

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

—○—
EARL WARREN, Governor
C. H. PURCELL, Director of Public Works
EDWARD HYATT, State Engineer

SHACKLEFORD CREEK ADJUDICATION

—
REPORT ON

WATERMASTER SERVICE

ON

SHACKLEFORD CREEK AND TRIBUTARIES

SISKIYOU COUNTY, CALIFORNIA

1947 SEASON



FEBRUARY, 1948

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WATERMASTER SERVICE AGREEMENT FOR THE 1947 SEASON.

Sacramento, California
February 27, 1948

Mr. Gordon Zander
Principal Hydraulic Engineer
Sacramento, California

Dear Sir:

Herewith is submitted the "Report on Watermaster Service on Shackleford Creek and Tributaries, Siskiyou County, California, 1947 Season".

The report covers the distribution of the waters of Shackleford Creek and its tributaries during the period from July 1 to September 30, 1947, in accordance with the provisions of "Watermaster Service Agreement for the 1947 Season", entered into by the various water right owners involved in the Shackleford Creek Adjudication.

Run-off records, measurements of ditch flow and other pertinent data on water supply and use of water are included.

Respectfully submitted,

HARRISON SMITHERUM

Supervising Hydraulic Engineer

BEFORE THE DEPARTMENT OF PUBLIC WORKS
OF THE STATE OF CALIFORNIA
DIVISION OF WATER RESOURCES

STATE ENGINEER

IN THE MATTER OF THE DETERMINATION OF THE
RIGHTS OF THE VARIOUS CLAIMANTS TO THE
WATERS OF SHACKLEFORD CREEK AND ITS TRIBUTU-
TARIES IN SISKIYOU COUNTY, CALIFORNIA.

I, Gordon Zander, Principal Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, hereby approve the within contained report entitled "Report on Watermaster Service on Shackleford Creek and Tributaries, Siskiyou County, California, 1947 Season", dated February, 1948.

Dated this 27th day of February, 1948.

GORDON ZANDER

Principal Hydraulic Engineer

I, Edward Hyatt, State Engineer and Chief of the Division of Water Resources, Department of Public Works of the State of California, hereby approve and adopt the within contained report entitled "Report on Watermaster Service on Shackleford Creek and Tributaries, Siskiyou County, California, 1947 Season", dated February 1948, as a report of the Department of Public Works in the above entitled proceeding.

WITNESS my hand and the seal of the Department of Public Works of the State of California, this 27th day of February, 1948.

DEPARTMENT OF PUBLIC WORKS

By EDWARD HYATT
State Engineer and Chief of the
Division of Water Resources

(Seal)

ORGANIZATION

C. H. Purcell	Director of Public Works
Edward Hyatt	State Engineer
A. D. Edmonston	Assistant State Engineer
Gordon Zander	Principal Hydraulic Engineer

This report was prepared under the direction of

HARRISON SMITHERUM

Supervising Hydraulic Engineer

By

P. E. STEPHENSON

Associate Hydraulic Engineer

INTRODUCTION

The petition initiating the Shackleford Creek adjudication proceeding dated January 15, 1944, was filed with the Department on January 18, 1944. Following a preliminary investigation in the matter and finding that the facts and conditions warranted the determination requested by the petitioners, the Department granted the petition by order dated June 22, 1944, and thereafter on June 22, 1944, gave notice of said order and of the pendency of the proceeding. The order set September 1, 1944, as the time for commencing the examination of the stream system. Field work on such examination was completed on about November 1, 1944.

The history of the proceedings subsequent to the granting of the petition and until the close of the 1946 irrigation season is set forth in the "Report on Investigation and Watermaster Service on Shackleford Creek and Tributaries, Siskiyou County, California, 1946 Season", dated November 1946.

The hearing of contests of claims which had been adjourned on May 22, 1946, was reopened at 10:00 o'clock A.M., November 19, 1946, in the court room of the Superior Court, Siskiyou County Court House and appearances were taken. After discussion in the matter the hearing was adjourned pending discussion and consideration by the claimants of a means of settlement of said contests by stipulation. The various parties involved in said contests agreed upon a method of settlement and the hearing was reopened and adjourned pending preparation and circulation of a stipulation for order of determination.

This document was circulated among all parties filing proofs of claims of water right in the proceeding and all parties became signatory thereto except the United States of America, in trust.

On May 7, 1947 at 2:00 o'clock P.M. a conference of the claimants in the preceding and representatives of the Department was held in Fort Jones, California to discuss the advisability of watermaster service on the stream system during the 1947 season. The conference resulted in the adoption of Watermaster Service Agreement for the 1947 Season".

The agreement provided for the distribution of the water of Shackleford Creek during the 1947 season on the basis of the rights set forth in the "Stipulation for Order of Determination" mentioned herein above. The priorities of and allocations of water to the various water rights involved in the 1947 distribution on Shackleford Creek are given in Schedules 3, 4, 5 and 6 of said stipulation. A copy of the 1947 agreement together with copies of said schedules are included as an appendix to this report.

