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

REPORT ON WATERMASTER SERVICE IN NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Modoc County, California

1948 SEASON

Sacramento, California

January 18, 1949

Mr. Gordon Zander
Principal Hydraulic Engineer
Sacramento, California

Dear Sir:

Herewith is submitted the annual report covering watermaster service within the North Fork Pit River Watermaster Service Area, Modoc County, California, during the 1948 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,

/s/ L. C. JOPSON
L. C. Jopson
Senior Hydraulic Engineer

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 in North Fork Pit River Watermaster Service Area, Modoc County, California, 1948 Season".

_____
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 in North Fork Pit River Watermaster Service Area, Modoc County, California, 1948 Season".

_____
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 in North Fork Pit River Watermaster Service Area, Modoc 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 18th day of January 1949.

DEPARTMENT OF PUBLIC WORKS

By_____
State Engineer and Chief of the
Division of Water Resources

SEAL

WATER RIGHTS OWNERSHIP CHANGES FOR 1949

Tract Number	Name of Water Right Owner Appearing in 1948 Statement	Name of Water Right Owner to Appear in 1949 Statement	Amount of Water c.f.s
9-95	Acty, Herman	DeWitt, Clara May and DeWitt, Willie	0.20
9-42	Barker, Iula	Mann, John and Mann, Alice	0.20
9-118, 9-119	Bonham, William K. and Bonham, Luella M.	Heesch, Hans A. and Heesch, Margaret M.	4.84
9-118	Denham, Charles H. and Denham, Anna L.	Bolliger, A. and Keller, A.	1.12
9-2	Hallinan, Patrick J. and Hallinan, Mildred	Leahy, John F. and Leahy, Ann B.	2.03
9-51	Henderson, A. E. and Henderson, Agnes	Eckard, D. H.	0.40
9-60 9-59 9-92, 9-93	Roberts, James W. Federal Land Bank of Berkeley and Roberts, James W. Royce, Howard and Royce, Pearl	Ong, Ralph O. and Ong, Peggy A. DeWitt, Clara May and DeWitt, Willie	0.20 0.20 0.46
9-96	Toney, Eugene and Toney, Marietta	Baldwin, C. B.	0.48

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INTRODUCTION

The North Fork Pit River Watermaster Service Area as created December 18, 1939, and changed and enlarged on December 13, 1940, all in accordance with Sections 4000 to 4032, inclusive, of the Water Code of California, includes the water rights on New Pine Creek, Cottonwood Creek, Davis Creek, Linville Creek, Franklin Creek, Joseph Creek, Thoms Creek, Gleason Creek, Shields Creek, Parker Creek, and North Fork of Pit River. The rights on all of which have been determined by court decrees as set forth in "Report on Watermaster Service in North Fork Pit River Watermaster Service Area, Modoc County, California, 1945 Season."

Watermaster service in the North Fork Pit River Watermaster Service Area for the 1948 season covered the regulation of diversions on the North Fork of Pit River and all its tributaries and on Davis, Cottonwood and New Pine Creeks tributary to Goose Lake. This service was carried on throughout the 1948 season in accordance with the "Distribution of Water" procedure contained in Sections 4050 to 4360, inclusive, of the Water Code. Such service extended over the period from April 1 to September 30, and was administered by watermaster R. C. Collet until August 15, 1948, at which time the administration was divided for the remainder of the season between W. G. Brigance who administered the north half and J. V. Seamon who administered the south half. G. H. Vickroy and J. V. Seamon directed and gave assistance early in the season as it was needed. Administration was under the supervision of L. C. Jopson, Supervising Watermaster.

WATER SUPPLY

Precipitation

Table 1 is a tabulation of the actual monthly and seasonal precipitation at the U. S. Weather Bureau stations in Lakeview, Oregon and Alturas, California, and at stations maintained by the California

Cooperative Snow Surveys at Bieber and Jess Valley, California. The average total precipitation at the four stations for the seasonal year of 1947-48 was approximately 120 per cent of the 19 year mean.

The results of precipitation during the winter months as measured by the water content of the snow on April 1 has been tabulated in Table 2. This data, taken from the California Cooperative Snow Survey Bulletin of April 10, 1948, indicates the snowfall in 1948 as being approximately 90.2 per cent of the mean for the period of record.

Stream Flow

Measuring stations equipped with water stage recorders were maintained on the various streams within the service area as follows:

New Pine Creek below Schroeder's - rated section.

Davis Creek at Old Fish Wheel - rated section.

Linville Creek at Old Power House - 3-foot rectangular weir.

Franklin Creek above Chrman Ditch - 4-foot rectangular weir.

Joseph Creek below Couch Creek - rated section.

North Fork of Pit River above Upper XL Dam - rated section.

Thomas Creek at Alturas - Cedarville Highway Crossing - rated section.

Parker Creek above Highway 395 - rated section.

Parker Creek at Fogarty Ranch - rated section.

Shields Creek below Pepperdine's - 6-foot rectangular weir.

Gleason Creek at Jones Ranch - 3-foot rectangular weir.

The records of daily discharge for these stations are presented in Tables 3 and 5 to 14 inclusive, submitted at the end of this report.

The daily discharge of Cottonwood Creek, on which no recorder is maintained, is given in Table 4. The total daily discharge of Cottonwood Creek was determined by totaling the sum of all diversions above the Bissel Dam with the amount of flow of the creek below Bissel Dam.

The total water supply available for diversion from the North Fork of Pit River is given in Table 15, and is a combination of Tables 13 and 14.

