DEPARTMENT OF PUBLIC WORKS

STATE OF CALIFORNIA

REPORTS OF THE

DIVISION OF WATER RESOURCES

EDWARD HYATT, State Engineer

oOo

REPORT ON WATER MASTER SERVICE ON MILL CREEK AND TRIBUTATIES

MODOC COUNTY, CALIFORNIA

FOR SEASON OF 1933

oOo

By Leslie C. Jopson, Modoc County Water Master.

Sacramento, California

March, 1934

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STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

March 1, 1934

EDWARD HYATT, STATE ENGINEER
CHIEF OF DIVISION

Mr. Harold Conkling,
Deputy State Engineer
Sacramento, California

Attention: Mr. Gordon Zander,
Supervising Hydraulic Engineer.

Dear Sir:

There is transmitted herewith a report covering the water distribution work of the water master in the Mill Creek Water Master District, Modoc County, California, during the period from April 1 to September 30, 1933.

The report describes the methods and practices followed in the distribution of the waters of Mill Creek and tributaries in accordance with the provisions of the decree in the case of G. M. Warrens, vs. J. A. Wimer, et al., and presents the results obtained under this distribution.

Respectfully submitted,

Modoc County Water Master

ORGANIZATION

Earl Lee Kelly	Director of Public Works
Edward Hyatt	State Engineer
Harold Conkling	Deputy State Engineer

Gordon Zander

Supervising Hydraulic Engineer

T. Russel Simpson	Senior Hydraulic Engineer
Leslie C. Jopson	Modoc County Water Master

GENERAL DESCRIPTION OF WORK

Water master service was continued in the Mill Creek Water Master District in 1933 in accordance with the provisions of Section 37a of the Water Commission Act. The service was commenced for the season on April 1 on Rutherford Creek and April 4 on Mill Creek, and was continued until September 24, when water master service was terminated for the season in Surprise Valley.

Mr. Leslie C. Jopson, Modoc County Water Master handled the distribution of water on Mill Creek throughout the season.

During the 1933 season all the ditches on Mill Creek and tributaries were opened and diverted water continuously whenever water was available for their respective priorities.

Several of the ranches on Mill Creek immediately below Lake City derive considerable benefit from sub-irrigation and customarily restrict their diversions below their allotments shortly after the first of June, which leaves a greater percentage of allotments available for the other irrigation rights. This procedure is of material benefit to the lower ranches as the extra water is released at a time when the water supply in the creek is failing.

Rotations between the users on certain ditches in Lake City were arranged as the water became short for garden use after the first of August. These rotations were between groups of water users who were able to use one diversion from the creek and operate a schedule of their own choosing in the use of the water. The use of four diversions from the creek was eliminated during the dry season by the groupings that were arranged.

DISCUSSION OF RESULTS FOR SEASON

Table 1 contains the precipitation data at Cedarville. The monthly and seasonal precipitation for the period of water master service in Surprise Valley and a comparison of the 1932-33 seasonal precipitation with the 1894-1933 mean are also shown in the table. The 1932-33 record shows the precipitation of that season as 64.2 per cent of the mean.

Table 2 is a tabulation of the water supply of Mill Creek above all diversions for the 1933 season. Plate 1 at the end of the report compares graphically the flow of 1933 with that in 1932. The allotments of water to the various priorities are also shown.

Table 3 is a tabulation of the net available water supply of Rutherford Creek. The table includes the flow of Rutherford Creek at the mouth of the canyon, the flow of Brown Creek at the mouth of Brown Canyon, the developed water in the Bennett Collecting and Hays Collecting Ditches and the flow of Rutherford Creek below Rutherford Swamp. Plate 2 at the end of the report compares graphically the water crop on Rutherford Creek in 1933 with that in 1932.

Table 4 is a comparison of water allotments and water supply on Mill Creek during the periods shown.

Table 5 is a comparison of the water allotments and water supplies of the various units of the Rutherford Creek stream system.

