STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

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

REPORT ON

WATER MASTER SERVICE

ON

SHASTA RIVER AND ITS TRIBUTARIES

SISKIYOU COUNTY, CALIF.

1940 SEASON

BY

P. E. Stephenson
Assistant Hydraulic Engineer

Sacramento, California
February, 1941

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SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

February 26, 1941

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention: Mr. Gordon Zander,
Supervising Hydraulic Engineer

Dear Sir:

Herewith is submitted a report covering water master service within the Shasta River Water Master District, Siskiyou County, California, during the 1940 season.

The report presents a general description of the work and a discussion of the results obtained. Records of precipitation, run-off and other pertinent data are included.

Respectfully submitted,

P. E. Stephenson
Assistant Hydraulic Engineer

TABLE OF CONTENTS

	Page
INTRODUCTION	1
DISCUSSION OF RESULTS	2
Precipitation	2
Water Supply	2
DISTRIBUTION	4
Shasta River above confluence of Boles Creek	5
Shasta River below junction of Boles Creek and Boles Creek	5
Shasta River below Lake Dwinnell Reservoir	6
Beaughan Creek	8
Carrick Creek	9
Parks Creek	9
Big Springs	10
Lower Shasta River	11
Little Shasta River	12
Changes in Ownership	13

TABLES

1. Average of Precipitation at Mount Shasta City and Montague 1889 to 1940 - Monthly, Seasonal and Average Amounts in inches.

2. Monthly Precipitation for Seasonal Year 1939-1940, Compared with Mean Monthly Precipitation 1889 to 1940.

3. Daily Discharge in Cubic Feet Per Second - Shasta River Above Edson-Foulke Yreka Ditch.

4. Daily Discharge in Cubic Feet Per Second.- Parks Creek Above Duke North Ditch.

5. Daily Discharge in Cubic Feet Per Second - Parks Creek at Robertson Weir.

6. Daily Discharge in Cubic Feet Per Second.- Shasta River at Edgewood Bridge.

7. Daily Discharge in Cubic Feet Per Second.- Shasta River at Rowe Dam.

8. Daily Discharge in Cubic Feet Per Second.- Shasta River Near Montague.

9. Daily Discharge in Cubic Feet Per Second.- Little Shasta River above Harp Ditch.

10. Discharge in Cubic Feet Per Second. Carrick Spring.

TABLES (Cont'd)

11. Discharge in Cubic Feet Per Second - Cleland Spring.

12. Discharge in Cubic Feet Per Second - Dow and Hammond - Eddy Creek Ditches.

13. Daily Discharge in Cubic Feet Per Second - Beaughan Creek at Long-Bell Lower Weir.

14. Daily Discharge in Cubic Feet Per Second - Beaughan Creek above Jackson Ditch.

15. Daily Discharge in Cubic Feet Per Second - M.W.C.D. Parks Creek Canal at Head.

16. Daily Storage on hand in Acre-Feet - Lake Dwinnell Reservoir.

17. Daily Discharge in Cubic Feet Per Second - M.W.C.D. Shasta River Canal.

18. Record of Deliveries to Prior Right Owners from Lake Dwinnell Reservoir. 1929 to 1940, inclusive.

19. Record of Operation of Lake Dwinnell Reservoir. 1929 to 1940, inclusive.

20. Daily Discharge in Cubic Feet Per Second - Shasta River Water Association Pumping Plant.

21. Daily Discharge in Cubic Feet Per Second - Grenada Irrigation District Pumping Plant.

22. Ownership of Lands and Water Rights.

Report on

Water Master Service

on

Shasta River and Tributaries

Siskiyou County, California

~~During~~ 1940 Season ~~of 1940~~

INTRODUCTION

The Shasta River Water Master District was created by order of the Division of Water Resources under date of March 1, 1933, to embrace the water rights on Shasta River and its tributaries in Siskiyou County, California, excepting certain tributaries and springs named in said order, as established by Decree of the Superior Court, Siskiyou County, California, in the Shasta River Proceeding No. 7035, entered on December 30, 1932. Subsequent to creation of the district, the boundaries were changed to exclude the water rights on Willow Creek and its tributaries by "Order Changing Shasta River Water Master District, Siskiyou County, California, and Containing a Description of All of the Lands Within Said District as so Changed", dated December 30, 1935.

Water master service in the Shasta River Water Master District was carried on throughout the 1940 season in accordance with the "Distribution of Water" procedure contained in Sections 37 to 37f, inclusive,

of the Water Commission Act. Such service extended over the period from April 1 to October 1. P. E. Stephenson, Water Master, Shasta River Water Master District, administered the distribution of water from the streams within the district during the entire period. Harrison Smitherum was Supervising Water Master.

DISCUSSION OF RESULTS

Precipitation

Data on precipitation, as compiled from records kept at Mt. Shasta City and Montague, are presented in Tables 1 and 2 of this report. Table 1 also sets forth the monthly precipitation at Edgewood from August 1, 1934, to October 1, 1940.

Based upon the data presented in the above-mentioned tables, precipitation for the 1939-40 Season was 33.00 inches, or about 141 per cent of the mean for the 51 year period 1889 to 1940. Of this total, 84 per cent fell during the period from October 1 to April 1 as compared with the long time mean of 80 per cent for the same period. The total snow fall as recorded at Mt. Shasta City for the 1939-40 season was 25.5 inches as compared with the normal of about 104 inches, or about 25 per cent of normal. However, the measured snow pack on April 1, 1940, at the head of Parks Creek was 36.3 inches of water content as compared with 33.3 inches water content on the same date in 1938, this measuring station lying at elevation 6500.

Water Supply

Measuring stations, equipped with water stage recorders, were maintained at the stream gaging stations listed below. Intermittent measurements of the various springs within the area were also obtained.

The records of discharge for the several streams and springs are presented in Tables 3 to 11, inclusive, submitted at the end of this report.

Shasta River above Edson-Foulke Yreka Ditch

Parks Creek above Edson-Foulke Parks Creek Ditch

Parks Creek at Robertson Weir

Shasta River at Edgewood Bridge

Shasta River at Rowe Dam

Shasta River near Montague

Little Shasta River above Harp Ditch

The gaging station on Shasta River near Edgewood is maintained by the Montague Water Conservation District throughout the winter period of each season. During the winter of 1939-40 the gage well and recorder were carried downstream by the high water, hence the record at this station is presented for the period April 1 to September 30, only.

Measuring stations equipped with water stage recorders, were also maintained on streams, reservoirs and diversion conduits at critical control points, as an aid in the distribution of the available water supply. A list of these stations follows:

Shasta River at Grenada Pumps

Little Shasta River at Rose Dam

Beaughan Creek at Long Bell Lower Weir

Beaughan Creek above Jackson Ditch

Carrick Creek at Jackson Weir

M. W. C. D. Parks Creek Canal at head.

Lake Dwinnell Reservoir

Dennis-Terwilliger Weir

Soule Weir

Jones Weir

M.W.C.D. Shasta River Canal at Head

McKee Weir

M.W.C.D. Shasta River Canal at Big Springs - Little Shasta Road Crossing

Big Springs Lake

Big Springs Weir No. 1

Big Springs Weir No. 2

Water supply conditions during the 1940 season were entirely satisfactory throughout the early part of the season into July. Some shortage occurred during the latter part of July and August. However, early fall rains increased the flow in all the streams during September allowing fall irrigation throughout the entire district. A comparison of the run-off for the past seven seasons is presented in the following tabulation.

Name of Stream	Run-off in Acre Feet April 1 to October 1						
	1934	1935	1936	1937	1938	1939	1940
Shasta River above Yreka Ditch	4420	8510	7440	13600	19100*	4090	14800
Parks Creek " Duke N Ditch	2550	6100	6560	11000	14400*	4490	16000
Little Shasta River	850	5630	6520	5680	6060**	3270	4160
Beaughan Spring	2020	1960	1860	1820	1950	1810	1810
Big Springs	12400	12200	12100	12100	--	12100	--
Carrick Spring	2090	2090	2050	2020	2110	2000	2070
Cleland Spring	2400	2420	2400	2410	2790	3060	3070

*Does not include April Run-off.

**Period May 14 to September 30, inclusive.

Distribution

Distribution for the 1940 season followed the practices initiated during the past six seasons with little modification. The results accomplished in the several sections into which the stream system has been divided follow.

Shasta River Above Confluence of Boles Creek:

The water supply available to this area is the summation of the flow of Shasta River above the Edson-Foulke Yreka Ditch, Table 3 hereof, and the combined discharge of the Dow Eddy Creek Ditch and the Hammond-Scott Ditch diverting from Eddy Creek, Table 12 hereof. A summary of the distribution for the 1940 season is set forth in the following tabulation.

	Average Available Water Supply Cu.Ft.Per Sec.	Distribution in per cent of Priority Allotments		
		Hammond-Scott	Foulke et al	Dow
April	78.3	100	100	100
May	89.8	100	100	100
June	62.0	100	100	82
July	24.1	95	70	0
August	8.8	22	23	0
September	11.2	34	28	0

This area had sufficient water during the irrigation season prior to August 1 to satisfy all irrigation demands, after this date there was considerably more water available for irrigation purposes than is normally expected.

