STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

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EARL WARREN, Governor

FRANK B. DURKEE, Director of Public Works

A. D. EDMONSTON, State Engineer

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# REPORT ON WATERMASTER SERVICE IN SOUTH FORK PIT-RIVER WATERMASTER SERVICE AREA

Modoc and Lassen Counties, California

1952 SEASON

Sacramento, California
April, 1953

## ORGANIZATION

Frank B. Durkee . . . . . Director of Public Works

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

* Gordon Zander . . . . . Assistant State Engineer

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This report was prepared under the direction of

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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, submit this "Report on Watermaster Service in South Fork Pit River Watermaster Service Area, Modoc and Lassen Counties, California, 1952 Season".

/s/ L. C. JOPSON
Supervising Hydraulic Engineer

I, Harrison Smitherum, Supervising Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, approve this "Report on Watermaster Service in South Fork Pit River Watermaster Service Area, Modoc and Lassen Counties, California, 1952 Season".

/s/ HARRISON SMITHERUM
Supervising 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, approve and adopt this "Report on Watermaster Service in South Fork Pit River Watermaster Service Area, Modoc and Lassen Counties, California, 1952 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 , 1952.

DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

By /s/ A. D. EDMONSTON
A. D. Edmonston
State Engineer

SEAL

TABLE OF CONTENTS


| | Page |
|---|---|
| INTRODUCTION | 1 |
| WATER SUPPLY | 2 |
| Precipitation | 2 |
| Stream Flow | 2 |
| DISTRIBUTION OF WATER | 4 |
| South Fork Pit River | 4 |
| Pine Creek near Alturas | 6 |
| Hot Springs Valley | 7 |
| CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS | 8 |

TABLES

1. PRECIPITATION AT ALTURAS AND JESS VALLEY, MODOC COUNTY, CALIFORNIA, 1951-1952

2. Daily Discharge in Cubic Feet Per Second - SOUTH FORK PIT RIVER ABOVE LIKELY, April 1 to September 30, 1952.

3. Daily Releases in Cubic Feet Per Second - WEST VALLEY RESERVOIR, April 1 to September 30, 1952.

4. Full Natural flow, SOUTH FORK PIT RIVER AT U.S.G.S. STATION ABOVE LIKELY, April 1 to September 30, 1952.

5. Daily Discharge in Cubic Feet Per Second,- FITZHUGH CREEK ABOVE CLARK RANCH - April 22 to September 15, 1952.

6. Daily Discharge in Cubic Feet Per Second - PINE CREEK NEAR ALTURAS BELOW POWER HOUSE, April 23 to September 25, 1952.

TABLE OF CONTENTS (Continued)

7. Daily Releases in Cubic Feet Per Second - BIG SAGE RESERVOIR, April 1 to September 30, 1952.

8. Daily Discharge in Cubic Feet Per Second - PIT RIVER NEAR CANBY, April 1 to September 30, 1952.

PLATES

1. HYDROGRAPHS OF SOUTH FORK PIT RIVER ABOVE LIKELY AND WEST VALLEY RESERVOIR RELEASES, 1952.

2. HYDROGRAPH OF PINE CREEK NEAR ALTURAS, 1952.

3. HYDROGRAPH OF PIT RIVER NEAR CANBY, 1952.

# INTRODUCTION

This is the eighteenth annual report on watermaster service in the South Fork Pit River Watermaster Service Area, and covers the period of water distribution in 1952 beginning on April 15 and terminating on September 30.

The service area was created by order of the Department of Public Works on December 31, 1934, to include with minor exceptions the water rights on South Fork Pit River. Subsequent orders have revised and changed the service area to include the water right of the South Fork Irrigation District, the water rights on Pine Creek and on Pit River in Hot Springs Valley, and to exclude certain rights to spring water on the South Fork Pit River.

Prior to inclusion in the service area, the various water rights involved had been determined as follows:

| | |
|---|---|
| South Fork Pit River | --- W. E. Armstrong v. Frank McArthur, No. 3273 Superior Court, Modoc County, entered October 30, 1934. |
| Pine Creek | --- Agreement Determining Rights to Water and to the Use Thereof from Pine Creek near Alturas, in Modoc County, California, dated November 7, 1934, and |
| Pit River in Hot Springs Valley | --- Agreement Determining Rights to Water and to the Use Thereof from Pit River and Rattlesnake Creek in Hot Springs Valley in Modoc County, California, dated November 22, 1933 |

By including Pine Creek and Pit River in Hot Springs Valley in the South Fork Pit River Watermaster Service Area, service areas previously created on those two streams on January 12, 1935, were abolished.

Watermaster service has been provided during each irrigation season since the service area was created, and annual reports have been prepared to show the work accomplished during each season.

The report is presented herein under four headings as follows: Introduction, Water Supply, Distribution of Water, and Changes in Ownership of Lands and Water Rights. Following the text are tables presenting precipitation data at Alturas and Jess Valley, Modoc County, California, and water supply records at

various locations within the area and plates showing hydrographs of South Fork Pit River above Likely and West Valley Reservoir Releases, Pine Creek near Alturas below Power House, and Pit River near Canby and Big Sage Reservoir Releases.

## WATER SUPPLY

### Precipitation

Data on precipitation, compiled from records of the California Cooperative Snow Surveys, for Alturas and Jess Valley are shown in Table 1. The records at these stations for the 1951-1952 season indicate a seasonal precipitation of 199 per cent and 145 per cent of normal, respectively.

The average water content of snow on the Eagle Peak, Blue Lake Ranch, Cedar Pass, and Adin Mountain Snow Courses, as published in the bulletin "Water Conditions in California as of April 1, 1952", was 30.0 inches. The average of the 63 year normals for the above courses is 16.2 inches.

