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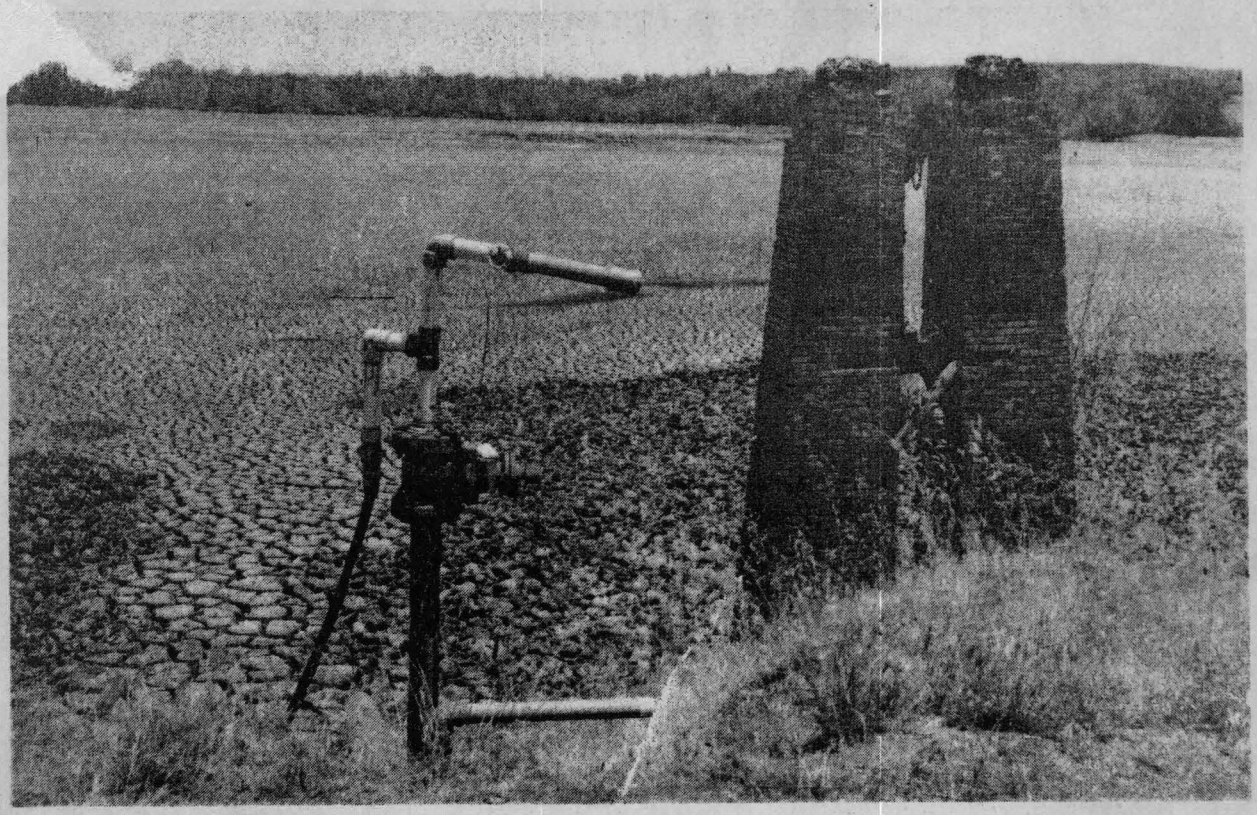
APPENDIX TO DROUGHT '77



DRY YEAR PROGRAM

STATE WATER RESOURCES CONTROL BOARD

Division of Water Rights

~~January~~ March 1978

050.11 DRY YEAR

STATE OF CALIFORNIA
Edmund G. Brown Jr., Governor

STATE WATER RESOURCES
CONTROL BOARD

John E. Bryson, Chairman
W. Don Maughan, Vice Chairman
W. W. Adams, Member

C. L. Whitney, Executive Director
Water Rights and Administration

Cover photograph: This is Bass Lake in El Dorado County in July, 1977, after two years of drought. The picture was taken from the top of the old Bass Lake dam, looking almost due east. The tower-like brick structures, 30 feet tall, are part of the old dam's outlet gate works, built around 1860. In a normal year only eight to ten feet of the structures would be visible. The pipelines and the siphon line served a veneer plant located due south of El Dorado Hills; they were removed in 1977.

— Photo by Bud Meyer, courtesy of Eldorado Irrigation District

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Opinion

APPENDIX TO DROUGHT-1977 REPORT

DRY YEAR PROGRAM

STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

March 1978

DRAFT

STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

Richard L. Rosenberger, Chief
Division of Water Rights

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INTRODUCTION

The purpose of this publication is to consolidate valuable data collected and computed by the Dry Year Team during 1977. The data is organized in the attached tables. The intent of the Division staff in preparing these tables is to document actions taken by the Division of Water Rights to implement the 1977 Dry Year Program. In addition, this publication would act as an excellent reference in future years, should the drought reoccur.

The scope of this publication is limited to critically impacted areas in the Central Valley of California. The tables present hydrologic routing studies made in the Sacramento-San Joaquin Basins including the Delta to satisfy water demands under different levels of water rights priorities.

As the natural water supplies and associated demands in the upper reach of the San Joaquin River from Friant Dam to the confluence with the Merced River are controlled and regulated by the United States Bureau of Reclamation (Bureau) under the Central Valley Project, this reach was not considered in the State Board's Dry Year Team activities.

To estimate the available water supplies and demands, the Sacramento and San Joaquin Basins were divided into the following three reaches:

1. Sacramento River Basin: Keswick Dam to Sacramento "I" Street Bridge.
2. San Joaquin River Basin: Confluence of the San Joaquin and Merced Rivers to the Delta Rim.
3. Sacramento-San Joaquin Delta.

RIPARIAN WATER RIGHTS

The riparian water rights exist by reason of ownership of land abutting upon a stream or body of water. As between riparian owners, priority of use establishes no priority of right, i.e., one cannot claim superior right merely because he used the water first. If there is insufficient water for the reasonable beneficial requirements of all riparian owners, they must share the available natural supply correlatively. Apportionment is governed by various factors, including each owner's reasonable requirement and use. The latter criteria was used extensively during the 1977 drought season to extend the use of available supply to satisfy riparian demand in the Sacramento-San Joaquin River Basins including the Delta.

ESTIMATION OF AVAILABLE WATER SUPPLY AND RIPARIAN DEMAND

Sacramento River Basin

The line sketch of the Sacramento River and its tributaries is shown in Figure 1. The water supply available for riparian users of the Sacramento River Basin results from natural flows of the Sacramento River and its major and minor tributaries. The available water supplies and riparian demands were estimated in accordance with the following procedure and/or assumptions.

Available Supply --

1. The natural flows available from the Sacramento River and its major tributaries, the Feather, Yuba and American Rivers, for the months of

March through September are shown in Table 1. The projected supply available for the months of October and November were obtained on October 12, 1977 from the Department of Water Resources' Snow Survey Branch.

2. To estimate supplies available from minor tributaries during 1977, proration factors were established by dividing 1977 forecasted natural inflow into the Shasta Lake and Oroville Reservoir by 1976 computed inflows. The supply proration factors are shown in Table 2.

3. The natural inflows available for use by assumed riparians on the Sacramento, Feather, Yuba, and American Rivers are shown in Tables 3 and 4.

4. Since the Department's projections for minor tributaries' contribution to the Sacramento River flows were not available, 1976 gaged flows were prorated to estimate 1977 minor tributary flows. The 1976 gaged flows were taken from the Department's Report "Sacramento Valley Water Use Survey-1976" (Survey). The monthly proration factors were established by dividing the projected 1977 natural inflows to Shasta Lake by 1976 recorded natural inflows. It was further assumed that all minor tributaries except Battle Creek would run dry by the end of May, 1977. Consequently, the estimated 1977 March flows of other minor tributary streams plus the flows prorated to April and May were made available to riparians. Based on the above assumptions, the computations showing contribution of flow from minor streams are shown in Table 3.

5. Prorated 1976 unmeasured accretions for the Sacramento and Feather Rivers reported in the Survey were assumed to be available to riparians. The computations are shown in Table 3 and 4 for the Sacramento and

Feather Rivers respectively. "Unmeasured accretions" as defined in the Survey are the computed quantities that make up the balance between measured inflows and outflows.

6. All measured return flows reported in the 1976 Survey were assumed to be not available for use by riparians during 1977.

7. Conveyance losses were not considered. It was assumed that these were accounted for in the Department's analysis of determining unmeasured accretions.

Riparian Demand --

1. The total irrigable riparian lands along the Sacramento River were taken from the Department's 1956 Cooperative Study reported in "Cooperative Study Program, Vol. I, March, 1957". These are shown in Table 3. The acreage of irrigable riparian lands along the Feather River was provided by the Department. Further, it was assumed that parcels abutting the Yuba River were riparian. The assumed irrigable lands were determined through the use of county assessor's maps. It was assumed that by riparians along the American River from Folsom Reservoir to the Sacramento River was negligible. The riparian lands for the Feather, Yuba and American Rivers are shown in Table 4.

2. It was assumed that 85% of the irrigable lands described above would be irrigated during 1977.

3. The duty of water used for irrigation was one cfs for 75 acres. The duty was arrived at by using data of 1976 measured diversions provided by the United States Bureau of Reclamation. No conservation factor was

applied. It was assumed that 1976 use accounted for conservation practices. Using this duty on the acreages determined in Item 2 above, the maximum monthly riparian demand for each river was calculated. These figures are shown in Tables 3 and 4.

4. Based on 1976 monthly diversions reported in the Survey, 1977 monthly demand factors were assumed to be 0.58, 0.71, 1.0, 0.95 0.94, 0.74, 0.34, and 0.15 for the months of March, April, May, June, July, August, September and October respectively. The plotted line in Plate 8 of the Survey showing March through October monthly diversions was extended to a demand factor of 0.05 for the month of November. The computed monthly demands for the Sacramento River are shown in Table 3, and for the Feather, Yuba and American Rivers in Table 4.

   The summary of available supply and riparian demand in the Sacramento Basin is shown in Table 5.

San Joaquin River Basin

The San Joaquin River Basin consists of the San Joaquin River eight major tributaries (Fresno, Chowchilla, Merced, Tuolumne, Stanislaus, Calaveras, Mokelumne and Cosumnes Rivers)and 15 to 22 minor tributaries. The schematic diagram of the Basin is shown in Figure 2. The available water supplies to meet riparian demand in the Basin consisted of natural inflow plus return flow as a consequence of using the natural supply. Following assumptions were used to compute available water supply and demands in the Basin.

Available Water Supply —

1. Projected monthly forecasts of natural flows (Table 1) made in the Department's Bulletin No 120-77: California Cooperative Snow Surveys for May, 1977 (Table 1) was the latest information available. The projected supply available during October and November of the water year 1977-78 was obtained on October 12, 1977 from the Department of Water Resources Snow Survey Branch.

2. Contribution of flow from minor tributaries is assumed negligible.

3. Return flow is assumed to be 20 percent for March and April, 10 percent for May and June, zero percent for July, August, and September, and 20 percent for October and November.

Riparian Demand --

1. In case of streams for which no study reports were available, all parcels abutting the stream were assumed riparian.

2. Assume riparian owners irrigated only 85 percent of their irrigable lands during the drought of 1977.

3. Efforts of local, state and federal agencies resulted in a 10 percent water conservation.

4. Average duty of water was assumed to be 1 cfs for 70 acres. Including conservation effort, the 1977 average duty worked out to be 1 cfs for 77 or say 80 acres.

5. Monthly peak use from some streams was advanced from the month of July

to the month of May. The estimated peak demand of a diverter during May was prorated for other months using monthly demand factors of 0.60, 0.70, 0.95, 0.95, 0.75, 0.35, 0.15, and 0.05 for the months of March, April, June, July, August, September, October, and November respectively.

6. Seepage and conveyance losses and/or unmeasured accretions in the Basin were not considered.

Following is a brief discussion regarding available supply and riparian demand on the major streams in the Basin.

Merced River (New Exchequer Dam to San Joaquin River) --

The New Exchequer Dam (Lake McClure) is controlled and regulated by Merced Irrigation District. The available water supply which is the summation of natural inflow to McClure Lake and return flow as a consequence of using natural flow on riparian land is shown in Table 6. Total riparian land in the reach is 7274 acres. The riparian acreage covers all parcels abutting the stream, and has been computed from the records of the Merced County Assessor's Office. The estimated riparian demand is compared with available supply in Table 6.

Tuolumne River (Don Pedro Dam to the San Joaquin River)--

Don Pedro Dam is controlled and operated by Turlock and Modesto Irrigation Districts. The available water supply to satisfy riparian demand is shown in Table 7. At the time of the study, information on riparian demand in the reach was not available. Four statements of water diversion and use on file with the Division were not considered adequate to account for riparian demand on the stream. As the physiography of the reach is similar to the

Stanislaus River reach, the riparian demand was assumed to be equal to that of the Stanislaus River. The riparian demand on the Stanislaus River is shown in Table 8. Table 7 compares riparian demand with available water supply for the Tuolumne River.

Stanislaus River (Goodwin Dam to the Delta Rim) --

Goodwin Dam is regulated by the Oakdale and South San Joaquin Irrigation Districts. The available supply for use by the riparian owners along the stream reach is shown in Table 8. The Bureau made a study regarding riparian demand. The peak demand during July and other monthly demands were advanced by two months. The peak demand was prorated to estimate demands for months of August through November. The computed demand and available supply is shown in Table 8.

San Joaquin River (Confluence of Merced and San Joaquin Rivers to the Delta Rim - Vernalis)--

Total riparian land in the reach is estimated to be 26,300 acres. The riparian acreage covers all the parcels abutting the stream and has been computed from records in the assessor offices of the respective counties. The estimated riparian demand and available supply is shown in Table 9.

Calaveras River (New Hogan Dam to Delta Rim)--

Calaveras River is 80 miles long (45 miles in mountains and 35 miles in the valley) and drains a watershed of 633 square miles. The north and south forks join seven miles upstream from New Hogan Dam, i.e. approximately 36 miles from the mouth of the river. The River's flow regime is dry for a few months in the summer. Calaveras River stream system is operated to serve Calaveras, Stanislaus, and San Joaquin Counties. New Hogan Dam is

regulated by the U. S. Corps of Engineers.

The service area is 597,000 acres with firm water supply commitments of 39,900 acre-feet.

As the Department's forecast for the Calaveras River was not available, the natural inflows during the 1977 irrigation season were assumed to be the same as those gaged by the USGS in 1924. These natural inflows are shown in Table 10.

The riparian demands were taken from the Statements of Water Diversion and Use on file with the Division and were advanced by one month due to the maximum month demand occurring in May. The computations of riparian demand during the 1977 season and available supply are shown in Table 10.

Mokelumne River (Camanche Reservoir to the Delta Rim - Woodbridge)--
The East Bay Municipal Utility District (EBMUD) operates Camanche Reservoir and has commitment to release sufficient flow to satisfy wildlife protection, prior vested rights and channel losses.

The computations showing the supply available and estimated riparian demand, are shown in Table 11. The riparian acreage has been taken from the map included in the Public Hearings, Documents "Lands Claiming Riparian Status", for Applications 11792, 12953, and 13265.

Cosumnes River (Michigan Bar to the Delta Rim)--
The available supply computed by adding natural inflow and return flow is shown in Table 12. The total area of parcels abutting the river in the counties of El Dorado, Amador and Sacramento was computed from county assessor

offices and was found to be 49,000 acres. The Bureau conducted a study and reported irrigated riparian land of 3600 acres with maximum annual diversion of 15,330 acre-feet (1962) in the Water Rights Appendix to the Cosumnes River Project Report. The Dry Year Team deemed appropriate to prorate yearly demand of 15,330 acre-feet by using monthly demand factors. The computation of available water supply and demand is shown in Table 12.

The summary of available supply and riparian demand in the San Joaquin Basin is shown in Table 13.

Sacramento - San Joaquin Delta

Available Supply - -

The supply available for the Sacramento-San Joaquin Delta riparian users was determined in the Sacramento Basin and the San Joaquin Basin studies discussed previously. Flows from other sources that are tributary to the Delta were assumed to be negligible. The rainfall over the Delta Service Area of approximately 678,000 acres occurs during the winter and consequently was not available to meet water needs during the irrigation season.

Riparian and Delta Demands - -

The Delta riparian demand was determined in accordance with the following assumptions:

1. The total irrigable riparian lands in the Delta were assumed to be those reported in the 1956 Cooperative Study and the 1966 Joint Water Rights Study. It was assumed that 85% of these lands would be irrigated during 1977.

2. To obtain the monthly Delta riparian demand for 1977, a factor was applied to the 1976 Delta service area monthly consumptive use figures

reported in the Department's survey. The factor was determined by dividing the total assumed riparian lands by the Delta Service Area acreage irrigated in 1976.

3. Demands for nonagricultural consumptive uses and the Delta outflow index were coequally shared with the Delta riparian demand. The nonagricultural consumptive uses are for native vegetation, riparian vegetation and water surface loss and were assumed to be the same as those reported in the 1976 Survey. The Delta outflow index is the flow required to meet the Delta water quality standards then in effect.

4. The Delta outflow index required for the months of March through May was 3,000 cfs and for the months of June through November was 1500 cfs. These figures were obtained from the Delta Unit of the Legal Division, State Water Resources Control Board. The reduction in flow for the months following May was the result of a new section in the California Administrative Code (Ch. 3, Sec. 764.20), adopted June 2, 1977 as an emergency measure.

5. The riparian agricultural and nonagricultural demands for the month of November were determined by correlating the Sacramento-San Joaquin Delta data for other months reported in the Department's Survey Report. The estimated riparian demand and demands for nonagricultural consumptive use and the Delta outflow index are shown in Table 14.

SUPPLY AND DEMAND ANALYSIS

As the riparian water rights are coequal, the Sacramento-San Joaquin Basins including the Delta were considered as a continuous system to compare

available supplies to satisfy the riparian demands. The Delta provides hydraulic continuity to the two basins as shown in Figure 3. Table 15 shows summation of the available supplies and the demands in the system. Figure 4 shows graphical comparison of available supplies and riparian demands in the system.

The tabular and graphical comparison were used to establish time frame by months when the riparian diverters in the system had to take a deficiency or completely go without their water supply. The time frame by months for the system is shown in Table 16. The available supplies and riparian demands on streams in the San Joaquin River Basin are compared in Figures 5 to 11. For the San Joaquin Basin, the time frame regarding the taking of a deficiency or going without water is shown in Table 16.

ACTIONS TAKEN

In accordance with the time frame shown in Table 16, the Division notified the assumed riparian owners in the Sacramento River Basins and the Delta. For the San Joaquin River Basin, the time frame regarding availability of water for different streams was compared with the system time frame (Table 16). Using the most stringent of the two time frames, the Division notified assumed riparians regarding shortage of water and time when they were required to take deficiencies in their water supply.

A brief summary of notices sent to the assumed riparians in the hydrologic system consisting of the Sacramento-San Joaquin Basins and the Delta is shown in Table 17.

PRE-1914 APPROPRIATIVE WATER RIGHTS

ESTIMATION OF AVAILABLE WATER SUPPLY

Sacramento River Basin

The following assumptions were made in estimating the water supply available to pre-1914 appropriators in the Sacramento River Basin.

1. Residual natural flows in the Sacramento River Basin were made available to the appropriators in the basin only after riparian demands in the basin and the Sacramento-San Joaquin Delta were satisfied. During the drought of 1977, riparian demands exceeded natural flow after the month of May. Consequently, there was no residual natural flow to satisfy appropriative demands.

2. Unmeasured accretions reported in the Department's Survey were assumed to be not available to appropriators.

3. Measured return flows reported in the Survey were assumed to be mostly from use of ground and project (stored or imported) water and consequently were available for use by appropriators. The Colusa Basin Drain and the Sutter Bypass provided most of the return flow.

4. The estimation of return flow was based on the assumption that the United States Bureau of Reclamation (Bureau) does not assert claim of right to recapture return flow originating from the use of project (stored or imported) water.

To estimate the available supply, the Sacramento River Basin was divided into two reaches. The upper reach extends from Keswick Dam to Knights Landing and the lower reach from Knights Landing to I Street Bridge in the

City of Sacramento.

In the upper reach, two irrigation districts, namely Anderson Cottonwood and Glenn Colusa, claim a combined amount of 2800 cubic feet per second of water under their pre-1914 rights. Consequently, it was assumed that return flows in this reach would be claimed by these districts and would not be available to appropriators in the lower reach. Therefore, no further study was made for the upper reach regarding availability of return flow for appropriation.

The flows available for appropriation in the lower reach of the Sacramento Basin after the month of May were assumed to consist mainly of return flows into the Sacramento, Feather, Yuba and American Rivers, and return flows from the Colusa Basin Drain and the Sutter Bypass. The flows were estimated in accordance with the following methods/procedures.

Sacramento River - -

The Survey tabulate measurements of return flows into the Sacramento River from various reclamation districts' drains.

These 1976 measurements were prorated to estimate 1977 supplies by the use of monthly proration factors established earlier. The flows taken into consideration were return flows exclusive of return flows north of Knights Landing and return flows from the Colusa Basin and Sutter Bypass. The estimated return flows to the Sacramento River are shown in Table 18.

Colusa Basin Drain - -

The Basin is located west of the Sacramento River and north of Knights Landing as shown in Figure 1. The Colusa Basin return flows drain

into a continuous channel referred to as the Colusa Trough Drain, R. D. 2047 Main Canal, Back Levee Burrow Pit, R D. 108 Main Drain and a variation of these names. The flows in the Colusa Basin Drain in a dry year such as 1977 consists mainly of return flows from irrigation districts of Glenn Colusa, Maxwell, Princeton-Codora Glenn, Provident, and from Reclamation District No. 108 and the O. P. Davis Ranch.

Because data was unavailable from all the diverters to arrive at figures for return flows into the Drain, it was assumed that operations within the Basin were similar. The return flows from the various entities were calculated by using data furnished by the Glenn Colusa Irrigation District in their January, 1977 report titled, "Report on Water Measurement Program for 1976". This report tabulates their monthly diversions, the total diverted during the irrigation season and the monthly drain outflows (return flows) for the year 1976. The monthly diversion percent of total diversion and the monthly outflow percent of monthly diversions were calculated.

It was assumed that the Bureau contracts with the various diverters indicate the amounts that each diverted in 1976. The percentage derived by the use of Glenn Colusa's data was applied to the other diverters to arrive at total monthly return flows into the Colusa Drain in 1976. For the 1977 season's return flow calculations, it was necessary to apply the Bureau's 25 percent cutback for 1977 diverters and also a further reduction of 25 percent resulting from the adoption of conservation measures and recycling of water within the various districts. The available return flow from the Colusa Drain is shown in Table 19.

Sutter Bypass - -

The Sutter Bypass drains an area roughly bordered by the Feather River

on the east the Sacramento River on the west and the PG&E's Western Canal on the North.

The flows available in the Sutter Bypass during the irrigation season consist mainly of agricultural return flows. These return flows are from irrigated lands within the areas served by the Joint Water Districts which consist of the Richvale Irrigation District, Butte Water District, Biggs-West Gridley Water District and Sutter Extension Water District and from lands served from PG&E's Western Canal.

Data was obtained from the Joint Water Districts regarding their water supply for 1976 and their projected delivery for 1977. Using this data and information from the Glenn Colusa Irrigation District and following the same procedures and assumptions as used for estimating return flows in the Colusa Basin Drain, the return flows into the Sutter Bypass were determined.

For the Joint Water District's return flow calculations, the monthly percentage figures, as used for the Colusa Basin, were applied to the District's projected 1977 supply.

PG&E's delivery through Western Canal for 1976 was obtained from the Department's report but the 1977 supply was unavailable. In determining the return flows that would result from diversion from the Western Canal, it is assumed that its supplies would be reduced approximately in the same proportion as that for the Joint Water Districts. The Joint Water District's 1977/76 reduction ratio was applied to PG&E's 1976 supply-and the same procedure followed in determining its contribution of return flow to the Sutter Bypass. The total return flows from the Sutter Bypass is shown in Table 20.

Feather and Yuba Rivers - -

The area of study for the Feather River was from Oroville Reservoir to the confluence of Sutter Bypass with the Feather River (Nicolaus) and for the Yuba River from Daguerre Point Dam to the Feather River. To determine the available supply from the Feather River system for pre-1914 appropriators, the gaging station at Nicolaus was used as a point of reference. The return flow at Nicolaus was estimated by subtracting the residual natural supply and any project water from the gaged flow.

The residual natural supply at Nicolaus was determined by subtracting riparian demands upstream and downstream of Nicolaus from the natural inflow into the Oroville Reservoir as shown in Table 21.

Monthly Feather River gage flows at Nicolaus, excluding assumed Department project waters, for 1976 were obtained from the Department's report. These flows were then adjusted to 1977 by using factors relating 1977 versus 1976 runoffs for the Feather River.

The return flow was estimated by subtracting residual natural flow, if any, from the gaged flows. The summation of residual natural flow and return flow, as shown in Table 21, gave the water available for appropriation.

American River - -

To estimate supply from American River, it was assumed that any water in excess of the residual natural flow and excluding water released from Folsom Reservoir storage is available for appropriation. During 1977, all natural supply was used to satisfy riparian demand; consequently, residual

natural supply was assumed zero.

The monthly natural supply is assumed to be the forecasted inflow to Folsom Reservoir as shown in Table 21.

To determine the available supply for appropriators, it was necessary to work with data regarding 1976 use and adjust for 1977. The 1976 monthly gaged flows at Fair Oaks were adjusted by subtracting the releases from Folsom Reservoir. These figures were then adjusted using the Feather River factors relating the 1977 versus the 1976 runoffs. Water is assumed to be available for appropriation in the months where the adjusted gage flows exceeded the projected runoff inflows and is shown in Table 22.

San Joaquin River Basin

The water supply available to satisfy pre-1914 demands in the basin is equal to the total residual natural supply after riparian demands in the basin are satisfied plus the return flow from the use of ground and project (stored or imported) water.

The residual natural supply at the gaging station on the stream is equal to the total natural supply less demand of upstream and downstream riparian owners. As the natural supplies were limited during the drought of 1977, riparian demands in the basin were not fully met during June, July, and August. Consequently, the residual natural supply during these months was zero.

The return flow in the stream reach or the Basin is equal to the gaged flow less natural supply meant for downstream riparian owners, and

storage water releases. The availability of the return flow for satisfying pre-1914 demands in the Basin was estimated in accordance with the following procedure and/or assumptions.

1. The total return flow in the Basin was computed from gaged flows at selected stations. The gages are located near the confluence of the Merced and San Joaquin Rivers (Newman), mouth of the Rivers (Stevenson for the Merced River, Tuolumne City for Tuolumne River, Koetitz Ranch for Stanislaus River) and near the rim of the Delta (Vernalis for the San Joaquin River, Stockton for Calaveras, Woodbridge for Mokelumne River and McConnel for Cosumnes River). The 1976 gaged flows are shown in Table 23. The 1977 gaged flows have been computed from 1976 gage flows using proration factors. The proration factors established by dividing 1977 forecasted natural flows by 1976 actual flows are shown in Table 24. The 1977 estimated gage flows, are shown in Table 25.

2. The gage flow at the point of measurement consists of return flow, natural supply meant for downstream riparian owners and releases of stored water. For the Basin, it was assumed that most of the stored water releases were diverted in the upstream reach from the gage stations and consequently their contribution to the gaged flow was assumed negligible.

3. The computations estimating natural supply meant for downstream riparians are shown in Table 26. The downstream riparians' share is equal to total natural supply less the percentage of riparian demands satisfied in the upstream reach. The total natural supply and riparian demands were taken from Tables 6 to 12. The percentages of riparian demands met during peak periods of the crop growth season

were taken from Table 17.

4. The return flow was estimated by subtracting supply meant for downstream riparians from the estimated flows at selected gage stations on the Merced, Tuolumne, Stanislaus, Calaveras, Mokelumne, and Cosumnes Rivers. However, for the San Joaquin River, the return flows from the upper basin was computed by subtracting estimated flows at Stevenson from those at Newman. The calculations assumed that the Bureau does not assert a claim of right to recapture return flows originating from the use of Central Valley Project water in the upper San Joaquin River Basin. For the Middle San Joaquin Basin, the return flow was computed by subtracting return flow supply from the upper San Joaquin Basin, natural supply meant for downstream riparians, and estimated return flows from Merced, Tuolumne and Stanislaus Rivers from the prorated gage flows at Vernalis. The computation to estimate return flow in the upper and middle basins of the San Joaquin River and other rivers tributaries to the San Joaquin River are shown in Table 26.

Supply Available to Pre-1914 Appropriators

The return flows available to appropriators from the lower reach of Sacramento River and its tributaries are shown in Tables 18 to 22, and return flows available from the upper, middle, and lower reaches of San Joaquin River and its tributaries are shown in Table 26. The summation of all these return flows gave the total supply available to satisfy demands under pre-1914 appropriative rights in the Sacramento-San Joaquin Basin including the Delta and are shown in Table 27.

ESTIMATION OF PRE-1914 DEMAND

The Statements of Water Diversion and Use (Statements) on file with the Division were the primary source to estimate pre-1914 demands. These statements are filed by riparians, and pre-1914 appropriators pursuant to Water Code Section 5101.

The pre-1914 demands in the middle and lower reaches of the Sacramento-San Joaquin Basins including the Delta were estimated in accordance with the following procedure.

1. Picked statement numbers on the appropriate stream reaches from the spot maps maintained by the Division.

2. Compiled date/year of first use/notice from the statement files; this helped to separate statements pertaining to pre-1914 appropriative water rights from statements assumed to be pertaining to riparian users. The statements showing initial water use/notice to use water prior to 1914 were assumed to be pre-1914 appropriators and all the remaining statements showing post-1914 or no year at all were assumed to be riparian users.

3. As no further analysis was done on assumed riparian statements, these were not considered.

4. The statements pertaining to pre-1914 rights were tabulated in order of their location from an upstream reservoir or point under consideration to the river mouth or end of stream reach under consideration. The statement files were used as reference to complete this table

for ownership and water right information such as amount of water use, season of water use, acreage irrigated or beneficial use of water.

5. The peak monthly demand for each statement was computed from area irrigated by using assumption made earlier (page 5) and was compared with amount of water use reported in the statement; the lesser of the two values was used to prorate demand for other months of the crop season.

The estimated pre-1914 demands in the Sacramento-San Joaquin Delta and the lower reaches of the Sacramento River Basin are shown in Table 28. The estimated pre-1914 demands in the middle and lower reaches of the San Joaquin River Basin are shown in Table 29.

SUPPLY AND DEMAND ANALYSIS

The pre-1914 demands in the Sacramento-San Joaquin Basins including the Delta will receive water from the available supply in accordance with their order of priority. The priority list of pre-1914 demands was prepared and is shown in Table 30. The supply available to satisfy pre-1914 demands, in order of their priority, is contributed by several tributaries as shown in Table 27 and Figure 3. The meeting of a specific pre-1914 demand depends upon (1) priority order, (2) relative location of point of diversion on the stream and (3) availability of water in the stream at the point of diversion. The relative location of the statements with their priority order is identified in Figure 12.

Using the available supply from Table 27, prioritized demands from Table 30 and location of point of diversion for the statement from

Figure 12, the running analysis of supply/demand as shown in Table 31 was made in accordance with the following procedure:

1. The table format as shown in Table 31 was designed.

2. The available supplies from several reaches and tributaries of the Sacramento-San Joaquin Basin were listed in Tables 31 and 32.

3. The running analysis of pre-1914 demands was made in order of their priority. Depending upon the location of the demand, the supply needed to satisfy the demand was determined by prorating the supply from several streams in accordance with their contribution to the total supply. For example, the demands located on streams with zero supply contribution were not satisfied, whereas demands located in the Delta picked up their supply by prorating supply from each stream in accordance with their contribution. As discussed, irrigation districts such as Modesto, Turlock, South San Joaquin, and Oakdale divert water near the head of a reach and do not pick up any return flow; consequently no return flow was made available to them to satisfy their demands under pre-1914 water rights.

The running analysis of pre-1914 demands during July and August are shown in Tables 31 and 32. The demands located on streams with zero contribution to the total available supply were not satisfied whereas the rest of the demands were either fully or partially satisfied. The percentage of supply available to satisfy demands of diverters under pre-1914 rights are shown in Table 33.

ACTIONS TAKEN

After riparian demands are satisfied, the diverters under pre-1914 rights have next claim to the remaining supply. Based on initial studies made separately for the Sacramento River Basin including the Delta, and the San Joaquin River Basin, two notices sent by the Division of Water Rights are shown in Table 34.

POST-1914 APPROPRIATIVE WATER RIGHTS

ESTIMATION OF AVAILABLE WATER SUPPLY

The residual supply left after satisfying pre-1914 demands, as shown in Tables 31 and 32, were made available to diverters under post-1914 appropriative water rights.

ESTIMATION OF POST-1914 DEMAND

The procedure used to estimate post-1914 demands was similar to the procedure discussed earlier in estimating pre-1914 demands. Permits and licenses on file with the Division of Water Rights were used.

The relative location of post-1914 demands in the upper Sacramento Basin (Keswick to Knights Landing) are shown in Table 35 and in the lower Sacramento Basin (Knights Landing to I Street Bridge in Sacramento) are shown in Tables 36, 37, and 38. Similarly, the relative location of post-1914 demands in the middle and lower reaches of the San Joaquin Basins are shown in Table 39. The relative location of post-1914 demands in the Sacramento-San Joaquin Delta was not determined. However, the Delta diverters have been listed in order of priority, as shown in Table 40, for service areas of North, Central and South Delta Water Agencies, and Contra Costa Irrigation District. These service areas are shown in Figure 13.

SUPPLY-DEMAND ANALYSIS

Under detailed study discussed above, the post-1914 demands were considered until the available supply became insufficient to meet estimated demands of diverters with subsequent order of their priority. The peak monthly demand for each diverter was estimated from irrigated area using assumptions made earlier. Comparison was made with licensed or permitted amount; the lesser of the two values was used to prorate demand for other months of the crop season. The priority order of diverters considered in the detailed study with estimated demands are shown in Table 41.

To make the analysis of available supply to satisfy prioritized demands, the Sacramento and San Joaquin Basins were considered as a continuous hydrologic system; the Delta provided the continuity between the two basins. The relative location of diversion points of diverters having senior water rights along with their priority order are shown in Figure 14. In accordance with the procedure used for pre-1914 demands, the running analysis of available supply to satisfy prioritized demands during July and August are shown in Tables 42 and 43.

As per Figure 14, the demands located on streams with zero supply contribution were not satisfied whereas demands located in the Delta or on other streams were either partly or fully satisfied. The percentage of demands satisfied are shown in Table 44.

The staff made the following findings from Tables 42 and 43.

1. The return flow supply is not available to diverters with application number greater than 2286. This is irrespective of their location in the lower reaches of the Sacramento-San Joaquin Basins including the

Delta.

2. For diverters with application numbers equal to or less than 2286, the percentage of demands met during July and August are shown in Table 44.

ACTIONS TAKEN

The detailed studies discussed above were completed during July of 1977. Initially, however, the hydrologic routing studies for the Sacramento River Basin including the Sacramento-San Joaquin Delta, and the San Joaquin River Basin were conducted independently because of the necessity of providing rice growers with a forecast before April 1, the closing date in order to obtain rice allotments. Based on these initial studies, the Division sent notices to permittees and licensees regarding the impact of the drought on their share of available supplies during a normal year. The details of the notices are shown in Table 45.

ENFORCEMENT OF WATER RIGHTS PRIORITIES

WATER AND LAND USE

Under an interagency contract between the State Water Resources Control Board (Board) and the Department of Water Resources (Department) fact finding teams visited and prepared field investigation reports regarding water and land use by 280 appropriators, assumed riparians, and others on the lower Sacramento River and 86 in the Delta Uplands, the Division of Water Rights (Division) staff analyzed the field reports and compiled pertinent information on water and land use as shown in Tables 46, 47, and 48.

Based on the data reported in these tables, the staff made the following findings:

1. Of 37,798 irrigable acres owned by riparians which were visited in the lower reaches of the Sacramento River Basin, as shown in Table 46, 24,772 acres or 66 percent were irrigated during 1977. For irrigation purposes, 54 percent water came from direct diversion, 28 percent from wells, 10 percent from contract water and source of water for the remaining 8 percent was not identified in the field report. Possibly the remaining 8 percent of irrigation water supply could be from one or combination of sources specified above.

2. Of the 44,132 irrigable acres owned by the appropriators visited in the lower reaches of the Sacramento River, as shown in Table 47, 10,724 acres were irrigated during the 1977 drought season. For irrigation purposes, 61 percent water came from direct diversion, 13 percent from wells, 1 percent from contract water and sources of remaining 25 percent were not identified in the field report.

3. Of the 117,524 irrigable acres owned by appropriators visited in the Delta Uplands, as shown in Table 48, 58,132 acres (approximately 50 percent) were irrigated during the 1977 drought season. For irrigation purposes, 89 percent of the water came from direct diversion and the remaining 11 percent from wells, contracts or other sources not identified in the field reports. Possibly, the remaining supply could be from one source or combination of sources specified above.

4. The review and analysis of field reports revealed that there were 39 diverters in the lower reach of the Sacramento River Basin and the

Delta uplands with questionable water rights and required revisits to relate water to the place of use.

5. A number of appropriators have not used their rights for many years and those can be referred for revocation of their permit or license.

POTENTIAL ILLEGAL USE OF WATER

According to the field reports, 39 diverters were potentially making illegal use of water. These diverters were visited by members of the Division's staff. Most of the diverters abided by the findings of the Division. Some specific cases using water under questionable rights were Half Moon Valley Produce Company, Tarke Brothers' Farm and the flooding of Coney Island. The State Board has referred the former two cases to the Attorney General for appropriate action. The Coney Island farmer instituted conservation measures during that season and it appears that he had not exceeded his share of riparian water this year. His unreasonable use of water for pre-irrigation or leaching was difficult to establish. However, the following problems became apparent while attempting to enforce use of water under appropriate level of water rights priority.

1. The Water Rights staff made three revisits in the Yolo Bypass. Typically, diverters in this area obtain water from the Yolo Bypass Borrow Pit. During 1977, there were virtually no return flows into the Borrow Pit, and all the appropriation was from tidal backup into the Borrow Pit. By being cooperative with the investigators, one license holder incriminated himself as a possible illegal diverter. Abating his diversion would cost him his pasture and crop. Pre-

liminary assessment showed a considerable area higher up the drain was being irrigated by farmers with apparently no color of right.

2. Another problem faced by the staff was to abate the use of water by those who ignored directives in the Board's notices and those that did not have any color of right. A number of farmers were diverting substantial amounts of water for irrigation but it was difficult to show that they were in fact illegally diverting. The identification of pirate diverters having neither riparian or appropriative rights calls for an enormous effort of relating each diversion pump to a place of use.

3. In the case of permit or license holders, it had to be clearly established that all the water they were diverting was through their normally allowable appropriation. If part of water supply for irrigation was from ground water or contract water, or if part of the property was riparian, illegal diversion was difficult to establish during the 1977 season.

4. In the case of riparian diverters, no flagrant misuse of water was uncovered in the areas visited. In compliance with the Board's notices, conservation measures were adopted by most of the diverters. Since the Board does not have any jurisdiction over riparian diverters, even if it could be established that excessive water was being used, recourse would only be through protracted action in the courts. Some riparian owners have been advised by their lawyers to deny access to

their property. This attitude prevented extensive investigation of riparians unless a legal right of access could be established and led to efforts to initiate aerial surveillance.

