STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

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

REPORT ON WATER MASTER SERVICE ON NORTH COW CREEK AND ITS TRIBUTARIES SHASTA COUNTY, CALIFORNIA DURING THE 1933 SEASON

BY
G. M. Vickroy
Water Master
Sacramento, California
March, 1939

EDWARD HYATT, STATE ENGINEER
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SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

February 21, 1940

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention Mr. Gordon Zander
Supervising Hydraulic Engineer

Dear Sir:

Herewith is submitted a report covering the water master service rendered in the Cow Creek Water Master District Shasta County, California, during the 1933 season.

This report considers the climatologic and hydrographic features of the 1933 irrigation season together with a description of results of water distribution.

Respectfully submitted,

G. M. Wickroy
Water Master

TABLE OF CONTENTS

INTRODUCTION

DISCUSSION OF RESULTS

PRECIPITATION DURING 1933

WATER SUPPLY DURING 1933

NEW INSTALLATIONS 1933

TABLES

1. Precipitation Data - Average at Redding and McCloud

2. Cedar Creek - Estimated daily net available flow in Cubic feet per second for the period June 1 to Sept. 30, 1933

3. Mill Creek - Estimated daily available net flow in cubic feet per second for the period June 1 to Sept. 30, 1933

4. North Cow Creek and Tributaries - Estimated daily net available flow in cubic feet per second for the period June 1 to September 30, 1933, excluding Mill and Cedar Creek.

PLATES

1. Hydrographs of Cedar Creek - showing water supply for 1933, 1934 and 1935

2. Hydrographs of Mill Creek - showing water supply for 1933, 1934 and Oak Run Creek for 1935

3. Hydrographs of North Cow Creek - showing water supply for 1933, 1934 and 1935

INTRODUCTION

The Cow Creek Water Master District was created by order of the State Engineer executed on October 17, 1932 as provided in Section 37 of the Water Commission Act, Water Master District procedure contained in Sections 37 to 37f of said Act, during the 1933 season on North Cow Creek and its tributaries and on Oak Run Creek.

Water Master service in 1933 was commenced on about June 1 and was extended throughout the season until about September 30th.

All diversions were opened and regulated to deliver water to the various water right owners according to the schedules of distribution of water contained in the Court Decrees in Case No. 5804 of Charles L. Lemm, et al. vs John Rutherford, et al, and Case No. 5701 of F. A. Colby, et al. vs L.O. Strayer, et al.

There was a surplus of water until July 10, at which time distribution was made in accordance with rotation schedules as set forth in the above mentioned decrees.

DISCUSSION OF RESULTS

There was a surplus of water on Mill, Cedar and North Cow Creeks during the month of June, the users of North Cow Creek all used simultaneously throughout the month.

During the Month of July, Mill Creek allotments gradually receded from 100% on the 1st to 80% on the 31st.

Cedar Creek allotments gradually receded from 100% on the 1st to 25% on the 31st. Rotation was commenced on North Cow Creek on the 10th

with 100% allotments to the Class A users, allotments rapidly receded to 3/8ths by the end of the month . The available water supply in these streams remained approximately at this stage the remainder of the irrigation season ending September 30, 1933.

The average monthly precipitation at Redding and McCloud for the seasonal year October 1, 1932 to September 30, 1933, has been compared with monthly precipitation from 1922 to 1938 and the 26 year monthly mean in Table 1 of this report. Tables 2, 3, and 4 are tabulations of the net available water supplies of Cedar, Mill and North Cow Creeks respectively during the 1933 season, Plates 1, 2 and 3 of this report graphically show the water supplies of Tables 2, 3 and 4, respectively, and compares them with water allotted to water users from these streams.

