BEFORE THE INDIAN CLAIMS COMMISSION

SOBOBA BAND OF MISSION INDIANS, Plaintiff,	)	
v.	)	Docket No. 80-A
THE UNITED STATES OF AMERICA, Defendant.	)	

Decided: March 5, 1976

FINDINGS OF FACT REGARDING LIABILITY OF DEFENDANT FOR PLAINTIFF'S LOSS OF WATER

The Commission makes the following findings of fact:

1. Plaintiff's Identity And Capacity To Sue.

The plaintiff, the Soboba Band of Mission Indians, is an identifiable band of American Indians recognized by the Secretary of the Interior as having authority to sue on its own behalf. The plaintiff is authorized under Sections 2 and 10 of the Indian Claims Commission Act (60 Stat. 1049), to present and maintain this action on its own behalf. There were at the date of filing of the petitions herein, and are now, living members of the Soboba Band of Mission Indians.

2. Early History And Location Of The Soboba Band.

The Spanish established the Catholic Mission of San Juan Capistrano along the California coast south of Los Angeles about 1778. A few years later they built the Mission of San Luis Rey, located a day's journey further south. The purpose of the missions was to spread the Catholic faith to the nearby Indians.

The records of missions of San Juan Capistrano and San Luis Rey refer to the Soboba village. The Soboba Band was first placed under the San Juan Capistrano Mission about 1780. In the late 1780's or early 1790's it was placed under the auspices of the San Luis Rey Mission.

Indians were designated by a derivative of the name of the mission which controlled them. Those under the San Luis Rey Mission were designated Luisenos. They included not only the Kahwea-speaking Soboba Band, but other bands speaking other languages.

Members of the Soboba Band were brought to the mission and taught Catholicism and how to grow mission crops including grapes, apricots, peaches, apples, citrus fruit, melons, olives, and various grains and vegetables.

The mission bands lived in settled communities. They cultivated crops on their tribal lands, gathered acorns, and hunted and fished.

During the 1830's, and 1840's, the missions were secularized. The Indians were freed from mission control and became citizens of Mexico.

The United States gained sovereignty over California and the Soboba Band under the Treaty of Guadalupe Hidalgo of February 3, 1848 (9 Stat. 922). The treaty was between the United States and Mexico. At the time of the treaty, and continuously thereafter, the Soboba Band was located, established and residing on the area of its present reservation. The reservation is located in the foothills of the San Jacinto Mountains, approximately eighty miles southeast of Los Angeles, and fifty miles inland from the San Juan Capistrano Mission. The southwest border

of the reservation lies along the San Jacinto River.

3. Establishment Of The Soboba Indian Reservation.

The first step in the establishment of the Soboba Indian Reservation began with the Executive Order of June 19, 1883. By that order some 3,000 acres were withdrawn from the public domain and set aside for the permanent use and occupation of the Mission Indians of California. A portion of the reservation, including parcels 1 and 2 on defendant's Map Exhibit 900, was riparian to the San Jacinto River.

The order of June 19, 1883, was cancelled as to part of the land, by the Executive Order of March 22, 1886. The reservation was further modified by the Executive Order of January 29, 1887, which restored other portions of the reservation to the public domain, and withdrew still other lands from the public domain and added them to the reservation.

The reservation was just east of the town of San Jacinto and was referred to as the San Jacinto Reservation.

In 1891 the Mission Indian Commission recommended that additional adjacent lands, including settlements of the Soboba Indians, be added to the reservation as a permanent reservation for the Soboba Indians. Most of the Commission's recommendations were adopted by the Executive Order of December 29, 1891, which increased the size of the reservation to some 4,309.83 acres. The 1891 increment included the lands along the Indian Creek and Poppet Creek tributaries of the San Jacinto River.

An additional 745.82 acres, designated as Tract 8, were added to the reservation through purchase by the United States from the State of

California on August 22, 1911. The addition of Tract 8 increased the area of the Soboba Reservation to its present total of 5,055.65 acres.[1/] Tract 8 is riparian to the San Jacinto River at a point downstream from parcels 1 and 2 of the initial reservation, supra. Tract 8 also contains the lower portion of Poppet Creek, which flows through Tract 8 to join the San Jacinto River within the southern boundary of Tract 8.

The lands of the Soboba Indian Reservation were variously patented by the United States to the "San Jacinto or Soboba Band or Village of Indians" on May 29, 1913, June 10, 1913, January 29, 1918, and May 4, 1936. These were trust patents under which the United States was to hold the lands in trust for 25 years and thereafter patent them to the band.

4. History Of Tract 8 Of The Soboba Reservation.

On December 31, 1842, six years prior to the United States' sovereignty over California under the 1848 Treaty of Guadalupe Hidalgo, Tract 8 was included in a large Mexican land grant to Victorio Dominguez de Estudillo. The grant was known as the Rancho San Jacinto Viejo. It took in a vast area west of the rest of lands which were ultimately included in the Soboba reservation. The grant contained the limitation that Estudillo "shall in no way disturb nor molest the Indians who are established or living thereon at the present time."[2/] There is reasonable inference that

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1/ The reservation covers about nine square miles of territory, extending along the northeast bank of the San Jacinto River for about five miles and from the river as much as two and one-half miles up into the foothills of the San Jacinto Mountain range. Its altitude ranges from 1,650 to 2,400 feet.

2/ Def. Ex. 419: Letter dated January 20, 1920, from Special Asst. to the Attorney General to the Attorney General; and Byrne v. Alas, 74 Calif. 628; 16 P. 523, 524, 526 (1888).

this reference to Indians was in recognition of the rights of the Soboba Band which was occupying Tract 8 and whose village was located there as of the time of the United States' sovereignty in 1848.[3/]

The Act of March 3, 1851 (9 Stat. 631), was passed to provide a procedure for the acknowledgment of legitimate Spanish and Mexican land grants in fulfillment of the United States' obligations under the 1848 Treaty of Guadalupe Hidalgo. There was no provision in the act for perfecting tribal claims based on Indian title. The ancestors of the plaintiff Indians presented no claim under the 1851 act.

The United States patented the grant to Estudillo on January 7, 1880.[4/] The patent allegedly made no reservation of rights for the Soboba Band or any other Indians.

The fee title to Tract 8 passed through various mesne conveyances. In 1882 it was set aside to one Matthew Byrne in a partition proceeding.

Byrne brought an action in ejectment against the Indians occupying Tract 8. A default judgment in Byrne's favor was vacated by the superior court, San Diego County. On appeal, the superior court's action in favor of the Indians was affirmed by the California Supreme Court in Byrne v. Alas, 9 P. 850 (1886). Byrne again sought to eject the Indians from Tract 8 and this time obtained a favorable decision by the superior court, San Diego County. On appeal, in which the Indians were represented by a Special United States Attorney, the Supreme Court of California reversed and remanded in favor of the Indians, even as to costs. Byrne v. Alas,

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3/ See Finding 2, supra.

4/ Def. Ex. 415: Letter of May 19, 1916, from representative of Citizens Water Company to U. S. Senator Ashurst. The decision in Byrne v. Alas, n. 2, supra, shows the patent date as January 17, 1880. It is not clear which date is correct.

74 Calif. 628, 16 P. 523 (1888). In the latter proceeding, the Indians were identified only as Antonio Alas and about 20 other Mission or Pueblo Indians. The parties agreed that the Indians had been

> . . . . in the continuous, open, and notorious peaceable and exclusive possession, occupancy, and use of the premises in controversy, claiming adversely to all the world ever since, and for a long time prior to, the establishment of the Mexican republic, to-wit, ever since the year 1815.

It appears more than probable that the Indians in the Byrne's ejectment suits were in fact the Soboba Band of Mission Indians.

In the second Byrnes proceeding, the California Supreme Court held that the Mexican grant to Estudillo did not annul the rights of the Indians, but by its terms expressly preserved those rights, and that neither the confirmation of the Estudillo grant by the United States, nor the United States patent to Estudillo affected those rights.

The title to Tract 8 passed by other mesne conveyance from Byrne to the Citizens' Water Company.

The State of California took Tract 8 for unpaid taxes and on August 22, 1911, ceded it to the defendant for the benefit of the Soboba Indians, in payment of $775 in back taxes.

The Citizens' Water Company then sought to recover Tract 8. It claimed a right of redemption, and that the doctrine of Harvey v. Barker 5/

5/ 58 Pac. R. 692 (1899), aff'd, 181 U.S. 481 (1901). Under the facts of that case Indians allegedly had vacated a tract of land at least two years before it was included in a Mexican land grant to a third party. The grant contained no provision to protect the Indians' interests. The California Supreme Court ruled that the lands claimed by the Indians passed into the public domain upon their failure to assert a claim thereto under the Act of March 3, 1851 (9 Stat. 631), and that a subsequent confirming patent by the United States to the grantee passed clear title and was conclusive against claims of exclusive use and occupancy by the Indians. The court distinguished Byrne v. Alas, supra (involving the Soboba Indians in Tract 8),

was decisive in its favor as against Indian title. The company filed suits in ejectment and to quiet title against the Superintendent of the Soboba Reservation and some of the Indians who were occupying Tract 8.

The defendant was aware of its obligation under the Act of January 12, 1891 (26 Stat. 712), to enforce full protection of the legal and equitable rights of the Soboba Indians.[6/] Section 6 of that act, which is captioned an Act For The Relief Of The Mission Indians In The State of California, provides

> That in cases where the lands occupied by any band or village of Indians are wholly or in part within the limits of any confirmed private grant or grants, it shall be the duty of the Attorney-General of the United States, upon request of the Secretary of Interior . . . to defend such Indians in the rights secured to them in the original grants from the Mexican Government, and in an act for the government and protection of Indians passed by the legislature of the State of California April twenty-second, eighteen hundred and fifty, or to bring any suit, in the name of the United States, in the Circuit Court of the United States for California, that may be found necessary to the full protection of the legal or equitable rights of any Indian or tribe of Indians in any of such lands.

However, the Department of Justice concluded that the tax title in the United States was of very doubtful validity and that it was doubtful whether the suits by the water company could be defended successfully.

In consequence a compromise agreement was entered into on January 6, 1920, between the Secretary of the Interior and Citizens' Water

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5/ (continued)
on the basis that therein the Indians had not vacated the land, and the Mexican grant protected their rights which were held to be paramount even under a confirming patent by the United States to the grantee. However, in Harvey v. Barker the court went on to state that Byrne v. Alas could no longer be considered as authority, especially as to the consequences resulting from nonpresentation of title by the Indians, and the scope and effect of patents in confirmation of Mexican land grants.

6/ Def. Ex. 420: Memorandum of December 5, 1918, by special assistants to the Attorney General.

Company.[7] The agreement acknowledged that a band or village of Soboba Indians for a long time past had been and was then occupying Tract 8 in whole or in part. The agreement provided:

(1) that the legal and equitable rights of the Soboba Indians would be fully protected;

(2) that the water company had dismissed its suits for ejectment and to quiet title; and

(3) that the water company on the same date had delivered to the United States a quitclaim deed to Tract 8, containing certain exceptions and reservations in respect to parcels 4 and 5 of Tract 8;[8]

(4) that the United States granted a right of way and permission to use parcels 1, 2, and 3[9] of the Soboba Reservation for construction of dams, reservoirs, flumes, and other water works for the development and utilization of water;

7/ Def. Ex. 419. A copy of the agreement is in the record as Def. Ex. 634.

8/ See Def. Map Ex. 900.

9/ Id.

(5) that the water company would so use the rights thus given as not to interfere with or diminish the use or enjoyment by the United States, or by the Indians, of their riparian rights in the San Jacinto River, or in the Poppet Creek or Indian Creek tributaries to said river, or in any underground waters of the Soboba Reservation, including Tract 8, and

(6) that the water company should indemnify and hold harmless the United States and the Indians against all manner of loss or damage arising from the construction, maintenance or operation of such works or the exercise of such rights and permission.

The Citizens' Water Company quitclaimed Tract 8 to the United States on January 6, 1920, together with any and all riparian rights. The deed 10/ excepted for the grantor the right to construct and use various dams, reservoirs, flumes and other water works on designated portions of Tract 8. The exception was subject to the qualification that the water company would not injure, diminish or detrimentally affect the full use and occupation by the United States of the balance of Tract 8, nor diminish the underground waters of the balance of Tract 8 so as to detrimentally affect present or future wells or the development of the underground waters or their use upon Tract 8 or any part of the Soboba Indian Reservation.

10/ Def. Ex. 633.

