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 FOR THE SEASON OF 1937

By

J. W. McPartland
Deputy Water Master

Sacramento, California
December, 1938

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December 24, 1938

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention: Gordon Zander
Supervising Hydraulic Engineer

Dear Sir:

There is transmitted herewith a report covering the water distribution work of the water master in the Soldier Creek Water Master District, Modoc County, California, during the 1937 irrigation season.

The report describes the methods and practices followed in the distribution of the waters of Soldier Creek in accordance with the provisions of the decree in the case of San Francisco Cattle and Loan Company, et al., vs. C. M. Crampton, et al., and presents the results obtained under this distribution.

Respectfully submitted,

T. W. McPartland
Deputy Water Master

ORGANIZATION

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

Gordon Zander

Supervising Hydraulic Engineer

T. R. Simpson	Senior Hydraulic Engineer
J. W. McPartland	Deputy Water Master

GENERAL DESCRIPTION OF WORK

Water master service was continued in the Soldier Creek Water Master District in 1937 in accordance with the provisions of Section 37a of the Water Commission Act. The service was commenced for the season on March 19th on Soldier Creek and was continued until September 30th, when water master service was terminated for the season.

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 in 1937. All water users exercised their full legal rights whenever water was available for use. The permit rights were allowed for water only when the flow of Soldier Creek exceeded its full allotments of water under the decree.

The last rotation under the schedule for the lower users which commenced on May 27th was insufficient for all the users to irrigate, rotation was practiced among the lower users to insure a final irrigation for all.

DISCUSSION OF RESULTS

Table 1, contains the precipitation data at Cedarville. The monthly and seasonal precipitation for the period of water master service in Surprise Valley and a comparison of the 1936-37 seasonal precipitation with the 1894-1937 mean are also shown in the table. The 1936-37 record shows the precipitation of that season as 77.9 per cent 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 in the Warner Range, namely, Eagle Peak and Cedar Peak, it is apparent that the 1937 snow surveys indicate that the water content of the snow on these two courses was 87.5 per cent and 97.4 per cent respectively, of their respective deduced normals. A mean between these two figures is 92.5 per cent 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 1937 season. Plate 1, at the end of the report compares graphically the flow of 1937 with that of 1932. The allotments of water to the various priorities are also shown.

The crop yields on the lands irrigated from Soldier Creek were considerably lighter than those of the previous two years, due to the late commencement of the growing season.

On June 19th the end of the rotation schedule, the flow of Soldier Creek diminished that only first priority water was available.

Simpson Canyon was dry on June 1st with approximately 0.20 cubic foot per second remaining in Daniels Canyon.

No new installations were made for the control or distribution of the waters of Soldier Creek during the 1937 season.

The schedule of use was followed as closely as possible during the season of 1937.

VIOLATION OF DECREE AND CONTROVERSIES

No violations of the decree or controversies over the waters of Soldier Creek developed during the 1957 season.

RECOMMENDATIONS

A new headgate and spillway should be installed in the head of the Warrens Flood Ditch, 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	10.39
1929-30	.07	.19	.00	3.02	3.39	1.53	.83	.51	.67	T	.02	T	10.23
1930-31	1.64	.59	1.22	.18	.67	.66	1.68	.58	.25	2.25	.00	.00	9.72
1031-32	.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	0.64	.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
Average 1925-1937	.47	.94	1.20	1.18	1.91	1.25	1.33	1.05	.67	.64	.09	.05	10.78
Mean 1894-1937	.54	1.03	1.50	1.48	1.74	1.51	1.47	.91	.92	.67	.21	.16	12.14
1936-37 in percent of total mean	4.9	0.0	0.0	4.7	15.9	17.9	12.9	9.7	3.5	5.9	2.5	0.0	77.9