TABLE I
PRECIPITATION DATA
AVERAGE AT REDDING AND McCLOUD

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total Seasonal
1922-23	4.50	3.42	9.62	4.54	1.41	0.49	6.45	0.75	2.53	0.00	0.24	2.89	36.84
1923-24	1.89	0.87	2.05	2.01	4.61	1.06	0.13	0.10	0.12	0.00	0.28	0.15	13.27
1924-25	7.06	6.55	6.24	4.53	18.35	4.24	5.58	3.11	0.93	0.00	0.81	3.28	60.68
1925-26	0.55	3.74	2.60	6.25	9.80	0.38	5.34	1.02	0.00	0.00	0.29	0.00	29.97
1926-27	3.34	18.18	4.65	10.23	14.01	5.26	4.16	2.18	1.02	0.16	0.07	0.09	63.35
1927-28	2.01	10.87	5.70	3.70	4.69	9.20	2.93	0.35	0.30	0.00	0.20	0.22	40.17
1928-29	0.64	7.41	5.75	1.59	5.32	2.91	3.54	0.11	2.32	0.00	0.00	0.00	29.59
1929-30	1.26	0.00	11.23	5.55	4.68	4.60	3.12	0.88	0.12	0.04	0.00	2.84	34.32
1930-31	0.58	2.65	1.87	7.79	3.52	2.58	0.75	0.60	3.25	0.00	0.00	0.40	23.99
1931-32	3.16	2.41	12.74	2.65	1.47	2.12	2.75	3.80	0.22	0.17	0.00	0.00	31.49
1932-33	0.13	3.13	3.75	6.38	1.19	8.46	0.41	5.38	0.22	0.01	0.00	0.26	29.32
1933-34	2.50	0.01	9.03	4.96	6.60	2.29	3.92	1.16	0.86	0.08	0.03	0.09	31.53
1934-35	3.50	8.83	3.38	8.14	5.01	2.92	8.13	0.75	0.05	0.28	0.01	0.32	41.32
1935-36	2.33	0.85	6.40	12.21	10.05	1.21	4.23	1.33	3.19	0.48	0.00	0.16	42.44
1936-37	0.13	0.00	4.51	4.64	8.79	9.48	7.32	0.31	4.32	0.04	0.00	0.06	39.60
1937-38	4.37	13.37	8.67	7.68	15.11	12.08	2.95	0.58	T	0.00	0.00	1.23	66.04
26 Year Monthly Mean	2.20	4.57	6.31	8.36	6.61	5.44	3.39	2.10	1.10	0.21	0.13	0.94	41.36

TABLE 2
ESTIMATED DAILY NET AVAILABLE FLOW
IN CUBIC FEET PER SECOND

CEDAR CREEK

FOR THE PERIOD JUNE 1 TO SEPTEMBER 30, 1933

DAY	JUNE	JULY	AUGUST	SEPT.	122 DAY PERIOD
1	9.50	6.90	1.70	1.00	
2	9.40	6.70	1.70	1.00	
3	9.30	6.55	1.70	1.00	
4	9.10	6.35	1.70	1.00	
5	9.00	6.20	1.70	1.00	
6	8.90	6.00	1.70	1.00	
7	8.80	5.85	1.70	1.00	
8	8.70	5.70	1.70	1.00	
9	8.60	5.50	1.70	1.00	
10	8.50	5.35	1.70	1.00	
11	8.40	5.20	1.60	1.00	
12	8.30	5.00	1.50	1.00	
13	8.20	4.85	1.40	1.00	
14	8.10	4.65	1.40	1.00	
15	8.00	4.40	1.40	1.00	
16	7.90	4.20	1.35	1.00	
17	7.80	4.00	1.35	1.00	
18	7.70	3.85	1.35	1.00	
19	7.60	3.65	1.35	1.00	
20	7.50	3.40	1.30	1.00	
21	7.40	3.20	1.30	1.00	
22	7.30	3.00	1.25	1.00	
23	7.20	2.80	1.20	1.00	
24	7.10	2.70	1.15	1.00	
25	7.00	2.55	1.10	1.00	
26	6.95	2.40	1.05	1.00	
27	6.95	2.25	1.00	1.00	
28	6.90	2.10	1.00	1.00	
29	6.90	2.00	1.00	1.00	
30	6.90	1.80	1.00	1.00	
31	----	1.70	1.00	----	
TOTAL SEC. FT. DAYS	239.90	130.80	43.05	30.00	[illegible]
MEAN SEC. FT.	7.96	4.22	1.39	1.00	3.64
MAX. SEC. FT.	9.50	6.90	1.70	1.00	9.50
MIN. SEC. FT.	6.90	1.70	1.00	1.00	1.00
TOTAL AC. FT.	476.	260.	85.4	59.5	881.