During the 1966 hearings in this case, the defendant introduced as its expert Mr. Frederic H. Varnum, a civil engineer for the Bureau of Indian Affairs. Mr. Varnum testified that the Soboba Indians' rights to the use of the San Jacinto River bottom for water storage and diversion of the type used by the Citizens' Water Company were not prohibited by the 1920 agreement and quitclaim deed.

5. Population Of The Soboba Band.

The Mission Indian Commission reported in 1891 that there were nearly 200 Soboba Indians. In 1950, Paul Henderson, a Bureau of Indian Affairs Area Irrigation Engineer, reported that there were about 116 Indians living on the Soboba Indian Reservation. These consisted of about 35 families in a village scattered along the northeast bank of the San Jacinto River in Tract 8, and several families living elsewhere on the reservation. In July 1965 the Bureau of Indian Affairs Area Director informed the Department of Justice that although total Soboba membership could not be estimated, there were then 234 individuals resident on the reservation. The defendant argues that only a small part of the Indians are living on the reservation. Some of the Soboba Indians do live off of the reservation.

6. Water Supply Of The Soboba Indian Reservation Prior To 1936.

A. The San Jacinto River.

The San Jacinto River rises on the southwest slope of the San Jacinto Mountains, and flows northwesterly for some miles along the foothills

thereof. The southwest border of the Soboba Indian Reservation lies in or along the bed of the San Jacinto River for a distance of about five miles. During that distance the river bed is either partly or entirely within the reservation.

The San Jacinto River is fed largely by winter precipitation which falls principally at the upper levels of its watershed. Its tributaries were also fed by numerous springs. The river sometimes floods during the spring of the year.[11/]

Under natural conditions at the times of the establishment of the Soboba Indian Reservation, there was an available water supply from the San Jacinto River, and its subsurface bed, sufficient for the full development of the reservation's irrigable lands, and for its domestic and stock watering needs.

In 1920 the San Jacinto River was described by the Department of Justice as having an underground flow but being dry at the surface during most of the year. One Indian witness told of swimming in the river in 1935 when she was 16 years old. The river was then waist deep at the Soboba bridge, which was 140 feet wide. She couldn't remember whether the river was that deep there year around or only during the flood season.

11/ Prior to the late 1940's the river periodically overflowed across the western portion of the Soboba Indian Reservation. Temporary flood control structures were installed by the CCC, and in 1952 a permanent revetment was installed by the Government to prevent the river from flowing across reservation lands.

B. Other Streams On The Soboba Indian Reservation.

Prior to 1936 the Soboba Indian Reservation was traversed by numerous creeks which were fed by precipitation and by springs in the creek beds, on the slopes above the creeks, and/or at the heads of the creeks. All of the streams carried some water during the spring rainy season. During the summer dry season many of the streams were dry at the surface except for waterholes at intervals, which served for stock watering.[12/]

The named creeks included Bautista Creek,[13/] Poppet Creek, and Indian Creek.[14/] Poppet Creek and Indian Creek are tributaries of the San Jacinto River. They were added to the reservation in 1891.

Poppet Creek rises in the mountains northeast of the reservation. Prior to 1933 the surface flow of Poppet Creek before it reached the Soboba Indian Reservation measured between 25 and 40 miner's inches year around with much greater amounts during the flood season. In southern California a miner's inch is 12,927.2 gallons every 24 hours.[15/] For a number of years prior to 1933, and apparently for some years thereafter, the entire surface flow of Poppet Creek before it reached the reservation was appropriated as needed during the summer irrigation season by non-Indians on the Campbell

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12/ Pl. Ex. 44: Report of Dept. of Interior Engineer Paul F. Henderson, p. 72 (1950).

13/ 1966 Tr., 801.

14/ 1966 Tr., 63 and Def. Map Ex. 900.

15/ A miner's inch is the quantity of water under a given head of pressure which will pass through an orifice one inch square in one second. In southern California a miner's inch is 1/50th of a second-foot. In northern California a miner's inch is 1/40th of a second-foot. A second-foot of water is a flow of one cubic foot of water per second or 646,360 gallons every 24 hours. One miner's inch in southern California thus is one 50th of 646,360, or 12,972.2 gallons every 24 hours. Pl. Ex. 49. See also n. 63, infra.

Ranch and the Jones Ranch. Except during the flood season the stream disappeared into the sands of its bed a mile or so inside of the reservation. The reservation Indians never used Poppet Creek directly for irrigation, although it replenished the cienegas, wells, and other underground waters in Tract 8 of the reservation.16/

Indian Creek is located in the southeast corner of the reservation at the greatest distance from the San Jacinto Tunnel. It is fed in part by the Ramona hot spring located just outside of and above the reservation.17/

The Mission Indian Commission reported in 1891 that the chief settlement of the reservation was along Indian Creek in Sections 2 and 3, Township 5 South, Range 1 East, S.B.M. The commission reported that the waters of Indian Creek had been partly filed upon by non-Indians, but that the Indians had a prescriptive right to the balance. The commission opined that the unappropriated water could be conducted to Sec. 32, T. 4, R. 1 of the reservation, making it the most valuable.

One Indian who lived along Indian Creek prior to the earthquake of 1900 stated that there were nine families living there then. By 1930 there were only about four families living along the creek. The witness thought that the others had moved away due to lack of water.

16/ Pl. Ex. 51: Pinkerton Report, pp. 7, 13, 17. This 1959 report contains interviews of Indian and white witnesses.

17/ Aug. 15, 1966 Tr., p. 258-13; Aug. 16, 1966 Tr., p. 353.

Another Indian witness testified that his family planted about 300 apricot trees in the 1920's and that they had an ample supply of water from Indian Creek. Several ditches were utilized to divert the waters of Indian Creek for irrigating at least 37 acres of apricots, melons, corn and other row crops prior to 1935.

Pechawa dam, of masonry construction, was built across Indian Creek near the center of Sec. 2 in 1934. The large reservoir of water impounded by the dam was used for irrigation and as a swimming hole for 50 to 60 children on weekends. Pl. Exs. 53A, B, C, are 1935 photographs showing children swimming in the brimming reservoir, and water spilling over the dam. The dam was washed out in 1937.

C. Springs.

Prior to 1936 the Soboba Indian Reservation contained more than twenty-two major cold water springs and several hot or mixed hot and cold water springs, which supplied water for irrigation, stock watering and domestic use. Many of these springs were located in the hills above Poppet Creek. Others were located above or along Indian Creek, and in Tract 8 of the reservation. Other springs were located in the stream beds. The most important springs are mapped on Def. Ex. 900.

All but two of the springs apparently were cold water springs which were recharged principally by precipitation within the immediate watershed. Several of the springs contained hot water indicating a source of supply from a larger area and deep circulation by some type of conduit associated with earth faulting. The earth has a normal geothermal gradient

of one degree Fahrenheit for every hundred feet of depth. The temperature of the water indicates the depth to which it has circulated. Differences in mineral content between hot and cold water springs also evidenced different sources.

The Indian Claims Commission visited many of spring sites in August 1966 and took testimony from Soboba Indian witnesses and the expert witnesses concerning the springs. There follows a summation of data relating to the most important springs prior to 1936.

(1) Corn Patch or La Gracia Springs were located in the northwest corner of the reservation above Poppet Creek and about 3-3/4 miles from the San Jacinto Tunnel. They consisted of two improved springs which fed a reservoir. An old woman with one family and six boys lived there. The water was used mostly for watering stock and for irrigating from three to four acres of row crops. Witnesses estimated that the springs supplied enough water for three families and to irrigate five acres. More specifically the springs produced about one miner's inch of water or 12,927.2 gallons every 24 hours.

(2) Morillo Springs also consisted of two improved springs in the northwest portion of the reservation about 3-3/4 miles from the San Jacinto Tunnel. These springs were added to the reservation under the Executive Order of December 29, 1891. The springs, which were located at an elevation of about 1950 feet, fed an earth dam reservoir forty feet in diameter by five feet deep. They supplied approximately one miner's inch or 12,927.2

gallons of water every twenty-four hours. The water was used for domestic purposes and for irrigation. Small ditches led from the reservoir to nearby fields and a 3" by 500' pipeline carried irrigation water to Castillo Canyon. Two families lived at the springs. They raised orchard fruit and row crops for their own use and for sale. The amount of land irrigated from these springs was variously estimated at from 3-1/2 to forty acres.

(3) Juaro Canyon Springs consisted of two improved springs in Juaro Canyon at the 2200 foot elevation, about 3-1/4 miles from the San Jacinto Tunnel. After the 1900 earthquake they gave much more water than before. Their flow after the quake was about 1-1/2 miner's inches or 19,390.8 gallons of water every twenty-four hours. Water from these springs flowed across the Soboba road even in summer. Prior to World War I, these springs fed a rock lined ditch leading to a reservoir used by an Indian, Mr. Juaro, to irrigate from 5 to 15 acres of corn, beans and various fruit trees. These springs were dry in 1925 or 1927. However, in 1934 the Civilian Conservation Corps opened the main spring a little, protected it from animals by a trash door, and installed a 400 cubic foot, roofed, concrete storage tank, and a concrete stock watering trough. The improvements were made to provide water for fighting brush fires and for stock watering.

(4) Segundo Springs consisted of five springs in Segundo Canyon, the west fork of Poppet Creek, about four miles from the San Jacinto Tunnel. They were located a short distance east, and over a ridge from Corn Patch Springs, in the area patented to the Indians on June 10, 1913. One spring was about 2,100 feet above sea level the others about 2,050 feet.

These springs were also known as Corberly Springs after the person who ran a pipe up to the largest of the springs in 1913. There was no seasonal variation and the water shot out of the one inch pipe with about a 30 or 40' head of pressure. This one spring alone was estimated to have equaled the one miner's inch flow of Corn Patch Springs.

Although there is no land suitable for farming near the Segundo Springs, the water was used for stock watering, and at one time allegedly was piped outside of the reservation to the white owned Campbell Ranch and Jones Ranch.[18/]

(5) Green (or Rouse Canyon) Springs consisted of at least one spring in the northwest corner of the reservation, above Poppet Creek. A 3/4" pipe extended from this spring. Nearby white ranchers reported that water shot out of the pipe about 18 inches. There is no evidence of record of the use to which this water was put other than to recharge the creek.

(6) Resvaloso (or Resualos) Springs consisted of five springs in the Indian Creek area of the reservation, about 6-3/4 miles from the San Jacinto Tunnel. They were located at betwen 2,100 and 2,200 feet of

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18/ Pl. Ex. 44: Report of Dept. of Interior Engineer Paul F. Henderson, pp. 38-39 (1950). It is not clear when such use occurred.

altitude. Two of these springs were seeps which contained water at all times but from which water seldom flowed. They had been dug out to form stock watering ponds. The other three were flowing springs which had been opened up slightly. They fed a small earth reservoir and an irrigation ditch. A pipe two inches in diameter from one of the springs shot water out about eighteen inches into the reservoir. The reservoir was always full. The combined flow of the Resvaloso Springs was estimated variously as 2.2 miner's inches (28,439.84 gallons every 24 hours) and 25 gallons per minute (nearly three miner's inches, or 36,000 gallons every 24 hours).

The water was used for domestic purposes by the several families which successively lived at the springs. In 1959 a seventy-two year old Indian witness who remembered the springs testified that in 1895 there were lots of trees there and grapes from which wine was made. Another witness testified that between 1933 and 1936 the springs were used to irrigate eighteen acres,[19/] ten of which were terraced. The locality is frost free, allowing production of early garden produce. Crops raised included grapes, apricots, peaches, olives, oranges, melons, grain, and row crops, including corn and potatoes.

19/ Other witnesses estimated the amount of land irrigated from these springs at four to eighteen acres.

(7) Joe Estrada Springs consisted of three cold water springs, one hot water spring, and one mixed hot and cold water spring, all located in the Indian Creek area of the reservation at about 2,100 feet of elevation, and about 7-1/2 miles from the San Jacinto Tunnel. They were about 3,000 feet downstream from the Resvaloso Springs. They are not to be confused with the separate Joe Estrada Spring located outside of the reservation. The evidence varies considerably as to the number of springs in this group, the amount of water produced and the number of acres irrigated. The Henderson Report (n. 12, supra) lists only four springs, the flow of which was estimated variously as from 2.2 miner's inches (28,439.49 gallons every 24 hours) to five or six miner's inches (71,100 gallons every 24 hours). The latter figure was based on an estimated duty of 1/2 miner's inch per acre necessary to irrigate the ten to twelve acres of tillable land at these springs.[20/] The Pinkerton Report (supra, n. 16) lists five springs in this group but only eight acres of tillable land. One of the five springs was used for watering stock.[21/] An Indian witness, whose brother-in-law was among the two or three families that lived at these springs, testified that there were five springs there before the San Jacinto Tunnel was constructed. She pointed out where there had been terraced fruit

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20/ Pl. Ex. 44: Henderson Report, pp. 9, 22, 37, 38. Reportedly the latter figure included supplemental water from the Joe Estrada spring located outside of the reservation.