Summing up, it became apparent that no dramatic action resulting in mass abatement of illegal water diversion could be carried out this year. Many farmers had completed their irrigation for the season. In future years, if the drought reoccurs, the experience gained during 1977 would enable a problem to be put into effect early enough to enforce water use more efficiently.

LINE DIAGRAM OF SACRAMENTO STREAM SYSTEM

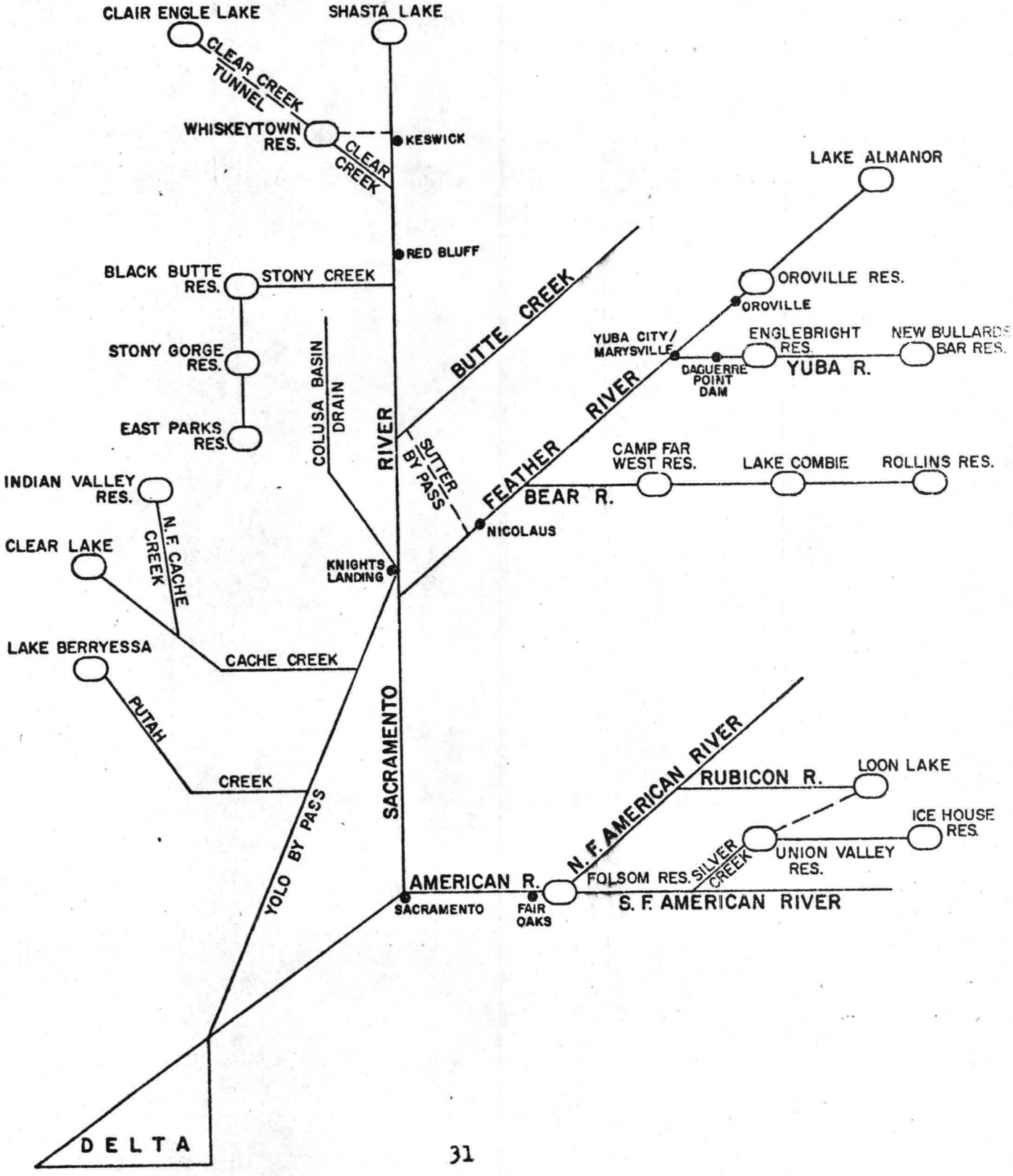


FIGURE 2

LINE DIAGRAM OF SAN JOAQUIN STREAM SYSTEM

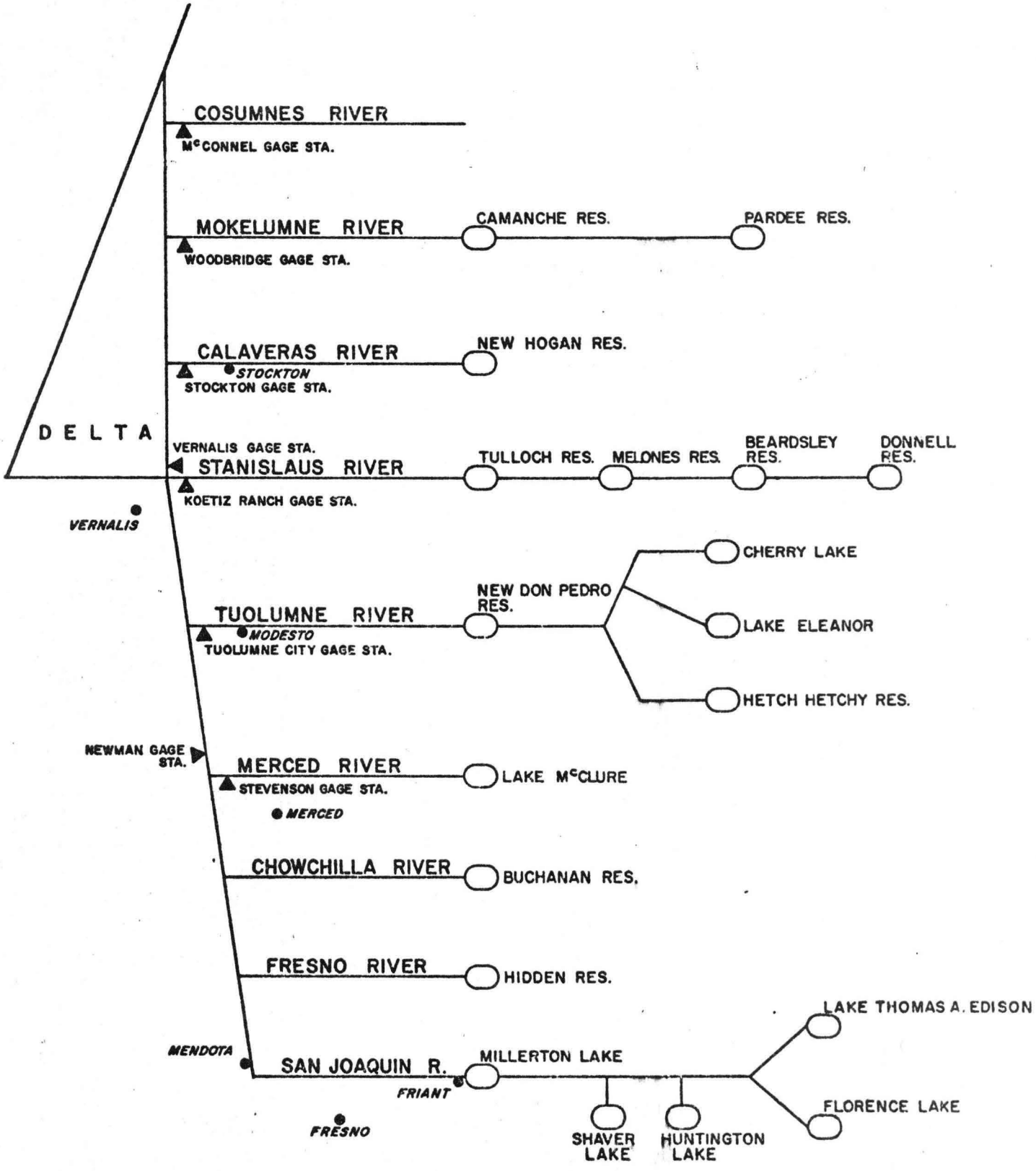
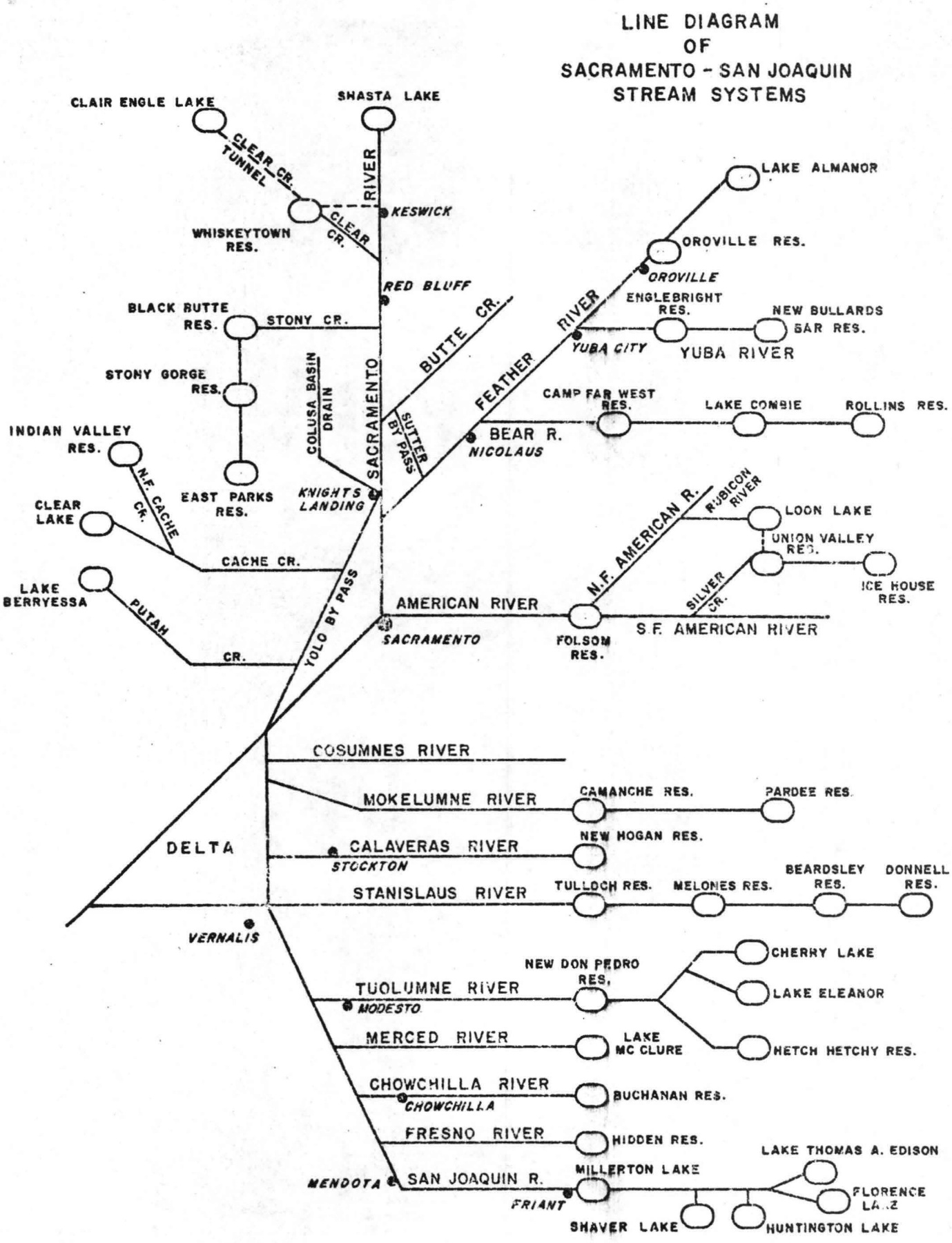


FIGURE 3


LINE DIAGRAM
OF
SACRAMENTO - SAN JOAQUIN
STREAM SYSTEMS
CLAIR ENGLE LAKE
SHASTA LAKE
CLEAR CR. TUNNEL
RIVER
KESWICK
CLEAR CR.
WHISKEYTOWN RES.
LAKE ALMANOR
OROVILLE RES.
OROVILLE
RED BLUFF
BUTTE CR.
FEATHER RIVER
ENGLEBRIGHT RES.
NEW BULLARDS BAR RES.
BLACK BUTTE RES.
STONY CR.
YUBA CITY
YUBA RIVER
STONY GORGE RES.
COLUSA BASIN DRAIN
SACRAMENTO
SUTTER BY PASS
CAMP FAR WEST RES.
LAKE COMBIE
ROLLINS RES.
BEAR R.
NICOLAUS
INDIAN VALLEY RES.
N.F. CACHE CR.
EAST PARKS RES.
KNIGHTS LANDING
RUBICON RIVER
N.F. AMERICAN R.
LOON LAKE
CLEAR LAKE
UNION VALLEY RES.
CACHE CR.
SILVER CR.
ICE HOUSE RES.
LAKE BERRYESSA
PUTAH CR.
YOLO BY PASS
AMERICAN RIVER
SACRAMENTO
FOLSOM RES.
S.F. AMERICAN RIVER
COSUMNES RIVER
MOKELUMNE RIVER
CAMANCHE RES.
PARDEE RES.
DELTA
NEW HOGAN RES.
CALAVERAS RIVER
STOCKTON
BEARDSLEY RES.
DONNELL RES.
STANISLAUS RIVER
TULLOCH RES.
MELONES RES.
VERNALIS
NEW DON PEDRO RES.
CHERRY LAKE
TUOLUMNE RIVER
LAKE ELEANOR
MODESTO
MERCED RIVER
LAKE MC CLURE
HETCH HETCHY RES.
CHOWCHILLA RIVER
BUCHANAN RES.
CHOWCHILLA
FRESNO RIVER
HIDDEN RES.
LAKE THOMAS A. EDISON
MILLERTON LAKE
MENDOTA
SAN JOAQUIN R.
FLORENCE LAKE
FRIANT
SHAVER LAKE
HUNTINGTON LAKE

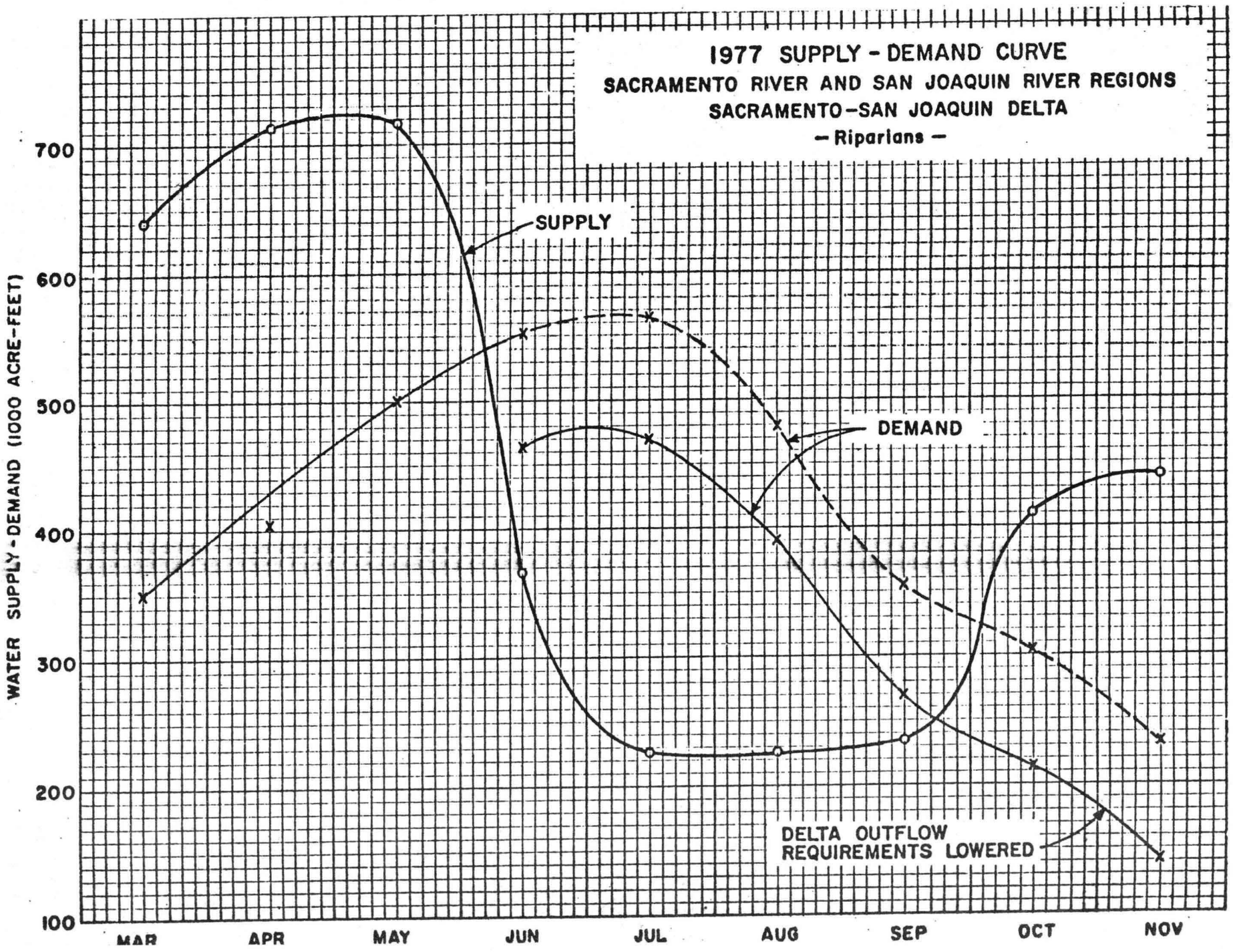

1977 SUPPLY - DEMAND CURVE
SACRAMENTO RIVER AND SAN JOAQUIN RIVER REGIONS
SACRAMENTO-SAN JOAQUIN DELTA
- Riparians -
SUPPLY
DEMAND
DELTA OUTFLOW
REQUIREMENTS LOWERED
WATER SUPPLY - DEMAND (1000 ACRE-FEET)
700
600
500
400
300
200
100
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV

FIGURE 4

FIGURE 5

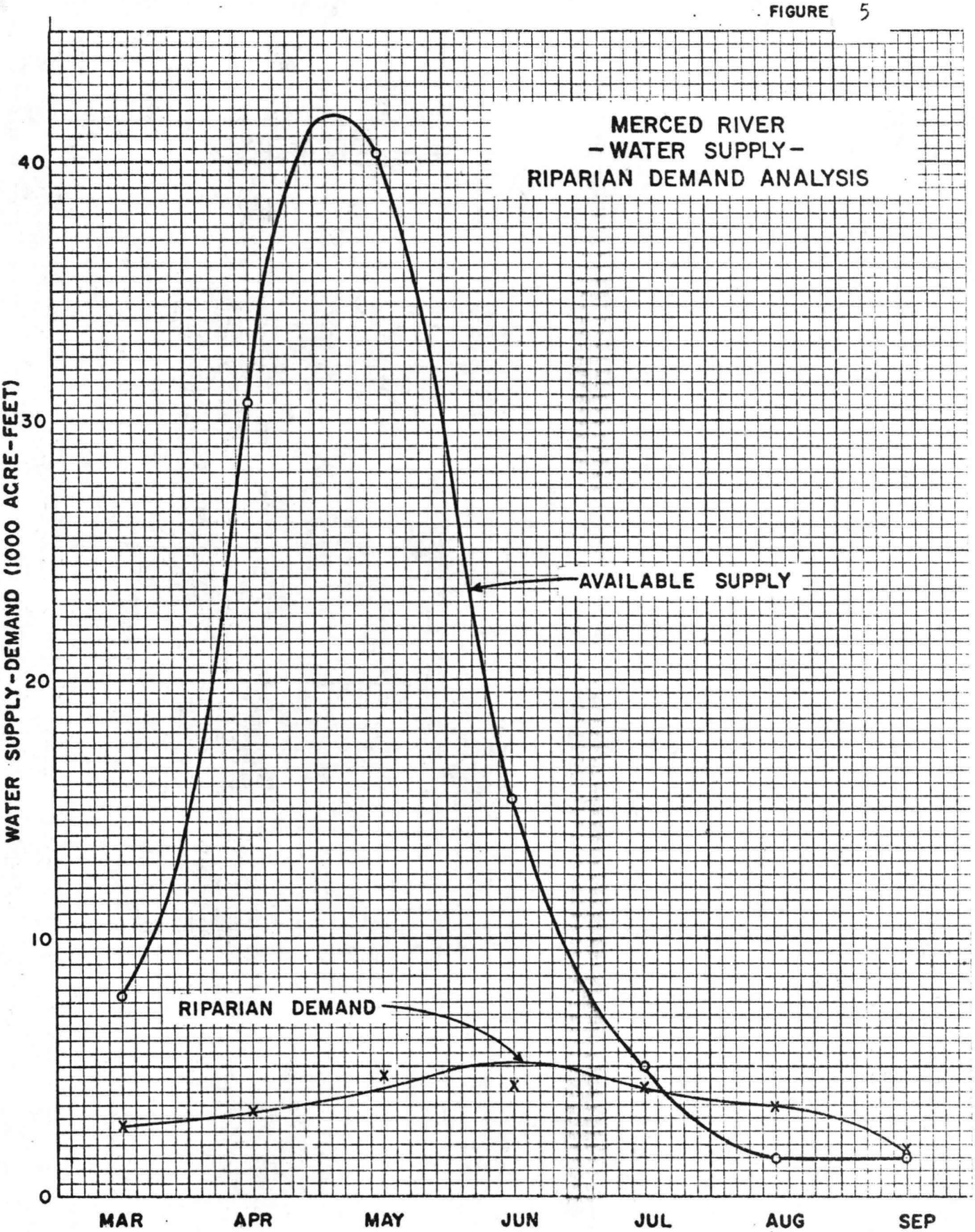

MERCED RIVER
-WATER SUPPLY-
RIPARIAN DEMAND ANALYSIS
WATER SUPPLY-DEMAND (1000 ACRE-FEET)
40
30
20
10
0
AVAILABLE SUPPLY
RIPARIAN DEMAND
MAR
APR
MAY
JUN
JUL
AUG
SEP

FIGURE 6

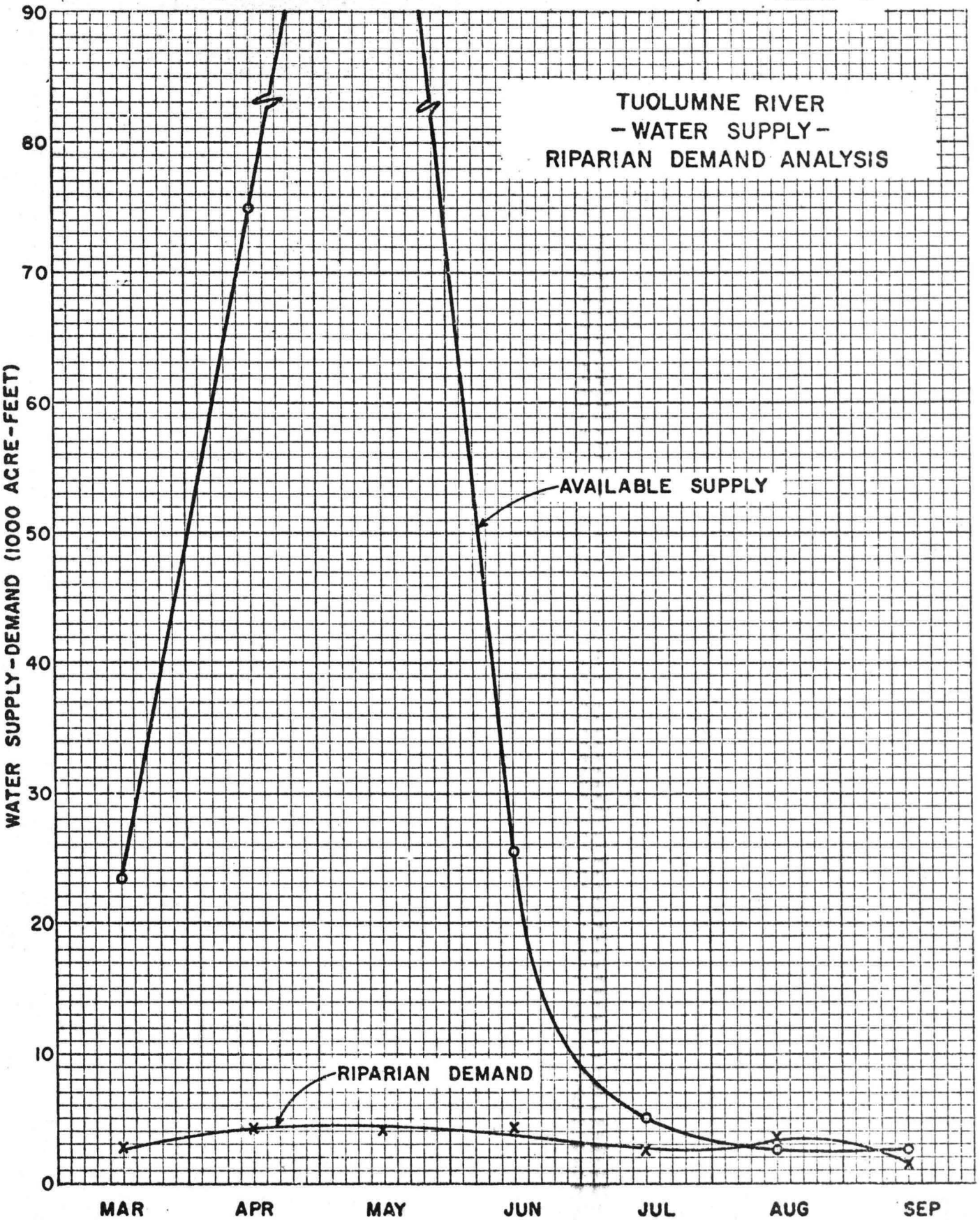

TUOLUMNE RIVER
-WATER SUPPLY-
RIPARIAN DEMAND ANALYSIS
WATER SUPPLY-DEMAND (1000 ACRE-FEET)
90
80
70
60
50
40
30
20
10
0
AVAILABLE SUPPLY
RIPARIAN DEMAND
MAR
APR
MAY
JUN
JUL
AUG
SEP

FIGURE 7

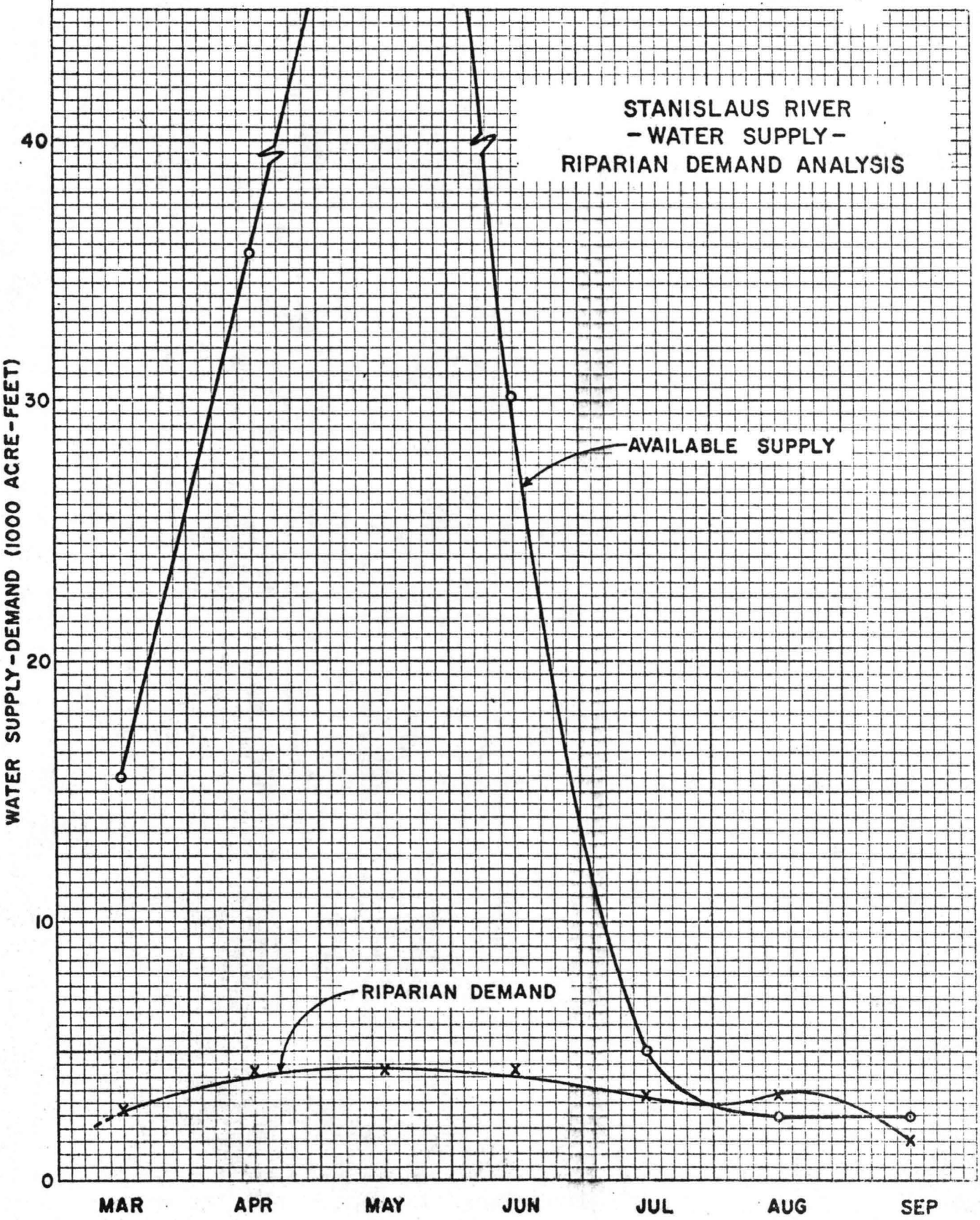

STANISLAUS RIVER
-WATER SUPPLY-
RIPARIAN DEMAND ANALYSIS
WATER SUPPLY-DEMAND (1000 ACRE-FEET)
40
30
20
10
0
AVAILABLE SUPPLY
RIPARIAN DEMAND
MAR
APR
MAY
JUN
JUL
AUG
SEP

FIGURE 8

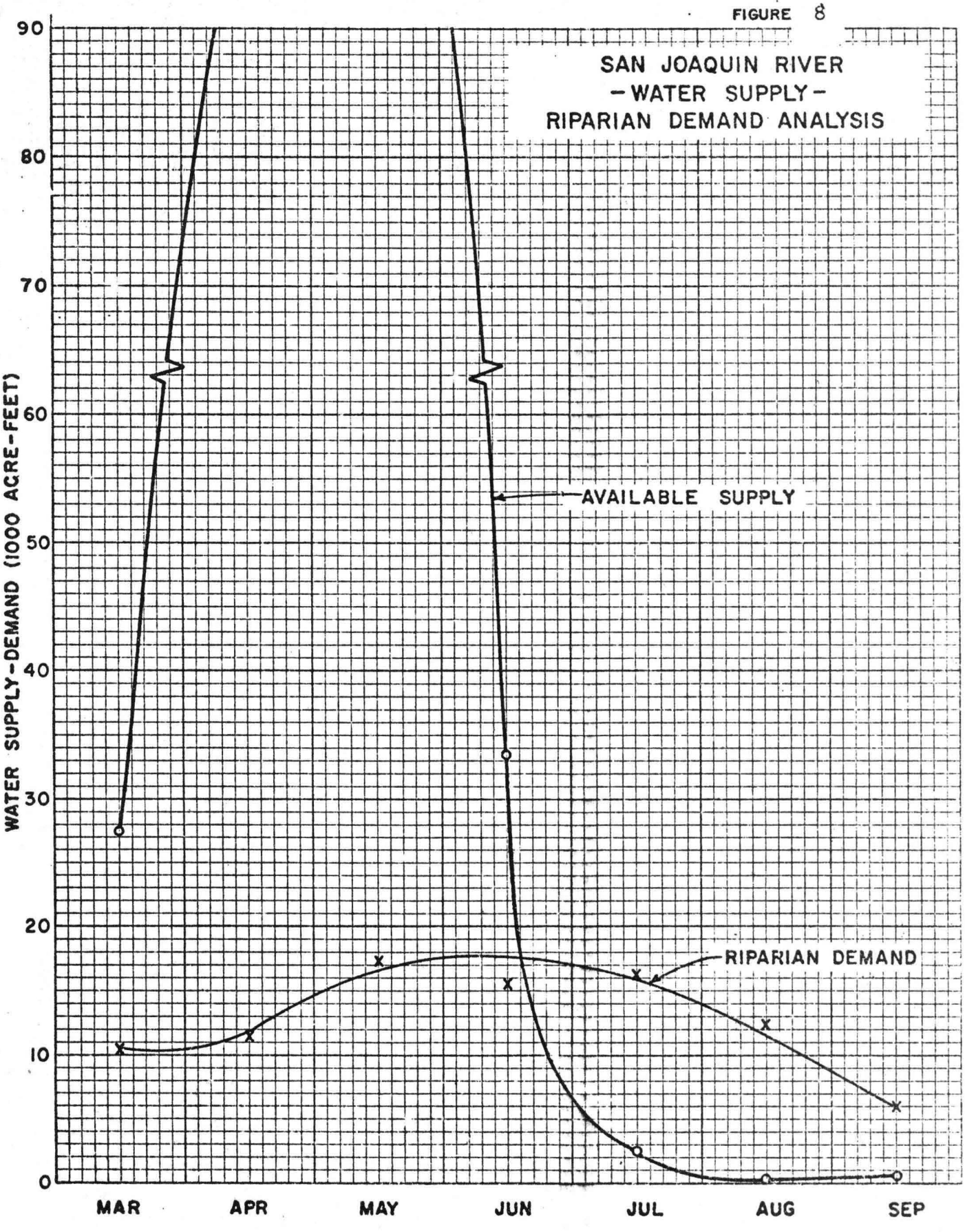

SAN JOAQUIN RIVER
-WATER SUPPLY-
RIPARIAN DEMAND ANALYSIS
WATER SUPPLY-DEMAND (1000 ACRE-FEET)
90
80
70
60
50
40
30
20
10
0
AVAILABLE SUPPLY
RIPARIAN DEMAND
MAR
APR
MAY
JUN
JUL
AUG
SEP

FIGURE 9

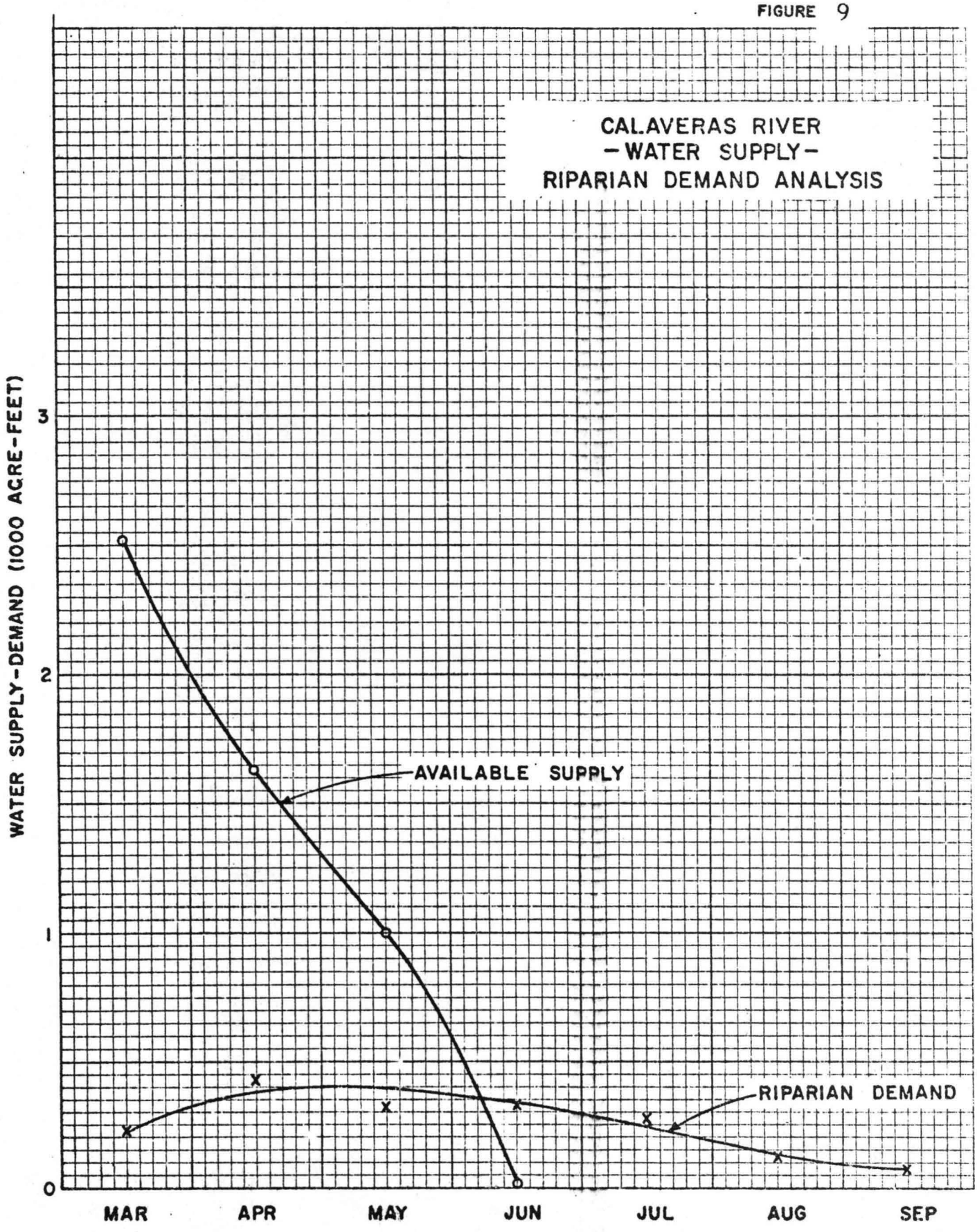

CALAVERAS RIVER
-WATER SUPPLY-
RIPARIAN DEMAND ANALYSIS
WATER SUPPLY-DEMAND (1000 ACRE-FEET)
3
2
1
0
AVAILABLE SUPPLY
RIPARIAN DEMAND
MAR
APR
MAY
JUN
JUL
AUG
SEP