Table 6 is a tabulation of crop yields on typical lands irrigated from Mill Creek and tributaries. The average yield of hay in 1933 was about fifteen per cent less than that received in 1932.

New headgates were installed in a number of the ditches in Lake City and several old ones remodeled by installing two gates in the box instead of one. The purpose of the double gate construction was to make

the headgate less sensitive to pressure. A new headgate and a nine inch Parshall Flume were installed in the head of the Little Channel to make possible a better control of the water than was possible with an open division.

Working parties were organized on two occasions in August to clean the creek channel and to open up the springs. A definite increase in flow was noticed as a result of the work done.

VIOLATIONS OF DECREE OR CONTROVERSIES

The distribution of the water was accomplished with little controversy except for the use of the water from Rutherford Swamp. The two upper users on Lower Rutherford Creek, the Hays and the Daniels Ranches, have been under the same management for several years and nearly every year they have consistently caused difficulty in administering the schedule of use. These ranches have certain prior rights due to use and to the development of certain spring water which in all rarely amounts to more than about 0.60 cubic foot per second. However, under guise of the prior rights the user has interfered with the division between him and the other users whenever the available water dropped to a point where pro-ration was necessary. The water master warned the party a number of times but it appears probable that some legal action may be necessary before the interference will stop.

Some controversy occurred over the use of the water on upper Rutherford Creek, also, but no interference of importance was noted.

RECOMMENDATIONS

It is recommended that new Parshall Flumes be placed in the Brown, Streiff and Hobbs Ditches, and that a new headgate be installed in the head of the Wimer Main Ditch at the earliest date possible.

The possibility of installing headgates and measuring devices on Lower Rutherford Creek should also be investigated.

FINANCIAL STATEMENT

The funds collected from the water users in the Mill Creek Water Master District to defray the water users share of the cost of water master service were placed to the credit of the water master district by the State Treasurer. These funds supplemented by the State's contribution to the fund are then subject to draft by the Division of Water Resources to meet the costs of water master service in the district.

There is submitted on the following page a statement of the Mill Creek Water Master Service Fund showing the receipts and disbursements during the 1933 season.

FINANCIAL STATEMENT

MILL CREEK WATER DISTRICT FUND

January 1, 1934

RECEIPTS

Balance on March 1, 1933	$241.93	
Contributed by State	350.00	
Contributed by Taxpayers (Mar. 1/33 to Jan. 1/34). . .	361.35	$953.28

DISBURSEMENTS
(Mar. 1/33 to Jan. 1/34)

Water Master Compensation	343.07	
Water Master Travel Expense	136.36	
Cost of Publication of Financial Statement.	28.00	507.43

BALANCE	445.85

TABLES

TABLE 1

PRECIPITATION

Cedarville, California

Season	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Seasonal
1924-25	0.25	2.06	1.86	1.66	1.08	1.34	0.61	0.65	1.59	0.49	0.29	0.30	12.18
1925-26	1.34	1.57	1.31	1.25	1.06	1.18	.13	1.26	1.07	T	.09	.09	10.35
1926-27	.15	.53	2.73	1.16	1.32	2.02	1.73	.81	.95	.35	T	T	12.25
1927-28	.32	.86	2.87	.86	.92	.75	2.93	.81	T	.55	.00	.00	10.87
1928-29	.40	.15	1.43	.42	2.08	.59	1.20	1.85	.29	1.98	.00	T	10.39
1929-30	.07	.19	.00	3.02	3.39	1.53	.83	.51	.67	T	.02	T	10.23
1930-31	1.64	.59	1.22	.18	.67	.66	1.68	.58	.25	2.25	.00	.00	9.72
1931-32	.33	3.20	.96	1.85	2.23	.70	1.97	1.87	.53	.22	T	T	13.86
1932-33	T	.13	.78	1.20	1.31	.81	.63	.90	1.06	.26	.25	T	7.33
Mean 1894 to 1933	.56	.98	1.59	1.54	1.76	1.55	1.45	.90	1.03	.65	.24	.18	12.43
1931-32 in per cent of total mean	.0	1.1	6.8	10.5	11.5	7.1	5.5	7.9	9.3	2.3	2.2	0	64.2

TABLE 2

CONTINUOUS RECORDS OF DAILY DISCHARGE IN CUBIC FEET PER SECOND OF MILL CREEK ABOVE ALL DIVERSIONS FOR THE PERIOD APRIL 4 to SEPTEMBER 17,1933.