21/ Pl. Ex. 51: Pinkerton Report, p. 4.

orchards and two tilled fields containing an estimated total of from thirty to thirty-two acres.[22/]

Crops raised at the Joe Estrada Springs included pears, cantaloupes, and other melons.

(8) Bee Canyon Springs consisted of two large springs flowing one miner's inch or 12,927.2 gallons every twenty-four hours. The springs were not used directly except for stock watering. However, their waters flowed into Indian Creek which was used for irrigation (see Finding 6.B., supra).

(9) Springs In Tract 8. Prior to 1936, Tract 8 of the Soboba Indian Reservation contained a number of springs which were used for irrigation and domestic purposes. Several of these springs are shown on the map enclosed with the Pinkerton Report, Pl. Ex. 51. One of them, the Isabel Arietta Spring, was used to irrigate about one acre.

In 1959 a seventy-year old white rancher from nearby the reservation testified from memory that in 1910 there was a beautiful spring fed irrigation ditch below the hospital in Tract 8. It carried an estimated 50 miner's inches per second, or 646,360 gallons of water every 24 hours.

22/ Vol. 5, 1966 Tr., p. 258-35 ff.

The large reservoir near the hospital in Tract 8 was fed in part by springs. One spring flowed into it year around. Witnesses described the reservoir as always being full before the construction of the San Jacinto Tunnel. One Indian witness testified that as a girl of sixteen in 1935 she swam in the reservoir, and that the water was over her head.[23/]

Another Indian witness testified that prior to 1935 there were springs all along the area west of the hospital, where vineyards grew. They were constant in flow, year around.

D. Cienegas.

Cienega is a Spanish word meaning bog, swamp, or marsh. It is a place where the water table is at the ground surface. On the Soboba Indian Reservation the term also means an area where the earth is sufficiently wet from seepage to allow the raising of crops without irrigation. Prior to 1936 there were a number of cienegas on the Soboba Indian Reservation.

There were several cienegas near the hospital in Tract 8. At least one of these helped feed the main reservoir there. Seepage came from the direction of Poppet Creek to the east. The cienega below the hospital went dry, or nearly dry, in 1930.

23/ The reservoir was also fed by a cienega or seep, by precipitation, and at times by supplemental well water.

E. Wells.

The Soboba Indian Reservation was supplied with supplemental water from wells. Some of these were shallow, dug wells. The Pinkerton Report map (Pl. Ex. 51) shows the location of seven old wells. As the water table continually dropped, wells went dry and were either abandoned or deepened and new wells were drilled. Some wells were located on the benchlands. In 1909 the Bureau of Indian Affairs drilled several new wells and constructed storage reservoirs and a water distribution system. There were two main wells in Tract 8, one for domestic use and one for irrigation. A new irrigation well was drilled between 1933 and 1936. In 1935 the water level in that well was twelve feet below the ground surface. No specific evidence was submitted as to the amount of water produced by the reservation wells.

7. Construction Of The San Jacinto Tunnel Drained Water From The Soboba Indian Reservation And From The Mountain Mass Overlying The Reservation.

In 1933 the Metropolitan Water District of Southern California began construction of a tunnel through the San Jacinto Mountains, as part of its Colorado River Aqueduct. The tunnel is some thirteen miles in length and sixteen feet in diameter. It passes under the San Jacinto Mountains northwest of the Soboba Indian Reservation. Its course passes within 3-1/2 miles of the nearest part of the reservation and about 8-1/4 miles from the most distant portion of the reservation.

The tunnel slopes downward slightly from east to west, its eastern inlet being at 1,536 feet above sea level, and its western outlet at

1,492 feet. The entire Soboba Indian Reservation lies at elevations substantially above the San Jacinto Tunnel.[24/]

The San Jacinto Mountains rise to great heights where they overlie the tunnel and in the area northeast of the reservation. Near the midpoint of the tunnel the overlying mountains reach a height of 4,400 feet. They continue to rise to a height of 10,800 feet about ten miles northeast of the reservation.

The geologist employed by the Metropolitan Water District reported in 1932 that construction of the tunnel might result in the drying up of springs. A pilot tunnel from the edge of the San Jacinto Valley, had encountered an unexpected flow of from 270 to 310 gallons of water per minute. The pilot tunnel passed through gouge seams parallel to the San Jacinto fault. The seams had acted as underground dams, holding back water long stored in the shattered rock of the mountains. In his report, the geologist warned that if the tunnel cut through additional faults it might tap considerable bodies of water. He stated that it was plain that by draining overlying saturated rocks a deep tunnel would also drain springs that were fed from the water contained in those rocks. There are fourteen faults or fault zones in the portion of the San Jacinto Mountain block traversed by San Jacinto Tunnel. Four of these, including the Goetz Fault, were described as "conspicuously strong".

Commencing in 1934, the contractor who began construction of the

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24/ The altitude of the reservation ranges from 1,650 to 2,400 feet. The relation of the tunnel to the reservation is graphically depicted on Pl. Exs. 47, and 48, and by p. 6 of Pl. Ex. 44.

San Jacinto Tunnel encountered enormous quantities of water gushing into the tunnel from the surrounding mountain mass. Sudden inflows repeatedly drowned out the contractor's equipment and prevented any advance in the Potrero-east heading from July 1934 to February 1935.

The Metropolitan Water District took over the construction in 1935, and completed the tunnel in 1939. Throughout that period, water and sometimes thousands of cubic yards of detritus poured into the tunnel from numerous breaks in the surrounding rock. Water pressures as great as 660 pounds per square inch were measured, and pressures of 250 to 300 pounds per square inch were common. A pressure of 600 pounds per square inch indicates that the ground water level was more than 1500 feet above the level of the tunnel.

To remove the water, two vertical shafts were sunk from the surface to the tunnel, and thirteen pumping units were installed with a total capacity of 27,000 gallons per minute. Inflows of up to 15,800 g.p.m. in or near a single working face continued with discouraging persistence, repeatedly flooding the shaft. In 1936 additional booster pumps with capacities of 12,500 g.p.m., 14,000 g.p.m., and 27,000 g.p.m. were installed to meet the increased flow. The Potrero-east heading, in traversing a fault, encountered caving ground, and water under high pressure, necessitating a 150 foot detour. New water flows in large volume persisted in all sections. At one time 9,000 g.p.m. entered the tunnel in a section 135 feet long.

In 1937 a new fissure was cut releasing an additional flow of

6,000 g.p.m. In the same year the Goetz fault brought in water up to 5,000 g.p.m. In all 60,000 acre feet of water was encountered in 1937.[25/] This corresponds to an average of 83 cubic feet of water per second or 37,350 gallons per minute. The peak discharge of 40,000 g.p.m. was reached in 1938. In all, an estimated 220,000 acre-feet of water was discharged from the San Jacinto Tunnel during the course of its construction.

The water discharged from the San Jacinto Tunnel during the course of its construction came from the contiguous mountain mass, including the Soboba Indian Reservation and the San Jacinto Mountains above and to the north and east of the Soboba Indian Reservation.

8. Efforts To Stem The Leakage Into The San Jacinto Tunnel, And Demand By Department Of Interior, Were Unsuccessful.

As an element of construction, the San Jacinto Tunnel was lined with concrete varying in thickness from six inches to several feet. The lining was ineffective in stemming the leakage of water into the tunnel. As water pressure in the surrounding rocks built up, portions of the concrete lining broke away, allowing continued leakage into the tunnel.

Considerable grouting back of the tunnel lining was done during the final part of the construction in 1939. At this time the leakage

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25/ An acre-foot consists of 325,900 gallons (the amount necessary to cover an acre of ground, one foot deep).

was reportedly reduced temporarily to about four cubic feet per second or 2,585,440 gallons per day. As the grouting also failed, the leakage into the tunnel rapidly increased.

On February 27, 1946, the Assistant Secretary of the United States Department of the Interior addressed a letter to the Metropolitan Water District of Southern California. The letter stated that San Jacinto Tunnel had caused numerous springs, streams and "seeps" on the Soboba Indian Reservation to dry up in 1936 and 1937, causing great damage to the Indians, who had been unable as a result to profitably use their lands. The letter demanded, inter alia, that M.W.D. seal out the waters which allegedly were then leaking into the tunnel at the rate of 18 acre-feet, or 5,866,200 gallons per day.[26/] The demand is prefaced with the following declaration:

> [T]he Secretary of the Interior is charged with the responsibility of protecting and preserving the assets of the Soboba Indians who by law are wards of the United States Government. [Pl. Ex. 44, p. 100.]

As a result of the demand, M.W.D. began extensive repairs of the tunnel lining, and pressure grouting of rocks around the leaks. M.W.D. allocated $250,000 for the task. The work was begun in the fall of 1946. A wier at the outlet of the tunnel then measured a water flow of 9-1/2 cubic feet per second. By May 8, 1847, some 2,268 holes had been drilled around some of the leaks. Each hole had been plugged with from two to five sacks of cement. The flow from the tunnel had been reduced to 3-1/2 c.f.s. All manner of leaks were in evidence, ranging from damp spots to fountains shooting clear to the arch of the tunnel.

26/ The Department of Interior engineer who made a number of inspections of the tunnel estimated the leakage as between 9-1/2 and 10-1/2 cubic feet per second (6,463,360 gallons per day).

In places large sections of the lining had been blown in permitting heavy flows of water to enter under low pressures. Repairs were stopped in June 1947 to begin using the aqueduct to carry water. At that time leakage into the tunnel was reduced to 2-1/2 c.f.s.

Repairs were begun again in August 1947 at which time the leakage had increased to 3.4 c.f.s. In addition a major invert break was found where the lining had popped up for thirty feet, allowing an inflow of between one and two cubic feet per second. As of December 1948 no effort had been made to repair this break.

The Department of Interior engineer who inspected the repairs was of the opinion that it was impossible to ever completely seal the tunnel. He estimated that the tunnel would continue to drain from 3,000 to 8,000 acre-feet annually from the underground reservoir under the San Jacinto Mountains. Plaintiff's expert witness, Dr. Norman P. Brooks, Professor of Civil Engineering, similarly testified, in effect, that it was impossible to completely seal the tunnel. He stated that the more the leaks into the tunnel were sealed up, the more the water pressure would build up until the lining broke in other places.

9. Disposition Of Water Which Leaked Into The San Jacinto Tunnel.

Initially, the water which leaked into the San Jacinto Tunnel

during its construction was discharged as waste. However, much of the discharge was soon used for irrigation by several land owners on large agricultural areas near the west portal of the tunnel. The contract right for such water was granted by M.W.D. in settlement of ground water and other claims of the several landowners.

The nonusable winter seepage flowed westerly into Lake Mathews, being about equal in amount to the evaporation losses from the reservoir.

After the completion of the tunnel, the leakage into the tunnel has become part of the M.W.D. supply, to be sold to its customers.

10. The Construction Period Of The San Jacinto Tunnel Was A Period Of Above Average Rainfall.

Plaintiff's expert witness, Dr. Norman H. Brooks, Professor of Civil Engineering at California Institute of Technology, stated that the San Jacinto Tunnel was built during a wet period in the rainfall cycles of southern California. He testified that the rainfall during the late 1930's was above normal throughout southern California, and that 1938 was one of the record flood years. His testimony is supported by available precipitation tables.[27/] Dr. Brooks opined that there was no way in which springs could dry up under normal circumstances during

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37/ Pl. Ex. 29: Calif. Dept. of Water Resources Bull. No. 15, p. 13 (1959); Pl. Ex. 44: Report of B.I.A. Engineer Paul Henderson, p. 121 (1950).

such a wet cycle. The defendant's expert, Mr. Fred Kunkle, agreed that the period from 1934 to 1944 was a wet period in the Soboba area. He testified that springs should have improved during that period.

11. Effect Of The San Jacinto Tunnel On The Water Supply Of The Soboba Indian Reservation And Nearby Areas.

The action of the Metropolitan Water District of Southern California in constructing the San Jacinto Tunnel materially destroyed the remaining ground water supply underlying the Soboba Indian Reservation.[28/] The tunnel drained the fault and joint system above the tunnel thereby lowering the water table above the tunnel and beneath the Soboba Indian Reservation. This resulted in the drying up of most of the springs, and cienegas, and in lessened stream flow on the Soboba Indian Reservation. Some reservation streams dried up entirely. The tunnel was also a material causative factor in the drying up of wells on the Soboba Indian Reservation.

