STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

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EARL WARREN, Governor

C. H. PURCELL, Director of Public Works

A. D. EDMONSTON, State Engineer

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# REPORT ON WATERMASTER SERVICE IN SUSAN RIVER WATERMASTER SERVICE AREA

Lassen County, California

1949 SEASON

Sacramento, California

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SUBMISSION TO, AND ADOPTION BY
DEPARTMENT OF PUBLIC WORKS

I, L. C. Jopson, Supervising Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, hereby submit the within contained report entitled "Report on Watermaster Service in Susan River Watermaster Service Area, Lassen County, California, 1949 Season".

_____
Supervising Hydraulic Engineer

I. Gordon Zander, Principal Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, hereby approve the within contained report entitled "Report on Watermaster Service in Susan River Watermaster Service Area, Lassen County, California, 1949 Season".

_____
Principal Hydraulic Engineer

I. A. D. Edmonston, State Engineer and Chief of the Division of Water Resources, Department of Public Works of the State of California, hereby approve and adopt the within contained report entitled "Report on Watermaster Service in Susan River Watermaster Service Area, Lassen County, California, 1949 Season", as a report of the Department of Public Works.

WITNESS my hand and the seal of the Department of Public Works of the State of California, this day of .

DEPARTMENT OF PUBLIC WORKS

By_____
A. D. Edmonston
State Engineer

## ORGANIZATION

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A. D. Edmonston . . . . . State Engineer

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This report was prepared under the direction of

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## INTRODUCTION

The Susan River Watermaster Service Area was created by order of the State Engineer on November 10, 1941, in accordance with Sections 4,000 to 4,032, inclusive, of the Water Code of California. The service area as created includes all of the water rights set forth in the decree in the case of J. J. Fleming, et al., vs. J. R. Bennett, et al., No. 4573, Superior Court, Lassen County, entered April 18, 1940, with the exception of certain rights excluded in the order, which have been discussed heretofore in the watermaster report for the 1943 season.

Watermaster service, as provided in the aforementioned sections of the Water Code, was commenced for the 1949 season on April 1 and terminated on September 30. Alfred J. Vandenberg, Assistant Civil Engineer, was in charge of the distribution of water from the stream system during the season under the supervision of L. C. Jopson, Supervising Hydraulic Engineer.

## WATER SUPPLY

### Precipitation

The monthly precipitation record for the U.S. Weather Bureau station at Susanville Airport for the period October 1, 1948, to September 30, 1949, is shown in Table 1. For purposes of comparison the tabulation also includes the mean monthly precipitation for a fifty-year period.

The total precipitation for the season, as reported by the weather station, was 10.87 inches or fifty seven per cent of the fifty-year mean. This comparison is not entirely accurate as this station was moved in 1943 from within the City of Susanville to its present location near Johnstonville. It is estimated that the precipitation near Johnstonville is about thirty per cent less than in the City of Susanville.

The California Cooperative Snow Surveys "Snow Survey Bulletin of April 1949" indicated that the water content of the snow as observed at three stations in the Susan River watershed on April 1, 1949, was about 90 per cent of the long time mean. However, dry and freezing weather conditions during April resulted in a far below normal runoff.

Stream Flow

Stream flow measuring stations, equipped with automatic water stage recorders, were maintained during the period of watermaster service at Susan River at Haws (below Ramsey Ditch), Old Susan Channel below Woodstock Dam, Susan River at Johnstonville Bridge, Willow Creek below Belfast Bridge, and Gold Run Creek above all diversions. Records of discharge at these stations are set forth in Tables 2 to 6, inclusive.

The discharge through the Ramsey Ditch, as shown in Table 7 was determined from intermittent measurements and staff-gage observations and by estimating the discharge for days when data was not available.

The discharge of Susan River above the Ramsey Ditch including water released from storage is shown in Table 8. The daily discharges shown in this table were obtained by combining Tables 2 and 7.

The natural flow of Susan River above the Ramsey Ditch, exclusive of stored water released from McCoy and Hog Flat reservoirs, is shown in Table 9. The natural flow during periods of reservoir release was computed and estimated by measurements and observations before and during the release of stored water. These computations were checked after the release of stored water was completed.

The released storage water passing Haws in the Susan River is shown in Table 10 and is derived by combining Tables 8 and 9.

Hydrographs for the 1949 season of Susan River below the Ramsey Ditch, Willow Creek below Belfast Bridge, and Gold Run Creek above all

diversions are shown on the plate at the end of this report.

The following tabulation shows a comparison of the average daily flows of the Susan River above Ramsey Ditch during the months of April, May, June, July and August.

AVERAGE DAILY FLOW OF SUSAN RIVER ABOVE RAMSEY DITCH
CUBIC FEET PER SECOND

| Year | April* | May | June | July | August |
|---|---|---|---|---|---|
| 1936 | 185 | 100 | 47 | 10 | 4.4 |
| 1937 | 220 | 125 | 27 | 6.8 | 4.5 |
| 1938 | 1560 | 1350 | 360 | 48 | 7.9 |
| 1939 | 39 | 15 | 6.7 | 2.8 | 2.3 |
| 1940 | 370 | 190 | 26 | 11.5 | 6.5 |
| 1941 | 220 | 420 | 88 | 20 | 14.5 |
| 1942 | 400 | 300 | 154 | 25 | 19.5 |
| 1943 | 266 | 145 | 68 | 21 | 17.7 |
| 1944 | 155 | 150 | 58 | 20 | 13.5 |
| 1945 | 160 | 98 | 48 | 16 | 10 |
| 1946 | 215 | 100 | 29 | 15 | 8.9 |
| 1947 | 73 | 49 | 15 | 3.8 | 3.1 |
| 1948 | 189 | 157 | 122 | 13.5 | 6.0 |
| 1949 | 188 | 80 | 16 | 5.9 | 2.9 |
| 1936-48 Average | 340 | 246 | 81 | 16.4 | 9.1 |

* Average flows may be for partial month.

Late in the season, new stream gaging stations were established and equipped with water stage recorders at Pine Creek near Bogard Station, Willow Creek below Mapes Big Spring, Baxter Creek below Highway, and Long Valley Creek at Old Herlong Road. These stations along with Susan River at Haws Station are being maintained by local residents during the period from October 1, 1949, to March 30, 1950. These stations are being operated on an annual basis at the request of, and in cooperation with, the Lassen County Chamber of Commerce.

## DISTRIBUTION OF WATER

The waters of Susan River and its tributaries were distributed during the 1949 season in accordance with the water rights defined in the judgment and decree in the case of J. J. Fleming, et al., vs. J. R. Bennett, et al., No. 4573, Superior Court, Lassen County, California.

The decree divides the waters of the stream system into three groups, depending upon the source or sources of supply. Schedule 3 of the decree defines the rights to the use of water from Willow Creek which includes Upper Willow Creek Valley, Lower Willow Creek, and a part of the requirements for the Susan River delta below the Colony Dam. Schedule 4 of the decree defines the rights to the use of water from Gold Run Creek, Piute Creek, Hills Creek, Holtzclaw Creek and Lassen Creek above their confluence with Susan River. Schedules 5 and 6 of the decree define the rights to Susan River exclusive of the tributaries.

