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STATE OF CALIFORNIA

DEPARTMENT OF PUBLIC WORKS

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

- - - - - - - - -

REPORT ON WATER MASTER SERVICE IN SUSAN RIVER WATER MASTER DISTRICT LASSEN COUNTY, CALIFORNIA 1943 SEASON

- - - - - - - - -

BY
J. W. McPARTLAND
WATER MASTER
SACRAMENTO, CALIFORNIA

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EDWARD HYATT, STATE ENGINEER
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STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

November 15, 1943

Mr. Harold Conkling
Deputy State Engineer
Sacramento, California

Attention: Mr. Gordon Zander
Supervising Hydraulic Engineer

Dear Sir:

The annual report on water master service on Susan River and its tributaries in Lassen County, California, during the 1943 season is submitted herewith.

The report presents a general description of the work and a discussion of the results obtained. Records of precipitation, runoff and other pertinent data are included.

Respectfully submitted,

J. W. McPARTLAND
Water Master

JWM:L L

FOR VICTORY
BUY UNITED STATES SAVINGS BONDS AND STAMPS

REPORT ON
WATER MASTER SERVICE
IN
SUSAN RIVER WATER MASTER DISTRICT
LASSEN COUNTY, CALIFORNIA
1943 SEASON

- - - - - - - - -

INTRODUCTION

The Susan River Water Master District, Lassen County, California, was created by order of the Division of Water Resources, entered November 10, 1941. As created the district embraced the water rights adjudicated by a decree entered April 18, 1940, by the Superior Court, Lassen County, in the case of J. J. Fleming, et. al., vs. J. R. Bennett, et. al., No. 4573, with the exception of the water rights set forth therein in Paragraphs 22 to 44, inclusive, and 50 to 52, inclusive; the water rights of R. H. Cross and Zeb Johnson, Bert Hostetter, and Harry Fitch from Petes Valley Creek, the water right of Mary S. Murrer through Diversions 115 and 116, and the water rights of Mabel Jackson, Sam Jackson, Andrew Jackson, Edward Jackson, Erma Jackson, Marion Jackson, and Lillian Jackson through Diversions 117, 118, and 119 on Willow Creek, all as set forth in Schedule 3; the water right of Joe Gwerder and Annie Gwerder from Ramsey Canyon set forth in Schedule 4; the water right of J. A. Bennett from Susan River and the water right of Georgia B. Jensen from Bunnell Springs set forth in Schedule 5.

Water Master Service in the Susan River Water Master District, in accordance with the provisions of Sections 4,000 to 4,360, inclusive, of the Water Code, was commenced on April 15, 1943, and terminated on September 30, 1943. J. W. McPartland was Water Master during the entire period, under the immediate supervision of Harrison Smitherum, Supervising Water Master, and the general supervision of the Division of Water Resources.

WATER SUPPLY

Precipitation

Data on the precipitation recorded at Susanville was compiled from the records of the United States Weather Bureau, are presented in Table 1 of this report. This table gives a comparison of the monthly and seasonal precipitation for the 1942-'43 season with the mean monthly and mean seasonal precipitation of 45 years of record, together with a comparison of the recorded snowfall.

In 1942-'43 the total seasonal precipitation was 18.43 inches, for the months of October to March, inclusive, 15.45, and for the remainder of the season, 2.98, as compared to the mean over 45 years of record for like periods of 18.56 inches, 14.97 inches, and 3.59 inches, respectively. Stated in percent of the total precipitation for the 1942-'43 season was 99.5 percent; that for October to March, inclusive, 103 percent; and that for the remainder of the season, 83 percent of normal.

The total snowfall as recorded at Susanville for the 1942-'43 season amount to 34.4 inches as compared to normal of 64.1 inches.

The results of the California Cooperative Snow Surveys published April 10, 1943, shows that the snow pack as of April 1, 1943, was in excess of normal at elevations of 7,500 feet and over. The water content of snow as measured at Fredonyer Pass, elevation 5,750 feet, was about 75 percent of normal.

Stream Flow

Measuring stations equipped with stage recorders were maintained on Susan River, below the Ramsey Ditch and at Johnstonville; on Old Channel of Susan River below Woodstock Dam; and on Gold Run Creek above all diversions; also on Willow Creek below Belfast Bridge. Intermittent measurements and gage heights observations were made on various streams and ditches throughout the entire Susan River Water Master District during the irrigation season. The data compiled from the records obtained at the various measuring stations are presented at the end of this report in Tables 2 to 10.

Tables 4 to 9, inclusive, are tabulations of the flows recorded for the key measuring stations maintained during the 1943 season. Table 3 gives the flow of Susan River above the Ramsey Ditch as compiled from a summation of the flow of Susan River above the Ramsey Ditch; Table 4, and the discharge of the Ramsey Ditch, Table 9. Table 2 gives the natural flow of Susan River above the Ramsey Ditch, as determined by deducting the adjusted storage release from McCoy Flat Reservoir, and Hog Flat Reservoir, as tabulated in Table 10, from the flow of Susan River above the Ramsey Ditch, Table 3. Table 10 gives the net amount of storage released from McCoy Flat and Hog Flat Reservoirs measured at Susanville.

Hydrographs of Susan River below the Ramsey Ditch, Gold Run Creek above all diversions for the period during the irrigation season for 1935 and 1943, also Willow Creek at Belfast Bridge for 1943 are shown on Plate 1 presented at the end of this report.

Sufficient runoff records for the Susan River stream system are not available to permit a direct comparison of the runoff for the 1943 irrigation season and that of a so-called normal season. It appears, however, from the records presented in this report, that the runoff for 1943 followed the pattern of the distribution and character of the precipitation as discussed above.

