STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

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EARL WARREN, Governor

FRANK B. DURKEE, Director of Public Works

A. D. EDMONSTON, State Engineer

REPORT ON WATERMASTER SERVICE IN SURPRISE VALLEY WATERMASTER SERVICE AREA

Modoc County, California

1951 SEASON

Sacramento, California
February, 1952

SUBMISSION TO, AND ADOPTION BY
DEPARTMENT OF PUBLIC WORKS

I, L. C. Jopson, Supervising Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, submit this "Report on Watermaster Service in Surprise Valley Watermaster Service Area, Modoc County, California, 1951 Season".

/s/ L. C. JOPSON
Supervising Hydraulic Engineer

I, Gordon Zander, Assistant State Engineer, Division of Water Resources, Department of Public Works of the State of California, approve this "Report on Watermaster Service in Surprise Valley Watermaster Service, Area, Modoc County, California, 1951 Season".

/s/ GORDON ZANDER
Assistant State Engineer

I, A. D. Edmonston, State Engineer and Chief of the Division of Water Resources, Department of Public Works of the State of California, approve and adopt this "Report on Watermaster Service in Surprise Valley Watermaster Service Area, Modoc County, California, 1951 Season", as a report of the Department of Public Works.

WITNESS my hand and the seal of the Department of Public Works of the State of California, this 25th day of April, 1952.

DEPARTMENT OF PUBLIC WORKS

By /s/ A. D. EDMONSTON
A. D. Edmonston
State Engineer

SEAL

ORGANIZATION

Frank B. Durkee . . . . . Director of Public Works

A. D. Edmonston . . . . . State Engineer

Gordon Zander . . . . . Assistant State Engineer

This report was prepared under the direction of

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INTRODUCTION

The Surprise Valley Watermaster Service Area was created by order of the Division of Water Resources on January 10, 1939 to include the water rights determined by decrees of the Superior Court, Modoc County on various streams in Surprise Valley as follows:

Stream	Case	Number
Mill Creek	Warrens vs. Wimer	3024
Soldier Creek	San Francisco Cattle Loan Co., vs. Crampton	2405
Pine Creek	Gaustad vs. McCulley	3391
Cedar Creek	Hill vs. Acty	2343
	Lighty vs. Cook	1206
Deep Creek	Tyeryar vs. Benner	3101
Owl Creek	Cummins vs. Allen	2410
Rader Creek	Powers vs. Woodruff	3626
Eagle Creek	Harris vs. Adams	3284
Emerson Creek	Murphey vs. Warren	2840

Prior to the order of January 10, 1939, service areas had been created on the streams as the water rights were determined. The new order which combined these smaller service areas into a single administrative unit was supplemented and revised by order of December 31, 1941 to allocate tract numbers to the various land ownerships to which the water rights attached.

Watermaster service, as provided in Part 4 of Division 2 of the Water Code, covered the period from March 19 to September 30, 1951.

J. D. Walters, deputy watermaster, was in charge of distribution under the supervision of P. E. Stephenson, Senior Hydraulic Engineer.

WATER SUPPLY

Precipitation

Data on precipitation, as compiled from observations made by the United States Weather Bureau at Cedarville, is shown in Table 1. The total precipitation for the 1950-51 seasonal year was 109 per cent of normal.

The water content of the snowpack on the Eagle Peak, Blue Lake Ranch, Cedar Pass and Adin Mountain snow courses in 1951, as published in the bulletin entitled "Water Conditions in California as of April 1, 1951", averaged 10.6 inches or 65 per cent of the computed average for the four courses.

Stream Flow

Stream flow measuring stations equipped with water stage recorders were maintained during the period of watermaster service at the following locations:

Mill Creek above diversions
Soldier Creek above diversions
Pine Creek at division between 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 at concrete division structure
Eagle Creek one-half mile below mouth of canyon
Emerson Creek above diversions

Records of discharge at the above stations are presented in Tables 2, 3, 4, 5, 6, 7, 9, 10, 12, and 13, respectively. The computed mean daily discharge of Deep Creek, comprising discharges of North Deep Creek and South Deep Creek, is shown in Table 8. The computed mean daily discharge of Rader Creek above diversions is shown in Table 11.

DISTRIBUTION OF WATER

Distribution of water from the various creeks was in accordance with the rights to water set forth in the respective decrees. The percentage of allotments available for distribution on each stream was determined from the mean daily discharge at the respective measuring station.

Mill Creek

Above normal rainfall provided an abundance of water in Mill Creek during April and May. After June 1 the water supply diminished steadily until about July 12 when water was no longer available for irrigation purposes. After July 25 it was necessary to prorate the available water among the first priority rights.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	97	70	55
2nd	100	100	100	54	0	0
3rd	82	96	46	2	0	0
4th	6	65	0	0	0	0

Soldier Creek

The distribution of the water of Soldier Creek was commenced on March 19 at the beginning of the first Lower Users rotation period.

Ample water was available to satisfy all rights under the decree and to supply permit rights until about April 17. Thereafter, except for a short period in May, the flow decreased steadily and by July 10 the available supply was being utilized entirely for domestic and stockwatering purposes. Subsequent to July 10, proration of the available water supply among the first priority rights was necessary.