The tunnel had a similar effect on springs in the area surrounding the Soboba Indian Reservation. The California Department of Water Resources reported that the tunnel stopped the flow of many springs and materially decreased the flow of Potrero Creek a few miles northwest of the tunnel. A spring nine miles distant from the tunnel was reported as dried up apparently as a result of construction of the tunnel.

28/ Plaintiff's proposed Finding 7-E. The plaintiff's expert witness, Mr. George F. Yackey, an engineer, testified that the Metropolitan Water District of Southern California acknowledged its responsibility for taking water away from the Soboba Indian Reservation through the San Jacinto Tunnel. Vol. 10, 1966 Tr. 562.

The tunnel had the greatest effect on cold water springs and on springs nearest to the tunnel. Many springs in the vicinity of the tunnel and on the Soboba reservation began to diminish in 1936 and numerous springs dried up entirely in 1936 and 1937. All of the cold water springs on Soboba Indian Reservation were still dry in 1962. Plaintiff's expert witness, Professor Norman N. Brooks, testified that even if the San Jacinto Tunnel could be sealed it would take several decades to one hundred years to build up water within the mountin. In his opinion the springs would never flow again.

There follows a synopsis of evidence relating to particular sources of water on the Soboba Indian Reservation after 1936.

A. Poppet Creek. The District Forest Ranger at San Jacinto testified in 1959 that after the San Jacinto aqueduct went through Poppet Creek dried up completely except during rain storms. In 1959 this creek was also reported by a Soboba Indian and a non-Indian residing near the reservation to be dry except during rains. Pl. Ex. 51 contains a 1959 photograph of the dry creek bed within the reservation.

B. Indian Creek. An Indian witness who had worked on the Civilian Conservation Corps development of Indian Creek stated that the creek subsided in 1936 to the extent that another Indian, Pete Soza, could not raise his bean crop. The District Forest Ranger at San Jacinto testified in 1959 that after the San Jacinto aqueduct went through Indian Creek dried up completely except during rain storms. Pl. Ex. 51 contains

1959 photographs showing only dry weeds and debris at the once brimming Pechawa dam across Indian Creek, and a dry ditch leading from the dam to Pete Soza's four and one-half acres.[29/]

In August 1966 during the Indian Claims Commission's on-site inspection and hearings, the defendant's expert witness, Frederick H. Varnum (Civil Engineer), described the Pechawa dam site. An inch and a half or two inch pipe extended along a small ditch about seventy-five feet below the dam structure. A "small quantity" of water flowed from the pipe. It disappeared into the ground about twelve feet below the pipe. On the same date the Commission observed a slight flow of water where one of the branches of Indian Creek passed through a culvert on a Forest Service road above the Pechawa dam site. The defendant's groundwater expert, Mr. Fred Kunkle, described the flow at the culvert as, ". . . slow, few, 10, 15 gallons a minute." The stream was dry most of the distance between the culvert and the dam.

A Soboba Indian, Eloy Soza, testified that Indian Creek stemmed from the Ramona hot spring located outside of the reservation. Defendant's expert, Mr. Varnum, testified that the water was slightly mineral (as would be expected from a hot spring).

The defendant's expert, Mr. Kunkle, testified that the upper reaches of Indian Creek, where the slight flow of water was observed by the

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29/ Although the dam washed out in 1937, the pictures illustrate that there was no stream flow to warrant rebuilding.

Commission in 1966, were in the extreme easterly portion of the Soboba Indian Reservation. He admitted that the area was the most remote from the San Jacinto Tunnel, that the tunnel would have less effect on springs in that area than on springs closer to the tunnel, and that the mere presence of water at Indian Creek did not imply that the tunnel did not cause nearer springs to dry up.

C. Corn Patch Or La Gracia Springs. These springs appear to be among those which went dry in 1936 or 1937. The springs were reported to be completely dry in April 1941. Pl. Ex. 51 contains a photograph and testimony showing them to be still dry in 1959.

D. Morillo Springs. These springs were among those which went dry in 1936 or 1937.[30/]

E. Juaro Canyon Springs. These springs also were among those which went dry in 1936 or 1937. The Supervising Engineer for the Indian Irrigation Service reported that these springs were absolutely dry when he inspected them in June 1940 and in April 1941--this in spite of heavy rains which preceded his 1941 inspection. Pl. Ex. 51 contains 1959 photographs showing the earlier improvements at these springs, which were

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30/ See Finding 12.A., infra, for the settlement made by the Metropolitan Water District for the loss of these springs.

dry at that time. The Soboba tribal spokesman, William Soza, testified that these springs were still dry when he visited them in 1962. The springs are only a few hundred feet from Gregg Springs which were also in Juaro Canyon, but just outside of the reservation. (See Finding 12.B., infra, for the settlement made by Metropolitan Water District with the owners of Gregg Springs for their claims of spring loss due to the San Jacinto Tunnel.)

F. Segundo Springs. These springs were among those which went dry in 1936 or 1937. All five of these springs were dry when visited by the Indian Irrigation Service Engineer in June 1940 and April 1941. Photograph No. 8 in Pl. Ex. 51 purports to show the dry site of these springs in 1959. These springs were still dry when visited by Soboba tribal spokesman William Soza during the winter and summer of 1962.

G. Green Springs. These springs reportedly were dry in 1959, and presumably had dried up with the other springs in 1936 or 1937.

H. Resvaloso Springs. The five springs in this group began to fail in 1936 and were completely dry by 1937. The homesite at these springs was abandoned in 1936 when the springs failed to give enough water for continued crop irrigation. The Soboba Tribal spokesman, Mr. William Soza, lived at the Resvaloso springs from 1963 through the period of the Indian Claims Commission's visit in August 1966. The springs were still dry during that period. Mr. Soza hauled water in a

tank truck from the Valley Vista area, across the San Jacinto River from the reservation.

I. Joe Estrada Springs. These springs consisted of three cold water springs, one hot spring, and one mixed hot and cold water spring. It appears that two of the three cold water springs began to decline in 1936. Those two cold water springs were completely dry when inspected in June 1940 and April 1941. The third cold water spring had produced a quart of water per minute for years prior to 1940. It began to dry up about July 1, 1940, after which date its discharge became so small that it was no longer used. This spring showed some sign of revival in 1941 but was completely dry when inspected in 1959.

The warm water spring produced about three or four quarts per minute in June 1940 and in April, 1941. By 1959, this spring had dried up into a small cattail marsh about a foot deep.[31/] The marsh was in much the same condition on the Commission's inspection in August, 1966.[32/]

The hot spring in this group produced about eleven gallons per minute prior to 1937. By 1939, its discharge had decreased to only one gallon per minute. In 1940, two families still lived near this

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31/ Photograph No. 5 in Pl. Ex. 51 depicts this marsh in 1959, keyed to the caption, Estrada Spring No. 3.

32/ 1966 Tr., Vol. 5, p. 258-37.

spring, which was described as a soft water spring. They used its waters for domestic purposes, and for irrigating up to one acre of land. The Metropolitan Water District alleged that the spring produced 3.26 gallons per minute in March 1941. To conserve the reduced flow of this spring after the San Jacinto Tunnel, a small, rectangular, roofed over, masonry reservoir was built within the larger, earth dam reservoir at this spring.[33/] In 1959 a small trickle of water still flowed through a pipe from the spring into the masonry reservoir. The larger earth reservoir and the irrigation ditch leading from it were then dry and overgrown with dry weeds.[34/]

The hot spring continued to produce a slight trickle of water when inspected in 1963, 1965, and 1966. In 1966 the flow was only an intermittent trickle. Although this was definitely a hot spring, its flow was insufficient to heat the pipe at that time.

The fact that the hot spring continued to flow so long confirms the testimony of witnesses that hot springs were not as quickly or as drastically affected by the San Jacinto Tunnel as were the cold water springs.[35/]

33/ 1966 Tr., Vol. 4, pp. 216, 217.

34/ Photograph No. 3, Pl. Ex. 51; 1966 Tr., Vol. 5, p. 217.

35/ 1966 Tr., Vol. 5, p. 258-49; 1966 Tr. Vol. 7, pp. 346, 347, 352, 353.

J. Bee Canyon Springs. A Soboba Indian witness testified in 1959 that the Bee Canyon Springs dried up after the San Jacinto Tunnel aqueduct went through. Soboba tribal spokesman William Soza testified in 1965 that these springs were still dry but that some moisture could be found by digging in a deep gully sixty feet vertically below the spring site.

K. Springs In Tract 8. The numerous springs in Tract 8 of the Soboba Indian Reservation dried up principally in 1937. The irrigation reservoir and the domestic reservoir in Tract 8 were largely spring fed. Reportedly use of these reservoirs was discontinued in 1934, when the Civilian Conservation Corps installed an 80,000 gallon domestic water storage tank two miles above the hospital along Castile Canyon Road. One Soboba Indian who had irrigated five acres of apricots, row crops and alfalfa from the irrigation reservoir, testified in 1959 that the reservoir dried up before World War II. Another Soboba Indian who had had from three to eight acres of apricots in Tract 8 testified in 1959 that the irrigation reservoir in Tract 8 dried up about the time the San Jacinto Tunnel aqueduct went through.

Pl. Ex. 51 contains 1959 photographs (Nos. 6 and 11) showing two groves of dead apricot trees in Tract 8, which perished for lack of water. Photograph No. 10 in Pl. Ex. 51, is a 1959 view of the dry Dolores Watta or Isabel Arrietta Spring, northeast of the Hospital in Tract 8.

L. Cienegas. With but two possible exceptions, the cienegas on the Soboba Indian Reservation dried up during or immediately following

the construction of the San Jacinto Tunnel. The possible exceptions are the cienega below the hospital in Tract 8, which was already dry or nearly dry in 1930; and the cienega or marsh which developed with the decline of the warm water Joe Estrada Spring (see Finding 11.I., supra).

M. Wells. The two-hundred foot deep irrigation well which was drilled in Tract 8 in the early 1930's, was located on the valley floor of the San Jacinto River. Water from this well was pumped as needed into the irrigation reservoir to supplement the natural flow of the cienega and springs which fed the reservoir. The water was used by thirty-five families for irrigating approximately 200 acres in Tract 8.[36/]

The water level in the irrigation well dropped from twelve feet below the top of the casing in 1935, to sixty feet in 1948. The decline was steady except during the high rainfall year of 1938, when the water rose to ten feet from the casing top.

A domestic well was drilled in 1939 on a small bench just above the irrigation well. The water table in this well was essentially the same as in the irrigation well, and showed the same decline.[37/] This domestic well went dry in 1949.

36/ See Finding 19.A., infra.

37/ However, the California Department of Water Resources reported that the 1951 ground water level along the San Jacinto River bed, roughly between the mouths of Indian Creek and Poppet Creek, varied from one hundred feet, to fifty feet, to two hundred feet below the surface. This refutes the conclusion of the B.I.A. Engineer that the water table was level beneath the Soboba Indian Reservation (Pl. Ex. 44, p. 18).

The domestic water supply was then drawn from the irrigation well, which declined further to a point where its pump had to be lowered. The irrigation well was ultimately abandoned. One of several Indians who were allowed to use the declining well for irrigation reported that it supplied enough water for his 8 acres of apricots and 2 acres of row crops until 1953. Thereafter he was unable to obtain water and his trees died. The well reportedly still held some water in 1955.

In 1964 the Bureau of Indian Affairs drilled a new well in Tract 8 near the baseball field and reservoir. It failed to produce a usable amount of water.

Soboba Indian witnesses testified in August 1965 that a well supplying domestic water had been in operation on the reservation until a few months previously, when it had failed. At that point the Fruitvale Mutual Water Company 38/ began furnishing domestic water to the reservation from an off-reservation well located across the San Jacinto River from the reservation.

The San Jacinto Tunnel was a material causative factor in the drying up of wells and in the declining water table on the Soboba Indian Reservation. 39/

38/ The Fruitvale Mutual Water Company was the successor in interest to the Citizens' Water Company, which had entered into the 1920 agreement with the defendant over water privileges in Tract 8. See Finding 4, supra.

39/ The conclusion of the B.I.A. Engineer that the tunnel had no effect on the water surface in the wells, and that the dropping water table beneath the reservation was due solely to overdraft pumping of subsurface water, appears to be patently in error (Pl. Ex. 44, p. 19). Cf. statement of plaintiff's expert, Dr. Norman H. Brooks, Professor of Civil Engineering, that whereas the tunnel had a slight effect on the added decline of wells in the San Jacinto Valley, the local effect was severe (1965 Tr., p. 114).

