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SURFACE WATER SUPPLY *of* HAWAII

JULY 1, 1943, *to* JUNE 30, 1944

Prepared by
WATER RESOURCES BRANCH
DIVISION OF SURFACE WATER

In cooperation with the
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SURFACE WATER SUPPLY OF HAWAII, JULY 1, 1943, TO JUNE 30, 1944

SCOPE OF WORK

This volume contains results of measurements of the flow of streams and ditches in the Territory of Hawaii during the year ending June 30, 1944. Since the beginning of stream-gaging work in Hawaii, in 1910, records of flow of streams and ditches have been obtained at about 489 stations for periods ranging from a few months to 33 years. In addition, hundreds of miscellaneous measurements have been made, and rather extensive studies of ground water have been made on most of the islands.

In this volume are given the records of daily flow obtained at stations that were operated during the year ending June 30, 1944, and the results of miscellaneous measurements of stream flow made during that year. Most of the results of ground-water studies have been published in bulletins of the Territorial Division of Hydrography. See "Publications," on page 3 for a record of surface water-supply papers pertaining to Hawaii.

DEFINITION OF TERMS

The units in which stream-flow data are presented in this report are defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel having a cross-sectional area of 1 square foot and an average velocity of 1 foot a second.

An "acre-foot" is equivalent to 43,560 cubic feet and is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

In the Territory of Hawaii the unit most commonly used in measuring water is the "million gallons." This is used with two meanings-- (1) to indicate a rate of flow and (2) to express an actual quantity of water. In the former sense "million gallons a day" is inferred, 1,000,000 gallons being taken as the unit of quantity and 24 hours as the unit of time. With this meaning the term is generally used in connection with pumping and irrigation. In the latter sense "million gallons" as an absolute quantity is used in the measurement of storage capacities of reservoirs.

The following convenient approximate relations exist between second-feet, million gallons a day, and acre-feet: 1 second-foot flowing 24 hours equals about 2 acre-feet; 1,000,000 gallons equals about 3 acre-feet or about 1.55 second-feet.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily discharge. All records of stage are obtained from water-stage recorders that give continuous records of the fluctuations. Measurements of discharge are usually made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. Occasionally discharge is determined from a weir or rating flume, using standard formulas, and for several stations the high-water discharge has been determined from rating developed by the use of models.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily gage heights to these rating tables gives the

discharge from which the daily, monthly, and yearly discharges are determined. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the discharge is determined by the "shifting-control method," in which correction factors based on individual discharge measurements and notes by engineers are used in applying the gage heights to the rating tables. At times the stage-discharge relation for a station may be temporarily changed by the presence of aquatic growth or debris on the control. For such times the discharge is computed by what is essentially the "shifting-control" method, described above.

The data presented in this report comprise, for each gaging station, a description of the station, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and runoff. Skeleton rating tables are published except for ditch, or spring stations. All rates of flow are expressed in million gallons a day.

The description of the station gives location, drainage area, records available, discharge corresponding to maximum and minimum recorded stages, average discharge if there has been more than 10 years or record, and, under "Remarks," notes on accuracy of the records, diversions that decrease the flow at the gage, and artificial regulation.

The table of daily discharge gives, in general, the discharge corresponding to the mean daily gage heights. But when, owing to sudden or rapid diurnal fluctuation, the discharge obtained from the rating table by applying the mean daily gage height would not be within 2 percent of the true mean, the mean has been obtained by averaging discharges for intervals during the day or by use of the discharge or graphic integrators.

In the table of monthly discharge the column headed "Maximum" gives the flow for the day when the total discharge was greatest. This does not correspond to the rate of flow at the crest of the flood. The maximum rate of flow is given in the station description under the heading "Extremes," and the corresponding stage is always taken from the water-stage recorder graph unless otherwise noted. Likewise, in the column headed "Minimum" the quantity given is the flow for the day when the total discharge was least. The columns headed "Mean" give the average flow in million gallons a day and cubic feet a second during the month. The "total runoff in million gallons" is the sum of the daily flows, and the "total runoff in acre-feet" is computed from the total monthly discharges in million gallons. Selected peak discharges with the times of their occurrence are given below the table of monthly discharge for stations having drainage areas of more than 10 square miles.

TIME BASIS

At 2 a.m. on February 9, 1942, as an emergency measure, the Nation shifted from standard time to "war time," and clock time in the several zones of the country as well as in Hawaii was moved ahead 1 hour, or to 3 a.m. Records of daily discharge prior to February 9, 1942, have been published on the basis of standard time. Records subsequent to that date have been computed on the basis of war time. To convert war time to standard time, subtract 1 hour.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the permanency of the stage-discharge relation and (2) on the accuracy of observation of stage, measurements of flow, and interpretation of records.

A general statement under "Remarks" gives the accuracy of records, the terms "excellent," "good," "fair," and "poor" indicating that the record is probably accurate within 5, 10, 15, and 20 percent, respectively.

It should be borne in mind that the observations in each succeeding year may be expected to throw new light on data previously published.

Computations are carried to not more than three significant figures, except that monthly and yearly total runoff (million gallons and acre-feet) above 10,000 are carried to four significant figures.

PUBLICATIONS

The following table lists, by years and numbers, the papers on the surface water supply of Hawaii published during the period 1903-44 and, used in conjunction with the list of stations maintained, which is given in Water-Supply Paper 795, provides a convenient index for finding the data for any station. Except as indicated, the year or years covered by each report begin July 1 and end June 30. The data for any particular station will be found in the reports covering the years during which that station was maintained, unless, owing to undeveloped rating curves, publication was postponed. Occasionally data are revised and republished in later papers. Miscellaneous discharge measurements made during any year at points other than regular gaging stations are included in the data published for that year.

Numbers of water-supply papers containing data on the surface water supply of Hawaii, 1903-44

Year	Number	Year	Number	Year	Number
1903.....	*77	1922-23.....	575	1934-35.....	795
1909-11†.....	318	1923-24.....	595	1935-36.....	815
1912†.....	336	1924-25.....	615	1936-37.....	835
1913†.....	373	1925-26.....	635	1937-38.....	865
1913-15.....	430	1926-27.....	655	1938-39.....	885
1915-16.....	445	1927-28.....	675	1939-40.....	905
1916-17.....	465	1928-29.....	695	1940-41.....	935
1917-18.....	485	1929-30.....	710	1941-42.....	965
1918-19.....	515	1930-31.....	725	1942-43.....	985
1919-20.....	516	1931-32.....	740	1943-44.....	1015
1920-21.....	535	1932-33.....	755		
1921-22.....	555	1933-34.....	770		

* This paper, entitled "Water resources of Molokai," by Waldemar Lindgren, contains data on both the surface and ground-water supplies of the island named.

† Calendar years. Data for the last half of the calendar year 1913 appears not only in Water-Supply Paper 373 but also in Water-Supply Paper 430, the first of the reports covering a year ending June 30.

A summary of records of flow in streams and ditches in the Territory of Hawaii was published in 1939 by the Territorial Planning Board. This report, entitled "Surface-water resources of the Territory of Hawaii, 1901-38," gives, by gaging stations for the periods of record, (1) monthly-discharge tables, which show for each month the maximum, minimum, and mean daily discharge and the total discharge, and (2) duration-discharge tables. Nearly all available records of flow in the Territory up to December 1938 were considered in making the summary. Some of these records are not contained in publications of the Geological Survey; some are revisions of records published in the Survey's water-supply papers.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The following table lists the gaging stations in the Territory of Hawaii at which records of discharge were collected during the fiscal year July 1943 to June 1944 by agencies other than the Geological Survey. The records for these stations are not contained in the publications of the Geological Survey and, except as indicated, have not been published elsewhere.

Records of discharge collected by agencies other than the Geological Survey

ISLAND OF KAUAI

Stream	Location	Period	Operated by
East Lawai ditch.....	Near Government Road, near Kalaheo.	1924-44	McBryde Sugar Co.
Eleele ditch.....	Near Government Road, near Kalaheo.	1924-44	Do.
Hanalei ditch.....	Above Kalihiwai Reservoir, near Kilauea.	1923-44	Kilauea Sugar Plantation Co.
Hanamaulu ditch.....	Below intake, near Hanamaulu..	1925-44	Lihue Plantation Co.
Koula (Hanapepe) ditch..	At Olokele Plantation boundary, near Makaweli.	1926-44	Olokele Sugar Co.
Hanapepe Field ditch....	Below Hanapepe River intake, near Eleele.	1924-44	McBryde Sugar Co.
Hanapepe Stream.....	At tidewater near Eleele.....	1924-44	McBryde Sugar Co.
Kamooloa ditch.....	Near Koloa boundary, near Koloa.	1924-44	Do.
Kapaia River diversion to field 8 reservoir.	Near Hanamaulu.....	1928-44	Lihue Plantation Co.
Kapaia River diversion to field 29.	Near Lihue.....	1927-44	Do.
East Lawai Stream.....	½ mile above cannery near Kalaheo.	1924-44	McBryde Sugar Co.
Lihue lower ditch.....	Below intake, near Lihue.....	1925-44	Lihue Plantation Co.
Lihue upper ditch.....	....do.....	1925-44	Do.
Olokele ditch.....	At powerhouse near Makaweli...	1926-44	Olokele Sugar Co.
Wahiawa Stream.....	Above Alexander Reservoir, near Kalaheo.	1924-44	McBryde Sugar Co.
Wahiawa Stream, East Branch.	....do.....	1929-44	Do.
West Lawai ditch.....	Near camp 12, near Kalaheo....	1924-44	Do.

ISLAND OF OAHU

Alewa Heights Spring....	Below reservoir 3.....	1932-44*	Board of Water Supply City and County of Honolulu.
Booth Springs.....	In Pauoa Valley, at altitude 685 feet.	1929-44*	Do.
Helemano ditch.....	About 3 miles below Upper Helemano Reservoir.	1933-44	Waialua Agricultural Co.
Hering Springs.....	In Makiki Valley, at altitude 970 feet.	1925-44*	Board of Water Supply City and County of Honolulu.
Kahuawai Springs.....	In Pauoa Valley, at altitude 618 feet.	1925-44*	Do.
Kalihi tunnels.....	At diversion, at altitude 650 feet.	1926-44*	Do.
Kamananui ditch.....	In Kawailoa Gulch about 500 yards above third siphon from Government Road.	1934-44	Waialua Agricultural Co.
Kipapa Stream.....	At altitude 375 feet.....	1917-44	Waiahole Water Co.
Makiki Springs.....	In Makiki Valley, at altitude 350 feet.	1926-44*	Board of Water Supply City and County of Honolulu.
Manoa tunnels.....	Upper Manoa Valley.....	1925-44*	Do.
Nuuanu tunnels.....	At Lower Luakaha.....	1926-44*	Do.
Nuuanu tunnel 3.....	At overflow, in upper Nuuanu Valley.	1931-44*	Do.
Palolo tunnel.....	Upper Palolo Valley.....	1926-44*	Do.
Wahiawa Reservoir Outlet	About 1,200 feet below dam....	1912-44*	Wahiawa Water Co.
Waiahole Stream.....	At altitude 250 feet.....	1919-44	Do.
Waiahole tunnel.....	At adit 8.....	1916-44	Do.
Waiawa Stream.....	At altitude 750 feet.....	1917-44	Do.
Waikakalaua Stream.....	....do.....	1917-44	Do.

* Published in biennial reports of Honolulu Sewer & Water Commission and of Honolulu Board of Water Supply.

ISLAND OF MAUI (WEST MAUI)

Everett ditch.....	Below intake, near Wailuku.....	1935-44	Wailuku Sugar Co.
Iao-Waikapu ditch.....	At lower end of tunnels, near Wailuku.	1923-44	Do.
Kama ditch.....	Below intake, near Wailuku.....	1933-44	Do.
Maniania ditch.....	....do.....	1923-44	Do.
North Waiehu.....	Near end of Waiehu Camp road, near Wailuku.	1922-44	Do.
South Waikapu ditch.....	Above first lateral, near Waikapu.	1935-44	Do.
Do.....	Below tunnel sections, near Waikapu.	1923-44	Do.
Spreckels ditch.....	Below intake, near Waihee.....	1931-44	Do.
Waihee ditch.....	....do.....	1922-44	Do.
Honokohau tunnel.....	At outlet of tunnel, at Mahinahina Camp.	1917-44	Pioneer Mill Co.
Kahoma tunnel.....	2,000 feet upstream from outlet above Lahaina.	1920-44	Do.
Kanaha ditch.....	At intake, above Lahainaluna School.	1921-44	Do.
Kauaula tunnel.....	At outlet, above Lahaina.....	1920-44	Do.
Launiupoko ditch.....	....do.....	1921-44	Do.
Ukumehame ditch.....	At outlet, near Olowalu.....	1931-44	Do.

ISLAND OF MAUI (East Maui)

Banana Spring.....	Near east wall of Keanae Valley, at altitude 700 feet.	1933-44	East Maui Irrigation Co.
Hanawi Spring upper high-level.	On east side of pali in Hanawi Gulch near Nahiku, at altitude 675 feet.	1932-44	Do.
Hanawi Spring lower high-level.	On east side of pali in Hanawi Gulch near Nahiku, at altitude 575 feet.	1932-44	Do.
Makapipi ditch.....	At west edge of Makapipi Gulch near Nahiku, at altitude 1,300 feet.	1933-44	Do.

Records of discharge collected by agencies other than the Geological Survey--Continued

ISLAND OF HAWAII

Stream	Location	Period	Operated by
Kohala ditch	At Awini weir in Honokane, near Niulii.	1917-44†	Kohala Ditch Co.
Do	At Niulii weir, near Niulii	1917-44†	Do.
Pololu Inlet 1	At Pololu, near Niulii	1929-44	Do.
Pololu Inlet 2	In Waiakalae Gulch at Pololu, near Niulii.	1929-44	Do.
Pololu Inlet 3	In Opaepilau Gulch, above Kohala ditch, near Niulii.	1937-44	Do.
Waiapuka Stream	Above Kohala ditch, near Niulii	1929-44	Do.
Pololu Inlet 5	In Niulii Gulch, above Kohala ditch, near Niulii.	1937-44	Do.
Pololu Inlet 6	In Waikane Gulch, above Kohala ditch, near Niulii.	1937-44	Do.
Waipuhi Stream	Above Kohala ditch, near Halawa	1933-44	Do.
Makapala ditch	....do	1929-44	Do.
Waipunalau Stream	....do	1929-44	Do.
Puwaiole Stream	....do	1937-44	Do.
Moaula Gulch	Below all development tunnels.	1929-44	Hawaiian Agricultural Co.
Hionamoa Gulch	....do	1926-44	Do.
Kesiwa Gulch	....do	1926-44	Do.
Noguchi tunnel 19	5.3 miles from Pahala, at altitude 3,500 feet.	1928-44	Do.
Makakupu tunnel 13	In Waiakaloa Gulch, at altitude 3,750 feet, 6.1 miles from Pahala.	1926-44	Do.
Upper Hamakua ditch and Reservoir 3 weir.	At base of Puu Lala, near Honokaa.	1907-12, 1921-44‡	Hawaiian Irrigation Co.
Lower Hamakua ditch	At main weir, near Kukuihaele	1921-44†	Do.
Honokaape ditch	At Kukuihaele Village	1923-44	Do.

† Records for some earlier years published in water-supply papers of Geological Survey.
‡ Records for 1913-20 published in water-supply papers of Geological Survey.

COOPERATION

The work during the year ending June 30, 1944, was done under cooperative agreement with the Territory of Hawaii through the commissioner of public lands. Assistance in collecting records was rendered also on the island of Kauai by the Kekaha Sugar Co., Ltd., the McBryde Sugar Co. Ltd., the East Kauai Water Co. Ltd., the Kilauea Sugar Co. Ltd., and the Lihue Plantation Co. Ltd.; on the island of Oahu by the Wahiawa Water Co. Ltd.; on the island of Maui by the Pioneer Mill Co. Ltd., and the East Maui Irrigation Co. Ltd., and on the island of Hawaii by the City of Hilo Water Works, the Kohala Ditch Co. Ltd., and the Olaa Sugar Co. Ltd.

Acknowledgment of records collected by individuals or corporations is made in connection with the description of each station for which such records were furnished.

DIVISION OF WORK

The stream-gaging work was conducted by the water-resources branch of the Geological Survey, Glenn L. Parker, chief hydraulic engineer, Carl G. Paulsen, assistant chief engineer, and Rudolph G. Kasel, chief of the division of surface waters. The data were collected and prepared for publication under the direction of M. H. Carson, district engineer, Honolulu. The manuscript was typed in final form in the Washington office.

ISLAND OF KAUAI

Waimea River below Kekaha ditch intake, near Waimea

Location.- Lat. 22°02'40", long. 159°38'35", in Waimea Canyon, 500 feet downstream from Kekaha ditch lower intake and 6½ miles northeast of Waimea. Altitude of gage, 490 feet (by barometer).

Drainage area.- 45.0 square miles.

Records available.- July 1921 to June 1944.

Average discharge.- 19 years (1925-44), 39.6 million gallons a day (61.3 second-feet).

Extremes.- Maximum discharge recorded during year, 6,640 million gallons a day (10,300 second-feet) Aug. 11 (gage height, 15.40 feet), from rating curve extended above 500 million gallons a day by test on model of station site; no flow at times, owing to regulation.

1921-44: Maximum discharge, 10,700 million gallons a day (16,600 second-feet) Dec. 24, 1927 (gage height, 20.40 feet), from rating curve extended above 500 million gallons a day by test on model of station site; no flow occasionally, owing to regulation.

Remarks.- Records fair except those below 5 million gallons a day, and those for period of no gage-height record, which are poor. Kokee and Kekaha ditches divert water above the station, taking practically all the water at low and medium stages for irrigation near Waimea and Kekaha.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	59	0	1.0	2.0	0.3	4.3	0.2		182	60	0.2	
2	54	4.3	8.0	3.0	.2	.15	6.4		78	160	.2	0.08
3	28	4.4	9.0	1.0	.2		8.9		1,360	60	66	
4	1.0	1.5	4.0	0	.2	5.2	.5		545	20	69	
5	13.0		3.0	0		82	.4	0.09	369	6.0	2.4	0
6	3.2	.15	1.0	0		213	118		658	2.0	.3	0
7	.2	5.7	1.0	0	.12	34	5.5		675	1.0	.3	0
8	166	5.5	0			202	.2		1,060	1.0	.3	0
9	9.2	.2	0	.13		36			1,500	0	.3	0
10	.3		0		0	1.8		.3	600	0	.2	56
11	.15	877	0	.4	0	.5		296	270	0	.5	116
12		39	0		11.6	.3		51	100	0	.2	42
13	47	16.4	0	.13	4.4			5.6	50	0	19.2	47
14	27.5	6.8	0					.6	30	0	9.8	34.5
15	37.5	6.1	0	0	.13			.6	20	1.0	.6	1.4
16	17.2	6.1	0	1.1		.12		.8	190	.6	.3	.3
17	.5	13.3	0	36	.8		.12	12.1	370	.6	.2	.3
18	.3	2.2	0	16.8	.4			5.6	50	.4	.2	.3
19	.9	.6	3.0	3.9	64			.7	120	.3	25.5	.3
20		.3	9.0		14.0			15.8	270	.2	9.8	.3
21		.2	7.0	.13	.3	.5		2.8	75	6.0	61	.2
22		206	1.0		.2	.3		27.5	45	5.0	.7	.2
23		65	1.0	11.5				200	37	.5	.3	.2
24		26	0	3.3		.13		42	35	.3	1.2	.2
25		1.0	0	.2				8.7	34	.2	.4	.2
26	.11	22	0		.12	245		339	54	.2	.2	.3
27		79	0			343	.3	204	15	.2	.2	1.0
28		35	0	.12		134	.2	29	2.0	.2	.2	1.2
29		8.0	0			8.1		957	1.0	.2		.3
30		59	1.0	.2	0	.4		-	0	.2	.13	64
31		12	-	.3	4.7	.3	.13	-	12	-		-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	186	-	15.7	24.3	486	1,490
August	877	0	48.5	75.0	1,500	4,610
September	9.0	0	1.63	2.52	49.0	150
October	36	0	2.62	4.05	81.4	250
November	64	0	3.43	5.31	103	316
December	343	-	42.3	65.4	1,310	4,030
Calendar year 1943	877	0	32.5	50.3	11,870	36,450
January	118	-	4.62	7.15	143	439
February	957	-	75.9	117	2,200	6,750
March	1,500	0	284	439	8,810	27,030
April	160	0	10.9	16.9	326	1,000
May	69	-	8.71	13.5	270	829
June	116	0	12.2	18.9	367	1,120
Fiscal year 1943-44	1,500	0	42.8	66.2	15,650	48,010

Peak discharge.- Aug. 11 (9 a.m.) 6,640 m.g.d. (10,300 sec.-ft.); Feb. 29 (12 m.) 4,110 m.g.d. (6,360 sec.-ft.); Mar. 3 (8 a.m.) 2,800 m.g.d. (4,330 sec.-ft.); Mar. 9 (1:30 a.m.) 4,000 m.g.d. (6,190 sec.-ft.).

Note.- No gage-height record Aug. 24 to Oct. 6, Mar. 9 to Apr. 15; discharge computed on basis of records for nearby stations.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kawaikoi Stream near Waimea

Location.- Concrete control, lat. 22°08'00", long. 159°37'15", at old trail crossing, 12½ miles northeast of Waimea. Altitude of gage, 3,420 feet (by barometer).

Drainage area.- 4.1 square miles.

Records available.- April 1909 to June 1944. July 1917 to July 1919 (unpublished).

Average discharge.- 25 years (1919-44), 21.2 million gallons a day (32.8 second-feet).

Extremes.- Maximum discharge during year, 1,070 million gallons a day (1,660 second-feet) Aug. 11 (gage height, 6.94 feet), from rating curve extended above 180 million gallons a day; minimum, 1.8 million gallons a day (2.8 second-feet) Nov. 8.
1909-44: Maximum discharge, 5,650 million gallons a day (8,740 second-feet) Oct. 2, 1940 (gage height, 12.00 feet), from rating curve extended above 180 million gallons a day; minimum, 1.3 million gallons a day (2.0 second-feet) Sept. 15, 1921.
Highest stage known, 15.2 feet Dec. 18, 1916.

Remarks.- Records good. No diversions above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.9	1.8	2.4	8.9	3.2	42
2.0	2.7	2.5	11.4	3.4	59
2.1	3.8	2.6	14.4	3.7	93
2.2	5.1	2.8	21.5	4.0	141
2.3	6.8	3.0	30.5	4.5	241

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	58	16.1	5.4	12.4	3.2	6.0	6.1	2.6	21.5	82	3.5	2.4
2	34.5	27.5	5.5	7.0	2.5	3.6	9.0	2.5	13.8	125	21	2.3
3	14.9	11.4	9.1	3.9	2.2	3.1	9.9	2.5	237	39	79	2.3
4	7.2	6.1	5.0	3.1	2.0	14.8	6.8	2.4	84	15.7	51	2.3
5	30.5	5.0	4.2	2.8	1.9	51	5.1	2.3	43	15.4	9.9	2.3
6	10.8	4.4	3.8	2.5	2.0	94	76	2.3	117	10.6	6.3	2.2
7	45	10.9	3.6	2.4	2.0	14.7	10.5	2.5	68	8.9	5.8	2.2
8	70	10.0	3.4	2.2	1.9	81	6.5	2.4	220	7.8	5.0	2.1
9	12.3	7.8	3.2	2.4	6.8	15.6	5.3	2.5	223	7.2	4.3	2.2
10	7.8	17.0	3.2	3.1	4.0	7.6	4.7	2.5	36.5	7.0	3.9	8.4
11	6.5	130	3.7	3.7	11.0	5.6	14.8	49	24	6.6	3.9	23.5
12	5.8	9.9	5.3	2.7	24.5	4.7	10.2	14.6	18.8	6.5	3.6	9.2
13	5.6	5.3	5.0	2.3	15.5	4.2	5.6	5.4	15.7	5.6	3.7	13.8
14	9.6	4.7	3.7	2.2	7.0	6.8	4.7	4.8	13.2	5.4	6.3	10.5
15	42	5.8	3.2	2.2	8.7	4.7	13.4	3.9	11.2	5.1	4.7	4.6
16	19.9	5.1	2.9	3.0	16.7	3.8	10.8	3.2	69	5.3	4.1	3.5
17	11.4	4.1	2.7	12.3	10.2	3.5	5.8	9.7	113	11.2	4.3	2.9
18	9.2	3.5	2.8	6.6	5.0	6.0	4.6	7.0	18.8	9.2	3.9	2.6
19	12.1	3.1	15.4	4.4	39.5	4.2	4.2	4.2	35.5	6.1	4.6	2.4
20	7.0	2.8	17.0	2.8	9.1	3.8	3.8	56	57	5.1	10.0	2.3
21	8.5	2.8	9.0	2.4	5.4	3.6	3.6	22.5	16.0	20.5	28	2.2
22	7.0	59	4.3	2.2	14.8	3.2	3.4	48	12.6	13.2	6.3	2.2
23	5.6	13.8	3.4	2.1	5.4	2.9	3.2	45	11.7	7.0	6.6	2.1
24	5.1	5.4	2.9	2.1	3.9	2.7	3.4	32.5	10.2	4.8	5.3	2.1
25	4.7	4.1	2.7	4.1	3.5	2.5	3.1	11.2	9.9	4.4	7.9	2.2
26	4.4	18.9	2.8	4.1	3.2	212	3.2	71	17.0	4.3	4.4	2.4
27	4.3	40	2.7	3.0	2.8	130	3.5	26.5	11.5	4.1	3.7	3.5
28	4.2	18.5	3.2	3.6	2.6	55	3.6	10.9	7.8	3.9	3.2	5.8
29	4.1	11.7	3.5	5.6	3.1	13.9	3.4	128	7.0	3.8	3.1	4.4
30	3.9	20.5	10.4	4.4	10.6	8.7	3.0	-	6.9	3.6	3.1	51
31	3.9	8.0	-	4.4	-	6.8	2.8	-	15.1	-	2.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	70	3.9	15.3	23.7	476	1,460
August	130	2.8	15.9	24.6	493	1,510
September	17.0	2.7	5.10	7.89	153	470
October	12.4	2.1	3.94	6.10	122	374
November	39.5	1.9	7.70	11.9	231	709
December	212	2.5	25.2	39.0	780	2,390
Calendar year 1943	460	1.9	19.8	30.6	7,230	22,200
January	76	2.8	8.19	12.7	254	779
February	128	2.3	19.9	30.8	578	1,770
March	237	6.9	50.5	78.1	1,570	4,800
April	125	3.6	15.1	23.4	454	1,390
May	79	2.7	10.1	15.6	313	961
June	51	2.1	6.06	9.38	182	558
Fiscal year 1943-44	237	1.9	15.3	23.7	5,610	17,170

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Mohihi Stream at altitude 3,500 feet, near Waimea

Location.- Lat. 22°07'05", long. 159°36'15", at upper trail crossing, 3.8 miles northeast of confluence of Waiahulu and Poomau Streams and 12 miles northeast of Waimea. Altitude of gage, 3,350 feet (from topographic map).
Drainage area.- 1.6 square miles.
Records available.- June 1920 to October 1926, October 1936 to June 1944. April 1909 to December 1912 at site 2 miles downstream (fragmentary).
Average discharge.- 13 years (1920-26, 1937-44), 5.02 million gallons a day (7.77 second-feet).
Extremes.- Maximum discharge during year, 855 million gallons a day (1,320 second-feet) Aug. 11 (gage height, 6.25 feet), from rating curve extended above 21 million gallons a day; minimum, 0.29 million gallons a day (0.45 second-foot) Nov. 8, 9.
1920-26, 1936-44: Maximum discharge, 915 million gallons a day (1,420 second-feet) Oct. 2, 1940 (gage height, 6.40 feet, from floodmarks), from rating curve extended above 21 million gallons a day; minimum, 0.05 million gallons a day (0.08 second-foot) May 3, 4, 1941.
Remarks.- Records good except those for periods of no gage-height record and those above 40 million gallons a day, which are poor. No diversions above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.9	0.20	1.4	2.85	2.4	23.5
1.0	.50	1.5	3.8	2.8	41
1.1	.88	1.8	5.0	3.2	68
1.2	1.38	1.8	8.2	3.6	108
1.3	2.0	2.0	12.4	4.0	166

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.9	0.77	1.75	1.90	0.80	1.38	1.38	0.65	11.3	7.4	0.98	0.89
2	10.0	2.7	3.25	2.4	.61	.88	1.66	.61	7.7	18.5	.98	.69
3	4.9	2.7	4.2	1.33	.47	.69	2.15	.58	80	10.1	10.9	.61
4	2.05	1.33	1.90	1.03	.38	1.02	1.50	.54	37.5	4.0	11.4	.61
5	3.15	.98	1.38	.93	.35	18.0	1.23	.50	22.5	2.85	3.05	.61
6	2.45	.84	1.18	.80	.32	23	16.4	.50	35	2.35	1.69	.61
7	1.38	.96	1.08	.77	.32	5.8	3.7	.50	32	1.94	1.38	.54
8	13.8	2.7	1.03	.74	.29	17.8	1.88	.50	70	1.75	1.23	.54
9	3.4	1.49	.98	.69	.60	5.6	1.50	.58	120	1.69	1.03	.73
10	1.63	3.3	.98	1.08	.81	2.25	1.28	.77	40	1.57	.93	3.2
11	1.23	66	1.03	1.18	.54	1.50	1.59	20.5	20	1.50	.93	9.8
12	1.03	5.2	1.13	.88	3.8	1.18	2.35	6.7	11	1.44	.84	4.9
13	1.08	2.15	1.23	.77	2.7	.98	1.50	2.3	6.5	1.38	.95	8.3
14	1.38	1.63	1.13	.69	1.28	.98	1.23	1.57	5.3	1.38	2.15	8.3
15	4.1	1.44	1.03	.65	1.38	1.13	1.64	1.28	4.2	1.33	1.38	2.35
16	4.6	1.28	.93	.73	2.25	.93	2.25	1.5	15	1.33	1.08	1.44
17	1.97	1.13	.88	3.05	2.8	.80	1.57	2.8	35	1.50	1.03	1.23
18	1.33	.98	.88	1.88	1.34	.80	1.23	2.5	6.0	1.81	.93	1.03
19	1.23	.88	2.3	1.38	9.6	.84	1.08	1.7	9.0	1.50	.99	.88
20	1.13	.80	3.4	.93	3.4	.93	.93	7.5	25	1.33	2.5	.80
21	1.08	.73	2.7	.73	1.44	1.03	.84	4.2	5.5	2.75	8.4	.77
22	1.13	13.7	1.38	.65	2.6	.88	.80	9.8	3.0	3.1	2.25	.69
23	.93	6.6	1.08	.58	1.47	.80	.73	19.0	2.4	1.88	1.50	.69
24	.84	2.15	.88	.65	1.03	.69	.73	12.6	2.1	1.38	1.46	.65
25	.77	1.38	.80	.61	.88	.65	.77	4.4	2.0	1.23	2.5	.61
26	.73	2.2	.77	.61	.80	42	.80	20	3.5	1.18	1.33	.69
27	.69	7.4	.77	.54	.69	23	1.13	12.6	2.4	1.08	1.03	.69
28	.69	4.8	.80	.54	.61	12.3	1.13	4.4	2.2	1.03	.88	.96
29	.69	2.35	.84	.69	.58	3.6	1.03	50	2.1	1.08	.80	1.23
30	.65	6.3	1.03	.80	.69	2.15	.80	-	2.0	1.03	.80	6.2
31	.65	3.0	-	.88	-	1.57	.73	-	1.94	-	.73	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	13.8	0.65	2.60	4.02	80.6	247
August	66	.73	4.83	7.47	150	460
September	4.2	.77	1.42	2.20	42.7	131
October	3.05	.54	1.00	1.55	31.1	95
November	9.6	.29	1.49	2.31	44.8	138
December	42	.65	5.65	8.74	175	538
Calendar year 1943	100	.29	4.75	7.35	1,730	5,320
January	16.4	.73	1.86	2.88	57.5	177
February	50	.50	6.59	10.2	191	586
March	120	1.94	20.1	31.1	622	1,910
April	18.5	1.03	2.75	4.25	82.4	253
May	11.4	.73	2.19	3.39	68.0	209
June	9.8	.54	2.03	3.14	61.0	187
Fiscal year 1943-44	120	.29	4.39	6.79	1,610	4,930

Note.- No gage-height record Feb. 16-21, Mar. 6-30; discharge computed on basis of records for Kawaikoi Stream and Kokee ditch.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kokee ditch near Waimea

Location.- Suppressed weir control, lat. 22°06'25", long. 159°40'45", 1,000 feet west of road and 10⅛ miles north of Waimea. Altitude of gage, 3,310 feet (by barometer).

Records available.- September 1926 to June 1944.

Average discharge.- 17 years (1927-44), 17.4 million gallons a day (26.9 second-feet).

Extremes.- Maximum discharge during year, 69 million gallons a day (107 second-feet) Mar. 20 (gage height, 2.56 feet); minimum, 2.0 million gallons a day (3.1 second-feet) Nov. 6, 7, 8, 9.
1926-44: Maximum discharge, 76 million gallons a day (118 second-feet) Mar. 26, 1938 (gage height, 2.69 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent except those for periods of no gage-height record, which are fair. Kokee ditch diverts water at altitude 3,400 feet from all streams tributary to Waimea River west of Mohihi Stream for irrigation near Kekaha. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	35	9.8	8.5	17	3.8	7.5	8.0	3.8	22	44	7.6	4.7
2	27	27	8.3	10	3.0	5.0	13	3.65	17.0	56	10.1	4.6
3	20	13.1	12.9	5.8	2.55	4.5	14	3.5	21	38.5	50	4.4
4	10	7.4	8.0	4.5	2.2	17	9.5	3.4	21	23.5	45	4.2
5	30	6.0	6.3	3.8	2.1	25	7.0	3.25	23.5	26	17.0	4.2
6	15	5.2	5.6	3.5	2.0	40	30	3.15	29	21	11.5	4.2
7	25	9.0	5.2	3.3	2.0	25	17	3.15	26	18.2	10.4	3.95
8	35	13.3	4.8	2.9	2.0	40	9.4	3.15	24.5	15.8	9.6	3.95
9	15	8.4	4.7	2.9	5.4	23	7.4	3.4	18.9	15.8	8.3	4.2
10	10	18.7	4.6	3.15	4.8	11	6.8	3.65	24.5	14.6	7.8	8.6
11	8.5	36.5	4.7	4.2	6.3	7.0	13.8	32	26	13.9	7.4	30.5
12	7.5	17.1	6.1	3.25	23.5	6.0	15.2	23.5	23.5	13.4	7.1	17.4
13	7.0	9.4	6.6	2.8	18.6	5.4	8.1	9.8	19.5	12.5	6.8	15.1
14	11	7.8	5.3	2.55	8.3	8.5	6.6	8.1	22	11.9	9.1	19.3
15	30	8.1	4.6	2.55	8.5	6.0	17.4	6.6	23	11.5	8.1	8.9
16	23	8.0	4.1	2.65	16.2	5.0	16.2	5.6	27.5	11.2	7.1	6.6
17	12.8	6.6	3.8	10.7	12.3	4.7	9.1	15.9	23	15.0	7.1	5.5
18	10.6	5.5	3.5	7.8	6.8	7.5	7.1	13.9	18.2	15.8	6.8	4.8
19	12.0	5.0	11.7	5.9	30.5	6.0	6.1	8.0	29	11.9	6.6	4.6
20	8.3	4.7	17.0	3.8	14.9	5.4	5.6	44	25	10.6	11.9	4.2
21	8.7	4.4	14.8	2.9	6.4	5.0	5.2	30.5	30	21.5	26	4.1
22	8.0	31.5	7.1	2.65	15.5	4.8	4.8	36	32	19.5	10.8	3.8
23	6.6	23	5.2	2.4	7.4	4.0	4.6	50	29	13.7	10.2	3.65
24	6.0	9.8	4.4	2.3	5.2	3.7	4.6	42	27.5	10.4	9.1	3.5
25	5.6	6.9	3.8	3.6	4.4	3.3	4.4	21	26	9.4	12.2	3.5
26	5.3	9.9	4.0	4.2	4.2	40	4.4	30.5	29	9.2	8.3	3.65
27	5.0	35.5	3.8	3.25	3.65	35	4.8	38.5	27	8.9	6.6	4.4
28	4.8	27	4.5	3.15	3.4	30	4.8	23	21	8.3	6.0	6.3
29	4.7	15.8	5.5	5.5	4.0	20	4.7	27.5	19.5	8.1	5.6	6.4
30	4.6	23.5	14	4.7	11	12	4.1	-	18.2	7.8	f5.3	24.5
31	4.4	13.3	-	5.3	-	9.5	3.95	-	23	-	f4.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	35	4.4	13.4	20.7	416	1,280
August	36.5	4.4	13.8	21.4	427	1,310
September	17.0	3.5	6.78	10.5	203	624
October	17	2.3	4.61	7.13	143	439
November	30.5	2.0	8.03	12.4	241	739
December	40	3.3	13.8	21.4	427	1,310
Calendar year 1943	54	2.0	15.2	23.5	5,540	17,000
January	30	3.95	8.96	13.9	278	852
February	50	3.15	17.3	26.8	500	1,540
March	32	17.0	24.1	37.3	746	2,290
April	56	7.8	17.3	26.8	518	1,590
May	50	4.8	11.6	17.9	360	1,100
June	30.5	3.5	7.59	11.7	228	699
Fiscal year 1943-44	56	2.0	12.3	19.0	4,490	13,770

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record July 1-15, Sept. 25 to Oct. 7, Nov. 28 to Jan. 7; discharge computed on basis of records for Mohihi and Kawaikoi Streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiahulu Stream near Waimea

Location.- Lat. 22°04'45", long. 159°39'15", in Waimea Canyon, half a mile upstream from confluence with Koaie Stream and 8¾ miles north of Waimea. Altitude of gage, 890 feet (by barometer).

Drainage area.- 20.0 square miles.

Records available.- February to October 1916, October 1917 to June 1918, May 1925 to June 1944. July 1918 to November 1920 at same site (fragmentary and unreliable; unpublished).

Average discharge.- 19 years (1925-44), 28.6 million gallons a day (44.3 second-feet).

Extremes.- Maximum discharge during year, 1,160 million gallons a day (1,790 second-feet) Aug. 11 (gage height, 6.23 feet), from rating curve extended above 400 million gallons a day; minimum, 8.3 million gallons a day (12.8 second-feet) July 30, 31, Aug. 1. 1916, 1917-18, 1925-44: Maximum discharge, 2,550 million gallons a day (3,950 second-feet) Dec. 24, 1927 (gage height, 9.92 feet), from rating curve extended above 400 million gallons a day; minimum, 5.2 million gallons a day (8.0 second-feet) Nov. 4, 1927.

Remarks.- Records fair. Kokee ditch diverts water above station for irrigation near Kekaha.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	39	8.3	12.1	10.0	9.3	9.5	10.3	9.5	65	50	9.6	8.4
2	33.5	11.9	11.2	11.5	9.1	9.3	10.0	9.5	27.5	173	9.8	8.4
3	15.9	12.1	22	10.0	8.9	9.1	10.9	9.5	474	70	52	8.4
4	11.5	10.0	14.3	9.5	8.9	8.9	10.6	9.3	317	30	46	8.4
5	11.2	9.1	11.5	9.3	8.9	57	10.0	9.3	200	24	14.0	8.4
6	12.1	8.9	10.3	9.3	8.7	121	94	9.3	272	19	10.8	8.4
7	27.5	8.7	10.0	9.7	8.7	23.5	15.9	9.3	259	18	10.6	8.4
8	77	10.3	9.7	9.5	8.7	153	11.2	9.3	436	16	10.1	8.4
9	14.0	10.3	9.7	9.3	8.7	26.5	10.3	10.2	704	15	9.6	9.4
10	10.6	10.3	9.7	9.3	9.5	12.7	10.0	9.7	224	14	9.6	18.4
11	9.7	196	9.7	9.5	9.1	10.6	9.7	104	116	13	9.6	42
12	9.3	29	9.7	9.3	13.1	9.7	11.5	33	72	12	9.4	25.5
13	9.1	12.7	10.0	9.1	13.9	9.3	10.3	13.2	45	12	9.1	21
14	9.5	10.6	9.7	8.9	10.3	9.1	9.7	10.0	35	12	10.1	24
15	19.8	10.3	9.3	8.9	9.7	9.1	10.6	9.3	27	11.4	10.1	12.6
16	18.0	10.3	9.3	8.9	11.2	8.9	12.1	9.9	100	11.4	9.6	10.8
17	11.2	9.7	9.3	10.9	12.1	8.7	10.6	16.0	201	11.1	9.4	9.8
18	9.7	9.6	9.3	10.9	10.6	8.7	10.0	15.6	35	11.7	9.4	9.4
19	9.5	9.3	11.5	9.7	29.6	8.7	9.7	11.2	50	11.4	9.1	9.1
20	9.3	9.3	13.1	9.3	17.3	10.0	9.7	47	181	10.8	10.5	8.9
21	9.1	9.3	11.5	8.9	11.2	9.7	9.7	17.2	35	11.7	20	8.6
22	9.3	92	10.0	8.7	11.5	9.5	9.5	44	21	13.7	11.6	8.6
23	9.1	31	9.3	8.7	11.2	9.1	9.5	81	17	11.4	10.3	8.4
24	9.1	13.9	9.3	8.7	9.7	8.7	9.5	39	16	10.6	10.8	6.4
25	8.9	11.2	9.3	8.7	9.5	8.5	9.5	18.0	15	10.3	11.4	8.4
26	8.7	11.2	9.1	8.7	9.3	223	10.0	166	21	10.3	10.1	8.4
27	8.5	37	9.1	8.9	9.1	207	10.3	87	17	10.1	9.4	8.4
28	8.5	24	9.1	8.9	8.9	76	10.0	22	15	10.1	9.1	8.4
29	8.5	13.1	9.1	9.1	8.7	17.8	9.7	293	14	9.8	8.9	9.1
30	8.3	14.5	9.3	10.6	8.9	12.4	9.7	-	13	9.8	8.6	34
31	8.3	16.3	-	9.7	-	11.2	9.5	-	13	-	8.4	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	77	8.3	15.0	23.2	464	1,420
August	196	8.3	21.9	33.9	680	2,090
September	22	9.1	10.6	16.4	316	971
October	11.5	8.7	9.43	14.6	292	897
November	29.6	8.7	10.8	16.7	324	995
December	223	8.5	36.0	55.7	1,120	3,420
Calendar year 1943	600	8.3	30.3	46.9	11,080	33,970
January	94	9.5	13.0	20.1	404	1,240
February	293	9.3	38.7	59.9	1,120	3,440
March	704	13	130	201	4,040	12,390
April	173	9.8	21.8	33.7	654	2,010
May	52	8.4	12.8	19.8	397	1,220
June	42	8.4	12.6	19.5	379	1,160
Fiscal year 1943-44	704	8.3	27.8	43.0	10,190	31,250

Peak discharge.- Aug. 11 (11:30 a.m.) 1,160 m.g.d. (1,790 sec.-ft.); Feb. 26 (5:30 a.m.) 930 m.g.d. (1,440 sec.-ft.); Feb. 29 (12 m.) 958 m.g.d. (1,480 sec.-ft.); Mar. 3 (7:30 p.m.) 834 m.g.d. (1,290 sec.-ft.); Mar. 9 (12:30 a.m.) 877 m.g.d. (1,360 sec.-ft.); Mar. 9 (6:30 a.m.) 1,040 m.g.d. (1,610 sec.-ft.).