After water had ceased to be available at the head of the West Branch of Soldier Creek, it was necessary for the watermaster to regulate the E. Clarence Stopp diversion from rising water in that channel to 0.30 cubic foot

per second as provided in the decree. Reregulation was required on numerous occasions in order to pass the water in excess of the decreed amount down the creek to other users who received and were able to use the excess water in spite of Stopp's contention that it would not reach them.

A tabulation showing the percentages of allotments delivered to the various priorities is shown in Table 14.

Pine Creek

During the period from March 20 to May 22 the water of Pine Creek was distributed on a rotation basis. There was sufficient water available during this period for two complete rotations. On May 23rd the flow was less than 4.0 cubic feet per second and, in accordance with the Pine Creek decree, the entire flow was turned into the North channel for use by the Harris and McCulley ranches. On May 27 when the flow became less than 1.60 cubic feet per second, the water was turned into the Cressler Ditch above the recorder station and on June 1 after flow had decreased to less than 0.30 cubic foot per second the entire supply was turned to the Ausman ranch for the remainder of the season.

Cedar Creek

The water available for diversion from Cedar Creek during the period from April 1 to about May 10 was inadequate to supply more than the first and part of the second priority rights. From about May 10 until about May 17, there was sufficient water to satisfy all priorities. Thereafter the flow gradually diminished and after about June 20, was all diverted by O. Crampton through the McCulley Ditch.

The average flow of Thoms Creek Ditch, bringing water into Cedar Creek from Thoms Creek, was approximately 2 cubic feet per second from April 1

to about June 10. Thereafter the flow decreased rapidly and soon ceased altogether. This water from Thoms Creek was used to supplement the water from Cedar Creek on the Warrens, Wallace, and Larson ranches.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	92	37	22	9
2nd	47	69	5	9	0	0
3rd	0	25	0	0	0	0
4th	0	18	0	0	0	0

Deep Creek

There was little demand for water for use by the earlier priorities on Deep Creek during April but the entire supply was utilized by the later priorities throughout the month. During May there was an increasing demand for water by the early rights, and by June 1 the entire flow of North Deep Creek was turned into the Company Ditch for use by first priority rights; and the entire flow of South Deep Creek was turned into the Sharp-Messier Ditch for use on the Hussa, Sweet and Bush ranches. After about July 12 use of water was restricted to domestic and stockwatering purposes.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	75	100	44	15	12	11
2nd	82	95	0	0	0	0
3rd	63	78	0	0	0	0
4th	53	68	0	0	0	0
5th	53	64	0	0	0	0

Owl Creek

Although the water supply at the beginning of the season was less than the amount required to supply full allotments, the supply was ample to fill the demand due to favorable soil moisture conditions. From the middle of May until the middle of June there was a surplus of water, but thereafter the supply diminished until only stockwater was available the latter part of July.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	100	100
2nd	100	100	100	100	100	70
3rd	100	100	100	100	90	3
4th	100	100	100	100	34	0
5th	100	100	100	96	1	0
6th	100	100	100	86	0	0
7th	100	100	100	75	0	0
8th	100	100	100	52	0	0
9th	100	100	100	29	0	0
10th	93	100	100	16	0	0
11th	80	100	100	7	0	0
12th	57	99	86	0	0	0
13th	52	76	63	0	0	0
14th	38	57	58	0	0	0
15th	13	55	50	0	0	0
16th	5	55	43	0	0	0
17th	0	55	43	0	0	0
18th	0	55	43	0	0	0
19th	0	52	32	0	0	0
20th	0	52	24	0	0	0
21st	0	52	23	0	0	0

Rader Creek

The water available for diversion from Rader Creek was sufficient to satisfy most of the demands of the first six priority classes until about July 1. The only exception of importance being during the second week of May when it was necessary to terminate the delivery of water to fourth, fifth and sixth priority rights for a short period. After July 1 the flow decreased rapidly and by the middle of August diversion was limited to the Dollarhide, Powers and Minto ranches.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	100	100
2nd	100	100	100	100	100	82
3rd	100	98	99	30	3	0
4th	100	78	86	0	0	0
5th	100	61	74	0	0	0
6th	97	45	69	0	0	0
7th	13	33	13	0	0	0

Eagle Creek

Demand for water from Eagle Creek was small during the early part of the season with only a moderate demand occurring prior to peak discharge during May and June. During July the discharge of the creek decreased steadily and by the end of the month was only sufficient to supply the upper ditches. During September use of water was limited to domestic and stockwatering purposes within the town of Eagleville.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	100	99
2nd	100	100	100	80	82	8
3rd	94	79	100	39	1	0
4th	44	55	100	4	0	0

Emerson Creek

The water available for diversion from Emerson Creek was adequate to supply most of the requirements under first, second and third priority rights from the beginning of the season until about the middle of May. During the last two weeks of May all priorities received a full supply. During June and July the flow of the creek decreased steadily until very little water was available for second priority at the end of the period. The entire water supply was diverted by the first priority rights after August 1.

