STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

EARL WARREN, Governor
C. H. PURCELL, Director of Public Works
EDWARD HYATT, State Engineer

REPORT OF

SACRAMENTO-SAN JOAQUIN

WATER SUPERVISION

FOR YEAR

1942

New Feature

See pages 185 to 296 containing tabulations of:

(a) Consumptive Use in Delta
(b) Diversion per acre in entire area under supervision
    (1) for mixed crops
    (2) for individual crops
(c) Use from wells on individual crops

JUNE, 1943

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DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

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REPORT OF

SACRAMENTO-SAN JOAQUIN WATER SUPERVISION

FOR
1942

Sacramento
June, 1943

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For the compilation of pumped diversions the Pacific Gas and Electric Company, and Merced, Modesto and Turlock Irrigation Districts have furnished a large number of power consumption records.

Valuable cooperation has been extended by the Water Resources Branch of the United States Geological Survey, Department of the Interior, in gathering and assembling stream flow data.

The State Division of Highways has cooperated in the expeditious and efficient testing of salinity samples in its testing laboratory. The Maintenance Department has cooperated in taking water samples from the Sacramento and San Joaquin valley stream flow channels.

In the San Joaquin Valley the City of San Francisco Public Utilities Commission, Hetch Hetchy Water Supply and the United States Bureau of Reclamation make available a large amount of stream flow data.

The Merced, Modesto, Oakdale, South San Joaquin and Turlock Irrigation Districts and Miller and Lux, Incorporated, have assisted in observing and maintaining recording and staff gages in the San Joaquin Valley as has the United States Bureau of Reclamation.

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ADVISORY COMMITTEE

PERMANENT COMMITTEE OF THE SACRAMENTO-SAN JOAQUIN RIVER PROBLEMS CONFERENCE

This Committee, representing the water users and other interests involved, was appointed by the First Sacramento-San Joaquin River Problems Conference in January 1924. Its continued interest and cooperation and particular activity in the promulgation of effective conservation measures in the seasons of critical water supply have contributed in large measure to the successful prosecution of the Water Supervision work.

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CHAPTER I

INTRODUCTION

The purpose of this report is to make of record the measurements made and data collected in connection with Water Supervision in the Sacramento-San Joaquin Valley area during 1942.

Origin and History of Work

Water Supervision was inaugurated in 1924 through the efforts of the first Sacramento-San Joaquin River Problems Conference and its Permanent Committee working with the former Division of Water Rights. A complete description of the origin, history and conduct of this work will be found in the 1924 and 1926 Biennial Reports of the former Division of Water Rights, in Bulletin Number 4 of the same Division, and in Bulletin Number 23 of the Division of Water Resources. The latter bulletin brings together all data and measurements obtained in the five-year period, 1924 to 1928, inclusive. The Water Supervision reports for subsequent years are mimeographed as is the present report. In this report is presented all available data relative to use of water on various crops for the period 1935-1942.

Objectives

The work of supervision is a measure of relief in the difficulties attendant upon water supply conditions and the use of water throughout the Sacramento-San Joaquin territory, particularly on the Sacramento River and in the Delta region. The situation involves the major problem of satisfying the water requirements for irrigation in both the upriver areas and the Delta, for the control of salinity in the Delta and Upper Bay areas, and for navigation above Sacramento as demanded by the U. S. War Department. In nearly every season of the last nineteen years, each one of those requirements has exceeded

the available summer flow in the rivers. Pending ultimate relief through the development of reservoir storage this situation has been met by mutual agreement through a provisional administration of stream flow and diversions. There has been no agreement, though, under which a water master might definitely and equitably distribute the existing water supply to those entitled to receive it, but it seems inevitable that such an agreement or a definite schedule of water priorities must be developed. Its realization will require, however, that there shall be available reliable and accurate data over a long period of years covering all of the actual diversions and uses of water, the stream flow, return flow, salinity, and all pertinent hydrographic data. Looking to this requirement, the Division of Water Resources is, concurrently with the provisional stream administration, continuing the investigations and all measurements necessary to complete the record of basic data.

Investigational Work

During 1942 as in the past years, the investigational work comprised: Measurements and record of the diversions of water from Sacramento, Feather, Yuba, American, Merced, Tuolumne, Stanislaus and San Joaquin rivers on the valley floor and above the Delta; stream flow measurements throughout the territory partially in cooperation with the Water Resources branch of the U. S. Geological Survey, measurements and records of waters returned to the Sacramento and San Joaquin rivers; an annual census of irrigated acreages and crops under all diversions recorded; and at intervals a complete survey of irrigated acreage in the Sacramento-San Joaquin Delta; maintenance and operation of recording tide gages in the Delta area. The salinity sampling in the Delta, by which the rate of advance and retreat of salinity was studied, was discontinued on July 15, 1941. Prior to this date samples were taken at four-day intervals at key stations throughout the Delta area and upper bays.

History of State and Water Users' Cooperative Financing

The complete history of the State and water users' cooperative financing for previous years has been published in prior reports.

Conservation Features

A comparison of the run-off and water supply conditions of the 1942 season with those of previous seasons is indicated in Tables 1 and 3. Tables 2 and 4 show for streams in Sacramento and San Joaquin Valley a summary of the average minimum 10-day flow occurring during the years 1924-1942 for period March 1 to September 30. It will be noted in Tables 1 and 3 that under the column "Run-off in Per Cent of Normal", the 40-year and 50-year mean percentages are given. The 50-year figure is based on a recent recalculation of mean full natural flow of the Sierra streams. Table 5 gives a comparison between the 40-year and 50-year mean full natural flow for all major streams entering the Great Central Valley.

TABLE 1

COMPARATIVE SACRAMENTO VALLEY WATER SUPPLY 1920 - 1942

Year	Run-off in per cent of Normal*				Minimum Mean Daily Flow in Second Feet (1)									Rice Acreage Served By Sacramento River & Tributaries
	Sacto.-San Joaquin to Delta		Sacramento at Red Bluff		Sacramento River at			Feather River at		Yuba River at		American River at		
					Red Bluff	Colusa	Sacramento	Oroville	Nicolaus	Smartsville	Mouth	Fairoaks	Sacramento	
	40 Yr.	50 Yr.	40 Yr.	50 Yr.										
1920	50	52	45	48	3240	660	(2) 540	905	(3) 19	106		100	(2) 114	
1924	28	28	35	38	2810	1470	705	720	Zero	71		5	Zero	88500
1925	83	86	86	92	3240	1870	2760	1330	334	150		219	203	94700
1926	57	60	61	65	2980	1030	1330	1480	264	114		109	161	128600
1927	114	121	117	125	3580	1960	3420	1460	565	240		274	334	123300
1928	80	84	82	87	3400	1960	2510	1210	310	180		109	178	101100
1929	42	44	47	50	3060	1550	2300	1640	520	119		59	50	73700
1930	63	65	65	70	2980	1680	2350	1560	586	220		105	130	88000
1931	28	30	35	38	2480	820	-131	950	Zero	130	(2)22	30	28	126500
1932	74	78	54	58	2620	1530	1900	685	284	181		178	159	90700
1933	45	48	49	52	2620	1350	1340	1050	200	165		32	30	87400
1934	40	43	48	51	2400	1320	1050	1180	208	144	(2)45	77	75	91800
1935	86	91	80	86	2860	1780	2700	1470	690	250		178	185	78100
1936	91	96	76	81	2700	1540	2150	1560	603	266		356	415	104400
1937	75	80	64	68	2780	1370	1640	1420	230	219		234	230	109400
1938	160	170	157	168	3880	3000	4950	1690	772	295		455	439	94800
1939	41	43	47	50	2700	1320	556	1360	68	168	38	37	44	103800
1940	108	115	112	120	3220	2040	2430	1600	438	177	118	279	274	94200
1941	130	137	143	164	4180	2700	4020	1680	575	230	106	255	261	119800
1942	120	129	120	129	4010	2670	3560	1990	495	358	220	270	282	158100

(1) Minimum mean daily flow that occurred prior to September 30th. For average minimum 10 day flow see Table 2.
(2) No continuous record. Lowest measured discharge.
(3) Lowest measured discharge at mouth of river, August 19th.

* (40-year normal taken as 40-year mean (1889-1929) of natural run-off at foothill stations of major tributaries.
(50-year normal taken as 50-year mean (1889-1939) of natural run-off at foothill stations of major tributaries.

TABLE 2

AVERAGE MINIMUM 10-DAY FLOW FOR SACRAMENTO VALLEY STREAMS
FOR PERIOD MARCH 1 TO SEPTEMBER 30, 1924-1942

Year	SACRAMENTO RIVER																	
	At Kennett		Near Red Bluff		At Butte City		At Colusa		At Wilkins Slu		At Knights Ldg.		At Verona		At Sacramento	
	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.
1924	No record		8/8	2840	7/21	1580	7/23	1540			7/20	1060	No record		7/14	858
1925	No record		8/9	3400	9/1	2150	8/7	2030			8/8	1990	No record		8/7	2860
1926	8/8	2710	9/20	3030	8/10	1350	8/11	1060			8/1	1120	8/1	1620	7/28	1460
1927	8/20	3240	9/9	3580	8/20	2330	8/22	1990			8/20	2220	8/13	3420	8/23	3560
1928	9/6	3120	9/7	3490	8/19	2150	8/14	2000			8/15	1920	8/14	2760	8/15	2660
1929	9/1	2820	9/11	3060	8/19	1680	8/19	1570			8/20	1400	7/18	2440	7/18	2460
1930	9/1	2800	8/27	2980	8/20	1880	8/19	1690			8/20	1460	8/22	2640	8/5	2500
1931	8/22	2510	8/10	2550	7/28	1080	7/26	860	7/27	797	7/21	279	7/21	327	7/20	-80
1932	9/25	2570	9/7	2680	9/30	1530	8/27	1550	8/8	958	8/11	1030	8/11	1890	8/11	1980
1933	9/1	2580	8/24	2640	8/19	1370	8/23	1360	8/20	714	8/15	964	8/6	1470	8/21	1450
1934	9/21	2430	9/13	2480	8/20	1320	8/22	1330	8/19	658	8/6	773	8/10	1300	7/20	1150
1935	9/6	2780	9/6	2940	9/28	1820	8/27	1820	8/29	1180	8/10	1610	8/30	2980	8/12	2920
1936	9/30	2580	9/26	2880	8/18	1630	8/19	1580	8/18	1100	8/8	1370	8/20	2420	8/20	2540
1937	9/26	2640	8/25	2900	8/25	1450	8/27	1410	8/28	870	8/16	1120	8/16	1810	8/16	1720
1938	9/22	3680	9/19	3940	9/5	3060	8/23	3130	8/22	2690	8/10	2980	8/12	4920	8/12	5190
1939	8/25	2830	8/25	2850	8/10	1400	8/8	1370	8/5	683	7/30	785	8/5	1030	8/5	630
1940	8/29	3200	8/23	3410	8/25	2040	8/18	2140	8/18	1370	8/18	1670	8/12	2510	8/12	2550
1941	9/25	3950	9/10	4380	8/22	2830	8/24	2980	8/23	2270	8/23	2680	8/25	4010	8/24	4190
1942	9/25	3870	9/17	4140	8/22	2730	8/23	2860	8/24	1840	8/24	2390	8/23	3540	8/22	3740

No record prior to 1931

NOTE: For minimum mean daily flow see Table 1.

TABLE 2 (CONTINUED)

AVERAGE MINIMUM 10-DAY FLOW FOR SACRAMENTO VALLEY STREAMS
FOR PERIOD MARCH 1 TO SEPTEMBER 30, 1924-1942

Year	FEATHER RIVER				YUBA RIVER				AMERICAN RIVER				MOKELUMNE RIVER		CALAVERAS RIVER	
	Near Oroville		At Nicolaus		At Smartville		Near Marysville		At Fairoaks		At Sacramento		At Woodbridge		At Jenny Lind	
	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.
1924	7/8	823	8/10	0	7/31	84	No continuous record prior to 1939		8/5	5	8/4	5	9/1	1	No record	
1925	9/3	1600	8/22	460	8/31	158			8/26	237	8/27	240	8/23	33	8/15	0
1926	7/1	1720	8/15	470	9/16	126			8/25	157	8/27	180	8/11	3	8/15	0
1927	9/20	1720	8/27	670	9/25	261			9/21	309	8/27	370	9/20	2	9/15	0
1928	9/20	1330	8/13	330	9/25	212			8/23	188	8/22	230	8/30	2	9/15	0
1929	7/8	1770	7/16	583	9/25	124			9/25	94	9/30	69	7/17	33	9/10	0
1930	7/16	1840	7/18	694	9/22	235			8/20	166	8/21	162	7/1	4	9/10	1
1931	9/23	1060	7/15	0	8/31	133	8/9*	22	8/15	53	8/17	43	9/25	3	9/10	0
1932	9/23	820	9/5	293	9/10	186			9/10	202	9/14	193	8/11	249	9/10	0
1933	9/20	1120	9/5	222	9/20	169			9/9	72	9/9	70	6/23	140	8/15	0
1934	9/12	1300	9/7	308	9/7	150	8/23*	45	9/1	93	9/6	110	6/25	8	8/15	0
1935	9/12	1500	9/17	975	9/16	266			9/6	204	9/6	199	8/16	206	9/10	0
1936	9/9	1880	8/30	835	9/22	278			8/28	410	8/30	438	7/17	162	9/15	0
1937	9/9	1440	8/11	265	8/20	230			9/17	264	9/16	287	7/31	140	9/15	0
1938	9/7	2070	9/7	1020	9/8	324			9/20	462	9/16	448	9/10	212	9/15	2
1939	8/5	1380	8/6	87	9/25	182	8/15	42	9/9	47	8/8	49	4/25	44	9/10	0
1940	8/7	1650	8/10	490	8/17	280	9/1	120	8/26	340	8/26	330	8/16	122	9/15	0
1941	9/17	1820	8/23	640	9/12	260	9/14	120	9/17	320	9/19	340	7/20	146	9/25	1
1942	8/20	2090	8/21	562	9/23	399	9/23	235	9/25	270	9/25	302	7/29	139	8/27	1

NOTE: For minimum mean daily flow see Table 1.
* Single measurments only.

TABLE 3

COMPARATIVE SAN JOAQUIN VALLEY WATER SUPPLY 1920-1942

Year	Run-off in per cent of normal*				Minimum Mean daily Flow in Second-feet (1)															
	Sacramento and San Joaquin to Delta		San Joaquin at Vernalis		San Joaquin River			Merced River		Tuolumne River		Stanislaus River			Calaveras River at Jenny Lind	Mokelumne River at Woodbridge	Cosumnes River at Michigan Bar	
					near Vernalis	near Newman	at (3) Fremont Ford Br.	at Yosemite Val.R.R.	near Mouth	at La Grange Br.(4)	at Tuolumne City	at Orange Blossom Bridge	at Hatmark Ranch(5)						
	40Yr	50 Yr	40Yr	50Yr															
1920	50	52	63	66	(2)450	62									0		1		
1924	20	28	24	24	391	15	0	0	(2) 2	(2) 29	(2) 245	(2) 14	(2) 95		0	1	0		
1925	83	86	86	88	660	114	0	(2) 4	(2) 73	(2) 35	(2) 299	(2) 19	(2)161		0	3	6		
1926	57	60	55	56	565	62	0	(2) 5	(2) 53	(2) 32	(2) 286	(2) 15	(2)116		0	3	0		
1927	114	121	100	104	1290	305	0	(2)12	(2) 204	(2)204	(2) 391	(2) 29	(2)275		0	1	6		
1928	80	84	67	70	840	205	0	6	53	38	292	31	194		0	2	2		
1929	42	44	44	46	565	105	0	4	65	32	287	30	205		0	3	1		
1930	63	65	50	53	645	170	0	7	92	60	344	32	216		0	3	1		
1931	28	30	26	27	200	22	0	1	17	25	243	25	81		0	3	0		
1932	74	78	101	106	965	251	0	27	165	37	348	35	223		0	150	1		
1933	45	48	51	54	569	187	0	7	127	36	280	19	185		0	81	0		
1934	40	43	35	37	315	62	(2) 5	7	39	26	270	20	104		0	6	0		
1935	86	91	98	103	850	306	(2) 97	46	206	34	345	28	199		0	84	2		
1936	91	96	100	104	980	360	150	25	190	33	375	28	194		0	65	4		
1937	75	80	100	105	950	333	115	12	211	3	355	17	212		0	106	2		
1938	160	170	172	180	2030	702	280	66	335	8	460	22	270		1	143	14		
1939	41	43	44	46	545	202	32	2	155	3	310	13	140		0	36	0		
1940	108	115	101	105	996	340	99	7	200	3	365	17	217		0	71	1		
1941	130	137	121	127	1300	412	187	18	238	19	300	13	252		0	55	5		
1942	120	129	113	118	1450	472	200	16	242	14	520	20	210		1	64	17		

*40-year normal taken as 40-year mean (1889-1929) of natural run-off at foothill stations of major tributaries.
*50-year normal taken as 50-year mean (1889-1939) of natural run-off at foothill stations of major tributaries.
(1) Minimum mean daily flow that occurred prior to September 30th. For average minimum 10 day flow see Table 4.
(2) No continuous record. Lowest discharge measured.
(3) Prior to 1934 station maintained at Delta Bridge.
(4) Prior to 1937 station maintained at Roberts Ferry Bridge. Minimum flow at Roberts Ferry for 1937, 1938 and 1939 was 18, 20, and 34 cubic feet per second, respectively.
(5) Station at Hatmark abandoned Sept. 30, 1940. New station established at Bret Harte pump Sept. 30, 1940.

TABLE 4

AVERAGE MINIMUM 10-DAY FLOW FOR SAN JOAQUIN VALLEY STREAMS
FOR PERIOD MARCH 1 TO SEPTEMBER 30, 1924-1942

Year	SAN JOAQUIN RIVER													
	Near Friant		At Fremont Ford Br.		Near Newman		At Grayson		At Hetch Hetchy Cross.		Near Vernalis	
	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.
1924	9/17	185			8/9	17					9/2	410
1925	9/23	596			9/25	122					9/29	740
1926	9/16	578	No continuous record prior to 1936		9/19	77	No continuous record prior to 1930		No continuous record prior to 1936		8/21	590
1927	9/25	787			9/2	326					8/23	1300
1928	9/25	813			8/20	234					8/22	870
1929	9/25	477			7/21	116					8/13	591
1930	9/25	678			8/20	184	8/8	230			8/4	740
1931	9/22	111			8/23	33	8/26	24			7/20	211
1932	9/21	1040			9/5	267	9/7	410			9/6	1020
1933	9/21	1090			8/15	196	8/15	270			8/14	607
1934	9/14	360			9/3	706	8/12	123			8/14	347
1935	9/25	1210			8/27	333	9/11	449			8/13	922
1936	9/24	1200	8/18	161	8/12	387	8/17	557	8/16	835	8/11	1040
1937	9/22	1130	8/21	122	8/23	364	9/24	517	8/23	744	8/23	1022
1938	9/21	1200	9/25	306	9/24	725	9/14	941	8/26	1800	8/27	2130
1939	*9/20	727	8/10	36	8/20	219	7/25	235	7/26	443	7/25	610
1940	9/23	896	8/23	101	8/20	345	8/24	520	8/13	875	8/10	1070
1941	9/11	1220	9/12	220	9/25	470	9/15	720	9/15	1360	9/14	1480
1942	9/23	1260	9/22	211	8/30	481	9/19	688	9/14	1245	8/20	1520

* New station started "Below Friant".

NOTE: For minimum mean daily flow see Table 3.

TABLE 4 (CONTINUED)

AVERAGE MINIMUM 10-DAY FLOW FOR SAN JOAQUIN VALLEY STREAMS
FOR PERIOD MARCH 1 TO SEPTEMBER 30, 1924-1942

Year	STANISLAUS RIVER								MERCED RIVER							
	At Orange Blossom Br.		At Burneyville Br.		At Ripon		At Bret Harte		At Hatmark Ranch		At Yosemite Valley R. R.		At Cressey Br.		Near Livingston		Near Mouth	
	Date:	c.f.s.	Date :	c.f.s.	Date:	c.f.s.	Date:	c.f.s.	Date:	c.f.s.	Date:	c.f.s.	Date:	c.f.s.	Date:	c.f.s.	Date:	c.f.s.
1924															8/1	26		
1925	No record		No record		No record		No record		No record		No record		No record		No record		No record	
1926	prior		prior		prior		prior		prior		prior		prior		9/24	53	prior	
1927	to 1930		to 1940		to 1940		to 1941		to 1930		to 1930		to 1941		8/28	121	to 1930	
1928															8/15	118		
1929															9/25	89		
1930	9/15	32							8/11	241	9/25	3			6/9	97	8/16	126
1931	9/15	25							8/17	96	9/18	1			9/20	55	8/23	258
1932	9/25	35							8/11	241	8/6	18			8/7	140	8/8	190
1933	9/22	19							9/5	215	9/25	11			8/21	121	8/13	141
1934	9/20	20							8/15	137	9/25	2			9/3	82	8/18	68
1935	9/1	28							9/22	230	9/9	48			9/22	159	9/16	220
1936	8/25	28							9/26	230	8/8	37			8/10	178	9/24	216
1937	9/21	17					Station established 10/1/40		9/10	226	9/25	21			9/20	199	8/16	228
1938	9/11	20							9/16	280	8/10	76			9/12	258	9/18	342
1939	9/11	14							8/20	144	9/21	7			8/8	124	8/8	174
1940	9/24	19	9/25	98	9/24	212			8/13	248	9/14	7			9/16	160	9/17	218
1941	9/15	18	9/25	86	9/15	209	9/22	262	Station discontined 9/30/40		7/21	24	9/15	108	9/10	164	9/14	257
1942	9/26	22	9/21	99	8/15	207	8/20	232			9/24	18	9/18	104	9/18	175	9/19	250

NOTE: For minimum mean daily flow see Table 3.

TABLE 4 (CONTINUED)

AVERAGE MINIMUM 10-DAY FLOW FOR SAN JOAQUIN VALLEY STREAMS
FOR PERIOD MARCH 1 TO SEPTEMBER 30, 1924-1942

Year	TUOLUMNE RIVER										DRY CREEK	
	At La Grange Br.		At Roberts Ferry Bn:		At Hickman Br.		At Modesto Br.		At Tuolumne City		Near Modesto	
	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.	Date	c.f.s.
1924												
1925												
1926	No record prior to 1936		No record prior to 1930		No record prior to 1932		No record prior to 1940		No record prior to 1930		No record prior to 1930	
1927												
1928												
1929												
1930			8/1	78					8/3	366	7/7	41
1931			9/25	25					7/28	249	9/16	19
1932			8/27	40	8/26	105			8/28	358	8/18	50
1933			8/19	37	8/11	102			8/3	310	7/18	41
1934			9/7	28	7/1	94			9/17	284	9/25	38
1935			8/31	35	9/6	100			8/10	370	8/15	48
1936			8/28	36	8/14	123			9/13	385	9/30	62
1937	8/15	3	8/17	19	8/21	123			8/15	363	9/18	51
1938	8/21	10	8/20	29	8/24	155			8/25	468	7/31	69
1939	6/10	3	6/15	36	4/20	138			6/18	326	9/4	38
1940	8/3	4	7/21	40	7/25	110	8/14	290	8/7	380	9/9	45
1941	8/5	137	8/6	190	8/6	211	9/13	480	9/13	595	7/25	55
1942	8/5	76	8/5	127	8/6	240	8/7	577	8/6	565	8/28	58

NOTE: For minimum mean daily flow see Table 3.

TABLE 5

COMPARISONS BETWEEN 40 AND 50 YEAR MEAN FULL NATURAL FLOWS*

River and Station	40-Year Mean Full Natural Flow 1889-90 to 1928-29 (Acre-feet)	50-Year Mean Full Natural Flow 1889-90 to 1938-39 (Acre-feet)	Changes in Mean
Sacramento at Red Bluff	9,354,000	8,717,000	-7%
Feather at Oroville	5,201,000	4,853,000	-7%
Yuba at Smartville	2,653,000	2,490,000	-6%
Bear at Wheatland	402,000	373,000	-7%
American at Fairoaks	3,069,000	2,879,000	-6%
Sacramento at Sacramento	20,679,000	19,342,000	-6%
Cosumnes at Michigan Bar	407,000	382,000	-6%
Mokelumne at Mokelumne Hill	853,000	802,000	-6%
Calaveras at Jenny Lind	227,000	210,000	-7%
Stanislaus below Melones	1,350,000	1,273,000	-6%
Tuolumne at La Grange	2,070,000	1,985,000	-4%
Merced at Exchequer	1,115,000	1,069,000	-4%
San Joaquin at Friant	1,995,000	1,914,000	-4%
San Joaquin at Vernalis	6,530,000	6,241,000	-4%
Combined flow to Delta	28,695,000	26,977,000	-6%
Kings at Piedra	1,889,000	1,818,000	-4%
Kaweah at Three Rivers	443,000	433,000	-2%
Kern at Bakersfield	725,000	710,000	-2%

* (40-year normal taken as 40-year mean (1889-1929) of natural run-off at (foothill stations of major tributaries.

(50-year normal taken as 50-year mean (1889-1939) of natural run-off at (foothill stations of major tributaries.

CHAPTER II

MEASUREMENTS OF STREAM FLOW

During the season of 1942 annual stream flow measurements and records were obtained through cooperation with the Water Resources Branch of the U. S. Geological Survey for stations on the Sacramento River at Kennett, Red Bluff, Butte City, Colusa, Wilkins Slough, Knights Landing and Verona; on the Feather River at Oroville and Nicolaus; on the Yuba River at Smartville and Marysville; on the American River at Fairoaks and Sacramento; on the Mokelumne River at Woodbridge; on the San Joaquin River below Friant, near Newman and near Vernalis; on the Merced River near Livingston; on the Tuolumne River at Tuolumne City; Stanislaus River near Ripon and Bret Harte Pump.

The above cooperative stations were supplemented by stations maintained by the Division of Water Resources in connection with the San Joaquin return water measurements (See Chapter IV), and in cooperation with the Merced, Modesto, Oakdale, South San Joaquin and Turlock Irrigation Districts, the City and County of San Francisco through the Hetch Hetchy Water Supply Division and the U. S. Bureau of Reclamation, at the following places: San Joaquin River at Delta Bridge, Fremont Ford Bridge, Mud Slough, Grayson (Laird Slough) and Hetch Hetchy Aqueduct Crossing; Merced River at Yosemite Valley Railroad Crossing, Cressey Bridge, and near the mouth; Tuolumne River at La Grange Bridge, Roberts Ferry Bridge, Hickman-Waterford Bridge, Modesto and Tuolumne City; Stanislaus River at Orange Blossom Bridge and Riverbank (Burneyville Bridge). For a majority of the stations maintained by the Division of Water Resources in cooperation with various irrigation districts, et al., the records have been compiled on an annual basis.

Sacramento River at Sacramento

The record of the flow of the Sacramento River at Sacramento for the periods of low flow as given in this and previous reports, does not represent actual measurements at a station below the City of Sacramento intake. Because of tidal action during periods of low flow, a gaging station at this point is not maintained. The daily discharge record as given has been computed for the periods of low flow by using the Verona record and making due allowance for the measured inflow and draft between that station and Sacramento. When the flow is above 25,000 cubic feet per second at a staff gage reading of about 10.0 (13.1 U.S.E.D. datum) the effect of the tidal influence is lost and a direct ratio between gage height and discharge is used to determine the daily flow. In this computation it is not practicable and no attempt has been made to allow for the time required for the flow to travel from Verona to Sacramento and to make the various deductions and additions enroute at the exact time that the given Verona flow would have passed the respective points of inflow or draft. During the summer period velocities between Verona and Sacramento are low and a given flow may require a day's time or more to travel this distance. Under these conditions the computed flow at Sacramento may differ somewhat from that which would have been found if the actual flow could have been measured. Contributing to this difference also, there are the accretions or losses which cannot be measured. In the upper sections of the river the invisible accretions or losses between two points are susceptible of computation as the remaining quantity required to satisfy the equation when the flow at the upper and lower points and all definite intermediate inflows and drafts are known. With no actual measurement of the flow at Sacramento, the invisible accretions or losses between Verona and Sacramento cannot be thus defined and hence they are unaccounted for in the computed flow at

Sacramento. From the data presented subsequently in Chapter IV, it appears that some return flow might be expected in the Verona-Sacramento section, but as indicated in the tabulation of return water (Table 87) no figure for it has been given (except for the measured drains - Table 86), because it could not be derived without a record of the actual flow at Sacramento.

Table 6 is given to show the water surface elevation which could be expected to occur at various points on the Sacramento River for stream flows from 1000 to 10,000 cubic feet per second. These elevations are based on data obtained during 1942, and are subject to changes from year to year should the channel show any scour or fill at the control points. Table 7 gives, for the period March to October 1942, the average water surface elevations at various points on the Sacramento River for 15-day periods. This is the information used to determine the seasonal pumping heads for the various Sacramento River pumping plants. Tables 8 to 26, inclusive, list in downstream order discharge records for the Sacramento Valley stream flow stations while similar data for the San Joaquin Valley stations are given in Tables 27 to 48.

TABLE 6

ELEVATION OF WATER SURFACE AT VARIOUS POINTS ALONG SACRAMENTO RIVER FOR DIFFERENT DISCHARGES

Station	Elevation of Zero of Staff Gage U.S.E.D.	July 1939		July 1942		U.S.E.D. Elevation of Water Surface*									
		Av.W.L. U.S.E.D.	Av. Disch. c.f.s.	Av.W.L. U.S.E.D.	Av. Disch. c.f.s.	1000 c.f.s.	2000 c.f.s.	3000 c.f.s.	4000 c.f.s.	5000 c.f.s.	6000 c.f.s.	7000 c.f.s.	8000 c.f.s.	9000 c.f.s.	10000 c.f.s.
Sacramento	3.10	5.3	980			Flows under 10000 c.f.s. will have no appreciable effect on average gage heights due to tidal action. Tidal effect lost at elevation 13.0. Flow 25000 c.f.s.									
Verona	0.0	7.6	1280	12.0	7310	7.5	8.0	8.7	9.6	10.4	11.1	11.8	12.4	12.9	13.5
Knights Landing	(1)0.0	9.4	997	15.4	3940	10.0	12.0	14.0	15.8	17.0	17.7	18.7	(4) 20.1	(4)21.4	(4)23.5
Wilkins Slough	0.0	19.0	920	24.3	3720	19.4	21.5	23.1	24.7	26.1	27.5	28.9	30.3	31.6	32.9
Colusa	(2)0.0	36.5	1660	40.3	4730	36.0	37.4	38.5	39.6	40.5	41.5	42.9	43.8	44.7	45.6
Butte City	0.0	68.9	1620	71.5	4510	67.5	69.5	70.5	71.0	71.5	72.0	72.4	73.9	74.3	74.7
Red Bluff (Iron Canyon)	252.0	252.4	(3)3150	253.6	5660	-	-	252.3	252.9	253.4	253.8	254.2	254.6	254.9	255.3
Kennett	623.0	624.1	3100	625.5	4900	-	-	624.0	624.8	625.5	626.1	626.6	627.1	627.6	628.1

* Elevations are subject to variation because of channel changes due to scour or fill. Figures given are based upon data obtained in 1942.

(1) Weather Bureau gage 0^{0} = 7.6 U.S.E.D.

(2) Weather Bureau gage 0^{0} = 40.4 U.S.E.D.

(3) Average flow during August 2926 c.f.s.

(4) When discharge at Knights Landing exceeds 5000 c.f.s. there is usually some backwater effect. Elevations as given take average backwater into account.

TABLE 7

1942 (MARCH TO OCTOBER) AVERAGE WATER SURFACE ELEVATIONS AT VARIOUS POINTS ON SACRAMENTO RIVER
FOR BI-MONTHLY PERIODS
ELEVATIONS ARE U.S.E.D. DATUM

Station	Miles above Sacramento	Month and Period																0² of Staff Gage U.S.E.D. datum
		March		April		May		June		July		August		September		October		
		1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-30	1-15	16-31	1-15	16-31	1-15	16-30	1-15	16-31	
Sacramento	0	15.8	16.0	22.1	24.8	20.3	21.5	18.8	12.2	8.1	6.8	6.1	5.7	5.9	6.1	6.4	6.1	3.10
Conaway Ranch	12.0			NO RECORD				22.7	15.8	11.1	9.1	7.8	7.6	8.3	9.4	10.0	9.8	0.0
Central M.W.Co.	16.0	22.7	23.0	28.6	32.0	26.8	27.3	24.5	17.6	12.7	10.3	9.1	8.9	9.7	10.8	11.6	11.4	0.0
Verona	19.6	23.6	23.7	29.5	32.8	27.4	28.0	25.0	17.9	13.1	10.7	9.4	9.1	10.0	11.2	12.1	12.0	0.0
Knights Landing	34.0	28.4	28.1	32.8	35.6	31.3	31.1	28.0	21.3	16.6	14.2	12.9	12.7	13.9	15.4	16.4	16.3	0.0
State Ranch Bend	40.6	31.0	30.7	34.9	38.4	33.7	32.9	29.8	22.7	17.9	15.3	13.8	13.4	14.8	16.5	17.7	17.7	0.0
Rough and Ready	44.0	32.4	31.8	36.8	39.5	34.6	34.4	30.6	23.4	18.7	16.3	15.0	14.6	15.6	17.3	18.7	18.7	0.0
Wilkins Slough	62.9	40.5	39.5	43.6	46.8	42.3	40.3	36.7	29.5	25.3	23.2	21.9	21.3	22.3	23.9	25.0	25.5	0.0
R. D. 70 Drain	68.8	42.5	41.2	45.9	49.8	44.6	42.2	38.2	31.2	27.3	25.2	24.0	23.4	24.3	25.6	27.1	27.8	0.0
Meridian	79.8	46.8	45.6	51.6	55.3	48.3	46.5	44.5		NO		RECORDS		32.9	33.2	33.7	34.1	0.0
Colusa	89.4	50.8	49.7	55.9	59.9	52.8	51.5	48.2	43.4	41.0	39.7	38.8	38.4	38.6	39.1	39.8	40.3	0.0
Butte City	115.8	76.5	75.9	78.6	80.0	76.8	76.4	75.2	72.7	71.8	71.1	70.6	70.3	70.4	70.6	71.0	71.2	0.0
M. & T. Inc.	141.5	116.0	115.4	117.5	118.3	116.2	116.0	114.6	112.9	111.9	111.3	110.8	110.7	110.7	111.1	111.4	111.5	4.2
Gianella Br.	150.0	131.9	131.5	133.8	134.9	132.4	132.2			NO		RECORDS						127.9
Glenn Colusa I.D.	154.8	141.7	141.4	143.7	144.6	142.6	141.6	140.4	138.8	138.9	138.4	138.1	137.8	138.5	139.2	139.6	139.7	3.1
Red Bluff	193.4	247.4	246.9	250.5	251.1	248.4	248.6	247.3	245.5	244.6	244.3	244.0	243.8	243.7	243.8	243.7	243.9	240.6
Iron Canyon	198.6	256.3	255.9	258.3	259.2	256.9	257.2	256.1	254.6	253.9	253.5	253.2	253.1	253.1	253.0	253.1	253.2	252.0

TABLE 8

DISCHARGE OF SACRAMENTO RIVER AT KENNETT. - 1942

Day	Daily Discharge in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	9490	26700	9220	8340	12500	10900	5660	4350	4280	4050	3850	
2	8620	50200	9040	8090	11700	11100	5800	4040	4280	3910	3810	
3	8180	52100	9140	8660	10900	10800	5520	4050	4160	3690	4230	
4	7900	71200	8960	12400	11000	10400	5320	4360	4040	3670	4360	
5	7610	59900	8880	17500	10400	10200	5200	4390	3840	3730	4230	
6	7450	77800	8820	15100	10200	10300	5230	4350	3810	4100	4230	
7	8160	60900	8340	13200	10200	9690	5470	4440	3720	4100	*4010	
8	9930	47300	8400	12300	10500	9320	5470	4100	4140	3910		
9	9870	35400	8840	12000	11000	9060	5420	3930	4230	3920		
10	9560	30000	8880	11900	10100	8820	5140	3920	4230	3800		
11	9320	25200	9260	11600	10700	8680	4850	4390	4190	4010		
12	9340	21900	9740	11700	10000	8320	4740	4330	3900	4110		
13	8990	19600	10300	13000	9600	7820	4560	4220	3730	4160		
14	8720	17500	10700	21200	9470	7550	4970	4200	3680	4190		
15	8560	15500	10000	24700	9890	7170	4990	3910	4090	4200		
16	8560	15400	10300	22200	9850	6950	5020	3770	4060	4100		
17	8400	14000	9820	23600	9710	6850	5010	4090	4100	4010		
18	8100	13100	9490	23700	9710	7220	4850	4090	4140	3870		
19	7780	12300	9360	20600	9780	7220	4530	4150	3920	3850		
20	7540	11900	9060	18600	10200	6580	4440	4320	3680	4100		
21	7300	11500	8820	16800	10900	6280	4810	4180	3730	4100		
22	9320	10900	8270	15800	11600	6150	4810	3930	4050	4220		
23	23200	10500	8880	14400	10800	6410	4770	3800	4190	4270		
24	44700	10900	8540	13400	10500	6300	4630	3770	4020	3910		
25	48900	10400	8410	12700	18900	6090	4400	4100	3870	3770		
26	48500	10000	8230	12000	16600	5990	4140	4190	3750	3810		
27	64900	9740	8090	12600	13700	5740	4270	4220	3710	4160		
28	45600	9360	7980	12600	13000	5540	4530	4270	3780	4300		
29	34800		7870	11700	12200	5460	4460	4100	4150	4140		
30	28900		7840	12200	11500	5700	4490	3840	4140	4100		
31	24900		8140		11100		4550	3830		3920		
Mean	17840	27190	8955	14820	11230	7820	4905	4117	3987	4006	4103	
Ac.Ft. for Month	1097000	1510000	550700	881800	690700	465300	301600	253200	237200	246300	56970	

NOTE: This was a permanent station maintained throughout the year, until 1942, under Federal-State cooperation by the Water Resources Branch of the U.S. Geological Survey.

* Station discontinued on November 7, 1942 on account of backwater from Shasta Dam. See station "at Keswick" Table 8A.

TABLE 8A

DISCHARGE OF SACRAMENTO RIVER AT KESWICK - 1942

Day	Daily Discharge in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	10000	25300	9390	8380						4120	4000	5750
2	9140	51200	9240	8090						3970	3950	6100
3	8580	53300	9410	8340						3850	4300	5940
4	8280	73800	9180	11900						3800	4400	5670
5	7970	62600	9100	17600						3800	4310	5310
6	7790	78400	9010	15700						4150	4250	5330
7	8300	62800	8530	13900						4200	4050	5660
8	10100	48700	8660	13000						4020	3610	6840
9	10200	36200	8860	12600						4020	3770	7400
10	9900	30500	9030	12500						3920	4050	6640
11	9650	25500	9370	12300						4130	4120	6070
12	9610	22200	9700	12300						4170	4140	5590
13	9320	19900	10200	12600						4250	4220	5370
14	9060	17800	10600	19400						4240	4390	5310
15	8830	16000	10000	24100						4230	6020	5420
16	8810	15400	10100	21500						4200	5650	5470
17	8660	14100	9860	22800						4040	7380	5520
18	8380	13300	9480	23400						3950	10000	5420
19	7960	12600	9440	20500						3880	6980	5120
20	7790	12100	9140	18400						4120	5850	4970
21	7490	11700	8890	16900						4200	5100	4890
22	8740	11200	8380	15900						4280	4640	5370
23	22300	10600	8870	14700						4370	4840	6730
24	45400	11000	8650	13800						4000	5230	10800
25	53200	10600	8530	13200						3740	5340	15000
26	47600	10200	8340	12600						3920	5220	10600
27	66900	9980	8160	12900						4280	6340	9510
28	48400	9660	8060	13100						4420	6310	11000
29	35600		7950	12200						4320	5700	11000
30	28900		7840	12600						4250	5760	10200
31	24400		8130							4070		11400
Mean	18300	27740	9035	14910						4094	5131	7142
Ac.Ft. for Month	1125000	1540000	555600	887000						251700	305300	439100

UPSTREAM STATION DISCONTINUED APR.30, 1942
RE-ESTABLISHED DOWNSTREAM OCT.1, 1942

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U.S. Geological Survey.

TABLE 9

DISCHARGE OF SACRAMENTO RIVER NEAR RED BLUFF - 1942

Day	Daily Discharge in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	16300	35800	12800	11200	19400	14300	6640	4960	4280	4400	4380	6960
2	14000	73000	12800	10600	17000	14400	6740	4640	4600	4240	4320	7220
3	12700	78000	12600	10700	16000	14400	6690	4520	4560	4140	4540	7520
4	11800	101000	12400	22900	15300	13800	6390	4710	4420	3970	4940	6860
5	11200	121000	12200	32100	14800	13200	6220	4830	4260	3950	5030	6460
6	10600	181000	12100	27200	14100	13300	6100	4790	4080	4100	4940	6240
7	14800	120000	11800	21200	14000	12800	6200	4790	4040	4400	4940	6940
8	23000	79300	11400	18700	14200	12200	6320	4810	4140	4320	4710	7060
9	18200	57700	11400	17500	14200	11800	6240	4460	4520	4200	4080	8410
10	16100	48100	12000	17500	14400	11400	6080	4320	4600	4220	4620	8200
11	15100	39800	12800	17000	14300	11100	5770	4460	4500	4640	4790	7420
12	14400	34200	13300	16400	14100	10800	5610	4750	4420	4750	4860	6860
13	13900	30400	13800	17400	13300	10300	5400	4690	4080	4730	4880	6360
14	13100	27100	14500	32200	12800	9750	5420	4580	4010	4770	4980	6290
15	12500	24800	15000	33200	13300	9420	5740	4540	4120	4790	6030	6240
16	12400	22600	13700	31400	13800	8970	5770	4220	4280	4770	6340	6320
17	11900	21400	13500	35300	13300	8660	5790	4200	4260	4620	9610	6320
18	11400	19900	12900	37600	13000	8690	5720	4520	4280	4480	11800	6320
19	10800	18800	12600	32100	12900	8940	5400	4320	4320	4360	10600	6100
20	10400	17900	12200	27500	13000	8690	5200	4540	4030	4420	7520	5810
21	9950	17100	11800	24700	13800	7910	5290	4580	3950	4600	6490	5770
22	10500	16400	11400	22600	14700	7700	5470	4440	4100	4670	5720	6320
23	25500	15300	11200	20900	14700	7760	5400	4140	4260	4730	5490	15700
24	65700	15600	11400	19200	13800	8020	5330	4060	4400	4670	5850	24500
25	91100	15500	11100	18000	18100	7760	5090	4200	4260	4300	6270	27700
26	69300	14500	10800	17000	25700	7440	4830	4400	4140	4040	6080	17600
27	100000	14000	10600	17600	19500	7090	4730	4500	4030	4380	6790	14100
28	81500	13500	10400	20800	18000	6820	4900	4520	4040	4710	8490	18900
29	54700		10300	17400	16900	6590	4980	4560	4160	4750	7290	18300
30	43600		10100	16400	15700	6560	4960	4240	4420	4640	6990	14700
31	37000		10100		14800		4980	4140		4500		15700
Mean	27850	45490	12100	22140	15250	10020	5658	4498	4252	4460	6113	10170
Ac.Ft. for Month	1713000	2526000	743800	1318000	938000	596200	347900	276600	253000	274200	363700	625200

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey. It is located near the Iron Canyon damsite, Mile 198.6 above Sacramento.