Rcts.- No gage-height record Mar. 13-16, 18, 19, Mar. 21 to Apr. 1, Apr. 3-14; discharge computed on basis of records for Mohihi and Kawaikoi Streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kekaha ditch at camp 1, near Waimea

Location.- Lat. 22°02'35", long. 159°38'30", in Waimea Canyon, a quarter of a mile downstream from lower intake and 6¼ miles northeast of Waimea. Altitude of gage, 520 feet (by barometer).

Records available.- November 1907 to June 1944.

Average discharge.- 25 years (1918-24, 1925-44), 36.5 million gallons a day (56.5 second-feet).

Extremes.- Maximum discharge during year, 67 million gallons a day (104 second-feet) Aug. 30 (gage height, 4.20 feet); no flow Mar. 24-26, when water was shut out of ditch.

1907-44: Maximum discharge, 71 million gallons a day (110 second-feet) Apr. 25, 1928 (gage height, 4.33 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent. Ditch diverts water from Waiahulu Stream and Koaie River, 3 miles above lower intake, for hydroelectric plant. Lower intake is on Waimea River, 300 feet downstream from powerhouse and 1 mile downstream from confluence with Waialae River. Flow regulated by head gates. Water used for irrigation in vicinity of Kekaha.

Discharge, in million gallons, fiscal year July 1943to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	51	23	41	30	29	38	30	22	36	39	28	25
2	51	41	48	43	26	28	38.5	21	37	41	28	24
3	51	46	51	30	24	26	46	21	32.5	48	53	24
4	41	46	41	26	23	31.5	39	21	28	48	53	24
5	46	36	34	25	23	51	33	20	28	48	46	24
6	46	33	31	24	23	46	43	20	29	46	36	24
7	35.5	32	29	24	23	41	43	20	28	41	34	23
8	48	46	27	28	23	41	34	21	26	41	37	23
9	48	33	27	25	24	41	29	24	22	39	30	27
10	39	46	28	39	27	39	27	33	28	38	30	46
11	34	39.5	32	33	24	32	26.5	41	30	36	38	41
12	31	46	34	27	49	28	32	37	29	36	29	41
13	45	38	36	24	46	27	28	36	29	34	33	41
14	48	32	30	23	32	26	26	36	29	37	51	46
15	48	29	28	23	29	26	29	32	29	40	41	46
16	48	30	26	34	36	24	36	34	30	43	31	36
17	41	30	25	51	46	24	29	39	31	46	32	31
18	38	28	25	51	34	24	26	43	29	41	30	28
19	46	27	46	41	41	24	24	36	30	36	40	31
20	33	26	51	29	48	31	23	43	29	33	48	28
21	31	26	43	25	34	32	23	48	5.1	41	49	27
22	30	42	31	24	38	29	22	48	.1	48	43	27
23	28	48	27	37.5	32	26	22	51	.1	41	33	26
24	26	46	25	37	27	24	23	51	0	33	36	25
25	25	34	24	29	26	23	22	48	0	31	38	26
26	24	34	24	27	25	38	26	41	2.4	31	29	36
27	24	51	23	25	23	51	33	37	31	30	27	41
28	24	51	24	26	23	46	30	37	36	30	26	46
29	23	48	26	29	23	43	26	36	37	33	28	38
30	23	51	29	31	32.5	39	24	-	38	30	33	39
31	23	48	-	37	-	32	22	-	38	-	27	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	51	23	37.1	57.4	1,150	3,530
August	51	23	38.3	59.3	1,190	3,650
September	51	23	32.2	49.8	966	2,960
October	51	23	30.9	47.8	958	2,940
November	49	23	30.4	47.0	914	2,800
December	51	23	33.3	51.5	1,030	3,170
Calendar year 1943	62	0	34.6	53.5	12,610	38,730
January	46	22	29.5	45.6	915	2,810
February	51	20	34.4	53.2	997	3,060
March	38	0	25.1	38.8	777	2,390
April	48	30	38.6	59.7	1,160	3,560
May	53	26	36.0	55.7	1,120	3,430
June	46	23	32.1	49.7	964	2,960
Fiscal year 1943-44	53	0	33.2	51.4	12,140	37,260

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanapepe River at Koula, near Eleele

Location.- Lat. 21°57'20", long. 159°33'15", just downstream from confluence with Manuahi Stream and 4 miles northeast of Eleele. Altitude of gage, 150 feet (by barometer).
Drainage area.- 18.8 square miles.
Records available.- May 1917 to January 1921, December 1926 to June 1944. August 1910 to December 1916 at site half a mile upstream; records not equivalent.
Average discharge.- 20 years (1917-20, 1927-44), 54.4 million gallons a day (84.2 second-feet).
Extremes.- Maximum discharge during year, 4,740 million gallons a day (7,330 second-feet) Feb. 29 (gage height, 7.85 feet), from rating curve extended above 2,400 million gallons a day by test on model of station site; minimum, 8.4 million gallons a day (13.0 second-feet) Feb. 25.
1910-21, 1926-44: Maximum discharge, 5,550 million gallons a day (8,590 second-feet) Mar. 19, 1937 (gage height, 8.59 feet), from rating curve extended above 2,400 million gallons a day by test on model of station site; minimum, 6.2 million gallons a day (9.6 second-feet) Oct. 4, 5, 1939.
Remarks.- Records good except those for Jan. 1-16, which are poor. Hanapepe ditch diverts water from river 3 miles above station for irrigation in vicinity of Makaweli.

Rating tables, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Aug. 11						Aug. 12 to June 30					
0.4	14.3	1.0	60	2.4	360	0.4	7.5	1.2	62	2.8	515
.5	19.4	1.2	84	2.8	515	.5	10.5	1.4	88	3.2	700
.6	25.5	1.4	114	3.2	700	.6	14.5	1.6	124	3.7	980
.7	32.5	1.6	148	3.5	860	.8	25	2.0	220		
.8	41	2.0	238			1.0	41	2.4	345		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	118	24	122	45	17.6	12.3	11	10.2	102	15.8	11.3	12.1
2	115	99	361	49	13.3	11.3	13	10.5	37	32.5	21	11.7
3	102	45	92	15.4	12.1	10.2	16	10.9	610	56	38.5	16.8
4	70	77	40	13.7	13.1	14.8	15	10.9	169	17.6	58	13.6
5	96	53	33	14.1	24.5	12.9	13	10.5	83	15.4	14.8	12.5
6	35	38	25	15.4	19.1	90	150	11.5	238	15.4	21	25.5
7	64	71	20	17.4	12.8	21.5	50	13.6	270	14.5	54	12.5
8	321	35	38	17.2	11.7	51	27	11.3	308	14.5	22	11.3
9	67	25	26.5	63	26.5	18.9	20	17.6	889	14.1	15.4	17.7
10	39.5	109	26.5	27	11.3	12.1	17	17.0	157	13.3	105	50
11	30.5	757	26	17.6	19.9	10.5	15	176	71	14.1	29	58
12	27	66	26	13.3	40	9.9	14	21.5	57	12.9	17.6	32.5
13	86	29	19.0	12.1	16.8	9.6	14	11.7	48	12.1	147	46
14	75	21.5	27.5	11.6	12.1	9.6	13	10.9	34.5	18.7	49	24.5
15	90	18.1	16.3	13.7	10.9	9.6	15	14.0	29	49	21	15.4
16	49	55	15.7	38	11.7	19.9	13	15.4	37.5	22.5	34	47
17	38.5	18.6	14.1	72	10.2	23	12.1	50	68	16.9	17.6	18.1
18	45	22.5	31.5	60	9.9	13.2	11.3	14.2	33	12.5	18.8	27
19	35.5	16.3	68	22	75	10.2	10.5	10.9	63	15.8	243	18.1
20	24.5	14.1	33	15.4	15.8	31.5	10.2	9.9	110	15.4	105	17.0
21	25	13.3	19.0	13.7	11.7	15.5	10.2	9.6	43	22.5	212	15.2
22	19.4	266	15.4	30	10.5	11.3	10.2	9.3	29.5	18.7	32	13.3
23	30	70	13.7	119	9.9	10.2	10.5	11.9	27	12.7	21.5	29.5
24	20	26.5	12.9	23.5	9.6	9.9	10.5	9.9	23	12.1	19.8	14.4
25	17.4	18.1	12.5	16.8	10.5	9.6	10.5	9.0	26.5	13.3	17.6	18.2
26	15.8	22	12.5	13.7	11.8	90	12.7	220	20	12.5	15.0	19.7
27	18.9	35	11.3	21.5	9.6	216	16.4	68	18.6	11.7	28	44
28	24.5	41	16.6	21	9.3	58	14.1	17.4	17.6	14.9	15.4	44
29	15.3	39	35	15.9	9.9	19.6	10.9	969	16.8	11.7	25	18.6
30	14.8	268	12.9	32	50	14.5	10.5	-	16.3	11.3	15.4	76
31	22	50	-	25.5	-	12.5	10.5	-	16.3	-	13.3	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	321	14.8	56.5	87.4	1,750	5,380
August	757	13.3	78.8	122	2,440	7,500
September	361	11.3	40.8	63.1	1,220	3,750
October	119	11.6	28.6	44.3	886	2,720
November	75	9.3	17.6	27.2	527	1,620
December	216	9.6	28.0	43.3	869	2,670
Calendar year 1943	1,070	9.3	53.4	82.6	19,480	59,810
January	150	10.2	18.9	29.2	587	1,800
February	969	9.0	61.5	95.2	1,760	5,470
March	889	16.3	118	183	3,670	11,260
April	56	11.3	18.0	27.9	540	1,660
May	243	11.3	47.0	72.7	1,460	4,470
June	76	11.3	26.0	40.2	780	2,390
Fiscal year 1943-44	969	9.0	45.1	69.8	16,510	50,690

Peak discharge.- Aug. 11 (7 a.m.) 4,600 m.g.d. (7,120 sec.-ft.); Feb. 26 (7:30 a.m.) 1,500 m.g.d. (2,320 sec.-ft.); Feb. 29 (8:30 a.m.) 3,980 m.g.d. (6,160 sec.-ft.); Feb. 29 (11 a.m.) 4,740 m.g.d. (7,330 sec.-ft.); Mar. 3 (4 a.m.) 2,720 m.g.d. (4,210 sec.-ft.); Mar. 9 (8:30 a.m.) 2,530 m.g.d. (3,910 sec.-ft.).
Note.- No gage-height record Jan. 1-16; discharge computed on basis of records for Hanapepe ditch and Waimea River.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanapepe ditch at Koula, near Eleele

Location.- Lat. 21°57'10", long. 159°33'00", at first flume downstream from siphon at Koula, 3 miles downstream from intake and 4 miles northeast of Eleele. Altitude of gage, 490 feet (by barometer).

Records available.- January 1910 to June 1921, March 1927 to June 1944.

Average discharge.- 27 years (1910-20, 1927-44), 25.4 million gallons a day (39.3 second-feet).

Extremes.- Maximum discharge during year, 34.5 million gallons a day (53.4 second-feet) Mar. 3 (gage height, 3.11 feet); minimum, 4.4 million gallons a day (6.8 second-feet) July 5.

1910-21, 1927-44: Maximum discharge, 38.5 million gallons a day (59.6 second-feet) Mar. 19, 1937 (gage height, 3.18 feet); ditch dry occasionally, owing to closing of head gates.

Remarks.- Records good except those for period of no gage-height record, which are poor. Ditch diverts water from Hanapepe River 3 miles above station for irrigation in vicinity of Makaweli. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July1943 to June 1944.

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	27	21.5	27	25	23	23	20	17.6	29	18	17.6	20
2	25.5	25	29	27	23	21.5	21.5	17.6	27	20	19.6	20
3	13.6	25	27	23	23	23	23	17.6	31	22	23	15.2
4	4.5	25	27	23	23	21.5	23	16.5	27	21	23	18.8
5	12.1	25	27	23	23	20	21.5	16.5	25	21	21.5	16.5
6	21.5	23	25	23	25	23.5	23	17.6	27	21	23	20
7	23.5	25	25	25	23	25.5	23	18.8	14.3	20	25	20
8	27	23	27	22.5	25	25	21.5	17.6	19.9	20	25	18.8
9	19.9	23	26	25	25	23	20	18.4	23	19	23	20
10	25	25	27	23	23	23	20	20	16.9	19	26	23
11	23	29	27	23	25	21.5	20	24	18.8	18	27	22
12	23	31.5	25	23	25	20	20	21.5	18	18	25	21.5
13	25	29	25	23	25	20	20	20	14	18	27	21.5
14	25	27	25	23	23	20	20	20	18	19	25	23
15	25	27	25	23	23	18.8	18.0	18.8	17	22	23	20
16	25	27	25	25	23	8.3	20	20	19	21	25	21.5
17	25	27	25	27	23	5.8	20	21.5	20	21	23	21.5
18	25	27	25	25	25	13.8	18.8	20	19	21	23	21.5
19	25	25	27	25	21.5	15.4	18.8	18.8	20	22	26	21.5
20	25	25	25	23	23	19.4	18.8	17.6	23	21	27	21.5
21	25	25	25	23	21.5	18.8	18.8	17.6	13	23	29	20
22	23	27	25	23	21.5	17.6	18.8	16.5	21	22	25	20
23	23	29	25	27	21.5	17.6	17.6	18.8	21	21	25	21.5
24	23	27	23	25	20	16.5	17.6	18.8	20	20	23	21.5
25	23	27	23	25	19.0	16.5	17.6	17.6	15	20	23	21.5
26	23	25	23	25	17.7	18.8	18.8	21	20	20	21.5	21.5
27	23	27	23	23	20	20.5	20	23	20	18.8	23	23
28	23	27	23	23	20	23	20	21.5	19	20	21.5	23
29	23	27	25	23	20	21.5	18.8	19.1	19	20	23	23
30	23	27	25	25	23	20	17.6	-	19	18.8	21.5	23.5
31	16.0	27	-	23	-	20	17.6	-	18	-	21.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	27	4.5	22.4	34.7	694	2,130
August	31.5	21.5	26.1	40.4	810	2,490
September	29	23	25.4	39.3	761	2,340
October	27	22.5	24.0	37.1	742	2,280
November	25	17.7	22.5	34.8	675	2,070
December	25.5	5.8	19.4	30.0	603	1,850
Calendar year 1943	31.5	4.5	22.7	35.1	8,270	25,380
January	23	17.6	19.8	30.6	614	1,880
February	24	16.5	19.1	29.6	554	1,700
March	31	14	20.4	31.6	632	1,940
April	23	18	20.2	31.3	606	1,860
May	29	17.6	23.7	36.7	735	2,250
June	23.5	15.2	20.9	32.3	625	1,920
Fiscal year 1943-44	31.5	4.5	22.0	34.0	8,050	24,710

Note.- No gage-height record Mar. 12 to Apr. 23; discharge computed on basis of records for Hanapepe River.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

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South Fork Wailua River near Lihue

Location.- Lat. 22°02'10", long. 159°22'55", a third of a mile upstream from Wailua Falls and 5 miles north of Lihue. Altitude of gage, 230 feet (by barometer).
Drainage area.- 22.4 square miles.
Records available.- December 1911 to June 1944. December 1911 to November 1918 at site a third of a mile upstream.
Average discharge.- 22 years (1921-24, 1925-44), 67.1 million gallons a day (104 second-feet).
Extremes.- Maximum discharge during year, 5,620 million gallons a day (8,700 second-feet) Feb. 29 (gage height, 8.26 feet), from rating curve extended above 1,550 million gallons a day by test on model of station site; minimum, 2.05 million gallons a day (3.17 second-feet) Feb. 5, 6.
1911-44: Maximum discharge, 29,000 million gallons a day (44,900 second-feet) Jan. 16, 1920 (gage height, 11.25 feet), from rating curve extended above 9,000 million gallons a day; minimum, 1.2 million gallons a day (1.9 second-feet) May 3, 1926.
Remarks.- Records good except those for Sept. 2-21, which are fair. Lihue and Hanamaulu ditches divert water above station at altitudes of 600 and 500 feet, respectively, for irrigation in the vicinity of Lihue.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.7	1.95	1.4	14.9	3.0	220
.8	2.9	1.6	22	3.5	390
.9	4.1	1.8	31.5	4.0	640
1.0	5.6	2.0	47	4.5	950
1.1	7.4	2.3	80	5.0	1,340
1.2	9.5	2.6	128	5.5	1,800

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	15.6	5.0	119	12.6	4.6	5.2	51	2.4	262	39.5	3.25	2.7
2	55	97	747	50	4.0	3.4	134	2.25	147	75	4.2	2.7
3	75	20.5	140	30.5	3.5	3.25	41	2.15	795	98	29.5	2.7
4	49	30	66	16.9	3.4	17.7	6.3	2.15	274	16.9	40	2.6
5	43	11.6	51	5.6	3.75	11.5	4.6	2.05	163	12.3	6.5	2.5
6	14.2	7.3	29	5.5	17.8	152	10.4	2.05	259	10.0	4.6	34
7	8.7	43	23	4.4	3.85	67	5.0	2.35	353	9.1	11.0	4.6
8	154	45	18.5	4.2	3.5	50	3.6	2.35	511	10.5	19.0	2.8
9	15.7	16.1	14.5	24	9.0	33	3.4	2.35	1,110	20	4.9	3.15
10	9.1	37	11.3	15.4	4.7	27	3.15	2.6	266	17.5	83	6.3
11	11.2	340	32	19.9	3.6	7.4	3.15	108	168	8.0	15.1	23
12	27.5	29	66	5.0	5.6	12.1	3.15	8.4	143	6.7	6.4	61
13	49	7.8	12.9	3.88	7.5	16.6	3.0	3.75	114	6.1	137	129
14	44	6.0	10.0	3.5	4.2	13.8	2.9	3.0	97	6.3	57	55
15	40	5.6	8.7	3.5	6.8	15.0	3.4	2.9	81	26	21.5	7.0
16	18.4	37.5	7.0	3.75	4.6	11.5	4.5	2.9	84	9.5	8.6	48
17	8.4	9.0	6.5	5.3	3.4	10.0	3.8	68	323	10.0	5.4	46
18	50	7.4	6.0	14.5	3.0	4.0	3.0	70	108	7.8	3.6	49
19	43	6.3	32	7.9	18.4	5.6	2.7	70	131	7.0	87	39.5
20	7.6	5.0	21	3.85	7.3	4.2	2.6	41	232	6.4	47	7.0
21	6.3	4.8	5.8	3.4	3.4	3.15	2.5	21	96	6.0	199	4.0
22	5.9	133	4.8	3.6	10.7	2.7	2.5	8.8	86	6.3	32	3.5
23	6.0	53	4.7	22.5	3.5	2.6	2.6	26	86	5.6	5.8	6.1
24	6.0	7.0	4.7	8.1	2.6	2.6	2.6	22.5	69	5.2	8.4	5.0
25	5.3	5.2	4.8	5.8	2.4	2.5	2.5	17.5	45	4.8	8.6	3.5
26	4.8	4.7	4.8	3.5	2.7	17.8	2.4	300	34.5	4.8	3.85	3.25
27	4.7	4.7	4.4	3.85	2.5	232	2.6	188	19.0	4.6	18.3	14.4
28	4.7	13.1	4.6	5.5	2.6	61	2.8	42	12.6	4.2	16.1	6.4
29	4.7	6.5	20.5	6.3	2.4	38	2.6	1,540	18.9	3.75	14.8	4.4
30	4.7	154	8.2	4.6	3.6	39	2.4	-	31.5	3.5	4.7	3.85
31	4.6	26	-	4.8	-	45	2.4	-	37	-	3.15	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	154	4.6	25.7	39.8	796	2,440
August	340	4.7	38.0	58.8	1,180	3,620
September	747	4.4	49.6	76.7	1,490	4,570
October	50	3.4	10.1	15.6	312	958
November	18.4	2.4	5.30	8.20	159	488
December	232	2.5	29.6	45.8	917	2,810
Calendar year 1943	1,710	2.4	55.8	86.3	20,370	62,490
January	134	2.4	10.4	16.1	323	990
February	1,540	2.05	88.5	137	2,570	7,880
March	1,110	12.6	198	306	6,150	18,860
April	98	3.5	15.0	23.2	451	1,390
May	199	3.15	29.3	45.3	909	2,790
June	129	2.5	19.4	30.0	583	1,790
Fiscal year 1943-44	1,540	2.05	43.3	67.0	15,840	48,590

Peak discharge.- Aug. 11 (9 a.m.) 1,640 m.g.d. (2,850 sec.-ft.); Feb. 29 (9 a.m.) 5,620 m.g.d. (8,700 sec.-ft.); Mar. 3 (5 a.m.) 2,170 m.g.d. (3,360 sec.-ft.); Mar. 9 (6:30 a.m.) 2,340 m.g.d. (3,620 sec.-ft.).
Note.- No gage-height record Sept. 2-21; discharge computed on basis of records for stations on North Fork.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

North Fork Wailua River at altitude 650 feet, near Lihue

Location.- Lat. 22°03'50", long. 159°26'20", 1¼ miles upstream from intake of Kanaha ditch and 7¾ miles northwest of Lihue. Altitude of gage, 650 feet (from topographic map).
Drainage area.- 6.6 square miles.
Records available.- August 1910 to June 1944. December 1910 to September 1914 at site 300 feet downstream from confluence of main and east branches; records not equivalent.
Average discharge.- 23 years (1921-44), 52.1 million gallons a day (80.6 second-feet).
Extremes.- Maximum discharge during year, 2,160 million gallons a day (3,340 second-feet) Mar. 3 (gage height, 7.27 feet), from rating curve extended above 600 million gallons a day by test on model of station site; minimum, 0.64 million gallons a day (0.99 second-foot) May 2, June 2-5.
1910-44: Maximum discharge, 4,020 million gallons a day (6,220 second-feet) June 2, 1943 (gage height, 9.96 feet), from rating curve extended above 600 million gallons a day by test on model of station site; minimum, that of May 2, June 2-5, 1944.
Remarks.- Records good except those for July 1 to Sept. 2, which are fair. Since 1925 Hanalei tunnel has discharged its water into river, and North Wailua and Stable farm ditches have diverted water above station for irrigation in vicinity of Lihue.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used July 1 to Sept. 2)

-1.0	0.7	-0.4	8.6	0.8	70
-.9	1.2	-.3	11.0	1.2	107
-.8	2.2	-.2	13.8	1.6	152
-.7	3.35	0.0	20.5	2.0	208
-.6	4.8	.2	29.5	2.5	302
-.5	6.5	.8	47	3.0	436

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	81	13.0	184	f104	30	13.5	32.5	3.1	98	53	3.0	0.92
2	93	63	293	64	27	7.6	64	3.1	66	69	17.1	.72
3	69	58	86	38	25.5	6.9	40	2.6	333	79	44	.72
4	50	63	68	31.5	29	64	38	2.7	103	38	38.5	.72
5	72	43	50	29	46	48	29	2.7	69	30.5	20.5	3.35
6	44	42	44	27	34	95	64	3.3	107	29.5	26.5	39
7	51	91	38	28	26	48	31.6	3.6	134	26	23.5	31.5
8	110	58	60	19.2	25	52	27	2.85	299	24	19.8	16.5
9	47	47	48	47	44	33	25.5	5.1	247	23	19.4	15.3
10	38	114	47	41	26	28	11.5	3.9	86	22	49	37
11	31.5	254	54	32	56	26.5	9.7	67	62	24.5	21.6	37
12	23	84	50	27	79	24	6.5	19.1	58	22	21.5	32
13	61	62	41	f13.5	47	23.5	5.3	2.7	47	23	67	65
14	53	54	41	6.2	32	24	5.0	2.7	41	26	28	36
15	55	50	31.5	6.2	30.5	22.5	8.1	2.35	34.5	28.5	22.5	26
16	32	63	29	22	31.5	22	16.8	10.9	48	14.1	27	67
17	25.5	47	28.5	54	28	21.5	13.2	59	135	20.5	21.5	45
18	28.5	50	41	54	26.5	13.6	22	49	50	25.5	21.5	46
19	25	39.5	54	29	61	7.7	21.5	30.5	82	27	58	32
20	19.1	27	41	27	33.5	9.9	21.5	31	70	27.5	40	35
21	18.4	15.7	30	f31	27.5	7.1	9.8	28.5	41	26	54	32
22	15.4	82	14.1	55	28	6.5	3.5	35	35	21	26	15
23	19.8	67	6.5	74	24.5	6.0	3.35	63	32	23.5	23	61
24	13.8	47	5.6	38	13.8	4.3	3.5	34.5	31	11.6	26.5	13.4
25	13.0	41	6.9	34	6.0	3.0	3.35	31	28.5	7.5	21.5	22.5
26	12.7	44	1.7	28.5	5.8	62	7.0	138	26.5	6.5	20	22
27	16.4	47	1.7	34	11.3	97	6.2	62	25	6.2	29.5	31
28	15.7	41	5.1	52	19.1	50	4.3	38	23.5	8.0	21	42
29	9.1	54	50	38	5.5	29	3.5	434	23	6.2	21.5	27.5
30	8.0	118	47	31	24.5	25	3.35	-	24	5.8	19.4	58
31	9.3	65	-	30	-	24.5	3.25	-	25.5	-	12.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	110	8.0	37.4	57.9	1,160	3,560
August	254	13.0	62.7	97.0	1,940	5,970
September	293	1.7	49.6	76.7	1,490	4,570
October	104	6.2	36.9	57.1	1,150	3,510
November	79	3.5	30.1	46.6	902	2,770
December	97	3.0	29.2	45.2	905	2,780
Calendar year 1943	497	1.7	51.2	79.2	18,700	57,380
January	64	3.25	17.5	27.1	544	1,670
February	434	2.35	40.4	62.5	1,170	3,590
March	333	23	80.1	124	2,480	7,620
April	79	5.8	25.2	39.0	755	2,320
May	67	3.0	27.9	43.2	864	2,650
June	67	.72	29.4	45.5	881	2,700
Fiscal year 1943-44	434	.72	38.9	60.2	14,240	43,710

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Sept. 17-30, Oct. 14-20; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanalei tunnel outlet near Lihue

Location.- Sharp-crested brass weir, lat. 22°05'00", long. 159°28'15", at end of Hanalei tunnel, 2¼ miles downstream from intake on Kaapoko Stream and 9⅝ miles northwest of Lihue. Altitude of gage, 1,210 feet (Lihue Plantation Co. levels).

Records available.- July 1932 to June 1944.

Average discharge.- 12 years, 25.6 million gallons a day (39.6 second-feet).

Extremes.- Maximum discharge during year, 76 million gallons a day (118 second-feet) Aug. 11 (gage height, 1.80 feet); no flow July 26-29, June 6, when water was shut out of ditch.

1932-44: Maximum discharge, 79 million gallons a day (122 second-feet) Jan. 4, 1943 (gage height, 1.85 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent except those for period of no gage-height record, which are good. Tunnel diverts water from Kaapoko Stream and Hanalei River and empties it into north branch of North Fork Wailua River, from which it is later diverted and used for irrigation in vicinity of Lihue and Kapaa. Flow regulated by spillway and head gates.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	16.0	23	43	37.5	21.5	20.5	24	15.3	34	33	16.0	15.3
2	17.6	24.5	49	29.5	19.9	19.9	36	15.3	a30.5	35	26	15.3
3	15.6	28.5	37.5	22	19.5	19.9	25	15.3	a47	34	35.5	14.9
4	13.8	29.5	29	20.5	22	31.5	23.5	14.9	a32	27	31	15.3
5	15.3	26.5	27	19.7	26.5	32	21	14.9	a27	23.5	18.7	16.0
6	12.0	24.5	25.5	19.1	22	38	34	16.8	a32	23	17.2	16.7
7	13.4	44	23.5	19.1	19.5	31	21.5	16.8	a34.5	22	16.4	20.5
8	17.6	31.5	29	21.5	19.1	34	19.5	15.3	a44	20.5	16.4	19.9
9	13.1	30	26.5	30.5	25.5	24	18.7	16.0	a39	19.7	16.4	21
10	12.0	46	28.5	23.5	18.4	21	18.0	15.6	a27	18.7	18.0	26
11	11.3	51	30	22	32	19.7	20.5	29	a24	19.9	16.4	23.5
12	5.2	37	27.5	19.1	38.5	18.7	18.0	16.4	a23	18.4	16.4	20.5
13	.36	30	23.5	18.7	26	18.4	17.6	16.8	a22.5	19.9	18.0	28
14	.26	27.5	24	18.7	20.5	18.7	16.8	17.2	21	24.5	16.8	20.5
15	.26	27	20.5	20.5	21	17.8	20.5	15.3	20.5	30	16.4	18.7
16	.26	33.5	19.9	31	23	17.6	22	18.9	24.5	28	16.4	31.5
17	.26	24.5	19.9	31	19.9	17.6	17.2	27	33	26.5	16.0	22.5
18	.26	24	29	31	19.5	18.0	16.8	23	25	20.5	16.0	27
19	.26	22.5	31	21	32.5	16.8	16.4	18.0	27	21.5	18.0	20.5
20	.26	21	26.5	19.9	21.5	16.8	16.4	23	28	19.9	17.6	24
21	.26	23	20.5	25	20.5	16.4	16.0	21.5	22.5	27	17.2	19.5
22	.47	40	19.7	33.5	19.9	16.4	16.0	28	22	24	16.0	22.5
23	.60	29.5	19.5	37.5	18.7	16.0	15.8	33.5	19.9	19.5	15.8	33.5
24	.47	23.5	18.7	24.5	18.2	16.0	16.0	22.5	20.5	18.0	15.8	20.5
25	.36	22	20.5	23.5	17.8	16.4	15.8	22.5	19.1	19.1	15.6	23
26	.11	27	19.9	20.5	17.6	37	16.4	35.5	18.0	18.0	15.3	23
27	1.63	28	18.8	25.5	17.2	41	19.2	28.5	18.0	16.8	15.6	27
28	.08	23.5	24	33	17.2	32	16.4	21.5	17.8	19.9	15.3	25
29	.09	31	31	24	18.0	21.5	15.6	49	17.8	17.6	15.6	19.9
30	2.65	41	25	22	24.5	19.9	15.3	-	19.9	16.0	15.3	31
31	11.2	30	-	23	-	19.7	15.3	-	21	-	15.3	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	17.6	0.08	5.90	9.13	183	562
August	51	21	29.8	46.1	924	2,840
September	49	18.7	26.3	40.7	788	2,420
October	37.5	18.7	24.8	38.4	768	2,360
November	38.5	17.2	21.9	33.9	658	2,020
December	41	16.0	22.7	35.1	704	2,160
Calendar year 1943	62	.08	24.1	37.3	8,800	27,030
January	36	15.3	19.4	30.0	601	1,850
February	49	14.9	21.5	33.3	623	1,910
March	47	17.8	26.2	40.5	812	2,490
April	35	16.0	22.7	35.1	681	2,090
May	35.5	15.3	17.8	27.5	552	1,700
June	33.5	14.9	22.1	34.2	662	2,030
Fiscal year 1943-44	51	.08	21.7	33.6	7,960	24,430

a Computed on basis of recorded range in stage and ditchman's notes.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

North Wailua ditch near Lihue

Location.- Sharp-crested weir, lat. 22°03'40", long. 159°27'55", 300 feet downstream from intake diversion dam on North Fork Wailua River, 8 miles west of Wailua, and 8½ miles northwest of Lihue. Datum of gage is 1,105.45 feet above mean sea level (Lihue Plantation Co. levels).

Records available.- July 1932 to June 1944. Records from 1926 to June 1932 collected by Lihue Plantation Co.

Average discharge.- 12 years, 12.7 million gallons a day (19.6 second-feet).

Extremes.- Maximum discharge during year, 49 million gallons a day (76 second-feet) May 10 (gage height, 1.61 feet); no flow at times, when water was shut out of ditch.
1932-44: Maximum discharge, 59 million gallons a day (91 second-feet) Feb. 25, 1935 (gage height, 1.57 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent except those for periods of no gage-height record, which are good. Flow regulated by gates. Water used for power and irrigation in vicinity of Lihue.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.83	19.6	1.66	3.2	12.4	13.4	12.0	9.3	0.55	11.2	10.2	12.2
2	2.5	10.8	.80	1.20	11.6	13.4	7.4	9.4	6.0	5.9	20.5	11.8
3	1.11	14.7	3.8	8.1	11.3	13.7	7.7	9.5	2.0	4.0	30.5	11.3
4	5.3	21.5	6.2	11.2	12.4	10.4	13.0	9.2	a.36	10.9	23	13.1
5	2.8	20.5	8.9	13.0	9.9	9.6	13.3	9.1	a.36	11.6	14.4	18.0
6	6.8	16.1	11.2	12.6	9.9	5.8	11.1	10.2	a.36	12.8	23.5	16.5
7	8.9	4.4	11.3	12.8	12.0	8.9	11.8	10.5	.42	13.0	20	11.7
8	.35	7.9	a4.7	13.0	11.6	11.7	12.1	9.3	.79	12.8	14.3	14.3
9	a3.9	11.4	a6.3	8.4	10.3	12.5	11.5	11.6	.53	11.8	15.3	16.3
10	a8.8	4.3	a8.5	9.1	11.5	11.9	11.0	12.8	5.5	11.6	24.5	19.1
11	a12.9	1.70	a8.5	11.7	11.0	11.4	11.4	5.0	8.0	10.6	16.8	18.8
12	a14.0	1.77	a8.0	12.5	2.4	11.2	10.6	10.2	7.4	10.7	17.4	17.6
13	a5.0	6.8	a8.2	12.0	7.2	10.8	10.5	12.2	5.7	12.3	29	11.9
14	a3.7	9.0	a10.6	12.6	11.1	11.0	10.4	11.4	7.0	17.0	20.5	11.7
15	2.85	12.0	12.0	13.7	12.7	10.7	11.6	10.6	11.0	15.3	16.3	12.8
16	7.2	7.5	12.8	16.3	12.7	10.6	12.8	11.4	12.9	13.0	20.5	15.3
17	10.7	9.6	13.0	8.6	12.8	10.5	10.6	7.3	3.05	12.8	14.3	11.8
18	10.9	10.4	17.3	5.1	12.2	11.0	10.2	12.4	8.1	12.7	16.7	10.8
19	11.3	11.3	10.0	10.5	6.7	11.1	10.1	11.7	8.9	13.0	31.5	11.7
20	11.8	12.5	8.5	12.5	9.7	8.9	9.9	10.9	5.5	13.0	25	12.8
21	13.1	13.6	11.4	12.7	11.9	10.5	9.8	10.8	11.3	13.1	25.5	12.2
22	13.4	10.4	12.2	12.2	11.7	10.5	10.0	12.3	12.5	12.8	17.1	12.7
23	10.4	5.5	12.2	7.6	11.0	10.2	9.7	11.9	12.8	12.2	14.3	7.2
24	14.0	8.8	11.8	8.9	9.4	10.1	10.2	12.8	12.6	11.8	18.6	11.2
25	13.2	11.7	13.6	12.2	11.0	10.1	9.6	11.8	12.0	12.2	14.7	11.8
26	12.2	15.3	12.1	12.8	10.7	8.0	12.0	5.3	11.8	11.6	13.1	11.8
27	17.1	15.4	11.6	13.1	10.6	1.00	10.9	7.6	11.4	11.0	19.1	12.2
28	14.9	14.7	16.0	9.5	10.8	7.0	10.3	12.0	11.2	12.2	16.2	12.2
29	14.0	14.8	6.2	10.1	11.4	11.1	9.6	2.3	11.0	11.2	17.2	11.7
30	13.1	.83	9.3	13.0	12.1	11.5	9.5	-	11.5	10.5	13.3	8.8
31	12.7	5.1	-	12.5	-	11.9	9.3	-	11.3	-	12.4	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	18.4	0.35	9.31	14.4	289	886
August	21.5	.83	10.6	16.4	330	1,010
September	17.3	.80	9.62	14.9	289	886
October	16.3	1.20	10.7	16.6	333	1,020
November	12.8	2.4	10.7	16.6	322	988
December	13.7	1.00	10.3	15.9	320	983
Calendar year 1943	21.5	.14	9.83	15.2	3,590	11,010
January	13.3	7.4	10.6	16.4	330	1,010
February	12.8	2.3	10.0	15.5	291	892
March	12.9	.36	7.22	11.2	224	687
April	17.0	4.0	11.8	18.3	355	1,090
May	31.5	10.2	18.9	29.2	586	1,800
June	19.1	7.2	13.0	20.1	391	1,200
Fiscal year 1943-44	31.5	.35	11.1	17.2	4,060	12,450

a - Faulty gage-height record; discharge computed on basis of ditchman's notes.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Stable storm ditch near Lihue

Location.- Sharp-crested weir, lat. 22°04'00", long. 159°26'45", 100 feet downstream from intake, 7.8 miles northwest of Lihue, and 8.2 miles west of Kapaa.

Records available.- December 1936 to June 1944. Records for April 1931 to December 1936 collected by Lihue Plantation Co. from staff gage at site 1 mile downstream.

Extremes.- Maximum discharge during year, 65 million gallons a day (101 second-feet) Aug. 1 (gage height, 2.12 feet); no flow for several periods during year.
1936-44: Maximum discharge, 73 million gallons a day (113 second-feet) June 2, 1943 (gage height, 2.22 feet); no flow at times, when water was shut out of ditch.

Remarks.- Records good. Ditch diverts water from North Fork Wailua River for irrigation of sugarcane in vicinity of Lihue. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.07	26.5	0.17	0.12	0.06	14.5	0	17.6	0.07	0	18.0	22.5
2	.07	27	.64	.12	.12	21.5	.02	17.9	.02	0	28.5	22.5
3	.07	9.6	.18	.12	.12	21.5	.07	17.9	.66	0	27	22
4	.07	9.8	.18	.07	.12	12.1	.12	17.6	.02	0	11.0	22.5
5	.07	8.9	.12	.02	.12	0	.12	17.6	.02	0	3.8	26.5
6	.02	8.4	.18	0	.07	.06	.12	19.0	.02	0	6.4	11.8
7	0	2.3	.18	0	0	0	.12	19.6	.02	0	.32	.12
8	0	.12	.18	15.1	0	0	.07	17.9	.12	0	.24	15.9
9	0	.12	.12	6.8	0	0	.07	19.3	.12	0	.24	15.9
10	0	.12	.12	.12	0	0	14.8	19.0	.07	0	.32	6.8
11	0	.48	.12	.12	0	0	20.5	5.8	.02	0	.24	.12
12	0	.07	.07	.12	.05	0	19.0	6.9	.02	0	.24	a.07
13	0	.07	.02	14.6	0	0	19.3	21	.02	0	.64	a.07
14	0	.07	0	21	0	0	19.0	21	.02	11.0	.24	a.07
15	0	.04	.02	22	0	0	19.9	19.3	0	33	.24	a.07
16	0	0	.07	13.9	0	0	21	21.5	0	29	.32	a.07
17	0	0	.07	.12	0	0	9.7	9.2	.12	16.4	.24	a.07
18	0	0	.07	.12	0	11.2	.07	.12	.12	.02	.18	a.07
19	0	2.95	.02	.12	0	16.2	.07	.12	.12	.07	.88	a.07
20	0	11.9	0	.12	0	17.0	.07	.12	.07	.02	.52	.12
21	0	22	0	.12	0	15.6	13.3	.07	.07	14.3	.52	6.5
22	0	28	11.7	.12	0	15.9	18.8	.07	.02	10.3	.32	19.9
23	0	.07	17.4	.12	0	16.2	18.5	.07	0	.07	.24	21.5
24	0	.07	17.0	.07	14.2	17.9	18.5	.07	0	12.7	.32	19.6
25	0	.07	21	.02	19.6	19.0	18.3	.02	0	17.0	.24	19.6
26	0	.07	22.5	0	19.0	9.1	19.6	.07	0	16.2	.24	18.8
27	0	.12	21.5	0	11.1	.02	19.9	.12	0	15.4	2.4	7.6
28	.86	.12	24.5	0	4.8	0	19.0	.07	0	17.3	.07	.12
29	3.6	.12	9.3	0	19.6	0	18.2	1.09	0	15.6	.12	.12
30	6.4	.12	.07	0	10.5	0	17.9	-	0	14.7	.06	.12
31	12.2	.07	-	0	-	0	17.6	-	0	-	10.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	12.2	0	0.756	1.17	23.4	72
August	28	0	5.14	7.95	159	489
September	24.5	0	4.92	7.61	148	453
October	22	0	3.07	4.75	95.1	292
November	19.6	0	3.32	5.14	99.5	305
December	21.5	0	6.70	10.4	208	638
Calendar year 1943	28	0	2.41	3.73	881	2,700
January	21	0	11.1	17.2	344	1,050
February	21.5	.02	10.0	15.5	290	890
March	.66	0	.056	.087	1.74	5.3
April	33	0	7.44	11.5	223	685
May	28.5	.06	3.71	5.74	115	353
June	26.5	.07	9.37	14.5	281	863
Fiscal year 1943-44	33	0	5.43	8.40	1,990	6,100

a No gage-height record; discharge computed on basis of ditchman's notes.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kanaha ditch near Lihue

Location.- Sharp-crested weir, lat. 22°03'50", long. 159°25'30", 750 feet downstream from intake and 7 miles northwest of Lihue. Altitude of gage, 540 feet (by barometer).

Records available.- August 1910 to June 1944.

Average discharge.- 24 years (1916-22, 1926-44), 6.34 million gallons a day (9.81 second-feet).

Extremes.- Maximum discharge during year, 5.9 million gallons a day (9.1 second-feet) Feb. 29 (gage height, 0.31 foot); no flow at times, when intake gate was closed.
1910-44: Maximum discharge recorded, 45 million gallons a day (70 second-feet) Dec. 24, 1927 (gage height, 3.22 feet, site and datum then in use); no flow occasionally, when water was shut out of ditch.

Remarks.- Records fair. Ditch diverts water from North Fork Wailua River for domestic use only. Flow regulated by head gate.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.31	0.10	0.21	0.55	0.12	0.21	0.12	0.21	0.21	0.12	0.03	0.16
2	.12	.80	.21	.21	.12	.21	.12	.21	.21	.12	.10	.08
3	.12	.43	.12	.21	.12	.21	.12	.16	.43	.12	.61	0
4	.12	.43	.08	.21	.12	.21	.12	.16	.21	.12	.73	0
5	.12	.37	.08	.16	.12	.16	.12	.16	.21	.12	.73	.05
6	.12	.36	.08	.12	.12	.16	.05	.16	.31	.12	.73	.31
7	.16	.49	.08	.12	.12	.12	0	.21	.37	.12	.73	.31
8	.21	.43	.12	.12	.12	.12	0	.21	.38	.12	.43	.31
9	.21	.43	.08	.12	.12	.12	0	.37	.55	.12	.21	.67
10	.21	.43	.08	.12	.16	.12	.12	.43	.31	.05	.16	.80
11	.16	.31	.08	.12	.16	.08	.31	.73	.31	.05	.16	.80
12	.16	.21	.08	.12	.16	.08	.31	.67	.19	.05	.12	.55
13	.21	.16	.08	.12	.16	.05	.31	.37	.16	.05	.05	.21
14	.05	.12	.08	.12	.16	.05	.31	.31	.16	.12	.05	.16
15	.05	.12	.12	.12	.16	.12	.31	.21	.16	.12	.05	.16
16	.05	.12	.16	.12	.16	.16	.31	.31	.21	.12	.05	.16
17	.05	.12	.16	.12	.12	.16	.31	.55	.31	.05	.05	.16
18	.05	.12	.16	.12	.12	.16	.43	.67	.16	.05	.05	.16
19	.05	.12	.16	.12	.12	.12	.43	.43	.21	.05	.05	.12
20	.05	.06	.16	.12	.12	.12	.43	.55	.16	.05	.05	.12
21	.05	0	.12	.12	.12	.12	.26	.31	.12	.05	.08	.12
22	.09	.12	.06	.12	.12	.21	.21	.31	.12	.12	.12	.12
23	.17	.12	0	.12	.12	.43	.21	.55	.12	.12	.16	.12
24	0	.12	0	.12	.12	.43	.37	.43	.12	.17	.16	.12
25	0	.12	0	.12	.12	.43	.43	.43	.12	.16	.21	.12
26	0	.12	0	.12	.12	.67	.55	.73	.12	.16	.16	.12
27	.06	.12	.46	.12	.12	.67	.43	.43	.12	.05	.21	.12
28	.08	.12	.94	.12	.12	.55	.43	.21	.12	.05	.21	.12
29	0	.12	1.32	.12	.10	.43	.21	.82	.12	.05	.21	.12
30	0	.12	.73	.12	.21	.31	.21	-	.12	.05	.21	.12
31	0	.12	-	.12	-	.21	.21	-	.12	-	.21	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.31	0	0.098	0.152	3.03	9.3
August	.80	0	.224	.347	6.93	21
September	1.32	0	.200	.309	6.01	18
October	.55	.12	.144	.223	4.46	14
November	.21	.10	.132	.204	3.95	12
December	.67	.05	.232	.359	7.20	22
Calendar year 1943	1.68	0	.197	.305	71.9	220
January	.55	0	.250	.387	7.75	24
February	.82	.16	.390	.603	11.3	35
March	.55	.12	.211	.326	6.54	20
April	.17	.05	.094	.145	2.82	8.7
May	.73	.03	.228	.353	7.06	22
June	.80	0	.216	.334	6.49	20
Fiscal year 1943-44	1.32	0	.201	.311	73.6	226

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Wailua ditch near Kapaa

Location.- Lat. 22°04'25", long. 159°24'05", 2,000 feet downstream from Wailua Reservoir, 5¼ miles west of Kapaa, and 7 miles north of Lihue. Altitude of gage, 462 ± 5 feet (by estimating slope of 2,000-foot length of ditch on basis of Lihue Plantation Co. levels).