A discussion of water distribution for the 1949 season in the three groups in accordance with the schedules follows:

Willow Creek (Schedule 3)

Upper Willow Creek

Willow Creek discharged little more than the natural flow of the springs above and below Willow Creek Valley throughout the season.

A shortage of irrigation water in Willow Creek Valley was apparent about the first week of May. At this time the water stored in back of the Walsh Dam at the lower end of the Barron (Walsh) ranch was completely drawn. This condition was temporarily relieved by a moderate rainfall about the middle of May. Again, at the end of the first week of June a shortage, severe in character, reoccurred below the Barron ranch. This shortage continued throughout the irrigation season being caused by a combination of low natural flow and excessive use by the owner of the Barron ranch.

Under the terms of the Susan River Decree the J. R. Barron ranch has a consumptive use right to the water from Willow Creek in the same priority class as the lower Willow Creek users and is obligated to deliver at the lower end of the ranch approximately thirty-eight per cent of the water occurring in Willow Creek at the upper end of the ranch.

From the start and through the major part of the irrigation season, J. R. Barron, owner of the Barron ranch, was repeatedly warned that through his actions he was infringing upon the rights of the several downstream owners.

The nature of the "Consumptive use" rights in Willow Creek Valley as set forth in the decree made it almost impossible for the watermaster to enforce a proper distribution of water without cooperation from the owner of the Barron ranch.

Objections to the actions of Mr. Barron by the downstream users resulted in a meeting which is further discussed in this report under "controversy".

Lower Willow Creek

Except for a small amount of return flow from Susan River above the Colony Dam, the Susan River delta area was entirely dependent upon the flow from Willow Creek after the first of June. The flow thereafter was sufficient to satisfy all first priority allotments (through the Wrede ditch) and about forty per cent of the second priority allotments under this shedule. This latter amount was sufficient to supply stock water to all ranches in the Tule area throughout the summer.

Lassen, Gold Run, Hills and Piute Creeks (Schedule 4)

Lassen Creek

The flow of Lassen Creek was adequate to meet irrigation needs until the middle of May. Subsequently the flow decreased rapidly until the end of the first week of June when about thirty per cent of the first priority requirements were available at the Hulsman ranch. Subsequently the flow decreased steadily until the creek was completely dry by the end of July and remained so through the rest of the season.

The flow of Holtzclaw Creek, tributary to Lassen Creek, was insufficient to supply any diversion to the Emerson meadow after May 6th. Subsequent to this date the entire flow was used on the Hulsman ranch. Flow in the creek ceased by the middle of June.

Gold Run Creek

The flow of Gold Run Creek was sufficient to meet all requirements until about the 20th of May. Subsequently the flow steadily decreased along the creek until the 20th of June at which time only stock water and about one-half of the first priority requirements could be satisfied. The flow then continued to drop until the end of July when only domestic and stock water was available at the Satica and Ridenour ranches for the remainder of the season.

Repeated requests were made during the spring months by S. D. Ridenour to have his entire water allotment supplied at his uppermost point of diversion from Gold Run Creek. The Susan River Decree lists three points along the creek at which the Ridenour ranch may divert its share of water. The lower two of these diversions are unusable due to the structures having been washed out and not replaced. Field observations during periods of moderate and low stream flows indicate that the creek flows partially and sometimes completely underground at the Ridenour upper diversion point while there is still ample surface flow in the stream at the lowermost diversion to supply the Ridenour allotment.

Since the non-use of the water at the lower diversion allows the water available there to flow to inferior priority rights and its replacement by water from upstream in an effort to make the Ridenour water available at his Upper Ditch would deprive a superior right of a portion of its supply, it did not appear practicable to grant Mr. Ridenour's request. There is also the question of channel losses in the stream channel above the Ridenour Ranch which makes delivery of water to his upper ditch during period of low flow almost impossible.

Hills Creek

The flow of Hills Creek was inadequate to supply the first priority requirements at any time throughout the irrigating season. The flow as measured at the head of the Emerson Ditch dropped from seventy per cent of total allotments on the first of May to only minimum stock water requirements by the middle of July.

Water through the Emerson Ditch failed to reach the Emerson ranch after the middle of June. There was insufficient flow in the creek to reach the Brugger (Clark) ranch during the period of minimum flow in August.

Piute Creek

There was sufficient water in Piute Creek to satisfy all requirements until June 1st. Thereafter the flow dropped rapidly until June 15 when water was available for only fifty percent of allotments. After the 1st of July the California Pacific Utilities Company diverted the entire flow of the creek for municipal purposes except the portion needed to supply the pro rata allotments of the users below the Utilities Company Ranch. A flow of 0.27 cubic foot per second was maintained below the Utilities Company Ranch to supply these allotments.

Susan River (Schedules 5 and 6

Schedule 5

The natural flow of Susan River as tabulated in Table 9 was adequate in general to meet all irrigation requirements until about June 1. Following this the stream flow decreased rapidly so that by the 7th of June only about forty per cent of the requirements could be met. After the 1st of July only stockwater and domestic requirements could be fulfilled. Stock water was supplied throughout the season.

The Woodstock, Bantley, Johnstonville, Ripley, Barham, Shanks, Johnston and Chappius, Dill, and Tanner dams were used during the 1949 season.

The average flow of Susan River above the Ramsey Ditch and the per cent of allotments delivered to the first and second priority rights under Schedule 5 are given by months in the following tabulation:

| Month | Average daily Flow Susan River above Ramsey Ditch (c.f.s.) | Per cent of Allotments Delivered 1st Priority * 4.90 c.f.s. | 2nd Priority * 67.55 c.f.s. |
|---|---|---|---|
| April | 187.7 | 100% | 100% |
| May | 79.5 | 100% | 100% |
| June | 16.4 | 100% | 21% |
| July | 5.8 | 100% | 1% |
| August | 2.9 | 59% | 0% |
| September | 2.8 | 57% | 0% |

* Does not include 11.05 cubic feet per second allocated to lands upstream from the gaging station.

During recent years, the Fruit Growers Supply Company, who have only a second priority water right, have been allowed to take first priority water from the river on the condition that they return an equal amount of water back to the river from their deep well. This is done because the river water is more suitable for their boilers than their well water. Late in the season this year the Fruit Growers' well broke down for about two weeks. During this time it was possible to obtain a measure of the quantity of water consumed and returned to the river under normal operating conditions. The conclusions are as follows:

0.3 c.f.s. of river water actually consumed.

0.5 c.f.s. of well water returned to river channel above the Woodstock Dam.

0.3 c.f.s. of well water returned to river channel below the Woodstock Dam.

Quantities of river water diverted in excess of 0.3 c.f.s are returned to the river above the Woodstock Dam without loss. Due to temporary storage in the Mill Pond it was possible to maintain about the normal flow during the two-week period.

For Information only (see 1 page)

Schedule 6

Water under this schedule is subject to all rights set forth in Schedules 3, 4 and 5.

Water was distributed under this schedule to the Tule area as late as May 10. Although these rights suffered particularly through the lack of satisfactory diversion structures and ditches, it was possible to rotate the use of the available water to all ranches and satisfactory crops were produced thereon.

