STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

PUBLICATIONS OF THE

DIVISION OF WATER RESOURCES

EDWARD HYATT, STATE ENGINEER

REPORT ON

WATER MASTER SERVICE

ON

DAVIS CREEK

MODOC COUNTY, CALIFORNIA

FOR THE SEASON OF 1933

By

J. W. McPartland, Deputy Water Master

Sacramento, California

April 3, 1934

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2. Continuous Records of Daily Discharge in Cubic Feet per Second of Davis Creek below Forks for the Period April 7th to September 26th, 1933.
3. Estimated Daily Discharge in Cubic Feet per Second of Davis Creek above all Diversions for the Period April 7th to September 26th, 1933.
4. Average Water Deliveries on Davis Creek Compared with Allotments - 1933 Season.
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Hydrographs of Davis Creek showing Water Supply above all Diversions in 1932 and 1933.

STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

VISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

EDWARD HYATT, STATE ENGINEER
CHIEF OF DIVISION

December 1, 1933

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention: Mr. Gordon Zander,
Supervising Hydraulic Engineer.

Dear Sir:

A report covering the water distribution work of the water master on Davis Creek, Modoc County, California, during the period April 7th to September 27th, 1933, is transmitted herewith.

The methods and practices followed in the distribution of the waters of Davis Creek in accordance with the decree in the case of the Lake Shore Cattle Company, et al., vs. J. D. Mulkey, et al., dated June 30, 1932, are described. The results obtained under the distribution are also discussed.

Respectfully submitted,

J. McCausland
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. Russel Simpson	Senior Hydraulic Engineer
Leslie C. Jopson	Assistant Hydraulic Engineer
J. W. McPartland	Deputy Water Master

GENERAL DESCRIPTION OF WORK

Water master service was conducted on Davis Creek during the 1933 season in accordance with the provisions of the decree in the case of Lake Shore Cattle Company, et al., vs. J. D. Mulkey, et al.

The field work was commenced on April 7th by L. C. Jopson, Assistant Hydraulic Engineer and terminated on September 27, 1933. Mr. J. W. Mc Partland assisted as Water Master during portions of the season.

The water supply on Davis Creek was deficient in 1933 and there was at no time sufficient water to fill the allotments of all priority classes. At its highest stage during the 1933 season, which occurred the latter part of May, the creek produced only enough water, over a ten day period, to fill 69 per cent of the total allotments. During the last ten days in June there was only sufficient water to fill about 17 per cent of the total allotments.

The dry weather flow in Davis Creek in 1933 was inadequate to fully supply the domestic allotments but was sufficient to permit continuous delivery to all the water users.

DISCUSSION OF RESULTS FOR THE SEASON

The monthly and seasonal precipitation at Lakeview, Oregon, for the period of water master service on Davis Creek is tabulated in Table 1. The mean precipitation for the station from 1884 to 1933 is also 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 59.6 per cent of the total mean.

Table 2 is a tabultation in cubic feet per second of Davis Creek at the register station below the Forks.

Table 3 is a tabulation in cubic feet per second of Davis Creek above all diversions. This table is a summation of the daily discharge given in Table 2 and of the estimated daily diversions of the Roberts and Mulkey-Heryford Ditches which divert water above the register station. Plate 1 graphically illustrates the water supply as given in this table. The water supply in 1932 is also included on the plate for a comparison of the water supply in the two years. Allotments of water for domestic and irrigation purposes are indicated by the horizontal lines.

Table 4 is a tabulation of the per cent of allotments delivered in each of the priority classes during the periods indicated. Total deliveries, per cent of total allotments delivered, total water supply and per cent of channel accretion or loss are also included in the table.

Table 5 is a tabulation of the estimated crop yields on typical lands irrigated from Davis Creek in 1933.

A number of division structures and headgates were installed in 1933. A list of the structures and places of installation is given below:

9 inch Parshall Measuring Flume -	Briles West Ditch
16 inch Headgate	Briles West Ditch
22 inch Headgate	Briles East Ditch
16 inch Headgate	Beeson Mill Ditch
8 inch Headgate	Beeson Upper Ramer Ditch
8 inch Headgate	Beeson Lower Ramer Ditch

Division Structure - North Branch-South Branch of the North Branch

Division Structure - South Branch-North Branch, Brown-Renner Ditch

Division Structure - Brown-Renner Ditch, between R.T. Renner & Lakeshore Cattle Company.

Division Structure - North Branch, North Branch, Mc Culley Ditch

The decree was followed in the distribution of the waters of Davis Creek throughout the season with the exception of a short period in July when the division of the water in the North Branch was disturbed to permit the cutting of the hay under the Mc Culley Ditch.