The distribution of water by months is shown in the following tabulation:

Priority	Percentage of Allotments Delivered					
	April	May	June	July	August	September
1st	100	100	100	100	94	97
2nd	99	100	70	14	2	0
3rd	70	69	9	0	0	0
4th	23	42	2	0	0	0

APPLICATIONS BEFORE THE DEPARTMENT OF PUBLIC WORKS

A hearing was held on June 7 and 8, 1951, in the Modoc County Court House, Alturas, California, relative to Application 13761 filed by E. Clarence Stopp for 0.50 cubic foot per second of water from springs in the West Branch of Soldier Creek. The hearing was conducted by representatives of the State Division of Water Resources, and attended by the applicant, the protestants and their respective attorneys together with pertinent witnesses. Action on the application is awaiting a decision in the matter of the hearing.

Application 13830 filed by Earl Daniels for water from the same source was cancelled at the request of the applicant.

CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS

The changes in ownership of lands and water rights, which have occurred subsequent to filing "Statement for Surprise Valley Watermaster Service Area, County of Modoc, State of California, for 1951" and which shall be included in the 1952 statement for the service area, are listed in the following tabulation:

Tract No.	Name of Water Right Owner Appearing in 1951 Statement	Name of Water Right Owner to Appear in 1952 Statement	Amount of Water c.f.s.
11	Seufferlein, E. K.	Steward, Bide and Steward, Winnie	0.15
32, 34	Carter, Oliver	Stewart, Brucie D.	0.28
33	Jacobs, Kenneth N. and Jacobs, Eva C.	Wimer, Vonetia	0.33
54	Raker, C. A.	Toney, Elmer	1.65
96	Morrison, Daisy O.	Crawford, Daisy O. Morrison	2.08
98	Cross, Clifford and Cross, Genevieve	Hicks, Gail E. and Hicks, Alice I.	0.05
110	Malitz, Harold R.	Allen, Sylvester E.	1.26
114, 115, 117	Davis, James H.; Davis, Eldred H.; McKnight, W. B.; and McKnight, Ida B.	Davis, James H. and Davis, Eldred H.	4.84
132	Branson, Oscar E. and Branson, Marjory E.	Branson, Jesse and Branson, Clara	0.08

TABLE 1

PRECIPITATION FOR SEASONAL YEAR 1950-1951
CEDARVILLE, MODOC COUNTY, CALIFORNIA

Month	Normal Precipitation Inches	1950-1951 Precipitation Inches
October	1.54	1.98
November	1.50	2.50
December	1.03	1.52
January	1.77	1.85
February	1.58	2.32
March	1.44	.30
April	.97	.81
May	.99	1.80
June	.71	.32
July	.25	.00
August	.16	.20
September	.50	.00
Total	12.44	13.60

From U. S. Weather Bureau Records.

TABLE 2

Daily Discharge in Cubic Feet Per Second
MILL CREEK ABOVE DIVERSIONS
March 20 to September 30, 1951

Day	March	April	May	June	July	August	September
1	NO	8.0	19.1	20	5.8	1.7	1.1
2		9.2	18.6	18.6	5.5	1.6	1.0
3		12.2	20	18.1	5.5	1.6	1.0
4	RECORD	15.0	21	19.1	5.2	1.6	1.0
5		16.5	22	18.1	4.9	1.6	1.0
6		18.1	22	17.5	4.6	1.6	1.0
7		18.6	24	17.0	4.6	1.7	1.0
8		19.6	25	16.5	4.4	1.6	.9
9		21	25	15.0	3.9	1.6	.9
10		22	26	15.0	3.6	1.6	.9
11		21	37	14.5	3.6	1.6	.9
12		22	34	14.5	3.4	1.5	1.0
13		24	33	14.0	3.3	1.5	1.0
14		24	31	14.0	3.3	1.4	1.1
15		24	29	14.0	3.0	1.3	1.1
16		25	30	13.6	2.9	1.3	1.2
17		26	31	12.6	2.9	1.3	1.2
18		26	29	11.7	2.9	1.3	1.2
19		25	29	10.4	2.7	1.3	1.2
20	12.6	24	30	10.0	2.4	1.3	1.2
21	10.9	23	29	9.6	2.1	1.3	1.2
22	10.4	21	30	9.2	2.0	1.5	1.2
23	9.6	21	29	9.2	2.0	1.5	1.2
24	10.0	20	29	8.8	2.0	1.4	1.2
25	10.0	18.6	29	8.4	1.9	1.2	1.2
26	9.6	22	30	8.0	1.8	1.2	1.3
27	10.0	22	30	7.6	1.8	1.1	1.3
28	10.0	23	31	6.9	1.7	1.2	1.3
29	10.0	21	29	6.5	1.7	1.2	1.3
30	9.2	19.6	24	6.1	1.7	1.2	1.3
31	8.4		21		1.8	1.1	
Total Sec. Ft. Days	*120.7	612.4	846.7	384.5	98.9	43.9	33.4
Mean Sec. Ft.	*10.1	20.4	27.3	12.8	3.2	1.4	1.1
Total Ac. Ft.	*239	1,215	1,679	763	196	87	66

Total for 195-day period - 4,245 acre-feet.

* 12-day period.