Day	Apr.	May	June	July	Aug.	Sept.	
1	No	17.8	46.6	8.60	2.20	1.05	
2		15.6	43.4	7.90	1.90	1.00	
3	Record	13.1	38.7	7.50	1.70	.95	
4	13.7	14.9	35.2	7.15	1.60	.95	
5	11.6	15.6	35.2	7.00	1.70	1.00	
6	10.1	15.6	35.2	6.80	1.60	1.05	
7	7.90	14.9	30.2	6.80	1.55	1.05	
8	6.40	13.1	30.2	7.15	1.45	1.00	
9	5.20	12.1	28.7	6.30	1.40	.95	
10	4.90	12.1	23.6	5.75	1.35	.95	
11	5.80	11.6	22.5	5.45	1.35	.90	
12	6.40	11.6	21.4	5.15	1.30	.85	
13	8.00	12.6	23.6	4.70	1.25	.80	
14	10.1	13.7	24.9	4.60	1.15	.85	
15	14.3	17.8	22.5	4.35	1.05	.90	
16	12.6	21.4	20.5	4.35	1.00	.85	
17	9.20	19.6	17.8	4.05	1.35	.80	
18	7.10	19.6	16.4	3.85	1.70	.90	
19	6.40	18.6	14.3	3.60	1.35	.90	
20	6.40	18.6	13.1	3.40	1.30	.85	
21	9.20	18.6	12.6	3.20	1.25	1.00	
22	14.3	17.8	12.1	3.00	1.20	1.00	
23	20.5	26.0	11.6	2.85	1.15	1.00	
24	27.3	33.4	11.6	2.60	1.10	2.20	
25	27.3	40.2	11.1	2.40	1.20	2.80	
26	37.0	46.6	10.6	2.35	1.20	2.05	
27	45.1	42.0	11.1	2.20	1.15	1.50	
28	45.1	48.3	11.1	2.10	1.10	1.20	
29	46.6	46.6	9.60	2.05	1.10	1.10	
30	21.4	55.0	9.15	2.05	1.15	1.00	
31	--	51.6	--	2.05	1.10	--	
Total Sec. Feet Days	*439.90	736.0	654.55	143.50	39.75	33.40	180 Day Period
Mean Sec. Feet	16.29	23.74	21.82	4.63	1.28	1.11	11.37
Maximum Sec. Feet	46.6	55.0	46.6	8.60	2.20	2.80	55.0
Minimum Sec. Feet	6.40	11.6	9.15	2.05	1.00	.80	.80
Total Acre Feet	872	1460	1300	285	78.8	66.2	4060

* 27 Day Period.

TABLE 3

ESTIMATED NET AVAILABLE WATER SUPPLY IN CUBIC FEET PER SECOND OF RUTHERFORD CREEK AND TRIBUTARIES FOR THE PERIOD APRIL 1 to SEPTEMBER 27,1933.