Administration of the diversions from the stream system under the 1947 agreement covered the period from July 1 to September 30, 1947. P. E. Stephenson, Associate Hydraulic Engineer, was designated by the Department as watermaster and served in that capacity in conjunction with his duties as watermaster in the Shasta River Watermaster Service Area in Shasta Valley.

WATER SUPPLY

Precipitation

Records of precipitation at Yreka and at Etna are presented in Table 1 of this report. A comparison of the precipitation at these two stations for the seven-year period 1940-41 to 1946-47, indicates that the average seasonal precipitation at Etna is 139 per cent of that at Yreka. Applying this percentage to the 32-year mean seasonal precipitation of 16.7 inches at Yreka, it is deduced that the 32-year mean seasonal precipitation at Etna is about 22.2 inches. The 1946-47 precipitation at Etna was about 80 per cent of this deduced mean. At Yreka the precipitation for the same season was about 76 per cent of the 32-year mean for that station. A further comparison shows that the 1946-47 precipitation at Etna and Yreka was 60 and 69 per cent of the 1945-46 precipitation at the respective stations. Assuming that the precipitation at these two stations is indicative of run-off conditions on the Shackleford Creek watershed, it appears that the water supply for the Shackleford Creek Area during the 1947 season was about 40 per cent less than for the 1946 season and about 20 per cent below normal expectancy.

Stream Flow

A stream flow measuring station and water stage recorder was maintained for the period from about July 1 to September 30, 1947, on Shackleford Creek below Camp Ditch.

Records of daily discharge at this station are submitted at the end of this report in Table 2.

Supplemental to this measuring station and as an aid to distribution, water stage recorders were installed and maintained on the Ralph Eastlick, Shackleford, Howard-Jones, Camp, and Freitas Ditches. Records of daily discharge for these ditches are given in Tables 4 to 7 inclusive, submitted at the end of this report.

A tabulation showing the total water supply available in Upper Shackleford Creek above the Camp Ditch is shown in Table 8. A similar table for 1946 is presented in Table 11 of the "Report on Investigation and Watermaster Service on Shackleford Creek and Tributaries, Siskiyou County, California, 1946 Season". A comparison of the records indicated that the flow for August and September, 1947 was about 62 per cent of that for the same period in 1946.

DISTRIBUTION OF WATER

Distribution for the 1947 season was based on Schedules 3, 4, 5 and 6 respectively, of the 1947 agreement. As a necessary adjunct to distribution, water stage recorders were installed and operated throughout the season at critical points on streams and major diversion conduits. Weirs have been installed in all ditches where it was practical to do so and intermittent measurements were made thereon.

Upper Shackleford Creek

Cliff and Campbell Lakes and the Ralph Eastlick, Shackleford, Howard-Jones, Camp, Whipple, Hobart Domestic, Hobart, and Dangel Shackleford ditches are located within this section of Shackleford Creek. The distribution of water for these ditches was based on the allotments set forth in Schedule 3 of the 1947 agreement.

There was sufficient water available to supply all demands of the first five priority classes from upper Shackleford Creek until about July 15. Subsequent to this date there was insufficient water to supply full demands to the third, fourth and fifth priority classes. After about August 9 there was insufficient flow available to supply full requirements of the first and second priority classes. Subsequent to July 15 the ditches were regulated in accordance with the amounts and priorities set forth in Schedule 3.

The regulation of the several ditches in accordance with these amounts and priorities resulted in an orderly distribution of the available water supply, however, the inactive operation of the Shackleford Ditch permitted delivery to the third and fourth priority class users for a longer period than would have been possible otherwise.

A statement of the conditions encountered and of the regulations of the various ditches follows:

Cliff and Campbell Lakes (Diversions 1 and 2) are owned by the Shackelford Ditch interests and are normally operated for storage purposes to supply supplemental water for that ditch. The outlet gates were not opened during the 1947 season. However, some seepage water was contributed to the Shackelford Creek flow through the Campbell Lake Dam. The measured seepage below this dam on July 6, 1947 was 4.5 cubic feet per second. The natural flow tributary to the lakes on this date was estimated to be about 2.0 cubic feet per second. It is estimated that approximately 250 acre-feet remained in storage at the end of the 1947 season.

The Ralph Eastlick Ditch (Diversion 3) headgate was first regulated about August 4. Prior to this date the flow through the ditch was less than its entitlement under Schedule 3. The flume at the head of the ditch was in bad condition, and it was impossible to divert the allotted amount. Subsequent to August 9, there was no water available for this priority and the headgate was closed. The record of discharge is presented in Table 3 of this report.

The Shackelford Ditch (Diversion 4) interests made little effort during the 1947 season to divert the amount of water allocated to the ditch in the second priority class. The flumes located along the first mile of the conduit were in bad condition and limited the amount of water diverted to less than 50 per cent of the amount allocated in said Schedule 3. The maximum diversion during the 1947 season after July 1, was 4.2 cubic feet per second. The record of discharge is shown in Table 4 of this report.