TABLE 10

DISCHARGE OF SACRAMENTO RIVER AT BUTTE CITY - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	25800	48400	17100	11300	21300	15500	5870	3400	2680	3950	4680	8150
2	20800	60600	16500	11900	22400	15200	5870	3400	2630	4050	4570	7910
3	18100	114000	16200	11600	20700	15200	5870	3260	3120	3950	4570	8390
4	16500	120000	15600	15600	19700	14900	5870	3190	3200	3950	4680	8390
5	15200	125000	15200	30800	18700	14200	5450	3190	3030	3760	4990	7680
6	14300	148000	14900	38100	18100	13900	5260	3190	3030	3760	5100	7450
7	14300	166000	14600	32100	17400	13600	5260	3260	3030	3760	5100	7220
8	28500	145000	14300	25400	17100	13100	5070	3260	2870	4050	5100	7910
9	30800	121000	14000	22200	17100	12700	5070	3260	2950	4050	4880	7910
10	24300	95000	13700	21200	17100	12300	5070	2990	3200	3950	4360	9110
11	20800	68200	14300	21500	16800	11900	4880	2920	3380	4050	4680	8870
12	19100	54100	14900	20800	17100	11500	4690	2860	3380	4360	4990	8390
13	18100	44900	15600	19800	16500	11000	4500	2990	3480	4570	4990	7680
14	17100	38600	15900	25800	15500	10600	4330	2990	3200	4570	5100	7220
15	15900	34700	16800	36600	14900	10100	4330	2990	3030	4680	5200	7220
16	15200	31200	16800	35600	15500	9700	4330	2860	3120	4680	6080	7220
17	14600	28900	15900	35600	15500	9200	4330	2860	3290	4680	7220	7220
18	14000	26900	15600	39600	14900	8750	4330	2630	3200	4570	9830	7220
19	13400	25800	14900	40600	14500	8750	4330	2740	3290	4570	12300	7220
20	12500	24000	14200	36100	14200	8750	4160	2740	3380	4360	10800	7220
21	12200	22900	14000	32200	14500	8520	4000	2860	3290	4360	8390	6760
22	11600	22200	13700	29600	15200	6720	3850	2920	3200	4570	7450	6760
23	16800	20800	13100	27700	16100	5450	4000	2860	3290	4570	6760	8630
24	44400	19800	13100	25500	15500	5260	4000	2630	3570	4680	6300	21600
25	94000	20100	12800	23800	15500	5260	3850	2580	3760	4680	6760	30500
26	121000	19400	12500	22700	21300	5070	3780	2630	3860	4460	6990	30100
27	118000	18400	12200	21700	24400	5260	3700	2740	3760	4150	6990	19300
28	126000	17800	11900	22700	20000	6500	3550	2860	3660	4460	7910	17700
29	123000		11900	23800	18700	6290	3480	2860	3760	4680	9110	23600
30	92000		11600	21000	17700	6080	3400	2920	3760	4780	8390	20900
31	59800		11300		16500		3400	2800		4780		17700
Mean	38330	60060	14360	26100	17430	10040	4512	2956	3280	4338	6476	11590
Ac.Ft. for Month	2357000	3336000	882800	1553000	1072000	597590	277400	181800	195200	266800	385300	712400

NOTE: Station is maintained jointly by the Division of Water Resources (Water Supervision) and the Water Resources Branch of the U. S. Geological Survey. Records above 100,000 c.f.s. are from extended rating curve. Station is near Butte City bridge and is at mile 115.8 above Sacramento.

TABLE 11

DISCHARGE OF SACRAMENTO RIVER AT COLUSA - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	29000	33900	18100	12200	21700	16500	6100	3600	2880	4000	4800	8000
2	25200	33700	17300	12600	23000	15500	6000	3600	2810	4100	4700	7900
3	21700	38100	16900	12600	22200	15000	6000	3400	2960	4200	4700	7900
4	19900	40400	16400	13100	20900	15000	6000	3220	3040	4100	4600	8400
5	18400	40700	16100	23000	19900	14500	5800	3220	3040	4000	4900	7900
6	17100	42800	15700	31400	18800	13900	5600	3310	3040	3900	5100	7400
7	16100	46900	15400	31000	17900	13700	5400	3400	2880	3900	5100	7200
8	21800	48200	15200	28500	17100	13300	5300	3310	2880	4100	5200	7500
9	30200	44900	14700	26000	16900	12600	5400	3310	2880	4200	5100	7600
10	28300	40700	14500	24000	16800	12200	5300	3220	3130	4100	4700	8300
11	25400	36900	14900	23500	16900	11700	5200	3040	3310	4200	4600	8820
12	23000	34600	15500	23400	16500	11400	5000	2960	3400	4300	5000	8300
13	21600	32900	16400	22500	16600	11000	4800	3130	3400	4600	5000	7800
14	20700	31600	17000	23800	15700	10600	4600	3220	3310	4700	5100	7400
15	19600	30600	17800	31400	14900	10000	4400	3040	3130	4700	5200	7200
16	18500	29600	19100	31800	14800	9560	4500	3040	3130	4800	5500	7000
17	17700	28500	18400	31800	15400	9240	4600	2960	3220	4800	6700	7000
18	17000	27600	17700	32400	15000	8820	4600	2810	3220	4800	8000	7100
19	16200	26400	16800	32900	14600	8610	4600	2880	3220	4700	10600	7100
20	15400	24900	16000	31800	14200	8610	4500	2960	3310	4600	11500	7000
21	14700	23700	15400	30600	14100	8400	4200	2880	3400	4500	10000	6800
22	14100	22600	14800	29600	14700	7900	4100	3040	3220	4600	7700	6700
23	14700	21800	14300	28500	15400	7600	4200	2960	3220	4700	6900	7000
24	26700	20900	13900	27300	15800	7400	4200	2880	3500	4800	6500	13900
25	35700	20400	14000	25500	15300	7500	4100	2740	3700	4800	6500	24100
26	39900	20400	13700	23700	17100	7300	4000	2670	3800	4700	6900	28700
27	40200	19800	13300	22500	24000	7000	3800	2810	3900	4400	6900	24400
28	40400	18900	13000	22400	23000	6800	3600	2880	3800	4500	7200	19600
29	41200		12700	24500	20700	6500	3500	2960	3800	4700	8610	21400
30	38900		12500	22900	19300	6300	3900	3040	3800	4900	8400	23000
31	35900		12300		17900		3600	3040		4800		20400
Mean	24680	31510	15480	25240	17650	10480	4729	3075	3278	4458	6390	11250
Ac.Ft. for Month	1518000	1750000	951700	1502000	1085000	623700	290800	189100	195000	274100	380300	691900

NOTE: Station is maintained jointly by the Division of Water Resources (Water Supervision) and the Water Resources Branch of the U. S. Geological Survey. Station is at Colusa Bridge and is at mile 89.4 above Sacramento.

TABLE 12

DISCHARGE OF SACRAMENTO RIVER BELOW WILKINS SLOUGH - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	21100	21700	17500	12300	19800	16600	5260	2560	2140	3930	4970	8480
2	20700	21600	16900	12500	20000	15500	5110	2560	2080	3800	4900	8250
3	20000	21900	16300	12800	19900	14700	5040	2500	2140	3740	4830	8100
4	19400	22100	15900	12800	19500	14400	5040	2320	2260	3800	4830	8480
5	18400	22300	15600	17500	18900	13900	4970	2200	2320	3860	4970	8400
6	17300	22800	15400	21200	18100	13400	4760	2260	2380	4060	5260	7950
7	16300	24600	15200	21400	17300	13100	4470	2260	2320	4120	5330	7650
8	17700	26300	14900	21100	16500	13000	4190	2260	2260	4260	5400	7650
9	20900	25300	14600	20800	15900	12400	4260	2260	2260	4470	5400	7880
10	20900	23700	14500	20500	15900	11900	4260	2260	2380	4400	5260	8180
11	20500	22400	14600	20400	15900	11600	4190	2140	2690	4400	5040	8850
12	20100	21900	15200	20400	15500	11100	3990	1960	2930	4400	5180	8850
13	19800	21700	15900	20200	15600	10700	3800	2140	3050	4620	5330	8400
14	19400	21400	16600	20300	15100	10400	3610	2260	3050	4830	5400	7950
15	18900	21200	17300	21200	14300	9900	3430	2140	2990	4830	5470	7580
16	18000	21100	18400	21400	13900	9450	3360	2080	2930	4830	5610	7360
17	17300	21000	18200	21400	14200	9080	3490	2020	2930	4900	6480	7280
18	16600	20900	17600	21400	14300	8700	3430	1840	2990	4970	7360	7360
19	16000	20700	16900	21500	13900	8250	3490	1780	2990	4900	9680	7360
20	15400	20400	16200	21400	13600	8180	3490	1840	3120	4900	11600	7360
21	14800	20300	15500	21300	13400	8100	3240	1900	3180	4830	10600	7280
22	14200	20000	15100	21200	13700	7730	3050	1960	3240	4760	8920	7130
23	14200	19900	14600	21100	14400	7210	2990	2020	3360	4760	7880	7280
24	18500	19600	14200	20900	15000	6910	3120	1900	3490	4830	7130	10300
25	21400	19300	14100	20700	14900	6840	3120	1780	3800	4900	6840	18400
26	22000	19200	13800	20400	15300	6770	3050	1660	4060	4900	6990	20900
27	22200	18900	13500	20200	19400	6400	2870	1720	4120	4620	7210	20500
28	22400	18100	13200	20000	20200	6110	2620	1840	4060	4470	7210	19100
29	22700		13000	20400	19500	5830	2560	2020	4060	4690	8180	18900
30	22500		12800	20200	18800	5470	2560	2080	3990	4900	8850	20200
31	22000		12500		17700		2560	2140		4970		20300
Mean	19080	21440	15350	19630	16460	10120	3722	2086	2986	4537	6604	10630
Ac.Ft. for Month	1173000	1191000	944100	1168000	1012000	602200	228900	128300	177700	279000	392900	653900

NOTE: Station is maintained jointly by the Division of Water Resources (Water Supervision) and the Water Resources Branch of the U. S. Geological Survery. Station is located at mile 62.9 above Sacramento, a short distance below Wilkins Slough pumping plant of Reclamation District 108.

TABLE 13

DISCHARGE OF SACRAMENTO RIVER AT KNIGHTS LANDING - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	22900	23300	19100	12400	20600	16400	5830	2790	2730	5130	5210	9330
2	22600	22500	18300	12500	20400	15200	5460	2810	2710	5240	5090	8910
3	22100	22500	17600	12700	20500	14400	5490	2810	2710	5360	4900	8740
4	21300	23100	17200	12000	20300	14100	5460	2640	2780	5480	4920	8800
5	19600	22400	16600	14900	19600	13600	5520	2510	2920	5100	5010	9160
6	18400	20700	16300	20000	18700	13000	5240	2470	3010	4850	5300	8860
7	17300	16000	15900	20900	17700	12900	4890	2530	3070	4720	5580	8410
8	17600	24400	15600	21400	16400	12600	4580	2550	2970	4630	5710	8160
9	22200	27400	15200	21200	15400	12200	4460	2560	2980	4830	5610	8480
10	22700	26100	14900	20800	15200	11700	4490	2610	3130	4840	5490	8730
11	22300	24500	14500	20600	15200	11300	4350	2500	3410	4930	5250	9350
12	21800	23500	14600	20200	15000	11000	4330	2380	3830	4660	5240	9630
13	21200	22900	15200	20500	15200	10800	3930	2390	4030	4770	5470	9270
14	20800	22600	16600	19800	14800	10600	3700	2510	3860	5130	5560	8630
15	20400	22100	16700	20700	14000	9960	3520	2500	3790	5170	5560	8190
16	19600	22000	17800	21400	13100	9630	3410	2440	3710	5170	5710	7900
17	18600	21900	18600	21400	13300	9450	3520	2400	3610	5170	6440	7770
18	18100	21700	18000	21600	13700	9340	3520	2400	3740	5190	7510	7700
19	17600	22000	17400	21900	13500	8960	3540	2290	3640	5210	9140	7840
20	17400	21600	16300	21900	13100	8860	3560	2350	3640	5050	12000	7900
21	16200	21600	15700	21800	12800	8950	3430	2480	3630	5040	11800	7890
22	15600	21600	15300	21600	13000	8490	3220	2460	3820	4880	10400	7640
23	15200	21300	14900	21500	13400	8000	3110	2520	4010	4880	9110	7660
24	18700	20800	14400	21200	14200	7620	3190	2510	4130	4900	8090	8440
25	22300	20300	14200	21300	14200	7500	3180	2400	4420	5150	7490	16000
26	21000	20400	14000	21000	14100	7510	3150	2290	4880	5110	7460	22200
27	22000	20200	13600	20700	18400	7310	3050	2280	5120	4810	7790	23000
28	21900	20000	13600	20600	20500	7000	2850	2340	5250	4630	7630	21300
29	23300		13200	21000	19900	6640	2740	2510	5120	4690	8310	19200
30	23700		12900	21200	19500	6140	2730	2630	5080	4950	9390	21200
31	23600		12600		18000		2790	2710		5070		21300
Mean	20260	22120	15700	19690	16250	10370	3943	2502	3724	4992	6939	11210
Ac. Ft. for Month	1246000	1229000	965600	1172000	999100	617200	242500	153900	221600	306900	412900	689400

NOTE: Station is maintained jointly by the Division of Water Resources (Water Supervision) and the Water Resources Branch of the U. S. Geological Survey. It is located at the Knights Landing Railroad Bridge, Mile 34.0 above Sacramento, below the point of discharge to the river of Colusa Basin drainage via the Back Borrow Pit of Reclamation Districts 108 and 787.

TABLE 14

DISCHARGE OF SACRAMENTO RIVER AT VERONA - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	54700	61100	36200	23700	48900	45500	11600	4420	4170	7880	7400	15600
2	53400	59200	34200	24200	48300	42100	11000	4420	4170	8040	7240	15200
3	51300	58600	32200	24900	47300	39200	11400	4290	4170	8040	7080	15000
4	48100	60400	31200	28200	46000	37000	11000	4170	4290	8200	7400	16100
5	43600	63500	30200	40300	43900	35700	10700	4050	4290	8040	7880	15600
6	39000	66600	29200	53100	41300	35400	9930	3930	4550	7560	8040	14800
7	35100	73000	28400	57400	39000	35400	9570	3690	4680	7560	7880	14200
8	34300	76900	28200	57100	37400	34400	9050	3580	4420	7400	7880	14400
9	39700	72700	27700	56300	37200	32700	8540	3930	4420	7560	7880	14000
10	43400	69100	27500	55500	37400	31400	8370	3930	4420	7560	7880	13800
11	45200	66300	28200	55000	37400	30400	8200	3810	4810	7720	7720	14000
12	45200	64400	31200	54400	37400	29200	7880	3690	5330	7720	7720	14400
13	43800	62500	34000	53900	37000	27500	7240	3580	5720	7720	7880	14000
14	41800	60600	36200	54200	35400	26300	6760	3690	5590	7880	8040	13400
15	39400	59000	40800	56300	33700	25300	6600	3810	5460	7880	8040	12600
16	36700	58000	43700	57100	34200	24900	6300	3690	5330	7880	8370	12600
17	34400	57100	42600	57100	36000	24000	6300	3580	5460	7880	9750	12400
18	32300	56100	40500	57700	36000	22600	6300	3580	5590	7720	14600	12200
19	30000	55200	38200	57700	35400	21000	6300	3470	5590	7720	23500	12200
20	27600	54200	36200	57400	35200	20300	6300	3470	5600	7400	25600	12200
21	26300	52800	34400	57100	35400	19400	5860	3580	5600	7400	21000	12000
22	24900	51200	32200	56600	36700	18600	5720	3580	5700	7400	17500	12000
23	24500	49600	31000	56300	38700	17700	5330	3690	5900	7400	15400	12800
24	29600	46800	29700	55800	40500	16900	5460	3690	6150	7400	13800	21000
25	40600	44400	29000	55200	41100	16300	5460	3580	6450	7400	12800	35700
26	54100	42400	28000	54200	42900	15600	5590	3360	7080	7560	13200	42100
27	60600	40300	27000	52600	49100	14600	5330	3360	7560	7400	12400	44200
28	64900	38200	26000	51500	52800	14000	4810	3580	7720	7400	14800	42600
29	66000		25300	50900	53100	13000	4550	3690	7720	7240	16300	46300
30	65200		24400	49900	51500	12200	4680	4050	7720	7240	16500	52600
31	63300		24200		48900		4550	4050		7400		53900
Mean	43190	57860	31860	50720	41130	25950	7312	3774	5522	7632	11750	21090
Ac. Ft. for Month	2656000	3214000	1959000	3018000	2529000	1544000	449600	232000	328600	469300	699100	1297000

NOTE: Station is maintained jointly by the Division of Water Resources(Water Supervision) and the Water Resources Branch of the U. S. Geological Survey. It is located at Mile 19.6 above Sacramento at the mouth of "Cross Canal" main drain of Reclamation District 1001, and below the mouth of the Feather River.

TABLE 15

DISCHARGE OF SACRAMENTO RIVER AT SACRAMENTO - 1942

Day	Daily Discharge in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	58400	64400	37900	27800	55000	52600	15800	4960	4380	8040	7890	18600
2	56300	63200	36000	28000	54500	50500	15200	4800	4350	8210	7690	17900
3	53900	64400	34400	29500	53000	48100	15500	4560	4430	8200	7660	19900
4	50900	66600	33100	37500	51700	45400	15000	4410	4520	8460	8410	19900
5	46400	77000	32100	50900	50200	45200	14600	4390	4480	8310	8760	19500
6	41700	82100	31400	60200	48000	46100	13500	4220	4800	7830	8710	17300
7	37300	87600	31000	63200	46300	46100	12900	3930	4790	7790	8480	17000
8	38200	84500	30400	62300	46000	44300	12200	3870	4520	7620	8470	16700
9	44900	78500	30400	62000	46300	42300	11400	4190	4670	7800	8440	16200
10	47000	73500	30500	61700	46200	41700	10900	4060	4740	7810	8460	15900
11	48200	68600	31800	61400	45400	40900	10400	3920	5070	8000	8330	16000
12	48500	65800	35000	61100	45300	39100	9870	3930	5650	8030	8290	16400
13	47300	64100	37500	61100	44100	37100	8980	3780	6060	8120	8430	15900
14	45200	63200	39600	63500	42800	35500	8310	3920	5800	8290	8630	15300
15	42800	62600	44900	65400	41400	35000	8000	4020	5720	8250	8720	14500
16	40200	61100	47600	64100	42400	34400	7720	3950	5650	8330	9010	14500
17	37600	59900	46400	63800	43100	32400	7650	3820	5830	8420	11000	14300
18	35300	58700	44000	63500	43600	30100	7610	3770	5820	8110	18000	14000
19	33000	57500	41800	62600	44000	28100	7480	3670	5830	8070	36200	14000
20	30500	56300	39500	62600	44800	26600	7390	3680	5710	7770	30400	13900
21	29800	54800	37200	62900	47100	24700	6930	3800	5690	7800	24300	13700
22	28600	53600	35300	62900	49600	23500	6710	3780	5810	7810	19000	13700
23	28200	51800	33800	62900	51600	23200	6240	3920	6060	7890	16500	14000
24	32400	49100	32800	61700	51700	22900	6300	3890	6280	7900	15000	34100
25	53600	46700	31700	60500	52900	22200	6360	3790	6610	7950	13500	47000
26	75500	44600	30500	59900	59600	20000	6340	3560	7240	8130	14000	47900
27	87000	42400	29500	58700	59000	19000	5920	3590	7750	7900	14000	47000
28	89700	40200	28500	58100	59500	18000	5410	3800	7920	7980	15000	45500
29	76500		27800	56300	59500	17000	5120	3920	7960	7800	17000	50300
30	71000		27500	54800	57600	16500	5250	4240	8030	7770	16500	56000
31	67400		27500		55300		5070	4240		7910		56300
Mean	49040	62240	34750	57030	49600	33620	9228	4012	5739	8010	13160	24300
Ac.Ft. for Month	3016000	3457000	2137000	3394000	3050000	2000000	567400	246700	341500	492500	783000	1494000

NOTE: This represents the flow of the Sacramento River past Sacramento (below the City of Sacramento intake) to the Delta. Additional water flows to the Delta via the East Borrow Pit of Yolo By-Pass. (See Tables 114 and 115. The discharges of this table have been computed as follows: January 1 to June 30, November 18 to 30 and December 23 to 31 by gage height discharge relation; balance of year based on flows at Verona and making due allowances for draft & measured return flow. A gaging station is not maintained at Sacramento during periods of low flow because of tidal action.

TABLE 16

DISCHARGE OF FEATHER RIVER NEAR OROVILLE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	6220	18200	6200	7700	13000	13200	4860	2350	2320	2400	1820	4020
2	5350	23300	6220	8070	11800	12800	5110	2290	2290	2380	1940	4320
3	5400	24100	6360	11700	11200	11800	4680	2390	2320	2430	2540	4590
4	5070	31800	6040	24500	10800	12200	4140	2310	2280	2240	2350	3810
5	4740	37600	6080	25700	10300	12600	4230	2380	2300	2250	2130	3420
6	4830	88400	6340	21400	10500	12400	3810	2320	2160	2380	1960	3540
7	9500	53700	6610	18300	11100	11300	3850	2320	2130	2400	1940	3600
8	13200	35200	6650	16900	11600	10800	3720	2260	2210	2350	1890	3270
9	10200	25800	6990	16400	12200	10700	3670	2130	2180	2360	2040	3270
10	9410	22400	7360	17400	12000	10500	3540	2200	2260	2350	1920	3240
11	8600	18400	9560	17000	11800	10000	2830	2210	2140	2280	1950	3180
12	7460	16200	11400	17100	10800	9570	3090	2240	2290	2310	1960	3060
13	7300	14200	11300	19600	10100	9300	3070	2160	2100	2320	1960	2760
14	6930	12700	11400	25000	10800	9190	3030	2240	2160	2320	1960	2820
15	6420	11400	10600	21100	13600	9260	3000	2160	2220	2400	2790	3060
16	6340	10900	10000	20500	14100	8670	2950	2070	2300	2350	2790	3000
17	5830	10300	9720	20400	13800	8120	2940	2040	2390	2310	6070	2970
18	5250	9850	9590	18200	13900	7900	2830	2130	2360	2160	12200	2910
19	5200	9120	9300	17000	13700	7820	2620	2090	2380	2290	7340	2820
20	4990	8760	8490	16700	14400	7320	2810	2130	2260	2280	4620	2730
21	4740	8700	8150	15500	14500	6880	2760	2130	2360	2400	3990	2790
22	5400	8330	8070	16100	16100	6800	2650	2030	2410	2320	3710	2930
23	9300	7560	8080	15900	16400	6420	2540	1990	2380	2330	3330	6500
24	18700	7600	7800	14100	15900	6210	2610	2140	2360	2310	3330	15600
25	37200	7480	7590	13400	21700	5660	2540	2330	2380	2160	3990	13300
26	37700	7240	7220	12400	22500	5340	2280	2220	2390	2350	3430	8260
27	61100	7120	6960	13300	19700	5050	2430	2260	2250	2350	4710	7500
28	45700	6660	6790	13100	17600	5010	2400	2310	2320	2280	4950	22600
29	32000		6800	12200	15300	4810	2440	2320	2350	2350	4350	19700
30	24400		6950	12300	14400	4870	2420	2210	2360	2310	4190	14500
31	20000		7110		13800		2400	2210		2100		12200
Mean	14020	19390	7991	16630	13850	8750	3169	2209	2287	2317	3472	6202
Ac. Ft. for Month	861800	1077000	491400	989700	851700	520700	194900	135800	136100	142500	206600	381400

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey. It is located at highway crossing about 4.5 miles above Oroville.

TABLE 17

DISCHARGE OF FEATHER RIVER AT NICOLAUS - 1942

Day	Daily Discharge in Second-feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	15000	41000	11800	9890	20600	20600	5770	989	692	2180	2020	6030
2	13000	38000	11100	10600	21100	19600	5770	981	708	2260	1860	5770
3	12000	48000	10900	10900	19600	19000	5900	951	730	2180	1940	6160
4	11000	60000	10900	18100	18500	18000	5380	867	730	2260	2440	6690
5	10000	74000	10600	28300	17500	18600	4860	905	753	2260	2620	5900
6	8500	106000	10400	36900	16200	19400	4470	867	776	2100	2350	5380
7	9000	130000	10600	33500	15800	19400	4210	837	776	2180	2180	5640
8	13500	102000	10800	29200	16600	17800	3820	791	700	2260	2100	5900
9	17700	70000	10600	27000	17700	16700	3430	822	692	2350	2100	5250
10	17500	56000	10900	25900	18500	16900	3190	776	768	2260	2100	4990
11	13500	45000	12200	25600	18300	16500	2950	715	829	2350	2100	4860
12	13000	37000	14900	25600	18600	15600	2530	715	867	2350	2260	4730
13	12000	31000	16900	25300	17300	14500	2350	715	951	2350	2180	4600
14	9000	26000	17300	28600	15600	13800	2180	708	913	2350	2180	4340
15	10000	22000	20700	32700	15800	13800	2180	677	829	2350	2180	4210
16	11000	20000	20000	31300	18800	14000	2100	692	882	2350	2620	4340
17	11000	20000	17300	30200	19400	13000	2100	654	943	2350	3430	4340
18	10500	16000	15600	29500	18800	12000	2020	609	1080	2350	8800	4340
19	10000	16000	14900	28000	18800	11100	1980	556	1240	2180	16900	4210
20	9500	15000	14200	26700	18800	10800	1860	578	1280	2100	12300	4080
21	9000	14000	13300	26100	19800	9940	1700	556	1320	2180	8000	3820
22	8500	14000	12600	25300	21100	9440	1700	540	1350	2260	6550	3950
23	10000	14000	12200	25000	22300	9120	1590	571	1390	2260	5770	5770
24	14400	13000	12000	24800	23000	8800	1510	525	1470	2180	5120	16100
25	24000	12000	11700	23500	22800	8320	1430	495	1590	2180	4990	23000
26	(1)74000	12000	11300	22600	28000	7550	1350	533	1740	2180	5770	22300
27	88000	12000	10800	21300	30800	6970	1280	685	1860	2100	5640	16800
28	102000	(1)11000	10300	21900	28700	6690	1080	685	1940	2180	7400	14500
29	82000	—	10100	21500	26800	6290	1120	715	1980	2180	7550	28700
30	64000	—	9890	20200	24300	5900	1080	768	2100	2180	6550	32100
31	50000	—	9730		22300		1040	776		2100		26300
Mean	24600	38390	12790	24870	20390	13340	2707	718	1129	2237	4667	9519
Ac. Ft. for Month	(1)1513000	(1)2132000	786500	1480000	1254000	793600	166500	44140	67200	137600	277700	585300
Diversions Below Nicolaus, Ac. Ft.	(2)23880	(2)124500	0	0	0	194	271	480	410	0	0	0
Discharge to Sacramento River, Ac. Ft.	1537000	2256000	786500	1480000	1254000	793400	166200	43660	66790	137600	277700	585300

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and the Water Resources Branch of the U. S. Geological Survey. Record from March 1 to December 31 compiled by U.S.G.S. Balance of year by Water Supervisor.

(1) Discharge given for period January 26 to February 28 is at Shanghai Bend about 14 miles above Nicolaus.

(2) Inflow of Bear River (below Shanghai Bend and above Nicolaus) for period that flow for Shanghai Bend is given.

TABLE 18

DISCHARGE OF YUBA RIVER AT NARROWS DAM - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	3400	6580	2690	3080	6460	6940	2780	686	440	412	398	1820
2	3400	8300	2690	3110	5540	7430	2810	648	440	412	384	1850
3	3400	10900	2670	4680	5220	7140	2610	648	440	412	576	2580
4	3400	14500	2640	13200	5180	7770	2500	648	440	412	648	2080
5	3400	16900	2690	13800	5080	8800	2180	629	440	412	508	1720
6	3400	39200	2780	10500	5150	9580	2180	629	440	412	457	1700
7	3400	22800	2750	7990	5570	8660	1950	629	440	412	440	1750
8	3400	14400	2720	6940	6340	7860	1750	629	440	412	440	1530
9	4040	10600	2810	6660	7020	7640	1600	629	457	412	440	1410
10	4720	8840	2930	6860	6460	8300	1440	629	440	412	440	1410
11	4220	7390	4090	7180	6270	7950	1360	610	440	412	426	1390
12	3920	6380	5290	7560	5750	7140	1290	610	440	474	412	1340
13	3700	5720	5050	9030	5180	6580	1240	576	440	440	398	1340
14	3520	5220	4810	11900	5180	6820	1200	559	440	426	440	1290
15	3400	4840	4380	9210	6150	7220	1180	559	426	426	629	1320
16	3400	4510	3930	8570	6620	6700	1140	542	426	426	842	1240
17	3400	4210	3610	8040	6080	6080	1090	542	426	426	2650	1290
18	3400	3990	3520	6900	6120	5150	1050	525	398	426	9840	1220
19	3400	3770	3390	6580	6460	5360	1050	508	398	412	5600	1180
20	3400	3610	3200	6660	7470	4570	1010	508	412	412	2580	1180
21	3400	3670	3080	6620	9760	4510	968	491	398	412	1720	1180
22	3400	3770	3020	7180	11300	4440	947	491	356	412	1360	1200
23	3400	3270	2990	7350	10900	4410	926	474	370	412	1200	4520
24	1840	3390	3020	6580	10100	4050	884	474	412	412	1160	13300
25	19800	3240	2900	6340	14400	3860	842	457	412	412	1850	8800
26	22400	2990	2720	6120	16800	3520	762	457	412	412	1680	5540
27	33700	2900	2690	6500	11800	3360	743	457	412	412	2310	4090
28	21700	2810	2580	6420	9850	3080	762	440	412	412	2690	14200
29	13000		2580	5460	8480	2870	743	457	412	412	2120	13100
30	9760		2640	5360	7560	2720	724	440	412	412	1920	6940
31	7730		2810		6940		705	440		412		5390
Mean	6834	8168	3215	7413	7651	6017	1368	549	422	417	1552	3513
Ac. Ft. for Month	420200	453600	197700	441100	470500	358000	84130	33760	25130	25650	92350	216000

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey. For total flow of Yuba river near Smartville combine with flows in Table 19.

TABLE 19

DISCHARGE OF DEER CREEK NEAR SMARTVILLE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	282	405	175	88	524	211	19	7	5	3	2	61
2	222	811	175	70	340	199	30	8	4	4	2	81
3	195	830	167	504	300	191	39	7	4	4	37	84
4	177	2650	157	1190	280	182	35	6	4	4	33	80
5	163	2500	155	1750	261	172	35	6	2	3	33	76
6	152	3860	148	628	244	157	34	5	2	2	23	200
7	364	2000	133	388	228	146	31	6	2	2	22	153
8	470	1180	127	305	222	138	29	6	3	2	24	102
9	308	805	116	266	217	133	30	7	6	2	23	87
10	255	678	135	261	222	124	20	7	7	3	20	83
11	228	567	388	228	411	124	17	6	6	4	20	78
12	211	486	315	199	395	121	17	5	4	8	20	74
13	201	411	308	444	287	112	17	5	3	9	19	71
14	190	375	592	907	264	108	17	7	2	12	20	69
15	179	342	475	472	355	102	16	4	1	12	48	73
16	182	325	340	562	348	94	16	2	2	10	48	67
17	174	296	270	535	305	87	16	3	1	6	573	67
18	168	273	248	420	289	80	17	4	1	5	853	66
19	163	241	226	382	266	76	16	3	1	5	219	70
20	153	237	199	360	228	74	14	3	1	4	127	81
21	148	270	175	332	197	73	14	4	1	4	85	84
22	207	331	152	312	186	73	12	4	1	5	54	88
23	459	246	132	296	174	64	10	5	1	4	44	1670
24	1030	257	101	275	165	65	8	5	1	5	38	830
25	1940	248	94	257	488	61	6	4	1	3	35	504
26	1300	215	84	248	388	60	6	4	2	3	33	280
27	2330	199	78	325	300	54	7	3	2	3	242	209
28	1280	188	76	330	287	50	8	5	2	2	95	1250
29	758		73	266	259	49	8	7	3	2	60	553
30	571		73	295	244	28	9	8	3	3	44	291
31	465		74		228		8	7		2		237
Mean	481	758	192	430	287	107	18	5	3	4	96	249
Ac. Ft. for Month	29600	42100	11820	25580	17660	6360	1110	321	152	274	5740	15310

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the U. S. Geological Survey. For total flow of Yuba River near Smartville combine with flows in Table 18.

TABLE 20

DISCHARGE OF YUBA RIVER AT MARYSVILLE (SIMPSON LANE BRIDGE) - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1							2590	487	241	248	299	
2							2700	481	238	241	303	
3							2560	455	241	241	402	
4							2410	440	238	238	613	
5							2180	435	244	238	511	
6							2020	412	244	238	430	
7							1870	398	238	241	425	
8							1640	394	234	241	416	
9							1500	394	234	252	407	
10							1330	394	238	263	402	
11							1200	389	238	275	394	
12							1130	389	241	287	376	
13							1070	380	244	311	353	
14							1010	358	238	315	371	
15							947	344	238	307	430	
16							884	344	238	303	710	
17							870	335	241	303	*	
18							849	319	238	291		
19							814	307	234	291		
20							800	299	234	287		
21							758	295	241	287		
22							724	279	252	287		
23							704	275	238	287		
24							672	267	220	283		
25							632	263	220	291		
26							587	255	234	295		
27							535	255	238	295		
28							517	252	238	291		
29							505	248	238	295		
30							487	244	244	295		
31							487	241		291		
Mean							1193	343	238	278		
Ac. Ft. for Month							73350	21080	14160	17070		

NOTE: Station is maintained jointly by the Division of Water Resources (Water Supervision) and the Water Resources Branch of the U. S. Geological Survey. Station is at 7th St. Bridge. Discharge record determined for low water season only. For balance of year see U.S.G.S. Stations "Yuba River at Narrows Dam" and "Deer Creek near Smartville" (Tables 18 & 19). These stations replaced Smartville station in December 1941. *Beginning of highwater.

TABLE 21

DISCHARGE OF BEAR RIVER NEAR WHEATLAND

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	924	973	4190	718	869	380	20	21	11	20	17	300
2	900	894	4130	1620	869	360	15	22	12	19	17	332
3	870	876	3410	1300	981	335	13	22	12	18	81	386
4	864	798	3340	5700	960	320	12	22	11	18	102	380
5	1010	750	2590	4180	988	272	10	22	11	17	63	366
6	1110	816	2050	2190	988	248	10	22	10	19	56	406
7	4890	810	1680	1920	897	269	10	22	10	19	47	581
8	2780	882	1400	1550	799	308	10	21	12	18	49	484
9	1620	1300	1230	1790	759	296	9	17	11	16	47	444
10	1170	2890	1020	2230	616	285	9	10	10	16	45	425
11	973	5220	1020	1700	726	285	10	13	10	17	43	406
12	870	6210	949	1380	655	278	10	12	10	20	43	373
13	1170	3160	880	1150	369	245	10	12	10	22	43	344
14	3520	2210	842	1040	161	234	10	12	10	22	43	344
15	2410	1840	783	988	590	226	10	10	10	20	58	338
16	1920	1720	744	995	566	217	11	10	11	22	79	305
17	1470	1540	712	932	488	187	11	10	10	20	402	310
18	1230	2220	724	848	476	170	13	12	12	20	966	349
19	1100	1840	712	799	470	107	13	12	12	19	819	349
20	992	1550	718	911	410	94	18	12	11	19	714	316
21	1140	4190	705	932	323	108	18	12	11	19	686	322
22	1760	2840	686	932	184	63	18	12	11	20	658	332
23	2200	2170	672	925	116	40	17	12	11	20	637	1340
24	2230	2220	660	925	97	15	17	12	12	20	616	1590
25	2980	1980	653	855	315	10	19	12	12	20	595	1800
26	5480	1660	646	883	335	30	16	11	12	20	560	1120
27	2880	1480	634	883	350	64	14	11	12	19	770	814
28	1970	1740	627	869	355	73	14	10	11	19	623	1400
29	1510		692	876	355	64	15	10	10	18	484	2090
30	1230		686	890	355	40	14	10	10	18	275	1120
31	1080		672		360		19	11		17		849
Mean	1815	2028	1305	1430	541	187	13	14	11	19	321	655
Ac. Ft. for Month	111600	112600	80250	85110	33290	11150	822	871	650	1170	19120	40290

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey.

TABLE 22

DISCHARGE OF AMERICAN RIVER AT FAIR OAKS - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	4540	9940	4000	5430	9720	9480	4970	872	459	238	503	3150
2	3590	10100	4020	5580	8870	10900	4960	636	439	258	483	2730
3	3180	14100	4120	6780	8250	10300	4860	596	499	240	663	6000
4	2980	18000	4070	16100	8380	10900	4740	582	439	233	1150	3870
5	2840	24000	4160	17600	8450	12500	4650	695	475	223	775	2860
6	2700	32600	4460	12800	8890	13700	4240	596	407	218	645	2500
7	2690	28100	4500	10300	10200	13100	3930	622	321	221	609	2860
8	8560	18500	4320	9580	11500	11300	3730	632	351	207	600	2360
9	8120	13600	4640	9860	12000	11800	3360	568	515	221	543	2180
10	5980	11900	4800	10600	10800	12700	3030	463	455	233	622	2070
11	5210	10200	6020	10900	10300	11900	2760	459	487	273	627	2020
12	4970	9120	6780	11000	10200	11100	2510	573	519	300	564	1950
13	4710	8140	6400	11800	9000	10600	2180	555	479	340	564	1920
14	4490	7370	6310	16800	8930	10700	1960	582	414	354	622	1920
15	4250	6700	7390	13000	9960	11100	1820	573	443	340	672	1920
16	4050	6200	6120	11300	11000	10600	1800	573	439	351	720	1920
17	3820	5900	5580	11400	10200	8910	1750	539	358	410	2030	1880
18	3510	5600	5360	9890	10700	8760	1690	515	368	337	21900	1840
19	3280	5320	5390	9360	11600	8380	1560	503	318	312	13600	1790
20	3160	5090	5000	9960	13300	7440	1490	527	291	368	4790	1740
21	3060	5020	4750	10100	16100	6840	1440	507	279	407	3100	1740
22	3050	5420	4750	11100	17300	6600	1380	503	279	424	2430	1710
23	3710	4820	4800	11000	16400	6820	1330	483	309	463	2140	3690
24	7580	4760	4830	9430	14500	6760	1250	463	273	515	2130	27400
25	29000	4820	4650	9290	17900	6320	1280	463	270	535	2560	16100
26	29700	4530	4400	9410	22800	5610	1080	459	273	582	2610	9360
27	54600	4400	4200	9620	13400	5040	990	463	285	487	2690	6410
28	36500	4220	4180	9580	11400	4890	984	463	312	535	5050	6840
29	20300		4250	8080	10200	4930	924	463	300	535	3730	11100
30	14500		4490	7530	9050	4920	948	400	291	499	2910	8080
31	11600		4880		8650		878	443		495		6340
Mean	9685	10300	4955	10510	11610	9163	2402	541	378	360	2734	4782
Ac. Ft. for Month	595500	572200	304700	625200	714000	545300	147700	33260	22510	22120	162700	294000

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey.

TABLE 23

DISCHARGE OF AMERICAN RIVER AT SACRAMENTO - 1942

Day	Daily Discharge in Second-Feet											
	Jan	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1						9300	4480	820	496	246	528	2990
2						10600	4470	650	460	272	480	2700
3						9950	4420	581	501	246	605	4920
4						10300	4300	545	475	242	1030	3820
5						12000	4230	664	470	222	892	2870
6						13300	3920	612	506	218	691	2460
7						12800	3630	569	345	222	624	2760
8						10900	3440	612	349	202	618	2340
9						11100	3180	581	496	202	581	2180
10						12100	2830	460	506	230	605	2080
11						11200	2570	450	496	254	638	1990
12						10100	2340	557	540	282	599	1950
13						9690	2060	545	540	308	575	1890
14						9690	1860	557	440	336	618	1880
15						10000	1700	551	480	365	712	1900
16						9660	1730	557	465	395	670	1900
17						8120	1680	540	430	445	1290	1860
18		(See footnote)				7770	1620	506	360	375	14300	1820
19						7480	1490	490	400	355	14700	1770
20						6660	1420	506	326	375	4940	1700
21						6160	1380	518	290	430	3240	1690
22						5850	1310	485	290	445	2560	1670
23						6050	1270	506	331	512	2210	2670
24						6020	1200	470	300	523	2160	
25						5680	1240	470	282	563	2460	
26						5130	1070	465	286	599	2700	
27						4640	937	470	295	523	2530	
28						4430	937	490	308	599	4400	
29						4450	883	485	326	575	3660	
30						4450	901	435	313	551	2900	
31							829	445		534		
Mean						8519	2236	535	403	376	2484	
Ac. Ft. for Month						506900	137500	32910	23990	23100	147800	

NOTE: Station is maintained jointly by Division of Water Resources (Water Supervision) and the Water Resources Branch of the U. S. Geological Survey. Station is located at the "H" Street Bridge and is 6.0 miles above mouth of river. For period not covered by this record refer to station at Fairoaks (Table 22).

TABLE 24

DISCHARGE OF COSUMNES RIVER AT MICHIGAN BAR

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	630	1720	585	646	1930	991	256	59	25	18	34	256
2	448	1810	578	662	1440	960	244	58	25	18	31	240
3	371	2890	570	799	1280	940	233	57	24	18	39	321
4	326	3340	548	1930	1220	910	222	55	24	19	97	298
5	289	4330	548	1680	1200	900	204	52	23	14	99	256
6	264	6450	548	1530	1160	910	194	50	22	16	68	280
7	276	6380	555	1340	1160	889	185	47	23	17	55	387
8	686	3860	555	1250	1200	826	175	48	22	19	50	303
9	638	2740	562	1210	1210	782	166	43	23	21	48	264
10	522	2260	592	1260	1150	766	158	41	22	21	48	244
11	478	1860	1210	1280	1480	734	152	39	22	21	50	233
12	460	1600	1110	1210	1610	710	144	39	23	22	50	215
13	448	1400	1060	1300	1280	678	137	41	24	25	48	208
14	442	1240	1210	3210	1190	654	134	43	22	32	47	204
15	430	1110	1440	2110	1370	638	134	41	23	38	51	198
16	425	1020	1090	1860	1610	600	127	38	23	38	84	194
17	408	930	960	2150	1460	548	120	38	18	36	185	191
18	392	871	900	1760	1420	522	114	37	19	35	3870	185
19	371	826	871	1610	1390	503	110	35	18	34	1790	178
20	351	766	799	1530	1400	472	105	30	18	31	630	175
21	331	774	758	1460	1460	436	101	30	21	30	403	178
22	331	1040	734	1440	1470	408	95	29	17	30	312	188
23	466	790	718	1380	1430	387	92	28	17	30	264	858
24	2330	750	719	1260	1330	371	85	27	17	29	236	3300
25	5980	774	686	1190	1680	361	79	26	17	30	222	2700
26	5370	694	654	1140	2240	351	76	26	17	29	211	1530
27	14100	662	622	1210	1580	331	70	25	17	30	280	1090
28	8690	622	608	1380	1390	308	68	26	17	30	448	1130
29	4160		592	1150	1220	285	67	30	17	32	336	1420
30	2910		600	1070	1130	272	65	27	18	34	280	1060
31	2130		622		1040		62	26		34		890
Mean	1786	1911	761	1434	1391	614	135	38	21	27	346	619
Ac. Ft. for Month	109800	106100	46800	85300	85550	36560	8280	2360	1230	1650	20560	38030

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey.

TABLE 25

DISCHARGE OF COSUMNES RIVER AT McCONNELL

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1	1260	2350	635	609	1450	1030	252	45	20	12	22	260
2	930	2230	613	625	1810	1020	235	41	21	10	25	235
3	2450	2910	609	677	1430	998	218	38	20	11	31	247
4	2690	3470	629	1330	1280	952	212	38	18	10	41	293
5	1190	2670	625	2100	1240	930	210	34	17	11	98	255
6	393	5570	625	2930	1190	936	206	40	19	11	86	230
7	355	7530	625	1860	1170	925	192	36	17	10	59	322
8	447	5280	625	1440	1170	880	186	36	16	11	50	311
9	820	3600	625	1310	1170	835	170	32	19	12	46	255
10	661	2780	629	1300	1170	804	152	30	15	14	44	230
11	565	2260	1080	1380	1280	777	134	34	14	16	43	215
12	512	1930	1470	1310	1720	732	136	32	13	17	42	206
13	495	1690	1170	1270	1480	685	134	32	14	16	42	194
14	459	1460	1150	1900	1270	647	132	34	18	19	42	190
15	435	1290	1850	2890	1250	621	129	32	16	23	42	188
16	429	1170	1670	2120	1630	607	128	34	13	29	46	180
17	411	1070	1130	2190	1570	564	118	35	16	32	117	172
18	405	972	995	2250	1500	543	112	35	14	29	942	170
19	392	907	922	1880	1470	512	106	28	13	27	2370	164
20	372	853	844	1720	1460	480	100	23	14	27	1300	158
21	355	810	786	1600	1490	448	92	23	15	26	595	152
22	355	1050	733	1530	1530	420	87	22	16	22	395	156
23	376	953	713	1480	1510	400	81	24	15	21	315	276
24	1209	817	701	1380	1400	378	76	22	12	21	280	1700
25	3890	851	677	1240	1380	354	70	22	11	21	255	2900
26	6540	765	645	1180	1950	334	66	23	13	26	238	2620
27	7370	719	617	1140	1900	316	58	19	13	25	240	1440
28	10300	677	597	1410	1530	300	49	16	14	22	392	1090
29	7760		593	1300	1340	282	48	19	18	21	378	1730
30	4370		597	1140	1160	268	48	21	17	22	294	1480
31	3070		609		1080		47	22		25		1130
Mean	1976	2166	832	1550	1419	633	129	30	16	19	296	618
Ac. Ft for Month	121500	120300	51150	92210	87230	37640	7900	1830	934	1190	17590	37980

NOTE: This station is maintained by the U. S. Bureau of Reclamation.
* On January 28 it was observed that 4700 c.f.s. were by-passing station. This flow was in addition to flow recorded in tabulation. By-passing of station commences when flow at McConnell approximates 8000 c.f.s.