FIGURE 10

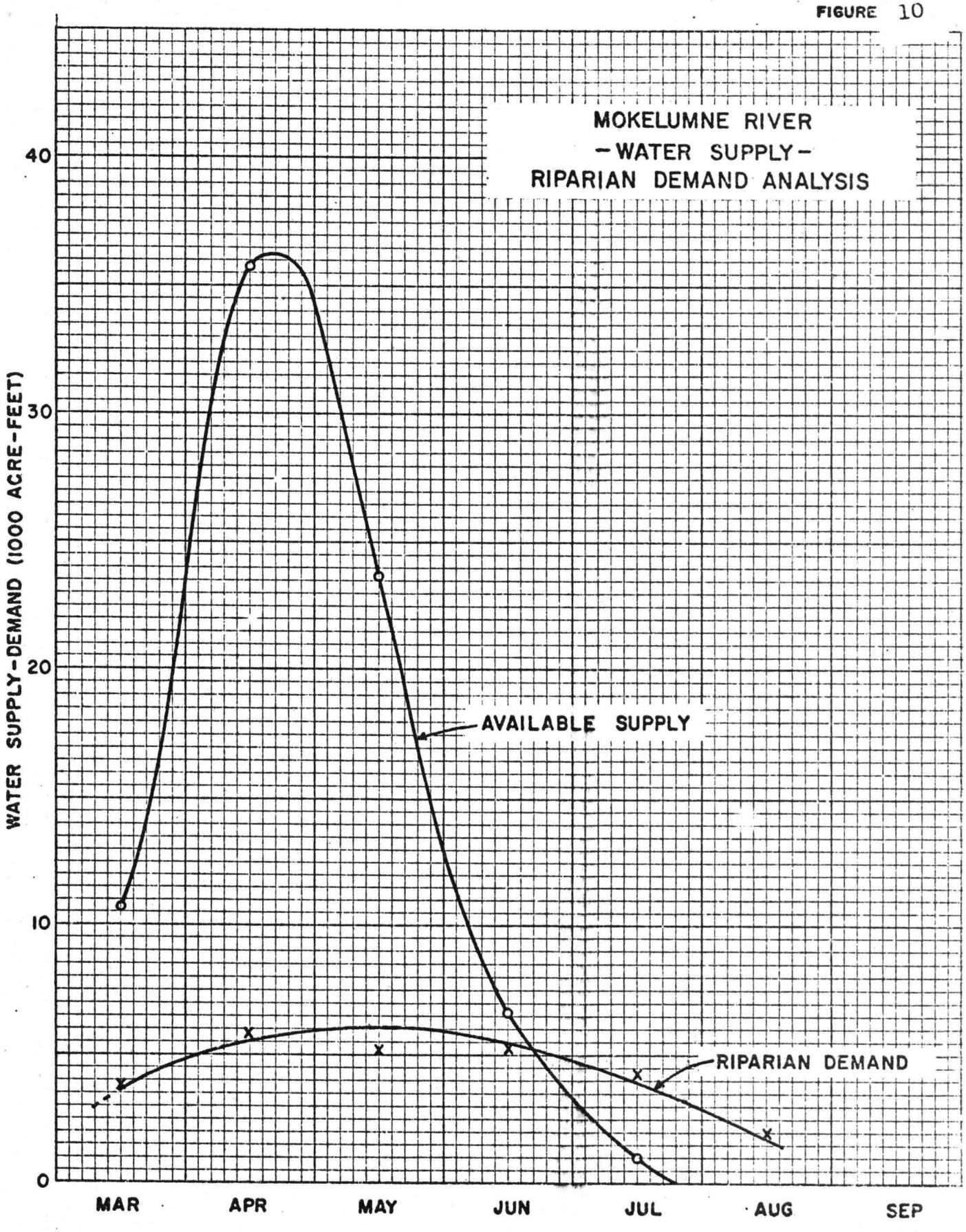

MOKELUMNE RIVER
-WATER SUPPLY-
RIPARIAN DEMAND ANALYSIS
WATER SUPPLY-DEMAND (1000 ACRE-FEET)
40
30
20
10
0
AVAILABLE SUPPLY
RIPARIAN DEMAND
MAR
APR
MAY
JUN
JUL
AUG
SEP

FIGURE 11

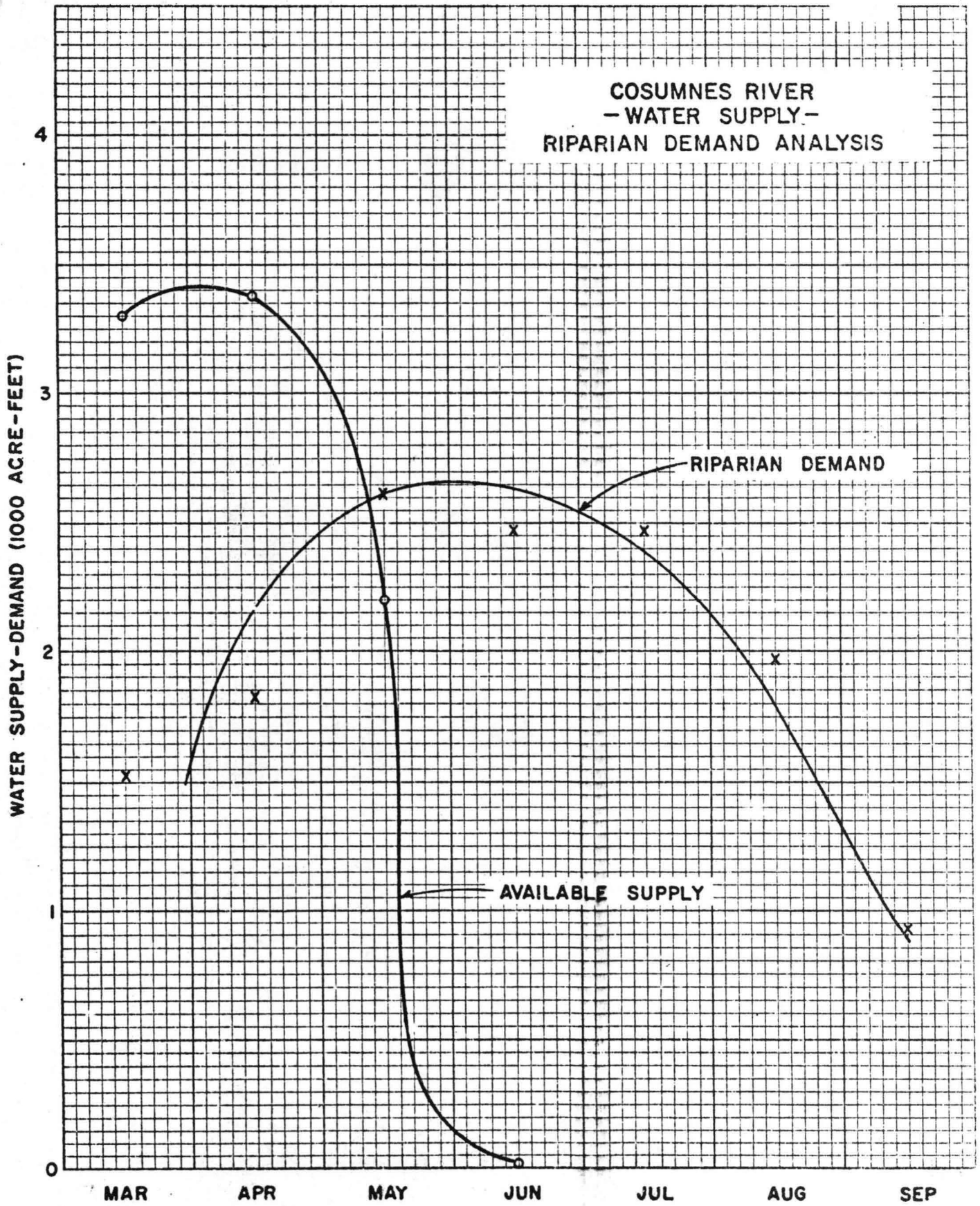
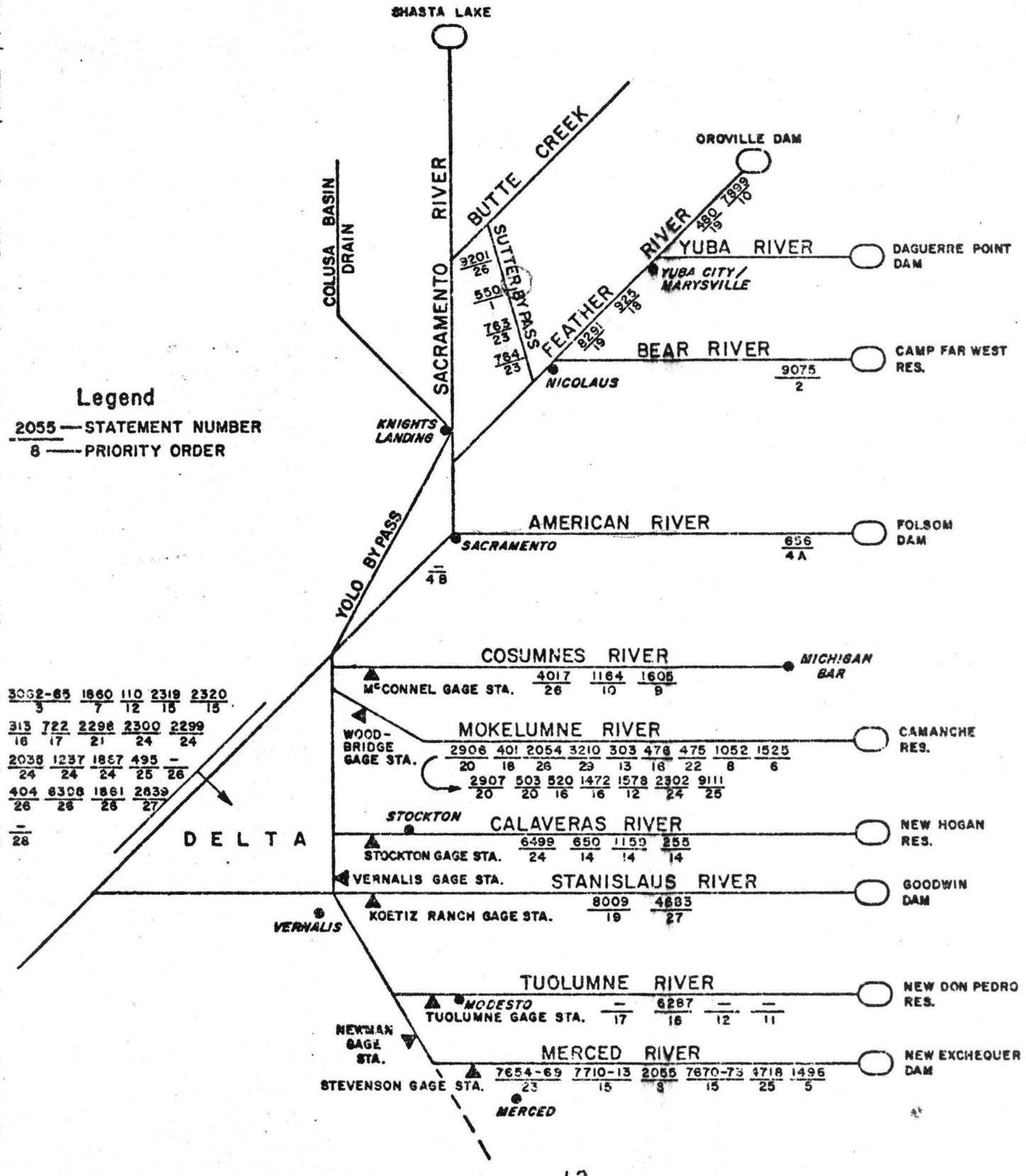

COSUMNES RIVER
-WATER SUPPLY-
RIPARIAN DEMAND ANALYSIS
WATER SUPPLY-DEMAND (1000 ACRE-FEET)
0
1
2
3
4
MAR
APR
MAY
JUN
JUL
AUG
SEP
RIPARIAN DEMAND
AVAILABLE SUPPLY

FIGURE 12

SACRAMENTO-SAN JOAQUIN BASINS INCLUDING THE DELTA

RELATIVE PRIORITY AND LOCATION OF PRE-1914 APPROPRIATIVE WATER RIGHTS



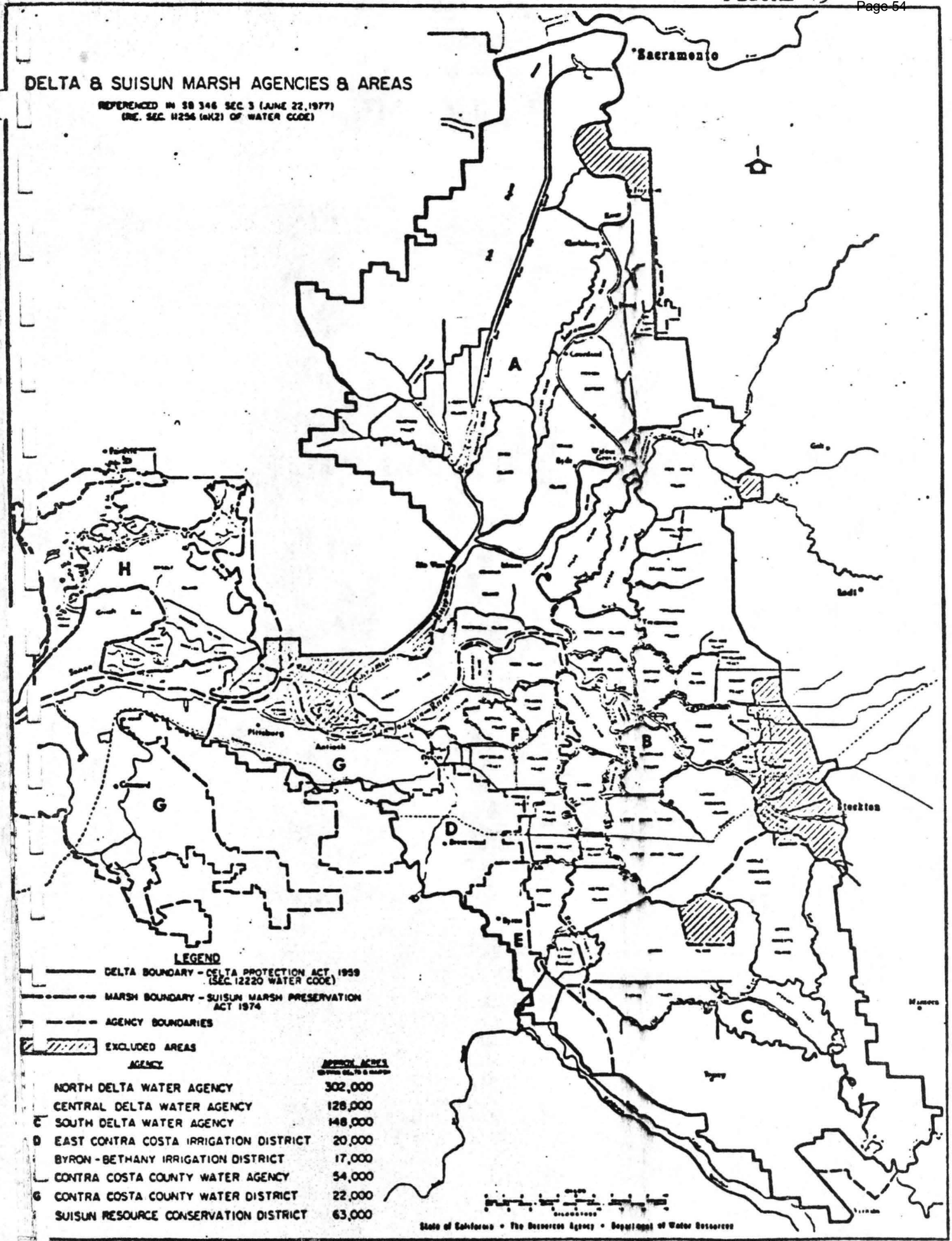

DELTA & SUISUN MARSH AGENCIES & AREAS
REFERENCED IN SB 346 SEC 3 (JUNE 22,1977)
(REF. SEC. 11256 (a)(2) OF WATER CODE)
Sacramento
Stockton
Pittsburg
Antioch
Tracy
Lodi
A
B
C
D
E
F
G
G
H
LEGEND
DELTA BOUNDARY - DELTA PROTECTION ACT 1959 (SEC. 12220 WATER CODE)
MARSH BOUNDARY - SUISUN MARSH PRESERVATION ACT 1974
AGENCY BOUNDARIES
EXCLUDED AREAS
AGENCY
APPROX. ACRES
NORTH DELTA WATER AGENCY 302,000
CENTRAL DELTA WATER AGENCY 128,000
C SOUTH DELTA WATER AGENCY 148,000
D EAST CONTRA COSTA IRRIGATION DISTRICT 20,000
BYRON - BETHANY IRRIGATION DISTRICT 17,000
CONTRA COSTA COUNTY WATER AGENCY 54,000
G CONTRA COSTA COUNTY WATER DISTRICT 22,000
SUISUN RESOURCE CONSERVATION DISTRICT 63,000
State of California • The Resources Agency • Department of Water Resources

FIGURE 14

SACRAMENTO-SAN JOAQUIN BASINS INCLUDING THE DELTA

RELATIVE PRIORITY AND LOCATION OF POST-1914 APPROPRIATIVE WATER RIGHTS

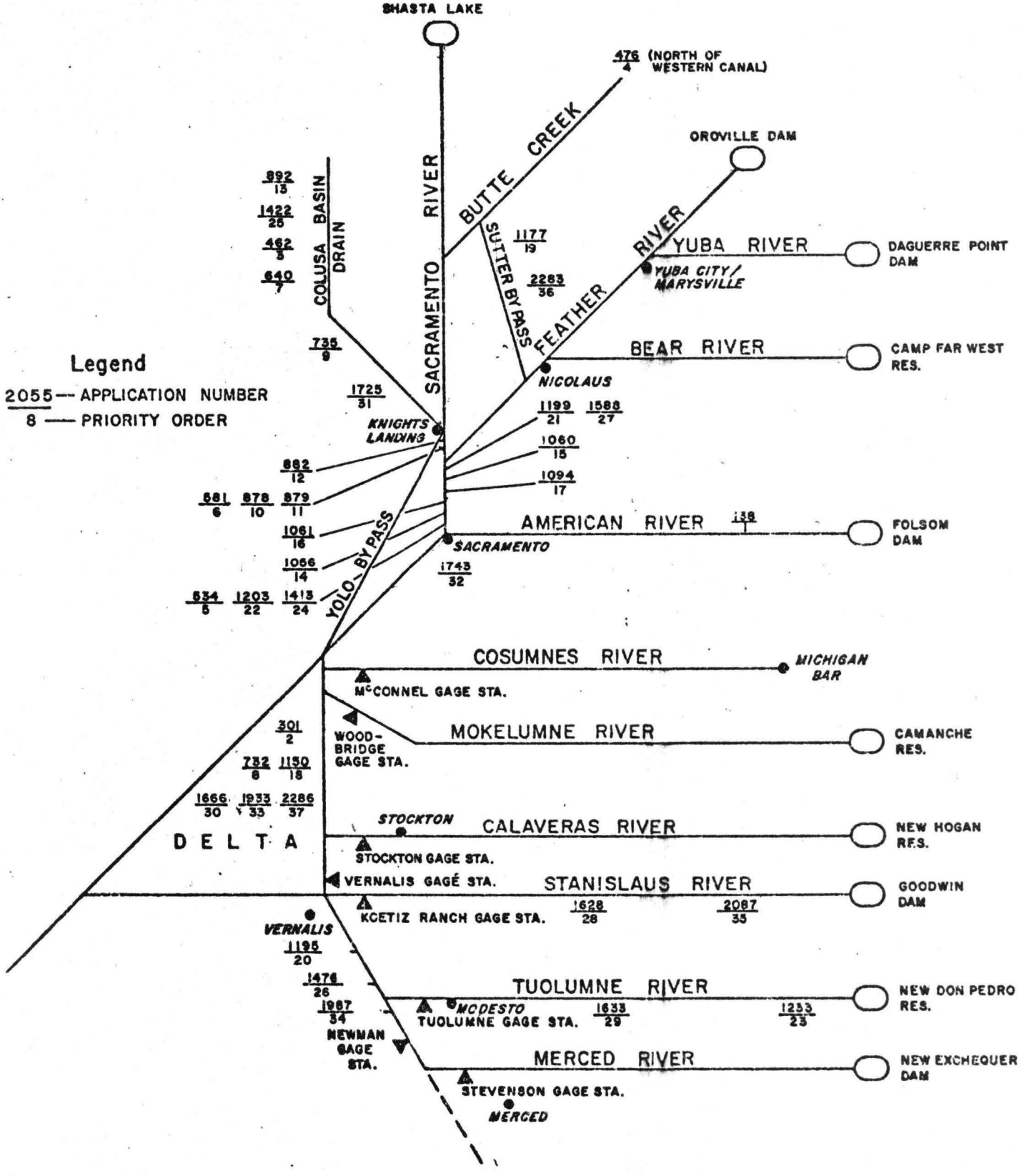
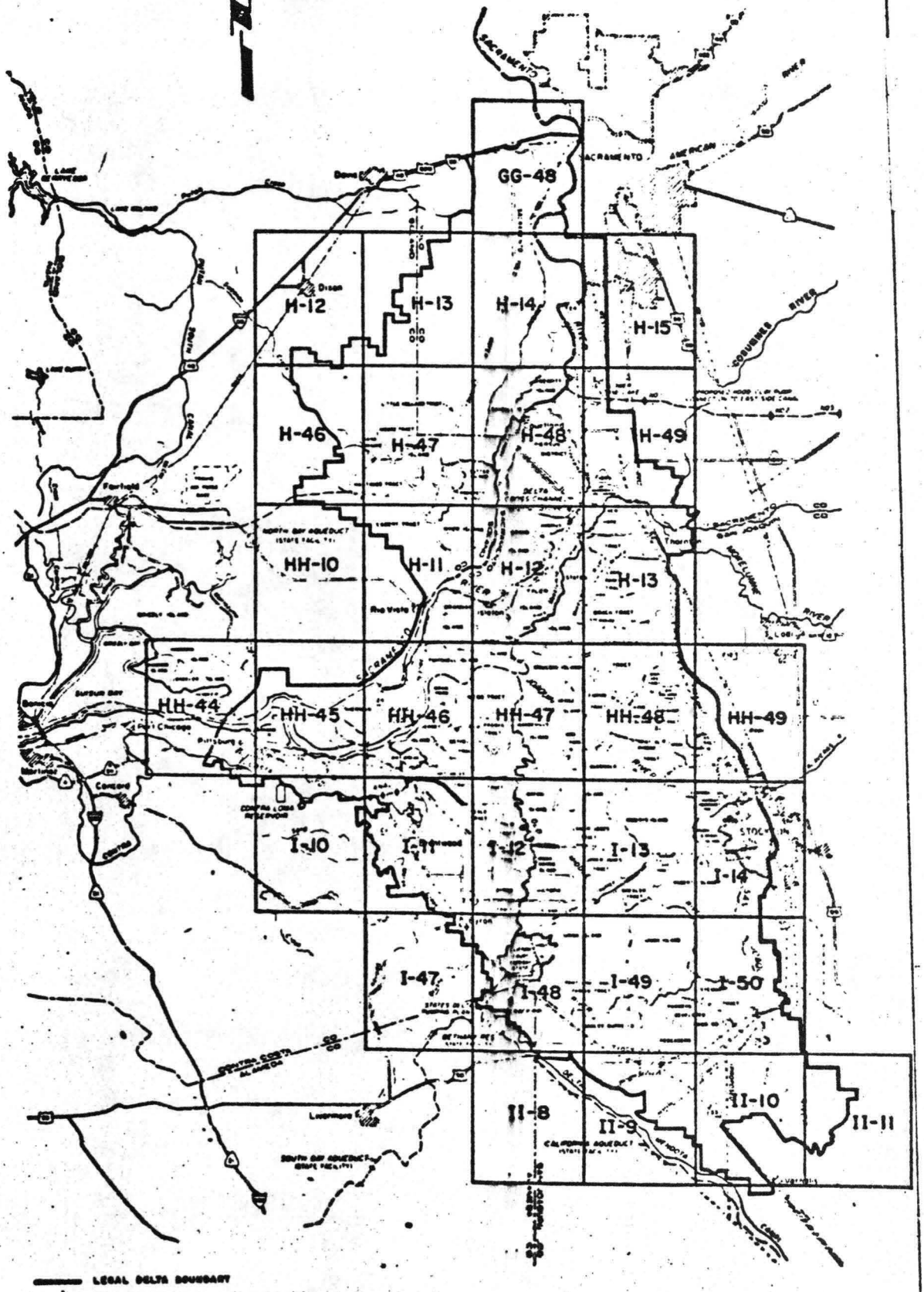


FIGURE 19



STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

SACRAMENTO-SAN JOAQUIN DELTA

INDEX FOR THE DELTA

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FORECASTS OF 1976-77 WATER YEAR UNIMPAIRED RUNOFF
FOR CENTRAL VALLEY STREAMS 1/
(1000 ACRE-FEET)

DRAINAGE BASIN	50-YEAR AVERAGE	MAXIMUM OF RECORD	MINIMUM OF RECORD	OCTOBER THROUGH JANUARY	FEB	MAR	APR	MAY	JUNE	JULY	AUG AND SEPT.	WATER YEAR FORECAST	PERCENT OF AVERAGE
SACRAMENTO RIVER BASIN													
Upper Sacramento River: inflow to Shasta Lake	5,482	10,796	2,479	925	225	245	200	200	155	130	290	2,370	43
Feather River: inflow to Oroville Reservoir	4,287	9,492	1,295	305	90	100	100	100	75	60	90	915	21
Yuba River: flow at Smartville	2,274	4,544	603	75	90	30	60	60	25	10	10	290	13
American River: inflow to Folsom Reservoir	2,573	5,787	543	55	25	45	70	70	25	5	5	300	12
SAN JOAQUIN RIVER BASIN													
Cosumnes River: flow at Michigan Bar	351	876	40	4	2	3	3	2	-	-	-	14	4
Mokelumne River: inflow to Pardee Reservoir	705	1,692	190	8	7	10	35	23	6	1	-	90	13
Stanislaus River: inflow to Melones Reservoir	1,085	2,834	261	17	8	15	35	50	30	5	5	165	15
Tuolumne River: inflow to Don Pedro Reservoir	1,854	3,852	543	20	17	23	75	100	25	5	5	270	15
Merced River: inflow to Lake McClure	920	2,188	252	11	4	7	30	40	15	5	3	115	13
San Joaquin River: inflow to Millerton Lake	1,659	4,368	444	50	15	20	55	80	35	15	10	280	17

TABLE 1 (Cont'd)

FORECASTS OF [illegible]
FOR CENTRAL VALLEY [illegible]

47

DRAINAGE BASIN	50-YEAR AVERAGE	MAXIMUM OF RECORD	MINIMUM OF RECORD	OCTOBER THROUGH JANUARY	FEB	MAR	APR	MAY	JUNE	JULY	AUG AND SEPT	WATER YEAR FORECAST	PERCENT OF AVERAGE
TULARE LAKE BASIN													
Kings River:inflow to Pine Flat Reservoir	1,549	4,203	392	65	15	20	70	80	30	15	10	305	19
Kaweah River:inflow to Terminus Reservoir	403	1,270	102	18	5	7	18	15	5	2	1	71	18
Tule River:inflow to Success Reservoir	133	504	19	7	2	2	2	1	-	-	-	14	11
Kern River:inflow to Isabella Reservoir	627	2,227	175	53	12	13	22	19	16	8	12	155	25

1/ Source - DWR Bulletin #120-77 - California Cooperative Snow Surveys, May 1, 1977

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TABLE 2

SACRAMENTO RIVER BASIN: 1977/1976 SACRAMENTO RIVER AND FEATHER RIVER SUPPLY/DEMAND PRORATION FACTORS

(Monthly Water Quantities in Acre-Feet)

NO.		MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	ASSUMPTIONS/ REFERENCE OR NOTES
1	SACRAMENTO RIVER SUPPLY FACTOR										
2	1977 Projected Runoff to Shasta Lake	245,000	200,000	200,000	155,000	130,000	145,000	145,000	210,000	210,000	Table 1
3	1976 Computed Inflow to Shasta Lake	435,970	391,320	304,940	224,410	214,690	248,000	227,330	234,730	229,810	1/
4	1977/1976 Factor	0.56	0.51	0.66	0.69	0.60	0.58	0.64	0.89	0.91	2 ÷ 3
5	FEATHER RIVER SUPPLY FACTOR										
6	1977 Projected Runoff to Oroville Reservoir	100,000	100,000	100,000	75,000	60,000	45,000	45,000	75,000	80,000	Table 1
7	1976 Unimpaired Runoff to Oroville Reservoir	265,000	225,000	177,000	114,000	101,000	112,000	73,000	72,000	74,000	DWR
8	1977/1976 Factor	0.38	0.44	0.56	0.66	0.59	0.40	0.62	1.04	1.08	6 ÷ 7
9	DEMAND FACTOR										
10	1976 Sacramento River Monthly Diversions	279,000	342,000	480,000	456,000	449,000	358,000	162,000	77,000	—	1/
11	1977 Demand Factor	0.58	0.71	1.00	0.95	0.94	0.74	0.34	0.16	0.05 2/	Monthly Demand ÷ May Demand

1/ The Sacramento Valley Water Use Survey (Survey) Department of Water Resources, June 1977. October and November data received from DWR

2/ DWR Survey Projection of 1976 Graph

TABLE 3
SACRAMENTO RIVER BASIN : ESTIMATED AVAILABLE NATURAL WATER SUPPLY AND RIPARIAN DEMAND
STREAM REACH - SACRAMENTO RIVER (KESWICK DAM TO SACRAMENTO)
(Monthly Quantities in Acre-Feet)

NO.		MONTHLY WATER SUPPLY-DEMAND IN 1977									ASSUMPTIONS/ REFERENCE OR NOTES
		MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	
1	Supply Available at Keswick	245,000	200,000	200,000	155,000	130,000	145,000	145,000	210,000	210,000	Table 1
2	1976 Minor Tributary Inflow (Excluding Battle Creek)	132,900	—	—	—	—	—	—	—	—	1/
3	Apply 1977/1976 Factor and Prorate	74,420	49,620	24,810	0	0	0	0	0	0	Use Proration Factor of 0.56
4	Battle Creek Inflow (1976)	29,980	25,220	22,320	16,470	14,900	15,550	15,100	15,400	15,400 2/	
5	1977/1976 Sacramento River Factor	0.56	0.51	0.66	0.69	0.60	0.58	0.64	0.89	0.89 2/	Table 2
6	Available Flow from Battle Creek	16,790	12,860	14,730	11,360	8,940	9,020	9,660	13,710	13,710	4 x 5
7	Unmeasured Accretions	112,110	65,580	5,420	(-)8,640	(-)26,810	1,440	17,630	22,070	22,070 2/	
8	1977/1976 Factor	0.56	0.51	0.66	0.69	0.60	0.58	0.64	0.89	0.89 2/	Table 2
9	Available Unmeasured Accretions	62,780	33,450	3,580	(-)5,960	(-)16,090	840	11,280	19,640	19,640	7 x 8
10	Total Available For Riparians	398,990	295,930	243,120	160,400	122,850	154,860	165,940	243,350	243,350	1 + 3 + 6 + 9
11	Riparian Acreage	109,910									3/
12	Riparian Acreage Irrigated in 1977	93,420									Assumed 85% of #11
13	Maximum Riparian Diversion	76,620									Assumed Duty - 1 cfs/75 Ac
14	Monthly Demand Factor	0.58	0.71	1.00	0.95	0.94	0.74	0.34	0.16	0.05	Table 2
15	Estimated Monthly Demand	44,440	54,400	76,620	72,790	72,020	56,700	26,050	12,260	3,830	13 x 14

1/ DWR Survey

2/ Assume the same as October

3/ 1956 Cooperative Study, Volume I - March, 1957

TABLE 4
SACRAMENTO RIVER BASIN: ESTIMATED AVAILABLE WATER SUPPLY AND RIPARIAN DEMAND
STREAM REACH - FEATHER RIVER (OROVILLE TO CONFLUENCE WITH THE SACRAMENTO RIVER)
YUBA RIVER (DAGUERRE POINT DAM TO CONFLUENCE WITH THE FEATHER RIVER)
AMERICAN RIVER (FOLSOM RESERVOIR TO CONFLUENCE WITH THE SACRAMENTO RIVER)

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NO.		MONTHLY WATER SUPPLY-DEMAND IN 1977									ASSUMPTIONS/ REFERENCE OR NOTES
		MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	
1	Feather River Inflow at Oroville	100,000	100,000	100,000	75,000	60,000	45,000	45,000	75,000	80,000	Table 1
2	Unmeasured Accretions	10,490	2,210	45,100	2,870	24,480	29,060	12,260	39,250	39,250 1/	2/
3	1977/1976 Factor	0.38	0.44	0.56	0.66	0.59	0.40	0.62	1.04	1.04	Table 2
4	Available Unmeasured Accretions	3,990	970	25,260	1,890	14,440	11,620	7,600	40,820	40,820 1/	2 x 3
5	Total Feather River Supply	103,990	100,970	125,260	76,890	74,440	56,620	52,600	115,820	120,820	1 + 4
6	Riparian Acreage	19,400									DWR
7	Riparian Acreage Irrigated in 1977	16,490									Assumed 85% of #6
8	Maximum Riparian Diversion	13,530									Assumed Duty 1 cfs/75 Ac.
9	Monthly Demand Factor	0.58	0.71	1.00	0.95	0.94	0.74	0.34	0.16	0.05	Table 2
10	Estimated Monthly Demand	7,850	9,610	13,530	12,850	12,720	10,010	4,600	2,160	680	8 x 9
	STREAM REACH - YUBA RIVER (DAGUERRE POINT DAM TO CONFLUENCE WITH THE FEATHER RIVER)										
1	Yuba River Inflow at Smartville	30,000	60,000	60,000	25,000	10,000	5,000	5,000	10,000	15,000	Table 1
2	Riparian Acreage	2,500									County Assessor's Maps
3	Riparian Acreage Irrigated in 1977	2,120									Assumed 85% of #2
4	Maximum Riparian Diversion	1,720									Assumed Duty - 1 cfs/ 75 Ac.
5	Monthly Demand Factor	0.58	0.71	1.00	0.95	0.94	0.74	0.34	0.16	0.05	Table 2
6	Estimated Monthly Demand	1,000	1,220	1,720	1,630	1,620	1,270	580	280	90	4 x 5
	STREAM REACH - AMERICAN RIVER (FOLSOM RESERVOIR TO CONFLUENCE WITH THE SACRAMENTO RIVER)										
1	American River Inflow at Folsom Reservoir	45,000	70,000	70,000	25,000	5,000	2,500	2,500	10,000	15,000	Table 1
2	1977 Water Demand	(Riparian use is assumed negligible)									

1/ Assumed to be the same as October

2/ DWR Survey

TABLE 5
SACRAMENTO RIVER BASIN: SUMMARY OF AVAILABLE SUPPLY AND RIPARIAN DEMAND

WATER SUPPLY - DEMAND PARTICULARS	MONTHLY WATER SUPPLY - DEMAND (ACRE-FEET)									ASSUMPTION/NOTES
	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	
Available Water Supply										
1. Sacramento River	398,990	295,930	243,120	160,400	122,850	154,860	165,940	243,350	243,350	Table 3
2. Feather River	103,990	100,970	125,260	76,890	74,440	56,620	52,600	115,820	120,820	Table 4
3. Yuba River	30,000	60,000	60,000	25,000	10,000	5,000	5,000	10,000	15,000	Table 4
4. American River	45,000	70,000	70,000	25,000	5,000	2,500	2,500	10,000	15,000	Table 4
TOTAL	577,980	526,900	498,380	287,290	212,290	218,980	226,040	379,170	394,170	
Riparian Demand										
1. Sacramento River	44,440	54,400	76,620	72,790	72,020	56,700	26,050	12,260	3,830	Table 3
2. Feather River	7,850	9,610	13,530	12,850	12,720	10,010	4,600	2,160	680	Table 4
3. Yuba River	1,000	1,220	1,720	1,630	1,620	1,270	580	280	90	Table 4
4. American River	—	—	—	—	—	—	—	—	—	Table 4
TOTAL	53,290	65,230	91,870	87,270	86,360	67,980	31,230	14,700	4,600	

TABLE 6
SAN JOAQUIN BASIN : ESTIMATED AVAILABLE WATER SUPPLY AND RIPARIAN DEMAND
STREAM REACH - MERCED RIVER (NEW EXCHEQUER DAM TO RIVER MOUTH)
(Water Flows in Acre-Feet)

NO.	WATER SUPPLY/DEMAND Particulars		MONTHLY WATER SUPPLY-DEMAND IN 1977									Assumptions/References or Notes
			March	April	May	June	July	August	September	October	November	
1	Natural Inflow from Upstream	AF	7,000	30,000	40,000	15,000	5,000	1,500	1,500	5,000	8,000	Refer to Table 1
2	Total Riparian Acreage	AC	7,274									
3	Irrigated Acreage in 1977	AC	6,183									Assumed 85% of #2 Above
4A	Water Demand	AF										
4B	Water Demand	AF										
5	Conservation by 10 Percent	AF										
6	1977 Maximum Month Water Demand	AF			4,600							Used Duty of 1 cfs for 80 Acres x 3
7	Monthly Diversion Factors	—	0.6	0.7	1.0	0.95	0.95	0.75	0.35	0.15	0.05	Assumed
8	Monthly Diversion	AF	2,760	3,250	4,600	4,390	4,390	3,470	1,630	690	230	6 x 7
9	Return Flow Factor	—	0.2	0.2	0.1	0.1	0	0	0	0.2	0.2	Assumed
10	Return Flow	AF	552	650	460	439	0	0	0	138	46	8 x 9
11	Available Supply	AF	7,552	30,650	40,460	15,439	5,000	1,500	1,500	5,138	8,046	1 + 10
12	Residual Supply at Foot of Reach	AF	4,792	27,400	35,860	11,049	610	0	0	4,448	7,816	11 - 8

TABLE 7
SAN JOAQUIN BASIN : ESTIMATED AVAILABLE WATER SUPPLY AND RIPARIAN DEMAND
STREAM REACH - TUOLUMNE RIVER (DON PEDRO DAM TO RIVER MOUTH)
(Water Flows in Acre-Feet)

C.	WATER SUPPLY/DEMAND Particulars	MONTHLY WATER SUPPLY-DEMAND IN 1977									Assumptions/References or Notes
		March	April	May	June	July	August	September	October	November	
1	Natural Inflow from Upstream	23,000	75,000	100,000	25,000	5,000	2,500	2,500	10,000	15,000	Refer to Table 5
	Total Riparian Acreage										
	Irrigated Acreage in 1977										
A	Water Demand										
B	Water Demand										
	Conservation by 10%										
	1977 Water Demand										
	Monthly Diversion Factors										
	Monthly Diversion	2,740	4,206	4,451	4,401	2,734	3,294	1,514	668	223	Assumed same as Stanislaus See Table 8
	Return Flow Factors	0.2	0.2	0.1	0.1	0	0	0	0.2	0.2	Assumed
10	Return Flow	548	841	445	440	0	0	0	134	45	8 x 9
11	Available Supply	23,548	75,841	100,445	25,440	5,000	2,500	2,500	10,134	15,045	1 + 10
12	Residual Supply at Foot of Reach	20,808	71,635	95,994	21,039	2,266	0	986	9,466	14,822	11 - 8

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TABLE 8
SAN JOAQUIN BASIN : ESTIMATED AVAILABLE WATER SUPPLY AND RIPARIAN DEMAND
STREAM REACH - STANISLAUS RIVER (GOODWIN DAM TO RIVER MOUTH)
(Water Flows in Acre-Feet)

NO.	WATER SUPPLY/DEMAND Particulars	MONTHLY WATER SUPPLY-DEMAND IN 1977									Assumptions/References or Notes
		March	April	May	June	July	August	September	October	November	
1	Natural Inflow from Upstream	15,000	35,000	50,000	30,000	5,000	2,500	2,500	6,000	10,000	Refer to Table 1
2	Total Riparian Acreage										
3	Irrigated Acreage in 1977										Assumed 85% of #2 Above
4A	Water Demand										Assumed Water Duty of 1:7
4B	Water Demand	3,044	4,673	4,946	4,890	3,038	3,660	1,682			
5	Conservation by 10%	304	467	495	489	304	366	168			4B x 0.1
6	1977 Water Demand	2,740	4,206	4,451	4,401	2,734	3,294	1,514			4B - 5
7	Monthly Diversion Factors								0.15	0.05	Assumed
8	Monthly Diversion	2,740	4,206	4,451	4,401	2,734	3,294	1,514	668	223	7* May Demand for October & November; rest same as #6
9	Return Flow Factor	0.2	0.2	0.1	0.1	0	0	0	0.2	0.2	Assumed
10	Return Flow	548	841	445	440	0	0	0	134	45	8 x 9
11	Available Supply	15,548	35,841	50,445	30,440	5,000	2,500	2,500	6,134	10,045	1 + 10
12	Residual Supply at Foot of Reach	12,808	31,635	45,994	26,039	2,266	0	986	5,466	9,822	11 - 8

