through half of Arizona, across hot deserts, before reaching the Reservation, and a substantial amount of it would be lost en route. Moreover, the United States admits that "an adequate water supply, primarily from underground sources . . . is presently available for the irrigation of lands of the Gila Bend Indian Reservation."[34] It is apparent, therefore, that no reasonable purpose can be served in an equitable apportionment by allocating water to the Reservation at the expense of present New Mexico uses.

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[32]Ariz. Ex. 103.
[33]See U. S. Proposed Conclusions 4.22.1, 4.23.2.
[34]U. S. Proposed Finding 4.21.5.

Any claims that the Reservation might have as against Arizona users on the Salt and Gila Rivers are, as discussed above, matters of intrastate rights and priorities which should not be adjudicated in this case.

The United States also claims rights to water from sources within the drainage area of the Gila River System for use in National Forests, Parks, Memorials and Monuments as well as for lands administered by the Bureau of Land Management. For reasons already stated, only claims to water of the Gila River and its interstate tributaries will be here considered. Ten federal establishments fall within this category.

With the exception of the Gila National Forest, it is unnecessary to pass on the claims of the United States for water for any of the other nine federal establisments, because the United States has not demonstrated, except as to the Gila National Forest, that it presently utilizes or requires water from the mainstream of the Gila or its interstate tributaries in order to carry out the purposes of these establishments. Nor has the United States demonstrated, again excepting the Gila National Forest, that it will in the future require water from these sources. There is, therefore, no controversy over uses by these federal establishments to be adjudicated. Certainly it would be inappropriate to adjudicate the claims of the United States (with the exception noted) at this time since those claims may never be exercised much less questioned. Moreover, it would be impossible on the basis of this record to determine the water rights of the United States (except for the Gila National Forest) either on the basis of state law or on the basis of federal reservation of water. Of course, the rights of Arizona and New Mexico adjudicated herein are subject to possible superior rights of the United States asserted on behalf of National Forests, Parks, Memorials, Monuments and lands administered by the Bureau of

Land Management, as such rights may be determined hereafter.

The Gila National Forest presently diverts water from the mainstream of the Gila and San Francisco Rivers. The finding is warranted that the United States intended, when it withdrew this Forest from entry, to reserve the water necessary to fulfill the purposes for which the Forest was created. Support for this finding lies in the following facts: The Gila and San Francisco Rivers are the only substantial streams which flow within the boundaries of the Forest; the purposes of the Forest cannot be fulfilled without an adequate water supply; and the United States presently utilizes water from these sources in order to maintain the Forest. The power of the United States to make such a reservation with respect to the Forest cannot be logically differentiated from the power of the United States with respect to Indian Reservations and Recreation Areas.

Having found that the United States intended to reserve water from these sources in quantities reasonably necessary to fulfill the purpose of withdrawal, and having concluded that the United States has the power to make such a reservation, it follows that water rights in the Gila River System recognized by the recommended decree herein are subordinate to the right of the United States to divert water for the Gila National Forest to the extent that the former rights are junior in time. As in the case of the Lake Mead National Recreation Area, the future water requirements of the Gila National Forest appear to be so modest that it is unnecessary to put maximum limits on the reserved water rights created for its benefit.

FINDINGS OF FACT

1. The Gila River rises in the mountainous areas of southwestern New Mexico near the towns of Cliff and Gila. It flows southwesterly—entering Arizona between Virden,

New Mexico and Duncan, Arizona. Thence it flows westerly across Arizona to its confluence with the Colorado River below Imperial and Laguna Dams near Yuma, Arizona. Its major tributaries are San Simon Creek and the San Francisco, San Carlos, San Pedro, Santa Cruz, Salt, Verde (a tributary of the Salt), Agua Fria and Hassayampa Rivers. The Gila River System drains a total of 57,800 square miles.[35]

2. The San Francisco River, which rises in Arizona near the town of Alpine, enters New Mexico near Luna and thence flows easterly, southerly and then westerly to re-cross the state line and enter Arizona near Clifton. Its confluence with the Gila River lies below Clifton and west of Guthrie, Arizona. The San Francisco River drains a total of 2,800 square miles.[36]

3. San Simon Creek is formed in New Mexico by tributaries which rise in southeastern Arizona and southwestern New Mexico. It enters Arizona in the San Simon-Cienaga area north of Rodeo, New Mexico and thence flows northwesterly for over 100 miles to its confluence with the Gila River below Solomonsville, Arizona. San Simon Creek drains a total of 2,280 square miles.[37]

4. There are ten Indian Reservations on the Gila River System, all within the State of Arizona. They are the Ak Chin, Camp Verde, Fort Apache, Fort McDowell, Papago, Salt River, San Xavier, Gila Bend, Gila River and San Carlos Reservations.[38]