DISTRIBUTION OF WATER

Distribution on the various streams within the North Fork Pit River Watermaster Service Area was in accordance with the allotments and priorities set forth in the respective decrees determining the rights thereon. The stream flow available for distribution was determined from the measured discharge at the respective measuring stations. A discussion of the results accomplished follows:

New Pine Creek

The available flow of New Pine Creek filled all allotments from May 10, 1948 to June 30, 1948 when the proration system changed to a priority system as provided in the decree determining the rights to water on New Pine Creek. Prior to May 10, 1948, an overall allotment of approximately 56% was supplied. During the period of May 10, 1948 to June 30, 1948, water was also available to fill requirements under Application 10207, Permit 5831, issued to Walter and Lawrence Butler. After July 1, 1948, and until July 10, 1948, 100 per cent allotments were delivered. Thereafter the total available supply gradually decreased to where only the first and second priority and a portion of the third could be supplied in September.

Cottonwood Creek

The available flow of Cottonwood Creek was adequate to fill all irrigation and domestic requirements until June 14, 1948. On July 4, 1948, the flow had receded to a point less than enough to fill the first priority rights. After July 13, 1948, the entire flow of the creek was turned to H. M. Fleming as the allotment of Charles Vincent would not reach his place of use. As the flow of the creek was in excess of the needs of H. M. Fleming a limited diversion was allowed to W. M. Allen under a second priority right.

The flow of Cottonwood Creek was divided in this manner throughout the remainder of the season of watermaster service.

Davis Creek

The available flow of Davis Creek was sufficient to furnish the requirements of the first and second and part of the third priority allotments until the 13th of May. The flow then progressively increased until full allotments were being delivered to all priorities. Delivery of full allotments was continued until June 18, 1948. After June 18, the flow available for irrigation and domestic purposes receded until, in September, only first and second and a portion of third priority allotments were again being supplied.

Linville Creek

The available flow of Linville Creek provided only a portion of the first priority requirement throughout the season, with the exception of a few days in April, May and June. During the periods mentioned some flow was furnished to the holders of second priority allotments.

Franklin Creek

The available flow of Franklin Creek varied throughout the months of April, May and June, but provided enough water to fill the first, second and third priority allotments and occasionally a portion of the fourth priority allotment. After June 7, 1948, the waters of Franklin Creek receded steadily until the first, second and a portion of the third priority allotments were being filled in September.

Joseph Creek

Joseph Creek supplied enough water to fill requirements until June 27. Thereafter the flow of the creek receded steadily, reaching a point on the 15th of September where only a small part of the first priority allotment was available. The flow then began to increase, due to

light precipitation in the area, providing an increased allotment to the first priority users.

Thoms Creek

The available flow of Thoms Creek is considerably greater than recorded at the recorder station due to diversion by some first and second priority rights above the station and the occurrence of considerable return flow from irrigation below the station. Accordingly the record at the station does not reflect the available water supply but merely indicates the flow condition.

The runoff of Thoms Creek was adequate to fill all priorities for the months of April, May and June. Then the supply began to decrease slowly until on September 15th only a small amount of first priority water was being delivered. After September 15th the flow began to increase slightly, but only enough to furnish a small additional amount for the use of the first priority users already diverting.

Gleason Creek

The available flow of Gleason Creek during April, May and until the 12th of June was adequate to fill all priority requirements. After the 12th of June the flow of the creek decreased until by July 15 only first priority rights were being supplied with water. Gleason Creek ceased flowing entirely during the month of September.

Parker Creek

The flow of Parker Creek was adequate to fill all priority requirements until the 8th of July. After the 8th of July the available flow of Parker Creek receded slowly until only first priority allotments and a portion of second priority allotments were being filled at the end of the season.

Shields Creek

Shields Creek provided adequate flow to fill first, second and occasionally third priority allotments until June 27. Subsequent to June 27, the flow of the Creek receded until only the first priority and portions of the second priority rights were being filled.

North Fork of Pit River

The available flow of North Fork of Pit River was adequate to fill all allotments until the 27th of June. Subsequent to June 27th the flow of North Fork of Pit River receded until by August 20 only a portion of the first priority water was being supplied. On August 22, water was released from the Lauer reservoir which combined with the North Fork of Pit River water provided approximately 70 per cent of the first priority requirement for the remainder of the season.

SUMMARY

The precipitation in the area was approximately normal over the seasonal year but was below normal during the winter months as can be noted from the snow survey results in Table 2. However, the deficiency was compensated for by above normal rain and snow fall during the spring months.

Adequate stream flow was available on all streams throughout the growing season to mature all crops. Sufficient water was available for stock watering purposes on all streams except Gleason Creek.

CONTROVERSIES

On New Pine Creek a controversy developed over the continued use of New Pine Creek water by Monday morning users beyond their allotted

time. In accordance with a previous agreement between the townspeople and the decreed users of New Pine Creek flow, signed July 27, 1914, the townspeople were to have the use of water for garden purposes between the hours of seven o'clock A. M. Monday and seven o'clock A. M. Tuesday of each week. However, the townspeople have developed the feeling that the privilege is now a right and that they can take water at their own discretion. The watermaster gave warning many times, blocked ditches and tore out dams, to no avail. In discussions with the decreed owners of New Pine Creek water it was suggested that they take action to prevent excessive use of the water and give the watermaster more authority. However, these owners felt that such action would put a strain on their friendly relations with the townspeople. Consequently, until some definite action is taken to determine the right of the townspeople, if any, and establish the authority of the watermaster, the excessive use of water by Monday users can be expected to continue.

OWNERSHIP OF LANDS AND WATER RIGHTS WITHIN NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Changes of Ownership

The following tabulation lists the changes in ownership of lands and water rights occurring in the North Fork Pit River Watermaster Service Area subsequent to the filing of statement for 1948. These changes shall be included in the statement of said service area for 1949.