A continued lack of agreement between the Galeppi and Tanner ranches on the operation of the Hartson Upper Ditch made a coordinated schedule of rotation necessary during April and the first week of May. Certain repairs along the entire Hartson Slough are necessary before any permanent rotation schedule may be established. Some of these repairs were started at the end of the season and were to be continued during the winter months.

Susan River Reservoirs 1949

The Lassen Irrigation Company owns and operates three reservoirs in the Susan River stream system. Lake Leavitt was filled to capacity early in April with releases for irrigation beginning about April 15. Releases from McCoy and Hog Flat Reservoirs was begun on June 1 and terminated on July 25 when the supply was exhausted. The replenished supply in Lake Leavitt supplied the irrigation needs of the irrigation company until about September 15. The amount of stored water released from McCoy and Hog Flat Reservoirs, available for rediversion below Susanville was 8370 acre-feet. These two reservoirs were only partially filled during the 1949 season and all reservoirs were completely drained at the end of the season.

Prior to release of storage water from McCoy Flat reservoir it was necessary to pass the natural flow through to satisfy prior irrigation rights below Susanville after May 24. This natural flow amounted to 322 acre-feet by June 12th at which time the flow of Susan River into McCoy reservoir ceased.

Colony Dam, which is owned and operated by the Lassen Irrigation Company, was not used this season.

Beckett Reservoir

This small reservoir is designed for storage of Rice Canyon water and regulatory storage of Susan River water diverted through the Kelley Ditch by the Barham Dam. During the past five or six years this reservoir has been used for storing Susan River Water to the extent that numerous local complaints have been directed against its operation. The regulating device at the head of the Kelly Ditch is unsatisfactory and is the probable main cause of the trouble. Attempts to have an automatic measuring device constructed at this point were made.

## EAGLE LAKE

Beginning in the 1947 season, measurements were taken from a bench mark to the water surface of Eagle Lake in order to determine the changes in the water surface elevation. These observations were continued through the 1948 and 1949 seasons. The elevation of the bench mark from which the measurements were taken, was determined by W. E. Buell as 98.06 feet above an earlier established datum. The elevation of the water surface at the various times of observation are included in the following tabulation for comparison.

## WATER SURFACE ELEVATIONS OF EAGLE LAKE

| Date | Distance B.M. to Water Surface | Water Surface Elevation |
|---|---|---|
| 4-27-47 | 13.85 | 84.21 |
| 5-16-47 | 14.08 | 83.98 |
| 8-16-47 | 15.17 | 82.89 |
| 9-11-47 | 15.75 | 82.31 |
| 6- 3-48 | 15.17 | 82.89 |
| 7- 7-48 | 15.32 | 82.74 |
| 7-28-48 | 15.73 | 82.33 |
| 8-26-48 | 16.12 | 81.94 |
| 9-24-48 | 16.62 | 81.44 |
| 5-17-49 | 15.55 | 82.51 |
| 6-19-49 | 15.90 | 82.16 |
| 7-18-49 | 16.50 | 81.56 |
| 8-22-49 | 17.25 | 80.81 |
| 9-19-49 | 17.55 | 80.51 |

## SUMMARY

Although the precipitation was below normal at the start of the season, snow conditions in the mountains were fairly good. Dry and freezing weather conditions during April resulted in a very poor runoff from the snow pack. The season itself was characterized by high daily temperatures and drying winds through the major part of the summer.

A shortage of water was in evidence by the middle of May but light rains at that time served to increase the stream flows until practically all of the ranches had been irrigated.

The main flow in the streams dropped off rather abruptly at the end of the first week of June and many ranches lacked sufficient water to complete another irrigation before haying time at the end of June. After haying, a very

limited amount of irrigation water was available in some areas.

Strict limitations on the use of first priority water through July, August, and September were enforced with the result that stock water could be delivered continuously to all ranches along the river.

## CONTROVERSY

Mr. A. Bantley, one of the water users below the Barron ranch in Willow Creek Valley requested that representatives of the Division of Water Resources attend a meeting to be held in Susanville to discuss the alleged violations of the Susan River Decree by J. R. Barron as to use of water from Upper Willow Creek. This meeting was held in Susanville on August 2, 1949, attended by all parties to the controversy. Mr. Holsinger, Principal Attorney, Mr. Smitherum, Supervising Hydraulic Engineer, Mr. Jopson, Senior Hydraulic Engineer and Mr. Vandenberg, Assistant Civil Engineer represented the Division of Water Resources.

The purpose of the meeting was to clarify the rights and responsibilities of the various parties to the controversy. In the course of the meeting it was pointed out that the rights involved were "consumptive use" rights and that delivery of water to lower users was mandatory upon the water user having the water under his control and that such user was entirely responsible for its delivery.

A chart, made from numerous measurements, was presented at the meeting. This chart, made by the watermaster, showed a consistent deficiency in the amount of water passing the Barron Ranch. Mr. Holsinger stated, after a through discussion, that a contempt of court proceeding, brought by the downstream owners, would appear to be the proper recourse for the injured

parties. It was also pointed out that Mr. Barron was apparently subject to an action for damages.

Following the meeting, although by this time the irrigation season was almost over and the flow of Willow Creek was at a summer minimum, Mr. Barron cooperated with the watermaster in providing a proper distribution of such water as was available. Although there was considerable talk among the downstream owners of initiating a contempt of court action, it was apparently decided to wait until the 1950 season with the hope that such action would be unnecessary.

## RECOMMENDATIONS

Every effort should be made to improve the condition of diversion structures and ditches. Measuring devices are needed in some areas. Particular attention along these lines should be directed toward the Hartson Slough, Kelley Ditch, and the Old Channel of the Susan River near Susanville.

It is also recommended that several recorders be allotted during the 1950 season for obtaining continuous records above and below the Barron ranch in Willow Creek Valley.

Some requests have been made by the ranches in the Tule area to have the watermaster make a preliminary visit to the service area during March. During normal, or drier than normal years this visit would be of considerable aid in anticipating and preparing for operations at the first of April.

## OWNERSHIP OF LANDS AND WATER RIGHTS WITHIN SUSAN RIVER WATERMASTER SERVICE AREA

### Changes of Ownership

The following tabulation lists the changes in ownership of lands and water rights occurring in the Susan River Watermaster Service Area subsequent to the filing of the statement for said service area for 1949. These changes shall be included in the statement of this service area for 1950

WATER RIGHT OWNERSHIP CHANGES FOR 1950

| Tract Number | Name of Water Right Owner Appearing in 1949 Statement | Name of Water Right Owner to Appear in 1950 Statement | Amount of Water c.f.s. |
|---|---|---|---|
| 12-73 | Bailey, Lillian; Hoffman, Florence; and Jeskey, Marian | Porter, D. S. and Porter, Lela | 1.50 |
| 12-22 | Beard, Marion and Beard, Margaret | Montgomery, Floyd E. | 0.034 |
| 12-10 | Boggs, Thurman L. | Susanville Elementary School District | 0.07 |
| 12-21 | Collier, J. R. and Collier, Jessie H. | Bauer, Wilford | 0.09 |
| 12-51 | Davis, Willis H. and Nuckolls, Neva Davis | Davis, Estate of Willis H. and Nuckolls, Neva Davis, c/o Nuckolls, Neva Davis | 0.80 |
| 12-104 | Dill, William A. and Dill, Clara F. | Anderson, Cecil and Anderson, Nettie | 1.55 |
| 12-87 | Harwood, Gus | Toscani, Albert A.; Toscani, Ernest J.; Toscani, Chester M.; Toscani, Arthur F.; Toscani, Arthur and Toscani, Mary | 3.90 |
| 12-12 | Marmo, Dan | Stewart, Royal A. and Stewart, Kathryn | 0.16 |
| 12-38 | Ulch, Millard and Ulch, Claire | Payne, P. C. | 1.05 |
| 12-74 | Taylor, P. A. | Senteney, D. L.; Senteney, D. L. and Senteney, K. D. | 2.45 |
| 12-108 | Independence Ice Cream Company | Alameda County Ice Cream Company | 5.45 |
| 12-93 | Geo. E. and Dora S. Woodstock | V. A. Stowe and J. C. Hutton | 1.00 |

