STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

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

REPORT ON

WATER MASTER SERVICE WITHIN

SURPRISE VALLEY WATER MASTER DISTRICT

MODOC COUNTY, CALIFORNIA

1943 SEASON

By
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DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

October 6, 1943

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention: Mr. Gordon Zender
Supervising Hydraulic Engineer

Dear Sir

Submitted herewith is the annual report covering water master service within the Surprise Valley Water Master District, Modoc County, California, during the 1943 season.

The report covers a general description of the work and a summary of the distribution of water on each stream within the district. Records of precipitation, run-off, and other pertinent data are included.

Respectfully submitted,

Senior Engineering Aid

FOR VICTORY
BUY UNITED STATES SAVINGS BONDS AND STAMPS

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Report on

Water Master Service Within

Surprise Valley Water Master District

Modoc County, California

For the Season of 1942

INTRODUCTION

Water master service was continued in the Surprise Valley Water Master District during the 1943 season in accordance with the provisions of Sections 4000 to 4360, inclusive, of the Water Code. The service was commenced for the season on March 19th, and was terminated on September 30.

J. Victor Scammon, Water Master, administered the distribution of water from the streams within the district until May 4, 1943. On that date, T. J. McMahon was appointed Deputy Water Master, Surprise Valley Water Master District, and administered the distribution of water in that capacity for the remainder of the season. Harrison Smitherum, Supervising Water Master, directed the work in the field.

WATER SUPPLY

Precipitation

Table 1 gives the monthly and seasonal precipitation at Cedarville for the 1940-41, 1941-42 and 1942-43 seasons and the mean monthly and seasonal precipitation at that station for the period of record, 1894 to 1943, as compiled from records of the United States Weather Bureau. The table also shows a comparison between the 1942-43 precipitation and the 1894-43 mean. The seasonal precipitation for 1942-43 was 114.3 percent of the mean.

Table 2 contains the results of snow surveys made annually at the four courses in the Upper Pit River watershed. Considering the two snow courses on the Warner Range, namely Eagle Peak and Cedar Pass, the water content of the snow on these two courses was 117.9 per cent and 118.3 per cent respectively of their deduced normals. The mean of these two figures is 118.1 per cent.

Stream Flow

Measuring stations, equipped with water-stage recorders, were maintained on the streams within the Surprise Valley Water Master District as listed below. The streams are listed geographically in order from north to south. As nearly as is practicable each station is located above all diversions on the particular stream. On Pine Creek the measurements were made by means of two 4.0 foot Parshall Measuring Flumes installed at the point where the stream divides into the north and south channels. The other stations were rated by means of current meter measurements taken at various stages of the streams throughout the period of water master service. The records of discharge for the several streams within the district are presented in Tables 3 to 15, inclusive, at the end of this report. The adequacy of the water supply to fill the requirements on the various streams is discussed for each stream under the chapter heading "Distribution of Water."

Mill Creek above diversions

Soldier Creek above diversions

Pine Creek above North and South Channels

Cedar Creek above diversions

North Deep Creek above diversions

South Deep Creek below Espil Ditch

Owl Creek below Allen-Arreche Ditch

Rader Creek above Parshall Flume Diversion Structure

Eagle Creek one-half mile below mouth of canyon

Emerson Creek above diversions

DISTRIBUTION OF WATER

Distribution on the various streams within the district was in accordance with the allotments and priorities set forth in the respective decrees. The flows available for distribution were determined from the measured discharge at the measuring stations. A summary of the results accomplished and of any difficulties encountered on each separate stream is given below.

Mill Creek

The regulation of Diversions from Mill Creek was made in accordance with the allotments and priorities set forth in the decree in the case of Warrens v. Wimer, No. 3024, Superior Court, Modoc County, dated December 19, 1931. The amounts of water available for distribution were determined from the flow at the measuring station on Mill Creek above all diversions. The record of daily discharge at this station for the 1943 season is submitted in Table 3 at the end of this report.

In April, May, and June all demands for water were filled. The fourth priority water failed on July 7. The third priority water was exhausted the first part of August. The second priority rights received full allotments until the middle of August. Full allotments were available for the first priority rights throughout the season.