In order to show the relationship of the available water supply in 1940-1941-1942 and 1943 the following table has been compiled:

Year	NATURAL FLOW-SUSAN RIVER AT HAWS-ACRE-FEET				TOTAL ACRE-FEET
	APRIL	MAY	JUNE	JULY	
1940	a. 7,250	11,700	1,560	706	21,216
1941	b. 3,060	26,000	5,240	1,220	35,520
1942	c. 10,300	18,600	9,160	1,570	40,630
1943	d. 5,800	8,890	4,050	1,320	20,060

a. 10-day period
b. 7-day period
c. 13-day period
d. 11-day period

The above table would indicate that the season of 1943, compared with the past seasons, is below normal for Susan River. Gold Run Creek during the 1943 season followed the same pattern as shown for Susan River.

DISTRIBUTION OF WATER

The waters of Susan River and tributaries were distributed during the 1943 season in accordance with the water rights defined in the Susan River Decree, in the case of J. J. Fleming, et. al., vs. J. R. Bennett, et. al., Superior Court, Lassen County, California, No. 4573, with the exceptions enumerated in the Order Creating Susan River Water Master District.

The decree divides the waters of the stream system into three groups, according to the source, or sources, of water supply. Schedule 3 defines the water rights from upper and lower Willow Creek, including the water rights from this source appurtenant to lands in the Susan River delta area. Schedule 4 defines the water rights from Gold Run Creek, Hills Creek, Lassen Creek, and Piute Creek, above the confluence of these creeks with Susan River. Schedules 5 and 6 define the water rights from Susan River exclusive of the tributaries.

Summaries of the distribution of the available water in the three groups in accordance with the schedules and related rights follow:

Willow Creek (Schedule 3)

Upper Willow Creek is largely dependent upon springs for its water supply during the irrigation season. The flow available for direct diversion at the beginning of the irrigation season was about 14.0 cubic feet per second. This supply held nearly constant during the entire season.

During the season the available water supply supplemented by water released from the Walsh Reservoir, was adequate to insure sufficient water to users in Willow Creek Valley.

The release of water stored in Walsh Reservoir was commenced on May 27 and continued to June 26, when the storage was exhausted. This storage was run out prematurely due to the improper installation of the flash-boards, which floated out when the pressure was lowered. Subsequent to June 16 only the natural flow of Willow Creek was available. During the months of June and July very little use of irrigation water was made due to the commencement of haying in Willow Creek Valley.

The first priority allotments were delivered in full throughout the season.

Lower Willow Creek is supplied by excess and return flow from irrigation in upper Willow Creek Valley by water released from Walsh Reservoir and by springs below Willow Creek Valley. The average monthly flow available from these sources is given in the table below.

During the haying season, the water available for the Murrer and Walsh ranches was by-passed in the Old Eagle Lake Canal and supplemented the Susan River water at the Colony Dam. During this period the first priorities under Schedule 3 received full allotments.

The following table has been prepared to show the average monthly amounts of water available in Willow Creek above all diversions in the Upper and Lower Willow Creek areas and the percentage of allotments delivered:

MONTH	MEAN WATER SUPPLY AVAILABLE ABOVE DIVERSIONS IN C. F. S.		PERCENT ALLOTMENTS DELIVERED			
			UPPER WILLOW CREEK		LOWER WILLOW CREEK	
	UPPER WILLOW CREEK AT OLD SAWMILL	LOWER WILLOW CREEK BELOW BELFAST BRIDGE	1ST PRIORITY 4.70 c.f.s.	2ND PRIORITY 25.15 c.f.s.	1ST PRIORITY 3.10 c.f.s.	2ND PRIORITY 19.20c.f.s.
May	14.0	15.0 15.1	100	37	100	62
June	15.0	25.0 12.12	100	41	100	100
July	14.0	19.9 11.7	100	37	100	88
August	14.0	17.3 14.2	100	37	100	74
September	14.0	14.6 16.8	100	37	100	60

Walsh Reservoir was filled approximately to one-half of its normal capacity. Only two flash-boards had been placed in about half of the dam and three flash-boards in

the other half instead of the five flash-boards required in all openings to fill the reservoir to its capacity of 2,500 acre-feet.

Horse Lake water was not available to the Tule area during the 1943 season.

Lassen, Gold Run, Hills, and Piute Creeks (Schedule 4)

Lassen Creek supplied full allotments to all priorities during the months of April and May. After that period the entire flow of Lassen Creek was utilized in supplying the first priority water to the Hulsman Ranch.

Gold Run Creek. The flow of Gold Run Creek was sufficient during the months of April and May for full allotments. During the months of June and July the first priority rights received 100 percent allotments with 48 and 4 percent, respectively, available for the second priority rights. During the months of August and September the first priority rights received 68 and 54 percent, respectively.

Hills Creek. The flow of Hills Creek on May 21, measured by the 4.2-foot weir above the intake of the Emerson Ditch, was 6.22 cubic-feet per second. This flow was divided so as to deliver 57 percent to the Emerson Ditch and 43 percent to the Ridenour and Clark Ranches. On August 1 the flow had diminished to 0.52 cubic-foot per second.

Piute Creek. The total of allotments on this stream is 3.14 cubic-feet per second, all in the first priority. During the months of April, May, June, and July the flow of the stream was sufficient to make delivery of 100 percent of the allotments. During August and September the flow averaged 64 percent of allotments. The bypass pipe from the California-Pacific Utilities Company Ranch was not used to divert water from the upper springs to the lower users during the 1943 season.

Susan River (Schedule 5 and 6)

Distribution of the available water supply on Susan River was carried on in accordance with the allotments and priorities set forth in Schedule 5 and 6 of the Susan River Decree.