### Stream Flow

South Fork of Pit River: A record of daily discharge in cubic feet per second of the South Fork Pit River above Likely from April 1 to September 30, 1952 is given in Table 2. These data were taken from records of the United States Geological Survey. The measuring station is below the mouth of West Valley Creek and about four miles upstream from Likely. Irrigation use in Jess Valley and storage in West Valley Reservoir occur above the station. The computed full natural flow of the South Fork Pit River at the U.S.G.S. Station above Likely from April 1 to September 30 is shown in Table 4.

A record of the mean daily releases from West Valley Reservoir during the period between April 1 and September 30, 1952 is given in Table 3. The reservoir filled in early spring and remained full until August 11. No use was made of the intake ditch from the South Fork Pit River during the 1952 irrigation season.

The data presented in Tables 2 and 3 are shown graphically on Plate 1. On the graph, the solid line represents the total discharge of the South Fork Pit River and the dotted line represents water released from storage in West Valley Reservoir.

Fitzhugh Creek: A record of the available water supply of Fitzhugh Creek above the Clark Ranch is given in Table 5. The daily discharge data were computed from current meter measurements and a continuous record of the water stage for the period from April 22 to September 15. This creek flows in a westerly direction entering the South Fork Valley at a point about 10 miles south of Alturas.

Pine Creek near Alturas: A record of the flow of Pine Creek near Alturas at the California-Oregon Power Company Power House is given in Table 6. An automatic water stage recorder is maintained at this point which is above all irrigation diversion. A hydrograph of the flow of Pine Creek near Alturas has been prepared from the data in Table 6 and is presented on Plate 2.

Pit River and Rattlesnake Creek in Hot Springs Valley and Big Sage Reservoir: The principal sources of water for irrigation in the Hot Springs Valley are the North Fork and the South Fork of Pit River, Big Sage Reservoir, and Rattlesnake Creek. The two forks of Pit River combine at the upper end of the valley and are joined a short distance below by Rattlesnake Creek. Rattlesnake Creek also serves to deliver water released from Big Sage Reservoir to meet the deficiencies in natural water supply.

Due to backwater conditions from river dams it has not been feasible to establish a measuring station below the new junction of the North Fork and South Fork of Pit River. Therefore, no record of the flow entering Hot Springs

Valley from these sources is presented in this report.

A record of water released from storage in Big Sage Reservoir is given in Table 7.

Below Rattlesnake Creek there are other small streams tributary to Pit River in Hot Springs Valley which contribute to the water supply during the early part of each season. In 1952 the flow from these sources continued until about August 1.

A stream flow measuring station is maintained by the U.S. Geological Survey on Pit River near Canby. This station is located at the outlet of Hot Springs Valley, and in the absence of other records, the flow at this station in indicative of water supply conditions in the Hot Springs Valley area. The record of this station also covers the measurement of return flow from irrigation in the area. Table 8 is a record of the flow of Pit River near Canby, as taken from records compiled by the U. S. Geological Survey.

A hydrograph prepared from the data in Table 8 is presented on Plate 3. Superimposed thereon is a hydrograph of the flow released from Big Sage Reservoir.

## DISTRIBUTION OF WATER

### South Fork of Pit River

The regulation of diversions of the natural flow from the South Fork of Pit River, including Fitzhugh Creek and other upstream tributaries, was made in accordance with Schedules 2 and 3 of the South Fork of Pit River Judgment and Decree No. 3273, which set forth the several rights and priorities. The natural flow of West Valley Creek, less the amounts of the allotments of the Van Loan West Valley Ranch, was permitted to pass through the West Valley Reservoir

without charge as regulated storage release.

The average percentages of allotments delivered from South Fork of Pit River and Fitzhugh Creek are presented in the following tabulations:

SOUTH FORK PIT RIVER

| Priority | Average percentages of allotments delivered | | | | | |
|---|---|---|---|---|---|---|
| | April | May | June | July | August | September |
| 1st | 100 | 100 | 100 | 100 | 100 | 100 |
| 2nd | 100 | 100 | 100 | 61 | 74 | 39 |

FITZHUGH CREEK

| Priority | Average percentages of allotments delivered | | | | | |
|---|---|---|---|---|---|---|
| | April | May | June | July | August | September |
| 1st | 100 | 100 | 100 | 100 | 100 | 100 |
| 2nd | 100 | 100 | 100 | 7 | 5 | 7 |

The regulation of West Valley Reservoir storage was performed in accordance with the by-laws adopted by the South Fork Irrigation District. Water released from the reservoir flows down the natural channels and comingles with the natural runoff, but is separated again by the watermaster at the points of diversion of each member of the district requesting reservoir water. The amount of water to which each person was entitled was determined by multiplying the amount of the total storage at the beginning of the season by the percentage factor of each owner listed below:

| Name | Per Cent |
|---|---|
| W. E. Armstrong (Now Arthur H. Burmister) | 2.18 |
| V. F. Christensen (Now H.C. Cattle Co.) | 20.46 |
| A. T. Coffman (Now Kenneth Flournoy) | 0.73 |
| J. D. Flournoy (Now Flournoy Bros.) | 3.98 |
| W. H. Flournoy (Now Kenneth D. and Bernardine Van Loan) | 2.51 |
| R. O. Gaustad (Now Jacob F. Derner) | 1.79 |
| R. J. Gaustad (Now Peter and John McGarva) | 1.95 |
| Jesse Hughes (Now Maston Ramsey) | 2.23 |
| Frank McArthur (now N.H. Monroe & Son ½; and Winema Farms ½) | 45.62 |
| Douglas McGarva (Now Flournoy Bros.) | 0.24 |

| Name | Per Cent |
|---|---|
| John and Peter McGarva | 2.63 |
| K. Nelson | 2.74 |
| Ray Stepp (Now Arthur H. Burmister) | 1.07 |
| A. L. Stinson (Now Flournoy Bros.) | 0.03 |
| D. E. Van Loan (Now Kenneth D. and Bernadine Van Loan and Flournoy Bros.) | 8.53 |
| Gary Williams | 2.51 |
| Roy Williams (Now Somer and Georgia Beeson) | 0.80 |
| | 100.00 |

There was no need for a supplemental water supply from West Valley Reservoir prior to the haying season. The releases began on August 11 for the irrigation of fall pasture, with all users diverting their share of stored water as each user finished his haying operations.