TABLE 1

PRECIPITATION AT SUSANVILLE AIRPORT, 6 MILES EAST OF SUSANVILLE, CALIFORNIA

Monthly, Seasonal, and Average Amounts in Inches

| Year | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Season |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1943-44 | 1.17 | .89 | .90 | 2.06 | 3.14 | 1.98 | 1.03 | .14 | 1.82 | .47 | .04 | .19 | 13.83 |
| 1944-45 | .35 | 3.67 | 1.58 | 2.42 | 2.45 | .70 | .33 | .70 | .46 | .27 | .09 | .47 | 13.49 |
| 1945-46 | 2.92 | 2.01 | 3.65 | .40 | .89 | 1.21 | .25 | .07 | .01 | .59 | .00 | .20 | 12.20 |
| 1946-47 | .25 | 3.28 | 1.50 | .25 | 1.28 | 1.37 | .67 | 1.13 | .47 | .00 | .18 | T | 10.38 |
| 1947-48 | 1.57 | .07 | .15 | .91 | .66 | .85 | 1.85 | 1.39 | 1.43 | .00 | .00 | .04 | 8.92 |
| 1948-49 | .61 | .48 | 1.55 | .24 | .60 | .97 | .01 | 1.89 | .00 | .04 | .02 | .00 | 6.41 |
| 6-Year Mean | 1.14 | 1.74 | 1.55 | 1.04 | 1.50 | 1.18 | .70 | .89 | .70 | .23 | .05 | .15 | 10.87 |
| 50-Year Mean * | 1.02 | 2.09 | 3.09 | 3.81 | 2.90 | 2.50 | 1.12 | 1.07 | .58 | .19 | .16 | .54 | 19.07 |

* Records prior to December, 1943 were recorded within the City of Susanville.

TABLE 2

Daily Discharge in Cubic Feet per Second
SUSAN RIVER AT HAWS BELOW RAMSEY DITCH INCLUDING WATER
RELEASED FROM STORAGE
APRIL 1 TO SEPTEMBER 30, 1949

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | 97 | 116 | 42 | 98 | 4.0 | 1.6 |
| 2 | 101 | 125 | 59 | 94 | 3.0 | 1.6 |
| 3 | 104 | 126 | 71 | 85 | 2.5 | 1.6 |
| 4 | 118 | 108 | 69 | 78 | 2.3 | 1.6 |
| 5 | 142 | 99 | 68 | 73 | 2.2 | 1.6 |
| 6 | 151 | 91 | 64 | 78 | 2.0 | 1.6 |
| 7 | 161 | 87 | 61 | 80 | 2.0 | 1.6 |
| 8 | 161 | 83 | 138 | 76 | 2.0 | 1.9 |
| 9 | 179 | 87 | 157 | 60 | 2.0 | 1.8 |
| 10 | 210 | 73 | 157 | 60 | 2.0 | 1.8 |
| 11 | 225 | 67 | 153 | 49 | 1.9 | 1.8 |
| 12 | 240 | 64 | 148 | 41 | 1.8 | 1.8 |
| 13 | 244 | 80 | 150 | 38 | 1.8 | 1.8 |
| 14 | 220 | 188 | 145 | 34 | 1.8 | 1.8 |
| 15 | 217 | 97 | 142 | 32 | 1.8 | 1.8 |
| 16 | 217 | 80 | 145 | 28 | 1.8 | 1.7 |
| 17 | 225 | 65 | 145 | 22 | 1.8 | 2.5 |
| 18 | 247 | 62 | 148 | 18 | 1.8 | 2.5 |
| 19 | 253 | 65 | 151 | 14 | 1.8 | 1.7 |
| 20 | 230 | 73 | 154 | 9.0 | 1.8 | 1.7 |
| 21 | 222 | 62 | 156 | 8.0 | 1.6 | 1.7 |
| 22 | 225 | 53 | 157 | 7.0 | 1.6 | 1.6 |
| 23 | 222 | 47 | 157 | 6.0 | 1.6 | 1.7 |
| 24 | 210 | 42 | 144 | 5.0 | 1.6 | 1.7 |
| 25 | 185 | 38 | 122 | 4.0 | 1.6 | 1.8 |
| 26 | 171 | 36 | 114 | 4.0 | 1.8 | 2.0 |
| 27 | 153 | 43 | 111 | 3.0 | 1.8 | 2.0 |
| 28 | 142 | 42 | 101 | 2.3 | 1.8 | 3.5 |
| 29 | 138 | 43 | 92 | 2.3 | 1.8 | 3.0 |
| 30 | 122 | 44 | 97 | 2.3 | 2.0 | 3.0 |
| 31 | | 45 | | 2.3 | 2.2 | |
| Total | 5,532 | 2,331 | 3,618 | 1,113.2 | 61.5 | 57.8 |
| Mean | 184.4 | 75.2 | 120.6 | 35.9 | 2.0 | 1.9 |
| Runoff in Ac.Ft. | 10,970 | 4,624 | 7,176 | 2,208 | 122 | 115 |

Discharge during Period - 25,210 acre-feet.

TABLE 3

Daily Discharge in Cubic Feet per Second
OLD CHANNEL OF SUSAN RIVER BELOW WOODSTOCK DAM
APRIL 7 TO SEPTEMBER 30, 1949

