

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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R E P O R T O N  
W A T E R M A S T E R S E R V I C E

IN

BURNEY CREEK WATERMASTER SERVICE AREA  
SHASTA COUNTY, CALIFORNIA

1948 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 Burney Creek Watermaster Service Area, Shasta County, California, 1948 Season".

/s/ L. C. JOPSON  
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 Burney Creek Watermaster Service Area, Shasta County, California, 1948 Season".

/s/ GORDON ZANDER  
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 Burney Creek Watermaster Service Area, Shasta County, California, 1948 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 24th day of March 1950.

DEPARTMENT OF PUBLIC WORKS

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

SEAL

ORGANIZATION

C. H. Purcell . . . . . Director of Public Works  
A. D. Edmonston . . . . . State Engineer  
P. H. Van Etten . . . . . Assistant State Engineer  
Gordon Zander . . ; Principal Hydraulic Engineer

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This report was prepared under the direction of

L. C. JOPSON  
Supervising Hydraulic Engineer

By

G. M. Vickroy  
Assistant Hydraulic Engineer

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## INTRODUCTION

The Burney Creek Watermaster Service Area was created by order of the Division of Water Resources under date of September 11, 1929. As created, the service area embraced the water rights on Burney Creek as established by a decree entered January 30, 1926 by the Superior Court, Shasta County, in the case of Ednah M. Black vs. Martha B. Grinnell, et al., No. 5111. By order of the Division of Water Resources dated March 28, 1942, the boundaries of the said watermaster service area were changed by excluding the lands and water rights of Ella P. Braden, John Snook and those portions of the NW $\frac{1}{4}$  of Section 20, T. 35 N., R. 3 E., M.D.B. & N., which are now within the town of Burney, California.

Watermaster service in the Burney Creek Watermaster Service Area was rendered throughout the 1948 season in accordance with Sections 4150 to 4161, inclusive, of the Water Code. This service covered the period from May 5 to September 30, 1948. G. M. Vickroy administered the distribution of water under the direction of L. C. Jopson, Supervising Watermaster.

## WATER SUPPLY

### Precipitation

The monthly and seasonal amounts of precipitation covering the period 1940 to 1948 and the monthly and seasonal means for the 28-year period from 1921 to 1948 are presented in Table 1. These data, collected at the Hat Creek Power House No. 1., indicate that the precipitation for the seasonal year 1947 - 1948 was 23.75 inches or about 128 per cent of the mean for the 28-year period. During the 1947-1948 season year, 58 per cent of the total

precipitation occurred during the period March 1 to June 30. The precipitation which occurred during these same six months over the 28 year period of record was 24 per cent of the yearly mean.

#### Stream Flow

The record of daily discharge of Burney Creek for the period from June 1 to September 30, 1948 is given in Table 2. These discharge figures were obtained by the summation of the amounts diverted by the various users.

A hydrograph prepared from the data contained in Table 2 is shown on Plate 1. The gross demand, which includes irrigation and minimum flow allotments, is also indicated on the drawing. From Plate 1 it is seen that there was a surplus of water available prior to July 18 and a deficiency in the supply subsequent to that date. The drawing also shows that the stream flow decreased rapidly until July 22 and then remained nearly constant at about 18 cubic feet per second until the end of the watermaster season.

The records of runoff for Burney Creek do not cover a sufficient period of time for the computation of satisfactory normals. From a comparison of discharges for the period from 1931 to the present, it appears that the stream flow for the 1948 irrigation season was about 130 per cent of the normal for the period of record.

#### DISTRIBUTION OF WATER

The distribution of water during the 1948 watermaster service season was made in accordance with both the provisions of the decree in the case of Ednah M. Black vs. Martha B. Grinnell, et al., and the sections of

the Water Code heretofore mentioned. All diversion facilities on the Burney Creek stream system were in operation throughout the period of water-master service, except the Cayton ditch. The water, which ordinarily would have been diverted to the Cayton ditch, was delivered to the Elling ranch through the Elling lower ditches.

The available water supply was sufficient to meet all irrigation requirements on a continuous flow basis until June 1. Subsequent thereto and until the end of the season the water was distributed on a continuous flow basis at the request of the various parties within the area.