The mean daily releases for the 1952 season from West Valley Reservoir are given in Table 3.

Pine Creek near Alturas

Distribution of Pine Creek water was made in accordance with the allotments set forth in Schedule 2 of the Pine Creek Agreement.

Water was diverted into Dorris Reservoir until August 12. The available water supply on Pine Creek was more than sufficient to meet all demands. For records of flow see Table 6.

The average percentages of allotments delivered from Pine Creek are presented in the following tabulation:

PINE CREEK

| Priority | Average percentages of allotments delivered | | | | | |
|---|---|---|---|---|---|---|
| | April | May | June | July | August | September |
| 1st | 100 | 100 | 100 | 100 | 100 | 100 |
| 2nd | 78 | 100 | 100 | 47 | 3 | 0 |

Hot Springs Valley

Distribution of Pit River water was made in accordance with the allotments set forth in Schedule 2 and 3 of the Hot Springs Valley Agreement. The distribution of Big Sage reservoir water was made in accordance with the by-laws of the Hot Springs Valley Irrigation District. As the major part of the water from both these sources is used by the same parties through the same irrigation system and devices, the method of distribution is similar for both stored water and natural flow. The Godfrey Dam, the use of which is regulated by agreement among parties affected by its operation, was not used in 1952.

## CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS

The changes in ownership of lands and water rights which have occurred subsequent to filing "Statement for South Fork Pit River Watermaster Service Area, Counties of Modoc and Lassen, State of California, for 1952" and which shall be included in the 1953 statement for said service area, are listed in the following tabulation:

| Tract No. | Name of Water Right Owner Appearing in 1952 Statement | Name of Water Right Owner to Appear in 1953 Statement | Amount of water cfs. |
|---|---|---|---|
| 7-52 | Hackett, E. C. | Shields, Jack | 3.35 |
| 7-64 and 7-65 | Ball, Fred; Starkebaum, Everett and Turpin, Zelda | Foley, James; Foley, Vernon and Turpin, Zelda | 0.77 |
| 7-69 | Lybarger, John and Lybarger, Laura A. | Lybarger, Fred L. and Lybarger, Margie L. | 0.48 |
| 7-74 | Jones, Theron W. and Jones, Doris B. | Goularte, Frank | 15.92 |
| 7-75 and 7-77 | Ottoman, Ivan F. and Ottoman, Helen | Ottoman, Ivan F.; Ottoman, Helen and Tscherky, Paul A. | 2.65 |
| 7-76 | Holm, Estate of Henry | Freeman, J.M.; Freeman, Lottie; Freeman, M.H. and Freeman, Joanne | 1.38 |
| 7-78 | Groth, Joe | Callendine, Christine | 2.64 |
| 7-87 | Carpenter, Oscar A.; Carpenter, Francis and Auble, E. F. | Carpenter, Oscar A. and Carpenter, Francis | 1.57 |

TABLE I

PRECIPITATION AT ALTURAS AND JESS VALLEY
MODOC COUNTY, CALIFORNIA
1951 - 1952
In Inches
Alturas, California

| Month | Normal Precipitation | 1951 - 1952 Precipitation |
|---|---|---|
| October | 0.98 | 1.95 |
| November | 1.21 | 1.05 |
| December | 1.57 | 3.00 |
| January | 0.92 | 2.75 |
| February | 1.46 | 2.60 |
| March | 1.38 | 3.45 |
| April | 1.14 | 0.83 |
| May | 1.07 | 0.48 |
| June | 0.72 | 4.63 |
| July | 0.43 | 1.21 |
| August | 0.21 | 0.00 |
| September | 0.55 | 1.25 |
| Total | 11.64 | 23.20 |

JESS VALLEY, CALIFORNIA

| Month | Normal Precipitation | 1951 - 1952 Precipitation |
|---|---|---|
| October | 1.50 | 2.12 |
| November | 1.75 | 1.48 |
| December | 1.56 | 3.09 |
| January | 1.99 | 3.49 |
| February | 1.79 | 4.40 |
| March | 1.65 | 3.35 |
| April | 1.70 | 0.94 |
| May | 1.57 | 0.70 |
| June | 0.81 | 3.55 |
| July | 0.51 | 1.00 |
| August | 0.33 | 0.07 |
| September | 0.72 | 2.38 |
| Total | 15.88 | 23.02 |

TABLE 2

Daily Discharge in Cubic Feet Per Second
SOUTH FORK PIT RIVER ABOVE LIKELY
April 1 to September 30, 1952