TABLE 26

DISCHARGE OF MOKELUMNE RIVER AT WOODBRIDGE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	922	4460	1000	690	2680	2620	779	155	125	423	468	575
2	917	3360	858	752	2560	2100	1160	242	250	428	504	572
3	1230	1790	790	904	2760	1650	1400	100	268	423	492	572
4	1300	1640	781	1120	2120	1280	1470	203	353	458	478	570
5	1320	2120	915	1570	2260	1190	1480	243	335	450	486	564
6	1720	3310	937	1700	2280	1130	1420	242	317	438	488	556
7	2150	3800	939	1710	2560	1120	1120	272	101	430	490	442
8	2410	4010	868	1640	2610	1080	994	236	114	430	490	547
9	2490	3260	744	1470	2300	1090	845	220	270	417	504	561
10	1350	2650	742	1450	2160	1640	686	64	312	415	662	878
11	852	2770	1220	1450	2180	1900	472	133	314	423	564	1270
12	759	2820	1560	1430	2190	2590	448	210	324	432	540	1390
13	729	2810	1630	1380	2190	3510	392	253	357	434	540	1620
14	706	2600	1540	1530	2120	3710	320	264	118	432	588	1710
15	695	2300	1320	1710	1680	3740	278	253	233	426	553	1710
16	682	1580	1260	1740	1800	3760	351	203	188	442	549	1720
17	679	1630	1150	2000	2060	3820	529	82	194	454	632	1340
18	673	1970	1090	2100	2060	3630	206	105	248	454	794	733
19	653	1950	1310	1860	2080	3240	218	239	324	446	873	655
20	660	1650	1460	1570	2290	2990	137	266	225	436	763	618
21	655	1540	1580	1490	2550	2400	214	278	172	396	653	456
22	651	1500	1600	1480	2780	2000	249	292	324	417	605	601
23	662	1290	1160	1570	3300	1590	213	284	389	450	503	630
24	1050	1220	1150	1800	3880	1290	204	89	382	452	603	660
25	1860	1210	1030	2130	4170	818	164	99	356	452	616	640
26	2390	1180	956	2260	4260	672	182	172	358	454	587	353
27	3300	1160	943	2280	4380	626	148	194	396	460	361	557
28	4740	1040	946	2200	4430	422	128	214	428	470	582	571
29	4900		883	2020	4510	325	86	371	423	474	575	676
30	4790		708	2780	3690	290	67	167	413	474	448	623
31	4720		699		2690		114	74		462		564
Mean	1697	2236	1089	1680	2761	1941	531	201	287	440	566	804
Ac. Ft. for Month	104400	124200	66980	99940	169700	115500	32680	12340	17080	27080	33700	49460

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey. It is located just below dam of Woodbridge Irrigation District.

TABLE 26A

DISCHARGE OF CALAVERAS RIVER AT JENNY LIND

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	784	728	212	160	790	182	54	11	1	3	0	60
2	382	695	198	153	820	172	52	11	1	4	0	51
3	245	1050	192	160	530	172	50	12	1	4	0	50
4	194	1010	187	820	410	152	48	10	1	4	0	52
5	167	1790	178	628	360	152	46	10	1	4	0	53
6	149	2300	168	604	360	134	44	10	1	4	0	50
7	138	2520	163	457	298	134	42	9	1	4	0	53
8	149	1980	158	350	272	129	40	8	1	4	0	70
9	248	1210	154	313	225	126	35	7	2	2	0	72
10	212	872	154	297	214	118	33	6	3	1	0.2	65
11	172	680	428	297	260	103	32	7	3	0.2	6	60
12	151	560	625	277	440	103	30	8	3	0.2	19	58
13	140	475	445	250	410	103	28	8	3	0.2	22	56
14	138	414	418	869	372	96	28	7	3	0.2	23	55
15	135	364	1050	1100	285	96	27	8	3	0.2	25	54
16	129	324	860	692	285	90	26	8	4	0.2	29	52
17	126	291	570	946	335	90	26	7	4	0.1	37	50
18	122	274	500	924	310	90	25	7	4	0.1	1250	48
19	115	253	440	692	285	90	25	6	4	0.1	1720	47
20	109	241	380	546	260	84	24	6	4	0.1	930	46
21	99	232	330	455	225	81	23	4	3	0	404	45
22	89	288	280	402	214	78	23	2	3	0	191	44
23	95	313	235	362	214	75	23	1	2	0	105	186
24	1040	270	220	318	182	72	22	1	2	0	68	1640
25	3490	274	210	294	172	69	19	1	2	0	57	2240
26	4320	264	205	274	335	66	16	0.4	2	0	49	1740
27	6280	244	197	257	285	63	14	0.4	2	0	55	872
28	6040	220	188	316	236	60	14	0.4	2	0	85	490
29	4260		180	449	196	58	14	1	2	0	111	460
30	3070		172	400	192	56	12	1	2	0	83	375
31	1760		164		192		12	1		0		279
Mean	1114	719	318	469	321	103	29	6	2	1	176	306
Ac.Ft. for Month	68520	39940	19560	27890	19760	6130	1800	346	141	71	10450	18790

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey.

TABLE 27

DISCHARGE OF SAN JOAQUIN RIVER BELOW FRIANT - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	3410	2690	1720	2630	4280	5900	5770	2080	1420	1340	869	968
2	2460	2330	1600	2760	4380	6990	5880	1920	1420	1260	814	1040
3	2080	2340	1790	3050	4100	7540	5930	1820	1400	1180	827	960
4	1940	2650	1960	4350	3900	7280	6120	1830	1380	1060	890	1060
5	1790	2800	2000	5500	4250	7990	6790	1820	1340	976	932	1120
6	1750	3340	1990	4490	4550	8660	6720	1800	1330	1060	904	992
7	1820	4360	2000	4150	5280	9190	6670	1800	1290	1070	869	688
8	1840	4170	2030	4080	5930	9320	6460	1850	1320	1080	897	827
9	1910	3120	2060	4070	6240	8980	6270	1800	1360	1060	688	911
10	1910	3040	2210	4410	6430	9280	6090	1730	1340	1050	772	1000
11	1800	2810	2690	4520	6140	9720	5850	1740	1340	1010	808	1010
12	1650	2560	3240	4430	5720	9780	5010	1750	1310	1010	796	1080
13	1810	2450	3180	4730	4900	9800	4450	1870	1300	1040	820	1010
14	1890	2230	2890	6200	4710	9760	4170	1890	1280	1060	754	802
15	1900	2120	3050	6400	4620	9640	4320	1810	1260	1060	718	890
16	1900	2030	2840	5690	4640	9550	4850	1770	1310	1060	670	1000
17	1880	2040	2650	5580	4520	9300	4920	1710	1330	1060	848	1060
18	1710	2070	2600	4950	4670	8880	4340	1660	1290	1000	1280	1060
19	1620	2030	2540	4360	5580	8860	3840	1650	1270	1020	3800	1060
20	1620	1970	2420	4390	6570	8660	3490	1640	1240	1140	3080	984
21	1700	2010	2280	4910	7870	8070	3350	1640	1150	1000	1880	890
22	1690	2170	2250	5300	9000	7300	3230	1620	1270	946	1370	911
23	2000	2060	2240	5420	9590	7420	3190	1550	1330	918	932	1100
24	2050	1970	2280	5200	9930	7280	3120	1480	1340	932	1120	1530
25	2990	2000	2410	5080	10100	7180	3050	1560	1340	911	1200	2400
26	3690	1880	2320	5120	10400	7060	3010	1500	1320	892	1160	1900
27	3660	1930	2200	5000	10200	5740	2700	1540	1210	862	968	1590
28	5420	1820	2130	5100	9420	5240	2610	1530	1100	897	1040	1200
29	4570		2040	4800	7980	4980	2480	1480	1300	918	984	1360
30	3540		2030	4390	6750	5610	2400	1470	1280	918	802	1380
31	3190		2310		5550		2190	1420		904		1430
Mean	2361	2464	2321	4702	6394	8032	4493	1701	1306	1019	1116	1136
Ac. Ft. for Month	145200	136800	142700	279800	393100	477900	276200	104600	77690	62690	66430	69840

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey.

TABLE 28

DISCHARGE OF SAN JOAQUIN RIVER AT DELTA BRIDGE* - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	615	985	515	90	715	1350	965	1			0	13
2	760	1020	477	99	675	1420	700	0			0	9
3	840	975	438	123	625	1420	575	0			0	5
4	885	900	397	142	585	1380	555				0	5
5	875	835	367	178	570	1300	570				0	14
6	815	790	373	247	520	1200	595				0	14
7	740	780	393	381	477	1140	625				0	15
8	665	800	399	520	467	1120	650				0	23
9	610	840	395	560	470	1120	680				0	28
10	575	885	360	560	505	1150	700				0	13
11	565	945	324	570	575	1190	705				0	2
12	565	950	318	640	645	1250	680				0	7
13	565	925	357	655	705	1310	600	FLOW	FLOW	FLOW	0	34
14	545	875	407	655	750	1370	540				0	55
15	530	830	570	650	780	1410	407				0	68
16	520	780	620	660	745	1450	345				0	74
17	410	735	650	720	595	1490	282				0	57
18	414	690	685	770	485	1520	232	NO	NO	NO	0	56
19	480	645	690	810	431	1540	249				0	77
20	535	615	645	820	377	1540	266				0	93
21	625	605	580	810	379	1550	263				0	107
22	610	590	530	765	455	1550	213				104	109
23	505	560	483	705	565	1550	123				250	130
24	490	565	440	700	670	1530	61				210	152
25	520	595	379	710	760	1510	45				142	150
26	580	605	316	740	825	1470	39				77	169
27	645	575	273	765	880	1420	26				51	216
28	710	550	221	795	945	1350	19				52	316
29	795		182	760	1030	1260	16				47	371
30	850		138	740	1140	1150	10				26	352
31	920		120		1260		4					276
Mean	637	766	423	577	665	1367	379	0	0	0	32	97
Ac. Ft. for Month	39190	42540	26000	34330	40870	81340	23300	2	0	0	1902	5970

* Also called Turner Island Bridge.

NOTE: Station maintained by U. S. Bureau of Reclamation; intermittent measurements of flow made by Water Supervisor. Station is located at county road bridge eight miles east and six miles north of Los Banos; Mile 158.7 above mouth of San Joaquin River. An undetermined amount of water by-passes this station through Pick Anderson Slough and other channels.

TABLE 29

DISCHARGE OF SAN JOAQUIN RIVER AT FREMONT FORD BRIDGE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2640	3660	2700	1320	3240	3830	4100	645	214	323	159	750
2	2920	3730	2630	1230	3190	3920	4000	600	218	325	141	700
3	3210	3770	2550	1280	3110	4000	3790	565	219	309	145	680
4	3380	3790	2460	1430	3000	4070	3370	505	218	287	155	660
5	3480	3770	2300	1610	2900	4070	2970	450	216	281	159	650
6	3530	3700	2270	1800	2820	4120	2770	392	223	281	165	675
7	3510	3610	2250	2020	2700	4110	2740	351	235	278	173	690
8	3410	3560	2260	2270	2600	4080	2750	325	233	279	185	710
9	3240	3580	2260	2440	2540	4020	2780	308	247	256	234	730
10	3050	3610	2240	2560	2550	3950	2810	302	253	250	330	740
11	2900	3640	2200	2640	2610	3890	2840	300	241	256	392	705
12	2800	3670	2110	2720	2710	3870	2880	295	221	248	414	670
13	2760	3710	2130	2810	2840	3910	2850	291	216	242	414	675
14	2720	3710	2250	2880	2950	3970	2760	289	212	235	407	735
15	2690	3670	2440	2930	3040	4010	2600	279	214	246	402	800
16	2650	3560	2660	2990	3110	4060	2380	274	218	250	397	835
17	2590	3460	2920	3150	3140	4080	2170	276	216	259	402	850
18	2450	3330	3080	3200	3020	4160	1990	281	210	265	417	810
19	2400	3210	3110	3300	2770	4190	1820	279	204	265	409	785
20	2470	3090	3080	3370	2530	4220	1820	281	221	263	394	815
21	2560	2990	3000	3400	2340	4250	1840	274	221	256	384	865
22	2670	2940	2860	3390	2310	4260	1810	268	212	252	535	910
23	2700	2910	2710	3310	2430	4270	1660	262	219	252	1130	950
24	2640	2930	2560	3230	2580	4270	1400	247	218	261	1550	1100
25	2630	2880	2430	3140	2760	4280	1150	235	204	267	1540	1260
26	2720	2830	2270	3100	2940	4280	1020	225	204	265	1320	1230
27	2970	2800	2110	3130	3150	4270	945	221	199	248	1040	1300
28	3180	2770	1950	3170	3330	4250	865	218	214	201	865	1580
29	3310		1810	3230	3460	4220	810	216	241	187	815	1880
30	3470		1640	3250	3590	4160	765	208	268	187	795	2090
31	3590		1510		3710		695	208		169		2140
Mean	2943	3389	2413	2677	2902	4103	2231	318	222	256	529	967
Ac. Ft. for Month	181000	188200	148400	159300	178500	244100	137200	19600	13200	15740	31470	59440

NOTE: This is a recording gage station at the county bridge on the road between Gustine and Stevinson, Mile 129.5 above mouth of San Joaquin River and 5.7 miles above the mouth of the Merced River. Recorder operated by U. S. Bureau of Reclamation. Measurements of flow made by Division of Water Resources and Bureau of Reclamation. Additional water during high flow periods passes this station via Mud Slough. See Table 30.

TABLE 30

DISCHARGE OF MUD SLOUGH (BRANCHES COMBINED) AT GUSTINE-STEVINSON HIGHWAY - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	750	2800	885	53	1480	2780	4120	4	1			51
2	995	3150	815	43	1410	3180	3520	4	1			54
3	1360	3430	745	34	1320	3520	2660	4	1			56
4	1770	3600	665	28	1190	3900	1680	4	1			58
5	2100	3430	580	104	1080	4190	1160	4	1			60
6	2260	2990	515	201	995	4260	940	4	1			62
7	2180	2580	500	345	880	4190	915	4	1			65
8	1860	2390	510	515	790	3940	920	4	1		FLOW	67
9	1410	2460	510	655	740	3660	950	4	1			69
10	1130	2600	495	755	745	3300	980	4	1			71
11	970	2790	464	830	800	3020	1020	4	1			74
12	880	2860	405	900	890	2950	1060	4	1			77
13	845	3050	415	985	1020	3130	1030	4	1	FLOW	NO	80
14	815	3050	500	1060	1130	3350	930	4	1			82
15	790	2830	655	1110	1240	3600	790	4	1			85
16	755	2410	845	1180	1320	3840	600	3	1			88
17	700	2030	1100	1370	1360	3970	443	3	1			90
18	590	1640	1280	1430	1210	4510	315	3	1			93
19	555	1350	1320	1580	940	4770	209	3	1	NO		96
20	605	1180	1280	1690	725	4990	212	2	1			99
21	680	1070	1190	1750	565	5170	223	2	1			101
22	775	1010	1040	1720	545	5320	206	2	1			104
23	800	980	890	1590	640	5410	126	2	1			105
24	745	1000	755	1470	775	5410	17	1	1		44	107
25	735	980	640	1360	935	5460	2	1	1		38	108
26	815	980	515	1310	1130	5460	2	1	1		40	109
27	1040	975	401	1340	1370	5410	3	1	1		43	110
28	1310	940	289	1390	1620	5220	3	1	1		45	155
29	1590		204	1460	1860	4940	3	1	1		47	285
30	2070		116	1500	2150	4550	3	1	1		49	390
31	2500		62		2450		4	1				420
Mean	1174	2159	664	992	1139	4247	808	3	1	0	10	112
Ac. Ft. for Month	72160	119900	40830	59020	70030	252700	49680	175	60	0	607	6885

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and U. S. Bureau of Reclamation. To determine total flow passing the Gustine-Stevinson highway (Fremont Ford Bridge road) combine the flow in this table with that shown in Table 29.

TABLE 31

DISCHARGE OF SAN JOAQUIN RIVER NEAR NEWMAN - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	3560	7380	5080	2600	7310	10200	9480	1010	475	597	379	1040
2	4010	7700	4940	2410	6970	10600	9160	967	472	611	352	1000
3	4450	7940	4780	2440	6760	11000	8630	923	495	618	345	989
4	4950	8180	4580	2640	6530	11500	7720	847	485	580	348	980
5	5410	8260	4390	2960	6240	11800	6660	790	488	575	350	962
6	5770	8120	4230	3510	6030	12000	5900	720	522	572	350	962
7	6280	7940	4090	4940	5930	12000	5500	669	558	548	350	1010
8	6460	7620	4080	5200	5920	12000	5190	624	537	530	358	1040
9	6190	7110	4080	4950	6090	11500	4980	609	522	524	394	1060
10	5720	7400	4070	5210	6500	9860	4920	621	540	527	478	1060
11	5300	7450	4050	5660	6760	8770	4870	594	546	552	548	1030
12	5030	7490	3970	6060	6960	8560	4850	573	502	583	576	980
13	4880	7550	3950	6130	7120	9680	4820	549	490	586	583	998
14	4810	7710	4040	6120	6950	10500	4610	552	480	586	576	1060
15	4760	7700	4280	6770	6730	11000	4280	543	475	580	569	1120
16	4670	7490	4810	7510	6660	11300	3840	549	478	572	566	1160
17	4600	7110	5920	7980	6740	11500	3380	567	475	566	580	1170
18	4420	6720	6470	8400	6630	11800	3040	549	485	580	608	1140
19	4210	6300	6550	8720	6210	11800	2720	531	482	597	622	1090
20	4220	5930	6460	8700	5700	11800	2590	528	505	586	597	1110
21	4320	5580	6290	8650	5860	11900	2590	534	520	555	566	1160
22	4550	5410	5810	7980	6310	12000	2550	528	518	562	650	1210
23	4730	5320	5440	7380	6660	11800	2370	515	512	569	1160	1250
24	4710	5280	5130	7760	6950	11500	2040	505	520	562	1660	1380
25	4740	5270	4820	7810	7260	11500	1700	495	522	520	1780	1600
26	4910	5220	4520	7640	7630	11500	1490	475	512	505	1640	1600
27	5230	5210	4210	7580	8010	11300	1390	475	515	493	1360	1680
28	5710	5170	3700	7640	8440	10800	1260	470	543	442	1170	1880
29	6280		3370	7800	8840	10100	1180	475	561	421	1100	2210
30	6570		3100	7840	9260	9730	1120	490	573	409	1070	2520
31	6990		2830		9730		1060	502		394		2680
Mean	5111	6841	4646	6233	6958	11040	4061	606	510	545	723	1295
Ac. Ft. for Month	314300	380000	285700	370900	427800	657100	249700	37250	30360	33520	43010	79600

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey. It is located at Hills Ferry Bridge, Mile 123.7 above mouth of San Joaquin River and just below the mouth of the Merced River.

TABLE 32

DISCHARGE OF SAN JOAQUIN RIVER AT GRAYSON - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	3300	7040	5400	3280	8550	10310	10170	1230	840	840	750	1220
2	3640	7325	5350	3050	8225	10850	9700	1230	805	845	700	1110
3	3925	7620	5220	2920	7900	11575	9600	1310	760	845	640	1070
4	4400	8250	5050	3040	7600	12275	9420	1350	760	850	595	1080
5	4800	8800	4930	3400	7230	12300	8670	1240	770	855	590	1120
6	5200	8900	4750	3875	6950	12200	7670	1160	790	855	600	1160
7	5575	8940	4575	4550	6650	12150	6520	1090	870	850	590	1250
8	6030	8600	4480	5630	6450	12100	6130	1030	845	830	560	1160
9	6300	8080	4430	5900	6430	12100	5750	990	825	810	560	1170
10	6200	7850	4410	5930	6650	12040	5550	950	790	845	600	1180
11	5900	7750	4435	6140	7000	11840	5480	980	820	870	670	1190
12	5525	7620	4425	6460	7250	11600	5450	950	795	980	720	1170
13	5320	7600	4420	6770	7300	11320	5420	920	760	990	750	1150
14	5230	7750	4440	6950	7310	11670	5350	905	690	1000	760	1160
15	5160	7880	4490	7150	7260	11800	5150	845	680	990	755	1200
16	5100	7880	4600	7650	7220	11820	4800	870	660	965	760	1250
17	5050	7700	5280	8170	7200	11920	4280	1010	640	965	765	1280
18	4975	7430	6160	8600	7150	11960	3870	970	625	965	780	1300
19	4820	7175	6600	8960	7420	11980	3520	970	640	980	790	1270
20	4700	6820	6800	9250	6550	11990	3300	860	665	970	790	1260
21	4700	6450	6850	9320	6350	11980	3150	840	760	940	770	1290
22	4800	6130	6680	9350	6570	11970	3000	830	760	900	760	1350
23	4950	5900	6360	8750	7200	11950	2710	835	760	900	850	1400
24	5150	5725	5975	8090	7350	11920	2440	840	740	915	1280	1470
25	5500	5650	5620	8200	7430	11870	2150	840	740	960	1530	1630
26	5650	5600	5220	8350	7850	11850	1930	825	760	920	1620	1730
27	5220	5520	4920	8200	8570	11840	1785	810	810	900	1510	1770
28	5800	5470	4400	8080	9050	11800	1705	795	820	860	1400	1860
29	6100		4150	8100	9120	11700	1595	800	835	855	1340	2070
30	6500		3790	8500	9110	10920	1580	870	840	820	1280	2400
31	6730		3525		9550		1520	930		820		2700
Mean	5234	7266	5088	6754	7498	11787	4817	970	762	900	869	1401
Ac. Ft. for Month	321800	403500	312900	401900	461000	701400	296200	59650	45330	55320	51700	86120

NOTE: Recording gage station maintained jointly by Division of Water Resources, City of San Francisco, Modesto Irrigation District and Turlock Irrigation District. Station is at Laird Slough Bridge, Mile 96.05 above mouth of San Joaquin River.

TABLE 33

DISCHARGE OF SAN JOAQUIN RIVER AT HETCH HETCHY AQUEDUCT CROSSING - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	6600	9700	8250	5300	11940	14250	12140	1890	1420	1880	2040	2220
2	6400	10050	8100	5100	11600	14500	11720	1860	1610	1900	1990	2180
3	6000	10400	7050	4750	11450	16050	13020	1840	1630	1895	1940	2220
4	6250	10750	7500	4750	11050	17600	14100	1800	1610	1960	1900	2500
5	6520	10750	7350	5000	10400	18400	14400	1630	1640	1980	1850	3120
6	6800	11140	7130	5400	10250	19300	13650	1560	1680	1960	1780	3100
7	7100	11800	6850	6000	10040	20850	12600	1500	1790	1930	1750	3100
8	7500	12060	6650	7050	9700	22600	11060	1430	1820	1900	1730	3130
9	8300	10300	6250	7850	9800	23400	9100	1390	1790	1860	1720	3210
10	8500	9990	6200	8050	10150	22700	8160	1250	1770	1920	1720	3240
11	8350	9900	6340	8250	10400	21700	7800	1210	1760	2050	1760	3290
12	8000	9840	6350	8490	10800	21100	7350	1190	1760	2210	1800	3300
13	7700	9800	6350	8790	10770	20800	6750	1190	1760	2200	1810	3270
14	7550	9800	6500	9350	10460	20700	6580	1190	1745	2170	1820	3200
15	7500	9820	6850	10100	10000	20320	6340	1270	1730	2140	1820	3300
16	7420	9850	7450	10800	9800	20200	6100	1320	1730	2140	1820	3400
17	7350	9800	7950	11200	9950	20500	5620	1300	1680	2140	1810	3440
18	7300	9650	8700	11300	9700	20500	5700	1270	1660	2140	1800	3460
19	7100	9810	9320	11500	9400	20200	5230	1260	1630	2150	1820	3470
20	6900	9650	9530	11650	9250	20000	4900	1260	1710	2120	1820	3520
21	6820	9310	9700	12000	9500	19700	4520	1260	1760	2060	1800	3580
22	6900	9100	9560	12550	10550	18940	3920	1445	1710	2000	1800	3630
23	7000	8850	9200	12900	12200	17950	3720	1440	1660	1980	1820	3680
24	7200	8800	8850	13100	14000	17060	3580	1260	1650	1970	2100	3760
25	7600	8850	8750	13200	14700	16400	3320	1270	1640	1995	1820	3960
26	8300	8850	8400	13100	15260	16360	2940	1570	1650	2020	2720	4060
27	8500	8800	8050	12950	17900	16600	2520	1620	1720	1995	2700	4040
28	8700	8500	7550	12750	19800	16020	2360	1600	1810	1970	2540	4060
29	9300		6900	12640	18550	14400	2220	1580	1780	1970	2360	4220
30	9290		6200	12500	16900	12250	2090	1560	1880	1970	2250	4500
31	9310		5500		15400		2030	1530		1990		4750
Mean	7550	9854	7614	9612	11989	18712	6953	1443	1706	2018	1947	3416
Ac. Ft. for Month	464300	547300	468200	572000	737200	1113400	427500	88750	101500	124100	115900	210100

NOTE: Recording gage station maintained by City of San Francisco Public Utilities Commission (Hetch Hetchy Water Supply) and Division of Water Resources. Station is at Mile 82.65 above mouth of San Joaquin River.

TABLE 34

DISCHARGE OF SAN JOAQUIN RIVER NEAR VERNALIS - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	7540	11400	9160	6700	16700	18700	13900	2200	1650	2000	2310	2800
2	7250	12000	8800	6480	16100	18400	13500	2100	1750	2000	2270	2800
3	6760	12600	8380	6200	15900	19600	14500	2050	1850	2050	2130	3030
4	7140	13500	8440	6150	15500	21300	15900	2000	1800	2150	2090	3240
5	7360	13700	8380	6540	15000	22200	16400	1900	1800	2170	2020	3900
6	7660	14300	8140	7120	14800	23000	16000	1850	1900	2140	1960	3830
7	7720	15400	7960	7770	14400	24300	15000	1750	2050	2110	1950	3840
8	8140	16000	7780	9050	14000	26000	13200	1700	2050	2100	1940	3740
9	8920	15000	7300	10300	14100	27100	10400	1650	1990	2010	1950	4090
10	9220	14900	7080	10800	14500	26800	8990	1600	2000	2090	1960	4220
11	9160	14300	7360	11200	15200	26000	8330	1600	2000	2250	2010	4310
12	8860	14100	7540	11800	15500	25200	7890	1550	2000	2450	2080	4330
13	8380	14000	7540	12400	15500	24800	7350	1520	2000	2400	2110	4270
14	8440	13800	7720	13100	15100	24700	7080	1500	2000	2350	2130	3910
15	8380	13900	8020	14400	14300	24200	6770	1500	1950	2350	2140	4200
16	8320	13900	8620	15700	13900	23800	6440	1500	1900	2360	2130	4420
17	8260	13600	8920	16500	14100	24100	5860	1500	1900	2360	2160	4470
18	8200	13200	9540	16500	13900	24200	5860	1500	1850	2410	2210	4440
19	8020	13900	10200	16600	13400	24000	5560	1500	1900	2440	2240	4520
20	7540	12600	10700	16700	13200	23700	5440	1500	1900	2400	2380	4540
21	7720	11400	10900	16900	13500	23400	5000	1500	2000	2330	2360	4630
22	7780	10800	10700	17500	14800	22600	4500	1600	1950	2270	2300	4700
23	7900	10200	10100	18000	16900	21400	4100	1600	1900	2220	2310	4760
24	8080	9540	9540	18500	19100	19800	3800	1500	1850	2210	2590	4840
25	8500	9680	9680	18800	20300	18700	3400	1450	1800	2270	3020	5090
26	9220	9610	9470	18700	20500	18600	3100	1650	1850	2280	3230	5410
27	9340	9750	9220	18400	22500	19200	2900	1800	1900	2250	3230	5030
28	9960	9540	8680	18100	24400	18700	2700	1800	2000	2210	3080	5190
29	10600		8260	17900	23600	17400	2500	1800	2000	2240	2900	5310
30	10500		7720	17600	21700	15300	2400	1800	2000	2230	2800	5600
31	10500		7080		20100		2300	1750		2240		5880
Mean	8431	12700	8675	13410	16530	22240	7776	1685	1916	2237	2333	4366
Ac. Ft. for Month	518400	705600	533400	798200	1017000	1323000	478200	103600	114000	137500	138800	268400

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey. It is located at Durham Ferry Bridge below the mouth of the Stanislaus River and is at Mile 76.7 above mouth of the San Joaquin River.

TABLE 35

DISCHARGE OF MERCED RIVER AT YOSEMITE VALLEY RAILROAD CROSSING - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	227	1370	1270	952	1920	4300	1680	21	25	30	13	8
2	106	1370	1270	994	1930	4280	1620	20	27	23	11	8
3	66	1370	1270	1120	1910	4260	1800	21	30	27	9	8
4	42	1370	1270	1220	1820	4200	1758	27	32	17	12	8
5	266	1480	1270	1930	1920	4300	1740	27	32	17	17	8
6	1460	1460	1270	3740	2090	4300	1620	23	30	17	12	8
7	1470	1470	1270	2200	2450	4300	1160	20	27	16	13	8
8	1470	1450	1270	2000	2920	3340	910	20	25	17	8	11
9	1470	1450	1270	2160	3620	1360	770	21	23	20	8	11
10	1470	1450	1300	2540	3620	1250	440	27	27	20	8	11
11	1470	1450	1300	2600	3600	2050	325	30	29	27	8	8
12	1470	1450	1300	2260	3250	4260	227	32	25	25	8	8
13	1470	1270	1300	2350	2580	4346	110	29	23	27	8	8
14	1430	1270	910	3600	2230	4370	61	29	25	27	8	9
15	1430	1270	1920	4260	2040	4420	61	30	29	29	8	11
16	1350	1270	2420	4480	2020	4484	71	27	25	21	8	11
17	1350	1270	2350	4850	2030	4240	59	30	25	55	9	12
18	1350	1270	1980	4140	1990	3800	59	34	21	50	11	13
19	1350	1270	1930	3640	2160	3500	59	34	21	53	13	14
20	1350	1270	1780	3600	3181	3250	57	32	20	53	9	16
21	1350	1270	1340	2060	4280	3080	50	34	17	42	8	16
22	1350	1270	1610	1980	4300	2580	40	32	16	17	8	16
23	1350	1270	1610	3280	4260	2520	29	34	17	12	8	18
24	1520	1270	1600	3230	4260	2630	32	34	17	13	8	30
25	1590	1270	1600	3150	4300	2600	32	30	17	14	8	34
26	1470	1270	1510	3110	4350	2340	29	29	17	14	8	30
27	1680	1270	1090	3100	4300	1430	29	32	17	14	12	18
28	1500	1270	1160	3070	4280	1090	27	27	18	13	12	20
29	1470		1060	2820	4300	1436	27	29	25	11	9	18
30	1470		990	1830	4300	1620	25	30	21	9	8	14
31	1470		910		4300		23	27		13		11
Mean	1240	1340	1430	2740	3110	3200	482	28	23	24	10	14
Ac. Ft. for Month	75940	74300	88070	163170	191430	190300	29610	1730	1390	1470	575	840

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and Merced Irrigation District. Station is at Mile 43.1 above mouth.

TABLE 36

DISCHARGE OF MERCED RIVER AT CRESSEY BRIDGE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1								99	108	116	68	88
2								104	114	133	74	82
3								102	104	132	74	79
4		*1660						99	108	140	78	78
5								108	108	132	82	78
6								99	116	128	86	78
7								92	116	116	86	81
8								97	106	114	88	78
9							*933	99	114	114	82	86
10								99	115	126	78	78
11								108	108	158	74	78
12								112	108	168	74	78
13								114	114	166	72	78
14								114	108	166	72	74
15							(1)198	116	108	158	78	78
16							153	116	104	158	78	78
17							164	108	100	160	81	74
18							158	114	96	186	90	78
19							146	110	99	169	92	78
20							153	108	104	164	92	78
21							166	108	114	158	92	78
22							112	100	104	148	86	79
23							124	104	104	104	86	86
24							116	108	108	86	82	92
25							106	108	106	86	82	116
26							99	104	108	97	84	240
27							108	104	114	88	90	140
28							114	104	114	82	94	108
29							102	106	104	78	92	100
30							104	108	114	72	90	96
31							99	106		68		90
Mean							108	106	108	128	83	90
Ac. Ft. for Month								6500	6440	7880	4910	5560

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and Turlock Irrigation District. Station is at Cressey Bridge - Mile 27.6 above mouth.

(1) Beginning of continuous record for season. Insufficient data on hand to compute flows during high water period.

* Measured discharge.

TABLE 37

DISCHARGE OF MERCED RIVER NEAR LIVINGSTON - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	439	1400	1390	1040	2440	4980	1780	218	174	210	143	152
2	398	1400	1400	1060	2370	4930	1850	196	188	210	143	147
3	316	1350	1400	1100	2340	4910	1890	182	178	206	147	141
4	268	1400	1400	1270	2280	4890	1930	200	180	236	147	140
5	234	1400	1390	1480	2200	4810	1870	192	194	230	145	140
6	666	1500	1390	2870	2370	4760	1880	206	241	202	150	138
7	1270	1700	1390	3660	2560	4760	1620	188	218	183	143	141
8	1350	1750	1390	2330	2940	4800	1210	186	200	174	150	141
9	1370	1550	1390	2180	3620	3140	1010	206	192	178	150	141
10	1380	1450	1380	2370	4150	1800	863	226	226	190	145	143
11	1370	1400	1430	2790	4200	1640	715	226	218	205	141	136
12	1380	1350	1530	2790	4230	3080	613	214	206	220	138	131
13	1380	1350	1480	2370	3680	4410	518	210	200	235	136	131
14	1380	1350	1520	2840	2990	4580	392	210	178	248	136	131
15	1390	1350	1330	4190	2610	4620	336	232	172	257	141	131
16	1380	1350	2440	4630	2520	4660	295	250	162	244	145	129
17	1370	1350	2680	4920	2480	4720	290	232	174	224	149	128
18	1370	1350	2510	5160	2420	4370	295	210	180	236	156	128
19	1380	1350	2190	4470	2360	4030	288	184	172	240	159	129
20	1380	1350	2070	4090	2830	3970	263	196	168	240	159	129
21	1380	1350	1830	3410	3960	3890	263	208	192	236	158	129
22	1380	1400	1570	2450	4740	3560	269	180	172	257	152	129
23	1380	1450	1700	2940	4800	3000	267	182	178	234	150	134
24	1400	1450	1680	3670	4790	3080	245	180	200	189	150	140
25	1520	1400	1690	3630	4830	3160	210	186	200	158	149	150
26	1660	1400	1690	3610	4910	3050	198	192	192	158	150	226
27	1520	1400	1480	3630	4950	2500	188	174	198	156	154	214
28	1910	1400	1220	3680	4960	1700	161	184	184	154	158	176
29	1700		1220	3740	4980	1480	168	190	182	150	156	161
30	1550		1120	3040	4960	1650	182	202	204	147	154	154
31	1510		1040		4960		196	196		145		150
Mean	1238	1418	1592	3047	3562	3698	718	201	191	205	148	145
Ac. Ft. for Month	76130	78740	97860	181300	219000	220000	44140	12370	11350	12600	8830	8910

NOTE: This is a permanent station maintained throughout the year under Federal-State cooperation by the Water Resources Branch of the U. S. Geological Survey. The station is at Mile 17.1 above mouth.

TABLE 38

DISCHARGE OF MERCED RIVER NEAR MOUTH - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	367	1400	1390	990	2520	4830	1640	299	278	264	205	164
2	376	1390	1390	990	2450	4790	1730	301	272	266	199	162
3	359	1370	1380	1030	2360	4770	1750	293	282	276	193	161
4	337	1380	1380	1180	2290	4760	1790	279	270	264	181	157
5	347	1400	1370	1390	2150	4710	1760	277	267	276	181	155
6	426	1500	1360	2100	2230	4680	1790	269	296	265	179	155
7	420	1710	1350	3570	2390	4670	1650	268	306	246	179	156
8	1170	1760	1360	2740	2680	4750	1310	251	290	243	175	156
9	1240	1530	1350	2190	3160	3960	1060	266	278	248	176	155
10	1290	1470	1350	2310	3750	2030	940	278	282	254	173	157
11	1310	1390	1380	2700	3880	1670	800	264	228	260	169	153
12	1330	1370	1470	2880	3930	2150	720	260	264	278	167	150
13	1350	1340	1500	2590	3710	3880	645	255	264	284	167	149
14	1360	1340	1490	2620	3060	4290	510	258	254	285	167	149
15	1230	1340	1310	3620	2610	4420	452	257	252	284	167	149
16	1360	1340	2010	4370	2450	4430	395	269	248	272	167	149
17	1370	1340	2690	4490	2400	4460	360	275	242	270	167	149
18	1400	1350	2660	4890	2330	4300	386	265	254	270	173	147
19	1410	1360	2300	4660	2230	3910	384	255	252	276	173	146
20	1390	1370	2160	4050	2350	3720	378	261	264	270	173	146
21	1380	1370	2020	3800	3260	3670	364	265	270	254	170	146
22	1380	1410	1640	2620	4110	3460	336	265	266	264	169	147
23	1380	1470	1730	2500	4350	2990	327	267	259	270	169	150
24	1400	1440	1720	3460	4390	2410	297	265	266	258	191	156
25	1480	1410	1720	3510	4430	2970	288	261	272	227	199	170
26	1670	1400	1720	3490	4530	2940	269	257	264	221	185	181
27	1560	1390	1630	3520	4610	2610	267	268	266	217	169	191
28	1760	1390	1260	3560	4660	1990	258	268	282	212	169	209
29	1780		1220	3620	4750	1510	257	274	270	217	169	270
30	1530		1140	3350	4770	1540	269	295	267	209	167	324
31	1440		1040		4800		279	302		209		354
Mean	1197	1420	1596	2960	3342	3576	763	271	270	255	176	173
Ac. Ft. for Month	73590	78800	98160	176100	205500	212800	46930	16640	16040	15690	10490	10640

NOTE: Station maintained by Division of Water Resources (Water Supervision) and is at Mile 1.1 above mouth. State station affected by back water from San Joaquin river except during low flow periods. When Merced River flow exceeds 400 c.f.s., water by-passes state station. See Table 38A.

Record for period January 1 to July 31 from U. S. Bureau of Reclamation station 4 miles above mouth.

TABLE 38A

DISCHARGE OF MERCED RIVER SLOUGH NEAR HILLS FERRY ROAD BRIDGE

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1		211	115	15	454	1070	389					
2		229	113	13	414	1090	382					
3		245	110	19	382	1110	356					
4		265	106	44	365	1140	313					
5		277	103	80	330	1150	261					
6	12	281	100	208	333	1160	240					
7	89	290	97	605	368	1160	206					
8	129	278	96	422	436	1140	133					
9	127	237	96	276	550	835	89					
10	115	227	95	297	715	295	72					
11	103	219	99	394	760	224	51					
12	95	217	111	455	780	276	39	FLOW	FLOW	FLOW	FLOW	FLOW
13	92	217	117	399	745	735	27					
14	91	233	115	388	575	865	8					
15	91	237	98	645	451	940	2					
16	90	224	215	860	403	1000						
17	90	203	407	930	394	1030						
18	87	182	422	1010	374	1030		NO	NO	NO	NO	NO
19	84	159	355	1000	337	975						
20	83	141	320	880	349	935						
21	85	130	281	830	575	930						
22	89	128	189	510	790	905						
23	93	134	188	454	855	785	FLOW					
24	96	131	178	700	875	745						
25	105	123	172	710	885	770						
26	133	121	166	695	915	760						
27	131	119	146	700	940	705						
28	172	117	77	710	965	550	NO					
29	209		67	735	995	414						
30	185		49	685	1020	389						
31	194		28		1040							
Mean	93	199	156	522	625	837	83					
Ac. Ft. for Month	5690	11060	9580	31080	38420	49810	5090					

NOTE: This station records the flow which at high stages in the Merced River by-passes the Hills Ferry Road Bridge and reaches the San Joaquin River below the U.S.G.S. station "near Newman". Table 38 records the entire flow of the Merced River and the flow in Table 38A is included in Table 38. Station is maintained by U. S. Bureau of Reclamation.

TABLE 39

DISCHARGE OF DRY CREEK NEAR MODESTO (CLAUSS ROAD BRIDGE) - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1		120	55	70	225	97	67	58	64	64	400	34
2	287	102	50	73	198	83	64	57	60	70	363	34
3	186	150	48	88	202	81	64	61	60	64	385	34
4	124		45	138	186	84	76	63	67	65	320	34
5	91		43		157	81	73	67	70	80	82	34
6	78		43		134	76	128	67	70	94	49	35
7	138		43		106	75	134	36	76	100	42	37
8	60		42		88	73	120	58	75	100	41	37
9	55	332	42	99	70	76	91	57	75	100	41	40
10	52		44	103	67	73	82	64	75	105	39	37
11	50		43	124	91	67	96	70	76	94	39	34
12	50		47	103	120	61	122	66	97	108	39	33
13	48		47	95	138	58	152	64	72	110	38	33
14	45		88	110	138	66	166	67	72	94	38	32
15	44	228	70	121	127	91	136	67	75	85	39	31
16	42	231	203	186	138	102	80	62	73	67	40	31
17	38	221	120	154	126	84	76	58	64	65	41	31
18	38	265	80	213	104	72	70	55	64	86	41	30
19	41	277	64	189	73	83	64	60	64	88	45	31
20	40	269	55		67	73	66	108	66	82	49	32
21	40	257	50		69	102	60	85	70	81	45	32
22	39	277	48		64	88	60	64	70	80	41	32
23	39	285	44		63	69	58	60	65	75	38	33
24	39	299	112		72	69	36	61	67	75	37	33
25		280	54	110	81	64	58	64	67	77	36	46
26		275	47	117	84	66	64	65	76	75	35	294
27		225	54	122	85	88	65	73	76	61	35	193
28		63	62	142	82	86	58	67	75	70	35	96
29			97		84	117	61	93	70	73	34	65
30			61		103	84	58	64	64	76	34	52
31			70		99		60	67		363		43
Mean			63		111	98	83	64	70	91	85	52
Ac. Ft. for Month			3850		6830	4740	5090	3960	4200	5610	5040	3220
M.I.D.Spill Below Station Ac. Ft.			320	660	1250	770	730	650	630	1080	0	0
Discharge to Tuolumne River Ac. Ft.			4170		8080	5510	5820	4610	4830	6690	5040	3220

Where discharge figure is omitted recorder had been removed on account of high water conditions.

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and Modesto Irrigation District.
Station moved to this location, 5.4 miles above Modesto in 1941 from previous location at Mile 2.9.