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | | 23 | 12 | 4.0 | 3.5 | 3.0 |
| 2 | | 21 | 13 | 3.5 | 3.5 | 2.0 |
| 3 | | 22 | 13 | 3.5 | 2.5 | 1.9 |
| 4 | | 21 | 12 | 3.5 | 2.3 | 1.6 |
| 5 | | 20 | 10.0 | 3.5 | 2.0 | 3.0 |
| 6 | | 21 | 10.0 | 3.5 | 2.0 | 3.0 |
| 7 | 6.0 | 20 | 10.0 | 3.5 | 2.0 | 2.5 |
| 8 | 8.0 | 20 | 8.5 | 3.0 | 1.9 | 1.7 |
| 9 | 8.0 | 20 | 8.5 | 3.0 | 1.9 | 1.7 |
| 10 | 4.8 | 22 | 8.0 | 3.0 | 1.9 | 1.7 |
| 11 | 12 | 23 | 7.0 | 3.0 | 1.9 | 1.7 |
| 12 | 14 | 19 | 6.0 | 3.0 | 1.7 | 1.9 |
| 13 | 18 | 19 | 6.5 | 2.8 | 1.9 | 1.8 |
| 14 | 18 | 19 | 6.0 | 2.8 | 1.8 | 2.0 |
| 15 | 20 | 20 | 5.5 | 2.6 | 1.5 | 2.0 |
| 16 | 14 | 20 | 5.0 | 2.6 | 1.6 | 1.9 |
| 17 | 10 | 20 | 5.0 | 2.6 | 1.7 | 1.9 |
| 18 | 6.0 | 20 | 4.5 | 2.6 | 2.0 | 2.0 |
| 19 | 6.0 | 20 | 4.0 | 2.5 | 1.7 | 1.9 |
| 20 | 6.0 | 20 | 4.0 | 2.5 | 1.7 | 1.8 |
| 21 | 5.0 | 19 | 5.0 | 2.5 | 1.8 | 1.8 |
| 22 | 5.0 | 18 | 5.0 | 2.5 | 1.7 | 1.8 |
| 23 | 6.0 | 17 | 5.0 | 2.5 | 1.8 | 1.8 |
| 24 | 5.0 | 16 | 4.5 | 2.5 | 1.8 | 1.6 |
| 25 | 6.0 | 15 | 4.5 | 2.5 | 1.8 | 1.5 |
| 26 | 10.0 | 15 | 4.5 | 2.2 | 1.9 | 1.7 |
| 27 | 24 | 14 | 4.0 | 2.2 | 2.0 | 2.4 |
| 28 | 23 | 12 | 4.0 | 2.2 | 1.9 | 3.5 |
| 29 | 25 | 13 | 3.5 | 2.2 | 1.9 | 4.0 |
| 30 | 24 | 13 | 3.0 | 2.2 | 3.0 | 3.5 |
| 31 | | 13 | | 2.2 | 4.5 | |
| Total | *283.8 | 575 | 201.5 | 86.7 | 65.1 | 63.6 |
| Mean | * 11.8 | 18.5 | 6.7 | 2.8 | 2.1 | 2.1 |
| Runoff in Ac.Ft. | *563 | 1,140 | 400 | 172 | 129 | 126 |

* 24-day Period

Discharge during Period - 2,530 acre-feet.

TABLE 4

Daily Discharge in Cubic Feet per Second
SUSAN RIVER AT JOHNSTONVILLE BRIDGE
APRIL 1 TO SEPTEMBER 30, 1949

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | 53 | 44 | 24 | 0.5 | 0.8 | 0.6 |
| 2 | 53 | 43 | 23 | 0.5 | 0.8 | 0.6 |
| 3 | 54 | 44 | 27 | 0.5 | 0.6 | 0.6 |
| 4 | 65 | 46 | 22 | 0.5 | 0.6 | 0.6 |
| 5 | 76 | 42 | 18 | 0.6 | 0.6 | 0.6 |
| 6 | 85 | 38 | 14 | 0.7 | 0.6 | 0.5 |
| 7 | 91 | 35 | 13 | 0.8 | 0.8 | 0.5 |
| 8 | 96 | 34 | 13 | 0.7 | 2.0 | 0.5 |
| 9 | 105 | 34 | 11 | 0.7 | 2.5 | 0.5 |
| 10 | 88 | 36 | 10 | 0.7 | 3.0 | 0.6 |
| 11 | 110 | 38 | 9.0 | 0.7 | 3.0 | 0.6 |
| 12 | 137 | 37 | 8.6 | 0.7 | 3.5 | 0.6 |
| 13 | 140 | 34 | 7.2 | 0.6 | 3.0 | 0.6 |
| 14 | 140 | 50 | 7.0 | 0.6 | 3.0 | 0.6 |
| 15 | 138 | 44 | 6.4 | 0.6 | 2.5 | 0.6 |
| 16 | 139 | 34 | 5.4 | 0.5 | 1.5 | 0.6 |
| 17 | 142 | 32 | 3.9 | 0.5 | 0.7 | 0.6 |
| 18 | 160 | 29 | 2.9 | 0.5 | 0.7 | 0.6 |
| 19 | 172 | 29 | 2.4 | 0.5 | 0.6 | 0.6 |
| 20 | 153 | 26 | 2.0 | 0.5 | 0.6 | 0.6 |
| 21 | 141 | 25 | 1.8 | 0.5 | 0.6 | 0.6 |
| 22 | 135 | 23 | 1.8 | 0.5 | 0.6 | 0.6 |
| 23 | 89 | 23 | 1.5 | 0.5 | 0.6 | 0.6 |
| 24 | 80 | 22 | 1.5 | 0.5 | 0.6 | 0.6 |
| 25 | 59 | 26 | 1.5 | 0.5 | 1.0 | 0.6 |
| 26 | 51 | 27 | 1.5 | 0.8 | 1.0 | 0.8 |
| 27 | 52 | 28 | 1.3 | 0.8 | 1.0 | 1.0 |
| 28 | 56 | 25 | 1.3 | 0.8 | 1.0 | 1.3 |
| 29 | 59 | 22 | 1.3 | 0.8 | 1.5 | 1.3 |
| 30 | 46 | 23 | 1.0 | 1.0 | 1.5 | 1.3 |
| 31 | | 23 | | 1.0 | 1.0 | |
| Total | 2,965 | 1,016 | 244.3 | 19.6 | 41.8 | 20.3 |
| Mean | 98.8 | 32.8 | 8.1 | 0.6 | 1.3 | 0.7 |
| Runoff in Ac. Ft. | 5,881 | 2,015 | 485 | 39 | 83 | 27 |

Discharge during Period - 8,530 acre-feet.

TABLE 5

Daily Discharge in Cubic Feet per Second
WILLOW CREEK BELOW BELFAST BRIDGE OR OLD NETT RANCH
APRIL 6 TO SEPTEMBER 30, 1949

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | | 12 | 12 | 12 | 14 | 11 |
| 2 | | 12 | 12 | 11 | 13 | 11 |
| 3 | | 13 | 12 | 11 | 13 | 12 |
| 4 | | 13 | 12 | 11 | 13 | 12 |
| 5 | | 13 | 11 | 11 | 13 | 11 |
| 6 | 21 | 13 | 12 | 11 | 14 | 11 |
| 7 | 23 | 13 | 11 | 10 | 14 | 12 |
| 8 | 21 | 13 | 11 | 10 | 14 | 13 |
| 9 | 20 | 13 | 12 | 10 | 14 | 13 |
| 10 | 20 | 13 | 12 | 11 | 14 | 13 |
| 11 | 20 | 13 | 13 | 11 | 14 | 13 |
| 12 | 21 | 13 | 13 | 11 | 15 | 13 |
| 13 | 22 | 14 | 13 | 11 | 15 | 12 |
| 14 | 19 | 15 | 13 | 11 | 15 | 13 |
| 15 | 19 | 15 | 13 | 12 | 15 | 13 |
| 16 | 19 | 15 | 13 | 12 | 15 | 13 |
| 17 | 18 | 16 | 13 | 12 | 15 | 13 |
| 18 | 18 | 16 | 13 | 12 | 15 | 13 |
| 19 | 18 | 17 | 13 | 12 | 15 | 13 |
| 20 | 17 | 17 | 12 | 12 | 15 | 13 |
| 21 | 15 | 16 | 12 | 12 | 15 | 13 |
| 22 | 13 | 16 | 12 | 13 | 15 | 13 |
| 23 | 12 | 16 | 12 | 14 | 15 | 13 |
| 24 | 12 | 16 | 12 | 14 | 14 | 13 |
| 25 | 12 | 15 | 12 | 14 | 14 | 13 |
| 26 | 12 | 15 | 12 | 14 | 14 | 13 |
| 27 | 12 | 15 | 12 | 14 | 14 | 13 |
| 28 | 12 | 14 | 12 | 14 | 14 | 13 |
| 29 | 12 | 13 | 13 | 14 | 14 | 13 |
| 30 | 12 | 14 | 12 | 14 | 12 | 13 |
| 31 | | 13 | | 14 | 11 | |
| Total | * 420 | 443 | 367 | 375 | 437 | 378 |
| Mean | * 16.8 | 14.3 | 12.2 | 12.1 | 14.1 | 12.3 |
| Runoff in Ac.Ft. | * 833 | 879 | 728 | 744 | 867 | 750 |