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | 432 | 401 | 470 | 191 | 79 | 102 |
| 2 | 466 | 382 | 439 | 174 | 74 | 90 |
| 3 | 520 | 392 | 405 | 158 | 73 | 59 |
| 4 | 598 | 372 | 379 | 146 | 67 | 59 |
| 5 | 694 | 340 | 369 | 142 | 65 | 60 |
| 6 | 671 | 337 | 372 | 138 | 62 | 64 |
| 7 | 606 | 376 | 363 | 126 | 62 | 65 |
| 8 | 495 | 382 | 331 | 114 | 59 | 66 |
| 9 | 412 | 340 | 328 | 108 | 58 | 69 |
| 10 | 366 | 340 | 369 | 113 | 53 | 72 |
| 11 | 325 | 369 | 344 | 133 | 54 | 110 |
| 12 | 304 | 405 | 307 | 129 | 81 | 133 |
| 13 | 298 | 422 | 279 | 124 | 118 | 94 |
| 14 | 276 | 442 | 243 | 126 | 166 | 83 |
| 15 | 236 | 456 | 219 | 108 | 195 | 78 |
| 16 | 224 | 463 | 197 | 98 | 197 | 77 |
| 17 | 226 | 495 | 176 | 93 | 197 | 74 |
| 18 | 248 | 520 | 170 | 82 | 195 | 73 |
| 19 | 271 | 538 | 166 | 78 | 193 | 71 |
| 20 | 243 | 585 | 166 | 72 | 191 | 65 |
| 21 | 233 | 592 | 206 | 68 | 189 | 68 |
| 22 | 240 | 563 | 189 | 66 | 182 | 67 |
| 23 | 268 | 545 | 224 | 68 | 182 | 64 |
| 24 | 298 | 545 | 344 | 71 | 182 | 59 |
| 25 | 369 | 545 | 307 | 68 | 182 | 57 |
| 26 | 418 | 549 | 276 | 67 | 180 | 59 |
| 27 | 442 | 549 | 231 | 66 | 152 | 60 |
| 28 | 463 | 538 | 233 | 67 | 108 | 62 |
| 29 | 459 | 527 | 243 | 71 | 105 | 53 |
| 30 | 435 | 506 | 222 | 73 | 102 | 32 |
| 31 | --- | 491 | --- | 94 | 102 | --- |
| Total Sec. Ft. Days | 11,536 | 14,307 | 8,567 | 3,232 | 3,905 | 2,145 |
| Mean Sec. Feet | 385 | 462 | 286 | 104 | 126 | 71.5 |
| Total Ac. Feet | 22,880 | 28,380 | 16,990 | 6,410 | 7,750 | 4,250 |

Total for period - 86,660 acre-feet.

TABLE 3

Daily Releases in Cubic Feet Per Second
WEST VALLEY RESERVOIR
April 1 to September 30, 1952

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | | | | | | 81 |
| 2 | | | | | | 16.0 |
| 3 | | | | | | 16.0 |
| 44 | | | | | | 16.0 |
| 5 | | | | | NO | 16.0 |
| 6 | | | | | | 16.0 |
| 7 | | | | | | 16.0 |
| 8 | | | | | | 16.0 |
| 9 | | | | | | 16.0 |
| 10 | | | | | RELEASE | 16.0 |
| 11 | | | | | 16 | 16.0 |
| 12 | | | | | 45 | 16.0 |
| 13 | | | | | 111 | 16.0 |
| 14 | | | | | 142 | 16.0 |
| 15 | NO | NO | NO | NO | 142 | 16.0 |
| 16 | | | | | 142 | 16.0 |
| 17 | | | | | 142 | 16.0 |
| 18 | | | | | 142 | 16.0 |
| 19 | | | | | 142 | 16.0 |
| 20 | RELEASE | RELEASE | RELEASE | RELEASE | 142 | 16.0 |
| 21 | | | | | 142 | 16.0 |
| 22 | | | | | 142 | 16.0 |
| 23 | | | | | 142 | 16.0 |
| 24 | | | | | 142 | 16.0 |
| 25 | | | | | 142 | 16.0 |
| 26 | | | | | 142 | 16.0 |
| 27 | | | | | 142 | 16.0 |
| 28 | | | | | 81 | 16.0 |
| 29 | | | | | 81 | 16.0 |
| 30 | | | | | 81 | 0 |
| 31 | | | | | 81 | |
| Total Sec. Ft. Days | | | | | *2,484 | 529 |
| Mean Sec. Ft. | | | | | * 118 | 17.6 |
| Total Ac. Feet | | | | | *4,926 | 1,049 |

* 21 day period

Total for period - 5,975 acre-feet.

TABLE 4

Full Natural Flow
SOUTH FORK PIT RIVER AT U.S.G.S STATION ABOVE LIKELY
April 1 to September 30, 1952
in acre feet

| | April | May | June | July | August | Sept. | Total |
|---|---|---|---|---|---|---|---|
| Regulated discharge at U.S.G.S. Station | 22,880 | 28,380 | 16,990 | 6410 | 7750 | 4250 | 86,660 |
| Differential of West Valley Reservoir Storage | 93 | 186 | 262 | 284 | 5,244 | 1679 | 7,748 |
| Estimated Consumption in Jess Valley | 0 | 900 | 1,800 | 1,200 | 500 | 500 | 4,900 |
| Full Natural Flow | 22,787 | 29,094 | 18,528 | 7,326 | 3,006 | 3,071 | 83,812 |

TABLE 5

Daily Discharge in Cubic Feet Per Second
FITZHUGH CREEK ABOVE CLARK RANCH
April 22 to September 15, 1952