The Howard-Jones Ditch (Diversion 5) was first regulated on about July 18. Prior to that date the flow through the ditch was about equal to the

amounts shown in Schedule 3 for the owners of the ditch. Subsequent thereto the diversion was regulated in accordance with the percentage of flow available for the fourth priority class as set forth in said schedule. The record of discharge is presented in Table 5 of this report.

The Camp Ditch (Diversion 6) had available at its intake, water in excess of the amount being diverted at all times. The supply was sufficient to satisfy the first and third priority allotments for this ditch prior to about August 9. Subsequent to that date there was insufficient flow to satisfy the second priority rights, however, as the second priority owners did not assert their full rights, the Camp Ditch received some water at all times under its third priority right. The record of discharge is set forth in Table 6 of this report.

The Whipple Ditch (Diversion 7) was not in operation after July 1 as the diversion dam had not been repaired. There was some water available for diversion through this ditch until July 15.

The Hobart Ditch (Diversion 9) was not operated after July 1 as no water was available for rights under this diversion subsequent to this date.

The Dangel Shackleford Creek Ditch (Diversion 10) was not operated after July 1 as no water was available for rights under this diversion subsequent to that date.

Lower Shackleford Creek

There are seven ditches diverting from this division of Shackleford Creek. In order downstream they are the Freitas, Chester, Hammond-Crawford-Lewis, Burton-Meamber, Goodale, Burton West Side and Burton East Side Ditches. Of the above the Chester and the Burton East Side

Ditches were not operated after July 1 during the 1947 season. Some regulation was necessary to provide full allotments at the head of the Burton West Side Ditch during August and September. Such regulation was based on the allotments set forth in Schedule A of the 1947 Agreement.

The Freitas Ditch (Diversion 17) did not divert the total water allocated at any time after July 1 during the 1947 season. It was necessary to regulate the ditch after about September 4 in order to satisfy the first, second and third priority rights. The record of discharge for the ditch is set forth in Table 7 of this report.

The Hammond-Crawford-Lewis Ditch (Diversion 19) was used during the 1947 season in the same manner as during the past several years. Water was conveyed about three-eighths of a mile for the irrigation of 6.9 acres and 11.9 acres on the Chester and Miller properties, respectively. An average of about 0.30 cubic foot per second was diverted and used through the ditch after July 1 until about September 10. Subsequent to this date the flow was regulated to 0.20 cubic foot per second.

The Burton-Meamber Ditch (Diversion 20) was used entirely by F. L. Lathrop until about September 10 of the 1947 season. Subsequent to that date B. M. Burton also received his allotment of water through this diversion. An average of about 4.50 cubic feet per second was diverted after September 10.

The Goodale Ditch (Diversion 21) was used to deliver water for irrigation of 10.6 acres on the Miller property and for stock watering purposes on that portion of the Rivallier property north and west of the County Road. This diversion was regulated to 0.40 cubic foot per second after September 10. This amount represented the second priority allotment through the diversion.

The Burton West Side Ditch (Diversión 22) was used for the irrigation of about 40.0 acres of the lands of Burnell Burton. A three foot rectangular weir was installed in the ditch on August 26, 1947. An average of 1.20 cubic feet per second was diverted through the ditch subsequent to that date.

Upper Mill Creek

The Eastlick (Mill Creek) Ditch and the Couch Ditch are the only diversions from this section of the stream. The allotments for these ditches are set forth in Schedule 5 of the 1947 agreement.

The Eastlick (Mill Creek) Ditch (Diversión 11) diverted the entire flow of Mill Creek subsequent to July 1. There was about 2.5 cubic feet per second available on that date which decreased to about 1.0 cubic foot per second by the end of September. A division box was installed, and weirs were placed in the division box to divide the water between the Silva interests and the Davis and Eastlick interests. No controversies arose after these weirs had been installed. The Couch interests received water for domestic purposes only.

The Couch Ditch (Diversión 12) diverted an average of 0.10 cubic foot per second after July 1.

Lower Mill Creek

Springs and rising water in the stream channel form the main sources of water for the sustained flow of this section of Mill Creek. During the early part of each season additional water is contributed by return flow from irrigation on the Albee, Douglas-Eastlick and Davis Ranches.

Four ditches divert from this section of the stream system, namely, in order downstream: Mulloy Spring Ditch (Diversión 13), China Ditch

(Diversion 14), Dangel Mill Creek Ditch (Diversion 15), and Denny Bar Ditch (Diversion 16). Due to the nearly constant flow of the stream, constant flows were maintained in these ditches during the irrigation season subsequent to July 1. As determined by intermittent measurements made during the 1947 season, the average flow of each ditch was as follows: Mulloy Spring Ditch 0.50 cubic foot per second; China Ditch 1.40 cubic feet per second; Dangel Mill Creek Ditch 0.80 cubic foot per second. The Denny Bar Ditch was not open after July 1 during the 1947 season. The above amounts were approximately the same as the allocations for these diversions set forth in schedule 6 of the 1947 agreement, therefore, no regulation was necessary.