Records available.- November 1936 to June 1944. Records collected by East Kauai Water Co. July 1922 to April 1932 at site 2 miles upstream, below intake, and April 1932 to November 1936 at present site.

Extremes.- Maximum discharge during year, 36.5 million gallons a day (56.5 second-feet) Aug. 13 (gage height, 3.20 feet); no flow Sept. 4, 5.
1936-44: Maximum discharge, 46 million gallons a day (71 second-feet) Oct. 6, 1938 (gage height, 3.96 feet); no flow May 15 to June 4, 1940, Sept. 4, 5, 1943.

Remarks.- Records good except those for period of no gage-height record, which are fair. Ditch diverts water from North Fork Wailua River to reservoir 2,000 feet above station and thence to fields for irrigation of sugarcane. Flow regulated by gates at reservoir.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.0	4.1	13.2	16.7	2.5	19.9	3.2	24	10.3	3.4	15.0	26.5
2	9.8	21	5.4	3.4	2.5	19.9	5.7	24	5.2	3.4	15.3	25
3	4.8	14.8	2.6	3.3	2.6	19.9	12.8	25	4.6	3.4	5.0	13.7
4	3.1	4.1	1.1	3.2	2.6	12.2	17.5	22.5	4.0	3.5	5.0	4.1
5	3.2	8.2	.7	9.7	2.6	6.2	24	16.2	3.9	9.1	4.9	16.4
6	3.1	15.1	2.7	16.3	2.6	10.7	26.5	11.7	3.9	11.3	4.9	25
7	10.2	8.1	10.3	19.9	9.6	2.9	29	16.3	3.6	9.3	5.1	20.5
8	19.2	3.2	17.5	19.9	29	2.9	18.2	18.7	3.8	13.4	9.5	13.9
9	26.5	8.8	19.9	9.4	33.5	2.8	7.4	16.3	4.0	15.1	17.5	15.1
10	19.4	20.5	19.9	3.3	33.5	3.0	18.7	12.8	3.4	18.7	21	9.6
11	12.8	28	12.6	10.4	26	3.0	18.7	16.3	3.2	17.5	26.5	4.4
12	30	28	6.4	14.5	17.5	3.0	18.7	13.4	3.3	13.9	25	4.2
13	18.1	33.5	14.5	15.1	10.5	1.6	14.3	4.0	3.4	13.9	24	7.0
14	8.8	19.2	17.8	12.2	3.1	1.6	6.7	3.3	3.5	13.9	22.5	4.2
15	8.8	10.0	24	9.1	3.1	2.4	3.6	3.0	4.0	10.0	17.5	4.1
16	8.8	22	26.5	6.2	3.2	2.5	3.5	3.1	4.0	7.5	17.5	4.1
17	6.4	14.9	19.2	4.9	6.9	2.6	3.5	2.7	4.1	13.4	13.4	4.2
18	4.4	17.2	8.1	16.9	15.1	2.6	10.0	2.6	3.5	13.4	9.6	4.3
19	7.6	22.5	5.9	29	15.1	2.6	13.9	2.6	3.4	16.3	6.0	4.2
20	11.5	20	21	32	9.3	2.6	13.9	2.4	3.4	21	3.7	8.1
21	22	10.1	26.5	33.5	4.1	3.3	14.5	2.5	3.3	19.5	5.0	12.8
22	28	5.8	29	33.5	4.1	9.4	9.9	2.4	2.9	12.2	7.6	15.1
23	28	17.2	30.5	16.4	4.1	16.3	3.7	2.4	2.9	10.1	6.2	7.6
24	14.6	28	30.5	1.5	8.5	12.8	3.6	2.3	2.8	10.1	5.7	4.6
25	4.4	29.5	19.7	9.0	19.9	4.8	5.2	2.4	2.7	14.9	6.2	4.7
26	23	29.5	6.1	17.5	18.7	6.2	10.1	2.5	2.9	21	6.2	12.4
27	32	27	18.1	13.8	18.7	5.2	a14.5	2.3	2.4	21	6.6	21
28	32	14.0	26.5	9.1	21	3.4	a14.5	2.3	2.6	14.4	7.1	22.5
29	32	4.2	32	7.3	25	3.2	a9.8	8.8	2.8	11.7	13.5	22.5
30	30.5	11.5	33.5	2.6	21	3.1	a5.5	-	3.1	11.7	24	22.5
31	20.5	16.3	-	2.5	-	3.1	a15.0	-	3.3	-	26.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	32	3.1	16.0	24.8	494	1,520
August	33.5	3.2	16.7	25.8	516	1,580
September	33.5	.7	16.7	25.8	502	1,540
October	33.5	1.5	13.0	20.1	402	1,230
November	33.5	2.5	12.5	19.3	376	1,150
December	19.9	1.6	6.32	9.78	196	601
Calendar year 1943	36.5	.7	12.1	18.7	4,410	13,520
January	29	3.2	12.2	18.9	377	1,160
February	25	2.3	9.27	14.3	269	825
March	10.3	2.4	3.68	5.69	114	350
April	21	3.4	12.6	19.5	378	1,160
May	26.5	3.7	12.4	19.2	384	1,180
June	26.5	4.1	12.1	18.7	364	1,120
Fiscal year 1943-44	33.5	.7	11.9	18.4	4,370	13,420

a Computed on basis of ditchman's notes.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Branch of North Fork Wailua River near Lihue

Location.- Lat. 22°04'10", long. 159°25'05", 1,200 feet upstream from confluence with North Fork and 7½ miles northwest of Lihue. Altitude of gage, 500 feet (by barometer).

Drainage area.- 6.2 square miles.

Records available.- July 1912 to June 1944.

Average discharge.- 24 years (1920-44), 30.6 million gallons a day (47.3 second-feet).

Extremes.- Maximum discharge during year, 1,800 million gallons a day (2,790 second-feet) Feb. 29 (gage height, 8.40 feet), from rating curve extended above 270 million gallons a day; minimum, 9.1 million gallons a day (14.1 second-feet) Feb. 5, 6.
1912-44: Maximum discharge, 3,340 million gallons a day (5,170 second-feet) Dec. 24, 1927 (gage height, 10.57 feet), from rating curve extended above 500 million gallons a day; minimum, 4.4 million gallons a day (6.8 second-feet) July 3, 13, 1926.

Remarks.- Records good. No diversions above station.

Rating tables, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Feb. 29				Mar. 1 to June 30	
1.0	8.8	3.0	167	1.0	7.4
1.2	14.5	3.5	216	1.2	12.8
1.4	22	4.0	280	1.4	20.5
1.8	42	4.5	358	1.6	29.5
2.2	78	5.0	456	1.8	42
2.6	124			Note.- Same as preceding table above 1.8 feet.	

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	f37.5	24	88	37	15.4	13.2	16.6	9.6	78	23.5	9.7	12.5
2	48	66	206	25.5	13.9	14.5	21.5	9.3	47	39	10.4	12.2
3	39.5	29.5	50	18.4	13.3	15.9	17.0	9.3	204	46	49	12.0
4	28	36	35	17.6	13.0	58	15.9	9.3	58	19.7	37	12.0
5	37.5	25	30.5	17.6	15.2	24	13.9	9.1	41	17.2	16.0	11.8
6	25	24.5	27.5	16.2	15.2	40	33	9.6	61	15.7	19.1	16.6
7	30.5	43	25	16.6	13.3	24	15.9	10.4	52	15.0	47	15.9
8	61	26.5	28	17.6	13.3	27	13.9	9.6	149	13.9	18.4	13.2
9	28.5	24.5	25	25.5	23	18.4	13.6	16.5	208	13.5	15.3	13.2
10	24.5	45	26	18.0	13.9	15.9	13.0	12.3	84	13.2	29.5	13.5
11	23	78	26.5	16.2	34.5	14.6	15.9	18.5	54	13.2	15.7	26.5
12	21	31.5	24	15.6	35.5	14.2	13.0	12.1	48	12.5	15.0	25.5
13	41	25.5	22	14.5	21.5	13.6	12.1	11.0	37	12.2	37	46
14	34.5	23.5	21.5	14.2	16.6	13.9	12.1	12.1	30.5	14.2	24	20.5
15	37	23.5	19.2	14.2	15.6	13.3	13.5	11.0	27.5	16.4	16.4	15.3
16	26.5	35.5	18.0	16.2	15.9	12.7	15.6	13.5	41	15.3	21.5	21
17	24	22	17.3	27	15.2	12.4	12.1	38.5	118	17.6	16.0	16.0
18	24	20.5	20.5	18.8	14.5	13.3	11.5	68	37.5	14.2	15.3	16.8
19	21.5	19.2	22.5	15.6	25	12.4	11.0	25.5	35	15.7	34.5	15.0
20	20	17.6	20	14.2	15.9	12.1	11.0	23.5	37	14.6	35.5	13.9
21	20	17.3	17.3	14.2	14.2	12.1	10.7	16.2	26.5	16.4	39.5	13.5
22	18.4	39.5	15.9	15.9	13.9	11.8	10.7	15.6	24.5	15.0	22	13.2
23	21	26	15.6	16.2	13.3	11.5	10.7	33.5	23	12.5	18.4	17.2
24	18.4	19.2	14.8	13.9	13.0	11.5	10.4	21.5	21.5	11.7	22	13.2
25	17.3	17.6	15.2	14.5	12.7	11.5	10.2	20.5	20	11.4	18.0	13.5
26	16.6	16.0	14.8	13.3	12.4	77	10.2	86	18.9	10.8	15.7	13.2
27	17.3	22	14.2	15.6	12.1	77	11.3	38.5	17.6	10.3	18.0	16.8
28	16.2	16.0	15.6	24	12.4	31	11.5	34	16.4	10.8	15.0	15.0
29	15.6	23	25.5	18.2	12.1	20	10.4	420	15.7	10.0	16.0	12.2
30	15.6	45	19.6	15.9	15.6	17.3	10.2	-	15.7	9.7	13.9	30.5
31	15.2	22.5	-	16.2	-	15.9	9.9	-	15.3	-	13.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	61	15.2	26.6	41.2	824	2,530
August	78	17.3	29.3	45.3	909	2,790
September	206	14.2	30.7	47.5	921	2,830
October	37	13.3	17.9	27.7	555	1,700
November	35.5	12.1	16.4	25.4	491	1,510
December	77	11.5	21.9	33.9	680	2,090
Calendar year 1943	338	11.5	28.8	44.6	10,510	32,260
January	33	9.9	13.5	20.9	418	1,280
February	420	9.1	35.3	54.6	1,020	3,140
March	208	15.3	53.6	82.9	1,660	5,100
April	46	9.7	16.1	24.9	483	1,480
May	49	9.7	22.4	34.7	694	2,130
June	46	11.8	17.0	26.3	510	1,560
Fiscal year 1943-44	420	9.1	25.1	38.8	9,160	28,140

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapaa River at Kapahi ditch intake, near Kapaa

Location.- Concrete masonry dam, lat. 22°06'05", long. 159°22'30", 4 miles northwest of Kapaa and 4½ miles northwest of Wailua. Altitude of gage, 365 feet (by barometer).

Drainage area.- 3.3 square miles.

Records available.- December 1936 to June 1944. July 1910 to May 1915 at site half a mile upstream, published as Kapaa River at Kapaa, June 1913 to April 1920 at site three-quarters of a mile upstream, published as Kapaa River near Kealia.

Extremes.- Maximum discharge during year, 2,810 million gallons a day (4,350 second-feet) Mar. 3 (gage height, 4.16 feet), from rating curve extended above 330 million gallons a day; no flow at times, when low flow is diverted into Kapahi ditch.
1936-44: Maximum discharge, 3,390 million gallons a day (5,250 second-feet) Mar. 19, 1937 (gage height, 4.50 feet), from rating curve extended above 330 million gallons a day; no flow at times, when low flow is diverted into Kapahi ditch.

Remarks.- Records fair. Entire low flow is diverted into several ditches above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

-0.05	0	0.5	19.0	1.1	115
0.0	.1	.6	28.5	1.3	168
.1	.8	.7	40	1.5	234
.2	2.7	.8	55	1.8	365
.3	6.3	.9	72	2.1	530
.4	11.7	1.0	92		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.7	a4.3	140	16.6	7.4	1.1	11.2	0.2	36	37.5	2.4	0
2	23	a30.5	179	15.0	2.7	5.1	14.6	1.3	23.5	38	19.2	0
3	23	a11.4	23	5.7	2.7	7.1	11.7	.5	216	43	56	0
4	16.9	8.3	13.3	.1	2.7	42	1.2	0	26	5.6	37.5	0
5	22	.8	8.5	1.7	6.2	18.3	0	0	18.3	4.1	13.9	1.0
6	6.8	7.5	3.5	1.4	1.6	30	17.6	0	26.5	10.6	18.2	11.0
7	16.5	25.5	3.3	1.1	.5	18.3	1.9	0	21	10.1	35.5	1.9
8	27.5	7.2	7.6	4.3	.6	21	2.4	0	225	10.1	9.6	3.0
9	.1	2.6	3.0	7.2	7.4	13.2	3.5	.3	151	9.5	5.6	.4
10	0	3.2	6.1	4.9	0	10.6	.7	0	29	4.3	6.9	3.6
11	0	13.3	5.6	4.5	27	10.1	9.5	0	20	1.1	6.3	19.3
12	0	.9	5.6	.4	26.5	9.5	6.8	0	20	0	8.5	18.3
13	19.4	0	1.2	.8	8.9	9.0	5.6	4.1	17.5	.1	18.6	80
14	8.7	1.0	.6	.2	3.6	10.1	2.0	9.5	14.6	2.6	12.4	9.1
15	6.3	1.0	0	0	1.2	9.5	13.1	5.9	14.6	11.2	3.6	4.9
16	2.2	1.8	0	1.9	1.4	6.3	14.7	10.1	54	12.4	11.7	10.6
17	0	.2	0	10.5	0	2.3	2.3	20	112	9.5	4.5	11.7
18	5.8	0	1.2	1.5	0	2.6	2.1	49	22	6.8	5.5	15.2
19	.9	1.2	3.2	1.1	12.8	.2	3.1	15.8	17.7	5.0	24	5.8
20	0	.3	0	0	4.1	.6	3.1	27	18.6	3.1	24	2.2
21	0	.8	0	0	2.3	.4	2.7	14.4	13.2	6.2	17.5	.5
22	0	22	0	.2	1.8	0	5.6	12.2	13.2	4.9	4.5	1.0
23	.4	2.6	0	0	.7	0	7.9	25	13.9	.8	6.3	6.2
24	1.6	1.7	0	0	.7	2.0	5.1	18.2	13.2	0	7.1	.3
25	1.5	0	1.0	.2	.7	5.2	0	18.3	12.4	0	6.3	.9
26	0	.1	1.1	0	.2	77	2.0	97	11.2	0	4.9	0
27	.2	2.3	0	.7	0	57	5.2	26.5	10.6	.1	11.2	1.0
28	0	3.4	.2	11.6	0	13.9	3.5	39	9.0	6.0	9.5	.5
29	0	5.2	4.3	3.8	.2	6.7	1.9	421	8.5	5.9	5.5	0
30	a0	14.3	.3	3.0	5.3	10.6	1.6	-	9.5	6.8	.9	14.2
31	a.9	7.9	-	12.0	-	10.1	.7	-	10.1	-	0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	27.5	0	6.37	9.86	197	606
August	30.5	0	5.85	9.05	181	556
September	179	0	13.7	21.2	412	1,260
October	16.6	0	3.56	5.51	110	339
November	27	0	4.31	6.67	129	396
December	77	0	13.2	20.4	410	1,260
Calendar year 1943	291	0	12.6	19.5	4,600	14,140
January	17.6	0	5.27	8.15	163	501
February	421	0	28.1	43.5	815	2,500
March	225	8.5	39.0	60.3	1,210	3,710
April	43	0	8.51	13.2	255	783
May	56	0	12.8	19.8	398	1,220
June	80	0	7.42	11.5	223	685
Fiscal year 1943-44	421	0	12.3	19.0	4,500	13,810

a No gage-height record; discharge computed on basis of records for Kapahi ditch.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapahi ditch near Kealia

Location.- Parshall flume, lat. 22°06'00", long. 159°22'30", 500 feet downstream from intake and 4½ miles west of Kealia. Altitude of gage, 360 feet (by barometer).

Records available.- April 1909 to May 1914, May 1915 to June 1944.

Average discharge.- 26 years (1917-20, 1921-44), 6.01 million gallons a day (9.30 second-feet).

Extremes.- Maximum discharge during year, 15.5 million gallons a day (24.0 second-feet) Feb. 9 (gage height, 1.30 feet); no flow many times.
1909-14, 1915-44: Maximum discharge, 233 million gallons a day (361 second-feet) Mar. 31, 1923 (gage height, 3.15 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent. Ditch diverts water from Kapaa River for irrigation in vicinity of Kapaa. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.8	1.68	3.05	2.8	0.19	3.8	0.19	1.67	0	1.20	1.76	3.35
2	2.35	6.9	2.05	.13	.16	3.15	.19	.98	0	.16	1.40	2.85
3	4.0	3.5	2.7	1.02	.16	1.00	.16	1.65	0	.10	1.44	2.85
4	.31	7.7		3.6	.16	.62	5.5	1.90	0	8.1	.57	3.35
5	2.9	9.4		2.45	.75	.40	3.45	1.99	0	8.0	.31	3.35
6	3.8	4.8	a3.4	2.05	2.25	.81	3.75	2.15	0	1.05	.31	4.6
7	3.7	3.3		1.78	2.25	.31	2.8	2.25	0	.13	.11	4.4
8	8.8	5.5		1.72	2.45	.35	2.7	2.1	0	.13	3.45	4.4
9	9.9	7.2		.27	5.8	.35	2.7	3.85	0	.13	5.2	4.3
10	7.3	6.9	2.25	.27	8.0	.35	4.5	2.85	0	5.0	5.4	6.0
11	6.7	6.6	1.26	.23	7.5	.27	3.5	7.8	0	5.7	3.3	4.3
12	5.6	7.7	.74	2.8	2.7	.27	.19	7.2	0	3.6	1.45	5.1
13	6.8	3.8	3.7	2.0	2.65	.27	.19	3.75	0	3.6	1.52	5.3
14	5.8	2.55	4.5	2.3	2.65	.23	4.6	.25	0	4.5	.23	6.3
15	7.6		4.2	2.6	4.3	.19	5.0	.23	0	3.65	6.8	6.0
16	7.9		3.9	2.15	6.8	.19	2.7	.19	0	.16	6.6	4.6
17	7.2		3.8	2.35	5.2	1.21	6.7	.23	0	3.35	6.5	3.55
18	2.25		3.05	3.9	4.4	2.95	6.0	.30	0	3.5	4.7	.23
19	5.7		2.2	3.7	4.4	2.76	4.7	.10	0	7.2	2.15	2.95
20	5.2		4.2	2.65	2.15	2.85	4.7	.10	0	7.2	3.5	4.2
21	6.9		3.7	2.65	2.45	2.75	4.7	.08	0	7.3	6.6	4.2
22	5.5	a2.75	3.45	3.7	3.25	2.45	2.05	.07	0	7.2	8.5	4.2
23	7.5		3.25	2.65	3.15	2.35	.27	.07	.06	8.8	3.4	4.4
24	3.65		3.15	2.25	2.95	2.65	.89	.02	.13	8.5	4.4	4.5
25	2.8		2.45	5.6	2.95	2.95	3.45	0	.13	8.8	4.0	4.3
26	3.7		2.25	4.8	2.95	3.8	2.2	.03	.13	8.2	4.3	4.3
27	4.4		3.05	2.45	2.85	.16	3.0	0	.13	7.8	2.3	4.6
28	4.4		3.35	2.6	2.95	7.0	3.15	0	1.25	2.6	.19	4.3
29	3.7		5.4	2.05	3.25	5.4	2.75	.51	1.02	1.54	4.2	3.25
30	4.5		5.0	2.75	4.2	.23	2.65	-	1.17	.23	5.3	4.4
31	2.65		-	1.83	-	.19	2.2	-	1.23	-	3.6	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	9.9	0.31	5.11	7.91	158	486
August	9.4	-	4.01	6.20	124	381
September	-	-	3.24	5.01	97.0	298
October	5.6	.13	2.39	3.70	74.0	227
November	8.0	.16	3.16	4.89	94.9	291
December	7.0	.16	1.69	2.61	52.2	160
Calendar year 1943	14.6	0	3.36	5.20	1,230	3,770
January	6.7	.16	2.95	4.56	91.4	281
February	7.8	0	1.46	2.26	42.3	130
March	1.25	0	.169	.261	5.25	16
April	8.8	.10	4.25	6.58	127	391
May	8.5	.11	3.31	5.12	102	315
June	6.3	.23	4.15	6.42	124	382
Fiscal year 1943-44	9.9	0	2.99	4.63	1,090	3,360

a No gage-height record; discharge computed on basis of records for Kapaa River.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Makaleha ditch near Kealia

Location.- Parshall flume, lat. 22°06'55", long. 159°02'00", at end of last tunnel from which water spills down slope into Mimino Reservoir, 3.9 miles northwest of Kealia, and 4.1 miles northwest of Kapaa.

Records available.- November 1936 to June 1944. Equivalent records for July 1925 to November 1936, at site 150 feet downstream, collected by East Kauai Water Co.

Extremes.- Maximum discharge during year, 22 million gallons a day (34 second-feet) Sept. 1 (gage height, 2.55 feet); minimum, 0.02 million gallons a day (0.03 second-foot) Aug. 24.
1936-44: Maximum discharge, 26.5 million gallons a day (41.0 second-feet) July 2, 1942 (gage height, 2.82 feet); minimum, 0.02 million gallons a day (0.03 second-foot) Nov. 28, 29, 1942, Aug. 24, 1943.

Remarks.- Records excellent. Ditch diverts water from Makaleha Stream for irrigation of sugarcane. Flow regulated by gates at intake and wasteway 1 mile upstream.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.9	5.9	8.1	8.7	4.4	4.9	0.05	4.3	0.10	0.06	3.1	4.0
2	4.9	6.4	7.6	2.05	6.4	5.0	.05	4.3	.08	.07	5.4	4.2
3	.26	5.9	.82	4.8	5.9	5.0	.05	4.3	.38	.07	3.0	4.2
4	.23	4.6	1.36	7.2	5.9	3.8	2.75	4.2	.08	.07	.30	4.3
5	.25	3.5	7.2	7.2	9.3	.07	4.9	4.1	.07	.07	.21	4.4
6	3.45	3.45	2.2	6.4	8.2	.08	5.4	4.4	.06	.07	.19	4.7
7	5.9	3.7	.07	5.9	6.4	.06	5.0	4.9	.05	.07	.19	4.5
8	6.4	3.55	4.0	7.0	7.1	.06	3.55	4.2	.33	.08	.16	4.5
9	5.7	7.9	8.2	9.2	6.7	.06	2.55	4.6	.29	.08	.12	4.4
10	5.4	11.2	10.0	7.2	1.08	.05	2.55	4.3	.10	.08	.08	4.4
11	5.4	9.4	9.2	6.8	5.4	.04	2.75	2.6	.08	3.55	.19	4.4
12	5.4	6.8	8.2	7.2	5.6	.04	2.8	.12	.07	5.0	.29	4.4
13	6.4	7.8	7.2	5.9	5.4	.05	2.6	.11	.06	5.0	.26	3.65
14	5.9	7.2	8.2	5.9	5.0	.04	1.34	.11	.07	4.6	.21	2.65
15	5.9	8.2	6.4	6.2	5.0	.04	.16	1.60	.07	1.53	.21	1.72
16	5.9	10.2	5.9	6.5	5.4	2.35	.11	3.0	.08	.19	.23	.16
17	5.4	7.2	5.9	9.7	5.0	4.5	.10	1.45	.10	.17	.21	.12
18	5.4	7.2	6.4	6.5	4.9	4.8	.08	.11	.06	.14	.14	.11
19	5.4	5.4	6.7	4.9	5.2	4.8	.07	.10	.06	.17	.21	2.85
20	5.4	5.0	7.7	5.9	4.8	4.7	.07	.12	.07	.19	.21	5.0
21	4.1	4.9	6.4	5.9	4.8	4.7	.07	.10	.06	.20	.21	5.0
22	4.3	11.2	5.4	7.1	4.8	4.5	.07	.10	.06	.19	.17	5.0
23	5.0	4.3	5.4	6.4	4.7	4.4	.07	.08	.07	.21	.17	5.4
24	5.0	1.68	5.3	5.9	4.6	2.75	1.91	.07	.07	.21	.12	5.0
25	5.4	6.4	6.4	2.4	4.6	.21	3.0	.07	.06	.11	.12	5.0
26	5.4	6.4	5.9	3.7	4.5	.33	3.0	.10	.06	.10	.15	5.0
27	5.4	9.0	5.4	7.3	4.5	.22	3.1	.07	.06	.10	.18	5.0
28	5.4	6.8	7.9	10.7	4.5	.07	2.8	.07	.06	.19	.19	5.0
29	5.4	8.2	10.2	8.6	4.8	.07	2.75	.91	.06	.34	.14	4.9
30	5.4	8.5	8.7	5.8	5.0	.07	2.65	-	.06	.44	2.25	5.0
31	5.4	2.8	-	.83	-	.07	3.55	-	.06	-	3.9	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	6.4	0.23	4.87	7.54	151	464
August	11.2	1.68	6.47	10.0	201	616
September	10.2	.07	6.36	9.84	191	586
October	10.7	.83	6.38	9.87	198	607
November	9.3	1.08	5.33	8.25	160	491
December	5.0	.04	1.86	2.88	57.6	177
Calendar year 1943	11.2	.04	3.86	5.97	1,410	4,320
January	5.4	.05	1.93	2.99	59.7	183
February	4.9	.07	1.88	2.91	54.5	167
March	.38	.05	.094	.145	2.92	9.0
April	5.0	.06	.778	1.20	23.4	72
May	5.4	.08	.726	1.12	22.5	69
June	5.4	.11	3.97	6.14	119	365
Fiscal year 1943-44	11.2	.04	3.39	5.25	1,240	3,810

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Anahola River near Kealia

Location.- Concrete dam and orifice control, lat. 22°08'55", long. 159°21'20", just upstream from intake of Lower Anahola ditch, 4⅛ miles northwest of Kealia. Altitude of gage, 220 feet (by barometer).
Drainage area.- 5.5 square miles.
Records available.- August to November 1910, December 1912 to June 1944.
Average discharge.- 25 years (1919-44), 13.5 million gallons a day (20.9 second-feet).
Extremes.- Maximum discharge during year, 1,970 million gallons a day (3,050 second-feet) Feb. 29 (gage height, 6.17 feet), from rating curve extended above 230 million gallons a day; minimum, 2.8 million gallons a day (4.3 second-feet) Oct. 26.
1910, 1912-44: Maximum discharge, 5,780 million gallons a day (8,940 second-feet) Aug. 12, 1940 (gage height, 9.53 feet), from rating curve extended above 230 million gallons a day; minimum, 1.4 million gallons a day (2.2 second-feet) Sept. 12, 13, 1923.
Remarks.- Records good. Anahola ditch diverts water 3 miles above station for irrigation in vicinity of Kealia.

Rating tables, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Sept. 1, Feb. 27 to June 30

0.9	3.15	2.0	34.5
1.0	3.95	2.3	59
1.2	5.8	2.6	95
1.4	8.0	3.0	162
1.6	13.5	3.4	254
1.8	23	3.8	380

Sept. 2 to Feb. 26

0.8	2.25	1.4	7.1
.9	2.85	1.6	11.7
1.0	3.55	1.8	22
1.2	5.1	2.0	34.5

Note.- Same as preceding table above 2.0 feet.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.9	7.3	92	7.4	4.3	3.8	4.7	3.2	39.5	17.4	3.8	3.85
2	16.8	22.5	155	5.9	3.55	4.0	4.9	3.1	23	39.5	14.6	3.76
3	13.9	7.6	13.6	4.0	3.15	9.1	4.7	3.05	104	36.5	46	3.65
4	6.3	6.7	8.1	3.4	3.0	33.5	4.2	2.9	22.5	9.5	46	3.65
5	13.5	5.1	7.2	3.55	5.2	7.0	3.9	2.85	16.5	8.2	10.7	a3.55
6	6.2	4.5	6.2	3.4	3.7	31.5	13.6	3.0	16.9	7.6	10.6	a3.7
7	12.9	10.2	5.6	3.0	3.15	12.1	4.5	3.05	16.4	7.1	11.2	a3.6
8	32	6.1	6.4	3.2	3.85	14.0	4.0	2.85	67	6.6	8.0	a3.6
9	7.8	5.8	5.3	6.2	7.7	6.8	3.8	3.0	99	6.3	7.0	a3.6
10	6.6	11.4	5.5	3.6	3.7	5.2	3.6	3.0	28	6.1	6.4	a4.1
11	6.1	17.8	4.8	3.2	8.7	4.6	4.0	3.5	19.4	6.0	6.1	13.4
12	5.8	6.4	4.6	3.4	14.5	4.3	3.7	3.2	16.0	5.6	5.9	40
13	12.7	4.9	4.3	3.0	6.3	4.0	3.4	3.0	13.9	5.5	6.6	18.9
14	8.2	4.5	4.2	2.85	4.5	3.9	3.35	3.9	11.6	5.5	6.0	8.8
15	7.2	4.7	4.0	2.9	4.0	3.7	9.6	3.2	10.7	5.5	5.3	6.1
16	9.9	6.7	3.85	3.2	5.1	3.55	8.5	5.7	67	8.0	10.4	5.8
17	6.3	4.5	3.8	4.8	4.0	3.7	4.3	13.8	92	8.2	6.2	5.3
18	5.6	4.1	3.8	4.1	3.5	3.6	3.85	38.5	23	6.1	5.5	4.8
19	5.4	3.95	6.2	3.2	4.7	3.35	3.6	9.7	16.5	5.8	7.6	4.5
20	5.0	3.7	4.5	2.8	3.6	3.25	3.5	43	16.0	5.3	7.9	4.5
21	5.8	3.8	3.9	2.65	3.35	3.2	3.4	12.8	12.5	6.8	13.6	4.3
22	4.9	26	3.5	2.85	3.4	3.15	3.35	6.4	11.2	6.0	7.0	4.0
23	5.1	5.6	3.35	3.0	3.15	3.05	3.2	9.0	10.7	4.9	5.6	6.0
24	4.7	4.4	3.2	2.65	3.0	3.05	3.2	5.9	10.1	4.5	5.6	4.5
25	4.3	3.95	3.35	3.15	3.0	3.05	3.35	9.5	9.5	4.5	4.7	3.95
26	4.2	4.2	3.25	2.75	2.85	61	3.2	87	9.0	4.3	4.5	3.85
27	4.2	6.1	3.2	3.5	2.85	40	10.7	24.5	8.4	4.1	4.5	3.85
28	4.1	4.3	3.15	5.4	2.85	10.5	5.6	30.5	7.6	4.1	4.4	3.7
29	3.95	5.2	3.55	31	3.35	5.0	3.85	370	7.2	4.0	4.2	3.55
30	3.95	13.0	3.9	7.4	8.3	5.0	3.5	-	7.8	3.85	4.1	6.8
31	3.95	4.7	-	4.1	-	4.8	3.35	-	7.5	-	4.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	32	3.95	7.91	12.2	245	753
August	26	3.7	7.41	11.5	230	705
September	155	3.15	12.8	19.8	383	1,180
October	31	2.65	4.70	7.27	146	447
November	14.5	2.85	4.54	7.02	136	418
December	61	3.05	9.93	15.4	308	944
Calendar year 1943	300	2.65	14.7	22.7	5,390	16,510
January	13.5	3.2	4.72	7.30	146	449
February	370	2.85	24.6	38.1	713	2,190
March	104	7.2	26.5	41.0	820	2,520
April	39.5	3.85	8.44	13.1	253	778
May	46	3.8	9.48	14.7	294	902
June	40	3.55	6.45	9.98	194	594
Fiscal year 1943-44	370	2.65	10.6	16.4	3,870	11,880

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Anahola ditch above Kaneha Reservoir, near Kealia

Location.- Parshall flume, lat. 22°08'00", long. 159°22'30", at point of discharge into Kaneha Reservoir, 5 miles northwest of Kealia. Datum of gage is 821.8 feet above mean sea level (Lihue Plantation bench mark).

Records available.- May 1915 to June 1944.

Average discharge.- 21 years (1921-25, 1927-44), 3.32 million gallons a day (5.14 second-feet).

Extremes.- Maximum discharge during year, 84 million gallons a day (130 second-feet) Sept. 1 (gage height, 3.75 feet); no flow Mar. 28 to Apr. 11.
1915-44: Maximum discharge recorded, 130 million gallons a day (201 second-feet) Jan. 16, 1921 (gage height, 6.25 feet, site and datum then in use); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent. Ditch diverts water from Anahola River to Kaneha Reservoir, where it is stored for irrigation. Flow regulated by wasteway gates.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.9	6.2	17.0	9.5	3.7	2.1	0.02	1.09	0.02	0.05	1.48	1.65
2	8.3	16.5	11.7	4.5	2.1	5.9	.02	1.02	.02	.08	8.0	1.56
3	2.7	7.4	3.05	2.3	1.78	5.7	.02	1.02	.50	.08	10.9	1.48
4	.04	6.6	5.5	1.83	1.74	14.4	1.09	1.02	.02	.04	.06	1.48
5	.02	4.4	4.9	1.74	3.7	5.0	2.3	1.02	.04	.04	.02	1.48
6	2.7	4.2	3.75	1.56	2.2	13.6	10.9	1.09	.08	0	.04	2.05
7	4.9	14.7	3.3	1.40	1.65	11.8	2.9	1.32	.04	0	.04	1.83
8	7.2	5.2	5.0	1.53	2.4	1.55	2.35	1.02	.56	0	.04	1.83
9	4.8	7.0	4.0	7.0	6.6	.02	2.1	1.09	.23	0	2.3	1.48
10	3.9	12.9	4.4	2.3	2.1	.02	1.92	1.02	.02	0	3.2	1.83
11	3.5	17.3	3.75	1.83	10.9	.04	4.5	1.64	.02	1.03	2.55	6.3
12	3.1	5.8	3.5	1.74	16.1	.04	2.2	1.24	.04	2.0	2.4	10.9
13	9.7	4.0	2.9	1.48	5.2	1.44	1.74	1.77	.04	1.92	6.9	9.4
14	5.7	3.4	2.65	1.40	3.2	2.2	1.61	2.2	.04	2.45	3.3	3.75
15	6.3	3.9	2.2	1.65	2.55	1.83	7.1	1.16	.02	4.1	2.35	2.35
16	9.4	8.2	2.0	2.95	5.1	1.74	6.7	5.9	.21	8.6	9.5	3.05
17	3.75	3.2	1.92	7.2	2.55	1.65	2.2	9.0	.16	7.5	3.5	2.3
18	3.45	3.1	2.0	5.4	2.1	2.55	1.83	10.4	.02	4.3	2.75	2.35
19	3.8	2.65	5.9	2.1	6.4	1.65	1.65	4.9	.02	3.3	6.4	2.1
20	3.3	2.25	3.4	1.65	2.35	1.56	1.56	10.8	.04	2.9	.08	2.55
21	5.4	2.9	2.2	1.56	2.2	1.48	1.48	.06	.02	7.7	.04	2.2
22	2.75	13.6	1.83	3.0	2.35	1.40	1.48	.04	.02	4.0	.04	2.2
23	3.4	5.7	1.65	2.2	1.74	1.40	1.40	.04	.02	2.35	1.60	7.3
24	2.55	3.1	1.56	1.48	1.56	1.36	1.32	.04	.02	2.0	3.1	2.35
25	2.2	2.45	1.65	2.3	1.48	1.24	1.24	.08	.02	2.0	2.55	2.2
26	2.0	4.5	1.56	1.48	1.48	17.0	1.24	.29	.02	1.92	2.3	2.1
27	1.92	5.1	1.56	4.1	1.40	8.8	3.35	.04	.01	1.74	2.55	2.9
28	2.1	2.65	1.40	8.6	1.48	.04	2.25	.16	0	1.79	2.2	2.1
29	1.83	8.1	3.35	10.8	1.74	.04	1.40	1.36	0	1.56	2.3	1.83
30	1.83	12.5	3.45	3.85	7.3	.02	1.24	-	0	1.48	1.92	8.3
31	1.83	4.5	-	2.75	-	.02	1.16	-	0	-	1.74	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	9.7	0.02	3.88	6.00	120	369
August	17.3	2.25	6.65	10.3	206	632
September	17.0	1.40	3.77	5.83	113	347
October	10.8	1.40	3.33	5.15	103	317
November	16.1	1.40	3.57	5.52	107	329
December	17.0	.02	3.47	5.37	108	330
Calendar year 1943	17.3	.01	3.25	5.03	1,190	3,640
January	10.9	.02	2.33	3.61	72.3	222
February	10.8	.04	2.13	3.30	61.8	190
March	.56	0	.073	1.13	2.27	7.0
April	8.6	0	2.16	3.34	64.9	199
May	10.9	.02	2.78	4.30	86.2	264
June	10.9	1.48	3.17	4.90	95.2	292
Fiscal year 1943-44	17.3	0	3.11	4.81	1,140	3,500

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Anahola ditch wasteway near Kealia

Location.- Sharp-crested weir, lat. 22°08'10", long. 159°22'30", 300 feet downstream from wasteway gates on Anahola ditch, 500 feet upstream from Kaneha Reservoir, 3.8 miles west of Anahola, and 4.9 miles northwest of Kealia.

Records available.- December 1936 to June 1944.

Extremes.- Maximum discharge during year, 94 million gallons a day (145 second-feet) Mar. 3 (gage height, 2.72 feet); no flow at times, when water was turned out of ditch.
1936-44: Maximum discharge, 110 million gallons a day (170 second-feet) Aug. 12, 1940 (gage height, 2.95 feet); no flow at times, when water was turned out of ditch.

Remarks.- Records good. Water that passes station is returned to Anahola River.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0	0.56	0		0	3.1	0	13.0	10.0	0	0
2	0	0	16.3	0		0	6.5	0	9.0	23	0	0
3	4.5	0	6.1	0		0	3.5	0	21.5	18.0	11.1	0
4	4.9	0	0	0		0	1.56	0	7.7	5.7	18.6	0
5	6.8	0	0	0		0	0	0	5.3	4.5	5.7	0
6	1.33	0	0	0		.10	0	0	10.5	3.85	9.3	0
7	0	0	0	0		0	0	0	7.3	3.25	8.5	0
8	0	0	0	0		9.3	0	0	18.1	2.95	3.95	0
9	0	0	0	0		4.5	0	0	24	2.8	1.06	0
10	0	0	0	0		3.25	0	0	8.2	2.55	0	0
11	0	0	0	0		2.8	0	0	5.5	1.50	0	0
12	0	0	0	0		2.45	0	0	5.4	.19	0	.11
13	0	0	0	0		.85	0	0	4.2	.19	0	0
14	0	0	0	0		.13	0	0	3.4	.19	0	0
15	0	0	0	0		.13	0	0	3.4	.19	0	0
16	0	0	0	0		.13	0	0	11.2	.19	0	0
17	0	0	0	0		0	0	0	22.5	.13	0	0
18	0	0	0	0		0	0	.31	7.3	.13	0	0
19	0	0	0	0		0	0	0	4.9	0	4.1	0
20	0	0	0	0		0	0	7.0	5.7	0	7.4	0
21	0	0	0	0		0	0	7.6	3.6	0	10.3	0
22	0	0	0	0		0	0	5.1	3.25	0	6.7	0
23	0	0	0	0		0	0	8.9	3.1	0	2.1	0
24	0	0	0	0		0	0	3.8	3.55	0	0	0
25	0	.07	0	0		0	0	7.4	3.0	0	0	0
26	0	0	0	0		.19	0	17.3	2.8	0	0	0
27	0	0	0	0		13.5	0	9.6	2.6	0	0	0
28	0	0	0	0		9.9	0	9.1	2.2	0	0	0
29	0	0	0	.12		5.95	0	35	2.15	0	0	0
30	0	0	0	0		3.1	0	-	3.35	0	0	0
31	0	0	-	0		2.8	0	-	3.25	-	0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	6.8	0	0.565	0.874	17.5	54
August	.07	0	.002	.003	.07	.2
September	16.3	0	.765	1.18	23.0	70
October	.12	0	.004	.006	.12	.4
November	0	0	0	0	0	0
December	13.5	0	1.84	2.85	57.1	175
Calendar year 1943	30	0	2.63	4.07	959	2,950
January	6.5	0	.473	.732	14.7	45
February	35	0	3.83	5.93	111	341
March	24	2.15	7.45	11.5	231	709
April	23	0	2.64	4.08	79.3	243
May	18.6	0	2.86	4.43	88.8	273
June	.11	0	.004	.006	.11	.3
Fiscal year 1943-44	35	0	1.70	2.63	623	1,910

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Lower Anahola ditch near Kealia

Location.- Parshall flume, lat. 22°08'00", long. 159°19'30", 100 feet downstream from last wasteway, 1.3 miles southwest of mouth of Anahola River, and 2.5 miles northwest of Kealia. Altitude of gage, about 270 feet (by levels from approximate site of two demolished Geological Survey bench marks).

Records available.- December 1936 to June 1944. Records collected by East Kauai Water Co. July 1925 to January 1935 at site half a mile downstream and January 1935 to December 1936 at present site.

Extremes.- Maximum discharge during year, 8.7 million gallons a day (13.5 second-feet) Aug. 16 (gage height, 1.37 feet); no flow many times, when water was turned out of ditch.

1936-44: Maximum discharge, 16.5 million gallons a day (25.5 second-feet) Apr. 19, 1937 (gage height, 2.11 feet); no flow at times, when water was turned out of ditch.