Shasta River below junction of Boles Creek and Boles Creek

One hundred per cent allotments were available for all priorities, excepting the storage rights of Montague Water Conservation District, up to about July 24. From July 24 to September 9 an average of about 60 per cent of allotments were delivered. From September 9 to September 30 an average of 100 per cent of allotments were again available. During the period July 24 to September 9, the available water was distributed on an equal and correlative basis among water right owners down to and including Frank H. Mills. Under this arrangement an average of about 60 per cent of allotments was

delivered.

Shasta River below Lake Dwinnell Reservoir

Water master service on this section of the stream system involves the operation of the Montague Water Conservation District's Lake Dwinnell Reservoir during the irrigation season. The water master in cooperation with the District exercises control over deliveries from the reservoir both to the District and to the water right owners below the reservoir, who are entitled to water from the reservoir in accordance with agreements with the District.

Delivery of water to the water right owners below the reservoir commenced on April 17 and continued until September 30. There were 2400 acre feet of storage in the reservoir at the end of the season.

Delivery of water for District use commenced on April 22 and continued until September 13. Water was supplied by the District to the Big Springs Irrigation District during the period April 22 to September 1 and to Stallcup and Sons during the period April 22 to September 14.

Summaries of the operation of the reservoir during the 1940 season are given in the following tabulations:

Operation of Lake Dwinnell Reservoir during the 1940 Season

Date	Storage On Hand Acre-feet	Storage Acre-feet	Inflow to Reservoir Acre-feet	Total Draft Acre-feet	Measured Delivery Acre-feet: District	Measured Delivery Acre-feet: Below Dam	Seepage and Evaporation Loss from Reservoir Acre-feet
April 1	27,350						
May 1	25,400	1950	7570*	9520	3586**	269	5665
June 1	23,320	2080	7880	9960	3140	505	6315
July 1	17,160	6160	2180	8340	3430	375	4535
Aug. 1	9,750	7410	120	7530	3914	428	3188
Sept. 1	3,475	6275	0	6275	3987	587	1701
Oct. 1	2,410	1065	250	1315	512	172	631
		24940	18000	42940	18569	2336	22035

* Includes 300 acre-feet estimated in flow from Carrick Creek.
** Includes 2710 acre-feet wasted through M.W.C.D. Canal and down river.

Deliveries from Lake Dwinnell Reservoir
to
Prior Water Right Owners Below Reservoir
During 1940 Season

Name of Water Right Owner	Allotment as per Agreement Acre-feet	Amount delivered from Lake Dwinnell Reservoir for 1939 Season: Acre-feet	Per Cent of Allotment
J. L. Jones	198	198	100
John Soule	692	471*	68
J.W. and Mary L.Dennis	696	562*	81
McKee Company	1200	1105	92
E. S. Terwilliger	596	0*	0
Totals	3382	2336	69

*Accretions to the flow of Shasta River due to seepage from the Reservoir provided additional water which was available for diversion in amounts sufficient to supplement the release from the reservoir sufficient to supply full irrigation demands.

Submitted at the end of this report in Tables 15, 16, 17, 18 and 19, respectively, are records as follows:

15. Daily discharge of M.W.C.D. Parks Creek Canal showing amount of water diverted from Parks Creek to Lake Dwinnell Reservoir during the 1940 season.

16. Daily storage on hand in Lake Dwinnell Reservoir for the 1939-40 season.

17. Daily discharge of M.W.C.D. Shasta River Canal showing amount of water delivered from Lake Dwinnell Reservoir for District use during the 1940 season. (Includes water supplied by Big Spring Irrigation District and Stallcup).

18. Deliveries from Lake Dwinnell Reservoir to water right owners below reservoir from 1929 to 1940, inclusive.

19. Operation of Lake Dwinnell Reservoir from 1929 to 1940, inclusive.

Beaughan Creek

Two measurements were made during the 1940 season at the 8.0 foot rectangular weir, (Long-Bell upper weir) located at the head of Beaughan Creek. The results are given below:

Date	Gage Height In Feet	Discharge in Cu. Ft. Per Sec.
May 20, 1940	0.33	5.00
Aug. 7, 1940	0.33	5.00

These amounts of water were sufficient to supply 61 per cent of the total second priority allotments of 8.28 cubic feet per second. Distribution to the second priority water right owners was made in accordance with these percentages during the 1940 season.

The Long-Bell Lumber Company diverts practically the entire flow of Beaughan Creek. After use thereof at its saw mill, the downstream users share of the available water, or 65 per cent of the measured flow at Long-Bell upper weir, is returned to Beaughan Creek at the Long-Bell Lower Weir.

Based on the measurements this amount of water should equal 3.25 cubic feet per second during the 1940 season. A record of delivery over the Lower Long-Bell Weir is submitted in Table 13 at the end of this report. The flow of Beaughan Creek above the Jackson Ditch is submitted in Table 14 at the end of this report.

It will be noted from Table 13 that the average monthly flow at Long-Bell Lower Weir is from 116 to 147 per cent of the required flow.

At the beginning of the 1940 season the Lower Long-Bell Weir was replaced by a two foot Parshall measuring Flume, constructed of wood and lined with galvanized sheet metal.

Carrick Creek

Distribution on this stream during the 1940 season was confined largely to the first, second, third, fourth, fifth, and ninth priorities from Carrick Creek and the fifth and seventh priorities from Stone Creek. Sufficient water was available to supply the first, second, third, fourth and fifth priorities with 100 per cent allotments throughout the season. There was sufficient water available to supply the seventh priority with 100 per cent allotment during April, May, June and September with only 75 per cent available during July and August. There was water available for the ninth priority only during April, May and June.

Parks Creek

Distribution on Parks Creek for the 1940 season was in accordance with the practices followed during the past six seasons with little modification.

A summary of the distribution made during the 1940 season is set forth in the following tabulation.

Month	Measured Water Supply Cu. Ft. Per Sec.	Distribution in Per Cent of Priority Allotments			
		Duke 1	Caledonia 2	Foulke 3	Robertson 4, 6, 11, 12 and 15
April	100	100	100	100	100
May	112	100	100	100	100
June	34.5	100	100	95	74
July	7.6	100	52	1	13
Aug.	4.2	70	0	0	0.5
Sept.	5.6	87	22	0	2

Records of the flow available for the above distribution are set forth in Tables 4 and 5 of this report.

The fifth priority rights from the North Branch of Parks Creek were supplied with 100 per cent of their allotments until about July 15, however, the water available to these rights failed entirely on about August 1.

The 21st and 24th priority rights of M. A. Silva on the extreme lower end of Parks Creek received 100 per cent allotments throughout the season.

Big Springs

The Big Springs Irrigation District was supplied with irrigation water during the 1940 season from April 22 to September 1 with the exception of two periods, May 19 to 29, inclusive and June 14 to June 29, inclusive, during which the Big Springs pumps were operated. The pumps were also operated from August 31 to September 26, inclusive. 5340 ac. ft. delivered to B.S.I.D. (See letter March 5, #141)

Stallcupeand Sons were supplied with irrigation water throughout the irrigation season with the exception of the above mentioned periods

during May and June. Stallcup and Sons operated their pump during the period from June 20 to June 24.

It was possible to measure the discharge of Big Springs only once during the 1940 season, when a total flow of 37.6 cubic feet per second was found on May 21.

Lower Shasta River

The following tabulation sets forth the average diversion made by the Shasta River Water Association and the Grenada Irrigation District during the 1940 season along with the water supply available to the water users below Montague Bridge during the same period.

Month	Average Available Water Supply Flock, et al Cu. Ft. per Second	Average Diversion Shasta River Water Association Cu. Ft. Per	Average Diversion Grenada Irrigation District Cu. Ft. Per
April	264	30.1*	0
May	100	34.7	25.9
June	80.9	32.5	16.4
July	59.3	37.3	17.9
August	62.7	34.1	14.8
Sept.	104	30.1**	10.3

*4 day period
**12 day period

The daily discharge in cubic feet per second of Shasta River at Montague Bridge is set forth in Table 8 of this report.

The daily diversions in cubic feet per second of Shasta River Water Association and Grenada Irrigation Irrigation District are set forth in Tables 20 and 21, respectively.

Little Shasta River

Distribution on Little Shasta River for the 1940 season was in accordance with the practices followed during the past six seasons with little modification. Increased flow of Cleland Springs provided sufficient water to maintain 100 per cent of first, second, third and fourth priority allotments, excepting a period from August 27 to September 10 during which period an average of 65 per cent of fourth priority allotments was available.

A summary of the distribution during the 1940 season is shown in the following tabulation.

Month	Available Water Supply		Distribution in Per Cent of Priority Allotments						
	Cubic Feet Per Second	% of Total Allotment	1	2	3	4	5	6	7
April	44.8	62	100	100	100	100	100	100	70*
May	27.2	21	100	100	100	100	85	10	0
June	15.1	19	100	100	100	100	25	0	0
July	11.1	14	100	100	100	100	0	0	0
August	10.6	14	100	100	100	93	0	0	0
September	11.2	14	100	100	100	89	0	0	0

*Return flow and non-use provided sufficient excess water to satisfy seventh priority during April.