The Hobart West Spring Ditch (Diversion 26) and the Hobart East Spring Ditch (Diversion 27) divert from a spring channel tributary to this section of Mill Creek. These ditches normally divert the entire flow available at the heads of the respective ditches, therefore no regulation was necessary.

SUMMARY

Distribution problems were encountered throughout the entire area, except in the Lower Mill Creek section, during the 1947 season due to the short water year. The available supply in the Lower Shackleford Creek section was somewhat less than any year during the investigation. This was partially caused by curtailed irrigation on the lands of Upper Mill Creek during the early spring months.

The water right owners cooperated at all times with the Watermaster in the regulation of the available water under the terms of the 1947 agreement, and satisfactory results were obtained throughout the area.

TABLE 1

PRECIPITATION AT YREKA, SISKIYOU COUNTY - ELEVATION 2625 FEET

Monthly, Seasonal and Average Amounts in Inches

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Seasonal
1940-41	1.34	.98	4.13	2.85	2.99	1.51	2.07	1.66	.95	.70	.54	.81	20.53
1941-42	1.01	1.84	8.01	1.88	2.65	.33	1.60	3.96	.30	.00	.13	.47	22.18
1942-43	.34	6.26	5.01	4.22	1.41	1.21	1.07	.66	1.07	.09	.01	.00	21.35
1943-44	2.24	1.17	.85	1.25	1.43	1.44	1.00	.73	.68	.60	.25	.22	11.86
1944-45	.45	2.86	1.15	.96	2.87	1.53	.69	4.06	.07	.13	.05	T	14.82
1945-46	2.06	2.86	4.55	2.25	1.99	1.13	.57	.89	.89	.41	T	.08	17.83
1946-47	1.07	3.15	.76	1.16	.93	1.84	.35	.73	1.13	.26	.85	.00	12.23
32 Year Mean	1.14	2.48	2.91	2.24	2.34	1.40	1.00	.91	.67	.36	.18	.54	16.17
7 Year Mean	1.22	2.73	3.50	2.08	2.04	1.28	1.05	1.81	.73	.31	.26	.25	17.26

PRECIPITATION AT ETNA, SISKIYOU COUNTY - ELEVATION 2945 FEET

Monthly, Seasonal and Average Amounts in Inches

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Seasonal
1940-41	1.73	1.11	6.72	3.13	4.56	2.35	2.57	1.83	.92	1.38	.61	.51	27.42
1941-42	1.21	2.91	9.71	3.46	3.91	.32	1.21	2.81	.20	.00	.00	.13	25.87
1942-43	.52	10.30	7.33	8.17	1.35	1.91	1.61	.61	.59	.40	.00	.00	32.79
1943-44	3.24	1.03	1.03	2.69	1.42	2.50	.79	.62	.70	.89	.25	.22	15.38
1944-45	.53	5.65	.96	1.02	4.76	1.91	.68	2.68	.04	.12	.39	.00	18.74
1945-46	3.83	5.80	8.56	4.90	2.61	1.64	1.01	.36	.54	.27	.00	.28	29.80
1946-47	1.83	4.66	0.97	1.98	1.90	4.01	0.32	0.41	0.70	0.58	0.49	0	17.85
7 Year Mean	1.84	4.50	5.04	3.62	2.93	2.09	1.17	1.33	.53	.52	.25	.16	23.98

TABLE 2

Daily Discharge in Cubic Feet Per Second
SHACKLEFORD CREEK BELOW CAMP DITCH
July 1 to September 30, 1947

Day	July	August	Sept	
1	1.5	0.2	0.2	
2	1.5	.2	.2	
3	1.5	.2	.2	
4	1.5	.2	.2	
5	1.5	.2	.2	
6	1.5	.2	.2	
7	1.5	.2	.2	
8	1.5	.2	.2	
9	1.5	.2	.2	
10	1.7	.2	.2	
11	1.5	.2	.2	
12	1.5	.2	.2	
13	1.5	.2	.2	
14	.6	.2	.2	
15	.6	.2	.2	
16	.5	.2	.2	
17	.5	.2	.2	
18	.2	.2	.2	
19	.2	.2	.2	
20	.2	.2	.2	
21	.2	.2	.2	
22	.2	.2	.2	
23	.2	.2	.2	
24	.2	.2	.2	
25	.2	.2	.2	
26	.2	.2	.2	
27	.2	.2	.2	
28	.2	.2	.2	
29	.2	.2	.2	
30	.2	.2	.2	
31	.2	.2	.2	
Total Sec. Ft. Days	24.7	6.2	6.0	92 Day Period
Mean Sec.Ft.	.8	.2	.2	.4
Max. Sec.Ft.	1.7	.2	.2	1.7
Min. Sec. Ft.	.2	.2	.2	.2
Total Ac. Ft.	49	12	12	73

TABLE 3

Daily Discharge in Cubic Feet Per Second
RALPH EASTLICK DITCH
July 1 to September 30, 1947