Remarks.- Records excellent. Ditch diverts water from Anahola River for irrigation of sugarcane. Flow regulated by spillways and gates.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.1	4.5	4.4	5.0	0	0	0	3.6		0	4.3	4.1
2	6.4	6.6	8.0	5.6	0	0	0	3.5		0	5.5	4.2
3	3.7	5.8	7.5	5.8	0	0	1.86	3.45		0	3.0	4.2
4	0	5.5	7.0	3.35	0	0	2.3	3.3		0	0	4.1
5	4.9	5.0	6.6	0	.79	0	2.55	3.2		0	0	4.1
6	7.0	4.5	6.6	1.32	0	0	1.55	3.15		0	0	4.1
7	6.0	5.6	5.9	3.35	0	0	.01	1.46		0	0	4.1
8	2.95	5.3	6.1	3.3	0	0	.01	0		0	0	4.1
9	0	5.4	5.6	2.65	0	0	0	0		0	0	4.2
10	0	5.7	5.7	.17	0	0	0	0		0	2.55	4.6
11	0	5.8	5.3	2.45	0	0	0	0		0	5.5	4.7
12	3.7	5.5	5.0	3.65	0	0	0	0		2.9	5.5	6.1
13	6.1	4.8	4.9	3.3	0	0	0	0		5.7	5.3	4.1
14	6.1	4.4	4.6	3.1	0	0	0	1.10		3.4	5.0	0
15	5.9	4.2	4.4	3.15	0	0	0	3.2		0	5.2	0
16	6.1	6.6	4.3	3.45	0	0	0	3.3		0	3.65	0
17	5.7	4.4	4.1	4.5	0	0	0	1.34		3.7	0	0
18	5.3	4.0	3.9	4.1	0	0	0	0		3.5	0	0
19	6.6	3.8	4.9	3.6	0	0	0	0		2.1	0	0
20	5.0	3.6	5.0	3.1	0	0	0	0		3.15	0	0
21	5.3	3.5	4.1	2.95	0	2.05	0	0		1.90	0	3.05
22	4.9	6.1	3.75	3.0	0	2.1	0	0		0	2.35	4.5
23	4.8	5.8	3.5	3.15	1.54	0	0	0		0	4.8	5.1
24	4.7	4.3	3.45	2.85	3.8	0	0	0		1.30	1.98	2.55
25	4.3	3.9	3.5	3.3	3.65	0	0	0		3.75	0	0
26	4.3	3.8	3.5	3.0	3.6	0	0	0		3.75	0	2.9
27	4.1	4.7	3.45	3.15	1.02	0	0	0		3.75	0	4.4
28	4.1	4.0	3.2	3.1	.01	0	0	0		3.65	0	4.1
29	4.1	3.75	3.45	2.95	0	0	0	0		3.65	2.75	3.8
30	4.0	6.1	4.1	0	0	0	0	-		3.6	4.5	4.5
31	4.0	4.5	-	0	-	0	1.29	-		-	4.3	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	7.0	0	4.39	6.79	136	418
August	6.6	3.5	4.89	7.57	151	465
September	8.0	3.2	4.86	7.52	146	447
October	5.8	0	3.05	4.72	94.6	290
November	3.8	0	.480	.743	14.4	44
December	2.1	0	.134	.207	4.15	13
Calendar year 1943	8.0	0	2.74	4.24	1,000	3,070
January	2.8	0	.326	.504	10.1	31
February	3.6	0	1.06	1.64	30.6	94
March	0	0	0	0	0	0
April	5.7	0	1.66	2.57	49.8	153
May	5.5	0	2.13	3.30	66.2	203
June	6.1	0	3.05	4.72	91.6	281
Fiscal year 1943-44	8.0	0	2.17	3.36	794	2,440

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Ka Loko ditch near Kilauea

Location.- Parshall flume, lat. 22°10'35", long. 159°23'00", 60 feet downstream from confluence of Ka Loko and Moloaa ditches, 400 feet upstream from Ka Loko Reservoir, and 3⅛ miles southeast of Kilauea. Altitude of gage, 750 feet (from topographic map).

Records available.- August 1932 to June 1944.

Average discharge.- 11 years (1933-44), 3.97 million gallons a day (6.14 second-feet).

Extremes.- Maximum discharge during year, 80 million gallons a day (124 second-feet) Feb. 29 (gage height, 3.64 feet); minimum, 0.81 million gallons a day (1.25 second-feet) Feb. 4-6, 8-13, 15, 16.
1932-44: Maximum discharge, 108 million gallons a day (167 second-feet) Jan. 2, 1933 (gage height, 4.41 feet); minimum, 0.19 million gallons a day (0.29 second-foot) May 24, 1933.

Remarks.- Records good except those for Aug. 13-17, Mar. 16, 17, which are poor. Ditch diverts water from Moloaa and Puu Ka Ele Streams, half a mile southeast and 1⅛ miles southwest of station, respectively. Flow regulated by wasteway gates. Water used for irrigation in vicinity of Kilauea.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.45	2.65	6.2	2.95	1.23	1.71	2.2	0.95	7.7	3.65	1.23	1.16
2	3.45	6.1	22	3.55	1.02	1.47	2.15	.95	5.8	8.0	3.6	1.16
3	3.6	3.15	4.6	1.71	.95	2.55	1.89	.95	12.7	11.8	10.3	1.09
4	2.45	3.75	3.05	1.47	.95	8.9	1.63	.88	4.6	3.15	12.8	1.09
5	4.7	2.25	2.65	1.47	2.25	2.95	1.47	.81	3.56	2.65	3.05	1.09
6	2.35	1.89	2.45	1.47	1.16	6.3	3.75	1.02	5.3	2.45	3.15	1.31
7	3.25	3.6	2.25	1.31	1.02	4.7	1.63	1.09	4.6	2.15	4.5	1.16
8	5.9	2.45	2.75	1.39	1.16	5.6	1.31	.88	9.1	2.05	2.35	1.51
9	2.55	2.25	2.35	2.5	3.5	2.75	1.23	.88	18.5	1.98	1.98	1.31
10	2.25	3.75	2.35	1.54	1.39	2.05	1.16	.88	5.2	1.89	1.98	1.51
11	2.05	5.2	2.25	1.39	3.25	1.89	1.31	1.16	4.0	1.71	1.80	3.95
12	2.05	2.95	2.05	1.47	5.3	1.71	1.23	1.02	3.55	1.54	1.80	8.4
13	5.1	a2.4	1.98	1.31	2.25	1.63	1.16	.93	3.25	1.54	2.15	4.3
14	3.55	a2.1	2.05	1.23	1.63	1.63	1.09	1.16	2.95	1.63	1.71	2.25
15	3.2	a2.0	1.80	1.31	1.47	1.47	4.3	.88	f2.85	1.89	1.54	1.54
16	4.4	a2.5	1.71	1.23	2.45	1.47	3.2	1.61	a4.0	3.35	2.8	1.71
17	2.45	a1.7	1.71	1.65	1.63	1.47	1.54	4.7	a10	2.95	1.71	1.39
18	2.35	f1.71	1.80	1.31	1.47	1.39	1.31	4.5	f3.0	1.98	1.47	1.39
19	2.15	1.63	2.95	1.02	2.25	1.31	1.23	2.55	4.0	2.15	3.2	1.31
20	1.98	1.54	2.15	.95	1.54	1.31	1.16	6.4	4.5	1.89	3.5	1.31
21	2.25	1.63	1.80	1.02	1.54	1.16	1.16	4.8	3.25	2.9	6.8	1.23
22	1.98	5.2	1.63	1.23	1.54	1.16	1.16	1.89	3.05	2.15	2.95	1.23
23	2.15	1.98	1.54	1.23	1.31	1.16	1.16	2.85	2.95	1.71	1.98	2.15
24	1.89	1.54	1.54	1.02	1.23	1.16	1.16	1.71	2.75	1.54	1.63	1.31
25	1.80	1.47	1.54	1.16	1.23	1.16	1.16	2.6	2.55	1.47	1.63	1.16
26	1.71	1.81	1.54	1.02	1.23	6.4	1.16	12.6	2.65	1.47	1.48	1.09
27	1.71	2.45	1.54	1.63	1.16	11.3	2.7	5.2	2.45	1.39	1.39	1.16
28	1.71	1.54	1.54	2.0	1.16	4.0	1.98	7.5	2.25	1.39	1.31	1.09
29	1.63	2.4	1.80	4.6	1.54	1.98	1.23	40	2.15	1.31	1.31	1.02
30	1.54	4.0	1.71	1.92	3.85	1.80	1.02	-	2.25	1.23	1.23	2.9
31	1.54	1.80	-	1.16	-	1.80	1.02	-	2.15	-	1.16	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.9	1.54	2.65	4.10	82.1	252
August	6.1	1.47	2.63	4.07	81.4	250
September	22	1.54	2.91	4.50	87.3	268
October	4.6	.95	1.62	2.51	50.2	154
November	5.3	.95	1.79	2.77	53.7	165
December	11.3	1.16	2.82	4.36	87.3	268
Calendar year 1943	31	.95	3.57	5.52	1,300	3,990
January	4.3	1.02	1.64	2.54	50.9	156
February	40	.81	3.91	6.05	113	348
March	18.5	2.15	4.76	7.36	148	453
April	11.8	1.23	2.57	3.98	77.0	236
May	12.8	1.16	2.89	4.47	89.5	275
June	8.4	1.02	1.81	2.80	54.3	167
Fiscal year 1943-44	40	.81	2.66	4.12	975	2,990

a No gage-height record; discharge computed on basis of records for Puu Ka Ele and Kalihiwai ditches and recorded range in stage.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Puu Ka Ele ditch near Kilauea

Location.- Parshall flume, lat. 22°11'05", long. 159°24'20", 100 feet upstream from Puu Ka Ele Reservoir and 2 miles south of Kilauea. Altitude of gage, 430 feet (by barometer).

Records available.- August 1932 to June 1944.

Average discharge.- 11 years (1933-44), 3.56 million gallons a day (5.51 second-feet).

Extremes.- Maximum discharge during year, 33.5 million gallons a day (51.8 second-feet) Sept. 2 (gage height, 2.10 feet); no flow many times.
1932-44: Maximum discharge, 38 million gallons a day (59 second-feet) May 7, 1943 (gage height, 2.28 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records good. Ditch diverts water from Puu Ka Ele Stream, 1 mile southwest of station. Flow regulated by wasteway gate 100 feet above station. Water used for irrigation in vicinity of Kilauea.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.,	Mar.	Apr.	May	June
1	3.8	4.2	5.4	3.5	2.15	1.98	0.71	1.54	0.29	3.55	1.71	1.89
2	4.9	7.9	21	5.4	1.89	1.94	.46	1.54	.04	6.0	3.9	1.80
3	5.7	4.3	8.7	2.65	1.80	2.2	1.42	1.54	1.57	5.9	9.2	1.71
4	4.8	6.5	5.6	2.15	1.80	8.4	1.98	1.54	0	2.5	11.7	1.80
5	6.8	3.7	4.7	2.15	3.25	3.35	1.89	1.54	.09	3.25	3.55	1.71
6	3.8	3.25	4.1	2.05	2.05	7.6	4.7	1.64	.27	2.95	3.3	1.80
7	6.5	4.8	3.8	2.05	1.89	5.1	2.35	1.71	.38	2.75	7.2	1.80
8	7.8	3.45	4.5	2.05	1.80	8.3	2.05	1.54	.95	2.55	3.35	1.80
9	3.9	3.35	3.45	2.65	2.75	3.8	1.98	1.54	1.38	2.45	2.85	1.80
10	3.7	6.1	3.45	2.15	1.89	2.95	1.89	1.47	.23	2.35	2.85	1.89
11	3.35	7.1	3.25	2.05	2.75	2.65	1.98	1.79	.23	2.35	2.55	3.5
12	3.25	4.3	3.15	2.05	5.2	2.45	1.80	1.54	.23	2.15	2.65	5.3
13	9.5	3.45	3.05	1.89	2.7	2.25	1.80	1.39	.18	2.05	2.95	3.3
14	5.4	3.25	2.95	1.89	2.15	2.15	1.71	1.47	.21	2.35	2.55	2.15
15	4.7	4.6	2.75	1.98	2.05	2.05	3.55	1.31	.27	2.55	2.35	1.89
16	6.5	4.3	2.65	2.05	2.85	1.98	3.2	1.74	.58	2.75	3.2	2.05
17	4.1	a2.75	2.65	2.65	1.98	1.98	1.98	3.9	2.4	2.55	2.65	1.89
18	4.1	f2.75	2.65	2.25	1.80	1.98	1.80	4.2	.16	2.25	2.35	2.05
19	3.55	2.65	4.1	1.89	2.45	1.80	1.71	2.2	2.9	2.55	4.2	1.89
20	3.35	2.45	3.05	1.89	1.80	1.80	1.71	6.7	4.5	2.55	4.4	1.80
21	3.35	2.55	2.55	1.89	1.71	1.71	1.80	3.8	3.7	2.95	7.4	1.71
22	2.95	6.7	2.35	2.05	1.71	1.63	1.71	2.2	2.55	2.45	3.45	1.82
23	3.15	2.95	2.25	1.98	1.63	1.54	1.63	2.85	2.3	2.15	2.75	2.75
24	2.85	2.55	2.15	1.80	1.54	1.63	1.63	2.05	3.15	2.05	2.65	1.80
25	2.75	2.45	2.05	1.98	1.54	1.54	1.63	2.7	3.05	2.06	2.45	1.71
26	2.55	2.85	1.98	1.71	1.47	2.4	1.63	8.8	1.78	1.98	2.35	1.80
27	2.65	3.25	1.89	2.3	1.47	1.06	3.15	5.3	2.0	1.98	2.25	1.71
28	2.55	2.55	1.98	3.35	1.54	.06	2.4	6.2	2.65	2.05	2.05	1.54
29	2.45	3.3	2.15	4.5	1.71	.27	1.80	7.8	2.55	1.89	2.15	1.54
30	2.35	6.9	2.05	3.15	3.6	.27	1.63	-	2.65	1.80	1.98	3.05
31	2.35	3.25	-	2.25	-	.23	1.54	-	2.55	-	1.98	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	9.5	2.35	4.18	6.47	129	397
August	7.9	2.45	4.01	6.20	124	382
September	21	1.89	3.88	6.00	116	357
October	5.4	1.71	2.40	3.71	74.4	228
November	5.2	1.47	2.16	3.34	64.9	199
December	8.4	.06	2.55	3.95	79.0	243
Calendar year 1943	21	0	2.96	4.58	1,080	3,320
January	4.7	.46	1.97	3.05	61.2	188
February	8.8	1.31	2.88	4.46	83.5	256
March	4.5	0	1.48	2.29	45.8	141
April	6.0	1.80	2.66	4.12	79.7	245
May	11.7	1.71	3.58	5.54	111	340
June	5.3	1.54	2.11	3.26	63.2	194
Fiscal year 1943-44	21	0	2.82	4.36	1,030	3,170

a No gage-height record; discharge computed on basis of records for Ka Loko and Kalihiwai ditches.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kalihiwai ditch near Kilauea

Location.- Parshall flume, lat. 22°10'55", long. 159°25'55", 0.1 mile upstream from Kalihiwai Reservoir and 2.4 miles southwest of Kilauea. Altitude of gage, 410 feet (by barometer).

Records available.- June 1934 to June 1944.

Extremes.- Maximum discharge during year, 52 million gallons a day (80 second-feet) Sept. 2 (gage height, 2.77 feet); minimum, 0.23 million gallons a day (0.36 second-foot) Mar. 8. 1934-44: Maximum discharge recorded, 64 million gallons a day (99 second-feet) Mar. 7, 1938 (gage height, 3.17 feet); minimum, 0.01 million gallons a day (0.02 second-foot) Nov. 28, Dec. 4, 1934.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Ditch diverts low-water flow from most branches of Pohakuhonu Stream at intakes, about 1 mile south of station. Diversion of flow to Kahililolo Stream, 0.1 mile above station, regulated by gates. Water discharges into Kalihiwai Reservoir, where it is stored for irrigation in vicinity of Kilauea.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.95	3.95	6.0	4.3	2.0	2.1	1.98	1.6	3.0	3.1	1.89	2.05
2	3.55	7.22	25	5.0	1.8	1.98	2.15	1.6	2.3	6.7	3.1	1.98
3	3.15	5.0	11	3.0	1.7	2.25	1.98	1.6	.63	6.8	9.5	1.89
4	2.9	5.2	7.0	2.3	1.7	2.7	1.80	1.5	.41	3.6	13.3	1.89
5	3.15	3.9	5.6	2.3	3.0	1.45	1.71	1.4	.36	2.25	4.4	1.98
6	3.5	3.45	4.8	2.3	2.0	2.5	3.55	1.7	.46	2.6	5.5	1.89
7	5.2	6.4	4.5	2.2	1.8	2.35	2.15	1.8	.35	3.15	8.6	1.89
8	6.6	4.6	5.2	2.3	1.7	1.20	1.89	1.6	2.25	2.85	4.3	1.80
9	5.0	4.6	3.8	3.5	4.0	.41	1.80	1.6	6.5	2.75	3.25	1.80
10	4.3	6.6	3.8	2.3	2.5	.36	1.71	1.6	4.0	2.55	3.4	1.80
11	4.0	7.3	3.6	2.0	3.5	1.37	1.71	2.0	3.55	2.55	2.85	1.80
12	3.8	3.8	3.4	2.1	5.0	1.80	1.63	1.7	3.45	2.45	2.75	2.0
13	3.1	3.05	3.2	1.9	3.0	1.71	1.54	1.6	3.05	2.35	4.8	2.2
14	2.35	2.85	3.1	1.7	2.5	1.71	1.54	1.7	2.85	2.45	3.55	1.98
15	4.0	2.75	3.0	1.8	2.4	1.54	2.3	1.5	2.75	2.45	2.75	1.71
16	4.0	3.35	2.8	1.7	3.3	1.54	2.2	3.15	2.55	3.05	4.1	1.80
17	3.4	2.65	2.8	2.8	2.3	1.54	1.9	4.2	.99	3.7	3.05	1.63
18	2.35	2.65	2.8	2.3	2.1	1.63	1.7	4.3	.52	2.95	2.75	1.80
19	2.15	2.55	4.5	1.8	3.0	1.54	1.6	2.85	1.63	3.15	5.1	1.63
20	1.98	2.45	3.5	1.7	2.0	1.47	1.6	6.3	2.55	2.75	5.6	1.71
21	2.95	2.55	2.8	1.7	1.9	1.39	1.6	3.7	2.25	3.35	7.9	1.54
22	3.45	4.8	2.4	2.0	1.9	1.39	1.6	2.75	1.55	3.15	4.6	1.71
23	3.35	2.95	2.2	2.0	1.7	1.39	1.6	4.1	.52	2.55	3.7	2.05
24	3.15	2.55	2.2	1.8	1.6	1.39	1.6	2.65	.52	2.35	3.15	1.71
25	2.95	2.2	2.2	2.0	1.6	1.31	1.6	3.35	.52	2.25	2.95	1.80
26	2.85	2.6	2.2	1.8	1.5	2.9	1.6	5.9	.52	2.15	2.65	1.98
27	2.85	3.5	2.2	2.8	1.5	5.0	3.5	4.8	.46	2.05	2.45	1.98
28	2.75	2.4	2.2	3.5	1.5	3.55	2.5	3.7	1.60	2.05	2.45	1.98
29	2.65	3.0	2.6	5.0	2.0	2.55	2.0	4.9	2.25	1.98	2.55	1.71
30	2.55	5.0	2.4	3.0	4.0	2.15	1.8	-	2.5	1.89	2.25	4.4
31	2.55	3.0	-	2.0	-	1.98	1.7	-	2.55	-	2.05	-

Month	Million gallons a day			Second-feet (msan)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	6.6	1.98	3.34	5.17	103	318
August	7.3	2.2	3.83	5.93	119	365
September	25	2.2	4.43	6.85	133	408
October	5.0	1.7	2.48	3.84	78.9	236
November	5.0	1.5	2.35	3.64	70.5	216
December	5.0	.36	1.88	2.91	58.2	178
Calendar year 1943	25	.27	2.86	4.43	1,040	3,210
January	3.55	1.54	1.92	2.97	59.5	183
February	6.3	1.4	2.80	4.33	81.2	249
March	6.5	.35	1.92	2.97	59.4	182
April	6.8	1.89	2.93	4.53	88.0	270
May	13.3	1.89	4.23	6.54	131	403
June	4.4	1.54	1.94	3.00	58.1	178
Fiscal year 1943-44	25	.35	2.84	4.39	1,040	3,190

Note.- No gage-height record Aug. 24 to Dec. 2, Jan. 16 to Feb. 16; discharge computed on basis of records for stations on nearby ditches.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanalei River at altitude 625 feet, near Hanalei

Location.- Lat. 22°07'10", long. 159°28'05", 0.4 mile downstream from confluence with Kaapoko Stream and 6¼ miles southeast of Hanalei. Altitude of gage, 625 feet (from topographic map).
Drainage area.- 7.4 square miles.
Records available.- January 1914 to June 1944.
Average discharge.- 26 years (1918-44), 46.6 million gallons a day (72.1 second-feet).
Extremes.- Maximum discharge during year, 5,880 million gallons a day (9,100 second-feet) Feb. 29 (gage height, 8.37 feet), from rating curve extended above 200 million gallons a day; minimum, 8.2 million gallons a day (12.7 second-feet) Feb. 13, 15, 16.
1914-44: Maximum discharge, 13,500 million gallons a day (20,900 second-feet) Apr. 27, 1939 (gage height, 11.12 feet), from rating curve extended above 200 million gallons a day; minimum, 5.8 million gallons a day (9.0 second-feet) Apr. 28, May 1-3, 1926.
Remarks.- Records good except those between 50 and 200 million gallons a day, which are fair, and those above 200 million gallons a day and those for periods of no gage-height record, which are poor. Since 1925 Hanalei tunnel has been diverting an average of about 20 million gallons of water a day from Kaapoko Stream and Hanalei River, at points about 2 miles above station, for irrigation in vicinity of Lihue.

Rating tables, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Feb. 29

0.4	7.0	1.3	50	3.5	452
.5	9.3	1.6	79	4.0	660
.7	15.5	2.0	129	4.5	890
.9	24	2.5	212		
1.1	35.5	3.0	318		

Mar. 1 to June 30

0.4	9.0	0.9	25.5
.5	11.5	1.1	36
.7	17.4	1.3	50

Note.- Same as preceding table above 1.3 feet.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	67	36	117	53	15.2	12	15	8.6	59	54	10.0	13.9
2	109	110	306	22.5	13.2	13	19	8.8	37	106	31.5	13.4
3	68	38.5	44	14.5	12.2	14	16	8.8	340	77	78	12.8
4	43	49	27.5	14.9	12.5	70	15	8.6	78	20.5	46	13.9
5	64	31	22.5	13.2	20.5	21	13	8.6	39	17.8	18.1	19.6
6	35	31	20.5	12.5	13.7	45	40	9.1	109	16.4	57	34.5
7	60	65	16.7	12.5	11.6	21	14	9.3	81	14.8	45	12.8
8	124	24	20	12.5	11.6	29	13	8.8	284	13.9	22	11.8
9	39.5	23.5	19.1	21	21.5	17	12.5	8.8	252	13.7	20.5	11.5
10	33.5	77	21	14.5	11.6	15	11.9	8.6	56	13.1	82	16.2
11	30	403	23.5	12.9	36.5	14	16.7	24.5	35	13.4	23.5	14.4
12	34.5	38	20.5	12.2	38	13	12.2	8.8	28.5	12.6	23.5	15.3
13	112	24	17.9	11.6	20	13	11.3	8.8	23	12.8	76	38.5
14	77	21.5	17.9	11.6	14.5	12	11.0	9.6	19.2	18.1	37	13.4
15	82	21.5	15.2	11.6	13.8	12	11.9	8.4	17.4	27.5	22	11.2
16	48	44	14.5	15.1	14.8	11	13.2	33	47	15.5	30	21
17	47	19.5	14.2	32	13.5	11	10.8	48	166	18.5	19.6	11.5
18	47	17.9	18.5	17.6	13.2	12	10.2	41	29.5	14.5	20.5	13.7
19	41	16.3	20.5	12.9	38	11	9.9	16.0	36.5	15.2	94	11.2
20	37.5	15.5	22.5	11.9	15.2	11	9.9	19.5	40	13.1	83	11.0
21	39.5	15.9	14.5	13.6	14.5	11	9.9	13.2	19.6	22	69	10.8
22	33.5	57	13.2	17.3	14.2	10	9.6	16.5	18.8	17.8	31	11.2
23	45	25.5	12.9	45	12.9	10	9.6	42	17.1	13.1	23	23.5
24	34.5	17.5	12.5	13.8	12.5	10	9.3	16.3	16.8	11.8	32	10.8
25	32.5	15.9	13.2	13.8	12.2	10	9.1	16.1	15.2	11.8	21	11.8
26	30.5	17.9	12.5	12.5	11.9	90	9.3	116	14.2	11.2	17.4	12.3
27	34	22	12.2	16.5	11.6	100	9.9	29	13.4	10.8	27.5	18.2
28	36.5	17.9	13.5	26	11.6	30	9.9	20.5	12.8	11.5	18.0	15.5
29	30.5	30	23	16.7	11.9	18	9.3	811	12.3	10.5	21	11.8
30	29	68	19.6	14.5	14	16	8.8	-	12.6	10.2	16.1	35.5
31	21.5	21.5	-	27.5	-	14	8.6	-	13.1	-	14.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	124	21.5	50.5	78.1	1,570	4,810
August	403	15.5	45.7	70.7	1,420	4,340
September	306	12.2	31.6	48.9	949	2,910
October	53	11.6	17.9	27.7	556	1,710
November	38	11.6	16.3	25.2	488	1,500
December	100	10	22.5	34.8	696	2,140
Calendar year 1943	1,000	9.1	37.8	58.5	13,810	42,340
January	40	8.6	12.6	19.5	390	1,200
February	811	8.6	47.8	74.0	1,390	4,250
March	340	12.3	62.7	97.0	1,940	5,960
April	106	10.2	21.3	33.0	639	1,960
May	94	10.0	36.4	56.3	1,130	3,470
June	38.5	10.8	16.1	24.9	484	1,480
Fiscal year 1943-44	811	8.6	31.8	49.2	11,650	35,730

Note.- No gage-height record Nov. 30 to Jan. 5; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanakapiai Stream near Hanalei

Location.- Lat. 22°11'20", long. 159°35'50", 1½ miles upstream from mouth and 6 miles west of Hanalei. Altitude of gage, 450 feet (by barometer).

Drainage area.- 2.6 square miles.

Records available.- December 1931 to June 1944.

Average discharge.- 12 years (1932-44), 11.3 million gallons a day (17.5 second-feet).

Extremes.- Maximum discharge during year, 380 million gallons a day (588 second-feet) Feb. 20 (gage height, 4.00 feet), from rating curve extended above 60 million gallons a day; minimum, not determined.
1931-44: Maximum discharge, 2,680 million gallons a day (4,150 second-feet) Dec. 23, 1937 (gage height, 8.41 feet), from rating curve extended above 60 million gallons a day; minimum (estimated), 2.3 million gallons a day (3.6 second-feet) June 21, 22.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.3	2.1	0.9	10.3	1.9	48
.4	2.9	1.1	14.9	2.1	62
.5	4.0	1.3	20.5	2.5	96
.7	6.7	1.6	32		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	26	6.7	4.3	6.6	2.9	4.5	4.1	2.8	9.4	35	2.8	2.6
2	19.6	12.3	6.6	4.3	2.8	3.8	5.2	2.8	5.2	60	23.5	2.6
3	7.8	5.9	5.4	3.45	2.8	3.45	4.9	2.7	45	25	47	2.6
4	10.7	4.1	4.0	3.25	2.8	8.3	3.9	2.7	21	14	25.5	2.6
5	19.3	3.65	4.0	3.25	2.8	15.5	3.55	2.6	11.6	8.0	7.0	2.5
6	6.5	3.45	3.65	3.1	2.75	33	29	2.7	26.5	6.0	5.0	2.5
7	26.5	7.9	3.55	3.1	2.8	7.6	5.3	2.8	15.4	4.8	4.5	2.5
8	28	5.6	3.45	3.0	2.8	40	4.0	2.6	32	4.0	3.65	3.0
9	7.2	9.8	3.45	3.1	4.0	8.8	3.55	3.5	37.5	4.0	3.35	2.5
10	5.6	10.6	3.55	3.25	3.0	5.2	3.35	3.0	9.1	3.8	3.25	2.7
11	4.8	25.5	4.1	3.25	10.1	4.3	10.1	f22	5.9	3.65	3.1	3.6
12	4.4	6.3	4.0	3.0	15.6	3.65	5.0	6.4	4.8	3.45	3.0	3.0
13	5.6	4.6	3.8	2.9	8.4	3.45	3.8	4.5	4.1	3.25	3.8	2.8
14	5.4	4.3	3.45	2.9	4.8	4.6	3.45	4.0	3.9	3.35	4.1	3.4
15	12.0	4.5	3.35	3.0	5.4	3.65	11.6	3.5	3.65	3.25	3.1	3.6
16	7.3	4.6	3.35	3.25	9.5	3.25	5.9	3.5	37.5	3.55	3.45	2.5
17	6.6	3.9	3.25	4.5	5.0	3.6	4.5	4.3	52	6.9	3.1	2.7
18	6.4	3.65	6.8	4.3	3.8	4.8	4.0	4.2	9.6	4.6	3.0	2.5
19	6.2	3.45	8.0	3.45	10.3	3.35	3.8	3.7	6.4	3.55	5.7	2.4
20	4.8	3.55	9.1	3.0	5.3	3.1	3.5	f66	24	3.25	13.3	2.4
21	5.3	4.5	5.2	2.9	5.3	3.0	3.4	15	6.4	9.9	14.2	2.3
22	4.4	23.5	3.8	2.9	8.6	2.9	3.3	17	5.4	7.9	4.5	2.3
23	4.0	6.3	3.45	2.8	4.3	2.8	3.2	15	5.6	4.4	3.65	2.4
24	3.8	4.4	3.35	3.0	3.9	2.8	3.2	12	5.5	3.35	4.7	2.4
25	3.65	4.0	3.35	4.3	3.9	3.0	3.2	4.0	5.3	3.25	4.0	2.5
26	3.55	5.0	3.35	3.45	3.55	75	3.2	16	14.9	3.1	3.0	2.7
27	3.55	10.2	3.25	3.45	3.35	68	4.0	15	6.9	3.0	2.8	3.3
28	3.45	8.0	3.25	4.5	3.45	26.5	3.1	4.8	4.3	2.9	2.75	5.0
29	3.45	8.1	3.35	4.1	4.1	8.0	3.0	33	3.65	2.9	3.1	4.0
30	3.45	9.1	5.2	3.55	9.1	5.4	2.9	-	3.6	2.9	2.75	16.5
31	3.45	5.2	-	3.35	-	4.5	2.9	-	3.6	-	2.65	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	28	3.45	8.48	13.1	263	806
August	25.5	3.45	7.18	11.1	223	683
September	9.1	3.25	4.29	6.64	129	395
October	6.6	2.8	3.49	5.40	108	332
November	18.3	2.75	5.51	8.53	165	507
December	75	2.8	11.9	18.4	370	1,130
Calendar year 1943	160	2.75	10.1	15.6	3,700	11,340
January	29	2.9	5.09	7.88	158	485
February	66	2.6	9.73	15.1	282	866
March	52	3.6	13.9	21.5	430	1,320
April	60	2.9	8.23	12.7	247	758
May	47	2.65	7.07	10.9	219	673
June	16.5	2.3	3.28	5.07	98.5	302
Fiscal year 1943-44	75	2.3	7.35	11.4	2,690	8,260

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Jan. 17 to Feb. 10, Feb. 12-19, Feb. 21 to Mar. 2, Mar. 30 to Apr. 6, June 6-30; discharge computed on basis of records for Hanakoa Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanakoa Stream near Hanalei

Location.- Lat. 22°11'00", long. 159°37'35", three-quarters of a mile upstream from mouth and 7/8 miles west of Hanalei. Altitude of gage, 470 feet (by barometer).

Drainage area.- 1.1 square miles.

Records available.- December 1931 to June 1944.

Average discharge.- 12 years (1932-44), 3.59 million gallons a day (5.55 second-feet).

Extremes.- Maximum discharge during year, 256 million gallons a day (396 second-feet) Feb. 20 (gage height, 4.02 feet), from rating curve extended above 30 million gallons a day; minimum, 0.28 million gallons a day (0.43 second-foot) Nov. 7.
1931-44: Maximum discharge, 569 million gallons a day (880 second-feet) June 10, 1938 (gage height, 5.51 feet), from rating curve extended above 30 million gallons a day; minimum, 0.17 million gallons a day (0.26 second-foot) Mar. 21, 22, 1934.

Remarks.- Records fair except those for period of no gage-height record, which are poor. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.9	0.10	1.2	2.35	1.7	14.2
1.0	.47	1.3	3.9	1.9	22
1.05	.79	1.4	5.8	2.1	31.5
1.1	1.20	1.5	8.2	2.4	49

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	0.92	0.72	1.30	0.40	0.79	1.4	0.43	2.95	14.6	0.47	0.40
2	3.65	1.98	1.25	.79	.35	.65	2.2	.43	1.83	27.5	3.7	.36
3	1.40	.87	.94	.53	.35	.59	2.0	.43	23	7.8	12.2	.40
4	1.17	.53	.65	.47	.32	1.36	1.0	.43	11.2	3.3	7.2	.40
5	4.0	.47	.59	.47	.32	5.3	.80	.40	5.5	2.5	1.60	.40
6	1.02	.43	.59	.47	.32	20	15	.43	17.4	1.71	1.20	.36
7	9.2	.92	.53	.47	.28	2.75	2.0	.47	7.5	1.50	1.11	.35
8	9.7	.79	.47	.47	.32	22.5	1.0	.40	13.1	1.20	.79	.52
9	1.50	1.19	.47	.47	.56	3.7	.80	.76	19.5	1.20	.72	.40
10	1.11	1.60	.53	.47	.40	1.96	.70	.47	4.1	1.02	.72	.43
11	.87	6.3	.65	.53	1.42	1.40	3.5	10.2	2.65	1.02	.65	.72
12	.72	1.02	.65	.43	3.35	1.02	1.5	1.59	1.96	.87	.59	.47
13	.94	.65	.59	.40	1.44	.87	1.0	1.20	1.60	.79	.79	.43
14	.87	.59	.47	.40	.72	1.02	.87	.94	1.40	.79	.94	.58
15	2.55	.55	.47	.43	.87	.86	6.8	.65	1.20	.79	.59	.72
16	1.40	.65	.43	.43	2.3	.76	1.96	.53	18.2	.87	.72	.40
17	1.02	.53	.43	.72	1.11	.90	1.20	1.36	20.5	1.20	.59	.53
18	.94	.47	1.38	.79	.65	1.1	.94	.79	3.36	.94	.53	.40
19	.94	.47	1.60	.53	5.9	.80	.79	.59	3.05	.72	.72	.36
20	.65	.47	1.96	.40	1.30	.66	.72	40	11.4	.65	1.28	.36
21	.79	.53	1.02	.40	1.59	.60	.65	5.5	2.35	2.1	3.2	.32
22	.65	6.8	.65	.36	2.0	.52	.59	7.3	2.45	1.40	.79	.32
23	.59	1.30	.53	.36	.87	.48	.59	5.9	2.2	.79	.65	.36
24	.53	.72	.47	.54	1.02	.49	.59	5.0	1.96	.65	1.19	.36
25	.47	.55	.47	.65	1.20	.52	.59	1.96	1.83	.65	.99	.40
26	.47	.98	.47	.47	.94	45	.53	7.0	7.0	.65	.53	.43
27	.47	2.65	.47	.43	.65	40	.72	3.1	2.35	.59	.47	.47
28	.47	1.97	.53	.53	.65	7.2	.65	1.60	1.40	.59	.43	.87
29	.47	1.71	.53	.79	.79	3.0	.53	19.1	1.20	.53	.53	.59
30	.43	1.60	.76	.59	1.80	2.0	.47	-	1.30	.53	.43	8.0
31	.43	.94	-	.47	-	1.6	.47	-	1.71	-	.40	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	9.7	0.43	1.83	2.83	56.6	174
August	6.8	.43	1.33	2.06	41.4	127
September	1.96	.43	.709	1.10	21.3	65
October	1.30	.36	.534	.826	16.6	51
November	5.9	.28	1.14	1.76	34.2	105
December	45	.48	5.50	8.51	170	523
Calendar year 1943	52	.28	3.16	4.89	1,150	3,540
January	15	.47	1.70	2.63	52.6	161
February	40	.40	4.10	6.34	119	365
March	23	1.20	6.36	9.84	197	605
April	27.5	.53	2.65	4.10	79.4	244
May	12.2	.40	1.51	2.34	46.7	143
June	8.0	.32	.707	1.09	21.2	65
Fiscal year 1943-44	45	.28	2.34	3.62	856	2,630

Note.- No gage-height record Dec. 15 to Jan. 13; discharge computed on basis of records for Hanakapiai Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kalalau Stream near Hanalei

Location.- Lat. 22°09'50", long. 159°38'15", 2 miles upstream from mouth and 9 miles southwest of Hanalei. Altitude of gage, 960 feet (by barometer).

Drainage area.- 1.6 square miles.

Records available.- November 1931 to June 1944.

Average discharge.- 12 years (1932-44), 4.37 million gallons a day (6.76 second-feet).

Extremes.- Maximum discharge during year, 74 million gallons a day (114 second-feet) Feb. 20 (gage height, 2.43 feet), from rating curve extended above 18 million gallons a day; minimum, 2.2 million gallons a day (3.4 second-feet) Feb. 1-9.
1931-44: Maximum discharge, 338 million gallons a day (523 second-feet) Nov. 27, 1939 (gage height, 3.76 feet), from rating curve extended above 18 million gallons a day; minimum, 1.9 million gallons a day (2.9 second-feet) Dec. 10, 11, 1933.

Remarks.- Records fair except those for July 13 to Aug. 13, which are poor. No diversions.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	3.9	3.45	3.2	2.7	2.5	2.6	2.2	6.9	3.65	2.7	2.6
2	4.3	4.2	3.75	3.2	2.7	2.5	2.6	2.2	5.2	6.9	2.9	2.6
3	4.1	4.2	3.6	3.2	2.7	2.6	2.6	2.2	18.7	4.7	3.05	2.6
4	4.1	3.9	3.46	3.05	2.7	2.6	2.6	2.2	14.5	3.75	2.9	2.6
5	4.3	3.0	3.45	3.05	2.7	3.2	2.6	2.2	9.3	3.3	2.7	2.7
6	4.1	3.9	3.45	3.05	2.7	4.6	4.5	2.2	14.5	3.2	2.7	2.7
7	4.8	3.9	3.46	3.05	2.7	3.05	2.9	2.2	12.4	3.05	2.7	2.7
8	5.3	3.9	3.45	2.9	2.7	3.2	2.7	2.2	12.3	2.9	2.6	2.7
9	4.3	3.9	3.45	2.9	2.7	4.0	2.6	2.3	30	2.8	2.6	2.7
10	4.1	3.9	3.45	2.9	2.7	2.9	2.5	2.3	10.2	2.8	2.6	2.8
11	4.1	4.4	3.45	2.8	2.7	2.7	2.9	4.4	6.7	2.8	2.6	2.8
12	4.1	4.0	3.45	2.8	2.7	2.6	2.7	2.9	5.3	2.8	2.6	2.7
13	4.1	3.8	3.46	2.8	2.7	2.5	2.5	2.5	4.5	2.8	2.6	2.7
14	4.1	3,75	3.45	2.8	2.7	2.5	2.5	2.4	3.96	2.8	2.5	2.7
15	4.4	3.75	3.3	2.8	2.7	2.5	4.9	2.3	3.45	2.8	2.5	2.7
16	4.3	3.75	3.3	2.8	2.7	2.5	3.6	2.3	8.6	2.8	2.5	2.7
17	4.0	3.6	3.3	2.8	2.7	2.5	2.9	2.6	13.2	2.8	2.5	2.7
18	4.0	3.6	3.45	2.8	2.7	2.4	2.7	2.6	7.0	2.8	2.5	2.7
19	3.9	3.6	3.45	2.8	2.6	2.4	2.6	2.4	6.0	2.7	2.5	2.7
20	3.9	3.6	3.45	2.8	2.6	2.4	2.5	17.0	10.2	2.6	2.5	2.7
21	3.9	3.6	3.45	2.8	2.6	2.4	2.4	6.2	6.0	2.6	2.5	2.7
22	3.9	4.8	3.45	2.8	2.6	2.4	2.3	5.3	5.3	2.6	2.5	2.7
23	3.9	3.6	3.45	2.8	2.6	2.4	2.3	5.6	4.7	2.6	2.5	2.7
24	3.9	3.45	3.45	2.8	2.6	2.4	2.3	5.1	4.3	2.6	2.6	2.8
25	3.9	3.45	3.45	2.8	2.6	2.4	2.3	3.6	4.1	2.6	2.6	2.8
26	3.8	3.46	3.45	2.8	2.6	5.4	2.3	9.2	6.9	2.6	2.6	2.8
27	3.8	3.75	3.45	2.8	2.6	6.0	2.3	8.2	6.1	2.6	2.6	2.8
28	3.8	3.75	3.3	2.8	2.6	3.95	2.3	4.7	4.3	2.6	2.6	2.8
29	3.8	3.6	3.3	2.8	2.5	3.05	2.3	11.4	3.6	2.7	2.6	2.8
30	3.8	3.6	3.2	2.7	2.6	2.8	2.3	-	3.45	2.7	2.6	3.05
31	3.8	3.46	-	2.7	-	2.7	2.3	-	3.2	-	2.6	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.3	3.8	4.10	6.34	127	390
August	4.6	3.45	3.80	5.88	118	361
September	3.75	3.2	3.43	5.31	103	316
October	3.2	2.7	2.87	4.44	89.1	273
November	2.7	2.5	2.65	4.10	79.6	244
December	8.2	2.4	3.13	4.84	97.0	298
Calendar year 1943	100	2.4	4.81	7.44	1,760	5,390
January	4.9	2.3	2.68	4.15	83.2	255
February	17.0	2.2	4.24	6.56	123	377
March	30	3.2	8.22	12.7	255	782
April	6.9	2.6	3.03	4.69	91.0	279
May	3.05	2.5	2.61	4.04	81.0	249
June	3.05	2.6	2.72	4.21	81.8	251
Fiscal year 1943-44	30	2.2	3.63	5.62	1,330	4,080

Note.- No gage-height record July 13 to Aug. 13, Nov. 4-24; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Right Branch of North Fork Kaukonahua Stream near Wahiawa

Location.- Concrete weir control, lat. 21°31'15", long. 157°56'55", 200 upstream from intake of Wahiawa Water Co.'s tunnel, which is just downstream from confluence of Right and Left Branches of North Fork Kaukonahua Stream, and 8 miles northeast of Wahiawa. Altitude of gage, 1,200 feet (from topographic map).

Drainage area.- 1.2 square miles.

Records available.- May 1913 to January 1933, February 1934 to June 1944.

Average discharge.- 25 years (1915-24, 1926-32, 1934-44), 7.62 million gallons a day (12.0 second-feet).

Extremes.- Maximum discharge during year, 527 million gallons a day (815 second-feet) Feb. 27 (gage height, 6.55 feet), from rating curve extended above 40 million gallons a day by test on model of station site; minimum, 0.24 million gallons a day (0.37 second-foot) Feb. 17.
1913-44: Maximum discharge, 1,500 million gallons a day (2,320 second-feet) Aug. 12, 1940; minimum, 0.09 million gallons a day (0.15 second-foot) Mar. 22, 1926.