The water supply during the month of April and the first part of May was adequate to fill the requirements under schedules 5 and 6. During the months of June, July, August, and September the water supply was prorated under Schedule 5, only, with no water available for Schedule 6. The first priority rights diverted 100 percent of allotments throughout the entire season of 1943.

The average flow of Susan River above the Ramsey Ditch and the percent of allotments delivered to the first and second priority rights under Schedule 5 during the months of June, July, August, and September are given in the following tabulation:

MONTH	Average Available Natural Flow of Susan River above Ramsey Ditch c. f. s.	PERCENT OF ALLOTMENTS DELIVERED 1ST PRIORITY * 4.90 c. f. s.	2D PRIORITY 67.55 c. f. s.
June	68.1	100	93
July	21.5	100	24
August	17.7	100	19
September	** 15.9	100	16

* Does not include 11.05 cubic-feet per second allocated to lands upstream from gaging station.
** 27-day period.

The Woodstock, Bantley, Ripley, Barham, Shanks, Johnston and Chappius, Coulthurst Upper, and Colony Dams were all used during the 1943 season. The Case Dam which failed during the early part of the 1942 season, was not replaced. The water for the Case Dam was diverted from the Barham Dam through the Kelly Ditch as was done in 1942.

Susan River (Reservoirs) 1943

The two reservoirs maintained by the Lassen Irrigation Company; namely, McCoy Flat and Hog Flat Reservoirs, were filled to capacity by the spring runoff added to

to the carryover storage from 1942.

The outlet on McCoy Flat Reservoir was opened on July 8, to a discharge of approximately 70.0 cubic-feet per second. This amount was increased to 100 cubic-feet per second on July 19. Release from Hog Flat Reservoir was commenced on August 19 with a flow of 10.0 cubic-feet per second and increased to 20.0 cubic-feet per second on August 26. Releases from McCoy Flat and Hog Flat Reservoirs were regulated so as to maintain a flow of approximately 90.0 cubic-feet per second at Susanville. Both reservoirs were closed on August 31, at which time McCoy Flat Reservoir was empty and approximately 2,500 acre-feet remained in Hog Flat Reservoir. Releases from McCoy Flat and Hog Flat Reservoirs during the period from July 8 to August 31, supplied approximately 8,730 acre-feet of water for rediversion into the A and B Canal for use by the Lassen Irrigation Company.

Water released from Lake Leavitt Reservoir, together with water available for direct flow diversion from Susan River supplied demands of the Lassen Irrigation Company during April, May, and the first part of June.

CROPS 1943

The crops grown in 1943 produced nearly normal yields throughout the entire Susan River area. Considerable acreage was planted to potatoes under the Lassen Irrigation Company's system.

SUMMARY

It appears that the water supply was nearly adequate to fill the allotments in all priorities to the end that crops were matured and produced normal yields. The storm which occurred the first part of June prevented what otherwise might have been a poor season as the flow of Susan River was rapidly decreasing during the latter part of May

After the haying season, as is normally to be expected, little water was available in excess of that required for stock-watering and garden purposes.

CONTROVERSIES

Due to the poor control of the waters at the head of the Dill and Tanner sloughs it was impossible to keep the required amount of water in the Mahle Ditch, which caused considerable trouble between the Cain, Woodstock, and Mahle Ranches.

The Lassen Irrigation Company continued to take storage in McCoy Flat Reservoir after May 7 when the reservoir was full to its allotted capacity. On May 26, Susan River above the reservoir was measured and the flow found to be 53.0 cubic-feet per second. The reservoir was thereafter regulated so as to by-pass an amount of water equal to the inflow.

CONSTRUCTION WORK--1943

The Tanner Dam located at the Dill Slough and Tanner Slough split consisted of a loose-rock dam approximately 130 feet long and 10 feet wide which was in very poor condition, causing considerable time and trouble each season in the control of the water. The dam was replaced by a concrete wall on the upstream side and on the downstream apron the rocks were grouted into place with concrete.

This work was accomplished by the water-users at a cost of approximately $800, with the cooperation of the Division of Fish and Game and Division of Water Resources. A report covering the construction, etc., on the Tanner Dam by R. M. Bushy, Game Refuge Supervisor, Division of Fish and Game, is filed in the office of the Division of Water Resources.

Work Approved Under Chapter 1071, Statutes of 1943. Repair of levees, stream channels, diversion structures, county road and bridge, County of Lassen, 1943.

(1) Project construction

(a) Tule Flood Control Channel Levee
Repair erosion damage (amount forwarded) $600

	(amount forwarded)		$ 600
(b)	Susan River above Lassen Street Bridge Repair levee		190
(c)	Johnstonville Dam Repair levee and clean channel		660
(d)	Old Susan River at Woodstock Dam Channel Cleaning		440
(f)	Gold River Creek Repair Parshall division structure Repair Emerson Dam	$150 440	590
(g)	Gold Run Creek Channel cleaning (Clarks)		440
(h)	Lassen Creek Reconstruction of County road bridge and approaches and channel cleaning		2,000
	Total Project Construction		$4,920
(2)	Construction, engineering, and supervision (10%)		492
(3)	Contingencies (15%)		738
	Total Estimated	*	$6,150

* One-half payable by County of Lassen ($3,075) and the other one-half ($3,075) by the State of California under Chapter 1071, Statutes of 1943.