12. The Defendant Was Aware That M.W.D. Settled Numerous Claims For Damages From the San Jacinto Tunnel.

There follows a synopsis of settlements made by the Metropolitan Water District of claims for water lost as a result of the San Jacinto Tunnel. The defendant was aware of these settlements shortly after they were made. Pl. Ex. 44, pp. 67 through 98.

A. Morillo Springs On The Soboba Indian Reservation. On January 19, 1938, the Metropolitan Water District of Southern California entered into an agreement with the Soboba Tribal Committee, and Rufina Morillo, to settle the latter's claim for interference with the flow of the "Morillo Spring". As full settlement, M. W. D. agreed to provide Mrs. Morillo with a used, 1936, Ford, 1/2-ton pick-up truck, and a water tank of not less than 150 gallon capacity. The value of the tank and truck was between $600 and $700. Allegedly the consideration also included $700.00 cash, although the written agreement makes no mention thereof.

The agreement was approved by the Assistant Secretary of the Interior on March 24, 1938.

B. Gregg Springs. These springs were located in Juaro Canyon, just north of the Soboba Indian Reservation and only a few hundred feet from the Juaro Canyon Springs on the reservation (see Finding 11.E., supra). The Gregg Springs discharged about 42.75 gallons per minute when they began to fail in 1935 and 1936. They ceased to flow in 1937. They had been used to irrigate five acres of olives, grapes, etc., on the Gregg Ranch. In settlement, M.W.D. purchased the entire ranch for $19,500.00. The size of the ranch is not in evidence.

C. Joe Estrada Spring. On December 9, 1939, M.W.D. entered into a settlement agreement with Soboba Indian, Joe Estrada, and his wife, for loss of water at "Warm Spring", located in Indian Canyon, just outside of the Soboba Indian Reservation. Mr. Estrada had filed on the water of this spring in 1912, claiming one hundred miner's inches of water, or 35,734 gallons every twenty-four hours. The settlement was for $700,00.

D. Morongo Indian Reservation. The southern portion of the Morongo Indian Reservation overlies the eastern half of the San Jacinto Tunnel. The southern edge of the Morongo Indian Reservation is about three and one-half miles north of the Soboba Indian Reservation. The Morongo Band of Mission Indians claimed failure of a spring, and the lowering of water in a well, as a result of the San Jacinto Tunnel. The claim was settled on April 19, 1939, by the Metropolitan Water District of Southern California, which agreed to pay $2,500 in full settlement of all past, present, and future damages to the water supply of the Morongo Band. The spring had produced three or four gallons per minute prior to failure. The Department of Interior Engineer who investigated the matter was unable to determine whether the water table in the well had been lowered as a result of the tunnel operations.

E. Wolfskill Company. M.W.D. paid the Wolfskill Company $62,500 for erosion and silting of grassland resulting from turning water out of the San Jacinto tunnel in large quantities.

F. Campbell Ranch. The Campbell Ranch was located northeast of the Soboba Indian Reservation.[40/] M.W.D. allegedly paid $50,000 for drying up of springs on the Campbell Ranch as a result of the San Jacinto Tunnel. The springs had produced 25 miner's inches or 323,180 gallons of water every twenty-four hours. The water had been used to irrigate walnut and orange groves. M.W.D. valued the buildings on the ranch at $4,650 and the trees at $1,920.

G. Jones Ranch. The Jones Ranch is located just north of the Soboba Indian Reservation and adjacent to the Campbell Ranch.[41/] M.W.D. reportedly paid the Jones Ranch $4,500 for drying up of springs as a result of the San Jacinto Tunnel. The springs allegedly produced about four and one-half miner's inches, or 58,172.4 gallons every twenty-four hours.

H. Sims Ranch. The Sims Ranch is located near the Jones Ranch. M.W.D. allegedly paid $1,000 or $4,500 to settle the Sims Ranch claims that the San Jacinto Tunnel dried up its springs which had produced four and one-half miner's inches, or 58,172.4 gallons every twenty-four hours.

40/ As noted in Findings 6.B., and 6.C.(4), supra, the Campbell Ranch allegedly used water from Segunda Springs on the Soboba Indian Reservation, and from the headwaters of Poppet Creek before it entered the reservation.

41/ As noted in Findings 6.B., and 6.C.(4), supra, the Jones Ranch allegedly used water from Segunda Springs on the Soboba Indian Reservation, and from the headwaters of Poppet Creek, before it entered the reservation.

I. Soboba Hot Springs Resort. The Soboba Hot Springs Resort is located along the San Jacinto River a mile downstream from the Soboba Indian Reservation, in the direction of the San Jacinto Tunnel. The resort had both a cold water and a warm water spring. Only the cold water spring was affected by the San Jacinto Tunnel. Its flow was reduced from one hundred gallons per minute to twenty-nine. The resort sued M.W.D. for $350,000 damages and reputedly received a settlement in 1944 for between $75,000 and $125,000.

J. Other Settlements. M.W.D. allegedly also settled claims for loss of springs on the Morris Ranch, located five and one-half miles from the San Jacinto Tunnel, and claims of the Bank of America, which owned one hundred and sixty acres adjacent to the Soboba Indian Reservation. The amounts of the settlements were not disclosed.

As stated in Finding 9 , supra, M.W.D. also settled claims of landowners near the tunnel exit by granting them the right to use water discharged from the tunnel during construction.

13. Efforts To Settle Soboba's Claims Against M.W.D., And To Supply Water To The Soboba Reservation.

A. Non-Legislative Means. On June 22, 1940, the Department of Interior, Indian Irrigation Service, instructed its Supervising Engineer, McCarthy, to conduct an investigation of Soboba's claims against the Metropolitan Water District. Mr. McCarthy's report is included in Pl. Ex. 44, as Appendix D.

The defendant's expert witness, Bureau of Indian Affairs Civil Engineer Mr. Frederick Varnum, testified that on April 23, 1941, the Soboba Tribal Committee passed a resolution demanding a minimum of $36,000, for which they would relinquish their claims for damages by M.W.D.

On February 27, 1946, the Assistant Secretary of the Interior wrote to the Metropolitan Water District of Southern California, demanding that the latter enter into negotiations with the Department to settle the claim of the Soboba Indians for damages from the San Jacinto Tunnel. As stated in Finding 8, supra, the letter also demanded that M.W.D. seal the leaks into the tunnel.

On September 1, 1948, the Assistant Secretary of the Interior appointed a 3-man committee to negotiate a settlement of the Soboba claims, with M.W.D. The Committee was composed of Walter V. Woehlke, Area Director of California Indian Agency; Paul F. Henderson, Regional Engineer of Portland, Oregon; and Geraint Humphres, Irrigation Counsel.

On February 6, 1953, a settlement conference was held between the Bureau of Indian Affairs representatives, M.W.D., and the Soboba Band. The Bureau's offer to settle in exchange for cash and replacement of water was countered with a lump sum payment offer by M.W.D. On January 29, 1954, the Area Director rejected M.W.D.'s offer and invited M.W.D. to submit an alternative proposal for restoring water to the reservation.

After further negotiations, the District made an offer on June 6, 1955, to pay $10,000 as settlement in full. In turn, on August 11, 1965, the Soboba Tribal Committee offered to settle for $100,000. An impasse was reached when the District made a final offer on September 20, 1955, to settle for $20,000.

On November 30, 1955, the Soboba Band requested the Secretary of the Interior to initiate suit against M.W.D. On March 16, 1956, the Department referred the Soboba claim to the Attorney General for legal action.

On April 30, 1958, M.W.D. offered a three party agreement under which it would pay the Soboba Band $30,000, and would annex 2,750 acres of the Soboba Indian Reservation without annexation fees, subject to reannexation by the Eastern Municipal Water District. The money would be used to help construct a water conduit to the reservation. The United States would finance construction of a distribution system on the reservation. The Indians would pay the cost of operation and maintenance, and would relinquish their claim against M.W.D. and Eastern.

On July 9, 1958, The Assistant Attorney General wrote to the Solicitor of the Department of the Interior, stating that no suit had been filed and expressing the belief that the evidence would not support the Soboba claim for $100,000.

In the fall of 1958, the Assistant Attorney General again wrote to the Solicitor, Department of the Interior, expressing doubt that the evidence would support a claim equivalent to the benefit they apparently would receive under the settlement proposed (apparently by M.W.D.). The letter conveyed consent to the Department of Interior to withdraw the request for legal action, in order that negotiations could be resumed, and promised no further action unless requested by Interior.

B. Legislative Means. The three-party agreement proposed by Metropolitan Water District on April 30, 1958, was in essence incorporated

by Congressman Tunney into H.R. 16017, on June 28, 1966. The bill died in the 87th Congress, 2d Session.

However, similar legislation was enacted on December 17, 1970, as Public Law 91-557 (84 Stat. 1465). The act authorized the Secretary of the Interior to approve a release agreement to be negotiated by and between the Soboba Band of Mission Indians, the Metropolitan Water District of Southern California, and the Eastern Municipal Water District. The agreement provides that the Soboba Band releases Metropolitan from all claims for damage to the water supply of the reservation arising from the San Jacinto Tunnel.

In turn the agreement provides that Metropolitan shall pay $30,000 to the Secretary of the Interior for the use and benefit of the Soboba Band.

The payment and release were to be effective upon annexation of the Soboba Indian Reservation lands to Metropolitan and Eastern and upon completion of a water service agreement authorized by section 2 of the Act.

Section 2 of the Act provides as follows:

> Sec. 2. The Secretary of the Interior and the Soboba Band of Indians are authorized to enter into an annexation and water service agreement with Eastern which provides, among other things, that --
>
> (a) The Soboba Indian Reservation lands may be annexed to Eastern and Metropolitan.
>
> (b) No annexation charge or back taxes regardless of form shall be made for said annexation.
>
> (c) The Secretary and Eastern shall jointly determine the additional new water supply and distribution facilities that shall be constructed and the existing facilities that shall be rehabilitated in order to provide domestic and irrigation

water to each consumer within the Soboba Indian Reservation. Subject to the appropriation authorization limitation in section 5, construction or rehabilitation of facilities to provide water service to the Soboba Indian Reservation shall be undertaken by Eastern, shall be financed by the United States, with Eastern providing such funds as the Secretary of the Interior and Eastern jointly determine represent a prorated share of joint-use facilities constructed outside of the Soboba Reservation, and with the $30,000 paid pursuant to subsection 1(a) being applied to the construction or rehabilitation. Facilities constructed within the Soboba Reservation shall be the property of the United States and facilities constructed outside of the Soboba Reservation shall be the property of Eastern.

(d) Eastern shall have the exclusive right, without charge, to use the supply and distribution facilities owned by the United States lying within the Soboba Indian Reservation, and Eastern shall assume the responsibility for maintaining and operating such facilities.

(e) Upon assumption of operation and maintenance of the system by Eastern following completion of the initial installation and rehabilitation work, any new service connections applied for by residents or consumers within the Soboba Indian Reservation, and any other additional water main extensions or facilities required for serving new development within the Soboba Indian Reservation, shall be financed by the applicants for such service, in accordance with the standard rules and regulations of Eastern, except as indicated in the next sentence. As long as title to the lands involved is held in trust by the United States, such new service connections or additional water main extensions or facilities may be financed by the United States to the extent agreed upon by the Secretary of the Interior. All such new service connections, additional extensions, or facilities shall be constructed by Eastern. All such new service connections, additional extensions, or facilities financed by parties other than the United States shall be the property of Eastern. All such service connections, additional extensions, or facilities financed by the United States shall be the property of the United States subject to exclusive use by Eastern without charge.

(f) Subject to the limitations of capacity and location of the jointly agreed upon facilities, Eastern shall deliver domestic and irrigation water to each individual consumer

within the Soboba Indian Reservation in accordance with the prevailing standard rules and regulations of Eastern and the provisions of the annexation and water service agreement.

(g) The retail rates applicable to water service within the Soboba Indian Reservation shall be mutually agreed upon by Eastern and the Secretary of the Interior, and shall be neither less than nor more than the estimated cost of such water service to Eastern, adjusted to reflect differences between estimated costs and actual costs in preceding rate periods. Eastern shall make collections for service in accordance with its prevailing rules and regulations and the Secretary of the Interior shall guarantee payment to Eastern of any delinquent bill for providing water service to lands held in trust within the Soboba Indian Reservation. Water service to a consumer shall be discontinued in accordance with the prevailing rules and regulations of Eastern when a bill for service becomes delinquent, and shall not be resumed as long as the bill is delinquent without prior approval of the Secretary of the Interior. The Secretary shall not approve a resumption of service to an Indian who is able to pay all or a portion of a delinquent bill and fails to do so.