Remarks.- Records good except those below 3 million gallons a day, which are fair, and those for period of no gage-height record, which are poor. No diversions above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

2.5	0.10	2.9	2.85	3.4	16.0
2.6	.30	3.0	4.5	3.6	24.5
2.7	.80	3.1	6.6	3.9	42
2.8	1.63	3.2	9.2		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.3	2.35	6.4	4.7	1.38	3.55	1.46	0.28	5.4	17	1.38	2.1
2	21	4.6	14.3	1.75	1.22	3.25	2.75	.30	2.35	45	1.22	2.5
3	8.5	14.5	4.2	1.22	1.22	6.1	1.42	1.29	24	13	2.45	3.25
4	13.2	28.5	3.5	4.7	1.38	5.2	1.38	.40	9.6	5.0	1.55	2.25
5	14.6	11.9	4.7	1.81	12.4	8.6	1.05	.30	3.75	3.5	1.37	5.0
6	8.4	5.5	4.0	1.13	1.63	9.1	4.2	.28	7.6	2.8	14.4	4.3
7	10.2	6.6	2.85	1.05	1.38	6.2	1.05	.51	9.9	2.1	11.0	7.7
8	19.1	3.7	4.4	12.9	1.13	17.8	.75	.45	9.1	1.8	3.9	9.6
9	5.8	3.8	2.6	8.2	1.05	2.4	.70	.28	3.0	1.6	20.5	3.3
10	4.7	11.9	2.5	2.35	1.13	1.55	.65	.26	2.4	1.5	11.9	2.5
11	4.0	24	2.25	3.45	.88	1.30	.65	.39	1.9	1.4	5.5	2.0
12	15.9	6.0	2.0	1.75	.97	1.05	1.06	.71	1.5	1.3	6.8	2.15
13	31	4.3	1.87	1.38	.75	.88	.65	.30	1.3	1.3	11.0	3.95
14	6.6	3.85	1.63	1.22	.75	.80	.55	.30	1.1	3.5	5.6	2.1
15	5.6	4.7	1.63	1.88	.70	.80	.55	.26	1.0	9.0	3.7	8.3
16	4.5	8.1	1.55	1.30	.65	4.8	.50	.26	.9	13	3.35	5.7
17	4.0	3.35	1.38	1.67	.65	1.05	.50	.27	1.1	6.5	2.6	2.6
18	6.9	2.85	1.68	2.8	.60	.75	.45	3.4	.9	4.5	23	3.1
19	3.85	2.6	1.86	1.06	2.1	.65	.45	.55	.8	10	19.9	2.0
20	3.96	2.35	1.98	.88	.70	.60	.45	.40	3.5	4.0	26.5	6.0
21	3.0	5.2	1.30	21.5	.60	.55	.45	3.15	1.0	3.0	9.4	3.0
22	5.5	5.5	1.13	31.5	.60	.55	.40	.65	.8	6.0	5.6	14.5
23	10.3	2.6	1.05	10.2	.55	.50	.35	.98	.7	2.5	4.5	5.1
24	3.2	2.25	.88	3.2	.50	.65	.35	.55	.6	2.0	4.0	2.85
25	2.75	2.0	2.15	2.35	.45	3.35	.30	.30	.5	1.9	3.5	4.7
26	2.6	2.1	1.05	2.0	.45	1.32	.30	.30	.5	1.9	3.2	3.5
27	24	2.0	1.10	5.5	.45	17.9	.30	45	.4	2.6	4.9	3.2
28	3.9	2.0	9.7	7.6	.40	5.8	.30	19.4	.4	5.1	3.2	8.5
29	3.0	15.5	5.6	2.3	.40	1.78	.30	22	3.0	2.15	5.7	5.7
30	2.75	32.5	1.55	1.63	1.84	1.06	.28	-	20	1.63	3.1	8.6
31	2.5	8.5	-	1.46	-	1.05	.28	-	14	-	2.35	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	31	2.5	8.57	13.3	266	815
August	32.5	2.0	7.60	11.8	236	723
September	14.3	.88	3.09	4.78	92.8	285
October	31.5	.88	4.72	7.30	146	449
November	12.4	.40	1.30	2.01	38.9	119
December	17.9	.50	3.58	5.54	111	340
Calendar year 1943	40	.40	5.65	8.74	2,060	6,320
January	4.2	.28	.801	1.24	24.8	76
February	45	.26	3.57	5.52	104	318
March	24	.4	4.30	6.65	133	409
April	45	1.3	5.89	9.11	177	542
May	26.5	1.22	7.32	11.3	227	697
June	14.5	2.0	4.67	7.23	140	430
Fiscal year 1943-44	45	.26	4.63	7.16	1,700	5,200

Note.- No gage-height record Mar. 9 to Apr. 27; discharge computed on basis of records for Left Branch of North Fork Kaukonahua Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Left Branch of North Fork Kaukonahua Stream near Wahiawa

Location.- Columbus control, lat. 21°31'10", long. 157°56'55", 140 feet upstream from intake of Wahiawa Water Co.'s tunnel, which is just downstream from confluence of Right and Left Branches of North Fork Kaukonahua Stream, and 8 miles northeast of Wahiawa. Altitude of gage, 1,200 feet (from topographic map).
Drainage area.- 1.5 square miles.
Records available.- May 1913 to June 1944.
Average discharge.- 27 years (1915-24, 1926-44), 11.2 million gallons a day (17.3 second-feet).
Extremes.- Maximum discharge during year, 507 million gallons a day (784 second-feet) Dec. 8 (gage height, 5.24 feet), from rating curve extended above 43 million gallons a day by test on model of station site; minimum, 0.19 million gallons a day (0.29 second-foot) Feb. 17.
1913-44: Maximum discharge, 5,400 million gallons a day (8,360 second-feet) Jan. 1, 1933 (gage height, 11.7 feet, from floodmark on well), from rating curve extended above 15 million gallons a day; minimum, 0.08 million gallons a day (0.12 second-foot) Mar. 2, 13, 1941.
Remarks.- Records good except those for period of no gage-height record, which are poor. No diversions above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.5	0.31	2.0	3.1	2.6	17.4
1.6	.56	2.1	4.3	2.8	27.5
1.7	.93	2.2	5.9	3.0	42
1.8	1.45	2.3	7.9	3.3	74
1.9	2.15	2.4	10.4		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.2	3.1	e.3	6.5	2.1	11.7	2.65	0.26	a10	30	1.94	3.35
2	44	7.1	22.5	4.2	1.87	6.1	3.1	.30	a4.0	82	1.73	3.9
3	11.9	13.6	5.7	2.1	1.94	9.8	2.25	1.01	a50	23.5	2.75	5.0
4	25.5	53	4.5	9.3	2.25	9.8	2.55	.42	a20	7.6	1.94	3.55
5	40 -	10.0	5.7	2.8	10.5	12.9	2.15	.26	a6.5	5.2	1.94	4.3
6	16.2	10.8	5.0	1.87	2.2	17.6	5.2	.30	a13	4.1	7.6	6.0
7	23.5	12.8	3.6	2.2	1.94	5.8	1.56	.99	a17	3.9	13.1	8.6
8	28	5.3	4.7	14.5	1.66	25.5	1.24	.60	a15	3.0	3.25	12.6
9	9.6	6.2	3.2	9.9	1.52	3.5	1.14	.28	5.2	2.6	26	4.6
10	7.9	15.9	3.2	3.6	2.3	2.6	1.03	.24	3.0	2.35	22	3.45
11	6.7	23	2.7	8.3	1.59	2.1	2.15	.36	2.6	2.0	9.2	2.9
12	20	7.4	2.6	3.1	1.45	1.80	1.85	.44	2.25	1.80	14.5	2.9
13	44	5.3	2.45	2.25	1.19	1.59	1.03	.36	1.94	1.80	24	11.7
14	9.4	4.6	2.25	1.94	1.19	1.52	.86	.42	1.73	5.8	10.7	4.1
15	7.9	6.0	2.1	4.2	1.14	1.52	.74	.28	1.52	13.8	6.9	7.4
16	6.7	25.5	2.1	2.65	.98	14.7	.71	.24	1.40	19.6	6.5	19.4
17	7.0	4.8	2.0	3.45	.93	1.88	.63	.36	1.78	9.8	4.1	10.9
18	18.3	3.8	2.2	4.7	.89	1.40	.56	5.9	1.40	6.7	46	6.5
19	7.0	3.45	2.85	1.73	5.1	1.24	.54	.69	1.24	16.2	49	3.95
20	7.8	3.1	3.25	1.45	1.27	1.14	.51	.39	5.6	6.0	55	10.8
21	4.9	9.0	1.80	14.4	.93	.94	.48	5.0	1.48	4.7	17.8	8.0
22	10.1	7.4	1.66	22	.98	.82	.44	.96	1.09	9.9	8.7	31.5
23	17.2	4.0	1.40	7.8	.74	.78	.41	a1.7	1.03	3.45	6.9	8.4
24	5.3	2.9	1.35	2.9	.67	.86	.38	a.8	.89	2.9	6.0	5.4
25	4.5	2.7	3.55	2.6	.60	4.3	.36	a.4	.74	2.8	4.9	10.3
26	4.2	2.8	1.45	2.35	.56	1.88	.34	a.3	.74	2.8	4.5	6.7
27	13.6	2.55	4.8	7.7	.51	39.5	.31	a80	.67	3.15	8.4	7.1
28	4.3	3.0	23.5	14.7	.48	9.9	.30	a35	.56	3.95	4.7	21.5
29	3.7	37.5	11.8	2.25	.48	3.05	.31	a40	5.4	2.35	13.0	16.7
30	4.2	54	2.7	2.45	11.8	1.94	.30	-	37	2.6	5.2	25
31	3.2	9.8	-	2.1	-	1.83	.28	-	26	-	3.95	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	44	3.2	14.0	21.7	435	1,330
August	54	2.55	11.6	17.9	360	1,110
September	23.5	1.35	4.83	7.47	145	445
October	22	1.45	5.55	8.59	172	528
November	11.8	.48	2.06	3.19	61.8	190
December	39.5	.78	6.45	9.98	200	614
Calendar year 1943	68	.48	8.40	13.0	3,070	9,410
January	3.1	.28	1.17	1.81	36.4	112
February	80	.24	6.15	9.52	178	547
March	50	.56	7.77	12.0	241	739
April	82	1.80	9.54	14.8	286	879
May	55	1.73	12.7	19.6	392	1,200
June	31.5	2.9	9.21	14.2	276	848
Fiscal year 1943-44	.82	.24	7.61	11.8	2,780	8,540

a No gage-height record; discharge computed on basis of records for Right Branch of North Fork Kaukonahua Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Puhawai Stream at Lualualei, near Waianae

Location.- Parshall flumes, lat. 21°28'10", long. 158°08'00", in Lualualei Valley, 5 miles northeast of Waianae. Altitude of gage, 600 feet (from topographic map).
Drainage area.- 0.6 square mile.
Records available.- September 1930 to October 1944 (discontinued).
Average discharge.- 12 years (1931-43), 0.246 million gallons a day (0.381 second-foot).
Extremes.- Maximum discharge during period, 5.9 million gallons a day (9.1 second-feet) Feb. 29, Mar. 6, 8 (gage height, 2.55 feet), from rating curve extended above 3.2 million gallons a day by test on model of station site; no flow many times.
1930-44: Maximum discharge, 862 million gallons a day (1,330 second-feet) Oct. 22, 1939 (gage height, 2.63 feet for 6-inch flume and 6.54 feet for 4-foot flume), from rating curves extended above 3.2 and 1.0 million gallons a day, respectively, by test on model of station site; no flow during dry weather.
Remarks.- Records good. Continuous rainfall records are obtained at station.

Discharge, in million gallons a day, 1943-44

1943-44

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.04	0.03	0.06	0.04	0.05	0.04	0.06	0.01	2.25	-	0.02	0.04
2	.04	.04	.06	.04	.05	.04	.06	.01	.73	-	.02	.04
3	.04	.04	.04	.05	.05	.04	.06	.01	3.05	-	.02	.03
4	.06	.05	.04	.07	.05	.04	.06	.02	3.3	-	.02	.02
5	.04	.05	.04	.06	.04	.04	.06	.02	3.0	-	.02	.03
6	.03	.06	.04	.02	.04	.04	.06	.02	2.5	-	.02	.03
7	.08	.06	.04	.02	.04	.04	.03	.02	4.4	-	.02	.04
8	.10	.06	.04	.02	.05	.06	.02	.02	5.0	-	.02	.07
9	.08	.06	.04	.02	.06	.05	.02	.06	2.35	-	.02	.02
10	.06	.05	.04	.02	.06	.05	.04	.05	1.28	-	.02	0
11	.06	.06	.04	.03	.05	.04	.08	.10	.72	-	.03	0
12	.06	.05	.04	.03	.05	.04	.09	.04	.59	-	.03	.03
13	.06	.05	.04	.02	.06	.04	.08	.03	.41	-	.03	2.55
14	.06	.06	.04	.03	.06	.04	.08	.07	.31	-	.03	3.7
16	.06	.06	.04	.03	.05	.04	.08	.05	.26	-	.04	2.45
16	.06	.05	.04	.03	.05	.04	.08	.03	.25	-	.04	1.47
17	.06	.04	.03	.03	.05	.05	.08	.06	.23	-	.04	.48
18	.08	.04	.04	.03	.04	.06	.04	.05	.19	-	.04	.70
19	.10	.04	.04	.03	.05	.07	.03	.03	.28	-	.04	.26
20	.10	.04	.04	.03	.04	.07	.03	.36	.46	-	.04	.02
21	.04	.04	.04	.03	.05	.07	.03	.20	.28	-	.04	.01
22	.03	.06	.04	.03	.05	.06	.03	.21	.23	-	.04	.02
23	.03	.04	.04	.02	.05	.06	.03	.18	.21	-	.05	.01
24	.03	.05	.04	.02	.05	.07	.03	.09	.15	-	.04	.03
25	.03	.04	.04	.02	.04	.07	.04	.06	.13	-	.04	.01
26	.03	.05	.05	.02	.04	.07	.06	.56	-	-	.04	.01
27	.03	.06	.06	.02	.04	.10	.05	.60	-	0.02	.04	.05
28	.03	.06	.06	.08	.04	.10	.02	.20	-	.02	.04	.07
29	.03	.05	.06	.06	.04	.08	.01	1.84	-	.02	.04	.01
30	.03	.06	.04	.05	.04	.05	.01	-	-	.02	.04	.07
31	.03	.05	-	.05	-	.06	.02	-	-	-	.03	-

1944

Day	July	Aug.	Sept.	Oct.	Day	July	Aug.	Sept.	Oct.	Day	July	Aug.	Sept.	Oct.
1	0.25	0.02	0	0	11	0.02	0	0	-	21	0	0	0.08	-
2	.01	.02	0	0	12	.01	0	0	-	22	0	0	.02	-
3	0	.01	0	0	13	0	0	0	-	23	0	0	.02	-
4	.02	.01	0	0	14	0	0	0	-	24	0	0	.02	-
5	.02	.01	0	0	15	0	0	0	-	25	0	0	.02	-
6	.02	0	0	0	16	0	0	0	-	26	0	0	.02	-
7	.02	0	0	0	17	0	0	0	-	27	0	0	.02	-
8	.01	0	0	0	18	0	0	0	-	28	0	0	.01	-
9	.01	0	0	0	19	0	0	0	-	29	0	0	0	-
10	.02	0	0	-	20	0	0	0	-	30	0	0	0	-
										31	.01	0	-	-

Monthly discharge, in second-feet, 1943-44

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July 1943	0.10	0.03	0.052	0.080	1.61	4.9
August	.06	.03	.050	.077	1.56	4.8
September	.06	.03	.043	.066	1.30	4.0
October	.08	.02	.034	.053	1.05	3.2
November	.06	.04	.048	.074	1.43	4.4
December	.10	.04	.056	.087	1.73	5.3
Calendar year 1943	4.0	.02	.166	.257	60.6	185
January 1944	.09	.01	.047	.073	1.47	4.5
February	1.84	.01	.172	.266	5.00	15
March 1-25	5.0	.13	1.30	2.01	32.6	100
April	-	-	-	-	-	-
May	.05	.02	.032	.050	1.00	3.1
June	3.7	0	.409	.633	12.3	38
Fiscal year	-	-	-	-	-	-
July 1944	.25	0	.014	.022	.42	1.3
August	.02	0	.002	.003	.07	.2
September	.08	0	.007	.011	.21	.6
October 1-9	0	0	0	0	0	0

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Waiawa, near Pearl City

Location.- Sharp-crested weir, lat. 21°23'40", long. 157°59'10", at rear of Oahu Sugar Co.'s pumping plant 9, on right bank of stream, 0.7 mile west of Pearl City and 9.8 miles northwest of Honolulu.

Records available.- March 1931 to June 1934, July 1937 to June 1944.

Average discharge.- 10 years (1931-34, 1937-44), 12.2 million gallons a day (18.9 second-feet).

Extremes.- Maximum daily discharge during year, 13.2 million gallons a day (20.4 second-feet) Mar. 3-16; minimum daily, 6.3 million gallons a day (9.8 second-feet) June 23, 27, 30.
1931-34, 1937-44: Maximum daily discharge, 17 million gallons a day (26 second-feet) Mar. 15-17, 1932, Mar. 3, 4, 8, 1933; minimum daily, 6.0 million gallons a day (9.3 second-feet) June 18-20, 1941.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Oahu Sugar Co.'s pump 9 diverts about 3 million gallons a day at times when water is needed for irrigation of sugarcane. Surface runoff from floods not included in figures of discharge given below.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.7	9.0	8.3	12	12.0	11.7	12.4	11.7	12.8	12	8.5	6.8
2	8.7	9.0	8.3	12	12.0	11.7	12.4	11.3	12.8	12	7.0	6.8
3	8.7	9.0	8.3	12	12.0	11.7	12.4	10.0	13.2	12	7.0	8.2
4	8.7	9.0	8.3	12	12.0	11.7	12.4	10.3	13.2	12	7.0	10
5	10	9.0	8.3	12	12.0	12.0	12.4	10.6	13.2	12	7.0	8.0
6	9.0	9.0	8.3	12	12.0	12.0	12.4	11.7	13.2	12	8.4	6.6
7	9.0	9.0	8.3	12	12.0	12.0	12.0	11.7	13.2	12	11	6.6
8	9.0	9.0	8.3	12	12.0	12.0	12.4	11.7	13.2	12	9.2	6.6
9	9.0	9.0	8.3	12	12.0	11.7	12.4	11.7	13.2	12	11	6.6
10	9.0	9.0	8.3	12.0	12.0	11.7	12.4	11.7	13.2	12	9.4	8.0
11	9.0	9.0	9.6	12.0	12.0	11.7	12.0	11.7	13.2	12	7.0	10.6
12	9.0	9.0	10.6	12.8	12.0	11.7	11.7	11.7	13.2	12	7.0	7.4
13	9.0	8.7	8.3	12.4	12.0	11.7	11.7	11.7	13.2	11	9.0	6.6
14	9.0	7.7	8.3	12.4	12.0	11.7	11.7	12.0	13.2	11	11	6.6
15	10	7.7	8.3	12.4	12.4	11.7	11.7	12.0	13.2	11	8.8	6.6
16	9.0	7.7	8.3	12.4	12.4	11.7	11.7	12.0	13.2	11	7.0	6.6
17	9.0	7.7	8.3	12.4	12.0	11.7	11.7	12.4	13	11	7.0	7.4
18	9.0	8.3	8.3	12.4	11.7	12.0	11.7	12.4	13	11	7.0	10.3
19	9.0	8.7	8.3	12.0	11.7	12.0	11.7	12.4	13	8.7	7.0	7.4
20	9.0	8.3	8.3	12.0	11.7	12.0	11.7	12.4	12	8.0	8.4	6.6
21	9.0	8.3	8.3	12.0	12.0	12.0	11.7	12.4	12	7.4	10	6.6
22	9.0	8.3	8.3	11.7	12.0	12.0	11.7	12.4	12	7.4	8.2	6.8
23	9.0	8.3	8.3	12.0	11.7	11.7	12.0	12.4	12	7.4	7.0	6.3
24	9.0	8.3	9.0	12.0	11.7	11.7	11.7	12.4	12	7.4	7.0	7.4
25	9.0	8.3	12	12.0	11.7	12.0	11.7	12.4	12	7.4	6.8	10.3
26	9.0	8.3	12	12.0	11.7	12.0	11.3	12.4	12	7.4	6.8	7.1
27	9.0	8.3	10	12.0	11.7	12.0	11.3	12.4	12	7.4	8.4	6.3
28	9.0	8.3	12	12.0	11.7	12.0	11.3	12.4	12	7.4	10	6.6
29	9.0	9.3	12	12.0	11.7	12.0	11.3	12.8	12	9.0	8.4	6.6
30	9.0	10.0	12	12.0	11.7	12.0	11.3	-	12	11	6.8	6.3
31	9.0	8.3	-	12.0	-	12.0	11.7	-	12	-	6.8	-

Month	Million gallons a day			Seoond-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10	8.7	9.03	14.0	280	859
August	10.0	7.7	8.61	13.3	267	819
September	12	8.3	9.12	14.1	274	839
October	12.6	11.7	12.1	18.7	376	1,150
November	12.4	11.7	11.9	18.4	358	1,100
December	12.0	11.7	11.9	18.4	368	1,130
Calendar year 1943	14.2	7.7	11.6	17.9	4,220	12,970
January	12.4	11.3	11.9	18.4	368	1,130
February	12.8	10.0	11.9	18.4	345	1,060
March	13.2	12	12.7	19.6	393	1,210
April	12	7.4	10.2	15.8	306	939
May	11	6.8	8.09	12.5	251	770
June	10.6	6.3	7.35	11.4	221	677
Fiscal year 1943-44	13.2	6.3	10.4	16.1	3,810	11,680

Note.- No gage-height record July 1-6, July 9 to Aug. 11, Sept. 19 to Oct. 9, Mar. 17 to Apr. 18, Apr. 21 to June 6; discharge computed on basis of records for stations on nearby springs.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Puukapu, near Pearl City

Location.- Sharp-crested weir, lat. 21°23'20", long. 157°58'10", on left bank of stream, near levee, 0.4 mile east of Pearl City and 8.9 miles northwest of Honolulu. Datum of gage is 0.5 foot below mean sea level.

Records available.- July 1931 to June 1944.

Average discharge.- 12 years (1931-35, 1936-44), 3.96 million gallons a day (6.13 second-feet).

Extremes.- Maximum daily discharge during year, 3.8 million gallons a day (5.9 second-feet) July 1-8, 11-15, 18, 29, July 31 to Aug. 2, Mar. 20-23, 26, 27; minimum daily, 3.0 million gallons a day (4.6 second-feet) May 30 to June 2, June 7, 8.
1931-44: Maximum daily discharge, 6.0 million gallons a day (9.3 second-feet) June 4, 1932, Mar. 4, 1933; minimum daily, 1.55 million gallons a day (2.40 second-feet) July 22, 1931.

Remarks.- Records good. About a million gallons a day is occasionally diverted from stream. Surface runoff from floods not included in figures of discharge given below.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.8	3.8	3.55	3.55	3.3	3.2	3.35	3.3	3.65	3.75	3.45	3.0
2	3.8	3.8	3.45	3.55	3.2	3.2	3.45	3.3	3.65	3.75	3.35	3.0
3	3.8	3.75	3.45	3.55	3.2	3.2	3.45	3.3	3.75	3.75	3.35	3.1
4	3.8	3.75	3.45	3.55	3.2	3.2	3.35	3.3	3.65	3.75	3.35	3.1
5	3.8	3.75	3.45	3.55	3.2	3.3	3.35	3.3	3.35	3.75	3.35	3.1
6	3.8	3.75	3.45	3.55	3.3	3.3	3.35	3.35	3.55	3.75	3.35	3.1
7	3.8	3.75	3.45	3.45	3.35	3.3	3.3	3.35	3.65	3.75	3.35	3.0
8	3.8	3.75	3.45	3.55	3.3	3.3	3.35	3.35	3.75	3.75	3.35	3.0
9	3.75	3.55	3.45	3.55	3.3	3.2	3.35	3.3	3.75	3.75	3.35	3.1
10	3.75	3.65	3.45	3.55	3.3	3.2	3.35	3.3	3.75	3.75	3.3	3.1
11	3.8	3.65	3.45	3.55	3.2	3.2	3.3	3.45	3.75	3.75	3.3	3.1
12	3.8	3.55	3.45	3.55	3.2	3.2	3.3	3.3	3.75	3.65	3.3	3.1
13	3.8	3.55	3.45	3.55	3.2	3.3	3.3	3.35	3.75	3.65	3.3	3.1
14	3.8	3.55	3.45	3.55	3.2	3.3	3.3	3.45	3.75	3.65	3.3	3.1
15	3.8	3.65	3.55	3.55	3.2	3.3	3.3	3.45	3.75	3.65	3.3	3.1
16	3.75	3.55	3.55	3.45	3.2	3.3	3.35	3.45	3.75	3.65	3.2	3.1
17	3.75	3.55	3.55	3.45	3.2	3.3	3.35	3.55	3.75	3.55	3.2	3.1
18	3.8	3.55	3.55	3.45	3.2	3.3	3.3	3.55	3.75	3.55	3.1	3.1
19	3.75	3.55	3.55	3.45	3.2	3.35	3.3	3.55	3.75	3.55	3.1	3.1
20	3.75	3.55	3.55	3.35	3.2	3.35	3.3	3.55	3.8	3.55	3.1	3.1
21	3.75	3.55	3.55	3.35	3.2	3.3	3.3	3.55	3.8	3.55	3.1	3.1
22	3.75	3.55	3.55	3.35	3.2	3.3	3.3	3.55	3.8	3.45	3.1	3.1
23	3.75	3.55	3.55	3.3	3.2	3.3	3.35	3.55	3.8	3.45	3.1	3.1
24	3.75	3.55	3.55	3.3	3.2	3.3	3.35	3.55	3.75	3.45	3.1	3.1
25	3.75	3.55	3.55	3.3	3.2	3.35	3.35	3.55	3.75	3.45	3.1	3.1
26	3.75	3.55	3.55	3.3	3.2	3.35	3.3	3.55	3.8	3.45	3.1	3.1
27	3.75	3.55	3.55	3.3	3.2	3.45	3.3	3.55	3.8	3.45	3.1	3.1
28	3.75	3.55	3.55	3.3	3.2	3.35	3.3	3.55	3.75	3.45	3.1	3.1
29	3.8	3.55	3.55	3.3	3.2	3.35	3.3	3.55	3.75	3.45	3.1	3.1
30	3.75	3.55	3.55	3.3	3.2	3.35	3.3	-	3.75	3.45	3.0	3.1
31	3.8	3.55	-	3.3	-	3.35	3.3	-	3.75	-	3.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.8	3.75	3.78	5.85	117	359
August	3.8	3.55	3.62	5.60	112	344
September	3.55	3.45	3.51	5.43	105	323
October	3.55	3.3	3.44	5.32	107	327
November	3.35	3.2	3.22	4.98	96.6	297
December	3.45	3.2	3.29	5.09	102	313
Calendar year 1943	6.2	3.2	3.77	5.83	1,380	4,230
January	3.45	3.3	3.33	5.16	103	317
February	3.65	3.3	3.44	5.32	99.8	306
March	3.8	3.65	3.74	5.79	116	356
April	3.75	3.45	3.61	5.59	108	332
May	3.45	3.0	3.21	4.97	99.6	306
June	3.1	3.0	3.09	4.78	92.6	284
Fiscal year 1943-44	3.8	3.0	3.44	5.32	1,250	3,860

Note.- No gage-height record Nov. 16 to Dec. 14; discharge computed on basis of records for stations on nearby springs.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Loko Kukona, near Pearl City

Location.- Sharp-crested brass weir, lat. 21°23'30", long. 157°58'00", on left bank of stream, near levee, half a mile east of Pearl City, and 8.8 miles northwest of Honolulu. Datum of gage is 0.80 foot below mean sea level.

Records available.- June 1931 to June 1944.

Average discharge.- 12 years (1931-35, 1936-44), 2.51 million gallons a day (3.88 second-feet).

Extremes.- Maximum daily discharge during year, 2.15 million gallons a day (3.33 second-feet) Mar. 12-14; minimum daily, 1.26 million gallons a day (1.95 second-feet) May 30 to June 7, June 13-30.
1931-44: Maximum daily discharge recorded, 4.0 million gallons a day (6.2 second-feet) Mar. 21, 22, Mar. 31 to Apr. 3, 1932; minimum daily, that of May 30 to June 7, June 13-30, 1944.

Remarks.- Records good. No diversions. Surface runoff from floods not included in figures of discharge given below.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.90	1.90	1.75	1.68	1.60	1.53	1.75	1.53	1.98	1.90	1.60	1.26
2	1.82	1.90	1.75	1.75	1.60	1.53	1.75	1.53	1.90	1.90	1.60	1.26
3	1.75	1.90	1.68	1.75	1.60	1.53	1.75	1.53	1.98	1.90	1.60	1.26
4	1.75	1.90	1.68	1.75	1.60	1.53	1.75	1.53	1.98	1.90	1.60	1.26
5	1.82	1.90	1.68	1.68	1.60	1.60	1.68	1.53	1.98	1.90	1.60	1.26
6	1.82	1.90	1.68	1.68	1.60	1.60	1.68	1.53	1.98	1.90	1.60	1.26
7	1.82	1.82	1.68	1.68	1.60	1.60	1.68	1.53	1.98	1.90	1.60	1.26
8	1.82	1.82	1.68	1.68	1.60	1.60	1.68	1.53	2.05	1.90	1.60	1.32
9	1.82	1.82	1.68	1.75	1.60	1.53	1.68	1.53	1.98	1.90	1.60	1.32
10	1.82	1.82	1.68	1.75	1.60	1.53	1.68	1.53	2.05	1.90	1.60	1.32
11	1.82	1.82	1.68	1.75	1.53	1.53	1.68	1.60	2.05	1.90	1.53	1.32
12	1.82	1.75	1.68	1.75	1.53	1.60	1.60	1.60	2.15	1.90	1.53	1.32
13	1.82	1.75	1.68	1.75	1.53	1.60	1.60	1.68	2.15	1.82	1.53	1.26
14	1.82	1.75	1.68	1.75	1.53	1.53	1.60	1.75	2.15	1.82	1.46	1.26
15	1.82	1.75	1.68	1.75	1.53	1.60	1.60	1.75	2.05	1.82	1.46	1.26
16	1.82	1.75	1.68	1.68	1.53	1.60	1.68	1.75	1.90	1.82	1.53	1.26
17	1.82	1.75	1.68	1.75	1.53	1.50	1.75	1.75	1.90	1.82	1.53	1.26
18	1.90	1.75	1.68	1.68	1.53	1.60	1.75	1.75	1.90	1.82	1.53	1.26
19	1.90	1.75	1.75	1.68	1.53	1.60	1.75	1.75	1.90	1.82	1.46	1.26
20	1.90	1.75	1.75	1.68	1.53	1.68	1.75	1.75	1.90	1.75	1.46	1.26
21	1.90	1.75	1.68	1.68	1.53	1.60	1.75	1.75	1.90	1.68	1.53	1.26
22	1.90	1.75	1.68	1.68	1.53	1.60	1.75	1.75	1.90	1.60	1.53	1.26
23	1.90	1.68	1.68	1.68	1.53	1.60	1.75	1.82	1.90	1.60	1.53	1.26
24	1.90	1.68	1.68	1.68	1.53	1.68	1.75	1.82	1.90	1.60	1.46	1.26
25	1.90	1.68	1.68	1.68	1.53	1.68	1.75	1.82	1.90	1.60	1.46	1.26
26	1.90	1.75	1.75	1.68	1.53	1.68	1.75	1.90	1.90	1.60	1.46	1.26
27	1.90	1.75	1.75	1.68	1.53	1.75	1.75	1.90	1.90	1.60	1.40	1.26
28	1.90	1.75	1.75	1.68	1.53	1.75	1.75	1.90	1.90	1.60	1.32	1.26
29	1.90	1.75	1.75	1.68	1.53	1.75	1.68	1.90	1.90	1.60	1.32	1.26
30	1.90	1.75	1.75	1.60	1.53	1.75	1.50	-	1.90	1.60	1.26	1.26
31	1.90	1.75	-	1.60	-	1.75	1.60	-	1.90	-	1.26	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.90	1.75	1.85	2.86	57.5	176
August	1.90	1.68	1.78	2.75	55.3	170
September	1.75	1.68	1.70	2.63	51.0	157
October	1.75	1.60	1.70	2.63	52.7	162
November	1.60	1.53	1.55	2.40	46.6	143
December	1.75	1.53	1.62	2.51	50.1	154
Calendar year 1943	2.4	1.53	1.85	2.86	677	2,080
January	1.75	1.60	1.70	2.63	52.7	162
February	1.90	1.53	1.59	2.61	49.0	150
March	2.15	1.90	1.96	3.03	60.8	187
April	1.90	1.60	1.78	2.75	53.4	164
May	1.60	1.26	1.50	2.32	46.6	143
June	1.32	1.26	1.27	1.96	38.1	117
Fiscal year 1943-44	2.15	1.26	1.68	2.60	614	1,880

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Kaluaoopu, near Pearl City

Location.- Lat. 21°23'30", long. 157°57'55", on right bank of stream, a fifth of a mile below Kamehameha Highway, 0.7 mile east of Pearl City, and 8.7 miles northwest of Honolulu.

Records available.- August 1931 to June 1937, November 1943 to June 1944.

Extremes.- Maximum daily discharge during period November 1943 to June 1944, 41 million gallons a day (63 second-feet) many times; minimum daily, 14.5 million gallons a day (22.4 second-feet) Feb. 18.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Hawaiian Electric Co.'s pump diverts water when needed by Honolulu Plantation Co. for irrigation of sugarcane.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1					-	23	39	15.0	38.5	38.5	31	27
2					-	23	39	17.8	38.5	41	30	26
3					-	23	24	17.4	41	41	30	26
4					-	23	23	15.1	41	41	33	35
5					-	40	24.5	15.5	f38.5	41	37	24
6					-	23.5	27	29.5	37	28	30	29.5
7					-	23.5	31	19.5	37	41	38	26
8					-	38.5	25	17.2	37	31	27	24
9					-	23	39	16.1	37	41	26	27
10					-	23	25	16.2	37	24.5	28	28
11					-	23	22	21	f37	21.5	26	41
12					-	40	22	14.6	37	19.0	26	26
13					-	23	21	29.5	41	19.4	33	27
14					-	21	21	17.9	41	19.0	36	25
15					-	22	20	16.6	41	27	35	24
16					-	22	37	16.0	41	35.5	32	25
17					-	22	22	16.4	41	27	24	26
18					-	22	23	14.5	41	27	21	39
19					-	39	22	16.6	38.5	27	26	23
20					-	29	22	33.5	38.5	27	26	25
21					38.5	20	21	19.8	38.5	29	38	25
22					23.5	22	38	24	41	26	27	27
23					22	25	24	23.5	41	35	27	23
24					23.5	20	28	38.5	41	28	23	24
25					22	39	28	26	35.5	25	25	39
26					21	40	23	32.5	38.5	26	30	26
27					21.5	40	24	37	41	24	29	24
28					39	27	24	28.5	35.5	30	27	24
29					23.5	28	16.4	38.5	28.5	31	26	25
30					21.5	26	26	-	29.5	38	25	f25
31					-	25	17.4	-	41	-	25	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November 21-30	39	21	25.6	39.6	256	786
December	40	20	27.0	41.8	838	2,570
Calendar year	-	-	-	-	-	-
January	39	16.4	25.8	39.9	798	2,450
February	38.5	14.5	22.2	34.3	644	1,980
March	41	28.5	38.4	59.4	1,190	3,650
April	41	19.0	30.3	46.9	909	2,790
May	38	21	28.9	44.7	896	2,750
June	41	23	27.2	42.1	816	2,500
The period	-	-	-	-	-	19,480

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Dec. 10 to Jan. 4, Jan. 7-28, Mar. 6-10, Apr. 20 to June 5, June 12-27; discharge computed on basis of pumpage by Hawaiian Electric Co.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hawaiian Electric Co. tunnel at Waiau, near Pearl City

Location.- 160° V-notched brass weir, lat. 21°23'35", long. 157°58'00", on left bank of ditch at Hawaiian Electric Co.'s power plant, 0.6 mile east of Pearl City and 8.8 miles northwest of Honolulu. Datum of gage is 0.64 foot above mean sea level.

Records available.- October 1939 to June 1944.

Extremes.- Maximum discharge during year, 25.5 million gallons a day (39.5 second-feet) Aug. 15 (gage height, 2.15 feet); minimum, 6.2 million gallons a day (9.6 second-feet) June 18.

1939-44: Maximum discharge, 37.5 million gallons a day (58.0 second-feet) Jan. 13, 1943 (gage height, 2.32 feet); minimum, 2.05 million gallons a day (3.17 second-feet) June 27, 1940.

Remarks.- Records good. Flow regulated by valves. Water is used for cooling condensers of power plant and afterwards for irrigation of sugarcane.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.1	9.8	12.4	11.5	11.5	11.0	-	9.5	10.8	11.8	10.8	9.0
2	10.5	11.1	12.1	11.5	11.8	10.7	-	10.2	11.2	11.9	10.5	8.6
3	10.2	10.6	11.9	11.5	10.9	11.2	-	9.8	11.1	12.1	10.4	8.3
4	10.5	10.2	11.7	11.4	11.5	11.3	-	9.5	12.2	11.8	10.1	9.0
5	10.2	10.2	10.5	10.9	12.0	11.6	-	9.8	11.8	11.0	9.6	8.6
6	10.5	10.2	12.0	10.6	11.7	11.9	-	10.8	12.0	11.3	10.2	8.0
7	10.2	10.2	11.7	10.3	11.1	11.2	-	9.8	12.8	10.9	9.9	9.6
8	10.5	9.5	12.3	10.5	11.3	10.7	-	9.8	11.8	11.8	11.0	9.4
9	9.5	10.5	11.5	10.2	12.1	11.4	-	9.8	12.3	11.1	10.7	9.3
10	9.5	9.5	12.0	10.2	11.7	12.1	-	9.5	10.2	11.7	11.4	10.0
11	9.6	9.4	13.9	10.1	11.4	12.3	-	10.2	10.8	12.0	11.7	10.6
12	9.8	9.8	11.9	9.8	12.0	11.7	-	9.2	11.0	11.8	11.8	10.8
13	9.5	11.2	13.4	9.8	11.2	11.8	-	10.5	12.8	11.8	12.3	10.2
14	10.2	11.2	12.2	9.8	11.1	11.9	-	9.5	12.7	11.8	11.7	10.4
15	10.2	11.2	12.2	9.5	10.6	11.6	-	9.5	12.3	12.2	11.6	10.3
16	10.9	11.3	11.6	11.7	10.8	11.3	-	9.5	11.9	11.9	11.8	10.5
17	10.8	10.8	12.2	11.6	11.3	11.6	-	9.8	10.8	11.9	11.3	10.6
18	10.7	11.9	11.9	11.6	11.4	12.6	-	9.5	10.9	11.9	11.7	10.3
19	10.7	11.1	11.5	13.2	12.1	12.5	-	9.8	9.5	12.2	11.6	10.3
20	11.1	11.5	11.6	12.8	12.5	12.7	-	10.2	11.0	12.7	11.6	10.5
21	10.9	11.1	11.6	12.1	11.0	-	-	9.7	11.4	11.8	11.6	10.6
22	11.3	10.0	11.4	11.3	11.6	-	-	10.6	11.6	12.4	11.5	10.9
23	10.5	10.4	12.2	12.2	11.2	-	-	9.0	11.4	12.3	10.8	10.4
24	11.6	10.8	11.1	11.5	11.2	-	-	10.8	10.9	12.3	10.9	10.9
25	9.8	10.9	10.9	11.7	11.3	-	-	10.5	11.0	12.3	10.9	10.8
26	11.9	10.9	11.7	11.6	11.0	-	-	11.1	10.7	12.0	11.0	10.7
27	10.5	11.6	11.7	11.4	10.9	-	-	11.2	11.7	12.6	9.7	10.8
28	10.4	11.3	11.2	11.8	12.0	-	-	11.7	11.6	11.6	9.5	10.8
29	11.0	12.0	11.5	12.0	12.3	-	9.2	12.2	11.7	11.1	9.7	11.0
30	11.1	12.4	11.7	11.0	11.6	-	10.5	-	11.8	10.0	8.7	11.1
31	11.3	12.6	-	11.3	-	-	9.8	-	11.8	-	8.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.9	9.5	10.5	16.2	326	1,000
August	12.6	9.4	10.8	16.7	335	1,030
September	13.9	10.5	11.8	18.3	356	1,090
October	13.2	9.5	11.2	17.3	346	1,060
November	12.5	10.6	11.5	17.8	344	1,060
December 1-20	12.7	10.7	11.7	18.1	233	715
Calendar year	-	-	-	-	-	-
January	-	-	-	-	-	-
February	12.2	9.0	10.1	15.6	293	899
March	12.8	9.5	11.5	17.8	356	1,090
April	12.7	10.0	11.8	18.3	354	1,090
May	12.3	8.7	10.8	16.7	335	1,030
June	11.1	8.0	10.1	15.6	302	928
Fiscal year	-	-	-	-	-	-

Note.- Data insufficient to compute discharge for days for which no figures are given.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Waiau, near Pearl City

Location.- Lat. 21°23'25", long. 157°57'40", on left bank of stream, a fifth of a mile below Kamehameha Highway, 0.8 mile east of Pearl City, and 8.5 miles northwest of Honolulu.

Records available.- May 1931 to February 1939, December 1942 to June 1944.

Extremes.- Maximum daily discharge during year, 5.3 million gallons a day (8.2 second-feet) Mar. 25 to Apr. 9; minimum daily, 3.0 million gallons a day (4.6 second-feet) Sept. 10-13.
1931-39, 1942-44: Maximum daily discharge, 10.1 million gallons a day (15.6 second-feet) May 24, Dec. 18, 19, 1937; minimum daily, that of Sept. 10-13, 1943.