* 25-day Period

Discharge during Period - 4,800 acre-feet.

TABLE 6

Daily Discharge in Cubic Feet per Second
GOLD RUN CREEK ABOVE DIVERSIONS
APRIL 7 TO SEPTEMBER 30, 1949

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | | 13.6 | 7.7 | 1.5 | 0.3 | 0.1 |
| 2 | | 14.0 | 7.0 | 1.5 | 0.2 | 0.1 |
| 3 | | 12.5 | 6.5 | 1.5 | 0.1 | 0.1 |
| 4 | | 12.2 | 6.5 | 1.5 | 0.2 | 0.1 |
| 5 | | 12.5 | 6.2 | 1.3 | 0.3 | 0.1 |
| 6 | | 12.8 | 6.0 | 1.3 | 0.2 | 0.1 |
| 7 | 8.5 | 12.5 | 6.0 | 1.3 | 0.1 | 0.1 |
| 8 | 8.2 | 11.3 | 5.5 | 1.3 | 0.1 | 0.1 |
| 9 | 9.1 | 10.8 | 4.2 | 1.0 | 0.1 | 0.1 |
| 10 | 10.5 | 13.2 | 4.0 | 1.0 | 0.1 | 0.1 |
| 11 | 12.2 | 15.0 | 3.5 | 1.0 | 0.1 | 0.1 |
| 12 | 15.0 | 16.0 | 3.4 | 1.0 | 0.1 | 0.1 |
| 13 | 12.5 | 17.0 | 3.0 | 1.0 | 0.1 | 0.1 |
| 14 | 12.5 | 19.0 | 2.7 | 0.9 | 0.1 | 0.1 |
| 15 | 13.2 | 17.0 | 2.7 | 0.8 | 0.1 | 0.1 |
| 16 | 13.6 | 15.5 | 2.7 | 0.7 | 0.1 | 0.1 |
| 17 | 15.0 | 14.3 | 2.7 | 0.7 | 0.1 | 0.1 |
| 18 | 16.0 | 12.3 | 2.7 | 0.4 | 0.1 | 0.1 |
| 19 | 16.0 | 13.2 | 3.0 | 0.4 | 0.1 | 0.1 |
| 20 | 15.3 | 11.3 | 2.7 | 0.2 | 0.1 | 0.1 |
| 21 | 17.0 | 10.5 | 2.7 | 0.4 | 0.1 | 0.1 |
| 22 | 18.5 | 10.5 | 2.3 | 0.2 | 0.1 | 0.1 |
| 23 | 18.5 | 10.2 | 2.0 | 0.2 | 0.1 | 0.1 |
| 24 | 17.0 | 10.5 | 2.0 | 0.2 | 0.1 | 0.1 |
| 25 | 15.5 | 9.6 | 2.0 | 0.2 | 0.1 | 0.1 |
| 26 | 15.5 | 8.8 | 1.7 | 0.2 | 0.1 | 0.2 |
| 27 | 14.6 | 8.8 | 1.7 | 0.1 | 0.1 | 0.3 |
| 28 | 14.0 | 8.6 | 1.6 | 0.1 | 0.2 | 0.6 |
| 29 | 12.5 | 7.7 | 1.5 | 0.1 | 0.3 | 0.4 |
| 30 | 12.5 | 7.7 | 1.5 | 0.1 | 0.2 | 0.5 |
| 31 | | 7.7 | | 0.1 | 0.1 | |
| Total | *333.2 | 376.6 | 107.7 | 22.2 | 4.2 | 4.5 |
| Mean | * 13.9 | 12.1 | 3.6 | 0.72 | 0.14 | .15 |
| Runoff in Ac.Ft. | *661 | 747 | 214 | 44.0 | 8.3 | 8.9 |

* 24-day Period

Discharge during Period - 1,680 acre-feet.

TABLE 7

Daily Discharge in Cubic Feet per Second
RAMSEY DITCH AT HEAD
APRIL 1 TO SEPTEMBER 30, 1949

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | 3.0 | 4.5 | 3.8 | 2.5 | 2.5 | 0.8 |
| 2 | 3.0 | 4.5 | 3.8 | 2.5 | 1.5 | 0.8 |
| 3 | 3.0 | 4.5 | 3.8 | 2.5 | 1.0 | 0.8 |
| 4 | 3.0 | 4.5 | 3.6 | 2.5 | 1.0 | 0.7 |
| 5 | 3.0 | 5.0 | 3.6 | 2.5 | 1.0 | 0.7 |
| 6 | 3.0 | 5.0 | 3.6 | 2.5 | 0.8 | 0.7 |
| 7 | 3.0 | 5.0 | 3.6 | 2.5 | 0.7 | 0.6 |
| 8 | 3.0 | 4.5 | 3.6 | 2.5 | 0.7 | 0.6 |
| 9 | 3.0 | 4.5 | 3.4 | 2.5 | 0.7 | 0.6 |
| 10 | 3.0 | 4.5 | 3.4 | 2.5 | 0.7 | 0.6 |
| 11 | 3.5 | 4.5 | 3.4 | 2.5 | 0.7 | 0.6 |
| 12 | 3.5 | 4.5 | 3.4 | 2.5 | 0.7 | 0.7 |
| 13 | 3.5 | 4.5 | 3.2 | 2.0 | 0.7 | 0.7 |
| 14 | 3.5 | 4.5 | 3.2 | 2.0 | 0.7 | 0.7 |
| 15 | 3.5 | 4.5 | 3.2 | 2.0 | 0.7 | 0.7 |
| 16 | 3.5 | 5.0 | 3.0 | 2.0 | 0.7 | 0.7 |
| 17 | 3.5 | 5.0 | 3.0 | 4.0 | 0.7 | 0.7 |
| 18 | 3.5 | 5.0 | 2.8 | 5.5 | 0.7 | 0.7 |
| 19 | 3.5 | 5.0 | 2.8 | 4.0 | 0.7 | 0.9 |
| 20 | 3.5 | 5.0 | 2.8 | 2.0 | 0.8 | 1.0 |
| 21 | 3.5 | 4.5 | 2.5 | 1.8 | 0.8 | 0.9 |
| 22 | 3.5 | 4.5 | 2.5 | 1.8 | 0.8 | 0.9 |
| 23 | 3.5 | 4.5 | 2.5 | 1.8 | 0.8 | 1.0 |
| 24 | 4.0 | 4.5 | 2.5 | 1.7 | 0.8 | 1.0 |
| 25 | 4.0 | 4.5 | 2.5 | 1.7 | 0.8 | 0.8 |
| 26 | 4.0 | 4.0 | 2.5 | 1.5 | 0.8 | 0.8 |
| 27 | 4.0 | 4.0 | 2.5 | 1.5 | 1.0 | 0.8 |
| 28 | 4.0 | 4.0 | 2.5 | 1.5 | 2.0 | 1.5 |
| 29 | 4.0 | 4.0 | 2.5 | 1.5 | 1.3 | 2.0 |
| 30 | 4.0 | 4.0 | 2.5 | 1.5 | 1.0 | 1.5 |
| 31 | | 4.0 | | 1.5 | 1.0 | |
| Total | 103.5 | 140.5 | 92.0 | 71.3 | 28.8 | 25.5 |
| Mean | 34.5 | 45.3 | 30.7 | 23.0 | 0.93 | 0.8 |
| Runoff in Ac.Ft. | 205 | 279 | 182 | 141 | 57 | 50 |