TABLE 40

DISCHARGE OF TUOLUMNE RIVER AT LA GRANGE BRIDGE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	1180	2010	2100	1610	2640	4300	2060	42	455	552	540	670
2	1120	2020	1990	1380	2860	5720	5180	17	455	552	492	695
3	1130	1540	1980	1130	2400	6360	5970	70	455	552	560	1320
4	1050	1020	1960	820	2520	6360	6090	128	455	552	556	1860
5	1140	1050	1940	800	2730	8100	5550	128	455	552	556	1860
6	1120	1040	1960	1110	2530	10280	5320	128	455	560	560	1860
7	1600	1060	1780	1480	2700	10640	2860	128	455	560	565	1960
8	2170	950	1610	1820	3090	9170	1630	83	455	560	552	1870
9	2170	1060	1690	1820	3560	8620	1630	14	457	560	544	1870
10	2170	1030	1690	1820	3250	9820	1630	17	457	560	560	1870
11	2170	1000	1690	1530	2800	11150	1190	128	457	560	552	1970
12	2190	1000	1650	1520	2560	10280	745	141	457	560	548	1970
13	2190	1020	1710	2120	2110	9000	779	412	457	528	570	1960
14	2190	1030	2000	2770	1770	8500	766	400	457	548	570	1970
15	2190	940	2240	2700	2360	8840	439	26	457	560	570	1970
16	2180	1030	2190	1870	2360	8640	821	15	457	556	536	1980
17	2180	1720	2300	1820	2750	7670	1390	106	457	520	595	1980
18	2170	2730	2470	1810	1820	7190	991	128	457	540	595	2040
19	2110	2500	2480	1960	2200	7260	941	128	457	540	585	2140
20	2170	2310	2400	2760	3200	6540	680	365	457	552	595	2140
21	2100	2340	2240	3040	4470	5400	420	408	457	552	600	2140
22	2080	2240	2200	3950	5320	4900	409	48	457	552	600	2140
23	2080	2270	2300	4540	5130	4650	522	15	457	552	595	2200
24	2100	2270	2290	4190	4180	4530	517	393	457	552	600	2240
25	2110	2310	2320	3940	6800	5000	70	540	457	552	610	2020
26	2110	2310	2210	3750	11360	4800	20	540	457	552	595	2270
27	2160	2280	2050	3370	7800	3780	117	540	457	552	610	2010
28	2130	2260	1740	3670	5480	1270	136	540	457	552	580	2090
29	2080		1350	3000	4270	285	136	48	552	544	585	2010
30	2050		1420	3470	3230	500	138	15	552	548	635	1940
31	2030		1370		2970		138	321		552		2070
Mean	1923	1655	1978	2390	3652	6652	1590	194	463	551	574	1906
Ac. Ft. for Month	118300	91910	121600	142000	224600	395800	97760	11920	27540	33890	34140	117200

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and Turlock Irrigation District.

TABLE 41

DISCHARGE OF TUOLUMNE RIVER AT ROBERTS FERRY BRIDGE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	1360	2140	2500	1570	2860	4090	1760	118	478	615	582	712
2	1060	2140	2140	1410	3160	5900	4840	79	478	615	538	732
3	1160	1900	2140	1160	2740	6860	4740	79	478	615	602	1490
4	1160	1160	2080	920	2740	6500	6680	180	478	615	595	1970
5	1210	1160	2080	880	2920	8120	6120	180	472	615	589	1840
6	1210	1160	2080	1110	2860	10400	5750	180	472	615	595	1820
7	1610	1160	1900	1440	2860	11360	5130	180	472	615	602	1900
8	2380	1060	1750	1900	3340	9980	1790	130	472	615	595	1840
9	2380	1160	1790	1900	3640	8720	1680	72	472	615	602	1840
10	2380	1110	1790	1900	3640	9980	1680	68	472	622	615	1840
11	2380	1110	1790	1590	3160	11360	1460	162	472	635	609	1900
12	2380	1110	1790	1570	2920	11360	810	173	472	635	602	1960
13	2380	1110	1790	2200	2360	9980	810	383	472	602	622	1900
14	2380	1110	2140	2940	1900	9350	810	490	472	615	628	1960
15	2380	1060	2500	2980	2400	9240	680	255	472	615	635	1960
16	2380	1060	2500	2080	2540	9350	648	68	472	615	628	2000
17	2380	1600	2560	1840	2020	8300	1460	63	472	582	648	2010
18	2380	2920	2740	1840	1740	7670	1060	152	472	609	660	2020
19	2380	2840	2740	1900	2240	7760	880	155	485	609	641	2140
20	2380	2570	2680	2800	3100	7040	778	366	460	615	648	2220
21	2260	2520	2540	3220	4380	5900	490	472	460	615	648	2260
22	2260	2400	2440	3900	5300	5300	490	295	460	615	641	2260
23	2260	2400	2500	4610	5690	5000	615	68	460	615	654	2260
24	2260	2450	2500	4420	4610	4870	615	226	460	615	660	2380
25	2380	2420	2540	4160	6260	5150	320	582	460	615	660	2250
26	2380	2420	2440	4020	12100	5220	102	602	460	615	654	2270
27	2500	2430	2240	3700	8970	4220	115	557	460	615	660	2200
28	2500	2500	1960	3830	6050	2260	192	608	460	615	667	2210
29	2380		1380	3400	4740	615	192	277	615	595	673	2220
30	2380		1360	2760	3700	615	192	83	615	589	660	2200
31	2260		1390		3220		192	280		589		2200
Mean	2110	1790	2150	2460	3880	7080	1712	240	479	612	627	1960
Ac. Ft. for Month	130000	99530	132400	146700	238300	421400	105300	15040	28510	37650	37320	120500

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and Modesto Irrigation District. Station is at Mile 39.9 above mouth.

TABLE 42

DISCHARGE OF TUOLUMNE RIVER AT HICKMAN-WATERFORD BRIDGE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	1730	2290	2530	1780	2830	4030	1500	255	442	625	716	716
2	1310	2300	2230	1660	3200	5970	4430	222	475	625	660	772
3	1290	2130	2250	1480	2830	7220	6590	218	475	625	578	1350
4	1340	1300	2210	1180	2720	6940	6800	248	475	625	667	1600
5	1290	1380	2190	1020	2940	8200	6380	259	475	625	646	1990
6	1330	1360	2170	1240	2930	9950	5970	259	481	625	639	1990
7	1500	1290	2090	1550	2780	12420	3880	259	475	625	632	1990
8	2390	1250	1890	2050	3210	11480	2010	255	470	625	639	1990
9	2410	1240	1890	2050	3720	9200	1850	222	464	625	625	1970
10	2450	1260	1910	2050	3780	9950	1850	216	464	625	625	2000
11	2450	1260	1930	1810	3220	12080	1780	241	464	660	646	2100
12	2450	1240	1890	1780	3020	12450	950	259	475	660	632	2140
13	2450	1240	1930	2150	2490	10320	875	277	475	625	625	2130
14	2490	1180	2050	2920	2130	9580	875	486	475	590	639	2150
15	2490	1210	2490	3010	2320	9420	800	347	475	660	639	2170
16	2490	1180	2470	2330	2610	9500	560	225	475	660	660	2190
17	2470	1460	2530	2090	2250	8760	1620	212	475	590	639	2190
18	2470	2880	2780	2010	2010	8060	1290	241	475	625	667	2190
19	2470	2880	2750	2150	2330	8020	1100	248	470	625	695	2190
20	2410	2570	2670	2780	3150	7420	1100	295	481	646	660	2210
21	2390	2570	2530	3350	4560	6270	590	464	486	646	660	2280
22	2360	2510	2490	3900	5580	5370	560	325	486	646	660	2290
23	2390	2530	2490	4860	6100	5190	660	225	486	646	653	2300
24	2410	2580	2570	4800	4930	4980	660	225	486	646	674	2450
25	2430	2580	2550	4320	5720	5280	420	590	486	646	681	2370
26	2410	2580	2510	4320	12550	5520	249	625	481	646	681	2210
27	2470	2570	2320	3840	9700	4500	229	632	481	646	688	2230
28	2490	2490	2130	3850	6630	2700	262	632	475	646	702	2210
29	2410		1660	3530	5190	800	292	420	625	646	702	2250
30	2330		1590	2920	3840	695	262	228	625	632	660	2240
31	2300		1660		3300		262	226		646		2190
Mean	2200	1900	2240	2630	4020	7410	1830	317	485	635	656	2030
Ac. Ft. for Month	135000	105700	137600	156300	247100	440900	112300	19500	28900	39000	39100	125100

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and Modesto Irrigation District. Station is at Mile 31.7 above mouth.

TABLE 43

DISCHARGE OF TUOLUMNE RIVER AT MODESTO - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2380	2500	2710	1640	3260	3900	1650	673	728	955	1280	825
2	2100	2460	2560	1800	3670	5350	3790	612	857	975	1230	900
3	1700	2480	2400	1660	3510	6900	6286	558	862	955	1230	915
4	1580	2200	2380	1720	3210	7040	6920	553	894	990	1180	2030
5	1450	1780	2330	1460	3320	7630	6920	629	903	970	1450	2200
6	1500	2230	2330	1330	3430	9210	6500	629	920	995	848	1700
7	1480	2630	2350	1530	3160	10830	5380	625	915	1000	839	2200
8	2080	2420	2180	2020	3380	11280	2950	608	880	995	825	2280
9	2530	1940	1980	2340	3710	10100	2520	545	862	1000	802	2230
10	2570	1700	1980	2570	4030	9680	2420	503	871	1000	825	2250
11	2580	1590	2000	2570	3840	10660	2380	520	829	1060	811	2330
12	2580	1530	1930	2270	3520	11580	1880	600	857	1110	802	2330
13	2580	1510	1900	2150	3140	11260	1720	616	857	1060	806	2350
14	2590	1490	2080	3120	2820	10380	1700	848	857	1030	806	2330
15	2600	1500	2880	3440	2640	9770	1670	857	820	1050	825	2360
16	2620	1490	2650	3240	3140	9860	1350	591	871	1060	811	2360
17	2630	1540	2700	2740	3010	9520	1920	503	848	1010	857	2380
18	2610	2560	2900	2640	2650	8670	1900	507	843	980	857	2380
19	2620	3270	2980	2620	2480	8290	1670	541	811	970	848	2480
20	2580	3040	2880	2840	2910	8310	1690	566	834	920	834	2550
21	2520	2980	2980	3610	4060	7330	1290	811	811	955	834	2550
22	2490	3000	2600	3860	5160	6090	1130	811	793	935	825	2580
23	2480	2880	2540	4890	5950	5670	1130	520	825	925	820	2580
24	2530	2980	2180	5220	5600	5470	1150	415	783	930	839	2650
25	2530	2980	2180	4730	5080	5420	1080	765	811	925	834	2200
26	3220	2960	2150	4630	8660	5920	811	970	843	930	829	2530
27	2860	2950	2530	4370	11110	5400	733	1000	834	920	875	2580
28	3190	2800	2330	4260	8250	4430	673	1000	857	935	848	2450
29	3110		2080	4250	5990	2215	668	894	857	920	839	2500
30	2750		1760	3550	4580	1680	687	562	955	945	871	2500
31	2100		1680		3870		673	461		1230		2400
Mean	2424	2335	2358	2969	4295	7662	2363	655	850	988	906	2223
Ac. Ft. for Month	149000	129700	145000	177000	264000	456000	145000	40300	50600	60800	53900	137000

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and Modesto Irrigation District. Located at old U.S. 99 highway bridge and is at mile 15.75 above mouth.

TABLE 44

DISCHARGE OF TUOLUMNE RIVER AT TUOLUMNE CITY - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2695	2340	2610	1810	3070	3710	1415	600	615	955	1325	820
2	2035	2300	2420	1960	3280	4630	2510	605	845	975	1225	860
3	1690	2240	2310	1810	3430	6230	3340	555	845	970	1190	895
4	1595	1950	2325	1850	3210	6990	5860	520	870	975	1220	1550
5	1475	1435	2230	1640	3250	7160	6280	580	900	975	1120	2080
6	1460	1870	2220	1620	3410	8570	6240	595	920	1020	1000	2150
7	1430	2245	2210	1820	3560	9570	6020	595	920	990	910	2155
8	1722	2000	2050	2080	3780	11330	3720	545	900	1025	855	2165
9	2410	1570	1860	2330	3530	10090	2470	585	930	1020	840	2140
10	2385	1540	1900	2450	3850	9300	2280	530	910	1025	840	2155
11	2415	1500	1820	2460	3760	9330	2130	540	865	1040	850	2185
12	2445	1485	1850	2190	3470	11600	1880	620	860	1130	820	2200
13	2445	1420	1930	2080	2900	12000	1620	650	840	1100	815	2220
14	2445	1465	1960	2900	2690	11100	1505	760	850	1040	815	2200
15	2475	1480	2300	3320	2400	9950	1460	870	845	1035	840	2250
16	2470	1515	2565	3320	2750	9970	1460	755	870	1070	840	2270
17	2475	1515	2680	2570	2840	9760	1470	620	865	1070	865	2290
18	2475	2125	2630	2470	2360	8420	1760	560	855	1025	880	2300
19	2475	2930	2780	2520	2260	8110	1540	620	865	1080	870	2330
20	2445	2860	2605	2610	3160	8030	1470	600	910	990	845	2420
21	2460	2720	2605	3220	3560	7610	1310	735	920	975	845	2440
22	2445	2805	2555	3480	4600	5790	1290	850	900	1005	840	2470
23	2455	2770	2520	4240	5280	5320	1030	730	890	975	835	2480
24	2485	2790	2590	4810	5440	5170	1060	545	860	970	820	2530
25	2530	2820	2640	4590	4770	5130	1040	635	880	975	845	2600
26	2950	2790	2610	4310	6850	5640	840	930	900	975	840	2440
27	2900	2745	2475	4290	9840	5340	670	980	915	970	870	2560
28	2885	2710	2065	4010	9120	4420	630	995	930	970	865	2410
29	3220		2040	4200	6700	2690	605	975	915	960	840	2430
30	2730		1790	3500	4930	1450	600	775	960	970	855	2450
31	2500		1810		4000		620	590		1100		2410
Mean	2356	2141	2289	2882	4131	7480	2133	679	878	1011	914	2157
Ac. Ft. for Month	144800	118900	140700	171500	254000	445100	131200	41740	52260	62190	54400	132600
Diversions Below Station, Ac. Ft.	0	0	0	0	70	140	180	180	120	10	0	0
M.I.D. Spill Below Station Ac. Ft.	0	0	400	1300	1400	900	800	700	700	1200	0	0
* Ac. Ft. to San Joaquin R.	144800	118900	141100	172800	255300	445900	131800	42260	52840	63380	54400	132600

NOTE: Recording gage station maintained jointly by Division of Water Resources, City of San Francisco, Modesto Irrigation District and Turlock Irrigation District. Station is 2.36 above the mouth. * Neglecting seepage return below station.

TABLE 45

DISCHARGE OF STANISLAUS RIVER AT ORANGE BLOSSOM BRIDGE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	1130	2880	190	968	3090	3540	1740	25	25	18	15	850
2	1070	3510	359	749	3030	4680	1890	25	25	20	19	872
3	1020	4270	617	762	3140	4750	1950	24	25	17	51	872
4	859	4480	912	1140	3920	4730	1890	25	25	27	97	529
5	1010	5470	762	1520	3620	5550	1950	25	25	15	135	476
6	1000	5660	758	2180	3670	6580	1560	24	25	18	177	476
7	992	5220	419	2690	4180	6900	1370	23	28	19	179	467
8	1000	4410	247	2700	4460	6070	1120	23	28	19	203	907
9	992	4770	472	2780	4880	5550	894	23	28	20	199	903
10	996	4610	810	3150	4480	5360	608	23	28	30	203	898
11	555	4532	992	3892	4410	5360	388	24	25	23	190	894
12	797	4442	996	4320	4000	5200	344	24	24	19	181	542
13	984	4330	1140	5050	3320	4370	309	25	25	20	159	388
14	988	4220	1340	7020	3080	3700	142	25	24	20	168	894
15	984	3750	1110	6090	3250	4410	85	25	24	18	172	890
16	988	3970	1090	4830	3710	4750	70	28	24	19	164	840
17	912	2760	1080	5240	2980	4550	60	25	24	19	172	885
18	577	2383	1080	4430	3760	4190	656	28	25	18	309	890
19	788	1570	1080	3660	3700	3940	762	25	24	15	564	890
20	972	1320	1080	4760	5190	3740	97	28	24	13	520	890
21	968	850	819	4640	7250	3340	54	25	23	13	520	890
22	876	230	348	5270	8670	2550	48	25	23	13	520	890
23	938	1280	775	5710	8600	428	40	25	23	13	520	894
24	1220	1810	960	4800	7470	388	31	25	24	13	511	1090
25	1520	1640	938	4380	8000	1620	25	25	23	14	520	1020
26	1170	929	938	4000	9820	2160	25	25	23	14	520	652
27	2700	727	894	4420	6280	1500	25	25	21	14	498	938
28	2290	291	1290	3900	4960	1140	25	25	21	14	485	942
29	1290		1060	3130	4190	1320	25	25	21	14	485	942
30	1980		1090	2520	3360	1600	25	25	20	14	485	929
31	3220		872		2750		25	31		14		938
Mean	1190	3080	855	3690	4750	3800	588	25	24	18	298	819
Ac. Ft. for Month	73000	171200	52600	219600	292000	226000	36200	1540	1440	1100	17700	50300

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision) and Oakdale Irrigation District. Station is at Mile 44.7 above mouth or 5.7 miles above Oakdale.

TABLE 46

DISCHARGE OF STANISLAUS RIVER AT RIVERBANK (BURNEYVILLE BRIDGE) - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	1330	2790	358	1020	2950	3400	1720	112	103	99	93	588
2	1160	3190	241	838	3320	4420	1860	112	103	99	93	925
3	1130	4050	738	799	3170	4710	1990	112	108	99	95	925
4	1060	4080	790	1070	3440	4550	1920	112	108	98	112	963
5	934	5050	901	1480	3620	4980	1880	112	108	97	164	498
6	1060	5540	865	1780	3550	5900	1950	112	108	97	190	456
7	1050	5440	790	2380	3950	6540	1590	112	108	96	225	190
8	1050	4800	385	2580	4180	6240	1270	112	108	95	228	937
9	1040	4420	170	2620	4580	5420	1100	112	108	95	228	940
10	1060	4610	796	2870	4730	5380	880	112	108	94	230	960
11	996	4530	934	3360	4280	5020	617	112	108	95	212	960
12	453	4440	1090	4050	4190	5460	506	112	108	95	207	944
13	1000	4350	1060	4490	3530	5070	484	103	108	95	193	236
14	1020	4240	1260	5670	3200	3510	330	103	103	95	179	880
15	1020	3980	1260	6730	3170	4000	236	105	103	95	190	940
16	1020	3820	1100	5010	3670	4490	179	103	103	95	190	925
17	1040	3130	1120	5030	3260	4470	162	103	95	95	193	925
18	988	2720	1090	4680	3380	4130	485	103	95	95	268	940
19	464	2000	1080	3870	3560	3860	1000	103	97	95	645	940
20	988	1500	1070	4190	4430	3700	400	103	95	95	588	940
21	1010	1360	1040	4530	6220	3400	165	103	95	93	540	940
22	1000	450	763	4830	7680	3020	142	105	103	91	515	934
23	874	910	378	5540	8580	1020	130	103	103	91	512	937
24	1040	1630	1020	5130	8400	697	124	103	102	90	498	1100
25	1820	1880	1010	4280	7520	1140	128	103	101	91	512	1420
26	844	1191	990	4229	9250	2320	124	103	100	91	512	484
27	2440	904	930	4186	7340	1800	122	103	99	92	498	940
28	2240	690	1080	4060	5350	1360	120	103	99	92	536	1020
29	1470		1200	3480	4480	1330	119	103	99	92	520	1050
30	1600		1050	2790	3650	1600	114	103	99	93	536	1050
31	2970		940		3040		113	103		93		1020
Mean	1200	3130	884	3590	4700	3760	708	107	103	94	323	868
Ac. Ft. for Month	73700	173900	54400	213300	288900	224000	43600	6560	6120	5810	19200	53400

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision), Oakdale and South San Joaquin Irrigation Districts. Station is at mile 32.0 above mouth.

TABLE 47

DISCHARGE OF STANISLAUS RIVER AT RIPON BRIDGE - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	1650	2710	830	1230	3160	3420	1790	250	206	231	225	596
2	1310	2730	709	1130	3470	3860	1860	246	235	244	216	782
3	1210	3200	847	1040	3400	4410	1970	237	242	256	216	924
4	1150	3690	984	1080	3360	4620	2030	218	254	266	239	635
5	1020	3970	1160	1640	3680	4620	1980	216	264	264	278	812
6	1110	4520	837	1750	3680	5000	2020	231	262	272	365	909
7	1130	5000	1070	2240	3750	5860	1850	206	259	264	398	984
8	1120	5100	791	2580	4020	6500	1590	218	257	239	424	842
9	1120	4630	607	2660	4200	6000	1400	233	254	242	430	614
10	1100	4500	796	2760	4460	5510	1240	208	252	266	428	525
11	1120	4500	1030	3050	4540	5270	1000	174	249	332	426	544
12	795	4430	1120	3580	4410	5190	849	193	247	314	409	544
13	980	4380	1140	3900	4200	5360	803	199	244	294	396	864
14	1100	4300	1270	4340	3730	4750	711	205	242	274	388	842
15	1110	4210	1440	5210	3440	4090	596	210	239	278	388	594
16	1110	3940	1400	5900	3520	4260	526	216	237	280	388	557
17	1100	3740	1400	5140	3730	4490	458	239	256	284	430	635
18	1090	3040	1410	4990	3380	4440	491	220	256	310	438	900
19	758	2500	1400	4670	3600	4210	938	206	206	304	584	988
20	970	1900	1390	4170	3790	4010	907	206	274	294	914	988
21	1080	1770	1400	4380	4360	3800	496	212	266	288	596	991
22	1090	1220	1210	4550	5690	3450	394	216	256	256	580	998
23	1020	950	888	4800	7870	2140	367	223	237	242	580	1000
24	1060	1650	1200	5270	8620	1300	314	233	222	246	582	1050
25	1510	2000	1350	4990	7870	1220	312	218	222	244	575	1260
26	1360	1740	1380	4610	8060	2140	296	208	256	256	578	1020
27	1620	1270	1340	4410	9500	2200	286	222	237	244	582	933
28	2560	1080	1260	4430	6920	1740	296	216	237	270	591	1030
29	1850		1550	4280	5440	1540	256	218	239	280	594	1060
30	1500		1340	3620	4650	1630	284	222	225	246	594	1080
31	2220		1250		3900		272	204		242		1080
Mean	1256	3167	1155	3613	4787	3900	922	217	247	268	461	858
Ac. Ft. for Month	77200	175900	71010	215000	294300	232100	56690	13330	14700	16510	27440	52740

NOTE: Station maintained jointly by Division of Water Resources (Water Supervision), Water Resources Branch of U.S. Geological Survey, City of San Francisco, U. S. Bureau of Reclamation and the South San Joaquin & Modesto Irrigation Districts. Station is at Highway 99 and is 16 miles above mouth of river.

TABLE 48

DISCHARGE OF STANISLAUS RIVER AT BRET HARTE PUMP - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	1610	2800	840	1320	3070	3570	1760	285	290	270	260	615
2	1320	2700	650	1360	3200	3750	1780	310	290	260	265	690
3	1230	3050	700	1180	3250	4220	1880	320	270	280	260	835
4	1190	3500	880	1420	3200	4500	2030	305	270	320	265	860
5	1130	3700	1100	1950	3500	4550	2090	305	265	295	305	790
6	1140	4050	1080	2120	3600	4770	2040	300	365	280	375	665
7	1170	4310	1070	3020	3650	5500	1920	305	350	270	405	630
8	1180	4800	900	2490	3920	6450	1660	270	340	270	440	530
9	1210	4650	830	2720	3670	6620	1380	310	325	250	455	810
10	1230	4260	820	3000	4320	5990	1240	290	350	285	450	880
11	1220	4350	1020	3300	4410	5600	1050	255	365	370	450	895
12	1110	4400	1250	3670	4300	5250	920	265	330	375	425	880
13	1270	4300	1340	4050	4200	5370	835	255	345	360	400	765
14	1160	4250	1460	4700	3800	5350	755	250	290	325	425	520
15	1170	4150	1690	5000	3450	4320	645	270	280	295	425	795
16	1180	3980	1580	5950	3460	4200	580	270	275	315	425	865
17	1180	3850	1470	5820	3750	4400	535	250	260	320	440	820
18	1180	3280	1330	5320	3450	4470	490	230	280	365	440	830
19	1070	2800	1320	5000	3600	4300	730	220	320	360	515	875
20	1020	2100	1150	4200	3770	4130	855	230	330	325	690	885
21	1130	1930	1100	3980	4130	3980	560	225	310	320	640	890
22	1150	1500	900	4280	5000	3690	435	235	300	260	610	890
23	1140	750	800	4450	6620	2750	370	255	295	255	605	895
24	1140	1440	830	4950	8470	1480	315	240	285	295	600	910
25	1250	2070	1250	5250	8300	1290	300	225	220	310	585	1225
26	1520	2060	1400	4770	7550	1900	375	210	245	280	595	1500
27	1360	1300	1450	4450	9050	2280	335	255	320	255	600	740
28	2610	900	1300	4370	8250	1870	335	270	295	280	580	920
29	2060		1670	4400	6300	1430	310	260	275	305	600	965
30	1480		1570	3750	5070	1380	315	295	240	305	610	1020
31	1920		1540		4200		315	290		260		1010
Mean	1314	3115	1171	3741	4726	3979	940	266	299	300	471	852
Ac. Ft. for Month	80790	173000	71980	222600	290600	236700	57800	16370	17800	18480	28050	52360
Diversions Below Station, Ac. Ft.	0	0	0	0	280	430	290	260	120	230	0	0
*Ac. Ft. to San Joaquin R.	80790	173000	71980	222600	290300	236300	57510	16110	17680	18250	28050	52360

NOTE: Recording gage station maintained jointly by Division of Water Resources, U. S. Bureau of Reclamation, City of San Francisco and Modesto Irrigation District. Station is 5.9 miles above mouth of river.

* Neglecting seepage return below station.

CHAPTER III

MEASUREMENTS OF DIVERSIONS

Measurements and records of diversions in 1942 have included those from the Sacramento River and its tributaries on the valley floor, those to the Delta Uplands from Old San Joaquin River, Tom Paine Slough, and San Joaquin River, and those on the Stanislaus, Tuolumne, Merced, (below the major irrigation districts' gravity diversions) and San Joaquin (above Durham Ferry Bridge) rivers as obtained in connection with the return water measurements (See Chapter IV). For 1942 this report records a total of 654 points of diversion, segregated to the various sources as follows: Sacramento River 281, Colusa Trough 14, Back Borrow Pit (carrying drainage water from Colusa Basin along the back levees of Reclamation Districts 108 and 787) 21, Lower Butte Creek and Butte Slough 23, By-Pass and Drainage Channels 41, Feather River 37, Yuba River 10, American River 36, from Old San Joaquin River 13, from Tom Paine Slough 8, and from San Joaquin River (below Vernalis gaging station) 48, San Joaquin River (above Vernalis gaging station) 20, Stanislaus River 25, Tuolumne River 21, and Merced River 56.

All of these diversions except four are accomplished by pumping. The four exceptions are gravity diversions, one on the Yuba River, two on the Feather River and one on the Sacramento River, the records for which are obtained by means of canal ratings. In the case of the pumping diversions there are a few instances where the records are obtained by means of canal ratings, but in the main the records are obtained from a relation established between electric power consumption, static head and pump discharge. This is possible due to the fact that nearly all of the pumping

plants are electrically operated. The relation between power input and water pumped is determined from current meter measurements of the discharge and the measured kilowatt input. At the larger pumping plants several measurements are made during each season. At the smaller plants a number of measurements are made initially to determine the rating and thereafter at intervals to show any changes which may occur in the rating. Prior to 1933 a daily diversion record for each plant was compiled. However, since that year, except for the larger diversions, the monthly diversion records only are available.

For 1942 the amount of water diverted by the larger plants was computed, as above, and several discharge measurements were made at each of the larger plants during the season. Due to the intermittent operation of the smaller plants and the large area to be covered by the field engineers, it was not possible to make many discharge measurements at any one of these smaller plants. However, it is felt that possibly the rating as initially determined, remains more or less constant and that over a period of time, enough measurements will be secured to determine any change in the rating. The diversions for 1942 have been computed on a monthly basis only and the breakdown into daily records was not made.

A summary of the 1942 diversions throughout the Sacramento-San Joaquin territory is shown in Table 67. A segregation is made to show the relative diversions from the various river sources. For each segregation the table shows also the acreage irrigated and the computed seasonal gross duty of water. Table 68 shows a comparison of the rice acreage served during the period 1924-1942, from the stream channels in the Sacramento-San Joaquin Valley area under water supervision, with the rice acreage in California served from all sources and reported by the Federal-State

Crop Reporting Service. Table 66 summarizes the diversions and irrigated acreages between different points on the Sacramento River. Table 49 shows a comparison of the Sacramento River stream flow irrigation draft and gross duty of water for the years 1924 to 1942, inclusive. Tables 50, 51 and 52 show similar data for the Feather, Yuba and American rivers. In Table 53 is shown the average monthly diversions in per cent of seasonal for the streams in the Sacramento and San Joaquin Valleys. A summary of the monthly diversions from the Sacramento Valley streams for the period of record prior to 1942 is given in Tables 54 to 57. All data available since 1924 regarding monthly diversions, acreage irrigated, and gross duty of water for the San Joaquin Valley streams and Delta Upland channels are given in Tables 58 to 64. Table 65 shows, for the Sacramento River only, the seasonal diversions and acreages irrigated for the period 1924-1942, segregated to the different river sections.

TABLE 49

SACRAMENTO RIVER - REDDING TO SACRAMENTO
STREAM FLOW - IRRIGATION DRAFT - GROSS DUTY OF WATER 1924 - 1942

Year	Seasonal Runoff at Red Bluff in Ber cent of normal *	Discharge of Sacramento River at Kennett Cubic feet per Sec.		Irrigation Draft			Acreage Irrigated			Gross Duty of Water				
										Acre-feet per Acre			Acres per sec. foot	
		Average July - Sep. Inclusive	Average July	July	Aver. cfs July-Sep. Inclusive	Acre-feet Mar.-Oct. Inclusive	General	Rice	Total	Jul.-Sep. Inclusive	July	Mar.-Oct. Inclusive	Mar.-Oct. Inclusive	July-Sep. Inclusive
1924	38	2920**	2890**	3075	2470**	953000	104300	59700	164000	2.75	1.15	5.81	84	66
1925	92	3630**	3640**	3444	2960**	843000/	76200	58000	134200	4.03	1.57	6.28	77	45
1926	65	2780	2880	4225	3210	1108000/	76600	87500	164100	3.57	1.58	6.75	72	51
1927	125	3550	3950	4229	3510	1159000/	77900	79800	157700	4.07	1.60	7.35	66	45
1928	87	3320	3580	3693	2920	1055000/	88200	63500	151700	3.52	1.49	6.95	70	52
1929	50	2920	3060	3379	2770	1066000/	136900	43900	180800	2.80	1.15	5.90	83	65
1930	70	2970	3070	3541	2880	1056000/	96600	56200	152800	3.44	1.42	6.91	70	53
1931	38	2570	2600	3937	3030	1335000	141500	73900	215400	2.57	1.13	6.20	78	71
1932	58	2730	2940	3218	2570	1020000	130700	53800	184500	2.54	1.07	5.53	88	72
1933	52	2770	3010	3211	2680	1042000	101100	53000	154100	3.17	1.28	6.76	72	57
1934	51	2540	2650	3299	2750	1057000	93800	56500	150300	3.34	1.35	7.03	69	54
1935	86	3010	3330	3364	2820	926000	98500	51100	149600	3.44	1.38	6.19	78	53
1936	81	2910	3280	3516	2890	1055000	93100	62700	155800	3.38	1.39	6.77	72	54
1937	68	2950	3380	3827	3210	1070000	101000	66500	167500	3.50	1.41	6.39	76	52
1938	168	4220	4870	3555	2990	932000	85600	62600	148200	3.68	1.47	6.29	77	49
1939	50	3000	3100	3746	2910	1301000	158800	63900	222700	2.38	1.03	5.84	83	77
1940	120	3425	3625	4050	3275	1063000	119700	64400	184100	3.25	1.35	5.77	84	56
1941	164	4500	5180	4314	3850	1150000	118600	85200	203800	3.44	1.31	5.64	86	53
1942	129	4340	4905	4662	4100	1279000	111200	107600	218800	3.42	1.31	5.84	83	53
Average 1924-1942		3213	3470	3699	3042	1077000	105800	65800	171600	3.23	1.32	6.28	77	56

* 50 year mean (1889-1939) of natural run-pff. See Tables 1, 3 & 5 for comparison of 40 and 50 year means.
** Flow near Red Bluff. Station at Kennett established in 1926.
/ Diversions for March estimated.

TABLE 50

FEATHER RIVER - OROVILLE TO MOUTH

STREAM FLOW - IRRIGATION DRAFT - GROSS DUTY OF WATER 1924 - 1942

Year	Seasonal Runoff at Oroville in Per cent of Normal *	Discharge of Feather River at Oroville Cubic Feet per Sec.		Irrigation Draft			Acreage Irrigated			Gross Duty of Water				
										Acre-feet per Acre			Acres per Sec. Ft.	
		Average July-Sep. Inclusive	Average July	July	Aver. cfs July-Sep. Inclusive	Acre-feet Mar.-Oct. Inclusive	General	Rice	Total	July-Sep. Inclusive	July	Mar.-Oct. Inclusive	Mar.-Oct. Inclusive	July-Sep. Inclusive
1924	27	933	852	950	917	355346	22402	22541	44943	3.72	1.30	7.92	61	49
1925	65	1719	1770	1464	1287	417150	25560	26734	52294	4.49	1.72	7.98	61	41
1926	65	1839	1840	1712	1432	474025	23545	34694	58239	4.49	1.81	8.14	60	41
1927	121	1920	2110	1857	1578	533615	24944	38513	63457	4.54	1.80	8.41	58	40
1928	88	1689	1980	1697	1363	497201	23383	33145	56528	4.40	1.85	8.80	55	41
1929	38	2080	1920	1416	1134	453464	29011	23917	52928	3.91	1.64	8.57	57	47
1930	80	1986	1890	1517	1225	450020	25604	24258	49862	4.48	1.87	9.03	54	41
1931	30	1177	1230	1333	1059	464138	24683	27079	51762	3.73	1.58	8.97	54	49
1932	68	1570	1990	1621	1327	496713	24115	28108	52223	4.64	1.91	9.51	51	39
1933	39	1389	1590	1533	1286	478326	21897	26541	48438	4.84	1.95	9.88	49	38
1934	42	1445	1530	1325	1085	428008	23984	24918	48902	4.05	1.67	8.75	56	45
1935	88	1937	2067	1502	1258	390873	25162	20849	46001	4.99	2.01	8.50	57	37
1936	88	2171	2242	1612	1349	479093	23990	26546	50536	4.87	1.96	9.48	51	37
1937	65	1760	2138	1787	1529	507765	26705	30203	56908	4.90	1.93	8.92	54	37
1938	175	2674	3334	1757	1594	512600	26938	27144	54082	5.38	2.00	9.48	51	34
1939	39	1516	1460	1497	1168	501357	29234	26303	55537	3.84	1.66	9.03	54	48
1940	116	1966	1913	1713	1414	473974	30117	23526	53643	4.81	1.96	8.84	55	34
1941	133	2229	2754	1681	1547	475240	27658	26640	54298	5.20	1.90	8.75	56	35
1942	136	2558	3169	2042	1833	539693	25177	38477	63654	5.25	1.97	8.48	57	35
Average 1924 - 1942		1820	1990	1580	1340	470000	25500	27900	53400	4.58	1.82	8.80	55	40

* 50 year mean (1889 - 1939) of natural runoff. See tables 1, 3 & 5 for comparison of 40 and 50 year means.
(1) Some of the smaller plants were omitted in 1924.

TABLE 51

YUBA RIVER - SMARTVILLE TO MOUTH
STREAM FLOW - IRRIGATION DRAFT - GROSS DUTY OF WATER 1925 - 1942

Year	Seasonal Runoff at Smartville in Per cent of Normal *	Discharge of Yuba River at Smartville Cubic feet per Sec.		Irrigation Draft			Acreage Irrigated			Gross Duty of Water				
										Acre-feet per Acre			Acres per Sec. Ft.	
		Average July-Sep. Inclusive	Average July	July	Aver. cfs July-Sep. Inclusive	Acre-feet Mar.-Oct. Inclusive	General	Rice	Total	July-Sep. Inclusive	July	Mar.-Oct. Inclusive	Mar.-Oct. Inclusive	July-Sep. Inclusive
1925(1)	85	417	637	16	10	4045	1796	0	1796	1.01	0.55	2.25	217	180
1926	65	226	280	145	133	35908	3234	3279	6513	3.73	1.37	5.51	88	49
1927	142	495	868	160	125	39750	4003	1930	5933	3.84	1.66	6.71	73	47
1928	98	374	546	157	114	36800	4935	1875	6810	3.04	1.42	5.40	90	60
1929	41	252	340	152	139	53254	5180	2450	7630	3.33	1.23	6.99	69	55
1930	73	299	347	191	163	58521	4680	2875	7555	3.93	1.56	7.74	63	46
1931	26	146	152	146	134	63320	4823	2950	7773	3.14	1.16	8.14	60	58
1932	85	359	603	155	137	58201	4950	2615	7565	3.32	1.26	7.70	63	55
1933	43	293	420	178	162	63369	5935	2645	8580	3.46	1.27	7.38	66	53
1934	40	185	222	183	127	52651	6305	1667	7972	2.91	1.40	6.51	74	63
1935	90	383	602	184	153	48850	6535	1552	8887	3.46	1.40	6.05	80	53
1936	104	394	584	168	155	64058	5202	2665	7867	3.58	1.31	8.14	60	51
1937	75	360	541	159	156	59163	6699	2598	9297	3.06	1.05	6.37	76	60
1938	162	748	1410	162	152	43257	5772	1605	7377	3.75	1.35	5.88	83	49
1939	36	213	238	210	186	73113	6642	1898	8540	3.97	1.51	8.56	57	46
1940	115	342	390	247	207	69968	7220	1270	8490	4.45	1.79	8.24	59	41
1941	129	787	1565	221	206	73530	7472	1345	8817	4.27	1.54	8.34	58	43
1942	137	792	1386	243	235	74706	6661	1125	7786	5.50	1.92	9.59	51	33
Average 1925 - 1942		392	618	171	150	54020	5450	2020	7480	3.66	1.41	7.22	67	49

* 50 year mean (1889 - 1939) of natural run-off. See Tables 1, 3 & 5 for comparison of 40 and 50 year means.
(1) Record obtained for Lower Yuba River only.

TABLE 52

AMERICAN RIVER - FAIROAKS TO MOUTH

STREAM FLOW - IRRIGATION DRAFT - GROSS DUTY OF WATER 1925 - 1942

Year	Seasonal Runoff at Fairoaks in per cent of Normal *	Discharge of American River at Fairoaks Cubic feet per Sec. Average July-Sep. Inclusive	Discharge of American River at Fairoaks Cubic feet per Sec. Average July	Irrigation Draft July	Irrigation Draft Aver. cfs July-Sep. Inclusive	Irrigation Draft Acre-feet Mar.-Oct. Inclusive	Acreage Irrigated General	Acreage Irrigated Rice	Acreage Irrigated Total	Gross Duty of Water Acre-feet per Acre July-Sep. Inclusive	Gross Duty of Water Acre-feet per Acre July	Gross Duty of Water Acre-feet per Acre Mar.-Oct. Inclusive	Gross Duty of Water Acres per Sec. Ft. Mar.-Oct. Inclusive	Gross Duty of Water Acres per Sec. Ft. July-Sep. Inclusive
1925	94	565	1080	20	16	4353	3510		3510	0.82	0.35	1.24	392	219
1926	48	207	247	25	16	4606	3073		3073	0.94	0.50	1.50	324	192
1927	127	653	1240	29	21	5636	3343		3343	1.16	0.52	1.68	288	159
1928	88	286	414	21	17	5635	3071		3071	1.00	0.41	1.83	264	181
1929	40	262	482	25	20	6324	3077		3077	1.20	0.50	2.04	239	154
1930	57	276	414	21	15	4955	2639		2639	1.06	0.49	1.87	262	176
1931	25	98	136	20	15	5620	2694		2694	1.03	0.46	2.09	232	179
1932	90	679	1500	21	17	5481	3165		3165	0.96	0.42	1.73	281	187
1933	44	344	633	21	15	4651	2848		2848	0.94	0.46	1.62	300	190
1934	39	179	192	21	15	5505	2770		2770	0.98	0.46	1.99	245	185
1935	90	504	1009	21	15	4815	2808		2808	0.97	0.46	1.71	284	187
1936	118	753	1364	20	16	4727	2492		2492	1.16	0.49	1.90	256	156
1937	81	497	873	25	20	5381	3353		3353	1.07	0.45	1.61	302	168
1938	157	1060	2101	20	16	4287	2923		(1) 2923	1.03	0.43	1.47	331	182
1939	36	127	165	28	19	6654	3064		(1) 3064	1.11	0.55	2.17	224	161
1940	118	511	734	29	19	6052	3061		(1) 3061	1.15	0.58	1.98	245	159
1941	109	715	1319	25	19	5309	3046		(1) 3046	1.12	0.50	1.74	279	160
1942	136	1115	2402	23	18	4167	3132		(1) 3132	1.08	0.44	1.33	364	174
Average 1925-1942		490	906	23	17	5230	3000	0	3000	1.03	0.47	1.74	280	176

* 50 year mean (1889-1939) of natural run-off. See Tables 1, 3 & 5 for comparison of 40 and 50 year means.
(1) An estimated 2200 acres have been added for Carmichael Irrigation District.

TABLE 53

AVERAGE MONTHLY DIVERSIONS IN PER CENT OF SEASONAL FOR SACRAMENTO AND SAN JOAQUIN VALLEY STREAMS

	Period of Record	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.
SACRAMENTO VALLEY		Per Cent of Seasonal Diversion							
Sacramento River - Redding to Sacramento	1924 to 1942	0.7	6.9	17.4	19.8	21.1	19.5	10.9	3.7
Feather River - Oroville to mouth	1924 to 1942	0.3	5.2	18.0	19.7	20.7	19.4	11.9	4.8
Yuba River - Smartville to mouth	1925 to 1942	—	7.7	16.2	18.9	19.5	18.3	12.8	6.6
American River - Fairoaks to mouth	1925 to 1942	0.6	4.5	9.9	20.1	27.0	20.8	11.9	5.2
DELTA UPLANDS									
Old San Joaquin River	1924 to 1942	2.5	9.0	17.1	18.0	20.5	17.2	11.2	4.5
Tom Paine Slough	1924 to 1942	1.5	7.5	15.2	17.2	18.8	18.1	14.3	7.4
San Joaquin River below Vernalis	1924 to 1942	2.8	12.1	15.9	13.7	24.2	18.7	8.9	3.7
SAN JOAQUIN VALLEY									
San Joaquin River - Delta Bridge to Vernalis	1931 to 1942	3.0	19.5	14.6	15.8	22.9	19.1	11.3	3.8
Merced River - Yosemite Valley Railroad Crossing to mouth	1931 to 1942	1.6	7.2	14.5	18.6	22.4	19.0	12.5	4.2
Tuolumne River - La Grange to mouth	1931 to 1942	2.1	7.2	16.9	17.7	20.5	19.0	11.6	5.0
Stanislaus River - Orange Blossom Bridge to mouth	1931 to 1942	1.0	7.6	13.8	19.4	21.5	19.3	11.9	5.5

TABLE 54

SACRAMENTO RIVER - MONTHLY DIVERSIONS IN ACRE-FEET - SACRAMENTO TO REDDING 1924 - 1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversions
1924	7324	102511	184043	186073	189081	163677	97976	22088	952773
1925	1200*	11177	87709	184151	211788	194888	134442	18108	843463
1926	4000*	34326	195052	258889	259777	226874	98632	30220	1107770
1927	600*	31327	206864	234116	260018	241876	139469	44993	1159263
1928	1900*	52335	207747	229261	227058	214549	92114	29574	1054538
1929	5600*	138283	204360	167378	207785	191346	107103	43954	1065809
1930	3100*	74236	198836	221852	217698	199875	107577	32681	1055855
1931	30199	222932	257156	227158	242076	209351	101822	44572	1335266
1932	4661	123973	176667	194500	197849	171122	99657	51571	1020000
1933	4452	118677	188004	189852	197452	185945	105071	52267	1041720
1934	2599	109638	204710	193469	202843	191488	107885	44331	1056963
1935	1524	18598	157817	203562	206813	195215	112498	30137	926164
1936	7320	76534	203802	194110	216217	206858	104203	45925	1054969
1937	3459	32727	210339	210927	235304	217924	133271	26510	1070461
1938	5285	29942	121847	199745	218572	208414	118177	30248	932230
1939	63636	202428	227491	233319	230319	209735	90708	43412	1301048
1940	1802	18073	182534	218505	249012	228765	119951	43988	1062630
1941	1883	5274	157567	228387	265229	259557	177189	55029	1150115
1942	1991	11727	187657	268091	286655	278848	186708	61298	1278975
Average Acre-feet	8030	74460	187400	212800	227400	210100	117600	39520	1077000
Average c.f.s.	131	1251	3048	3576	3698	3417	1976	643	2216
Monthly Diversion in per cent of Seasonal	0.7	6.9	17.4	19.8	21.1	19.5	10.9	3.7	

*Estimated.