Day	Apr.	May	June	July	Aug.	Sept.	
1	1.75	5.60	9.20	1.80	0.55		
2	2.10	6.00	9.90	1.70	0.50		
3	3.10	6.50	9.60	1.70	0.50		
4	2.70	6.20	9.30	1.60	0.45		
5	2.50	6.10	9.20	1.70	0.45		
6	2.30	6.00	8.60	1.80	0.45		
7	2.10	5.90	7.90	1.80	0.40		
8	1.90	5.80	8.30	1.80	0.40		
9	1.60	5.60	8.60	1.80	0.40		
10	1.70	7.20	8.70	1.80	0.35		
11	1.80	6.55	8.70	1.50	0.35		
12	1.90	6.15	8.50	1.50	0.35		
13	1.90	6.25	7.80	1.50	0.35		
14	1.90	6.30	6.80	1.10	0.35		
15	1.90	6.30	5.90	1.00	0.30		
16	1.90	6.30	5.20	1.00	0.30		
17	2.00	6.10	5.30	.90	0.30		
18	2.00	6.00	5.25	.90	0.30	NO	
19	2.10	6.00	4.80	.90	0.30		
20	2.10	6.00	3.70	1.40	0.30		
21	2.10	5.90	3.30	1.40	0.30		
22	2.60	5.90	3.20	1.40	0.25		
23	2.70	6.00	3.00	1.00	0.25	RECORD	
24	2.80	5.90	2.90	.90	0.25		
25	3.45	6.30	2.70	.90	0.25		
26	4.50	6.60	2.30	.80	0.25		
27	4.90	6.70	2.30	.80	0.25		
28	5.10	6.90	2.20	.80	0.20		
29	5.40	7.30	2.60	.70	0.20		
30	5.30	7.80	2.80	.70	0.20		
31	--	8.20	--	.60	0.20		
Total Sec. Feet Days	80.10	196.35	178.55	39.20	10.25		153 Day Period
Mean Sec. Feet	2.67	6.33	5.96	1.26	.33		3.30
Maximum Sec. Feet	5.40	8.20	9.90	1.80	.55		9.90
Minimum Sec. Feet	1.60	5.60	2.20	.60	.20		.20
Total Acre Feet	159	389	354	77.7	20.3		1000

TABLE 4

WATER DELIVERIES ON MILL CREEK COMPARED WITH ALLOTMENTS
1933

Period	Per Cent of Allotment Delivered					Average Net Available Water Supply c.f.s.	Channel Loss c.f.s.	Average Total Water Supply c.f.s.
	1st Priority 2.02 c.f.s.	2nd Priority 1.50 c.f.s.	3rd Priority 20.45 c.f.s.	4th Priority 3.47 c.f.s.	Total 27.44 c.f.s.			
4/4 to 4/13	100	100	19	0	27	7.50	0.50	8.00
4/14 to 4/23	100	100	34	0	38	10.46	.55	11.01
4/24 to 5/3	100	100	112	51	102	28.13	1.50	29.63
5/4 to 5/13	100	100	45	0	47	12.76	.65	13.41
5/14 to 5/23	100	100	72	0	67	18.27	.90	19.17
5/24 to 6/2	100	100	178	100	158	43.37	2.00	45.37
6/3 to 6/12	100	100	106	100	104	28.59	1.50	30.09
6/13 to 6/22	100	100	66	0	62	16.98	.80	17.78
6/23 to 7/2	100	100	30	0	35	9.74	.50	10.24
7/3 to 7/12	100	100	12	0	22	6.00	.50	6.50
7/13 to 7/22	100	88	2	0	13	3.66	.25	3.91
7/23 to 8/1	95	8	0	0	7	2.04	.25	2.29
8/2 to 8/11	70	0	0	0	5	1.41	.15	1.56
8/12 to 8/21	58	0	0	0	4	1.17	.10	1.27
8/22 to 8/31	51	0	0	0	4	1.04	.10	1.14
9/1 to 9/10	46	0	0	0	3	.92	.08	1.00
9/11 to 9/20	40	0	0	0	3	.80	.06	.86
9/21 to 9/30	69	0	0	0	5	1.40	.08	1.48