The flow of Little Shasta River above Harp Ditch is set forth in Table 9 of this report.

Intermittent measurements of the discharge of Cleland Springs are recorded in Table II of this report. The following tabulation compiled from measurements made during the period 1935 to 1940, inclusive, indicates the

reaction of Cleland Springs to years of abnormal precipitation.

Year	Discharge-Cubic Feet Per Second		
	Beginning of Season	End of Season	Mean
1935	6.81	662	6.65
1936	6.50	6.72	6.60
1937	6.50	6.78	6.65
1938	7.10	10.0	7.70
1939	8.77	8.25	8.44
1940	7.84	9.56	8.48

Changes of Ownership

The ownership of lands and water rights within the Shasta River Water Master District set forth in the Shasta River Decree No. 7035 have been traced to the owner of said lands and water rights as shown on the statement for the Shasta River Water Master District for 1941. Table 22 of this report sets forth the original ownership, intermediate ownerships, water right, tract No. and present owners along with the latest known mailing address.

Table 1

(Elevation 3555) (Elevation 2523)

AVERAGE OF PRECIPITATION AT MOUNT SHASTA CITY AND MONTAGUE 1889 to 1940

Monthly, Seasonal and Average Amounts in Inches

Season ~~Day~~	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Seasonal
1930-31	0.41	1.26	0.77	3.59	1.19	1.16	0.41	0.24	2.71	0.00	0.00	0.94	12.68
1931-32	1.95	.92	6.81	2.32	1.13	1.77	1.39	3.20	.50	.19	.00	.00	20.18
1932-33	.46	3.50	2.35	4.98	.64	5.86	.57	1.28	.34	.12	.00	.20	20.30
1933-34	1.24	.02	5.38	2.13	3.16	1.46	1.64	1.16	1.54	.58	.40	.24	18.95
1934-35	2.77	5.29	1.48	4.00	1.63	1.87	3.96	.34	.05	.22	.26	.31	22.18
1935-36	1.14	.96	3.04	6.00	3.76	.74	1.96	1.46	2.11	.34	.62	.14	22.27
1936-37	.02	.00	2.01	3.92	4.91	6.70	1.86	.50	3.20	.15	.00	.26	23.53
1937-38	2.31	6.88	4.54	4.25	8.17	5.88	1.74	.97	.16	.18	.00	.94	36.02
1938-39	1.80	2.34	1.30	2.08	1.06	1.87	.24	1.27	.14	.20	T	1.88	14.18
1939-40	1.00	.52	7.86	5.24	8.55	4.44	1.25	.99	.62	.08	T	2.45	33.00
1940-41	1.44	.90	9.88	5.34	7.64	5.42	4.77	2.25	1.64	.58	.65	.46	40.92
Totals	~~79.53~~	~~146.71~~	~~187.29~~	~~207.95~~	~~181.11~~	~~148.27~~	~~83.49~~	~~63.80~~	~~36.78~~	~~11.51~~	~~11.85~~	~~36.03~~	~~1194.32~~
Mean	80.97	147.61	197.17	213.29	188.75	153.69	88.21	66.05	38.42	12.09	12.50	36.49	1235.24
52 ~~51~~ Yrs.	~~1.56~~	~~2.88~~	~~3.67~~	~~4.08~~	~~3.55~~	~~2.91~~	~~1.64~~	~~1.25~~	~~0.72~~	~~0.22~~	~~.23~~	~~.71~~	~~23.42~~
	1.56	2.84	3.79	4.10	3.34	2.96	1.70	1.27	.74	.23	.24	.70	23.76

Precipitation at Edgewood - Elevation 2952

1933-34											0.38	0.00	
1934-35	1.30	3.53	1.08	1.65	1.15	2.62	2.58	0.43	0.57	0.38	.06	.21	15.56
1935-36	.81	.82	1.51	3.15	1.65	1.22	1.08	1.04	.45	.15	.00	.13	12.02
1936-37	.00	.00	.41	1.90	1.28	3.53	.86	1.06	1.27	.00	.00	.33	10.64
1937-38	1.52	3.49	4.24	3.47	5.45	5.16	.96	.89	.35	.08	.00	.60	26.21
1938-39	1.31	1.75	.44	1.17	.53	1.79	.56	.37	.51	.55	.37	1.27	10.62
1939-40	1.27	0.38	5.77	2.45	5.37	3.12	.92	.91	.68	.01	T	2.61	23.49
1940-41	2.61	.64	9.30	2.25	7.86	6.36	4.51	1.55	1.42	.29	.78	.07	37.64

TABLE 2

Monthly Precipitation for Seasonal Year 1939-40

Compared with Mean Monthly Precipitation 1889 to 1940

Month	Monthly Mean-51 Years		Monthly 1939-40		Snowfall at Mt. Shasta City in inches	
	Inches	Per cent of total	Inches	Per cent of tot.	Normal	1939-40
October	1.56	6.7	1.00	3.0		
November	2.88	12.3	.52	1.6		
December	3.67	15.6	7.86	23.8	24.9	T
January	4.08	17.4	5.24	15.9	37.0	2.0
February	3.55	15.1	8.55	25.9	19.4	23.5
March	2.91	12.4	4.44	13.5	17.8	T
April	1.64	7.0	1.25	3.8	4.4	T
May	1.25	5.3	.99	3.0		
June	0.72	3.1	.62	1.9		
July	.22	1.0	.08	0.2		
August	.23	1.0	T	0.0		
September	.71	3.1	2.45	7.4		
Totals	23.42	100.0	33.00	100.0	103.5	25.5

TABLE 3 -

Daily Discharge in Cubic Feet Per Second

SHASTA RIVER ABOVE EDSON-FOULKE YREKA DITCH

April 1 to September 30, 1940

Day	Apr.	May	June	July	Aug.	Sept.
1	85.0	66.0	59.0	33.0	9.40	5.00
2	84.0	81.0	64.0	34.0	9.40	5.20
3	83.0	76.0	60.0	33.0	9.40	13.0
4	82.0	91.0	56.0	31.0	9.40	8.00
5	81.0	67.0	56.0	31.0	9.40	6.60
6	81.0	61.0	54.0	31.0	8.70	6.60
7	86.0	60.0	52.0	30.0	8.00	5.70
8	83.0	60.0	50.0	29.0	7.80	5.50
9	81.0	70.0	48.0	27.0	7.50	5.60
10	81.0	86.0	48.0	25.0	7.40	5.60
11	79.0	94.0	52.0	22.0	7.20	5.30
12	81.0	94.0	60.0	18.0	7.00	6.00
13	92.0	94.0	61.0	19.0	6.80	13.0
14	98.0	92.0	59.0	20.0	6.60	7.00
15	86.0	91.0	59.0	18.0	6.40	6.00
16	81.0	89.0	59.0	18.0	6.20	5.70
17	76.0	87.0	61.0	20.0	6.20	8.00
18	76.0	81.0	59.0	18.0	6.10	17.0
19	72.0	81.0	76.0	17.0	6.00	13.0
20	73.0	83.0	64.0	17.0	5.90	11.0
21	72.0	84.0	59.0	17.0	5.80	8.00
22	76.0	84.0	50.0	14.0	5.70	7.30
23	78.0	86.0	46.0	14.0	5.60	7.30
24	78.0	88.0	44.0	14.0	5.60	7.00
25	63.0	87.0	46.0	14.0	5.50	7.00
26	63.0	78.0	46.0	14.0	5.50	8.00
27	58.0	70.0	43.0	13.0	5.50	20.0
28	58.0	66.0	40.0	12.0	5.40	18.5
29	58.0	68.0	35.0	11.0	5.30	11.0
30	58.0	72.0	31.0	10.0	5.20	10.5
31		68.0		9.00	5.20	
Tot. Sec. Ft. Days	2303.0	2455.0	1597.0	633.0	211.1	263.4
Mean Sec. Ft.	76.8	79.3	53.2	20.4	6.8	8.2
Total Ac. Ft.	4570	4870	3170	1260	419	522

TABLE 4

Daily Discharge in Cubic Feet Per Second

PARKS CREEK ABOVE DUKE NORTH DITCH

April 1 to September 30, 1940

Day	Apr.	May	June	July	Aug.	Sept.
1	93.0	102	70.2	11.3	5.70	3.90
2	92.0	118	67.3	11.3	5.70	3.90
3	91.0	104	61.7	11.3	5.30	7.30
4	90.0	102	57.6	10.5	4.90	6.20
5	87.9	86.2	53.7	9.90	4.50	5.00
6	84.5	81.2	51.1	9.70	4.50	4.80
7	89.6	78.0	48.6	9.50	4.40	4.70
8	89.6	89.6	46.3	9.10	4.30	4.70
9	93.0	118	41.0	8.90	4.20	4.60
10	97.0	144	40.0	8.70	4.20	4.50
11	102	155	42.0	7.80	4.20	4.40
12	122	162	43.0	7.10	4.20	5.40
13	132	165	42.0	7.00	4.20	6.00
14	144	155	33.5	6.90	4.30	5.40
15	118	146	30.1	6.80	4.10	5.00
16	102	132	27.7	6.70	3.90	5.40
17	94.8	126	26.9	6.60	3.90	6.20
18	108	116	24.7	6.60	3.90	9.90
19	112	118	33.5	6.60	3.90	8.70
20	112	120	26.9	6.50	3.90	5.20
21	112	118	23.3	6.40	3.90	4.80
22	122	124	20.8	6.20	3.90	4.70
23	120	126	19.6	6.10	3.90	4.60
24	108	122	17.8	6.10	3.90	4.60
25	93.0	122	16.2	6.10	3.90	4.40
26	84.5	89.6	15.2	6.00	3.90	6.20
27	76.4	81.2	14.7	6.00	3.90	7.30
28	76.4	73.2	14.7	5.90	3.90	7.00
29	76.4	73.2	13.1	5.80	3.90	7.00
30	84.5	71.7	13.1	5.80	3.90	7.00
31		70.2		5.80	3.90	
Total Sec. Feet Days	3011.2	3489.1	1036.3	235.0	131.1	168.8
Mean Second Feet	100.3	112.5	34.5	7.6	4.2	5.6
Total Acre-Feet	5970	6910	2050	466	260	335