5. The Gila Bend, Gila River and San Carlos Reservations are situated on the Gila River. The other seven Reserva-

[35]Ariz. Exs. 106, 328, 1000, p. 12; N. M. Exs. 400, 402B, 402D.
[36]Ariz. Exs. 106, 334, 1000, p. 12; N. M. Exs. 400, 402C.
[37]Ariz. Exs. 106, 1000, p. 12; N. M. Exs. 400, 402A.
[38]See Part One, pp. 88-94.

tions are situated on tributaries of the Gila which flow entirely within the State of Arizona.[39]

6. The Gila Bend Indian Reservation is situated below the confluence of the Salt and Gila Rivers in Arizona, approximately 40 miles southwest of Phoenix.[40]

7. Coolidge Dam is the sole water storage facility on the Gila River between its headwaters and its confluence with the Salt River. Situated 26 miles southeast of Globe, Arizona, it creates the San Carlos Reservoir which serves the San Carlos Project in Arizona.[41]

8. The flow of the Gila River and its tributaries has been erratic.[42]

9. On June 29, 1935, the United States District Court for the District of Arizona entered a final decree which determined rights to divert and use water from the Gila River from a point in New Mexico (above the Virden Valley) ten miles east of the eastern boundary of Arizona to the Gila River Crossing, located a short distance upstream from the joinder of the Gila and Salt Rivers southwest of Phoenix, Arizona. *United States* v. *Gila Valley Irrigation District, et al.* (Globe Equity No. 59).[43]

10. The Gila River, San Francisco River, and San Simon Creek are overappropriated, supply being insufficient to satisfy existing needs.[44]

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[39]See U. S. Ex. 100.
[40]See U. S. Exs. 1408-1409.
[41]See Part One, p. 39.
[42]See *e.g.*, Ariz. Ex. 98, pp. 604-605, 609-610, 626-627.
[43]Ariz. Exs. 103, 300.
[44]Ariz. Answering Brief p. 83; N. M. Rebuttal Brief, p. 5. For example, under the Gila Decree (Globe Equity No. 59) the United States has the right to divert up to 603,276 acre-feet per annum at Ashurst-Hayden Dam for the use of the San Carlos Project and

11. The Gila River is a losing or wasting stream below Ashurst-Hayden Dam.[45]

12. Lands within the Gila River System drainage basin in New Mexico are irrigated with surface and underground water.[46]

13. There are 2,900 acres presently being irrigated with water from San Simon Creek, its tributaries and underground water sources in New Mexico.[47]

14. Present annual consumptive uses of water from San Simon Creek, its tributaries and underground water sources in New Mexico are 7,200 acre-feet.[48]

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certain federal and Arizona agencies. Ariz. Ex. 103 p. 98. However, diversions at Ashurst-Hayden Dam from 1934 to 1955 averaged 187,000 acre-feet per year. Ariz. Ex. 139, p. 1. The 1951-1955 diversion figures were as follows:

1951	47,000 acre-feet
1952	226,000 acre-feet
1953	53,000 acre-feet
1954	121,000 acre-feet
1955	113,000 acre-feet

Similarly, the Gila Decree authorized the storage in San Carlos Reservoir of 1,285,000 acre-feet. Ariz. Ex. 103, p. 105. Storage in the Reservoir, however, has never exceeded 800,000 acre-feet and storage, from 1934 to 1955, averaged 168,000 acre-feet. Ariz. Ex. 139, p. 5. Storage figures as of May 1 for the years 1951 through 1955 were:

1951	—0— acre-feet
1952	160,000 acre-feet
1953	9,000 acre-feet
1954	26,000 acre-feet
1955	—0— acre-feet

An average of 63,000 acres of the 100,546 acre San Carlos Project were irrigated from 1934 to 1955. Most of the unirrigated acreage would have been irrigated had the water supply been adequate. Tr. 1560-1562 (Gookin); see Ariz. Ex. 139. See also Part One, pp. 48-50.

[45]Tr. 1399-1402 (Gookin); 5584-5590 (Dugan); Ariz. Ex. 77B, p. 33, Table G.

[46]See Tr. 17389-17407 (Sorenson); N. M. Ex. 517.

[47]Tr. 17389-17407 (Sorenson).

[48]N. M. Ex. 517.

15. There are 225 acres presently being irrigated in the Luna area of the San Francisco River System in New Mexico.

16. There are 316 acres presently being irrigated in the Apache Creek-Aragon area of the San Francisco River System in New Mexico.