TABLE 3

Daily Discharge in Cubic Feet Per Second
SOLDIER CREEK ABOVE DIVERSIONS
March 18 to September 30, 1951

Day	March	April	May	June	July	August	September
1		15.6	11.6	8.8	2.6	1.5	1.8
2	NO	18.8	13.2	8.1	2.5	1.4	1.7
3		24	14.8	7.8	2.5	1.4	1.7
4		24	14.1	8.1	2.4	1.6	1.7
5		25	12.0	7.2	2.4	1.6	1.6
6		25	17.0	6.6	2.3	1.8	1.6
7		26	18.2	6.1	2.3	1.7	1.4
8		26	18.2	5.9	2.2	1.6	1.3
9	RECORD	28	16.0	5.6	2.1	1.6	1.3
10		23	15.6	5.6	2.0	1.5	1.2
11		23	14.8	5.3	1.9	1.5	1.2
12		24	17.0	5.3	1.8	1.5	1.2
13		25	18.8	5.2	1.8	1.4	1.2
14		24	22	4.9	1.8	1.4	1.2
15		25	24	4.8	1.8	1.3	1.4
16		25	23	4.4	1.8	1.2	1.4
17		23	22	4.1	1.8	1.2	1.5
18	13.2	19.7	21	3.9	1.6	1.2	1.6
19	14.1	20	19.2	3.7	1.7	1.3	1.6
20	18.8	16.0	19.2	3.5	1.7	1.3	1.5
21	21	14.6	18.2	3.4	1.7	1.3	1.5
22	18.8	13.5	18.2	3.1	1.6	2.2	1.5
23	17.9	13.5	16.5	2.8	1.6	2.2	1.5
24	18.8	14.8	16.0	2.6	1.5	1.9	1.5
25	19.2	14.1	15.6	2.6	1.6	1.8	1.5
26	18.8	14.6	14.8	2.6	1.4	1.7	1.5
27	18.2	14.6	15.2	2.8	1.4	1.7	1.5
28	18.2	13.5	13.2	2.9	1.4	1.8	1.5
29	17.9	12.8	11.6	2.8	1.4	1.9	1.5
30	16.0	11.6	10.3	2.6	1.5	1.9	1.5
31	15.2		9.8		1.5	1.8	
Total Sec. Ft. Days	*246.1	597.7	511.1	143.1	57.6	49.2	44.1
Mean Sec. Ft.	*17.6	19.9	16.5	4.8	1.9	1.6	1.5
Total Ac. Ft.	*488	1,186	1,014	284	114	98	87

Total for 197-day period - 3,271 acre-feet.

* 14-day period.

TABLE 4

Daily Discharge in Cubic Feet Per Second
PINE CREEK AT DIVISION BETWEEN NORTH AND SOUTH CHANNELS
March 20 to September 30, 1951

Day	March	April	May	June	July	August	September
1	NO	5.0	4.8	NO	NO	NO	NO
2		6.5	6.2				
3	RECORD	8.5	8.1	FLOW	FLOW	FLOW	FLOW
4		10.2	7.5				
5		10.2	5.8				
6		10.2	10.2				
7		10.9	16.3				
8		12.8	16.3				
9		13.6	13.2				
10		11.1	10.7				
11		10.4	10.4				
12		10.4	10.4				
13		10.7	13.9				
14		9.6	13.9				
15		9.2	11.6				
16		9.2	10.0				
17		9.0	8.7				
18		7.9	7.5				
19		6.7	6.2				
20	11.4	6.0	5.2				
21	9.2	5.4	5.0				
22	6.7	5.0	4.2				
23	6.3	4.5	3.8				
24	7.1	4.2	3.0				
25	6.5	3.6	2.5				
26	6.5	3.4	2.0				
27	6.3	3.4	1.6				
28	5.8	4.2					
29	6.0	4.2	NO				
30	5.1	4.0					
31	4.3		FLOW				
Total Sec. Ft. Days	*81.2	230.0	**219.0				
Mean Sec. Ft.	*6.8	7.7	**8.1				
Total Ac. Ft.	*161	456	**434				

Total for 69-day period - 1,051 acre-feet.

* 12-day period.
** 27-day period.

TABLE 5

Daily Discharge in Cubic Feet Per Second
CEDAR CREEK ABOVE DIVERSIONS
April 1 to September 30, 1951