TABLE 5

Daily Discharge in Cubic Feet Per Second

PARKS CREEK AT ROBERTSON WEIR

April 19 to September 30, 1940

Day	Apr.	May	June	July	Aug.	Sept.
1		16.0	16.0	3.90	1.10	0.40
2		16.0	16.0	3.50	1.10	0.30
3		16.0	16.0	3.10	1.30	.60
4		16.0	16.0	2.70	1.40	.70
5		16.0	16.0	2.70	1.60	.70
6		16.0	16.0	2.70	1.70	.70
7		16.0	16.0	2.60	1.60	.70
8		16.0	16.0	2.60	1.00	.80
9		16.0	16.0	2.20	.90	.90
10		16.0	16.0	2.20	1.10	.80
11		16.0	16.0	1.70	1.10	1.90
12		16.0	16.0	1.40	.90	1.30
13		16.0	16.0	1.20	.80	3.70
14		16.0	14.0	1.30	.70	3.70
15		16.0	14.0	1.30	.60	3.50
16		16.0	14.0	1.40	.50	2.90
17		16.0	12.0	1.90	.50	3.10
18		16.0	12.0	2.00	.50	5.90
19	16.0	16.0	12.5	1.60	.50	5.90
20	16.0	16.0	12.0	1.60	.50	5.90
21	16.0	16.0	11.7	1.90	.50	6.10
22	16.0	16.0	10.1	1.90	.50	6.10
23	16.0	16.0	6.60	1.70	.40	5.60
24	16.0	16.0	5.00	1.90	.30	5.20
25	16.0	16.0	5.20	1.60	.40	5.00
26	16.0	16.0	4.50	1.70	.40	5.20
27	16.0	16.0	3.90	1.70	.60	6.80
28	16.0	16.0	3.50	1.70	.50	6.80
29	16.0	16.0	3.50	1.70	.50	6.80
30	16.0	16.0	3.50	2.10	.50	6.80
31		16.0		2.60	.50	
Tot. Sec. Feet days	192.0	496.0	356.0	64.1	24.5	104.8
Mean Sec. Feet	16.0	16.0	11.9	2.1	0.8	3.5
Total Ac. Ft.	381.	984.	706.	127.	48.6	208.

TABLE 6

Daily Discharge in Cubic Feet Per Second

SHASTA RIVER AT EDGEWOOD BRIDGE

April 1 to September 30, 1940

Day	Apr.	May	June	July	Aug.	Sept.
1	270	84.0	54.0	11.0	5.40	5.10
2	226	158.	54.0	10.2	5.60	5.40
3	172	150.	44.0	9.60	5.60	6.80
4	164	200.	68.0	9.60	5.60	8.20
5	142	134	54.0	9.60	5.90	7.50
6	124	114.	61.0	9.00	5.80	7.50
7	126	100	68.0	8.20	5.80	7.00
8	118	92.0	43.0	7.50	5.80	6.80
9	112	118	32.0	7.00	5.40	6.80
10	109	178	29.0	6.20	5.10	6.40
11	108	188	33.0	6.20	5.10	6.40
12	109	178	44.0	5.80	4.80	6.40
13	114	178	42.0	5.90	4.80	11.80
14	122	170	40.0	6.40	4.80	11.0
15	122	160	38.0	6.20	4.80	10.7
16	108	148	35.0	5.80	4.80	9.60
17	102	142	32.0	5.40	5.00	9.90
18	100	134	30.0	5.80	4.60	16.5
19	100	128	44.0	5.90	4.60	15.5
20	112	128	38.0	6.20	4.70	17.0
21	102	128	33.0	6.20	4.70	11.8
22	108	122	28.0	6.60	5.00	12.6
23	128	137	25.0	5.80	5.60	11.0
24	122	137	23.0	5.40	5.40	10.7
25	138	134	21.0	5.40	5.10	9.90
26	106	110	21.0	5.40	5.10	9.90
27	94.0	78.0	19.0	5.40	5.00	21.4
28	78.0	72.0	17.0	5.40	5.00	17.5
29	68.0	64.0	16.0	5.40	5.00	16.5
30	64.0	58.0	14.0	5.40	5.00	16.0
31		52.0		5.40	5.10	
Tot. Sec. Feet days	3668.	3974.	1100.	209.3	160.0	319.6
Mean Sec. Feet	122.	128.	36.6	6.75	5.15	10.6
Total Ac. Ft.	7270.	7880.	2180.	415.	317.	634.

TABLE 7

Daily Discharge in Cubic Feet Per Second

SHASTA RIVER AT ROWE DAM

July to September 30, 1941

Day	July	August	September
1	7.00	0.00	0.00
2	6.00		.00
3	5.50		.00
4	5.50		1.26
5	5.50		1.26
6	5.00		1.26
7	3.93		1.26
8	3.27		1.59
9	2.85		1.59
10	2.67		2.49
11	2.10		1.74
12	1.54		1.59
13	1.41		1.59
14	1.11		3.06
15	.99		3.48
16	.99		4.59
17	.87		5.82
18	.75		7.65
19	.62		7.95
20	.50		7.38
21	.50		7.38
22	.26		7.65
23	.28		7.38
24	.26		6.60
25	.10		4.83
26	.10		4.38
27	.00		7.38
28	.00		7.95
29	.00		7.95
30	.00		8.22
31	.00		
Tot. Sec. Feet Days	59.64		125.28
Mean Sec. Feet	1.92		4.18
Tot. Ac. Feet	118.		248

TABLE 8

Daily Discharge in Cubic Feet Per Second

SHASTA RIVER NEAR MONTAGUE

April to September, 1940

Day	Apr.	May	June	July	Aug.	Sept.
1	510	156	119	58.0	72.0	115
2	410	170	158	53.0	59.0	93.0
3	380	190	170	44.0	44.0	56.0
4	370	170	170	44.0	44.0	69.0
5	350	174	154	42.0	50.0	65.0
6	350	150	154	43.0	65.0	56.0
7	340	150	115	44.0	75.0	56.0
8	340	138	100	53.0	72.0	69.0
9	332	119	100	56.0	65.0	77.0
10	332	100	96.0	75.0	62.0	72.0
11	326	96.0	93.0	72.0	59.0	75.0
12	322	100	86.0	72.0	54.0	72.0
13	302	86.0	97.0	75.0	54.0	93.0
14	270	86.0	93.0	82.0	54.0	107.
15	238	75.0	69.0	93.0	50.0	119
16	236	75.0	44.0	79.0	50.0	119
17	220	72.0	34.0	80.0	54.0	119
18	204	79.0	30.0	67.0	59.0	134
19	196	79.0	39.0	62.0	64.0	138
20	190	77.0	34.0	56.0	67.0	134
21	182	69.0	39.0	53.0	75.0	130
22	174	62.0	48.0	53.0	86.0	130
23	172	56.0	50.0	47.0	62.0	130
24	160	69.0	47.0	42.0	62.0	130
25	198	62.0	44.0	42.0	58.0	126
26	192	64.0	47.0	42.0	56.0	122
27	168	74.0	54.0	42.0	56.0	126
28	154	67.0	50.0	56.0	59.0	130
29	150	69.0	42.0	65.0	72.0	130
30	150	82.0	50.0	72.0	86.0	130
31		103		75.0	100.0	
Tot. Sec. Feet days	7918.0	3119.0	2426.0	1839.0	1945.0	3122.0
Mean Sec. Feet	264	100.	80.9	59.3 T	62.7	104.
Total Ac. Ft.	15700.	6180.	4810.	3650.	3860	6190.

