STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

REPORTS OF THE
DIVISION OF WATER RESOURCES
EDWARD HYATT, STATE ENGINEER

REPORT ON

WATER MASTER SERVICE

ON

SOLDIER CREEK

MODOC COUNTY, CALIFORNIA

1938 SEASON

BY

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Sacramento, California
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INTRODUCTION

The Soldier Creek Water Master District was created on September 11, 1929, by order of the State Engineer in accordance with Section 37 of the Water Commission Act. Distribution of the water therein was continued during the 1938 season beginning June 1st and terminated on September 30th.

The work of water distribution in the Soldier Creek Water Master District was done by J. W. McPartland, Deputy Water Master for the entire season, under the direction of T. R. Simpson, Supervising Water Master.

All ditches in the Soldier Creek Water Master District were opened by May 15th, 1938, with all users including the permittees irrigating whenever water was available for use.

Rotation was not practiced until June 1st as prior to that date sufficient water existed for all users who were in a position to use it.

DISCUSSION OF RESULTS

Table 1, contains the precipitation data at Cedarville. The monthly and seasonal precipitation for the period of Water Master service in Surpise Valley and a comparison of the 1937-38 seasonal precipitation with the 1894-1938 mean are also shown in the table. The 1937-38 record shows the precipitation of that season as 174.2 percent of the mean.

Table 2, contains the results of the snow surveys made annually at the three courses in the Upper Pit River Watershed. Considering the two snow courses on the Warner Range namely Eagle Peak and Cedar Peak, it is apparant that the 1938 snow surveys indicate that the water content of the snow on these two courses was 118.0 percent, and 114.0 percent respectively, of their respective deduced normals. A mean between these two figures is 116.0 percent which should be indicative of the expected runoff from the Soldier Creek Watershed.

Table 3, is a tabulation of the water supply of Soldier Creek above all diversions for the 1938 season. Plate 1, at the end of the report compare graphically the flow of 1938 with that of 1932. The allotments of water to the various priorities are also shown.

The heavy rains which occurred in December 1937, in the Warner Range did considerable damage to Soldier Creek, removing the upper measuring devices and filling the heads of the ditches with silt and debris. The water users of the company ditch completed repairs to their diversion on May 12th, which delayed the use of water for irrigation purposes.

The floods which occurred during the 1938 spring runoff, went into Middle Lake, as most of the users were not in a position to commence irrigating. Middle Lake filled to its capacity of years ago and did not go dry during the remainder of the season.

On May 25, 1938 an appropriation of $1600.00 was

granted by the state of California for the rectification of the streams in Surprise Valley, which included Soldier Creek.

Crop yields on the lands irrigated from Soldier Creek were above normal, considering the silt deposits on most of the meadow hay lands, and the late commencement of the growing season.

A concrete division structure was installed in the forks of Soldier Creek, with an opening of nine feet on the West Fork of Soldier Creek and eleven feet opening on the East Fork of Soldier Creek. This structure replaced the one removed by the flood of December 1937.

The schedule of use was followed as closely as possible during the season of 1938.

VIOLATION OF DECREE OR CONTROVERSIES

No violation of the decree or controversies over the distribution of the water of Soldier Creek developed during the 1938 season.

RECOMMENDATIONS

The replacement of several headgates and measuring devices are necessary on ditches diverting from Soldier Creek, when time and material are available.

TABLES

TABLE 1

PRECIPITATION

Cedarville, California

Season	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Seasonal
1924-25	0.25	2.06	1.86	1.66	1.08	1.34	0.61	0.65	1.59	0.49	0.29	0.30	12.18
1925-26	1.34	1.57	1.31	1.25	1.06	1.18	.13	1.26	1.07	T	.09	.09	10.35
1926-27	.15	.53	2.73	1.16	1.82	2.02	1.73	.81	.95	.35	T	T	12.25
1927-28	.32	.86	2.87	.86	.92	.75	2.93	.81	T	.55	.00	.00	10.87
1928-29	.40	.15	1.43	.42	2.08	.59	1.20	1.85	.29	1.98	.00	T	10.50
1929-30	.07	.19	.00	3.02	3.39	1.53	.83	.51	.67	T	.02	T	10.25
1930-31	1.64	.59	1.22	.18	.67	.66	1.68	.58	.25	2.25	.00	.00	9.72
1931-32	.33	3.20	.96	1.85	2.23	.70	1.97	1.87	.53	.22	T	T	13.86
1932-33	T	.13	.78	1.20	1.31	.81	.63	.86	1.06	.26	.25	T	7.29
1933-34	.42	1.23	T	.87	1.37	1.44	.98	.19	.94	1.14	.00	.13	8.71
1934-35	.52	.61	2.01	.85	1.32	.73	1.67	2.94	.32	.00	T	.00	10.97
1935-36	.13	1.08	.42	1.48	5.60	2.31	1.38	.16	.64	.41	.16	.10	13.87
1936-37	.59	T	.03	.57	1.93	2.17	1.57	1.18	.42	.72	.30	.00	9.48
1937-38	.09	1.44	3.15	5.51	1.07	2.34	3.98	1.60	1.24	.45	.30	T	21.17
Average 1925-1938	.45	.97	1.41	1.49	1.85	1.33	1.52	1.09	.71	.63	.10	.04	11.59
Mean 1894-1938	.54	1.03	1.50	1.48	1.74	1.51	1.47	.91	.92	.67	.21	.16	12.14
1937-38 in per cent of total mean	0.7	11.9	26.0	45.4	8.8	19.3	32.8	13.2	10.2	3.7	2.5	0.0	174.2