Day	July	August	Sept.	
1	1.9	1.2		
2	1.9	1.4		
3	1.9	1.2		
4	1.9	.9		
5	1.9	.8		
6	1.9	.9		
7	1.9	1.0		
8	1.9	1.0		
9	1.6	.3		
10	1.3			
11	1.3			
12	1.8			
13	1.9			
14	1.9			
15	1.9			
16	1.9			
17	2.0			
18	1.9	NO DIVERSION	NO DIVERSION	
19	2.0			
20	2.1			
21	1.9	NO DIVERSION	NO DIVERSION	
22	1.7			
23	1.7			
24	1.9			
25	1.9			
26	1.9			
27	1.9			
28	1.9			
29	1.9			
30	1.6			
31	1.4			
Total Sec. Ft. Days	56.5	8.7	0.0	40 Day Period
Mean Sec. Ft.	1.8	1.0	.0	1.6
Maximum Sec. Ft.	2.1	1.4	.0	2.1
Minimum Sec. Ft.	1.3	.3	.0	.3
Total Acres Ft.	112	17	0	129

TABLE 4

Daily Discharge in Cubic Feet per Second
SHACKLEFORD DITCH
July 1 to September 30, 1947

Day	July	August	Sept.	
1	2.8	3.8	2.2	
2	2.8	3.6	1.8	
3	3.0	3.5	3.4	
4	3.0	3.5	3.5	
5	3.0	3.4	3.4	
6	3.1	3.2	3.4	
7	3.1	3.2	4.1	
8	3.1	3.1	3.8	
9	3.1	3.1	3.8	
10	3.2	3.1	3.8	
11	3.1	3.1	3.6	
12	3.0	3.1	3.4	
13	2.8	3.1	3.1	
14	2.7	3.8	3.0	
15	2.7	3.6	3.0	
16	2.7	3.5	3.0	
17	3.0	3.4	2.8	
18	3.4	3.1	2.8	
19	3.2	2.8	3.0	
20	3.1	2.8	2.8	
21	3.1	2.8	2.7	
22	3.1	2.8	2.7	
23	3.1	2.7	2.7	
24	3.1	2.7	2.7	
25	3.2	2.7	2.7	
26	3.9	2.7	2.7	
27	4.2	2.4	2.7	
28	4.2	2.7	2.7	
29	4.1	2.8	3.0	
30	3.9	2.8	3.4	
31	3.9	2.6		
Total Sec. Ft. Days	99.7	95.5	91.7	92 Day Period
Mean Sec. Ft.	3.2	3.1	3.1	3.1
Maximum Sec. Ft.	4.2	3.8	4.1	4.2
Minimum Sec. Ft.	2.7	2.4	1.8	1.8
Total Acre Ft.	198	189	182	569

TABLE 5

Daily Discharge in Cubic Feet per Second
 HOWARD-JONES DITCH
 July 1 to September 30, 1947

Day	July	August	Sept.	
1	5.7	1.2		
2	5.7	1.2		
3	5.7	1.2		
4	5.7	1.2		
5	5.7	1.1		
6	5.7	1.0		
7	5.7	.7		
8	5.7	.2		
9	5.7	.9		
10	5.7	.9		
11	6.0	.9		
12	5.7	.9		
13	5.4	.4		
14	4.8			
15	4.8			
16	4.7			
17	4.6			
18	1.6			
19	1.5			
20	1.5			
21	1.5	NO DIVERSION	NO DIVERSION	
22	1.5			
23	1.5			
24	1.5			
25	1.4			
26	1.4			
27	1.4			
28	1.4			
29	1.3			
30	1.2			
31	1.2			
Total Sec. Ft. Days	112.9	11.8	0.00	44 Day Period
Mean Sec. Ft.	3.6	.9	.00	2.8
Maximum Sec. Ft.	6.0	1.2	.00	6.0
Minimum Sec. Ft.	1.2	.2	.00	.2
Total Acre Ft.	224	23	0	247

TABLE 6

Daily Discharge in Cubic Feet per Second
 CALIF DITCH
 July 1 to September 30, 1947

Day	July	August	Sept.	
1	4.5	5.4	4.3	
2	4.5	5.0	4.0	
3	4.4	4.9	3.4	
4	4.4	5.4	3.0	
5	4.3	4.9	2.9	
6	4.2	4.5	2.8	
7	4.0	4.5	2.9	
8	3.9	4.9	2.7	
9	3.6	4.7	2.7	
10	3.4	4.3	2.7	
11	3.3	4.2	2.7	
12	2.8	4.2	2.7	
13	3.1	4.7	2.7	
14	4.0	4.7	2.6	
15	4.0	4.7	2.6	
16	3.7	4.6	2.4	
17	3.6	4.4	2.4	
18	5.4	4.4	2.4	
19	5.4	4.4	2.4	
20	5.2	4.2	2.4	
21	5.0	4.2	2.4	
22	5.0	4.2	2.4	
23	4.9	4.2	2.4	
24	4.5	4.3	2.4	
25	4.3	4.2	2.4	
26	6.6	4.2	2.4	
27	7.2	4.3	2.4	
28	7.2	4.2	2.4	
29	5.8	4.7	2.4	
30	5.4	4.6	2.3	
31	5.3	4.4		
Total Sec. Ft. Days	142.9	140.5	80.6	92 Day Period
Mean Sec. Ft	4.6	4.5	2.7	4.0
Maximum Sec. Ft.	7.2	5.4	4.3	7.2
Minimum Sec. Ft.	2.8	4.2	2.3	2.3
Total Acre Ft.	283	279	160	722