TABLE 9

Daily Discharge in Cubic Feet Per Second

LITTLE SHASTA RIVER ABOVE HARP DITCH

April 1 to September 30, 1940

Day	April	May	June	July	Aug.	Sept.
1	60.0	24.3	14.2	3.90	2.00	1.20
2	60.0	26.9	12.4	3.60	1.70	1.20
3	59.2	29.7	11.2	3.50	1.70	3.00
4	63.8	29.0	10.9	3.00	1.60	2.70
5	56.0	28.3	10.6	3.00	1.50	1.70
6	50.0	26.9	9.80	3.00	1.80	1.60
7	47.0	25.5	8.30	2.70	1.50	1.60
8	45.0	23.7	7.40	2.60	1.40	1.60
9	43.0	22.5	7.40	2.60	1.40	1.60
10	41.0	22.5	7.40	2.60	1.50	1.60
11	38.2	21.9	7.40	2.60	1.50	1.40
12	39.1	21.3	7.20	2.60	1.40	1.40
13	39.1	20.1	6.60	2.60	1.40	1.80
14	37.2	20.1	6.40	2.60	1.40	1.60
15	34.4	18.6	6.20	2.60	1.40	1.60
16	31.1	18.6	6.10	2.60	1.40	1.70
17	30.4	17.7	5.80	2.60	1.40	1.80
18	30.4	17.2	5.80	2.60	1.40	3.80
19	29.7	16.8	5.80	2.40	1.40	3.20
20	21.9	16.3	5.80	2.40	1.30	1.70
21	27.6	16.3	5.40	2.40	1.20	1.70
22	20.1	15.9	5.40	2.30	1.30	1.70
23	20.7	15.0	5.10	2.20	1.40	1.60
24	21.3	16.8	4.70	2.20	1.90	1.60
25	32.6	13.0	4.70	2.20	1.50	1.60
26	29.0	13.0	4.30	2.20	1.50	1.60
27	25.5	13.0	4.30	2.20	1.40	1.60
28	25.5	13.4	4.10	2.20	1.40	1.60
29	25.5	12.7	4.10	2.20	1.40	1.60
30	25.5	12.4	3.90	2.20	1.40	1.60
31		12.1		2.20	1.40	
Tot. Sec. Feet days	1109.8	601.5	208.7	80.60	45.8	54.00
Mean Sec. Feet	37.0	19.4	6.96	2.60	1.48	1.70
Total Ac. Ft.	2200	1190	414	160	90	107

TABLE 10

Discharge in Cubic Feet Per Second

CARRICK SPRING

April 1 to September 30, 1940

Day	April	May	June	July	August	Sept.
1						
2						
3						
4			5.61			
5						
6						5.80
7						
8		5.77				
9						
10				5.58		
11	5.77					
12						
13						
14					5.68	
15						5.80
16				5.58		
17						
18						
19			5.58			
20						
21						
22						
23				5.58		
24		5.77				
25						5.80
26						
27	5.77					
28					5.80	
29			5.58			
30						
31						
Mean Sec.,Feet	5.77	5.77	5.59	5.58	5.74	5.80
Total Ac. Ft.	343	355	3.32	343	353	345
Total Acre Feet - 6 Months Period						2070

TABLE 11

Discharge in Cubic Feet Per Second

CLELAND SPRING

April 1 to September 30, 1940

Day	April	May	June	July	Aug.	Sept.
1						
2						
3						
4			7.95			
5						
6					8.77	
7						
8						
9						
10						
11						
12						
13						
14		7.84				
15					9.08	
16						
17						
18		7.84				
19						
20				8.58	9.22	
21						
22						
23						
24						
25			8.25			
26						9.56
27						
28					9.32	
29						
30						
31					9.31	
Mean Sec. Feet	7.84	7.84	8.10	8.50	9.10	9.45
Total Acre-Feet	466	482	482	522	559	562
Total Acre-feet - 6 months Period						3070

TABLE 12

Discharge in Cubic Feet Per Second

DOW AND HAMMOND - EDDY CREEK DITCHES

April 1 to September 30, 1940

Day	April	May	June	July	Aug.	Sept.
1			10.46			
2					2.04	2.04
3		9.77				
4						
5				5.30		
6						
7						
8						
9						
10						
11						
12			9.68	4.56		
13						
14						
15						
16						
17		10.46*			2.10	
18						
19				3.92		
20						
21			9.34	2.04		
22						
23						
24		10.46*				
25			8.91**			
26	8.91					
27						4.50
28			6.84			
29						
30					1.75	
31						
Mean Sec. Feet	8.91*	10.46	8.80	3.70	2.00	3.00
Total Acre-Ft.	88	643	524	228	123	178

* Dow Eddy Creek Ditch 1.55 cubic feet per second.
Hammond-Scott Ditch 8.91 cubic feet per second.

** On June 25 and subsequent thereto the Dow-Eddy Creek Ditch was dry.

TABLE 13

Daily Discharge in Cubic Feet Per Second

BEAUGHAN CREEK AT LONG BELL LOWER WEIR

May to September, 1940

Day	May	June	July	August	September
1		4.11	3.53	4.40	5.02
2		4.20	3.53	4.70	5.02
3		3.91	3.35	4.70	5.55
4		3.91	3.81	5.12	4.91
5		3.72	4.30	4.92	5.02
6		3.72	4.40	3.81	5.02
7		3.26	4.20	4.60	5.12
8		3.62	3.81	4.91	5.12
9		3.81	3.35	4.11	4.81
10	5.12	3.53	3.81	4.11	4.91
11	4.60	3.17	3.62	4.60	4.91
12	3.08	3.17	3.91	4.11	5.12
13	3.26	3.17	4.30	4.30	5.12
14	3.62	3.26	4.20	4.81	5.23
15	4.20	3.91	3.62	4.70	5.23
16	4.81	3.91	3.62	4.60	4.81
17	4.50	3.81	4.60	4.60	4.60
18	4.20	4.01	4.70	4.60	5.23
19	3.81	4.60	4.40	4.50	4.81
20	3.72	4.20	4.70	4.40	4.60
21	3.53	4.60	4.60	4.40	4.60
22	3.44	4.50	4.11	4.40	4.60
23	3.26	4.60	3.81	4.50	4.20
24	3.26	4.81	3.81	5.02	4.01
25	3.91	4.50	3.91	5.12	4.01
26	4.01	4.50	4.01	4.91	4.30
27	3.81	4.50	4.30	4.60	4.30
28	3.62	3.26	4.81	4.60	4.30
29	2.57	3.44	3.44	4.60	4.30
30	3.26	3.91	3.81	4.70	4.30
31	3.26		4.30	4.60	
Tot. Sec. Feet Days	82.85	117.62	124.67	142.05	143.08
Mean Sec. Feet	3.77	3.92	4.02	4.58	4.77
Tot. Ac. Feet	164	233	247	282	284

TABLE 14

Daily Discharge in Cubic Feet Per Second

BEAUGHAN CREEK ABOVE JACKSON DITCH

Day	July	August	September
1		2.94	3.67
2		3.30	3.80
3		3.18	4.99
4		3.54	4.18
5		3.80	4.05
6	3.30	2.71	4.18
7	3.30	2.71	4.05
8	3.06	3.80	4.18
9	2.60	3.30	4.05
10	2.71	2.82	3.93
11	2.71	3.30	3.67
12	2.37	3.06	3.93
13	3.06	2.94	4.18
14	3.42	3.06	4.05
15	2.94	3.06	4.18
16	2.48	3.18	4.05
17	2.82	3.18	3.80
18	3.93	3.06	4.72
19	3.42	3.54	4.32
20	3.42	3.06	3.54
21	3.54	3.06	
22	3.30	3.06	
23	2.60	3.06	
24	2.60	3.67	
25	2.37	3.80	
26	2.60	3.54	
27	3.06	3.42	
28	3.67	3.42	
29	3.30	3.42	
30	2.26	3.54	
31	2.82	3.30	
Total Second Feet Days	77.66	100.83	81.52
Mean Second Feet	2.98	3.25	4.08
Total Acre Feet	154	200	162

TABLE 15

Daily Discharge in Cubic Feet Per Second

M.W.C.D. PARKS CREEK CANAL AT HEAD

Day	April	May	June
1		30.0	14.0
2		32.0	15.0
3		34.0	8.00
4		34.0	7.00
5		25.0	6.00
6		23.0	5.00
7		24.0	.00
8		30.0	
9		48.0	
10		68.0	
11		70.0	
12		70.0	
13		65.0	
14		57.0	
15		50.0	
16		48.0	
17		40.0	
18		35.0	
19	13.0	38.0	
20	26.0	38.0	
21	27.0	37.0	
22	35.0	38.0	
23	40.0	40.0	
24	38.0	38.0	
25	30.0	32.0	
26	22.0	24.0	
27	20.0	20.0	
28	20.0	15.0	
29	16.0	14.0	
30	20.0	.0	
31		6.00	
Total Second Feet Days	307.0	1123.0	55.0
Total Acre Feet	609	2230	109
Total Acre Feet Six Months Season			2950