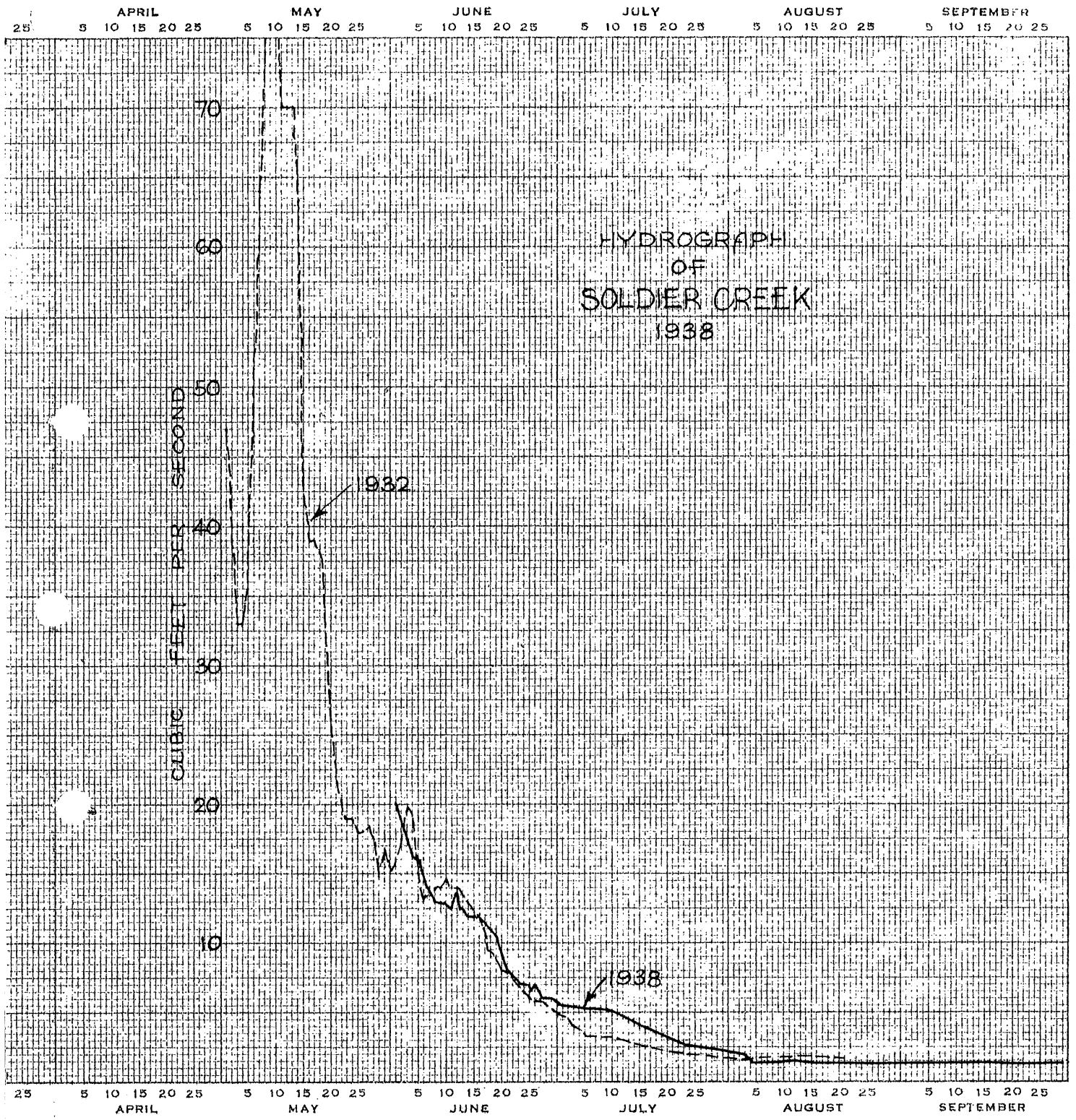
TABLE 2
DIVISION OF WATER RESOURCES
SNOW SURVEY - UPPER PIT RIVER

	1930	1931	1932	1933	1934	1935	1936	1937	1938
Eagle Peak Course - Elev. 7500 Ft.									
Date of Survey	4/3	4/1	3/30	3/30	4/2	4/10	4/9	3/29	3/31
Depth of Snow - In.	24.3	13.3	43.8	38.1	9.9	66.1	52.0	47.3	71.3
Water Content - In.	11.0	5.2	18.7	14.3	3.3	22.6	22.0	17.5	23.6
Density - Per cent	45.3	39.1	42.6	37.5	33.3	34.2	42.3	37.1	33.1
Deduced Normal Water Content								20.0	20.0
% of Deduced Normal	55.0	27.0	94.0	71.5	16.5	113.0	110.0	87.5	118.0
Record Average - In.								14.32	15.35
% of Record Average	78.0	36.3	131.0	100.0	23.0	158.0	154.0	122.0	153.7
Cedar Peak Course - Elev. 7200 Ft.									
Date of Survey	3/31	3/31	3/26	3/28	3/31	3/27	4/5	4/10	3/26
Depth of Snow - In.	29.3	22.1	49.2	43.9	2.2	56.4	68.2	54.2	79.1
Water Content - In.	13.0	8.0	19.8	16.3	0.9	21.1	26.2	21.6	25.2
Density - Per cent	44.4	37.6	40.3	37.1	40.8	37.4	38.4	40.0	31.8
Deduced Normal Water Content								22.2	22.2
% of Deduced Normal	58.7	36.1	88.4	73.4	4.1	98.2	118.0	97.4	114.0
Record Average - In.								15.9	16.9
% of Record Average	82.0	50.4	118.0	102.5	5.7	133.0	165.0	136.0	149.1
Adin Mountain Course - Elev. 6500 Ft.									
Date of Survey	3/27	3/27	3/24	3/27	4/1	4/17	3/26	4/7	4/8
Depth of Snow - In.	13.3	6.1	30.0	37.6	0	45.9	47.2	37.4	61.4
Water Content - In.	6.1	2.9	13.3	14.1	0	18.8	20.0	16.7	28.1
Density - Per Cent	45.6	47.3	44.3	37.5	0	40.9	42.3	44.8	45.8
Deduced Normal Water Content								16.1	16.1