This ditch was badly clogged with grass and although the water allotted to the ditch was no more than sufficient to fill the domestic requirements, the seepage was so great that R. T. Renner wished to have a portion of his water in the ditch transferred into the Brown-Renner Ditch by changing the division between the two branches of the north Branch of the Creek. This procedure was objected to by some of the other users on the Mc Culley Ditch as they feared that it would jeopardize their domestic water supply if the ditch were cut. However, the change was finally made after some interference from several of the parties.

CONTROVERSIES

The controversies during the 1933 season were few and of minor detail and all disputes were settled by the water master.

RECOMMENDATIONS

There are a number of headgates and division boxes yet to be installed on Davis Creek including replacements of some structures which are in poor condition. These installations will be made when the necessary time and material is available.

FINANCIAL STATEMENT

Under the Provisions of Section 37F of the Water Commission Act all funds collected in a water master district are kept in separate amounts and placed in a fund to the credit of that 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 Davis Creek Water Master District.

FINANCIAL STATEMENT

DAVIS CREEK WATER MASTER DISTRICT

JANUARY 1, 1934

RECEIPTS

Contributed by State in 1933	$400.00	
Contributed by Taxpayers (Mar. 1/33 to Jan. 1/34 . . .	287.45	687.45

DISBURSEMENTS

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

Water Master Compensation	372.49	
Water Master Travel Expense	139.96	
Cost of Publication of Financial Statement	24.00	536.45

Balance	151.00

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 DAVIS CREEK
COMPARED WITH ALLOTMENTS -- 1933 SEASON

Period	Per Cent of Allotment Delivered				Total Deliveries c.f.s.	Average Flow above Diversions c.f.s.	Per Cent Channel Accretion of Loss
	1st Priority	2nd Priority	3rd Priority	Total			
4/7 to 4/16	30	16	2	14	7.21	6.87	+5
4/17 to 4/26	60	12	2	15	7.75	7.38	+5
4/27 to 5/6	100	20	4	24	12.79	12.18	+5
5/7 to 5/16	100	13	1	21	10.02	9.82	+2
5/17 to 5/26	100	23	1	25	13.15	13.02	+1
5/27 to 6/5	100	91	11	69	35.97	34.06	+5
6/6 to 6/15	100	76	4	57	30.01	29.42	+2
6/16 to 6/25	100	29	0	28	14.55	14.84	-2
6/26 to 7/5	100	11	0	17	9.00	9.37	-4
7/6 to 7/15	100	2	0	12	6.36	6.70	-5
7/16 to 7/25	91	0	0	8	4.29	4.61	-7
7/26 to 8/4	74	0	0	7	3.35	3.72	-10
8/5 to 8/14	72	0	0	6	3.27	3.63	-10
8/15 to 8/24	69	0	0	6	3.15	3.50	-10
8/25 to 9/3	71	0	0	6	3.20	3.56	-10
9/4 to 9/13	61	0	0	5	2.79	3.10	-10
9/14 to 9/23	65	0	0	6	2.94	3.26	-10

1st Priority Allotments - 5.95 Cubic Feet per Second 4/1 to 6/15
- 6.35 Cubic Feet per Second 6/16 to 6/30
- 5.05 Cubic Feet per Second 7/1 to 9/30