(h) When title restrictions are removed from any part or all of the Soboba Indian Reservation land, the responsibility and duties of the United States under the annexation and water service agreement shall cease with respect to such land, except for the installation and rehabilitation obligations undertaken in subsections 2 (c) and (e) unless otherwise provided by Act of Congress. Title to the water distribution facilities serving such lands shall at that time become the property of Eastern and the obligation of Eastern to provide water service to such land at cost to the district shall likewise cease.

Sections 3 and 4 of the Act pertain to rights of way, and proscriptions against alienation and taxation. Sections 5, 6, and of the Act read as follows:

Sec. 5. There are authorized to be appropriated to carry out the provisions of subsection 2(c) not to exceed $316,658 in addition to the unexpended balance of sums

previously appropriated and available for a water supply to the Soboba Reservation and the $30,000 provided pursuant to subsection 2(c), plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicated by engineering cost indices applicable to the types of construction involved. There are also authorized to be appropriated such sums as may be necessary to make any payments guaranteed pursuant to subsection 2(g). No funds shall be appropriated pursuant to the authorization contained in this section until sixty calendar days (not counting days on which either the House of Representatives or the Senate is not in session because of an adjournment of more than three calendar days to a day certain) after the Secretary has submitted to the Congress a plan for the construction and use of the water supply and distribution facilities under subsection 2(c), and for the repayment of costs as provided in section 6, and then only if within said sixty days neither the House nor the Senate Committee on Interior and Insular Affairs disapproves by committee resolution the plan submitted.

Sec. 6. Nothing in this Act shall affect the right of the Soboba Indians to pursue their claim against the United States under the Act of August 13, 1946 (60 Stat. 1049), now pending in docket numbered 80A before the Indian Claims Commission, but any expenditures under subsections 2 (c), (e), and (g), and the $30,000 paid by the Metropolitan and used pursuant to subsection 2(c), may be used by the Commission either in mitigation of damages or as an offset against any award which the Indians may receive. If such amount exceeds the award, the excess, and all expenditures by the United States under subsections 2(c), (e), and (g) after the date of the award, shall be repaid to the United States, without interest, by deductions from revenues received by the Soboba Band or its members from the sale, lease, or rental of the lands, such deductions to be in amounts that will reimburse the United States within fifty years, or as soon thereafter as possible, according to estimates of the Secretary of the Interior, which estimates may be revised from time to time: Provided, That deductions in any one year shall not exceed 50 per centum of the revenues received in that year.

> Sec. 7. Notwithstanding any other provision of law, any assignment of land on the Soboba Reservation shall be modified, reduced in size, revoked, or otherwise limited by the governing body of the Soboba Band, or by the Secretary of the Interior if in his judgment the governing body fails to act effectively in order to assure that the benefits from the development of the land with water provided pursuant to this Act, other than for subsistence purposes, will accrue to the Band rather than to the assignee.

The record does not show the extent to which P. L. 91-577, or the agreement provided for therein, has been implemented.

14. Appropriations By Non-Indians Of Water From The San Jacinto Watershed.

The United States has permitted excessive and unreasonable diversions of water from the San Jacinto River watershed, upstream from, adjacent to, and on the Soboba Indian Reservation, to the injury of the Soboba Band.[42/]

Prereservation filings on Indian Creek, and postreservation appropriation of the entire flow of Poppet Creek during the irrigation season, are noted in Finding 6.B , supra. Similarly, non-Indian appropriation of water from Segundo Springs, located on the Soboba Indian Reservation, is noted in Finding 6.B.(4), supra.

The agreement between the Secretary of the Interior and the Citizens' Water Company, permitting the latter to appropriate water from Tract 8, and from parcels 1 through 5 of the Soboba Indian Reservation, is described in Finding 4, supra.

In addition to the above appropriations, the State of California, in 1918, granted to Fruitvale Mutual Water Company permits to appropriate 600 cubic feet per second, or approximately 434,400 acre feet of water

42/ Pl. Proposed Finding 7-C, p. 72 Pl. Brief. Cf. Def. Br., p. 169.

per year, from the San Jacinto River above Indian Creek.

The State of California Department of Water Resources estimated that the average inflow to the entire San Jacinto unit for the period 1922 through 1941 was 49,500 acre feet per year.[43/] It is thus apparent that Fruitvale Mutual Water Company was authorized to appropriate almost nine times the average annual inflow for the entire watershed.

Fruitvale Mutual Water Company was the successor in interest to the Citizens' Water Company. As noted in Finding 11 M., supra, when the last functioning well on the Soboba Indian Reservation failed in 1965 the Soboba Band found it necessary to obtain its domestic water supply from Fruitvale Mutual Water Company.

From 1927 through 1961, California authorized an additional twenty-eight appropriations from the San Jacinto watershed upstream from the Soboba Indian Reservation. These included fifteen authorizations to appropriate a total of 98,874 gallons per day, or 110.7 acre feet per year, from springs; and thirteen authorizations to appropriate a total of 2,627,641 gallons per day, or 2,942.8 acre feet per year, from streams and creeks.

It is not disputed that the defendant at all times was aware of the manifold appropriations in the San Jacinto watershed (and of the permits therefor) in violation of the plaintiff's water rights. Those appropriations upstream from the Soboba Indian Reservation materially depleted the reservation flow of Poppet Creek, Indian Creek and the San Jacinto River.

43/ Pl. Ex. 29: California Dept. of Water Resources Bulletin No. 15, Table 15, p. 29 (1959); Pl. Brief, p. 74.

The streams had recharged the groundwater beneath the reservation. The appropriations were a material causative factor in lowering the water table beneath the reservation, in the failure of the reservation wells, in the forced abandonment of reservation agriculture, and in making necessary the purchase of domestic water from an off-reservation source.

15. Appropriations Of Water In The San Jacinto Valley.

The United States has permitted excessive and unreasonable extractions of ground waters of the San Jacinto Valley, downstream from the Soboba Indian Reservation, to the injury of the Soboba Band. 44/

The Bureau of Indian Affairs Engineer who investigated the loss of water on the Soboba Indian Reservation reported in 1950 that the underground water table of the entire coastal area, between the San Jacinto Mountains and the ocean, had been dropping at an alarming rate in the previous several years as a result of an overdraft on the subsurface water supply. In his opinion the dropping water table beneath the lower part of the Soboba Indian Reservation was from the same cause. We have already shown that the water table was also lowered by the San Jacinto Tunnel and by excessive appropriations in the San Jacinto watershed adjacent to and above the Soboba Indian Reservation. See Findings 11 and 14, including n. 39, supra.

The California Department of Water Resources reported that the ground water levels in the San Jacinto unit had been lowered progressively by pumping from 1922 through 1959. The water table in the unit had dropped from 1520 feet in 1917 to nearly 1420 feet in 1950.

44/ Pl. Proposed Finding 7-D, p. 72 Pl. Brief.

The plaintiff's expert, Dr. Norman H. Brooks, testified in 1966 that the ground water basin of the San Jacinto River was still being lowered by heavy overuse in excess of the rate of replenishment. The defendant's expert, Mr. Fred Kunkle, testified in 1966 that the effect of pumping in the San Jacinto Valley prior to 1935 may have been "reaching up into the area of the springs" on the Soboba reservation, contributing to their drying up between 1935 and 1940. In his opinion larger pumps nearer the reservation would have more effect than distant pumps. He concluded, however, that pumping in the valley had a relatively minor effect in lowering the water table beneath the reservation and in causing the reservation springs to dry up.

We conclude that the long term excessive extraction of ground water in the San Jacinto Valley was a material causative factor in lowering the ground water table beneath the reservation, in the failure of the reservation wells, in the forced abandonment of reservation agriculture, and in making necessary the purchase of domestic water from an off-reservation source. It may also have had a minor effect in drying up the springs and cienegas on the reservation.

The defendant at all times was aware of the excessive extraction of ground water in the San Jacinto Valley and of its effect or probable effect on the plaintiff's water supply.

16. Drought As A Factor In The Loss Of Water On The Soboba Indian Reservation.

We have determined in Finding 10 that the period of construction of the San Jacinto Tunnel (1933-1939), and continuing thereafter to 1944, was a period of above average rainfall in the Soboba area. Both the plaintiff's expert witness, Dr. Norman H. Brooks, and the defendant's

expert, Mr. Fred Kunkle, testified that there was no drought during that period.

However, Mr. Kunkle testified that after 1944 all of southern California, including the San Jacinto Valley, had experienced a protracted drought. He named the drought, the tunnel construction, and pumping in the San Jacinto Valley, as causative factors in the lowered water table beneath the Soboba Indian Reservation, and in the drying up of some of the springs on the reservation. He was unable to say to what extent each of these factors was responsible for loss of water on the reservation.

It appears that the drought in the Soboba area was caused by the permanent loss of water through the San Jacinto Tunnel, by excessive appropriations of surface waters in the San Jacinto watershed, and by excessive pumping in the San Jacinto Valley. Water withdrawn from the watershed was removed from the local evaporation-precipitation cycle.

We find that the drought was not a factor in drying up the cold water springs on the Soboba Indian Reservation. The drought was more a consequence of, rather than a cause of, the drying up of the other springs; and of the drying up of the cienegas, streams, and wells; and of the other aspects of the lowered water table on the Soboba Indian Reservation.

17. Geology And Drainage Of The Soboba Indian Reservation And Surrounding Areas.

In its Bulletin No. 15, the California Department of Water Resources has described and mapped the underlying "soil" structure of the Soboba

Indian Reservation and the surrounding areas.[45/] It classifies the bulk of the reservation as "TQM" deposits of the Mt. Eden, San Timateo, and Bautista formations. These are described as "sand and gravel, partly consolidated, commonly containing much silt and clay; silt, clay, shale, and a little limestone."[46/] The California Department of Water Resources characterizes TQM materials as "nonwater-bearing". The term is defined as including all crystalline rocks plus sedimentary formations too impermeable to yield water in sufficient quantity for irrigation. The rocks of this group form the rims of the alluvial vallies of the Soboba reservation and the surrounding area.

The defendant's groundwater expert, Mr. Fred Kunkle, testified that the TQM deposits were alluvial, that on the Soboba Indian Reservation the depth of the TQM deposits to bedrock was in excess of two thousand feet, and that their yield (when saturated) was from three to seven percent water.

The California Department of Water Resources classifies most of the bed of Poppet Creek, and a wide shelf along its west bank, as "Qt" material, being older, water-bearing alluvium of unconsolidated to partly consolidated sand, gravel, and clay.

The Department classifies the bed of the San Jacinto River, part of the bed of Poppet Creek, the mouth of Indian Creek, and most of the

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45/ Pl. Ex. 29, p. 107, and Plates B-1A and B-1B following p. 125 (1959).

46/ Id., legend on plate B-1B.

San Jacinto Valley, as "Qal" material. This category consists of water-bearing alluvium of unconsolidated and poorly sorted sand, gravel and clay. It is the principal groundwater source in the San Jacinto Valley, and the source from which most of the irrigation wells drew their water. Mr. Kunkle, the defendant's expert, testified that "Qal" deposits may be expected to sustain wells yielding a thousand or two thousand gallons per minute.

The subterranian beds of Poppet Creek, the San Jacinto River, and the lower reaches of Indian Creek, are channelized, permitting the underground flow of these streams.

The San Jacinto Mountains north and west of the Soboba Indian Reservation are composed in part of TQM and Qal formations. They also include "bcm" formations of undifferentiated metamorphic rocks including schist, gneiss, quartzite and crystalline limestone; and "bcg" formations of undifferentiated granitic rocks.

A hot spring fault lies immediately north of the Soboba Hot Springs. The fault extends easterly from the Soboba Hot Springs, about three miles, at which point it is intersected by another fault which extends to the southeast. The faults lie along the northwest and eastern boundaries of the Soboba Indian Reservation. The defendant's groundwater expert, Mr. Fred Kunkle, testified that the fault between the San Jacinto Tunnel and the Soboba Indian Reservation acted as a partial barrier to water passing along the hydraulic gradient from the Soboba Reservation

to the tunnel. Pl. Ex. 47 is a sketch by the plaintiff's expert, Dr. Norman H. Brooks, showing seven fissures running from the reservation to the tunnel. Mr. Kunkle agreed that water may have run down or through such fissures or cracks from the reservation to the tunnel.