Remarks.- Records fair. Water is used for cooling condensers of Hawaiian Electric Co. power plant and afterwards for irrigation of sugarcane.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	4.5	3.3	3.3	3.3	3.7	4.5	4.1	4.9	5.3	4.5	4.1
2	4.5	4.1	3.3	3.7	3.3	3.7	4.5	4.1	4.9	5.3	4.9	4.1
3	4.5	4.5	3.3	3.3	3.3	3.7	4.5	4.5	4.9	5.3	4.5	4.1
4	4.5	4.1	3.3	3.3	3.3	3.3	4.1	4.5	4.9	5.3	4.5	4.1
5	4.9	4.1	3.0	3.3	3.3	3.7	4.1	4.5	4.9	5.3	4.5	4.1
6	4.5	4.1	3.3	3.3	3.3	3.7	4.5	4.5	4.9	5.3	4.5	4.1
7	4.9	4.1	3.3	3.3	3.3	3.7	4.5	4.5	4.9	5.3	4.5	4.1
8	4.5	4.1	3.3	3.3	3.3	3.7	4.5	4.5	4.9	5.3	4.3	4.1
9	4.5	4.1	3.3	3.3	3.3	3.7	4.5	4.5	4.9	5.3	4.5	4.1
10	4.9	3.7	3.0	3.3	3.3	3.7	4.5	4.1	4.9	4.9	4.1	4.1
11	4.5	3.7	3.0	3.3	3.3	3.7	4.5	4.5	4.9	4.9	4.1	4.1
12	4.5	3.7	3.0	3.3	3.3	3.7	4.5	4.5	4.9	4.9	4.1	4.1
13	4.5	3.3	3.0	3.3	3.3	3.7	4.5	4.5	4.9	4.9	4.1	4.1
14	4.5	3.3	3.3	3.3	3.3	3.7	4.5	4.5	4.9	4.9	4.1	4.1
15	4.5	3.3	3.3	3.3	3.3	3.7	4.5	4.5	4.9	4.9	4.1	4.1
16	4.5	3.3	3.3	3.3	3.7	3.7	4.5	4.5	4.9	4.9	4.1	4.1
17	4.5	3.3	3.3	3.3	4.1	4.1	4.5	4.5	4.9	4.9	4.1	4.1
18	4.5	3.3	3.3	3.3	3.7	4.1	4.5	4.5	4.9	4.9	4.1	4.1
19	4.5	3.3	3.3	3.7	4.1	4.1	4.5	4.5	4.9	4.9	4.1	4.1
20	4.5	3.3	3.3	3.3	4.1	4.1	4.5	4.5	4.9	4.5	4.1	4.1
21	4.5	3.7	3.3	3.3	4.1	4.5	4.5	4.5	4.9	4.5	4.1	4.1
22	4.5	3.3	3.3	3.3	4.1	4.5	4.5	4.5	4.9	4.5	4.1	4.1
23	4.5	3.7	3.3	3.3	4.1	4.5	4.5	4.5	4.9	4.5	4.1	4.1
24	4.5	3.3	3.3	3.3	4.1	4.5	4.5	4.9	4.9	4.9	4.1	4.1
25	4.5	3.3	3.3	3.3	4.1	4.5	4.5	4.9	5.3	4.9	4.1	4.1
26	4.5	3.3	3.3	3.3	4.1	4.5	4.5	4.9	5.3	4.9	4.1	4.1
27	4.1	3.3	3.3	3.3	4.1	4.5	4.1	4.9	5.3	4.9	4.1	4.1
28	4.1	3.3	3.3	3.3	3.7	4.5	4.1	4.9	5.3	4.5	4.1	4.1
29	4.1	3.3	3.3	3.3	4.1	4.5	4.5	4.9	5.3	4.5	4.1	4.1
30	4.1	3.3	3.3	3.3	4.1	4.5	4.1	-	5.3	4.5	4.1	4.1
31	4.1	3.3	-	3.3	-	4.5	4.5	-	5.3	-	4.1	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	4.9	4.1	4.47	6.92	139	426
August	4.5	3.3	3.62	5.60	112	345
September	3.3	3.0	3.25	5.03	97.5	299
October	3.7	3.3	3.33	5.15	103	316
November	4.1	3.3	3.65	5.66	110	337
December	4.5	3.3	4.02	6.22	125	385
Calendar year	-	-	-	-	-	-
January	4.5	4.1	4.44	6.87	138	422
February	4.9	4.1	4.54	7.02	132	404
March	5.3	4.9	4.99	7.72	155	475
April	5.3	4.5	4.93	7.63	148	454
May	4.9	4.1	4.23	6.54	131	402
June	4.1	4.1	4.10	6.34	123	377
Fiscal year 1943-44	5.3	3.0	4.13	6.39	1,510	4,640

Note.- Doubtful gage-height record Nov. 9-30 and no gage-height record Dec. 17-20, Dec. 24 to Jan. 26, May 19 to June 7; discharge computed on basis of 3 discharge measurements.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Kalauao, near Aiea

Location.- Sharp-crested weir, lat. 21°23'00", long. 157°56'50", on left bank of stream, a quarter of a mile downstream from Honolulu Plantation pump 6, 1.1 miles west of Aiea, and 7.6 miles northwest of Honolulu. Datum of gage is 1.10 feet below mean sea level.

Records available.- March 1931 to June 1944.

Average discharge.- 13 years, 16.4 million gallons a day (25.4 second-feet), unadjusted for pumpage.

Extremes.- Maximum daily discharge during year, 18.4 million gallons a day (28.5 second-feet) July 5, 18; minimum daily, 10.7 million gallons a day (16.6 second-feet) Jan. 20, 21, May 24, 27, 30, 31, June 1, 3.
1931-44: Maximum daily discharge, 25 million gallons a day (39 second-feet) Feb. 17-26, 1938; minimum daily, 8.7 million gallons a day (13.5 second-feet) Aug. 23, 1934.

Remarks.- Records good. When water is needed for irrigation of sugarcane, Honolulu Plantation pump 6 diverts about 7 million gallons a day as a high-lift pump or 9 million gallons a day as a low-lift pump. Surface runoff from floods not included in figures of discharge given below.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.2	18.0	14.2	12.3	13.8	11.3	14.9	12.7	16.0	15.6	11.0	10.7
2	14.2	17.2	13.8	15.3	13.8	14.2	15.3	12.0	16.0	15.6	14.2	13.1
3	15.3	17.6	12.7	16.0	13.8	11.3	12.3	12.3	15.6	15.6	11.0	10.7
4	18.0	17.6	14.5	13.1	13.8	14.2	12.0	11.7	15.6	13.4	14.2	13.1
5	18.4	15.3	16.4	14.2	13.4	14.5	12.0	11.7	15.6	15.6	12.0	11.3
6	14.9	17.6	13.1	14.2	13.8	13.4	14.9	14.9	16.0	13.4	14.2	13.8
7	15.3	14.2	14.5	14.2	14.9	14.9	14.5	12.3	16.0	15.6	14.5	11.3
8	14.5	16.8	16.0	15.6	13.8	14.9	12.3	12.7	15.6	14.5	12.0	11.3
9	14.2	14.5	16.0	13.8	13.4	12.3	14.9	12.7	15.6	15.6	12.0	11.3
10	14.2	14.2	14.9	15.6	13.4	14.9	12.0	13.4	15.6	15.6	11.3	11.7
11	16.0	13.8	14.9	14.2	13.1	12.7	12.0	12.7	16.0	13.1	14.9	13.8
12	14.5	13.8	16.4	14.2	13.4	14.9	12.0	13.4	16.0	14.9	12.0	12.0
13	15.6	13.1	16.4	13.8	13.1	13.4	14.2	14.9	15.6	13.1	11.3	11.3
14	14.5	13.1	16.0	14.2	14.5	14.9	11.3	12.7	15.6	14.9	14.5	11.0
15	14.5	16.8	16.0	14.5	13.1	11.7	11.3	12.7	15.6	15.3	11.3	11.0
16	14.2	13.4	15.6	15.6	13.1	11.3	14.5	14.9	15.6	15.3	11.3	11.3
17	16.8	14.5	13.8	15.6	11.7	14.5	11.0	13.1	15.6	15.6	11.3	11.3
18	18.4	14.2	14.2	14.2	11.3	11.3	11.3	13.1	15.6	16.3	11.7	13.4
19	14.9	13.8	15.6	14.2	14.2	14.5	13.8	12.7	15.6	12.7	13.4	11.3
20	14.5	14.5	16.0	14.2	15.1	13.1	10.7	14.9	15.6	14.9	11.7	11.3
21	14.2	16.4	13.8	14.2	14.5	14.9	10.7	13.1	16.0	14.9	13.8	11.7
22	14.9	16.4	15.6	13.8	12.7	12.3	12.3	13.8	15.6	14.9	11.3	12.0
23	14.9	15.3	13.8	12.7	13.4	14.9	14.2	14.9	16.4	14.9	11.3	12.0
24	14.9	16.0	15.3	14.9	14.2	12.3	14.9	15.3	16.0	14.9	10.7	13.8
25	18.0	13.8	13.1	14.2	12.7	14.9	12.0	15.3	16.6	11.3	11.3	11.7
26	14.5	13.8	15.6	13.4	12.0	15.3	12.3	15.3	16.6	14.9	11.3	11.0
27	14.5	14.2	14.5	15.8	13.1	14.2	12.7	16.6	15.6	11.3	10.7	11.3
28	14.5	14.5	15.3	13.8	14.9	14.9	14.9	13.1	13.4	14.9	13.8	11.3
29	14.2	16.0	13.1	13.8	12.3	12.7	11.7	16.0	14.9	12.0	11.0	11.0
30	14.2	13.8	14.9	13.8	14.5	12.3	14.9	-	13.1	14.9	10.7	11.0
31	14.2	14.5	-	14.9	-	14.9	12.0	-	15.6	-	10.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	18.4	14.2	15.2	23.5	470	1,440
August	18.0	13.1	15.1	23.4	469	1,440
September	16.4	12.7	14.9	23.1	446	1,370
October	16.0	12.3	14.3	22.1	442	1,360
November	14.9	11.3	13.4	20.7	403	1,240
December	15.3	11.3	13.6	21.0	422	1,290
Calendar year 1943	19.1	11.3	15.5	24.0	5,660	17,380
January	15.3	10.7	12.9	20.0	400	1,230
February	16.0	11.7	13.6	21.0	394	1,210
March	16.4	13.1	15.6	24.1	482	1,480
April	15.6	11.3	14.5	22.4	434	1,330
May	14.9	10.7	12.1	18.7	376	1,160
June	13.8	10.7	11.8	18.3	353	1,080
Fiscal year 1943-44	18.4	10.7	13.9	21.5	5,090	15,630

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Moanalua Stream near Honolulu

Location.- Concrete weir control, lat. 21°22'50", long. 157°52'20", 5 miles upstream from mouth and 5 miles north of Honolulu post office. Datum of gage is 339.12 feet above mean sea level.

Drainage area.- 2.8 square miles.

Records available.- June 1926 to June 1944.

Average discharge.- 18 years, 2.48 million gallons a day (3.84 second-feet).

Extremes.- Maximum discharge during year, 131 million gallons a day (203 second-feet) Dec. 5 (gage height, 2.89 feet); no flow for several periods during year.
1926-44: Maximum discharge, 2,980 million gallons a day (4,580 second-feet) Nov. 18, 1930 (gage height, 11.58 feet), from rating curve extended above 71 million gallons a day by test on model of station site; no flow during dry weather.

Remarks.- Records good. Continuous records of rainfall are obtained at station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.6	1.66	1.1	8.8
.2	.07	.7	2.55	1.2	11.1
.3	.22	.8	3.75	1.4	17.0
.4	.51	.9	5.1	1.6	24.5
.5	.99	1.0	6.8	1.8	34.5

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.25		0			0			0.03	14.7		
2	3.45		.12			0			0	29.5		
3	.38		0			0			12.0	17.1		
4	1.44		0			0			8.2	5.0		
5	11.2		0			1.81			2.85	2.35		
6	3.95		0			6.2			1.03	1.19		
7	1.65		0			.01			7.2	.48		
8	3.3		0			.16			6.2	.16		
9	1.18		0			.06			2.3	.06		
10	.48		0			0			.88	.02		
11	.18		0			0			.27	.01		
12	.02		0			0			.07	.01		
13	2.25		0			0			.02	0		
14	.32		0			0			.01	0		
15	.05		0			0			.01	0		
16	.01		0			2.45			0	0		
17	0		0			.13			0	0		
18	0		0			0			0	0		
19	0		0			0			0	0		
20	0		0			0			0	0		
21	0		0			0			0	0		
22	0		0			0			0	0		
23	0		0			0			0	0		
24	0		0			0			0	0		
25	0		0			0			0	0		
26	0		0			0			0	0		
27	0		0			5.4			0	0		
28	0		0			6.8			0	0		
29	0		0			.68			0	0		
30	0		0			.06			1.34	0		
31	0		-			.01			6.8	-		

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.2	0	1.04	1.61	32.1	99
August	0	0	0	0	0	0
September	.12	0	.004	.006	.12	.4
October	0	0	0	0	0	0
November	0	0	0	0	0	0
December	6.8	0	.767	1.19	23.8	73
Calendar year 1943	81	0	1.58	2.44	576	1,770
January	0	0	0	0	0	0
February	0	0	0	0	0	0
March	12.0	0	1.59	2.46	49.2	151
April	29.5	0	2.35	3.64	70.6	217
May	0	0	0	0	0	0
June	0	0	0	0	0	0
Fiscal year 1943-44	29.5	0	.480	.743	176	540

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kalihi Stream near Honolulu

Location.- Lat. 21°22'00", long. 157°50'45", at Kioi Pool, three-eighths of a mile upstream from Catholic Orphanage and 4.1 miles north of Honolulu post office. Datum of gage is 464.40 feet above mean sea level.

Drainage area.- 2.7 square miles.

Records available.- September 1913 to June 1944.

Average discharge.- 27 years (1916-20, 1921-44), 5.02 million gallons a day (7.77 second-feet).

Extremes.- Maximum discharge during year, 116 million gallons a day (179 second-feet) Mar. 6 (gage height, 4.31 feet); minimum, 0.17 million gallons a day (0.26 second-foot) Nov. 19.
1913-44: Maximum discharge, 10,900 million gallons a day (16,900 second-feet) Nov. 18, 1930 (gage height, 13.81 feet), from rating curve extended above 220 million gallons a day by test on model of station site; minimum, 0.06 million gallons a day (0.09 second-foot) Oct. 22, 1933.

Remarks.- Records good except those for periods of faulty, or no gage-height record, which are poor. Water for domestic use diverted from stream above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.7	0.10	1.1	3.5	2.0	22
.8	.60	1.2	5.1	2.3	30.5
.9	1.28	1.4	8.7	2.6	40
1.0	2.2	1.7	14.8		

Discharge, in million gallons, fiscal year July1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.2	1.37	1.64	1.5	0.60	1.05	1.73	0.60	3.25	20	1.28	0.84
2	3.9	1.37	3.85	1.0	.60	.73	1.73	.72	1.82	38	1.21	.84
3	2.1	1.46	1.73	1.1	.60	.84	1.64	.84	7.3	16.8	1.21	.84
4	7.2	2.1	1.37	2.0	.60	1.53	1.64	.60	6.1	8.3	1.28	.84
5	7.6	1.46	1.37	1.0	1.17	5.7	1.46	.60	3.35	6.0	1.21	.94
6	5.8	1.37	1.21	.9	.66	4.1	1.64	.60	5.5	4.6	2.35	.78
7	5.5	1.70	1.13	1.0	.60	3.75	1.37	.63	12.3	4.0	2.4	1.47
8	6.1	1.28	1.05	1.5	.60	4.7	1.21	.47	10.2	3.35	1.46	1.32
9	3.5	1.28	1.05	1.2	.60	2.6	1.21	.53	5.1	2.85	1.37	.90
10	2.7	1.64	1.05	1.1	.60	1.64	1.13	.53	3.5	2.85	1.46	1.21
11	2.35	1.82	.97	1.3	.60	1.46	1.37	.91	2.85	2.6	1.21	.90
12	4.1	1.37	.97	1.0	.60	1.28	1.21	.72	2.45	2.35	1.13	.84
13	4.8	1.28	.97	.9	.53	1.28	1.05	.66	2.2	2.1	1.55	3.0
14	2.6	1.28	.97	.8	.53	1.21	.97	.72	2.0	2.2	1.21	1.7
15	2.2	1.55	.97	.9	.53	2.7	.97	.78	2.05	2.35	1.05	2.8
16	2.1	1.28	.90	1.3	.47	9.0	.97	.72	1.73	2.6	1.05	4.0
17	2.0	1.21	.90	1.1	.49	3.25	.90	.66	1.75	2.6	.97	8.0
18	2.2	1.13	1.21	.8	.53	1.91	.90	1.05	1.73	2.1	1.31	2.5
19	2.0	1.05	1.13	.8	.41	1.64	.84	.84	1.46	3.1	1.73	1.0
20	1.82	1.05	.97	.8	.47	1.46	.84	1.15	3.15	2.05	1.28	1.1
21	1.73	1.37	.90	.8	.47	1.28	.84	3.9	1.73	2.1	1.21	2.0
22	1.73	1.64	.90	.72	.47	1.21	.78	1.43	1.64	2.2	1.13	3.0
23	1.82	1.13	.90	.72	.54	1.13	.78	1.55	1.73	1.73	1.13	2.0
24	1.64	1.05	.95	.60	.36	1.21	.78	1.21	1.55	1.55	1.06	1.7
25	1.64	1.05	1.50	.60	.41	1.64	.72	.97	1.37	1.46	.97	1.6
26	1.55	.97	.97	.60	.41	1.28	.72	.97	1.21	1.46	.97	1.5
27	1.73	.97	1.0	.97	.41	14.9	.66	1.60	1.21	1.46	1.05	1.5
28	1.46	.97	1.8	1.13	.33	7.6	.66	2.65	1.21	1.37	.90	3.0
29	1.37	2.3	1.5	.84	.47	3.25	.66	3.25	3.05	1.28	.90	1.5
30	1.28	3.2	1.0	.72	1.14	2.2	.60	-	7.8	1.28	.90	2.3
31	1.28	1.46	-	.66	-	1.91	.60	-	17.9	-	.90	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	7.6	1.28	2.97	4.60	92.0	282
August	3.2	.97	1.42	2.20	44.2	136
September	3.85	.90	1.23	1.90	36.8	113
October	2.0	.60	.979	1.51	30.4	93
November	1.17	.36	.567	.877	17.0	52
December	14.9	.73	2.89	4.47	89.4	274
Calendar year 1943	69	.36	3.47	5.37	1,270	3,880
January	1.73	.60	1.05	1.62	32.6	100
February	3.9	.47	1.10	1.70	31.9	98
March	17.9	1.21	3.88	6.00	120	369
April	38	1.28	4.89	7.57	147	450
May	2.4	.90	1.25	1.93	38.8	119
June	8.0	.78	1.86	2.88	55.9	172
Fiscal year 1943-44	38	.36	2.01	3.11	736	2,260

Note.- No gage-height record Sept. 27 to Oct. 22, faulty gage-height record June 13-30; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Nuuanu Stream below reservoir 2 wasteway, near Honolulu

Location.- Sharp-crested weirs, lat. 21°20'55", long. 157°49'40", on Pali road in upper Nuuanu Valley, a quarter of a mile downstream from reservoir 2 wasteway and 3.5 miles northeast of Honolulu post office. Datum of gage is 631.71 feet above mean sea level.

Drainage area.- 3.4 square miles.

Records available.- October 1913 to June 1944.

Average discharge.- 25 years (1917-20, 1922-44), 5.49 million gallons a day (8.49 second-feet).

Extremes.- Maximum discharge during year, 34 million gallons a day (53 second-feet) Sept. 25 (gage height, 1.76 feet); minimum, 0.28 million gallons a day (0.43 second-foot) Feb. 5.
1913-44: Maximum discharge, 4,520 million gallons a day (6,990 second-feet) Jan. 16, 1921 (gage height, 8.74 feet, from floodmarks), from rating curve extended above 300 million gallons a day by test on model of station site; minimum, 0.06 million gallons a day (0.09 second-foot) Sept. 10, 11, 1925.

Remarks.- Records good except those for Apr. 21 to June 4, which are fair. Reservoirs 2, 3, and 4 (capacities, 21, 34, and 1,630 acre-feet, respectively) regulate flow. Board of Water Supply diverts ground water from tunnels in drainage area.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.30	0.7	2.1	1.2	11.6
.3	.60	.8	2.7	1.4	18.5
.4	.90	.9	4.4	1.6	27
.5	1.25	1.0	6.6	1.8	36
.6	1.65	1.1	9.0		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.2	1.49	1.49	4.6	0.51	0.51	0.84	0.54	1.48	9.5	1.2	1.1
2	3.8	1.57	2.05	2.3	.51	.45	.94	.57	.84	21	1.1	1.0
3	2.36	1.74	1.35	.75	.51	.57	.87	.63	2.4	10.8	1.1	1.0
4	4.4	3.3	1.22	1.13	.54	.60	.87	.54	2.75	5.1	1.1	1.0
5	4.6	1.61	1.22	.75	.60	.77	.87	.30	1.33	3.7	1.1	1.00
6	3.9	1.57	1.18	.66	.54	.72	.94	.33	1.46	3.2	1.9	1.00
7	3.45	1.53	1.11	.63	.51	1.92	.72	.39	5.8	2.7	2.0	1.00
8	3.45	1.45	1.11	.34	.48	2.3	.60	.36	5.2	2.5	1.9	.87
9	2.05	1.53	1.08	.78	.48	.84	.60	.36	1.85	2.4	1.8	.86
10	1.92	1.53	1.08	.69	.48	.63	.60	.36	1.33	2.3	1.7	1.07
11	1.88	1.70	1.04	.36	.48	.60	.72	.39	1.18	2.05	1.5	.90
12	2.4	1.45	1.04	.60	.48	.57	.72	.42	1.22	2.0	1.5	.94
13	4.2	1.41	1.00	.57	.48	.54	.66	.42	1.22	1.92	1.8	1.09
14	2.3	1.37	.97	.57	.45	.54	.66	.45	.90	2.15	2.0	.94
15	2.05	1.41	1.00	.63	.45	.66	.66	.51	.90	2.0	1.6	1.08
16	1.88	1.37	1.00	.63	.45	3.7	.66	.48	.97	2.35	1.4	1.00
17	1.90	1.25	1.00	.66	.45	.87	.66	.73	1.00	1.88	1.3	.97
18	1.92	1.25	1.18	.60	.45	.72	.66	.75	1.00	1.88	1.91	.90
19	1.88	1.22	1.14	.54	.51	.69	.63	.54	1.11	2.55	2.2	.87
20	1.83	1.18	1.08	.54	.45	.66	.60	.61	2.2	1.88	1.6	.90
21	1.83	1.39	1.08	.51	.45	.63	.60	1.95	1.08	2.0	1.5	1.04
22	1.92	1.53	.94	.42	.45	.60	.60	.72	.97	2.1	1.4	1.08
23	2.05	1.25	.90	.51	.45	.60	.57	.97	1.20	1.8	1.4	.90
24	1.74	1.14	12.1	.63	.45	.66	.57	.69	.97	1.7	1.4	.84
25	1.70	1.11	31.5	.66	.45	.72	.57	.60	.90	1.6	1.4	.87
26	1.74	1.08	26	.69	.42	.66	.54	.57	.87	1.6	1.4	.84
27	2.2	1.14	7.9	.75	.42	5.7	.54	.60	.84	1.6	1.5	.81
28	1.70	1.11	6.4	.63	.42	3.2	.54	.74	.84	1.5	1.3	1.11
29	1.61	1.84	5.9	.66	.42	1.14	.54	1.29	1.17	1.4	1.2	.94
30	1.57	4.6	4.2	.57	.54	.90	.54	-	6.8	1.3	1.1	1.11
31	1.53	1.49	-	.54	-	.87	.54	-	9.6	-	1.1	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	4.6	1.53	2.42	3.74	75.0	230
August	4.6	1.08	1.57	2.43	48.6	149
September	31.5	.90	4.01	6.20	120	369
October	4.6	.42	.829	1.28	25.7	79
November	.60	.42	.476	.736	14.3	44
December	5.7	.45	1.11	1.72	34.5	106
Calendar year 1943	106	.42	3.85	5.96	1,410	4,320
January	.94	.54	.665	1.03	20.6	63
February	1.95	.30	.607	.939	17.6	54
March	9.6	.84	1.98	3.06	61.4	188
April	21	1.3	3.35	5.18	100	308
May	2.2	1.1	1.50	2.32	46.4	142
June	1.11	.81	.968	1.50	29.0	89
Fiscal year 1943-44	31.5	.30	1.62	2.51	593	1,820

Note.- Faulty gage-height record Apr. 21 to June 4; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

West Branch Manoa Stream near Honolulu

Location.- Combined Parshall flume and concrete weir control, lat. 21°19'50", long. 157°48'15", 100 feet upstream from lower highway and 4 miles northeast of Honolulu post office. Datum of gage is 290.84 feet above mean sea level (Board of Water Supply bench mark).
Drainage area.- 1.1 square miles.
Records available.- August 1925 to June 1944. May 1913 to January 1921 at site 200 feet upstream.
Average discharge.- 25 years (1913-20, 1926-44), 2.81 million gallons a day (4.35 second-feet).
Extremes.- Maximum discharge during year, 69 million gallons a day (107 second-feet) Dec. 16 (gage height, 1.97 feet), from rating curve extended above 33 million gallons a day by test on model of station site; minimum, 0.22 million gallons a day (0.34 second-foot) Nov. 29, 30, Feb. 5, 6, 10, 11.
1913-21, 1925-44: Maximum gage height, 10.4 feet Jan. 16, 1921, from floodmarks, site and datum then in use (discharge, 2,100 million gallons a day or 3,250 second-feet, estimated from rating curve extended above 40 million gallons a day); minimum discharge, about 0.05 million gallons a day (0.08 second-foot) Mar. 16, 22, 1926.
Remarks.- Records good. Small quantity of water is diverted occasionally for irrigation.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in millions gallons a day)

0.1	0.25	0.6	3.5	1.1	15.0
.2	.62	.7	4.8	1.2	18.7
.3	1.11	.8	6.7	1.4	28
.4	1.78	.9	9.0		
.5	2.6	1.0	11.8		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.3	0.58	2.75	1.16	0.44	1.18	1.06	0.25	1.32	4.4	0.51	0.40
2	3.45	1.03	3.65	.67	.44	.72	1.01	.25	.72	26.5	.47	.38
3	1.54	1.40	1.58	.60	.36	1.29	.96	.40	1.20	10.2	.40	.32
4	4.5	4.3	1.11	1.86	.36	2.15	1.08	.29	1.79	3.6	.44	.40
5	4.6	1.58	1.01	.77	.79	1.54	.86	.22	1.01	2.25	.36	.32
6	3.7	1.18	.82.	.67	.36	1.35	1.05	.32	1.15	1.71	1.97	.40
7	3.65	1.69	.72	.60	.32	2.55	.82	.44	2.15	1.51	1.34	.78
8	2.95	1.01	.67	1.39	.32	1.84	.77	.32	3.65	1.18	.55	.55
9	1.78	1.01	.72	.98	.29	1.01	.72	.29	1.51	1.18	.56	.40
10	1.31	1.21	.91	.72	.29	.72	.67	.25	1.01	1.16	1.05	.40
11	1.11	1.59	.72	.91	.29	.55	.81	.25	.77	.91	.62	.36
12	1.15	1.06	.67	.77	.36	.47	.67	.32	.62	.77	.58	.32
13	2.5	1.09	.67	.58	.32	.44	.55	.36	.55	.72	1.19	.94
14	1.26	.91	.62	.58	.29	.44	.55	.36	.51	.77	2.2	.51
15	1.01	.91	.58	.72	.29	1.74	.51	.47	.47	.77	.96	1.90
16	1.07	1.04	.55	1.39	.29	10.5	.51	.40	.44	1.02	.77	1.23
17	.86	.67	.55	1.29	.25	1.78	.47	.55	.44	.86	.55	3.35
18	1.21	.62	.81	.62	.25	1.01	.44	.55	.44	.77	1.59	.96
19	.66	.58	1.08	.55	.36	.77	.44	.36	.44	2.0	1.84	.72
20	.82	.55	.77	.51	.32	.67	.40	.56	1.95	1.01	1.13	.78
21	.90	.84	.62	.55	.29	.58	.40	1.26	.62	1.18	1.08	1.17
22	.99	2.05	.55	.51	.29	.51	.36	.47	.51	2.6	.72	2.1
23	2.25	.67	.47	.47	.29	.47	.32	.58	.83	1.24	.58	1.18
24	.96	.62	.44	.40	.32	.58	.32	.47	.55	.86	.56	.86
25	.77	.58	.98	.40	.29	1.34	.32	.36	.47	.77	.51	.77
26	.84	.55	.51	.44	.25	.72	.32	.40	.44	.67	.46	.55
27	1.08	.55	.48	.80	.25	11.5	.29	.40	.40	.62	.55	.51
28	.67	.58	1.76	.87	.29	7.1	.29	.54	.40	.58	.40	1.84
29	.62	3.5	1.47	.78	.22	2.25	.29	1.48	1.36	.55	.40	1.07
30	.55	3.4	.82	.51	.98	1.51	.29	-	3.5	.51	.36	3.2
31	.55	1.51	-	.44	-	1.24	.29	-	3.05	-	.47	-

Month	Million gallons a day			Seoond-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	4.6	0.55	1.70	2.63	52.8	162
August	4.3	.55	1.25	1.93	38.9	119
September	3.65	.44	.969	1.50	29.1	89
October	1.86	.40	.758	1.17	23.5	72
November	.98	.22	.349	.540	10.5	32
December	11.5	.44	1.95	3.02	60.5	186
Calendar year 1943	59	.22	1.80	2.79	656	2,020
January	1.08	.29	.575	.890	17.8	55
February	1.48	.22	.454	.702	13.2	40
Maroh	3.65	.40	1.11	1.72	34.3	105
April	25.5	.51	2.40	3.71	71.9	221
May	2.2	.36	.812	1.26	25.2	77
June	3.35	.32	.956	1.48	28.7	88
Fiscal year 1943-44	25.5	.22	1.11	1.72	406	1,250

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Branch Manoa Stream near Honolulu

Location.- Combined Parshall flume and concrete weir control, lat. 21°19'50", long. 157°48'10", just downstream from highway bridge, 400 feet upstream from confluence with West Branch, and 4 miles northeast of Honolulu post office. Datum of gage is 294.50 feet above mean sea level (Board of Water Supply bench mark).
Drainage area.- 1.0 square mile.
Records available.- May 1913 to January 1921, August 1925 to June 1944.
Average discharge.- 25 years (1913-20, 1926-44), 3.23 million gallons a day (5.00 second-feet).
Extremes.- Maximum discharge during year, 173 million gallons a day (268 second-feet) Aug. 22 (gage height, 3.09 feet), from rating curve extended above 5.7 million gallons a day by test on model of station site; minimum, 1.10 million gallons a day (1.70 second-feet) May 30, June 1, 3, 6.
1913-21, 1925-44: Maximum gage height, 10.4 feet Jan. 16, 1921, from floodmarks, site and datum then in use (discharge, 2,000 million gallons a day or 3,090 second-feet, estimated from rating curve extended above 37 million gallons a day); minimum discharge, 0.4 million gallons a day (0.6 second-foot) June 7, 8, 1926.
Remarks.- Records fair. Board of Water Supply, at times, diverts a small amount of ground water from tunnels in drainage area.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.3	1.15	0.9	7.3
.4	1.85	1.1	11.4
.5	2.65	1.3	16.8
.6	3.55	1.6	27.5
.7	4.5	2.0	49
.8	5.7		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.8	2.5	4.4	2.6	1.64	1.90	1.93	1.29	2.5	10.1	1.29	1.15
2	5.3	2.95	5.7	2.0	1.57	1.72	1.85	1.29	1.7	31.5	1.22	1.15
3	2.65	3.65	2.9	2.05	1.64	2.45	1.85	1.36	1.84	9.7	1.22	1.10
4	7.9	5.5	2.65	3.7	1.71	5.2	2.0	1.29	2.95	3.75	1.22	1.22
5	7.0	2.65	2.65	2.0	1.92	3.15	1.78	1.29	1.71	2.85	1.22	1.15
6	5.8	2.9	2.35	1.85	1.71	2.4	1.85	1.56	2.4	2.35	2.85	1.22
7	5.6	3.45	2.35	2.0	1.64	3.85	1.64	1.50	3.15	2.15	1.99	1.67
8	4.6	2.55	2.25	2.6	1.57	3.0	1.64	1.36	4.3	1.93	1.36	1.58
9	3.3	2.65	2.35	2.25	1.57	1.85	1.57	1.36	1.93	1.93	1.36	1.22
10	3.1	2.85	2.4	2.1	1.57	1.57	1.57	1.29	1.57	2.0	2.05	1.15
11	2.9	3.3	2.15	2.35	1.57	1.50	2.0	1.3	1.50	1.71	1.43	1.22
12	3.4	2.55	2.1	1.93	1.57	1.50	1.64	1.4	1.43	1.57	1.36	1.15
13	3.6	2.55	2.0	1.85	1.57	1.43	1.50	1.4	1.43	1.50	1.67	2.75
14	2.9	2.4	1.93	1.86	1.50	1.43	1.50	1.4	1.50	1.50	1.93	1.29
15	2.85	2.5	1.93	2.0	1.57	3.15	1.43	1.6	1.50	1.57	1.43	2.45
16	2.95	2.55	1.85	2.5	1.50	14.8	1.43	1.5	1.50	1.50	1.36	3.25
17	2.75	2.4	1.78	2.3	1.50	2.65	1.43	1.8	1.43	1.50	1.29	5.4
18	2.9	2.4	2.15	1.85	1.50	2.0	1.36	1.8	1.50	1.57	2.35	1.71
19	2.65	2.35	2.25	1.85	1.57	1.78	1.36	1.4	1.50	2.1	2.55	1.36
20	2.85	2.35	2.0	1.85	1.57	1.64	1.36	1.9	3.05	1.50	1.76	1.43
21	3.05	3.0	1.93	1.85	1.57	1.57	1.36	3.5	1.43	2.1	1.71	1.83
22	3.0	7.2	1.85	1.85	1.57	1.57	1.29	1.8	1.36	3.3	1.43	2.2
23	3.5	2.4	1.85	1.78	1.57	1.57	1.29	2.0	1.87	1.64	1.29	1.64
24	2.85	2.25	1.93	1.78	1.50	1.78	1.29	1.8	1.36	1.43	1.29	1.45
25	2.65	2.25	2.75	1.71	1.50	3.35	1.29	1.4	1.29	1.43	1.22	1.43
26	2.55	2.15	2.0	1.71	1.50	1.93	1.29	1.5	1.29	1.36	1.22	1.36
27	2.75	2.15	2.1	1.85	1.50	13.8	1.29	1.5	1.22	1.36	1.38	1.36
28	2.5	2.4	3.2	2.0	1.57	5.2	1.22	2.0	1.22	1.36	1.15	2.55
29	2.5	5.9	2.8	1.93	1.50	2.65	1.29	2.7	3.1	1.29	1.15	1.85
30	2.4	4.3	1.93	1.78	1.92	2.25	1.29	-	6.3	1.29	1.10	3.15
31	2.5	2.75	-	1.71	-	2.1	1.29	-	6.3	-	1.22	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	7.9	2.4	3.58	5.54	111	340
August	7.2	2.15	3.02	4.67	93.8	288
September	5.7	1.78	2.42	3.74	72.5	222
October	3.7	1.71	2.05	3.17	63.4	195
November	1.92	1.50	1.59	2.46	47.7	146
December	14.8	1.43	3.12	4.83	96.7	297
Calendar year 1943	45	1.43	3.39	5.25	1,240	3,800
January	2.0	1.22	1.51	2.34	46.9	144
February	3.5	1.29	1.63	2.52	47.3	145
March	6.3	1.22	2.17	3.36	67.1	206
April	31.5	1.29	3.36	5.20	101	309
May	2.85	1.10	1.52	2.35	47.1	144
June	5.4	1.10	1.78	2.75	53.4	164
Fiscal year 1943-44	31.5	1.10	2.32	3.59	848	2,600

Note.- No gage-height record Feb. 11 to Mar. 2; discharge computed on basis of records for Waiomao and West Branch Manoa Streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pukele Stream near Honolulu

Location.- Concrete weir control, lat. 21°19'15", long. 157°47'10", 200 feet upstream from bridge on Palolo Belt Road, five-eighths of a mile upstream from confluence with Waiomao Stream, and 4¼ miles east of Honolulu post office. Datum of gage is 344.78 feet above mean sea level (Board of Water Supply bench mark).
Drainage area.- 1.2 square miles.
Records available.- June 1926 to June 1944. April 1912 to September 1913, above present site and just below Mahoe Springs.
Average discharge.- 18 years, 1.41 million gallons a day (2.18 second-feet).
Extremes.- Maximum discharge during year, 49 million gallons a day (76 second-feet) Apr. 2 (gage height, 2.82 feet), from rating curve extended above 15 million gallons a day by test on model of station site; minimum, 0.16 million gallons a day (0.25 second-foot) Nov. 27 to Dec. 3.
1912-13, 1926-44: Maximum discharge, 1,680 million gallons a day (2,600 second-feet) Apr. 11, 1930 (gage height, 7.75 feet, from floodmarks), from rating curve extended above 14 million gallons a day by test on model of station site; minimum, 0.09 million gallons a day (0.14 second-foot) Dec. 7-13, 20, 21, 1933.
Remarks.- Records good except those for July 5-24 and Aug. 24 to Sept. 7, which are fair, and those for periods of faulty gage-height record, which are poor. A 2-inch pipe diverts water from stream above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.0	0.08	1.4	1.76	1.8	7.4
1.1	.28	1.5	2.7	1.9	9.7
1.2	.60	1.6	3.9	2.0	12.5
1.3	1.10	1.7	5.5	2.2	19.0

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.55	0.38	0.70	0.54	0.20	0.16	0.34	0.22	0.28	3.55	0.38	0.24
2	.99	.38	1.36	.50	.20	.16	.31	.22	.24	21.5	.38	.24
3	.44	.34	.50	.50	.20	.18	.28	.22	.26	6.1	.38	.24
4	1.34	1.08	.50	.75	.20	.23	.26	.22	.28	1.85	.34	.24
5	1.30	.38	.50	.50	.18	.28	.24	.20	.28	1.30	.34	.24
6	1.28	.38	.50	.41	.18	.20	.28	.20	.28	1.17	.34	.24
7	1.19	.38	.50	.38	.18	.20	.26	.20	.54	1.17	.31	.24
8	.81	.38	.50	.41	.18	.20	.26	.20	1.54	1.10	.31	.24
9	.56	.41	.50	.44	.18	.22	.26	.20	.70	1.05	.28	.24
10	.56	.41	.44	.41	.18	.22	.24	.20	.57	1.00	.26	.24
11	.56	.41	.34	.44	.18	.24	.44	.20	.57	.80	.24	.24
12	.56	.41	.31	.44	.18	.24	.44	.20	.57	.75	.24	.24
13	.68	.41	.28	.41	.18	.24	.41	.20	.57	.70	.24	.74
14	.51	.44	.26	.38	.18	.24	.38	.20	.57	.60	.24	.28
15	.46	.44	.24	.31	.18	.24	.34	.20	.54	.57	.24	.24
16	.41	.44	.24	.28	.18	5.9	.31	.20	.50	.54	.24	.24
17	.41	.41	.22	.28	.18	.85	.28	.18	.50	.50	.24	.24
18	.41	.38	.22	.22	.18	.38	.26	.20	.47	.50	.24	.24
19	.41	.38	.26	.22	.18	.31	.26	.18	.47	.47	.24	.24
20	.38	.38	.27	.22	.18	.28	.26	.18	.69	.47	.24	.24
21	.35	.38	.20	.22	.18	.26	.26	.18	.47	.44	.24	.26
22	.35	2.2	.20	.22	.18	.24	.24	.18	.44	.44	.24	.26
23	.35	.44	.20	.22	.18	.22	.24	.20	.47	.44	.24	.26
24	.38	.44	.20	.22	.18	.20	.24	.22	.44	.41	.24	.26
25	.38	.44	.41	.22	.18	.28	.24	.22	.44	.41	.24	.26
26	.38	.44	.34	.22	.18	.38	.24	.22	.38	.41	.24	.26
27	.38	.44	.34	.20	.16	2.8	.24	.22	.38	.41	.24	.26
28	.38	.54	.70	.20	.16	2.1	.24	.22	.38	.41	.24	.26
29	.38	.75	.80	.20	.16	.57	.24	.24	.66	.41	.24	.26
30	.38	.95	.54	.20	.16	.41	.24	-	2.85	.38	.24	.26
31	.38	.47	-	.20	-	.38	.22	-	2.3	-	.24	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.34	0.35	0.577	0.893	17.9	55
August	2.2	.34	.520	.805	15.1	49
September	1.36	.20	.420	.650	12.8	39
October	.75	.20	.334	.517	10.3	32
November	.20	.16	.180	.279	5.40	17
December	5.9	.16	.606	.938	18.8	58
Calendar year 1943	82	.16	1.29	2.00	472	1,460
January	.44	.22	.282	.436	8.75	27
February	.24	.18	.204	.316	5.92	18
March	2.85	.24	.633	.979	19.6	60
April	21.5	.38	1.66	2.57	49.8	153
May	.38	.24	.270	.418	8.36	26
June	.74	.24	.265	.410	7.94	24
Fiscal year 1943-44	21.5	.16	.496	.767	181	558

Note.- Backwater from debris or aquatic vegetation July 5-24, Aug. 24 to Sept. 7. Faulty gage-height record Sept. 8 to Oct. 18, Dec. 17-27, Dec. 29 to Jan. 19; discharge computed on basis of records for Waiomao Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiomao Stream above Pukele Stream, near Honolulu

Location.- Concrete weir control, lat. 21°19'10", long. 157°46'45", 300 feet west of road, 1 mile upstream from confluence with Pukele Stream, and 5 miles east of Honolulu post office. Datum of gage is 373.49 feet above mean sea level (Board of Water Supply bench mark).

Drainage area.- 1.0 square mile.

Records available.- June 1926 to June 1944. April 1911 to December 1912 at highway bridge below present site.

Average discharge.- 18 years, 1.27 million gallons a day (1.96 second-feet).

Extremes.- Maximum discharge during year, 34 million gallons a day (53 second-feet) Apr. 2 (gage height, 2.61 feet); no flow for several periods during year.
1911-12, 1926-44: Maximum discharge, 602 million gallons a day (931 second-feet) Oct. 15, 1938 (gage height, 5.43 feet), from rating curve extended above 45 million gallons a day by test on model of station site; no flow in extremely dry weather.

Remarks.- Records excellent except those for periods of doubtful, or no gage-height record, which are fair. Board of Water Supply diverts ground water from tunnels in drainage area.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.92	0	1.4	1.15	1.9	7.2
1.0	.01	1.5	1.83	2.0	9.4
1.1	.10	1.6	2.7	2.1	12.0
1.2	.30	1.7	3.85	2.2	15.5
1.3	.63	1.8	5.3	2.4	24

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.35	0.06	a0.90	0.12		0	0.28	0	1.01	5.9	d0.06	0
2	1.59	.15	a2.0	.08		.03	.22	0	.46	21.5	d.05	0
3	.40	.48	a.60	.06		.35	.20	0	.48	6.9	d.05	0
4	1.40	1.54	a.40	.45		1.45	.20	0	1.21	2.0	d.05	0
5	2.3	.52	a.30	.20		1.03	.20	0	.78	1.15	d.05	0
6	2.55	.26	a.25	.09		1.08	.18	0	.58	.79	d.1	0
7	2.15	.33	a.20	.06		1.03	.12	0	1.81	.56	.39	0
8	1.60	.24	.18	.10		1.44	.09	0	4.3	.43	.16	.03
9	.70	.22	.18	.12		.60	.08	0	1.42	.37	.07	.06
10	.40	.28	.14	.07		.30	.07	0	.79	.46	.24	.01
11	.28	.26	.10	.14		.20	.17	0	.53	.43	.14	.01
12	.26	.22	.08	.16		.14	.24	0	.40	.30	.07	.01
13	1.19	.16	.06	.08		.10	.10	0	.30	.26	.10	1.83
14	.40	.10	.06	.05		.09	.07	0	.24	.20	.09	.58
15	.30	.10	.05	.06		1.16	.06	0	.18	.18	.05	.72
16	.24	.09	.04	.10		9.8	.06	0	.16	.16	.05	.69
17	.18	.06	.01	.32		2.95	.04	.09	.12	.18	.02	.50
18	.20	.05	.02	.10		1.26	.03	.83	.12	.16	.02	.28
19	.20	.02	.14	.06		.68	.01	.28	.12	d.30	.36	.20
20	.16	.01	.06	.03		.46	.01	.20	1.41	d.20	.14	.20
21	.18	.02	.03	.03		.33	.01	1.93	.50	d.30	.20	.43
22	.18	3.05	.01	.07		.26	0	.63	.28	d.50	.08	.46
23	.24	.60	.01	.02		.20	0	1.20	.66	d.20	.07	.28
24	.14	a.30	0	.01		.22	0	.63	.33	d.10	.04	.18
25	.10	a.20	.14	0		.74	0	.37	.22	d.08	.02	.12
26	.08	a.20	.05	0		.46	0	.30	.16	d.07	.01	.09
27	.14	a.20	.01	.01		4.8	0	.46	.10	d.06	.01	.08
28	.09	a.25	.24	.10		2.9	0	.33	.08	d.06	0	.40
29	.06	a.80	.50	.12		.89	0	.62	1.59	d.06	0	.30
30	.06	a1.3	.16	.06		.50	0	-	5.2	d.06	0	.52
31	.06	a.60	-	.01		.37	0	-	4.5	-	0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	2.55	0.06	0.586	0.907	18.2	56
August	3.05	.01	.409	.633	12.7	39
September	2.0	0	.230	.356	6.90	21
October	.45	0	.093	.144	2.88	8.8
November	0	0	0	0	0	0
December	9.8	0	1.16	1.79	35.8	110
Calendar year 1943	70	0	1.02	1.58	370	1,140
January	.28	0	.079	.122	2.44	7.5
February	1.93	0	.271	.419	7.57	24
March	5.2	.08	.969	1.50	30.0	92
April	21.5	.06	1.46	2.26	43.9	135
May	.39	0	.087	.135	2.69	8.3
June	1.83	0	.266	.412	7.98	24
Fiscal year 1943-44	21.5	0	.468	.724	171	526

a No gage-height record; discharge computed on basis of records for Pukele Stream.
d Doubtful gage-height record; discharge computed on basis of estimated gage heights.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Haiku Stream near Heeia

Location.- Lat. 21°24'40", long. 157°49'40", on left bank of stream, 1.7 miles west of Kaneohe post office and 1.8 miles southwest of Heeia. Datum of gage is 271.9 feet above mean sea level (levels by City and County of Honolulu).