TABLE 55

FEATHER RIVER - MONTHLY DIVERSIONS IN ACRE FEET - OROVILLE TO MOUTH 1924 - 1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversions
1924	2652	36440	75741	60132	58418	67365	41618	12980	355346
1925	0*	9506	70947	88956	90047	81340	63395	8829	413020
1926	0*	16528	83297	104100	105255	101623	54446	4083	469332
1927	0*	17522	96458	107706	114211	102251	71514	18669	528331
1928	0*	19912	101655	109875	104359	97452	46986	12040	492279
1929	1500*	48450	97295	83570	87061	82177	37711	12711	450475
1930	0*	31719	78154	91418	93250	89300	40912	20811	445564
1931	5887	67203	98054	85024	81941	71953	39288	14788	464138
1932	2158	50002	85950	94140	99640	93180	49359	22284	496713
1933	5388	31219	91529	91635	94231	85891	54515	23918	478326
1934	2245	34217	92225	82379	81467	72334	44121	19020	428008
1935	214	1538	51974	89713	92372	85835	51342	17885	390873
1936	768	14136	92675	92002	99147	90575	56374	33416	479093
1937	620	5647	92614	99882	109850	103248	65946	29958	507765
1938	0	3512	76975	98534	108039	104846	77969	42725	512600
1939	3583	71539	99567	90960	92044	83292	37752	22620	501357
1940	188	2207	84408	95502	105337	93454	59182	33695	473973
1941	0	2448	70513	72971	103334	100433	78451	47090	475240
1942	0	0	61352	113416	125530	122146	86814	30435	539693
Average Acre-feet	1330	24410	84280	92200	97130	90980	55670	22520	468500
Average c.f.s.	22	410	1370	1550	1580	1480	936	366	964
Monthly Diversion in per cent of seasonal	0.3	5.2	18.0	19.7	20.7	19.4	11.9	4.8	

*Estimated

TABLE 56

YUBA RIVER - MONTHLY DIVERSIONS IN ACRE-FEET - SMARTVILLE TO MOUTH 1925 - 1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversions
1925	-	-	617	1594	985	586	249	14	4045
1926	0	0	4681	6825	8893	10785	4604	120	35908
1927	-	304	6492	9761	9808	8733	4220	432	39750
1928	0	0	7329	8759	9651	8816	2245	0	36800
1929	0	3972	10808	8843	9376	8710	7308	4237	53254
1930	0	4803	9234	10293	11752	10825	7137	4477	58521
1931	0	10471	12111	10427	8991	8986	6468	5866	63320
1932	0	8778	10151	9973	9525	9188	6371	4215	58201
1933	0	7617	11048	10516	10917	10920	7724	4627	63369
1934	0	7112	11137	10985	11235	8454	3496	232	52651
1935	0	525	9034	11008	11313	10013	6674	283	48850
1936	0	9709	11579	10513	10330	10009	7908	4010	64058
1937	0	8093	9913	10055	9749	9815	8835	2703	59163
1938	0	360	4807	9371	9982	9433	8284	1020	43257
1939	176	8986	13174	12890	12889	12739	8304	3955	73113
1940	0	1326	9377	14114	15190	11798	10780	7383	69968
1941	0	2624	10589	13076	13574	13419	10672	9576	73530
1942	0	36	5703	14736	14955	14841	13086	11349	74706
Average Acre-feet	10	4150	8770	10210	10510	9890	6910	3580	54020
Average c.f.s.	0.2	70	143	172	171	161	116	58	111
Monthly Diversion in per cent of seasonal	—	7.7	16.2	18.9	19.5	18.3	12.8	6.6	

TABLE 57

AMERICAN RIVER - MONTHLY DIVERSIONS IN ACRE-FEET - FAIROAKS TO MOUTH 1925 - 1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversions
1925	10*	66	261	985	1233	1198	458	142	4353
1926	0*	5	390	1162	1519	894	480	156	4606
1927	5*	16	317	1028	1754	1577	529	410	5636
1928	10*	121	580	1406	1263	965	832	458	5635
1929	50*	482	812	936	1539	1280	864	361	6324
1930	30*	317	436	1250	1302	976	504	140	4955
1931	46	469	1127	916	1237	1027	510	288	5620
1932	39	390	598	1116	1317	1164	556	301	5481
1933	0	106	471	1070	1317	924	424	303	4615
1934	63	431	896	1078	1281	806	624	326	5505
1935	5	338	663	893	1289	824	603	200	4815
1936	44	312	355	786	1208	1005	667	350	4727
1937	3	119	329	1082	1518	1252	797	281	5381
1938	0	100	267	824	1256	1117	635	88	4287
1939	73	380	932	1616	1699	1151	557	246	6654
1940	44	339	488	1216	1785	1038	686	456	6052
1941	150	253	379	836	1531	1202	673	285	5309
1942	0	0	13	678	1395	1187	789	104	4167
Average Acre-feet	32	236	517	1050	1410	1090	622	272	5230
Average c. f. s.	0.5	4	8	18	23	18	10	4	11
Monthly Diversion in per cent of Seasonal	0.6	4.5	9.9	20.1	27.0	20.8	11.9	5.2	

*Estimated.

OLD SAN JOAQUIN RIVER - DELTA UPLANDS, MONTHLY DIVERSIONS IN ACRE-FEET AND GROSS SEASONAL DUTY OF WATER - 1924 - 1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversion	Acreage Irrigated		Gross Seasonal Duty, Acre-Ft. per acre
										General	Rice	
1924	10320	10311	12600	12434	12460	10845	8277	3633	80880	29190	0	2.8
1925	100*	1737	7330	13233	16264	13962	9404	2347	64377	34677	0	1.9
1926	500*	4440	15526	17420	16690	15283	12376	2151	84386	37480	0	2.3
1927	80	1815	16312	14758	14252	12651	9398	2504	71770	35351	0	2.0
1928	500*	3430	16895	15037	14526	13701	9185	2679	75953	39924	0	1.9
1929	2000*	12977	13170	8894	14735	13143	9465	3389	77773	37359	0	2.1
1930	400*	5624	15152	14488	15289	12958	8535	3019	75465	36480	0	2.1
1931	5735	17099	10400	9245	14125	10854	3522	389	71369	34232	0	2.1
1932	296	5460	9318	9343	9803	8379	5718	2636	50953	27942	0	1.8
1933	488	10114	10351	10092	10938	10414	6082	3463	61942	27851	0	2.2
1934	3204	14687	10321	8708	12827	9946	5817	3019	68529	29792	0	2.3
1935	10	30	11027	13473	12973	10171	6933	2082	56699	28307	0	2.0
1936	420	5310	12235	8621	14492	9994	6958	5239	63269	30232	0	2.1
1937	3	2621	13418	11093	13590	11934	7100	4853	64612	31913	0	2.0
1938	0	1313	8628	11989	9806	8841	6250	3566	50393	29658	0	1.7
1939	7728	12880	8746	12055	13453	9855	4977	1669	71363	34956	0	2.0
1940	0	1015	9527	10943	14091	10217	6148	3306	55247	29009	0	1.9
1941	0	447	5492	11541	13087	10009	7382	2909	50867	28842	0	1.8
1942	0	516	7175	11077	13143	11425	6740	2878	52954	28749	0	1.8
Average	1670	5890	11240	11810	13500	11290	7380	2930	65730	32210	0	2.0
Average c. f. s.	27	99	183	198	220	184	124	48	135			
Monthly Diversion in per cent of seasonal	2.5	9.0	17.1	18.0	20.5	17.2	11.2	4.5				

*Estimated

TABLE 59

TOM PAINE SLOUGH - DELTA UPLANDS, MONTHLY DIVERSIONS IN ACRE-FEET AND GROSS SEASONAL DUTY OF WATER - 1924 - 1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversion	Acreage Irrigated		Gross Seasonal Duty, Acre-ft. per acre
										General	Rice	
1924	1126	1926	2529	2696	2238	2419	1474	1242	15650	2810	0	5.6
1925	0*	500*	1672	3491	3027	3058	2205	933	14886	7441	0	2.0
1926	100*	926	3676	3095	3238	2903	2507	693	17138	4973	0	3.4
1927	0*	94	3700	2911	3099	3166	2630	1655	17255	6157	0	2.8
1928	200*	785	2111	2589	2456	2353	2497	1649	14640	4906	0	3.0
1929	500*	1554	2376	1642	3028	2814	2100	1154	15168	5195	0	2.9
1930	100*	764	2081	2132	2326	2124	1752	960	12239	4987	0	2.5
1931	530	2109	1324	1602	2325	2286	1981	523	12680	5322	0	2.4
1932	67	1809	926	1883	1952	2068	1894	775	11374	5040	0	2.3
1933	0	1306	1608	1775	1715	1898	1543	1351	11196	4450	0	2.5
1934	70	2069	1272	1433	1936	1616	1578	972	10946	4549	0	2.4
1935	0	0	1593	1917	1797	1826	1241	556	8930	3226	0	2.8
1936	38	990	1680	1670	2469	2373	1709	1308	12237	4450	0	2.7
1937	0	112	1545	1864	2173	2041	1426	503	9664	3302	0	2.9
1938	0	432	1219	1364	1296	1497	1062	427	7297	2887	0	2.5
1939	763	1620	1218	1703	1414	1789	1015	645	10167	3911	0	2.6
1940	0	159	1509	1974	2129	1612	1133	873	9389	4007	0	2.3
1941	0	0	1406	1972	2163	1788	1704	529	9562	3963	0	2.4
1942	0	0	1292	1852	2434	1930	1158	278	8944	4357	0	2.0
Average	184	903	1830	2080	2270	2190	1720	896	12070	4520	0	2.7
Average c. f. s.	3.0	15	30	35	37	36	29	15	25			
Mo.Div. in per cent of seasonal	1.5	7.5	15.2	17.2	18.8	18.1	14.3	7.4				

*Estimated

TABLE 60

SAN JOAQUIN RIVER - DELTA UPLANDS, MONTHLY DIVERSIONS IN ACRE-FEET AND GROSS SEASONAL DUTY OF WATER - 1924-1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversion	Acreage Irrigated		Gross Seasonal Duty, Acre-ft. per acre
										General	Rice	
1924	614	1126	1760	1889	2175	1819	1385	206	10974	4335	0	2.5
1925	0*	6	276	1149	1530	1694	1040	39	5734	3224	0	1.8
1926	2000*	5657	8800	7696	8251	7693	6308	1577	47982	11196	0	4.3
1927	0*	713	8530	8224	8927	9378	4317	746	40835	12870	0	3.2
1928	1000*	3075	7915	7523	9141	8159	4604	1849	43266	17579	0	2.5
1929	2000*	6747	9600	5497	10594	7624	4498	2586	49146	16941	0	2.9
1930	2000*	6823	11848	7555	12899	11800	4227	1357	58409	18486	0	3.2
1931	3009	9378	8007	5475	12617	11759	4141	2126	56512	17021	0	3.3
1932	1452	8519	5767	5133	9972	7349	4365	1704	44261	19088	0	2.3
1933	767	9174	6089	5799	10703	7581	3165	2099	45377	18025	0	2.5
1934	3744	10633	7861	5411	12805	8682	4068	1965	55169	19372	0	2.8
1935	12	1691	6790	8950	10353	7785	3637	1714	40932	16571	0	2.5
1936	1483	7467	6838	4166	11651	8629	3575	1865	45674	18993	0	2.4
1937	3	5355	6512	4285	12542	7737	2824	1970	41228	19648	0	2.1
1938	1	3062	6753	4154	9943	6622	3004	991	34530	17582	0	2.0
1939	4012	9394	5398	6901	11721	8744	3862	1178	51210	18672	0	2.7
1940	4	4638	6974	7011	12805	7978	3300	1932	44642	18457	0	2.4
1941	4	1086	6162	5944	12007	8735	4384	1762	40084	19298	0	2.1
1942	188	2232	5210	6602	12203	9651	4014	2085	42185	17932	0	2.4
Average	1170	5090	6690	5760	10150	7860	3720	1560	42010	16070	0	2.6
Average c. f. s.	19	86	109	97	165	128	63	25	86			
Mo. Div. in per cent of seasonal	2.8	12.1	15.9	13.7	24.2	18.7	8.9	3.7				

*Estimated

TABLE 61

SAN JOAQUIN RIVER - FREMONT FORD BRIDGE TO VERNALIS, MONTHLY DIVERSIONS IN ACRE-FEET AND GROSS SEASONAL DUTY OF WATER - 1928-1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversion	Acreage Irrigated		Gross Seasonal Duty, Acre-ft.per acre
										General	Rice	
1928	*	*	*	*	11854	10574	8925	*	*	*	*	*
1929	*	*	*	*	12814	11021	10790	*	*	*	*	*
1930	*	12970	15632	15951	16472	16921	10860	1654	90460	*	*	*
1931	8084	18145	14765	14752	19847	15593	9607	5203	105996	34894	500	3.0
1932	3510	16745	11018	11802	15571	14886	11562	5010	90104	39813	80	2.3
1933	5496	14431	11244	11762	19043	18373	11437	3795	95581	35036	0	2.7
1934	5935	21809	17152	12615	24787	22392	12880	3123	120693	41696	290	2.9
1935	595	1228	14156	18502	23647	22541	13284	5211	99164	37320	155	2.6
1936	4511	12744	15608	21854	23594	15879	10614	3729	108533	41862	160	2.6
1937	212	3100	17198	16112	25933	21963	12183	3295	99996	41542	230	2.4
1938	69	4378	17054	15089	21991	17576	10842	2767	89766	42226	200	2.1
1939	7044	17485	17212	18955	25161	21288	10366	2505	120016	42379	420	2.8
1940	555	4547	15524	18950	26396	17707	10769	3365	97813	39373	470	2.5
1941	0	302	13633	15486	26484	20840	12725	3947	93417	39866	484	2.3
1942	573	2044	14158	17059	28352	25384	12575	4235	104380	41934	580	2.5
Average**	3050	9750	14890	16080	23400	19540	11570	3850	102120	39830	297	2.5
Average M. c. f. s.**	50	164	242	270	381	318	194	63	210			
Monthly** Diversion in per cent: of seasonal:	3.0	9.5	14.6	15.8	22.9	19.1	11.3	3.8				

*No Record
**1931 to 1942.
NOTE: No records prior to 1928.

TABLE 62

MERCED RIVER - YOSEMITE VALLEY RAILROAD CROSSING TO MOUTH, MONTHLY DIVERSIONS IN ACRE-FEET AND GROSS SEASONAL DUTY OF WATER - 1928-1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversion	Acreage Irrigated		Gross Seasonal Duty, Acre-ft. per acre
										General	Rice	
1928	*	*	*	*	3451	3027	2343	*	*	*	*	*
1929	*	*	*	*	3420	2965	1942	*	*	*	*	*
1930	*	1062	2319	2750	2716	2253	1242	474	12816	*	*	*
1931	778	2836	3298	2902	3553	3232	2128	765	19492	3623	0	5.4
1932	524	1334	1808	2261	2539	2292	1787	711	13256	3299	0	4.0
1933	320	1406	1757	1990	2372	1900	1600	645	11990	3229	0	3.7
1934	627	2627	2989	2637	3202	2673	2018	826	17599	5091	0	3.5
1935	0	70	1612	2684	2764	2472	1607	632	11841	3305	0	3.6
1936	26	486	2192	2149	2426	2705	1623	411	12018	3662	0	3.3
1937	0	108	1341	2514	3114	2876	1671	387	12011	4155	0	2.9
1938	0	123	858	1523	2213	1933	1018	458	8126	3072	0	2.6
1939	38	951	1791	2162	2520	1803	808	236	10309	3478	0	3.0
1940	2	220	1541	2275	2206	1597	949	317	9107	3123	0	2.9
1941	0	0	870	1644	1995	1537	1306	236	7588	3570	0	2.1
1942	0	14	475	1619	2716	2005	1207	363	8399	3302	0	2.5
Average**	193	848	1710	2200	2640	2250	1480	500	11810	3580	0	3.2
Average c. f. s.**	3	14	28	37	43	37	25	8	24			
Monthly** Diversion in per cent of seasonal	1.6	7.2	14.5	18.6	22.4	19.0	12.5	4.2				

* No record
** 1931 to 1942
NOTE: No records prior to 1928.

TABLE 63

TUOLUMNE RIVER - LA GRANGE BRIDGE TO MOUTH, MONTHLY DIVERSIONS IN ACRE-FEET AND GROSS SEASONAL DUTY OF WATER - 1928-1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversion	Acreage Irrigated		Gross Seasonal Duty, Acre-ft.per acre
										General	Rice	
1928	*	*	*	*	327	277	79	*	*	*	*	*
1929	*	*	*	*	477	338	189	*	*	*	*	*
1930	*	173	388	480	523	473	224	59	2320	*	*	*
1931	128	585	560	585	673	585	363	88	3567	894	0	4.0
1932	37	234	260	281	438	331	181	95	1857	653	0	2.8
1933	72	222	213	300	451	411	266	205	2220	855	0	2.6
1934	108	334	396	368	325	349	219	150	2249	845	0	2.7
1935	7	47	326	422	438	375	257	120	1992	770	0	2.6
1936	41	125	387	345	422	442	295	121	2178	736	0	3.0
1937	41	120	540	339	451	409	255	57	2212	752	0	2.9
1938	0	12	135	222	245	201	127	38	980	594	0	1.7
1939	160	149	414	501	455	558	193	104	2534	864	0	2.9
1940	3	19	577	415	642	436	335	151	2578	1072	0	2.4
1941	0	122	519	685	603	607	438	173	3147	1295	0	2.4
1942	7	75	443	462	645	683	343	112	2770	1619	0	1.7
Average**	50	170	397	417	482	449	273	118	2360	912	0	2.6
Average c. f. s.**	1	3	6	7	8	7	5	2	5			
Monthly Diversion in per cent of seasonal	2.1	7.2	16.9	17.7	20.5	19.0	11.6	5.0				

* No records.
** 1931 to 1942.
NOTE: No records prior to 1928.

TABLE 64

STANISLAUS RIVER - ORANGE BLOSSOM BRIDGE TO MOUTH, MONTHLY DIVERSIONS IN ACRE-FEET AND GROSS SEASONAL DUTY OF WATER - 1928-1942

Year	March	April	May	June	July	August	September	October	Seasonal Diversion	Acreage Irrigated		Gross Seasonal Duty, Acre-ft.per acre
										General	Rice	
1928	*	*	*	*	1248	1277	1089	*	*	*	*	*
1929	*	*	*	*	1059	807	605	*	*	*	*	*
1930	*	625	1057	1495	1336	1167	730	115	6525	*	*	*
1931	108	2023	1692	2773	2855	2449	1308	706	13914	2261	0	6.2
1932	431	1142	1529	1994	1780	1678	1216	471	10241	2522	0	4.1
1933	103	1046	1158	1355	1350	1176	684	316	7188	2021	0	3.6
1934	240	1620	1274	1687	1697	1683	780	402	9383	2122	0	4.4
1935	0	250	1177	1702	1855	1745	759	304	7792	2076	0	3.8
1936	0	727	838	1256	1952	1407	943	429	7552	2313	0	3.3
1937	0	508	1816	2248	2530	2429	1756	650	11937	3849	75	3.0
1938	0	327	735	1239	1690	1748	997	309	7045	3198	0	2.2
1939	198	1848	2201	2873	3222	3310	1752	827	16231	6331	0	2.6
1940	217	682	2143	3330	3858	2924	1741	851	15746	6902	0	2.3
1941	12	392	2696	3173	3413	3228	2466	1280	16660	6940	110	2.4
1942	240	356	2533	4242	4590	3972	2721	1360	20014	7095	130	2.8
Average**	129	910	1650	2320	2570	2310	1430	659	11980	3970	26	3.0
Average c. f. s.**	2	15	27	39	42	38	24	11	25			
Monthly** Diversion in per cent of seasonal	1.0	7.6	13.8	19.4	21.5	19.3	11.9	5.5				

* No record.
** 1931 to 1942.
NOTE: No records prior to 1928.

TABLE 65

SACRAMENTO RIVER - SEASONAL DIVERSIONS AND ACREAGES IRRIGATED 1924 - 1942
(SEGREGATED TO RIVER SECTIONS)

Year		River Sections							Redding to Sacramento
		Redding to Red Bluff	Red Bluff to Butte City	Butte City to Colusa	Colusa to Wilkins Slu	Wilkins Slu to Knights Ldg	Knights Ldg to Verona	Verona to Sacramento	
1924	Seasonal diversion acre-feet	99835	407427	67152	167217	99573	18422	93147	952773
	Average cubic feet per second	205	838	138	344	205	38	192	1960
	Acreage irrigated - rice	0	25875	6950	10130	11000	770	4963	59688
	Acreage irrigated - general	20020	32488	12991	19401	6093	854	12422	104269
1925	Seasonal diversion acre-feet	105593	369570	69511	179953	33822	6731	78283	843463
	Average cubic feet per second	217	761	143	370	70	14	161	1736
	Acreage irrigated - rice	0	30467	8761	9156	3054	0	6587	58025
	Acreage irrigated - general	15714	12979	7065	25408	3472	922	10662	76222
1926	Seasonal diversion acre-feet	107160	525287	134027	189515	41796	19700	90285	1107770
	Average cubic feet per second	220	1081	276	390	86	41	186	2280
	Acreage irrigated - rice	0	47827	14117	13214	1781	1537	9025	87501
	Acreage irrigated - general	19890	13580	7534	18778	4440	1803	10600	76625
1927	Seasonal diversion acre-feet	103240	502946	95815	233466	113750	24786	85252	1159263
	Average cubic feet per second	212	1036	197	481	234	51	175	2386
	Acreage irrigated - rice	0	37718	9110	16864	7574	2569	5926	79761
	Acreage irrigated - general	17823	17565	6445	18609	5371	1597	10451	77861
1928	Seasonal diversion acre-feet	113321	446674	68244	224477	77851	22153	101818	1054538
	Average cubic feet per second	234	919	140	461	160	46	210	2170
	Acreage irrigated - rice	0	29911	5751	14024	4865	1642	7353	63546
	Acreage irrigated - general	20789	19996	7452	21875	5889	513	11704	88218
1929	Seasonal diversion acre-feet	120150	478947	70608	205659	76003	18246	96196	1065809
	Average cubic feet per second	247	986	146	423	156	37	198	2193
	Acreage irrigated - rice	0	21680	4557	7979	4404	0	5274	43894
	Acreage irrigated - general	19105	39985	9168	45826	10859	464	11507	136914
1930	Seasonal diversion acre-feet	126760	440617	72341	229715	68169	21528	96725	1055855
	Average cubic feet per second	261	907	149	473	140	44	199	2173
	Acreage irrigated - rice	0	29199	4963	11717	3155	1130	6020	56184
	Acreage irrigated - general	14571	24068	9461	30003	7659	491	10324	96577
1931	Seasonal diversion acre-feet	143543	553663	93184	313237	70966	21506	139167	1335266
	Average cubic feet per second	295	1139	192	645	146	44	286	2747
	Acreage irrigated - rice	0	39532	5462	19067	789	200	8853	73894
	Acreage irrigated - general	14538	33254	10216	54487	9706	2417	16887	141505

TABLE 65 (CONTINUED)

SACRAMENTO RIVER - SEASONAL DIVERSIONS AND ACREAGES IRRIGATED 1924 - 1942
(SEGREGATED TO RIVER SECTIONS)

Year		River Sections							
		Redding to Red Bluff	Red Bluff to Butte City	Butte City to Colusa	Colusa to Wilkins Slu	Wilkins Slu to Knights Ldg	Knights Ldg to Verona	Verona to Sacramento	Redding to Sacramento
1932	Seasonal diversion acre-feet	132035	460462	31846	249723	37791	18573	89570	1020000
	Average cubic feet per second	272	947	66	514	78	38	184	2099
	Acreage irrigated - rice	0	29673	3086	15529	0	567	4968	53823
	Acreage irrigated - general	12745	52084	7387	34883	9159	4707	9782	130747
1933	Seasonal diversion acre-feet	135323	474372	33281	250149	59381	17837	71377	1041720
	Average cubic feet per second	278	975	69	515	122	37	147	2143
	Acreage irrigated - rice	0	31663	1640	15578	2126	270	2017	53294
	Acreage irrigated - general	12809	30479	4436	34925	6468	1847	10057	101021
1934	Seasonal diversion acre-feet	133625	448806	23531	243463	90826	20877	95835	1056963
	Average cubic feet per second	275	924	48	501	187	43	197	2175
	Acreage irrigated - rice	0	29153	587	15853	4497	892	5534	56516
	Acreage irrigated - general	13620	27858	4591	28934	7035	1461	10284	93783
1935	Seasonal diversion acre-feet	121974	385508	19703	225702	74382	20989	77906	926164
	Average cubic feet per second	251	794	41	464	153	43	160	1906
	Acreage irrigated - rice	0	26884	380	14462	4168	650	4546	51090
	Acreage irrigated - general	13405	28589	5142	30663	6804	1313	12577	98493
1936	Seasonal diversion acre-feet	149313	455981	36371	215313	80901	17072	100018	1054969
	Average cubic feet per second	307	937	75	443	167	36	206	2171
	Acreage irrigated - rice	0	30087	2028	14409	7042	400	8696	62662
	Acreage irrigated - general	13254	27579	5423	27832	5884	1542	11579	93093
1937	Seasonal diversion acre-feet	114609	482048	42570	247130	72526	12949	98629	1070461
	Average cubic feet per second	236	992	88	508	149	27	203	2203
	Acreage irrigated - rice	0	34214	2040	19235	3739	0	7318	66546
	Acreage irrigated - general	13324	30634	5843	29888	6710	2631	11806	100836
1938	Seasonal diversion acre-feet	120301	351901	31684	267085	66219	12447	82593	932230
	Average cubic feet per second	248	723	65	550	136	26	170	1918
	Acreage irrigated - rice	0	29522	1790	19616	4264	0	7396	62588
	Acreage irrigated - general	9309	27193	5137	27788	6476	1757	7935	85595
1939	Seasonal diversion acre-feet	141403	587358	29668	292226	89153	21496	139744	1301048
	Average cubic feet per second	291	1209	61	601	183	44	288	2677
	Acreage irrigated - rice	0	32917	750	17360	3667	0	9159	63853
	Acreage irrigated - general	13423	58185	6802	51711	13120	2727	12800	158768

TABLE 65 (CONTINUED)

SACRAMENTO RIVER - SEASONAL DIVERSIONS AND ACREAGES IRRIGATED 1924 - 1942
(SEGREGATED TO RIVER SECTIONS)

Year		River Sections							Redding to Sacramento
		Redding to Red Bluff	Red Bluff to Butte City	Butte City to Colusa	Colusa to Wilkins Slu	Wilkins Slu to Knights Ldg	Knights Ldg to Verona	Verona to Sacramento	
1940	Seasonal diversion acre-feet	116052	479028	15683	249532	70974	34057	97304	1062630
	Average cubic feet per second	239	986	32	513	146	70	200	2187
	Acreage irrigated - rice	0	31754	463	19475	4024	1541	7134	64391
	Acreage irrigated - general	9696	43885	6354	41548	7318	1318	9611	119730
1941	Seasonal diversion acre-feet	135305	493667	16903	305187	95969	25970	77114	1150115
	Average cubic feet per second	278	1016	35	628	197	53	159	2367
	Acreage irrigated - rice	0	40183	530	30716	6786	1013	5968	85196
	Acreage irrigated - general	12205	45217	6772	37039	7923	980	8445	118581
1942	Seasonal diversion acre-feet	119216	553834	37714	335431	116200	26820	89760	1278975
	Average cubic feet per second	245	1140	78	690	239	55	185	2632
	Acreage irrigated - rice	0	49299	2668	39415	8957	660	6664	107663
	Acreage irrigated - general	13513	47696	5123	30095	5425	1476	7898	111226
	Average 1924 - 1942								
	Seasonal diversion acre-feet	123100	468300	52100	243400	75590	20110	94770	1077000
	Average cubic feet per second	253	964	107	501	155	41	195	2216
	Percent of seasonal draft	11.4	43.5	4.8	22.6	7.0	1.9	8.8	
	Acreage irrigated - rice	0	33030	3980	17040	4520	728	6495	65790
	Acreage irrigated - general	14720	32280	7020	32090	7150	1620	10910	105800

TABLE 66

SUMMARY OF SACRAMENTO RIVER DIVERSIONS, DIVERSION PERCENTAGES AND ACREAGES IRRIGATED - 1942

River Section	Acre-feet diverted and monthly use in per cent of seasonal									Per Cent of Seasonal Draft	Acreage Irrigated		Acre-feet per Acre
	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Seasonal Draft		General	Rice	
Redding to Red Bluff (Ac. Ft.)	134	113	8465	22167	23145	22905	22031	20256	119216	9.3	13513	0	8.8
Per cent of seasonal	.1	.1	7.1	18.6	19.4	19.2	18.5	17.0					
Red Bluff to Butte City	0	6249	86511	113748	117414	114878	78905	36129	553834	43.4	47696	49299	5.7
Per cent of seasonal	0	1.1	15.6	20.5	21.2	20.8	14.3	6.5					
Butte City to Colusa	0	0	1199	13367	9821	9050	3980	297	37714	2.9	5123	2668	4.8
Per cent of seasonal	0	0	3.2	35.4	26.0	24.0	10.6	.8					
Colusa to Wilkins Slough	0	3186	59902	70735	80955	75019	44951	683	335431	26.2	30095	39415	4.8
Per cent of seasonal	0	.9	17.9	21.1	24.1	22.4	13.4	.2					
Wilkins Slough to Knights Ldg.	0	377	17516	23690	28034	27455	18067	1061	116200	9.1	5425	8957	8.1
Per cent of seasonal	0	.3	15.1	20.4	24.1	23.6	15.6	.9					
Knights Landing to Verona	0	7	2831	6777	6284	5886	5032	3	26820	2.1	1476	660	(1)12.6
Per cent of seasonal	0	.1	10.6	25.3	23.4	21.9	18.8	.1					
Verona to Sacramento	1857	1795	11233	17607	21002	19655	13742	2869	89760	7.0	7898	6664	6.2
Per cent of seasonal	2.1	2.0	12.5	19.6	23.4	21.9	15.3	7.2					
Total	1991	11727	187657	268091	286655	274848	186708	61298	1278975		111226	107663	5.8
Average cubic feet per second	32	197	3052	4505	4662	4470	3138	997	2632				
Monthly diversion in per cent of seasonal	.1	.9	14.7	21.0	22.4	21.5	14.6	4.8					

(1) The principal diversion on this section of river is the Portuguese Bend plant of Sutter Mutual Water Co. Area irrigated is included in section between Colusa and Wilkins Slough.

TABLE 67

DIVERSIONS, ACREAGE IRRIGATED, AND GROSS SEASONAL (MARCH TO OCTOBER, INCLUSIVE) DUTY OF WATER IN THE SACRAMENTO-SAN JOAQUIN AREA - 1942

Source	Table Number	Seasonal Diversions Acre-feet	Acreage Irrigated			Gross Seasonal Duty of Water Acre-feet per-acre
			General	Rice	Total	
Sacramento River - Redding to Sacramento	69	1278975	111226	107663	218889	5.8
Feather River below Oroville	74	539693	25177	38477	63654	8.5
Yuba River on Valley floor	75	74706	6661	1125	7786	9.6
American River below Fairoaks	76	4167	(1) 3132	0	(1) 3132	(1) 1.3
By-Pass and Drainage Channels	73	25059	7281	2667	9948	3.5
Lower Butte Creek and Slough	72	31879	2067	1045	3112	(2) 3.3
Colusa Trough and Back Borrow Pit	70-71	66049	2995	7167	(3) 10162	6.5
Total above Sacramento		2030528	(1) 158539	158144	(1) 316683	(2) 6.4
Delta Uplands from:						
Old San Joaquin River	77	52954	28749	0	28749	1.8
Tom Paine Slough	78	8944	4357	0	4357	2.1
San Joaquin River (below Durham Ferry Bridge)	79	42185	17932	0	17932	2.4
San Joaquin River from Fremont Bridge to Durham Ferry Bridge	80	104380	41934	580	42514	2.5
Merced River below Snelling	81	8399	3302	0	3302	2.2
Tuolumne River below Roberts Ferry Bridge	82	2770	1619	0	1619	1.7
Stanislaus River below Orange Blossom Bridge	83	20014	7095	130	7225	2.8
Total delta uplands & pumping diversions of San Joaquin River and Tributaries*		239646	104988	710	105698	2.3
Sacramento-San Joaquin Delta**		(See Table 132)				

* Note that major gravity diversions by canals of Oakdale, South San Joaquin, Modesto, Turlock, Waterford and Merced Irrigation Districts and Miller and Lux are not included within the scope of these measurements.

** Delta crop census not taken in 1942. See 1938 and reports prior to 1933 for detailed data.

(1) Includes 2200 acres classed as suburban lands but not shown in totals for Table 76.

(2) Duty figured after taking into account 6650 acres of gun clubs not shown in totals. Diversions after November 1 not included.

(3) A large portion of this diversion was used to supply acreages reported under Sacramento River Diversions (Provident Irrigation District). See footnote Table 69, Provident Irrigation District diversions at Mile 154.0R.

TABLE 68

RICE ACREAGE IN CALIFORNIA

A comparison of rice acreage served from stream channels in Sacramento-San Joaquin Valleys with rice acreages in California from all sources.

Year	Rice Acreage		Rice acreage in Sacramento-San Joaquin Valley in per cent of total rice acreage
	Served from all sources*	Served from stream channels in Sacramento-San Joaquin Valleys**	
1924	90000	89000	99
25	103000	95000	92
26	149000	129000	87
27	160000	123000	77
28	132000	101000	76
29	95000	74000	78
30	110000	88000	80
31	125000	126000	100
32	110000	91000	83
33	108000	87000	80
34	108000	92000	85
35	100000	78000	78
36	138000	104000	75
37	132000	109000	82
38	125000	95000	76
39	120000	104000	87
40	118000	94000	80
41	153000	120000	78
42	(1) 207000	159000	77
Average 1924-1942	125400	103100	82

* As reported by Federal-State crop reporting service.
** From reports of Sacramento-San Joaquin Water Supervision.
(1) During 1942 there was a large increase in acreages served from sources other than Sacramento, San Joaquin Rivers and tributaries.

TABLE 69

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.		General	Rice
"M" STREET BRIDGE - SACRAMENTO - City of Sacramento	MILE 0.0 0.8L	1-18" 3-20"	1857	1795	2376	3517	4129	3816	3018	2401	22909	Municipal	
AMERICAN RIVER - MILE 1.1 LEFT													
BACK BORROW PIT RECLAMATION DISTRICT 1000 - MILE 1.3 LEFT													
E. Fourness	1.45R	1-8"				25	148	12			185	154	
M. Zubiri	2.05L	1-8"				NO DIVERSION							
RECLAMATION DISTRICT 1000 DRAIN - MILE 2.1L													
Elmer F. Christophel(1)	2.15L	1-8"				18	37	13	19		87	38	
Elmer F. Christophel	2.4L	1-5"				NO DIVERSION							
H. M. Swalley	2.45L	1-5"				14	5	1	5		25	42	
N. J. Parr	2.9L	1-6"				9	13	11	7	2	42	23	
Di Giorgio Fruit Corp.(2)	3.55R	1-16"				257	108				365	161	
W. E. M. Beardslee Estate	3.75R	1-5"			39	27	40	26	25	21	178	58	
M. C. C. Van Loben Sels	4.0R	1-10"				NO DIVERSION							
Reese & Greer	4.65R	1-7"					42	8			50	106(3)	
A. M. Harbinson (4)	5.05R	1-14"					120	56			176	88(5)	
R. S. Seydel	5.25R	1-8"			8	31	35	20	21	13	128	127	
Alan Merkley (6)	5.3R	1-8"				9	9				18	54	
Lucy Casselman	5.5R	1-6"				7	11				18	37	
A. A. Casselman	5.55R	1-6"				4	19				23	40	
K. L. Lovdal	5.7R	1-10"				NO DIVERSION							
J. E. Bandy	6.0R	1-6"				19	26				45	84	
Riverside Mutual Water Company	6.1L	2-18"				521	991	780	236		2528	1063	
O. A. & F. L. White	6.6R	1-6"					8	44	22		74	70	
E. S. Fisk	7.0R	1-4"				NO DIVERSION							
Fred C. Jones	7.5L	1-8"					14	42	24		80	100	
M. R. Williamson (7)	7.8L	1-10"				4	28	31	8		71	85	

* Mileage along river above Sacramento.
(1) New installation 1942.
(2) Formerly Earl Fruit Company.
(3) Includes 18 ac. served by plant at Mile 5.05R.
(4) Formerly Harbinson Brothers.
(5) An additional 18 ac. served for plant at Mile 4.65R.
(6) Formerly C. H. Merkeley Estate.
(7) Formerly California Western States Life Insurance Company.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of Pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
A. Marty	7.9R	1-8"				6	72	43			121	(1) 285	
Bennett Bros.	7.9L	1-10"				37	147	97			281	56	
M. Marty	8.3R	1-8"				32	193	57			282	(2)	
		1-10"											
Blauth Estate	8.5R	1-7"				32	79	12			123	83	
H. Waldeck	8.7R	1-6"			5	6	9	26	15	3	64	41	
Miller & Plato(3)	8.95R	1-6"				NO DIVERSION							
Capital Company	9.35R	1-14"				119	218	151	79		567	175	
R. G. Pearson and P. S. Driver	9.8L	1-14"				8	311	246	23		588	(4) 363	
Carl Casselman	9.9R	1-12"					64	131	40		235	110	
Lloyd M. Robbins	10.25L	1-14"				14	186	101		25	326	67	
Reese Estate	10.75R	1-12"						112	44		156	225	
Fiddyment (Lauppe) and Natomas Co. (Rosa)	10.75L	1-12"					45	73			118	60	
McKeehan & Harris	11.1R	1-10"(5)			280	335	600	569	514	112	2410	89	160
		1-12"											
A. L. White	11.6L					PLANT REMOVED							
—ELKHORN FERRY - MILE 11.9													
Conaway Ranch	12.0R	4-36"			439	2475	1795	2062	885		(6) 7656	1100	(7) 2700
Thomas O'Connor	12.5R	1-12"(8)					36	35	12		83	85	
Gertrude Brown	12.7R	1-6"			1	14	30	7	1		53	30	
Julius Hauser	13.1R	1-12"			19	80	107	88	23		317	138	
J. Corey	13.2R	1-8"				NO DIVERSION							
Socal & Bonnetto (9)	13.25R	1-8"			9	36	62	18	4		129	45	
Elkhorn Mutual Water Co.	14.1L	1-20"				1075	1525	1221	570	52	4443	1527	
		1-24"											
Joseph Veress	14.25R	1-10"				57	92	33	10		192	126	
M. E. Dole	14.4R	1-6"				NO DIVERSION							
Capital Company	15.15R	1-10"				57	82	56	18		213	72	
California Trust & Savings Bank	15.7L					PLANT REMOVED							

* Mileage along river above Sacramento.

(1) This is the combined acreage served by this plant and the one at Mile 8.3R. Of this acreage 50 acres received supplemental water from wells.

(2) See note for plant at Mile 7.9R.

(3) Formerly Hazel Goethe.

(4) Acreage divided as follows: Driver 135, Pearson 128 and includes 100 acres on adjoining Fong Yen Lands.

(5) 10" unit added in 1942.

(6) Additional water during spring from Willow Creek and By-Pass runoff.

(7) Includes 140 acres on adjoining Swanston lands and 345 acres for gun clubs.

(8) 5" unit has been removed.

(9) Formerly M. Narahara.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of Pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Central Mutual Water Company	16.0L	(1)2-38"			2766	3595	3785	3870	2949		(2) 16965	(3)558	(3)3804
Fisher & Rich (Hershey Plant)	16.27R	1-20"					14	25			39	28	
H. T. Silvius	16.4R	1-6"				NO DIVERSION							
California Trust & Savings Bank	16.62R	1-10"				NO DIVERSION							
California Trust & Savings Bank	16.7R	1-12"				NO DIVERSION							
Fisher & Rich	17.4R	1-18"				41	57				98	125	
California Western States Life Insurance Company	17.75R	1-20"					252	117			369	80	
M. & J. Scheiber (Ashwanden)	18.45L	1-12"					54	59	9	47	169	100	
G. H. Lyall	18.7L	1-8"				NO DIVERSION							
Northern Mutual W.Co.(Bennett)(4)	(1.0S)	(5) 1-20"			809	806	766	884	831	27	4123	(6)	(6)
Northern Mutual W.Co. (Central)	(2.0S)	(5) 3-24"			4482	4320	4638	4702	4330	166	22638	(6)	(6)
Natomas Ben May Plant	(3.3S)	(4) 1-10"				NO DIVERSION							
—VERONA GAGING STATION - MILE 19.6—													
SACRAMENTO TO VERONA Totals			1857	1795	11233	17607	21002	19655	13742	2869	89760	7898	6664
Average cubic feet per second			30	30	183	296	342	320	231	47	185		
Monthly use in per cent of seasonal			2.1	2.0	12.5	19.6	23.4	21.9	15.3	3.2			
—FEATHER RIVER - MILE 20.9L—													
—SACRAMENTO SLOUGH - MILE 21.2L—													
West Coast Life Insurance Co.	21.7R	1-15"				NO DIVERSION							
Frank Fisher & Henry Rich (Keller Plant)	22.5R	1-22"			400	1057	858	785	692		3792		550
A. F. Johnston	26.8L	1-8"						23			23	100	
Frank B. Edson	28.2L	1-4"				NO DIVERSION							
Morse Inglin	28.2R	1-6"				17	25	5	19		66	30	
Russell Bros.	29.2R	1-12"				35	62	13	38	3	151	118	
M. R. Richardson	29.7R	1-8"					24	26	16		66	67	
P. L. Traganza and Kate Russell	29.75R	1-8"					22	11			33	64	

* Mileage along river above Sacramento.

(1) 20" unit not installed in 1942.

(2) This plant pumps to the irrigation canal both from a drain canal of R.D. 1000 and from the Sacramento River. The diversions listed are those from the river only. The water obtained from the drain canal was as follows: (Acre-feet) May 490, June 340, July 390, August 465, September 420. Total 2105.

(3) This is the total acreage served by this plant and the one on the south bank of cross canal Mile 19.6L and includes 60 acres general crops for plant at Mile 15.7R. An additional 1365 acres rice served from interior drains.

(4) New installation 1942.

(5) Cross canal, the main drain between R. D. 1000 and 1001 joins the Sacramento River at Mile 19.6L. Distance of plant from Sacramento River and bank are shown in ().

(6) See acreage note for plant at Mile 16.0L.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Sebastine Yturraldi	29.9L	1-12"					26	26			52	48	
Leo Giovanetti	30.2L	1-5"					15	7	4		26	20	
M. R. Richardson	30.6R	1-12"					39	57			96	189	
Floyd Anderson	30.7R	1-6"				NO DIVERSION							
George Senf	30.9L	1-8"				20	18				38	35	
A. C. Huston	31.5R	1-12"					22	20			42	50	
M. Alonzo	31.8L	1-6"				NO DIVERSION							
M. R. Richardson	32.0R	1-12"					153	141	91		385	300	
Sutter Mutual Water Co.(Portuguese Bend)	32.0L	2-24"		7	2251	5189	4583	4331	3559		19920	(1)	(1)
Collier Bros.	32.5R	1-10"				35	27	21	10		93	85	
Walter H. Ziegler	33.2L	2-10"			180	424	410	381	603		1998	310	110
J. G. Knox	33.35L	1-8"				NO DIVERSION							
Snowball Estate	33.5R	1-12"				NO DIVERSION							
Leiser Bros.	33.75L	1-12"						39			39	60	
J. W. Snowball	33.85R	1-6"				NO DIVERSION							
—KNIGHTS LANDING GAGING STATION - MILE 34.0—													
VERONA TO KNIGHTS LANDING													
Totals			0	7	2831	6777	6284	5886	5032	3	26820	1476	660
Average cubic feet per second			0	.1	46.0	114	102	95.7	84.6	.1			
Monthly use in per cent of seasonal			0	—	10.6	25.3	23.4	21.9	18.8	—			
—COLUSA BASIN DRAINAGE - MILE 34.15—													
Meek Estate (2)	34.2R	1-10"				NO DIVERSION(2)						(2)	(2)
		2-16"											
River Farms Co. (Townsite Plant)(3)	34.25R	1-20"				NO DIVERSION(3)						(3)	(3)
		1-24"											
		1-26"											
Commercial Investment Co.	34.85L	1-12"					18	48			66	106	
Walter Raymond	35.2L	1-12"				NO DIVERSION							
Walter Raymond	35.62L	1-7"				NO DIVERSION							
J. H. Donnelly Ranch (Bundock Bros.)	35.8L	1-10"				15	21	20	7	3	66	87	

*Mileage along river above Sacramento.