TABLE 16

Daily Storage on Hand in Acre-Feet

LAKE DWINNELL RESERVOIR

October, 1939 to September 30, 1940

Day	March	April	May	June	July	Aug.	Sept.
1		27,350	25,400	23,320	17,160	9,750	3,475
2		27,350	25,100	23,250	16,900	9,450	3,420
3		27,500	25,175	23,110	16,660	9,250	3,310
4		27,325	25,175	22,970	16,420	9,010	3,255
5		27,200	25,325	22,830	16,180	8,775	3,200
6		26,975	25,400	22,690	15,940	8,535	3,150
7		26,900	25,400	22,480	15,700	8,300	3,100
8		26,600	25,400	22,270	15,460	8,115	3,050
9		26,600	25,325	21,990	15,220	7,890	3,000
10		26,450	25,325	21,710	14,920	7,710	2,950
11		26,375	25,325	21,430	14,680	7,485	2,900
12		26,225	25,325	21,080	14,440	7,265	2,825
13	24,050	26,150	25,325	20,735	14,200	7,050	2,750
14	24,050	26,150	25,400	20,540	13,960	6,800	2,680
15	24,050	26,225	25,325	20,475	13,720	6,585	2,630
16	24,050	26,225	25,325	20,345	13,420	6,380	2,590
17	24,050	26,225	25,250	20,215	13,190	6,140	2,590
18	24,050	26,225	25,100	20,085	13,025	5,940	2,540
19	24,050	26,225	24,950	19,890	12,695	5,740	2,520
20	23,975	26,225	24,950	19,760	12,420	5,490	2,520
21	23,975	26,225	24,875	19,630	12,200	5,280	2,520
22	23,975	26,225	24,875	19,370	12,000	5,070	2,520
23	23,900	26,225	24,800	19,175	11,850	4,900	2,500
24	23,900	26,150	24,725	18,980	11,650	4,610	2,475
25	23,900	26,075	24,650	18,720	11,450	4,545	2,475
26	24,050	26,000	24,575	18,460	11,200	4,350	2,475
27	24,275	25,925	24,425	18,200	10,950	4,200	2,430
28	24,800	25,850	24,275	17,940	10,700	4,050	2,410
29	25,025	25,625	24,125	17,680	10,450	3,900	2,410
30	25,850	25,475	23,900	17,420	10,200	3,750	2,410
31	26,600		23,600		10,000	3,610	

TABLE 17

Daily Discharge in Cubic Feet Per Second

M.W.C.D. SHASTA RIVER CANAL
Showing Delivery to Montague Water Conservation District

Day	April	May	June	July	August	Sept.
1		54.0	66.0	58.0	66.0	35.0
2		54.0	55.0	56.0	66.0	27.0
3		55.0	55.0	57.0	65.0	18.0
4		30.0	55.0	57.0	65.0	11.0
5		8.0	55.0	55.0	66.0	9.00
6		24.0	57.0	54.0	68.0	8.00
7		35.0	71.0	54.0	68.0	8.00
8		44.0	80.0	52.0	69.0	8.00
9		56.0	80.0	52.0	68.0	9.00
10		57.0	80.0	50.0	68.0	9.00
11		57.0	90.0	50.0	67.0	17.0
12		57.0	96.0	47.0	66.0	21.0
13		57.0	80.0	47.0	67.0	21.0
14		64.0	0	47.0	71.0	16.0
15		68.0	0	59.0	70.0	9.00
16		74.0	0	70.0	69.0	9.00
17		78.0	0	73.0	68.0	9.00
18		78.0	26.0	73.0	67.0	9.00
19		53.0	50.0	71.0	67.0	.00
20		0	55.0	70.0	68.0	
21		0	57.0	70.0	69.0	
22	46.0	7.0	62.0	70.0	69.0	
23	47.0	35.0	64.0	70.0	66.0	
24	50.0	48.0	72.0	70.0	65.0	
25	50.0	58.0	74.0	70.0	64.0	
26	50.0	66.0	74.0	70.0	56.0	
27	50.0	63.0	75.0	68.0	50.0	
28	50.0	63.0	67.0	68.0	49.0	
29	50.0	78.0	61.0	68.0	50.0	
30	49.0	83.0	61.0	69.0	51.0	
31		83.0		68.0	51.0	
Tot. Sec. Feet days	442.0*	1582.0	1718.0	1913.0	1989.0	253.0**
Mean Sec. Feet	49.1	51.0	57.3	61.7	64.2	14.0
Total Ac. Ft.	876	3140	3410	3790	3940	502

Total Acre-Feet - 6 Month Period 15658

TABLE 18

Record of Deliveries to Prior Right Owners From

LAKE DWINNELL RESERVOIR

1929 to 1940, Inclusive

Year	Jones	Soule	Dennis	McKee	Ter-williger	Total Acre feet	Total % of allotments
1929	-	-	-	-	-	-	-
1930	190	485	465	923	-	2060	61
1931	198	473	473	909	-	2050	61
1932	-	-	-	-	-	-	-
1933	198	692	687	1130	101	2810	83
1934	159	692	461	922	159	2390	71
1935	198	609	600	1075	234	2720	80
1936	198	637	527	1195	202	2759	82
1937	198	633	489	1200	120	2690	80
1938	198	-	-	1073	-	1271	38
1939	198	692	687	1138	308	3023	90
1940	198	471	562	1105	0	2336	69

1929 - Records of deliveries missing

1930 - 1931 Records of delivery to Terwilliger Missing

1932 - Records missing

1938 - Soule, Dennis and Terwilliger had sufficient water from reservoir seepage to supply irrigation demands.

1940 - Reservoir seepage supplied sufficient water for full irrigation demand for Terwilliger and supplemental supply in addition to the release from the reservoir to supply Soule and Dennis with a full irrigation demand.

TABLE 19

RECORD OF OPERATION OF LAKE DWINNELL RESERVOIR 1929 TO 1940, INCLUSIVE

Year	Reservoir storage on April 1	Inflow Apr. 1 to Sep.30	Total Available water supply	Maximum Storage in Reservoir		Delivery From Reservoir					Storage in reservoir when delivery to MWCD ceased	Seepage and evaporation loss
						M.W.C.D.		Prior Rights		Total		
				Ac. Ft.	Date	Ac. Ft.	Period	Ac. Ft.	Period	Ac. Ft.		
1929				4,500		No record*		No record				
1930				10,500	Mar.14	5,000	May 5 to July 4	2,060	Apr. 23 to Sep.5	7,060	2,800	
1931				4,250	Apr. 4	0		2,050	Apr. 1 to Jul.25	2,050	2,800	
1932	5,500			5,500	Mar.20	2,000	May 15 to June 15	No record		2,000	2,000	
1933	5,200			6,500	May 3	4,750	Apr. 21 to Jul.16	2,810	Apr.10 to Sept. 3	7,560	2,200	
1934	4,850			5,000	Apr. 5	1,500	Apr. 10 to Apr.23	2,390	Apr. 5 to July 22	3,890	2,800	
1935	5,000	4,620	9,620	5,700	May 10	2,700	May 10 to Jun.2	2,720	Apr.9 to Aug. 11	5,420	3,000	4,200
1936	5,460	4,720	10,180	6,020	Mar. 3	1,560	Apr. 14 to May 20	2,760	Apr.14 to Aug. 11	4,320	3,250	5,860
1937	5,940	14,040	19,980	9,800	May 6	7,360	May 5 to Sept.15	2,690	Apr.26 to Sep.9	10,050	0	9,930
1938	31,600	28,440	60,040	32,100	May 3	** 23,910	May 1 to Sept. 30	1,270	May 1 to Sept.30	25,180	2,850	34,860
1939	7,350	1,210	8,560	7,350	Apr. 1	2,350	Apr. 9 to May 5	3,020	Apr.4 to Aug.10	5,370	3,525	3,190
1940	27,350	24,940	52,290	28,000	Apr. 6	***18,570	Apr.22 to Sep18	2,340	Apr. 17 to Sep.30	20,900	2,540	22,040

***Includes 2710 acre feet wasted in April to maintain reservoir level and deliveries during entire season to Big Springs Irrigation District and to Stallcup and Sons.

**Includes 831 acre-feet wasted through outlet to prevent increase in reservoir level and 9,980 acre-feet delivered by District to Stallcup and Big Springs Irrigation District.

*In 1929 the District used water only for puddling its canal.

TABLE 20

Daily Discharge in Cubic Feet Per Second

SHASTA RIVER WATER ASSOCIATION PUMPING PLANT

April 27 to September 12, 1940

Day	April	May	June	July	August	September
1		38.0	38.0	38.0	38.0	00
2		14.2	30.0	38.0	38.0	00
3		0.0	0.0	38.0	38.0	28.5
4		13.0	0.0	38.0	38.0	38.0
5		38.0	0.0	38.0	38.0	38.0
6		38.0	0.0	38.0	38.0	38.0
7		38.0	31.8	38.0	38.0	38.0
8		38.0	38.0	33.5	38.0	38.0
9		38.0	38.0	38.0	38.0	38.0
10		38.0	38.0	38.0	38.0	38.0
11		38.0	38.0	38.0	38.0	38.0
12		38.0	38.0	38.0	38.0	28.5
13		38.0	38.0	38.0	38.0	0
14		38.0	38.0	38.0	38.0	
15		38.0	38.0	38.0	38.0	
16		38.0	38.0	31.8	38.0	
17		38.0	38.0	28.5	38.0	
18		38.0	38.0	38.0	38.0	
19		38.0	38.0	38.0	38.0	
20		38.0	38.0	38.0	38.0	
21		38.0	38.0	38.0	17.4	
22		38.0	38.0	38.0	26.0	
23		38.0	38.0	38.0	19.6	
24		20.6	38.0	38.0	38.0	
25		38.0	38.0	38.0	38.0	
26		38.0	38.0	38.0	38.0	
27	6.30	38.0	38.0	38.0	38.0	
28	38.0	38.0	38.0	38.0	38.0	
29	38.0	38.0	38.0	38.0	35.0	
30	38.0	38.0	38.0	38.0	10.8	
31		38.0		38.0	0.0	
Tot. Sec. Feet days	120.3	1073.8	973.8	1157.8	1058.8	361.0
Mean Sec. Feet	30.1	34.7	32.5	37.3	34.1	30.1
Total Ac. Ft.	239	2130	1930	2300	2100	716

