STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

PUBLICATIONS OF THE
DIVISION OF WATER RESOURCES
EDWARD HYATT, State Engineer

REPORT ON

WATER MASTER SERVICE

ON

NEW PINE CREEK

MODOC COUNTY, CALIFORNIA

FOR THE SEASON of 1933

By

J. W. McFarland, Deputy Water Master

Sacramento, California
March 1934

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Hydrographs of New Pine Creek Showing Water Supply Above all Diversions 1931-1933.

LETTER OF TRANSMITTAL

March 21, 1934.

Mr. Harold Conkling,
Deputy State Engineer,
Sacramento, California.

Dear Sir: Attention: Mr. Gordon Zander,
Supervising Hydraulic Engineer

There is submitted herewith a report covering the water master service on New Pine Creek in Modoc County, California, for the 1933 season.

The report describes the methods and practices followed in the distribution of the waters of New Pine Creek under the provisions of the decree in the case of Edward E. Keller, et al., v. Anna Jensen, et al., and presents the results obtained under this distribution.

Respectfully submitted,

Deputy Water Master.

ORGANIZATION

Earl Lee Kelly	Director of Public Works
Edward Hyatt	State Engineer
Harold Conkling	Deputy State Engineer

GORDON ZANDER
Supervising Hydraulic Engineer

T. Russell Simpson	Senior Hydraulic Engineer
L. C. Jopson	Assistant Hydraulic Engineer
J. E. McPartland	Deputy Water Master

GENERAL DESCRIPTION OF WORK

Water master service on New Pine Creek, during the 1933 season, was conducted in accordance with the decree in the case of Edward Keller, et al. vs. Anna Jensen, et al. The decree on the above case was entered on June 14, 1932.

The field work was commenced on April 8th by I. C. Jepson, Assistant Hydraulic Engineer and terminated on September 20th, 1933. Mr. J. V. McPartland assisted as water master during portions of the season.

The water supply of New Pine Creek, prior to May 27th was insufficient to meet the requirements, but the shortage was not serious due to the hail and snow storms which occurred prior to that date. Subsequent to May 27th sufficient water was available for all requirements up to July 1st. After haying the water supply was short of the demand but there was adequate water for the first priorities on all the ditches until August 20th. Thereafter the California Ditch experienced a varying shortage until the ditch was closed on September 11th due to the mill starting operation.

The records of run-off on New Pine Creek are of insufficient length to establish a normal on the stream so no comparison of the 1933 run-off with normal can be made. The precipitation records of the Lakeview station indicate a deficiency of rainfall of about 40 per cent for the 1933 season, compared to a deficiency of rainfall of about 15 per cent for the 1932 season.

The run-off of New Pine Creek in 1933 has been plotted as a hydrograph on the plate at the end of this report. The run-off in 1932 and the decreed allotments of water have also been plotted on the same plate.

DISCUSSION OF RESULTS FOR THE SEASON

In Table 1 is presented a monthly and seasonal record of the precipitation at Lakeview, Oregon. The mean precipitation for the station from 1884 to 1933 is shown as well as a tabulation of the precipitation in 1932-33 in per cent of the total mean precipitation. The seasonal precipitation in 1932-33 was 69.6 per cent of the total mean.

Table 2 is a record of the flow in cubic feet per second of New Pine Creek at the register station below the Schroeder Ranch.

Table 3 is a tabulation of the estimated flow, in cubic feet per second, of New Pine Creek above all diversions. This table is a summation of the daily discharge in Table 2 and the estimated combined diversions by the Schroeder Ranch.

Table 4 is a tabulation of the per cent of allotments delivered to each priority class during the periods indicated. The per cent of total allotments delivered and surplus over deliveries are also shown in the table. During the period of high flow in May and June, 200 per cent of the allotments was diverted in order to facilitate the irrigation on the ranches.

In Table 4 the special uses on the Cook and the Butler Ranches were not considered. According to the decree Walter Butler is allowed 0.40 cubic foot per second for six days in each of the two periods from April 1st to May 20th and May 20th to June 20th. C. S. Cook is allowed 0.75 cubic foot per second under the same conditions. Both users customarily divert at the same time and rotate in the use of the water but owing to the excess water during their second period of use in 1933 they were permitted to divert as much water as they found convenient.

Table 6 is a tabulation of crop yields on typical ranches irrigated from New Pine Creek. The data from which this table is compiled was furnished by the various water users.