Day	April	May	June	July	August	September
1	9.2	11.4	8.0	3.1	1.2	0.6
2	8.8	11.9	7.8	3.1	1.2	.6
3	10.0	12.6	7.3	3.0	1.2	.6
4	10.4	13.2	6.4	3.0	1.1	.6
5	10.0	12.2	6.4	2.5	1.1	.5
6	12.0	15.2	6.4	2.5	1.1	.4
7	12.2	17.6	6.4	2.4	1.1	.4
8	12.8	20	6.4	2.3	1.1	.4
9	13.9	18.9	6.4	2.2	1.1	.4
10	14.6	21	6.3	2.1	1.0	.4
11	13.6	25	6.0	2.0	1.0	.4
12	13.2	26	5.8	2.0	1.0	.4
13	13.2	27	5.7	1.8	1.0	.4
14	13.7	27	5.4	1.8	.9	.4
15	13.2	26	5.5	1.7	.9	.4
16	12.0	25	5.3	1.6	.9	.4
17	12.2	24	5.1	1.5	.8	.4
18	12.4	22	4.9	1.4	.9	.4
19	13.7	18.9	4.7	1.5	.9	.4
20	13.6	16.6	4.6	1.5	.9	.4
21	13.2	15.2	4.6	1.5	1.0	.4
22	12.4	13.7	4.4	1.4	2.5	.4
23	12.0	13.6	4.1	1.4	2.0	.4
24	11.4	13.4	3.9	1.4	1.5	.4
25	11.3	12.8	3.8	1.4	1.0	.4
26	11.3	12.0	3.8	1.3	1.0	.4
27	11.2	11.2	3.7	1.3	.9	.4
28	11.9	10.2	3.6	1.3	.9	.4
29	10.8	9.2	3.5	1.3	.8	.4
30	11.0	8.2	3.3	1.2	.8	.4
31		8.2		1.2	.8	
Total Sec. Ft. Days	361.2	519.2	159.5	57.7	33.6	12.9
Mean Sec. Ft.	12.0	16.7	5.3	1.9	1.1	0.4
Total Ac. Ft.	716	1,030	316	114	67	26

Total for 183-day period - 2,269 acre-feet.

TABLE 6

Daily Discharge in Cubic Feet Per Second
NORTH DEEP CREEK ABOVE DIVERSIONS
April 1 to September 30, 1951

Day	April	May	June	July	August	September
1	6.4	7.3	5.2	1.7	1.0	1.0
2	6.4	6.4	4.9	1.7	1.0	1.0
3	7.0	6.6	4.9	1.6	1.0	1.0
4	8.2	6.6	4.9	1.6	1.0	1.0
5	8.7	6.6	4.9	1.6	1.0	1.0
6	9.1	13.3	4.5	1.5	1.0	1.0
7	9.1	13.8	4.2	1.4	1.0	1.0
8	9.1	12.3	4.0	1.4	1.0	1.0
9	9.5	11.9	3.8	1.4	1.0	1.0
10	9.5	12.9	3.5	1.4	1.0	1.0
11	9.5	14.2	3.3	1.4	1.1	1.0
12	10.0	13.8	3.2	1.3	1.1	1.0
13	10.5	14.8	2.9	1.3	1.1	1.0
14	10.0	14.2	2.7	1.2	1.1	1.0
15	9.5	14.2	2.7	1.2	1.1	1.0
16	9.5	13.3	2.5	1.2	1.1	1.0
17	10.5	13.8	2.4	1.1	1.1	1.0
18	10.0	13.3	2.4	1.1	1.1	1.0
19	9.5	12.9	2.4	1.1	1.1	1.0
20	9.1	11.9	2.4	1.1	1.2	1.0
21	8.7	11.4	2.1	1.2	1.3	1.0
22	8.2	10.0	1.9	1.1	1.3	1.0
23	7.8	10.0	1.8	1.1	1.4	1.0
24	7.0	9.1	1.8	1.1	1.3	1.0
25	6.6	8.7	1.7	1.1	1.3	1.0
26	6.6	8.2	1.7	1.1	1.3	1.0
27	6.6	7.8	1.7	1.0	1.3	1.1
28	6.6	7.8	1.7	1.0	1.3	1.1
29	7.0	7.3	1.7	1.0	1.3	1.1
30	7.3	6.6	1.7	1.0	1.2	1.1
31		5.8		1.0	1.0	
Total Sec. Ft. Days	253.5	326.8	89.5	39.0	35.1	30.4
Mean Sec. Ft.	8.4	10.5	3.0	1.3	1.1	1.0
Total Ac. Ft.	503	648	178	77	70	60

Total for 183-day period - 1,536 acre-feet.

TABLE 7

Daily Discharge in Cubic Feet Per Second
SOUTH DEEP CREEK BELOW ESPIL DITCH
April 1 to September 30, 1951

Day	April	May	June	July	August	September
1	7.4	11.7	8.0	1.3	0.6	0.6
2	7.4	13.0	6.8	1.3	.6	.6
3	9.0	21	6.2	1.2	.6	.6
4	15.6	25	5.8	1.2	.6	.6
5	23	23	6.2	1.2	.6	.6
6	21	49	5.3	1.2	.6	.6
7	23	58	4.9	1.1	.6	.6
8	23	45	4.1	1.0	.6	.6
9	38	38	3.8	1.0	.6	.6
10	38	41	3.5	.9	.6	.6
11	35	38	3.5	.9	.6	.6
12	37	38	3.2	.8	.6	.6
13	32	47	3.0	.8	.6	.6
14	32	41	3.0	.8	.6	.6
15	25	37	2.7	.8	.6	.6
16	25	35	2.5	.8	.6	.6
17	28	35	2.5	.8	.6	.6
18	23	30	2.3	.8	.6	.6
19	21	28	2.3	.8	.6	.6
20	19.0	28	2.1	.8	.6	.6
21	17.2	28	1.9	.8	.6	.6
22	15.6	25	1.9	.8	.7	.6
23	14.0	19.0	1.9	.7	.8	.6
24	13.0	17.0	1.8	.7	.7	.6
25	11.7	17.2	1.8	.7	.6	.6
26	10.6	15.6	1.6	.6	.6	.6
27	9.0	14.0	1.5	.6	.6	.6
28	9.0	13.0	1.5	.6	.6	.6
29	9.0	11.7	1.4	.6	.6	.6
30	9.7	10.6	1.3	.6	.6	.6
31		9.0		.6	.6	
Total Sec. Ft. Days	601.2	861.8	98.3	26.8	19.0	18.0
Mean Sec. Ft.	20.0	27.8	3.3	0.9	0.6	0.6
Total Ac. Ft.	1,192	1,709	195	53	38	36