TABLE 21

Daily Discharge in Cubic Feet Per Second

GRENADA IRRIGATION DISTRICT PUMPING PLANT

To September, 1940

Day	May	June	July	August	September
1		22.5	13.0	11.3	.0
2		4.0	28.8	26.8	15.6
3		00	30.0	30.0	10.6
4		00	30.0	30.0	0
5		00	30.0	16.5	12.8
6	11.0	14.2	30.0	0	17.0
7	16.0	19.0	30.0	12.6	17.0
8	16.0	19.0	23.8	17.0	17.0
9	16.0	19.0	0	17.0	17.0
10	16.0	19.0	0	17.0	17.0
11	10.0	20.0	0	17.0	17.0
12	0.60	20.0	0	17.0	17.0
13	32.0	2.6	0	30.0	17.0
14	32.0	31.0	0	30.0	17.0
15	32.0	31.0	19.2	30.0	17.0
16	32.0	19.6	20.0	20.0	9.2
17	32.0	23.3	20.0	16.0	0
18	32.0	31.0	20.0	16.0	0
19	28.4	31.0	30.0	6.0	0
20	32.0	31.0	30.0	0	0
21	32.0	22.2	30.0	0	0
22	31.7	16.0	30.0	15.0	0
23	32.0	16.0	30.0	20.0	0
24	32.0	16.0	30.0	20.0	0
25	32.0	10.7	30.0	19.0	11.8
26	26.2	0	30.0	12.0	21.0
27	30.0	7.3	11.3	13.0	27.0
28	30.0	16.0	0	0	22.5
29	30.0	16.0	0	0	9.2
30	30.0	16.0	0	0	0
31	30.0		0	0	
Total Sec. Feet Days	673.9*	493.4	554.1	459.2	309.7
Mean Second Feet	25.9	16.4	17.9	14.8	10.3
Total Acre-Feet	1340	980	1100	910	610

Total for Season - 4940 Acre-Feet

Note: Put first name 1st in first and second columns

TABLE 22

OWNERSHIP OF LANDS AND WATER RIGHTS
(Names of Present Owners arranged alphabetically)

Owner Under Decree	Intermediate Possessors	Water Right in c.fs.	Tract No.	Present Owners	Address of Present Owners
Albee, Abbie C.		2.269	5-104	Albee, Abbie C.	Weed, California
Alexander, Samuel		1.62	5-90	Alexander, Alice	Edgewood, California
Araujo, Domingos B. and Araujo, Manuel B., ~~Ruggles, Mollie Armstrong and Ruggles, Charles H.~~	Armstrong, Mollie	2.62	5-36	Araujo, Domingos B. and Araujo, Manuel B., Ruggles, Mollie Armstrong; Ruggles, Chas. E. ~~Armstrong, Mollie~~	Yreka, California
		~~2.35~~	~~5-64~~		~~Gazelle, California~~
Belcastro, Joe		0.55	5-102	Belcastro, Joe	Weed, California
Scalise, Louis	McGregor, Fred	0.10	5-100	Belcastro, Mike	Weed, California
Big Springs Irr. Dist.		30.00	5-52	Big Springs Irr. Dist.	c/o R. E. Swigert, Montague, California
Barnum, Lucretia		Mining	5-32	Bower, Grover N.	P.O.Box 411, Yreka, California
Dennis, J.W. & Dennis, Mary L.	Cummins, Nellie E.	(a) 0.64	5-59	Cummins ? Bray, Walter J.	Hornbrook, California
~~Earhart, Esther L. and Joseph Brown~~		(b) 0.54	5-14	Brown, Ira E. ~~and~~ ~~Myrtle~~ Brown, Myrtle	Montague, California
Carrick, May and Carrick, Cecile		2.47	5-103	Cady, Mae Carrick and Crebbs, Cecile Carrick ?	Weed, California
Cavenaugh, R. E.		3.62	5-87	Caldwell, Callie; Hoy, Nora; and Rucker, Leverne	Edgewood, California; Edgewood, California; c/o R.E. Cavenaugh, Edgewood, California

Put after on page 2

Note: Sub-paragraph numbers given in foot notes are sub-paragraphs of Paragraph III of the Shasta River Decree.

(a) Sub-paragraph 72 — Water divided 1/4 & 3/4 to Tracts 5-59 and 5-58, respectively

(b) Sub-paragraph 88 — Shares of water as per interests in Musgrove-Linton Ditch

TABLE 22 (Continued)

Owner Under Decree	Intermediate Possessors	Water Right in CFS	Tract No.	Present Owners	Address of Present Owners
California Joint Stock Land Bank of San Francisco, a corporation		5.30	5-72	California Joint Stock Land Bank of San Francisco, a corporation	c/o Harry P. Mc Clelland, Vice Pres. 458 Montgomery St. S. F.
California Oregon Power Co., a corporation.		Power	5-33	California Oregon Power Co., a corporation	216 West Main St., Medford, Oregon ~~c/o O.G. Steel, Dist. Mgr., Yreka, Calif.~~
Chase, Ray V. and Chase, Ethel L.		2.10	5-86	Cardoza, Albert	Edgewood, California
Carrigan, Louis R.; Carrigan, Grace M.; Van Norman, Estate of H.E.& Van Norman, Maude		4.80	5-63	Carrigan, Louis R. Carrigan, Grace M. Van Norman, Estate of H.E. Van Norman, Maude	Gazelle, California
Central Pacific Railway Co., a corporation		0.65	5-93	Central Pacific Railway Co., a corporation	65 Market St. San Francisco, Calif.
Clark, Pearl H.		0.70	5-75	Clark, Paul J and Clark, Cades	Edgewood, California
Ruggels, Mollie Armstrong and Ruggels, Charles A.	Mollie Armstrong	2.35	5-64	Coonrod, Mollie Armstrong	Gazelle, California
Cooper, J. T.		1.00	5-81	Cooper, Ida T.	Suisun, California
Cullen, Charles B.		0.12	5-7	Cullen, Est. of Charles B. and Meiss, Susie	c/o Susie Meiss, Montague, California
Davidson, Charles S. and Davidson, Dora		0.74	5-99	Davidson, Charles S. and Davidson, Dora	Weed, California
Dow, Roxanna; Davidson, Minnie May; and ~~Gamber~~ Camber, Naomi E.		5.025	5-79	Davidson, Clarence R.	Edgewood, California
Dow, Ira M.	Dow, Roxanna	1.40	5-78	Davidson, Herbert A. and Kendall, Naomi E.	Edgewood, California
Davis, Isaac S.		3.00	5-30	Davis, Isaac S.	Montague, California

TABLE 22 ((tinued)

Owner Under Decree	Intermediate Possessors	Water Right in CFS	Tract No.	Present Owner#	Address of Present Owner#
Dennis, J. W. and Dennis, Mary L.		(a) 2.16	5-58	Dennis, J. W. and Dennis, Mary L.	Edgewood, California
~~Edson and Foulke Co., a corporation~~ de Soza, Manuel		(c) 5.95	5-46	de Soza, Manuel	Grenada, California
Garoutte, T.W. and Garoutte, Sarah E.	Hudson, Susie	2.15	5-44	Doran, John L.	Montague, California
Dow, Roxanna		1.80	5-80	Dow, Roxanna	Edgewood, California
Dreyer, E. F. et al		(b) 1.09	5-16	Estate of Dreyer, E. F.	Montague, California
Edson & Foulke Company, a Corporation		(c) 36.835	(5-47 (5-65	Edson & Foulke Co., a Corporation	c/o Lewis M.Foulke, Mgr Gazelle, California
Ekstrom, Roland		0.25	5-45	Ekstrom, Roland	Box 113, M.R.A. Montague, California
~~Chase, Gussie L. Behnke~~	~~Enos, J. V.~~	~~2.65~~	~~5-85~~	~~Enos, J. V.~~ Lemos, Henry	~~Edgewood, California~~
Fiock, George		0.79	5-37	Fiock, George	Yreka, California
King, G.W.		4.18	5-42	Fiock, George W.	Montague, California
Fiock, Henry		4.99	5-35	Fiock, Henry	Yreka, California
Goose Nest Properties, Inc., a Corporation		0.92	5-2	Goose Nest Properties, Inc. a Corporation	c/o John Soule, Pres., Edgewood, California
Sullivan, E. A.	Gow, Stanley and Gow, Imogene	(b) 0.65	5-20	Gow, Imogene	Montague, California
Grenada Irrigation District		40.00	5-49	Grenada Irrigation Dist.	c/o G. A. Inabnit, Sec., Grenada, Calif.
Haight, Estate of A. C.		0.55	5-28	Haight, Emma J.	Montague, California