OWNERSHIP OF LANDS AND WATER RIGHTS

Changes in Ownership

The following change in ownership of land and water right was made during the 1948 season and shall be included in the statement for 1949:

<u>Tract No.</u>	<u>Name of Water Right Owner Appearing in 1948 Statement</u>	<u>Name of Water Right Owner to appear in 1949 Statement</u>	<u>Amount of Water c.f.s</u>
1-1	Black, Ednah M.	Taylor, John F. and Taylor Helen	5.85

TABLE 1

## PRECIPITATION AT HAT CREEK, SHASTA COUNTY, CALIFORNIA

Elevation 3,110 Feet - 1940 - 48

Monthly, Seasonal and Average Amounts in Inches

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Seasonal
1940 - 41	3.20	2.57	3.63	3.53	5.92	1.13	2.15	2.27	0.47	0.38	0.43	0.27	29.95
1941 - 42	0.74	1.51	5.82	3.81	5.86	1.40	3.82	1.61	0.13	0.01	0.41	0.37	25.49
1942 - 43	0.67	11.34	3.85	6.74	3.89	3.04	2.22	0.36	2.66	0.14	0.10	0.00	34.51
1943 - 44	1.00	0.92	1.07	2.31	3.07	1.35	2.30	0.45	1.37	0.15	0.13	0.05	14.17
1944 - 45	0.69	4.22	1.86	0.91	3.79	1.90	0.23	1.90	0.93	0.00	0.07	0.03	16.53
1945 - 46	2.68	2.20	4.12	1.94	2.99	1.37	0.49	0.70	0.14	0.60	0.00	0.36	17.59
1946 - 47	2.05	14.71	8.50*	0.72	2.19	1.40	1.31	1.23	1.12	0.00	0.27	0.75	34.25
1947 - 48	3.03	1.04	0.67	2.33	0.62	4.13	4.47	2.24	2.81	0.34	1.21	0.86	23.75
1921 - 48													
Total	35.98	70.38	74.67	65.36	81.65	51.09	44.48	33.61	23.00	4.27	4.56	11.92	500.97
1921-48													
27-Yr. Mean:	1.33	2.61	2.77	2.42	3.02	1.89	1.65	1.24	0.85	0.16	0.17	0.44	18.55

\* Estimated

TABLE 2

DAILY DISCHARGE IN CUBIC FEET PER SECOND  
BURNEY CREEK ABOVE DIVERSIONS  
JULY 12 TO SEPTEMBER 30, 1948

Day	July	August	September
1		20	19
2		20	19
3	S	20	19
4	U	20	19
5	L	20	19
6	P	20	19
7	S	20	19
8	U	20	19
9	R	19	19
10	F	19	19
11	L	19	19
12	30	19	19
13	29	19	18
14	29	19	18
15	28	19	18
16	27	19	18
17	27	19	18
18	26	19	18
19	25	19	18
20	24	19	18
21	22	19	18
22	21	19	18
23	21	19	18
24	21	19	18
25	21	19	18
26	21	19	18
27	20	19	18
28	20	19	18
29	20	19	18
30	20	19	18
31	20	19	
Total	47.2	597	552
Mean	23.6	19.3	18.4
Runoff			
in			
Ac.Ft.	940	1,120	1.100

Total Discharge for 80 day period 3,160 acre-feet.

# PLATE 1

APRIL                      MAY                      JUNE                      JULY                      AUGUST                      SEPTEMBER  
5 10 15 20 25      5 10 15 20 25      5 10 15 20 25      5 10 15 20 25      5 10 15 20 25      5 10 15 20 25

## HYDROGRAPH OF BURNEY CREEK 1948

CUBIC FEET PER SECOND

25  
30  
25  
20  
15  
10  
5

DEMAND ON SUPPLY

TOTAL WATER SUPPLY

5 10 15 20 25      5 10 15 20 25      5 10 15 20 25      5 10 15 20 25      5 10 15 20 25      5 10 15 20 25  
APRIL                      MAY                      JUNE                      JULY                      AUGUST                      SEPTEMBER