(1) See plant at Mile 63.75 L.

(2) See plant on Knights Landing Ridge Cut 0.8R (By pass and Drainage Channel diversions).

(3) Land usually served by this plant now gets water through plant on Back Borrow Pit Mile 0.03L.

TABLE 69 CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of Pump	Monthly Diversions in Acre-feet								Total Diversion: March to: October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		Gen-eral	Rice
F. L. Burrell (J. L. Sills)	36.2L	1-14"			260	267	312	249	466	58	1612		175
R. H. Bailey (J. L. Sills)	36.45L	1-8"				NO DIVERSION							
Amedeo Moroni (Leiser Bros.)	36.7L	1-5"				NO DIVERSION							
Robert Bottimore	37.2L	1-14"				NO DIVERSION							
Bundock Bros.	37.75L	1-8"					11	27			38	73	
Addie Reel	38.4L	1-10"						64			64	85	
Capital Company (H. A. Kramer)	38.8L	1-10"						74			74	80	
F. O. Eastman	39.4L	1-12"					57				57	75	
Commercial Investment Company (C. L. Reel)	39.8L	1-10"						44			44	75	
Wm. Duffy Jr.	39.9L	1-6"				NO DIVERSION							
Sutter Mutual Water Co. (State Ranch Bend)	40.6L	2-24" 1-36"		377	4320	6274	5577	5992	4226	132	26898	(1)	(1)
Buell Ranch (M.K. Dean)	41.8L	1-4"				NO DIVERSION							
Buell Ranch (M. K. Dean)	42.2L	1-6"				NO DIVERSION							
Matteolli & Fratchia	42.3L	1-8"				NO DIVERSION							
Kramer Ranch (2)	43.1L	1-12"				19	41	176	2	4	242	250(3)	
El Dorado Ranch	43.1R	1-18"				214	162	56	300	261	993	558	
River Farms Co. (R.D.#2047 Plant)	43.1R	2-50"			7564	6160	11297	10753	6446	115	42335	1035	4845(4)
—RECLAMATION DISTRICT 108 DRAINAGE PLANT - MILE 44.0R—						55	60				115	200	
John Clauss	44.2L	1-14"				NO DIVERSION							
John Clauss	47.3L	1-14"				940	938	920	545		4215	295	200
P. J. Hiatt	48.7L	2-20"			872	20		23			43	50	
G. J. Hiatt (5)	49.7L	1-14"				5719	5398	4666	4000	468	22151		2497
R. D. #108 (Tyndall Mound Plant)	51.1R	2-24" 1-36"			1900	1002	1022	952	508		4323	245	120
Holmes & Noble (P. J. Hiatt)	51.2L	2-16"			839	NO DIVERSION							
J. F. White	51.5L	1-8"				101	139	65			305	100	
T. J. Cummins Ranch Co.	52.0L	1-16"				NO DIVERSION							
George Van Ruiten	52.9L	1-10"				24		31	21	8	84	100	
George Van Ruiten	53.9L	1-12"				129	75	115	42		361	153	
Broomieside Farm	55.1L	1-20"				1484	1172	1431	654		5558	420	600
R. D. #108 (Boyer Bend Plant)	56.4R	1-18" 1-30"			817								
C. M. Miller	56.42R	1-6"					5		2		7	5	

*Mileage along river above Sacramento.

(1) See plant at Mile 63.75L.
(2) Formerly listed as A. Kramer Estate.
(3) Includes 150 acres on adjoining Brown property.
(4) Includes 3841 acres on Reclamation District #108 lands.
(5) Listed in 1941 as G. J. Glenn.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Broomieside Farm	56.95L	1-20"				NO DIVERSION							
L. M. Miller	57.0R	1-10"				24	24	31	19	4	102	(1) 69	
Lamb Bros.	57.5L	1-16"				NO DIVERSION							
James A. Neilson	58.2L	1-15"					102	94	51		247	194	
Alex Grant	58.9L	1-16"				41	17	72			130	25	
I. G. Zumwalt	59.1R	1-12"				38	147	129			314	255	
Lamb Bros.	59.8L	1-8"			944	1134	1297	1323	754		5452	510	520
		1-12"											
		1-14"											
R. D. #108 (Steiner Bend Plant)	59.85R	1-16"				NO DIVERSION							
F. L. Burrell	60.4L	1-10"				11	71				82	160	
Blanche Coulter Brown	60.5L	1-12"				NO DIVERSION							
Sutter Basin Corp. (Coles Ldg.)	61.3L	1-12"				NO DIVERSION							
I. G. Zumwalt	61.5R	1-12"						35			35	48	
Hines Ranch	62.3R	1-10"					38	26			64	95	
Blanche Coulter Brown	62.3L	1-10"				NO DIVERSION							
Jake Locovitch	62.6R	1-8"				NO DIVERSION							
R. L. Young	62.8L	1-8"				19	33	39	24	8	123	77	
—WILKINS SLOUGH GAGING STATION - MILE 62.9—													
KNIGHTS LANDING TO WILKINS SLOUGH Totals			0	377	17516	23690	28034	27455	18067	1061	116200	5425	8957
Average cubic feet per second			0	6.3	285	398	456	447	304	17.3	239		
Monthly use in per cent of seasonal			0	0.3	15.1	20.4	24.1	23.6	15.6	.9			
R. D. #108 (Wilkins Slough Plant)	63.2R	5-42"			17900	16747	22359	19233	7613	112	83964	(2) 927	(2)12815
B. W. Meister	63.65L	1-8"				35	6				41	70	
Sutter Mutual Water Company (Tisdale Plant)	63.75L	2-48"		1393	33626	41248	42578	42088	30370		191303	(3)18451	(3)20344
		6-42"											
Ombaum, Nobles, Land & Livestock Co.	64.3R	1-12"						47			47	20	
Tisdale Irrigation & Drainage Co.	64.4L	1-12"			197	391	471	541	528		2128	(4) 1172	(4) 205
Van Horn Ranch	64.9R	1-14"				98	237	139			474	(5) 220	

*Mileage along river above Sacramento.

(1) Includes 12 acres on adjoining lands.

(2) Rice figure includes 800 acres outside of district. See plant at Mile 43.1R (River Farms Company) for additional R. D. #108 acreage.

(3) This is the total acreage served by this plant and the ones at Mile 32.0L and 40.6L and includes lands served in R. D. 1660 as follows: General 1170, Rice 1096; Water delivered (acre-feet) April 107, May 1996, June 2615, July 2636, Aug. 2553, September 1701, Total 11608.

(4) This is the total acreage served by this plant and the one at Mile 67.1L.

(5) An additional 17 acres served for plant at Mile 65.1R.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
M. Bettencourt	65.1R	1-8"				NO DIVERSION (1)					(1)	17	
Capital Company	65.7L	1-10"				NO DIVERSION							
M. P. Schohr	65.8R	1-16"				47	15				62	60	
J. L. Browning	66.4R	1-18"				NO DIVERSION							
Tisdale Irrigation & Drainage Co.	67.1L	1-12"			453	720	1190	1168	864		4395	(2)	(2)
		1-20"											
Desmond A. Winship	67.2L	1-10"				NO DIVERSION							
Newhall Land & Farming Co. (3)	67.5L	2-24"		15	2267	3159	3410	2658	2210		13719	1600	(4) 1519
—RECLAMATION DISTRICT #70 DRAIN - MILE 68.80L—													
Meridian Farms Water Co. #5 (5)	68.8L	1-24"									(6)	(6) 376	(6) 57
J. L. Browning	69.0R	1-24"				342	313				655	400	
Faxon Ranch	69.2R	1-18"					200	25			225	(7) 154	
—EDDYS FERRY (GRIMES) - MILE 69.45—													
Wilber Jensen and Mary Cecil, et al.	70.35R	1-24"				NO DIVERSION							
H. F. Daly	70.4L	1-10"				NO DIVERSION							
Houchins, Hoffman, Beckley & Ritchie	70.4R	1-6"			200	880	1013	800	345	49	3287		520
		1-20"											
		1-24" (8)											
Meridian Farms Water Co. #4	71.1L	1-24"			230	889	1074	1494	312		3999	1041	379
A. B. Armstrong (9)	71.9R	1-12"				56	238	88	9		391	(10) 118	
Antone Steidlmayer	71.9R	1-12"				NO DIVERSION (11)					(11)	(11) 90	
California Western States Life Insurance Company	72.3L	1-7"					55				55	90	
E. B. Vann	73.0R	1-10"				NO DIVERSION							
Meridian Farms Water Co. #3	74.8L	1-18"				417	167	305	74	10	973	621	
L. B. Westfall	75.3R	1-10"					61	39	16		116	(12) 163	
J. H. Yates	76.1L	1-12"						48			48	65	
Joseph Miller (Sanborn)	76.2L	1-8"				17					17	(13) 45	

*Mileage along river above Sacramento.

(1) See plant at Mile 64.9R.
(2) See plant at Mile 64.4L.
(3) Formerly Scott F. Ennis and E. S. Brown.
(4) Rice figure includes the following acreages: Middleton 120 and Sutter Butte Land Company 431.
(5) Combination irrigation and drainage plant.
(6) No diversion from river. All pumping from drain canal.
(7) Includes 50 acres on Andreath lands.
(8) 24" unit added in 1942.
(9) Formerly J. L. Browning.
(10) An additional 90 acres served for Steidlmayer plant at Mile 71.9R.
(11) See Armstrong plant at 71.9R.
(12) Includes 110 acres on adjoining Tuttle and Brown lands.
(13) Includes 30 acres on adjoining lands of M. S. Davis.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Steidlmayer Bros.	76.5R	1-16"					59				59	160	
F. V. Jacobs	77.9L	1-12"				NO DIVERSION							
Sebia Davis Estate	78.2R	1-16"				NO DIVERSION							
Sebia Davis Estate	78.8R	1-14"			1822	2341	1845	1739	645		8392		1926
		1-24"											
C. E. Reische	79.0L	1-10"				42	69	57	7		175	(1)159	
Steidlmayer Bros.	79.0R	1-12"				NO DIVERSION							
Henry Schmidt	79.3R	1-10"				NO DIVERSION							
E. V. Jacobs	79.5L	1-8"				NO DIVERSION							
G. W. Wood	79.7L	1-10"				21	31	11			63	(2)58	
—MERIDIAN BRIDGE - MILE 79.85—													
Meridian Farms Water Co. #1 & 2	80.0L	1-20"		1778	3092	2583	4422	4239	1626	500	18240	2316	1650
		1-24"											
Roger C. Wilbur	80.3R	1-8"					31			7	38	45	
Wonderly & Lillienthal	81.5L	1-16"				84	51	28	44		207	(3)83	
Steidlmayer Bros.	81.9R	1-20"					123	2	232		357	(4)460	
F. T. Reische and L. F. Wood	82.5L	1-12"				NO DIVERSION							
J. T. Pinkard	83.05L	1-7"				NO DIVERSION							
George W. Kirkpatrick Estate	83.3L	1-14"				NO DIVERSION							
J. E. Clark	83.5L	1-8"				NO DIVERSION							
—BUTTE SLOUGH OUTFALL GATES - MILE 84.0L													
Clifford Reichel	85.8L	1-8"				NO DIVERSION							
Ewing and Halsey	86.1R	1-12"					51				51	70	
Lydell Peck	86.1L	1-8"				NO DIVERSION							
Lydell Peck	86.6L	1-18"				NO DIVERSION (5)					(5)	(5)	
Lloyd Scoggins	86.8L	1-8"				7	30				37	(6)45	
Capital Company (Wilbur)	86.9R	1-10"			35	74	49	17	5	5	185	80	
Capital Company (Wilbur)	87.4R	1-10"				16	44				60	35	
Jacobson & O'Rourke	87.6L	1-10"				NO DIVERSION							
Swinford Tract Irrigation Co.	87.7R	1-12"			80	64			36		180	(7)140	
Edward K. Lange	88.0R	1-6"					8				8	20	
Nagle & Locovitch	88.2L	1-10"				NO DIVERSION							

*Mileage along river above Sacramento.

(1) Includes adjoining acreages as follows: Rockholt 19, Kilgore 30, Lemos 28, Staas 24.
(2) Includes 28 acres on Burtis lands.
(3) Includes 50 acres on Rowley lands.
(4) Includes 70 acres on adjoining lands of A. H. Tubbs.
(5) See plant at Mile 86.8L.
(6) An additional 35 acres are served for plant at Mile 86.6L.
(7) Divided as follows: M. P. Montgomery 33, J. F. Montgomery 15, Sutton 36, Cairo 12, Edmonds 17 and Tennant 27.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
W. D. De Jarnett Estate	88.7L	1-14"				83					83	125	
Colusa Irrigation Co.	89.2R	1-20"				374	755	253	15		1397	564	
Phil B. Arnold	89.25L	1-8"				NO DIVERSION							
G. A. Berkey	89.26L	1-12"				NO DIVERSION							
—COLUSA BRIDGE & GAGING STATION - MILE 89.4—													
WILKINS SLOUGH TO COLUSA Totals			0	3186	59902	70735	80955	75019	44951	683	335431	30095	39415
Average cubic feet per second			0	53.5	974	1189	1317	1220	755	11.1	690		
Monthly use in per cent of seasonal			0	.9	17.9	21.1	24.1	22.4	13.4	.2			
Lillian and Hattie Boggs	89.7L	1-6"				NO DIVERSION							
Roberts Ditch Company	90.7R	2-20"			75	420	450	379	226	190	1740	910	
Paul R. Westfall	91.1L	(1)1-8"								20	20	20	
I. G. Zumwalt	91.6R	1-12"				NO DIVERSION							
George P. Ahlf	92.5L	1-8"						27	10		37	(2) 52	
Paul R. Westfall (3)	93.0L	(3)				PLANT REMOVED(3)							
Brown Ranch (Halsey & Yerxa)(4)	93.0R	1-12"				NO DIVERSION							
Paul R. Westfall	93.4L	1-8"								26	26	63	
		1-10"											
Tuttle Land Company	94.3R	1-15"				72	171	175			418	(5)196	
		1-20"									(6)	(6) 20	
W. D. De Jarnett Estate	94.6R	1-8"				NO DIVERSION(6)							
Capital Company	94.8R	1-12"				NO DIVERSION							
A. N. Lewis	95.6L	1-16"					430	269			699	400	
		1-20"										(7) 25	
Bridget Graham Estate	95.8L	1-16"				NO DIVERSION(7)							
I. G. Zumwalt	96.8R	1-15"				NO DIVERSION							
H. Heitman	97.7R	1-12"				NO DIVERSION							
Frank N. Beckley	98.0L	1-10"					20	31			51	(8) 20	
J. L. Erisey	98.3R	1-10"				NO DIVERSION							

*Mileage along river above Sacramento.

(1) Formerly listed as 6" unit.

(2) Includes 45 acres on adjoining Colusa Development Company lands.

(3) Formerly Colusa County Bank. Now temporary point of diversion only.

(4) Formerly U. W. Brown.

(5) An additional 20 acres served for plant at Mile 94.6R.

(6) See plant at Mile 94.3R.

(7) See plant at Mile 98.0L.

(8) An additional 20 acres served for plant at Mile 95.8L.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
R. A. Sperry and Colusa Development Company	98.6L	1-15"				NO DIVERSION							
D. Boggs	98.8L	1-18"				21	72	55			148	104	
Cheney Slough Irrigation Co.	99.0R	2-26"				NO DIVERSION							
		1-36"											
J. P. Boggs	99.1L	1-10"				39	68	74			181	135	
Terrill & Sartain	99.2L	1-20"				302		23			325	546	
Dave George (Bond & Cauzza)	99.8L	1-16"				NO DIVERSION							
R. C. Wohlfrom (Gillenwater)	101.1R	1-20"				134	131	41			306	133	
Clara C. Packer	102.8R	2-18"				320		450	171		941	430	
		2-30"											
		1-36"											
Charles W. Welch	103.7R	1-16"			140	198	410	103		61	912	405	
Compton-Delevan Irrigation Dist.	103.8R	2-24"				NO DIVERSION(1)						(1)	(1)
		1-36"											
C. W. Tuttle	103.9R	1-16"			89	632	817	637	438		2613		450
		1-20"											
I. G. Zumwalt	104.8L	1-12"					125				125	150	
Thousand Acre Ranch (H. W. Keller)	106.0R	1-14"				42	95	14			151	150	
Capital Company	110.0R	1-12"				95	76				171	145	
Capital Company	111.2R					PLANT REMOVED							
—PRINCETON FERRY - MILE 112.0—													
Reclamation District #1004	112.1L	2-30"			895	11038	6926	6772	3135		(2) 28766	(2) 1110	(2) 2218
		1-50"											
Princeton-Codora-Glenn Irr. Dist.	112.4R	3-24"				NO DIVERSION (3)					(3)	(3)	(3)
I. G. Zumwalt (Stone Ranch)	112.6L	1-10"				35	20				55	83	
Edward L. Steele Estate	115.5L	1-12"				19	10				29	26	
—BUTTE CITY GAGING STATION - MILE 115.8—													
COLUSA TO BUTTE CITY													
Totals			0	0	1199	13367	9821	9050	3980	297	37714	5123	2668
Average cubic feet per second			0	0	19.5	225	160	147	66.9	4.83	77.6		
Monthly use in per cent of seasonal			0	0	3.2	35.4	26.0	24.0	10.6	0.8			
R. H. Gebicke	115.85L	1-14"				NO DIVERSION							
—BUTTE CITY FERRY - MILE 115.9—													
Butte City Ranch	115.9R	1-10"				52	52	46	28		178	46	

* Mileage along river above Sacramento.

(1) See plant at Mile 154.8R

(2) Additional water diverted and acreage served from Butte Creek Mile 9.3R.

(3) See plant at Mile 154.8R.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Butte City Ranch	116.7R	1-10"				14	15				29	22	
R. H. Gebicke	116.9L	1-12"				87	153	102			342	180	
Capital Company	117.8R					PLANT REMOVED							
C. T. White	123.7R	1-6"				NO DIVERSION					2	4	
S. Taylor	123.8R	1-3½"					1	1					
Princeton-Codora Glenn Irr. Dist.	123.9R	3-24"				NO DIVERSION	(1)				(1)	(1)	(1)
Provident Irrigation District	124.2R	1-36"				NO DIVERSION	(1)				(1)	(1)	(1)
		4-42"											
Capital Company (Shelloe Ranch)	124.4R	1-16"				NO DIVERSION	(1)				(1)	(1)	(1)
Capital Company	126.3R	1-12"				NO DIVERSION	(1)				(1)	(1)	(1)
F. S. Reager	130.75R	1-6"				NO DIVERSION							
—ORD FERRY - MILE 130.8—													
M. & T. Inc. & Parrott Invest. Co.	141.5L	5-24"			40	445	290	1780	1229	78	(2) 3862	(3)6357	(3)1800
—OLD CHICO LANDING RAILROAD BRIDGE SITE - MILE 142.1													
Alameda Putney	145.8L	1-6"						12	11	9	32	20	
Edward Fierro	146.5L	1-6"						3	5		8	10	
C. C. Dunning	148.9R	1-10"					34	40	34	27	135	70	
—GIANELLA BRIDGE - MILE 149.5—													
Capital Company	150.0L	1-10"				80	69	108			257	155	
Joseph Gianella	(4)150.0L					PLANT REMOVED							
Holly Sugar Corporation (5)	150.8R	1-12"				281	675	426	64		1446	856	
		1-16"											
Holly Sugar Corporation	151.0R					PLANT REMOVED							
A. Holecek	152.2R	1-6"				20	25	18	17	2	82	30	
Maas Bros.	154.6R	1-5"				7	7	7	7	3	24	12	
Glenn-Colusa Irrigation District(6)	154.8R	2-30"		6086	56740	78290	82893	79655	55354	33062	(7)392000	30579	32132
		1-42"											
		2-50"											
		2-66"											
		4-72"											
		1-100"											

* Mileage along river above Sacramento.

(1) See plant at Mile 154.8R.

(2) Additional water from Butte Creek as follows: (Acre-feet) May 7700, June 7400, July 7000, August 4600, September 4100, Total 30800. About equally divided between M. & T. and Parrott Inv. Co.

(3) Acreage divided as follows: M. & T.,1100 rice and 5059 general; Parrott Inv. Co., 700 rice and 1298 general.

(4) Pump was on Nord Slu or Pine Creek Lagoon which joins Sacramento River at Mile 147.0L. Plant is located 3 miles up slough on right bank or opposite Mile 150.0L, Sacramento River.

(5) New installation 1942 to replace plant at 151.0R.

(6) This is common point of diversion for Glenn-Colusa, Jacinto, Compton-Delevan, Provident, Princeton-Codora-Glenn, Maxwell Irrigation District and Capital Company.

(7) Additional water from Stony Creek by gravity as follows: (Acre-feet) April 6250, May 21420, June 2840. Diversion figure includes delivery outside of District as follows: (Acre-feet) Mills Orchard 685.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet							Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Jacinto Irrigation District	154.8R	(1)		93	2660	4060	4200	4030	3190	2320	20553	(2)6318	
Compton-Delevan Irrigation Dist.	154.8R	(1)			1870	3740	4440	4870	1684	250	16854		3030
Provident Irrigation District	154.8R	(1)			13050	12580	10600	10940	8270	360	(3) 55800	(4)618	(4)7034
Princeton-Codora-Glenn Irr. Dist.	154.8R	(1)		150	11639	13143	12880	11623	8404		57839	2116	(5) 3413
Maxwell Irrigation District	154.8R	(1)			496	595	643	698	380		(6) 2812		1890
Capital Company (Shelloe Ranch)	154.8R	(1)				200	109	272			581	70	
Capital Company (Leonard Ranch)	154.8R	(1)					89	91	99		279	80	
Jonathon Garst	161.7L	2-16"				NO DIVERSION							
—CORNING VINA BRIDGE - MILE 166.5—													
A. F. Landis	166.7R	1-7½"				4	6	11	8	2	31	13	
Mrs. Guy Whitnack	166.8R	1-2"				1	1	1	1	1	5	4	
—TEHAMA BRIDGE - MILE 177.5—													
E. B. Noble	184.5R	1-14"			16	59	93	55	45	15	283	60	
Coneland Water Company	187.6L	1-12"				NO DIVERSION							
Wallace Bosworth	188.6L	1-8"				NO DIVERSION							
—RED BLUFF BRIDGE - MILE 193.45—													
G. E. Sutton	196.2R					PLANT REMOVED							
J. Keithdriber	196.5L	1-2½"				NO DIVERSION							
S. & E. Erickson	196.6L	1-5"				20	38	2	18		78	36	
C. Droz	197.0L	1-8"				77	101	87	57		322	40	
W. H. Freemeyer	197.65L	1-3"				NO DIVERSION							
—RED BLUFF GAGING STATION (IRON CANYON) - MILE 198.6—													
BUTTE CITY TO RED BLUFF Totals			0	6249	86511	113748	117414	114878	78905	36129	553834	47696	49299
Average cubic feet per second			0	105	1407	1912	1910	1868	1326	588	1140		
Monthly use in percent of seasonal			0	1.1	15.6	20.5	21.2	20.8	14.3	6.5			
C. C. Budd	206.75L	1-10"				44	43				87	36	
—BEND FERRY BRIDGE - MILE 207—													
Mrs. A. A. Keene	209.0L	1-2½"				NO DIVERSION							
J. F. Nunes	213.0R	1-7"					48	62		37	147	30	
F. L. Jelly	213.5L	1-3"				NO DIVERSION							

* Mileage along river above Sacramento.

(1) Same plant as that of Glenn-Colusa Irrigation District.

(2) An additional 31 acres served for Provident Irrigation District.

(3) District operates plants on Colusa Trough (See Table 70) to supplement diversions from river.

(4) An additional 740 acres rice served for Princeton-Codora-Glenn Irrigation District. Includes 31 acres general served by Jacinto Irrigation District.

(5) Includes 740 acres rice served by Provident Irrigation District.

(6) No record of any additional water being received by District.

TABLE 69 (CONTINUED)

SACRAMENTO RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
—JELLYS FERRY - MILE 215.6—													
J. F. Nunes	216.0R	1-3"				NO DIVERSION							
W. A. Hunaeus	216.4L	1-3"				NO DIVERSION							
T. A. Haakonson	217.5L	1-3½"				27	30	1			58	54	
J. L. Haskins	218.0L	1-5"					38	25			63	50	
Rio Alto Rancho	221.0R	1-10"				NO DIVERSION							
—BALLS FERRY BRIDGE - MILE 224.5—													
—ANDERSON BRIDGE - MILE 232.9—													
L. C. Smith	233.0L	1-6"				6	4				10	2	
Menzel Estate	240.2L	1-12"				299	371	177	118		965	130	
Anderson-Cottonwood I.D.	240.5L	1-24"			330	2344	2315	2471	2299	749	10508	1790	
Jack Graf	241.5L					PLANT REMOVED							
—REDDING - ALTURAS BRIDGE - MILE 242.0—													
—REDDING - YREKA BRIDGE - MILE 245.9—													
Columbia Construction Co.	245.4L	1-16"			NO AGRICULTURAL USE, GRAVEL WASHING ONLY								
		1-18"											
Anderson-Cottonwood Irr. Dist.	246.0R	Gravity			7971	19220	19953	19847	19354	19321	(1)105666	11404	
—SOUTHERN PACIFIC RAILROAD CROSSING - MILE 246.25—													
John Diestelhorst	246.3R	1-10"				12	23	25	24		84	17	
—OLD REDDING- YREKA BRIDGE - MILE 246.4—													
City of Redding	246.7R	2-6"	134	113	164	215	320	297	236	149	1628	Municipal	
RED BLUFF TO REDDING													
Totals			134	113	8465	22167	23145	22905	22031	20256	119216	13513	
Average cubic feet per second			2.18	1.90	138	373	376	373	370	329	245		
Monthly use in per cent of seasonal			.1	.1	7.1	18.6	19.4	19.2	18.5	17.0			
TOTAL DIVERSIONS - SACRAMENTO TO REDDING													
Totals			1991	11727	187657	268091	286655	274848	186708	61298	1278975	111226	107663
Average cubic feet per second			32	197	3052	4505	4662	4470	3138	997	2632		
Monthly use in per cent of seasonal			.1	.9	14.7	21.0	22.4	21.5	14.6	4.8			

*Mileage along river above Sacramento.

(1) Considerable return water from this diversion reaches the Sacramento River as seepage or direct spill in drains and creek channels between Redding and south of Cottonwood.

TABLE 70

*COLUSA TROUGH DIVERSIONS - 1942

Water User	**Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet							Total diversion March to October Acre-feet	Acreage Irrigated		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice	Gun Club
—COLUSA TROUGH GAGING STATION - MILE 0—														
I. G. Zumwalt	2.2L	1-15"			100	200	400	1000	200		1900		(1)1220	
		1-20"												
		1-36"												
Buffem & Seaver (2)	3.0L	1-12"			107	472	791	713	434		2517		300	
Wierdsma Bros.	4.5L	1-12"			NO DIVERSION									
Maxwell Irr. Dist. Plant #2A	7.0R	1-15"			NO DIVERSION (3)						(3)	(3)	(3)	
		1-26"												
Maxwell Irr. Dist. Plant #3A	Opp.7.0R(4)	1-20"			NO DIVERSION (3)						(3)	(3)	(3)	
S. Ashe	7.65R	1-10"			NO DIVERSION									
S. Ashe	8.0R	1-20"			NO DIVERSION									
El Dorado SportsmansClub	9.5R	1-15"							150	240	390			30
M. A. Rourke Estate	10.5L	1-20"			NO DIVERSION									
Provident I. D. (Delevan Pump)	Opp.13.5R(5)	1-20"			NO DIVERSION (6)						(6)	(6)	(6)	
—LATERAL HIGHWAY - BUTTE CITY TO WEST SIDE - MILE 20.5—														
Provident I.D.(Willow Cr.Plant)	Opp.20.5R(7)	1-24"			306	1431	2162	2184	1169	27	(6) 7279	(6)	(6)	
		1-36"												
Henry Jameson Estate	22.0R	1-18"				100	111	150	31		392	240		
Provident I. D. (Drain #55)	Opp.24.2R(8)	Gravity		327	1094	1717	1956	2280	2420	1769	(6)11563	(6)	(6)	
Provident I. D. (Drain #13)	Opp.27.0R(9)	1-15"			633	977	951	950	707		(6) 4218	(6)	(6)	
Total Acre-feet			0	327	2240	4897	6371	7277	5111	2036	28259	240	1520	30
Average cubic feet per second			0	5.5	36	82	104	118	86	33	58			
Monthly use in per cent of seasonal			0	1.2	7.9	17.3	22.5	25.8	18.1	7.2				

* Main drain of Reclamation District 2047.

** Mileage along Colusa Trough above Colusa-Williams Highway.

(1) This diversion is supplementary to main supply received from Glenn-Colusa Irrigation District.

(2) Formerly A. D. J. Land Company.

(3) See Maxwell Irrigation District's diversion at Mile 154.8R.

(4) Plant is on Lateral E (Stone Corral Creek) and is 3/4 mile west of Plant #2A (Mile 7.0R).

(5) Plant is on Hunter Creek at SW Corner Section 36, T. 18 N., R. 3 W.

(6) See Provident Irrigation District diversion at Mile 154.8R.

(7) Plant is on Willow Creek at SW Corner NE¼, Section 33, T. 19 N., R. 2 W.

(8) Works are on Drain #55 and are in S½ N½, Section 86, Glenn Ranch survey.

(9) Works on Drain #13 and are in SW¼ SW¼, Section 51, Glenn Ranch survey.

TABLE 71

*BACK BORROW PIT DIVERSIONS - 1942

Water User	**Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
—KNIGHTS LANDING RIDGE CUT JUNCTION - MILE 0.4R—													
River Farms Company (1)	.03L	1-16"				432	1305	1336			3073	715	
River Farms Company	1.45R	1-16"				NO DIVERSION							
E. L. Wallace and W. Crawford	4.35R	1-16"				NO DIVERSION							
		1-20"											
Reclamation District 108	8.8R	1-14"				NO DIVERSION							
Hershey Estate (Johnson & Peterson)	11.15R	1-12"			140	687	423	513	201		1964		401
		1-14"											
Hershey Estate	13.75R	1-16"			320	643	835	783	143		2724		606
Reclamation District 108	13.76L					PLANT REMOVED							
C. M. Mumma	14.75R	1-10"			30	104	82	79	26		321	80	78
—COUNTY LINE BRIDGE - MILE 15.25—													
M. T. Emmert	15.75R	1-15"			300	490	470	441	130		1831		387
Katherine West	18.1R	2-15"			455	833	665	803	369		3125		1000
C. R. Suggett	20.0R	1-15"				NO DIVERSION							
Gregory Estate	21.35R	1-16"			45	1095	1051	803	473		3467		400
Bean and Brandenburg	22.15R	1-14"				NO DIVERSION							
J. W. Browning (Kaelin)	22.65L	1-24"			400	1118	1284	1117	828		4747		575
—HANNUM BRIDGE - MILE 22.8—													
—SOUTHERN PACIFIC RAILROAD CROSSING - MILE 23.0—													
H. Balsdon	24.6L	1-20"				463	508	561			1532	1040	
A. M. Dobrowsky (Moore)	24.7L	1-8"					60	44	23		127	60	
—GRIMES-COLLEGE CITY CAUSEWAY - (SOUTH LINE OF RECLAMATION DISTRICT 2047) - MILE 25.5—													
Fred Schutz (Tuttle)	25.9L(2)	1-16"			265	1362	1935	782			4344	660	780
		1-20"											
C. W. and M. F. Struckmeyer(3)	27.25L	1-16"			385	761	1056	1057	722		3981	200	(4)320
		1-20"											
Wallace Ranch (Wilkins)	28.0R	2-12"			349	1047	546	531	563		3036		(6)550
		(5)1-15"											
WALLACE CROSSING - MILE 29.2 (OLD MERIDIAN-WILLIAMS BRIDGE)—													
Sebia Davis Estate (7)	32.5L	1-24"				400					400		(7)
J. C. Hornall	33.5R	1-20"				NO DIVERSION							
W. H. O'Hair	36.65R	1-20"			57	518	771	802	970		3118		550
—COLUSA-WILLIAMS HIGHWAY - MILE 37.0—													
—COLUSA TROUGH GAGING STATION AT "COLUSA-WILLIAMS HIGHWAY"—													
Totals			0	0	2746	9953	10991	9652	4448	0	37790	2755	5647
Average cubic feet per second			0	0	45	167	179	157	75	0	78		
Monthly use in per cent of seasonal			0	0	7	26	29	26	12	0			

*Carries return water from Colusa Basin along West Border of Reclamation Districts 108 and 787 and thence to discharge to Sacramento River at Knights Landing or partial diversion via Knights Landing Ridge Cut.

**Mileage along Borrow Pit from outfall gate just above junction of Borrow Pit with Sacramento River at Knights Landing.

(1) This plant serves some of the land formerly served by Sacramento River plant (Mile 34.25R).
(2) Corrected mileage.
(3) New installation 1942.
(4) Additional acreages served as follows: Wallace (Mile 28.0R) 160 and Morris 120.
(5) 15" unit added in 1942.
(6) Includes 160 acres served from plant at Mile 27.25L.
(7) Temporary installation 1942. Used to supplement diversions from Sacramento River at Mile 78.8R.

TABLE 72

LOWER BUTTE CREEK AND BUTTE SLOUGH DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice	**Gun Club
Lower Butte Creek														
—SACRAMENTO RIVER JUNCTION - MILE 0—														
Reclamation District 833	1.5L	1-8"				NO DIVERSION								
Reclamation District 833 (Ingram)	2.9L	1-36" box					410	558			968	525		
West Butte Farms Co.	3.85L	1-8"				NO DIVERSION								
Reclamation District 1004 (1)	3.9R(1)	1-15"				NO DIVERSION					(1)	(1)	(1)	
		1-24"												
Butte Lodge Outing Club	4.0R	1-22"				NO DIVERSION(2)					(2)			900
El Anzar Duck Club	5.35L	1-12"				NO DIVERSION								
Reclamation District 1004 (1)	9.3R(1)	Gravity			574	951	1272	1622	2059	1362	(1) 7840	741	411	(3)
Butte Basin Gun Clubs (4)	10.0(4)	Gravity							6000	9000	15000			5000
White Mallard Duck Club	10.2R	1-36" box								248	248			750
Murdock Land Company	14.4R	1-12"				NO DIVERSION								
—GRIDLEY ROAD - MILE 15.4—														
Murdock Land Company	19.3R	1-14"				101	134	145	89	45	514	115		
—BIGGS-AFTON ROAD - MILE 19.4—														
Glenn Rice Farms	20.4R	1-24"			164	426	703	638	374		2305		220	
—RICHVALE - BUTTE CITY ROAD - MILE 22.5—														
Elefante & McGowan (5)	23.0R	1-20"			666	916	1118	985	636		4321		414	

*Approximate mileage from junction with Sacramento River.

**Only diversions which occurred prior to November 1st are given for gun club acreages. In most instances diversions for this purpose extended into November and December.

(1) Reclamation District 1004 diversion points are: Sacramento River 112.1 Left, and Butte Creek Mile 3.9 Right, and 9.3 Right.

(2) Served through R. D. 1004 diversion at Mile 9.3R.

(3) See plant at Mile 4.0R.

(4) In addition to gun clubs under other diversions listed, this comprises the group of clubs diverting Butte Creek water by gravity from the main or interconnecting channels (Sanborn Slough, etc.) in the vicinity of Mile 10. Through R. D. 833 canals, most of the clubs in this group receive also drainage and Feather River water diverted from the clubs by Western Canal. These diversions are principally in the fall months. For diversions via Western Canal see table of Feather River Diversions, Mile 59.7R. The area flooded by this group is estimated to be approximately 5000 acres. The clubs included are Wild Goose, Last Chance, Berry and Keller, Tule Goose, Bettens, Greenhead, Field and Tule, North Butte, Henshaw, Sacramento Outing, Anderson, West Butte, and Colusa Shooting.

(5) Formerly O. W. Baker and Sons, Inc.

TABLE 72 (CONTINUED)

LOWER BUTTE CREEK AND BUTTE SLOUGH DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice	**Gun Club
Butte Slough														
Butte Slough Irrigation Co. Ltd. (Diversion to Sutter By-Pass)	0.3W	Gravity									(1)	(2)		
M. Marty	0.3W	1-12"				14:	13:	25:	14:		66:	74:		
G. S. & D. C. Smith	1.4E	1-8"					36:	52:			88:	180:		
—MAWSON BRIDGE - MILE 2.1—														
J. E. Smith	3.0W	1-10"					35:	8:	5:		48:	67:		
I. E. Nall	3.5W	1-10"					14:	60:	45:		119:	90:		
P. A. Reische (Ross Place) (3)	3.7W	1-10"					21:	17:			38:	30:		
P. A. Reische	4.1W	1-10"					204:	10:			214:	(4)125:		
E. V. Jacobs	4.8W	1-10"					25:	15:			40:	60:		
Armstrong-Hensen-Locovitch	5.1W	1-12"					30:	30:	10:		70:	(5) 60:		
W. Nall	6.3W					PLANT REMOVED:								
T. J. Hageman	6.8W	3-8"				NO DIVERSION:								
—OLD LONG BRIDGE - MILE 7.5 WEST—														
Totals (Lower Butte Creek and Butte Slough			0:	0:	1404:	2408:	4015:	4165:	9232:	10655:	31879:	2067:	1045:	6650:
Average cubic feet per second			0:	0:	23:	40:	65:	68:	155:	173:	66:			
Monthly return in per cent of seasonal			0:	0:	4:	8:	12:	13:	30:	33:				

*Approximate mileage from junction with Sacramento River.

**Only diversions which occurred prior to November 1st are given for gun club acreage. In most instances diversions for this purpose extended into November and December.

(1) Butte Slough Irrigation Company maintains a dam on Butte Slough just above its junction with Sacramento River and thereby diverts water via Butte Slough to East and West Borrow Pits of Sutter By-Pass near "Long Bridge". The total water so diverted is shown in Table 97. Rediversions from West Borrow Pit of Sutter By-Pass are made. See Sutter By-Pass Diversions, Table 73.

(2) See acreages under rediversions - West Borrow Pit Sutter By-Pass. A considerable additional but indefinite acreage was served by sub-irrigation and direct diversions from flow diverted to East Borrow Pit of Sutter By-Pass which is joined by Feather River return flow entering via Wadsworth Canal, Table 101. See East Borrow Pit Sutter By-Pass Diversions, Table 73.

(3) Plant reinstalled 1942 at an old point of diversion.

(4) Acreage divided as follows: S. E. and P. A. Reische 70; C. P. Reische 55.

(5) All on P. B. Hensen lands.

TABLE 73

BY-PASS AND DRAINAGE CHANNEL DIVERSIONS - 1942

Water User	Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice	Gun Club
West Borrow Pit of Sutter By-Pass														
(1)														
--SOUTHERN PACIFIC RAILROAD CROSSING - MILE 2.5--														
C. Fred Holmes	7.1*					PLANT REMOVED								
--KNIGHTS LANDING - MARYSVILLE CAUSEWAY - MILE 12.7--														
--SOUTH LEVEE TISDALE BY-PASS - MILE 18.9--														
--RECLAMATION DISTRICT 1660 GRAVITY RETURN - MILE 19.3--														
Sutter Basin Improvement Co. (Guisti)	24.4	1-24"		200	1500	1500	1500	1450	1000		7150		802	
Butte Slough Irrigation Co. Ltd.(2)	25.0	Gravity			200	240	248	248	96		1032	(3)		
Butte Slough Irrigation Co. Ltd.	28.4	Gravity			1421	1905	2041	1952	698		8017	(4)4086		
Fred and George Tarke	28.6					PLANT REMOVED								
Frye Bros.	29.0					PLANT REMOVED								
--NEW COLUSA - MARYSVILLE HIGHWAY - MILE 29.1--														
--NORTHERN ELECTRIC RAILROAD CROSSING - MILE 29.15--														
East Borrow Pit of Sutter By-Pass														
(5)														
R. E. Hughes (A. Christenson)	0.4S*	1-14"				NO DIVERSION								
R. E. Hughes	0.1S*	1-16"				NO DIVERSION								
--GAGING STATION "WILLOW SLOUGH AT CHANDLER" - MILE 0--														
R. E. Hughes	0.5N*	1-16"						552			552	(6)1465	(6)350	
--RECLAMATION BOARD DRAINAGE PLANT #1 - MILE 1.4N--														
Earl Lane	(7)1.4N(0.4)					PLANT REMOVED								
Earl Lane	(7)1.4N(1.3)	1-10"				NO DIVERSION								
E. H. Christenson	(7)1.4N(1.75)	1-15"				NO DIVERSION								
E. H. Christenson	(7)1.4N(2.7)					PLANT REMOVED								
E. H. Christenson(8)	(7)1.4N(3.29)	1-12"									(8)	(8)	(8)	
A. W. Kimerer	(7)1.4N(3.3)	1-14"				NO DIVERSION								

(1) Mileage is given northerly from drainage plant of Reclamation District 1500. Mile 9.15 West Borrow Pit is opposite Chandler. Asterisk indicates area irrigated is within By-Pass area.
(2) New point of diversion 1942.
(3) See diversion at Mile 28.4.
(4) This is total acreage served by the diversions at Mile 25.0 and 28.4.
(5) Mileage is given northerly or southerly from Chandler. Chandler is opposite Mile 9.15 West Borrow Pit. Asterisk indicates area irrigated is within By-Pass area.
(6) This is total acreage served by plants at Miles 0.5N*, 1.5N*, 2.9N* and 4.0N*.
(7) Plant is on drain canal which enters By-Pass at this point. Figure in () indicates distance along drain from By-Pass.
(8) This plant used as booster for water diverted at 7.5N.

TABLE 73 (CONTINUED)

BY-PASS AND DRAINAGE CHANNEL DIVERSIONS - 1942

Water User	Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet							Total diversion March to October Acre-feet	Acreage Irrigated		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice	Gun Club
East Borrow Pit of Sutter By-Pass (Continued)														
E. H. Christenson (2)	(1) (3)1.4N(3.3)	1-15"									(2)	(2)	(2)	
		1-16"												
Nelson Bros.	(3)1.4N(3.3)	1-12"				NO DIVERSION								
R. E. Hughes (Ulrich)	1.5N*	1-14"				203	564	599	640		2006	(4)	(4)	
R. E. Hughes	2.9N*	1-14"						10			10	(4)	(4)	
R. E. Hughes	3.85N*					PLANT REMOVED								
R. E. Hughes	4.0N*	1-14"						7			7	(4)	(4)	
--KNIGHTS LANDING - MARYSVILLE CAUSEWAY - MILE 4.4N														
R. E. Hughes	4.5N*	1-14"				NO DIVERSION								
Ira Mulligan	5.7N	1-16"				NO DIVERSION								
R. E. Hughes	6.0N*					PLANT REMOVED								
Ira Mulligan	7.1N	1-16"				NO DIVERSION								
E. H. Christenson (5)	7.5N	1-20"					1054	1531	1326		3911		640	
--RECLAMATION BOARD DRAINAGE PLANT #2 - MILE 10.0N--														
Spurgeon Gun Club	10.0N*	(6)1-12"				NO DIVERSION								
--EAST LEVEE OF WADSWORTH CANAL - MILE 16.0N--														
--RECLAMATION BOARD DRAINAGE PLANT #3 - MILE 16.5N--														
Meyer, Platter, Moorhead, DeWitt Bros., Epperson and Middleton	19.1N	1-8"												
		1-14"				NO DIVERSION								
--NEW COLUSA-MARYSVILLE HIGHWAY - MILE 19.98N--														
--NORTHERN ELECTRIC RAILROAD CROSSING - MILE 20.0N--														
Sacramento Slough														
C. Fred Holmes	(7) 1.4R	1-24"				NO DIVERSION								
Knights Landing Ridge Cut (8)														
Meek Estate (Wallace & Crawford)	0.8R	1-20"				1130	1550	1760	1740	1070	7250		650	
M. R. Richardson (Lawler) (9)	0.82L	1-14"				126	51	766	710	767	2944		225	

(1) Mileage is given northerly or southerly from Chandler. Chandler is opposite Mile 9.15 West Borrow Pit. Asterisk indicates area irrigated is within By-Pass area.
(2) This plant used as booster for water diverted at 7.5N.
(3) Plant is on drain canal which enters By-Pass at this point. Figure in () indicates distance along drain from By-Pass.
(4) This is total acreage served by plants at miles 0.5N*, 1.5N*, 2.9N* and 4.0N*.
(5) Temporary installation 1942 to supply water to booster at 1.4N (3.29 and 3.3).
(6) 6" unit removed.
(7) Mileage is given easterly from drainage plant of Reclamation District 1500 which is at head of slough.
(8) Flow is principally Colusa Basin drainage diverted to the Ridge Cut by checking at the Knights Landing outfall gates on the Back Borrow Pit of Reclamation District 787. See Table 113.