During the period of low flow some difficulty was experienced with the division of the water between Reid and Green in the Green Lower Ditch. Due to the nature of the headgate structure in the Reid lateral and the presence of a high spot in the Green Ditch below the Reid takeout, the headgate must be operated as a submerged orifice. At times trash would collect against this headgate cutting off the flow to the Reid Ranch.

The mill commenced operation on June 6th and ran to about July 19th and commenced again on September 11th. After September 11th there was insufficient water to operate the mill in a satisfactory manner on a direct flow basis and they had to resort to storage of the night flow of the stream and finally to supplementary power to keep running.

Until about September 11th there was sufficient water to supply the entire length of the California Ditch with stock and garden water during the high flow periods of the day.

A rotation schedule was used to divide the irrigation water in the California Ditch during the latter part of June and during July and August. The schedules used permitted stock water use by all parties continuously. The excess flow in the ditch over the stock water requirements was rotated on a five day period for the lower users with the Naylor and Perkins Ranches rotating with each other.

RECOMMENDATIONS

It is recommended that the following structures be installed to facilitate the regulation and distribution of the waters of the creek:

Headgate and Parshall Flume in the Green Upper Ditch.

Headgate and Parshall Flume in the Green Lower Ditch.

Headgate and Parshall Flume in the Bohnett-Meryford Ditch.

A number of division and outlet structures are also needed on the California Ditch.

FINANCIAL STATEMENT

Under the provisions of Section 37f of the Water Commission Act all funds collected in a water master district are kept in seperate amounts and placed in a fund to the credit of t at district.

There is submitted on the following page a statement of the funds collected and expenditures during the period from March 1, 1933 to January 1, 1934, for the New Pine Creek Water Master District.

FINANCIAL STATEMENT

NEW PINE CREEK WATER DISTRICT FUND

January 1, 1934

RECEIPTS

Contributed by State in 1933	$350.00	
Contributed by Taxpayers (Mar. 1/33 to Jan. 1/34). . .	147.99	$497.99

DISBURSEMENTS
(Mar. 1/33 to Jan. 1/34)

Water Master Compensation	269.47	
Water Master Travel Expense	112.80	
Cost of Publication of Financial Statement	24.00	405.27

BALANCE 92.72

TABLES

TABLE I

PRECIPITATION DATA
AVERAGE AT LAKEVIEW, OREGON

SEASONAL	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEASONAL
1927-28	0.61	0.98	4.04	0.71	1.14	1.06	2.22	0.95	0.21	0.34	T	0.10	12.36
1928-29	.11	.39	1.21	.64	1.00	.50	.69	2.04	.02	1.31	0.00	.02	7.93
1929-30	.16	.45	T	3.22	1.69	1.18	1.05	.90	1.11	.21	T	.51	10.48
1930-31	.85	.29	1.02	.07	.38	1.10	1.39	.22	.19	.89	T	T	6.40
1931-32	.26	1.32	.96	1.60	1.26	.39	1.89	2.33	1.17	.98	T	.02	12.18
1932-33	0.00	.44	0.39	1.01	1.53	.70	1.04	.96	1.36	.59	.27	T	8.29
Mean 1884 - 1933	.66	.85	1.69	1.73	1.89	1.76	1.42	1.12	1.25	.93	.34	.26	13.90
1932 - 1933 in per cent of: total mean.	0	3.2	2.8	7.3	11.0	5.0	7.5	6.9	9.8	4.2	1.9	0	59.6

TABLE 4

AVERAGE WATER DELIVERIES ON BIG PINE CREEK
COMPARED WITH ALLOTMENTS - 1933 SEASON.

Period	Per Cent of Allotment Delivered					Average Flow Above Diversions c.f.s.	Surplus
	1st Priority	2nd Priority	3rd Priority	4th Priority	Total		
4/8 - 4/17	23				23	6.09	0
4/18 - 4/27	39				39	9.61	0
4/28 - 5/7	61				61	13.15	0
5/8 - 5/17	42				42	9.23	0
5/18 - 5/27	79				79	17.62	0
5/28 - 6/6	200				200	45.70	11.54
6/7 - 6/16	200				200	47.80	3.44
6/17 - 6/26	100				100	24.46	2.22
6/27 - 6/30	89				89	19.42	0
7/1 - 7/10	100	100	100	38	77	16.06	0
7/11 - 7/20	100	100	70	0	49	10.82	0
7/21 - 7/30	100	100	16	0	35	7.67	0
7/31 - 8/9	100	61	0	0	29	6.36	0
8/10 - 8/19	100	46	0	0	21	4.67	0
8/20 - 8/29	100	11	0	0	16	3.38	0
8/30 - 9/8	97	0	0	0	15	2.84	0
9/9 - 9/18	79	0	0	0	4	2.30	0
9/19 - 9/26	31	0	0	0	6	2.35	0