TABLE 9
SAN JOAQUIN BASIN : ESTIMATED AVAILABLE WATER SUPPLY AND RIPARIAN DEMAND
STREAM REACH - SAN JOAQUIN RIVER (CONFLUENCE OF MERCED AND SAN JOAQUIN RIVERS TO DELTA RIM)
(Water Flows in Acre-Feet)

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NO.	WATER INFLOW/DEMAND Particulars	MONTHLY WATER SUPPLY-DEMAND IN 1977									Assumptions/References or Notes
		March	April	May	June	July	August	September	October	November	
1.	Residual Supply from Upstream	0	0	0	0	0	0	0	0	0	Assumed Negligible
	Residual Supply from Tributaries										
	Merced River	4,792	27,400	35,860	11,049	610	0	0	4,448	7,816	Refer to Table No.6
	Tuolumne River	20,808	71,635	95,994	21,039	2,266	0	986	9,466	14,822	Refer to Table No. 7
	Sub-Total	25,600	99,035	131,854	32,088	2,876	0	986	13,914	22,638	
2.	Total Acreage	26,300	(Estimated from County's Assessor Maps)								
3.	Irrigated Acreage in 1977	22,355									Assumed 85% of #2 Above
4A	Water Demand										
4B	Water Demand										
5	Conservation by 10%										
6.	1977 Water Demand	17,152	16,599	17,152	16,599	17,152	16,599	17,152	17,152	16,599	Used duty of 1 cfs for 80 Acres x3
7.	Monthly Diversion Factors	0.6	0.7	1.0	0.95	0.95	0.75	0.35	0.15	0.05	Assumed
8.	Monthly Diversion	10,291	11,619	17,152	15,769	16,294	12,449	6003	2,573	830	6 x 7
9.	Return Flow Factor	0.2	0.2	0.1	0.1	0	0	0	0.2	0.2	Assumed
10.	Return Flow	2,058	2,324	1,715	1,577	0	0	0	515	166	8 x 9
11.	Available Supply	27,658	101,359	133,569	33,665	2,876	0	986	14,429	22,804	1 + 10
12.	Residual Supply at Foot of Reach	17,367	89,740	116,417	17,896	0	0	0	11,856	21,974	11 - 8

TABLE 10
SAN JOAQUIN BASIN:ESTIMATED AVAILABLE WATER SUPPLY AND RIPARIAN DEMAND
STREAM REACH - CALAVERAS RIVER (NEW HOGAN DAM TO DELTA RIM)
(Water Flows in Acre-Feet)

O.	WATER INFLOW/DEMAND PARTICULARS	MONTHLY WATER SUPPLY-DEMAND IN 1977									Assumptions/References or Notes
		March	April	May	June	July	August	September	October	November	
1.	Natural Inflow from Upstream	2,460	1,560	960	0	0	0	0	1740	1,500	Refer to USGS 1924 Records
2.	Total Acreage										
3.	Irrigated Acreage in 1977										Assumed 85% of #2 Above
4A	Water Demand										Assumed Water Duty of 1:70
4B	Water Demand	243	465	338	340	293	145	68			
5.	Conservation by 10%	24	47	34	34	29	15	7			(4A or 4B X 0.1)
6.	1977 Water Demand	219	418	304	306	264	130	61			(4A or 4B) - 5
7.	Monthly Diversion Factors								0.15	0.05	Assumed
8.	Monthly Diversion	219	418	304	306	264	130	61	46	15	6 May Demand 7 for October and November; rest same as #6
9.	Return Flow Factor	0.2	0.2	0.1	0.1	0	0	0	0.2	0.2	Assumed
10.	Return Flow	44	84	30	31	0	0	0	9	3	8 x 9
11.	Available Supply	2,504	1,644	990	31	0	0	0	1,749	1503	1+10
12.	Residual Supply at Foot of Reach	2,285	1,226	686	0	0	0	0	1,703	1,488	11 - 8

TABLE 11

SAN JOAQUIN BASIN: ESTIMATED AVAILABLE WATER SUPPLY AND RIPARIAN DEMAND
STREAM REACH - MOKELUMNE RIVER (CAMANCHE RESERVOIR TO THE DELTA RIM
(Water Flows in Acre-Feet)

NO.	WATER SUPPLY/DEMAND Particulars	MONTHLY WATER SUPPLY-DEMAND IN 1977									Assumptions/References or Notes
		March	April	May	June	July	August	September	October	November	
1	Natural Inflow from Upstream	10,000	35,000	23,000	6,000	1,000	0	0	5,000	8,000	Refer to Table 1
2	Total Riparian Acreage	8,620									
3	Irrigated Acreage in 1977	7,327									Assumed 85% of #2 Above
4A	Water Demand	6,425	6,217	6,425	6,217	6,425	6,425	6,217	6,425	6,217	Assumed Water Duty of 1:70 X 3
4B	Water Demand										
5	Conservation by 10%	642	622	642	622	642	642	642	642	622	4A x 0.1
6	1977 Water Demand	5,783	5,595	5,783	5,595	5,783	5,783	5,595	5,783	5,595	4A - 5
7	Monthly Diversion Factors	0.6	0.7	1.0	0.95	0.95	0.75	0.35	0.15	0.05	Assumed
8	Monthly Diversion	3,460	3,916	5,783	5,315	5,494	4,337	1,958	867	280	6 x 7
9	Return Flow Factors	0.2	0.2	0.1	0.1	0	0	0	0.2	0.2	Assumed
10	Return Flow	692	783	578	532	0	0	0	173	56	8 x 9
11	Available Supply	10,692	35,783	23,578	6,532	1,000	0	0	5,173	8,056	1 + 10
12	Residual Supply at Foot of Reach	7,232	31,867	17,895	1,217	0	0	0	4,306	7,776	11 - 8

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TABLE 12
SAN JOAQUIN BASIN : ESTIMATED AVAILABLE WATER SUPPLY AND RIPARIAN DEMAND
STREAM REACH - COSUMNES RIVER (MICHIGAN BAR TO DELTA RIM)
(Water Flows in Acre-Feet)

NO.	WATER SUPPLY/DEMAND Particulars	MONTHLY WATER SUPPLY-DEMAND IN 1977									Assumptions/References or Notes
		March	April	May	June	July	August	September	October	November	
1	Natural Inflow from Upstream	3,000	3,000	2,000	0	0	0	0	2,000	3,000	Refer to Table 6
2.	Total Riparian Acreage	49,000									
3	Irrigated Acreage in 1977	3,600									Assumed 85% of #2 above
4A	Water Demand										Assumed Water Duty of 1:70
4B	Water Demand	1,685	2,032	2,903	2,758	2,758	2,178	1,016			
5	Conservation by 10%	167	203	290	276	276	218	102			4B x 0.1
6	1977 Water Demand	1,518	1,829	2,613	2,482	2,482	1,960	914			4B - 5
7	Monthly Diversion Factors								0.15	0.05	Assumed
8	Monthly Diversion	1,518	1,829	2,613	2,482	2,482	1,960	914	392	130	7 x May Demand for October and November; rest same as #6
9	Return Flow Factor	0.2	0.2	0.1	0.1	0	0	0	0.2	0.2	Assumed
10	Return Flow	304	366	200	0	0	0	0	78	26	10 x 11
11	Available Supply	3,304	3,366	2,200	0	0	0	0	2,078	3,026	1 + 10
12	Residual Supply at Foot of Reach	1,786	1,537	0	0	0	0	0	1,686	2,896	11 - 8

TABLE 13

SAN JOAQUIN RIVER BASIN: SUMMARY OF AVAILABLE SUPPLY AND RIPARIAN DEMAND

WATER SUPPLY - DEMAND PARTICULARS	MONTHLY WATER SUPPLY - DEMAND (ACRE-FEET)									ASSUMPTIONS/REFERENCES
	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	
Available Water Supply										
1. Merced River	7,552	30,650	40,460	15,439	5,000	1,500	1,500	5,138	8,046	Table 6
2. Tuolumne River	23,548	75,841	100,445	25,440	5,000	2,500	2,500	10,134	15,045	Table 7
3. Stanislaus River	15,548	35,841	50,445	30,440	5,000	2,500	2,500	6,134	10,045	Table 8
4. San Joaquin River (Return Flow)	2,058	2,324	1,715	1,577	0	0	0	515	166	Table 9
5. Calaveras River	2,504	1,644	990	31	0	0	0	1,749	1,508	Table 10
6. Mokelumne River	10,692	35,783	23,578	6,532	1,000	0	0	5,173	8,056	Table 11
7. Cosumnes River	3,304	3,366	2,200	0	0	0	0	2,078	3,026	Table 12
TOTAL	65,206	185,449	219,833	79,459	16,000	6,500	6,500	30,921	45,892	
Riparian Demand										
1. Merced River	2,760	3,250	4,600	4,390	4,390	3,470	1,630	690	230	Table 6
2. Tuolumne River	2,740	4,206	4,451	4,401	2,734	3,294	1,514	668	223	Table 7
3. Stanislaus River	2,740	4,206	4,451	4,401	2,734	3,294	1,514	668	223	Table 8
4. San Joaquin River	10,291	11,619	17,152	15,769	16,294	12,449	6,003	2,573	830	Table 9
5. Calaveras River	219	418	304	306	264	130	61	46	15	Table 10
6. Mokelumne River	3,460	3,916	5,783	5,315	5,494	4,337	1,958	867	280	Table 11
7. Cosumnes River	1,518	1,829	2,613	2,482	2,482	1,960	914	392	130	Table 12
TOTAL	23,728	29,444	39,354	37,064	34,392	28,934	13,594	5,904	1931	

TABLE 14

SACRAMENTO - SAN JOAQUIN DELTA ; RIPARIAN DEMAND

(Monthly Water Quantities in Acre-Feet)

NO.		MONTHLY WATER SUPPLY-DEMAND IN 1977									ASSUMPTIONS/ REFERENCE OR NOTES
		MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	
1	Irrigable Riparian Acreage in Delta	417,000									1/
2	Assumed Riparian Acreage Irrigated in 1977	354,450									Assumed 85% of #1
3	Delta Service Area Acreage Irrigated in 1976	488,467									2/
4	Percent of Diversion Applied to Riparian Lands	73%									2 ÷ 3
5	Use in the Delta Service Area in 1976	75,170	112,770	160,050	239,510	253,120	202,800	123,680	93,690	—	2/
6	Estimated Monthly Demand	54,870	82,320	116,840	174,840	184,780	148,040	90,290	68,390	29,560 3/	4 x 5
7	Native Vegetation	17,210	17,830	15,980	15,370	15,990	14,760	12,300	12,910	—	2/Assumed the same amount consumed in 1977 as in 1976
8	Riparian Vegetation	3,680	4,750	7,660	8,580	8,270	5,360	4,750	2,910	—	2/Assumed the same amount consumed in 1977 as in 1976
9	Water Surface Evaporation	21,690	28,010	45,190	50,610	48,800	31,630	28,010	17,170	—	2/Assumed the same amount consumed in 1977 as in 1976
10	Non-Agricultural Consumptive Use	42,580	50,590	68,830	74,560	73,060	51,750	45,060	32,990	17,150 4/	7 + 8 + 9
11	Delta Outflow Index	184,470	178,520	184,470	89,260	92,230	92,230	89,260	92,230	89,260	5/

1/ 1956 Cooperative Study and 1966 Joint Water Rights Study

2/ DWR Survey

3/ November demand factor determined from DWR Survey data. 16% of July Demand

4/ November consumptive use determined from DWR Survey data. 23% of June use.

5/ SWRCB Delta Unit - March through May = 3000 cfs
June through November = 1500 cfs

TABLE 15

SACRAMENTO - SAN JOAQUIN BASINS INCLUDING THE DELTA - SUMMARY OF AVAILABLE SUPPLY AND ASSUMED RIPARIAN DEMAND

WATER SUPPLY / DEMAND PARTICULARS	MONTHLY WATER SUPPLY - DEMAND (ACRE-FEET)									ASSUMPTIONS/REFERENCES
	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	
Available Water Supply										
1. Sacramento River Basin	577,980	526,900	498,380	287,290	212,290	218,980	226,040	379,170	394,170	Table 5
2. San Joaquin River Basin	65,206	185,449	219,833	79,459	16,000	6,500	6,500	30,921	45,892	Table 13
3. Sacramento-San Joaquin Delta	—	—	—	—	—	—	—	—	—	—
TOTAL	643,186	712,349	718,213	366,749	228,290	225,480	232,540	410,091	440,062	
Assumed Riparian Demand										
1. Sacramento River Basin	53,290	65,230	91,870	87,270	86,360	67,980	31,230	14,700	4,600	Table 5
2. San Joaquin River Basin	23,728	29,444	39,354	37,064	34,392	28,934	13,594	5,904	1,931	Table 13
3. Sacramento - San Joaquin Delta										
a. Assumed Riparian	54,870	82,320	116,840	174,840	184,780	148,040	90,290	68,390	29,560	Table 14
b. Non-agricultural Consumptive Use	42,580	50,590	68,830	74,560	73,060	51,750	45,060	32,990	17,150	Table 14
c. Outflow	184,470	178,520	184,470	89,260	92,230	92,230	89,260	92,230	89,260	Table 14
TOTAL	358,938	406,104	501,364	462,994	470,822	388,934	269,434	214,214	142,501	

TABLE 16

SACRAMENTO-SAN JOAQUIN BASIN INCLUDING THE DELTA

MONTHLY TIME-FRAME SHOWING PERCENT OF ESTIMATED RIPARIAN DEMANDS MET

STREAM/BASIN	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT	NOV	NOTES
Sacramento - San Joaquin Basin Including Delta	100	100	100	60	40	55				Based on May Forecasts & Delta Outflow Index
	100	100	100	80	50	60	85	100	100	Based on May Forecasts and June outflow Index
SAN JOAQUIN BASIN										
Merced River	100	100	100	100	100	40	90	100	100	Based on May Forecasts
Tuolumne River	100	100	100	100	100	75	100	100	100	
Stanislaus River	100	100	100	100	100	75	100	100	100	
San Joaquin River	100	100	100	100	20	0	15	100	100	
Calaveras River	100	100	100	0	0	0	0	100	100	
Mokelumne River	100	100	100	100	20	0	0	100	100	
Cosumnes River	100	100	85	0	0	0	0	100	100	

Sacramento - San Joaquin System including the Delta

TABLE - 17

NOTICES SENT TO ASSUMED RIPARIAN OWNERS

3

DATE	NOTICE DESCRIPTION	STREAM	NUMBER OF NOTICES	PERCENT OF DEMAND MET JUNE	JULY	AUGUST	NOTES
4-22-77	Riparian diversions from the Sacramento River above I Street Bridge and lower reaches of main tributaries not having contracts with USBR or agreements with DWR.	Sacramento River	895	60	45	50	Forecast of March 1, 1977
		Yuba River	83	60	45	50	
		Feather River	15	60	45	50	
			993				
5-18-77	Riparian Diverters from Sacramento-San Joaquin Delta channels.	Sacramento-San Joaquin Delta Channels	2146	60	40	55	Forecast of May 1, 1977
5-27-77	Riparian diverters from the middle & lower San Joaquin River and its tributaries having no contracts with the Bureau-	Merced River	163	60	40	40	Forecast of May 1, 1977 1/
		Tuolumne River	172	60	40	50	
		Stanislaus R.	187	60	40	50	
		San Joaquin R.	107	60	40	50	
		Calaveras R.	146	0	0	0	
		Mokelumne R.	166	60	20	0	
		Cosumnes R.	125	0	0	0	
			1049				
			1105				

1/ Monthly figures based on assuming Sacramento and San Joaquin Basins as on item

SACRAMENTO River Basin; Estimation of Return Flow

TABLE

SACRAMENTO RIVER : KNIGHTS LANDING TO I STREET BRIDGE IN SACRAMENTO

(Monthly Quantities in Acre-Feet)

NO.		MONTHLY WATER SUPPLY IN 1977						NOTES/REFERENCES
		APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	
1	Return Flows (1976)							Sacramento Valley Water Use Survey 1976, DWR
2	Reclamation District 1001 Drain	—	790	1,400	2,630	4,680	4,820	" " "
3	Reclamation District 1000 Drain #4	—	0	0	0	0	620	" " "
4	Reclamation District 1000 Drain #6	—	0	0	0	570	1,600	" " "
5	Reclamation District 1000 Drain (2nd Bannon Slough)	—	920	600	800	2,790	6,640	" " "
6	Total Return Flows	—	1,710	2,000	3,430	8,040	13,680	2 + 3 + 4 + 5
7	1977/1976 Sacramento River Factor	—	0.66	0.69	0.60	0.58	0.64	Riparian Study-Table 2
8	Available Return Flows - 1977	—	1,130	1,380	2,060	4,660	8,760	6 x 7

TABLE

SACRAMENTO RIVER BASIN : COLUSA BASIN DRAIN RETURN FLOW

(Monthly Quantities in Acre-Feet)

NO.		MONTHLY WATER SUPPLY IN 1977							NOTES/REFERENCES
			APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	
1	Glenn Colusa I. D. - Total Diversion	824,409							Glenn-Colusa Irrigation Report on Water Measurement Program for 1976 - January 1977 Table 2
2	Monthly Diversions		124,960	163,180	158,210	160,640	134,330	59,830	
3	Percent of Total Diversion		0.15	0.20	0.19	0.19	0.16	0.07	2 ÷ 1
4	Monthly Drain Outflow		20,600	37,400	19,100	18,900	36,700	38,500	Glenn-Colusa Report
5	Outflow-Percent of Monthly Diversion		0.16	0.23	0.12	0.12	0.27	0.64	4 ÷ 2
6	Maxwell I. D. - Total Diversion - 1976	17,980							USBR Contract No. 6078A
7	Monthly Diversion		2,700	3,600	3,420	3,420	2,880	1,260	3 x 6
8	Assumed Monthly Outflow		430	830	410	410	780	810	5 x 7
9	Princeton-Codora-Glenn I. D. - Total Diversion - 1976	67,810							USBR Contract No. 849A
10	Monthly Diversion		10,170	13,560	12,880	12,880	10,850	4,750	3 x 9
11	Assumed Monthly Outflow		1,630	3,120	1,550	1,550	2,930	3,040	5 x 10
12	Provident I. D. - Total Diversion-1976	54,730							USBR Contract No. 856A
13	Assumed Monthly Diversion		8,210	10,950	10,400	10,400	8,760	3,830	3 x 12
14	Assumed Monthly Outflow		1,310	2,520	1,250	1,250	2,360	2,450	5 x 13
15	Reclamation District No. 108 - Total 1976 Diversion	232,000							USBR Contract No. 876A

Table 19 (Contd.)

NO.		MONTHLY WATER SUPPLY IN 1977							NOTES/REFERENCES
			APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	
16	Assumed Monthly Diversion		34,800	46,400	44,080	44,080	37,120	16,240	3 x 15
17	Assumed Monthly Outflow		5,570	10,670	5,290	5,290	10,020	10,390	5 x 16
18	O. P. Davis Ranch - Total Diversion-1976	31,800							USBR Contract No. 2146A
19	Assumed Monthly Diversion		4,770	6,360	6,040	6,040	5,090	2,230	3 x 18
20	Assumed Monthly Outflow		760	1,460	730	730	1,370	1,430	5 x 19
21	Total Monthly Outflow		30,300	56,000	28,330	28,130	54,160	56,620	4 + 8 + 11 + 14 + 17 + 20
22	1977 USBR Cutback (25%)		22,720	42,000	21,250	21,100	40,620	42,470	USBR 1977 Deliveries Cutback by 25%
23	1977 Assumed Outflow		17,040	31,500	15,940	15,830	30,460	31,850	Assumed reduction due to conservation measures and recycling by 25%.

TABLE 20

SACRAMENTO RIVER : SUTTER BYPASS
(Monthly Quantities in Acre-Feet)

NO.		MONTHLY WATER SUPPLY IN 1977							NOTES/REFERENCES
			APRIL	MAY	JUNE	JUL	AUGUST	SEPTEMBER	
1	Joint Water District - 1977 Diversion	303,750							1977 Anticipated Deliveries Data Received from Joint Water Board District's manager
2	Glenn-Colusa Monthly Diversion Percent		15	20	19	19	16	7	Table 19
3	Assumed Monthly Diversion		45,560	60,750	57,710	57,710	48,600	21,260	1 x 2
4	Outflow - Percent of Monthly Diversion		16	23	12	12	27	64	Table 19
5	Assumed Monthly Outflow		7,290	13,970	6,920	6,920	13,120	13,610	3 x 4
6	Joint Water District - 1976 Diversion	615,712							
7.	Reduction in Delivery for 1977	49.3%	Assume 50%						1 ÷ 6
8	Western Canal - 1976 Diversion	214,000							Sacramento Valley Water Use Survey
9	Western Canal - 1977 Diversion	107,000							Assume same delivery reduction as Joint Water Board Districts 7 x 8
10	Assumed Monthly Diversion		16,050	21,400	20,330	20,330	17,120	7,490	2 x 9
11	Assumed Monthly Outflow		2,570	4,920	2,440	2,440	4,620	4,790	4 x 10
12	Assumed Total Monthly Outflow		9,860	18,890	9,360	9,360	17,740	18,400	5 + 11
13	Total 1977 Outflow		7,400	14,170	7,020	7,020	13,310	13,800	Assumed reduction due to conservation measures and recycling by 25%

ESTIMATION OF RETURN FLOWS TABLE 2.1

FEATHER RIVER : OROVILLE RESERVOIR TO NICOLAUS

YUBA RIVER : DAGUERRE POINT DAM TO CONFLUENCE WITH FEATHER RIVER

(Monthly Quantities in Acre-Feet)

NO.		MONTHLY WATER SUPPLY IN 1977						NOTES/REFERENCES
		APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	
1	Feather River and Yuba River - Available Natural Flow (1977)	160,000	160,000	100,000	70,000	50,000	50,000	Table 1
2	Feather River Riparian Demand	9,640	13,530	12,850	12,720	10,010	4,600	Sacramento River Riparian Study Table 4
3	Yuba River Riparian Demand	1,220	1,720	1,630	1,620	1,270	580	Table 4
4	Assumed Natural Supply Available at Nicolaus (1977)	149,170	144,750	85,520	55,660	38,720	44,820	1 - 2 - 3
5	Gaged Flow at Nicolaus (1976)	188,500	90,090	105,000	170,300	102,800	167,700	Sacramento Valley Water Use Survey - 1976 DWR
6	Assumed DWR Project Water Flow at Nicolaus	39,720	0	59,060	139,580	43,220	37,190	Assume Release From Storage - DWR Project Water - DWR Survey
7	Feather River Flow Available to Riparians and Appropriators at Nicolaus (1976)	148,780	90,090	45,940	30,720	59,580	130,510	5 - 6
8	1977/1976 Feather River Factor	0.44	0.56	0.66	0.59	0.40	0.62	Riparian Study-Table 2
9	Assumed 1977 Supply Using Gaged Flows	65,460	50,450	30,320	18,120	23,830	80,920	7 x 8
10	Available for Appropriation	0	0	0	0	0	36,100	9 - 4

ESTIMATION OF RETURN FLOW TABLE 2-2

AMERICAN RIVER : FOLSOM RESERVOIR TO CONFLUENCE WITH SACRAMENTO RIVER

(Monthly Quantities in Acre-Feet)

NO.		MONTHLY WATER SUPPLY IN 1977						NOTES/REFERENCES
		AFRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	
1	American River - Available Natural Flow	70,000	70,000	25,000	5,000	2,500	2,500	Table 1
2	Gaged Flow at Fair Oaks (1976)	73,870	78,350	76,010	106,500	122,500	100,900	Sacramento Valley Water Use Survey, 197 DWR
3	Assumed USBR Project Water (1976)	0	2,200	51,700	61,800	68,900	35,000	Assume Release from Storage is USBR Project Water - S.V.W.U. Survey
4	Available Gaged Flow (1976)	73,870	76,150	24,310	44,700	53,600	65,900	2 - 3
5	1977/1976 Feather River Factor	0.44	0.56	0.66	0.59	0.40	0.62	Riparian Study-Table 1
6	Assumed Available 1977 Flow at Fair Oaks	32,500	42,640	16,040	26,370	21,440	40,860	4 x 5
7	Available For Appropriation	0	0	0	21,370	18,940	38,360	6 - 1

TABLE 23

San Joaquin River Basin

Gaged Flow Data for 1976 (Acre-feet)

STREAM (GAGE STATION)	March	April	May	June	July	Aug	Sept
Merced R. 2/ (Stevenson)	13,650	13,370	9,160	7,380	5,770	9,990	9,570
San Joaquin R. (Newman)	34,600	30,600	20,290	18,990	13,450	26,090	27,380
Tuolumne R. (Tuolumne City)	48,020	22,580	14,000	10,920	10,040	11,920	13,820
Stanislas R. (Koetiz Ranch)	13,960	10,930	9,088	6,934	5,492	6,720	6,831
DELTA INFLOW 1/							
San Joaquin R. (Vernalis)	109,380	77,580	56,340	47,880	40,260	63,300	64,020
Calaveras R. (Near Stockton)	-0-	1,032	1,068	744	810	1,164	684
Mokelume R. (Wood Bridge)	2,076	1,200	1,002	840	79.	882	592
Cosumnes R. (McConnel)	6,120	6,300	2,340	85	34	47	3
	117,576	86,112	60,750	49,549	41,183	65,393	65,299

1/ Supplied by: Don Skinkle, Central District (2-7176)

2/ : Vesty Pearce, USGS (484-4606)

TABLE 24

San Joaquin Basin: Water Supply Boration

~~Establishing Pro-rate~~ Factors on the Basis of ~~Natural Flows~~

1976 Actual and 1977 Forecasted Natural Flows

(1000 Ac-Ft)

STREAM/FACTORS	Year	March	April	May	June	July	Aug	Sept
San Joaquin River	1976	59.14	81.59	173.47	60.19	34.16	23.67	35.27
	1977	20.00	55.00	80.00	35.00	15.00	5.00	5.00
Factor	77/76	.34	.67	.46	.58	.44	.21	.14
Merced River	1976	30.57	48.66	91.72	18.21	9.71	4.45	8.77
	1977	7.00	30.00	40.00	15.00	5.00	1.50	1.50
Factor	77/76	.23	.60	.47	.82	.51	.34	.17
Tuolumne River	1976	66.31	90.43	202.58	32.95	3.55	10.63	5.82
	1977	23.00	75.00	100.00	25.00	5.00	2.50	2.50
Factor	77/76	.35	.83	.49	.76	1.41	.24	.43
Stanislaus River	1976	42.88	76.35	99.21	18.55	5.04	6.55	10.93
	1977	15.00	35.00	50.00	30.00	5.00	2.50	2.50
Factor	77/76	.35	.46	.50	1.60	.99	.38	.23
Subtotals for pro-ration at Vernalis	1976	198.90	297.03	566.97	129.90	52.46	45.30	60.79
	1977	65.00	195.00	270.00	105.00	30.00	11.50	11.50
Factor	77/76	.33	.66	.48	.81	.57	.25	.19
Calaveras River	1976	Not Available						
	1977	Not Available						
Factor		Use pro-rate factors of Mokelumne River						
Mokelumne River	1976	27.23	43.78	71.06	6.86	1.01	4.23	1.70
	1977	10.00	35.00	23.00	6.00	1.00	-0-	-0-
Factor	77/76	.37	.80	.32	.87	1.00	-0-	-0-
Cosumnes River	1976	10.90	9.99	4.05	1.05	.07	2.41	.17
	1977	3.00	3.00	2.00	-0-	-0-	-0-	-0-
Factor	77/76	.28	.30	.49	-0-	-0-	-0-	-0-

TABLE 35

San Joaquin River Basin

Estimated Flows for 1977 (Acre-feet)

STREAM & (GAGE STATION)	March	April	May	June	July	Aug	Sept
Merced R. (Stevenson)	3,140	8,022	4,305	6,052	2,943	3,366	1,627
San Joaquin R. (Newman)	11,764	20,502	9,333	11,014	5,918	5,479	3,833
Tuolumne R. (Tuolumne City)	16,807	18,741	6,860	8,299	14,156	2,376	5,943
Stanislaus R. (Koetoz Ranch)	4,886	5,028	4,544	11,094	5,437	2,554	1,571
DELTA INFLOW FROM							
San Joaquin R. (Vernalis)	35,002	50,427	27,043	47,880	33,013	18,990	16,005
Calaveras R. (Near Stockton)	-0-	826	342	647	810	-0-	-0-
Mokelume R. (Woodbridge)	768	960	321	731	792	-0-	-0-
Cosumnes R. (McConnel)	1,714	1,890	1,147	-0-	-0-	-0-	-0-

TABLE 26

SAN JOAQUIN Rivers BASIN : ESTIMATION OF RETURN FLOW
(ACRE-FEET)

NO	GAGE STATION/STREAM	June	July	August	Sept.	NOTES
	A - STEVENSON (MERCED RIVER)					
1.	Estimated Flow	6050	2940	3370	1630	Table 25
2.	Natural Supply	15440	5000	1500	1500	Table 6
3.	Riparian Demand (Total)	4390	4390	3470	1630	Table 6
4.	Percent of Riparian Demand Met	60	40	40		Table 17
5.	Riparian Water Use	2630	1760	1390		3 x 4
6.	Supply for downstream Riparians	12810	3240	110		2 - 5
7.	Return Flow	0	0	3260		1 - 6
	B - TUOLUMNE CITY (TUOLUMNE RIVER)					
1.	Estimated Flow	8300	14160	2380	5940	Table 25
2.	Natural Supply	25440	5000	2500	2500	Table 7
3.	Riparian Demand	4400	2730	3290	1510	Table 7
4.	Percent of Riparian Demand Met	60	40	50		Table 17
5.	Riparian Water Use	2640	1090	1650		3 x 4
6.	Supply for downstream Riparians	22800	3910	850		2 - 5
7.	Return Flow	0	10250	1530		1 - 6

NO.	CAGE STATION/STREAM	June	July	August	Sept.	NOTES
	C - KOETIZ RANCH (STANISLAUS RIVER)					
1.	Estimated Flow	11,100	5,440	2,550	1,570	Table 25
2.	Natural Supply	30,440	5,000	2,500	2,500	Table 8
3.	Riparian Demand (Total)	4,400	2,730	3,290	1,510	Table 8
4.	Percent of Riparian Water Demand Met	60	40	50		Table 17
5.	Riparian Water Use	2,640	1,090	1,650		3 x 4
6.	Supply for downstream Riparians	27,800	3,910	850		2 - 5
7.	Return Flow	0	1,530	1,700		1 - 6
	D - VERNALIS (SAN JOAQUIN RIVER)					
1.	Estimated Flow	47,880	33,013	18,990	16,000	Table 25
2.	Inflow From San Joaquin River (Upper Basin)		2,975	2,113		Table
3.	Residual flow from San Joaquin River (Middle Basin)		30,038	16,877		1 - 2
4.	Natural Supply	71,320	15,000	6,500		$A_2+B_2+C_2$
5.	Riparian Demand on San Joaquin River	15,770	16,300	12,450		Table 9
6.	Percent of Riparian Demand Met	60	40	45		Table 17
7.	Riparian Water Use on San Joaquin River	9,460	6,520	5,600		5 x 6
8.	Total riparian demand in the San Joaquin River (Middle Basin)	17,340	10,460	10,290		$A_5+B_5+C_5+D_7$

NO.	GAGE STATION/STREAM	June	July	August	Sept.	NOTES
9.	Supply for downstream Riparians	53,950	4,540	0		
10.	Total return flow in the San Joaquin River (Middle Basin)			25,498	16,877	3 - 9
11.	Return flow from Rivers of Merced, Tuolumne & Stanislaus			11,780	6,990	$A_7+B_7+C_7$
12.	Return flow from San Joaquin River (Middle Reach)		13,718	10,387		9 - 11
	E - NEAR STOCKTON (CALAVERAS RIVER)					
1.	Estimated Flow	650	810	0	0	Table 25
2.	Natural Supply	0	0	0	0	Table 10
3.	Riparian Demand	306	264	130	61	Table 10
4.	Percent of Riparian Demand Met	0	0	0	0	Table 17
5.	Riparian Water Use	0	0	0	0	3 x 4
6.	Supply for Downstream Riparians	0	0	0	0	2 - 5
7.	Return Flow	650	810	0	0	1 - 6
	F - WOODBRIDGE (MOKELUMNE RIVER)					
1.	Estimated Flow	730	790	0	0	Table 25
2.	Natural Supply	6,532	1,000	0	0	Table 11
3.	Riparian Demand	5,310	5,490	4,340	1,960	Table 11
4.	Percent of Riparian Demand Met	60	20	0	0	Table 17
5.	Riparian Water Use	3,190	1,100	0	0	3 x 4

NO.	GAGE STATION/STREAM	June	July	August	Sept.	NOTES
6.	Supply ment for downstream riparians	3,342	0	0	0	2 - 5
7.	Return Flow	0	0	0	0	1 - 6
	G - McCONNEL (COSUMNES RIVER)					
1.	Flow	0	0	0	0	Table 25
2.	Natural Supply	0	0	0	0	Table 12
3.	Riparian Demand	4,800	4,800	3,780	1,340	Table 12
4.	Percent of Riparian Demand Met	0	0	0	0	Table 17
5.	Riparian Water Use	0	0	0	0	3 x 4
6.	Supply for Downstream Riparians	0	0	0	0	2 - 5
7.	Return Flow	0	0	0	0	1 - 6

TABLE 27

SACRAMENTO-SAN JOAQUIN RIVER BASINS: ESTIMATED SUPPLY FOR USE BY APPROPRIATORS UNDER PRE-1914 AND POST-1914 WATER RIGHTS

NO.	BASIN/STREAMS	ACRE-FEET				NOTES
		May	June	July	August	
	A - SACRAMENTO RIVER BASIN (LOWER REACH)					
1.	Sacramento River (Below Knights Landing)	1130	1380	2090	4660	Table 18
2.	Colusa Basin Drain	31,500	15,940	15,830	31,000	Table 19
3.	Sutter Bypass	14,170	7,020	7,020	13,310	Table 20
4.	Feather & Yuba Rivers	0	0	0	0	Table 21
5.	American River	0	0	21,370	18,940	Table 22
6.	Subtotal	45,670	24,310	46,310	36,910	1 + 2+3+4+5
	B - SAN JOAQUIN RIVER BASIN					
1.	Merced River		0	0	3,260	Table 26, A-7
2.	Tuolumne River		0	10,250	1,530	Table 26, B-7
3.	Stanislaus River		0	1,530	1,700	Table 26, C-7
4A.	San Joaquin River (Upper Reach)			2,975	2,113	Table 26, D-2
4B.	San Joaquin River (Middle Reach)			13,718	10,387	Table 26, D-12
5.	Calaveras River		650	810	0	Table 26, E-7
6.	Mokelumne River		0	0	0	Table 26, F-7
7.	Cosumnes River		0	0	0	Table 26, G-7
8.	Subtotal		650	29,283	18,990	1+2+3+4A+4B+5+6+7
	TOTAL			75,593	55,900	

TABLE
ESTIMATION OF PRE-1914 WATER DEMANDS IN LOWER REACHES OF SACRAMENTO RIVER BASIN AND THE SACRAMENTO-SAN JOAQUIN DELTA

STREAM REACH	STATEMENT NO.	SPOT MAP NO.	DIVERTERS NAME	DATE/YEAR OF FIRST USE/NOTICE	WATER RIGHTS			ESTIMATED MONTHLY DEMAND (ACRE-FEET)						
					AMOUNT	SEASON	AREA (ACRES) USE	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT.
Sacramento-San Joaquin Delta	495	II-10	Banta-Carbona I. D.	8-11-1911			10,920			6540	6210	6210	4910	2290
	404	I-12	East Contra Costa I. D.	5-9-1912			15,330			9180	8720	8720	6885	3210
	-		Naglee Burk	9-13-1912			2,060			1200	1150	1150	900	350
	-		Byron-Bethany I. D.	5-18-1914			17,200			10320	9800	9800	7740	3610
	6308	I-48	Walter & P Peterson	-1912		Mar-Oct.	185			110	105	105	55	38
	722	I-50	Ruth M. Axlund & R. Dunn	-1901		Mar-Oct.	260			160	150	150	120	60
	110	HH-49	R. Dunn	-1890			600			360	340	340	270	130
	3062	HH-47	Reclamation Dist. #2041	-1850	2700	June-Dec.	1900	-	-	-	600	650	650	400
	3063	HH-47	Reclamation Dist. #2041	-1850	2700	June-Dec.	1900	(Included in Statement #3062)						
	3064	HH-47		-1850	(Included in Statement Number 3062)									
	3065	HH-47		-1850	(Included in Statement Number 3062)									
	2319	HH-46	The Burroughs Trust	Pre-1900		Mar-Oct.	700			420	400	400	-	-
	2298	HH-46	Ernest C. Burroughs, et al	Pre-1906		Mar-Oct.	340			200	190	190	140	70

TABLE

ESTIMATION OF PRE-1914 WATER DEMANDS IN LOWER REACHES OF SACRAMENTO RIVER BASIN AND THE SACRAMENTO-SAN JOAQUIN DELTA

STREAM REACH	STATE-MENT NO.	SPOT MAP NO.	DIVERTERS NAME	DATE/YEAR OF FIRST USE/NOTICE	WATER RIGHTS			ESTIMATED MONTHLY DEMAND (ACRE-FEET)						
					AMOUNT	SEASON	AREA (ACRES) USE	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT
	2299	HH-46	Oscar N. Burroughs, et al	Pre-1910	2200	March-Oct.	220			390	370	370	300	145
	2300	HH-46	Oscar N. Burroughs, et al	Pre-1910	2100	Mar-Oct.	210			380	360	360	285	135
	2320	HH-46	Emerson Dairy, Inc.	Pre-1900		Mar-Oct.	445			270	250	250	200	90
	313	H-46	J. R. Coelho	1900	4480	Apr.-Nov.	700			815	770	770	610	285
	2035	H-48	Reuben Gentner	1910	20	May - Aug.	10			5	5	5	5	
	1237	H-48	Gary Rylman	1910	2000 gpm	May - Sept.				265	250	250	200	90
	1867	H-48	Harvey Rylman & Sons	1910	1500 gpm	May - Sept.	Irri-gation			200	190	190	150	70
	1861	H-14	Warren Bogle	1912		Apr.-Sept.	110			70	65	65	50	24
	2839	H-14	Perry S. Cook	1913	145	Apr.-Sept.	50			30	30	30	20	10
Sacramento River (Knights Landing to Delta Legal Boundary)	-		City of Sacramento	1854	75	All Year	Urban	4500	4500	4500	4500	4500	4500	4500