Total for 183-day period - 3,223 acre-feet.

TABLE 8

Computed Daily Discharge in Cubic Feet Per Second
NORTH DEEP AND SOUTH DEEP CREEKS ABOVE DIVERSIONS
April 1 to September 30, 1951

Day	April	May	June	July	August	September
1	14.2	19.0	13.2	3.0	1.6	1.6
2	14.2	20	11.7	3.0	1.6	1.6
3	16.4	27	11.1	2.8	1.6	1.6
4	24	32	10.7	2.8	1.6	1.6
5	32	30	11.1	2.8	1.6	1.6
6	31	63	9.8	2.7	1.6	1.6
7	33	72	9.1	2.5	1.6	1.6
8	33	57	8.1	2.4	1.6	1.6
9	49	50	7.6	2.4	1.6	1.6
10	49	54	7.0	2.3	1.6	1.6
11	46	52	6.8	2.3	1.7	1.6
12	48	52	6.4	2.1	1.7	1.6
13	44	62	5.9	2.0	1.7	1.6
14	43	55	5.7	2.0	1.7	1.6
15	36	51	5.4	2.0	1.7	1.6
16	36	48	5.0	2.0	1.7	1.6
17	39	49	4.9	1.9	1.7	1.6
18	34	43	4.7	1.9	1.7	1.6
19	32	41	4.7	1.9	1.7	1.6
20	29	40	4.5	1.9	1.8	1.6
21	26	40	4.0	2.0	1.9	1.6
22	25	35	3.8	1.9	2.0	1.6
23	22	29	3.7	1.8	2.2	1.6
24	21	26	3.6	1.8	2.0	1.6
25	19.0	26	3.5	1.8	1.9	1.6
26	18.0	24	3.3	1.7	1.9	1.6
27	16.0	22	3.2	1.6	1.9	1.7
28	16.5	21	3.2	1.6	1.9	1.7
29	16.5	21	3.1	1.6	1.9	1.7
30	17.5	17.2	3.0	1.6	1.8	1.7
31		14.8		1.6	1.6	
Total Sec. Ft. Days	880.3	1,193.0	187.8	65.7	54.1	48.4
Mean Sec. Ft.	29.3	38.5	6.3	2.1	1.7	1.6
Total Ac. Ft.	1,746	2,366	373	130	107	96

Computed total for 183-day period - 4,818 acre-feet.

TABLE 9

Daily Discharge in Cubic Feet Per Second
OWL CREEK BELOW ALLEN-ARRECHE DITCH
April 1 to September 30, 1951

Day	April	May	June	July	August	September
1	11.0	22	30	14.8	2.5	1.3
2	11.0	22	30	14.1	2.4	1.2
3	11.5	20	40	13.5	2.4	1.0
4	11.5	18.4	50	12.4	2.4	1.0
5	12.9	18.4	59	11.5	2.2	1.0
6	14.1	19.2	79	11.0	2.1	1.0
7	14.8	20	16.8	10.2	2.1	1.0
8	15.2	20	16.8	9.3	2.1	1.0
9	15.2	19.2	16.8	9.0	2.0	1.0
10	14.1	19.2	18.4	8.5	2.0	1.0
11	14.1	20	19.2	8.2	1.8	1.0
12	15.2	20	20	7.5	1.8	1.0
13	15.2	20	33	7.2	1.8	.9
14	17.7	20	30	6.8	1.8	.8
15	20	30	44	6.2	1.7	.8
16	22	40	44	5.7	1.7	.8
17	22	40	44	5.2	1.6	.8
18	24	50	34	4.9	1.5	.8
19	26	36	30	4.7	1.5	.8
20	28	40	26	4.3	1.5	.8
21	26	44	26	4.3	1.5	.8
22	24	50	26	4.1	1.4	.8
23	23	59	24	3.6	2.2	.8
24	23	82	22	3.4	2.1	.8
25	26	69	19.2	3.4	1.6	.8
26	28	59	18.4	3.2	1.5	.8
27	24	54	17.7	3.2	1.4	.8
28	23	50	16.8	2.9	1.3	.8
29	22	50	16.1	2.8	1.3	.8
30	22	59	15.2	2.6	1.3	.8
31		44		2.6	1.3	
Total Sec. Ft. Days	576.5	1,134.4	882.4	211.1	55.8	27.0
Mean Sec. Ft.	19.2	36.6	29.4	6.8	1.8	0.9
Total Ac. Ft.	1,143	2,250	1,750	419	111	54

Total for 183-day period - 5,727 acre-feet.