Drainage area.- 1.0 square mile.

Records available.- January 1914 to October 1919, July 1939 to June 1944.

Extremes.- Maximum discharge during year, 141 million gallons a day (218 second-feet) Dec. 5 (gage height, 2.93 feet), from rating curve extended above 13 million gallons a day by test on model of station site; minimum, 0.65 million gallons a day (1.01 second-feet) Jan. 19.
1914-19, 1939-44: Maximum discharge, 952 million gallons a day (1,470 second-feet) Jan. 13, 1943 (gage height, 4.99 feet), from rating curve extended above 13 million gallons a day by test on model of station site; minimum, that of Jan. 19, 1944.

Remarks.- Records good. Suburban Water System diverts ground water from tunnel in drainage area.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.0	0.53	1.4	3.05
1.1	.92	1.5	4.2
1.2	1.45	1.6	5.9
1.3	2.1	1.7	9.2

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.71	1.29	1.40	0.97	0.27	0.88	0.80	0.80	1.71	4.1	0.84	0.76
2	1.84	1.40	1.64	.97	1.03	.84	.80	.80	1.13	2.05	.84	.76
3	1.84	1.29	1.18	1.08	.92	.92	.80	.80	6.5	1.45	.84	.76
4	2.0	1.29	1.13	1.08	1.08	.97	.80	.80	3.65	1.18	.88	.76
5	1.84	1.45	1.13	.97	1.03	7.5	.80	.76	2.15	1.08	.88	.76
6	1.52	1.13	1.24	.97	.97	2.35	.80	.80	1.80	1.03	.88	.76
7	1.29	1.24	1.34	.97	.92	1.31	.76	.88	2.55	.97	.88	.76
8	1.34	1.24	1.03	.97	.92	1.08	.76	.80	2.4	.97	.88	.76
9	1.34	1.29	.97	.97	.92	.92	.72	.80	1.52	.97	.88	.76
10	1.29	1.29	.97	.92	.92	.84	.72	.80	1.24	.92	.88	.72
11	1.08	1.40	.97	.97	.92	.80	.72	.92	1.13	.92	.88	.72
12	1.08	1.40	.92	.97	.92	.80	.82	1.00	1.13	.92	.88	.72
13	1.13	1.18	.92	.97	.88	.80	.72	.72	1.03	.92	.88	.80
14	1.13	1.24	.92	.97	.88	.80	.72	.76	.97	.92	.84	.76
15	1.29	1.18	.92	.97	.88	.84	.72	.76	.97	.92	.84	.76
16	1.40	1.18	.92	.97	.88	2.65	.72	.76	.92	.92	.84	.76
17	1.78	1.18	.92	.97	.88	1.34	.72	.76	.92	.92	.80	.76
18	1.58	1.18	.97	.97	.88	1.03	.69	.80	.97	.88	.80	.76
19	1.58	1.18	.92	.92	.88	.92	.69	.76	.97	.88	.80	.76
20	1.58	1.18	.92	.92	.84	.88	.69	.87	1.21	.84	.80	.76
21	1.58	1.18	.97	.92	.84	.84	.69	1.34	1.03	.84	.80	.80
22	1.58	1.24	.92	.92	.84	.84	.76	1.03	1.03	.84	.80	.80
23	1.58	1.18	.92	.92	.84	.84	.76	.92	.97	.80	.76	.80
24	1.24	1.24	.92	.92	.84	.84	.80	.84	.92	.80	.76	.76
25	1.24	1.18	.97	.92	.84	.84	.80	.84	.92	.80	.76	.76
26	1.52	1.13	.92	.92	.84	.84	.80	.84	.92	.80	.76	.76
27	1.45	1.18	.97	.97	.84	1.40	.80	1.37	.88	.80	.76	.76
28	1.29	1.18	1.03	1.08	.84	1.34	.76	1.40	.88	.84	.80	.76
29	1.29	1.29	1.03	1.08	.84	.92	.72	1.91	1.06	.84	.80	.76
30	1.29	1.40	.97	1.03	.92	.84	.76	-	2.1	.84	.80	.76
31	1.29	1.29	-	.97	-	.80	.80	-	2.65	-	.80	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	2.0	1.08	1.45	2.24	45.0	138
August	1.45	1.13	1.25	1.93	38.7	119
September	1.64	.92	1.03	1.59	31.0	95
October	1.08	.92	.972	1.50	30.1	92
November	1.08	.84	.900	1.39	27.0	83
December	7.5	.80	1.25	1.93	38.8	119
Calendar year 1943	34.5	.80	2.03	3.14	741	2,270
January	.82	.69	.755	1.17	23.4	72
February	1.91	.72	.919	1.42	26.6	82
March	6.5	.88	1.56	2.41	48.2	148
April	4.1	.80	1.07	1.66	32.0	98
May	.88	.76	.827	1.28	25.6	79
June	.80	.72	.761	1.18	22.8	70
Fiscal year 1943-44	7.5	.69	1.06	1.64	389	1,200

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Iolekaa Stream mauka near Heeia

Location.- Columbus type concrete control, lat. 21°26'30", long. 157°49'50", 0.7 mile upstream from confluence with Haiku Stream, 1.5 miles southwest of Heeia, and 1.8 miles west of Kaneohe post office. Datum of gage is 320 feet ±1.0 foot above mean sea level.

Drainage area.- 0.3 square mile.

Records available.- March 1940 to June 1944.

Extremes.- Not determined owing to faulty gage-height record.
1940-44: Maximum discharge, 69 million gallons a day (107 second-feet) Oct. 22, 1941 (gage height, 2.40 feet), from rating curve extended above 1.0 million gallons a day by rating for Columbus type control and test on model of station site; minimum daily, 0.20 million gallons a day (0.31 second-foot) Dec. 20, 1943, and many days from Apr. 29 to June 1, 1944.

Remarks.- Records poor prior to Mar. 4, good thereafter. No diversions above station.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.39	0.29	0.31	0.29	0.28	0.31	0.21	0.25	0.50	1.26	0.20	0.20
2	.41	.29	.37	.29	.28	.29	.21	.25	.37	.69	.20	.21
3	.37	.29	.28	.31	.28	.37	.22	.25	1.28	.43	.20	.21
4	.43	.31	.28	.33	.29	.35	.26	.25	1.15	.37	.20	.21
5	.56	.31	.28	.29	.29	.38	.29	.24	.68	.33	.20	.21
6	.45	.31	.28	.29	.29	e.31	.33	.24	.54	.31	.20	.22
7	.43	.29	.28	.29	.29	e.29	.33	.24	.89	.29	.21	.21
8	.43	.29	.28	.29	.29	e.31	.33	.24	.67	.29	.20	.21
9	.39	.31	.28	.29	.28	e.29	.31	.24	.43	.29	.20	.21
10	.37	.31	.28	.29	.28	e.28	.31	.24	.35	.28	.20	.21
11	.37	.28	.28	.29	.28	e.27	.29	.32	.31	.28	.20	.21
12	.35	.28	.29	.28	.28	e.26	.29	.28	.29	.26	.20	.21
13	.31	.28	.29	.28	.28	e.25	.29	.26	.28	.26	.21	.28
14	.31	.28	.29	.28	.28	e.25	.29	.26	.26	.26	.20	.22
15	.33	.28	.29	.28	.28	.26	.31	.26	.26	.28	.20	.27
16	.31	.28	.29	.29	.28	.26	.33	.26	.26	.26	.20	.29
17	.33	.28	.29	.29	.28	.25	.33	.26	.26	.26	.21	.22
18	.35	.28	.29	.29	.28	.25	.33	.26	.26	.25	.22	.22
19	.36	.28	.31	.28	.28	.25	.28	.25	.26	.25	.21	.22
20	.35	.28	.29	.29	.28	.20	.26	.33	.43	.24	.21	.22
21	.35	.29	.31	.31	.28	.21	.25	.59	.29	.24	.21	.22
22	.35	.29	.31	.31	.28	.21	.24	.28	.28	.22	.21	.22
23	.31	.29	.31	.31	.28	.21	.24	.29	.28	.22	.20	.22
24	.31	.29	.31	.31	.28	.21	.25	.28	.26	.21	.20	.22
25	.29	.29	.31	.29	.28	.22	.25	.26	.26	.21	.20	.22
26	.29	.29	.31	.29	.28	.22	.24	.28	.26	.21	.20	.22
27	.29	.29	.31	.33	.28	.28	.24	.54	.26	.21	.20	.22
28	.29	.29	.33	.33	.28	.25	.24	.41	.26	.21	.20	.22
29	.29	.33	.29	.29	.28	.22	.24	.62	.31	.20	.21	.22
30	.29	.26	.28	.29	.31	.22	.25	-	.62	.20	.20	.22
31	.29	.28	-	.29	-	.22	.25	-	.83	-	.20	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.56	0.29	0.353	0.546	10.9	34
August	.33	.26	.290	.449	8.99	28
September	.37	.28	.297	.460	8.90	27
October	.33	.28	.295	.456	9.16	28
November	.31	.28	.283	.438	8.48	26
December	.38	.20	.263	.407	8.15	25
Calendar year	-	-	-	-	-	-
January	.33	.21	.274	.424	8.49	26
February	.62	.24	.301	.466	8.73	27
March	1.28	.26	.440	.681	13.6	42
April	1.26	.20	.310	.480	9.29	29
May	.22	.20	.203	.314	6.30	19
June	.29	.20	.222	.343	6.66	20
Fiscal year 1943-44	1.28	.20	.294	.455	106	331

e Recorded gage heights not representative of average for day; discharge computed on basis of records for Haiku Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kahaluu Stream near Heeia

Location.- Modified Parshall flume, lat. 21°26'20", long. 157°51'05", 40 feet upstream from intake of Libby ditch, half a mile upstream from forest-reserve boundary, and 3.5 miles northwest of Kaneohe. Datum of gage is 357.22 feet above mean sea level (levels by Wright, Harvey & Wright).

Drainage area.- 0.4 square mile.

Records available.- October 1935 to June 1944.

Extremes.- Maximum discharge during year, 26 million gallons a day (40 second-feet) Dec. 5 (gage height, 1.88 feet), from rating curve extended above 8.4 million gallons a day by test on model of station site; minimum, 1.91 million gallons a day (2.96 second-feet) June 18, 19.

1935-44: Maximum discharge, 290 million gallons a day (449 second-feet) Sept. 27, 1937 (gage height, 5.47 feet, control then in use), from rating curve computed from 11 to 240 million gallons a day by Parshall flume formula and extended above; minimum, that of June 18, 19, 1944.

Remarks.- Records good. No diversions above station. Continuous records of rainfall are obtained at the station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.5	1.91
.6	2.7
.7	3.75
.8	4.8

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.25	2.4	2.7	2.55	2.45	2.45	2.3	2.3	2.8	3.1	2.25	2.15
2	2.3	2.4	2.7	2.55	2.45	2.45	2.3	2.3	2.4	2.45	2.25	2.15
3	2.3	2.4	2.7	2.55	2.45	2.55	2.3	2.3	3.35	2.3	2.25	2.15
4	2.4	2.6	2.8	2.8	2.45	2.7	2.3	2.3	3.6	2.3	2.25	2.15
5	2.45	2.4	2.6	2.55	2.45	3.5	2.3	2.3	2.55	2.3	2.25	2.05
6	2.45	2.4	2.6	2.55	2.45	2.75	2.3	2.3	2.45	2.3	2.25	2.05
7	2.4	2.4	2.6	2.55	2.45	2.25	2.25	2.3	2.7	2.3	2.3	2.05
8	2.4	2.4	2.6	2.55	2.45	2.3	2.25	2.3	2.9	2.3	2.3	2.05
9	2.4	2.5	2.6	2.55	2.45	a2.25	2.25	2.3	2.45	2.3	2.25	2.05
10	2.4	2.7	2.6	2.55	2.45	a2.25	2.25	2.3	2.3	2.3	2.25	2.05
11	2.4	2.55	2.6	2.55	2.4	a2.25	2.25	2.4	2.3	2.3	2.25	2.05
12	2.4	2.7	2.6	2.55	2.4	a2.25	2.25	2.3	2.25	2.3	2.25	2.05
13	2.55	2.7	2.6	2.55	2.4	a2.25	2.25	2.3	2.25	2.25	2.15	2.05
14	2.3	2.7	2.6	2.55	2.4	a2.25	2.25	2.3	2.25	2.25	2.15	1.99
15	2.3	2.7	2.6	2.55	2.4	a2.6	2.25	2.3	2.25	2.25	2.15	2.05
16	2.3	2.7	2.6	2.55	2.4	a3.8	2.3	2.25	2.25	2.25	2.15	2.15
17	2.25	2.7	2.6	2.55	2.4	2.6	2.3	2.25	2.25	2.25	2.15	1.99
18	2.25	2.7	2.8	2.55	2.4	2.45	2.3	2.25	2.25	2.15	2.25	1.99
19	2.25	2.7	2.8	2.55	2.4	2.4	2.3	2.25	2.25	2.25	2.25	1.91
20	2.25	2.7	2.6	2.55	2.4	2.3	2.4	2.3	2.75	2.15	2.15	1.99
21	2.25	2.7	2.6	2.45	2.45	2.3	2.4	2.45	2.3	2.15	2.15	1.99
22	2.25	2.85	2.6	2.45	2.45	2.3	2.4	2.3	2.3	2.15	2.15	2.05
23	2.25	2.7	2.6	2.45	2.45	2.3	2.4	2.3	2.3	2.15	2.15	2.05
24	2.3	2.7	2.6	2.45	2.45	2.3	2.4	2.3	2.3	2.25	2.15	2.05
25	2.3	2.7	2.6	2.45	2.45	2.3	2.4	2.3	2.3	2.25	2.15	2.05
26	2.3	2.7	2.6	2.45	2.45	2.3	2.4	2.3	2.3	2.25	2.15	2.05
27	2.3	2.7	2.6	2.55	2.45	3.0	2.4	2.9	2.25	2.25	2.15	2.05
28	2.4	2.7	2.85	2.55	2.45	2.55	2.3	3.05	2.25	2.25	2.15	1.99
29	2.3	2.8	2.6	2.45	2.45	2.3	2.3	3.15	2.45	2.25	2.15	1.99
30	2.4	2.8	2.55	2.45	2.45	2.3	2.3	-	3.3	2.25	2.15	1.99
31	2.4	2.7	-	2.45	-	2.3	2.3	-	2.55	-	2.15	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	2.55	2.25	2.34	3.62	72.4	222
August	2.85	2.4	2.64	4.08	81.8	251
September	2.85	2.55	2.62	4.05	78.5	241
October	2.8	2.45	2.53	3.91	78.4	241
November	2.45	2.4	2.43	3.76	73.0	224
December	3.8	2.25	2.48	3.84	76.8	236
Calendar year 1943	11.9	2.25	2.59	4.01	945	2,900
January	2.4	2.25	2.31	3.57	71.6	220
February	3.15	2.25	2.38	3.68	69.0	212
March	3.6	2.25	2.49	3.85	77.2	237
April	3.1	2.15	2.28	3.53	68.6	210
May	2.3	2.15	2.20	3.40	68.2	209
June	2.15	1.91	2.05	3.17	61.4	188
Fiscal year 1943-44	3.8	1.91	2.40	3.71	877	2,690

a No gage-height record; discharge computed on basis of records for Waihee Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waihee Stream near Heeia

Location.- Modified Parshall flume, lat. 21°27'05", long. 157°51'35", 70 feet upstream from intake of Kihe ditch, 120 feet downstream from forest-reserve boundary, and 4.1 miles northwest of Kaneohe. Altitude of gage, 193 feet.

Drainage area.- 1.1 square miles.

Records available.- December 1935 to June 1944.

Extremes.- Maximum discharge during year, 97 million gallons a day (150 second-feet) Dec. 5 (gage height, 3.38 feet), from rating curve extended above 50 million gallons a day by test on model of station site; minimum, 4.3 million gallons a day (6.6 second-feet) June 24-28.

1935-44: Maximum discharge, 465 million gallons a day (719 second-feet) Feb. 28, 1939 (gage height, 5.47 feet, control then in use), from rating curve computed from 20 to 230 million gallons a day by Parshall flume formula and extended above; minimum, that of June 24-28, 1944.

Remarks.- Records good except those for Feb. 15 to Apr. 25, which are poor. A 2-inch pipe line diverts water for domestic use.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.8	4.6	1.1	9.0
.9	6.0	1.2	11.0
1.0	7.5	1.4	15.1

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.5	6.3	6.5	6.3	5.9	5.6	5.3	4.9	6.0	11	5.0	5.0
2	7.5	6.3	6.0	6.2	5.9	5.6	5.3	4.9	6.8	7.8	5.0	5.0
3	6.6	6.3	6.4	6.3	5.9	6.0	5.3	4.9	10	6.8	5.0	4.9
4	8.5	7.1	6.3	7.1	5.9	6.3	5.3	4.7	14	6.2	5.0	4.9
5	7.5	6.4	6.3	6.3	6.2	10.0	5.3	4.7	7.6	5.8	5.0	4.9
6	6.9	6.3	6.3	6.3	5.9	7.9	5.4	4.7	6.2	5.6	5.2	4.9
7	6.8	6.3	6.3	6.3	5.9	6.6	5.3	4.6	7.0	5.6	5.6	4.9
8	6.6	6.3	6.3	6.3	5.9	7.4	5.3	4.6	7.6	5.6	5.2	4.9
9	6.4	6.5	6.3	6.2	5.9	6.3	5.3	4.6	6.4	5.6	5.2	4.7
10	6.4	6.8	6.3	6.0	5.9	6.0	5.3	4.6	6.0	5.6	5.0	4.7
11	6.4	7.4	6.3	6.2	5.7	5.9	5.3	5.0	6.8	5.6	5.0	4.6
12	6.4	6.6	6.3	6.2	5.7	5.9	5.3	4.6	5.4	5.6	5.0	4.6
13	7.1	6.6	6.3	6.0	5.7	5.7	5.3	4.6	5.4	6.4	5.0	4.9
14	6.4	6.6	6.3	6.0	5.7	5.7	5.3	4.6	5.4	5.4	4.9	4.6
15	6.4	6.6	6.3	6.0	5.7	7.3	5.3	4.6	5.2	5.4	4.9	4.9
16	6.4	6.4	6.3	6.0	5.7	14.3	5.3	4.6	5.2	5.4	4.7	4.7
17	6.4	6.4	6.3	6.0	5.7	7.6	5.3	4.5	5.2	5.4	4.6	4.6
18	6.4	6.4	6.4	6.0	5.7	6.4	5.3	4.5	5.2	5.4	5.7	4.5
19	6.4	6.4	6.3	6.0	5.7	6.0	5.3	4.5	5.2	5.4	5.2	4.5
20	6.4	6.4	6.3	6.0	5.7	5.7	5.3	4.7	6.4	5.2	5.2	4.5
21	6.3	6.6	6.2	6.0	5.7	5.6	5.2	5.0	5.4	5.2	5.0	4.5
22	6.3	7.6	6.0	6.0	5.7	5.6	5.2	4.6	5.2	5.2	4.9	4.6
23	6.3	6.6	6.0	5.9	5.7	5.4	5.0	4.6	5.2	5.2	4.9	4.4
24	6.3	6.4	6.0	5.9	5.7	5.4	5.0	4.6	5.2	5.2	4.9	4.3
25	6.3	6.4	6.2	5.9	5.6	5.6	5.0	4.6	5.2	5.2	4.9	4.3
26	6.3	6.4	6.2	5.9	5.6	5.4	5.0	4.6	5.2	5.2	4.9	4.3
27	6.3	6.4	6.3	6.0	5.6	6.8	4.9	7.0	5.0	5.2	4.9	4.3
28	6.3	6.4	7.1	6.2	5.6	6.0	4.9	8.0	5.0	5.2	4.9	4.3
29	6.3	6.8	6.3	6.0	5.5	5.6	4.9	10	5.6	5.2	4.9	4.4
30	6.3	6.8	6.3	6.0	5.7	5.4	4.9	-	15	5.2	4.9	4.4
31	6.3	6.4	-	6.0	-	5.4	4.9	-	7.6	-	4.9	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	8.5	6.3	6.56	10.1	204	625
August	7.6	6.3	6.55	10.1	203	624
September	7.1	6.0	6.32	9.76	190	582
October	7.1	5.9	6.11	9.45	190	582
November	6.2	5.6	5.76	8.91	173	530
December	14.3	5.4	6.46	10.0	200	615
Calendar year 1943	33.5	5.4	7.03	10.9	2,570	7,880
January	5.4	4.9	5.19	8.03	161	494
February	10	4.5	5.05	7.81	146	449
March	15	5.0	6.57	10.2	204	625
April	11	5.2	5.73	8.87	172	527
May	5.7	4.6	5.01	7.75	155	477
June	5.0	4.3	4.64	7.18	139	427
Fiscal year 1943-44	15	4.3	5.84	9.04	2,140	6,560

Note.- No gage-height record Feb. 15 to Apr. 25; discharge computed on basis of records for Kahalua Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

MISCELLANEOUS DISCHARGE MEASUREMENTS

Measurements of streams and ditches on the island of Oahu at other than regular gaging stations are listed below:

Miscellaneous discharge measurements on Oahu during fiscal year July 1943 to June 30, 1944

Date	Stream	Tributary to or diverting from--	Locality	Discharge	
				Second-feet	Million gallons a day
Aug. 11	Pearl Harbor Springs.	Pacific Ocean	All springs west of Puukapu gaging station.	1.52	0.983
Sept. 15	do	do	do	1.78	1.15
Oct. 21	do	do	do	1.62	1.05
Mar. 11	do	do	do	2.74	1.77
June 8	do	do	do	1.24	.801
Oct. 27	Halawa Shaft	North Halawa Stream.	At outlet of shaft near Aiea	23.2	15.0
28	do	do	do	25.6	16.5
Nov. 6	do	do	do	28.4	18.4
29	do	do	do	40.5	26.2
29	do	do	do	41.8	27.0
30	do	do	do	42.2	27.3
Dec. 9	do	do	do	45.8	29.6
Nov. 26	Pearl Harbor Springs.	Pacific Ocean	225 feet above gaging station at Kalauoopu, near Pearl City.	11.4	7.37
Apr. 3	Poamoho tunnel outlet.	North Fork Kaukonahua Stream.	At tunnel outlet, near Wahiawa.	13.7	8.85
3	do	do	do	15.9	10.3
3	do	do	do	14.0	9.05
3	do	do	do	14.4	9.31
28	Poamoho	Kaukonahua Stream	At diversion dam, near Wahiawa	6.89	4.45
May 3	Kahaluu	Pacific Ocean	Near source of springs, near Heeia.	2.64	1.71
6	do	do	do	3.15	2.04
9	do	do	do	3.64	2.35
9	do	do	do	3.61	2.33
13	do	do	do	3.50	2.26
13	do	do	do	3.49	2.26

Halawa Stream near Halawa

Location.- Lat. 21°09'30", long. 156°46'00", about 500 feet downstream from confluence of two main branches, 1½ miles west of Halawa, and 6 miles northeast of Pukoo.

Drainage area.- 4.5 square miles.

Records available.- August 1917 to July 1932, November 1937 to June 1944.

Average discharge.- 20 years (1918-32, 1938-44), 19.4 million gallons a day (30.0 second-feet).

Extremes.- Maximum discharge during year, 942 million gallons a day (1,460 second-feet) Mar. 6 (gage height, 6.56 feet), from rating curve extended above 100 million gallons a day by logarithmic plotting; minimum, 1.2 million gallons a day (1.9 second-feet) Feb. 11.

1917-32, 1937-44: Maximum discharge, 3,320 million gallons a day (5,140 second-feet) Mar. 18, 1943 (gage height, 11.31 feet), from rating curve extended above 100 million gallons a day by logarithmic plotting; minimum, 0.8 million gallons a day (1.2 second-feet) Oct. 13-15, 19, 1917.

Remarks.- Records fair. A 1-inch pipe line diverts water about a quarter of a mile above station for domestic use of Halawa village.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Aug. 22 to Oct. 31)

0.5	1.2	1.0	6.8	2.0	35
.6	1.95	1.1	8.5	2.5	62
.7	2.85	1.3	12.5	3.0	104
.8	3.95	1.5	17.5	3.5	167
.9	5.3	1.7	23.5	4.0	252

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.4	21	13.3	45	15.5	16.4	9.1	1.6	29.5	39.5	3.8	6.4
2	17.0	10.2	25.5	8.2	8.0	5.6	11.1	3.8	9.2	192	3.05	4.8
3	6.6	47	9.1	11.5	5.9	5.2	9.6	f7.4	11.4	61	2.4	4.8
4	22	46	7.0	12.9	5.0	50	9.4	2.5	47	17.6	2.4	3.85
5	37.5	14.4	19.7	5.8	16.0	43	8.8	1.8	14.6	14.4	2.2	6.8
6	27.5	21	7.6	4.5	5.4	10.4	12.9	1.8	90	10.5	6.9	9.4
7	45	22.5	5.8	4.9	4.5	70	6.1	6.3	143	8.2	14.1	12.6
8	15.5	8.3	5.0	13.6	3.75	14.0	4.8	3.6	22.5	6.8	3.2	6.6
9	9.3	6.6	6.2	14.7	7.1	8.5	4.2	2.15	11.8	6.5	11.6	4.2
10	25	25	15.1	6.0	7.8	5.6	3.75	1.5	8.5	6.4	7.4	4.5
11	7.8	9.5	14.8	84	3.85	4.5	4.5	1.4	7.3	6.2	5.6	26.5
12	28	7.6	5.6	39.5	3.4	3.75	16.7	1.4	6.2	5.4	5.5	6.8
13	33.5	9.3	4.6	10.0	3.05	3.4	4.6	11.5	5.0	6.0	10.9	4.5
14	9.7	8.9	4.2	7.1	2.65	20.5	3.6	59	4.5	6.0	7.2	3.5
15	7.5	12.7	4.1	7.6	2.6	113	3.2	15.9	3.95	11.5	3.95	63
16	6.5	9.1	3.6	7.9	3.5	97	2.85	4.0	3.6	9.7	3.05	14.2
17	5.6	5.6	3.2	7.3	2.95	31	2.6	54	3.3	9.0	2.75	24
18	9.5	4.5	3.8	6.5	2.5	11.1	2.5	15.6	3.9	9.0	54	14.6
19	6.3	3.95	12.0	5.0	17.4	7.8	2.3	13.5	5.4	12.3	22.5	7.0
20	5.8	3.6	6.2	4.2	4.3	5.9	2.5	36.5	41	6.1	6.1	6.1
21	4.8	94	4.1	3.95	2.75	5.0	2.2	226	32.5	9.7	14.3	66
22	7.9	36.5	3.5	3.6	2.6	4.4	1.9	47	55	14.1	5.3	33.5
23	9.6	10.3	2.85	3.3	2.2	3.95	1.8	26.5	110	6.0	3.95	10.8
24	4.5	8.5	2.85	3.05	1.95	21.5	3.05	11.5	10.7	4.8	3.4	7.3
25	4.1	10.8	3.6	2.95	1.9	12.8	14.3	8.5	7.3	4.6	3.8	6.6
26	5.4	6.6	2.65	2.95	1.8	6.2	7.6	9.2	5.6	4.4	6.4	5.3
27	22	5.8	3.7	3.95	1.8	85	2.5	22.5	13.6	5.0	14.1	12.9
28	5.4	6.9	44	7.2	4.1	56	1.95	42	74	4.8	4.0	20.5
29	3.96	60	13.3	50	14.1	15.4	1.8	13.9	139	3.4	3.5	16.5
30	3.85	42	36.5	114	51	8.2	1.6	-	35.5	4.0	3.4	49
31	7.0	10.5	-	144	-	10.2	1.5	-	18.2	-	14.6	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	45	3.85	13.3	20.6	413	1,270
August	94	3.6	19.0	29.4	589	1,810
September	44	2.65	9.78	15.1	293	901
October	144	2.95	20.8	32.2	645	1,980
November	51	1.8	6.51	9.76	139	581
December	113	3.4	24.0	37.1	745	2,290
Calendar year 1943	401	1.8	21.9	33.9	7,970	24,480
January	16.7	1.5	5.33	8.25	165	507
February	226	1.4	22.5	34.8	652	2,000
March	143	3.3	31.4	48.6	973	2,990
April	192	3.4	16.8	26.0	505	1,550
May	54	2.2	8.24	12.7	255	784
June	66	3.5	15.4	23.8	463	1,420
Fiscal year 1943-44	226	1.4	16.1	24.9	5,890	18,080

Waiakeakua Stream near Wailau

Location.- Concrete and boulder dam, lat. 21°07'30", long. 156°49'40", three-quarters of a mile upstream from confluence with Pulena Stream, 3.2 miles south of Wailau, and 3.8 miles northwest of Pukoo. Datum of gage is 698 feet above mean sea level (hand levels from Reclamation Service bench mark).

Drainage area.- 1.4 square miles.

Records available.- October 1919 to September 1929, September 1937 to June 1944.

Average discharge.- 15 years (1920-29, 1938-44), 7.75 million gallons a day (12.0 second-feet).

Extremes.- Maximum discharge during year, 216 million gallons a day (334 second-feet) Mar. 7 (gage height, 4.27 feet), from rating curve extended above 140 million gallons a day by logarithmic plotting; minimum, 2.45 million gallons a day (3.79 second-feet) date uncertain.

1919-29, 1937-44: Maximum discharge, 1,340 million gallons a day (2,070 second-feet) Mar. 18, 1943 (gage height, 9.82 feet), from rating curve extended above 140 million gallons a day by logarithmic plotting; minimum, 1.3 million gallons a day (2.0 second-feet) Mar. 7, 1920.

Remarks.- Records good except those for period of no gage-height record, which are fair. No diversions.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.1	6.5	6.1	6.9	5.5	9.5	5.8	2.9	7.3	15.5	3.05	3.3
2	4.9	4.3	7.3	3.95	3.85	8.0	7.2	3.25	3.85	113	2.95	3.4
3	3.5	16.4	5.3	4.1	3.5	8.6	5.6	3.1	8.3	31.5	2.9	3.3
4	7.3	19.7	4.6	5.6	3.4	27	5.0	2.7	10.8	9.2	2.9	3.5
5	11.9	7.3	6.0	3.5	5.2	22	4.6	2.6	5.7	7.0	2.8	3.6
6	9.7	8.1	4.2	3.15	3.4	9.0	6.0	2.8	23.5	5.9	5.5	4.3
7	16.3	5.8	4.1	3.6	3.15	13	4.3	3.3	42	5.2	4.0	4.5
8	7.2	5.0	3.85	4.1	3.05	8.0	4.1	2.7	8.6	4.8	2.95	3.5
9	8.1	4.9	4.7	4.8	4.2	6.0	3.85	2.6	6.3	4.5	4.9	3.4
10	8.9	9.5	6.7	3.4	4.4	4.8	3.75	2.6	5.5	4.6	4.2	7.7
11	4.8	5.9	5.9	7.7	3.05	4.2	3.85	3.2	5.0	4.2	3.5	13.0
12	6.9	5.0	3.95	5.8	2.95	3.8	4.1	3.0	4.5	3.75	3.4	3.95
13	11.8	4.9	3.85	3.6	2.8	3.5	3.5	5.2	4.1	3.75	4.8	3.6
14	5.2	4.6	3.6	3.4	2.8	10	3.4	13.3	3.95	4.2	3.75	3.4
16	4.6	4.8	3.5	3.8	2.7	16	3.3	4.4	3.75	4.6	3.3	9.7
16	4.5	4.8	3.4	3.5	2.8	15	3.15	3.15	3.6	4.5	3.15	4.2
17	4.3	3.95	3.15	3.4	2.7	11	3.05	9.7	3.5	4.5	2.95	6.7
18	4.9	3.85	3.5	3.15	2.7	7.3	3.05	7.7	3.4	5.7	14.0	4.8
19	3.95	3.75	4.3	2.95	6.9	5.5	3.05	12.8	3.3	5.5	5.5	3.85
20	3.85	3.6	3.3	2.9	2.9	4.8	3.05	4.3	12.6	4.1	4.5	4.6
21	3.75	29.5	3.05	2.9	2.7	4.3	2.95	52	8.7	5.2	4.5	32.5
22	4.7	11.6	3.05	2.8	2.7	4.1	2.9	9.2	17.2	4.9	3.85	10.6
23	4.1	5.5	2.95	2.8	2.6	3.85	3.3	5.8	19.4	3.95	3.4	5.8
24	3.75	4.8	2.9	2.8	2.6	7.1	3.15	4.3	5.6	3.6	3.15	4.9
25	3.85	4.9	2.9	2.8	2.6	5.4	7.6	3.95	4.6	3.6	3.3	4.8
26	7.5	4.2	2.8	2.8	2.5	3.85	3.15	3.6	4.2	3.3	4.0	4.7
27	9.6	4.3	2.95	2.9	2.7	32	2.8	7.9	4.1	3.5	3.4	7.5
28	4.1	4.2	12.2	2.9	3.5	30	2.7	9.3	7.0	3.3	3.05	10.1
29	3.75	15.7	4.2	16.3	4.2	10.3	2.7	4.3	17.2	3.05	3.05	5.6
30	3.6	14.9	8.9	11.4	16	7.0	2.7	-	6.6	3.05	2.95	18.1
31	5.9	5.6	-	18.4	-	7.0	2.6	-	4.9	-	5.6	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	16.3	3.5	6.17	9.55	191	587
August	29.5	3.6	7.67	11.9	238	730
September	12.2	2.8	4.57	7.07	137	421
October	18.4	2.8	4.84	7.49	150	460
November	16	2.5	3.80	5.88	114	349
December	32	3.5	10.1	15.6	312	967
Calendar year 1943	112	2.05	6.72	10.4	2,450	7,530
January	7.6	2.6	3.88	6.00	120	369
February	52	2.6	6.75	10.4	196	600
March	42	3.3	8.68	13.4	269	828
April	113	3.05	9.45	14.6	283	870
May	14.0	2.8	4.04	6.25	125	384
June	32.5	3.3	6.76	10.5	203	622
Fiscal year 1943-44	113	2.5	6.39	9.89	2,340	7,180

Note.- No gage-height record Nov. 22 to Dec. 17; discharge computed on basis of records for Pulena and Lanipuni Streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pulena Stream near Wailau

Location.- Lat. 21°07'40", long. 156°49'50", half a mile upstream from confluence with Waiakeakua Stream, 3 miles south of Wailau, and 4 miles northwest of Pukoo. Datum of gage is 546 feet above mean sea level (hand levels from Reclamation Service bench mark).

Drainage area.- 4.4 square miles.

Records available.- October 1919 to December 1928, September 1937 to June 1944.

Average discharge.- 14 years (1920-28, 1938-44), 21.5 million gallons a day (33.3 second-feet).

Extremes.- Maximum discharge during year, 2,030 million gallons a day (3,140 second-feet) Mar. 7 (gage height, 5.87 feet), from rating curve extended above 220 million gallons a day by logarithmic plotting; minimum, 3.2 million gallons a day (5.0 second-feet) Feb. 11.

1919-28, 1937-44: Maximum discharge, 11,400 million gallons a day (17,600 second-feet) Mar. 18, 1943 (gage height, 11.68 feet), from rating curve extended above 220 million gallons a day by logarithmic plotting; minimum, 3.0 million gallons a day (4.6 second-feet) June 28, July 14, 1920.

Flood of Jan. 20, 1929, reached a stage of at least 22 feet.

Remarks.- Records good except those above 150 million gallons a day and those for period of no gage-height record, which are fair.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.4	17.8	14	14.4	6.6	15.3	16.2	4.2	35.5	45	6.2	5.6
2	13.9	11.8	13	7.3	5.0	10.6	21	6.2	16.2	239	5.6	6.4
3	8.6	24.5	12	7.0	4.7	11.2	16.3	5.0	44	94	5.4	6.6
4	27.5	64	12	6.0	4.8	85	12.8	3.5	88	42	5.4	6.2
5	38.5	25.5	12	5.2	18.4	50	12.4	3.5	41	27.5	5.0	6.8
6	42	21	11	4.8	5.2	16.3	27	4.0	210	20	14.0	7.0
7	80	27	10	5.8	4.7	29	11.4	9.5	311	16.6	10.5	6.8
8	36.5	14.9	9.0	6.4	4.4	13.6	9.4	3.8	52	14.5	5.6	5.0
9	41	12	9.0	13.4	6.7	10.0	8.6	3.4	29	13.2	17.4	5.0
10	33.5	21	12	6.2	5.2	8.1	7.8	3.3	21	14.7	11.8	24
11	17.5	13	9.4	7.8	4.4	7.0	8.5	8.7	17.5	11.8	7.3	18.8
12	21.5	9.8	f7.5	9.1	4.7	6.2	10.4	7.4	14.1	9.4	9.2	8.6
13	39	9.0	7.0	5.2	4.1	5.8	7.0	12.6	12.2	8.9	22.5	6.6
14	15.8	9.0	6.8	4.7	4.0	18.9	6.4	18.6	10.8	13.1	17.5	5.6
15	14.1	8.6	6.4	9.0	4.0	34.5	6.0	9.4	9.4	17.0	8.9	9.6
16	12.8	8.2	6.2	7.9	4.6	32	5.8	4.9	8.5	18.0	8.1	5.8
17	11.8	7.6	5.8	5.4	4.0	20.5	5.4	10.5	8.1	13.2	7.0	5.4
18	17.6	7.2	8.4	5.2	4.1	12.7	5.2	12.4	7.8	22	24.5	7.3
19	10.4	7.0	15.7	4.4	25.5	9.7	4.8	42	7.0	24	17.6	5.6
20	9.7	7.0	7.0	4.1	6.2	8.4	5.0	11.8	57	14.1	13.2	13.6
21	8.9	200	5.8	4.4	4.1	7.3	4.7	177	30	19.8	16.4	74
22	11.3	60	5.8	4.2	4.2	6.8	4.4	66	52	17.4	8.9	27
23	8.9	30	5.2	5.5	3.6	6.6	5.2	32	74	10.8	7.5	14.1
24	7.3	20	5.4	4.2	3.5	12.0	4.8	17.5	22	9.2	6.8	11.1
25	7.5	18	5.4	4.1	3.4	8.6	4.6	13.8	15.8	8.9	6.8	9.7
26	9.5	16	4.7	4.4	3.3	6.0	4.2	12.8	12.5	7.5	6.6	11.8
27	31	16	6.8	5.4	3.6	93	4.0	21.5	12.5	10.5	7.3	22.5
28	8.9	14	24	5.2	6.9	151	3.8	36.5	29.5	7.5	5.4	41
29	7.5	25	9.7	16.9	7.9	52	3.8	19.1	40	6.6	8.9	22.5
30	6.8	30	14.5	14.8	32	24	3.6	-	21	6.6	8.2	60
31	16.1	16	-	11.6	-	21	3.5	-	15.4	-	13.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Millions gallons	Acre-feet
July	80	6.8	20.2	31.3	627	1,920
August	200	7.0	24.9	38.5	771	2,370
September	24	4.7	9.38	14.5	282	864
October	16.9	4.1	7.13	11.0	221	678
November	32	3.3	6.79	10.5	204	625
December	151	5.8	25.6	39.6	793	2,430
Calendar year 1943	698	3.3	23.2	35.9	8,480	26,000
January	27	3.5	8.19	12.7	254	779
February	177	3.3	20.0	30.9	581	1,780
March	311	7.0	42.7	66.1	1,320	4,070
April	239	6.6	26.1	40.4	783	2,400
May	24.5	5.0	10.2	15.8	317	975
June	74	5.0	15.0	23.2	451	1,380
Fiscal year 1943-44	311	3.3	18.1	28.0	6,600	20,270

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Aug. 9 to Sept. 11; discharge computed on basis of records for Lanipuni and Waiakeakua Streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Pelekunu Stream near Pelekunu

Location.- Lat. 21°08'20", long. 156°52'50", three-quarters of a mile upstream from confluence with Lanipuni Stream, 1.8 miles south of Pelekunu, and 6.8 miles northwest of Pukoo. Datum of gage is 546 feet above mean sea level (hand levels from Reclamation Service bench mark).

Drainage area.- 2.4 square miles.

Records available.- December 1919 to January 1929, September 1937 to June 1944.

Average discharge.- 14 years (1920-28, 1938-44), 10.6 million gallons a day (16.4 second-feet).

Extremes.- Maximum discharge during year, 295 million gallons a day (456 second-feet) Feb. 21, Mar. 7 (gage height, 2.75 feet), from rating curve extended above 15 million gallons a day by logarithmic plotting; minimum, 1.46 million gallons a day (2.26 second-feet) Nov. 26, 27.
1919-29, 1937-44: Maximum discharge, 3,080 million gallons a day (4,770 second-feet) Nov. 20, 1940 (gage height, 6.81 feet), from rating curve extended above 80 million gallons a day by logarithmic plotting; minimum, that of Nov. 26, 27, 1943.