BIG PINE:

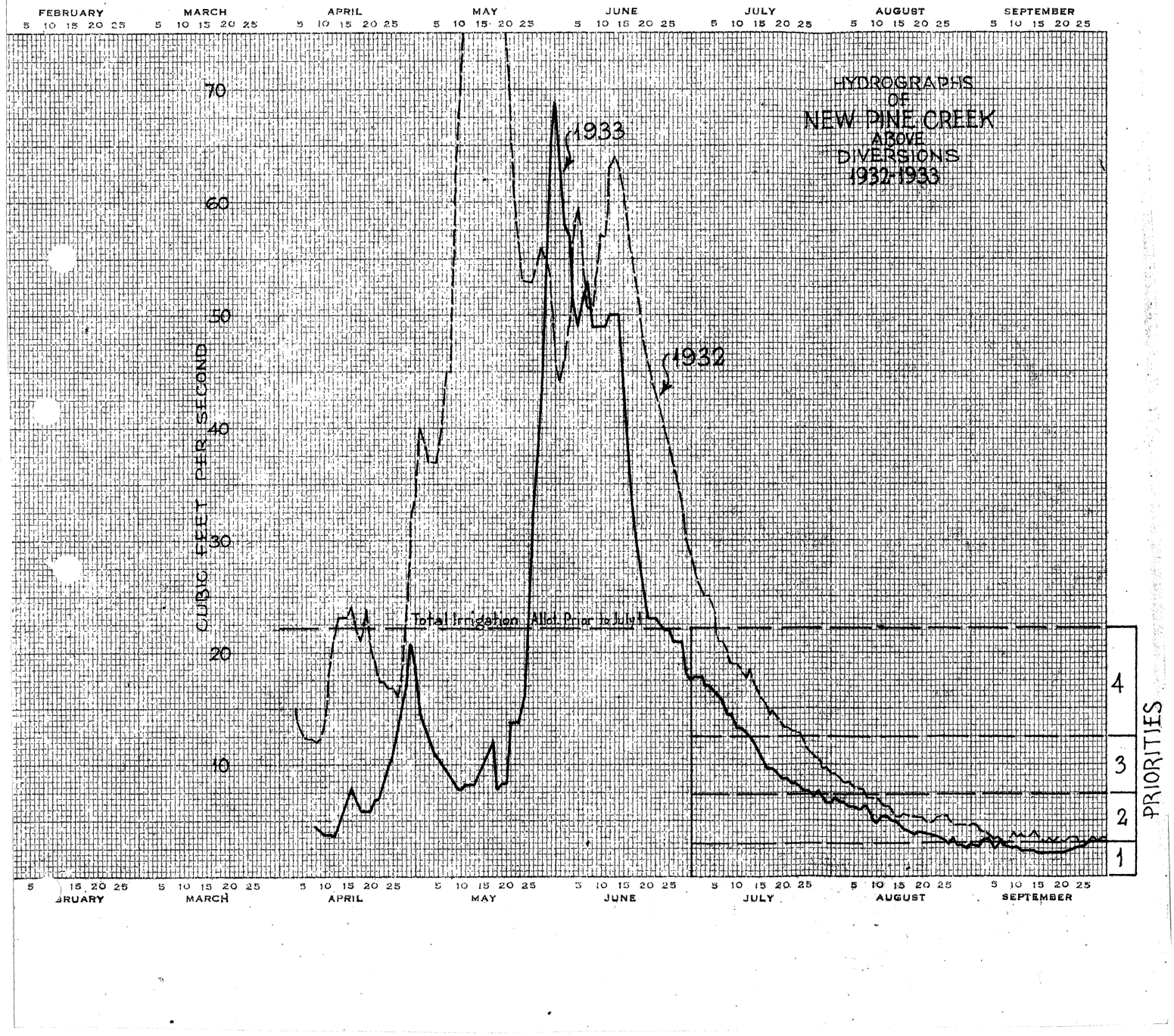
April 8th to June 30th - 1st 22.18 c.f.s.

July 1st to September 26th - 1st 2.02 c.f.s.

2nd 3.81 c.f.s.

3rd 3.84 c.f.s.

4th 1.81 c.f.s.


HYDROGRAPHS
OF
NEW PINE CREEK
ABOVE
DIVERSIONS
1932-1933
1933
1932
Total Irrigation Allot. Prior to July 1
CUBIC FEET PER SECOND
70
60
50
40
30
20
10
4
3
2
1
PRIORITIES
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25