TABLE 10

Daily Discharge in Cubic Feet Per Second
RADER CREEK AT CONCRETE DIVISION STRUCTURE
April 20 to September 30, 1951

Day	April	May	June	July	August	September
1		16.7	25	12.2	1.8	1.5
2		15.7	22	11.8	1.7	1.4
3	NO	15.3	22	11.0	1.7	1.5
4		14.8	22	10.1	1.7	1.5
5		13.5	22	8.1	1.7	1.5
6		12.2	20	7.0	1.7	1.4
7		11.4	19.6	6.3	1.8	1.4
8	RECORD	12.2	19.0	6.3	1.8	1.4
9		13.1	19.0	5.9	1.8	1.4
10		14.4	18.6	5.9	1.7	1.4
11		15.3	20	5.9	1.7	1.4
12		16.7	21	5.6	1.6	1.4
13		16.7	22	4.8	1.6	1.4
14		16.7	23	4.8	1.7	1.4
15		16.7	23	4.6	1.6	1.2
16		16.7	23	4.6	1.5	1.2
17		16.7	23	3.9	1.5	1.2
18		19.0	20	3.9	1.5	1.2
19		21	19.6	3.6	1.5	1.2
20	22	22	18.6	3.6	1.5	1.2
21	22	25	17.6	3.4	1.6	1.2
22	21	28	16.7	3.2	1.9	1.2
23	19.6	33	16.2	2.7	2.7	1.2
24	19.6	35	15.7	2.5	1.8	1.2
25	19.0	35	15.3	2.4	1.6	1.2
26	20	36	15.3	2.2	1.5	1.2
27	23	37	14.4	2.3	1.5	1.2
28	19.0	39	13.5	2.3	1.6	1.2
29	18.6	40	13.1	2.3	1.6	1.2
30	17.6	36	12.7	2.2	1.7	1.2
31		32		2.0	1.6	
Total Sec. Ft. Days	*221.4	692.8	572.9	157.4	52.2	39.2
Mean Sec. Ft.	*20.1	22.3	19.1	5.1	1.7	1.3
Total Ac. Ft.	*439	1,374	1,136	312	104	78

Total for 164-day period - 3,443 acre-feet.

* 11-day period.

TABLE 11

Computed Daily Discharge in Cubic Feet Per Second
RADER CREEK ABOVE DIVERSIONS
April 20 to September 30, 1951

Day	April	May	June	July	August	September
1		18.0	28	15.3	2.4	1.7
2	NO	17.0	25	14.8	2.3	1.6
3		16.5	25	14.8	2.3	1.7
4		16.0	25	13.4	2.3	1.7
5		14.8	25	11.0	2.3	1.7
6		13.5	23	9.0	2.3	1.6
7		12.5	23	8.3	2.4	1.6
8		13.2	22	8.3	2.4	1.6
9	RECORD	14.4	22	7.8	2.4	1.6
10		15.7	22	7.8	2.3	1.6
11		16.5	24	7.8	2.2	1.6
12		18.0	25	7.5	2.1	1.6
13		18.0	26	6.3	2.0	1.6
14		18.0	27	6.3	2.0	1.6
15		18.0	27	5.6	1.9	1.4
16		18.0	27	5.1	1.8	1.4
17		18.0	27	4.3	1.8	1.4
18		20	24	4.3	1.8	1.4
19		22	24	4.0	1.8	1.4
20	23	24	23	4.0	1.8	1.4
21	23	26	22	3.8	1.8	1.4
22	22	32	21	3.6	2.1	1.4
23	21	36	20	3.0	3.0	1.4
24	21	39	19.7	2.8	2.1	1.4
25	20	39	19.2	2.7	1.8	1.4
26	21	40	19.2	2.5	1.7	1.4
27	24	42	18.2	2.6	1.7	1.4
28	20	44	17.1	2.7	1.8	1.5
29	20	45	17.0	2.8	1.8	1.5
30	18.6	41	15.9	2.8	1.9	1.5
31		37		2.6	1.8	
Total Sec. Ft. Days	*233.6	763.1	683.3	197.6	64.1	45.5
Mean Sec. Ft.	*21.2	24.6	22.8	6.4	2.1	1.5
Total Ac. Ft.	*463	1,514	1,355	392	127	90

Total for 164-day period - 3,941 acre-feet.

* 11-day period.