TABLE 3
ESTIMATED DAILY NET AVAILABLE FLOW
IN CUBIC FEET PER SECOND

MILL CREEK

FOR THE PERIOD JUNE 1 TO SEPTEMBER 30, 1933

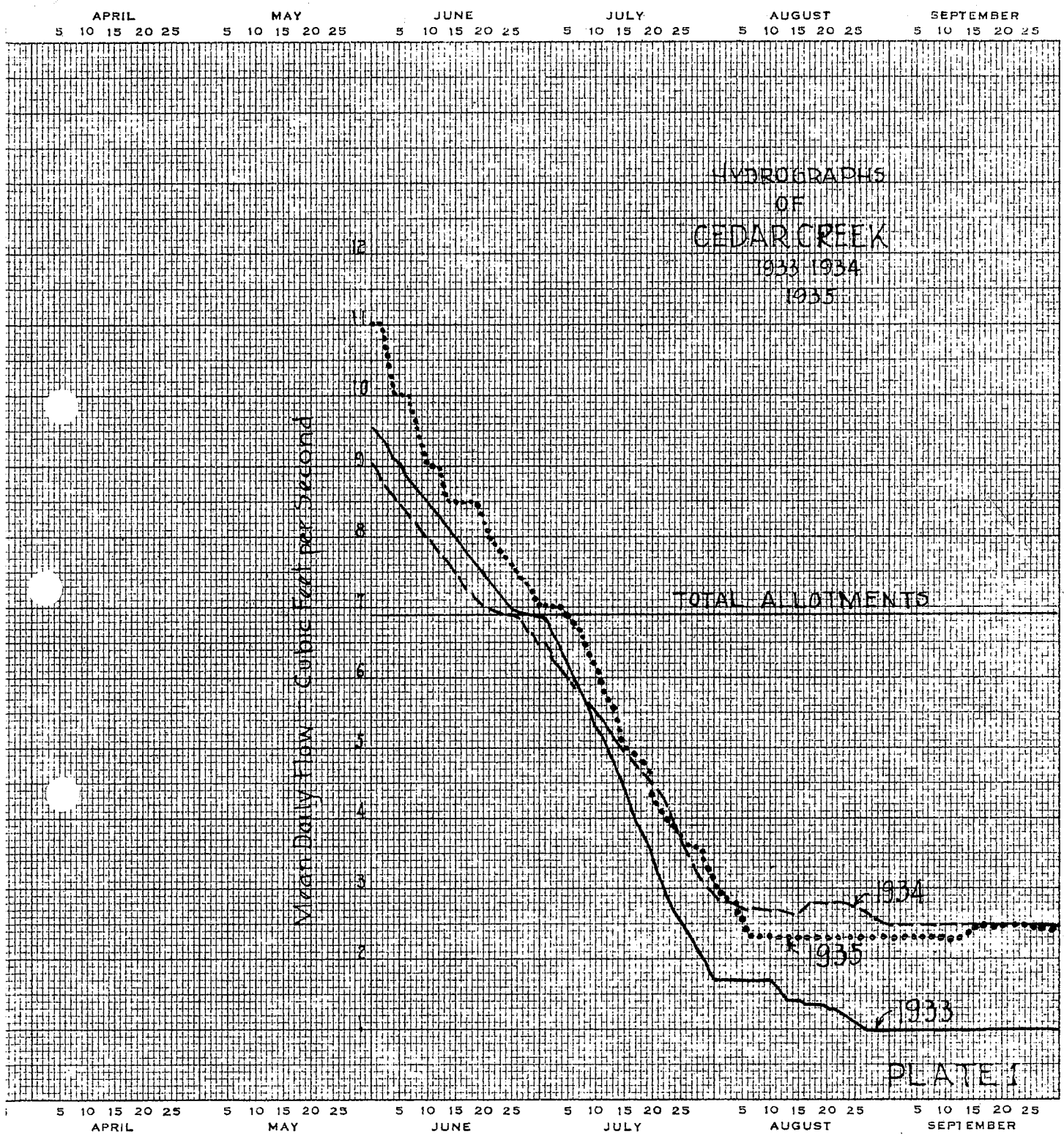
DAY	JUNE	JULY	AUG.	SEPT.	122 DAY PERIOD
1	5.00	5.00	4.00	3.80	
2	5.00	5.00	3.95	3.80	
3	5.00	5.00	3.90	3.80	
4	5.00	4.95	3.90	3.80	
5	5.00	4.90	3.85	3.80	
6	5.00	4.80	3.80	3.80	
7	5.00	4.80	3.80	3.80	
8	5.00	4.70	3.80	3.80	
9	5.00	4.70	3.80	3.80	
10	5.00	4.70	3.80	3.80	
11	5.00	4.60	3.80	3.80	
12	5.00	4.60	3.80	3.80	
13	5.00	4.50	3.80	3.80	
14	5.00	5.50	3.80	3.80	
15	5.00	4.50	3.80	3.80	
16	5.00	4.50	3.80	3.80	
17	5.00	4.40	3.80	3.80	
18	5.00	4.40	3.80	3.80	
19	5.00	4.40	3.80	3.80	
20	5.00	4.30	3.80	3.80	
21	5.00	4.30	3.80	3.80	
22	5.00	4.30	3.80	3.80	
23	5.00	4.30	3.80	3.80	
24	5.00	4.30	3.80	3.80	
25	5.00	4.20	3.80	3.80	
26	5.00	4.20	3.80	3.80	
27	5.00	4.20	3.80	3.80	
28	5.00	4.20	3.80	3.80	
29	5.00	4.10	3.80	3.80	
30	5.00	4.10	3.80	3.80	
31	----	4.00	3.80	----	
TOT.SEC. FT. DAYS	150.0	139.45	118.40	114.0	
MEAN SEC. FT.	5.00	4.50	3.82	3.80	4.25
MAX. SEC. FT.	5.00	5.00	4.00	3.80	5.00
MIN. SEC. FT.	5.00	4.00	3.80	3.80	3.80
TOT. AC. FT.	298.	275.	235.	226.	1030.