TABLE 73 (CONTINUED)

BY-PASS AND DRAINAGE CHANNEL DIVERSIONS - 1942

Water User	Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice	Gun Club
Knights Landing Ridge Cut (Continued) (1)														
—RECLAMATION DISTRICT 730 DRAIN PLANT #2 - MILE 3.8—														
Ralph N. Pollock	4.5SL	1-12"				83	74	69	16		242	125		
Hershey Estate (Darnielle)	4.7L	1-15"					222	118			340	305		
Sieber Bros.	4.7R	1-6"				NO DIVERSION								
Hershey Estate	4.9R					PLANT REMOVED								
—WEST LEVEE YOLO BY-PASS - MILE 6.3—														
Frank Fisher, Henry Rich and E. L. Wallace	6.3(2)	Gravity				NO DIVERSION								
Yolo By-Pass (East Borrow Pit or Tule Canal (3)														
Robert Swanston	1.8S (4)	1-10"				NO DIVERSION								
Robert Swanston (Mello)	1.1S	(5)1-16"					340	600			940	250		
Robert Swanston	0.7S					PLANT REMOVED								
—NORTH LEVEE SACRAMENTO BY-PASS - MILE 0.0—														
Robert Swanston	1.8N*	1-20"				NO DIVERSION								
California Packing Corporation	2.4N	1-20"						20	485		505	(6)985		
California Packing Corporation	3.4N	1-8"							20		20	(6)		
Smith and Roberts (McDonnell)	5.9N	1-14"					49	42	42		133	65		
—SACRAMENTO-WOODLAND HIGHWAY - MILE 6.18—														
—SACRAMENTO-WOODLAND RAILROAD CROSSING - MILE 6.2—														
Julius Hauser	7.0N	1-14"				NO DIVERSION								
—RECLAMATION DISTRICT 1600 DRAINAGE PLANT - MILE 10.0—														
Frank Fisher and Henry Rich	10.0N	1-18"				NO DIVERSION								
Frank Fisher and Henry Rich	10.1N*	Gravity				NO DIVERSION								
E. L. Wallace (Hershey Lands)	10.1N*	Gravity				NO DIVERSION								
—FREMONT WEIR (EAST END) - MILE 12.3—														

(1) Flow is principally Colusa Basin drainage diverted to the Ridge Cut by checking at the Knights Landing Outfall Gates on the Back Borrow Pit of Reclamation District 787. See Table 113.

(2) See Yolo By-Pass diversions Mile 10.0 and 10.1N.

(3) Diversions from East Borrow Pit of Yolo By-Passare primarily from water diverted through Knights Landing Ridge Cut (Table 113).

(4) Mileage is given northerly or southerly from north levee of Sacramento By-Pass. Asterisk indicates land irrigated is in By-Pass area.

(5) Replaces 10" unit.

(6) Total acreage served by plants at Miles 2.4N and 3.4N.

TABLE 73 (CONTINUED)

BY-PASS AND DRAINAGE CHANNEL DIVERSIONS - 1942

Water User	Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice	Gun Club
Back Borrow Pit Reclamation District 1000														
						NO DIVERSION								
Totals - By-Pass and Drainage Channel Diversions														
West Borrow Pit of Sutter By-Pass			0	200	3121	3645	3789	3650	1794	0	16199	4086	802	0
East Borrow Pit of Sutter By-Pass			0	0	0	203	1618	2699	1966	0	6486	1465	990	0
Sacramento Slough			0	0	0	0	0	0	0	0	0	0	0	0
Knights Landing Ridge Cut			0	0	1256	2208	2822	2637	1853	0	10776	430	875	0
Yolo By-Pass (East Borrow Pit or Tule Canal)			0	0	0	0	389	662	547	0	1598	1300	0	0
Back Borrow Pit Reclamation District 1000			0	0	0	0	0	0	0	0	0	0	0	0
Totals			0	200	4377	6056	8618	9648	6160	0	35059	7281	2667	0
Average cubic feet per second			0	3.4	71	102	140	157	104	0	72			
Monthly use in per cent of seasonal			0	0.6	12.5	17.3	24.5	27.5	17.6	0				

TABLE 74

FEATHER RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Henry Rutz	1.55L	1-8"				8	51	26	5		90	59	
Sutter Basin Corporation	2.60R	1-20"				NO DIVERSION							
		1-26"											
Frank Guastalli (1)	5.6L	1-10"				136	52	316	255		759		50
Capital Company	6.44L	1-10"					23	26	19		68	35	
M. Scheiber	7.7L	1-10"				50	145	112	131		438	196	
—NICOLAUS GAGING STATION - MILE 9.3—													
—NICOLAUS BRIDGE - MILE 9.4—													
Bercut Richards Co.	9.75R	1-20"			263	627	751	681	598		2920	(2)128	300
Garden Highway Mutual Water Co.	13.1R	1-20"			970	2044	2554	2214	1360	53	9195	819	656
		1-24"											
Feather River Water Company	16.35R	1-14"					136	110	17		263	261	
Plumas Mutual Water Co.	17.5L	1-22"				535	1231	1140	1052	496	4454	1020	
G. C. Shannon	18.75R	1-6"				22	69	16	11		118	24	
Oswald Water District	21.4R	1-16"				743	759	555	456	148	2661	(3) 668	
Alicia Mutual Water Company	24.0L	1-20"				NO DIVERSION							
Nevada-California Lands Inc.	25.2R	1-10"				NO DIVERSION							
Levee District #1	26.8R	Gravity				PLANT REMOVED							
—MOUTH OF YUBA RIVER - MILE 27.3R—													
—YUBA CITY - MARYSVILLE BRIDGE - MILE 28.0—													
J. L. Sullivan, Jr.	33.9R	1-10"				167	165	107	4		443	182	
Sutter Butte Canal Company (Sunset Plant)	38.1R	1-26"					1688				(4) 1688	(4)	(4)
		2-42"											
John L. Sullivan, Jr. and C. J. Mathew	43.7L (5) (0.4L)	1-18"				178	267	189	121		755	355	
Thomas Mathew	43.7L (5) (0.7)	1-5"				NO DIVERSION							
Moznett and Wetmore Sub. #1	43.7L (1.2) (5)	1-10"				145	232	37	33		447	(6)208	

*Mileage along river above mouth.

(1) New installation 1942.

(2) Includes 18 acres on adjoining Albright lands.

(3) Includes 145 acres outside of District.

(4) See diversion at Mile 58.1R.

(5) Plant diverts Feather River water backed into Honcut Slough. Slough is tributary to Feather River at Mile 43.7L. Mileage of plant above mouth of Honcut Slough is indicated ( ). All plants on left bank of slough.

(6) Some additional water from well pump.

TABLE 74 (CONTINUED)

FEATHER RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Manuel A. Barba (Borges)	(1)43.7L (1.25)	1-8"			20	67	28	38	14		167	78	
A. P. Barba	47.9L	1-12"					41	75			116	60	
E. F. Biggs	48.3L	1-10"					14	89			103	240	
Edward Dunning	49.0L	1-8"				5	88	11			104	(2) 55	
Clyne Ranch	51.0R	1-6"					44	24			68	(3) 31	
C. E. Porter	51.1L	1-7"				54	40	57	39	3	193	55	
Edward Steadman	51.4R	1-10"				11	140	93			244	(4)120	
J. F. Fratus	52.1L	1-10"					54	17	47	4	122	80	
Capital Company	52.5L	1-6"				NO DIVERSION							
F. L. Morris	52.7L	1-8"				33	53	53			139	71	
Frank Dutra	52.9R	1-6"				NO DIVERSION							
Ruby Chambers	53.1R	1-6"				1	22	6	1		30	38	
Budh Singh Banes	54.7R	1-8"			NO DIVERSION FROM RIVER								
Hearst Estate	55.1L	1-14"			22	130	153	79	34		418	191	
Mrs. Alvin Kister	57.0L	1-8"				27	111	66			204	30	
Henry Hazelbusch	57.9R	1-9"			2	45	32	33			112	70	
Sutter Butte Canal Co.	(5)58.1R	Gravity			38523	67900	68758	67981	51037	18374	312573	(6)18862	(6)13771
Richvale Irrigation Dist.	(7)58.1R	Gravity			13997	24670	24982	24699	18543	6676	113567	746	9941
Western Canal Company	59.7R	Gravity			7555	15818	22847	23296	13037	4681	(8) 87234	445	13759
—OROVILLE BRIDGE - MILE 65—													
—U.S.G.S. GAGING STATION - MILE 71—													
Totals			0	0	61352	113416	125530	122146	86814	30435	539693	38477	25177
Average cubic feet per second			0	0	998	1906	2042	1987	1459	495	1111		
Monthly use in per cent of seasonal			0	0	11.4	21.0	23.3	22.6	16.1	5.6			

*Mileage along river above mouth.

(1) Plant diverts Feather River water backed into Honcut Slough. Slough is tributary to Feather River at Mile 43.7L. Mileage of plant above mouth of Honcut Slough is indicated ( ). All plants on left bank of slough.

(2) Some additional water from well pump.

(3) An additional 15 acres served for plant at Mile 51.4R.

(4) Includes 15 acres served through plant at Mile 51.0R.

(5) This is common point of diversion for Sutter Butte Canal Company and Richvale Irrigation District.

(6) This is the total acreage served by this diversion and the plant at Mile 38.1R.

(7) See diversion at Mile 58.1R.

(8) Includes 4197 acre-feet diverted for gun clubs in Butte Basin. See Lower Butte Creek diversions (Table 72).

TABLE 75

YUBA RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
—GAGING STATION "YUBA RIVER AT MARYSVILLE" (SEVENTH STREET BRIDGE) - MILE 0.9—													
Davis Bros.	1.6L	1-12"				9	29	12	7		57	90	
Charles Shinkle	1.8R	1-5"				[illegible]	13	15	12		40	8	
Marysville River Farms Co.	3.0L	1-10"					84	244	63	84	475	225	
Yuba River Farms Co.	3.4R	1-6"				NO DIVERSION							
E. O. Rubke	4.1L	1-8"				77	111	100	43		331	(1)140	
Di Giorgio Fruit Corp.(2)	4.75L	1-10"		36		145	48	21			250	136	
Di Giorgio Fruit Corp.(2)	5.3L	1-8"				5	52	7			64	50	
Hallwood Irrigation Co.	11.0R(3)	Gravity			5108	9728	9763	9787	8959	7218	50563	4112	735
Cordua Irrigation District	11.0R(3)	Gravity			595	4772	4855	4655	4002	4047	22926	(4)1900	(4)390
—DAGUERRE POINT DAM - MILE 11.0—													
Yuba Consolidated Gold Field Co.	14.5L	Gravity			NO AGRICULTURAL USE								
—GAGING STATION "YUBA RIVER BELOW NARROWS DAM" - MILE 20													
Totals			0	36	5703	14736	14955	14841	13086	11349	74706	6661	1125
Average cubic feet per second			0	.60	92.8	248	243	241	220	185	154		
Monthly use in per cent of seasonal			0	.1	7.6	19.7	20.0	19.9	17.5	15.2			

*Approximate mileage along river above highway crossing at Marysville.

(1) Includes 90 acres on Hendrick's land.

(2) Formerly Earl Fruit Co. and Dinsmore.

(3) Hallwood Irrigation Company and Cordua Irrigation District have a common point of diversion and common canal for about one-half mile.

(4) Rice figure includes 80 acres outside of district. General figure includes 200 acres outside of district.

TABLE 76

AMERICAN RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
—GARDEN HIGHWAY BRIDGE - MILE 0.2—													
—AUBURN BOULEVARD BRIDGE (16th STREET) - MILE 1.9—													
—SACRAMENTO-NORTHERN RAILROAD BRIDGE - MILE 2.0—													
—WESTERN PACIFIC RAILROAD BRIDGE - MILE 2.1—													
North Sacramento Lands Co.	2.4R	1-6"				NO DIVERSION							
North Sacramento Lands Co.	2.55R	1-5"				NO DIVERSION							
North Sacramento Lands Co.	2.65R	1-7"				NO DIVERSION							
G. A. Meister	3.1L	1-10"				NO DIVERSION							
—SOUTHERN PACIFIC RAILROAD BRIDGE - MILE 3.5—													
G. A. Meister	3.7L	1-4"				NO DIVERSION							
		1-6"											
G. A. Meister	4.1L	1-10"				NO DIVERSION							
C. Swanston and Sons	4.2R	1-10"						18	58		76	(1)160	
C. Swanston and Sons	5.3R	1-10"							32	23	55	(1)	
C. Swanston and Sons	5.5R	1-6"				NO DIVERSION							
W. S. Kendall Estate	5.7L	1-10"					33	77	37	16	163	145	
—GAGING STATION - AMERICAN RIVER AT SACRAMENTO" - MILE 6.1—													
E. Clemens Horst Co. (2)	6.5R	1-6"				2	37				39	(3)50	
S. H. Cowell	7.1L	1-7"				NO DIVERSION							
E. Clemens Horst Co.	7.5R	1-8"				22	90				112	(3)100	
Haggin Hop Farm	7.8R	1-5"				11	28				39	44	
Hagginbottom Land Co.	8.05R	1-10"				NO DIVERSION							
J. H. Kerby	9.0L	1-6"				56	74	60			190	43	
Hagginbottom Land Co.	9.2R	1-12"				NO DIVERSION							
Collins Ranch	9.2L	1-8"				NO DIVERSION							
Ruth Coleman	9.35L	1-5"					3	25	5		33	(4)50	
Ruth Coleman	9.5L	1-5"				1	18	3			22	(4)	
Ruth Coleman	9.55L	1-5"					11	20			31	40	
Henry Cowell	9.6L	1-6"				NO DIVERSION							

* Mileage along river above mouth.

(1) This is the total acreage served by the plants at Miles 4.2R and 5.3R.

(2) New installation 1942.

(3) Additional water received from well pump.

(4) This is the total acreage served by plants at Miles 9.35L and 9.5L.

TABLE 76 (CONTINUED)

AMERICAN RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Dr. J. Karnarse (1)	10.2R	1-5"			3	4	3	2			12	6	
Guy H. Roddan	10.3L	1-10"				NO DIVERSION							
Gold Nugget Orchard Co.	10.4R	1-5"				33	17				50	17	
Hagginbottom Land Co.	10.5R					PLANT REMOVED							
Mucke Sand and Gravel Co.	11.2L	1-6"				6					6	10	
J. T. Gore Estate	11.5L	1-8"			10	26	30	40	20		126	55	
William A. Meyer	11.7L	1-4"				8	15				23	27	
Capitol Building & Loan Assn.	11.7L	1-5"					15	8			23	32	
H. T. Danielson	13.1R	1-5"					8	5	4		17	8	
P. Osterli	13.2R	1-4"					41	23			64	46	
		1-6"											
Chas. Deterding Jr., J.R.Deterding and M. McDonald	13.9R	1-6"				70	11				81	66	
Chas. Deterding Jr., J.R.Deterding and M. McDonald	14.7R	1-4"				NO DIVERSION							
Chas. Deterding Jr., J.R.Deterding and M. McDonald	15.1R	1-6"					48				48	33	
Carmichael Irrigation District	16.0R	1-6"				439	914	906	633	65	(2) 2957	(3)	
		2-12"											
William H. Devlin	17.1R	1-6"				NO DIVERSION							
--GAGING STATION "AMERICAN RIVER AT FAIROAKS" - MILE 19.2--													
Totals			0	0	13	678	1395	1187	789	104	4167	**932	
Average cubic feet per second			0	0	.2	11.4	22.7	19.3	13.3	1.7	8.6		
Monthly use in per cent of seasonal			0	0	.3	16.3	33.5	28.5	18.9	2.5			

*Mileage along river above mouth.

**Note that 2200 acres classed as suburban lands are not included.

(1) Formerly R. A. Bartlow.

(2) Additional water received from wells.

(3) Approximately 2200 acres classed as suburban lands. No details of irrigation available.

TABLE 77

DELTA UPLANDS DIVERSIONS FROM OLD SAN JOAQUIN RIVER - 1942

Water User	*Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.		General	Rice
East Contra Costa Irrigation Dist.	(1)36.5L	2-18"			2747	4383	4880	3636	1801	559	(2)18006	12458	
		2-24"											
		2-30"											
Byron Bethany Irrigation District	(3)40.9L	1-26"											
		1-30"			1143	2658	3014	3217	2561	794	13387	5128	
Federal Land Bank	(4)44.6L	1-7"				NO DIVERSION							
E. H. Stevenson Estate	45.3L	1-12"				NO DIVERSION							
H. Lindeman	47.2L	1-12"				122	167	52	106		447	150	
Gus Lindeman	47.2L	1-10"				NO DIVERSION							
West Side Irrigation District	(5)47.65L	7-15"		496	2451	2549	3552	3095	1290	937	(6)14370	(6)7657	
Vance Brown	48.7L	1-8"			6	17	29	9			61	62	
Naglee-Burke Irrigation District	50.4L	1-16"			764	1059	1135	1141	750	547	5396	(7)2557	
		1-18"											
Freemont Irrigation Association	50.9L	1-14"			28	233	310	212	217	35	1035	(8)562	
Joe Freitas	51.0L	1-8"			10	8	8	8	8		42	35	
Attilio Casserini	51.2L	1-8"				NO DIVERSION							
Excelsior Ranch #2	52.4L	1-10"		20	26	48	48	55	7	6	210	140	
TOM PAINE SLOUGH - MILE 54.3													
Totals			0	516	7175	11077	13143	11425	6740	2878	52954	28749	
Average cubic feet per second			0	9	117	186	214	186	113	47	109		
Monthly use in per cent of seasonal			0	1.0	13.5	20.9	24.8	21.6	12.7	5.5			

* Distance along river from its mouth 4½ miles below Antioch. Mileage as established by War Department Survey of 1913-15.

(1) To junction of Old River and Indian Slough. Pumping plant is located two and one-half miles west along Indian Slough.
(2) An additional 4000 ac. ft. taken from wells and interior drains.
(3) To junction of Old River and Italian Slough. Pumping plant is located 2-3/4 miles southwest along Italian Slough and extension cut.
(4) Plant is on cut which joins river at Mile 44.6 left.
(5) To junction of Old River with Intake Cut. Pumping plant is located one mile south along Intake Cut.
(6) Includes 400 acres served for Tracy Clover I.D. (See Tom Paine Slough Mile 2.1S.) Estimated that 390 ac.ft. furnished to that district.
(7) An additional 7 ac. served for plant at Mile 50.9L.
(8) Includes 7 ac. served through plant at Mile 50.4L.

TABLE 78

DELTA UPLANDS DIVERSIONS FROM TOM PAINE SLOUGH - 1942

Water User	*Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.		General	Rice
Independent Mutual Water Corp.& Co(1)	0.7S	2-18"			163	277	435	378	152	88	1493	1070	
Independent Mutual Water Corp. & Co.	1.2S	1-18"				16	127	93	23		259	140	
Holly Sugar Corporation	(2)2.1S	1-10"Box			3	144	207	76			(3) 430	400	
		1-12"											
Tracy Clover Irrigation District	(2)2.1S	1-16"				NO DIVERSION (2)					(2)	(4) 400	
Pescadero R.D. #2058 Plant #1	2.9S	1-12"			106	71	158	131	99	9	574	(5)2347	
Pescadero R.D. #2058 Plant #3	6.3S	1-12"			827	1026	1256	1142	674	151	5076	(6)	
		1-24"											
Pescadero R.D. #2058 Plant #5	8.3S	1-12"			113	184	152	32	111	30	622	(6)	
Pescadero R.D. #2058 Plant #5a	9.0S	1-12"			80	134	99	78	99		490	(6)	
SOUTHERN PACIFIC RAILROAD CROSSING - MILE 9.1S													
LINCOLN HIGHWAY - MILE 9.9S													
Totals			0	0	1292	1852	2434	1930	1158	278	8944	4357	
Average cubic feet per second			0	0	21	31	40	31	19	5			
Monthly use in per cent of seasonal			0	0	14.4	20.7	27.2	21.6	13.0	3.1			

* Distance along Tom Paine Slough from its mouth which is at Mile 54.3 on Old San Joaquin River (War Department Survey of 1913-15).

(1) Formerly Stimson Estate Company.

(2) To junction of Tom Paine Slough and dredger cut. Pumping plant is located 1½ miles south along dredger cut.

(3) Additional water obtained from wells after August 24.

(4) See acreage note for West Side Irrigation District Old San Joaquin Mile 47.65L.

(5) This is the total uplands area (South of Tom Paine Slough) irrigated from all Pescadero Reclamation District plants on Tom Paine Slough.

(6) See acreage note for plant at Mile 2.9S.

TABLE 79

DELTA UPLANDS DIVERSIONS FROM SAN JOAQUIN RIVER - 1942

Water User	*Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.		Gen-eral	Rice
GARWOOD BRIDGE - MILE 45.3													
Katten and Morengo Ranch	45.45R	1-8"				54	66	59	45		218	90	
A. Jury	45.5R	1-6"			2	9	10	9	1	7	38	25	
C. R. Van Buskirk	45.6R	1-5"				55	42	28			125	52	
		1-8"											
Mrs. John D. McDougall	46.3R	2-6"				NO DIVERSION							
Ivy Rainey	46.65R	1-6"				NO DIVERSION							
Wilhoit and Hammill	46.85R	1-10"						101	0	113	214	160	
L. F. Grimsley	47.2R	1-6"			12	21	22	20			75	40	
Wolfinger Bros.	47.3R	1-10"				NO DIVERSION							
Alma A. Haack	48.0R	1-12"				66	90	52	68		276	165	
H. G. Learned (Lee Young)	48.3R	1-4"				5	5	7	4		21	(1)30	
H. G. Learned	48.5R	1-3½"				8	3	13	7		31	(2)	
Joe Calcagno	48.5R	1-6"			6	60	30	57	8		161	98	
F. Piccardo, J.Vigliani & J.Calcagne	48.55R	1-6"		6	16	27	33	37	27	8	154	47	
G. B. Figari	48.6R	1-5"				6	3	15	2		26	27	
M. O. Couper	49.0R	1-10" box				6	17	18	9		50	23	
Mettler, Cross & Drury (Chapman)	49.5R	1-14"			37	55	53	41	49	19	254	60	
A. A. Rodgers	50.1R	1-10"			12	24	27	29	22	9	123	40	
BRANDT BRIDGE - MILE 50.2													
A. Hirata (Converse) (3)	50.4R	1-8"				13	19	9			41	30	
B. & K. Watanabe (Toscano)	50.6R	1-8"			3	1	18	10	8		40	35	
D. Toscano	50.8R	1-6"			10	13	19	10	12		64	37	
J. J. O'Toole	51.8R	1-12"				NO DIVERSION							
Capital Company	52.2R	1-12"				21	49	33	36	7	146	95	
A. Geraldi	52.5R	1-5"			3	1	7	4	2	2	19	14	
F. C. Roberts	52.65R	1-6"				NO DIVERSION							
F. C. Roberts	52.8R	1-8"						20	8		28	25	
Capital Company	53.2R	1-12"				NO DIVERSION							
Wm. Nishimura	53.4R	1-8"				15	17	11	11		54	30	
M. Dos Reis	53.7R	1-12"						46	26		72	50	
R. E. Albertson	54.9R	1-10"				NO DIVERSION							

* Distance along San Joaquin River from its mouth 4½ miles below Antioch. (Mileage as established by War Department Survey of 1913-15).

(1) This is the total acreage served by this plant and the one at Mile 48.5R.

(2) See plant at Mile 48.3R.

(3) Formerly Frank Reichmuth.

TABLE 79 (CONTINUED)

DELTA UPLANDS DIVERSIONS FROM SAN JOAQUIN RIVER - 1942

Water User	*Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.		General	Rice
Oakwood Stock Farm	56.0R	1-10"			NO DIVERSION								
—JUNCTION WITH MIDDLE RIVER - MILE 56.2L													
Oakwood Stock Farm	57.0R	1-14"			134	203	228	215	187	76	1043	(1)256	
James Tobin	57.15R	1-7"			NO DIVERSION								
A. J. Thompson	57.3R	1-5"					1	1			2	1	
A. Colori	57.45R	1-3"			NO DIVERSION								
G. Gardella	57.5R	1-4"		3	4	8	6	6	4	1	32	10	
V. Sanguenetti	58.4R	1-2½"				1		2	1		4	2	
G. B. Figari	58.6R	1-3"			1	2					3	3	
R. Mauro	58.7R	1-4"			NO DIVERSION								
MOSSDALE BRIDGE - MILE 58.9 - RECORDING GAGE													
C. C. Abersold	59.25R	1-6"			9	14	9	6	18	4	60	40	
H. A. Neistrath	59.3R	1-14"				65	140	131			336	150	
H. A. Neistrath	(2)60.1R	1-6"					11	13			24	52	
PARADISE DAM - (HEAD OF PARADISE CUT) - MILE 62.2L													
Banta Carbona Irrigation District	67.5L	2-20" 3-24" 1-36"	188	2223	4962	5717	10874	8280	3147	1807	37198(3)	15005(3)	
J. Y. Matsumoto	70.0R	1-8"					12	27	13		52	100	
J. Y. Matsumoto	70.5R	1-10"					82	25	12		119	150	
Reclamation District #2075	71.0R	1-16"				133	314	207	256	32	942	700	
Mortensen, Borges & Whitman	73.2R	1-12"						109	31		140	280	
Ralph Martin	75.7R	1-7"			NO DIVERSION								
Ralph Martin	76.2R	1-6"			NO DIVERSION								
U.S.G.S. GAGING STATION- SAN JOAQUIN RIVER NEAR VERNALIS - MILE 76.7													
Totals			188	2232	5210	6602	12203	9651	4014	2085	42185	17932	
Average Cubic feet per second			3	38	85	111	198	157	67	34	87		
Monthly use in per cent of seasonal			0.4	5.3	12.4	15.7	28.9	22.9	9.5	4.9			

* Distance along San Joaquin River from its mouth 4½ miles below Antioch. (Mileage as established by War Department Survey of 1913-15).
(1) Divided as follows: Silveria 95, Oliveria 161.
(2) Up Walthall Slough .2 mile and opposite this mileage on river.
(3) Includes 1329 ac. served in Kasson District.

TABLE 80

SAN JOAQUIN RIVER DIVERSIONS

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total Diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
—U.S.G.S. GAGING STATION - "SAN JOAQUIN RIVER NEAR VERNALIS" - MILE 76.7—													
—STANISLAUS RIVER - MILE 79.7R—													
—MAZE ROAD BRIDGE - MILE 81.85—													
W. C. Blewett Estate	81.95L	3-12"	56	96	266	391	375	392	252	116	1944	601	
El Solyo Ranch	82.0L	1-12"	255	367	974	1832	2324	2226	1664	938	10580	3042	
		3-18"											
—GAGING STATION - "SAN JOAQUIN RIVER AT HETCH HETCHY WATER SUPPLY CROSSING" - MILE 82.65—													
—TUOLUMNE RIVER INFLOW - MILE 91.0R—													
West Stanislaus Irrigation District	91.8L	3-26"	191	359	4621	6784	16017	13514	3850	1778	47114	(1)22479	
El Pescadero Ranch #1	(2) 91.8L	1-12"					34	88			122	109	
El Pescadero Ranch #2	(2) 91.8L	1-14"			18	13	20	74	61		186	65	
El Pescadero Ranch #3	(2) 91.8L	1-12"				23	29	37	30	13	132	75	
Burkhard Investment Company	(2) 91.8L	1-14"				65	85	77	11		238	90	
—LAIRD SLOUGH BRIDGE - GAGING STATION - "SAN JOAQUIN RIVER NEAR GRAYSON" - MILE 96.05—													
Rancho El Pescadero	98.9L	1-16"			156	431	400	366	225		1578	570	
—PATTERSON BRIDGE - MILE 104.4—													
Patterson Water Company	104.4L	1-14"		312	6773	6205	7325	6683	5136	1234	33668	13480	
		1-18"											
		4-26"											
Turlock Garden Land Company	104.5R	1-10"			85	1	161	67	57	36	407	90	
Mortgage Guarantee Company	106.5R	1-6"				NO DIVERSION							
		1-10"											
Patterson Ranch Company	109.8L	1-12"		839	1165	1196	1390	1675	1148		7413	(3)847	580
		2-16"											
Roy Ustick (4)	112.55R	1-16"	71	35	50	52	101	57	73	112	551	295	
—CROWS LANDING BRIDGE - MILE 113.4—													
Laura C. Johnson	113.5R					PLANT REMOVED							
A. J. Silveria	113.85R	1-6"				NO DIVERSION							
A. J. Silveria	114.35R	1-8"		7	2	2	17	17	7	8	60	23	
F. Dutcher	114.95R	1-10"				NO DIVERSION							
L. B. Crow	116.05R	1-14"		29	48	64	74	111	61		387	168	
Oscar Hogan	116.45R	1-12"				NO DIVERSION							
C. L. Olinger	116.95R	1-12"				NO DIVERSION							
—U.S.G.S. GAGING STATION "SAN JOAQUIN RIVER NEAR NEWMAN" - MILE 123.7—													
—MERCED RIVER INFLOW - MILE 123.75R—													
Stevinson Water District	129.4R	1-10"				NO DIVERSION							
—FREMONT FORD BRIDGE - GAGING STATION - MILE 129.5—													
—DELTA BRIDGE (TURNER ISLAND) - GAGING STATION - MILE 158.7—													
Totals			573	2044	14158	17059	28352	25384	12575	4235	104380	41934	580
Average cubic feet per second			9	34	230	287	461	413	211	69	215		
Monthly use in per cent of seasonal			.5	2.0	13.6	16.3	27.2	24.3	12.0	4.1			

*Mileage along San Joaquin River from its mouth 4½ miles below Antioch. (Mileage as established by War Department Survey of 1913-15).

(1) Includes 450 acres outside of district.

(2) Pump is on cut leading to West Stanislaus Irrigation District plant.

(3) Includes 40 acres on adjoining lands.

(4) [illegible]

TABLE 81

MERCED RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
—GAGING STATION - "MERCED RIVER NEAR MOUTH" - MILE 1.1—													
Stevinson Water District	3.8R	1-15"		14	12	164	537	431	261	17	1436	515	
Andrew Rayle	4.0L	1-8"				NO DIVERSION							
Andrew Rayle	4.2L					PLANT REMOVED							
H. DeAngeles	5.8L	1-10"			6	44	65	49	29		193	82	
J. F. Peck	6.1L	1-18"				NO DIVERSION							
Stevinson Water District	6.55L	1-15"				NO DIVERSION							
Francis Hartman	8.5L	1-12"			3		122	26			151	82	
Mary Collier	8.85L	1-8"			31	30	56	25	29	9	180	70	
Samuel B. McCullagh (1)	9.4L	1-10"			53	210	170	162	128		723	340	
R. W. Adams & J. B. Silva	10.35L	1-8"			121	283	341	264	165	37	1211	404	
		1-10"											
L. A. Brown (2)	10.6R	1-3"					1	1	1	1	4	8	
W. D. Adams	10.8R	1-6"					2	4			6	10	
W. D. Adams	10.85L	1-12"			74	109	149	89	107		528	216	
C. G. McLaughlin	11.4L	1-8"				NO DIVERSION							
C. G. McLaughlin	11.55L	1-4"					1				1	4	
L. E. Milliken and Edna McKinley	11.6L	1-10"			39	64	23	37	19		182	70	
J. Regello	11.6L	1-12"					24	23			47	80	
—NEW MILLIKEN BRIDGE - MILE 11.65—													
A. J. Azevedo	12.35L	1-10"			29	52	51	79			211	90	
Pacific Coast Joint Stock Land Bank	12.85L	1-10"				NO DIVERSION							
Capital Company	16.5L	1-12"				82	142	110	53	126	513	85	
Merced River Farms Co.	17.05L	1-6"			5	7	7	7	2		28	17	
—U.S.G.S. GAGING STATION "MERCED RIVER NEAR LIVINGSTON" - MILE 17.1—													
L. A. Chase (3)	17.3L	1-4"				NO DIVERSION							
J. Clark	17.7L	1-3"				NO DIVERSION							
		1-6"											
O. B. Daniels	17.7L	1-5"					3	4	4	3	14	5	
Rhiners and Laramore	18.4L	1-6"				NO DIVERSION							
John Reininghaus	20.4L	1-6"			4	28	40	28	2		(4) 102	60	
W. J. Haskins	20.65R	1-3½"			1	1	1	1	1		5	5	
—SOUTHERN PACIFIC RAILROAD (MAIN LINE) - MILE 21.05—													
A. C. Jorgensen	21.1R	1-6"					8	10			18	30	
A. C. Jorgensen	22.2R	1-12"				137	234	93	58	22	544	200	

*Mileage along river above mouth.

(1) Formerly Grace McCullagh.

(2) New installation 1942.

(3) Formerly R. G. Woodward.

(4) Additional water received from well pump.

TABLE 81 (CONTINUED)

MERCED RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
A. C. Jorgensen	23.3R	1-6"			70	81	79	93	42	73	438	120	
		1-12"											
M. McConnell	23.4L	1-5"				NO DIVERSION							
Manuel A. Bettencourt (1)	23.8R	1-6"					9	6	2		17	22	
T. Nishihara	24.0R	1-4"				3	5	5	2		15	15	
W. F. McConnell	24.2L	1-5"				NO DIVERSION							
W. F. McConnell	24.5L	1-6"				NO DIVERSION							
T. Nishihara	24.6R	1-6"				21	21	2	7		30	25	
T. Nishihara	25.0R	1-5"				8	3				11	10	
T. Nishihara	25.5R	1-6"				NO DIVERSION							
Merced River Farms Association	26.3R	1-8"			13	70	184	71	47	48	433	91	
W. C. Magneson	26.55R	1-5"				20	17	15	8		60	31	
W. C. Magneson	27.0R	1-6"					2	2	2		6	8	
—SANTA FE RAILROAD CROSSING - MILE 27.05—													
W. C. Magneson	27.6R	1-10"					91	141	144		376	100	
T. Nishihara	27.8R	1-4"			2	20	13	14	15		64	29	
Y. Tanabe	28.1R	1-6"				18	9	7	3		37	20	
G. H. Lovely	28.4R	1-4"			11	15	9	5	4	1	45	18	
J. Campadonica	28.6R	1-6"				NO DIVERSION							
D. S. Enright	28.6R	1-5"				14	27	19	8		68	85	
		1-8"											
Anthony Demchilli (2)	29.1R	1-7"				39	66	34	15	4	158	55	
Anthony Demchilli (New listing)	29.75R	1-6"				13	12	18	9		52	30	
American Trust Company	29.9R	1-6"					59	103			162	48	
Capital Company	30.2L	1-6"				13	13	14	20	22	82	25	
American Trust Company	30.95R	1-12"				36	37	15	9		97	40	
Capital Company	31.1L	1-8"				NO DIVERSION							
T. H. Carlon	31.5R	1-6"				NO DIVERSION							
		1-8"											
—SOUTHERN PACIFIC RAILROAD (OAKDALE BRANCH) - MILE 32.52—													
B. H. Arkellian	32.9R	1-8"					25				25	35	
B. H. Arkellian	33.55R	1-7"			1	58	66		1		126	122	
P. & A. Rnenero (3)	39.2L	24" box				NO DIVERSION							
—GAGING STATION "MERCED RIVER AT YOSEMITE VALLEY RAILROAD CROSSING" - MILE 42.1—													
Totals			0	14	475	1619	2716	2005	1207	363	8399	3302	
Average cubic feet per second			0	.2	8	27	44	33	20	6	17		
Monthly use in per cent of seasonal			0	.2	5.6	19.3	32.3	23.9	14.4	4.3			

*Mileage along river above mouth.

(1) New installation 1942.

(2) Formerly C. L. Mahrton.

(3) Formerly C. P. Stout.

TABLE 62

TUOLUMNE RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
E. T. Mapes Ranch	1.9R	1-14"			68	143	160	153	100	14	638	(1)800	
J. de Souza and J. B. Silva	2.2R	1-6"				NO DIVERSION							
E. B. Henry	3.1R	Bxl-16"					16	22	24		62	40	
—GAGING STATION "TUOLUMNE RIVER AT TUOLUMNE CITY"- MILE 3.35—													
Bancroft Fruit Farms	4.1R	1-10"		19	100	21	106	55	16	15	332	(2)245	
Bancroft Fruit Farms	5.0R	1-10"	7	56	54	78	80	71	62	40	448	(2)	
Randolph Marketing Company	7.1R	1-10"				NO DIVERSION							
J. F. Duffy	7.2R	1-5"				NO DIVERSION							
J. J. and E. J. Schivo	7.8L	1-10"				NO DIVERSION							
W. F. Duffy	7.9R	1-4"				NO DIVERSION							
W. F. Duffy	8.4R	1-10"			135	87	86	106	78		492	60	
Otis Burch	9.2L	1-4"				PLANT REMOVED							
A. Holmes	10.2R	1-11"			54	60	56	45	15	7	237	52	
F. Strangio	15.25R	1-6"						39			39	20	
G. B. and L. D. Podesto	15.75R	1-3"			5	5	8	10	10	2	40	15	
—GAGING STATION "TUOLUMNE RIVER AT MODESTO" - MILE 15.75—													
—SOUTHERN PACIFIC RAILROAD (MAIN LINE) - MILE 15.8—													
—DRY CREEK INFLOW - MILE 16.5R													
Mrs. L. R. Hughson	20.3R	1-8"				21	32	64			117	35	
M. J. Leckron	20.5R	1-10"					15	19		23	57	52	
—SANTA FE RAILROAD - MILE 21.6—													
P. L. Alexander	25.0L	1-8"(3)						16			16	35	
P. L. Alexander(4)	25.7L	1-4"					2				2	5	
P. L. Alexander	26.0L	1-8"(5)			15	12	45	8			80	40	
P. L. Alexander	26.2L(6)	1-6"			9	4					13	18	
L. Firpo	27.1L	1-10"				10	15	22	20		67	55	
—SOUTHERN PACIFIC RAILROAD (OAKDALE BRANCH) - MILE 31.5—													
—GAGING STATION "TUOLUMNE RIVER AT HICKMAN BRIDGE" - MILE 31.7—													
George H. Sawyer	39.8L	1-6"			3	21	24	53	18	11	130	147	
—GAGING STATION "TUOLUMNE RIVER AT ROBERTS FERRY BRIDGE" - MILE 39.9—													
Totals			7	75	443	462	645	683	343	112	2770	1619	0
Average cubic feet per second			.1	1.3	7.2	7.8	10.5	11.1	5.8	1.8	5.7		
Monthly use in per cent of seasonal			.2	2.7	16.0	16.7	23.3	24.7	12.4	4.0			

*Mileage along river above mouth.

(1) An estimated 1200 acres additional irrigated from T.I.D. spill.
(2) Total acreage served by plants at Miles 4.1 and 5.0R.
(3) Replaces 6" unit.
(4) New installation 1942.
(5) 7" unit removed.
(6) Corrected mileage.

TABLE 83

STANISLAUS RIVER DIVERSIONS - 1942

Water User	*Mile and Bank	Number and size of pump	Monthly Diversions in Acre-feet								Total diversion March to October Acre-feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Frank Coker	1.1R	1-6"						13:			13:	15:	
Mrs. E. W. Hawkins	1.6R	1-4"				NO DIVERSION:							
J. Chisholm	2.9R	1-8"				NO DIVERSION:							
J. W. Smith	3.1R	1-6"				6:	5:	4:	4:		19:	17:	
Will Hawkins	3.2R	1-4"				NO DIVERSION:							
Winfield S. Overton	5.25L	2-14"			277:	422:	284:	246:	115:	231:	1575:	160:	130:
—GAGING STATION "STANISLAUS RIVER AT BRET HARTE PUMP" - MILE 5.9—													
Recl. Dist. #2064 (Bret Harte)	5.9R	1-16"	189:	92:	802:	854:	694:	787:	451:	508:	(1)4377:	(1)1010:	
McMullin Rec'l. Dist. #2075	5.95R	2-16"		133:	721:	1146:	1466:	864:	932:		(2)5262:	(2)1300:	
Henry Pelucca	6.7L	1-15"			78:	49:	110:	128:	72:	53:	490:	(3) 70:	
J. W. Updike	7.4L	1-8"				NO DIVERSION:							
C. C. Updike	8.2L	1-12"							41:	34:	75:	65:	
Caswell Bros.	9.8R	1-14"	29:	19:	223:	406:	480:	519:	376:	160:	2212:	304:	
Pacific States Savings & Loan Co.	10.0R	1-10"	22:	62:	232:	295:	284:	265:	206:	152:	1518:	200:	
D. F. Koetitz	10.1L	1-10"		50:	117:	123:	207:	111:	94:	133:	835:	300:	
Joseph Hertle	10.5L	1-10"			14:	22:	16:	17:	18:	2:	89:	30:	
—SOUTHERN PACIFIC RAILROAD BRIDGE (MAIN LINE) - MILE 15.9—													
—GAGING STATION "STANISLAUS RIVER NEAR RIPON" - MILE 16.0—													
A. Girardi (4)	17.0L	1-12"				73:	82:	54:			209:	125:	
American Trust Company	18.5R	(5) 1-10"				19:	34:	78:	21:		152:	150:	
Dr. Rollin Reeves	20.75R	1-14"				283:	298:	531:	229:		1341:	275:	
Heath Ranch	20.9L	1-5"			21:	24:	28:	28:	22:	11:	134:	30:	
DiGiorgio Fruit Corporation (6)	21.75R	1-8"				48:	102:	41:	29:	26:	246:	70:	
Cornelius de Boer	22.0L	1-5"				NO DIVERSION:							
Riverside Ranch	22.3R	1-5"					5:	13:			18:	46:	
		1-5"											
		1-10"											
—MODESTO-ESCALON BRIDGE - MILE 28.15—													
—SANTA FE RAILROAD CROSSING - MILE 31.85—													
—GAGING STATION "STANISLAUS RIVER AT RIVERBANK" (BURNEYVILLE BRIDGE) - MILE 32.0—													
Oakdale Irr. Dist. (Riverbank Pump)(7)	32.9L	1-10"			16:	137:	188:	48:	32:	50:	471:	(7) 1700:	
Oakdale Irr. Dist. (Crawford Pump)(7)	35.9L	1-14"			32:	242:	207:	126:	24:		631:	(7) 536:	
Oakdale Irr. Dist. (Brady Pump) (7)	37.0L	1-14"				100:	93:	99:	55:		347:	(7) 692:	
SOUTHERN PACIFIC RAILROAD (OAKDALE BRANCH) - MILE 39.0—													
—GAGING STATION "STANISLAUS RIVER AT ORANGE BLOSSOM BRIDGE" - MILE 44.7—													
Totals			240:	356:	2533:	4242:	4590:	3972:	2721:	1360:	20014:	7095:	130:
Average cubic feet per second			4:	6:	41:	71:	75:	65:	46:	22:	41:		
Monthly use in per cent of seasonal			1.2:	1.8:	12.7:	21.2:	22.9:	19.8:	13.6:	6.8:			

*Mileage along river above mouth.

(1) Additional water received from plant at 5.95R for partial irrigation of 90 acres.
(2) See plant at Mile 5.9.
(3) Includes 18 acres on adjoining Overton lands.
(4) New installation 1942.
(5) Formerly listed as 12".
(6) Formerly Earl Fruit Corporation.
(7) Oakdale Irrigation District maintains river plants at Miles 32.9L, 35.9L, 37.0L, and 45.4L to supplement District gravity supply.

CHAPTER IV

MEASUREMENTS OF RETURN WATER

Sacramento Return Waters

In the Sacramento Valley the flow of all well defined channels carrying irrigation waters returned to the Sacramento River is measured and recorded. Table 85 lists these channels in downstream order and gives the total flow as computed from the measurements. The report for 1942 gives, for most of the channels, the flow for the entire year.

Between Colusa and Red Bluff there are no large well defined return flow channels. Records or estimates of natural inflow from streams in this stretch of the river were, however, obtained. Above Red Bluff, from a point below Cottonwood to Redding there is considerable return from the Anderson-Cottonwood Irrigation District, but it is not recorded.