TABLE 12

Daily Discharge in Cubic Feet Per Second
EAGLE CREEK ONE-HALF MILE BELOW MOUTH OF CANYON
April 17 to September 30, 1951

Day	April	May	June	July	August	September
1	NO	16.0	40	28	4.3	3.0
2		14.1	38	26	4.3	3.0
3		13.7	38	25	4.0	3.0
4	RECORD	13.7	38	23	4.0	2.9
5		12.4	36	21	3.8	2.7
6		13.2	34	19.2	3.6	2.6
7		12.8	32	17.6	3.5	2.5
8		12.8	31	16.6	3.5	2.5
9		13.7	32	15.6	3.5	2.4
10		20	35	13.7	3.3	2.4
11		29	38	12.0	3.3	2.5
12		27	40	11.3	3.3	2.5
13		26	41	10.5	3.2	2.5
14		24	42	9.9	3.0	2.5
15		21	44	9.7	3.0	2.5
16		25	47	8.7	3.0	2.5
17	29	31	44	8.7	3.0	2.5
18	27	35	42	8.5	3.0	2.5
19	27	37	40	8.2	3.0	2.5
20	28	38	39	8.2	3.2	2.5
21	28	42	38	8.0	3.6	2.5
22	28	44	38	7.5	3.8	2.5
23	27	49	37	7.3	4.3	2.5
24	27	51	35	6.9	4.2	2.5
25	25	55	33	6.9	3.3	2.5
26	24	60	32	6.4	3.2	2.5
27	24	59	31	6.2	3.1	2.5
28	24	59	31	6.0	3.1	2.5
29	21	56	31	4.5	3.1	2.5
30	17.6	53	30	4.5	3.0	2.5
31		43		4.5	3.0	
Total Sec. Ft. Days	*356.6	1,006.4	1,107	370.1	106.5	77.0
Mean Sec. Ft.	*25.5	32.5	36.9	11.9	3.4	2.6
Total Ac. Ft.	*707	1,996	2,196	734	211	153

Total for 167-day period - 5,997 acre-feet.

* 14-day period.

TABLE 13

Daily Discharge in Cubic Feet Per Second
EMERSON CREEK ABOVE DIVERSIONS
April 3 to September 30, 1951

Day	April	May	June	July	August	September
1	NO	15.7	23	6.0	2.5	2.1
2	RECORD	14.9	19.2	5.8	2.5	2.1
3	12.2	15.3	16.0	5.8	2.5	2.1
4	12.2	15.3	14.4	5.5	2.1	2.1
5	12.8	14.4	15.2	5.5	1.9	2.1
6	13.7	15.3	13.8	5.3	1.8	2.1
7	14.5	15.3	13.1	4.5	1.8	2.1
8	15.7	15.3	12.6	4.5	1.8	2.2
9	16.6	15.3	12.1	4.2	1.8	2.2
10	19.3	16.6	12.1	4.0	1.8	2.1
11	18.7	19.3	11.7	4.0	1.7	2.1
12	19.3	17.6	11.3	4.0	1.7	2.1
13	20	17.2	10.9	3.8	1.7	1.9
14	22	16.6	10.4	3.7	1.7	1.9
15	23	17.2	10.4	3.5	1.7	1.9
16	24	18.2	10.0	3.3	1.7	1.9
17	26	19.9	10.0	3.1	1.8	1.9
18	25	22	9.3	2.9	1.9	1.9
19	25	23	9.0	2.7	1.9	1.9
20	22	24	8.6	2.5	2.2	1.9
21	22	25	8.3	3.1	2.2	1.9
22	21	26	8.0	2.9	2.5	1.9
23	19.9	27	7.5	2.9	2.7	1.9
24	19.3	28	7.3	2.7	3.0	1.9
25	18.7	29	7.0	2.7	2.7	1.9
26	18.7	35	6.7	2.7	2.7	1.9
27	18.7	36	6.3	2.5	2.7	2.1
28	18.7	40	6.3	2.5	2.7	2.1
29	18.2	36	6.0	2.5	2.7	2.2
30	16.6	31	6.3	2.5	2.5	2.2
31		26		2.5	2.2	
Total Sec. Ft. Days	*533.8	687.4	322.8	114.1	67.1	60.6
Mean Sec. Ft.	*19.1	22.2	10.8	3.7	2.2	2.0
Total Ac. Ft.	*1,059	1,363	640	226	133	120

Total for 181-day period - 3,541 acre-feet.

* 28-day period.

TABLE 14

PERCENTAGE OF ALLOTMENTS DELIVERED FROM SOLDIER CREEK
March 19 to September 30, 1951

Period	Group Entitled to Water	Percentage of Allotments Delivered								Average Delivery to Surplus Rights c.f.s.
		First Priority	Second Priority	Third Priority	Fourth Priority	Fifth Priority	Sixth Priority	Seventh Priority	Eighth Priority	
March 19 - April 1	Lower	100	100	100	100	79	8	8	—	0.1
April 1 - April 11	Upper	100	100	100	99	90	90	83	80	2.9
April 11 - April 24	Lower	100	100	100	100	79	69	66	—	2.4
April 24 - May 4	Upper	100	100	100	68	0	0	0	0	.0
May 4 - May 17	Lower	100	100	100	100	66	23	23	—	.7
May 17 - May 27	Upper	100	100	100	97	62	60	32	13	.0
May 27 - June 9	Lower	100	100	94	37	4	0	0	—	.0
June 9 - June 19	Upper	100	53	0	0	0	0	0	0	.0
June 19 - July 1	Both	100	33	0	0	0	0	0	0	.0
July	Both	90	4	0	0	0	0	0	0	.0
August	Both	83	1	0	0	0	0	0	0	.0
September	Both	77	0	0	0	0	0	0	0	.0