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | | 55 | 24 | 13.0 | 2.7 | 4.4 |
| 2 | | 55 | 24 | 10.0 | 2.7 | 4.4 |
| 3 | | 53 | 23 | 8.5 | 3.2 | 4.4 |
| 4 | | 54 | 21 | 8.1 | 1.6 | 4.4 |
| 5 | | 50 | 19.0 | 6.7 | 2.2 | 4.4 |
| 6 | | 50 | 21 | 6.7 | 3.2 | 4.4 |
| 7 | | 50 | 19.0 | 6.3 | 3.2 | 4.4 |
| 8 | | 50 | 24 | 5.6 | 3.2 | 4.4 |
| 9 | | 50 | 23 | 4.8 | 3.2 | 4.4 |
| 10 | NO | 50 | 21 | 3.2 | 5.2 | 4.4 |
| 11 | | 49 | 19.0 | 6.7 | 5.2 | 4.4 |
| 12 | | 49 | 17.0 | 6.7 | *5.2 | 4.4 |
| 13 | RECORD | 45 | 17.0 | 5.2 | 5.2 | 4.4 |
| 14 | | 46 | 18.0 | 3.2 | 5.2 | * 4.4 |
| 15 | | 46 | 18.0 | 2.9 | 4.8 | 4.4 |
| 16 | | 38 | 19.0 | 2.9 | 4.8 | |
| 17 | | 36 | 19.0 | 2.9 | 4.8 | |
| 18 | | 36 | 17.0 | 2.9 | 4.8 | |
| 19 | | 34 | 17.0 | 2.5 | 4.8 | |
| 20 | | 46 | 19.0 | 2.5 | 4.8 | |
| 21 | | 38 | 19.0 | 2.5 | 4.8 | |
| 22 | 71 | 36 | 19.0 | 2.5 | 4.4 | |
| 23 | 71 | 34 | 19.0 | 2.2 | 4.4 | NO |
| 24 | 69 | 34 | 19.0 | 2.2 | 4.4 | |
| 25 | 68 | 33 | 17.0 | 2.2 | 4.4 | RECORD |
| 26 | 67 | 32 | 16.0 | 2.2 | 4.4 | |
| 27 | 65 | 31 | 16.0 | 2.2 | 4.4 | |
| 28 | 61 | 29 | 16.0 | 2.2 | 4.4 | |
| 29 | 59 | 28 | 15.0 | 2.2 | 4.4 | |
| 30 | 59 | 27 | 15.0 | 2.7 | 4.4 | |
| 31 | | 26 | | 2.5 | 4.4 | |
| Total Sec. Ft. Days | **590 | 1290 | 570 | 137 | 129 | ***66 |
| Mean Sec. Ft. | ** 65.6 | 41.6 | 19.0 | 4.4 | 4.2 | *** 4.4 |
| Total Ac. Feet | **1170 | 2558 | 1130 | 272 | 256 | ***131 |

** 9 day period
*** 15 day period
* Gage Heights Estimated

Total for period - 5,517 acre-feet.

TABLE 6

Daily Discharge in Cubic Feet Per Second
PINE CREEK NEAR ALTURAS BELOW POWER HOUSE
April 23 to September 25, 1952

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | | 58 | 88 | 55 | 26 | 18.0 |
| 2 | | 58 | 80 | 54 | 26 | 18.0 |
| 3 | | 57 | 79 | 53 | 25 | 19.0 |
| 4 | | 57 | 80 | 52 | 24 | 19.0 |
| 5 | | 56 | 81 | 50 | 24 | 19.0 |
| 6 | | 55 | 82 | 49 | 23 | 19.0 |
| 7 | | 55 | 82 | 48 | 22 | 19.0 |
| 8 | | 55 | 82 | 47 | 21 | 19.0 |
| 9 | | 56 | 81 | 46 | 19.0 | 20 |
| 10 | | 57 | 81 | 46 | 15.0 | 20 |
| 11 | | 56 | 80 | 45 | 21 | 21 |
| 12 | | 58 | 76 | 44 | 25 | 24 |
| 13 | NO | 58 | 68 | 43 | 26 | 26 |
| 14 | | 59 | 62 | 41 | 26 | 26 |
| 15 | RECORD | 60 | 57 | 39 | 24 | 26 |
| 16 | | 61 | 55 | 38 | 23 | 19.0 |
| 17 | | 62 | 49 | 36 | 22 | 18.0 |
| 18 | | 67 | 52 | 34 | 21 | 18.0 |
| 19 | | 70 | 52 | 31 | 19.0 | 19.0 |
| 20 | | 77 | 52 | 31 | 19.0 | 19.0 |
| 21 | | 79 | 52 | 31 | 19.0 | 19.0 |
| 22 | | 81 | 57 | 30 | 19.0 | 19.0 |
| 23 | 41 | 86 | 73 | 30 | 19.0 | 19.0 |
| 24 | 44 | 86 | 79 | 30 | 19.0 | 18.0 |
| 25 | 45 | 86 | 84 | 30 | 19.0 | 18.0 |
| 26 | 48 | 86 | 78 | 29 | 19.0 | |
| 27 | 55 | 87 | 73 | 28 | 19.0 | NO |
| 28 | 59 | 89 | 68 | 28 | 19.0 | |
| 29 | 60 | 89 | 62 | 27 | 19.0 | RECORD |
| 30 | 60 | 89 | 57 | 26 | 19.0 | |
| 31 | | 89 | | 26 | 19.0 | |
| Total Sec. Ft. Days | *412 | 2139 | 2102 | 1197 | 660 | **499 |
| Mean Sec. Ft. | * 51.5 | 69.0 | 70.1 | 38.6 | 21.3 | ** 20.0 |
| Total Ac. Ft. | *817 | 4242 | 4168 | 2374 | 1309 | **990 |

* 8 day period
** 25 day period

Total for period - 13,900 acre-feet.

TABLE 7

Daily Releases in Cubic Feet Per Second
BIG SAGE RESERVOIR
April 1 to September 30, 1952