TABLE 7

Daily Discharge in Cubic Feet per Second
 FREITAS DITCH
 Aug 1 to September 30, 1947

Day	July	Aug.	Sept.	
1		3.3	2.5	
2		3.3	2.4	
3		3.3	2.2	
4		3.3	2.2	
5		3.3	2.2	
6		3.3	2.2	
7		3.3	2.0	
8		3.3	2.0	
9		3.3	2.0	
10		3.3	2.0	
11		3.3	2.0	
12	RECORD	3.3	2.0	
13		3.2	2.0	
14		3.2	2.0	
15		3.2	2.0	
16		3.2	2.2	
17	NO RECORD	3.2	2.2	
18		3.2	2.2	
19		3.2	2.2	
20		3.2	2.2	
21		3.2	2.2	
22		3.2	2.2	
23		3.1	2.2	
24		3.1	2.2	
25		3.1	2.2	
26		2.9	2.2	
27		2.9	2.2	
28		2.8	2.2	
29		2.8	2.2	
30		2.8	2.2	
31		2.7		
Total Sec. Ft. Days		97.8	64.7	61 day Period
Mean Sec. Ft.		3.2	2.2	2.5
Maximum Sec. Ft.		3.3	2.5	3.3
Minimum Sec. Ft.		2.7	2.0	2.0
Total Acre Ft.		200	130	330

TABLE 8

Daily Discharge in Cubic Feet per Second
UPPER SHACKLEFORD CREEK ABOVE DIVERSIONS
July 1 to September 30, 1947

Day	July	August	Sept.	
1	16.4	11.8	6.7	
2	16.4	11.4	6.0	
3	16.5	11.0	7.0	
4	16.5	11.2	6.7	
5	16.4	10.4	6.5	
6	16.4	9.8	6.4	
7	16.2	9.6	7.2	
8	16.1	9.4	6.7	
9	15.5	9.2	6.7	
10	15.3	8.5	6.7	
11	15.2	8.4	6.5	
12	14.8	8.4	6.3	
13	14.7	8.4	6.0	
14	14.0	8.7	5.8	
15	14.0	8.5	5.8	
16	13.5	8.3	5.6	
17	13.7	8.0	5.4	
18	12.5	7.7	5.4	
19	12.3	7.4	5.6	
20	12.1	7.2	5.4	
21	11.7	7.2	5.3	
22	11.5	7.2	5.3	
23	11.4	7.1	5.3	
24	11.2	7.2	5.3	
25	11.0	7.1	5.3	
26	14.0	7.1	5.3	
27	14.9	6.9	5.3	
28	14.9	7.1	5.3	
29	13.3	7.7	5.6	
30	12.3	7.6	5.9	
31	12.0	7.2		
Total Sec. Ft Days	436.7	262.7	178.3	92 Day Period
Mean Sec. Ft.	14.1	8.5	5.9	9.5
Maximum Sec. Ft	16.5	11.8	7.2	16.5
Minimum Sec. Ft.	11.0	6.9	5.3	5.3
Total Acre Ft.	866	521	354	1740

APPENDIX

BEFORE THE DEPARTMENT OF PUBLIC WORKS
OF THE STATE OF CALIFORNIA
DIVISION OF WATER RESOURCES
STATE ENGINEER

IN THE MATTER OF THE DETERMINATION OF THE)
RIGHTS OF THE VARIOUS CLAIMANTS TO THE)
WATERS OF SHACKLEFORD CREEK AND ITS TRIBU-) WATERMASTER SERVICE
TARIES IN SISKIYOU COUNTY, CALIFORNIA) AGREEMENT FOR THE
1947 SEASON

WHEREAS, the above entitled proceeding is pending before the Department of Public Works of the State of California, Division of Water Resources, State Engineer, in which the rights in and to the waters, and in and to the use thereof, from Shackleford Creek and its tributaries, of all the claimants hereunto subscribed are involved; and

WHEREAS, said Department has completed and filed its report on trial distribution for the 1946 season and has circulated copies of said report among the various claimants in the proceeding, and

WHEREAS, an agreement, entitled "Stipulation for Order of Determination", has been entered into among all, save one, of the various claimants in said proceeding, and

WHEREAS, said stipulation sets forth the rights of the various claimants in and to the use of the waters of said Shackleford Creek stream system, thereby affording an equitable basis for the distribution of the waters of said stream system, and

WHEREAS, the parties hereunto subscribed desire continuation of distribution of the waters of said stream system by a watermaster under State supervision during the 1947 season.

NOW THEREFORE IT IS HEREBY AGREED by and between each and every party hereunto subscribed and among all of said parties, that the Department of Public Works of the State of California acting through the State Engineer, under authority conferred by Section 226 of the Water Code, may undertake to distribute the waters of said Shackelford Creek stream system among the various claimants hereunto subscribed subject to such provisions as are hereinafter contained, to wit:

(1) Watermaster service under this agreement shall extend from May 15 to October 1, 1947, only.

(2) The waters of the said Shackelford Creek stream system shall be distributed in accordance with the rights of the various claimants as set forth in the aforesaid stipulation, a copy of which said stipulation is annexed hereto and made a part hereof.

(3) The distribution of water in accordance with this agreement shall not in any manner prejudice the rights which are now claimed or may hereafter be asserted by any of the claimants hereunto subscribed.

(4) Said Department may appoint a watermaster to distribute the waters of the said Shackelford Creek stream system, as herein provided for, during the 1947 season, and said watermaster shall have power and authority to inspect and regulate the diversions of all the claimants hereunto subscribed in accordance with this agreement, and in the exercise of such authority may enter upon the lands of said claimants for the purpose of such inspection and regulation, and may establish and maintain such gaging stations and measuring devices in said stream system and diversion conduits as may be necessary or convenient. The several ditch owners shall furnish

the necessary labor and material for the construction and installation of diversion works, headgates and measuring devices for their respective ditches.

(5) It is finally agreed that in order to meet the costs of such distribution by the watermaster during the 1947 season, the claimants hereunto subscribed will pay to the Division of Water Resources on or before July 1, 1947, the amount of \$270.00, which amount shall be apportioned among the said claimants in accordance with the apportionments set forth as follows:

APPORTIONMENT OF COST OF WATERMASTER SERVICE ON
SHACKLEFORD CREEK AND TRIBUTARIES DURING THE 1947 SEASON

Name of Claimant	Continuous Flow Equivalent Cu. Ft. per Sec.	Portion of Expense
Brown, Robert E. and Graves, Walter A.	0.20	\$ 1.80
Burton, Burnell M. and Burton, Rose A.	2.30	8.89
Burton, Edward and Vanarsdell, Frances	3.30	12.26
Camblin, C. B. and Camblin, Jeanne	4.80	17.33
Cason, Jesse Arnold and Helm, Roy J.	1.00	4.50
Chester, Henry F.	0.90	4.16
Couch, Robert L.	0.62	3.22
Dangel, Jacob	2.70	10.24
Davis, Robert P. and Davis, Margaret W.	4.50	16.32
Eastlick, G. Douglas and Eastlick, Elma J.	4.50	16.32
English, Robert A.	0.60	3.15

Name of Claimant	Continuous Flow Equivalent Cu. Ft. per Sec.	Portion of Expense
Graham, Cecil and Zwanziger, Camille	12.43	\$ 43.09
Heide, John H. and Heide, Lorene M.	3.50	12.94
Hicks, William A. and Hicks, Ollie P.	0.30	2.14
Lathrop, F. L. and Lathrop, Georgina C.	4.65	16.82
Miller, Lillian B.	0.70	3.50
Mulloy, Cornelius J. and Mulloy, L. Dennis	4.50	16.32
Mulloy, L. Dennis	2.93	11.01
Pereira, Julio	1.40	5.85
Rivallier, Joseph	5.30	19.02
Shulz, Richard; Shulz, Jack E.; and Shulz, Bette	1.30	5.51
Silva, Lena Butler	1.00	4.50
Soderquist, Arthur L. and Soderquist, Mildred J.	0.30	2.14
United States of America	8.25	28.97
Total	71.98	\$ 270.00

IN WITNESS WHEREOF, the parties hereto have affixed their hands
and seals.

<u>Name</u>	<u>Address</u>	<u>Date</u>
<u>Robert A. English</u>	<u>Fort Jones</u>	<u>April 7</u>
<u>Edward Burton</u>	<u>Fort Jones</u>	<u>May 7</u>
<u>Lena Butler Silva</u>	<u>Fort Jones</u>	<u>May 7</u>
<u>Frank L. Lathrop</u>	<u>Fort Jones</u>	<u>May 7</u>
<u>Georgina C. Lathrop</u>	<u>Fort Jones</u>	<u>May 7</u>
<u>Margaret W. Davis</u>	<u>Fort Jones</u>	<u>May 7</u>
<u>John H. Heide</u>	<u>Fort Jones</u>	<u>May 7</u>
<u>Camille Zwanziger</u>	<u>Weed</u>	<u>May 7</u>
<u>By Geo. Zwanziger</u>	<u>Weed</u>	<u>May 7</u>
<u>Lillian B. Miller</u>	<u>Fort Jones</u>	<u>May 7</u>
<u>Burnell M. Burton</u>	<u>Fort Jones</u>	<u>May 12</u>
<u>Robert P. Davis</u>	<u>Fort Jones</u>	<u>May 13</u>
<u>Douglas Eastlick</u>	<u>Fort Jones</u>	<u>May 21</u>
<u>L. Dennis Mulloy</u>	<u>Fort Jones</u>	<u>May 21</u>
<u>C. J. Mulloy</u>	<u>Fort Jones</u>	<u>May 21</u>