Discharge during Period - 914 acre-feet.

TABLE 8

Daily Discharge in Cubic Feet per Second
SUSAN RIVER ABOVE RAMSEY DITCH INCLUDING WATER
RELEASED FROM STORAGE
APRIL 1 TO SEPTEMBER 30, 1949

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | 100 | 120 | 46 | 101 | 6.5 | 2.4 |
| 2 | 104 | 129 | 63 | 97 | 4.5 | 2.4 |
| 3 | 107 | 130 | 75 | 88 | 3.5 | 2.4 |
| 4 | 121 | 112 | 74 | 81 | 3.3 | 2.3 |
| 5 | 145 | 104 | 73 | 76 | 3.2 | 2.3 |
| 6 | 154 | 96 | 68 | 80 | 2.8 | 2.3 |
| 7 | 164 | 92 | 65 | 82 | 2.7 | 2.2 |
| 8 | 164 | 88 | 142 | 78 | 2.7 | 2.5 |
| 9 | 182 | 91 | 160 | 62 | 2.7 | 2.4 |
| 10 | 213 | 77 | 160 | 62 | 2.7 | 2.4 |
| 11 | 229 | 71 | 156 | 51 | 2.6 | 2.4 |
| 12 | 244 | 68 | 151 | 43 | 2.5 | 2.5 |
| 13 | 247 | 84 | 153 | 40 | 2.5 | 2.5 |
| 14 | 223 | 192 | 148 | 36 | 2.5 | 2.5 |
| 15 | 220 | 101 | 145 | 34 | 2.5 | 2.5 |
| 16 | 221 | 85 | 148 | 30 | 2.5 | 2.4 |
| 17 | 228 | 70 | 148 | 26 | 2.5 | 3.2 |
| 18 | 250 | 67 | 151 | 20 | 2.5 | 3.2 |
| 19 | 256 | 70 | 154 | 18 | 2.5 | 2.6 |
| 20 | 233 | 78 | 157 | 11 | 2.6 | 2.7 |
| 21 | 225 | 66 | 159 | 9.8 | 2.4 | 2.6 |
| 22 | 228 | 57 | 160 | 8.8 | 2.4 | 2.5 |
| 23 | 225 | 51 | 160 | 7.8 | 2.4 | 2.7 |
| 24 | 214 | 47 | 147 | 6.7 | 2.4 | 2.7 |
| 25 | 189 | 43 | 124 | 5.7 | 2.4 | 2.6 |
| 26 | 175 | 40 | 116 | 5.5 | 2.6 | 2.8 |
| 27 | 157 | 47 | 113 | 4.5 | 2.8 | 2.8 |
| 28 | 146 | 46 | 103 | 3.8 | 3.8 | 5.0 |
| 29 | 142 | 47 | 94 | 3.8 | 3.1 | 5.0 |
| 30 | 126 | 48 | 99 | 3.8 | 3.0 | 5.0 |
| 31 | | 49 | | 3.8 | 3.2 | |
| Total | 5,632 | 2,466 | 3,712 | 1,180 | 90.3 | 83.8 |
| Mean | 187.7 | 79.5 | 123.7 | 38.1 | 2.9 | 2.8 |
| Runoff in Ac.Ft. | 11,170 | 4,891 | 7,363 | 2,340 | 179 | 166 |

Total acre-feet for Period - 26,110

TABLE 9

Daily Discharge in Cubic Feet per Second
NATURAL FLOW OF SUSAN RIVER ABOVE RAMSEY DITCH
APRIL 1 TO SEPTEMBER 30, 1949

(Excluding Released Storage Water)

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | 100 | 120 | 46 | 7.3 | 6.5 | 2.4 |
| 2 | 104 | 129 | 44 | 7.3 | 4.5 | 2.4 |
| 3 | 107 | 130 | 41 | 7.3 | 3.5 | 2.4 |
| 4 | 121 | 112 | 34 | 7.3 | 3.3 | 2.3 |
| 5 | 145 | 104 | 29 | 7.0 | 3.2 | 2.3 |
| 6 | 154 | 96 | 26 | 7.0 | 2.8 | 2.3 |
| 7 | 164 | 92 | 23 | 7.0 | 2.7 | 2.2 |
| 8 | 164 | 88 | 21 | 7.0 | 2.7 | 2.5 |
| 9 | 182 | 91 | 18 | 6.8 | 2.7 | 2.4 |
| 10 | 213 | 77 | 16 | 6.8 | 2.7 | 2.4 |
| 11 | 229 | 71 | 15 | 6.8 | 2.6 | 2.4 |
| 12 | 244 | 68 | 14 | 6.8 | 2.5 | 2.5 |
| 13 | 247 | 84 | 13 | 6.0 | 2.5 | 2.5 |
| 14 | 223 | 192 | 13 | 6.0 | 2.5 | 2.5 |
| 15 | 220 | 101 | 12 | 6.0 | 2.5 | 2.5 |
| 16 | 221 | 85 | 11 | 5.5 | 2.5 | 2.4 |
| 17 | 228 | 70 | 11 | 7.5 | 2.5 | 3.2 |
| 18 | 250 | 67 | 10.0 | 9.0 | 2.5 | 3.2 |
| 19 | 256 | 70 | 9.8 | 7.2 | 2.5 | 2.6 |
| 20 | 233 | 78 | 8.8 | 5.2 | 2.6 | 2.7 |
| 21 | 225 | 66 | 8.0 | 4.8 | 2.4 | 2.6 |
| 22 | 228 | 57 | 8.5 | 4.8 | 2.4 | 2.5 |
| 23 | 225 | 51 | 8.0 | 4.3 | 2.4 | 2.7 |
| 24 | 214 | 47 | 8.0 | 4.2 | 2.4 | 2.7 |
| 25 | 189 | 43 | 7.5 | 4.2 | 2.4 | 2.6 |
| 26 | 175 | 40 | 7.5 | 4.0 | 2.6 | 2.8 |
| 27 | 157 | 47 | 7.5 | 3.7 | 2.8 | 2.8 |
| 28 | 146 | 46 | 7.5 | 3.7 | 3.8 | 5.0 |
| 29 | 142 | 47 | 7.5 | 3.7 | 3.1 | 5.0 |
| 30 | 126 | 48 | 7.5 | 3.7 | 3.0 | 5.0 |
| 31 | | 49 | | 3.7 | 3.2 | |
| Total | 5,632 | 2,466 | 493.1 | 181.6 | 90.3 | 83.8 |
| Mean | 187.7 | 79.5 | 16.4 | 5.86 | 2.9 | 2.8 |
| Runoff in Ac.Ft. | 11,170 | 4,891 | 978 | 360 | 179 | 166 |

Discharge during Period - 17,740 acre-feet.