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | | | 28 | 22 | 6.0 | 8.0 |
| 2 | | | 28 | 22 | 6.0 | 8.0 |
| 3 | | | 28 | 22 | 6.0 | 8.0 |
| 4 | | | 28 | 22 | 6.0 | 8.0 |
| 5 | | | 28 | 22 | 6.0 | 8.0 |
| 6 | | | 28 | 22 | 6.0 | 8.0 |
| 7 | | | 28 | 22 | 6.0 | 8.0 |
| 8 | | | 28 | 22 | 6.0 | 8.0 |
| 9 | | | 28 | 6.0 | 6.0 | 8.0 |
| 10 | | | 28 | 6.0 | 6.0 | 29 |
| 11 | | | 28 | 6.0 | 6.0 | 29 |
| 12 | | | 28 | 6.0 | 6.0 | 29 |
| 13 | | | 28 | 6.0 | 6.0 | 29 |
| 14 | | | 28 | 6.0 | 6.0 | 29 |
| 15 | | | 28 | 6.0 | 6.0 | 29 |
| 16 | | | 28 | 6.0 | 6.0 | 29 |
| 17 | | | 28 | 6.0 | 6.0 | 29 |
| 18 | NO | NO | 28 | 6.0 | 6.0 | 29 |
| 19 | | | 28 | 6.0 | 37 | 29 |
| 20 | RELEASE | RELEASE | 22 | 6.0 | 37 | 29 |
| 21 | | | 22 | 6.0 | 37 | 29 |
| 22 | | | 22 | 6.0 | 53 | 29 |
| 23 | | | 22 | 6.0 | 53 | 29 |
| 24 | | 28 | 22 | 6.0 | 53 | 29 |
| 25 | | 28 | 22 | 6.0 | 53 | 29 |
| 26 | | 28 | 22 | 6.0 | 53 | 29 |
| 27 | | 28 | 22 | 6.0 | 53 | 29 |
| 28 | | 28 | 22 | 6.0 | 53 | 29 |
| 29 | | 28 | 22 | 6.0 | 8.0 | 29 |
| 30 | | 28 | 22 | 6.0 | 8.0 | 29 |
| 31 | | 28 | | 6.0 | 8.0 | |
| Total Sec. Ft. Days | | *224 | 774 | 314 | 614 | 681 |
| Mean Sec. Ft. | | * 28 | 25.8 | 10.13 | 19.8 | 22.7 |
| Total Ac. Ft. | | *444 | 1535 | 623 | 1218 | 1350 |

* 8 day period

Total for period = 5,170 acre-feet.

TABLE 8

Daily Discharge in Cubic Feet Per Second
PIT RIVER NEAR CANBY
April 1 to September 30, 1952

| Day | April | May | June | July | August | September |
|---|---|---|---|---|---|---|
| 1 | 4330 | 1730 | 760 | 772 | 76 | 121 |
| 2 | 4250 | 1620 | 748 | 640 | 176 | 121 |
| 3 | 4300 | 1540 | 760 | 486 | 186 | 107 |
| 4 | 4300 | 1440 | 628 | 394 | 133 | 104 |
| 5 | 5570 | 1340 | 634 | 342 | 133 | 104 |
| 6 | 5470 | 1240 | 628 | 307 | 113 | 90 |
| 7 | 5300 | 1180 | 604 | 275 | 101 | 78 |
| 8 | 4800 | 1160 | 541 | 220 | 83 | 76 |
| 9 | 4210 | 1110 | 502 | 220 | 76 | 73 |
| 10 | 3640 | 1080 | 563 | 201 | 70 | 66 |
| 11 | 3100 | 1050 | 610 | 110 | 68 | 58 |
| 12 | 2730 | 1020 | 563 | 86 | 68 | 104 |
| 13 | 2460 | 970 | 486 | 280 | 66 | 201 |
| 14 | 2310 | 924 | 448 | 524 | 66 | 289 |
| 15 | 2120 | 898 | 394 | 362 | 58 | 303 |
| 16 | 1950 | 846 | 332 | 262 | 37 | 224 |
| 17 | 1780 | 790 | 266 | 197 | 16.0 | 162 |
| 18 | 1660 | 820 | 249 | 183 | 16.0 | 143 |
| 19 | 1590 | 826 | 224 | 146 | 14.0 | 159 |
| 20 | 1570 | 820 | 186 | 152 | 8.3 | 140 |
| 21 | 1570 | 802 | 179 | 149 | 2.0 | 127 |
| 22 | 1510 | 802 | 162 | 133 | 1.2 | 86 |
| 23 | 1450 | 820 | 186 | 133 | 6.2 | 58 |
| 24 | 1410 | 833 | 357 | 127 | 12.0 | 42 |
| 25 | 1490 | 833 | 535 | 83 | 27 | 23 |
| 26 | 1550 | 820 | 688 | 86 | 159 | 17.0 |
| 27 | 1590 | 802 | 796 | 73 | 143 | 22 |
| 28 | 1690 | 796 | 852 | 96 | 216 | 205 |
| 29 | 1740 | 778 | 833 | 104 | 213 | 155 |
| 30 | 1730 | 766 | 833 | 104 | 169 | 110 |
| 31 | --- | 760 | --- | 88 | 136 | --- |
| Total Sec. Ft. Days | 83,210 | 31,216 | 15,547 | 7,335 | 2,648.7 | 3,568 |
| Mean Sec. Ft. | 2,774 | 1,007 | 518 | 237 | 85.4 | 119 |
| Total Ac. Feet | 165,000 | 61,920 | 30,840 | 14,550 | 5,250 | 7,080 |

Total for period = 284,640 acre-feet.