The San Jacinto Tunnel drained water not only from beneath the Soboba Indian Reservation but from the mountain mass overlying the reservation. It is thus insignificant as a drainage factor that the surface gradient from the reservation springs to the San Jacinto River was steeper than the subterranian gradient from the springs to the tunnel. Once the water which had fed the springs was intercepted by the tunnel, it was no longer a part of the reservation water supply or of the surface drainage water on the reservation.

18. Land Use Capability Classification Of The Soboba Indian Reservation.

Defendant's Exhibits 900 [47/] and 900-A are maps of the Soboba Indian Reservation, purporting to show land use capability classification. Def. Ex. 900-A was prepared from aerial photographs used by the United States Department of Agriculture, Soil Conservation Service soil scientists

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47/ Def. Ex. 900 is a 1920 map showing 200 "irrigable" acres in Tract 8 for which a water system had been developed, and 508 irrigable acres for which no water systems had been developed. The map does not show the additional acreages for which irrigation systems had been used at the various upland springs or at Pechawa dam or other areas along Indian Creek. See Finding 6.B and C , supra.

in a field survey of the reservation from 1953 through 1960. The soils were classified using the Standard Land Use Capability Classification of the Soil Conservation Service. The Classification utilizes Roman numerals from I to VIII, with the first numeral designating the highest use classification. The classification system takes into consideration such factors as steepness of terrain, susceptability to overflow, etc.

The defendant's expert witness, Mr. George T. Nordstrom, a soil conservationist for the Bureau of Indian Affairs, testified concerning the land use capability classification of the reservation, as shown on Def. Exs. 900 and 900-A. He stated that there are only two small parcels of Class I soils, totaling approximately ten acres, all located in Tract 8 of the reservation. Class I soils are deep, well drained, pliable soils with few limitations that restrict their use.

Mr. Nordstrom testified that there are approximately 546 acres of Class II soils scattered throughout the reservation, adjacent to the major water courses. One of the largest parcels of Class II soils occurs in Tract 8. Class II soils are defined as having some limitations which reduce the choice of plants or require moderate conservation practices.

There are 150 acres of Class III soils, also scattered within the reservation, adjacent to the main watercourses, i.e., the San Jacinto River, Indian Creek, and Poppet Creek. Class III soils are defined as having severe limitations which reduce the choice of plants or require special conservation practices, or both.

In addition there are four acres of Class IV soils, a small amount of Class VI soils, and "tremendous acreages" of Class VII and VIII soils. Class IV is the last classification used for normal farm cropping. Class IV soils are defined as having very severe limitations which restrict the choice of plants, and require very careful management, or both. Class VI soils are defined as having severe limitations which make them generally unsuited to cultivation and limit their use largely to pasture, range, woodland or wildlife food and cover. Class VII soils are defined as having very severe limitations making them unsuited for cultivation and restricting their use largely to grazing, woodland, or wildlife. Class VIII soils and rock outcroppings are defined as having limitations that preclude their use for commercial plant production, and restrict their use to recreation, wildlife, water shed, or esthetic purposes. Classes VII and VIII are predominatly the mountainous portions of the reservation.

The classification system used by the Soil Conservation Service is geared to mechanized agriculture, as contrasted to hand cultivation and harvesting. Soils on which common field crops can be cultivated and harvested only by hand are not placed in Classes I through IV. The System does not take into consideration the intensive amount of agricultural care used by the Soboba Indians, which made it possible for them to raise a variety of crops on even Class VIII soils. For example, Corn Patch Springs, Morillo Springs, and Juaro Canyon Springs, were utilized to irrigate from 11.5 to 59 acres of a variety of fruit trees and of row crops,

including corn and beans, for self use and for sale (Finding 6.C.(1), (2), and (3), supra). Yet the Soil Conservation Service classified all of the land at these springs as Class VIII. Similarly, although the Soil Conservation Service classified the land at Resvaloso Springs as Class III and Class VIII, Finding 6.C.(6), supra, shows that eighteen acres of that land produced grapes, apricots, peaches, olives, oranges, melons, grain and early row crops, including corn and potatoes. In a like manner, the Soil Conservation Service classified the land at the Joe Estrada Springs as Class VII, whereas Finding 6.C.(7), supra, evidences that in addition to terraced fruit orchards there, the Indians tilled two fields of up to thirty-two acres. The crops raised included pears, cantaloupes, and other melons.

The defendant's expert, Mr. Nordstrom, testified that the Class VI designation, as unsuited to cultivation, should not be taken too literally. He stated that in southern California Class VI land was cultivated extensively and that both Class VI and Class VII were suitable for citrus and avocado trees. Extensive citrus and avocado groves were noted on Class VI soils just outside of the Pauma Indian Reservation in the San Luis Rey Valley. Mr. Nordstrom testified that the same crop possibilities existed with Class VI and Class VII soils on the Soboba Indian Reservation.

In 1962 The Bureau of Indian Affairs Area Director stated that in the past more then 300 acres had been irrigated on the Soboba Indian Reservation and that in addition perhaps 500 or 600 additional acres could be irrigated

if water were available.[48] We find that the maximum of 900 irrigable acres thus obtained (300 plus 600) is a reasonably accurate determination of the amount of practicably irrigable land on the reservation prior to 1936.[49]

19. Land And Water Use On The Soboba Indian Reservation.

a. Crop Raising. The evidence relating to the number of acres irrigated and the amount of water used for irrigation on the Soboba Indian Reservation contains many contradictions.

Mr. Pinkerton, an electrical engineering graduate student in 1959, was employed then by the plaintiff's expert, Dr. Brooks, to investigate facts on the Soboba Indian Reservation. Mr. Pinkerton estimated that during the years 1930 through 1935 the numerous small irrigated plots in Tract 8 totaled an absolute minimum of 68 acres. Pinkerton's after the fact estimates of former irrigated acreages appear to be consistently lower than the estimates by the Indians.[50] In this he appears to have erred. The probable sources of error are several. He tended to count only flat land, and he counted

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48/ Def. Ex. 642 and 1966 Tr., pp. 878-879.

49/ The plaintiff's expert, Dr. Brooks, estimated that the amount of water used for the average assortment of crops on the Soboba reservation was 3 to 5 (or an average of 4) acre feet per acre per year. On this basis, which we find reasonable, the water duty on the 900 practicably irrigable acres would be 3,600 acre feet annually. The irrigation duty of 1/2 miner's inch per acre used by the Department of Interior District Counsel, Mr. Humphreys, would result in 6,516 acre feet per year.

50/ Pl. Ex. 51: Pinkerton Report, pp. 4, 6, 7. Note also Mr. Pinkerton's estimate of only 8 irrigated acres at the Joe Estrada Springs compared with the Indian estimate of 32 acres. Finding 6.C. (7), supra.

only acreage which he could personally verify as having been irrigated.[51] His survey however was made many years after the springs and other sources of irrigation water had dried up, and when there was little to show the extent of the former irrigated tracts other than the vestiges of abandoned irrigation works, terraces, and dead fruit trees. In some cases even the dead orchards had long since been consumed for fire wood. In such circumstances the word of the Indians who had first hand knowledge of the size and location of former irrigated fields and orchards, and of the products raised, is entitled to great weight.

Mr. Pinkerton admitted that the old irrigation reservoir in Tract 8 may have irrigated some area around it, but he did not include such acreage because he could not prove it had been irrigated. Similarly, although his Indian informant stated that Juaro Canyon Springs had irrigated from 5 to 15 acres, Mr. Pinkerton did not count this acreage because he ". . . was not able to find any evidence of this."[52]

Plaintiff's expert, Dr. Brooks, testified that prior to the San Jacinto Tunnel a total of between 90 and 100 acres were irrigated on the Soboba reservation. His estimate was based on Mr. Pinkerton's estimate. Dr. Brooks estimated that the water duty for the average assortment of crops was 3 to 5 acre feet per year for a total annual irrigation consumption of from 300 to 500 acre feet.

51/ Id., and 1966 Tr., p. 218.

52/ Pl. Ex. 51, p. 15; and 1966 Tr., Vol. III, p. 188.

We find that Dr. Brooks' estimates of the total acres irrigated and hence of the total amount of water used is too low.[53/]

The defendant's expert, Mr. Frederic H. Varnum, a civil engineer for the Bureau of Indian Affairs, testified that one report he'd found (ostensibly from the Bureau of Indian Affairs) indicated that in 1909 there were between 350 to 400 acres in cultivation on the Soboba Indian Reservation. This included both irrigated and dry farmed areas.

The Soboba Indians' use of land and water outside of Tract 8 has been touched upon in Findings 6, 11, and 18, supra. Estimates of the amount of land irrigated outside of Tract 8 vary from a minimum of 25 acres to a maximum of 37 acres along Indian Creek and a maximum of 110 acres at the various springs and cienegas.[54/] We find that the resultant average of 86 acres [25 plus (37 plus 100) equals 172 ÷ 2 equals 86] is a reasonable approximation of the number of acres irrigated outside of Tract 8 annually prior to 1936.

As noted in Finding 18, supra, the Area Director of the Bureau of Indian Affairs stated in 1962, that in the past more than 300 acres had

53/ Cf. Finding 6.C.(9), supra, showing that a single irrigation spring in Tract 8 produced an estimated 50 miner's inches of water per second. This constitutes a cubic foot per second or 724 acre feet per year. To this must be added the irrigation consumption from all of the other springs, cienegas, streams and wells on the reservation.

54/ The Henderson Report (Pl. Ex. 44, p. 37) errs in estimating that a maximum of 25 acres could have been irrigated by springs outside of Tract 8. The Henderson Report did not consider the cienegas at all. Mr. Henderson took his 25 acre figure from a 1940 report by an Indian Service Irrigation Engineer. Mr. Pinkerton's estimate of 25.5 acres irrigated by springs outside of Tract 8 appears to have been influenced by the Henderson Report. The figures are contradicted by Indian testimony. Cf. the incredible statement by the Dept. of Interior District Counsel, Humpherys, at p. 45 of the Henderson Report, that the total spring flow on the reservation was about 7 miner's inches and that probably no more than 10 acres could have been irrigated in any one year.

been irrigated on the Soboba Indian Reservation. We assume that this occurred prior to the water losses from the San Jacinto Tunnel in 1936. If we subtract from this total of 300 acres the average of 86 acres irrigated outside of Tract 8 we are left with 200 plus irrigated acres in Tract 8. The defendant alleges that in 1920 200 acres were irrigated in Tract 8 alone.[55/] Accordingly, we find that the 200 acre figure is an accurate approximation of the amount of land irrigated annually in Tract 8 prior to 1936.[56/]

We find that at least 286 acres (200 in Tract 8, plus 86 outside of Tract 8) were irrigated annually prior to 1936. The irrigation duty on 286 acres, at 4 acre feet per acre, was 1,144 acre feet annually. (Using the 1/2 miners inch per acre duty utilized by the Department of Interior District Counsel, Mr. Humphreys, the duty would be 2,070 acre feet annually.)

In 1948, the Bureau of Indian Affairs area Irrigation Engineer, Mr. Henderson, reported that the thirty-five families living in Tract 8 were attempting to farm "something over 100 acres", with water from the 1935 well.[57/] The defendant's expert, Mr. Varnum, testified that from 1940 to 1960 an average of 100 acres per year were irrigated on the reservation,

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55/ Def. Brief, p. 91. See also n. 47, supra, discussing Def. Map Ex. 900, showing 200 irrigable acres in Tract 8.

56/ In the 1930's some members of the band attempted to establish citrus groves but could not raise the necessary capital. Commercial lending institutions would not lend money on trust lands, and the Bureau of Indian Affairs loan program was inadequate.

57/ Pl. Ex. 41: Henderson Report, p. 1.

with a maximum of 134 in 1953, and a minimum of 87 in 1964.[58] There was no irrigation water available on the reservation in 1965.

It appears probable that if needed water had been available from the beginning of 1953 to date the band would have continued to irrigate at least 200 acres in Tract 8 and 86 acres outside of Tract 8, with the same water duty as before. In 1966, long after all irrigation water had disappeared on the reservation, at least several Indians were experimenting with growing orange trees on the reservation with water hauled in a tank truck from outside the reservation.[59]

In 1965 the tribal spokesman testified in a hearing before this Commission that if there were sufficient water he would go into avocados. Based upon his personal knowledge of the other tribal members, he was pretty sure that most of them would at least ". . . raise their own gardens, and perhaps get back to the orchards."[60]

The crops raised in Tract 8 included walnuts, apricots, grapes, melons, alfalfa, and row crops such as potatoes, corn, and beans. One Indian interviewed by Mr. Pinkerton reported leasing his 8 acres to others, including a potato grower, who obtained water for two years prior to 1939, by installing an extra pump on an existing well. Another Indian who had 5 acres of apricots, row crops and alfalfa in 1930 reported that he got

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58/ We assume that the same average applies to the period from 1936 to 1940.