TABLE 1

PRECIPITATION - UPPER PIT RIVER STATIONS - 1929-1948
Monthly, Seasonal and Average Amounts in Inches

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Season
Jess Valley, Modoc County, California, Elev. 5400 Ft.													
16 Yr. Total	19.36	23.59	28.62	33.22	34.48	28.53	29.42	27.47	21.49	6.00	3.22	11.22	266.62
1945-1946	1.36	3.25	2.29	1.44	1.28	2.53	0.59	1.32	0.98	0.79	0.20	0.41	16.44
1946-1947	1.61	1.10	1.77	0.67	0.45	1.56	0.93	3.08	2.13	0	0.05	0.27	13.62
1947-1948	1.71	1.88	1.63	0.61	1.12	2.30	2.31	2.36	3.83	0.25	0.30	0.90	19.20
19 Yr. Total	24.04	29.82	34.31	35.94	37.33	34.92	33.25	34.23	28.43	7.04	3.77	12.80	315.88
19 Yr. Rec. Mean	1.26	1.57	1.80	1.89	1.96	1.84	1.75	1.80	1.50	0.37	0.20	0.67	16.62
Alturas, Modoc County, California, Elev. 4,460 Ft.													
16 Yr. Total	16.16	19.39	26.61	30.19	25.30	19.60	17.17	16.69	11.84	3.47	2.94	5.79	195.15
1945-46	2.09	2.08	1.47	0.72	0.58	1.49	0.48	0.72	0.48	0.67	T	0.12	10.90
1946-47	0.83	1.67	1.08	0.31	0.88	0.83	0.69	1.20	1.08	0	0.47	0.26	9.30
1947-48	1.58	1.38	0.48	0.84	0.51	1.57	2.47	2.12	2.34	0.20	0	0.81	14.30
19 Yr. Total	20.66	24.52	29.64	32.06	27.27	23.49	20.81	20.73	15.74	4.34	3.41	6.98	229.65
19 Yr. Rec. Mean	1.08	1.29	1.56	1.69	1.44	1.24	1.10	1.09	0.83	0.23	0.18	0.37	12.09
Lakeview, Lake County, Oregon, Elev. 4,750 Ft.													
16 Yr. Total	17.92	20.61	29.07	27.81	29.56	22.50	20.63	21.68	18.19	2.42	2.95	8.45	221.79
1945-46	1.19	1.60	1.81	1.19	0.90	1.27	0.21	0.32	0.38	0.42	T	0.25	9.54
1946-47	1.45	1.81	1.55	0.29	0.67	1.97	0.74	1.80	2.96	0	0.06	0.32	13.62
1947-48	2.39	1.17	0.49	1.88	0.93	1.86	1.88	1.24	2.81	0.26	0.01	0.91	15.83
19 Yr. Total	22.95	25.19	32.92	31.17	32.06	27.60	23.46	25.04	24.34	3.10	3.02	9.93	260.78
19 Yr. Rec. Mean	1.21	1.33	1.73	1.64	1.69	1.45	1.23	1.32	1.28	0.16	0.16	0.52	13.72
Bieber, Lassen County, California, Elev. 4,200 Ft.													
16 Yr. Total	21.63	25.65	41.95	40.52	43.24	31.50	22.85	21.40	11.13	2.71	0.99	6.66	270.23
1945-46	2.43	2.97	2.93	1.80	2.32	1.70	1.27	0.82	0.27	0.50	0	0.22	17.23
1946-47	0.54	1.98	2.74	0.60	1.56	1.91	0.79	2.25	1.17	0	0.35	0.28	14.17
1947-48	3.52	1.22	0.69	2.68	0.86	4.16	4.03	2.71	2.27	0.42	0.16	0.75	23.47
19 Yr. Total	28.12	31.82	48.31	45.60	47.98	39.27	28.94	27.18	14.84	3.63	1.50	7.91	325.10
19 Yr. Rec. Mean	1.48	1.67	2.54	2.40	2.53	2.07	1.52	1.43	0.78	0.19	0.08	0.41	17.10

For records prior to 1940-1941, see 1940 Report
For records prior to 1945-1946 see 1945 Report

TABLE 2

SNOW SURVEY DATE—UPPER PIT RIVER

	1945	1956	1947	1948	1949	1950
Eagle Peak Course Elev. 7500 Ft.						
Date of Survey	3/30	4/5	4/2	3/29		
Depth of Snow—Inches	63.5	53.3	22.2	42.9		
Water Content—Inches	22.2	21.2	6.4	14.4		
Density—Percent	35.0	39.8	28.8	33.6		
Record Average—Inches	15.8	16.1	15.5	15.5		
% of Record Aver.	140.5	131.7	41.0	92.9		
Cedar Pass Course Elev. 7200 Ft.						
Date of Survey	3/29	3/28	3/31	3/31		
Depth of Snow Inches	67.5	55.4	26.0	49.1		
Water Content Inches	22.4	22.9	10.3	15.7		
Density—Percent	33.2	41.3	39.6	31.9		
Record Average—Inches	17.2	17.5	17.1	17.1		
% of Record Average	130.2	130.8	60.0	91.8		

	1945	1946	1947	1948	1949	1950
Adin Mountain Course— Elev. 6500 Ft.						
Date of Survey	4/3	3/26	3/31	3/31		
Depth of Snow—In.	41.2	44.0	13.4	28.4		
Water Content—In.	15.8	16.2	4.4	9.9		
Density—Percent	38.4	37.0	32.8	34.9		
Record Average—In	12.2	12.5	12.0	11.9		
% of Record Aver.	129.5	129.6	36.6	83.2		
Blue Lake Ranch Course Elev. 7300 Ft.						
			New Course 1940			
Date of Survey	4/3	4/3	4/1	4/1		
Depth of Snow—Inches	44.0	44.9	17.5	27.3		
Water Content—Inches	15.8	16.2	5.3	10.1		
Density—Percent	35.9	36.1	30.4	37.0		
Record Average—Inches			11.0	10.9		
% of Record Average			48.0	92.7		

For record prior to 1945, see 1946 report.