TABLE 2

DIVISION OF WATER RESOURCES
SNOW SURVEY - UPPER PIT RIVER

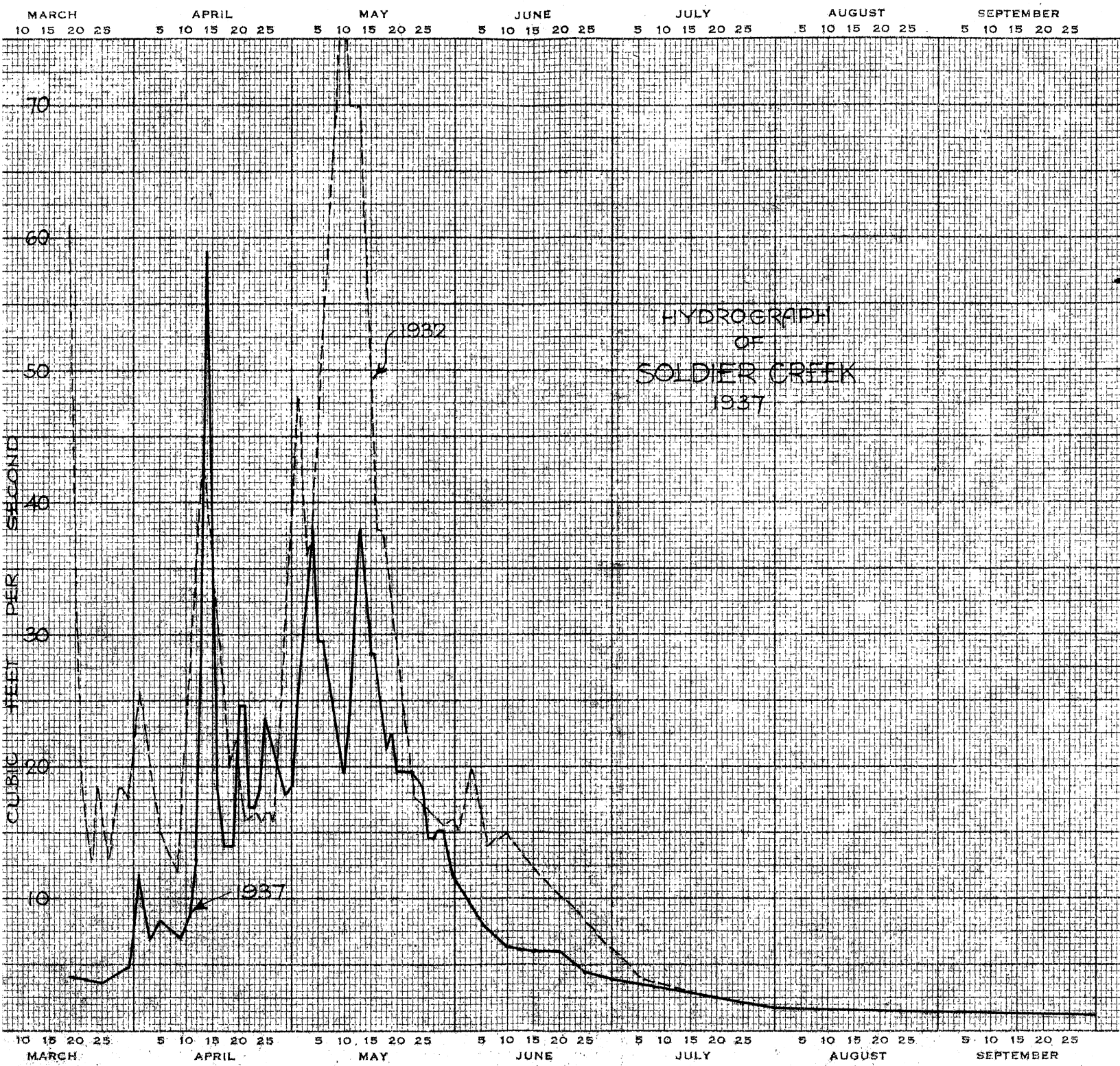
	1930	1931	1932	1933	1934	1935	1936	1937
Eagle Peak Course - Elev. 7500 Ft.								
Date of Survey	4/3	4/1	3/30	3/30	4/2	4/10	4/9	3/29
Depth of Snow -Inches	24.3	13.3	43.8	38.1	9.9	66.1	52.0	47.3
Water Content- Inches	11.0	5.2	18.7	14.3	3.3	22.6	22.0	17.5
Density - Per cent	45.3	39.1	42.6	37.5	33.3	34.2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

TABLE 3

Continuous Records of Daily Discharge in Cubic Feet per Second
of Soldier Creek above all Diversions for the
Period March 19th to September 30th, 1937

Day	March	April	May	June	July	August	Sept.	
1		12.0	24.5	10.8	4.00	1.80	1.40	
2		9.20	30.8	10.2	3.80	1.80	1.40	
3		6.60	33.0	10.2	3.50	1.80	1.40	
4		7.00	38.0	9.10	3.50	1.80	1.40	
5		7.60	29.5	8.00	3.40	1.80	1.40	
6		6.80	29.5	7.80	3.40	1.80	1.40	
7		6.60	27.0	7.30	3.40	1.80	1.40	
8		6.60	28.6	7.00	3.10	1.80	1.40	
9		6.60	24.5	7.00	2.80	1.80	1.40	
10		7.80	19.5	6.80	2.70	1.80	1.40	
11		8.80	24.5	6.80	2.70	1.80	1.40	
12		13.0	29.4	6.40	2.60	1.70	1.40	
13		28.6	38.0	6.60	2.60	1.60	1.40	
14		59.0	33.0	6.00	2.40	1.50	1.40	
15		38.0	28.5	6.00	2.20	1.40	1.40	
16		18.4	28.5	18.0	2.10	1.40	1.40	
17		14.8	24.5	7.00	2.10	1.30	1.40	
18		14.4	21.3	6.60	2.00	1.40	1.40	
19	4.20	14.0	22.4	6.00	1.90	1.40	1.40	
20	4.00	24.6	19.5	6.00	1.80	1.40	1.40	
21	4.00	24.0	19.5	6.00	1.80	1.40	1.40	
22	3.80	17.8	19.5	5.20	1.80	1.40	1.40	
23	3.60	17.8	19.5	4.70	1.80	1.40	1.40	
24	3.60	18.4	18.4	4.50	1.90	1.40	1.40	
25	3.60	24.0	17.8	4.40	2.00	1.40	1.40	
26	4.00	21.3	14.4	4.20	1.90	1.40	1.40	
27	4.20	18.4	14.0	4.20	1.90	1.40	1.40	
28	4.20	14.8	15.8	4.00	1.80	1.40	1.40	
29	4.60	13.5	15.3	5.00	1.80	1.40	1.40	
30	4.80	18.4	11.2	3.80	1.80	1.40	1.40	
31	6.80		11.5		1.80	1.40		
Total Sec. Feet Days	* 55.4	498.8	731.4	205.6	76.3	48.3	42.0	196 Day Period
Mean Sec. Feet	4.26	16.2	23.6	6.85	2.46	1.56	1.40	8.97
Maximum Sec. Feet	6.80	59.0	38.0	10.8	4.00	1.80	1.40	59.0
Minimum Sec. Feet	3.60	6.60	11.2	3.80	1.80	1.40	1.40	1.40
Total Acre Feet	110.	989.	1450.	408.	151.	95.8	83.3	3287.

* 13 day period


HYDROGRAPH
OF
SOLDIER CREEK
1937
1932
1937
CUBIC FEET PER SECOND
70
60
50
40
30
20
10
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
10 15 20 25
5 10 15 20 25