WATER RIGHTS INITIATED UNDER PROVISIONS OF WATER CODE

Application 9123 was filed by the Tanner Slough Irrigation Association on September 21, 1937, requesting a permit to appropriate 2,600 acre-feet from Willow Creek tributary to Susan River, to be stored from October 15 of each year to May 1 of the succeeding year. Permit 5139 was issued on April 25, 1938, and License 2598 was issued on May 4, 1943, confirming right to 2,600 acre-feet.

Application 9797 was filed by Johnston and Chappius on January 3, 1940, requesting a permit to appropriate 3.00 cubic-feet per second by direct diversion from Willow Creek, tributary to Susan River, during the period from February 1 to March 1 for irrigation purposes, and 70 acre-feet for storage,

to be stored from November 15 of each year to March 1 of the succeeding year, for stock-watering purposes. Permit 5654 was issued on October 24, 1940.

Application 9943 was filed by the Tanner Slough Irrigation Association on June 29, 1940, requesting a permit to appropriate 10,000 acre-feet from Eagle Lake, to be stored from January 1 to December 31 of each year. Application is still pending.

Application 10026 was filed by Mardis Barry on October 3, 1940, requesting a permit to appropriate 175 acre-feet from an unnamed stream, tributary to Susan River, to be stored from October 15 of each year to April 15 of the succeeding year. Permit 5686 was issued on December 14, 1940.

TABLES

TABLE 1

PRECIPITATION AT SUSANVILLE, CALIFORNIA
ELEVATION 4,286 FEET

COMPARISON BETWEEN PRECIPITATION FOR SEASONAL YEAR
1942-'43 AND FOR 45-YEAR PERIOD

Month	MONTHLY MEAN 45 YEARS		1942-'43		SNOWFALL IN INCHES	
	Inches	Percent of Total Mean	Inches	Percent of Total Mean	Normal	1942-'43
October	1.13	6.1	.01	–	–	–
November	2.09	11.3	2.63	14.2	–	2.0
December	3.08	16.6	2.20	11.9	15.3	6.0
January	3.38	18.2	6.87	37.0	26.3	19.5
February	2.79	15.0	1.45	7.8	11.0	6.5
March	2.50	13.5	2.29	12.4	9.6	0.4
April	1.12	6.0	.53	2.9	1.9	T
May	.83	4.5	.49	2.7	–	T
June	.49	2.6	1.78	9.6	–	–
July	.28	1.5	.17	1.0	–	–
August	.33	1.8	.00	–	–	–
September	.54	2.9	.01	–	–	–
Totals	18.56	100.0	18.43	99.5	64.1	34.4

TABLE 2

DAILY DISCHARGE IN CUBIC FEET PER SECOND
NATURAL FLOW OF SUSAN RIVER ABOVE RAMSEY DITCH
APRIL 20 TO SEPTEMBER 27, 1943

Day	April	May	June	July	August	September	
1		268.	127.	25.1	19.3	17.0	
2		267.	130.	27.1	19.3	17.8	
3		262.	117.	26.0	19.5	18.8	
4		256.	100.	24.0	19.3	17.8	
5		234.	132.	23.5	19.3	17.8	
6		202.	123	22.5	19.3	17.7	
7		205.	110.	22.5	19.3	17.2	
8		189.	99.5	21.5	19.3	17.2	
9		178.	91.5	21.5	19.3	17.2	
10		175.	81.5	21.5	18.3	16.6	
11		159.	76.0	21.5	18.2	16.6	
12		148.	77.0	21.5	18.2	16.6	
13		135.	72.0	21.5	18.2	15.6	
14		125.	66.0	21.5	18.2	15.5	
15		121.	62.0	20.5	18.2	15.5	
16		115.	52.0	20.5	18.2	14.4	
17		107.	47.0	20.5	18.1	14.4	
18		98.7	43.0	20.5	18.1	14.3	
19		91.7	41.0	20.5	18.1	14.3	
20	290.	82.5	38.5	20.6	18.1	14.3	
21	282.	84.5	36.5	20.6	18.1	14.3	
22	270.	85.0	38.5	20.6	18.0	14.2	
23	266.	85.0	34.5	20.3	18.0	14.2	
24	263.	85.0	33.7	20.3	18.0	14.7	
25	250.	84.0	35.7	20.3	18.0	14.7	
26	248.	96.0	35.7	20.3	17.0	14.7	
27	248.	105.	32.7	20.3	17.0	14.7	
28	285.	106.	29.0	20.3	17.0		
29	264.	103.	26.0	19.3	17.0		
30	261.	101.	24.0	19.8	17.0		
31	—	109.	—	19.3	17.0		
TOTAL Sec. Ft. Days	* 2927.	4482.4	2042.3	665.7	548.7	** 428.1	161-Day Period
Mean Sec. Ft.	266.	144.6	68.1	21.5	17.7	15.9	68.9
Max. Sec. Ft.	290.	268.	132.	27.1	19.3	18.8	290.
Min. Sec. Ft.	248.	82.5	24.0	19.3	17.0	14.2	14.2
TOTAL Ac. Ft.	5800.	8890.	4050.	1320.	1090.	849.	22,000

* 11-day Period
**27-day Period

TABLE 3

DAILY DISCHARGE IN CUBIC FEET PER SECOND
SUSAN RIVER ABOVE RAMSEY DITCH
INCLUDING WATER RELEASED FROM STORAGE
APRIL 20 TO SEPTEMBER 27, 1943