TABLE 3

DAILY DISCHARGE IN CUBIC FEET PER SECOND
NEW PINE CREEK BELOW SCHROEDER'S
APRIL 2 TO SEPTEMBER 23, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1	NO RECORD	15.9	28	33	10.8	8.3
2	13.5	15.6	28	30	9.9	8.0
3	13.2	15.6	32	30	10.5	8.0
4	13.8	16.2	37	28	11.6	8.0
5	13.5	18.2	34	27	11.2	8.3
6	13.8	22	32	26	11.2	8.3
7	13.8	23	30	24	10.8	8.3
8	14.1	31	67	24	10.8	8.3
9	12.9	29	71	23	10.8	8.3
10	11.9	27	67	22	10.8	8.0
11	12.4	24	64	22	10.8	8.0
12	11.3	24	62	21	10.8	8.0
13	11.3	24	59	19.0	10.8	8.0
14	12.1	32	56	17.3	10.5	7.7
15	13.2	38	53	16.7	10.5	7.7
16	13.5	37	53	16.1	10.5	7.7
17	20.1	29	52	15.6	10.2	7.5
18	19.7	21	53	15.6	10.2	7.7
19	19.7	25	51	15.0	9.9	7.7
20	19.7	29	51	14.4	9.6	7.5
21	20.1	28	51	14.4	9.6	7.7
22	18.2	28	49	14.0	9.6	7.7
23	16.6	27	47	13.6	9.6	7.7
24	16.6	25	43	13.2	9.6	
25	16.6	46	41	13.2	9.6	
26	16.2	42	41	13.2	9.6	
27	16.2	37	37	13.2	9.2	NO
28	16.2	33	36	12.8	9.2	
29	15.9	29	35	12.8	8.9	RECORD
30	15.9	26	34	12.0	8.6	
31		26		11.6	8.3	
Total sec-ft-days	*442.0	843.5	1,394	583.7	314.0	**182.4
Mean sec-ft	* 15.2	27.2	46.5	18.8	10.1	**7.93
Runoff ac-ft	* 877	1,670	2,760	1,160	623	** 362

* 29-day period
** 23-day period

Total runoff for 175 day period - 7,460 acre-feet

TABLE 4

DAILY DISCHARGES IN CUBIC FEET PER SECOND
COTTONWOOD CREEK ABOVE DIVERSIONS
MAY 11 TO SEPTEMBER 23, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1		NO	15.0	4.0	0.66	0.17
2			19.0	3.8	.63	.15
3			23	3.6	.60	.14
4			27	3.4	.56	.13
5			26	3.2	.55	.12
6		RECORD	25	3.0	.55	.11
7			27	2.9	.54	.10
8	NO		28	2.8	.53	.09
9			26	2.7	.52	.08
10			24	2.5	.51	.07
11		8.0	22	2.3	.50	.06
12		10.0	19.0	2.1	.49	.05
13		12.0	15.0	2.0	.48	.05
14		14.0	13.0	1.8	.47	.04
15		16.0	11.2	1.7	.46	.04
16		16.0	10.8	1.6	.45	.04
17	RECORD	14.0	10.4	1.5	.44	.04
18		13.0	10.0	1.3	.43	.04
19		14.0	9.6	1.1	.42	.04
20		14.0	9.1	1.0	.41	.10
21		14.0	8.6	.96	.40	.13
22		13.0	8.1	.92	.38	.16
23		13.0	7.4	.88	.36	.18
24		15.0	6.7	.84	.34	
25		20	6.0	.82	.32	
26		19.0	5.3	.81	.30	NO
27		18.0	4.6	.81	.28	
28		17.0	3.9	.78	.26	
29		16.0	3.3	.75	.24	RECORD
30		15.0	3.6	.72	.22	
31		14.0		.69	.20	
Total sec-ft-days		*305.0	427.6	57.28	13.50	** 2.13
Mean sec-ft		* 14.5	14.3	1.85	0.44	** 0.09
Runoff ac-ft		*605	848	114	26.8	** 4.2

* 21-day period
** 23-day period
Total runoff for 136 day period - 1,600 acre-feet

TABLE 5

DAILY DISCHARGE IN CUBIC FEET PER SECOND
DAVIS CREEK AT OLD FISH WHEEL
APRIL 10 TO SEPTEMBER 21, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1		23	85	21	12.4	10.8
2	NO	22	96	19.0	12.1	10.8
3		21	103	18.7	12.1	10.8
4		22	104	18.4	12.1	10.6
5		26	103	18.4	12.1	10.6
6		36	100	17.5	12.3	10.6
7	RECORD	41	98	17.5	12.1	10.6
8		43	119	17.0	11.9	10.6
9		36	128	16.7	11.9	10.4
10	17.8	33	106	16.2	11.9	10.4
11	15.3	32	98	16.2	11.8	10.3
12	16.0	33	106	15.3	11.6	10.3
13	18.7	39	104	14.5	11.6	10.1
14	19.6	43	96	14.1	11.6	10.1
15	41	50	87	13.9	11.4	10.1
16	45	59	77	13.8	11.4	10.1
17	44	60	74	13.6	11.4	10.1
18	43	56	59	13.6	11.3	10.1
19	42	59	51	13.6	11.3	10.3
20	48	47	42	13.6	11.3	10.3
21	48	53	33	13.5	11.4	10.3
22	43	46	32	13.3	11.4	
23	43	45	29	13.1	11.4	
24	38	53	28	12.9	11.4	NO
25	32	58	28	12.9	11.4	
26	31	72	27	12.9	11.3	
27	29	86	24	12.8	11.1	
28	28	86	23	12.6	10.9	RECORD
29	26	95	20	12.6	10.8	
30	25	88	21	12.6	10.8	
31		81		12.6	10.8	
Total sec-ft-days	* 693.4	1544	2101	464.4	358.3	*218.3
Mean sec-ft	* 33.0	49.8	70.0	14.9	11.6	* 10.4
Runoff ac-ft	*1,380	3060	4170	921	711	*433