17. There are 725 acres presently being irrigated in the Reserve area of the San Francisco River System in New Mexico.

18. There are 1,003 acres presently being irrigated in the Glenwood area (including Mule Creek) of the San Francisco River System in New Mexico.

19. Thus there is an aggregate of 2,269 acres presently being irrigated with water from the San Francisco River, its tributaries and underground water sources in New Mexico.

20. Present annual consumptive uses of water from the San Francisco River, its tributaries and underground water sources in New Mexico, for all uses, are 3,187 acre-feet.

21. There are 287 acres presently being irrigated in the Upper Gila area of the Gila River in New Mexico.

22. There are 1,456 acres presently being irrigated in the Red Rock area (including the Fuller Ranch) of the Gila River in New Mexico.

23. There are 5,314 acres presently being irrigated in the Cliff-Gila and Buckhorn-Duck Creek area of the Gila River in New Mexico.

24. Thus there is an aggregate of 7,057 acres (exclusive of the Virden Valley) presently being irrigated with water

from the Gila River and its underground water sources in New Mexico.

25. Present annual consumptive uses of water from the Gila River and its underground water sources in New Mexico (exclusive of the Virden Valley), for all uses, are 13,662 acre-feet.

26. There are 380.81 acres of land within the Virden Valley, New Mexico, with no rights confirmed by the Gila Decree (Globe Equity No. 59) which are presently being irrigated with water from the underground water sources of the Gila River, to-wit, the following designated and described parcels owned by the following persons:

Owner	Subdivision	Legal Description Sec.	Twp.	Rng.	Acreage
Marvin Arnett and J. C. O'Dell	Part Lot 3	6	19S	21W	33.84
	Part Lot 4	6	19S	21W	52.33
	NW¼ SW¼	5	19S	21W	38.36
	SW¼ SW¼	5	19S	21W	39.80
	Part Lot 1	7	19S	21W	50.68
	NW¼ NW¼	8	19S	21W	38.03
Hyrum M. Pace, Ray Richardson, Harry Day, and N. O. Pace, Est.	SW¼ NE¼	12	19S	21W	8.00
	SW¼ NE¼	12	19S	21W	15.00
	SE¼ NE¼	12	19S	21W	7.00
C. C. Martin	S. part SE¼SW¼SE¼	1	19S	21W	0.93
	W½W½W½NE¼NE¼	12	19S	21W	0.51
	NW¼NE¼	12	19S	21W	18.01
A. E. Jacobson	SW part Lot 1	6	19S	21W	11.58
W. LeRoss Jones	E. Central part E½E½E½NW¼NW¼	12	19S	21W	0.70
	SW part NE¼NW¼	12	19S	21W	8.93
	N. Central part N½N½NW¼SE¼NW¼	12	19S	21W	0.51
Conrad and James R. Donaldson	N½N½N½SE¼	18	19S	20W	8.00
James D. Freestone	Part W½NW¼	33	18S	21W	7.79

Owner	Subdivision	Legal Description	Sec.	Twp.	Rng.	Acreage
Virgil W. Jones	N½SE¼NW¼; SE¼NE¼NW¼		12	19S	21W	7.40
Darrell Brooks	SE¼SW¼		32	18S	21W	6.15
Floyd Johns	Part N½SE¼NE¼		13	19S	21W	4.00
	Part NW¼SW¼NW¼		18	19S	20W	1.70
L. M. Hatch	SW¼SW¼		32	18S	21W	4.40
——	Virden Townsite					3.90
Carl M. Donaldson	SW¼SE¼		12	19S	21W	3.40
Mack Johnson	Part NW¼NW¼NE¼		10	19S	21W	2.80
	Part NE¼NW¼NE¼		10	19S	21W	0.30
	Part N½N½S½NW¼NE¼		10	19S	21W	0.10
Chris Dotz	SE¼SE¼; SW¼SE¼		3	19S	21W)	
	NW¼NE¼; NE¼NE¼		10	19S	21W)	2.66
Roy A. Johnson	NE¼SE¼SE¼		4	19S	21W	1.00
Ivan and Antone Thygerson	NE¼SE¼SE¼		32	18S	21W	1.00
John W. Bonine	SW¼SE¼SW¼		34	18S	21W	1.00
Marion K. Mortenson	SW¼SW¼SE¼		33	18S	21W	1.00
	TOTAL					380.81

27. New Mexico has not established that her claimed rights are senior in time to rights of Arizona and the United States.[49]

28. The Gila National Forest is the only one of the National Forests, Parks, Memorials, Monuments and lands administered by the Bureau of Land Management which presently diverts water from the mainstream of the Gila or its interstate tributaries.[50]

[49]See N. M. Opening Brief, pp. 6-10; N. M. Rebuttal Brief, p. 4; N. M. Proposed Finding 12.