See break down on yellow copy

Put after Lemos, George on Sheet 5

c - Sub-paragraph 124 - Water divided 1/2 and 1/2 to Tracts 5-46 and 5-47

d - Sub-paragraph 116 - 39/40 of direct flow diversion and storage to Tract 5-65 and 1/40 of direct flow diversion to Tract 5-66

TABLE 22 (Continued)

Owner Under Decree	Intermediate Possessors	Water Right in CFS	Tract No.	Present Owners	Address of Present Owners
Haight, G. M.	Soule, Ella D. and Soule, Clarence W.	(e) 5.31)	5-27	Haight, George M.	Montague, California
Earhart, Esther L.; Brown, L. Leo; and Soule, Clarence W.		.73)	5-9	Haight, George M.	Montague, California
Haight, Ira F.		(b) 1.63	5-15	Haight, Ira F.	Montague, California
California Joint Stock Land Bank of San Francisco, a corporation		15.98	(5-76 (5-77 (5-82	Hammond, Charles; Hammond, Dwight; Hammond, Quincy; and Hammond, Stewart	Fort Jones, California Edgewood, California Fort Jones, California Fort Jones, California
Hart, Kate C. ~~and Brother, Henry L.~~ Hart, E. C.; Hart, E.C. and Hart, Kate C.		(e) 17.15	~~(5-25~~ (5-26	Hart, Kate C.	Montague, California
Hoy, A.B.; Hoy, A. B. and Mills, Frank H.		(f) 2.585	(5-107 (5-108	Hoy, A. B.	Weed, California
Jackson, S.H.; ~~Koppel,~~ Alice V. Koppel		4.67 ~~5.77~~ 1.10	5-109 5-109A	Jackson, S. H.	Edgewood, California
Janson, Henry		3.30	5-13	Janson, Henry	Montague, California
Duke, W. D.		6.00	5-73	Jones, George W. and Jones, Myrtle R.	P. O. Box 135, Lafayette, California
Jones, J. L. ~~and Montague Water Conservation District~~		(g) 1.15	5-61	Jones, J. L.	Montague, California
Kellog, Frank A. Hix, Mamie M. and Martin, Adolph K.		2.425	5-94	Kellogg, Frank A. Hix, Mamie M. and Martin, Adolph K.	Grenada, California
King, Frank Agustus, King, Frank J. and King, William H.		(h) 6.75	5-83	King, Frank Augustus	Edgewood, California

(e) Sub-paragraph 152 - Water divided 1/4 and 3/4 to Tracts 5-27 and 5-26, respectively

(f) Sub-paragraph 170 - Water divided 26 per cent and 74 per cent to Tracts 5-107 and 5-108, respectively

(g) Sub-paragraph 183 - Water divided 1/2 and 1/2 to Tracts 5-61 and 5-31

(h) Sub-paragraphs 196 to 203, inclusive - Water divided 98 per cent and 2 per cent to Tracts 5-83 and 5-84, respectively

TABLE 22 (Continued)

Owner Under Decree	Intermediate Possessors	Water Right in CFS	Tract No.	Present Owners	Address of Present Owners
King, Frank Augustus, King, Frank J. and King, William H.		(h) 0.15	5-84	King, William H.	Edgewood, California
King, G. W.		4.18	5-42	King, G. W.	Edgewood, California
Jones, H. E.		0.57	5-43	Koppes, Simon	Montague, California
Lemos, George		0.70	5-41	Lemos, Estate of George	Montague, California
Gussie L. Behnke Chase	J.V. Enos	2.65	5-85	Lemos, Harry	Edgewood, California
Lemos, Jesse H. and Lemos, Henrietta M.		1.40	5-70	Lemos, Jesse H. and Lemos, Henrietta M.	Edgewood, California
Lemos, John A.		1.45	5-69	Lemos, John A.	Edgewood, California
Wholey, Elizabeth E. and Lewis, Martha D.		1.11	5-88	Lewis, Martha D.	Edgewood, California
Long, James F.		(b) 2.72	5-19	Long, James F.	Montague, California
LongBell Lumber Company, a Corporation, and LongBell Lumber Sales Corporation		9.37	5-95	LongBell Lumber Co., a Corporation	c/o J. M. White Weed, California
Louie, John, Louie, Manuel and Louie, Frank		19.10	5-5A	Louie, John; Louie, Manuel; and Louie, Frank	Montague, California
Earhart, Esther L., Brown, L. Leo and Soule, Clarence		(b) 4.36	5-11	Magetti, James P. and Maggetti, Domencia M.	Montague, California
Martin, Ida A.		13.60	(5-6 (5-1 (5-5 (5-3	Martin, Ida A.	Montague, California

TABLE 22 (Continued)

Owner Under Decree	Intermediate Possessors	Water Right in CFS	Tract No.	Present Owners	Address of Present Owners
~~Martin, W. T.~~		(i) (j) 3.24	5-10	Martin, W. T.	Montague, California
William G. Maxwell ~~Edson and Foulke~~	Maxwell, William G.	(d) 0.715	5-66	Maxwell, Glenn C.	Montague, California
McKee Company, The, a Corporation		7.85	5-56	McKee Company, The, a Corporation	c/o John D. McKee, President, Russ Bldg. San Francisco, Calif.
Frank H. Mills		2.60	5-91		
Mills, Frank H.		8.95 ~~12.75~~	5-92	Frank H. Mills	Edgewood, California
Frank H. Mills		1.20	5-51		
Montague Water Conservation District		(g) 1.15	5-31		
Montague Water Conservation District and the McKee Company, Montague Water Conservation District		1.32 ~~159.67~~	5-~~31~~	Montague Water Conservation District	c/o R.E.Swigart, Sec. Montague, California
		157.20	5-31		
Fairchield, Kate M. and Newton, Katherine L.		(b) 1.09	5-22	Montague Water Conservation District and Dexter, George F.	c/o R.E.Swigart, Sec. Montague, California
Morris, Clyde		0.70	5-101	Morris, Clyde	Weed, California
Nelson, Cecelia		2.70	5-67	Nelson, Estate of Cecelia	c/o ~~Nelson, G. V.~~ Fred C. Burton, ~~Gazelle~~ Yreka, California
Nelson, G. V.		1.50	5-68	Nelson, G. V.	Gazelle, California
O'Connor, Mary J.		(h) 5.45 ~~9.40~~	5-18	O'Connor, Arthur	~~Yreka, California~~
Mary J. O'Connor		3.95	5-18A	O'Connor, Howard	c/o Sidney O'Connor Montague, California
				O'Connor, Lois and White, Phoebe	~~Montague, California~~
Payot, Charles O.		1.70	5-38	Payot, Estate of Charles O.	Yreka, California

(i) Sub-paragraph 151 — Water divided 1/2 and 1/2 to Tracts 5-10 and 5-29
(j) Sub-paragraph 252 — Water divided 1/2 and 1/2 to Tracts 5-10 and 5-12

TABLE 22 (Continued)

Owner Under Decree	Intermediate Possessors	Water Right in CFS	Tract No.	Present Owners	Address of Present Owners
Dennis, Lemuel	Gouldin, Harry and Gouldin, May	1.275	5-74	Peabody, R. E. and Peabody, Anna E.	Edgewood, California
Duke, W. D.		17.50	5-62	Robertson, John W. Robertson, Ruth and Grabhorn, Marjorie Robertson	% Dr. John W. Robertson, 934 South L St. Livermore, California
Rohrer, J. B. Prather, Mary L.		(2) 1.09 ~~2.74~~ 1.65	5-17 5-25	Rohrer, J. B.	Montague, California
Rovito, Frank and Rovito, Maria		1.05	5-97	Rovito, Frank and Rovito, Maria	Weed, California
Salanti, Pete, Gilbert Salanti, ~~Gilbert~~ and Ben Salanti, ~~Ben~~		1.175	5-98	Salanti, Pete and Salanti, Gilbert	Weed, California
Salvadori, Angelo		1.10	5-50	Salvadori, Angelo	Grenada, California
Dwinnell, G. W.		0.30	5-39	Sawyer, J. L.	Montague, California
Shasta River Water Assoc., a Corporation		42.00	5-48	Shasta River Water Assoc., a Corporation	c/o R.E. Swigert, Sec. Montague, California
Shelley, Manuel		1.75	5-34	Shelley, Manuel	Yreka, California
Silva, M. A.		2.98	5-55	Silva, M. A.	Gazelle, California
~~W. T. Martin and Harmart, Esther L., Brown, L. Leo,~~ Soule, Clarence W.		(1) 2.33	5-12	Soule, Ella D. and Soule, Clarence W.	Montague, California
Soule, John		3.20	5-60	Soule, John	Edgewood, California
Soule, Ray		3.30	5-8	Soule, Ray	Montague, California
Spada, Ernest and Spada, Rosina		2.75	5-89	Spada, Ernest and Spada, Rosina	Edgewood, California

(1) Share of water awarded under sub-paragraph 88 of Paragraph III of Decree
(2) 1/2 of water awarded under sub-paragraph 252 of Paragraph III of Decree