* 21-day period
Total runoff for 165 day period - 10,700 acre-feet

TABLE 6

DAILY DISCHARGE IN CUBIC FEET PER SECOND
LIRVILLE CREEK AT OLD POWER HOUSE
APRIL 5 TO SEPTEMBER 20, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1	NO	2.83	3.22	2.46	2.28	2.37
2	RECORD	2.83	3.42	2.37	2.46	2.37
3		2.83	3.42	2.28	2.46	2.37
4		3.22	3.73	2.20	2.46	2.46
5	2.74	3.62	3.94	2.46	2.46	2.46
6	3.03	3.94	3.62	2.46	2.46	2.46
7	3.32	4.59	3.62	2.46	2.46	2.46
8	3.62	4.04	3.73	2.37	2.46	2.46
9	3.94	3.52	4.15	2.37	2.46	2.46
10	4.36	3.03	3.94	2.37	2.46	2.46
11	4.81	2.65	3.62	2.37	2.46	2.46
12	4.69	2.65	3.52	2.37	2.46	2.46
13	4.59	2.65	3.42	2.46	2.46	2.46
14	4.47	2.65	3.22	2.28	2.46	2.46
15	4.36	2.65	2.93	2.20	2.46	2.46
16	4.36	2.65	2.74	2.28	2.46	2.46
17	4.26	2.65	2.74	2.28	2.46	2.46
18	4.15	2.55	3.03	2.28	2.46	2.46
19	4.04	2.55	2.83	2.28	2.46	2.46
20	3.94	2.55	2.93	2.28	2.46	2.46
21	3.83	2.74	2.83	2.28	2.46	
22	3.73	2.83	2.83	2.28	2.46	
23	3.62	3.03	2.74	2.28	2.46	
24	3.52	2.93	2.65	2.28	2.46	NO
25	3.42	3.62	2.65	2.28	2.46	
26	3.32	3.94	2.55	2.28	2.37	
27	3.22	4.04	2.46	2.28	2.28	
28	3.03	4.04	2.46	2.37	2.02	RECORD
29	2.93	3.83	2.37	2.28	2.02	
30	2.83	3.62	2.46	2.28	2.02	
31		3.32		2.28	2.11	
Total sec-ft-days	* 93.77	98.59	93.77	72.05	74.14	**48.93
Mean sec-ft	*3.61	3.18	3.13	2.32	2.39	**2.45
Runoff ac-ft	*186	196	186	143	147	**97.1

Records of flow measured over 3-foot weir.

* 26-day period

** 20-day period

Total runoff for 169 day period - 955 acre-feet

TABLE 7

DAILY DISCHARGE IN CUBIC FEET PER SECOND
FRANKLIN CREEK ABOVE DIVERSIONS
APRIL 3 TO SEPTEMBER 21, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1	NO	7.05	10.20	5.42	2.94	2.60
2	RECORD	6.75	9.84	4.99	3.06	2.60
3	4.32	6.44	9.67	4.86	3.18	2.48
4	4.18	7.05	12.20	4.86	3.18	2.60
5	4.18	8.00	12.70	4.72	3.06	2.60
6	3.93	8.66	13.70	4.32	3.06	2.48
7	3.80	8.33	14.20	4.16	3.06	2.48
8	3.67	7.05	14.00	3.93	3.06	2.60
9	3.67	7.36	13.80	3.80	3.06	2.48
10	4.45	7.68	13.50	3.80	3.06	2.48
11	5.27	8.00	12.90	3.67	2.94	2.48
12	6.14	8.49	12.30	3.42	2.94	2.60
13	7.21	9.67	11.80	3.42	2.94	2.48
14	8.17	10.20	11.20	3.42	2.94	2.48
15	9.67	10.50	10.70	3.54	2.82	2.48
16	11.20	11.10	9.67	3.42	2.60	2.60
17	11.40	12.20	9.16	3.42	2.48	2.60
18	10.20	10.90	10.20	3.42	2.48	2.71
19	9.84	10.00	8.82	3.42	2.48	2.71
20	10.40	9.33	10.20	3.30	2.48	2.71
21	10.70	8.99	8.82	3.06	2.60	2.82
22	8.82	10.00	8.00	3.06	2.94	
23	8.66	10.40	7.52	3.06	2.94	
24	8.49	11.80	7.21	2.94	2.94	NO
25	8.33	12.70	7.05	2.94	2.94	
26	8.17	12.30	6.44	2.94	2.82	
27	8.00	12.00	5.85	3.06	2.71	
28	7.84	11.60	5.42	3.06	2.71	RECORD
29	7.68	11.20	4.99	3.06	2.60	
30	7.36	10.00	5.27	2.94	2.60	
31		10.50		2.82	2.60	
Total sec-ft-days	* 205.75	297.15	297.33	112.27	88.22	**54.07
Mean sec-ft	*7.35	9.59	9.91	3.62	2.84	** 2.57
Runoff ac-ft	*408	589	590	223	175	** 107

Records of flow measured over 4-foot weir.