ESTIMATION OF PRE-1914 WATER DEMANDS IN LOWER REACHES OF SACRAMENTO RIVER BASIN AND THE SACRAMENTO-SAN JOAQUIN DELTA

STREAM REACH	STATE-MENT NO.	SPOT MAP NO.	DIVERTERS NAME	DATE/YEAR OF FIRST USE/NOTICE	WATER RIGHTS			ESTIMATED MONTHLY DEMAND (ACRE-FEET)						
					AMOUNT	SEASON	AREA (ACRES) USE	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT.
American River (Folsom Lake to River Mouth)	656	GG-19	San Juan Suburban W.D.	1852			26,500		2000	6000	5500	5500	4000	2000
Feather River (Oroville Reservoir to River Mouth - Verona).	7899	FF-50	DiGiorgio Fruit Corp.	1880		Feb-Nov.	945			720	690	690	500	
	480	F50/51	Joint W. D.	1904	3034c	Mar-Dec.	600,000	3,000	39000	145000	120000	125000	115000	50000
	925	F19	PG&E	1902		Apr-Nov	19,400	0	2	40	40	50	40	15
	8291		Yason Gold Field, Inc.	1904		Jan-Dec.	60			50	45	45	35	20
Yuba River (Daguerre Point Dam to River Mouth - Feather River)					NONE									
Bear River (Camp Far West to River Mouth -Feather River)	9075	FF-52	Roger C. and Virginia P. Patterson	1849		Jan-Dec.	130 Cattle Heads	(NEGLIGIBLE DEMAND)						
Sutter By-pass	9201	FF-17	Pearl V. Clark	1912		Jan-Dec.	127			100	95	95	75	35
(Western Canal to Feather River)	550	FF-49	Wild Goose Club	1800 +			1200 acres for duck hunting		200	600	500	300	200	-

TABLE 3

ESTIMATION OF PRE-1914 WATER DEMANDS IN LOWER REACHES OF SACRAMENTO RIVER BASIN. AND THE SACRAMENTO-SAN JOAQUIN DELTA

STREAM REACH	STATE-MENT NO.	SPOT MAP NO.	DIVERTERS NAME	DATE/YEAR OF FIRST USE/NOTICE	WATER RIGHTS			ESTIMATED MONTHLY DEMAND (ACRE-FEET)						
					AMOUNT	SEASON	AREA (ACRES) USE	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT.
Western Canal to Feather River	763	EE50	Ellen I. Bowlsbay	1908	50	Apr-Oct.	1000 Rice			1500	1425	1425	1125	525
	764	EE50	Ellen I. Bowlsbay	1908				(DEMAND INCLUDED IN S763)						
Colusa Trough (Glenn Colusa ID Service Area to Knights Landing)		--	NONE --											

TABLE 9

ESTIMATION OF PRE-1914 WATER DEMANDS IN LOWER REACHES OF THE SAN JOAQUIN RIVER BASIN AND ITS MAJOR TRIBUTARIES[2/]

Stream Reach	Statement Number	Spot Map No.	Diverter's Name	Date/Year of First Use/ Notice	WATER RIGHTS			ESTIMATED MONTHLY DEMAND (Acre-feet)						
					Amount	Season	Area (Acres	March	April	May	June	July	August	Sept.
rced River (New Exchequer Dam/Lake cClure to River outh)	4705	II-55	P G & E	1910			- - -	- POWER USE -		- - -				
	1496	II-55	H. G. Kelsey	1858	2350 af	April to Nov.	350	0	220	330	300	300	275	200
	4718	II-55	Merced I. D.	1911	200 cfs ?	October to April	---	100	100	- -	- - (STORAGE)		- - -	-
	7670	II-54	Gallo Glass Co	1900		March to Nov.	90			70	65	65	50	25
	2055	II-54	H. G. Kelsey	1870	800 af	March to Oct.	125			150	140	140	110	50
	7673	II-54	Gallo Glass Co	1900		March to Nov.	70			60	55	55	40	20
	7672	II-54	Gallo Glass Co	1900		March to Nov.	125			90	90	90	60	30
	7671	II-54	Gallo Glass Co	1900		March to Nov.	70			60	55	55	40	20
	7710	J-17	Gallo Glass Co	1900	390 af	March to Nov.	130			65	60	60	45	25
	7711	J-17	Gallo Glass Co	1900	8640 af	March to Nov.	2880			1440	1370	1370	1080	500
	7712	J-17	Gallo Glass Co	1900	7020 af	March to Nov.	2340			1170	1110	1110	880	410
	7713	J-16	Gallo Glass Co	1900	1175 af	March to Nov.	410			195	185	185	145	70
	7654-69	J-14 & 5	E & J Gallo Winery Ranch	1910			1402			700	700	700	560	280
	Sub-Total									4330	4130	4130	3285	1630
	Sub-Total	(Demand Estimated by Merced Irrigation District)						3340	4150	4600	6110	5410	4230	4370

82

Stream Reach	Statement Number	Spot Map No.	Diverter's Name	Date/Year of First Use/ Notice	WATER RIGHTS			MONTHLY DEMAND (Acre-feet)						
					Amount	Season	Area (Acres)	March	April	May	June	July	August	Sept.
Tuolumne River (Don Pedro Dam to River Mouth)	- 2/	-	Turlock I.D.	1889	4500		159,000	150,000	175,000	250,000	238,000	238,000	188,000	---
	- 2/	-	Modesto I. D.	1890	5000		159,000							---
	6287	II-49	Eugene Boone & Galen Hartwich	1900		April to Oct.	230	102	119	170	160	160	125	120
	- 2/	-	Turlock I.D.	1901	4000		159,000	12,000	14,000	20,000	19,000	19,000	15,000	---
	- 2/	-	Modesto I.D.	1908	1000		159,000	3,150	3,675	5,250	5,000	5,000	4,000	---
	Sub-Total							162,252	192,794	275,420	262,160	262,160	207,125	---
Stanislaus River (Goodwin Dam to River Mouth)	994	I-55	P G & E	1908			- - -	- -GENERATION OF ELECTRIC POWER - - -						
	4683	I-55	Oakdale & So. San Joaquin I. D.	1913			126,232	64,800	75,600	108,000	102,600	102,600	81,000	37,800
	8009	II-11	Bernard J. Wend	1904		March to Dec.	600	309	360	515	489	489	386	180
	Sub-Total							65,109	75,960	108,515	103,089	103,089	81,386	37,980
San Joaquin River (Confluence of Merced & San Joaquin Rivers to the Delta - Vernalis)			- - - - - NO PRE-1914 STATEMENT OF WATER USE ON FILE - - - -											
Calaveras River (New Hogan Dam/ Reservoir to River Mouth)	255	HH-52	Leslie M. Gregory	1898	3 af/ac	May to Sept.	48			30	25	25	20	10
	1159	HH-52	S.L. Gregory	1898	900	April to Sept.			130	190	180	180	140	65
	650	HH-52	Emmet A. Gregory	1898	3 af/ac	May to Sept.	22			12	10	10	8	5
	6499	I-14	Weir Shanser Chioz & Picardo	1910	500	Feb. to Sept.			1	1	1	1	1	---
	Sub-Total									233	216	216	169	80

84.

Stream Reach	Statement Number	Spot Map No.	Diverter's Name	Date/Year of First Use/ Notice	WATER RIGHTS			MONTHLY DEMAND (Acre-feet)						
					Amount	Season	Area (Acres)	March	April	May	June	July	Augus	Sept.
Mokelumne River (Camanche Reservoir to River Mouth)	1525	HH-16	Lester Mehrtens	1860		May to Oct.	120 Cattle	- - - -		NEGLIGIBLE		- - - -		
	1052	HH-16	L. E. Putnam Estate	1870	250	March to Oct		15	20	40	40	60	25	50
	475	HH-16	Carl Vliet	1907	80	April to Oct	26	---	10	10	15	15	15	10
	476	HH-16	Margaret Clement	1900	2500	April to Nov.	325	---	280	460	560	390	280	180
	303	HH-16	Chester M. Locke	1895	448	March to Oct.	80			75	70	70	55	30
	3210	HH-16	Melvin Berg	1914	530	March to Sept.	70			50	50	50	40	20
	8212	HH-15	El Rio Vineyards	1914	5000gpm	Mar-Dec	400							
	2054	HH-15	Pritam S. Dhaliwal	1912		May to Sept.	13			10	9	9	7	3
	401	HH-15	A. E. Joans	1902	250	Feb. to June		40	90	60	60	---	---	---
	2906,	HH-15	Rose J. Linde	1905/30	290	Apr.-Aug.	---	2	3	105	60	110	10	---
	2907	HH-15	Rose J. Linde	1905/30	50	Apr.-Aug.	---	---	---	20	10	10	10	
	503	HH-14	William Taddie	1905/08	100af	Apr.-Aug.	100	---	5	10	20	30	20	15
	520	HH-14	Everett H. Shinn	1900	100	Feb. to June	46	20	20	20	20	---	---	---
	1472	HH-13	Nabors, Dixon & Dambacher	1900	720	March to Oct.	244	70	100	120	110	110	90	60
	1578	HH-13	Housken Ranch	1890	850	March to Sept.	150+	60	120	125	125	125	120	60
	2302	HH-13	Peter Mesdonati	1910	500	April to Oct.	50	---	---	95	90	90	70	30
	9111	HH-13	Bill Thisby	1911		Feb. to August	100			75	70	70	50	25

85.

Stream Reach	Statement Number	Spot Map No.	Diverter's Name	Date/Year of First Use/ Notice	WATER RIGHTS			MONTHLY DEMAND (Acre-feet)						
					Amount	Season	Area (Acres)	March	April	May	June	July	August	Sept.
Cosumnes River (Michigan Bar to River Mouth)	1605	GG-52	Charles E. Ruman	1877	250 af	January to Dec.	20			40	40	50	30	
	1164	H-17	George W. Signorotti	1880	30 af	June to July		---	---	---	12	18	---	---
	4071	H-17	Rooney Bros., Inc.	1912	245 af	May to August		---	---	30	120	95	---	---
	Sub-Total									70	172	163	30	

1/ Pre-1914 water demands have been computed from the Statements of Water Division and Use. The demands in statements showing initial use of water prior to 1914 are assumed to be Pre-1914 demands.

2/ Computed from file 1232 #3, Item 1, "Report on Turlock and Modesto ID by A. J. Wiley, 1918, page 15".

TABLE 30

PRIORITY LIST OF PRE-1914 WATER RIGHTS/DEMANDS IN SACRAMENTO AND SAN JOAQUIN BASINS INCLUDING THE DELTA

ORITY DER	DATE/YEAR OF USE/NOTICE	STATEMENT NUMBER	DIVERTER'S NAME	SOURCE	WATER RIGHT			ESTIMATED MONTHLY DEMAND (ACRE FEET)						
					AMOUNT	SEASON	AREA OR USE(ACRES)	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.
1	1800+	550	Wild Goose Club	Sutter Bypass			1200 acres for duck hunting	—	200	600	500	300	200	—
2	1849	9075	Roger C. and Virgina P. Patterson	Bear River		Jan.- Dec.	130 Cattle Heads	- - - -		- - -	Negligible			
3	1850	3062	R.D. #2041	San Joaquin R - Delta -	2700	June - Dec	1900				600	650	650	400
	"	3063	"	"	"	"	"	(Included in Statement #3062)						
	"	3064	"	"	"	"	"							
	"	3065	"	"	"	"	"							
4A	1852	656	San Juan Sub-urban W. D.	American River (Folsom Lake)			26,500		2000	6,000	5,500	5,500	4,000	2,000
4B	1854		City of Sacto.	Sacramento River	75	-	Urban	4,500	4,500	4,500	4,500	4,500	4,500	4,500
5	1858	1496	H. G. Kelsey	Merced River	2350	April-Nov.	350	- -	220	330	300	300	275	200
6	1860	1525	Lester Mehrtens	Mokelumne River		May-Oct.	120 Cattle Heads			Negligible				
7	1861	1860	Thompson & Folger Co.	Hog Slough-Delta		Jan.-Dec.	850			510	485	485	380	
8	1870	2055	H.G. Kelsey	Merced River	800	March-Oct.	125			150	140	140	110	50
	1870/1952	1052	L.E. Putnam Estate	Mokelumne River	250	March-Oct.		15	20	40	40	60	25	50
9	1877/1908	1605	Charles E. Ruman	Cosumnes River	250AF	Jan.-Dec.	20	- - -	- - -	40	40	50	30	- - -
10	1880	1164	George W. Signorotti	Cosumnes River	30	June-July		- - -	— -	- - -	12	18	- - -	- - -
	1880	7899	DiGiorgio Fruit Corporation	Feather River		Feb.-Nov.	945	- - -	- - - -	720	690	690	- - -	- - -

TABLE 30 (Cont.)

PRIORITY LIST OF PRE-1914 WATER RIGHTS/DEMANDS IN SACRAMENTO AND SAN JOAQUIN BASINS INCLUDING THE DELTA

PRIORITY ORDER	DATE/YEAR OF USE/NOTICE	STATEMENT NUMBER	DIVERTER'S NAME	SOURCE	WATER RIGHT AMOUNT	WATER RIGHT SEASON	WATER RIGHT AREA OR USE	MONTHLY DEMAND (ACRE FEET) MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT
11	1889		Turlock ID	Tuolumne River	4,500 c		159,000				238,000	238,000	188,000	
12	1890	-	Modesto ID	Tuolumne River	5,000 c		(Included in Statement #1889)							
	1890	110		Fourteen Miles Slough	600 acres					360	340	340	270	130
	1890	1578	Housken Ranch	MokelumneRiver	850	March Sept.	150+	60	120	125	125	125	120	60
13	1895	303	Chester M. Locke	Mokelumne River	448	March-Oct.	80			75	70	70	55	30
14	1898	255	Leslie M. Gregory	Calaveras River	3af/ac	May-Sept.	48			30	25	25	20	10
	1898	650	Emmet A. Gregory	Calaveras River	3af/ac	May-Sept.	22			12	10	10	8	5
	1898	1159	S. L. Gregory	Calaveras River	900	Apr.-Sept.			130	190	180	180	140	65
15	Pre-1900	7710	Gallo Glass Co.	Merced River	390	Mar.-Nov.	130			65	60	60	45	25
	1900	7711	Gallo Glass Co.	Merced River	8640	Mar.-Nov.	2880			1440	1370	1370	1080	500
	1900	7712	Gallo Glass Co.	Merced River	7020	Mar.-Nov.	2340			1170	1110	1110	880	410
	1900	7713	Gallo Glass Co.	Merced River	1175	Mar.-Nov.	410			195	185	185	145	70
	1900	7670	Gallo Glass Co.	Merced River		Mar.-Nov.	90			70	65	65	50	25
15	"	7671	"	"		Mar.-Nov.	70			60	55	55	40	20
	"	7672	"	"		"	125			90	90	90	60	20
	"	7673	"	"		"	70			60	55	55	40	20
	"	2319	The Burroughs Trust	Dutch Slough-Delta		Mar.-Oct.	700			420	400	400	- -	- -
	"	2320	Emmerson Dairy, Inc.	Dutch Slough-Delta		Mar.-Oct.	445			270	250	250	200	90
16	1900	1472	Nabors, Dixon, Dambacher	Mokelumne River	720	Mar.-Oct.	244	70	100	120	110	110	90	60
	"	476	Margaret Clements	"	2500	Apr.-Nov.	325+cattle		280	460	560	390	280	180

TABLE 30 (cont.)

PRIORITY LIST OF PRE-1914 WATER RIGHTS/DEMANDS IN SACRAMENTO AND SAN JOAQUIN BASINS INCLUDING THE DELTA

83

ORITY DER	DATE/YEAR OF USE/NOTICE	STATEMENT NUMBER	DIVERTER'S NAME	SOURCE	WATER RIGHT			MONTHLY DEMAND (ACRE FEET)						
					AMOUNT	SEASON	AREA OR USE	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT
16	1900	520	Everett H. Shinn	Mokelumne River	100	Feb.-June	46	20	20	20	20	- - -	- - -	- -
	"	6287	Eugene Boone - Galen Hartwich	Tuolumne River		Apr.-Oct.	230			170	160	160	125	120
	"	313	J.R. Coelho	Cachee Slough Delta	4480	Apr.-Nov.	700			815	770	770	610	285
17	1901	-	Turlock ID	Tuolumne River	4000 c		159,000				19,000	19,000	15,000	
17	1901	722	Ruth M. Axlund & R. Dunn	San Joaquin River Delta		Mar.-Oct.	260			160	150	150	120	60
18	1902	401	A.E. Joens	Mokelumne River	250	Feb.-June		40	90	60	60	- -	- -	- -
	"	925	P.G.&E	Feather River		Apr.-Nov.	19400 Duck Water	0	2	40	40	50	40	15
19	1904	8009	Benard J. Wend	Stanislas River	72	Mar.-Dec.	600	10	15	20	15	15	10	5
	"	480	Joint Water Dist.	Feather River	3034c	Mar.-Dec.	600,000	3,000	39,000	145,000	120,000	125,000	115,000	50,000
	"	8291	Yason Gold Field Inc.	"		Jan.-Dec.	60			50	45	45	35	20
20	1905/08	503	William Taddie	Mokelumne River	100af	Apr.-Aug.	100		5	10	20	30	20	15
	1905/30	2906	Rose J. Linde	"	290	Apr.-Sept.			2	3	105	60	110	10
		2907	Rose J. Linde	"	50	May-Aug.				20	10	10	10	
21	1906	2298	Ernest C. Burroughs, etal	Dutch Slough Delta		Mar.- Oct.	340			200	190	190	140	70
22	1907	475	Carl Vliet	Mokelumne River	80	Apr.-Oct.	26		10	10	15	15	15	10
23	1908	994	P.G.&E	Stanislas River			Power	-	-	-	-	-	-	-
23	"	763	Ellen I. Bowlsbey	Sutter Bypass	50	Apr.-Oct.	1000 Rice			1500	1425	1425	1125	525
23	1908	764	Ellen I. Bowlsbey	Sutter bypass							(Demand included in Statement 763)			

TABLE 30 (cont.)

PRIORITY LIST OF PRE-1914 WATER RIGHTS/DEMANDS IN SACRAMENTO AND SAN JOAQUIN RIVERS BASIN INCLUDING THE DELTA

ORITY DER	DATE/YEAR OF USE/NOTICE	STATEMENT NUMBER	DIVERTER'S NAME	SOURCE	WATER RIGHT AMOUNT	WATER RIGHT SEASON	AREA OR USE	MONTHLY DEMAND (ACRE FEET) MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.
23	1908	-	Modesto ID	Tuolumne River	1000c		159000				5000	5000	400	
	Pre-1910	7654-69	E.&J. Gallo Winery Ranch	Merced River			1602 Grapes			700	700	700	500	280
24	1910	2302	Peter Mesdonate	Mokelumne River	500	Apr.-Oct.	50			95	90	90	70	30
	"	6499	Weir Shauser Chiozo & Picaro	Calaveras River	500	Feb.-Sept.	irrigation							
	"	4705	P.G.&E.	Merced River			Power							
	"	2300	Oscar N. Burroughs, etal	Dutch Slough Delta	2100	Mar.-Oct.	210			380	360	360	285	135
	"	2299	"	"	2200	Mar.-Oct.	220			390	370	370	300	145
	"	2035	Renben Gentner	Sacramento River Delta	20	May-Aug.	10			5	5	5	5	
	"	1237	Gary Rylman	"	2000gpm	May-Sept.				265	250	250	200	90
	"	1867	Harvey Pylman & Sons	"	1500gpm	May- Sept.	Irrigation			200	190	190	150	70
25	8/11/1911	495	Banta Carbuna ID	San Joaquin River Delta			10,920			6540	6210	6210	4910	2290
	1911	9111	Bill Thisby	Mokelumne River		Feb-Aug.	100			75	70	70	50	25
	"	4718	Merced ID	Merced River	200	Oct.-Apr.		100	100	-	-	-	-	-
26	5/9/1912	404	East Contra Costa ID	Old River Delta			15,330			9180	8720	8720	6885	3210
	9/13/1912	-	Naglee-Burk ID	"			2,060			1200	1150	1150	900	350
	1912	9201	Pearl V. Clark Alice Brewer	Sutter-bypass		Jan.-Dec.	127			100	95	75	75	35
	"	4071	Rooney Bros. Inc.	Cosumnes River	245	May-Aug.	Irrigation	-	-	30	120	95	-	-
	"	2054	Pritam S. Dhaliwal	Mokelumne River		May-Sept.	13			10	9	9	7	3

TABLE 30 (cont.)

PRIORITY LIST OF PRE-1914 WATER RIGHTS/DEMANDS IN SACRAMENTO AND SAN JOAQUIN RIVERS BASIN INCLUDING THE DELTA

RITY ER	DATE/YEAR OF USE/NOTICE	STATEMENT NUMBER	DIVERTER'S NAME	SOURCE	WATER RIGHT			MONTHLY DEMAND (ACRE FEET)						
					AMOUNT	SEASON	AREA OF USE	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.
	1912	6308	Walter & F. Peterson	Tom P. Slough Delta		Mar.-Oct.	185			110	105	105	55	38
	"	1861	Warren Bogle	Sacramento River Delta		Apr.-Sept.	110			70	65	65	50	24
	1913	4683	Oakdale & South San Jaoquin ID	Stanislas River	590,000	Jan.-Dec.	126,232	31,000	46,000	108,000	103,000	101,000	80,000	64,000
	"	2839	Perry S. Cook	Sacramento River-Delta	145	Apr.-Sept.	50			30	30	30	20	10
	5/18/1914	-	Byron Bethany ID	Old River Delta			17,200			10,320	9,800	9,800	7740	3610
	1914	3210	Melvin Berg	Mokelumne River	530	Mar.-Sept.	70			50	50	50	40	20

AVAILABILITY OF RETURN FLOW TO PRE-1914 DIVERTERS IN

SACRAMENTO AND SAN JOAQUIN BASINS INCLUDING DELTA DURING JULY, 1977
(Acre-Feet)

te-t #	Prior-ity	Location	Supply/ Demand (S)/(D)	SAN JOAQUIN RIVER SYSTEM								SACRAMENTO RIVER SYSTEM							DELTA Supply/ Demand	NOTES
				SJR(U)	MERGED	TUOL	STAN	SJR(M)	CAL	MOK	COS	Colusa	Sutter	Feather	Yuba	Bear	Amer.	Sacto.		
0	1	Sutter	S	2975	0	10,250	1,530	13,715	810	0	0	15,830	7,020	0	0	0	21,370	2,090	75,590	
			D										300						(-) 300	
			S										6,720			-			75,290	
75	2	Bear	D																—	Negligible demand
			S	2975	0	10,250	1,530	13,715	810	0	0	15,830	6,720	0	0	0	21,370	2,090	75,290	
62-065	3	Delta	D	25		90	10	115	10	0	0	140	60	0	0	0	180	20	(-) 650	Prorated on streams
			S	2950	0	10,160	1,520	13,600	800	0	0	15,690	6,660	0	0	0	21,190	2,070	74,640	
5	4A	American	D														5,500		(-)5,500	
			S	2950	0	10,160	1,520	13,600	800			15,690	6,660	0	0	0	15,690	2,070	69,140	
-	4B	Sacramento	D									1,755	765				1,755	225	4,500	Prorated
			S	2950	0	10,160	1,520	13,600	800	0	0	13,935	5,895	0	0	0	13,935	1,845	64,640	
96	5	Merced	D		300														—	Demand on dry Merced River
			S		0														64,640	
25	6	Mokelumne	D							0									—	Negligible Demand
			S	2950	0	10,160	1,520	13,600	800	0	0	13,935	5,895	0	0	0	13,935	1,845	64,640	
30	7	Delta	D	25		75	10	100	5			105	45				110	15	(-)1,490	
			S	2925	0	10,085	1,510	13,500	795	0	0	13,830	5,850	0	0	0	13,825	1,830	64,150	
65	8	Merced	D		140														—	Demand on Dry Merced River
			S		0														64,150	
62	8	Mokelumne	D							60									—	Demand on Dry Mokelumne R.
			S							0									64,150	
05	9	Cosumnes	D								50								—	Demand on Dry Cosumnes R.
			S								0								64,150	
54	10	Cosumnes	D								18								—	
			S								0								64,150	
99	10	Feather	D											690					—	
			S											0	0	0			64,150	
-	11/12	Tuolumne	D			238 000													—	MID & TID do not pick up return flow
			S	2925	0	10,085	1,510	13,500	795	0	0	13,830	5,850	0	0	0	13,825	1,830	64,150	
0	12	Delta	D	17	0	50	7	70	3			75	33				75	10	(-)340	Prorated on stream
98	12	Mokelumne	S	2908	0	10,035	1,503	13,430	792	0	0	13,755	5,817	0	0	0	13,750	1,820	63,810	
			D							125									—	
			S							0									63,810	
1	13	Mokelumne	D							70									—	
			S							0									63,810	
3, 0, 39	14	Calaveras	D						215										- 215	
			S						577										63,595	
70-73	15	Merced	D		2990														—	
			S	2908	0	10,035	1,503	13,430	577	0	0	13,755	5,817	0	0	0	13,750	1,820	63,595	
9	15	Delta	D	20		60	8	84	4		-	88	36				88	12	- 400	Prorated
			S	2888	0	9,975	1,495	13,346	573	0	0	13,667	5,781	0	0	0	13,662	1,808	63,195	
0	15	Delta	D	13	-	38	5	52	3	-	-	55	22	-	-	-	55	7	(-)250	Prorated
			S	2875	0	9,937	1,490	13,294	570	0	0	13,612	5,759	0	0	0	13,607	1,801	62,945	
2 - 0 - 6	16	Mokelumne	D							500									—	
			S							0									62,945	

ate- it #	Prior- ity	Location	Supply/ Demand (S)/(D)	SAN JOAQUIN RIVER SYSTEM								SACRAMENTO RIVER SYSTEM							DELTA Supply/ Demand	NOTES
				SJR(U)	MER- CED	TUOL	STAN	SJR(M)	CAL	MOK	COS	Colusa	Sutter	Feather	Yuba	Bear	Amer- ican	Sacra- mento		
37	16	Tuolumne	D			160													(-) 160	
			S	2875	0	9,777	1,490	13,294	570	0	0	13,612	5,759	0	0	0	13,607	1,801	62,785	
3	16	Delta	D	39	—	116	15	160	8	—	—	170	69	—	—	—	169	24	(-)770	
			S	2836	0	9,661	1,475	13,134	562	0	0	13,442	5,690	0	0	0	13,438	1,777	62,015	
	17	Tuolumne	D			19,000													—	Not considered
			S	2836	0	9,661	1,475	13,134	562	0	0	13,442	5,690	0	0	0	13,438	1,777	62,015	
2	17	Delta	D	8		23	5	30				33	13				33	5	(-)150	
			S	2828	0	9,638	1,470	13,104	562	0	0	13,409	5,677	0	0	0	13,405	1,772	61,865	
1/925	18	Mokelumne/ Feather	D											50					—	
			S											0					61,865	
09- 80- 91	19	Stanislaus/ Feather	D				15							125,045					(-) 15	
			S	2828	0	9,638	1,455	13,104	562	0	0	13,409	5,677	0	0	0	13,405	1,772	61,850	
3/2905 2907	20	Mokelumne	D							100										
			S	2828	0	9638	1,455	13,104	562	0	0	13,409	5,677	0	0	0	13,405	1,772	61,850	
98	21	Delta	D	10		30	4	40	2			42	17				40	5	(-)190	
			S	2818	0	9,608	1,451	13,064	560	0	0	13,367	5,660	0	0	0	13,365	1,767	61,660	
5/934	22/23	Mokelumne	D							15									—	
			S							0									61,660	
3/764	23	Sutter	D										1,425						1,425	
			S										4,235						60,235	
54-69	23	Tuolumne/ Merced	D		700	5,000													=	Demand on Tuolumne River not considered
			S		0	9,608													60,235	
2, 99, 05	24	Mokelumne/ Calaveras Merced	D						1	90									(-) 1	
			S	2818	0	9,608	1,451	13,064	559	0	0	13,367	4,235	0	0	0	13,365	1,767	60,234	
00, 99, 35, 37, 87,495	24/25	Delta	D	369		1,182	222	1,551	74			1,625	517				1,625	200	(-)7,385	Includes demand of Banta-Carbona I D
			S	2449	0	8,426	1,229	11,513	485	0	0	11,742	3,718	0	0	0	11,740	1,547	52,849	
11 18	25	Mokelumne/ Merced	D							70										
			S	2449	0	8,426	1,229	11,513	485	0	0	11,742	3,718	0	0	0	11,740	1,547	52,849	
4	26	Delta	D	592		1,579	197	2,073	100			2,172	690				2,171	296	(-)9,870	East Contra Costa & Naglee Burk
			S	1857		6,847	1,032	9,440	385	0	0	9,570	3,028	0	0	0	9,569	1,251	42,979	
01	26	Sutter	D										95						(-) 95	
			S										2,933						42,884	
71, 54	26	Cosumnes/ Mokelumne	D							9	95									
			S	1857	0	6,847	1,032	9,440	385	0	0	9,570	2,933	0	0	0	9,569	1,251	42,884	
08, 61	26	Delta	D	9		27	4	37	2			37	12				37	5	(-) 170	
			S	1848	0	6,820	1,028	9,403	383	0	0	9,533	2,921	0	0	0	9,532	1,246	42,714	
83	27	Stanislaus	D				101,000													Discussed with SJID (Mr. Duncan) & Oakdale ID (Bob Isaac) & not considered
			S	1848	0	6,820	1,028	9,403	383	0	0	9,533	2,921	0	0	0	9,532	1,246	42,714	
39/-	27/28	Delta	D	492		1,474	197	2,163	98	0	0	2,162	688	0	0	0	2,261	295	(-)9,830	Includes Byson Bethony ID
			S	1356	0	5,346	831	7,240	285	0	0	7,371	2,233	0	0	0	7,271	951	32,884	

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Table 32

AVAILABILITY OF RETURN FLOW SUPPLY TO PRE-1914 DIVERTERS IN

SACRAMENTO AND SAN JOAQUIN BASINS, INCLUDING THE DELTA DURING AUGUST, 1977

(Acre-Feet)

Diverter #	Priority NO.	Location	Supply/ Demand (S)/(D)	SAN JOAQUIN RIVER SYSTEM								SACRAMENTO RIVER SYSTEM							DELTA Supply/ Demand	NOTES
				SJR(U)	MER-CED	TUOL	STAN	SJR(M)	CAL	MOK	COS	Colusa	Sutter	Feather	Yuba	Bear	Amer.	Sacto.		
	1	Sutter-Bypass	S	2113	3260	1530	1700	10,387	0	0	0	31,000	13,310	0	0	0	18,940	4,660	86,900	
			D										200						(-)200	
			S										13,110						86,700	
5	2	Bear	D																	Negligible Demand
			S	2113	3260	1530	1700	10,387	0	0	0	31,000	13,110	0	0	0	18,940	4,660	86,700	
2-65	3	Delta	D	13	26	13	13	78				234	98				143	32	(-)650	
			S	2100	3234	1517	1687	10,309	0	0	0	30,766	13,012	0	0	0	18,797	4,628	86,050	
	4A	American	D														4,000		(-)4,000	
			S														14,797		82,050	
	4B	Sacramento	D									2,205	945				1,035	315	(-)4,500	
			S	2100	3234	1517	1687	10,309	0	0	0	28,561	12,067	0	0	0	13,762	4,313	77,550	
6	5	Merced	D		275														275	
			S	2100	2959	1517	1687	10,309	0	0	0	28,561	12,067				13,762	4,313	77,275	
5	6	Mokelumne	D																	Negligible Demand
0	7	Delta	D	11	15	8	8	45				141	61				68	23	(-)380	
			S	2089	2944	1509	1679	10,264	0	0	0	28,420	12,006				13,694	4,290	76,895	
5/	8	Mokelumne/	D		110		—			25									(-)110	
52		Merced	S		2834					0									76,785	
5/	9/10	Cosumnes	D								30								—	
64			S								0								76,785	
9	10	Feather	D																	
			S																76,785	
	11/12	Tuolumne	D			238,000													—	TID/MID demand not considered
			S	2089	2834	1509	1679	10,264	0	0	0	28,420	12,006	0	0	0	13,694	4,290	76,785	
)	12	Delta	D	8	11	5	6	35	—	—	—	97	43	—	—	—	49	16	270	
			S	2081	2823	1504	1673	10,229	0	0	0	28,323	11,963	0	0	0	13,645	4,274	76,515	
8/303	12/13	Mokelumne	D							175										
			S	2081	2823	1504	1673	10,229	0	0	0	28,323	11,963	0	0	0	13,645	4,274	76,515	
5/650/	14	Calaveras	D						168										76,515	
59			S						0										2,340	
0-13/	15	Merced	D		2340														74,175	
0-73			S	2081	483	1504	1673	10,229	0	0	0	28,323	11,963	0	0	0	13,645	4,274		
9-20	15	Delta	D	6	2	4	4	28				76	32				36	12	(-) 200	
			S	2075	481	1500	1669	10,201	0	0	0	28,247	11,931				13,609	4,262	73,975	
2/529/	16	Mokelumne	D							370										
476			S							0									73,975	
37	16	Tuolumne	D			125													125	
			S	2075	481	1375	1669	10,201	0	0	0	28,247	11,931	0	0	0	13,609	4,262	73,850	
13	16	Delta	D	18	6	12	12	85	—	—	—	232	98				110	37	(-) 610	
			S	2057	475	1363	1657	10,116	0	0	0	28,015	11,833	0	0	0	13,499	4,225	73,240	
	17	Tuolumne	D			15000														Not Considered
			S			1363													73,240	
22	17	Delta	D	4	1	2	2	17				46	19				22	7	(-) 120	
			S	2053	474	1361	1655	10,099	0	0	0	27,969	11,814	0	0	0	13,477	4,218	73,120	

Table 32 (Cont.)

e- #	Priority NO.	Location	Supply/ Demand (S)/(D)	SAN JOAQUIN RIVER SYSTEM								SACRAMENTO RIVER SYSTEM							DELTA Supply/ Demand	NOTES
				SJR(U)	MERCED	TUOL.	STAN.	SJR(M)	CAL	MOK	COS	Colusa	Sutter	Feather	Yuba	Bear	American	Sacramento		
'925	18	Mokelumne/ Feather	D											40					—	
			S							0				0					73,120	
)/43	19.	Stanislaus/	D				10							115,000					(-) 10	
1		Feather	S				1645							0					73,110	
'29?6/	20	Mokelumne	D							140									—	
7			S							0									73,110	
3	21	Delta	D	4	1	2	2	20				54	23				26	8	(-)140	
			S	2049	473	1359	1643	10,079	0	0	0	27,915	11,791	0	0	0	13,451	4,210	72,970	
994	22/23	Mokelumne/	D							15									—	
		Stanislaus	S				1643			0									72,970	
764	23	Sutter-	D										1125						(-)1125	
		Bypass	S	2049	473	1359	1643	10,079	0	0	0	27,915	10,666				13,451	4,210	71,845	
			S	2049	473	1359	1643	10,079	0	0	0	27,915	10,666	0	0	0	13,451	4,210	71,845	
	23	Tuolumne	D			400														Not considered
			S			1359													71,845	
1-69	23	Merced	D		560														(-) 473	
			S	2049	0	1359	1643	10,079	0	0	0	27,915	10,666	0	0	0	13,451	4,210	71,372	
2/	24	Mokelumne/	D						1	70									—	
9/		Calaveras/		2049	0	1359	1643	10,079	0	0	0	27,915	10,666	0	0	0	13,451	4,210	71,372	
5		Merced																		
)	24/25	Delta	D	176		117	117	819				2,282	877				1,112		(-)5,850	Includes Banta-Carbona I.D.
)			S	1873	0	1242	1526	9,260	0	0	0	25,633	9,789	0	0	0	12,339	3,860	65,522	
5																				
7																				
7/495																				
	25	Mokelumne/																	—	
3		Merced								50									65,522	
				0						0										
	26	Delta	D	234		156	156	1,090				3,036	1,167				1,479	467	(-)7,785	East Contra Costa & Naglee-Burk ID are included
			S	1639	0	1086	1370	8,170	0	0	0	22,597	8,622	0	0	0	10,860	3,393	57,737	
1	26	Sutter	D										75						(-) 75	
													8,547						57,662	
1/	26	Cosumnes/	D							7									—	
4		Mokelumne	S	1639	0	1086	1370	8,170	0	0	0	22,597	8,547	0	0	0	10,860	3,393	57,662	
3/	26	Delta	D	3		2	2	15				41	16				20	6	105	
1			S	1636		1084	1368	8,155	0	0	0	22,556					10,840	3,387	57,557	
3	27	Stanislaus	D				80000												—	Not considered
			S				1368												57,557	
)	27/28	Delta	D	233		155	155	1,086	-	-	-	3,026	1,164	-	-	-	1,475	466	7,760	Includes Byron Bethany ID
			S	1403	0	929	1213	7,069	0	0	0	19,530	7,367	0	0	0	9,365	2,921	49,797	
)	29	Mokelumne	D							40									—	
			S	1403	0	929	1213	7,069	0	0	0	19,530	7,367	0	0	0	9,365	2,921	49,797	

TABLE 23

PERCENT SACRAMENTO - SAN JOAQUIN BASIN
AVAILABILITY OF RETURN FLOW TO PRE-1914 DIVERTERS

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PRIORITY ORDER	STATEMENT NUMBER	SOURCE	PRE-1914 DIVERTER'S NAME	PERCENT OF DEMAND MET		NOTES
				JULY	AUGUST	
1	550	Sutter Bypass	Wild Goose Club	100	100	
2	9075	Bear River	Roger C. and Virginia P. Patterson	—	—	Negligible Demand
3	3062-3065	San Joaquin River-Delta	Reclamation District #2041	100	100	
4A	656	American R.	San Juan Suburban W. D.	100	100	
4B	—	Sacramento River	City of Sacramento	100	100	
5	1496	Merced River	H. G. Kelsey	0	100	
6	1525	Mokelumne R.	Lester Mehrtens	0	0	Negligible Demand
7	1860	Hog Slough-Delta	Thompson & Folger Co.	100	100	
8	2055	Merced River	H. G. Kelsey	0	0	Dry Stream
8	1052	Mokelumne R.	L. E. Putnam Estate	0	100	
9	1605	Cosumnes R.	Charles E. Ruman	0	0	Dry Stream
10	1164	Cosumnes R.	George W. Signorotti	0	0	Dry Stream
10	7899	Feather R.	DiGiorgio Fruit Corporation	0	0	Dry Stream
11	—	Tuolumne R.	Turlock I. D.	0	0	TID & MID do not pick up return flow
12	—	Tuolumne R.	Modesto I. D.	0	0	
12	110	Delta	R. Dunn	100	100	
12	1578	Mokelumne R.	Housken Ranch	0	0	Dry Stream
13	303	Mokelumne R.	Chester M. Locke	0	0	Dry Stream
14	255	Calaveras R.	Leslie M. Gregory	100	0	
14	650	Calaveras R.	Emmet A. Gregory	100	0	
14	1159	Calaveras R.	S. L. Gregory	100	0	
15	7710-13	Merced River	Gallo Glass Co.	0	100	
15	7670-73	Merced River	Gallo Glass Co.	0	100	

Table 33 (cont.)