[50]See U. S. Exs. 2706, 2708, 2710, 2712, 2716, 2718, 2720A, 2720B, 2803, 2815, 2821, 2908-2911.

29. The Gila National Forest was created as a public reservation by a Presidential Proclamation dated March 2, 1899. Its area was subsequently enlarged and modified.[51]

30. In withdrawing lands for the Gila National Forest the United States intended to reserve rights to the use of so much water from the Gila and San Francisco Rivers as might be reasonably needed to fulfill the purposes of the Forest.[52]

31. There is not sufficient evidence to make a finding of the ultimate water requirements of the Gila National Forest.

CONCLUSIONS OF LAW

1. The Colorado River Compact does not give New Mexico any rights to the use of water from the Gila River System as against any of the other states of the Lower Basin.

2. The Boulder Canyon Project Act, 45 Stat. 1057 (1929), does not give New Mexico any rights to the use of water from the Gila River System as against any of the other states of the Lower Basin.

3. This controversy is governed by the principles of equitable apportionment.

4. An equitable apportionment of the waters of the Gila River System does not justify reduction of present New Mexico uses. Such uses as are specified in the foregoing Findings of Fact should be confirmed.

5. An equitable apportionment of the waters of the Gila River System requires that uses in excess of those specified in the foregoing Findings of Fact should be enjoined.

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[51]See U. S. Exs. 2720A-2720B.

[52]Presidential Proclamation of March 2, 1899, U. S. Exs. 2719A-2720B.

6. For purposes of this equitable apportionment, the State of New Mexico, as well as her citizens, is bound by the Gila Decree (Globe Equity No. 59) and priorities therein specified shall continue to be administered thereunder.

7. The decree herein recommended applies both to surface and underground water.

8. Uses recognized on particular streams may not be transferred so as to justify additional uses on other streams.

9. Rights to water from the Gila River for the benefit of the San Carlos and Gila River Indian Reservations are governed by the Gila Decree (Globe Equity No. 59).

10. Claims of the United States on behalf of the Gila Bend Indian Reservation against New Mexico users are rejected. Similar claims against Arizona users are not determined herein.

11. The United States has the right to divert water from the mainstream of the Gila and San Francisco Rivers in quantities reasonably necessary to fulfill the purposes of the Gila National Forest with priority dates as of the date of withdrawal for forest purposes of each area of the Forest within which the water is used.

PART THREE

PART THREE

Recommended Decree

It is ORDERED, ADJUDGED AND DECREED that

I. For purposes of this decree:

(A) "Consumptive use" means diversions from the stream less such return flow thereto as is available for consumptive use in the United States or in satisfaction of the Mexican treaty obligation;

(B) "Mainstream" means Lake Mead and the mainstream of the Colorado River downstream from Lake Mead within the United States;

(C) Consumptive use from the mainstream within a state shall include all uses of water of the mainstream within that state, including but not limited to, uses made by persons, by agencies of the state, and by the United States for the benefit of Indian Reservations and other federal establishments within the state;

(D) "Regulatory structures controlled by the United States" refers to Hoover Dam, Davis Dam, Parker Dam, Headgate Rock Dam, Palo Verde Weir, Imperial Dam, Laguna Dam and all other dams and works controlled or operated by the United States which regulate the flow of water in the mainstream or the diversion of water from the mainstream;

(E) "Water controlled by the United States" refers to the water in Lake Mead, Lake Mohave, Lake Havasu and all other water in the mainstream below Hoover Dam and within the United States of America;

(F) "Tributaries" means all stream systems in the Lower Basin of the Colorado River the waters of which

naturally drain into the main Colorado River and also means that portion of the main Colorado River in the Lower Basin above Lake Mead;

(G) "Perfected right" means a water right acquired in accordance with state law, which right has been exercised by the actual diversion of a specific quantity of water that has been applied to a defined area of land or to definite municipal or industrial works, and in addition shall include water rights created by the reservation of mainstream water for the use of federal establishments under federal law whether or not the water has been applied to beneficial use;

(H) "Present perfected rights" means perfected rights, as here defined, existing as of June 25, 1929, the effective date of the Boulder Canyon Project Act;

(I) "Domestic use" shall include the use of water for household, stock, municipal, mining, milling, industrial, and other like purposes, but shall exclude the generation of electrical power;

(J) "Annual" and "Year," except where the context may otherwise require, refer to calendar years;

(K) Consumptive use of water diverted in one state for consumptive use in another state shall be treated as if diverted in the state for whose benefit it is consumed.