* 28-day period
** 21-day period

Total runoff for 172 day period 2,090 acre-feet

TABLE 5

DAILY DISCHARGE IN CUBIC FEET PER SECOND
JOSEPH CREEK BELOW COUCH CREEK
JUNE 27 TO SEPTEMBER 26, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1				9.8	3.8	1.3
2				8.6	3.6	1.2
3				8.0	3.3	1.4
4				7.7	3.2	1.4
5				8.2	3.0	1.4
6				7.1	3.0	1.4
7	NO	NO	NO	6.3	3.0	1.3
8				5.5	2.9	1.3
9				4.8	2.8	1.3
10				4.4	2.8	.80
11				4.4	2.7	.80
12				4.3	2.6	.80
13				4.1	2.7	.80
14				3.8	2.6	.80
15				3.2	2.5	.80
16				3.0	2.5	.90
17	RECORD	RECORD	RECORD	2.9	2.6	1.2
18				2.8	2.5	1.4
19				2.7	2.6	1.4
20				2.4	2.6	1.8
21				2.6	2.5	2.1
22				2.4	3.2	2.6
23				2.4	3.4	2.8
24				2.2	3.0	3.2
25				2.3	2.7	3.2
26				2.2	2.5	3.5
27			10.6	2.1	2.2	NO
28			9.6	2.8	2.0	
29			9.3	4.3	1.8	RECORD
30			9.3	4.1	1.6	
31				4.0	1.4	
Total sec-ft-days			* 38.8	135.4	83.6	**40.30
Mean sec-ft			* 9.70	4.37	2.70	** 1.57
Runoff acrft			* 77.0	269	166	** 81.1

* 4-day period
** 26-day period

Total runoff for 92 day period - 593 acre-feet

TABLE 9

DAILY DISCHARGE IN CUBIC FEET PER SECOND
THOMS CREEK AT GEDARVILLE-ALTURAS HIGHWAY CROSSING
APRIL 3 TO SEPTEMBER 26, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1	NO	19.6	37	6.6	2.4	0.60
2	RECORD	22	36	6.3	2.3	.50
3	22	25	34	5.7	1.9	.50
4	19.0	29	46	5.5	1.6	.50
5	15.1	47	91	6.1	1.2	.50
6	12.0	82	57	5.6	1.6	.50
7	11.4	94	57	4.7	1.5	.40
8	10.5	72	77	4.5	1.5	.40
9	11.0	52	88	4.0	1.5	.40
10	10.9	42	61	4.0	1.4	.30
11	11.4	39	47	4.0	1.2	.30
12	10.7	37	36	3.8	1.1	.20
13	11.8	37	25	3.7	1.1	.10
14	37	22	21	3.7	.70	.10
15	80	13.9	21	3.8	.30	.20
16	94	13.0	19.0	3.5	.10	.30
17	89	28	21	3.1	.00	.20
18	85	50	16.8	3.2	.00	.30
19	77	48	17.0	3.5	.10	.30
20	80	46	17.6	3.5	.10	.40
21	85	44	15.3	3.4	.20	.40
22	73	42	13.7	3.4	.50	.30
23	61	53	12.4	3.3	.90	.50
24	49	65	11.4	3.3	1.0	.70
25	38	92	9.5	3.2	.80	.70
26	29	89	7.9	3.1	.80	1.0
27	24	92	7.9	3.7	.70	
28	20	80	6.9	3.6	.70	NO
29	15.8	66	6.1	3.1	.50	
30	17.6	56	6.3	2.9	.60	RECORD
31		46		2.8	.60	
Total sec-ft - days	*1,100.2	1,543.5	922.4	124.6	28.90	**10.60
Mean sec-ft	* 39.3	49.8	30.7	4.02	0.93	** 0.41
Runoff ac-ft	*2180	3060	1830	247	57.3	** 21.0

* 28-day period.
** 26-day period

Total runoff for 177 day period = 7,400 acre-feet.

TABLE 10

DAILY DISCHARGE IN CUBIC FEET PER SECOND
GLEASON CREEK NEAR JONES RANCH
APRIL 20 TO AUGUST 31, 1946

Day	Apr.	May	June	July	Aug.	Sept.
1		5.6	3.7	0.89	0.18	
2		5.8	3.7	.83	.18	
3		6.1	3.7	.83	.18	
4	NO	6.4	4.8	.76	.18	
5		7.2	7.0	.58	.18	
6		7.7	6.0	.47	.18	
7		7.8	5.0	.47	.18	
8		7.1	6.0	.42	.18	NO
9		6.2	6.1	.37	.18	
10		5.8	5.4	.29	.18	
11		6.0	5.2	.25	.18	
12		5.8	4.6	.33	.18	
13	RECORD	6.0	4.0	.29	.18	
14		6.1	3.4	.29	.18	
15		6.1	2.7	.25	.18	
16		6.0	2.5	.25	.18	
17		3.6	2.3	.21	.18	FLOW
18		3.6	2.4	.21	.18	
19		3.6	2.2	.18	.18	
20	8.4	4.0	2.5	.21	.15	
21	7.7	7.0	1.9	.29	.15	
22	7.1	9.1	1.8	.29	.15	
23	6.2	7.6	1.6	.25	.12	
24	5.3	9.2	1.5	.18	.12	
25	4.9	8.6	1.2	.15	.09	
26	4.7	7.6	.47	.15	.09	
27	4.8	7.1	.37	.18	.06	
28	4.9	6.3	.76	.18	.06	
29	5.2	5.8	.89	.18	.03	
30	5.4	5.4	.89	.18	.03	
31		4.4		.18	.03	
Total sec-ft - days	*64.6	194.6	93.58	10.41	4.50	
Mean sec-ft	*5.87	6.28	3.12	0.34	0.14	
Runoff ac-ft	*128	386	186	20.6	8.9	