59/ 1966 Tr., Vol. 5, pp. 258-22, 258-23. See also n. 56, supra.

60/ 1965 Tr., Vol. VII, pp. 806-807.

five tons of apricots a year from his plot. Other crops raised on the reservation included peaches, pears, oranges, olives, and grain.

Loss of water on the reservation also made it impossible to farm the portions of the reservation which previously had been dry farmed.

B. Stock Raising. Cattle were the principal livestock raised on the Soboba Indian Reservation. The 1950 report by the Bureau of Indian Affairs Area Irrigation Engineer, Mr. Henderson (Pl. Ex. 44), shows that prior to the San Jacinto Tunnel approximately 4,000 acres of the reservation were used as grazing land. Appendix K of the Henderson Report contains a 1950 letter to the Bureau of Indian Affairs Area Director from a member of the Secretary of Interior's Committee on the San Jacinto Tunnel claims. The letter discusses cash damages from the tunnel, based on the loss of one-half of the grazing capacity on the 4,000 acres of grazing land on the reservation. Appendix A of the Henderson Report contains a 1945 memorandum from the Bureau of Indian Affairs District Counsel to the Commissioner of Indian Affairs, discussing the 2,000 acres of Soboba grazing land that were dried up as a result of the drilling of the San Jacinto Tunnel.

In May 1943 the government Fire Guard at Pala, California, wrote to the Superintendent of the Mission Indian Agency concerning a recent field inspection of the grazing area of the Soboba reservation. Only two thousand acres were inspected. Under the then existing conditions, where water was available for only a very short portion of the year, the range was practically useless. As a result of loss of water necessary to support either the edible vegitation or the cattle, the

range was reverting to semi dense to dense chaparral, with value only as watershed cover.

We find that the use of 4,000 acres of rangeland was lost to the Soboba Band through loss of water resulting from the San Jacinto Tunnel, water appropriations in the San Jacinto watershed, and pumping in the San Jacinto Valley.

Soboba Indians interviewed by the government Fire Guard at the time of the 1943 range inspection related that prior to the springs drying up the number of cattle that were grazed in that area varied from a low of 15 to 20, to as many as 80 to 100 head. It is not clear whether these figures applied only to the 2,000 acres inspected, or to the entire reservation.[61/] We assume, as did the Bureau of Indian Affairs District Counsel in 1945, that they applied only to the 2,000 acres inspected in 1943. No information is in evidence as to the carrying capacity of the entire 4,000 acres of rangeland prior to the San Jacinto Tunnel. We find by inference however that since up to 100 head were grazed on half of the range the pretunnel range capacity of the entire Soboba reservation was well in excess of 100 head of cattle.

61/ The Fire Guard estimated, on the basis of the then deteriorated condition of the range on the 2,000 acres inspected, that the range would only support 40 head of cattle if water were available. We assume that this applies only to the 2,000 acres inspected, and not to the 4,000 acres of former rangeland. The Bureau of Indian Affairs District Counsel stated in 1943 that the previous range survey, inferably earlier in 1943, established the carrying capacity for the entire Soboba reservation at 77 head of cattle. See Pl. Ex. 44: Henderson Report, pp. 40, 46, 47, 120, 125 (1950).

There is no evidence of record as to the type of cattle raised on the Soboba reservation, whether they were all beef cattle or included milk cows as well, or what the ownership of the cattle was. Nor is there any evidence of record as to the value of the cattle to the Soboba Band in terms of food or cash income.

The record does not show precisely how much water was used in stock raising. The cattle watered at the various streams, springs, and water holes. As shown by Finding 6.C.(3), supra, after 1934, Juaro Spring, which some time previously had produced 1-1/2 miner's inches of water, was fed into a reservoir for fire fighting and stock watering. Possibly another miner's inch of water was consumed by stock from the other springs. We find that a minimum of 2 miner's inches of water (from all sources) was used for watering livestock. Although the amount of water actually consumed by livestock was relatively small, its unique value lay in the fact that it was naturally located at numerous sites, making it readily accessible to stock scattered across the reservation.

C. Other Uses.

(1) Households. As shown by Finding 5, supra, reportedly there were nearly 200 Soboba Indians in 1891. In 1950 the Bureau of Indian Affairs reported that about 116 Indians were still living on the reservation. We assume that there were at least that many living on the reservation prior to the loss of water from the San Jacinto tunnel in 1936.

The Eastern Municipal Water District's 1965 Engineering Report[62/]

62/ Def. Ex. 426.

on Soboba's water requirements postulates an annual per capita domestic water requirement of approximately .20 acre feet.

We find that the annual domestic water requirement prior to 1936 was 23.2 acre feet (116 people times .20 acre feet per person equals 23.2). This equals slightly less than 2 miner's inches.[63/] Approximately half of this came from springs.

By 1965 the Indian reservation population had grown to 234 individuals. The future domestic water requirement of the reservation based upon a stable population of 234 individuals would be 3.2 miner's inches. A growing Soboba population would require a proportionately greater supply.

(2) Hospital. From the early 1920's until it was abandoned for lack of funds in 1947, a United States Indian Service hospital was located in Tract 8, just north of the Indian village. The hospital was staffed by a resident doctor and three resident nurses. All of the Indians of Southern California were entitled to treatment at the hospital, which contained about 37 beds, with one wing for men and one for women.

Pl. Ex. 53 is a 1936 photograph of the hospital grounds, showing palm trees, a large shade tree and a lush, grass covered lawn. For a time the hospital had its own vegetable and flower gardens. These were abandoned and the hospital grounds were allowed to deteriorate due to a water shortage, sometime before the hospital itself was abandoned. Pl. Exs. 52A and B., are photographs of the hospital, after it was

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63/ A miner's inch in southern California equals 12,927.2 gallons every 24 hours or 14.48 acre feet per year. (23.2 acre feet ÷ 14.48 acre feet equals 2 miner's inches.) See also n. 15, supra.

abandoned, showing some trees still living, others dead, and the lawn reverted to dry weeds and grasses.

The hospital had been supplied with water from the irrigation well and the domestic well in Tract 8. There is no evidence of record of the amount of water used by the hospital.

(3) Recreation. The streams and reservoirs on the reservation were utilized by the plaintiff for fishing, swimming, and bathing. See Findings 2, and 6.A , B , and C.(9), supra.

CONCLUSIONS OF LAW

Upon the foregoing Opinion and Findings of Fact, the Commission concludes as a matter of law that:

1. When the defendant gained sovereignty over the plaintiff on February 2, 1848, under the Treaty of Guadalupe Hidalgo (9 Stat. 922), the plaintiff had Indian title water rights to use the waters appurtenant to the lands it used and occupied, in quantities sufficient to maintain its modified aboriginal life style of irrigation farming, raising of lifestock, and hunting, fishing, and gathering.

2. The plaintiff's Indian title water rights to all but Tract 8 of the lands which now comprise its reservation were wrongfully extinguished by the defendant, without compensation, on March 3, 1853, under the Act of March 3, 1851 (9 Stat. 631).

3. Said extinguishment by the defendant, of plaintiff's Indian title water rights to all but Tract 8 of the lands which now comprise its reservation, was a less than fair and honorable dealing within

the meaning of §2(5) of the Indian Claims Commission Act (25 U.S.C. §70).

4. The plaintiff's Indian title water rights to Tract 8 were recognized by the Mexican Government.

5. The plaintiff's Indian title and other water rights claims were not settled in Indians of California v. United States, Docket 31, et al., 8 Ind. Cl. Comm. 1 (1959), 13 Ind. Cl. Comm. 369 (1964), but were expressly excluded, to be decided in this proceeding. Id., 13 Ind. Cl. Comm. 369, 378-379, 385-386 (1964).

6. The effect of Harvey v. Barker, 58 Pac. R. 692 (1899), aff'd, Barker v. Harvey, 181 U. S. 481 (1901), holding that a United States patent to a holder of a Mexican land grant passed clear title and was conclusive against Indians who failed to present a claim under the Act of March 3, 1851, placed a cloud upon the plaintiff's Indian title water rights to Tract 8.

7. The agreement of January 6, 1920, between the Secretary of the Interior and Citizens' Water Company constituted acknowledgement by the United States and Citizens' of the plaintiff's Indian title water rights to Tract 8, as well as of the plaintiff's Winters Doctrine water rights, and that acknowledgement, in effect, constituted an exception to the rule of Barker v. Harvey.

8. Prereservation, non-Indian appropriations of water on Tract 8, which in any way impaired the plaintiff's use and occupancy of Tract 8, were infringements of plaintiff's Indian title water rights to Tract 8, and as such did not give rise to any adverse rights, and in no way constituted prior appropriative rights in limitation of plaintiff's subsequently acquired Winters Doctrine water rights to Tract 8.

9. The plaintiff has Winters Doctrine water rights to water and use of water from unappropriated sources naturally available to the Soboba Indian Reservation, at the times the reservation was established, sufficient for:

a. stock raising to the then natural carrying capacity of the 4,000 acres of range land on the reservation;

b. irrigation farming of the 900 practically irrigable acres on the reservation;

c. household consumption and domestic use of its members resident on the reservation;

d. swimming, fishing, bathing, and other recreational use on the reservation;

e. operation and maintenance of a 37 bed hospital, including the vegetable and flower gardens appurtenant thereto;

f. firefighting on the reservation; and

g. any other municipal, business or commercial venture which:

(1) is economically feasible, and

(2) constitutes a beneficial use.

10. The Winters Doctrine applied to each part of the Soboba Indian Reservation as it was established in piecemeal fashion, commencing with the Executive Order of June 19, 1883.

11. The Winters Doctrine applies to all portions of the Soboba Indian Reservation, including Tract 8.

12. The Winters Doctrine applies to all unappropriated waters in, on, and pertinent or appurtenant to the Soboba Indian Reservation, including wells, springs, streams, and percolating and channelized ground water.

13. The Winters Doctrine, as it applies to the Soboba Indian Reservation, is paramount to the California law, including the California doctrines of riparian rights, appropriation, and percolating ground waters, and is paramount to such subsequently derived state rights of non-Soboba-Indian-Band appropriators.

14. The plaintiff's Winters Doctrine water rights may not be abrogated by prescription, laches, nor estoppel.

15. The defendant, at all times since gaining sovereignty over the plaintiff, under the 1848 Treaty of Guadalupe Hidalgo, has had a compelling moral obligation to protect and preserve the plaintiff's water rights against infringement by third parties, and to recover damages for and restoration of any water or use of water lost to the plaintiff by such infringement. This duty stems from the obligations imposed by:

a. Articles IX and XI of the Treaty of Guadalupe Hidalgo of February 2, 1848;

b. the Commerce Clause (Article I, §7, Cl. 3) of the United States Constitution;

c. the Indian Trade and Intercourse Acts;

d. Section 16 of the Act of March 3, 1851 (19 Stat. 631);

e. the Winters Doctrine;

f. Section 6 of the Mission Indian Relief Act of January 12, 1891 (26 Stat. 712);

g. the 1920 agreement between the Citizens' Water Company and the Secretary of the Interior; and

h. the fiduciary of guardian relationship assumed by the defendant toward the plaintiff in each of the foregoing, and in all of its relationships with the plaintiff.

16. The defendant has failed in its duty to protect and preserve the plaintiff's water rights.

17. The plaintiff's Indian title water rights to Tract 8 of the lands which now constitute its reservation were not lost or extinguished prior to the acquisition of Tract 8 as part of plaintiff's reservation, although said rights were grievously violated by third parties.

18. The plaintiff's Winters Doctrine rights to plaintiff's entire reservation, including Tract 8, have not been lost or extinguished, although they have been violated to the extent that 100% of plaintiff's bounteous supplies of naturally available water have been appropriated by third parties.

19. The sum total of the defendant's course of dealings with the plaintiff, in repeatedly obligating itself to protect the plaintiff's

water rights, in undertaking to protect those rights, and in its ineffective and dilatory action and inaction in respect to protecting those rights, and in obtaining indemnification for and restitution of water lost through infringement of those rights, constitutes less than fair and honorable dealings within the meaning of § 2(5) of the Indian Claims Commission Act (25 U.S.C. §70).

20. The defendant is liable to the plaintiff for its loss of water and loss of use of water, and for all demonstrative and non-speculative damages resultant therefrom and related thereto.

Jerome K. Kuykendall, Chairman

John T. Vance, Commissioner

Richard W. Yarborough, Commissioner

Margaret H. Pierce, Commissioner

Brantley Blue, Commissioner