II. The United States, its officers, attorneys, agents and employees, be, and they are hereby severally enjoined:

(A) From operating regulatory structures controlled by the United States and from releasing water controlled by the United States other than in accordance with the following order of priority:

(1) For river regulation, improvement of navigation, and flood control,

(2) For irrigation and domestic use, and

(3) For power;

Provided, however, that the United States may release water in satisfaction of its obligations to the United States of Mexico under the treaty dated February 3, 1944, without regard to the priorities specified above;

(B) From releasing water controlled by the United States for irrigation and domestic use in the States of Arizona, California and Nevada, except as follows:

(1) If sufficient mainstream water is available for release, as determined by the Secretary of the Interior, to satisfy 7,500,000 acre-feet of annual consumptive use in the aforesaid three states, then of such 7,500,000 acre-feet of consumptive use, there shall be apportioned 2,800,000 acre-feet for use in Arizona, 4,400,000 acre-feet for use in California, and 300,000 acre-feet for use in Nevada;

(2) If sufficient mainstream water is available for release, as determined by the Secretary of the Interior, to satisfy annual consumptive use in the aforesaid states in excess of 7,500,000 acre-feet, such excess consumptive use is surplus, and 50% thereof shall be apportioned for use in Arizona and 50% for use in California; provided, however, that if the United States so contracts with Nevada, then 46% of such surplus shall be apportioned for use in Arizona and 4% for use in Nevada;

(3) If insufficient mainstream water is available for release, as determined by the Secretary of the In-

terior, to satisfy annual consumptive use of 7,500,000 acre-feet in the aforesaid three states, then the available annual consumptive use shall be apportioned as follows:

(a) For use in Arizona $\frac{2.8}{7.5}$,

(b) For use in California $\frac{4.4}{7.5}$,

(c) For use in Nevada $\frac{.3}{7.5}$;

(4) Any mainstream water consumptively used within a state shall be charged to its apportionment, regardless of the purpose for which it was released;

(5) If the water apportioned for consumptive use in any of said states in any year is insufficient to satisfy present perfected rights in that state, the deficiency shall first be supplied out of water apportioned for use in the other two states but not consumed in those states, and any remaining deficiency shall be supplied by each of the remaining states, out of water apportioned for consumptive use in such states which is in excess of the quantity necessary to satisfy present perfected rights in such states, in proportion to the ratios heretofore established between them, to wit: if water must be supplied to satisfy present perfected rights in two of the three states, then the third state shall, out of such excess, supply all the necessary water, and if water must be supplied to satisfy present perfected rights in one state, then each of the other two states shall out of such excess supply that proportion of the necessary water that its apportionment of the first

7,500,000 acre-feet of consumptive use bears to the aggregate apportionment of the two states;[1] provided, however, that present perfected rights in California shall not exceed 4,400,000 acre-feet of consumptive use per annum;

(6) If the mainstream water apportioned for consumptive use in any year is insufficient to satisfy present perfected rights in each and all of the three states, then such water shall be allocated for consumptive use in accordance with the priority of present perfected rights without regard to state lines; provided, however, that present perfected rights in California shall not exceed 4,400,000 acre-feet of consumptive use per annum;

(7) Notwithstanding the provisions of Paragraphs (1) through (6) of this subdivision (B), mainstream water shall be delivered to users in Arizona, California and Nevada only if contracts have been made by the Secretary of the Interior, pursuant to Section 5 of the Boulder Canyon Project Act, for delivery of such water;

(8) If, in any one year, water apportioned for consumptive use in a state will not be consumed in that state, whether for the reason that delivery contracts for the full amount of the state's apportionment are not in effect or that users cannot apply all of such water to beneficial uses, or for any other reason, nothing in this decree shall be construed as prohibiting the Secretary of the Interior from releasing such apportioned but unused water during such year for consumptive use in the other

[1]Thus if water is to be supplied to California from the other states' apportionment, Arizona shall contribute $\frac{2.8}{3.1}$ and Nevada $\frac{.3}{3.1}$ of the total amount supplied.

states. No rights to the recurrent use of such water shall accrue by reason of the use thereof;

(C) From releasing water controlled by the United States for use in the States of Arizona, California and Nevada for:

(1) Any use or user in violation of state law, except as specified in Article II (B) (5) and (6) of this decree and except as federal statutes may otherwise specifically direct;

(2) The benefit of any federal establishment, except as specified hereinafter; provided, however, that such release may be made notwithstanding the provisions of Paragraph (7) of subdivision (B) of this Article and of Paragraph (1) of this subdivision (C) and provided further that nothing herein shall prohibit the United States from making future additional reservations of unappropriated mainstream water as may be authorized by law:

(a) The Chemehuevi Indian Reservation in annual quantities not to exceed (i) 11,340 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 1,900 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, with a priority date of February 2, 1907;

(b) The Cocopah Indian Reservation in annual quantities not to exceed (i) 2,744 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 431 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, with a priority date of September 27, 1917;

(c) The Yuma Indian Reservation in annual quantities not to exceed (i) 51,616 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 7,743 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, with a priority date of January 9, 1884;

(d) The Colorado River Indian Reservation in annual quantities not to exceed (i) 717,148 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 107,588 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, with priority dates of March 3, 1865, for lands reserved by the Act of March 3, 1865 (13 Stat. 541, 559); November 22, 1873, for lands reserved by the Executive Order of said date; November 16, 1874, for lands reserved by the Executive Order of said date, except as later modified; May 15, 1876, for lands reserved by the Executive Order of said date; November 22, 1915, for lands reserved by the Executive Order of said date;

(e) The Fort Mohave Indian Reservation in annual quantities not to exceed (i) 122,648 acre-feet of diversions from the mainstream or (ii) the quantity of mainstream water necessary to supply the consumptive use required for irrigation of 18,974 acres and for the satisfaction of related uses, whichever of (i) or (ii) is less, and, subject to the next succeeding proviso, with priority dates of September 18, 1890, for lands transferred by the Executive Order of said date;

February 2, 1911, for lands reserved by the Executive Order of said date; provided, however, that lands conveyed to the State of California pursuant to the Swamp and Overflowed Lands Act [9 Stat. 519 (1850)] as well as any accretions thereto to which the owners of such land may be entitled, and lands patented to the Southern Pacific Railroad pursuant to the Act of July 27, 1866 (14 Stat. 292) shall not be included as irrigable acreage within the Reservation and that the above specified diversion requirement shall be reduced by 6.4 acre-feet per acre of such land that is irrigable;

(f) The Lake Mead National Recreation Area in annual quantities reasonably necessary to fulfill the purposes of the Recreation Area, with priority dates of March 3, 1929, for lands reserved by the Executive Order of said date (No. 5105), and April 25, 1930, for lands reserved by the Executive Order of said date (No. 5339);

(g) The Havasu Lake National Wildlife Refuge in annual quantities reasonably necessary to fulfill the purposes of the Refuge, not to exceed (i) 41,839 acre-feet of water diverted from the mainstream or (ii) 37,339 acre-feet of consumptive use of mainstream water, whichever of (i) or (ii) is less, with a priority date of January 22, 1941, for lands reserved by the Executive Order of said date (No. 8647), and a priority date of February 11, 1949, for land reserved by the Public Land Order of said date (No. 559);

(h) The Imperial National Wildlife Refuge in annual quantities reasonbly necessary to fulfill

the purposes of the Refuge not to exceed (i) 28,000 acre-feet of water diverted from the mainstream or (ii) 23,000 acre-feet of consumptive use of mainstream water, whichever of (i) or (ii) is less, with a priority date of February 14, 1941.

Provided further, that consumptive uses for the benefit of the above named federal establishments shall be satisfied only out of water allocated, as provided in subdivision (B) of this Article, to each state wherein such uses occur, and only to the extent that their priorities specified herein are senior to other priorities within the state.

III. The States of Arizona, California and Nevada, Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, Metropolitan Water District of Southern California, City of Los Angeles, City of San Diego, and County of San Diego, their officers, attorneys, agents and employees, be and they are hereby severally enjoined:

(A) From interfering with the management and operation, in conformity with Article II of this decree, of regulatory structures controlled by the United States;

(B) From interfering with or permitting the interference with releases and deliveries, in conformity with Article II of this decree, of water controlled by the United States;

(C) From diverting or permitting the diversion of water from the mainstream the diversion of which has not been authorized by the United States for use in the respective states; and provided further that none of the above named political subdivisions of the State of California shall divert or permit the diversion of water

from the mainstream the diversion of which has not been authorized by the United States for its particular use;

(D) From consuming or permitting the consumptive use of water from the mainstream in excess of the quantities specified in Article II of this decree.