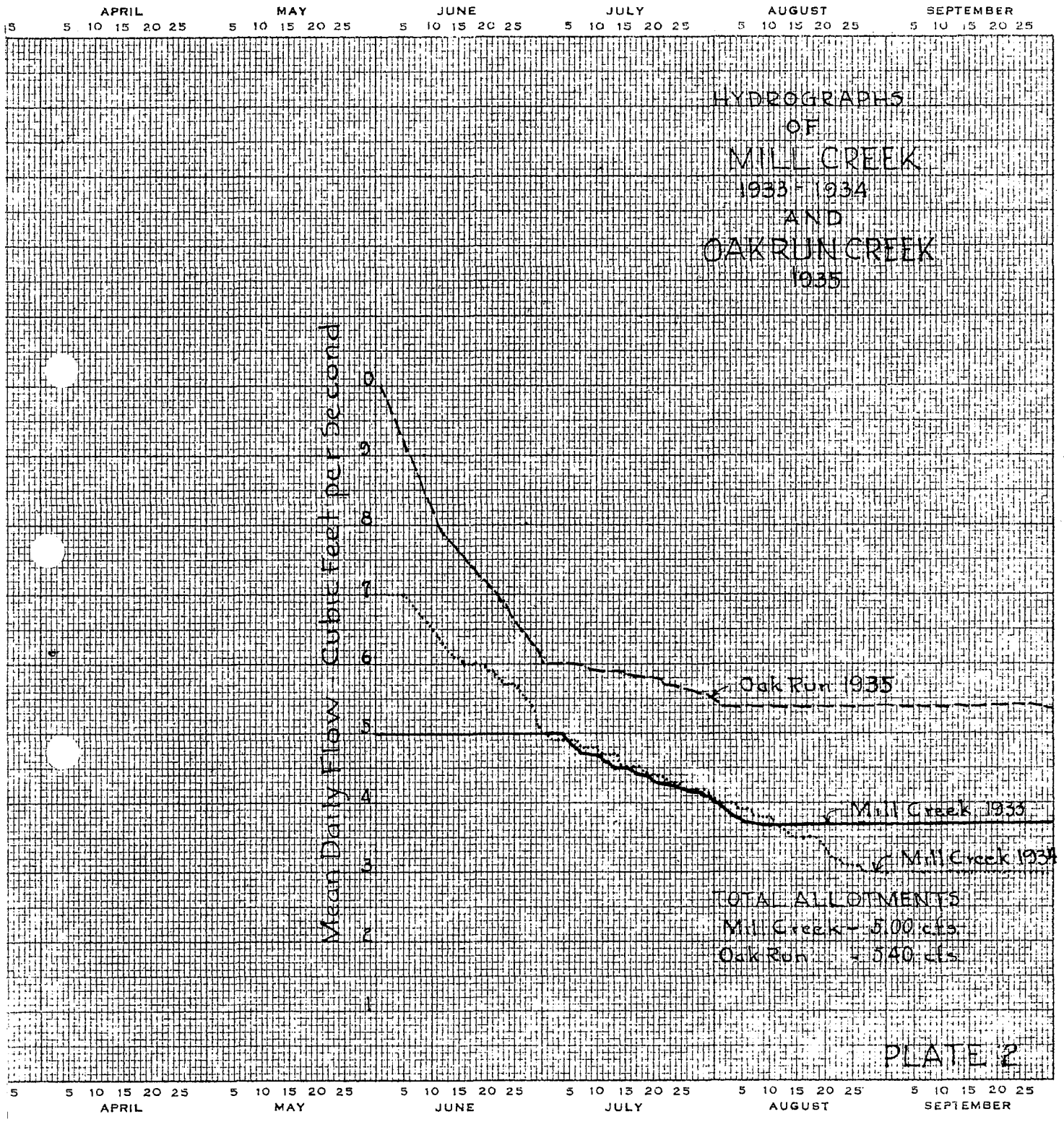
TABLE 4
ESTIMATED DAILY NET AVAILABLE FLOW
IN CUBIC FEET PER SECOND

NORTH COW CREEK

FOR THE PERIOD JUNE 1 to SEPTEMBER 30,1933

DAY	JUNE	JULY	AUGUST	SEPT.	122 DAY PERIOD
1	58.0	33.0	9.00	7.00	
2	58.0	32.0	9.00	7.00	
3	57.0	31.5	9.00	7.00	
4	56.0	31.5	9.00	7.00	
5	55.0	31.0	9.00	7.00	
6	54.0	31.0	9.00	7.00	
7	53.0	31.0	9.00	7.00	
8	52.0	30.5	9.00	7.00	
9	51.0	30.0	9.00	7.00	
10	50.0	30.0	8.90	7.00	
11	49.0	28.0	8.80	7.00	
12	48.0	27.0	8.70	7.00	
13	47.0	26.0	8.60	7.00	
14	46.0	24.0	8.50	7.00	
15	46.0	23.0	8.30	7.00	
16	45.5	21.0	8.10	7.00	
17	45.0	20.0	7.90	7.00	
18	44.0	18.5	7.80	7.00	
19	43.5	17.0	7.70	7.00	
20	43.0	16.0	7.60	7.00	
21	42.5	15.0	7.50	7.00	
22	42.0	15.0	7.40	7.00	
23	41.0	14.0	7.30	7.00	
24	40.5	13.0	7.25	7.00	
25	40.0	13.0	7.20	7.00	
26	39.0	12.5	7.15	7.00	