All ditches on Mill Creek were used during the season of 1943 with the exception of the Mill Ditch, Diversion 1, and the Larkin Ditch, Diversion 5.

Rutherford Creek had ample water to meet all requirements throughout the season. In the latter part of the season Roy Hobbs did not use his full allotment of first priority water, thus making extra water available for C. A. Baker and George Warrens. The Bennett Collecting Ditch was cleaned during August, thus making water available for rediversion from Rutherford Creek through the Bennett Rediversion Ditch to the extent of 0.40 cubic-foot per second.

Soldier Creek

The diversions from Soldier Creek were regulated in accordance with the provisions

of the decree in the case of San Francisco Cattle Loan Co. v. Crampton, No. 2405, Superior Court, Modoc County, dated November 28, 1928, and additional appropriative rights initiated subsequent to said decree. The amounts of water available for distribution were determined from the flow at the measuring station on Soldier Creek above all diversions. The record of daily discharge at this station for the 1943 season is submitted in Table 4.

All ditches on Soldier Creek were opened in 1943, and all users exercised their full legal rights whenever water was available therefor, excepting the Jones Ditch, Diversion 10, which serves the J. W. Ledford property under an "additional appropriative right."

Rotation was practised from March 19 until June 19, in accordance with the decree. The Daniels ranch at no time during the season diverted more than 1.00 c.f.s. from Soldier Creek, as the supply from Daniels Canyon and Simpson Canyon was ample to supply most of its needs.

During the Lower Users periods it was not necessary to rotate water between the two channels, as the supply was ample to furnish users on both channels with sufficient water at the same time.

Full allotments were available during all rotation periods of both the Lower and the Upper Users, except during the final rotation period of the Upper Users, when only about 70 per cent of the total allotments were available. After June 19 the creek continued to fail so that only 68 per cent of first priority water was available in September.

Water was available for and used under the "additional appropriative rights," during April and May and for the first few days in June, excepting no use was made on the J. W. Ledford place as noted above.

A good alfalfa seed crop was produced this year on lands irrigated from Soldier Creek, and the amount of hay produced exceeded that of average seasons.

Pine Creek

The diversions from Pine Creek were regulated in accordance with the decree in the case of Gausted v. McCulley, No. 3391, Superior Court, Modoc County, dated December 7, 1936. The amount of water available for distribution was determined at the two Parshall Measuring Flumes on the North and South Channels of Pine Creek. The record of daily discharge above diversions for the 1943 season is submitted in Table 5.

The water supply on Pine Creek was sufficient to complete the first and second rotations by April 30. The third rotation was then commenced with all users except Freeborn and Ledford. On May 11 the water was turned to Harris and McCulley for rotation until May 17, at which time the total flow of Pine Creek was turned into the South Channel for Harry Hill. On May 23, the flow having diminished to 1.8 c.f.s., all the water was turned into the Cressler Ditch for W. E. Hill.

On June 1, due to heavy rain, the flow of the creek increased to the extent that water was again available for both main channels. The third rotation was resumed on that date and completed on June 6, when the water was again given to Harris and McCulley for rotation. On June 15 all the water was again turned into the Cressler Ditch for W. E. Hill. By June 21, the flow of Pine Creek was insufficient to reach the W. E. Hill Ranch and on that date the entire flow of the creek, except the Royce allotment, was turned to John Freeborn.

Cedar Creek

Distribution on Cedar Creek was made in accordance with the water rights defined in the cases of Hill v. Actr, No. 2343, and Lighty v. Cook, No. 1206, Superior Court, Modoc County, and Agreement re. Right of Jake Rechsteiner to divert water from Cedar Creek. ~~Water was also distributed to two licensed appropriative rights initiated under the Water Code procedure.~~ Water diverted from Thoms Creek into Cedar Creek through the Cedar Pass Ditch, the rights to which are set forth in the North Fork Pit River Decree, No. 4074, Superior Court, Modoc County, dated December 14, 1939, and in the said Lighty v. Cook decree, was also distributed to the rightfull owners. The amounts of water available for distribution were determined from measurements taken at a Parshall Measuring

Flume on the Cedar Pass Ditch, and at the measuring station on Cedar Creek above all diversions. The record of daily discharge at the Cedar Creek station for 1943, which includes the water diverted from Thoms Creek, is submitted in Table 6.