Day	April	May	June	July	August	September	
1		268.	127.	25.1	106.	41.0	
2		267.	130.	27.1	106.	20.8	
3		262.	117.	26.0	108.	18.8	
4		256.	130.	24.0	109.	17.8	
5		234.	132	23.5	110.	17.8	
6		222.	123.	22.5	106.	17.7	
7		205.	110.	22.5	104.	17.2	
8		189.	99.5	21.5	101.	17.2	
9		178.	91.5	44.5	104.	17.2	
10		175.	81.5	82.5	108.	16.6	
11		159.	76.0	81.5	109.	16.6	
12		148.	77.0	76.5	109.	16.6	
13		135.	72.0	84.5	109.	15.6	
14		125.	66.0	82.5	109.	15.5	
15		121.	62.0	81.5	110.	15.5	
16		115.	52.0	80.5	108.	14.4	
17		107.	47.0	80.5	108.	14.4	
18		98.7	43.0	80.5	108.	14.3	
19		91.7	41.0	79.5	109.	14.3	
20	290.	82.5	38.5	96.6	113.	14.3	
21	282.	84.5	36.5	117.	118.	14.3	
22	270.	85.0	38.5	114.	116.	14.2	
23	266.	85.0	34.5	111.	114.	14.2	
24	263.	85.0	33.7	111.	118.	14.7	
25	250.	84.0	35.7	109.	112.	14.7	
26	248.	96.0	35.7	111.	104.	14.7	
27	248.	105.	32.7	110.	82.0	14.7	
28	285.	106.	29.0	111.	87.0		
29	264.	103.	260.	111.	82.0		
30	261.	101.	24.0	113.	76.0		
31	–	109.	–	110.	73.0		
Total Sec. Ft Days	* 2927	4482.4	2042.3	2371.3	3236.0	** 455.1	161-Day Period – –
Mean Sec. Ft.	266.	144.6	68.1	76.5	104.4	16.9	96.4
Max. Sec. Ft.	290.	268.	132.	113.	118.	41.0	290.
Min. Sec. Ft.	248.	82.5	24.0	21.5	73.0	14.2	14.2
Total Ac. Ft.	5800.	8890.	4050.	4700.	6420.	902.	30,760

* 11-day period
** 27-day period

TABLE 4

DAILY DISCHARGE IN CUBIC FEET PER SECOND
SUSAN RIVER BELOW RAMSEY DITCH INCLUDING WATER
RELEASED FROM STORAGE
APRIL 20 TO SEPTEMBER 27, 1943

Day	April	May	June	July	August	September	
1		264.	128.	22.0	104.	39.0	
2		263.	128.	24.0	104.	19.0	
3		258.	115.	23.0	106.	17.0	
4		252.	128.	21.0	107.	16.0	
5		230.	130.	21.0	108.	16.0	
6		218.	121.	20.0	104.	16.0	
7		201.	108.	20.0	102.	15.5	
8		185.	98.0	* 19.0	99.0	15.5	
9		174.	90.0	42.0	102.	15.5	
10		171.	80.0	80.0	106.	15.0	
11		155.	74.0	79.0	107.	15.0	
12		144.	75.0	74.0	107.	15.0	
13		131.	70.0	82.0	107.	14.0	
14		120.	64.0	80.0	107.	14.0	
15		116.	60.0	79.0	108.	14.0	
16		110.	50.0	78.0	106.	13.0	
17		102.	45.0	78.0	106.	13.0	
18		94.0	41.0	78.0	106.	13.0	
19		87.0	39.0	77.0	107.	130.	
20	290.	78.0	37.0	96.0	111.	13.0	
21	282.	80.0	35.0	114.	116.	13.0	
22	270.	80.0	37.0	111.	114.	13.0	
23	266.	80.0	33.0	108.	112.	13.0	
24	263.	80.0	32.0	108.	116.	13.5	
25	250.	79.0	34.0	106.	110.	13.5	
26	245.	91.0	34.0	108.	102.	13.5	
27	245.	101.	31.0	107.	80.0	13.5	
28	282.	102.	27.0	108.	85.0		
29	261.	100.	24.0	108.	80.0		
30	258.	98.0	22.0	110.	74.0		
31	–	106.	–	107.	** 71.0		
Total Sec. Ft. Days	A 2912.	4350.	1987.	2288.	3174.	B 414.5	161-Day Period
Mean Sec. Ft.	264.7	140.3	66.2	73.8	102.4	15.4	93.9
Max. Sec. Ft.	290.	264.	130.	114.	116.	39.0	290.
Min. Sec. Ft.	245.	78.0	22.0	22.0	71.0	13.0	13.0
Total Ac. Ft.	5770.	8630.	3940.	4540.	6290.	822.	29,990

* McCoy Flat Reservoir opened July 8, 1943
**McCoy Flat Reservoir closed August 31, 1943
A 11-day Period
B 27-day Period