IV. The State of New Mexico, its officers, attorneys, agents and employees, be and they are after four years from the date of this decree hereby severally enjoined:

(A) From diverting or permitting the diversion of water from San Simon Creek, its tributaries and underground water sources for the irrigation of more than a total of 2,900 acres during any one year, and from exceeding a total consumptive use of such water, for whatever purpose, of 72,000 acre-feet during any period of ten consecutive years; and from exceeding a total consumptive use of such water, for whatever purpose, of 8,220 acre-feet during any one year;

(B) From diverting or permitting the diversion of water from the San Francisco River, its tributaries and underground water sources for the irrigation within each of the following areas of more than the following number of acres during any one year:

Luna Area	225
Apache Creek-Aragon Area	316
Reserve Area	725
Glenwood Area	1,003;

and from exceeding a total consumptive use of such water, for whatever purpose, of 31,870 acre-feet during any period of ten consecutive years; and from exceeding a total consumptive use of such water, for whatever purpose, of 4,112 acre-feet during any one year;

(C) From diverting or permitting the diversion of water from the Gila River, its tributaries (exclusive of the San Francisco River and San Simon Creek and their tributaries) and underground water sources for the irrigation within each of the following areas of more than the following number of acres during any one year:

Upper Gila Area	287
Cliff-Gila and Buckhorn-Duck Creek Area	5,314
Red Rock Area	1,456;

and from exceeding a total consumptive use of such water (exclusive of uses in Virden Valley, New Mexico), for whatever purpose, of 136,620 acre-feet during any period of ten consecutive years; and from exceeding a total consumptive use of such water (exclusive of uses in Virden Valley, New Mexico), for whatever purpose, of 15,895 acre-feet during any one year;

(D) From diverting or permitting the diversion of water from the Gila River and its underground water sources in the Virden Valley, New Mexico, except for use on lands determined to have the right to the use of such water by the decree entered by the United States District Court for the District of Arizona on June 29, 1935, in *United States* v. *Gila Valley Irrigation District, et al.* (Globe Equity No. 59) (herein referred to as the Gila Decree), and except pursuant to and in accordance with the terms and provisions of the Gila Decree; provided, however, that:

(1) This decree shall not enjoin the use of underground water on any of the following lands:

Owner	Subdivision	Legal Description	Sec.	Twp.	Rng.	Acreage
Marvin Arnett and J. C. O'Dell		Part Lot 3	6	19S	21W	33.84
		Part Lot 4	6	19S	21W	52.33
		NW¼ SW¼	5	19S	21W	38.36
		SW¼ SW¼	5	19S	21W	39.80
		Part Lot 1	7	19S	21W	50.68
		NW¼ NW¼	8	19S	21W	38.03
Hyrum M. Pace, Ray Richardson, Harry Day and N. O. Pace, Est.		SW¼ NE¼	12	19S	21W	8.00
		SW¼ NE¼	12	19S	21W	15.00
		SE¼ NE¼	12	19S	21W	7.00
C. C. Martin		S. part SE¼SW¼SE¼	1	19S	21W	0.93
		W½W½W½NE¼NE¼	12	19S	21W	0.51
		NW¼NE¼	12	19S	21W	18.01
A. E. Jacobson		SW part Lot 1	6	19S	21W	11.58
W. LeRoss Jones		E. Central part E½E½E½NW¼NW¼	12	19S	21W	0.70
		SW part NE¼NW¼	12	19S	21W	8.93
		N. Central part N½N½NW¼SE¼NW¼	12	19S	21W	0.51
Conrad and James R. Donaldson		N½N½N½SE¼	18	19S	20W	8.00
James D. Freestone		Part W½NW¼	33	18S	21W	7.79
Virgil W. Jones		N½SE¼NW¼; SE¼NE¼NW¼	12	19S	21W	7.40
Darrell Brooks		SE¼SW¼	32	18S	21W	6.15
Floyd Jones		Part N½SE¼NE¼	13	19S	21W	4.00
		Part NW¼SW¼NW¼	18	19S	20W	1.70
L. M. Hatch		SW¼SW¼	32	18S	21W	4.40
——		Virden Townsite				3.90
Carl M. Donaldson		SW¼SE¼	12	19S	21W	3.40
Mack Johnson		Part NW¼NW¼NE¼	10	19S	21W	2.80
		Part NE¼NW¼NE¼	10	19S	21W	0.30
		Part N½N½S½NW¼NE¼	10	19S	21W	0.10
Chris Dotz		SE¼SE¼; SW¼SE¼	3 10	19S 19S	21W} 21W}	2.66

Owner	Subdivision	Legal Description	Sec.	Twp.	Rng.	Acreage
Roy A. Johnson	NE¼SE¼SE¼		4	19S	21W	1.00
Ivan and Antone Thygerson	NE¼SE¼SE¼		32	18S	21W	1.00
John W. Bonine	SW¼SE¼SW¼		34	18S	21W	1.00
Marion K. Mortenson	SW¼SW¼SE¼		33	18S	21W	1.00
		TOTAL				380.81

or on lands or for other uses in the Virden Valley to which such use may be transferred or substituted on retirement from irrigation of any of said specifically described lands, up to a maximum total consumptive use of such water of 838.2 acre-feet per annum, unless and until such uses are adjudged by a court of competent jurisdiction to be an infringement or impairment of rights confirmed by the Gila Decree; and