Water was available in varying amounts for all rights on Cedar Creek in 1943. The Cedar Pass Ditch from Thoms Creek was opened May 9;and,except for the first four days in June when the ditch was closed for repairs, ran continuously until June 29. Due to the accumulation of debris in the lower end of Cedar Creek channel, no water could be diverted during 1943 by the Harry Hill Ranch, the W. E. Hill Ranch, or the Hughes Ranch. It was possible to divert a limited amount of irrigation water at the Alex Ash Ranch. Since the lower users could not divert their allotments, users in later priorities were given extra water. The Meyers (Acty) Ditch, Diversion 9, remained open throughout the month of April. Jake Rechsteiner was allowed to use water for one irrigation during the latter part of May. Stock and garden water was available at the McCulley Ranch throughout the season.

Deep Creek

The diversions from Deep Creek were regulated in accordance with the water rights defined in the decree in the case of Tyerver v. Benner, No. 3101, Superior Court, Modoc County, dated January 25, 1934. The amounts of water available were determined from measurements taken at the measuring stations on North and South Deep Creeks. The records of daily discharge for 1943 for North and South Deep Creeks are shown in Tables 7 and 8, respectively. A summation of the results for these two stations has been tabulated in Table 9.

During April there was a sufficient amount of water to satisfy all priorities, and during May and June many users did not use their full allotments, which made water available for the third, fourth, and fifth priorities. During the first few days of May and June, Tom F. Patton and other users allowed J. Stiner to use a head of water from North Deep Creek rather than have it waste into Middle Alkali Lake. J. Stiner has no decreed right from Deep Creek, and only on extremely good years can he obtain

water from this stream.

The flow of Deep Creek was sufficient to reach all users entitled to first priority water throughout the season.

Owl Creek

The regulation of diversions from Owl Creek was made in accordance with the allotments and priorities set forth in the decree in the case of Cummins v. Allen, No. 2410, Superior Court, Modoc County, dated April 29, 1929. The amount of water available for distribution was determined from measurements of the flow of Owl Creek taken at the measuring station below the Allen-Arreche Ditch. The record of daily discharge at this station is shown in Table 10.

Until April 12, water was available only for the first eleven priorities. Beginning on that date, due to melting of the snow-pack, water became available in increasing amounts and from May 31 to July 2 there was a sufficient amount of water to satisfy all priorities. Through July and August the water supply steadily diminished. However, the supply was sufficient to furnish garden and stock water to the Daussat, Heryford, and Cummins ranches throughout the season.

Rader Creek

The waters of Rader Creek were distributed in accordance with the water rights defined in the decree in the case of Powers v. Woodruff, No. 3626, Superior Court, Modoc County, dated June 4, 1937. The amounts of water available for distribution were determined from measurements taken at the measuring station on Rader Creek above the Parshall Flume division structure. The record of daily discharge at this station for 1943 is submitted in Table 11. The summation of the flow at this station and the amounts of water diverted above is shown in Table 12.

Water was available in varying amounts for all rights on Rader Creek during 1943.

On May 20, the McCulley-Hudspeth Ditch was opened and regulated to divert one-seventh of the flow of the creek at the point of diversion. The ditch was closed on July 26 when the water failed to reach the place of use.

Stock water was available throughout the season for Woodruff, Hinto, Powers, and Miura.

Eagle Creek

Regulation of the ditches diverting water from Eagle Creek was made in accordance with the allotments and priorities set forth in the decree in the case of Harris v. Adams, No. 3284, Superior Court, Modoc County, dated November 5, 1937. The amount of water available for distribution was determined from measurements taken at the measuring station on Eagle Creek. The record of daily discharge at this station for the 1943 season is shown in Table 13. A record of daily discharge above all diversions has been compiled by adding the quantities diverted above the measuring station to the amounts shown in Table 13. This compilation is submitted in Table 14.