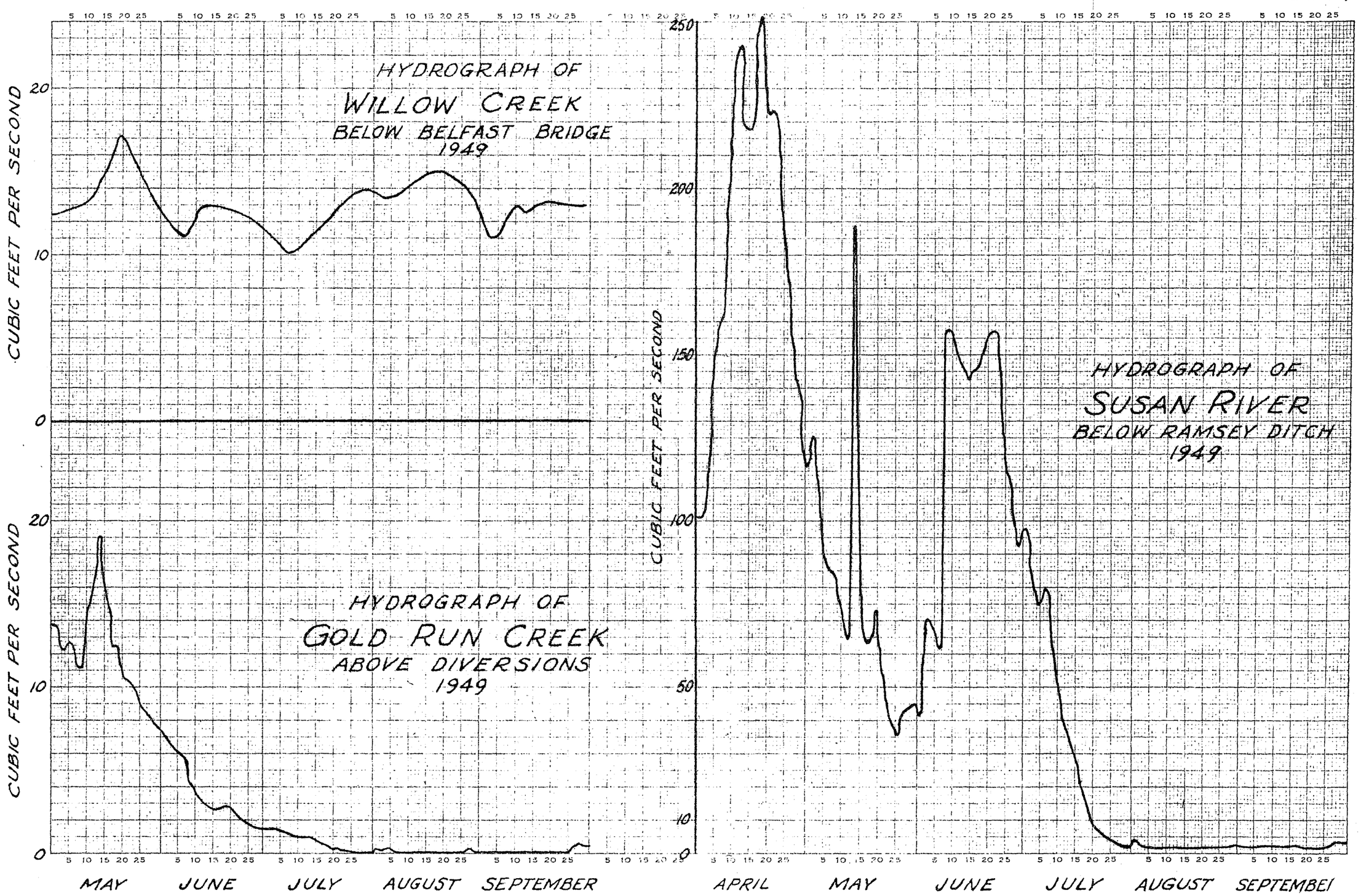
TABLE 10

Daily Discharge in Cubic Feet per Second
WATER RELEASED FROM MCCOY AND HOG FLAT RESERVOIRS
AND AVAILABLE FOR RE-DIVERSION AT SUSANVILLE
JUNE 1 TO JULY 27, 1949

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | | | 0 | 93 | | |
| 2 | | | 19 | 89 | | |
| 3 | | | 34 | 80 | | |
| 4 | | | 38 | 72 | | |
| 5 | | | 44 | 68 | | |
| 6 | | | 42 | 73 | | |
| 7 | | | 48 | 75 | | |
| 8 | NO | NO | 121 | 71 | NO | NO |
| 9 | | | 142 | 56 | | |
| 10 | | | 144 | 56 | | |
| 11 | | | 141 | 45 | | |
| 12 | | | 137 | 37 | | |
| 13 | | | 140 | 34 | | |
| 14 | | | 135 | 30 | | |
| 15 | | | 133 | 28 | | |
| 16 | | | 137 | 24 | | |
| 17 | | | 137 | 18 | | |
| 18 | | | 141 | 14 | | |
| 19 | | | 144 | 11 | | |
| 20 | | | 148 | 6 | | |
| 21 | | | 151 | 5 | | |
| 22 | | | 151 | 4 | | |
| 23 | RELEASE | RELEASE | 151 | 3 | RELEASE | RELEASE |
| 24 | | | 139 | 3 | | |
| 25 | | | 117 | 2 | | |
| 26 | | | 109 | 2 | | |
| 27 | | | 106 | 1 | | |
| 28 | | | 96 | 0 | | |
| 29 | | | 87 | RESER- | | |
| 30 | | | 92 | VOIRS | | |
| 31 | | | | EMPTY | | |
| Total | | | 3,218 | 1,000 | | |
| Mean | | | 107.2 | 37.0 | | |
| Runoff in Ac.Ft. | | | 6,385 | 1,985 | | |

Discharge during Period - 8,370 acre-feet.

PLATE 1


HYDROGRAPH OF
WILLOW CREEK
BELOW BELFAST BRIDGE
1949
HYDROGRAPH OF
GOLD RUN CREEK
ABOVE DIVERSIONS
1949
HYDROGRAPH OF
SUSAN RIVER
BELOW RAMSEY DITCH
1949
CUBIC FEET PER SECOND
CUBIC FEET PER SECOND
CUBIC FEET PER SECOND
0
10
20
0
10
20
0
10
50
100
150
200
250
5 10 15 20 25
MAY
JUNE
JULY
AUGUST
SEPTEMBER
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER