

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

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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
1948 SEASON

JANUARY, 1949

SUBMISSION TO, AND ADOPTION BY
DEPARTMENT OF PUBLIC WORKS

I, Harrison Smitherum, Supervising Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, hereby submit the within contained report entitled "Report on Watermaster Service on Shackelford Creek and Tributaries, Siskiyou County, California, 1948 Season".

HARRISON SMITHERUM

Supervising Hydraulic Engineer

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 Shackelford Creek and Tributaries, Siskiyou County, California, 1948 Season".

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 Shackelford Creek and Tributaries, Siskiyou County, California, 1948 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 27th day of January, 1949.

DEPARTMENT OF PUBLIC WORKS

EDWARD HYATT

By 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

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INTRODUCTION

The petition initiating the Shackelford Creek adjudication proceeding dated January 15, 1944, was filed with the Department of Public Works of the State of California, Division of Water Resources, State Engineer on January 18, 1944. Subsequent steps in the proceeding up to and including the 1947 irrigation season are set forth in "Report on Water Supply and Use of Water on Shackelford Creek and Tributaries, Siskiyou County, California, January, 1945", "Report on Investigation and Watermaster Service on Shackelford Creek and Tributaries, Siskiyou County, California, 1946 Season", dated November 1946, and "Report on Watermaster Service on Shackelford Creek and Tributaries, Siskiyou County, California, 1947 Season", on file in the proceeding in the office of the Department, Sacramento, California.

On May 6, 1948, at 2:00 P.M., a conference of the claimants in the proceeding and representatives of the Department was held in Fort Jones, California, to discuss the advisability of watermaster service on the stream system during the 1948 season. The conference resulted in the adoption of "Watermaster Service Agreement for the 1948 Season".

The agreement provided for the distribution of the water of Shackelford Creek during the 1948 Season on the basis of the rights set forth in the "Stipulation for Order of Determination" referred to in "Report on Watermaster Service on Shackelford Creek and Tributaries, Siskiyou County, California, 1947 Season". The priorities of, and allocations of water to the various water rights involved in the 1948 distribution on Shackelford Creek are given in Schedules 3, 4, 5, and 6 of said stipulation. A copy of the 1948 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

1948 agreement covered the period from about July 1 to September 30, 1948. Paul E. Stephenson, Senior 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 eight-year period 1940-41 to 1947-48, indicates that the average seasonal precipitation at Etna is 137 per cent of that at Yreka. Applying this percentage to the 33-year mean seasonal precipitation of 16.32 inches at Yreka, it is deduced that the 33-year mean seasonal precipitation at Etna is about 22.4 inches. The 1947-48 precipitation at Etna was approximately 117 per cent of this deduced mean. At Yreka the precipitation for the same season was about 129 per cent of the 33-year mean for that station. A further comparison shows that the 1947-48 precipitation at Etna and Yreka was 146 and 172 per cent of the 1946-47 precipitation for the respective stations. Assuming that the precipitation at these two stations is indicative of the runoff conditions on the Shackleford Creek watershed, it appears that the water supply for the Shackleford Creek area during the 1948 season was about 46 per cent greater than for the 1947 season and about 17 per cent above normal expectancy.

Stream Flow

A stream flow measuring station and water stage recorder was maintained for the period from July 1 to September 30, 1948, on Shackleford Creek below the 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 Shackelford, Howard-Jones and Camp Ditches. Records of daily discharge for these ditches are set forth in Tables 3, 4, and 5, at the end of this report.

A tabulation showing the total water supply available in Upper Shackelford Creek above all diversions for the period from July 1 to September 30, 1948, is submitted in Table 6. A comparison of the record with that in 1947 indicates that the flow in 1948 was about 230 per cent of that for the same period in 1947.

DISTRIBUTION OF WATER

Distribution for the 1948 season was based on Schedules 3, 4, 5 and 6 of the 1948 agreement. As a necessary adjunct to distribution, weirs have been installed in all ditches where it was practical to do so and intermittent measurements were made thereon.

Upper Shackelford Creek

Cliff and Campbell Lakes and the Ralph Eastlick, Shackelford, Howard-Jones, Camp, Whipple, Hobart Domestic, Hobart and Dangel Shackelford Ditches are located within this section of Shackelford Creek. The distribution of water for these ditches was based on the allotments set forth in Schedule 3 of the 1948 agreement.

There was sufficient water available to supply all demands of the first five priority classes from Upper Shackelford Creek until about August 5. Subsequent to this date it was necessary to regulate certain of these ditches 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. The Ralph Eastlick Ditch was not opened during the 1948 season, therefore, water was delivered to the remaining fourth priority class users in larger amounts 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 (Diversion 1 and 2) These lakes are maintained and operated to supply supplemental water for rediversion through the Shackleford Ditch during the latter part of the irrigation season. However, during the 1948 season, leakage through the Campbell Lake Dam contributed a near constant flow to Shackleford Creek and was available for distribution to the various ditches diverting from Upper Shackleford Creek. The measured leakage on July 11, 1948, was 6.6 cubic feet per second and the natural flow tributary to the Lakes on this date was estimated to be about 2.5 cubic feet per second. The headgate at Campbell Lake Dam was opened on about August 15 in order to lower the lake for the purpose of inspecting the dam and outlet works.

Inspection of the Campbell Lake and Cliff Lake dams and outlet structures was made on September 13 and 14, 1948, by D. S. Cleavinger and Paul E. Stephenson accompanied by Mr. George Zwanziger representative of the owners. Mr. Zwanziger was instructed by Mr. Cleavinger to make immediate repairs to the dam and spillway of Campbell Lake, and to repair the outlet structures of both dams prior to or at the end of the 1949 irrigation season.

Ralph Eastlick Ditch (Diversion 3) This ditch was not opened during the 1948 season.

Shackleford Ditch (Diversion 4) There was sufficient flow up to about September 18, to satisfy the full second priority entitlement of seven cubic feet per second allocated for use through this ditch in Schedule 3 of the 1948 Agreement. The watermaster was unable to regulate the ditch to its full entitlement throughout the season, because of faulty diversion works. The amounts of water diverted through the ditch for July, August and September 1948 averaged 7.8, 6.5 and 3.4 cubic feet per second, respectively. The record of daily discharge for these months is shown in Table 3 of this report.

Howard-Jones (Diversion 5) This ditch was not opened to capacity flow until about July 21 and was first regulated by the watermaster on August 5. Subsequent thereto the water supply was insufficient for full fourth priority entitlements and regulation was made in accordance with the percentage of flow available for the fourth priority class as set forth in Schedule 3. The record of discharge is presented in Table 4 of this report.

Camp Ditch (Diversion 6) The amount of water available at the intake of this ditch water was at all times in excess of that being diverted through the ditch. During the 1948 season the condition of the ditch was such that only about four cubic feet per second, as measured at the weir, could be conveyed through the ditch without excessive transportation losses and the Howard-Jones Ditch was regulated so as to provide this amount at the head of the Camp Ditch at all times after August 5. The supply was sufficient to satisfy this requirement throughout the remainder of the 1948 season. The record of discharge is set forth in Table 5 of this report.

Whipple Ditch (Diversion 7) This ditch was not in operation after July 1 although there was water available at the intake until about August 10.

Hobart Ditch (Diversion 9) This ditch received some water until about July 25. Sufficient flow was available to satisfy 100 per cent allotment until about July 15.

Dangel Shackelford Ditch (Diversion 10) This ditch was not operated during the 1948 season although water was available for diversion prior to about July 15.

Lower Shackelford Creek

There are seven ditches diverting from this section of Shackelford Creek. In order downstream they are the Freitas, Chester, Hammond-Crawford-Lewis, Burton-Meamber, Goodale, Burton West Side and Burton East Side. The allotments for these ditches are set forth in Schedule 4 of the 1948 Agreement. Of the above, the Freitas, Chester and Burton East Side Ditches were

not operated after July 1 of the 1948 season. It was not necessary to regulate any of these ditches during this season.

Freitas Ditch (Diversion 17) This ditch was not used to divert water from the main stream during the 1948 season. The channel had changed during high water in January 1948 and heavy equipment would have been required to re-establish the point of diversion. There was some flow from Freitas Cold Springs in this ditch during the entire season.

Hammond-Crawford-Lewis Ditch (Diversion 19) This ditch was used during the 1948 season in the same manner as during the past several years, i.e., 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 0.25 cubic foot per second was diverted and used through this ditch during the entire season.

Burton-Meamber Ditch (Diversion 20) F. L. Lathrop used this ditch almost exclusively throughout the season. B. M. Burton used about 50 per cent of his allotment during September.

Goodale Ditch (Diversion 21) The headworks and a section of the ditch south of the County Road bridge were destroyed by high water in January 1948. A temporary replacement to a capacity of about 0.25 cubic foot per second was used during the 1948 season for the irrigation of 10.6 acres of the Miller property.

Upper Mill Creek

Eastlick (Mill Creek) Ditch and the Couch Ditch are the only ditches diverting from this section of the stream. The allotments for these ditches are set forth in Schedule 5 of the 1948 agreement.

Eastlick (Mill Creek) Ditch (Diversion 11) The entire flow of Mill Creek was diverted by this ditch subsequent to about July 1. There were about 6.0 cubic feet per second available on that date which decreased to about 1.3 cubic feet per second by the end of September. No controversies arose over the use of this ditch during 1948. The Couch interests received

water for domestic purposes only.

Couch Ditch (Diversion 12) This ditch had an average of about 0.15 cubic foot per second available at all times 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 (Diversion 13), China Ditch (Diversion 14), Dangel Mill Creek Ditch (Diversion 15) and Denny Bar Ditch (Diversion 16). Constant flows were maintained in these ditches during the irrigation season subsequent to July 1 because of the nearly constant flow of the stream. As determined by intermittent measurements made during the 1948 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; and Mill Creek ditch 0.80 cubic foot per second. The Denny Bar Ditch was not open after July 1 during the 1948 season. The above amounts were the same as the allocations for these ditches as set forth in Schedule 6 of the 1948 agreement, therefore no regulation was necessary.

Hobart West Spring Ditch (Diversion 26) and Hobart East Spring Ditch (Diversion 27) These ditches divert from a spring channel tributary to this section of Mill Creek, and normally take the entire flow available in that source. No regulation was necessary during the season.

SUMMARY

Distribution problems were encountered only in the Upper Shackleford Creek area during the 1948 season. The supply on other sections of the stream was generally sufficient to satisfy all irrigation demands.

The water right owners cooperated at all times with the watermaster in the regulation of the various ditches to the amounts of water to which they are entitled under the terms of the 1948 agreement. 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	.63	.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
:1947-48	2.46	.99	.74	5.35	1.36	1.56	2.50	.90	1.33	.29	2.54	.98	21.00
:32 Year													
:mean	1.18	2.43	2.84	2.33	2.31	1.40	1.05	.91	.69	.36	.25	.55	16.32
:3 Year													
:mean	1.37	2.51	3.15	2.49	1.95	1.32	1.23	1.70	.80	.31	.55	.32	17.72

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	.97	1.98	1.90	4.01	.32	.41	.70	.58	.49	.05	17.90
:1947-48	3.95	0.75	0.96	7.54	3.36	1.76	2.60	1.14	1.63	0.22	0.15	2.00	26.06
:8 Year													
:mean	2.11	4.03	4.53	4.11	2.98	2.05	1.35	1.31	.66	.48	.24	.40	24.24

TABLE 2

Daily Discharge in Cubic Feet Per Second
SHACKLEFORD CREEK BELOW CAMP DITCH
July 1 to September 30, 1948

Day	July	August	September
1	79	6.0	0.3
2	69	6.0	.3
3	61	6.0	.3
4	53	5.0	.3
5	58	3.5	.3
6	53	3.0	.3
7	37	2.0	.3
8	32	2.0	.3
9	30	2.0	.3
10	28	1.0	.3
11	27	.6	.3
12	27	.6	.3
13	25	.6	.3
14	23	.2	.3
15	21	.2	.3
16	21	.2	.6
17	21	.2	1.0
18	21	.2	1.0
19	21	.2	1.0
20	21	.2	1.0
21	16	.2	1.0
22	14	.2	1.0
23	13	.2	1.0
24	11	.2	1.0
25	10	.5	1.0
26	10	.5	1.0
27	9	.5	1.0
28	8	.5	1.0
29	7	.5	1.0
30	6	.5	1.0
31	6	.5	
Total			92
Sec. Ft.			Day
Days	838.0	44.0	19.1
Mean			Period
Sec. Ft.	27.0	1.4	.6
Max.			9.8
Sec. Ft.	79	6.0	1.0
Min.			79
Sec. Ft.	6	.2	.3
Total			.2
Ac. Ft.	1660	87	38
			1780

TABLE 3

Daily Discharge in Cubic Feet Per Second
SHACKLEFORD DITCH
July 1 to September 30, 1948