The flow of Eagle Creek was low until the latter part of April when the snow began melting due to warm weather. Prior to that date only a partial supply of water was available for third priority rights, but with continued warm weather all priorities were receiving full allotments by May 1. This condition prevailed until July 9.

The amount of water available to the Town Users through the Gee and Grider Ditches was sufficient throughout the season so that rotation was unnecessary between the Town Users, except as provided for in the decree. Copies of the schedules used when rotation is practiced are included in the "Report on Water Master Service, Surprise Valley Water Master District, 1940 Season."

Emerson Creek

The ditches diverting from Emerson Creek were regulated in accordance with the allotments and priorities set forth in the decree in the case of Murphy v. Warren, No. 2840, Superior Court, Modoc County, dated March 25, 1930. The amount of water available for distribution was determined from measurements taken at the measuring station on Emerson Creek. The record of daily discharge at this station for 1943 is submitted in Table 15.

Water was available for all users from Emerson Creek for varying periods during the season. After April 29 there was sufficient water to supply all priorities until July 21. Third priority users were supplied full allotments until August 2. The second priority rights received full allotments until August 12, and partial allotments for the

remainder of the season. The first priority rights received full allotments throughout the season. Sufficient water was available at all times to satisfy garden and stock water demands.

Ownership of Lands and Water Rights Within Surprise Valley Water Master District

Changes in Ownership

The changes in ownership of lands and water rights which have accurred subsequent to filing "Statement for Surprise Valley Water Master District, County of Modoc, State of California for 1943" and which shall be included in the statement for said water master district for 1944 are listed in the following tabulation:

Tract No.	Name of Water Right Owner Appearing in 1943 Statement	Name of Water Right Owner to Appear in 1944 Statement	Amount of water c.f.s.
10	Frances E. Wilson	Harvey O. and Millie M. Darst Lake City, California	1.85
11	Mrs. C. H. Darst	J. W. and Maude Ledford Lake City, California	0.15
17	F. S. Heard	Estate of F. S. Heard c/o G. K. Heard	0.70
42	George Catlin and S. B. Strief	George Catlin Lake City, California	0.10
43	Annie L. Akins	M. R. and Gladys Vernon Lake City, California	0.32
59	Mrs. C. H. Darst	J. W. and Maude Ledford Lake City, California	0.50
68	Even R. and Della M. Gaustad	Edgar and Ruby H. Harris Cedarville, California	2.50
72	The Federal Land Bank of Berkeley	The Federal Land Bank of Berkeley and Raymond E. and Matilda M. Ledford Cedarville, California	0.10
78	H. O. Hughes	Mrs. H. O. Hughes Cedarville, California	1.10
101	E. R. and Hattie Tyeryar	Percy B. and Julia G. Harris Cedarville, California	0.16
105	E. R. and Hattie Tyeryar	Percy B. and Julia G. Harris Cedarville, California	4.30
108	Martin and Lucie Espil	Martin Espil Cedarville, California	0.65

Tract	Name of Water Right Owner Appearing in 1943 Statement	Name of Water Right Owner to Appear in 1944 Statement	Amount of water c.f.s.
141	Estate of Jesse Parman	Hattie Parman Pratt Eagleville, California	* 0.05
147	Sabra E. Powers	Emmet A. Powers Eagleville, California	0.08
164	Charlie Lee Pabst	Estate of Charlie Lee Pabst Cedarville, California	4.20
168	Etta M. Harris	Etta M. Harris Langston Eagleville, California	2.50
174	Estate of A. N. and Lottie Slinkard	Lottie May Slinkard Eagleville, California	0.31
183	Estate of Jesse Parman	William G. Parman and Jessie W. Stevens, Eagleville, California	* 0.60

Division

Tract 141 — Hattie Parman Pratt

Eagle Creek 0.05 c.f.s.

Tract 183 — William G. Parman and Jessie W. Stevens

Emerson Creek 0.60 c.f.s.

Names of Current Owners

Corrected to show the above changes, the name of the current owner of each property tract and appurtenant water right, as of September 30, 1943, embraced within the Surprise Valley Water Master District, is set forth in Table 16 submitted at the end of this report.