TABLE 5

WATER DELIVERIES ON RUTHERFORD CREEK COMPARED WITH ALLOTMENTS - 1933

Period	Per Cent of Allotment Delivered											
	1st Priority 0.21 c.f.s.	2nd Priority 0.10 c.f.s.	3rd Priority 0.20 c.f.s.	4th Priority 0.11 c.f.s.	5th Priority 1.18 c.f.s.	6th Priority 0.20 c.f.s.	7th Priority 4.95 c.f.s.	Total 6.95 c.f.s.	*Brown Creek 1.60 c.f.s.	**Prior Rights Below Swamp 0.50 c.f.s.	***Developed Water in C.f.s.	Net Available Water Supply c.f.s.
4/1 to 4/10	100	100	100	100	39	0	0	1.08	0.31	100	0.30	2.18
4/11 to 4/20	100	100	100	82	0	0	1	.65	.40	100	.40	1.95
4/21 to 4/30	100	100	100	100	74	40	10	2.05	.97	92	.40	3.88
5/1 to 5/10	100	100	100	100	100	95	39	3.92	1.20	100	.47	6.09
5/11 to 5/20	100	100	100	100	100	67	34	3.88	1.20	100	.62	6.20
5/21 to 5/30	100	100	100	100	100	100	36	3.77	1.56	100	.70	6.53