Day	July	August	September
1	6.5	4.9	5.5
2	6.5	4.7	5.2
3	6.5	4.6	5.0
4	6.5	6.5	5.0
5	6.5	9.3	4.9
6	6.5	7.6	4.6
7	6.5	6.5	4.2
8	10.7	5.9	4.1
9	10.7	5.5	4.1
10	10.5	5.5	3.5
11	10.3	5.2	3.5
12	9.8	5.0	3.5
13	9.5	6.9	3.4
14	9.2	8.1	2.8
15	9.0	7.8	2.4
16	8.9	7.6	2.6
17	8.8	7.4	2.6
18	8.5	7.4	2.6
19	8.3	7.4	2.6
20	8.1	7.2	2.6
21	8.0	7.1	2.6
22	8.0	7.1	2.6
23	7.5	7.4	2.7
24	7.3	7.2	2.7
25	7.0	6.7	2.8
26	6.8	6.4	2.8
27	6.6	6.2	2.8
28	6.3	6.0	2.8
29	6.0	5.9	2.8
30	5.6	5.5	2.8
31	5.2	5.7	
Total			92
Sec. Ft.			Day
Days	242.1	202.2	102.1
Mean			Period
Sec. Ft.	7.8	6.5	3.4
Maximum			5.9
Sec. Ft.	10.7	9.3	5.5
Minimum			10.7
Sec. Ft.	5.2	4.6	2.4
Total			2.4
Acre Ft.	480	401	203
			1080

TABLE 4

Daily Discharge in Cubic Feet per Second
 HOWARD--JONES DITCH
 July 1 to September 30, 1948

Day	July	August	September	
1	1.0	6.1	2.4	
2	1.0	6.1	2.3	
3	1.0	6.1	2.3	
4	1.0	5.2	2.4	
5	1.0	4.5	2.3	
6	1.0	3.9	2.4	
7	1.0	3.3	2.4	
8	1.0	3.2	2.5	
9	1.0	2.9	2.5	
10	1.0	2.5	2.9	
11	1.0	2.6	2.8	
12	1.0	2.7	2.8	
13	1.0	2.9	2.8	
14	1.0	1.6	2.0	
15	1.0	1.2	2.2	
16	1.0	1.0	2.3	
17	1.0	1.0	1.9	
18	1.0	.9	2.1	
19	1.0	.9	1.8	
20	1.0	.9	1.7	
21	6.2	.9	1.7	
22	6.1	.8	1.7	
23	6.0	.8	1.5	
24	6.0	1.2	1.0	
25	6.5	1.6	1.0	
26	6.7	1.6	1.0	
27	6.6	1.5	1.0	
28	6.6	1.6	1.0	
29	6.7	1.7	1.0	
30	6.5	2.1	1.0	
31	6.2	2.5		
Total				92
Sec. Ft.				Day
Days	90.1	75.8	58.7	Period
Mean				
Sec. Ft.	2.9	2.4	2.0	2.4
Maximum				
Sec. Ft.	6.7	6.1	2.9	6.7
Minimum				
Sec. Ft.	1.0	.8	1.0	.8
Total				
Acre Ft.	179	150	116	445

TABLE 5

Daily Discharge in Cubic Feet per Second
 CAMP DITCH
 July 1 to September 30, 1948

Day	July	August	September
1	6.0	2.5	3.9
2	5.9	2.4	3.9
3	5.6	2.4	3.9
4	5.4	1.8	3.9
5	5.5	.8	3.8
6	5.5	2.3	3.7
7	5.4	3.6	4.0
8	5.2	3.5	4.0
9	5.2	3.6	4.0
10	5.3	3.8	4.0
11	5.2	3.7	4.0
12	4.5	3.6	4.0
13	4.0	4.0	4.0
14	4.0	4.5	4.0
15	3.8	4.8	4.0
16	3.7	4.9	3.4
17	3.5	4.9	3.4
18	3.3	5.0	3.5
19	3.1	4.8	3.5
20	3.1	4.5	3.5
21	3.0	4.5	3.4
22	2.7	4.3	3.2
23	2.7	4.3	2.8
24	2.7	4.5	2.7
25	2.5	3.6	2.6
26	2.1	3.6	2.7
27	2.0	3.4	2.7
28	1.8	3.3	2.7
29	2.1	3.3	2.7
30	2.5	3.3	2.7
31	2.6	3.3	
Total			92
Sec. Ft.			Day
Days	119.9	112.8	104.6
Mean			Period:
Sec. Ft.	3.9	3.6	3.5
Maximum			3.7
Sec. Ft.	6.0	3.6	4.0
Minimum			6.0
Sec. Ft.	1.8	5.0	.8
Total			
Acre Ft.	238	224	207
			669