% of Deduced Normal	37.9	18.0	82.5	87.6	0	116.6	124.3	104.0	174.0
Record Average - In.								11.5	13.3
% of Record Average	53.0	25.2	115.6	122.5	0	163.7	174.0	145.2	211.3

Table 3

ESTIMATED RECORD OF DAILY DISCHARGE IN CUBIC FEET PER SECOND OF SOLDIER CREEK ABOVE ALL DIVERSIONS FOR PERIOD June 1st to September 30, 1938

Day	May	June	July	Aug.	Sept.	
1	N	20.0	5.50	2.10	1.40	
2		19.5	5.50	2.00	1.40	
3	O	17.8	5.40	1.90	1.40	
4		16.0	5.40	1.50	1.40	
5		15.9	5.30	1.40	1.40	
6	R	14.5	5.30	1.40	1.40	
7		13.6	5.30	1.40	1.40	
8	E	12.9	5.20	1.50	1.40	
9		12.9	5.10	1.40	1.40	
10	C	12.7	5.00	1.40	1.40	
11		12.5	4.80	1.60	1.40	
12	O	13.6	4.60	1.50	1.40	
13		12.5	4.40	1.50	1.40	
14	R	12.0	4.20	1.40	1.40	
15		12.0	4.00	1.40	1.40	
16	D	11.8	3.80	1.40	1.40	
17		11.4	3.60	1.40	1.40	
18		11.0	3.40	1.40	1.40	
19		10.6	3.30	1.40	1.40	
20		9.00	3.00	1.40	1.40	
21		8.00	2.90	1.40	1.30	
22		7.50	2.80	1.40	1.20	
23		7.00	2.70	1.40	1.20	
24		6.50	2.60	1.40	1.30	
25		6.00	2.50	1.40	1.40	
26		6.90	2.50	1.40	1.40	
27		6.50	2.50	1.40	1.40	
28		6.00	2.30	1.40	1.40	
29		5.70	2.30	1.40	1.40	
30		5.50	2.20	1.40	1.40	
31		---	2.20	1.40	---	
Total Sec. Ft. Days		337.8	119.6	45.8	41.4	122 Day Period
Mean Sec. Ft		11.3	3.86	1.48	1.38	4.46
Max. Sec. Ft.		20.0	5.50	2.10	1.40	20.0
Min. Sec. Ft.		5.50	2.20	1.40	1.20	1.20
Total Ac. Ft.		670.	237.	91.0	82.1	1080.


HYDROGRAPH
OF
SOLDIER CREEK
1938
1932
1938
CUBIC FEET PER SECOND
70
60
50
40
30
20
10
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
25 5 10 15 20 25