5/31 to 6/9	100	100	100	100	100	100	92	6.57	1.15	100	.66	8.88
6/10 to 6/19	100	100	100	100	100	100	69	5.43	.20	100	.57	6.70
6/20 to 6/29	100	100	100	100	85	30	4	2.07	0	94	.46	2.82
6/30 to 7/9	100	100	100	100	34	0	3	1.17	0	84	.26	1.85
7/10 to 7/19	100	100	99	66	10	0	0	.72	0	58	.20	1.21
7/20 to 7/29	100	100	60	0	0	0	1	.49	0	64	.20	1.01
7/30 to 8/8	100	98	28	0	0	0	0	.34	0	2	.14	.50
8/9 to 8/18	98	30	0	0	0	0	0	.24	0	0	.10	.34
8/19 to 8/28	90	0	0	0	0	0	0	.19	0	0	.07	.26

*Brown Creek decreed rights = 0.80 c.f.s. with a provision for the use of 1.60 c.f.s. as maximum rate of diversion.

**0.25 c.f.s. for stock water and 0.25 c.f.s. for garden on Hays, Daniels and Darst Ranches.

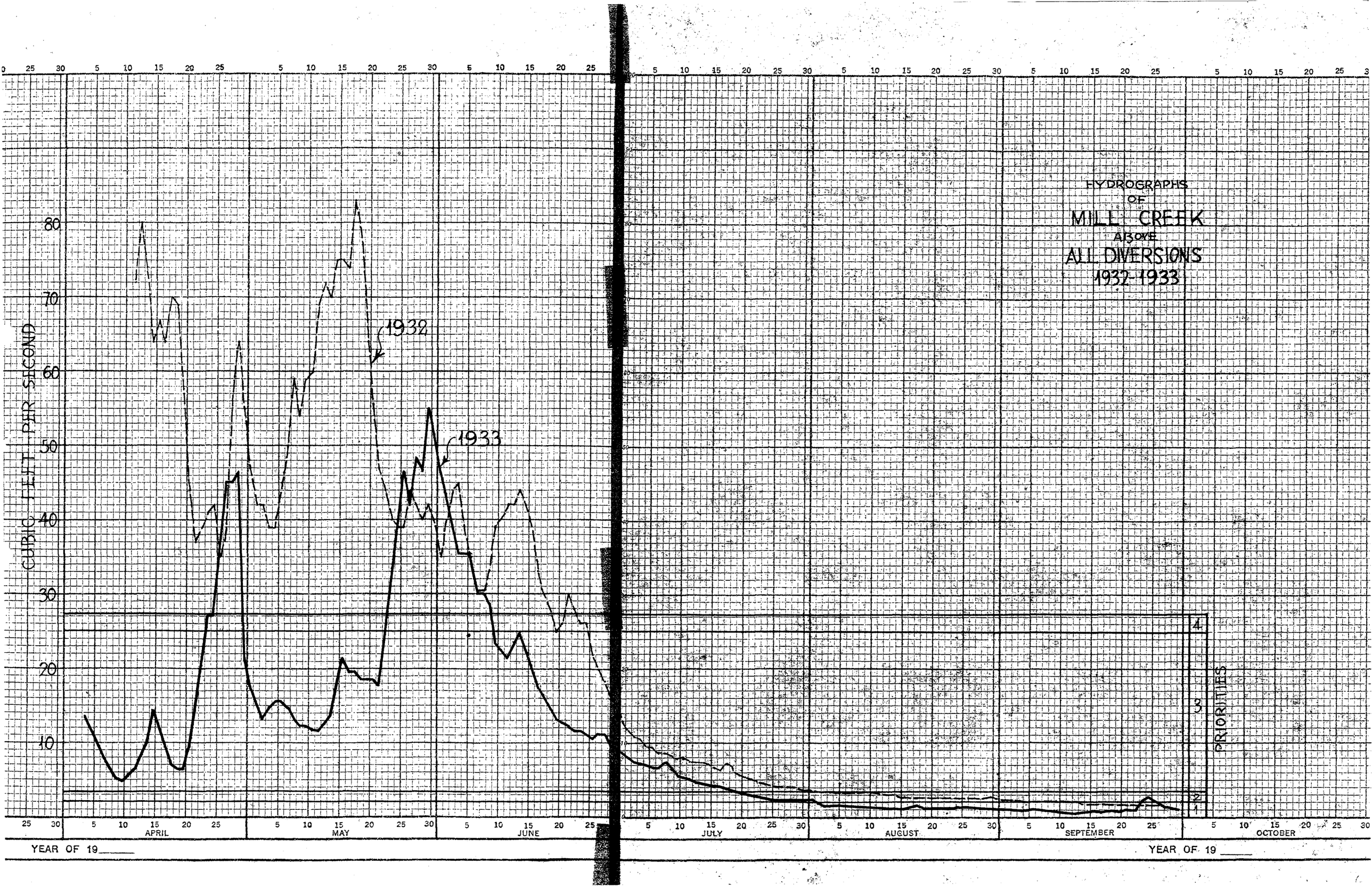
***Bennett Collecting Ditch and Hays Collecting Ditch.