TABLE 1

PRECIPITATION AT CEDARVILLE, CALIFORNIA, 1894—1943, ELEVATION 4,675 FEET
MONTHLY, SEASONAL, AND AVERAGE AMOUNTS IN INCHES

Season	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Seasonal
1940—1941	1.04	1.40	1.23	1.38	1.41	1.77	0.67	0.58	1.77	1.33	1.32	1.09	14.99
1941—1942	0.34	1.38	1.50	2.79	0.58	1.29	0.43	1.35	1.40	0.73	0	0.16	11.95
1942—1943	0.19	T	2.84	1.66	3.66	1.42	1.12	1.40	0.79	0.68	0.12	T	13.88
Mean 1894—1943	0.54	1.03	1.50	1.48	1.74	1.51	1.47	0.91	0.92	0.67	0.21	0.16	12.14
1942—1943 In Per-Cent of Mean	35.2	0	189.3	112.2	210.3	94.0	76.2	153.8	85.9	101.5	57.1	0	114.3

Note: See Surprise Valley Water Master District Rpt. for 1940 and Soldier Creek reports prior to 1940 for previous records.

TABLE 1 2
SNOW SURVEY DATA—UPPER PIT RIVER

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
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	3/30	4/4	3/26	3/29	3/24			
Depth of Snow—Inches	24.3	13.3	43.8	38.1	9.9	66.1	50.5	47.3	71.3	27.2	38.4	35.1	38.6	56.7			
Water Content—Inches	11.0	5.2	18.7	14.3	3.3	22.6	22.1	17.5	23.6	10.4	15.6	13.8	14.7	23.7			
Density—Percent	45.3	39.1	42.6	37.5	33.3	34.2	43.7	37.1	33.1	38.2	40.6	39.3	38.1	41.8			
Record Average—Inches								14.32	15.35	14.8	14.9	14.8	14.8	15.5			
% of Record Aver.	78.0	36.3	131.0	100.0	23.0	158.0	154.0	122.0	153.7	70.5	104.7	93.3	99.3	152.9			
Cedar Pass Course Elev. 7200 Ft. Date of Survey	3/31	3/30	3/26	3/28	3/31	3/27	4/5	4/10	3/26	3/28	3/22	3/24	3/27	3/22			
Depth of Snow Inches	29.3	22.1	49.2	43.9	2.2	56.4	68.2	54.4	79.1	28.2	35.9	40.8	47.4	62.3			
Water Content Inches	13.[illegible]	8.3	19.8	16.3	0.9	21.1	26.2	21.6	25.2	10.5	14.6	17.9	19.3	25.8			
Density—Percent	44.4	37.6	40.3	37.1	40.8	37.4	38.4	39.6	31.8	37.2	40.7	43.8	40.7	41.4			
Record Average—Inches								15.9	16.9	16.3	16.1	16.3	16.0	17.2			
% of Record Average	82.0	50.4	118.0	102.5	5.7	133.0	165.0	136.0	149.1	64.4	90.7	109.0	120.6	150.0			

TABLE 1 (Continued)

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946
Blue Lake Ranch Course Elev. 7300 Ft.			New	Course	1940												
Date of Survey											4/11	3/28	3/31	3/26			
Depth of Snow-Inches											16.3	18.8	28.9	34.9			
Water Content-Inches											6.4	8.5	11.7	15.3			
Density—Percent											39.2	45.2	40.5	43.8			
Record Average-Inches																	
% of Record Average																	
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	3/31	4/7	3/31	4/2	3/31			
Depth of Snow-In.	13.3	6.1	30.0	37.6	0	45.9	47.2	37.4	61.4	17.5	10.8	24.6	32.1	30.4			
Water Content-In.	6.1	2.9	13.3	14.1	0	18.8	20.0	16.7	28.1	8.1	4.3	11.3	13.9	13.2			
Density—Percent	45.6	47.3	44.3	37.5	0	40.9	42.4	44.8	45.8	46.2	39.8	45.9	43.3	43.4			
Record Average-In.								11.5	13.3	12.8	12.0	12.0	12.1	12.2			
% of Record Aver.	53.0	25.2	115.6	122.5	0	163.7	174.0	145.2	211.3	63.3	35.8	94.1	114.9	108.2			