2nd Priority Allotments - 31.00 Cubic Feet per Second 4/1 to 9/30

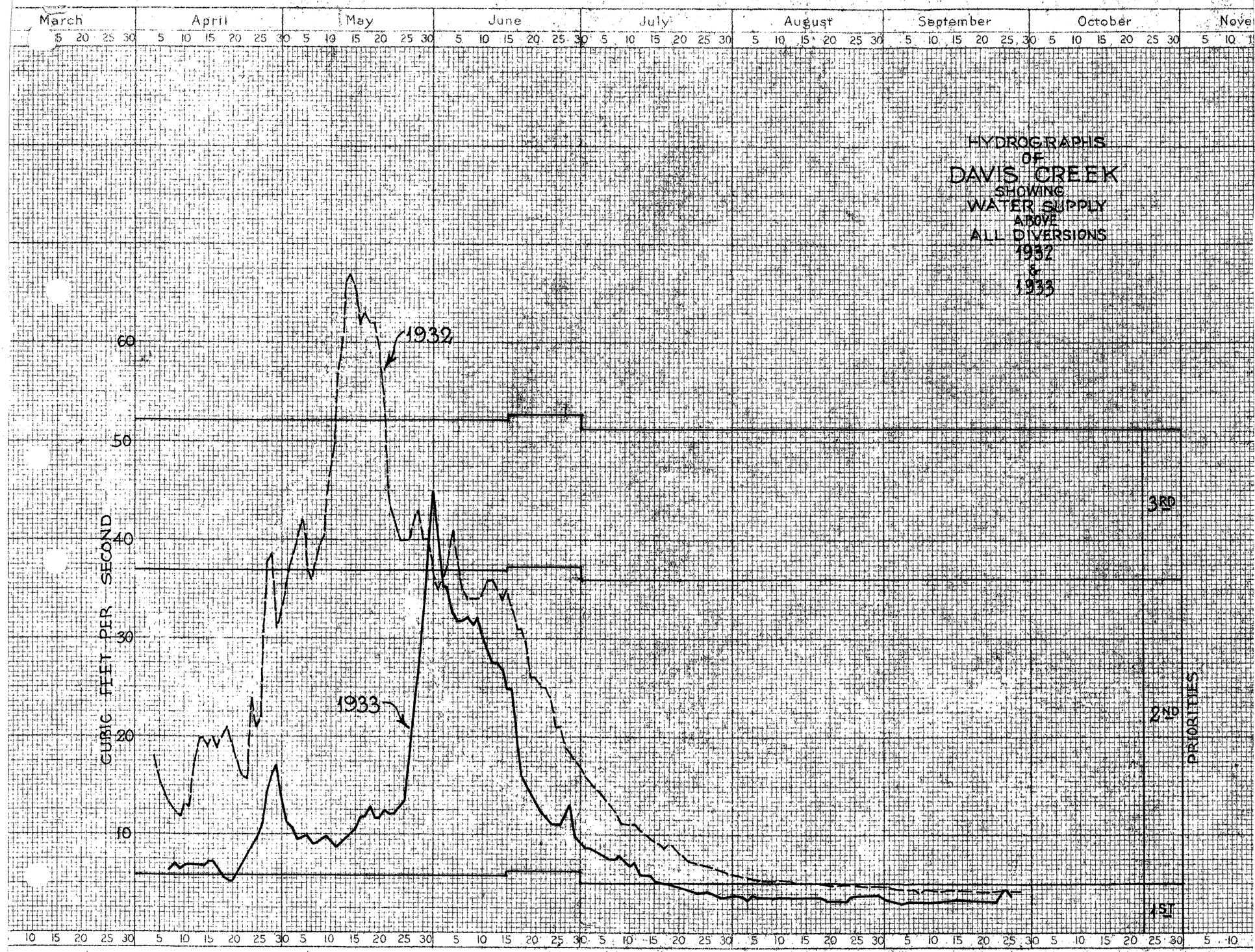
3rd Priority Allotments - 15.35 Cubic Feet per Second 4/1 to 9/30

6.36
5.05
1.31 of 31.00

TABLE 5

ESTIMATED CROP YIELDS ON TYPICAL LANDS
IRRIGATED FROM DAVIS CREEK - 1933

Owner	Crop	Acres	Total Yield Tons	Total Yield Sacks	Yield Per Acre Tons	Yield Per Acre Sacks
J. Briles	Meadow Hay	35.0	60		1.7	
	Grain Hay	30.0	15		0.5	
	Apples	15.0	(250 Boxes)			17 (Boxes)
	Garden	0.5	Good			
C. A. Brown	Alfalfa	8.0	16		2.0	
	Grain Hay	60.0	40		0.7	
	Wheat	100.0		400		4
A. Graham	Alfalfa	150.0	75		0.5	
	Grain Hay	25.0	50		2.0	
	Meadow Hay	10.0	10		1.0	
	Rye	4.0		20		5
	Wheat	30.0		90		3
	Rye	40.0	20		0.5	
	Orchard	10.0	(Poor)			
	Garden	2.5	(Good)			
R. E. Henderson	Meadow Hay	40.0	25		0.6	
	Orchard	2.0	(Good)			
	Garden	1.5	(Good)			
Lakeshore Cattle Co.	Alfalfa	40.0	20		0.5	
	Grain Hay	100.0	100		1.0	
	Meadow Hay	800.0	500		0.6	
	Potatoes	6.0		300		50
J. D. Mulkey	Grain Hay	34.0	25		0.7	
	Meadow Hay	125.0	110		0.9	
	Wheat	8.0		30		4
	Apples	12.0	(200 Boxes)			17(Boxes)
	Garden	0.3	(Good)			
	Potatoes	1.0		60		60
R. M. Taylor	Meadow Hay	75.0	25		0.3	


HYDROGRAPHS
OF
DAVIS CREEK
SHOWING
WATER SUPPLY
ABOVE
ALL DIVERSIONS
1932
&
1933
March
April
May
June
July
August
September
October
CUBIC FEET PER SECOND
60
50
40
30
20
10
1932
1933
3RD
2ND
1ST
PRIORITIES