SCHEDULE 3

ALLOCATIONS TO VARIOUS CLAIMANTS FROM SHACKLEFORD CREEK
IN UPPER SHACKLEFORD CREEK GROUP

Name of Claimant	Acreage	Diver- sion No. as to be per Sup- plied	Allotments in Cubic Feet per Second							Total
			Priority Class							
		D.W.R. Map	1st	2nd	3rd	4th	5th	6th	7th	
John H. Heide & Lorene M. Heide	147.7	3				3.50				3.50
Estate of Abbie C. Albee	310.4	4		7.00			4.00			11.00
Robert A. English	20.6	5				0.60				0.60
Arthur L. Soderquist & Mildred J. Soderquist	10.8	5				0.30				0.30
William A. Hicks & Ollie P. Hicks	3.0	5				0.30				0.30
Cornelius J. Mulloy & L. Dennis Mulloy	169.7	5				4.00				4.00
United States of America In Trust	212.6	6	2.00		3.00					5.00
Jack E. Schulz & Richard R. Schulz	39.7	7						*1.20		1.20
L. Dennis Mulloy	Domes- tic	8	0.03							0.03
L. Dennis Mulloy	55.4	9						*1.30		1.30
Jacob Dangel	75.2	10						*1.70		1.70
Total	1045.1		2.03	7.00	3.00	8.70	4.00	1.20	3.00	28.93

* Water may be diverted under these rights at three times the average rate herein set forth whenever water is available therefor.

SCHEDULE 4
 ALLOCATIONS TO VARIOUS CLAIMANTS FROM SHACKLEFORD CREEK
 IN LOWER SHACKLEFORD CREEK GROUP

Name of Claimant	Acreage	Diver- sion No. as to be per	Allotments in Cubic Feet per Second								Total	
			Sup- plied	D.W.R. Map	Priority Class							
					1st	2nd	3rd	4th	5th	6th		7th
Jack E. Schulz & Richard R. Schulz	2.3	17		0.10								0.10
United States of America in Trust	142.2	17			1.20				2.05			3.25
Edward Burton and Frances Vanarsdell	93.5	17							2.10			2.10
F. L. Lathrop & Georgina C. Lathrop	21.9	17							1.15			1.15
Henry F. Chester	23.0	18		0.70								0.70
Henry F. Chester	6.9	19		0.20								0.20
Lillian B. Miller	11.9	19						0.30				0.30
Joseph Rivallier	125.1	19						1.30		2.00		3.30
C. B. Camblin & Jeanne Camblin	140.8	19						1.80		3.00		4.80
Edward Burton and Frances Vanarsdell	50.0	20			1.20							1.20
Burnell M. Burton & Rose A. Burton	48.4	20			1.10							1.10
F. L. Lathrop & Georgina C. Lathrop	129.1	20			3.50							3.50
Lillian B. Miller	10.6	21		0.40								0.40
Joseph Rivallier	87.9	21					2.00					2.00
Burnell M. Burton & Rose A. Burton	40.0	22 & 23		1.20								1.20
Robert E. Macaulay and Ina G. Macaulay	9.7	28 & 29		0.20								0.20
Total	943.3			1.50	1.30	7.00	2.00	3.40	5.30	5.00		25.50

SCHEDULE 5
 ALLOCATIONS TO VARIOUS CLAIMANTS FROM MILL CREEK
 IN UPPER MILL CREEK GROUP

Name of Claimant	Acreage to be Supplied	Diver- sion No. as per D. W. R. Map	Allotments in Cubic Feet per Second			
			Priority Class			
			1st	2nd	3rd	Total
Robert L. Couch	22.0	11 & 12	0.01		0.61	0.62
Lena Butler Silva	49.6	11		1.00		1.00
Robert P. Davis and Margaret W. Davis	200.4	11		4.50		4.50
G. Douglas Eastlick and Elma J. Eastlick	172.4	11		4.50		4.50
Total	444.4		0.01	10.00	0.61	10.62

Whenever the flow available for the rights in priority class "2nd" shall be equal to or less than 0.50 cubic foot per second, then during such times the available flow shall be divided equally among the three owners of said rights in priority class "2nd".

SCHEDULE 6
 ALLOCATIONS TO VARIOUS CLAIMANTS FROM MILL CREEK
 IN LOWER MILL CREEK GROUP

Name of Claimant	Acreage to be Supplied	Diver- sion No. as per D. W. R. Map	Allotments In Cubic Feet per Sec.		
			Priority Class		
			1st	2nd	Total
Cornelius J. Mulloy and L. Dennis Mulloy	21.4	13	0.10	0.40	0.50
Julio Pereira	52.1	14	0.25	1.15	1.40
Jacob Dangel	15.8	15	0.25	0.25	0.50
Jacob Dangel	3.5	16		0.50	0.50
L. Dennis Mulloy	78.4	26 & 27		1.60	1.60
Total	171.2		0.60	3.90	4.50