PRIORITY ORDER	STATEMENT NUMBER	SOURCE	PRE-1914 DIVERTER'S NAME	PERCENT OF DEMAND MET		NOTES
				JULY	AUGUST	
15	2319	Dutch Slough-Delta	The Burroughs Trust	100	100	
15	2320	Dutch Slough-Delta	Emmerson Dairy, Inc.	100	100	
16	1472	Mokelumne R.	Nabors, Dixon, Dambacher	0	0	Dry Stream
16	520	Mokelumne R.	Everett H. Shinn	0	0	Dry Stream
16	476	Mokelumne R.	Margaret Clements	0	0	Dry Stream
16	6287	Tuolumne R.	Eugene Boone - Galen Hartwich	100	100	
16	313	Cachee Slough Delta	J. R. Coelho	100	100	
17	—	Tuolumne R.	Turlock I. D.	0	0	Not considered
17	722	Delta	Ruth M. Axlund & R. Dunn	100	100	
18	401	Mokelumne R.	A. E. Jones	0	0	Dry Stream
18	925	Feather River	P. G. & E.	0	0	Dry Stream
19	8009	Stanislaus R.	Benard J. Wend	100	100	
19	480	Feather R.	Joint Water District	0	0	Dry Stream
19	8291	Feather R.	Yason Gold Field Inc.	0	0	Dry Stream
20	503	Mokelumne R.	William Taddie	0	0	Dry Stream
20	2906	Mokelumne R.	Rose J. Linde	0	0	Dry Stream
20	2907	Mokelumne R.	Rose J. Linde	0	0	Dry Stream
21	2298	Delta	Ernest C. Burroughs, et al	100	100	
22	475	Mokelumne R.	Carl Vliet	0	0	Dry Stream
23	994	Mokelumne R.	P. G. & E.	0	0	Dry Stream
23	763	Sutter Bypass	Ellen I. Bowlsbey	100	100	
23	764	Sutter Bypass	Ellen I. Bowlsbey	100	100	
23	—	Tuolumne R.	Modesto I. D.	0	0	Not Considered
23	7654-69	Merced River	E. & J. Gallo Winery Ranch	0	0	Dry Stream

Table 33 (cont.)

PRIORITY ORDER	STATEMENT NUMBER	SOURCE	PRE-1914 DIVERTER'S NAME	PERCENT OF DEMAND MET		NOTES
				JULY	AUGUST	
24	2302	Mokelumne R.	Peter Mesdonate	0	0	Dry Stream
24	6499	Calaveras R.	Weir Shauser Chiozo & Picaro	100	0	
24	4705	Merced River	P. G. & E.	0	0	Dry Stream
24	2300	Delta	Oscar N. Burroughs, et al	100	100	
24	2299	Delta	Oscar N. Burroughs, et al	100	100	
24	2035	Delta	Reuben Gentner	100	100	
24	1237	Delta	Gary Rylman	100	100	
24	1867	Delta	Harvey Pylman & Sons	100	100	
25	495	San Joaquin River Delta	Banta Carbona I. D.	100	100	
25	9111	Mokelumne R.	Bill Thisby	0	0	Dry Stream
25	4718	Merced River	Merced I. D.	0	0	Dry Stream
26	404	Delta	East Contra Costa I. D.	100	100	
26	—	Delta	Naglee-Burk I. D.	100	100	
26	9201	Sutter Bypass	Pearl V. Clark & Alice Brewer	100	100	
26	4071	Cosumnes River	Rooney Bros., Inc.	0	0	Dry Stream
26	2054	Mokelumne R.	Pritam S. Dhaliwal	0	0	Dry Stream
26	6308	Delta	Walter & F. Peterson	100	100	
26	1861	Delta	Warren Bogle	100	100	
27	4683	Stanislaus R.	Oakdale & South San Joaquin I.D.	0	0	Not considered
27	2839	Delta	Perry S. Cook	100	100	
28	—	Delta	Byron Bethany I. D.	100	100	
29	3210	Mokelumne R.	Melvin Berg	0	0	Dry Stream

TABLE 34

ACTION TAKEN: NOTICES SENT TO DIVERTERS UNDER PRE-1914 APPROPRIATIVE WATER RIGHTS

DATE	NOTICE DESCRIPTION	STREAM	NO. OF NOTICES	AVAILABILITY OF WATER SUPPLY
5-18-77	Diverters of water under different levels of water rights (riparian, pre-1914 and post-1914 appropriators)	Sacramento-San Joaquin Delta	4	No natural supply available commencing June 1.
5-27-77	Diverters from the San Joaquin River and its tributaries under riparian and pre-1914 appropriative water rights.	Merced River	3	No natural supply available commencing June 1; have claim to return flow if available.
		Tuolumne River	1	
		Stanislaus River	3	
		San Joaquin River	6	
		Mokelumne River	17	
		Calaveras River	4	No supply available commencing June 1
		Cosumnes River	3	

TABLE 35

SACRAMENTO RIVER BASIN - RELATIVE LOCATION OF POST-1914 APPROPRIATIVE WATER RIGHTS IN the Sacramento River Basin

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
Sacramento River (Keswick Dam to Colusa)	5626	CC-53	U. S. B. R.	66 ~~88~~
	10588	CC-53	U. S. B. R.	92 ~~128~~
	9363	CC-53	U. S. B. R.	85 ~~118~~
		DD-17	U. S. B. R.	
		E -16	U. S. B. R.	
	9364	CC-53	U. S. B. R.	86 ~~119~~
		DD-17	U. S. B. R.	
		E-16	U. S. B. R.	
	8884	CC-53	City of Redding	82 ~~115~~
	10320	CC-53	City of Redding	89 ~~124~~
	14450	CC-54	H. Daniell	119 ~~174~~
	13667	D-55	GSC Development Corp.	113 ~~163~~
	23140	D-55	GSC Development Corp.	141 221
	14314	DD-17	T. J. & Estate of C. Loftus	117 ~~168~~
	17134	DD-17	Diamond Int. Inc.	132 203
	20087	DD-52	F. Pusich & J. Mann	217 140
	13658	E-16	Wood Orchards Inc.	162 112
	13487	E-16	Rumiano Bros. Co. Inc.	157 108
	~~14447~~	E-48	J. & F. Zuppan	~~173~~ 118
	12899	E-48	J. & F. Zuppan	151 104
	18	E-48	Glenn-Colusa I. D.	1
		F-48		

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	1624	E-48	Glenn-Colusa I. D.	~~46~~ 34
	1554	E-48	Glenn-Colusa I. D. Dist.	~~42~~ 31
	892	E-48 EE-48	Provident I. D.	~~38~~ 26
	640	E-48 EE-48	Provident I. D.	~~17~~ 14
	462	E-48 EE-48	Provident I. D.	~~10~~ 9
	244	E-48 EE-48 E-16	Princeton-Codora-Glenn I. D.	~~9~~ 8
	770	E-48 EE-48 E-16	Princeton-Codora-Glenn I. D.	~~22~~ 19
	3994	E-48	S. McClain, et al	~~72~~ 56
	10363	E-48	J. & J. Bolen	~~105~~ 90
	12580	E-49	T. & J. Boswell	~~150~~ 105
	8213	EE-17	M. & T. Inc.	~~113~~ 80
	27	F-16	Recl. Dist #1004	2
	1653	F-48	H. W. Keller Tr.	~~47~~ 35
	16965	F-48	W. & E. Coffman L. Boyes	~~201~~ 130
	11856	F-48	W. & E Coffman L. Boyes	~~138~~ 100
	14619	F-48	G. Zumwalt, et al	~~157~~ 121
	1179	F-48	C. & C. Tuttle	~~38~~ 30
	27A	F-48	G. Zumwalt, et al	3
	8631	F-48	Maxwell I. D.	~~114~~ 81

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	14682	F-48	R. Carter	~~179~~ 122
	186	F-48	Jimeno Ranch	~~5~~ 4
	15452	F-48	Colusa Properties Inc.	~~188~~ 124
	733	F-48	St. Patrick's Home	~~19~~ 16
	13877	F-48	St. Patrick's Home	~~166~~ 115
	230B	F-48	C. Seaver	~~8~~ 7
	14205	F-48	E. Farnsworth	~~167~~ 116
	230A	F-48	Est. of E. Farnsworth	~~8~~ 6
	12120	F-48	M. U. Hunter	~~141~~ 102
	190	F-48	J. T. Griffin, et al	~~6~~ 5
	1617	F-48	W. Lewis J. Danforth	~~46~~ 33
	11274	F-49	R. C. Wilbur	~~132~~ 95
Colusa to Knights Landing	1976	FF-17	A.A. Ehrke	~~5~~ 743
	11384	FF-17	R.& A.Davis D. Kaveney	~~134~~ 96
	9032	FF-17	P. V. Clark	~~117~~ 84
	13512	FF-17	P. V. Clark	~~159~~ 110
	13511	FF-17	P. V. Clark	~~158~~ 109
	11450	FF-17	F. & R. Tomlinson	~~135~~ 97
	6726	FF-17	F. & R.Tomlinson	~~101~~ 76
	1074B	FF-17	American Farms Water Co.	~~35~~ 28
	11795	FF-17	A. Fairey	~~137~~ 99

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	5100	FF-17	Burtis Ranch	~~85~~ 63
	657	FF-17	A. B. Lemos	~~18~~ 15
	1659	FF-17	Davis Ranches	~~48~~ 36
	18372	FF-17	Davis Ranches	~~216~~ 139
	7997	FF-47	R. Anderson, G. Davis	~~117~~ 79
	12281	FF-47	R. C. Chesney	~~143~~ 103
	18122	FF-47	R. C. Chesney	~~214~~ 138
	15811	FF-47	W. & R. Morris	~~192~~ 125
	1074A	FF-47	Newhall Land & Farming Co.	~~34~~ 27
	17890	FF-47	Froh Farms, Inc.	~~208~~ 135
	8931	FF-47	A. & O. Andreotti	~~116~~ 83
	11618	FF-47	A. & O. Andreotti	~~136~~ 98
	13454	FF-47	A. & O. Andreotti	~~156~~ 107
	6696	FF-47	A. B. Armstrong Jr.	~~100~~ 75
	5916	FF-47	Poundstone Trust et al	~~92~~ 68
	9987	FF-47	J. D. Farnsworth, et al	~~123~~ 88
	10408	FF-47	R. Beckley, et al	~~126~~ 91
	771	FF-48	C. & V. Yerxa, et al	~~28~~ 20
	4613	FF-48	Newhall Land & Farming Co.	~~79~~ 59
	4699	FF-48	Newhall Land & Farming Co.	~~80~~ 60
	6486	FF-48	Newhall Land & Farming Co.	~~96~~ 71

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	742	FF-48	Tisdale Irr. & Drainage Co.	~~20~~ 17
	4355	FF-48	Winship Ranch	~~57~~ 58
	16985	FF-48	Tisdale Irr. & Drainage Co.	~~202~~ 131
	7308	FF-48	Crocker Nat'l Bank Trustee	~~103~~ 77
	6672	FF-48	F. Erdman, et al	~~99~~ 74
	16677	G-49	Sutter Mutual Water Co., et al	~~200~~ 129
	14584	FF-48	F. Lamb Trust	~~176~~ 120
	12470	FF-48 G-16, 49	Sutter Mutual Water Co., et al	~~149~~ 104
	3195	FF-48 G-16, 49	Sutter Mutual Water Co., et al	~~83~~ 49
	7886	FF-48	Sutter Mutual Water Co., et al	~~110~~ 78
	1160	FF-48	Sutter Mutual Water Co., et al	~~37~~ 29
	1772	FF-48	Sutter Mutual Water Co., et al	~~56~~ 42
	10658	FF-48 G-16, 49	Sutter Mutual Water Co., et al	~~129~~ 93
	1769	FF-48	Sutter Mutual Water Co., et al	~~56~~ 41
	1763	FF-48	Sutter Mutual Water Co., et al	~~52~~ 38
	581	FF-48 G-16, 49	Sutter Mutual Water Co., et al	~~16~~ 13
	1758	FF-48	Sutter Mutual Water Co., et al	~~51~~ 37
	879	FF-48 G-49	Sutter Mutual Water Co., et al	~~25~~ 22
	880A	FF-48	Sutter Mutual Water Co.	~~26~~ 23

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	11953	FF-48 G-16, 49	Sutter Mutual Water Co., et al	139 101
	878	FF-48 G-16, 49	Sutter Mutual Water Co., et al	24 21
	9760	FF-48 G-16, 49	Sutter Mutual Water Co., et al	120 87
	880B	FF-48	Osi Bros., Partner	27 24
	880C	FF-48	Osi Bros., Farm	28 25
	10951	FF-48	Osi Bros. Farm, Inc.	131 94
	13590	FF-48	Osi Bros. Farm, Inc.	160 111
	1589	FF-48 G-16, 49	Reclamation Dist. #108	44 32
	576	FF-48 G-16, 49	Reclamation Dist. #108	14 11
	763	FF-48 G-16, 49	Reclamation Dist. #108	21 18
	16199	FF-48 G-16	L. & M. Butler	196 126
	6670	G-16	Title Ins. & Trust Co. Trustee	98 73
	1765A	G-16	Pelger Mutual Water Co.	53 39
	17210	G-16	M. B. Cauplin	205 154
	6527	G-16	T. L. Nelson, et al	99 72
	14789	G-16	T. & H. Nelson	181 123
	13796	G-16	L. Erdman	165 114

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	17150	G-16	W. S. Keeler	~~204~~ 133
	3290	G-16	G. J. Hiatt, et al	~~67~~ 53
	1765B	G-16	G. J. Hiatt	~~51~~ 40
	6146	G-16	J. & E. Henle	~~93~~ 69
	3247	G-16 G-49	J. Clauss Sr., et al	~~86~~ 52
	6454	G-49	Kramer Ranch	~~95~~ 70
	575	G-49 G-50	River Garden Farms Co.	~~13~~ 10
	3201	G-49	N. Lorenzetti	~~65~~ 51
	5696	G-50	M.R. & C. Reel	~~91~~ 67
	3200	G-50	C.M. & R. Reel	~~64~~ 50
	2317A	G-50	J. & N. Munson	~~58~~ 44
	18061	G-50	F., N. A., R. & S. N. Guisti	~~210~~ 136
	18062	G-50	A. Guisti	~~211~~ 137
	3466	G-50	T. E. Bryson R. L. Stanghellini	~~70~~ 55
	2884	G-50	Title Ins. & Trust Co. Trustee	~~62~~ 48
	5160	G-50	L. E. Johnson	~~86~~ 64
	5359	G-50	F. Lang, et al	~~87~~ 65
	577	G-50	River Garden Farms Co.	~~16~~ 12
	16361	G-50	Hersey Land Co., L. Knaggs	~~198~~ 128

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STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	3423	G-50	F. Lang, et al	~~69~~ 54
	4351	G-50	F. Lang, et al	~~76~~ 57
	4901	G-50	F. Lang, et al	~~82~~ 61
	4902	G-50	F. Lang, et al	~~83~~ 62
	16305	G-50	Knights Landing Ridge Cut Water Users Assoc.	~~197~~ 127
	2317B	G-50	I. E. Bundock	~~59~~ 45
	2317C	G-50	W. L. Schreiner	~~60~~ 46
	2317D	G-50	D. & I. Nix	~~61~~ 47

TABLE 36

SACRAMENTO RIVER BASIN : (Lower Sacramento, Feather, Yuba and American Rivers) Relative Location of Post-1914 Appropriative Water Rights

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
Sacramento River				
Knights Landing to I Street Bridge	882	G-50	Phil Leiser, et al	29 4
	15150	G-50	MCM Properties	184 32
	15151	G-50	Wayne Leiser	185 33
	15152	G-50	MCM Properties	186 34
	18154	G-50	Angelina Fava, et al	215 37 38
	13646	G-50	Lee Richter, et al	161 28
	6418	G-50	Henry Richter, et al	94 15
	14728	G-50	Emile Furlan	180 30
	4364	G-50	Wallace Const., Inc.	78 14
	12469A	G-50	A. & A. Furlan	147 25
	12469B	G-50	D. Azevedo, M. Baldwin	148 26
	3700	G-50	Eufemia Yturralde	31 11

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	7598	G-50	G. H. Russell	~~104~~ 16
	14836	G-50	Antonio Furlan	~~183~~ 31
	15711	G-50	Lowell Edson	~~191~~ ~~35~~ 34
	17537	G-50	Gus Inglin, et al	~~207~~ ~~36~~ 37
	15572	G-51 GG-16	Natomas Central Mutual Wtr. Co.	35
	1413	G-51 GG-16	Natomas Central Mutual Wtr. Co.	~~41~~ 9
	534	G-51 GG-16	Natomas Central Mutual Wtr. Co.	~~12~~ 1
	1056	G-51 GG-16	Natomas Central Mutual Wtr. Co.	~~31~~ 3
	1203	G-51 G-16	Natomas Central Mutual Wtr. Co.	~~48~~ 8
	7641A	G-51	E. D. Willey, et al	~~106~~ 17
	7641B	G-51	Roy Osterli	~~107~~ 18
	7641C	G-51	H. & D. Van Dyke	~~108~~ 19
	7641D	G-51	Est. of W. Nichols	~~109~~ 20
	10900	G-51	H. C. Lauppe	~~130~~ 22
	13031	GG-16	Church of Jesus Christ	~~182~~ 27

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	4226	GG-15	Professional Pistacchio Prop.	~~35~~ 12
	4257	GG-15	Halkett Trust.	~~75~~ 13
	1199	GG-15	Woodland Farms Ltd.	~~39~~ 7
	1588	GG-15	Woodland Farms Ltd.	~~43~~ 10
	12073	GG-15	Woodland Farms Ltd.	~~140~~ 23
	12357	GG-15	Heidrick Bros.	~~144~~ 24
	8141	GG-16	W. & D. Ten Eyck	~~122~~ 21
	1060	GG-16	F. Chilton, Jr.	~~32~~ 4
	1094	GG-16	Regents of Univ. of California	~~36~~ 6
	1061	GG-16	Betty Coker	~~33~~ 5
	14494	GG-16	Fong Sacramento Fruit Ranch	~~175~~ 29

1

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
Feather River (Oroville Reservoir to Sacramento River)	5629	EE-53 EE-52	DWR	~~89~~ 5
	5630	EE-53 EE-52	DWR	~~90~~ 6
	14443	EE-53 EE-52	DWR	~~170~~ 11
	14445	EE-53 G-51	DWR DWR/SWRCB	~~172~~ 13
	14444	EE-52	DWR	~~171~~ 12
	16191	F-20	J. & I. Hollingsworth	~~195~~ 17
	10529	F-19	Sutter Extension Water District	~~127~~ 8
	3406	F-19	Pedrozo Bros.	~~88~~ 3
	17534	F-51	Roy Mathews	~~206~~ 19
	4251	F=52	Manuel Aguiar	~~24~~ 4
	11357	FF-20	Valley Farms	~~133~~ 9
	15872	FF-20	C. Perrucci, et al	~~193~~ 15
	18025	FF-20	City of Yuba	~~209~~ 20
	6925	FF-50	Oswald Water Dist.	~~102~~ 7
	14803	FF-50	Feather Water District	~~182~~ 14
	16401	FF-50	Tudor Mutual Water Co.	~~199~~ 18
	480	FF-50	Plumas Mutual Water Co.	~~11~~ 1

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	23045	G-18	Garden Highway Mutual Water Co.	~~220~~ 23
	1699	G-18	Garden Highway Mutual Water Co.	~~50~~ 2
	14415	G-18	Garden Mutual Water Co.	~~169~~ 10
	15893	G-18	Garden Mutual Water Co.	~~194~~ 16
	25256	G-18	Garden Mutual Water Co.	~~222~~ 24
	20091	G-18	L. & B. Buckley	~~218~~ 21
	20399	G-18	L. & B. Buckley	~~219~~ 22
Yuba River (Daguerre Point Dam to Feather River)	9927	FF-21	Cordua I.D.	~~122~~ 2
	12371	FF-21	Cordua I.D.	~~146~~ 3
	15204	FF-21	Yuba County Water Agency	~~187~~ 4
	15574	FF-21	Yuba County Water Agency	~~190~~ 5
	9899	FF-21	Hallwood I. D.	~~121~~ 1
American River (Folsom Reservoir to Sacramento River)	13370	GG-19	U.S.B.R.	~~153~~ 8
	13371	GG-19	U.S.B.R.	~~154~~ 9
	13372	GG-19	U.S.B.R.	~~155~~ 10
	14662	GG-19	U.S.B.R.	~~178~~ 11
	18085	GG-19	Placer County Water Agency	~~212~~ 12
	18087	GG-19	Placer County Water Agency	~~213~~ 13
	138	GG-18 GG-50	Carmichael I.D.	~~1~~ 1
	12367	GG-18 GG-50	Carmichael I.D.	~~145~~ 7

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	4743	GG-18 GG-50	Carmichael I.D.	~~81~~ 3
	5031	GG-50	County of Sacramento	~~84~~ 4
	1686	GG-50	J. P. Kassis, et al	~~49~~ 2
	7622	GG-50	Growth Inc.	~~105~~ 5
	12140	GG-49	City of Sacramento	~~142~~ 6

TABLE 37

COLUSA ~~TROUGH~~ BASIN DRAIN - RELATIVE LOCATION
OF POST-1914 APPROPRIATIVE WATER RIGHTS

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTER'S NAME	PRIORITY ORDER
Colusa Basin Drain (Glenn Colusa District to Knights Landing)	462	EE-48	Provident I. D.	1
	640	EE-48	Provident I. D.	2
	892	EE-48	Provident I. D.	4
	1422	F-16	Joe Navarro	5
	21088	F-16	Joe & Cecelia Navarro	71
	10595	F-16	Gerald & Irene E. Garner	13
	17066	F-16	Princeton-Codora-Glenn I. D.	66
	8570	F-16	Douglas H. Montz	7
	11242	F-16	Jerald & Edith Shuey Holzapfel	16
	20915	F-16	Thomas M. & Betty J. Gordon	70
	20809	F-16	Thomas M. & Betty J. Gordon	69
	9092	F-15	U. S. Fish & Wildlife Service	8
	9093	F-15	U. S. Fish & Wildlife Service	9
	9094	F-15	U. S. Fish & Wildlife Service	10
	9095	F-15	U. S. Fish & Wildlife Service	11
	23005	F-47	G. Croasman, A. G. Schmies & J. M. Kirby	74
	12125	F-47	Glenn-Colusa I. D.	43
	12946	F-48	Helphenstine Rice Lands	51
	14131	F-48	Eugene M. Massa	59

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTER'S NAME	PRIORITY ORDER
	12429	F-48	Gunnersfield Enter-Prices Inc.	48
	11954	F-48	Boyles & McCarthy Bros.	37
	11956	F-48	Maxwell I. D.	39
	11959	F-48	Colusa Land Co.	40
	11886	F-48	Estate of Sadie V. Ash	26
	11955	F-48	Maxwell I. D.	38
	24806	F-48	Gunnersfield Enter-Prices Inc.	77
	14661	F-48	Louis G. Sutton	61
	11902	F-48	Carl A. Goette & Arch J. Campbell	32
	11903	FF-16	Helen M. & Estate of Lloyd W. Seaver	33
	11900	FF-16	Arch J. Campbell Trustee	30
	11901	FF-16	Carl A. Goette	31
	14649	FF-16	J. H. Cave	60
	11888	FF-16	Helen M. & Estate of Lloyd W. Seaver	27
	11889	FF-16	Leon & Joyce L. Paulo	28
	22946	FF-16	S.M.M. Farms Inc. & John Kalfsbeek	73
	12363	FF-16	Gerald Hahn	45
	11028	FF-16	George R. Zumwalt et al	15
	11909	FF-16	Arch J. Campbell Trustee	34
	12411	FF-16	Richard Moore	46

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTER'S NAME	PRIORITY ORDER
	12115	FF-16	U.S. Fish & Wildlife Service	42
	13734	FF-16	Durst Brothers	58
	13002	FF-16	Davis Ranches	56
	12412	FF-16	Davis Ranches	47
	13001	FF-16	Davis Ranches	55
	11881	FF-46	W.P. & R. L. Wallace dba Wallace Bros.	24
	23945	FF-46	W. P. & R. L. Wallace dba Wallace Bros.	75
	23946	FF-46	W.P. & R. L. Wallace dba Wallace Bros.	76
	11925	FF-46	Frederick J. Strain, et al	35
	11926	FF-46	Frederick J. Strain, et al	36
	22696	FF-46	J. & J. A. Barber , B. B. Sherer	72
	12087	FF-46	B. B. Sherer, J. S. D.G. & G. A. Baber	41
	18469	FF-46	W.B. & M. Jensen; J. Grimmer	68
	12459	FF-47	Estate of Jackson S. King	49
	11011	FF-47	Balsdon Ranch	14
	13003	FF-47	Ethel Brandenburg	57
	16185	G-15	B. W. Jr. & B. W. Whitmore	62
	11899	G-15	Reclamation District #108	29
	11865	G-15	Robert J. & Jewell L. Rooney	21
	16442	G-15	Robert J. & Jewell L. Rooney	63

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTER'S NAME	PRIORITY ORDER
	11875A	G-15	R. W. West	22
	11875B	G-15	Hiraam J. Kalsbeek	23
	11864	G-15	J. W. Hughes	20
	11863	G-15	Myrtle J. West	19
	12889	G-15	Michael V. Doherty	50
	17853	G-15	C. M. Mumma	67
	735	G-15	C. M. Mumma	3
	11855	G-48	E. G. Cochran	18
	11854	G-48	Elmer Johnson	17
	9554	G-49	George E. Young-Mark	12
	1725	G-49	Layton Knaggs	6
	12256	G-49	Layton Knaggs	44
	12995	G-49	Layton Knaggs	52
	12996	G-49	Layton Knaggs	53
	12997	G-49	Layton Knaggs	54
	16515	G-49	J. E. Taylor	64
	16516	G-49	Tom Tolson	65
	11885	G-49	John C. & Evelyn Cooling	25
	13006	G-49		

TABLE 38
SUTTER BYPASS - RELATIVE LOCATION
OF POST-1914 APPROPRIATIVE WATER RIGHTS

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTER'S NAME	PRIORITY ORDER
Sutter Bypass (Western Canal to the Feather River Mouth)	476	E-19	Paradise I. D.	1
	15017	EE-50	Worth Bayless	35
	15406	EE-50	Worth Bayless	36
	14354	F-18	McGowan Brothers	32
	13008	F-18	McGowan Brothers	25
	9625	F-18	McGowan Brothers	15
	15468	F-18	McGowan Brothers	37
	14546	F-18	E. E. & Virginia Fay McPherrin	33
	1177	F-18	N. E. Askew	2
	2283	F-18	W. E. Burford, et al	3
	15710	F-18	E. E. McPherrin	38
	9802	F-17	C. Wm. Johnson & Mary Suzanne Foraker	16
	24590	F-17	Elna Schoar Inc.	48
	22333	F-17	C. Wm. Johnson & Mary Suzanne Foraker	44
	23201	FF-17	Reclamation District 1004	47
	13675	FF-17	Colusa Shooting Club	28
	13728	FF-17	Colusa Shooting Club	30
	14316	FF-17	West Butte Farm Co.	31
	12437	FF-17	West Butte Farm Co.	24
	7925	FF-17	Reclamation District 833	9
	16320	FF-18	Edward E. & Doris M. Nall	40
	7988	FF-18	Central Gun Club Inc. et al	10
	6743	FF-18	Butte Slough Irrigation Co.	8

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTER'S NAME	PRIORITY ORDER
	15763	FF-18	Ross D. Madden	39
	23673	FF-18	Joseph A. & Brenda Morehead	46
	8722	FF-18	Clarence DeWitt et al	12
	2824	FF-18	D. Meyers; E. E. & D. E. Nall	4
	10787	FF-18	Claire H. Epperson et al	18
	19749	FF-18	Thomas E. Nevis et al	42
	13605	FF-18	James E. Tarke	27
	22969	FF-18	James R. & Neva E. Bohannan	45
	10983	FF-18	G. Todd Bihlman et al	20
	10788	FF-18	Claire H. Epperson, et al	19
	25114	FF-48	Loretta Dean	50
	25159	FF-48	Estate of Edward Dean	51
	24897	FF-48	Frederick H. & Myra M. Ziegenmeyer	49
	13311	FF-48	Estate of Edward Dean	26
	11632	FF-48	U. S. Fish & Wildlife Service	22
	10030	FF-48	Guiseppe, Frank & Angelo Giusti	17
	11349	FF-49	U. S. Fish & Wildlife Service	21
	21206	FF-49	Milton Middleton et al	43
	13710	FF-49	Milton Middleton et al	29
	11953	FF-49	Sutter Mutual Water Company et al	23
	7989	G-17	Agrivest Corp. et al	11
	9325	G-17	Neal Westrope	14

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTER'S NAME	PRIORITY ORDER
	14867	G-17	Juan Etcheverry	34
	5754	G-17	James I. & Ethel Mulligan	5
	6582	G-17	Agrivest Corp & Neal Westrope	7
	6348	G-18	Agrivest Corp.	6
	19083	G-18	Agrivest Corp.	41
	9230	G-18	Anderson Farms Co.	13

TABLE 39
SAN JOAQUIN RIVER BASIN - RELATIVE LOCATION
OF POST-1914 APPROPRIATIVE WATER RIGHTS

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
Merced River (New Exchequer Dam/Lake Mcclure to River Mouth)	1221	II-55	Merced ID	~~2~~ 1
	1222	II-55	Merced ID	~~3~~ 2
	16187	II-55	Merced ID	~~106~~ 17
	16186	II-55	Merced ID	~~105~~ 16
	17647	II-55	H. Meyer	~~115~~ 19
	6470	II-55	P.G.& E.	~~48~~ 9
	10572	II-55	Merced ID	~~68~~ 11
	---	II-54		
	---	J-17		
	6603	J-16	M. F. Silva	~~51~~ 10
	1906	J-15	M. F. Silva	~~45~~ 7
	3664	J-15	M. F. Silva	~~29~~ 8
	13444	J-15	Santa Clara	~~90~~ 14
	13445	J-15	U.S. Sequoia Nat'l Forest	~~91~~ 15
	1442	J-15	J & W Thompson F & R Reichle L & L Roberts D & M Blackstock S & R Hodge	~~4~~ 4
	16895	J-15	J. D. Fisher	~~113~~ 18
	1322	J-15	J. E. Gallo	~~6~~ 3
	12715	J-14	Gallo Vineyards Inc.	~~80~~ 13

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	1885	J-52	Stevinson Water Dist, et al	~~14~~ 6
	11555	J-52	E. DeAngelis	~~71~~ 12
	1730	J-52	3H Securities Co.	~~12~~ 5
Tuolumne River (Don Pedro Dam to River Mouth)	1532	II-17	Turlock & Modesto I.D.	~~9~~ 3
	9996	II-17	Turlock & Modesto I.D.	~~64~~ 13
	1232	II-17	Turlock & Modesto I.D.	~~4~~ 1
	1233	II-17	Turlock & Modesto I.D.	~~5~~ 2
	9997	II-17	Turlock & Modesto I.D.	~~65~~ 14
	3648	II-17	Turlock & Modesto I.D.	~~28~~ 6
	6711	II-17	Turlock & Modesto I.D.	~~55~~ 10
	3139	II-17	Turlock & Modesto I.D.	~~23~~ 5
	15371	II-16	William A & A. Jean Hall	~~102~~ 20
	12262	II-15	Iva M. & Est. of A.E. Ketcham	~~76~~ 16
	12674	II-49	Homer & Verna Couchman	~~79~~ 18
	9301	II-49	Golden Sierra Ranch	~~59~~ 11
	11390	II-49	Evelyn N. & Lister E. Hyer	~~70~~ 15
	5269	II-49	Eugene Boone, et al	~~41~~ 8
	12396	II-49	R. U. & Frances Maxfield	~~77~~ 17

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	1633	II-48	Paul Bancroft	11 4
	4607	II-48	Paul & Philip Bancroft	40 7
	13496	II-48	J. Russel Murray	92 19
	6574	II-48	John B. Silva	50 9
	9573	II-48	Estate of E.T. Mape	60 17
Stanislaus River (Goodwin Dam to Delta Rim)	12910	I-55	Calaveras Co. Water Dist.	82 13
	19149	I-55	Calaveras Co. Water Dist.	122 25
	18728	I-55	Calaveras Co. Water Dist.	120 24
	2524	I-55	So. San Joaquin I. D.	2 3
	11741	I-55	W. & M. Ardis	73 12
		I-54		
	9666	I-53	Oakdale I.D.	61 7
	22294	I-53	M. & E. Mondo	126 27
	8892	I-53	Oakdale I.D.	58 6
	13100	I-53	G. L., U.P. & Est. of R.P. Barton	86 17
	21169	I-53	A.& M.Pogolotti	123 26
	13099	I-53	G.L.,H.P. & Est. of R. Barton	85 16
	18715	II-13	G.L.,H.P. & Est. of R. Barton	129 23
	2087	II-13	J. Bankhead	1 2
	10710	I-52	M. & R. Zolezzi A Partnership	69 10

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	12987	II-12	A. L. & Est. of R. P. Barton	83 14
	14716	II-12	A. Girardi	96 20
	10466	II-12	A. Girardi	66 9
	11648	II-12	E. R. Wells	72 11
	13018	II-11	R. & L. McIntosh	84 15
	18526	II-11	P. & A. Dykzeul	128 22
	1628	II-11	D. F. Koetitz	10 1
	3516	II-11	D. F. Koetitz	26 4
	13414	II-11	J. L. Hertle	88 18
	6963	II-11	A. & R. Brocchini	56 5
	9834	II-11	A. & R. Brocchini	63 8
	13628	II-11	A. & R. Brocchini	95 19
	15680	II-11	G. Pellicca	103 21
San Joaquin River (Merced River to Tuolumne River)	---	J-52		
	6393	J-13	L. B. Crow	46 7
	6467	J-12	A. Silveira	47 8
	4237	J-12	Twin Oaks Irr. Co.	37 5
	15175	J-12	Joe T. Azevedo	100 11
	4102	J-12	Hailwood Inc.	35 4
	13552	II-49	Dean Houk & E. H. Kolding	93 9
	13553	II-49	L. G. Houk et al	94 10
	4507	II-49	E. H. Kolding & B. & Dr. Houk	39 6
	16662	II-48	H. H. Baker	111 12
	16669	II-48	County of Stanislaus	112 13

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	1987	II-48	W. Stanislaus I.D.	~~16~~ 3
San Joaquin River (Tuolumne River to Delta Rim)	---	II-48		
	1476	II-11	El Solyo Water District	~~8~~ 2
	1195	II-11	P. K. Coddington et al	~~1~~ 1
~~Calaveras River (New Hogan Dam to Delta Rim)~~	11792	HH-18	Calaveras Co. Water Dist.	~~14~~ 9
	18812	HH-18	USBR	~~121~~ 13
	16448	HH-52	L. & D. Sparks	~~109~~ 11
	18208	HH-52	L. & D. Sparks	~~117~~ 12
	6624	HH-52	R. T. McGurk	~~54~~ 8
	2839	HH-52	R. T. McGurk	~~22~~ 3
	3776	HH-52	L. Pallavicino et al	~~30~~ 4
	6623	HH-52	R. F. Grimsley Sr. et al	~~53~~ 7
	2380	HH-52	R. F. Grimsley Sr. et al	~~19~~ 1
	2381	HH-51	Dan Compton	~~30~~ 2
	6612	HH-51	Dan Compton	~~52~~ 6
	6522	HH-51	Stockton East Water District	~~49~~ 5
	13423	HH-50	Stockton East Water Dist.	~~89~~ 10

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
Mokelumne River (Camanche Reservoir to Delta Rim)	13156	HH-16	East Bay MUD	87 18
	12842	HH-16	N. San Joaquin W. C. District	81 17
	12539	HH-16	G. Beggs	78 16
	22103	HH-16	E. Lepera	124 21
	5957	HH-16	H. & E. Mason	45 11
	4405	HH-16	J. & R. Henry	38 9
	3453	HH-16	G. & L. Gauntt	25 2
	3213	HH-16	G. Queirolo et al	24 1
	11977	HH-16	R. & R. Sutter	75 15
	3617	HH-16	Harris Vineyards	27 3
	17954	HH-16	R. & R. Sutter	116 20
	3996	HH-15	R. & I. Mehlhaff	34 7
	4215	HH-15	D. Stapelberg et al	36 8
	9796	HH-16	Cranston Farms	62 13
	3830	HH-15	L. Kirschenmann	33 6
	8871	HH-15	B. Davis	57 12
	10553	HH-15	V. & E. Hoffman	67 14

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	3811	HH-15	V. & E. Hoffman	31 4
	3821	HH-15	R. Burley R. VanGalder	32 5
	15202	HH-15	T. Gott et al	101 19
	5807	HH-14	Woodridge I. D. et al	44 10
	21578	HH-14	J. & N. Piazza	124 21
Cosumnes River (Michigan Bar to Delta Rim)	5645	GG-54	State Filing	42 3
	5646	(A) GG-54	U S B R	43 4
		(B) GG-54	U S B R	
	16501	GG-53	E. & H. Wolin	110 11
	23416	H-18	Trust Fund for Operating Engineers	128 14
	1838	H-18	Trust Fund for Operating Engineers	13 1
	2296	H-18	Cosumnes Irr. Assoc.	18 2
	24085	H-18	H. & M.J. Carlson P. & R. Maughn	129 15
	16142	H-18	Trust Fund for Operating Engineers	104 8

STREAM REACH	APPLICATION NUMBER	SPOT MAP NUMBER	DIVERTERS NAME	PRIORITY ORDER
	17190	H-17	J. Schneider et al	~~113~~ 12
	14781	H-16	G. & M. Beitzel	~~97~~ 5
	14782	H-16	G. Beitzel	~~98~~ 6
	16201	H-16	R. H. Mitchell	~~106~~ 9
	15141	H-49	E. Avila	~~99~~ 7
	22684	H-49	S. & D. Peterson	~~128~~ 13
~~Delta Rim~~	16390	H-49	R. Wilson	~~108~~ 10

Delta Rim

TABLE 40

RELATIVE LOCATION OF POST-1914
DIVERTERS IN DIFFERENT SERVICE AREAS
OF THE SACRAMENTO-SAN JOAQUIN DELTA

SERVICE AREA: NORTH DELTA WATER AGENCY

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
19086	GG-47	301	Florence R. Swanston, et al	Tule Canal
20376	GG-48	309	See above	Tule Canal
19087	GG-48	302	F. R. & L. E. Swanston; R. Nixon	West Cut
4101	GG-48	45	Reclamation District #999	Sacramento R.
17491	H-12	269	Maine Prairie Water Dist.	Unnamed Drainage Canal
19931	H-13	306	Irvin D. & Fay E. Bulkley	Dixon Drain Dist. Lateral #2
16566	H-13	260	Senator Outing Club	2 Unnamed Streams
20773 A	H-13	312	Yolo Basin Farms	Unnamed Strea
367	H-14	056	Mae Nakayama	Sacramento R.
4376	H-14	059	Howard J. Reamer Jr., et al	Sacramento R.
4369	H-14	052	William J. Correa	Sacramento R.
6299	H-14	116	Mario & Anna Mesquita	Sacramento R.
2707	H-14	013	Joseph Blumenfeld, et al	Sacramento R.
4101	H-14	045	Reclamation Dist. #999	Sacramento R.
7232	H-14	127	Lucile Fagunes	Sacramento R.
4501	H-14	071	Lawrence & Ruth Schneider	Sacramento R.
12803	H-14	196	See Above	Sacramento R.
9220	H-14	143	American Crystal Sugar Co.	Sacramento R.
8292	H-14	130	See Above	Sacramento R.
4100	H-14	044	Reclamation Dist. #999	Sacramento R.
1666	H-14	004	See Above	Sacramento R.
4372	H-14	058	Estate of Frank Rose	Sacramento R.