Return flow from Other than Sacramento River Sources.

In the water returned to the Sacramento River as included in Table 85, it should be noted that practically all of that entering the river through Butte Slough is derived from Feather River diversions through the Western and Sutter Butte canals. Of the discharge entering through Sacramento Slough, that portion flowing down the East Borrow Pit of Sutter By-Pass, is also practically all of Feather River origin. (See Table 109.)

Relation of Sacramento Return Water to Irrigation Draft

Tables 86 and 87 record the Sacramento River return water for the period July to October, inclusive, 1942, and indicate the relation between the return and the diversions from which it was derived. Due to high water conditions prevailing in the Spring, it was not practicable to attempt to

determine the return flow for the balance of the year. Since, in Tables 86 and 87 it is the purpose to show the return water from Sacramento River diversions only, the inflow from Butte Slough, that portion of Sacramento Slough derived from Feather River sources (Table 109) and from the Feather and American Rivers has been excluded. In Table 86 is shown the relation to the diversions of that return water only which was measured at the well defined channels. With the records available of the discharge of the Sacramento River at Red Bluff, Butte City, Colusa, Wilkins Slough, Knights Landing, and Verona and all diversions between these points, it is possible to approximate the total water returned to the river between each of those points, including not only the flow in the definite channels which were measured, but all seepage, ground water return, etc., which could not be directly measured. The figures for the return water computed in this manner and the relation of this return shown for the Verona-Sacramento section is only that contributed by the measured drains since, as explained in Chapter II, the total return in this section, including all accretions, is not susceptible of computation in the manner outlined because of the fact that no record of low water flow actually measured at Sacramento is available.

The data in Tables 86 and 87 show that seepage, ground water return, etc., (for the period July-September, inclusive) which could not be directly measured, amounted to 17 per cent of the irrigation draft, the direct return in definite channels 39 per cent, the total return being 56 per cent. The data in Table 87 shows the return flow in the Sacramento River for the period June to September, inclusive, 1942. The return flow for the balance of the year has not been computed as the flows in the stream were large and there was much rainfall and local drainage so that it would

not be practical with the data available to attempt to determine the return flow for the period not shown in the Table.

In Table 88 the return flow and accretion for the entire Sacramento Valley have been determined for the period July to September for the years from 1931 to 1942, inclusive. In the computations for this table only major inflows were taken into account, the inflow of all minor creeks was not included for during the months July to September their flow is negligible.

Draft Return Water Relation for Particular Sacramento Valley Areas

In the Sacramento Valley there are certain units or districts which are set apart physically by levees or otherwise, so that the direct return water in each district may be readily segregated when the records of all diversions to and discharges from the units are available. Included in such units are the areas above the Colusa-Williams highway crossing of the Colusa Trough, Reclamation Districts 70, 108, 1500 and 1000. The relation between draft and return water for the Colusa Trough area is shown in Table 89 and for Reclamation Districts 70, 108, 1500 and 1000 in Tables 90, 91, 92 and 93 respectively. As in the case of the return water computations for the Sacramento River, no attempt has been made to present the data for the entire year, as there probably was much seepage into the districts due to high river stages. Should it be desired to make a detailed study of these return and seepage flows for the entire year the annual pumping from the various districts is given in the return flow tables and the annual precipitation records for rainfall stations in the valley are given in Tables 119 to 130.

Tables 96 to 118, inclusive, present in detail the discharge records for the Sacramento Valley return water channels.

San Joaquin Return Waters

In the 1942 San Joaquin Valley return water measurements, the gaging stations were located at the same points as in previous years beginning with 1928, and the same methods were followed. A continuous record of the discharge during the entire year was obtained at most stations on each stream. An upper and lower station were maintained on each stream, to wit: San Joaquin, Merced, Tuolumne and Stanislaus rivers. On all of the streams continuous records of discharge were also obtained at intermediate stations--four on the San Joaquin River, (1) at Fremont Bridge, (2) just below the junction with the Merced River (maintained by the U. S. Geological Survey and referred to as "San Joaquin River near Newman"), (3) near Grayson (Laird Slough), and (4) at the Hetch Hetchy Water Supply Crossing below the Tuolumne River inflow; two on the Merced River, (1) near Livingston (U. S. Geological Survey station), (2) at Cressey Bridge; three on the Tuolumne River, (1) at Roberts Ferry, (2) at Hickman Bridge, (3) at Modesto; and two on the Stanislaus River (1) at Burneyville Bridge and (2) near Ripon. Measurements and records of all pumping diversions between stations on each stream were obtained, thereby completing the necessary data for the computations of the return water. The records for the gaging stations are given in Chapter II, Tables 27 to 48, inclusive, and the diversion records for the San Joaquin streams above Durham Ferry Bridge, are given in Chapter III, Tables 80 to 83, inclusive.

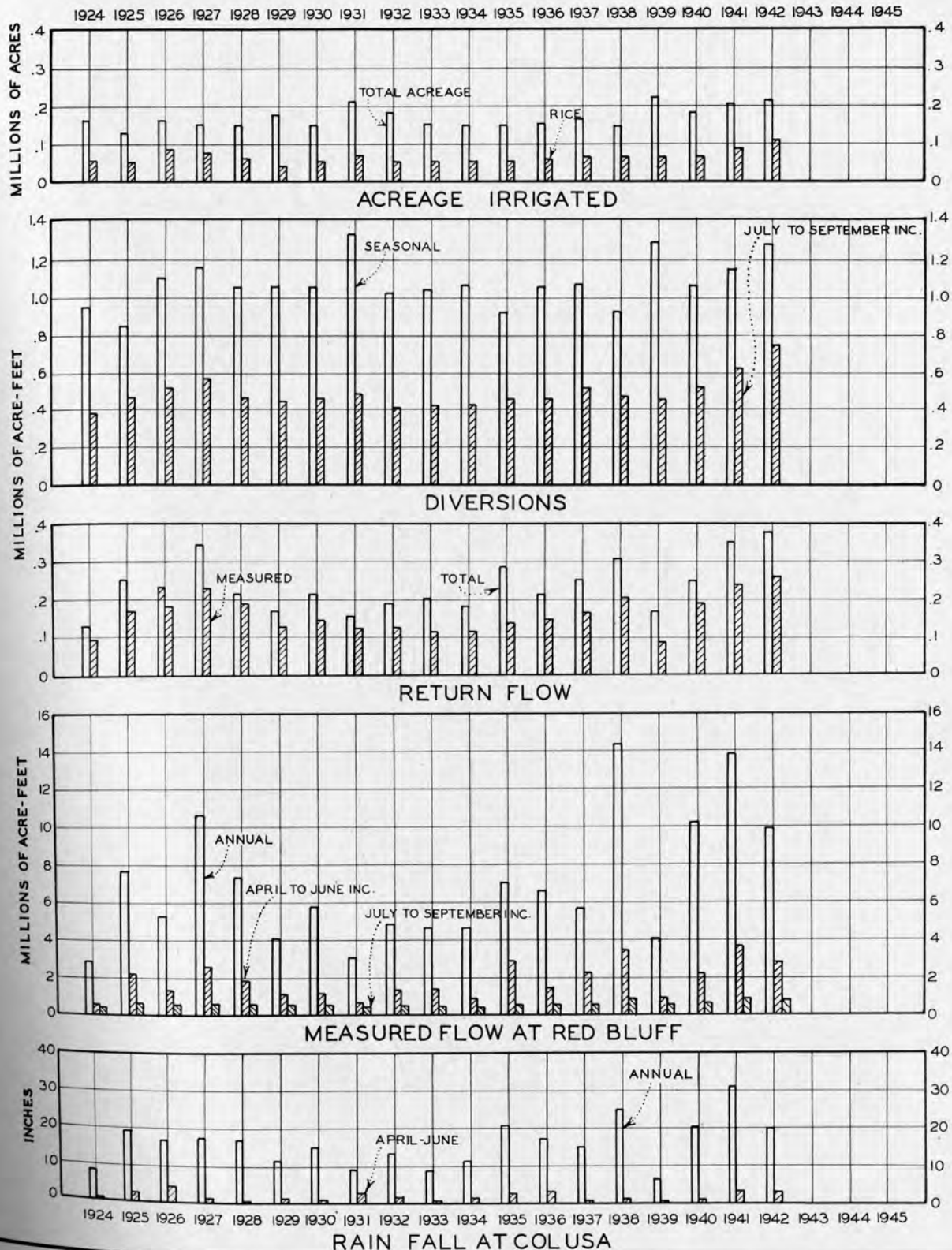
Table 94 tabulates the results of the San Joaquin return water measurements and Table 95 shows a comparison of the return water with the irrigation draft in the San Joaquin Valley.

Comparative Sacramento and San Joaquin Return Water, 1924-1942

Comparative figures, 1924 to 1942, for the Sacramento and San Joaquin seasonal return water in per cent of the irrigation draft are shown in Table 84. In order to show graphically for the Sacramento River the variation from year to year of the measured flow at Red Bluff, the return flow and irrigated acreage Plate 1 was prepared. While no definite conclusions can be reached it appears that there may be some relation between the seasonal flow and the return flow.

In the case of the San Joaquin return water data there appears to be no definite relation between the seasonal flow of the San Joaquin and its tributaries in per cent of normal and the return water percentages. This may be due to the regulation which occurs in Lake McClure Reservoir on the Merced River, Don Pedro Reservoir on the Tuolumne River and Melones Reservoir on the Stanislaus River. It is to be noted that in some years the period used in the comparison of return flow and diversions makes considerable difference in the percentage figures, and further, that for the period August-September only, the percentage is nearly always greater than when the July-September period is used. As there may be a considerable lag between diversions and corresponding return flow, the figures in the last column of Table 84 were compiled to show the August-September return flow in per cent of the July-August diversions. These percentages still seem to bear no definite relation to the seasonal runoff percentages, but their variation from year to year is somewhat reduced and a more or less constant percentage of return flow is indicated.

The average percentage of diversions occurring as return water in the San Joaquin River is shown to be considerably smaller than that for the Sacramento River (Table 84). This difference may probably be attributed to the fact that, whereas due to basin topography practically all drainage from Sacramento River diversions is quickly returned to the river; in the San Joaquin Valley considerable of the return water may never reach the river because of its contributing to underground water and being recovered by drainage pumps in low areas of many of the irrigation districts for re-use in their irrigation canals.



SACRAMENTO - SAN JOAQUIN WATER SUPERVISION

SACRAMENTO RIVER

RED BLUFF TO SACRAMENTO

ACREAGE IRRIGATED, DIVERSIONS, RETURN FLOW,
STREAM FLOW AND RAIN FALL
1924 - 1942

TABLE 84

SACRAMENTO AND SAN JOAQUIN RETURN WATER PERCENTAGES 1924-1942

Year	Sacramento River			San Joaquin River and Tributaries						
	Seasonal Run-off at Red Bluff in per cent of normal*	Return Water in per cent of Diversions		Seasonal Run-off in per cent of Normal S.J.River and tributaries**	Return Water in per cent of Diversions					Aug.-Sep. Return in per cent of Jul.-Aug. Diversions
		Jun.-Sep. inc.	Jul.-Sep. inc.		Jun.-Sep. inc.	Jul.-Sep. inc.	Aug.-Sep. inc.	Jul.-Oct. inc.	Aug.-Oct. inc.	
1924	38	33	33	24		35	41			29
1925	92		55(1)	86			38			23
1926	65	49	45	56		28	32			22
1927	125	66	59	104			32			23
1928	87	49	46	70		28	28			23
1929	50	42	39	46		19	21			16
1930	70	55	47	53	20	21	22			17
1931	38	33(2)	32	27	23(3)	27	40			18
1932	58	56	47	106			26		29	21
1933	52	56	48	54		22	20	25	25	17
1934	51	45	41	37	20(4)	21	28	25(5)	33	16
1935	86		62	103		30	24	34	31	19
1936	81	56	47	104		31	25	35	32	20
1937	68		48	105		35	28	38	35	22
1938	168		64	180			41		47	29
1939	50	38	36	46	20	20	23	24	29	17
1940	120	55	48	105		25	25	27	29	19
1941	164	69	56	127	27	32	28	35	33	21
1942	129	74	56	118	22	28	26	31	31	20

* 50-year mean (1889-1939) of natural run-off. For comparison of 40 and 50 year means see Tables 1, 3 and 5.

** 50-year mean (1889-1939) of natural run-off at foothill stations of San Joaquin, Merced, Tuolumne and Stanislaus Rivers. For comparison of 40 and 50 year means, see Tables 1, 3 and 5.

(1) July-October, inclusive, 59.
(2) May-September, inclusive, 34.
(3) May-September, inclusive, 19.
(4) May-September, inclusive, 20.
(5) June-October, inclusive, 23: May-October, inclusive, 21.

TABLE 85

WATER DISCHARGED TO THE SACRAMENTO RIVER ABOVE SACRAMENTO AS MEASURED AT DEFINITE RETURN FLOW CHANNELS
1942

Return Flow Channel		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	June to October	July to October
		Acre-feet													
Butte Slough (1)	97	7120	12430	0	0	0	15530	10240	12510	24320	20460	23940	20650	83060	67530
R. D. 70 Drain	103	3150	6460	2310	2640	1850	1660	1210	1390	1850	910	290	570	9540	7880
R. D. 108 Drain	104	12240	17850	8200	4140	6920	14980	12710	13070	13540	5870	1170	2200	60170	45190
Colusa Basin Drainage (2)	106	0	0	0	0	0	15510	22970	31280	52490	21680	12260	8690	143930	128420
Sycamore Slough	107	0	0	0	0	0	0	0	323	184	0	0	0	507	507
Sacramento Slough (3)	108	(4)	(4)	(4)	(4)	(4)	(4)	45400	45200	47700	33300	(4)	(4)	—	171600
R. D. 1001 Drain (5)	116	3970	12980	3360	4350	1700	978	470	123	414	369	117	262	2354	1376
R. D. 1000 Drain #3	117	5540	6490	3960	4140	3830	1690	593	1320	2410	2300	785	1520	8313	6623
R. D. 1000 Drain	118	4240	11200	2040	3180	0	0	0	0	0	340	0	0	340	340
Totals		—	—	—	—	—	—	93593	105216	142888	85229	—	—	—	499380

(1) This flow except during high water periods is practically all of Feather River origin.
(2) A portion of the water which normally should return to the Sacramento River at this point is diverted to the Knights Landing Ridge Cut. (See Table 113)
(3) This is the measured flow and includes Feather River diversions. (See Table 109 for segregation of waters)
(4) See footnote Table 108.
(5) Discharged to main drain between Reclamation District 1000 and 1001, thence to Sacramento River at Mile 19.6L.

TABLE 86

RELATION BETWEEN RETURN WATER AND DRAFT, SACRAMENTO RIVER, RED BLUFF TO SACRAMENTO (USING ONLY RETURN WATER WHICH ENTERED THROUGH DEFINITE RETURN CHANNELS*) - 1942

Return Flow Channel	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	January to December	June to Sept.	July to Sept.
	Acre-feet														
R. D. 70 Drain	3150	6460	2310	2640	1850	1660	1210	1390	1850	910	290	570	24290	6110	4450
R. D. 108 Drain	12240	17850	8200	4140	6920	14980	12710	13070	13540	5870	1170	2200	112890	54300	39320
Colusa Basin Drainage**	83610	300100	50880	38750	30020	32850	26950	34610	54430	21750	12600	25190	711740	148840	115990
Sacramento Slough	(1)	(1)	(1)	(1)	(1)	(1)	29400	32100	36600	11260	(1)	(1)	(1)	(1)	98100
R. D. 1000 Drains	9780	17690	6000	7320	3830	1690	590	1320	2410	2640	780	1520	55570	6010	4320
Total Return	—	—	—	—	—	—	70860	82490	108830	42430	—	—	—	—	262180
Diversions (Red Bluff to Sacramento)	0	0	1860	11610	179200	245900	263500	251900	164700	41000	0	0	1159700	926000	680100
Return in % of diversions	—	—	—	—	—	—	27	33	66	—	—	—	—	—	39

NOTE: In order to show return water from Sacramento River irrigation only, the discharge to the river of Butte Slough is excluded, as is also the portion of the return through Sacramento Slough derived from Feather River diversions (Table 109) the surplus water diverted to Sutter By-Pass from Butte Slough and the discharge from Reclamation District 1001.

* As distinguished from use of all accretions as indicated in Table 87.
** Figures include water diverted to Knights Landing Ridge Cut (Table 113) and outflow from Sycamore Slough (Table 107).
(1) See footnotes Table. 108.
(2) Estimated. Balance of flow assumed to be runoff of winter flow stored in By-Pass area.

TABLE 87

RELATION BETWEEN RETURN WATER AND DRAFT, SACRAMENTO RIVER, RED BLUFF TO SACRAMENTO (INCLUDING ALL ACCRETIONS)* - 1942

River Section	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan-Dec
	Acre-feet												
Return Flow													
Red Bluff to Butte City						79200	35400	16900	17600				
Butte City to Colusa						39600	23200	16300	3800				
Colusa to Wilkins Slough						33700	8900	1700	3400				
Wilkins Slough to Knights Ldg.						92700	41600	53100	62000				
Knights Landing to Verona	- - - - - - -		(1)		- - - - - - -	60400	31200	27200	34100				
Verona to Sacramento						1700	600	1300	2400				
Total Return						307300	140900	116500	123300				
Total Diversion													
Red Bluff to Sacramento						245900	263500	251900	164700				
Return in per cent of draft						—	53	46	75				
Monthly return in % of seasonal						—	—	—	—				

River Section	Return Flow Acre-feet		Red Bluff to Lower End of Section						In River Section			Red Bluff to Lower End of Section		
			Return Flow Acre-feet		Diversions Acre-feet		Return flow in % of Diversion		January to December			January to December		
	June to Sept.	July to Sept.	June to Sept.	July to Sept.	June to Sept.	July to Sept.	June to Sept.	July to Sept.	Return	Diversion	Return in % of Diver.	Return	Diversion	Return in % of Diver.
Red Bluff to Butte City	149100	69900	149100	69900	424900	311200	35	22						
Butte City to Colusa	82900	43300	232000	113200	461100	334000	50	34						
Colusa to Wilkins Slough	47700	14000	279700	127200	732800	535000	38	24						
Wilkins Sl. to Knights Ldg.	249400	156700	529100	283900	830100	608600	64	47						
Knights Ldg. to Verona	152900	92500	682000	376400	854300	625800	80	60	- - - - - - - - - (1) - - - - - - - - -					
Verona to Sacramento**	6000	4300	688000	380700	926300	680200	74	56						
Total	688000	380700												
Diversions (Red Bluff to Sacramento)	926300	680200												
Return in % of diversions	74	56												

NOTE: In the return water here shown, the discharge to the Sacramento River of the Feather and American rivers is excluded as is also the discharge of following return water channels, Butte Slough and that portion of the discharge of Sacramento Slough derived from Feather River waters. Also inflow from Mill, Antelope, and Deer Creeks between Red Bluff and Butte City has been excluded.

(1) Due to high water in spring of 1942 no attempt was made to determine return flows and percentages for that period.

* The return water in this table between any two stations is computed as the difference in discharge between the upper and lower station, making due allowance for the intervening diversions, the results include both those accretions entering from definite return channels, which have been measured and accretions due to seepage, groundwater return, etc., which cannot be directly measured.

TABLE 88

RETURN FLOW AND ACCRETIONS FOR PERIOD JULY - SEPTEMBER 1932 TO 1942
SACRAMENTO VALLEY; RED BLUFF TO SACRAMENTO

(ACRE-FEET)

	1942												
	July	Aug.	Sept.	1942	1941	1940	1939	1938	1937	1936	1935	1934	1933	1932
1 - Inflow (1)														
Sacramento River at Red Bluff	347900	276600	253000	877500	933000	675400	557500	855800	595400	590600	579700	482000	527000	518000
Feather River at Oroville	194900	135800	136100	466800	406800	358800	276600	487900	321200	396100	353400	263600	253500	286100
Yuba River at Smartville	85240	34080	25280	144600	143600	62400	38900	136500	65700	71900	69900	33600	53400	65400
American River at Fairoaks	147700	33260	22510	203470	130400	93300	23100	193500	90600	137400	92000	32600	62800	123900
1 - Total inflow (1)	775740	479740	436890	1692370	1613800	1189900	896100	1673700	1072900	1196000	1095000	811800	896700	993400
2 - Outflow														
Sacramento River at Sacramento	567400	246700	341500	1155600	1135000	713700	376100	1371200	588400	743700	741600	338400	446100	579000
Yolo By-Pass opposite Sacramento	5560	4520	3090	13170	13400	5900	3800	800	3700	8300	2000	3900	1000	1300
2 - Total outflow	572960	251220	344590	1168800	1148400	719600	379900	1372000	592100	752000	743600	342300	447100	580300
3 - Diversions														
Sacramento River	263510	251940	164680	680130	630500	533000	467500	482900	523800	462700	456000	438100	425600	403100
Colusa Trough	6370	7280	5110	18760	19600	21300	16300	3100	14200	15500	2300	3500	0	1700
Back Borrow Pit	11000	9650	4450	25100	14500	11300	16000	9600	13100	9700	10200	13600	9300	11800
Lower Butte Creek and Slough	4020	4160	9230	17410	14400	18100	16500	23300	15000	13600	9600	4400	21000	13900
By-Pass and Drainage Channels	7030	8080	5200	20310	28200	21100	30400	9300	92200	29900	20100	29600	13200	14500
Feather River	125530	122150	86810	334490	282100	258000	213100	290900	279000	246100	229500	197900	234600	242200
Yuba River	14960	14840	13090	42890	37700	37800	33900	27700	28400	28200	28000	23200	29500	25100
American River	1400	1190	790	3380	3100	3500	3400	3000	3600	2900	2700	2700	2600	3100
3 - Total Diversions	433820	419290	289360	1142470	1030100	904100	797100	849800	899300	808600	758400	713000	735800	715400
Return flow & accretion (2+3-1)	231040	190770	197060	618900	564700	433800	280900	548100	418500	364600	407000	243500	286200	302300
Total gain in % of diversions	53	45	68	54	55	48	35	64	47	45	54	34	39	42
Seasonal flow in % of normal(2)				133	142	118	43	167	70	92	87	45	46	69

(1) Only major flows considered. Flows of tributary creeks negligible during late summer months.
(2) Normal at Sacramento taken as 50-year (1889-1929) mean of natural runoff at foothill stations.

TABLE 89

RELATION BETWEEN THE RETURN WATER IN COLUSA TROUGH AT COLUSA-WILLIAMS HIGHWAY
AND
THE PRINCIPAL DIVERSIONS FROM WHICH THE RETURN WATER WAS DERIVED - 1942
(Acre-feet except as noted)

Diversion	Mile and Bank	May	June	July	Aug.	Sept.	Oct.	June to Sept. (inc.)	July to Sept. (inc.)	Acreage Irrigated	
										General	Rice
Sacramento River (Table 69)											
Glenn Colusa Irrigation District	154.8R	56740	78290	82893	79655	55354	33062	296192	217902	30579	32132
Jacinto Irrigation District	154.8R	2660	4060	4200	4030	3190	2320	15480	11420	6318	0
Compton Delevan Irrigation District	154.8R	1870	3740	4440	4870	1684	250	14734	10994	0	3030
Provident Irrigation District	154.8R	13050	12580	10600	10940	8270	360	42390	29810	618	7034
Princeton-Codera-Glenn Irrigation Dist.	154.8R	11639	13143	12880	11623	8404	0	46050	32907	2116	3413
Maxwell Irrigation District	154.8R	496	595	643	498	380	0	2316	1721	0	1890
Colusa Trough Plants (Table 70)	—	2240	4897	6371	7277	5111	2036	23656	18759	240	1520
Totals		88695	117305	122027	119093	82393	38028	440818	323513	39871	49019
Return Flow											
Colusa Trough at Colusa-Williams Highway (1)		25420	34810	30430	35450	51550	17940	152240	117430		
Colusa Trough diversions		2240	4897	6371	7277	5111	2036	23656	18759		
Total return (Acre-feet)		27660	39707	36801	42727	56661	19976	175896	136189		
Total return (Average cubic feet per second)		450	667	599	695	952	325	727	746		
Return in per cent of diversions		31	34	30	36	69	53	40	42		

(1) Record of flow in Colusa Trough is only available for the period

TABLE 90

RELATION BETWEEN DIVERSIONS FROM AND RETURN TO THE SACRAMENTO RIVER FROM RECLAMATION DISTRICT #70 FOR 1942

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.-Dec. inc.	Mar.-Oct. inc	Jul.-Sep. inc	Acreage Irrigated	
	Acre-feet															Gen.	Rice
Diversions (1)	0	0	0	1790	5590	7230	9620	9000	4350	510	0	0	38090	38090	22970	6960	3605
Return water (2)	3150	6460	2310	2640	1850	1660	1210	1390	1850	910	290	570	24290	13820	4450		
Return in % of diversion	—	—	—	—	33	23	13	15	43	—	—	—	—	—	19		
Return in % of annual diversions	—	—	—	—	4.8	4.4	3.2	3.6	4.9	2.4	0.8	—	—	—	12		
Drainage rediverted (3)	NO COMPUTATION MADE OF REDIVERSIONS																
Rainfall (4)																	

(1) The diversions comprise those from the Sacramento River, left bank, Mile 67.5 to Mile 83.5 (Table 69) and those from Butte Slough, Mile 0.3 to 7.5 (Table 72).
(2) The return water is the discharge to the Sacramento River through the drainage plant of Reclamation District 70 at Mile 68.8L (Table 103). This is a combined drainage and irrigation plant which also discharges into an irrigation canal at the plant.
(3) This is the water re-used within the district. It has not been taken into account in the percentage computations.
(4) Rainfall not taken into account in percentage figures. See Tables 119 to 130 for daily rainfall records.

TABLE 91

RELATION BETWEEN DIVERSIONS FROM AND RETURN TO THE SACRAMENTO RIVER FROM RECLAMATION DISTRICT #108 FOR 1942

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.-Dec. inc.	Mar.-Oct. inc.	Jul.-Sep. inc.	Acreage Irrigated	
	Acre-feet															Gen.	Rice
Diversions (1)	0	0	0	0	26040	28430	37240	33260	16910	610	0	0	142490	142490	87410	1830	19800
Return water (2)	12200	17800	8200	4140	6920	15000	12700	13100	13500	5870	1170	2200	112800	79430	39300		
Return in % of diversion	—	—	—	—	27	53	34	39	80	—	—	—	—	—	45		
Return in % of annual diversions	—	—	—	—	4.9	10.5	8.9	9.2	9.5	4.1	0.8	—	—	—	28		
Drainage rediverted (3)																	
Rainfall (4)																	

NOTE: Flood stages prevailed in spring and winter.
(1) The diversions comprise those from the Sacramento River, right bank, from Mile 43.1 to Mile 63.2 (Table 69).
(2) The return water is the discharge to Sacramento River of Reclamation District 108 drain at Rough and Ready Bend (Table 104) and on Back Borrow Pit (Table 105).
(3) No report of any rediversion of drainage water.
(4) Rainfall not taken into account in percentage figures. See Tables 119 to 130 for daily rainfall records.

TABLE 92

RELATION BETWEEN DIVERSIONS FROM AND RETURN TO THE SACRAMENTO RIVER FROM RECLAMATION DISTRICT #1500 FOR 1942

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.-Dec. Inc.	Mar.-Oct. Inc.	Jul.-Sep. Inc.	Acreage Irrigated	
	Acre-feet															Gen.	Rice
Diversions (1)	0	0	0	1670	41300	54350	54790	54650	39480	210	0	0	246400	246400	148920	20760	20370
Return water (2)	18400	30100	10600	12700	24700	28800	26700	29200	33300	10200	2050	4000	230800	176200	89200		
Return in % of diversion	—	—	—	—	59	53	49	53	84	—	—	—	—	—	60		
Return in % of annual diversion					10	12	11	12	14	4.1	0.8	—	—	—	36		
Drainage rediverted (3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Rainfall (4)																	

(1) The diversions comprise those from the Sacramento River, left bank, from Mile 29.9 to Mile 63.75 (Table 69). The principal ones are the Sutter Mutual Water Company's plants at Tisdale, State Ranch Bend and Portuguese Bend. Diversions through Tisdale plant to R. D. 1660 have been excluded.

(2) The return water is the discharge through the drainage plant of Reclamation District #1500 on the West Borrow Pit of the Sutter By-Pass (Table 110). This water reaches Sacramento River via Sacramento Slough (Table 108).

(3) This is the water pumped from drains and re-used within district. It has not been taken into account in the percentage computations.

(4) Rainfall not taken into account in percentage figures. See Tables 119 to 130 for daily rainfall records.

TABLE 93

RELATION BETWEEN DIVERSIONS FROM AND RETURN TO THE SACRAMENTO RIVER FROM RECLAMATION DISTRICT #1000 FOR 1942

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.-Dec. Inc.	Mar.-Oct. Inc.	Jul.-Sep. Inc.	Acreage Irrigated	
	Acre-feet															Gen.	Rice
Diversions (1)	0	0	0	0	8060	10400	12510	12120	8990	320	0	0	52400	52400	33620	4040	3800
Return Water (2)	7780	17690	6000	7320	3830	1690	590	1320	2410	2640	780	1520	53570	—	4320		
Return in % of diversion	—	—	—	—	—	16	4.7	11	27	—	—	—	—	—	13		
Return in % of annual diversion	—	—	—	—	7.3	3.2	1.1	2.5	4.6	5.0	1.5	—	—	—	8		
Drainage rediverted (3)														3900			
Rainfall (4)																	

(1) The diversions comprise those from the Sacramento River, left bank, Mile 2.4 to Mile 19.6 (Table 69).

(2) The return water is the discharge through the drainage plant of Reclamation District #1000, Plant #3 (Table 117) and 2nd Bannon Slough (Table 118).

(3) This is the water pumped from the drains within the district and at Central M.W. Co. plant (Mile 16.0L).

(4) Rainfall not taken into account in percentage figures. See Tables 119 to 130 for daily rainfall records.

TABLE 94

RETURN FLOW IN SAN JOAQUIN VALLEY STREAMS – 1942

(Acre-feet)

River Section	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
SAN JOAQUIN RIVER												
Fremont Ford Bridge to Vernalis												
Fremont Ford Bridge to Newman	54000	101900	29500	4400	5400	150400	60500	1050	1160	2080	1040	9560
Newman to Grayson	7500	23500	27300	32200	41500	51300	55500	30400	21680	23190	8690	6520
Grayson to Hetch Hetchy Crossing	-2300	24900	14400	-2300	25500	-27000	15600	640	7930	7200	9800	-8620
Hetch Hetchy Crossing to Vernalis	-26690	-14700	-6480	4100	-9300	-24500	-4110	1340	-3280	-3750	-5150	5940
Total return flow*	32510	135600	64720	38400	63100	150200	127500	33430	27490	28720	14380	13400
Total diversions	0	0	570	2040	14160	17060	28400	25400	12580	4240	0	0
STANISLAUS RIVER												
Orange Blossom Bridge to Hatmark Ranch												
Orange Blossom Bridge to Riverbank	700	2700	1800	-6300	-3050	-1520	7890	5290	4790	4760	1500	3100
Riverbank to Ripon Bridge	3500	2000	16600	1700	5420	8550	13640	7520	8880	10740	8200	-660
Ripon Bridge to Bret Harte Pump	3590	-2900	1210	7960	-1510	7500	4370	5730	5290	3010	610	-380
Total return flow**	7790	1800	19610	3360	860	14530	25900	18540	18960	18510	10310	2060
Total diversions	0	0	240	360	2260	3820	4300	3710	2600	1130	0	0
TUOLUMNE RIVER												
La Grange Bridge to Tuolumne City												
La Grange Bridge to Roberts Ferry Bridge	11700	7620	10800	4700	9700	25600	7540	3120	970	3760	3180	3300
Roberts Ferry Bridge to Hickman Bridge	5000	6170	5200	9600	8800	19520	7020	4510	410	1360	1780	4600
Hickman Bridge to Modesto	14000	24000	7400	20700	16920	15150	32810	20930	21720	21820	14800	11900
Modesto to Tuolumne City	-4200	-10800	-4300	-5420	-9650	-10650	-13460	1770	1840	1450	500	-4400
Total return flow**	26500	26990	19100	29580	25770	49620	33910	30330	24940	28390	20260	15400
Total diversions	0	0	10	80	370	300	440	450	200	90	0	0
MERCED RIVER												
Yosemite Valley Railroad to Mouth												
Yosemite Valley Railroad to Livingston	190	4440	9790	18130	27680	30270	15560	11340	10370	11300	8250	8070
Livingston to mouth	3150	11120	9880	25890	25290	43660	9570	5570	5480	3280	1660	1730
Total return flow**	3340	15560	19670	44020	52970	73930	25130	16910	15850	14580	9910	9800
Total diversions	0	0	0	10	480	1620	2720	2000	1210	360	0	0

*The return flow figure is obtained by making due allowance for diversions and deducting all measured inflow from tributaries, but it is apparent that there is a large unmeasurable accretion from lands irrigated from the tributaries. Inflow of Dry Creek treated as Tuolumne River return water. During periods of high flow a large portion of the water passing Fremont Ford bridge is in the Mud Slough channels and spreads over a large area.

**The excessive return flow in relation to diversions here shown is due to large irrigation district diversions which are made above upper station shown for each stream. This return flow enters the channels below the initial gaging stations on each.

TABLE 95

COMPARISON OF DIVERSIONS AND RETURN FLOW - SAN JOAQUIN VALLEY 1942
(Quantities in acre-feet except as noted)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan-Dec.
San Joaquin River below Friant (1)	145200	136800	142700	279800	393100	477900	276200	104600	77690	62690	66430	69840	
DIVERSIONS													
Miller & Lux	6380	5880	29490	84320	147640	165280	159450	111340	80790	69910	38650	20200	919330
Merced Irrigation District	870	690	6980	23600	62500	86590	94680	79670	52510	27210	830	800	437330
Turlock Irrigation District Canal (1)	1750	1040	34320	38680	86890	106100	102800	75440	55970	36500	26800	11880	578170
Modesto Irrigation District Canal (1)	560	7260	16530	36330	49460	73130	63310	42140	41990	36770	10680	200	378360
So.San Joaquin& Oakdale I.D.Canal (1)	40	0	15910	24040	41410	57740	55000	49640	36480	8090	430	60	288840
Oakdale Irrigation District Canal (1)	0	0	1950	5980	18410	22700	23620	22240	17270	7140	110	0	119420
Pumping Diversions-Tables 80,81,82,83	0	0	820	2490	17610	23380	36300	32040	16850	6070	0	0	135560
Total diversions - acre-feet	9600	14870	106000	215440	423920	535320	535160	412510	301860	191690	77500	33140	2857010
Total diversions - average c.f.s.	156	268	1724	3621	6894	8996	8704	6709	5073	3118	1302	539	3946
Monthly diversion in % of annual	0.3	0.5	3.7	7.5	14.8	18.8	18.8	14.4	10.6	6.7	2.7	1.2	
RETURN FLOW (3)													
San Joaquin River near Vernalis (1)	518400	705600	533400	798200	1017000	1323000	478200	103600	114000	137500	138800	268400	6136100
Pumping diversions-Tables 80,81,82,83	0	0	820	2490	17610	23380	36300	32040	16850	6070	0	0	135560
Undiverted Flow (2)													
at Fremont Ford Br.(San Joaquin R.)	253160	308100	189230	218320	248530	496800	186880	19780	13260	15740	32080	66320	2048200
at LaGrange (Tuolumne River)	118300	91910	121600	142000	224600	395800	97760	11920	27540	33890	34140	117200	1416660
at Yosemite Val.R.R.Crossing (Merced River)	75940	74300	88070	163170	191430	190300	29610	1730	1390	1470	580	840	818830
at Orange Blossom Br.(Stanislaus R.)	73000	171200	52600	219600	292000	226000	36200	1540	1440	1100	17700	50300	1142680
Power release and spill (2)													
Net return - acre-feet (3)	-2000	60090	82720	57600	78050	37480	164050	100670	87220	91370	54300	33740	845290
Net return - average c.f.s. (3)	-33	1082	1345	968	1269	630	2668	1637	1466	1486	913	549	1168
Return in % of diversions	—	—	—	27	18	7	31	24	29	48	70	—	
Monthly return in % of annual	—	7.0	9.8	6.8	9.2	4.4	19.4	11.9	10.3	10.8	6.4	4.0	

NOTE: Only the major diversions from the San Joaquin River between Friant and Fremont Ford Bridge are included in figures. It is possible that some of the late summer flow at Fremont Ford Bridge considered in this table as being "Undiverted flow" is actually return water. For the periodic relation between diversion and return flow see Table 84.

(1) U.S.G.S. station.

(2) It is assumed that the stations which are above the valley diversions and below the foothill diversions represent all undiverted flow and include all spill or power release.

(3) Includes any valley floor run-off and all accretions.

TABLE 96

DISCHARGE OF COLUSA TROUGH AT COLUSA-WILLIAMS HIGHWAY - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	3030	2990	427	265	472	562	480	516	693	600	183	150
2	2830	2670	406	260	517	580	485	512	714	574	177	141
3	2150	2760	395	268	436	591	481	502	733	522	177	138
4	1330	4010	381	345	364	594	490	487	741	461	164	135
5	940	6340	362	647	291	622	484	473	749	426	180	134
6	674	7940	353	1030	294	640	485	488	778	411	196	132
7	609	12500	341	1140	273	653	496	493	831	369	209	145
8	785	14900	323	960	277	644	502	529	902	356	223	145
9	890	10700	317	803	302	616	490	525	977	322	216	142
10	761	7510	318	796	318	615	490	524	1050	290	196	145
11	623	5120	422	923	351	615	486	523	1050	281	182	140
12	540	3820	481	862	387	636	467	530	1040	291	184	139
13	492	3030	436	750	400	610	477	549	1020	273	177	130
14	448	2340	470	821	420	597	487	560	1000	258	187	132
15	413	1680	1230	980	418	609	495	566	990	262	207	126
16	387	1250	1580	943	458	610	479	572	973	250	199	126
17	367	1130	1420	871	496	614	487	590	957	209	140	141
18	335	1010	1060	842	500	636	492	605	937	250	317	149
19	316	855	755	820	474	659	507	599	923	236	252	161
20	303	767	580	781	442	598	516	599	907	230	195	165
21	294	710	482	740	392	590	509	610	889	207	149	176
22	305	686	438	697	387	590	502	624	873	207	163	220
23	333	637	410	640	402	585	509	630	855	207	149	403
24	1350	584	390	587	391	567	518	624	844	196	164	732
25	2130	548	373	533	439	532	512	624	887	199	163	819
26	3320	507	343	493	453	525	500	640	879	217	150	871
27	6340	476	329	480	457	494	500	659	812	194	154	636
28	6160	453	311	461	490	470	490	680	719	200	163	668
29	5150		309	380	482	449	503	680	653	187	163	1030
30	4400		292	312	497	449	509	680	615	176	157	950
31	3670		280		534		512	680		176		723
Mean	1667	3497	517	681	413	585	495	577	866	292	185	324
Ac. Ft. for Month	102500	194200	31760	40520	25420	34810	30430	35450	51550	17940	10980	19920

NOTE: This is return water flowing in the main drain of Reclamation District 2047; it is drainage chiefly from lands irrigated by Glenn-Colusa, Provident, Princeton-Codora-Glenn, Compton-Delevan and Maxwell Irrigation Districts. Flow reaches Sacramento River via Back Borrow Pit (Table 106).

TABLE 97

DISCHARGE OF BUTTE SLOUGH TO SACRAMENTO RIVER - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0				0	229	177	330	497	84	497
2	0	0					212	149	345	499	107	497
3	0	0					209	130	282	497	148	497
4	112	0					249	149	313	497	173	150
5	595	0					236	168	298	353	249	385
6	840	0					189	166	306	499	259	497
7	735	1110					146	160	315	353	253	497
8	0	1330					141	157	298	353	253	385
9	0	1330					179	179	359	150	283	385
10	0	1190					207	217	339	353	766	385
11	0	924				0	178	206	360	150	384	385
12	0	385				278	137	232	457	499	497	385
13	0	0	FLOW	FLOW	FLOW	384	169	232	482	499	497	546
14	0					278	147	234	471	353	497	497
15	0					384	127	224	548	499	497	385
16	0					384	126	223	538	499	497	385
17	0					518	125	230	556	499	542	497
18	0	FLOW	NO	NO	NO	501	125	236	543	499	618	497
19	0					495	124	230	500	542	278	385
20	0					465	125	202	475	497	150	497
21	154					453	108	214	234	353	542	616
22	0					498	115	206	322	580	618	616
23	280	NO				486	128	196	278	70	618	546
24	0					494	175	196	497	89	618	0
25	0					464	165	198	278	100	542	0
26	0					471	152	202	497	93	618	0
27	0					352	156	199	497	87	542	0
28	0	0				325	190	223	497	90	542	0
29	0					323	224	245	547	89	199	0
30	497			0		277	199	245	497	89	199	0
31	378		0		0		178	281		89		0
Mean	116	223	0	0	0	261	166	203	409	332	402	336
Ac. Ft. for Month	7120	12430	0	0	0	15530	10240	12510	24320	20460	23940	20650

NOTE: This is the discharge to the Sacramento River at Mile 84 Left and is measured at and regulated by the gravity culverts at the mouth of the Slough. This flow together with that shown in Tables 98 and 101 is, during the summer months, made up almost entirely of return water from lands irrigated by Feather River diversions. Discharge from the Sacramento River to Butte Basin over Moulton and Colusa weirs is shown in Tables 99 and 100, respectively.

TABLE 98

DISCHARGE OF BUTTE SLOUGH TO SUTTER BY-PASS - 1942

Day	Daily Discharge in Second-Feet											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	14600	50500	1750	417	1270	714	112	105	84	24	44	44
2	10500	38700	1620	470	1220	664	119	105	84	24	49	44
3	8100	39600	1500	470	1120	640	119	105	79	22	49	44
4	6200	55100	1440	509	1075	649	112	105	94	19	55	44
5	4750	66100	1320	640	1075	616	105	105	99	15	88	44
6	3700	78000	1170	2400	1035	570	105	105	99	7	49	31
7	2880	136700	1075	5350	1035	570	112	112	89	6	44	31
8	2880	166500	960	6000	1075	549	112	105	94	4	49	35
9	3050	141500	960	5200	1035	529	119	112	94	3	49	39
10	4900	96200	830	4300	995	451	119	112	89	2	39	61
11	5050	75300	960	3800	960	400	112	105	89	2	35	80
12	4600	57900	995	3230	925	355	119	112	89	2	35	74
13	4200	44100	995	2880	860	245	119	105	70	2	39	55
14	3500	29400	1075	2560	860	217	119	105	66	2	39	39
15	3050	19800	1270	2560	830	166	119	105	46	2	44	31
16	2800	14600	1440	5800	740	126	126	105	30	2	39	35
17	2480	9600	1620	8100	714	112	126	105	24	2	44	39
18	2170	7800	1750	10200	740	119	129	105	24	2	39	35
19	1820	6000	1890	12000	770	119	129	105	22	2	105	31
20	1500	4750	1750	12800	740	126	126	105	19	8	355	31
21	1220	3900	1440	15400	714	126	126	112	17	6	151	31
22	995	3320	1270	9900	640	112	126	105	17	4	35	27
23	995	2880	1075	7600	592	105	119	112	17	7	35	67
24	1500	2640	925	5650	592	105	135	105	17	35	31	340
25	6000	2400	890	4400	570	105	119	105	19	31	27	830
26	31200	2240	800	3320	570	99	119	112	22	24	27	1075
27	56100	2030	664	2480	640	99	119	112	24	27	27	1220
28	65200	1890	592	2100	689	105	126	112	24	27	27	1560
29	73500		549	1680	740	94	119	112	24	31	44	1890
30	74600		489	1380	770	94	112	105	24	35	35	2400
31	63400		434		740		112	105		39		2960
Mean	15100	41400	1140	4790	849	299	120	107	53	13	58	428
Ac. Ft. for Month	927000	2300000	70400	285000	52200	17800	7310	6600	3150	829	3430	26300

NOTE: This is the discharge from Butte Slough to the Sutter By-Pass. During low flow periods gates at mouth of slough are regulated (Table 97) which forces water under Long Bridge as shown in this table. Normal and summer flows are primarily from Feather River sources. During flood periods Sacramento River water enters Butte Basin above Butte City by bank spill and over Moulton and Colusa weirs. The purpose of the summer regulation is to make water available for use on Sutter By-Pass lands (below Long Bridge).