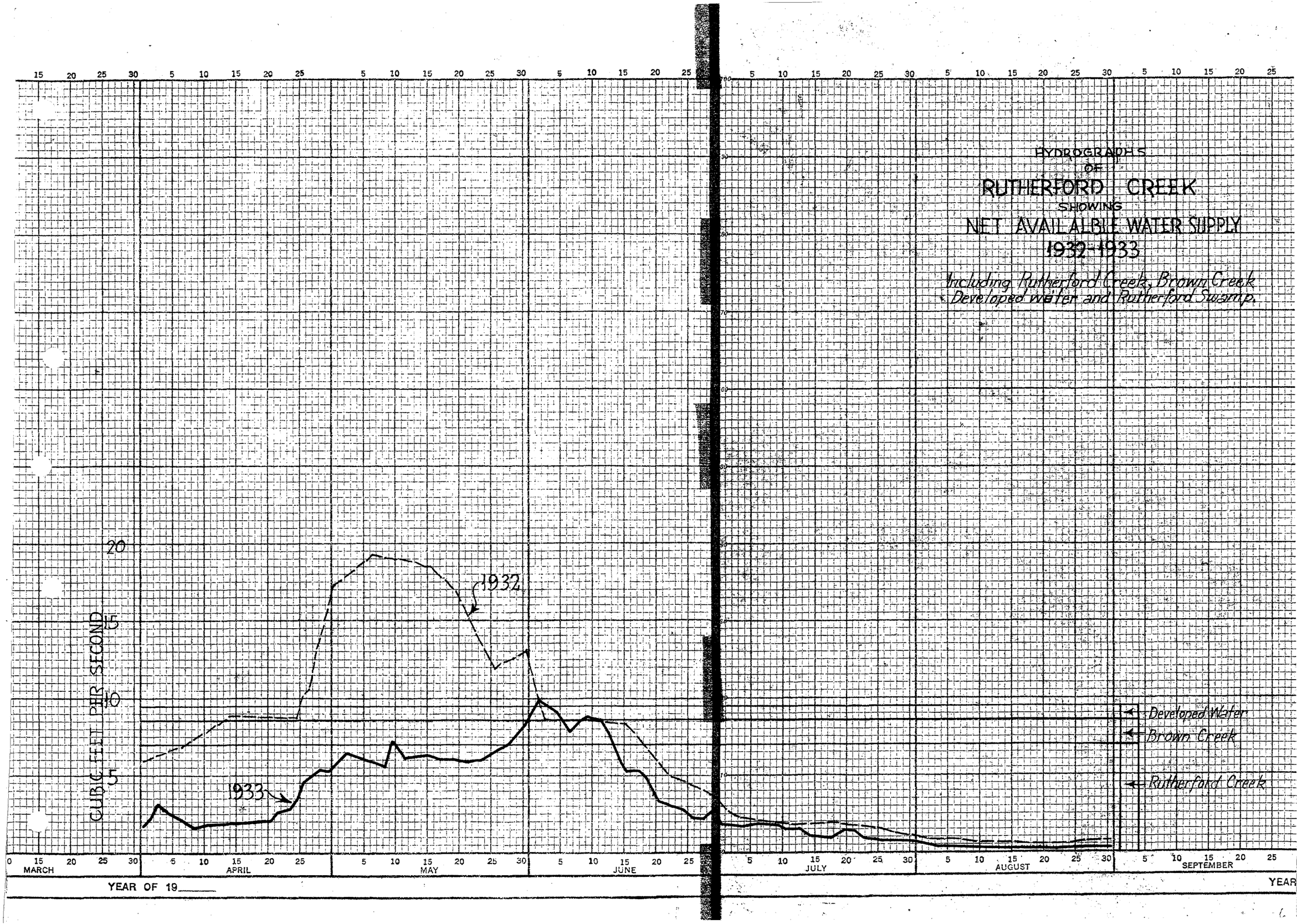
TABLE 6

ESTIMATED CROP YIELDS ON TYPICAL LANDS IRRIGATED FROM MILL AND RUTHERFORD CREEKS - 1933

Owner	Crop	Acres	Total Yield		Yield Per Acre	
			Sacks	Tons	Sacks	Tons
V. L. Jacobs	Meadow Hay	80.0		230		2.9
W. S. Jacobs	Meadow Hay	40.0		95		2.4
	Pasture	3.0			Fair	
P. M. Robinson	Meadow Hay	50.6		150		3.0
O. P. Robinson	Alfalfa Hay	12.0		30		2.5
	Grain Hay	2.0		4		2.0
	Meadow Hay	120.7		300		2.5
	Barley	20.0	330		16.5	
Joshua Streiff	Alfalfa Hay	20.0		40		2.0
	Meadow Hay	16.9		40		2.4
	Pasture	23.2			Good	
	Garden	2.0			Good	
Geo. M. Warrens	Meadow Hay	100.0		102		1.0
	Barley	6.0	90		15.0	
	Rye	3.0	12		4.0	
	Wheat	26.0	167		6.4	
	Alfalfa Seed	14.0	1500#		107#	
J. A. Wimer	Alfalfa Hay	24.0		60		3.0
	Meadow Hay	60.0		250		4.2
	Barley	3.0	58		19.4	
	Wheat	21.9	300		13.7	

PLATES


HYDROGRAPHS
OF
MILL CREEK
ABOVE
ALL DIVERSIONS
1932-1933
CUBIC FEET PER SECOND
80
70
60
50
40
30
20
10
1932
1933
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
PRIORITIES
4
3
2
1
YEAR OF 19
YEAR OF 19


HYDROGRAPHS
OF
RUTHERFORD CREEK
SHOWING
NET AVAILABLE WATER SUPPLY
1932-1933
Including Rutherford Creek, Brown Creek
Developed water and Rutherford Swamp.
CUBIC FEET PER SECOND
20
15
10
5
1932
1933
Developed Water
Brown Creek
Rutherford Creek
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
YEAR OF 19
YEAR