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
16156	H-14	250	Laura E. Snyder	Elk Slough
16157	H-14	251	Georgia M. Williams	Elk Slough
16158	H-14	252	See Above	Elk Slough
12803	H-14	196	Lawrence & Ruth Schneider	Sacramento R.
16641	H-14	261	McKeon Construction	Unnamed Canal
16160	H-14	253	Laverne K. Caton & Mary Pylman	Elk Slough
14386	H-14	224	Warren V. & Francis Bogle	Elk Horn Slou
14830	H-14	234	Reclamation Dist. #150	Elk Horn Slou
14381	H-14	223	Perry S. Cook	Elk Horn Slou
13650	H-14	208	F. R. & L. E. Swanston	Borrow Pit W. Levee Rd 9
13651	H-14	209	George A. Pope, Jr.	Borrow Pit W. Levee Rd 9
4099	H-14	042	Reclamation Dist. #999	Sacramento R. Deep Water Channel
None	H-15	--	--	--
17664	H-46	279	Maine Prairie Water Dist.	Unnamed Drainage Canal
20698	H-46	311	See Above	Sweeney Creek
17488	H-46	268	See Above	Unnamed Drainage Canal
17491	H-46	269	See Above	Unnamed Drainage Canal
17493	H-46	270	See Above	Unnamed drainage Canal
17487	H-46	267	See Above	Unnamed Drainage Canal
12566	H-46	192	Henry & Sadie Petersen	Lindsey Slough
17514	H-46	278	State Water Resources Control Board	Lindsey Slough
22219	H-46	318	Edward S. Wineman	Haas Slough

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
24449	H-46	326	Mort L. Triplett	Cache Slough
24420	H-46	325	Claire Lea	Cache Slough
13439	H-46	206	Eleanor B. Parker	Cache Slough
3769	H-46	035	Hastings Reclamation Dist. #2060	Cache Slough, etc.
13148	H-46	201	Petersen Estate Company	Lindsey Slou
9824	H-46	153	Vernon E. & Marie Schmeiser	Unnamed Stre
17514A	H-46	274	California Department of Water Resources	Lindsey Slou
9862	H-46	154	Margaret M. Deterding, et al	Lindsey Slou
14174	H-47	220	Yolo Flyway Farms	Yolo Canal
12566	H-47	192	Henry & Sadjo Petersen	Lindsey Slou
3088	H-47	200	Nave Bros, A Partnership	Yolo Canal
13180	H-47	203	Frank & Nancy Finnegan	Yolo Canal
13181	H-47	204	William Pritehard, Cal Farms	Yolo Canal
18820	H-47	299	See Above	Yolo Canal
18594	H-47	297	Nave Bros, A Partnership	Yolo Canal
18824	H-47	300	See Above	Yolo Canal
20773 B	H-47	313	Cal Farms, Inc.	Unnamed Stre
22903	H-47	323	Frank & Nancy Finnegan	Yolo Canal
24362	H-47	324	Gordon & Adeline Wagner	Yolo Canal
18530	H-47	296	William Pritchard, Cal Farms	Yolo Canal
17898	H-47	281	Marie E. Wineman	Unnamed Drainage Canal
1150	H-47	003	Sweetwater Company	W. Toe Drain Deep Water Channel
4123	H-47	047	See Above	W. Toe Drain Deep Water Channel

PLICATION MBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
18824	H-47	300	Nave Bros, A Partnership	Yolo Canal
124	H-47	048	See Above	W. Toe Drain Deep Water Channel
4218	H-47	051	Ernest Fahn, et al	Egbert Cut, et
.544	H-47	231	Lorraine, Lorin & Roger Zanetti	Duck Slough
9229	H-47	304	Reclamation Dist. #2068	Haas Slough
14338	H-47	222	Ervin E. Vassar	Haas Slough
2318	H-47	007	Reclamation Dist. #2068	Haas Slough
12286	H-47	190	City of Vallejo	Maine Prairie Slough
9363	H-47	146	U. S. Bureau of Reclamation	Sacramento R.
364	H-47	148	See Above	Sacramento R.
20398	H-47	310	Lucky Five Farms	West Cut
3769	H-47	035	Hastings Reclamation Dist.	Cache Slough Etc.
4100	H-47	044	Reclamation District #999	Sacramento R. Etc.
566	H-47	004	Reclamation District #999	Sacramento R. Etc.
4218	H-47	051	Ernest Fahn, et al	Egbert Cut, Etc.
14381	H-48	223	Perry S. Cook	Elkhorn Slough
2482	H-48	191	Donald C. McClain	Sacramento R.
14521	H-48	229	Robert & James Pylman	Elkhorn Slough
5993	H-48	114	Edgar M. Simpson Jr., et al	Sacramento R.
14520	H-48	228	Robert & James Pylman	Sacramento R.
5630	H-48	111	California Department of Water Resources	Feather River, Etc.
14443	H-48	225	See Above	Feather River, Etc.
9812	H-48	305	U. S. Bureau of Reclamation	Sacramento R., Etc.

PLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
14445A	H-48	227	California Department of Water Resources	Italian Sloug etc.
17512	H-48	271	See Above	Italian Sloug etc.
4830	H-48	233	Reclamation Dist. #150	Elkhorn Sloug
0194	H-48	160	J. H. Jonson & Sons, Inc.	West Snodgras Slough
0193	H-48	159	See Above	West Snodgras Slough
5626	H-48	110	U. S. Bureau of Reclamation	Sacramento R.
3239	H-48	205	Robert & Gertrude Collins	Sacramento R.
3969	H-48	215	McKeon Construction	Unnamed Canal
4100	H-48	044	Reclamation Dist. #999	Sacramento R.
666 1666	H-48	004	See Above	Sacramento R.
14540	H-48	230	McKeon Construction Co.	Unnamed Canal
0859	H-48	169	Joe Sanchez Farms Inc.	Steamboat Slough
2699	H-49	195	Sourn Kor Samra, et al	Sacramento Drainage Cana
5633	H-49	243	Thomas A. Sullivan, et al	Sacramento Drainage Cana
1637	H-49	179	Tessie & Spencer Wilcox	Stone Lake
15695	H-49	244	See Above	Stone Lake
4540	H-49	230	McKeon Construction Co.	Unnamed Canal
1644	H-49	180	Clarence L. & Laurel C. Bloom	Unnamed Canal
2897	H-49	197	See Above	Unnamed Canal

PLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
15041	H-49	237	Tessie & Spencer Wilcox	Unnamed Canal
9936	H-49	307	John & Helen S. Campbell	Unnamed Canal
22722	H-49	322	S. L., T.M., & C.R. Wilcox	Unnamed Canal
8075	H-49	294	S. Miyagawa, G. & Estate of H. B. Whitney	Dredger Cut
1887	H-49	186	S. Miyagawa; G. & Estate of H. B. Whitney	Dredger Cut
14280	H-49	221	Eric, Patricia, & Frank Loretz	Stone Lake
18075	H-49	294	S. Miyagawa; G. & Estate of H. B. Whitney	Dredger Cut
18255	H-49	295	Peter & Magdalen Saunders	Unnamed Drain
8489A	H-49	135	Genevieve & Emmett James	Dredger Cut
8489B	H-49	136	John McCormack Co. Inc.	Dredger Cut
8489C	H-49	137	Earl M. Dean	Dredger Cut
15034	H-49	236	Sourn Kor Samra, et al	Unnamed Slough
11541	H-49	178	Norman Alfred Jr., & Alfred Kuhn	Dredger Cut
11268	H-49	175	Alfred Kuhn	Dredger Cut
17468	H-49	265	See Above	E. Extension Snodgrass Slough
12916	H-49	198	H. T. Wilder	Dredger Cut
26818	H-49	10	Genevieve & Emmett James	Dredger Cut
26818	H-49	11	John McCormack Co. Inc.	Dredger Cut
26818	H-49	12	Earl M. Dean	Dredger Cut
14100	H-49	218	Comanche Farms, Inc.	R. D. #1002 Drainage Cana

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
:699	H-49	195	Sourn Kor Samra, et al	Sacramento Drainage Canal
11194	H-49	172	Douglas McCormack, et al	Snodgrass Slough
12009	H-49	187	Estate of Evelyn Ross	Snodgrass Slough
17971	H-49	292	Thomas McCormack	Snodgrass Slough
3914	H-49	038	McCormack Williamson Co.	Dredger Cut
16097	H-49	247	Charles P. & Ruth Coldani	Unnamed Creek
16098	H-49	248	See Above	Unnamed Creek
1240	H-49	173	Eric & Patricia Loretz	Unnamed Strea
8406	H-49	134	Angelo Dinelli	Mokelumne Riv
.0068	H-49	157	Thomas J. Stokes, et al	Unnamed Strea
16099	H-49	249	Charles P. & Ruth Coldani	Cosumnes Rive
15698	H-49	245	Thomas J. Stokes, et al	Burton Slough
.4101	H-49	219	Comanche Farms Inc.	Dredger Cut
11526	H-49	177	Eric & Patricia Loretz	Unnamed Strea
15698	H-49	245	Thomas J. Stokes	Burton Slough
9169	HH-10	139	Horace D. Towne	Sacramento R.
None	HH-11	—	--	--
9363	HH-12	146	U. S. Bureau of Reclamation	Sacramento R
9364	HH-12	146	U. S. Bureau of Reclamation	Sacramento R
13239	HH-12	188	Estate of Martin Bronich	Old River
3488	HH-12	207	C.G., P.A. & E. F. McDowell	Steamboat Slough
16376	HH-12	258	Fay, Sturtz, & Fay Ranch	Steamboat Slough

PPLICATION MBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
7889	HH-12	280	Fay, Sturtz, & Fay Ranch	Streamboat Slough
9252	HH-12	144	C.G., P.A., & E.F. McDawell	Steamboat Slough
6168	HH-12	254	Joe Lopes	Sacramento River
2948	HH-12	015	Reclamation Dist. #756	Potato Slough Etc.
3914	HH-13	038	McCormack Williamson Co.	Dredger Cut, etc.
3990	HH-13	040	R.N., Ethel E.& R. D. Blossom	Mokelumne Riv
0531	HH-13	165	Thornton Farms	Mokelumne Riv
6145	HH-13	115	Mark Vernon Holthouse Jr.	Mokelumne Riv
5250	HH-13	242	Albin Steffan	Mokelumne Riv
2648	HH-13	194	Woodbridge Irrigation Dist. et al	Beaver Slough
2241	HH-13	189	Cora S. Fiddyment	Beaver Slough
16432	HH-13	259	See Above	Beaver Slough
0240	HH-13	163	Woodbridge Irrigation Dist. et al	Mokelumne R.
5135	HH-13	240	George R. Patterson	Mokelumne R.
15136	HH-13	241	See Above	Mokelumne R.
1810	HH-13	184	Sol D. & Estate of Jack Klein	Beaver Slough
4894	HH-13	085	Albert, Mary & Virginia Amaro	Beaver Slough
5807	HH-13	112	Woodbridge Irrigation Dist. et al	Mokelumne Riv
5092	HH-13	97	A. E. Gianelli, et al	Beaver Slough Etc.
24834	HH-45	327	Dow Chemical Co. Inc.	Sacramento R
one	HH-46	--	--	--
None	HH-47	--	--	--

SERVICE AREA: CONTRA COSTA COUNTY WATER DISTRICT

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
5941	HH-44	113	Contra Costa County Water District	Mallard Slough
17001	HH-45	264	Crown Zellerbach Corp.	San Joaquin R
768	HH-46	034	Jersey Island Reclamation District #830	San Joaquin R etc.
3436	HH-46	030	E. I. Dupont DeNemours & Co.	San Joaquin R
2952	HH-46	020	Delta Farms R. D. #2026	False River, etc.
None	HH-47	--	--	--
	I-10	--	--	--
22316	I-11	319	U. S. Bureau of Reclamation	Rock Slough
9363	I-11	147	U. S. Bureau of Reclamation	Sacramento R.
9364	I-11	148	U. S. Bureau of Reclamation	Sacramento R.
9366	I-11	149	U. S. Bureau of Reclamation	Rock Slough
9367	I-11	150	U. S. Bureau of Reclamation	Rock Slough
15094	I-11	239	Alba C. Houston	Kellogg Creek
16229	I-12	256	Mantelli Bros.	Sand Mound Slough
2951	I-12	019	Delta Farms R. D. No. 2025	Roosevelt Cut etc.
4942	I-12	038	Palm Tract Co.	Old River, et
2950	I-12	017	Delta Farms R. D. #2024	Indian Slough etc.
2949	I-12	016	H. John Bloomfield, et al	Unnamed Strea
2593	I-12	009	Leo Fallman, et al	Unnamed Strea
2718	I-12	014	Leo Fallman, et al	Unnamed Strea
NONE	I-47	--	--	--
6587	I-48	122	William R. Baldwin	Italian Slough
8338	I-48	132	William R. Baldwin	Old River

PPLICATION MBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
4432	I-48	063	John W. Lund, et al	Old River
4635	I-48	079	Elmer & Claire Danielson	Delta-Mendota Canal, etc.
25515	I-48	—	—	—
5516	I-48	—	—	—
6587	I-48	121	William Richard Baldwin	Italian Sloug
9368	I-48	151	U. S. Bureau of Reclamation	Old River
0245	I-48	308	U. S. Bureau of Reclamation	Old River
5630	I-48	111	California Department of Water Resources	Feather River etc.
14443	I-48	225	See Above	Feather River etc.
17513	I-48	272	State Water Resources Control Board	Italian Sloug
17512	I-48	271	California Department of Water Resources	Italian Sloug
4445	I-48	226	State Water Resources Control Board	Feather River etc.

SERVICE AREA: SOUTH DELTA WATER AGENCY

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
NONE	I-12	--	--	--
5877A	I-13	124	R. N. Blossom	North Canal
6877B	I-13	125	Francis D. Lamb	Middle River
5720	I-13	099	Sol D. Klein & Estate of Jack Klein	Middle River
4023	I-13	217	Agusta Bixler	Middle River
5064	I-13	096	Bank of Stockton	Burns Cutoff
4452	I-13	065	Yamada Bros, et al	Burns Cutoff, Etc.
5364	I-13	109	Merrill & Ralph Lucas & Daniel Roza	Middle River
4979	I-13	092	Rudolph & Nelly Mussi	Middle River
6936	I-14	126	Frank Pellegri	San Joaquin R
102	I-14	098	See Above	San Joaquin R
8633	I-14	138	Angelo Marchini et al	San Joaquin R
4922	I-14	087	H. & M. Muller , M. Messer	San Joaquin R
4568	I-14	078	Estate of Carolyn Weston	San Joaquin R etc.
14585	I-14	232	Estate of Carolyn Weston	San Joaquin R
3701	I-14	033	Minnie M. & Fred Witt	San Joaquin R
4562	I-14	077	William P. Remonda	San Joaquin R
13732	I-14	211	Lester Rodgers	San Joaquin R
3733	I-14	212	Martha L. Ratto	San Joaquin R.
3802	I-14	036	Gertrude E. Labaume	San Joaquin R.
4209	I-14	050	David G. Saunders	San Joaquin R.
6226	I-14	255	John Calcagno	San Joaquin R.
5712	I-14	123	John Calcagno	San Joaquin R.
13177	I-14	202	Glenn W. Saunders	San Joaquin R.

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
4568	I-14	078	Estate of Carolyn Weston	San Joaquin R
4110	I-48	046	Julian B. Bonetti, et al	North Canal
4432	I-48	063	John W. Lund, et al	Old River
4662	I-48	082	Vaquero Farms Inc.	Grant Line Canal
4276	I-48	054	Estate of H. G. Grunauer, et al	Old River
301	I-48	001	West Side Irrigation Dist.	Old River
13955	I-48	214	Johnnie & Josephine Costa	Old River
21542	I-48	316	U. S. Bureau of Reclamation	Old River
22638	I-49	321	E. W. & Bernice M. Avila	Middle River
7667	I-49	129	Alice G. Ratto	Middle River
9889	I-49	155	Alzoe S. Garvey	Middle River
10374	I-49	164	See Above	Middle River
4637	I-49	081	George E. Moran, et al	Middle River
22598	I-49	320	Marian Williams Wheeler	Middle River
8318	I-49	131	Joseph P. & Minnie M. Ratto	Middle River
10067	I-49	156	Joseph P. Ratto Jr. & Sr.	Middle River
11694	I-49	182	I. N. Robinson, Jr. et al	Middle River
10233	I-49	162	Eva L. & Estate of Francis H. Saunders	Middle River
17638	I-49	278	Estate of Francis H. Saunders	Middle River
9764	I-49	152	bernard & Frederick Daniele	Middle River
4637	I-49	081	George S. Moran, et al	Middle River
4636	I-49	080	Martin & Julius Muhs	Middle River
17567	I-49	276	Peter Miocevich	Middle River

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
4513	I-49	074	Robert E. Ferguson	Grant Line Canal
4452	I-49	065	Yamada Bros., et al	Middle River etc.
732	I-49	002	Loretta Holt & Lindsey Cochran	Grant Line Canal
4512	I-49	073	Robert E. Ferguson	Grant Line Canal
11847	I-49	185	Union Island Mutual Water Co., Inc.	Grant Line Canal
14022	I-49	216	Agusta Bixler Farms	Grant Line Canal
4275	I-49	053	Estate of Annie Fabian, et al	Old River
4274	I-49	052	Bianchi Bros., A Partnership	Paradise Slough, etc
5047	I-49	094	Theodore Stark, et al	Old River, et
5155	I-49	103	Island Reclamation Dist. #2062	Old River, et
10113	I-49	158	Jose Alves	Old River
4429	I-49	062	Arthur R. Banta	Old River
12239	I-49	188	Estate of Martin Bronich	Old River
4921	I-49	086	See Above	Old River
14445	I-49	227	California Department of Water Resources	Italian Slough etc.
4071	I-49	041	Peter M. & Frances Yroz	Old River
4991	I-49	093	Pescadero R. D. #2058	Tom Paine Slough
5201	I-49	104	Peter & Frances Yroz	Old River
6386	I-50	119	Raymond & Elsie Muller	San Joaquin River
11739	I-50	183	Estate of Francis H. Saunders	San Joaquin River

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
11672	I-50	181	John & Pia Cerri	San Joaquin R
4520	I-50	075	John & Pia Cerri	San Joaquin R
2339	I-50	008	Cleo R. Vieria, et al	San Joaquin R
20957	I-50	314	Katie Fleck & Carla McDonnell	San Joaquin R
18712	I-50	298	Lloyd & Thelma Phelps	San Joaquin River Delta Channel
21162	I-50	315	See Above	San Joaquin River
10903	I-50	170	Donald Frick, Trustee	San Joaquin River
3518	I-50	031	Frieda J. Stricker	San Joaquin River
3905	I-50	037	Martin P.H. & Nancy A. Matts	San Joaquin River
4820	I-50	084	Ivan & Joe Cerri	Old River
14891	I-50	234	Golden Plow Ranch, A Corporation	Old River
11412	I-50	176	Albert Muller	Old River
4161	I-50	049	See Above	Old River
5153B	I-50	102	California Department of Corrections	San Joaquin River
15061	I-50	238	Ivan & Joseph Cerri	San Joaquin River
3957	I-50	039	I. N. Jr. & Isabelle Robinson	San Joaquin River
5155	I-50	103	Island Reclamation Dist.#2062	Old River, et
2286	I-50	006	Pescadero Reclamation Dist. #2058	Tom Paine Slough
9183	I-50	142	Dell Osso Bros.	San Joaquin River

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
4451	I-50	064	Dell Osso Bros.	San Joaquin R
4472	I-50	070	Father Flanagan's Boys' Home	San Joaquin R
16749	I-50	262	Baird Lands Inc.	Walthall Slo
4569	I-50	078	H.& K. Windeler & M. Kalp	San Joaquin River
2286	I-50	006	Pescadero Reclamation Dist. #2058	Tom Paine Slough
4991	I-50	093	See Above	Tom Paine Slough
4506	I-50	072	Bernice A. Von Sosten	San Joaquin River
4470	I-50	068	Paradise Mutual Water Co.	San Joaquin River
9182	I-50	141	See Above	San Joaquin River
5063	I-50	095	J. E.S., R.& A.M. Calcagno, A. Aloi	San Joaquin River
5153A	I-50	101	Everett Farms, A corp.	San Joaquin River
5153B	I-50	102	California Department of Corrections	San Joaquin River
5209A	I-50	105	California Department of Corrections	San Joaquin River
5209B	I-50	106	See A & B Above	San Joaquin River
21162	I-50	315	Lloyd & Thelma Phelps	San Joaquin River
NONE	II-8	--	--	--
NONE	II-9	--	--	--
5153A	II-9	--	Everett Farms, A Corp.	San Joaquin River

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
5209A	II-10	106	See A & B Above	San Joaquin River
5209B	II-10	106	See A & B Above	San Joaquin River
19194	II-10	303	Alex & Barbara Hildebrand	San Joaquin River
17950	II-10	287	Alex & Barbara Hildebrand	San Joaquin River
17945	II-10	282	Albert & Dorothy Fonseca	Walthall Slou
17946	II-10	283	William H. Hayes, et al	Walthall Slou
17948	II-10	285	San Joaquin Water Assoc.	Walthall Slou
17952	II-10	289	T. Kell, A. & T. Cardoza	San Joaquin R.
17949	II-10	286	P & M Ranch	San Joaquin River
5248	II-10	107	Banta-Carbona Irrigation District	San Joaquin River
1933	II-10	005	Banta-Carbona Irrigation District	San Joaquin River
13715	II-10	210	San Joaquin River Water Users Co.	San Joaquin River
18026	II-10	293	Emil & Lois Filippini	San Joaquin River
17947	II-10	284	Antonio & Tony Cardoza	Walthall Slou
17953	II-10	290	See Above	San Joaquin River
17951	II-10/11	288	See Above	San Joaquin River
4460	II-10	067	River Junction R.D. #2064	Stanislaus River, etc.
12963	II-10	199	Emmett A. Tassi	San Joaquin River
5316	II-11	108	McMullin Reclamation Dist. #2075	Stanislaus R. etc.

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
17966	II-11	291	McMullin Reclamation Dist. #2075	Stanislaus R. etc.

SERVICE AREA: CENTRAL DELTA WATER AGENCY

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
NONE	HH-12	--	--	--
3613	HH-13	032	Brack Reclamation Dist. #2032	S.F. Mokelumn River
6430	HH-13	120	Kooyman Bros, Dairy Inc., et al	State Canal
7474	HH-13	128	W. H., V, K.J. & N. Ehlers	Upland Canal
6315	HH-13	117	Adam & Pietje Van Exel	Upland Canal
6316	HH-13	118	J. L. Orvis	Upland Canal
14907	HH-13/48	235	Reclamation Dist. #548	White Slough, etc.
3617	HH-13	--	--	--
13931	HH-13	213	A & Clara Patane	Sycamore Slou
4400	HH-13	060	Barbera Packing Corp.	Sycamore Slou
2948	HH-47/48	015	Reclamation Dist. #756	Potato Slough etc.
4341	HH-47/48	055	Tower Park Developers	Potato Slough etc.
2953	HH-47	021	Delta Farms Reclamation Dist. #2027	San Joaquin R etc.
2957	HH-47/48	026	See Above #2041	Middle River
2956	HH-47/48	025	See Above #2030	Latham Slough
4454	HH-48	066	John & Elmer Molini	Potato Slough
12572	HH-48/49	193	Bert Van Rinten	Dredger Cut
2955	HH-48	023	Delta Farms Reclamation District #2029	San Joaquin R., etc.
25104	HH-48	329	City of Stockton	San Joaquin R etc.
2959	HH-48	028	Delta Farms Reclamation District #2044	San Joaquin R etc.

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
2958	HH-48	027	Delta Farms Reclamation District #2042	Unnamed Stream, etc.
2960	HH-49	029	H. Moffet & Co. & Elbon Land Co.	Unnamed Canal
4766	HH-49	083	Holt Oaks, A Partnership	Fourtaninle Slough
2954	I-12	022	Delta Farms Reclamation Dist. #2028	Old River, et
10215	I-12	161	Bandoni Delta Farms	Old River, et
4944	I-12	090	Reclamation Dist. #2038	Dredger Cut, etc.
4945	I-12	091	Reclamation Dist. #2039	Middle River
2956	I-13	025	Delta Farms Reclamation Dist. #2030	Latham Slough
4471	I-13	069	George & Anna G. Speckman	San Joaquin River
10611	I-13	166	See Above	San Joaquin River
4944	I-13	090	R. D. #2038	Dredger Cut, etc.
9320	I-13	145	Estate of C. Parket Holt	Whiskey Slough
17592	I-13	277	Dick & Katie Lageman, et al	Whiskey Slough
17475	I-13	266	See Above	Whiskey Slough
4537	I-13	036	Nello & Tillie Giovannoni	Burns Cutoff
4945	I-13	091	R. D. #2039	Middle River, etc.
9170	I-14	140	Alice Pellegri, et al	Burns Cut-off
16345	I-14	257	L. & J. Dal Porto	Burns Cut-off
8338	I-48	132	William R. Baldwin	Old River
6587	I-48	122	See Above	Italian Slough

SERVICE AREA: EXCLUDED AREAS

APPLICATION NUMBER	SPOT MAP NUMBER	PRIORITY ORDER	DIVERTER'S NAME	SOURCE
25616	GG-48			
25331	GG-48			
4367	H-14	056	Mac Nakagama	Sacramento R.
4376	H-14	059	Howard J. Reamer, Jr. et al	Sacramento R.
4369	H-14	057	William S. Correa	Sacramento R.
6299	H-14	116	Mario & Anna Mesquita	Sacramento R.
2707	H-14	013	Joe Blumenfeld, et al	Sacramento R.
NONE	H-15	---	--	--
11141	HH-49	171	H. Moffat Co. & Elbon Land Co.	Disappointment Slough
11266	HH-49	174	Estate of John C. Kelly	Unnamed Canal
4766	I-14	083	Holt Oaks, A Partnership	Fourteen Mile Slough
10808	I-14	167	Stockton Golf & Country Club Inc.	Calaveras River, etc.
NONE	I-13	---	--	--
NONE	I-49	---	--	--
16809	I-48	263	Steven J. Arnando	Mountainhouse Creek
21687	I-48	317	Fredrickson & Watson Construction Co.	Mountainhouse Creek
10842	I-48	168	Manuel R. & Olympia Furtado	Kennedy Cut
15764	I-48	246	U. S. Bureau of Reclamation	Old River

PRIORITY LIST OF ESTIMATED POST-1914 DEMANDS LOWER REACHES OF THE SACRAMENTO - SAN JOAQUIN RIVERS AND TRIBUTARIES

PRIORITY ORDER	APPLICATION NUMBER	DIVERTER'S NAME	WATER SOURCE	WATER RIGHTS				ESTIMATED DEMANDS (ACRE-FEET)								
				AMT CFS	SEASON	AREA (ACRES	USE	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT.	OCT.	NOV.
1	138	Carmichael ID	American River	15	1/1 - 12/31	4,500	ID					900	900			
2	301	The Westside ID	Delta	82.5		11993.76		X		4950	4703	4,703	3,713			
3	462	Provident ID	Colusa	250	4/1-10/1	13373.5	I	6420	7490	10,700	10,165	10,165	8,025	3,745		
4	476	Paradise ID	Sutter Bypass			11,100				1,281	1,217	1,217	996			
5	534	Natomas Central Mutual Wtr Co	Sacramento R.	42.18	4/1-10/1	5903.54		1519	1772	2,532	2,404	2,404	1,898	886		
6	581	Sutter Mutual Water Co.	Sacramento R.	45	3/1-10/31	50544	I			2,430	2,309	2,309	1,823			
7	640	Provident ID	Colusa	100	4/1 - 10/1	13373.5	I	(INCLUDED IN A-462 ABOVE)								
8	732	Loretta Holt & Lindsey W. Cochran	Delta							555	527	527	413			
9	735	C. M. Mumma	Colusa	2		288				120	114	114	90			
10	878	Sutter Mutual Water Co.	Sacramento R.	116.72	3/1-10/31	50544				6300	5,985	5,985	4,725			
11	879	Sutter Mutual Water Co.	Sacramento R.	25.25	3/1 - 10	50544	I			1363	1,295	1,295	1,022			
12	882	Phil Leiser, et al	Sacramento R.	1.5	4/1 - 11/1	181.5		54	63	90	86	86	68	32		

PRIORITY ORDER	APPLICATION NUMBER	DIVERTER'S NAME	WATER SOURCE	WATER RIGHTS AMT CFS	SEASON	AREA (ACRES)	USE	ESTIMATED DEMANDS (ACRE-FEET) MARCH 0.6	APRIL 0.7	MAY 1.0	JUNE 0.95	JULY 0.95	AUGUST 0.75	SEPT 0.35	OCT 0.15	NOV 0.05
13	892	Provident ID	Colusa	110	4/1-10/1	13373.5	I	(INCLUDED IN A-462 Above)								
14	1056	Natomas Cen. Mutual W.C.	Sacramento R.	38.0	3/15-10/15	3543.6		1368	1596	2280	2166	2166	1710	798		
15	1060	F. Clinten, Jr.	Sacramento R.	0.36		240					22	21	21	15		
16	1061	Betty Coker	Sacramento R.	3.33		716					200	190	190	170		
17	1094	Regents of Univ. of Calif	Sacramento R.	3.95		316					238	224	224	160		
18	1150	Sweet Water Co.	Delta	230		4318				1380	1310	1310	1035			
19	1177	N. E. Askew	Sutter-Bypass	13.66		411				330	314	314	248			
20	11.95	P. K. Codding-ton et al	San Joaquin River	3.5	3/1-10/15	2359	I	1134	1323	1890	1795	1795	1417	661		
21	1199	Woodland Farms LTD.	Sacramento R.	120		21,314				7200	6800	6800	5400			
22	1203	Natomas Central Mutual W.C.	Sacramento R.	160	5/1-10/31	11298				9036	8584	8584	6779			
—	1221	Merced ID	Merced R.				P									
—	1222	Merced ID	Merced R.				P									
-	1224	Merced ID	Merced R.	266,400 afa		164395	ID	DOES NOT PICK UP RETURN FLOW								

PRIORITY ORDER	APPLICATION NUMBER	DIVERTER's NAME	WATER SOURCE	WATER RIGHTS				ESTIMATED DEMANDS (ACRE-FEET)								
				AMT CFS	SEASON	AREA (ACRES)	USE	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT.	OCT.	NOV.
-	1232	Turlock Modesto ID	Tuolumne River		10/1-8/1		P&R									
23	1233	Turlock & Modesto ID	Tuolumne River	325,000 af	10/1-8/1	237,699	I			(DO NOT PICK UP THE RETURN FLOW)						
-	1322	J. E. Gallo	Merced R.	0.5	4/1-10/1	40	A			30	28	28	22			
24	1413	Natomas Central Mutual Water Co.	Sacramento	131.0	4/1-6/30	37,778				(INCLUDED IN A-1203 ABOVE)						
25	1422	Joe Navarro	Colusa	10						324	308	308	243			
-	1442B	J & W Thompson	Merced R.	0.39	5/1-10/1	31.1	A			23	22	22	17			
	1442C	F & R Reiche	Merced R.	.405	5/1-10/1	32.3	A			24	23	23	18			
	1442D	L & L Roberts	Merced R.	.138	5/1-10/1	11.0	A			8	8	8	6			
	1442E	D & M Blackstock	Merced R.	.031	5/1-10/1	2.6	A			2	2	2	1			
	1442F	S & R Hodge	Merced R.	.133	5/1-10/1	10.5	A			8	8	8	6			
26	1476	El Soyo Water Dist.	San Joaquin R.	46.74	3/1-11/1	3781	I	1770	1960	2950	2800	2800	2210	1032		
-	1532	Turlock & Modesto ID	Tuolumne R.	2558	1/1-12/31	-	P									
27	1588	Woodland Farms LTD	Sacramento R.	14.75		21,314				885	840	840	664			

PRIORITY ORDER	APPLICATION NUMBER	DIVERTER's NAME	WATER SOURCE	WATER RIGHTS				ESTIMATED DEMANDS (ACRE-FEET)								
				AMT Cfs	SEASON	AREA (ACRES)	USE	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT.	OCT	NOV.
28	1628	D. F. Koetiz	Stanislaus R.	0.69	6/1 - 10/1	318	A	42	41	42	41	42	42	41	6	2
29	1633	Paul Bancroft	Tuolumne	3.15	2/15-10/15	327.8	I	114	133	190	180	180	142	67	29	10
-	1656	Paul Bancroft	Sutter By-Pass	12.0	2/15-10/15	276c				720	684	684	540			
30	1666	Reclamation Dist. #999	Delta	160.0		21,905				9,600	9,120	9,120	7,200			
31	1725	Layton Knaggs	Colusa	27.42		1808.2				1,446	1,374	1,374	1,085			
-	1730	3H Securities Co.	Merced R.	2.25	6/1-10/31	180.2	I	-	95	135	128	128	101	44	20	-
32	1743	City of Sacramento	Sacramento R.	225								2,971	1,984			
-	1838	Trust Fund for Operating Engineers	Cosumnes R.	2.0	3/15-9/1	160	I	-	82	117	111	111	88	41	-	-
-	1885	Stevenson WD et al	Merced R.	34.4	3/1 - 10/31	2400	I	1080	1,260	1,800	1,710	1,710	1,350	630	270	-
-	1906	M. F. Silva	Merced R.	1.34	3/1 - 10/31	107	I	48	56	80	76	76	60	28	12	4
33	1933	Banta Carbona I.D.	Delta					(Not considered as the demand is met under pre-1914 rights)								
34	1987	W. Stanislaus I. D.	San Joaquin R.	262.15	1/1-12/31	21,666	I			15,730	14,943	14,943	11,797			
35	2087	J. Bankhead	Stanislaus R.	0.15	6/1-11/1	13	A	-	-	-	9	9	9	9		

PRIORITY ORDER	APPLICATION NUMBER	DIVERTER'S NAME	WATER SOURCE	WATER RIGHTS				ESTIMATED DEMANDS (ACRE-FEET)								
				AMT Cfs	SEASON	AREA (ACRES)	USE	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.
36	2283	W. E. Burford, et al	Sutter-Bypass	1.65		132				100	95	95	75			
37	2286	Pescadero R. Dist. #2058	Delta	88.37		7070				5,302	5,037	5,037	3,977			

TABLE 42

AVAILABILITY OF RETURN FLOW TO POST-1914 DIVERTERS IN & LOWER REACHES OF SACRAMENTO-SAN JOAQUIN BASINS INCLUDING THE DELTA DURING JULY, 1977

Application #	Applicants	Location	Supply (S) Demand (D)	SAN JOAQUIN RIVER SYSTEM								SACRAMENTO RIVER SYSTEM							Delta Supply or Demand	NOTES
				SJR (M)	MERCED	TUOL	STAN	SJR (M)	CAL	MOK	COS	Colusa	Sutter	Feather	Yuba	Beaver	American	Sacramento		
138	Carmichael I. D.	American	S	1356	0	5346	831	7240	285	0	0	7371	2233	0	0	0	7271	951	32,884	
			D														900		(-) 900	
			S														6371		31,984	
301	Westside I. D.	Delta	D	188		800	141	1035	47	0	0	1082	329				941	140	(-)14,703	Pro-rated
			S	1168	0	4546	690	6205	238	0	0	6289	1904	0	0	0	5430	811	27,281	
																			(-)5289	
462	Provident I. D.	Colusa	D									10165							20,992	
			S									0								Located North of Western Canal, not considered.
													1217							
476	Paradise I. D.	Sutter	D										1904						20,992	
			S										1683					721	(-)2404	
534	Natomas Central Mutual Water County	Sacramento	D																	
			S	1168	0	4546	690	6205	238	0	0	0	221	0	0	0	5430	90	18,588	
																		2309	-	Located U/S of Sutter B.; no right to flow from Sutter & Sacramento River.
581	Sutter Mutual Water Co.	Sacramento	D																	
			S									0	221					90	18,588	
												(Included in A-462 above)								
640	Provident I. D.	Colusa	D																	
			S	1168	0	4546	690	6205	238	0	0	0	221	0	0	0	5430	90	18,588	
			D	32	-	126	21	179	5	-	-	-	5	-	-	-	159	0	(-)527	
732	Loretta Holt & L. W. Cochran	Delta	S	1136	0	4420	669	6026	233	0	0	0	216	0	0	0	5271	90	18,061	
			D									114								
735	C.M. Mumma	Colusa	S									0								
			D															5985		Sutter B. & American River water is not available because of location.
878	Sutter Mutual Water Co.	Sacramento	S	1136	0	4420	669	6026	233	0	0	0	216	0	0	0	5271	90	18,061	
			D															1295	-	
879	Sutter Mutual Water Co.	Sacramento	S															90	18,061	" " "
			D															86	-	
882	Phil K. Leiser	Sacramento	S															90	18,061	" " "
			D																18,061	
892	Provident I. D.	Colusa	S									(Included in A-462 above)								
			D															628	(-)306	American River Water not available
1056	Natomas C. Water Co.	Sacramento	S										1538							
			D									0	0	0	0	0	5271	0	17,755	
			S										-	-	-	-	-	435	-	" " "
1050-61-94	Frank Chilton-Betty Mae Coker-UCD	Sacramento	D									0	0	0	0	0	5271	0	17,755	
			S	1136	0	4420	669	6026	233	0	0									
1150	Sweet Water Co.	Delta	D	79	-	328	52	445	13	-	-						393		(-)1310	Prorated
			S	1057	0	4092	617	5581	220	0	0	0	0	0	0	0	4878	0	16,445	
1177	N.E. Asker	Sutter	D										314						-	
			S										0						16,445	
1195	Philip K. Coddington	San Joaquin	D	-	-	-	-	1795	-	-	-	-	-	-	-	-	-	-	1,795	
			S	1057	0	4092	617	3786	220	0	0	0	0	0	0	0	4878	40	14,650	
1199	Woodland	Sacramento	D															15,384	-	American River water not available.
1203	Farms LTD, Natomas C.M. Water Co.		S	1057	0	4092	617	3786	220	0	0	0	0	0	0	0	4878	0	14,650	

TABLE 42 (Cont.)