* 11-day period

Total runoff for 134 day period - 730 acre-feet

TABLE 11

DAILY DISCHARGE IN CUBIC FEET PER SECOND
PARKER CREEK AT FOGARTY RANCH
APRIL 6 TO SEPTEMBER 26, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1.	NO	69	76	27	7.4	4.2
2		68	76	25	7.0	4.2
3	RECORD	70	77	22	6.7	4.2
4		75	98	21	6.7	4.2
5		91	119	18	7.0	4.2
6	32	103	106	20	7.0	4.2
7	31	108	98	18.8	6.3	4.2
8	28	96	93	18.1	6.7	4.2
9	29	85	104	16.2	9.8	4.2
10	37	80	96	16.2	10.6	4.2
11	62	81	84	14.5	11.0	4.2
12	67	84	78	14.5	11.5	4.2
13	73	90	74	13.4	11.0	4.2
14	80	89	69	12.9	10.6	4.2
15	88	92	65	12.9	8.9	4.2
16	98	96	63	12.9	7.4	4.2
17	109	93	57	12.4	5.7	4.2
18	103	91	66	12.4	7.4	4.2
19	99	84	59	12.4	6.3	4.2
20	102	80	66	12.0	6.7	4.2
21	106	88	64	11.5	5.7	4.2
22	87	113	61	11.0	6.3	4.5
23	82	102	60	10.6	4.8	4.5
24	77	103	50	10.2	4.8	4.5
25	74	104	42	9.8	4.5	4.5
26	71	104	41	9.4	4.2	4.8
27	71	103	38	9.4	4.0	
28	72	98	29	9.4	4.0	NO
29	76	91	28	8.5	3.7	
30	72	86	26	8.1	4.0	RECORD
31		84		8.5	4.2	
Total sec-ft-days	*1,826	2,801	2,063	439.8	211.9	** 111.0
Mean sec-ft	* 73.0	90.4	68.8	14.2	6.82	** 4.27
Runoff ac-ft	*3620	5560	4090	872	420	** 220

* 25-day period
** 26-day period

Total runoff for 174 day period - 14,800 acre-feet

TABLE 12

DAILY DISCHARGE IN CUBIC FEET PER SECOND
SHIPLEY CREEK BELOW [illegible] RANCH
APRIL 16 TO SEPTEMBER 26, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1		5.0	10.4	6.1	4.6	2.9
2		4.6	9.7	6.1	4.6	3.2
3		4.4	11.1	5.9	4.4	3.2
4	NO	4.4	12.2	5.8	4.3	3.2
5		5.4	21	5.9	4.3	3.2
6		7.0	23	7.0	4.3	3.2
7		8.0	22	7.0	4.1	3.2
8		7.7	12.2	6.7	4.1	3.2
9		7.0	14.8	6.6	4.6	3.2
10		7.4	14.0	6.3	4.6	3.2
11		7.7	12.2	6.1	4.6	3.2
12	RECORD	7.2	10.0	6.1	4.6	3.2
13		6.8	13.7	5.9	4.2	3.2
14		6.5	12.7	5.8	3.8	3.2
15		6.0	11.9	5.8	3.6	3.2
16	10.0	7.0	11.4	5.2	3.6	3.4
17	11.6	8.2	16.7	4.8	3.4	3.4
18	11.1	9.3	13.4	4.1	3.4	3.4
19	10.5	9.7	11.0	4.4	3.2	3.4
20	10.2	10.0	15.2	4.4	3.4	3.4
21	9.7	10.4	13.4	4.4	3.2	3.4
22	9.2	10.7	11.0	4.4	3.2	3.4
23	8.7	11.1	10.2	4.4	3.1	3.4
24	8.2	11.6	8.6	4.3	3.2	3.4
25	7.7	11.4	8.9	4.3	3.4	3.4
26	7.2	11.4	8.2	4.4	3.2	3.4
27	6.8	11.2	7.6	4.4	3.2	
28	6.3	10.9	7.0	4.4	2.9	NO
29	5.8	10.7	6.1	4.4	2.9	
30	5.4	10.5	6.0	4.6	2.9	RECORD
31		10.4		4.8	2.6	
Total sec-ft - days	*128.4	249.4	369.9	164.5	117.9	** 84.9
Mean sec-ft	* 8.56	8.37	12.3	5.31	3.74	** 3.27
Runoff ac-ft	*255	494	734	326	230	** 168