TABLE 5

DAILY DISCHARGE IN CUBIC FEET PER SECOND
OLD CHANNEL OF SUSAN RIVER BELOW WOODSTOCK DAM
APRIL 20 TO SEPTEMBER 27, 1943

Day	April	May	June	July	August	September	
1		26.6	25.0	5.80	4.60	2.90	
2		27.0	25.0	6.60	4.60	4.90	
3		26.6	24.0	63.0	4.60	6.30	
4		27.0	26.2	5.60	4.50	6.20	
5		25.8	25.5	5.30	4.50	5.90	
6		24.0	25.1	4.80	4.50	5.80	
7		21.8	23.4	4.30	4.40	5.10	
8		20.0	22.1	4.30	4.40	5.00	
9		19.3	21.5	4.70	4.40	5.00	
10		19.0	19.9	6.20	4.40	5.00	
11		18.0	18.0	5.80	4.40	4.60	
12		17.2	18.3	5.60	4.40	4.50	
13		15.2	17.4	5.60	4.40	4.40	
14		14.4	15.2	5.60	4.40	4.20	
15		13.6	13.8	5.60	4.40	4.20	
16		13.1	12.4	5.20	4.40	3.90	
17		15.2	11.8	5.20	4.40	3.20	
18		23.4	11.2	5.20	4.40	3.40	
19		21.8	11.4	5.20	4.40	3.60	
20	16.8	20.9	10.9	5.30	4.40	3.70	
21	17.2	20.9	10.1	5.20	4.60	3.80	
22	16.6	20.9	10.4	4.90	4.60	3.90	
23	15.8	21.2	9.40	4.70	4.60	3.80	
24	15.2	20.9	9.00	4.80	4.70	3.70	
25	15.4	20.6	9.60	4.60	4.40	3.80	
26	17.8	21.8	9.00	4.60	4.20	4.00	
27	16.6	22.5	8.20	4.60	3.50	4.00	
28	23.4	21.8	7.50	4.60	3.60		
29	22.8	20.9	6.20	4.60	3.40		
30	25.5	20.6	5.60	4.80	3.20		
31	–	21.8	–	4.80	3.00		
Total Sec. Ft. Days	* 203.1	643.3	463.1	160.4	132.7	** 118.8	161-Day Period
Mean Sec. Ft.	18.5	20.8	15.4	5.17	4.28	4.40	10.7
Max. Sec. Ft.	25.5	27.0	26.2	6.60	4.70	6.30	27.0
Min. Sec. Ft.	15.2	13.1	5.60	4.30	3.00	2.90	2.90
Total Ac. Ft.	403.	1280.	918.	318.	263.	235.	3,420

* 11-day Period
** 27-day Period

TABLE 6

DAILY DISCHARGE IN CUBIC FEET PER SECOND
SUSAN RIVER AT JOHNSTONVILLE
MAY 14 TO SEPTEMBER 27, 1943

Day	May	June	July	August	September	
1		75.6	17.8	7.80	3.00	
2		75.8	17.8	7.80	3.80	
3		68.8	15.4	7.80	3.40	
4		64.0	14.0	7.50	3.40	
5		57.0	13.0	7.00	4.80	
6		54.0	12.4	7.50	4.00	
7		44.4	11.4	7.50	4.00	
8		43.0	11.4	7.50	4.00	
9		41.0	11.4	7.50	4.00	
10		39.0	11.4	7.50	4.00	
11		39.0	9.50	7.50	4.00	
12		44.4	9.50	7.40	3.80	
13		41.0	9.50	7.30	3.80	
14	47.0	37.0	9.50	7.20	3.80	
15	46.0	32.8	9.50	6.20	3.80	
16	41.0	34.8	9.50	6.40	3.80	
17	3[illegible].0	31.8	9.50	6.40	3.80	
18	31.0	30.0	9.50	6.00	3.80	
19	29.0	29.0	9.50	6.00	3.80	
20	28.0	28.0	9.00	6.00	3.80	
21	29.0	27.4	9.50	6.00	3.50	
22	32.8	26.8	9.50	6.00	3.50	
23	31.0	25.8	9.00	6.00	3.00	
24	37.4	26.0	8.40	6.00	3.00	
25	34.0	24.0	8.40	6.00	3.00	
26	32.4	24.8	8.00	6.00	3.00	
27	45.8	24.0	8.00	6.00	3.00	
28	44.4	23.8	8.00	6.00		
29	47.4	22.0	8.00	6.00		
30	45.0	19.4	8.00	6.00		
31	34.4	-	8.00	6.00		
Total Sec. Ft. Days	* 997.9	1164.9	322.3	208.6	** 108.8	137-Day Period
Mean Sec. Ft.	38.8	38.8	10.4	6.73	3.92	16.3
Max. Sec. Ft.	34.4	75.8	17.8	7.80	3.80	75.8
Min. Sec. Ft.	28.0	19.4	8.00	6.00	3.00	3.00
Total Ac. Ft.	1980.	2310.	639.	414.	216.	4,000

* 18-day Period

** 27-day Period

TABLE 7

DAILY DISCHARGE IN CUBIC FEET PER SECOND
WILLOW CREEK BELOW BELFAST BRIDGE
MAY 3 TO SEPTEMBER 24, 1943

Day	May	June	July	August	September	
1		11.7	19.0	19.7	13.8	
2		13.0	17.3	19.7	13.4	
3	22.6	16.9	17.3	19.7	12.7	
4	22.6	26.0	19.7	20.0	12.7	
5	21.0	40.0	20.6	20.6	12.7	
6	20.6	47.0	19.0	21.0	12.7	
7	17.4	40.0	17.0	21.6	12.3	
8	16.4	30.9	21.0	21.6	12.7	
9	16.0	28.0	26.4	20.6	14.9	
10	16.0	28.0	27.0	18.6	14.9	
11	15.2	32.3	26.4	18.6	14.9	
12	14.5	34.3	22.6	18.6	14.2	
13	14.5	34.3	19.0	18.6	13.8	
14	14.5	34.3	18.6	17.3	14.2	
15	14.5	28.0	17.7	18.6	14.9	
16	14.5	24.8	17.3	17.7	17.3	
17	14.5	24.2	17.0	14.9	16.4	
18	14.5	23.7	17.0	13.8	16.0	
19	14.5	23.1	17.7	13.0	16.4	
20	14.2	22.0	17.7	14.6	17.0	
21	14.2	21.0	18.6	15.2	17.0	
22	13.8	21.0	19.7	15.2	15.2	
23	13.8	20.6	20.6	15.2	14.6	
24	13.4	19.7	23.1	15.2	14.6	
25	12.7	19.0	22.0	15.2		
26	11.7	18.6	21.0	15.2		
27	11.7	17.7	21.0	16.0		
28	11.7	17.0	21.0	15.6		
29	11.7	17.0	18.2	14.6		
30	11.7	16.0	18.2	14.6		
31	11.4	–	18.6	14.2		
Total Sec. Ft. Days	* 435.8	750.1	617.3	535.0	** 349.3	145-Day Period
Mean Sec. Ft.	15.0	25.0	19.9	17.3	14.6	18.5
Max. Sec. Ft.	22.6	47.0	27.0	21.6	17.3	47.0
Min. Sec. Ft.	11.4	11.7	17.0	14.2	12.3	11.4
Total Ac. Ft.	864.	1490.	1220.	1060.	693.	5,330