(2) This decree shall not prohibit domestic use of water from the Gila River and its underground water sources on lands with rights confirmed by the Gila Decree, or on farmsteads located adjacent to said lands, or in the Virden Townsite, up to a total consumptive use of 265 acre-feet per annum in addition to the uses confirmed by the Gila Decree, unless and until such use is adjudged by a court of competent jurisdiction to be an infringement or impairment of rights confirmed by the Gila Decree:

(E) Provided, however, that nothing in this Article IV shall be construed to affect rights as between individual water users in the State of New Mexico; nor shall anything in this Article be construed to affect possible superior rights of the United States asserted on behalf of National Forests, Parks, Memorials, Monuments and

lands administered by the Bureau of Land Management; and provided further that in addition to the diversions authorized herein the United States has the right to divert water from the mainstream of the Gila and San Francisco Rivers in quantities reasonably necessary to fulfill the purposes of the Gila National Forest with priority dates as of the date of withdrawal for forest purposes of each area of the Forest within which the water is used.

V. The United States shall prepare and maintain, or provide for the preparation and maintenance of, and shall make available, annually and at such shorter intervals as the Secretary of the Interior shall deem necessary or advisable, for inspection at all reasonable times and at a reasonable place or places, complete, detailed and accurate records of:

(A) Releases of water through regulatory structures controlled by the United States,

(B) Diversions of water from the mainstream, return flow of such water to the stream as is available for consumptive use in the United States or in satisfaction of the Mexican treaty obligation, and consumptive use of such water. These quantities shall be stated separately as to each diverter from the mainstream, each point of diversion, and each of the States of Arizona, California and Nevada;

(C) Releases of mainstream water pursuant to orders therefor but not diverted by the party ordering the same, and the quantity of such water delivered to Mexico in satisfaction of the Mexican Treaty or diverted by others in satisfaction of rights decreed herein. These quantities shall be stated separately as to each diverter from the mainstream, each point of diversion, and each of the States of Arizona, California and Nevada;

(D) Deliveries to Mexico of water in satisfaction of the obligations of Part III of the Treaty of February 3, 1944, and, separately stated, water passing to Mexico in excess of treaty requirements;

(E) Diversions of water from the mainstream of the Gila and San Francisco Rivers and the consumptive use of such water, for the benefit of the Gila National Forest.

VI. Within two years from the date of this decree, the States of Arizona, California, and Nevada shall furnish to this Court and to the Secretary of the Interior a list of the present perfected rights, with their priority dates, in waters of the mainstream within each state, respectively, in terms of consumptive use, except those relating to federal establishments. The Secretary of the Interior shall supply similar information, within a similar period of time, with respect to federal establishments within each state. If the three states and the Secretary of the Interior are unable at that time to agree on the present perfected rights to the use of mainstream water in each state, any state or the United States may apply to the Court for the determination of such rights by the Court.

VII. The State of New Mexico shall, within four years from the date of this decree, prepare and maintain, or provide for the preparation and maintenance of, and shall annually thereafter make available for inspection at all reasonable times and at a reasonable place or places, complete, detailed and accurate records of:

(A) The acreages of all lands in New Mexico irrigated each year from the Gila River, the San Francisco River, San Simon Creek and their tributaries and all of their underground water sources, stated by legal description and component acreages and sepa-

rately as to each of the areas designated in Article IV of this decree and as to each of the three streams;

(B) Annual diversions and consumptive uses of water, in New Mexico, from the Gila River, the San Francisco River and San Simon Creek and their tributaries, and all their underground water sources, stated separately as to each of the three streams.

VIII. This decree shall not affect:

(A) The relative rights *inter sese* of water users within any one of the states, except as otherwise specifically provided herein;

(B) The rights or priorities to water in any of the Lower Basin tributaries of the Colorado River in the States of Arizona, California, Nevada, New Mexico and Utah except the Gila River System;

(C) The rights or priorities, whether under state law or federal law, except as specific provision is made herein, of any Indian Reservation; National Forest, Park, Recreation Area, Monument or Memorial; or lands administered by the Bureau of Land Management.

IX. Any of the parties may apply at the foot of this decree for its amendment or for further relief. The Court retains jurisdiction of this suit for the purpose of any order, direction, or modification of the decree, or any supplementary decree, that may at any time be deemed proper in relation to the subject matter in controversy.

This Report, together with the Findings of Fact and Conclusions of Law therein contained, and the recommended decree thereto annexed are .

Respectfully submitted,

SIMON H. RIFKIND
Special Master

New York, N. Y.
December 5, 1960