AVAILABILITY OF RETURN FLOW TO POST-1914 DIVERTERS IN MIDDLE OF LOWER REACHES OF SACRAMENTO-SAN JOAQUIN BASINS INCLUDING THE DELTA DURING JULY, 1977

Appl'i cation #	Applicants	Location	Supply (S) Demand (D)	SJR (M)	MER-CED	TUOL	STAN	SJR (M)	CAL	MOK	COS	Colusa	Sutter	Feather	Yuba	Beaver	Amer-ican	Sacra-mento	Delta Supply or Demand	NOTES
			S	1057	0	4092	617	3786	220	0	0	0	0	0	0	0	4878	0	14,650	Supply brought forward
																			-	TID/MID do not
1233	TID/MID	Tuolomne	D																14,650	pick up return flow
			S																	
1413& 1422	Natomas Central Mutual W.Co.	Sacramento/ Colusa																	-	American River water
			D									0							14,650	not available.
	Joe Navarro		S					2800											2,800	
1476	El Solyo Water Dist.	San Joaquin	D																11,850	
			S	1057	0	4092	617	986	220	0	0	0	0	0	0	0	4878	0	(-) 42	
1538, 1629	Woodland Farms Ltd/ D.F.Koetz	Sacramento/ Stanislaus	D				42											840	11,808	
			S				575													
						180													-) 180	
1633	Paul Pancroft & Philip Pancroft	Tuolomne	D																11,628	
			S	1057	0	3912	575	986	220	0	0	0	0	0	0	0	4878	0		
																	3830		(-)9120	
1666	Rec. District #999	Delta	D	821	-	3101	456	730	182			0	0	0	0	0	1048		2,508	
			S	236	0	811	119	256	38	0	0								-	
1725	Layton Knaggs	Colusa	D									1374							2,508	
			S									0							1,048	
																	2971		1,460	
1743	City of Sacramento	Sacramento	D									0	0	0	0	0	0	0	-	Not considered;
			S	236	0	811	119	256	38										1,460	land already
1933	Banta-Carbona I. D.	Delta	D																(-)492 *	supplied under
			S	236	0	811	119	256	38	0	0	0	0	0	0	0	0	0	968	pre-1914 rights.
1987	Westside I. D.	San Joaquin	D	7920	-	-	-	7023											(-) 9	*Demand limited to
			S	0	0	811	119	0	38	0	0	0	0	0	0	0	0	0	959	supply.
2087	Jack Bank-head	Stanislaus	D				9						0						-	
			S			811	110		38				95						959	
2283	W.E. Burford	Sutter	D																(-)5,037	
			S	0	0	811	110		38	0	0	0	0	0	0	0	0	0	0	
2286	Pescadero R. D. #2058	Delta	D			4281	554		202											
			S			0	0		0											

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AVAILABILITY OF RETURN FLOW TO POST-1914 DIVERTERS IN MIDDLE AND LOWER REACHES OF SACRAMENTO-SAN JOAQUIN BASINS INCLUDING THE DELTA DURING AUGUST, 1977

Application #	Applicant	Location	Supply (S) Demand (D)	SJR (M)	MER-CED	TUOL	STAN	SJR (M)	CAL	MCK	COS	Colusa	Sutter	Feather	Yuba	Beaver	American	Sacramento	Delta Supply or Demand	NOTES
			S	1403	0	929	1213	7069	0	0	0	19530	7367	0	0	0	9365	2921	49,797	
A138	Carmichael I. D.	American	D									~~1486~~					900	~~(223)~~	900	
			S														8465		48,897	
301	Westside I. D.	Delta	D	111		74	111	520				1486	557				631	223	3,713	
462	Provident I. D.	Colusa	S	1292	0	855	1102	6549	0	0	0	18044	6810	0	0	0	7834		45,184	
			D									8025							(-)8025	
			S									10019							37,159	
476	Paradise I. D.	Sutter	D										996							Not Considered
			S	1292	0	855	1102	6549	0	0	0	10019	6810	0	0	0	7834	2698	37,159	
534	Natomas Central Mutual Water Co.	Sacramento	D									968	664				-	266	1,898	Located North of American River.
			S									9051	6146	0	0	0	7834	2432	35,261	
581	Sutter Mutual Water Co.	Sacramento	D									1823	-				-	-	(-)1823	Located North of Confluence of Sutter Bypass
			S									7228	6146	0	0	0	7834	2432	33,438	
640	Provident I. D.	Colusa	D									(Included under #462								
			S	1292	0	855	1102	6549	0	0	0	7228	6146	0	0	0	7834	2432	33,438	
732	Loretta Holt & L. W. Cochran	Delta	D	17		12	12	83				91	74				95	29	(-)413	
			S	1275	0	843	1090	6466	0	0	0	7137	6072	0	0	0	7739	2402	33,025	
735	C.M. Mumma	Colusa	D									90							- 90	
			S									7047							32,935	
878	Sutter Mutual Water Co.	Sacramento	D									4725							-4,725	Only get water from Colusa.
			S									2322							28,210	
879	Sutter Mutual Water Co.	Sacramento	D									1022							1,022	
			S									1300							27,188	
882	Phil K. Leiser	Sacramento	D									68							- 68	
			S									1232							27,120	
892	Provident I. D.	Colusa	D									(Included in #462								
			S	1275	0	843	1090	6466	0	0	0	1232	6072	0	0	0	7739	2403	27,120	Located North of American River Confluence
1056	Natomas Central Mutual Water Co.	Sacramento	D									222	1060					428	1710	
			S									1010	5012	0	0	0	7739	1975	25,410	
1060-61-94	Frank Chilton - Betty Mae Coker - UCD	Sacramento	D									45	214					86	- 345	
			S	1275	0	843	1090	6466	0	0	0	965	4798	0	0	0	7739	1889	25,065	
1150	Sweet Water Co.	Delta	D	52		31	41	267				41	197				321	83	-1,035	
			S	1223	0	812	1049	6197	0	0	0	924	4601	0	0	0	7418	1806	24,030	
1177	N, E. Askew	Sutter	D										248						248	
			S										4353						23,782	
1195	Philip K. Coddington	San Joaquin	D					1417					4353						1,417	
			S					4780											22,365	
1199	Woodland Farms Ltd.	Sacramento	D									756	3294					1350	-5,400	Located North of American River Confluence
			S									168	1059	0	0	0	7418	456	16,965	

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AVAILABILITY OF RETURN FLOW TO POST-1914 DIVERTERS IN MIDDLE AND LOWER REACHES OF SACRAMENTO-SAN JOAQUIN BASINS INCLUDING THE DELTA DURING AUGUST, 1977

Appli-cation #	Applicant	Location	Supply (S) Demand (D)	SJR (M)	MER-CED	TUOL	STAN	SJR (M)	CAL	MOK	COS	Colusa	Sutter	Feather	Yuba	Beaver	Ameri-can	Sacra-mento	Delta Supply or Demand	NOTES
			S									168	1059	0	0	0	7418	456	16,965	
1203	Natomas Central Mutual Water Co.	Sacramento	D									949	4134					1694	1,683	Only part of the demand met.
			S									0	0				7418	0	15,282	
1233	TID/MID	Tuolomne	D																	TID/MID do not pick up return flow.
			S																15,282	
1413	Natomas Central Mutual Water Co.	Sacramento	D									(Included in 1203 above)								
			S																15,282	
1422	Joe Navarro	Colusa	D									243							-	
			S									0							15,282	
1476	El Solyo Water Dist.	San Joaquin	D					2210											-2210	
			S	1223	0	812	1049	2570	0	0	0	0	0	0	0	0	7418	0	13,072	Located North of American River Confluence
1588	Woodland Farms Ltd.	Sacramento	D															664	-	
			S															0	13,072	
1628	D.F. Koetitz	Stanislaus	D				42												- 42	
			S				1007												13,030	
1632	Paul Bancroft & et al	Tuolomne	D			142													- 142	
			S	1223	0	670	1007	2570	0	0	0	0	0	0	0	0	7418	0	12,888	
1666	Reclamation Dist. #999	Delta	D	648	-	360	576	1440									4176	-	7,200	
			S	575	0	310	431	1130	0	0	0	0	0	0	0	0	3242	0	5,688	
1725	Layton Knaggs	Colusa	D									1085							-	
			S	575	0	310	431	1130	0			0					3242		5,688	
1743	City of Sacramento	Sacramento	D														1984		1,984	
			S	575	0	310	431	1130	0	0	0	0	0	0	0	0	1258		3,704	
1933	Santa-Carbona I. D.	Delta	D																	Not considered as the demand is met under Pre-1914 water rights.
			S	575	0	310	431	1130	0	0	0	0	0	0	0	0	1258		3,704	
1987	West Stanis-laus I. D.	San Joaquin	D	3657	-	-	-	8140											1,705	
			S	0	0	310	431	0	0	0	0	0	0	0	0	0	1258		1,999	
2087	Jack Bankhead	Stanislaus	D				9												9	
			S	0	0	310	422	0	0	0	0	0	0	0	0	0	1258		1,990	
2283	W. E. Burford	Sutter	D										75							
			S										0						1,990	
2286	Pescadero Rec. Dist. #2086	Delta	D			477	676										2824		3,977	
			S			0	0										0		0	

Percent AVAILABILITY OF RETURN FLOW TO POST-1914 DIVERTERS in the Sacramento - San Joaquin Basins including the Delta.

Location	Diverter's		Percentage of Estimated Demand	
	Name	App. No.	July	August
Colusa	Provident I D	462, 640, 892	40	100
	C. M. Mumma	735	0	100
	Joe Novarro	1422	0	0
	Layton Knaggs	1725	0	0
Sutter By-Pass	Paradise I D	476[1]	--	--
	N. E. Askew	1177	0	100
	W. E. Burford	2283	0	0
Sacramento River (Knights Landing to Delta)	Natomos Central Mutual Company	534	100	100
	Sutter Mutual Water Company	581	0	100
		878	0	100
		879	0	100
	Phil K. Leiser	882	0	100
	Natomas Central Water Company	1056	15	100
	Frank Chilton	1060	0	100
	Betty M. Coker	1061	0	100
	U C Davis	1094	0	100
	Woodland Farms, Ltd.	1199	0	100
	Natomas Central Mutual Water Company	1203, 1413	0	26
	Woodland Farms, Ltd.	1588	0	0

Location	Diverters		Percentage of Estimated Demand	
	NAME	APP. NO.	JULY	AUGUST
	City of Sacramento	1743 2/	74	100
Delta	Westside I. D.	301	100	100
	Loretta Holt & L. W. Cochran	732	100	100
	Sweetwater Company	1150	100	100
	R. D. #999	1666	100	100
	Banta Carbona I. D.	1933 3/	---	---
	Pescadero R. D. #2058	2286	24	67
San Joaquin River	Philip K. Coddington	1195	100	100
	El Solyo W. D.	1476	100	100
	West Stanislaus I. D.	1987	4	16
Tuolumne River	TID/MID	1233 4/	---	---
	Paul Bancroft Jr., et al	1633	100	100
St nislaus River	D. F. Koetz	1628	100	100
	Jack Bankhead	2087	100	100
m rican River	Carmichael I. D.	138	100	100

Footnotes - See Next Page

Footnotes:

1/ Paradise Irrigation District is north of Western Canal and has no claim to return flow in Sutter By-Pass.

2/ For City of Sacramento, following are the actual water demands during July and August and available supply to satisfy them:

	July	August
Demand	7471	6484
Supply		
Pre-1914	4500	4500
Post-1914	1048	3242
	5548	7742
Supply as Percentage of Demand	74	119

3/ Banta Carbona Irrigation District demands against Post-1914 rights are not considered as these are satisfied under Pre-1914 rights.

4/ Turlock and Modesto Irrigation District do not pick up return flow; hence their demands are not considered.

TABLE 45

ACTIONS TAKEN: NOTICES SENT TO PERMITTEES AND LICENSEES

DATE	DESCRIPTION OF NOTICE	STREAM	NR. OF NOTICES	AVAILABILITY OF SUPPLY
3-29-77	Permittees & Licensees in the Sacramento River Basin diverting in excess of 3.0 cfs, and having no contracts of water supply with the Department or the Bureau	Sacramento River Basin Upstream of "I" Street Bridge in the City of Sacramento	259	No supply available commencing May 1 to post-1927 permittee and licens and May 15 to pre-1927 permittees and licensees
		Colusa Basin (52) Drain		Cautioned regarding inadequate supply.
4-18-77	Permittees and Licensees in the San Joaquin Basin	Merced River	14	No supply available throughout the seaso
		Tuolumne River	12	
		San Joaquin River	9	
		Calaveras	1	
		Mokelumne River	18	No supply available commencing May 20.
		Cosumnes River	9	
		Calaveras River	7	No supply available commencing June 7.
		Mokelumne River	1	No supply available commencing June 15.
		San Joaquin River	1	No supply available commencing July 1.
		Merced River	1	
		Mokelumne River	12	
		Stanislaus River	18	No supply available commencing August 1.
5 18-77	Permittees & Licensees	Sacramento-San Joaquin Delta	235	No supply available commencing May 1.

TABLE 46

WATER AND LAND USE ANALYSIS OF RIPARIANS ON THE SACRAMENTO RIVER
(ACRES)

OWNER'S NAME (PARCEL NO)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA											UNIRRIGATED AREA		DOUBLE-CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW		
Anderson Farms (34-18-01,03, 04)	Sutter	1	0	0	100	0			X							X					1000
M. Anderson (34-17-24,25)	Sutter	1	0	0	100	0			75							30	105		X		105
Andrectti (17-04-16)	Colusa	1	0	100	0	0									2		2	137			139
Armstrong (19-11-35)	Colusa	1	0	100	0	0				11							11				14
Arneberg (32-30-01)	Glenn	1		?											X						
Ballard Ranch (47-01-16)	Butte	1			X	X									70	30	100				1200
Bates (15-03-19)	Colusa	1		?											X						
Bellows (13-06-10)	Sutter	1	0	100	0	0									45		45				50
Bettman (47-01-14)	Tehama	1	0	100	0	0									19		19				19
Blake (16-06-13)	Glenn	2	0	100	0	0									35		35				35
D. Boggs (T17N, R1w) Sec. 31	Colusa	1	0	100	0	0		150									150				161
G. Boggs (15-07-42)	Colusa	1		?											X						
J. Boggs (T17N, R1W Sec. 29)	Colusa	1			100	0			60								60				60
Boitano (79-32-04)	Tehama	1													110	30	140				140

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OWNER'S NAME (PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PASTURE	ALFALFA	SAFFLOWER	GRAIN	CORN	RICE	BEETS	TOMATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR	FALLOW	
G. Burton (9-22-12)	Tehama	1	0	20	0	80	100	110									210			240
P. Burton (9-16-03) (9-12-13)	Tehama	1	0	100	0	0	X	X									150			1864
Butler (24-01-05) (24-09-06)	Sutter	1	0	X	X	0						80		105		125	310			310
Butte Creek Farms (8-14-17)	Sutter	1	0	100	0	0				155							155			155
Burrows (13-01-21)	Sutter	1	0	100	0	0									70		70			70
Connell (15-02-08)	Colusa	1	0	0	X	X									200		200			200
Sally RI Corp. (15-25-11) (17-04-14)	Colusa	1	0	100	0	0				260							260			340
														X						1079
Capaul (21-11-16)	Sutter	1	0	100	0	0						110					110			110
Collier (56-16-08)	Yolo	1	0	100	0	0										81	81			81
Cowley (57-19-15)	Shasta	1	0	100	0	0		43									43			100
Crane (15-13-15)	Colusa	1	0	100	0	0									75		75			125
Crocker Bank (19-11-28, 19-02)	Colusa	1	0	100	0	0				1200			500				1700			1815.5
C. Davis (13-02-08, (13-06-41)	Sutter		0 0 -	0 0 -	0 0 -	100 100 -									27 23		27 23 10	 23		27 23 30

OWNER'S NAME (PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS & NUTS	OTHER	SUB-TOTAL	CROPS NOT IR.	FALLOW		
W. Davis/Hays (43-19-01)	Tehama		0	87	0	13	60										60				70
G. Davis (13-06-03)	Sutter	1	0	0	0	100									30		30				30
Davis Ranches (17-12-35)	Colusa	1	0	100	0	0									200		200				200
Deseret Farms (57-03-08)	Yolo	1	0	100	0	0				219					305		524				524
(57-05-02) (57-05-03)		1	0	100	0	0				16	7				365		338				338
Darwood Farming (13-14-14)	Glenn			?											X						
Driscoll Strawberry Assoc. (9-20-19)	Tehama	1	0	X	X	0										90	90				651
Driver (34-01-23)	Sutter	1	0	100	0	0				60							60				60
C. Drown (67-23-08) (67-28-11)	Tehama	1	0	26	0	74									760		760				760
Duffy (29-18-17)	Sutter	1	0	0	0	0											0	20			20
A. Drown (35-02-09)	Sutter	1		?																	
Ettl 21-09-17	Sutter	1	0	100	0	0									35	42	77		58		135
21-10-01		1		0	0	100											0	16			16
Farmer Stutz (35-35-26)	Tehama	1	0	0	0	100									X		275				275
Faye (56-01-09) 56-02-01,02,03 56-06-01	Sutter	1	0	99	0	1			55	163		30		211	630		1089				1089
Ferraro (15-13-17)	Colusa	1	0	100	0	0									30		30				40

OWNER'S NAME (PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW		
Fitzgerald (57-01-07)	Yolo	1	-	-	0	0											0				
Florimond Orchards (15-13-25, 17-03-06)	Colusa	1	0	50	0	50	X								X		130				140
Flynn (9-11-36, 9-12-09)	Tehama	1	0	X	-	-										X					
Freedle (15-13-20)	Colusa	1	0	100	0	0									15		15				25
Froh Farms (19-03-33, 19-03-04)	Colusa	1	0	0	0	100			50	167			90		15		322	35			527
Furlan 34-05-21	Sutter	1	0	0	0	100									54		54				54
34-05-30			0	0	100	0															
Garafalo (17-12-48)	Colusa	1	0	0	0	100									100		100	40			140
Gano (47-01-14)	Butte	1	0	100	0	0									115		115				115
Greening (55-33-03)	Shasta	1	0	50	0	50				X			X		X	X	1000				1200
Giesbrecht (19-04-16,14)	Glenn	1	0	100	0	0				27							27				27
Gross (Zumwalt Farms) (15-03-42)	Colusa	1													200		200				200
Gustafson (19-16-04)	Colusa	1	0	0	0	100									21		21				23
Green-Island Farms (24-01-03)	Sutter	1	0	100	0	0				130				80			210				210

OWNER'S NAME PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR	FALLOW		
W. Halsey	Colusa																			
(15-07-05)		1	0	100	0	0									50		50				50
(15-07-79)		2	0	100	0	0									20		20				20
(15-25-02)		1	0	100	0	0									17		17				20
(17-14-15)		1	0	100	0	0									18		18				20
Harada (15-25-06)	Colusa	1	0	100	0	0						80			20	40	140				175
Harjo (42-25-25)	Yolo	1	0	100	0	0								X		X	42				42
Hawes River Acres (57-19-22)	Shasta	1	0	X	0	X									32		32				148
Hershey Land Co. (57-01-02)	Yolo	1	0	0	50	50				180	200			74			454				454
Hickman (57-19-01)	Shasta	1	0	27	0	73	150										150				2900
Holms (34-21-01)	Sutter	1	0	0	100	0				100						200	300				300
Hyer (8-14-18)	Sutter	1	0	0	0	100									X	X	5				5
Illerich (29-03-02,04)	Sutter	1	0	100	0	0			55								55				55
James (29-19-57)	Sutter	1	0	0	100	0								35			35				35
Jones (12-22-21)	Colusa	1	0	?	0	?									X						
Johnston	Yolo																				
(57-03-01)		1	0	100	0	0			X							X	254				254
(34-21-07)		1	0	100	0	0															
(34-21-06)		1	0	100	0	0															
Kai Motel (13-01-42)	Sutter	1	0	0	0	100									142		142				142

OWNER'S NAME (PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA											UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RYE	BEETS	TOM-ATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW		
Kalfsbeek (17-08-10)	Colusa	1	0	0	0	100				30							30				40
Kimmelshue (39-04-16)	Butte	1	0	50	0	50				X				X		X	610				610
Kenyon (13-16-90)	Sutter	1	0	100	0	0				X					X		50				80
King (34-91-08)	Sutter	1	0	68	0	32		8							17		25				25
Knaggs (57-12-09) (57-16-02)	Yolo	1	0	X	0	X									95		95				95
(57-03-05)			0	0	0	100									60		60				60
(57-06-02)			0	X	0	X									666		666				666
Lamb (24-04-14) (24-04-03) (24-02-06)	Sutter	1	0	X	X	0				240				210			450				450
Lang (42-25-07, 06,04)	Yolo	1	0	X	0	X											75	137			212
Lemos (13-06-01)	Sutter	1	0	100	0	0									18		18				18
Lewis (T22n,R1W, Sec. 17)	Butte	1	0	0	0	X															
Locvich (15-13-19)	Colusa	1	0	100	0	0									12		12				12
Matteoli (29-18-19,20,04)	Sutter	1	0	100	0	0						70					70				70
McGowan-Knapper- Kinke (15-13-23, 15-25-09)	Colusa	1	0	100	0	0					X				X		110				210

OWNER'S NAME (PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PASTURE	ALFALFA	SAFFLOWER	GRAIN	CORN	RICE	BEETS	TOMATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW	
McIntosh (T26N-R3W, Sec. 1)	Tehama	1	0	100	0	0									3.5		3.5			3.5
Miller (29-03-03)	Sutter	1	0	100	0	0										36	36			36
Mitchell (42-26-08)	Butte	1	-	-	-	-											0			
D. Moore (19-11-17)	Colusa	1	0	100	0	0										50	50			100
R. Moore (19-11-19)	Colusa	1															0			
Moresco (13-16-91)	Sutter	1	0	100	0	0										80	80			80
Morici Corp. (12-12-31)	Colusa	1																		
Morris (56-16-07)	Yolo	1	0	100	0	0								75			75			75
Moultrie (35-33-05)	Sutter	1	0	0	0	100								80			80			80
Munson (29-19-54,55)	Sutter	1	0	70	30	0									54		54		30	84
Myers (17-08-11)	Colusa	1	0	100	0	0									60		60			60
Newhall Land Co. (47-04-03)	Butte	1													X					
Nichols (39-03-07) (39-04-14)	Butte	1	0	X	0	X				X				X			260			260
Nix (29-19-40)	Sutter	1	0	100	0	0									60		60			60
Nusz (56-17-15)	Yolo	1	0	0	0	100					15				7		22			22
OMC Orchards (70-22-05)	Tehama	1	0	5	0	95									1340		1340			1340

OWNER'S NAME (PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA											UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW		
Pacific Farms (64-04-01)	Tehama	1	0	0	0	100							X	X	X	X	1500				1500
Packer Farming Co. (T17N-R2W, Sec. 13)	Colusa	1	0	100	0	0									10		10				10
Parrott Ranch (38-28-01, 02)	Butte	1	0	90	0	10	X	X		X	X	X	X								
Peabody (42-31-08,07, 06)	Yolo	1	0	100	0	0		203									203				203
Peterson Ranch (47-14-08)	Butte	1	0	X	0	X										X					
K. Pierce (13-16-80)	Sutter	1	0	100	0	0									5		5				15
L. Pierce (13-06-28)	Sutter	1	0	20	30	0				X					X	X	266				327
15-07-76)	Colusa	1	0	0	0	100									100		100				109
Plumb (57-07-17)	Yolo	1	0	70	0	30			100	115					118		333				383
	Sacramento	1	0	100	0	0				X	X		X			X	130				383
Province (23-02-05)	Glenn	1	0	67	0	33									60		60				80
Ramos (91-04-12)	Tehama	1	0	100	0	0									10		10				10
Ramsay-Yeung (42-28-17)	Yolo	1	0	100	0	0								25			25				
(42-28-10)		1	0	-	0	100				80	80		40				200				
(42-28-09)		1	0	100	0	0								35			35				
(42-25-19)		1	0	100	0	0				20				30			50				
(42-31-11,12, 13)		1	0	100	0	0				100	40		70				210				640
(42-31-10)		1	0	100	0	0				10	110						120				
Reager (23-05-11)	Glenn	1	0	50	0	50									X	X	200				200
Reel (29-19-67)	Sutter	1								X											

OWNER'S NAME (PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA										UNIRRIGATED AREA			DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW		
Reed (19-05-08)	Glenn	1	0	0	0	100				X							35				35
River Gardens Farm (53-04-03)	Yolo	1	0	100	0	0			75								75				75
Rohleder (21-04-05, 21-04-25)	Sutter	1	0	100	0	0									45		45				45
Sacramento & San Joaquin Drainage Dist. (17-12-52)	Colusa	1	-	-	-	-											0				6
Terhel Farms (T17N, R1W, Sec. 30)	Colusa	1	0	0	100	0		200				X			17		700				700
Schohr (19-16-02)	Colusa	1	0	100	0	0								170			170		85		255
Schreiner (29-19-39)	Sutter	1	0	100	0	0				33							33				33
Shell Oil Products (15-13-53)	Colusa	1	-	-	-	-											-				4
Silva (57-02-02,03, 04, 05)	Yolo	1	0	-	0	X	X											300			300
Smithenbank (47-01-01)	Tehama	1	0	-	-	-									40			40			40
Steidmayer (15-25-10)	Colusa	1	0	0	0	100											0				7
St. Louis (19-06-04)	Glenn	1	0	0	0	100															
Smith (12-22-12)	Colusa	1	0	100	0	0									X						
A. Steidelmeyer (19-03-19)	Colusa	1	0	100	0	0				82							82				82

OWNER'S NAME (PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PASTURE	ALFALFA	SAFFLOWER	GRAIN	CORN	RICE	BEETS	TOMATOES	FRUITS & NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW	
Steidelmeyer & Son	Colusa																			
(17-04-11			-	100	0	0	84		210		7					139	440			544
(17-04-07)			0	100	0	0				320							320			329
(17-12-51)			0	100	0	0	X									70	70			244
(17-12-23)			0	100	0	0	200										200			505
(17-03-26)			0	0	0	100	25			103						75	203			211
(17-08-14)			0	100	0	0				362							362			443
(17-08-07)			0	100	0	0			112						9		121		33	154
Terry (13-18-18)	Glenn		0	100	0	0									30		30			30
Tuttle (T17N, R1W, Sec. 31)	Colusa	1	0	X	?	0				X			X	X			375			430
(12-26-42,16)			0	100	0	0									40		40			40
Union Oil (15-13-35)	Colusa	1	-	-	-	-											0			5
U. C. Berkeley (42-32-08)	Yolo	1	0	100	0	0		70	50		250						370			370
Veress (57-12-08)	Yolo	1	0	100	0	0		80		55				65			200			200
																				100
Vestal (41-34-05)	Tehama	1	0	100	0	0														
Waters (34-17-01,02, 03,24 (34-16-40) (34-05-22) (34-17-24)	Sutter	1	0	100	0	0									5	80	85			85
Weis (19-02-08)	Glenn	2	0	100	0	0				200							200			200
Wilbur (12-26-41)	Colusa	1	0	100	0	0									90		90			90
Wilcox (57-33-14)	Shasta	1	0	X	0	0											0			
Williams (42-32-14,13)		1	0	0	0	100														

OWNER'S NAME (PARCEL NO.)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW		
Womble (12-12-21)	Colusa	1	0	100	0	0			X	X		245					350				1690
Woodmansee (23-02-04)	Glenn	1	0	100	0	0			X												
Winafton Ranch (13-311-01)	Glenn	1	0	25	0	75											117				117
Yates (13-16-87, 21-10-15,14)	Sutter	1	0	0	0	0											0				
C. Yerxa (19-11-051)	Colusa	1	0	100	0	0	X								X						
M. Yerxa (15-07-31)	Colusa	1	0	100	0	0									X		90				90
Young (24-01-11,14) (21-11-20)	Sutter	1	0	50	0	50				30					40	55	125				125
Zoler (21-04-27) (21-04-29)	Sutter	1	0	100	0	0				X					X		48				64
Zumwalt (13-16-19) (13-15-07)	Glenn	1	0	100	0	0									300		300				300
Zumwalt Orchards (13-17-05)	Glenn	1	0	?	?	0									50		50	160			160
(15-07-41)	Colusa	1	0	?	?	0											60				
T. Zumwalt (T16N, R1W, Sec. 5)	Colusa	1	0	100	0	0									100		100	100			100
																	24,772				37,798

TABLE 71

WATER AND LAND USE ANALYSIS OF APPROPRIATORS ON THE SACRAMENTO RIVER
(ACRES)

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OWNER'S NAME (APPLICATION NUMBER)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			STREAM			WELL	PASTURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS & NUTS	OTHER	SUB-TOTAL	CROPS	FALLOW	
			APPL.	RIP.	CONT.															
LENN-COLUSA I. D. (18)	Colusa	2	X	X	X															6048
Wilbur (190)	Colusa	1										X			X					
Farnsworth (230A)	Colusa	1		100	0	0									X					80
Beaver (230B)	Colusa	1		100											X		259			259
Natomas Cen. Mutual Water Co. (534,1203,1413, 15572,22309)	Sutter	1	X									X								5903.5
St. Patrick's Home (733)	Colusa	1				X														147
Verva (771)	Colusa	1																		
Meiser (822)	Sutter	1			X					50							50			181.5
Hilton, et al (1060)	Sacramento	1		X		X				40	X			50						239.88
Coker, et al (1061)	Sacramento	2		38	19	43			21	90	X			164	30		305		34	715.56
C. (1094)	Yolo	1		X	X				116	110	186						412			412
Little (1179)	Colusa			X	X															985.5
Woodland Farms (1199, 1588, 12073)	Yolo	1																		
Carter (1468,2042)	Colusa	2	X		X	70	X			X			X	X			X	210		210
Miller (1653)	Colusa	1			X										X					395

WNER'S NAME APPLICATION NUMBER)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			STREAM			WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUIT$ & NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW		
			APPL.	RIP.	CONT.															
UNDOCK, et al (2317)	Sutter	1		100						72					67	139				139
itle Ins. & Trust (2884)	Sutter	2		100												30	30			30
eel (3200)	Sutter	1		100													0	79		79
orenzetti (3201)	Sutter	1		100												50	50			58
ryson (3466)	Sutter	2		100										X						91
necht (3994)	Glenn	1		56		44									16		16			20
ang (3423,4901,4902 359)	Yolo	1		X											X					2943 (40 Acre Overlap)
ang (4351)	Yolo	1		X																2971
turralde (3700)	Sutter	1		100										105			105			105
rofessional istachio Prod (4226)	Yolo	2	Abandoned												130		130			139
alkett (4257)	Yolo	1		100						160							160			160
urtis Ranch (5100)	Sutter	1		100						X					X		66			66
ohnson (5160)	Sutter	1		100												120	120			120
eel (5696)	Sutter	1		100						85							85			85
ramer Ranch (6454)	Sutter	2		100						104							104			104
elson (6527)	Sutter	1		100					X	X	X						477			477

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NER'S NAME PPLICATION NUMBER)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			STREAM			WELL	PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS & NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW		
			APPL.	RIP.	CONT.															
rocker Bank (7308)	Colusa	1		100									500				500	1200			1700
rmstrong (6696)	Colusa	1		100				X		X						X	476				476
en Eyck (8141)	Yolo	1		100						350			100				450	350			466 366(Licens
& T Inc. (8213)	Butte	1	X	X	X	30		X			X	X				X	3500				1000 (1977 Licensee)
axwell I.D. (8631)	Colusa	2																			11,185
lark (9032,13511, 3512)	Sutter	1		100					X	X					X		215				215
olen Ranch (10363)	Colusa	1		100											X		608				608
avis-Kaveney (11384)	Colusa	1		100										210			210				210
offman-Boyes 11856,16965)	Colusa	1	0	100	0	0	100								35		35				35License 9 10.5
unter (12120)	Colusa	1				X									X						45.3
oswell (12580)	Butte	1		5		0	95	X							83		128				355
uppan 12899,14447)	Tehama	1		100				60									60				60
ood Orchard (13658)	Tehama	1			100										180		180				180
umiano Bros. 13487)	Tehama	1		100				X			X					X	110				110
uperior quity of alif. 13667)	Tehama	1		100				X													929

OWNER'S NAME (APPLICATION NUMBER)	COUNTY	NO. OF VISITS	PERCENTAGE OF WATER				IRRIGATED AREA											UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			STREAM			WELL	PASTURE	ALFALFA	SAFFLOWER	GRAIN	CORN	RICE	BEETS	TOMATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS NOT IRR.	FALLOW		
			APPL.	RIP.	CONT.																
St. Patrick's Home (13877)	Colusa	1	Abandoned																		988
Cortes & West High-Low Nursery (14450)	Shasta	2			X											X					
Leathers & Kary (14854)	Sutter	1		100	0	0				30							30				30
Colusa Prop. (15452)	Colusa	1			X																
Edson (15711)	Yolo	1		100											70		70				206
Morris & Moore (15811)	Colusa	1		100	0	0									97		97		90		187
Butler (16199)	Sutter	1		100						316							316				316
Inglin (17537)	Yolo	1		100				8		17							25				25
Froh Farms (17890)	Colusa	1		100												80	80				80
Busich & Mann (20087)	Tehama	1													X		20				20
Jimeno Ranch (186)	Colusa	1		100											X		1156				1156
AMERICAN RIVER Growth Inc. (7622)	Sacramento	1	Abandoned																		
Cassis (1686)	Sacramento	1	Abandoned																		

TABLE 45

WATER AND LAND ANALYSIS OF APPROPRIATORS IN THE SACRAMENTO-SAN JOAQUIN DELTA UPLANDS
(ACRES)

OWNER'S NAME (APPLICATION NUMBER)	COUNTY	NUMBER OF VISITS	PERCENTAGE OF WATER STREAM				IRRIGATED AREA										UNIRRIGATED AREA		DOUBLE CROP	TOTAL ACREAGE
			APPL.	RIP.	CONT.	WELL	PASTURE	ALFALFA	SAFFLOWER	GRAIN	CORN	RICE	BEETS	TOMATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS	FALLOW	
Sweet-Water Co. (1150, 4123, 4124)	Yolo	1	100		0	0	1940				580		1600	180			4,300				8016
Reclamation Dist. #2068 (2318, 19229, 24961)	Solano	2	100	—	0	0	6595			1177	2481		1938	371		243	13313			60	39581
Viera (2339)	San Joaquin	2	100		0	0		90													
Moffat (2960, 11141)	San Joaquin	1	100		0	0				230	130		150			40	550				808
Dupont-Newhours (3436)	Contra Costa	1	0	0	100	0	0								100		100	55			155
Rio Blanco Ranch (3957)	San Joaquin	2	100		0	0	X	X						X			140				174
Reclamation District #2064 (4460)	San Joaquin	1	25		0	75	X	X			X				X		X				5200
Paradise Mutual (4470, 9132)	San JOaquin	1	100		0	0		500								321	821		885		1706
Flanagan Boys (4472)	San Joaquin	1	100		0	0			X				X			X	1955				1955
Tiago (4506)	San Joaquin	1	100		0	0										X	X				284
Windeler (4569)	San Joaquin	1	100		0	0		143			60						203				285
Holt Oaks (4766)	San Joaquin	1						ABANDONED									0				1702

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			STREAM				PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS & NUTS	OTHER	SUB-TOTAL	CROPS	FALLOW		
			APPL.	RIP.	CONT.	WELL															
Calcagno (5063,6712, 16226	San Joaquin	1	100		0	0		55									55				59
Everett Farms (5153A, 5209A)	San Joaquin	1	100		0	0		474					243		50	300	1075				1212
Department of Corrections (5153B, 5209B)	San Joaquin	2	100		0	0	70	125			115						310	150			525
Reclamation District #2075 (5316, 17966)	San Joaquin	1	100		0	0		X			X			X		X	2991				3000
Woodbridge ID (5807, 10240, 12648)	San Joaquin	1	100	0	0	0	1130	719		1199	100		381	60	3306	255	11060				21770
Fuller (6306)	San Joaquin	1	100		0	0		110			242						352				352
Andrade (6430)	San Joaquin	2	100		0	0		70			100						170				730
Schleiser (8921)	Solano	1	100		0	0	18										18		67		85
Peterding (9682)	Solano	1	ABANDONED		NO IRRIGATION		DURING	THE	PAST	10	YEARS										100
Thornton Farms (10531)	Sacra-mento	1	100		0	0					125						148				148
Stockton Golf Course (10808)	San Joaquin	1	100		0	0										92	92				92
Furtado (10842)	San Joaquin		100		0	0	40	200			45					45	330				361
Kelley (11266)	San Joaquin	1	ABANDONED	-	LAND	UNDER	APARTMENT	COMPLEX													520
Kuhn (11541)	Sacra-mento	1	100		0	0			75	75	200						350				358
Bloom (11644, 12897)	Sacra-mento	1	100		0	0		223									223				223

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			STREAM				PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS	FALLOW		
			APPL.	RIP.	CONT.	WELL														
Wilcox (11637, 15041, 15695,22722)	Sacramento	1	67		0	33	50			20	25						95				98
Van Ruiten (12572)	San Joaquin	2	X	-	0	X		115						50			295				460
Sowrn Kor Sohra (12699, 15034)	Sacra-mento	1	100							484							484				484
Wilder (12916)	Sacra-mento	2	100	-	0	0			100		40					40	180				220
Tassi (12963)	San Joaquin	1	100		0	0	120	120			120						360				385
Nave Bros. (13088, 18594, 18824)	Yolo	2	100	-	0	0	160										160				160
Finnegan (13180, 22903)	Yolo	2	100	-	0	0	80										80				80
Pritchard (13181, 18530, 18820)	Yolo	2	100	-	-	-	80				80						160				160
Parker (13439)	Solano	1	100				120										120				120
Swanston (13650)	Yolo	2	100	-	0	0					710						710				1070
Pope (13651)	Yolo	2	50	-	50	0	850				350						1200				1650
S. J. River Water Users Co. (13715)	San Joaquin	1	X		0	X		X			X		X	X			1805				1805
Costa (13,955)	San Joaquin	1	100					80									80				80
McKeon Constr. (13969,14540)	Sacra-mento	1	100				136										136				136

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			STREAM				PAS- TURE	AL- FALFA	SAF- FLOWER	GRAIN	CORN	RICE	BEETS	TOM ATOES	FRUITS &NUTS	OTHER	SUB- TOTAL	CROPS	FALLOW		
			APPL.	RIP.	CONT.	WELL															
lo Flyway arms (14174)	Yolo	1	100		0	0	522										522				522
retz (14230)	Sacra- mento	2		100			470				300		285				1055				1063
assar (14338)	Solano	1		100	0	0	223										223				223
anetti (14544)	Solano	2	100	-	0	0					160		500				660				800
eston (14585)	San Joaquin	1		100	0	0		50									50				50
uston (15094)	Contra Costa	1	-	-	100	0									40		40				40
teffan (15250)	San Joaquin	1		100			1668										1668	150			1818
hock (15633)	Sacra- mento	1		100	0	0		75					50				125		35		160
ecchini (15698)	Sacra- mento	1		100	0	0	X				X						550				550
ay, Clow & ose Stokes (15698)	Sacra- mento	2	100	-	0	0	992										992				1005
oldani (16097, 16098, 16099)	Sacra- mento	1		100	0	0	145						45				190				190
bird Lands (16749)	San Joa- quin	1		100	0	0	200									275	475				480
rnaudo (16809)	San Joa- quin	1	100	-	0	0							30				30				30
aine Prairie ater Dist. (17487, 88, 91, 17664, 20698)	Solano	1			X	X															6260
ineman (17898)	Solano	1	100	-	0	0	320										320				320

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			STREAM				PAS-	AL-	SAF-				TOM-	FRUITS		SUB-				
			APPL.	RIP.	CONT.	WELL	TURE	FALFA	FLOWER	GRAIN	CORN	RICE	BEETS	ATOES	&NUTS	OTHER	TOTAL	CROPS	FALLOW		
Fonteca (17945)	San Joaquin	2	0	0	0	100		122									122				122
Hays (17946)	San Joaquin	2	50			50		90								120	210				232
Cardoza/Kell (17947, 17953)	San Joaquin	1		100	0	0		X			X						180				260
P & M Ranch (17949)	San Joaquin	1	ABANDONED				PUMP REMOVED														
Hildebrande (17950,19194)	San Joaquin	1		100			X									X	64				64
Cardoza/Kell (17951, 17952)	San Joaquin	1		100	0	0		X			X		X	X			90		60		150
Filippini (18026)	San Joaquin	1		100			NOT IN USE DURING THE SEASON										0				9
Saunders (18255)	Sacramento			X		X	112.5										112.5				112.5
Swanston (19086, 20376, 19087)	Yolo	1	X			X			497	400	600		200	1150			2750	97			2847
Bulkley (19931)	Yolo	2	50	0	0	50	214				130		50				394				394
Campbell (19936)	Sacramento	2		100			70										70				70
Whitney (11887, 18075)	Sacramento	2		100	0	0			90		923		95				1108				1108
Lucky Five Farms (20388)	Yolo	2	100	-	0	0	420				60						480				480
Yolo Basin Farms (20773A)	Yolo	2		100			140										140				140
P.G. Electric Co. & Buhler Invest. (20773B)	Yolo	2		100	0	0	160										160				160

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			STREAM				PAS-TURE	AL-FALFA	SAF-FLOWER	GRAIN	CORN	RICE	BEETS	TOM-ATOES	FRUITS &NUTS	OTHER	SUB-TOTAL	CROPS	FALLOW		
			APPL.	RIP.	CONT.	WELL															
Fineman (22219)	Solano	1	100		0	0	530		90		60		100				780		100		1060
Wagner (24362)	Yolo	2	100		0	0	150										150				285