27	38.0	12.0	7.10	7.00	
28	37.0	11.0	7.00	7.00	
29	36.0	10.0	7.00	7.00	
30	35.0	9.50	7.00	7.00	
31	----	9.00	7.00	----	
TOTAL SEC. FT.DAYS	1392.0	666.00	250.80	210.0	
MEAN SEC. FT.	46.4	21.5	8.09	7.00	20.6
MAX. SEC. FT.	58.0	33.0	9.00	7.00	58.0
MIN. SEC. FT.	35.0	9.00	7.00	7.00	7.00
TOT. AC. FT.	2760.	1320.	490.	417.	4990.


HYDROGRAPHS
OF
CEDAR CREEK
1933 1934
1935
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25
Mean Daily Flow — Cubic Feet per Second
12
11
10
9
8
7
6
5
4
3
2
1
TOTAL ALLOTMENTS
1934
1935
1933
PLATE 1


HYDROGRAPHS
OF
MILL CREEK
1933 - 1934
AND
OAK RUN CREEK
1935
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25
Mean Daily Flow - Cubic Feet per Second
0
9
8
7
6
5
4
3
2
1
Oak Run 1935
Mill Creek 1933
Mill Creek 1934
TOTAL ALLOTMENTS
Mill Creek - 5.00 cfs
Oak Run - 5.40 cfs
PLATE 2