* 15-day period
** 25-day period

Total runoff for 164 day period = 2,230 ac-feet

TABLE 13

DAILY DISCHARGE IN CUBIC FEET PER SECOND
PARKER CREEK ABOVE HIGHWAY 395
APRIL 2 TO SEPTEMBER 20, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1	NO RECORD	26	45	33	7.2	1.3
2	22	25	32	32	6.6	1.1
3	12.2	25	30	30	6.5	1.0
4	11.5	25	46	28	6.6	1.2
5	11.0	37	203	29	6.1	1.3
6	11.0	76	239	30	6.4	1.3
7	11.0	106	185	28	6.1	1.2
8	11.0	60	193	26	5.4	1.0
9	11.5	49	218	24	4.4	.85
10	14.0	32	219	23	4.2	1.0
11	24	29	171	20	4.0	1.0
12	37	34	146	18.5	4.0	1.0
13	39	48	129	18.0	3.8	.55
14	26	37	107	17.0	3.4	.70
15	61	38	71	16.0	3.6	.80
16	106	49	33	15.8	3.6	.70
17	106	46	25	15.0	3.6	.95
18	106	59	60	15.0	3.6	1.1
19	107	52	78	14.2	3.4	1.4
20	107	45	88	14.2	3.2	1.6
21	107	79	103	14.0	3.1	
22	55	254	71	13.0	2.9	
23	44	220	60	12.0	2.8	
24	33	203	54	12.8	2.6	NO
25	32	194	52	12.8	2.5	
26	27	189	45	10.4	2.0	
27	24	184	41	9.4	1.9	
28	26	161	36	9.4	1.3	RECORD
29	26	143	33	8.7	1.4	
30	26	135	32	7.2	1.3	
31		119		6.6	1.3	
Total sec-ft-days	* 1,234.2	2,743	2,934	563.0	118.7	** 41.55
Mean sec-ft	* 42.6	88.5	97.8	18.2	3.83	** 1.02
Runoff ac-ft	*2450	5440	5820	1120	235	** 82.7

* 19-day period
** 20-day period

Total runoff for 172 day period = 15,100 acre-feet.

TABLE 14

DAILY DISCHARGE IN CUBIC FEET PER SECOND
NORTH FORK OF FIFE RIVER ABOVE UPPER XL DAM
APRIL 2 TO SEPTEMBER 26, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1	NO RECORD	48	61	13.4	2.8	4.4
2	43	46	57	11.6	2.8	4.4
3	39	45	56	11.0	2.7	5.9
4	35	61	65	9.9	2.5	4.9
5	35	79	107	9.0	2.5	4.7
6	41	75	92	13.0	2.2	4.7
7	65	79	85	13.0	2.2	4.7
8	64	70	82	11.0	2.3	4.7
9	82	62	90	9.9	2.7	4.7
10	101	62	89	9.1	2.3	4.4
11	119	64	77	8.0	2.2	4.7
12	85	75	70	8.0	2.0	4.7
13	65	83	64	6.9	1.8	4.7
14	63	84	52	6.5	1.8	4.1
15	73	85	42	6.2	1.8	4.1
16	75	89	38	6.2	2.0	4.1
17	74	91	33	6.2	2.0	4.4
18	72	98	53	5.6	2.0	4.4
19	70	109	47	4.7	2.0	4.4
20	69	86	53	4.7	1.7	4.1
21	67	95	47	4.9	1.6	3.1
22	66	140	41	4.7	***1.6	2.3
23	64	96	39	3.5	4.1	2.0
24	62	86	34	3.5	4.4	2.5
25	61	89	31	3.5	4.7	2.7
26	58	91	27	2.8	5.2	*** 2.2
27	56	90	18.6	2.7	5.2	
28	54	80	13.4	3.1	5.2	NO
29	52	74	12.0	4.1	4.9	
30	49	70	11.0	3.8	4.7	RECORD
31		69		3.2	4.7	
Total sec-ft-days	*1859	2471	1587.0	213.7	90.6	**106.0
Mean sec*ft	* 64.1	79.7	52.9	6.89	2.92	** 4.08
Runoff ac-ft	* 3690	4900	3150	424	180	**210

* 29-day period
** 26-day period

Runoff between "***" includes Lauer Reservoir Water.

Total runoff for 178 day period - 12,600 acre-feet

TABLE 15

COMBINED DAILY DISCHARGE IN CUBIC FEET PER SECOND
NORTH FORK OF FIT RIVER ABOVE DRIFT XI DAM
AND
PARKER CREEK ABOVE HIGHWAY 395
APRIL 2 TO SEPTEMBER 20, 1948

Day	Apr.	May	June	July	Aug.	Sept.
1	NO RECORD	74	106	46	10.0	5.7
2	6	71	89	44	9.4	5.5
3	51	70	86	41	9.3	6.9
4	46	86	111	38	9.18	6.1
5	46	116	400	38	8.6	6.0
6	52	151	331	43	8.6	6.0
7	76	185	270	41	8.3	5.9
8	75	130	275	37	7.7	5.7
9	94	111	308	34	7.1	5.6
10	115	101	308	32	6.5	5.4
11	143	93	248	28	6.2	5.7
12	122	109	216	26	6.0	5.7
13	104	125	193	25	5.6	5.6
14	89	121	159	24	5.2	4.8
15	134	123	113	22	5.4	4.9
16	181	138	71	22	5.6	4.8
17	180	140	68	21	5.6	5.4
18	178	157	113	21	5.6	5.5
19	177	161	125	18.9	5.4	5.8
20	176	132	141	18.0	4.9	5.9
21	174	148	150	18.9	4.8	
22	121	394	112	17.7	***4.5	
23	108	316	99	15.5	6.9	
24	95	289	88	16.3	7.0	NO
25	93	283	82	16.3	7.0	
26	85	280	72	13.2	7.2	
27	80	274	60	12.1	7.1	
28	80	241	49	12.5	6.5	RECORD
29	78	217	45	12.8	6.3	
30	75	195	43	11.0	6.0	
31		188		9.8	6.0	
Total sec-ft-days	* 3093	5214	4521	776.9	209.4	**112.9
Mean sec-ft	* 107	168	151	25.1	6.75	** .64
Runoff ac-ft	* 6140	10,300	8970	1540	415	**224

* 29-day period
** 28-day period
*** Lauer Reservoir turned on.

Total runoff for 172 day period - 27,600 acre-feet