PLATE 1

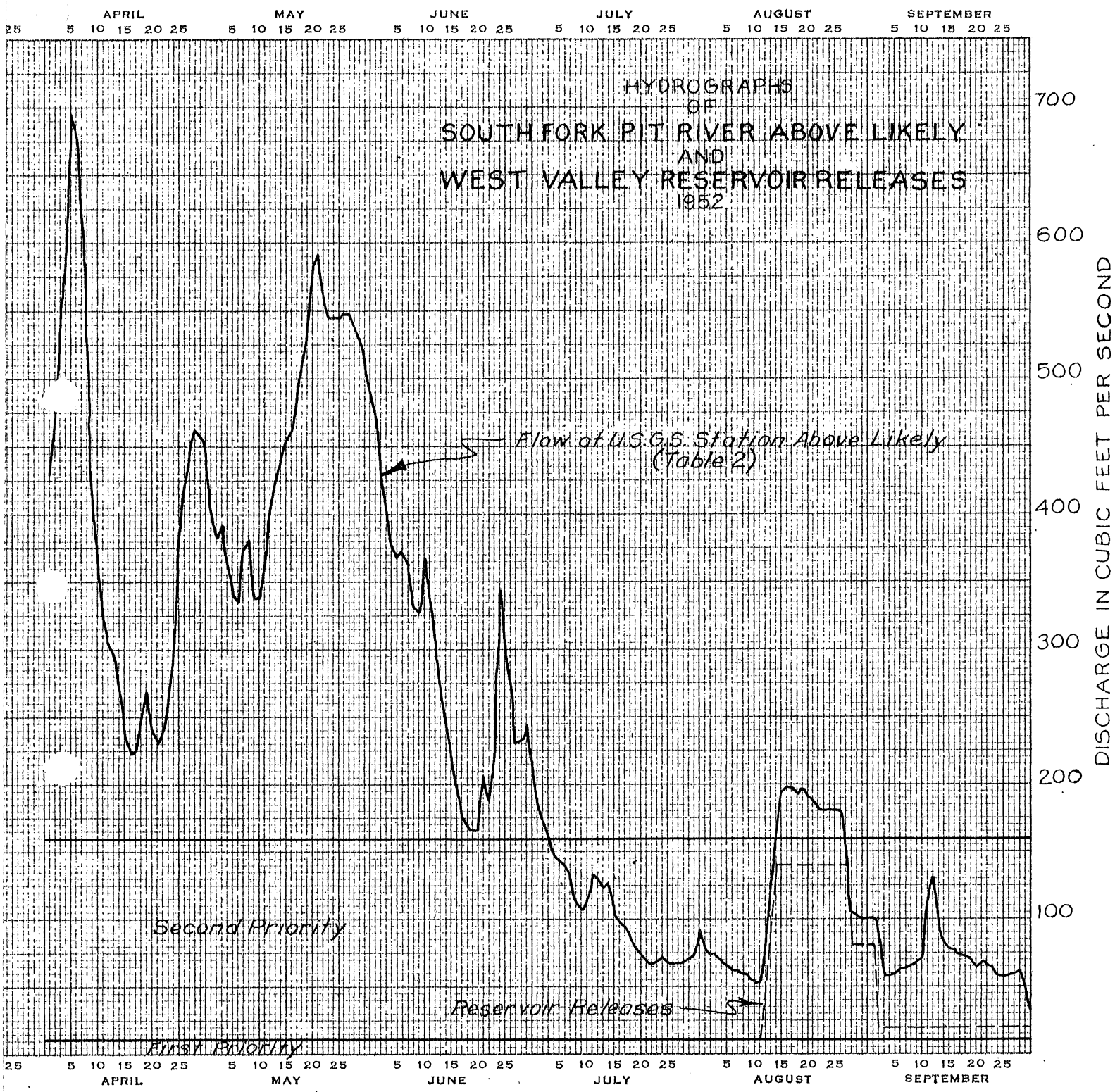

HYDROGRAPHS
OF
SOUTH FORK PIT RIVER ABOVE LIKELY
AND
WEST VALLEY RESERVOIR RELEASES
1952
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25
700
600
500
400
300
200
100
DISCHARGE IN CUBIC FEET PER SECOND
Flow at U.S.G.S. Station Above Likely
(Table 2)
Second Priority
Reservoir Releases
First Priority