* 29-day Period
** 24-day Period

TABLE 8

DAILY DISCHARGE IN CUBIC FEET PER SECOND
GOLD RUN CREEK
APRIL 26 TO SEPTEMBER 22, 1943

Day	April	May	June	July	August	September	
1		52.6	30.5	4.10	1.00	.70	
2		49.0	20.8	3.90	1.00	.70	
3		51.4	20.0	3.90	1.00	.70	
4		56.0	20.0	3.60	1.00	.70	
5		54.0	18.6	3.60	1.00	.70	
6		52.6	17.0	3.30	1.00	.70	
7		42.4	15.8	3.10	1.00	.70	
8		35.8	14.6	2.80	1.00	.70	
9		34.6	12.8	2.50	1.00	.70	
10		35.8	12.8	2.50	1.00	.70	
11		34.6	12.8	2.30	.90	.70	
12		31.4	12.4	2.30	.90	.70	
13		27.6	12.0	2.30	.90	.70	
14		25.0	11.4	2.10	.90	.70	
15		21.6	11.0	2.00	.90	.70	
16		20.0	10.0	2.00	.80	.70	
17		18.6	9.50	1.80	.80	.70	
18		18.5	9.50	1.80	.80	.70	
19		17.9	9.50	1.80	.80	.70	
20		18.6	9.00	1.80	.80	.70	
21		20.0	7.40	1.80	.80	.70	
22		23.2	7.00	1.80	.80	.70	
23		28.4	6.60	1.70	.80		
24		29.6	5.60	1.70	.80		
25		31.4	5.60	1.70	.80		
26	36.0	31.4	5.30	1.60	.80		
27	33.4	30.5	5.30	1.10	.80		
28	36.8	25.9	5.00	1.10	.80		
29	32.4	22.4	4.30	1.10	.80		
30	34.8	20.8	4.10	1.10	.80		
31	–	22.4	–	1.10	.80		
Total Sec. Ft. Days	* 173.4	984.0	346.2	69.3	27.3	** 15.4	150-Day Period
Mean Sec. Ft.	34.7	31.7	11.5	2.24	.88	.70	10.7
Max. Sec. Ft.	36.8	56.0	30.5	4.10	1.00	.70	56.0
Min. Sec. Ft.	32.4	17.9	4.10	1.10	.80	.70	.70
Total Ac. Ft.	344.	1950.	1087.	137.	54.1	30.5	3,200

* 5-day Period
** 22-day Period

TABLE 9

DAILY DISCHARGE IN CUBIC FEET PER SECOND
RAMSEY DITCH AT HEAD
APRIL 22 TO SEPTEMBER 27, 1943

Day	April	May	June	July	August	September	
1		3.70	2.00	3.10	2.30	2.00	
2		3.70	2.00	3.10	2.30	1.80	
3		3.70	2.00	3.00	2.30	1.80	
4		3.80	1.70	3.00	2.30	1.80	
5		3.80	1.70	2.50	2.30	1.80	
6		3.80	1.50	2.50	2.30	1.70	
7		3.80	1.50	2.50	2.30	1.70	
8		4.00	1.50	2.50	2.30	1.70	
9		4.00	1.50	2.50	2.30	1.70	
10		4.00	1.50	2.50	2.30	1.60	
11		4.00	2.00	2.50	2.20	1.60	
12		4.00	2.00	2.50	2.20	1.60	
13		4.00	2.00	2.50	2.20	1.60	
14		4.50	2.00	2.50	2.20	1.50	
15		4.50	2.00	2.50	2.20	1.50	
16		4.50	2.00	2.50	2.20	1.40	
17		4.70	2.00	2.50	2.10	1.40	
18		4.70	2.00	2.50	2.10	1.30	
19		4.70	2.00	2.50	2.10	1.30	
20	.60	4.50	1.50	2.60	2.10	1.30	
21	.60	4.50	1.50	2.60	2.00	1.30	
22	.60	5.00	1.50	2.60	2.00	1.20	
23	.60	5.00	1.50	2.30	2.00	1.20	
24	.60	5.00	1.70	2.30	2.00	1.20	
25	.80	5.00	1.70	2.30	2.00	1.20	
26	3.00	5.00	1.70	2.30	2.00	1.20	
27	3.00	4.00	1.70	2.30	2.00	1.20	
28	3.00	4.00	2.00	2.30	2.00		
29	3.00	3.00	2.00	2.30	2.00		
30	3.00	3.00	2.00	2.80	2.00		
31	–	2.50	–	2.30	2.00		
Total Sec. Ft. Days	* 18.8	128.4	53.7	78.7	66.6	** 40.6	161-Day Period
Mean Sec. Ft.	1.71	4.14	1.77	2.54	2.15	1.50	2.40
Max. Sec. Ft.	3.00	5.00	2.00	3.10	2.30	2.00	5.00
Min. Sec. Ft.	.60	2.50	1.50	2.30	2.00	1.20	.60
Total Ac. Ft.	37.3	255.	106.	156.	132.	80.5	767.

* 11-Day Period
** 27-day Period

TABLE 10

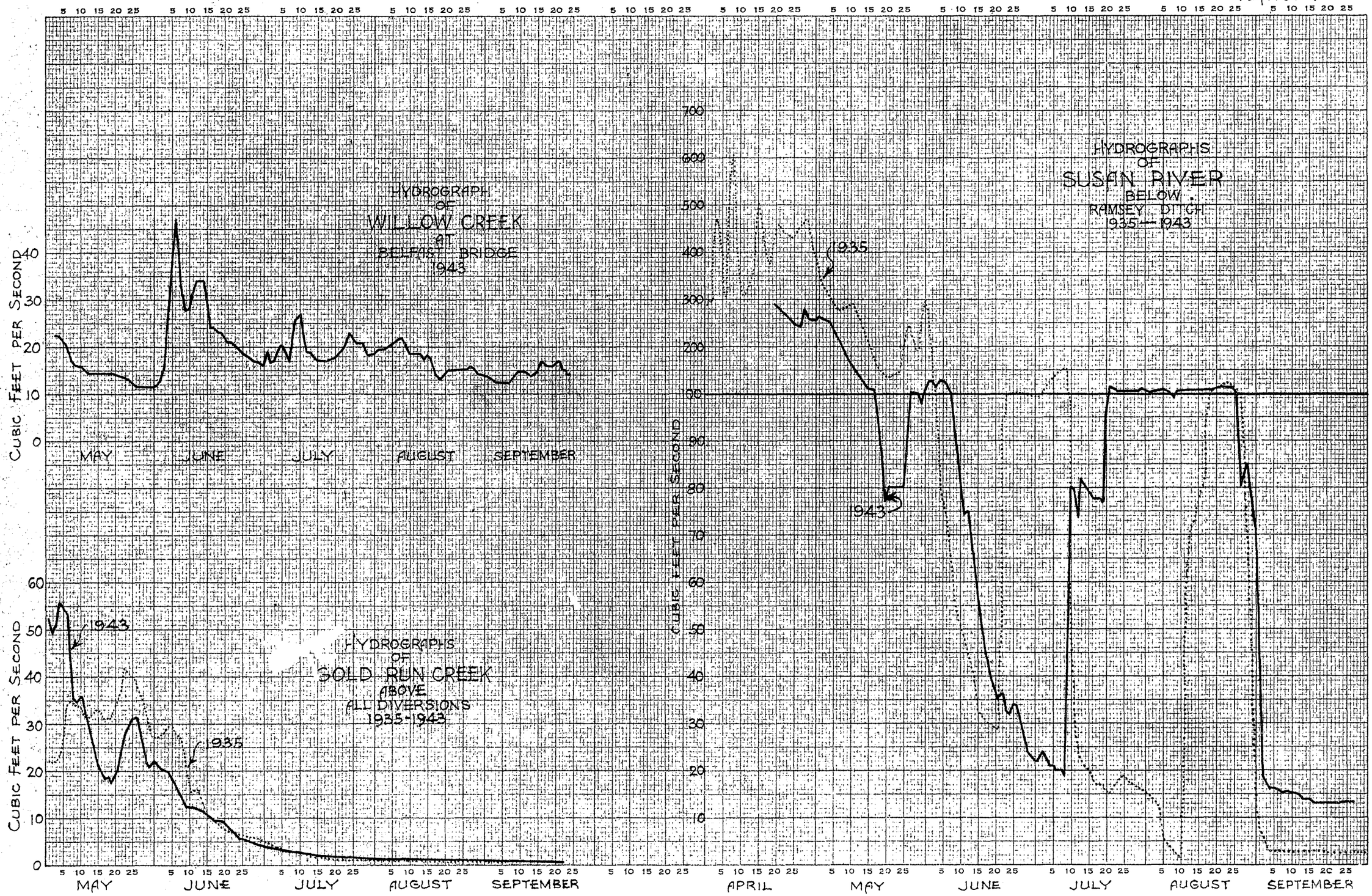
DAILY DISCHARGE IN CUBIC FEET PER SECOND
WATER RELEASED FROM McCOY FLAT AND HOG FLAT RESERVOIRS
AND AVAILABLE FOR REDIVERSION AT SUSANVILLE
JULY 8 TO AUGUST 31, 1943

Day	July	August	September	
1		86.7	24.0	
2		86.7	3.00	
3		88.7		
4		89.7		
5		90.7		
6		86.7		
7		84.7		
8	*	81.7		
9	23.0	84.7		
10	61.0	89.7		
11	60.0	90.8		
12	55.0	90.8		
13	63.0	90.8		
14	61.0	90.8		
15	61.0	91.8		
16	60.0	89.8		
17	60.0	89.9		
18	60.0	89.9		
19	59.0	90.9		
20	76.0	94.9		
21	96.4	100.		
22	93.4	98.0		
23	90.7	96.0		
24	90.7	100.		
25	88.7	94.0		
26	90.7	87.0		
27	89.7	65.0		
28	90.7	70.0		
29	91.7	65.0		
30	93.2	59.0		
31	90.7	** 56.0		
Total Sec. Ft. Days	A 1705.6	2670.4	B 27.0	56-Day Period
Mean Sec. Ft.	74.2	86.1	13.5	78.6
Max. Sec. Ft.	96.4	100.	24.0	100.
Min. Sec. Ft.	23.0	56.	3.00	3.00
Total Ac. Ft.	3380.	5300.	53.5	8,730

A 23-Day Period
B 2-Day Period
* McCoy Flat Reservoir opened July 8, 1943
** McCoy Flat Reservoir opened August 31, 1943

5803 acre
approx 1.16 acre ft per acre
1943

PLATE 1



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