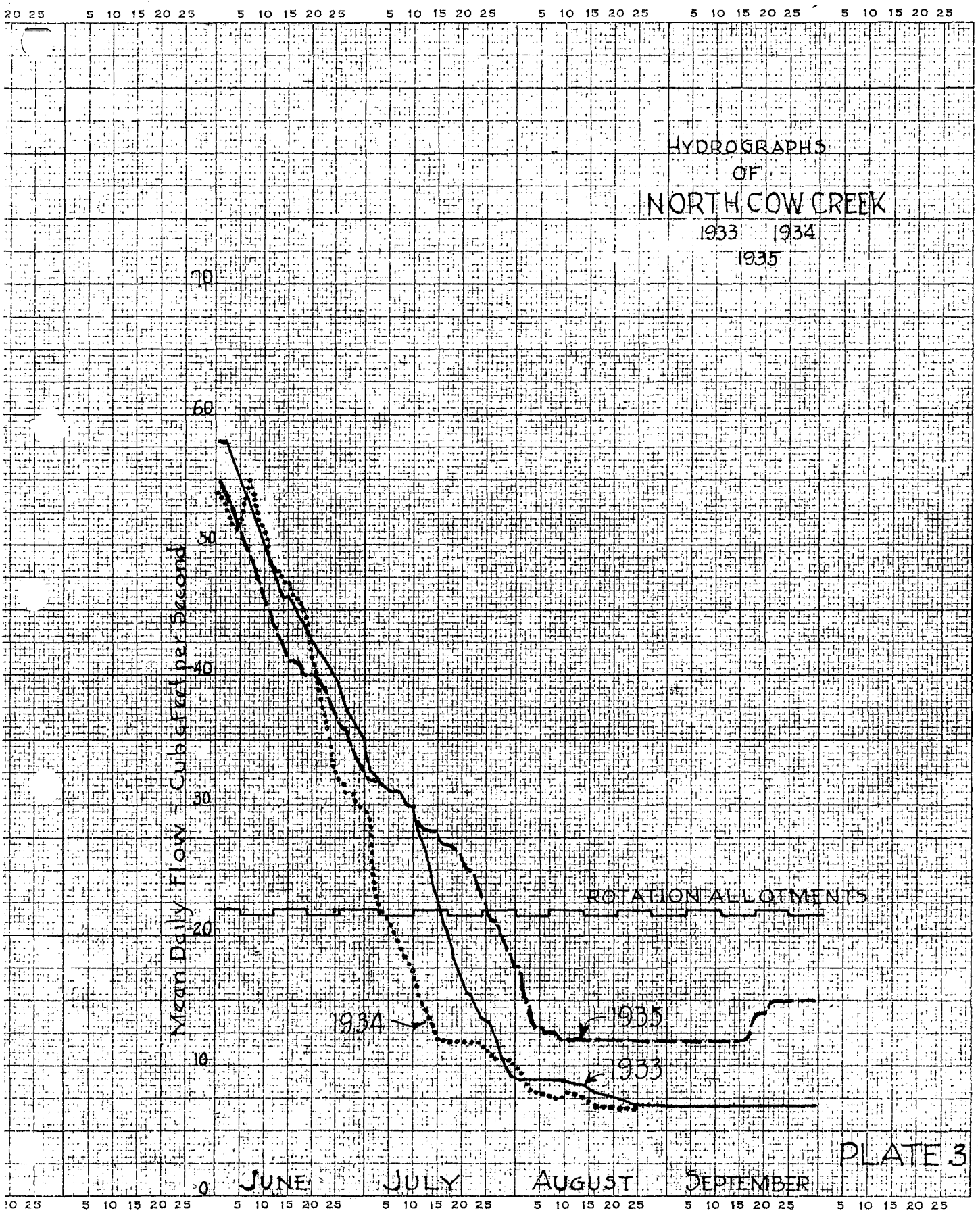

HYDROGRAPHS
OF
NORTH COW CREEK
1933 1934
1935
Mean Daily Flow - Cubic Feet per Second
70
60
50
40
30
20
10
0
ROTATION ALLOTMENTS
1934
1935
1933
JUNE
JULY
AUGUST
SEPTEMBER
5 10 15 20 25

PLATE 3