PLATE II

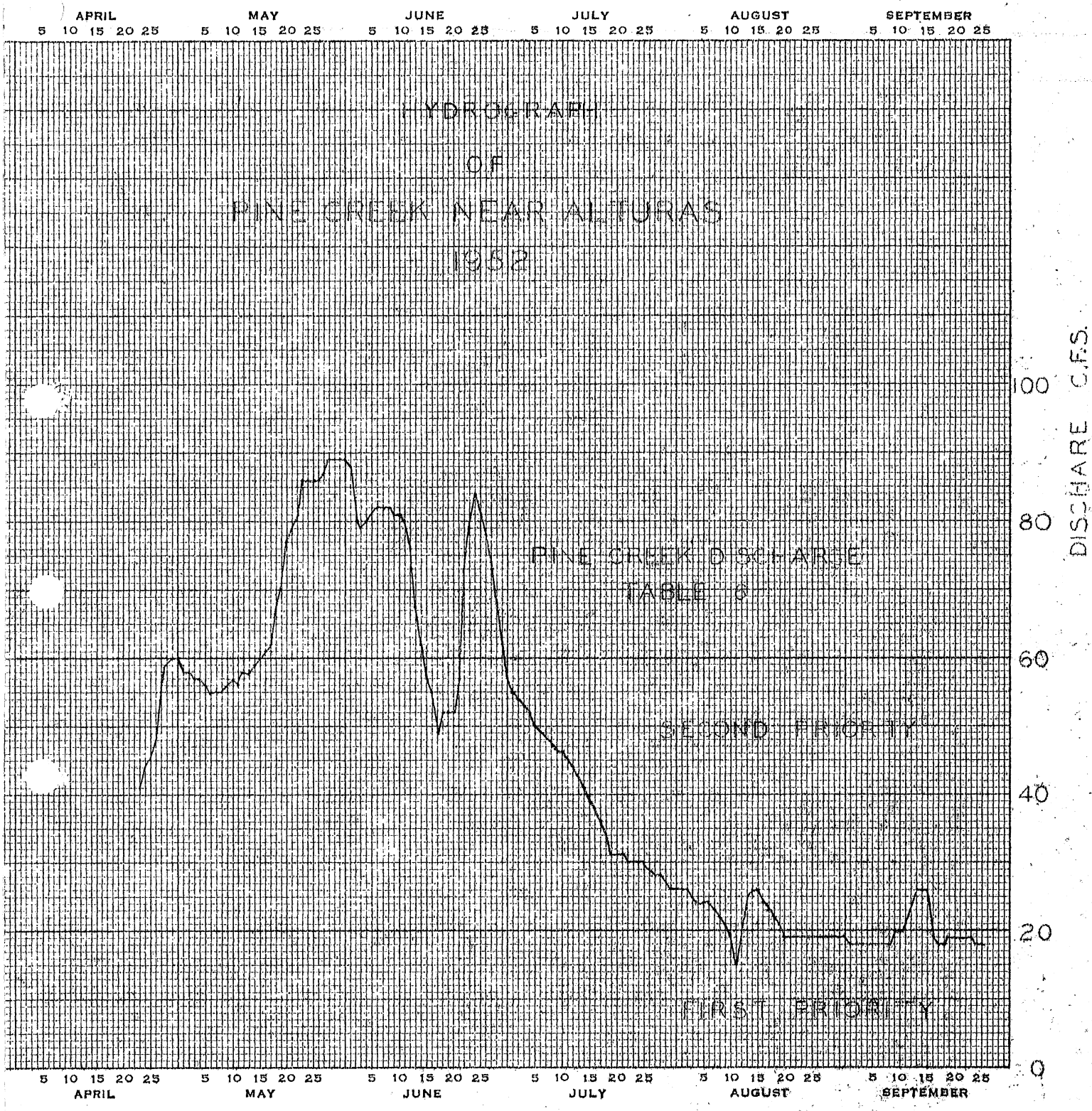
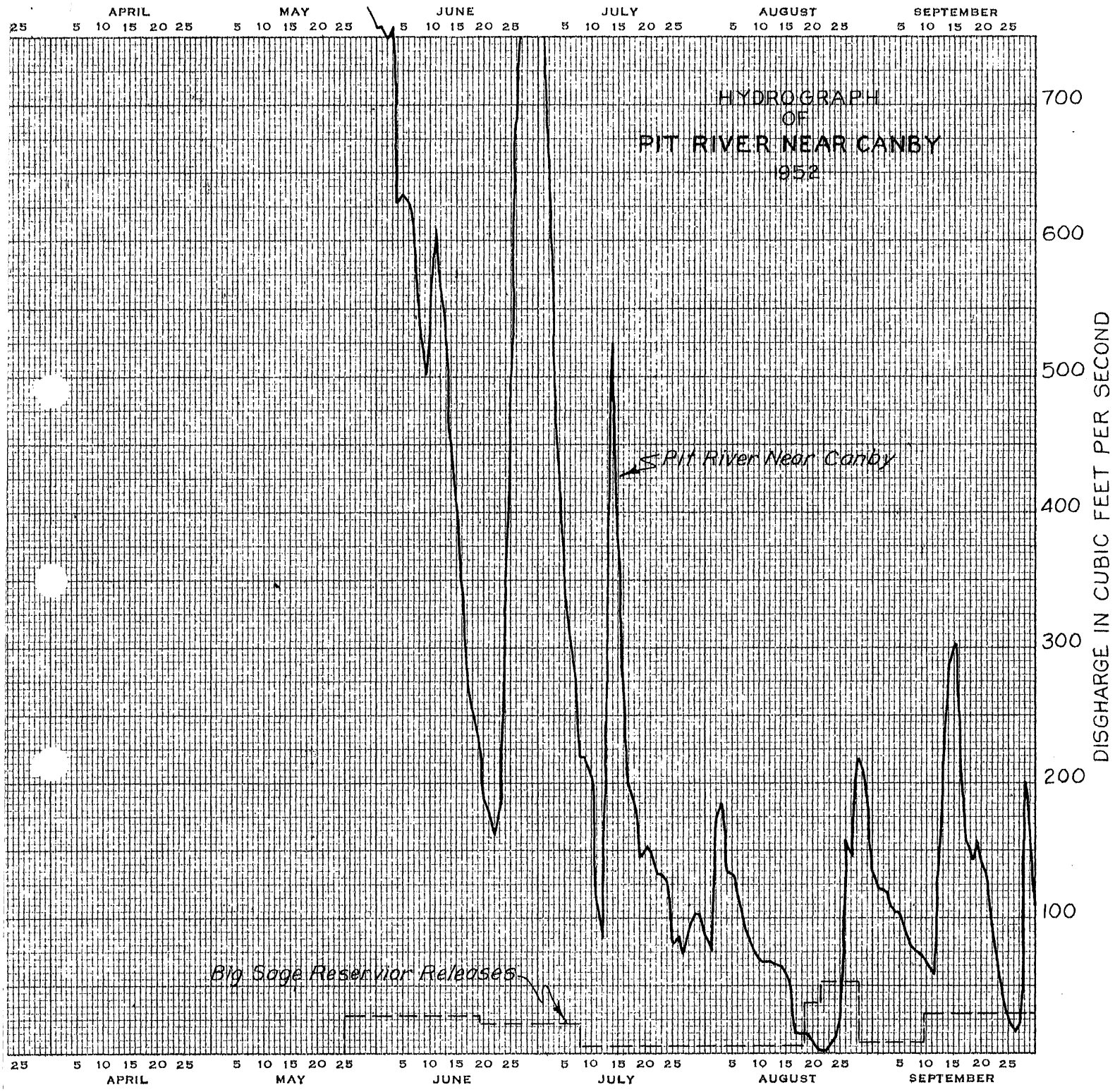

APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25
HYDROGRAPH
OF
PINE CREEK NEAR ALTURAS
1952
PINE CREEK DISCHARGE
TABLE 6
SECOND PRIORITY
FIRST PRIORITY
100
80
60
40
20
0
DISCHARGE C.F.S.

PLATE 3


HYDROGRAPH
OF
PIT RIVER NEAR CANBY
1952
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
25 5 10 15 20 25
700
600
500
400
300
200
100
DISCHARGE IN CUBIC FEET PER SECOND
Pit River Near Canby
Big Sage Reservior Releases