TABLE 6

Daily Discharge in Cubic Feet per Second
UPPER SHACKLEFORD CREEK ABOVE DIVERSIONS
July 1 to September 30, 1948

Day	July	August	September	Period
1	92.5	19.5	12.1	
2	82.4	19.2	11.7	
3	74.1	19.1	11.5	
4	65.9	18.5	11.6	
5	71.0	18.1	11.3	
6	66.0	16.8	11.0	
7	49.9	15.4	10.9	
8	48.9	14.6	10.9	
9	46.9	14.0	10.9	
10	44.8	12.8	10.7	
11	43.5	12.1	10.6	
12	42.3	11.9	10.6	
13	39.5	14.4	10.5	
14	37.2	14.4	9.1	
15	34.8	14.0	8.9	
16	34.6	13.7	8.9	
17	34.3	13.5	8.9	
18	33.8	13.5	9.2	
19	33.4	13.3	8.9	
20	33.2	12.8	8.8	
21	33.2	12.7	8.7	
22	30.8	12.4	8.5	
23	29.2	12.7	8.0	
24	27.0	13.1	7.4	
25	26.0	12.4	7.4	
26	25.6	12.1	7.5	
27	24.2	11.6	7.5	
28	22.7	11.4	7.5	
29	21.8	11.4	7.5	
30	20.6	11.4	7.5	
31	20.0	12.0		
Total				92
Sec. Ft.				Day
Days	1290.1	434.8	284.5	Period
Mean				
Sec. Ft.	41.6	14.0	9.5	21.8
Maximum				
Sec. Ft.	92.5	19.5	12.1	92.5
Minimum				
Sec. Ft.	20.0	11.4	7.4	7.4
Total				
Acre Ft.	2560	862	564	3990

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
	1948 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 trail distribution for the 1947 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 distribtuion of the waters of said stream system by a watermaster under State supervision during the 1948 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 Shackleford 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, 1948, only.

(2) The waters of the said Shackleford 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 Shackleford Creek stream system, as herein provided for, during the 1948 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 1948 season, the claimants hereunto subscribed will pay to the Division of Water Resources on or before July 1, 1948, 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 1948 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
Graham, Cecil and Zwanziger, Camille	12.43	43.09
Heide, John H. and Heide, Lorene M.	3.50	12.94
Lathrop, F. L. and Lathrop, Georgina C.	4.65	16.82
Miller, Lillian B.	0.70	3.50
Mulloy, Cornelius J. and Mulloy, L. Denis	4.50	16.32
Mulloy, L. Dennis	2.93	11.01
Parks, Drury M.	0.30	2.14
Pereira, Julio	1.40	5.85
Rivallier, Joseph	5.30	19.02

Name of Claimant	Continuous Flow Equivalent Cu. Ft. per Sec.	Portion of Expenses
Schulz, Richard; Schulz, Jack E.; and Schulz, 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 this 6th day of May, 1948.

<u>Name</u>	<u>Address</u>	<u>Date</u>
C. J. Mulloy	Ft. Jones, Calif.	May 6, 1948
Camille Zwanziger	Weed, Calif.	May 6, 1948
Cecil Graham By Geo. Zwanziger	Weed, Calif.	May 6, 1948
F. L. Lathrop	Fort Jones, Calif.	May 6, 1948
Robert P. Davis	P. O. Box 566 Fort Jones, Calif.	May 6, 1948
John H. Heide	Fort Jones, Calif.	May 6, 1948
Edward S. Burton	Fort Jones, Calif.	May 6, 1948
Lena Butler Silva	R.F.D. 32 Fort Jones, Calif.	May 6, 1948
Mrs. Lola Helm	Rt. 1, Box 49 Fort Jones, Calif.	May 6, 1948
Douglas G. Eastlick	Fort Jones, Calif.	May 6, 1948
Burnell M. Burton	Fort Jones, Calif.	May 18, 1948
Arthur L. Soderquist	Fort Jones, Calif.	May 18, 1948
Julio Pereira	Fort Jones, Calif.	May 18, 1948

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	Priority Class							Total
			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	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	Division	Allotments in Cubic Feet per Second							Total
			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 & 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 & 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 & 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 such 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