Remarks.- Records fair except those above 5 million gallons a day, which are poor. No diversions.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.0	5.8	5.0	5.0	1.82	7.0	7.5	2.5	14.2	26	4.3	3.85
2	5.5	4.8	4.5	3.3	1.73	4.9	8.5	2.95	7.3	88	4.1	3.45
3	3.85	8.7	4.2	3.1	1.64	5.8	8.6	2.8	17.3	41	3.85	3.85
4	9.0	12.4	4.2	2.95	1.73	23.5	7.3	2.3	31	21.5	3.85	3.45
5	11.3	7.0	4.1	2.8	4.4	17.7	7.0	2.15	18.5	18.0	3.5	3.6
6	13.1	7.9	3.7	2.65	1.82	7.0	11.3	2.3	49	12.9	6.6	3.1
7	27	8.2	3.4	2.8	1.73	7.3	6.0	5.1	102	12.5	6.0	2.95
8	17.5	5.5	3.3	2.8	1.64	5.8	5.3	2.5	32.5	9.2	3.85	2.5
9	10.0	5.0	3.3	5.0	1.91	4.6	4.6	2.15	21.5	8.2	6.6	2.5
10	16.7	6.3	3.4	3.1	1.82	3.45	4.1	2.3	16.4	8.9	5.5	3.5
11	8.2	5.0	4.8	2.95	1.64	3.1	4.7	4.7	12.9	7.6	4.1	4.8
12	7.9	5.3	3.3	3.1	1.82	2.95	6.1	4.2	11.2	5.3	4.3	3.45
13	9.5	5.0	3.1	2.65	1.64	2.8	3.85	9.7	9.8	5.8	11.1	2.65
14	5.0	4.8	3.1	2.5	1.55	5.8	3.45	6.7	8.5	8.2	9.6	2.65
15	5.5	4.6	2.95	4.2	1.64	7.9	3.3	5.2	7.9	10.0	5.3	3.45
16	5.3	4.1	2.95	3.6	1.82	4.8	3.3	3.3	7.6	9.6	5.3	2.65
17	4.8	3.85	2.8	3.1	1.55	4.3	3.1	3.45	7.0	7.8	4.6	2.5
18	7.9	3.6	3.45	2.8	1.73	3.6	2.95	3.6	7.0	9.2	9.9	3.1
19	4.8	3.45	6.2	2.5	9.4	3.3	2.8	13.6	6.6	12.5	11.4	2.65
20	4.6	3.45	3.3	2.5	2.65	3.1	2.8	26.5	28.5	8.6	8.2	7.8
21	4.3	30.5	2.95	2.5	1.73	2.8	2.8	90	15.9	12.5	10.4	27.5
22	4.8	14	2.8	2.3	1.73	2.8	2.65	39	21	10.8	6.0	12.2
23	4.3	5.4	2.65	2.8	1.55	2.65	2.65	19.7	35	7.3	5.3	6.6
24	3.85	5.8	3.1	2.3	1.55	3.85	2.65	11.7	14.3	6.3	4.8	5.8
25	3.85	5.4	2.95	2.15	1.55	2.95	2.65	9.1	10.0	6.0	4.6	5.3
26	4.5	4.6	2.65	2.5	1.46	2.5	2.5	8.9	8.2	5.5	4.3	6.0
27	9.8	4.8	3.85	2.8	1.64	27	2.5	5.8	7.9	6.3	4.3	8.9
28	4.3	4.3	6.2	2.5	2.3	46	2.5	3.3	19.3	5.0	3.6	17.7
29	3.85	12	3.6	6.2	2.45	19.4	2.5	6.4	22.5	4.6	5.0	12.4
30	3.6	14	5.8	3.25	9.7	10.8	2.3	-	18.0	4.6	3.85	16.2
31	5.0	6.0	-	1.91	-	9.6	2.3	-	13.8	-	6.9	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	27	3.6	7.50	11.8	236	723
August	30.5	3.45	7.21	11.2	224	686
September	6.2	2.65	3.72	5.76	112	342
October	6.2	1.91	3.05	4.72	94.6	290
November	9.7	1.46	2.38	3.68	71.3	219
December	46	2.5	8.36	12.9	259	795
Calendar year 1943	118	1.46	8.06	12.5	2,940	9,040
January	11.3	2.3	4.35	5.73	135	414
February	90	2.15	10.5	16.4	307	942
March	102	6.6	19.4	30.0	602	1,850
April	88	4.6	13.4	20.7	400	1,230
May	11.4	3.6	5.84	9.04	181	556
June	27.5	2.5	6.23	9.64	187	573
Fiscal year 1943-44	102	1.46	7.67	11.9	2,810	8,620

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Lanipuni Stream near Pelekunu

Location.- Lat. 21°08'40", long. 156°52'30", 0.4 mile upstream from confluence with Pelekunu Stream, 1½ miles southeast of Pelekunu, and 6.8 miles northwest of Pukoo. Datum of gage is 418 feet above mean sea level (hand levels from Geological Survey bench mark).

Drainage area.- 0.8 square mile.

Records available.- December 1910 to September 1929, September 1937 to June 1944.

Average discharge.- 15 years (1920-29, 1938-44), 9.90 million gallons a day (15.3 second-feet).

Extremes.- Maximum discharge during year, 290 million gallons a day (449 second-feet) Feb. 21 (gage height, 4.10 feet), from rating curve extended above 35 million gallons a day by logarithmic plotting; minimum, 1.45 million gallons a day (2.24 second-feet) Jan. 29.

1919-29, 1937-44: Maximum discharge, 3,470 million gallons a day (5,370 second-feet) Mar. 18, 1943 (gage height, 9.02 feet), from rating curve extended above 35 million gallons a day by logarithmic plotting; minimum, that of Jan. 29, 1944.

Remarks.- Records poor. No diversions.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.0	5.2	5.4	5.2	2.65	7.0	3.25	1.74	8.0	35	2.9	3.4
2	7.8	4.7	5.0	3.65	2.55	6.4	3.5	1.90	4.2	96	2.8	3.15
3	4.5	10.1	4.4	3.65	2.55	6.6	3.6	1.74	9.9	41	2.8	3.15
4	16.8	15.0	4.4	5.4	2.65	20.5	3.3	1.58	18.0	17.1	2.65	3.15
5	16.2	6.9	4.4	3.15	4.2	14.5	3.7	1.58	6.6	9.9	2.65	3.0
6	19.8	10.6	3.85	3.0	2.55	5.9	3.9	1.66	26.5	6.8	4.4	2.8
7	37	8.3	3.65	3.25	2.55	7.6	2.8	2.45	52	5.2	3.15	3.0
8	16.0	5.2	3.5	3.25	2.4	4.5	2.4	1.58	12.7	4.7	2.8	2.55
9	13.5	4.9	3.5	4.7	3.05	3.65	2.3	1.50	6.4	4.6	6.3	2.4
10	14.4	6.8	5.0	3.25	2.65	3.25	2.15	1.58	4.9	5.2	4.8	2.6
11	7.0	5.0	4.6	3.5	2.55	3.15	3.5	1.71	4.4	4.4	3.0	2.55
12	8.9	4.5	3.4	3.25	2.65	3.0	3.95	1.66	3.85	3.65	6.9	2.3
13	9.9	4.5	3.4	3.0	2.55	2.8	2.2	3.45	3.4	3.65	14.3	2.15
14	5.4	4.4	3.25	3.0	2.55	8.6	2.05	6.6	3.25	4.9	9.6	2.15
15	4.9	4.2	3.15	4.3	2.65	12.2	1.98	2.95	3.15	6.8	4.0	2.6
16	4.7	4.0	3.0	3.5	2.9	6.3	1.90	2.25	3.0	9.1	3.5	2.15
17	5.0	3.85	3.0	3.25	2.55	4.9	1.82	2.9	2.9	8.8	3.4	2.15
18	9.1	3.65	3.65	3.15	2.8	3.65	1.82	2.9	2.8	10.7	20.5	2.55
19	4.5	3.5	4.6	2.9	9.9	3.25	1.74	4.4	2.65	12.0	14.1	2.2
20	4.5	3.5	3.4	2.8	3.4	2.9	1.82	8.1	7.3	6.4	10.6	8.9
21	4.4	31	3.15	2.8	3.0	2.8	1.74	94	3.85	10.3	9.8	35
22	5.0	13.6	3.0	2.8	3.0	2.8	1.58	29	3.15	9.4	4.7	14.3
23	4.4	6.4	3.0	2.9	2.65	2.65	1.58	14.4	15.9	4.9	3.85	4.5
24	4.2	5.7	3.15	2.65	2.55	3.4	1.58	7.3	4.4	3.85	3.5	4.5
25	4.2	4.9	3.15	2.8	2.55	2.8	1.58	6.0	3.65	3.65	3.25	3.65
26	5.7	4.2	2.9	2.9	2.4	2.4	1.58	4.9	3.25	3.4	3.55	7.5
27	7.7	4.5	3.65	3.0	3.05	31	1.50	4.5	3.85	4.1	3.4	10.4
28	4.4	4.4	8.1	2.8	4.1	35	1.50	6.3	31.5	3.25	2.9	23.5
29	4.0	12.8	3.85	3.15	3.8	10.8	1.50	4.7	39.5	3.0	4.7	11.2
30	3.85	15.4	8.2	3.0	10.4	4.5	1.58	-	16.4	3.0	3.15	28.5
31	5.5	5.9	-	2.8	-	4.5	1.58	-	10.1	-	8.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	37	3.85	8.75	13.5	271	833
August	31	3.5	7.34	11.4	228	698
September	8.2	2.9	4.02	6.22	121	370
October	5.2	2.65	3.26	5.03	101	309
November	10.4	2.4	3.33	5.15	99.8	306
December	35	2.4	7.53	11.7	233	716
Calendar year 1943	60	2.4	6.98	10.8	2,550	7,820
January	3.95	1.50	2.29	3.54	71.0	218
February	94	1.50	7.77	12.0	225	692
March	52	2.65	10.4	16.1	321	986
April	96	3.0	11.5	17.8	345	1,060
May	20.5	2.65	5.69	8.80	176	542
June	35	2.15	6.74	10.4	202	620
Fiscal year 1943-44	95	1.50	6.54	10.1	2,390	7,350

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waikolu Stream below pipe-line crossing, near Kalaupapa

Location.- Concrete and stone dam, lat. 21°09'50", long. 156°56'00", three-quarters of a mile upstream from mouth and 3.9 miles southeast of Kalaupapa post office. Datum of gage is 253 feet above mean sea level (hand levels from Reclamation Service bench mark).

Drainage area.- 4.0 square miles.

Records available.- August 1931 to July 1932, September 1937 to June 1944. June 1919 to November 1930 at site 500 feet upstream.

Extremes.- Maximum discharge during year, 570 million gallons a day (882 second-feet) Feb. 21 (gage height, 4.35 feet), from rating curve extended above 42 million gallons a day by logarithmic plotting; minimum, 4.3 million gallons a day (6.6 second-feet) Feb. 10, 11.
1919-32, 1937-44: Maximum discharge, 2,510 million gallons a day (3,880 second-feet) Apr. 9, 1938 (gage height, 6.01 feet), from rating curve extended above 50 million gallons a day by logarithmic plotting; minimum, 1.3 million gallons a day (2.0 second-feet) Nov. 1, 2, 1925, June 5, 1928.

Remarks.- Records good. Kalaupapa water-supply system diverts water above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.2	3.6	1.8	26.5
1.3	5.8	2.0	40
1.4	8.5	2.2	58
1.5	11.9	2.6	106
1.6	16.0	3.0	172

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.7	8.0	6.3	8.4	4.9	8.2	7.4	4.5	12.3	28.5	5.8	6.6
2	12.9	7.7	6.3	5.8	4.9	6.3	8.2	4.5	6.6	124	5.6	6.8
3	7.7	8.6	6.1	5.4	4.7	7.4	10.4	4.6	16.4	40	5.6	5.8
4	13.3	12.6	6.1	5.4	4.7	43	8.8	4.5	41	12.2	5.6	5.8
5	14.7	8.0	6.1	5.1	4.7	21	7.7	4.6	11.9	9.5	5.6	5.8
6	21.5	7.4	5.8	5.1	4.7	7.2	8.9	4.5	33.5	8.5	5.6	5.8
7	46	10.1	5.8	5.1	4.7	7.2	6.3	4.5	90	8.0	5.6	5.6
8	15.9	6.9	5.8	5.1	4.7	8.1	5.6	4.5	11.5	7.7	5.6	5.4
9	11.2	6.6	5.6	5.1	4.7	7.7	5.4	4.5	8.0	7.4	5.6	5.4
10	24.5	6.9	5.6	5.4	4.7	5.6	5.4	4.3	6.9	7.7	5.6	6.4
11	8.5	7.7	5.8	5.1	4.7	4.9	5.6	4.5	6.3	7.7	5.4	8.5
12	8.0	7.4	5.6	5.1	4.7	4.7	8.6	8.4	6.1	7.4	5.4	7.9
13	8.5	6.9	5.4	6.1	4.7	4.9	5.4	7.7	5.8	7.2	6.6	5.8
14	8.0	6.9	5.1	5.1	4.7	9.7	4.9	5.8	5.8	9.0	7.8	5.8
15	7.4	6.6	6.1	5.1	4.7	15.3	4.7	7.3	5.8	9.4	5.8	5.6
16	7.2	6.3	5.1	5.6	4.7	7.7	4.7	5.8	5.8	7.7	5.6	5.8
17	7.2	8.3	5.1	5.4	4.7	6.3	4.7	5.8	5.6	7.2	5.4	5.4
18	8.2	6.1	5.1	5.1	4.7	5.8	4.7	5.7	5.6	7.4	5.7	5.1
19	7.7	6.1	5.6	4.9	10.8	5.6	4.7	22	5.6	8.5	12.6	5.1
20	7.2	6.1	5.6	4.9	6.3	5.4	4.7	16.4	28	7.2	6.6	6.6
21	6.9	45	5.4	4.9	5.1	5.4	4.7	16.1	10.1	8.0	9.4	28
22	6.9	21.5	5.4	4.9	4.7	5.4	4.7	31	9.5	10.9	5.8	10.6
23	6.9	7.7	5.4	4.7	4.7	5.4	4.7	11.4	38.5	6.6	5.4	6.6
24	6.5	6.9	5.4	4.7	4.7	5.4	4.5	7.4	8.8	6.1	5.4	5.8
25	6.9	6.6	5.4	4.7	4.7	5.6	4.5	7.0	6.3	5.8	5.1	5.8
26	7.2	6.3	5.1	4.7	4.7	5.4	4.5	8.5	5.8	5.8	5.4	5.8
27	9.0	6.3	5.4	4.9	4.9	18.2	4.5	6.1	6.1	5.8	5.4	7.2
28	7.7	6.6	5.8	4.9	4.9	78	4.5	5.8	30.5	5.8	5.4	11.0
29	7.4	7.8	6.6	4.9	5.1	15.0	4.5	5.8	58	5.8	5.4	10.0
30	6.6	15.6	6.7	4.9	7.1	7.4	4.5	-	24.5	5.8	5.6	12.1
31	6.9	6.9	-	4.9	-	6.6	4.5	-	12.0	-	6.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Miniaum	Mean		Million gallons	Acre-feet
July	46	6.6	10.7	16.6	332	1,020
August	45	6.1	9.24	14.3	286	879
September	6.7	5.1	5.65	8.74	170	520
October	8.4	4.7	5.17	8.00	160	492
November	10.8	4.7	5.09	7.88	153	469
December	78	4.7	11.3	17.5	350	1,070
Calendar year 1943	117	4.7	11.0	17.0	4,010	12,310
January	10.4	4.5	5.71	8.83	177	543
February	31	4.3	8.08	12.5	234	719
March	90	5.6	17.1	26.5	531	1,630
April	124	5.8	13.3	20.6	399	1,220
May	12.6	5.1	6.07	9.39	188	578
June	26	5.1	7.36	11.4	221	678
Fiscal year 1943-44	124	4.3	8.74	13.5	3,200	9,820

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Keolewa Stream near Kalae

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 21°10'30", long. 156°58'45", 2.1 miles northeast of Kalae and 6.4 miles northeast of Kaunakakai post office. Altitude of gage, 1,950 feet (from topographic map).

Records available.- June 1940 to June 1944 (discontinued).

Extremes.- Maximum discharge during year, 22 million gallons a day (34 second-feet) Mar. 22 (gage height, 2.14 feet), from rating curve extended above 5 million gallons a day by broad-crested weir formula; no flow Dec. 11-14, 19-27.
1940-44: Maximum discharge, 52 million gallons a day (80 second-feet) Mar. 18, 1943 (gage height, 2.75 feet), from rating curve extended above 5 million gallons a day by broad-crested weir formula; no flow Dec. 11-14, 19-27, 1943.

Remarks.- Records good except those for periods of no gage-height record, which are poor. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.6	0.45	1.2	2.05
.1	.01	.7	.61	1.3	2.5
.2	.05	.8	.82	1.4	3.5
.3	.10	.9	1.07	1.5	5.0
.4	.18	1.0	1.35	1.6	6.8
.5	.29	1.1	1.69		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.03	0.03	0.01	0.01	0.01	0.02	0.01	0.01	0.19	0.94	0.03	0.01
2	.03	.03	.01	.01	.01	.01	.01	.01	.02	5.9	.02	.01
3	.03	.03	.01	.01	.01	.01	.02	.01	.20	1.1	.02	.01
4	.05	.03	.02	.01	.01	.02	.02	.01	.69	.26	.02	.01
5	.03	.03	.02	.01	.01	.24	.02	.01	.14	.16	.02	.01
6	.04	.04	.02	.01	.01	.03	.03	.01	.63	.15	.02	.01
7	1.24	.05	.02	.01	.01	.01	.02	.01	3.1	.14	.02	.01
8	.19	.06	.02	.01	.01	.01	.01	.01	.06	.11	.02	.01
9	.51	.06	.01	.01	.01	.01	.01	.01	.04	.10	.02	.02
10	1.49	.06	.01	.01	.01	.01	.01	.01	.03	.09	.02	.01
11	.04	.06	.01	.01	.01	0	.23	.01	.03	.08	.02	.02
12	.03	.07	.01	.01	.01	0	.30	.01	.03	.07	.02	.02
13	.03	.08	.01	.01	.01	0	.02	.02	.02	.06	.02	.01
14	.03	.08	.01	.01	.01	1.02	.01	.01	.02	.05	.02	.01
15	.03	.07	.01	.01	.01	1.02	.01	.01	.02	.05	.02	.02
16	.03	.08	.01	.01	.01	.02	.01	.01	.02	.05	.02	.01
17	.03	.07	.01	.01	.01	.01	.01	.01	.02	.05	.02	.01
18	.03	.07	.01	.01	.01	.01	.01	.01	.02	.05	.03	.01
19	.03	.07	.01	.01	.02	0	.01	.01	.02	.04	.03	.01
20	.02	.07	.01	.01	.01	0	.01	.01	.77	.04	.02	.02
21	.02	.33	.01	.01	.01	0	.01	1.02	.04	.04	.02	.60
22	.02	.07	.01	.01	.01	0	.01	.19	.86	.03	.02	.18
23	.02	.02	.01	.01	.01	0	.01	.14	1.20	.03	.02	.02
24	.02	.01	.01	.01	.01	0	.01	.02	.58	.03	.02	.02
25	.02	.01	.01	.01	.01	0	.01	.08	.06	.03	.02	.02
26	.02	.01	.01	.01	.01	0	.01	.03	.06	.03	.02	.02
27	.02	.01	.01	.01	.01	.79	.01	.01	.76	.03	.02	.03
28	.02	.01	.01	.01	.01	6.5	.01	.01	2.45	.03	.01	.07
29	.02	.02	.01	.01	.01	.24	.01	.01	4.5	.03	.01	.07
30	.02	.02	.01	.01	.02	.03	.01	-	1.2	.03	.01	.20
31	.03	.01	-	.01	-	.02	.01	-	.40	-	.02	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.49	0.02	0.135	0.209	4.17	13
August	.33	.01	.054	.084	1.66	5.1
September	.02	.01	.012	.019	.35	1.1
October	.01	.01	.010	.016	.31	1.0
November	.02	.01	.011	.017	.32	1.0
December	6.5	0	.324	.501	10.0	31
Calendar year 1943	6.5	0	.208	.322	75.8	233
January	.30	.01	.029	.045	.89	2.7
February	1.02	.01	.059	.091	1.72	5.3
March	4.5	.02	.586	.907	18.2	66
April	5.9	.03	.327	.506	9.80	30
May	.03	.01	.020	.031	.62	1.9
June	.60	.01	.049	.076	1.48	4.5
Fiscal year 1943-44	6.5	0	.135	.209	49.5	153

Note.- No gage-height record Mar. 30 to Apr. 6, May 8 to June 2, June 25-30; discharge computed on basis of records for Makaeleele Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waialala Springs near Kalae

Location.- Right angle brass weir control, lat. 21°10'20", long. 157°00'05", on the highway from Kalae to the Kalaupapa Pali, 0.8 mile northeast of Kalae, and 5.7 miles northeast of Kaunakakai post office. Altitude of gage, 1,600 feet (from topographic map).

Records available.- September 1940 to June 1944.

Extremes.- Maximum daily discharge during year, 0.064 million gallons a day (0.099 second-foot) Apr. 2; minimum daily, 0.012 million gallons a day (0.019 second-foot) Feb. 19, 20, 24, 28, 29, Mar. 2, 3.
1940-44: Maximum daily discharge, 0.275 million gallons a day (0.425 second-foot) Mar. 11, 1942; minimum daily, that of Feb. 19, 20, 24, 28, 29, Mar. 2, 3, 1944.

Remarks.- Records good. Maui County Water Works diverts the entire flow for domestic supply, from tail bay at station.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.030	0.026	0.024	0.021	0.020	0.018	0.019	0.016	0.013	0.021	0.024	a0.023
2	.030	.026	.024	.022	.020	.018	.019	.016	.012	.064	.024	a.023
3	.030	.026	.024	.022	.020	.018	.018	.016	.012	.051	.024	.023
4	.030	.026	.023	.022	.019	.017	.018	.016	.015	.039	.024	.023
5	.030	.026	.023	.022	.019	.017	.018	.016	.013	.031	.024	.023
6	.030	.026	.023	.022	.019	.017	.018	.016	.014	.031	.024	.023
7	.030	.026	.022	.021	.019	.017	.017	.016	.030	.031	.024	.023
8	.029	.026	.023	.021	.019	.017	.017	.016	.018	.030	.024	.024
9	.030	.026	.024	.021	.019	.017	.017	.016	.016	.030	.024	.025
10	.032	.026	.024	.021	.019	.017	.018	.016	.015	.029	.024	.024
11	.030	.026	.024	.021	.019	.017	.018	.016	.014	.028	.024	.024
12	.029	.026	.024	.021	.019	.017	.018	.016	.014	.028	.024	.024
13	.029	.026	.023	.021	.019	.017	.018	.017	.014	.027	.024	.024
14	.029	.026	.023	.021	.019	.018	.017	.017	.013	.027	.024	.024
15	.029	.025	.023	.021	.019	.019	.017	.016	.013	.027	.024	.023
16	.029	.025	.023	.020	.019	.019	.017	.016	.013	.026	.024	.023
17	.028	.025	.023	.020	.019	.018	.017	.016	.013	.026	.024	.023
18	.028	.025	.023	.020	.019	.018	.017	.017	.013	.026	.024	.023
19	.028	.025	.023	.020	.019	.018	.017	.012	.013	.026	.024	.023
20	.028	.025	.023	.020	.019	.018	.017	.012	.015	.026	.024	.023
21	.028	.025	.023	.021	.019	.018	.017	.013	.014	.026	.024	.024
22	.028	.025	.022	.021	.019	.018	.017	.013	.014	.026	.024	.024
23	.028	.025	.022	.021	.019	.018	.017	.013	.020	.026	.024	.023
24	.028	.025	.022	.021	.018	.018	.017	.012	.017	.025	.024	.023
25	.028	.025	.022	.021	.018	.017	.016	.014	.016	.025	.024	.023
26	.028	.025	.022	.021	.018	.017	.016	.013	.015	.025	.024	.023
27	.028	.025	.022	.021	.018	.017	.016	.013	.015	.024	a.024	.023
28	.028	.025	.022	.021	.018	.026	.016	.012	.018	.024	a.024	.023
29	.027	.025	.021	.021	.018	.022	.016	.012	.026	.024	a.024	.023
30	.027	.025	.021	.021	.018	.020	.016	-	.030	.024	a.024	.023
31	.027	.024	-	.020	-	.019	.016	-	.023	-	a.024	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.032	0.027	0.029	0.045	0.893	2.7
August	.026	.024	.025	.039	.788	2.4
September	.024	.021	.023	.036	.685	2.1
October	.022	.020	.021	.032	.650	2.0
November	.020	.018	.019	.029	.566	1.7
December	.026	.017	.018	.028	.562	1.7
Calendar year 1943	.047	.017	.027	.042	9.95	30
January	.019	.016	.017	.026	.532	1.6
February	.017	.012	.015	.023	.430	1.3
March	.030	.012	.016	.025	.501	1.5
April	.064	.021	.029	.045	.873	2.7
May	.024	.024	.024	.037	.744	2.3
June	.025	.023	.023	.036	.700	2.1
Fiscal year 1943-44	.064	.012	.022	.034	7.92	24

a No gage-height record; discharge computed on basis of probable decrease in flow.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Makaeleele Stream near Kalae

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 21°09'05", long. 156°57'55", about 50 feet downstream from Maui County pipe-line intake, 3.1 miles southeast of Kalae, and 5.6 miles northeast of Kaunakakai post office. Altitude of gage, 2,450 feet (from topographic map).

Records available.- May 1940 to June 1944.

Extremes.- Maximum discharge during year, 27 million gallons a day (42 second-feet) Dec. 4 (gage height, 2.92 feet), from rating curve extended above 4.2 million gallons a day by broad-crested weir formula; no flow many times.
1940-44: Maximum discharge, 36 million gallons a day (56 second-feet) Oct. 22, 1942 (gage height, 3.25 feet); no flow at times.

Remarks.- Records good except those for Apr. 5, 6, which are fair. Maui County Water Works diverts about 0.014 million gallons a day for domestic supply from pool about 50 feet upstream.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.5	0.29	1.2	2.05
.1	.01	.6	.43	1.4	2.95
.2	.05	.7	.61	1.6	4.2
.3	.10	.8	.82	1.8	6.1
.4	.18	1.0	1.35	2.0	8.4

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.13	0.05	0.12	0.12	0.02	0.19	0.16	0.01	0.05	0.14	0.07	0.08
2	.39	.05	.12	.03	0	.42	.11	.01	.10	2.9	.06	.02
3	.06	.06	.10	.03	0	.31	.09	.01	.32	2.75	.05	.02
4	1.58	.18	.12	.05	0	2.0	.08	.01	.07	2.65	.04	.13
5	.37	.05	.12	.02	0	1.14	.07	.01	.77	a.54	.04	.08
6	1.57	.74	.07	.01	0	.24	.24	.02	1.05	a.32	.04	.02
7	5.2	.38	.03	.01	.01	.09	.12	.01	.52	f.24	.03	.01
8	.43	.06	.01	.01	.01	.08	.06	.01	1.23	.19	.03	.01
9	.89	.04	.02	.01	.01	.04	.06	.01	1.22	.17	.03	.01
10	1.99	.03	.02	.01	.01	.03	.05	.01	.38	.26	.03	.01
11	.22	.03	.10	.01	0	.02	.30	.02	.21	.25	.03	.10
12	.19	.03	.03	0	0	.02	.46	.03	.15	.13	.03	.20
13	.22	.03	.02	0	0	.01	.12	.04	.11	.10	.03	.04
14	.12	.03	.01	0	0	1.43	.08	.04	.10	.10	.03	.02
15	.09	.04	.01	.01	0	1.37	.08	.06	.08	.09	.04	.02
16	.07	.03	.01	.02	.01	.16	.06	.03	.07	.08	.03	.02
17	.07	.02	.01	.01	0	.08	.06	.02	.06	.08	.03	.01
18	.06	.02	.01	.01	0	.05	.05	.02	.06	.10	.12	.01
19	.05	.01	.02	0	.44	.04	.04	.62	.05	.08	.10	0
20	.06	.02	.01	0	.06	.03	.04	.43	.05	.10	.06	.34
21	.06	3.85	.01	0	.01	.03	.03	3.35	.05	.42	.07	2.55
22	.05	.81	.01	0	0	.02	.02	1.81	.04	.21	.03	.27
23	.04	.25	.01	0	0	.02	.02	1.45	.04	.11	.04	.09
24	.04	.22	.01	0	0	.02	.01	.56	1.56	.10	.04	.80
25	.04	.17	.01	0	0	.02	.01	.17	.29	.10	.03	.19
26	.04	.15	0	0	0	.02	.01	.21	.16	.11	.05	.08
27	.04	.14	.02	.01	0	1.48	.01	.22	f1.7	.10	.02	.19
28	.03	.13	.28	0	.14	7.3	.01	.08	.46	.10	.02	1.61
29	.03	.23	.09	0	.42	.93	.01	.06	.25	.12	.02	.36
30	.03	.33	.14	.14	.62	.28	.01	-	.14	.10	.04	2.2
31	.03	.15	-	.10	-	.17	.01	-	.11	-	.20	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.2	0.03	0.458	0.709	14.2	44
August	3.85	.01	.269	.416	8.33	26
September	.28	0	.051	.079	1.54	4.7
October	.14	0	.020	.031	.61	1.9
November	.62	0	.059	.091	1.76	5.4
December	7.3	.01	.581	.899	18.0	55
Calendar year 1943	7.3	0	.351	.543	128	393
January	.46	.01	.080	.124	2.48	7.6
February	3.35	.01	.322	.498	9.33	29
March	1.7	.04	.369	.571	11.4	35
April	2.9	.08	.425	.658	12.7	39
May	.20	.02	.048	.074	1.48	4.5
June	2.55	0	.316	.489	9.49	29
Fiscal year 1943-44	7.3	0	.250	.387	91.3	281

a No gage-height record; discharge computed on basis of records for Keolewa Stream.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapuna Stream near Kalae

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 21°09'05", long. 156°59'00", 2.1 miles southeast of Kalae and 4.9 miles northeast of Kaunakakai post office. Altitude of gage, 1,900 feet (from topographic map).
Records available.- June 1940 to June 1944.
Extremes.- Maximum discharge during year, 0.27 million gallons a day (0.42 second-foot) Apr. 2 (gage height, 0.48 foot); no flow Feb. 7, 16, 17.
1940-44: Maximum discharge, 10.0 million gallons a day (15.5 second-feet) Mar. 11, 1942 (gage height, 2.00 feet); no flow Feb. 7, 16, 17, 1944.
Remarks.- Records good except those for period of no gage-height record, which are poor. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.01
.2	.05
.3	.10
.4	.18

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	a0.05	0.02	0.02
2	.04	.03	.02	.02	.01	.01	.01	.01	.01	a.18	.02	.02
3	.04	.03	.02	.02	.01	.01	.01	.01	.03	a.16	.02	.02
4	.03	.03	.02	.02	.01	.01	.01	.01	.06	a.14	.02	.02
5	.03	.03	.02	.02	.01	.01	.01	.01	.07	a.10	.02	.02
6	.03	.03	.02	.02	.01	.01	.01	.01	.05	a.09	.02	.02
7	.03	.03	.02	.02	.01	.01	.01	.01	.08	.08	.02	.02
8	.03	.02	.02	.02	.01	.01	.01	.01	.09	.07	.02	.02
9	.03	.02	.02	.02	.01	.01	.01	.01	.07	.06	.02	.02
10	.03	.02	.02	.02	.01	.01	.01	.01	.06	.06	.02	.02
11	.03	.02	.02	.02	.01	.01	.01	.01	.05	.05	.02	.02
12	.03	.02	.02	.02	.01	.01	.01	.01	.03	.05	.02	.02
13	.03	.02	.02	.02	.01	.01	.01	.01	.03	.04	.02	.02
14	.03	.03	.02	.02	.01	.01	.01	.01	.03	.04	.02	.02
15	.03	.03	.02	.02	.01	.01	.01	.01	.02	.04	.02	.02
16	.03	.03	.02	.02	.01	.01	.01	.01	.02	.04	.02	.02
17	.03	.02	.02	.02	.01	.01	.01	.01	.02	.03	.02	.02
18	.03	.02	.02	.02	.01	.01	.01	.01	.02	.03	.02	.02
19	.03	.02	.02	.02	.01	.01	.01	.01	.02	.03	.02	.02
20	.03	.02	.02	.01	.01	.01	.01	.01	.02	.03	.02	.02
21	.03	.03	.02	.01	.01	.01	.01	.01	.02	.03	.02	.02
22	.03	.03	.02	.01	.01	.01	.01	.01	.02	.03	.02	.02
23	.03	.03	.02	.01	.01	.01	.01	.01	.04	.03	.02	.02
24	.03	.03	.02	.01	.01	.01	.01	.01	.05	.03	.02	.02
25	.03	.03	.02	.01	.01	.01	.01	.01	.05	.03	.02	.02
26	.03	.03	.02	.01	.01	.01	.01	.01	.05	.03	.02	.02
27	.03	.03	.02	.01	.01	.01	.01	.01	.04	.03	.02	.02
28	.03	.03	.02	.01	.01	.02	.01	.01	.04	.03	.02	.02
29	.03	.03	.02	.01	.01	.02	.01	.01	.04	.02	.02	.02
30	.03	.03	.02	.01	.01	.02	.01	-	a.04	.02	.02	.02
31	.03	.02	-	.01	-	.01	.01	-	a.04	-	.02	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.04	0.03	0.031	0.048	0.96	2.9
August	.03	.02	.026	.040	.82	2.5
September	.02	.02	.020	.031	.60	1.8
October	.02	.01	.016	.025	.50	1.5
November	.01	.01	.010	.016	.30	.9
December	.02	.01	.011	.017	.34	1.0
Calendar year 1943	.13	.01	.031	.048	11.5	35
January	.01	.01	.010	.016	.31	1.0
February	.01	.01	.010	.016	.29	.9
March	.09	.01	.039	.060	1.22	3.7
April	.18	.02	.055	.085	1.65	5.1
May	.02	.02	.020	.031	.62	1.9
June	.02	.02	.020	.031	.60	1.6
Fiscal year 1943-44	.18	.01	.022	.034	8.21	25

a No gage-height record; discharge computed on basis of records for Makaeleele Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

MISCELLANEOUS DISCHARGE MEASUREMENT

The following discharge measurement was made on Kapuna Stream (tributary to Pacific Ocean) 200 feet above gaging station, near Kaunakakai:

July 23, 1943: Discharge, 0.024 million gallons a day (0.037 second-foot)

Left Branch Makamakaole Stream near Waihee

Location.- Combined orifice and concrete control, lat. 20°57'40", long. 156°33'45", at intake to Marshall Ranch diversion ditch on left branch, a quarter of a mile upstream from confluence with main stream, 2 miles northeast of Waihee, and 2¼ miles south of Kahakuloa village. Altitude of gage, 1,500 feet (by barometer).

Drainage area.- 0.4 square mile.

Records available.- July 1939 to June 1944.

Extremes.- Maximum discharge during year, 92 million gallons a day (142 second-feet) Feb. 20 (gage height, 3.13 feet), from rating curve extended above 20 million gallons a day by test on model of station site; minimum, 0.44 million gallons a day (0.68 second-foot) Feb. 4, 5.
1939-44: Maximum discharge recorded, 275 million gallons a day (425 second-feet) Mar. 18, 1943 (gage height, 4.87 feet), from rating curve extended above 20 million gallons a day by test on model of station site; minimum, that of Feb. 4, 5, 1944.

Remarks.- Records fair. Marshall Ranch diversion ditch diverts water from gage pool for watering stock.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.1	0.47	1.7	3.0
1.2	.54	1.8	4.5
1.3	.60	1.9	6.8
1.4	.72	2.0	10.0
1.5	1.09	2.1	14.3
1.6	1.90	2.2	19.5

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.77	1.29	1.22	0.98	0.54	0.57	0.60	0.45	0.63	2.4	0.72	0.63
2	.67	.82	1.29	.75	.53	.54	.58	.45	.60	15.3	.69	.59
3	.64	1.09	1.09	.75	.53	1.00	.60	.45	.63	8.0	.68	.62
4	2.3	1.62	.90	.75	.53	1.85	.59	.44	5.8	2.65	.67	.59
5	1.27	.86	.90	.63	.53	5.1	.61	.44	5.9	2.25	.65	.65
6	2.4	.75	.80	.61	.52	1.15	.57	.48	1.53	1.62	.67	.77
7	5.5	.72	.80	.63	.53	.90	.55	1.09	7.0	1.37	.67	.72
8	1.71	.72	.72	.71	.52	.90	.54	.53	1.29	1.22	.64	.68
9	1.98	.69	.72	.58	.55	.86	.53	.45	1.03	1.15	.75	.60
10	1.90	.68	1.09	.57	.54	.82	.52	.45	.90	1.22	.71	1.33
11	1.22	.69	1.15	2.65	.53	.77	.54	.45	.82	1.45	.67	.72
12	2.45	.64	.77	1.22	.79	.77	1.16	.47	.77	.94	.62	.63
13	1.71	.63	.71	.69	.70	.77	.60	.79	.75	.90	1.03	.56
14	1.29	.63	.68	.65	.54	.97	.55	.53	.72	.86	.80	.57
15	1.03	.67	.66	.64	.53	2.0	.54	.48	.69	.86	.64	1.70
16	.98	.62	.68	.60	.54	2.25	.53	.48	.68	.82	.62	.75
17	.94	.59	.68	.57	.53	.90	.53	.48	.65	.98	.60	.67
18	1.29	.58	.67	.55	.54	.75	.53	.49	.69	2.65	3.45	.62
19	.94	.58	.72	.55	.62	.68	.52	.57	.68	1.80	2.35	.58
20	1.09	.57	.67	.55	.66	.62	.54	5.5	.65	.98	.98	.72
21	.90	5.0	.64	.54	.54	.58	.51	10.9	5.0	1.45	.98	.77
22	1.18	1.62	.64	.54	.53	.57	.51	1.90	1.55	1.45	.75	3.25
23	1.37	.90	.61	.54	.51	.55	.51	.90	4.9	1.09	.68	.90
24	.90	1.09	.64	.54	.50	.55	.50	1.45	1.15	.94	.64	.71
25	.86	3.0	.65	.54	.49	.54	.50	.86	.90	.86	.63	.68
26	.90	1.09	.57	.54	.49	.66	.49	.69	.80	.82	1.14	.65
27	.86	.86	.59	.54	.51	1.09	.48	.64	.77	.80	.77	.62
28	.77	.77	2.1	.54	.53	2.4	.47	.68	14.4	.80	.84	.62
29	.75	3.15	.94	.66	.54	.82	.47	.63	9.8	.75	.84	.60
30	.72	2.7	1.55	1.34	.57	.67	.47	-	3.0	.72	.62	.80
31	.98	1.22	-	.62	-	.62	.45	-	1.90	-	.65	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.5	0.64	1.36	2.10	42.3	130
August	5.0	.57	1.19	1.84	36.8	113
September	2.1	.57	.862	1.33	25.9	79
October	2.65	.54	.728	1.13	22.6	69
November	.79	.49	.550	.851	16.5	51
December	5.1	.54	1.07	1.66	33.1	102
Calendar year 1943	25.5	.49	1.63	2.52	595	1,830
January	1.16	.45	.551	.853	17.1	52
February	10.9	.44	1.18	1.83	34.1	105
March	14.4	.60	2.47	3.82	76.6	235
April	15.3	.72	1.97	3.05	59.1	181
May	3.45	.60	.863	1.34	26.8	82
June	3.25	.57	.811	1.25	24.3	75
Fiscal year 1943-44	15.3	.44	1.13	1.75	415	1,270

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honokohau Stream near Honokohau

Location.- Masonry dam control, lat. 20°57'45", long. 156°35'20", 1,000 feet upstream from intake of Honokohau ditch and 5 miles southeast of Honokohau. Altitude of gage, 950 feet (by barometer).

Drainage area.- 4.2 square miles.

Records available.- March 1913 to September 1920, May 1922 to June 1944.

Average discharge.- 26 years (1916-20, 1922-44), 26.3 million gallons a day (40.7 second-feet).

Extremes.- Maximum discharge during year, 899 million gallons a day (1,390 second-feet) Mar. 4 (gage height, 5.82 feet), from rating curve extended above 120 million gallons a day; minimum, 6.0 million gallons a day (9.3 second-feet) Feb. 11.
1913-20, 1922-44: Maximum discharge, 2,420 million gallons a day (3,740 second-feet) Dec. 14, 1942 (gage height, 8.40 feet), from rating curve extended above 120 million gallons a day; minimum, that of Feb. 11, 1944.

Remarks.- Records good. No diversions above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.8	4.5	2.3	18.9	3.3	114
1.9	6.4	2.5	29	3.6	165
2.0	8.7	2.7	42	4.0	250
2.1	11.5	3.0	73		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.4	21	14.8	17.6	8.0	9.8	8.2	7.3	7.8	16.5	8.0	10.7
2	11.9	18.0	20.5	11.1	8.0	8.0	8.7	8.4	7.1	239	7.8	9.9
3	11.4	60	14.0	10.1	7.8	25.5	12.5	7.3	16.5	110	7.6	16.9
4	49	63	10.9	11.4	8.0	59	9.8	6.6	146	14.2	7.6	13.8
5	36.5	18.5	12.2	9.3	8.7	43	12.3	6.4	51	18.8	7.6	16.5
6	74	17.2	10.4	9.0	8.0	10.3	11.6	7.3	11.1	10.4	29.5	12.2
7	115	14.9	9.8	14.5	8.0	8.2	8.7	28.5	57	10.1	14.7	9.3
8	46	10.9	9.5	12.4	8.0	8.0	7.8	6.9	9.3	10.8	14.2	8.5
9	56	10.4	10.7	10.1	13.6	7.6	7.3	6.4	8.0	12.7	25.5	8.8
10	39.5	10.7	25	9.3	9.7	7.6	7.1	6.2	7.8	14.1	19.2	9.0
11	11.8	14.6	31.5	11.4	8.0	7.6	7.3	6.4	7.6	17.7	9.4	8.7
12	50	10.9	10.4	10.4	11.4	7.3	18.7	9.8	7.1	9.8	17.1	8.5
13	44	10.1	9.5	9.0	10.0	7.3	8.0	8.6	6.9	9.9	33.5	8.0
14	11.8	12.1	9.5	8.7	8.2	36.5	7.1	8.3	6.9	19.2	43	8.0
15	14.1	16.9	9.3	12.3	8.2	182	7.1	8.2	6.9	32.5	10.0	17.0
16	10.9	10.9	9.3	10.7	9.3	14.8	6.9	6.9	6.6	18.4	18.8	9.5
17	51	10.7	9.3	9.0	8.0	9.3	6.9	6.9	6.9	28	19.9	9.3
18	35	9.8	9.5	8.7	8.8	9.0	6.9	7.1	9.1	75	214	8.5
19	12.2	9.5	14.1	8.2	33	8.2	6.9	15.5	7.9	35	152	8.7
20	15.3	9.5	10.1	8.2	15.5	7.8	6.9	11.3	9.2	10.8	27	30.5
21	10.9	87	9.3	9.8	8.2	7.6	6.6	89	51	17.6	25.5	58
22	24.5	28.5	9.0	8.7	7.8	7.6	6.6	20	10.8	23	10.4	97
23	15.5	15.5	9.0	8.2	7.6	7.3	6.6	10.5	36	13.3	9.5	11.8
24	10.7	27.5	9.3	8.2	7.3	7.6	6.6	9.0	9.0	9.5	9.0	9.3
25	10.1	49	9.8	8.0	7.1	7.3	6.4	8.0	7.8	8.7	8.7	9.0
26	50	12.2	9.0	8.0	7.1	14.4	6.4	7.8	7.6	8.5	10.2	8.6
27	40	11.2	20.5	8.0	7.3	61	6.4	7.1	7.3	25.5	12.3	8.7
28	12.2	10.9	54	9.6	7.1	134	6.4	6.9	26	14.0	18.5	18.6
29	10.4	55	15.2	10.5	10.2	36	6.4	6.9	48	9.6	16.3	10.4
30	9.8	80	18.2	11.0	11.1	9.5	6.4	-	40	8.2	10.0	35.5
31	21.5	13.2	-	8.2	-	8.2	6.4	-	14.3	-	19.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	115	9.8	29.8	46.1	924	2,840
August	87	9.5	24.2	37.4	750	2,300
September	54	9.0	14.1	21.8	424	1,300
October	17.6	8.0	9.99	15.5	310	950
November	33	7.1	9.63	14.9	289	887
December	182	7.3	25.1	38.8	777	2,390
Calendar year 1943	182	7.1	20.2	31.3	7,370	22,620
January	18.7	6.4	8.00	12.4	248	761
February	89	6.2	11.9	18.4	346	1,060
March	146	6.6	21.4	33.1	662	2,030
April	239	8.2	28.4	43.9	851	2,610
May	214	7.6	27.0	41.8	836	2,570
June	97	8.0	16.6	25.7	499	1,530
Fiscal year 1943-44	239	6.2	18.9	29.2	6,920	21,230

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honokawai ditch near Lahaina

Location.- Lat. 20°56'00", long. 156°37'30", just downstream from intake on Honokawai Stream, 2⅛ miles upstream from Pioneer Mill Co.'s power house, and 7⅛ miles northeast of Lahaina. Altitude of gage, 1,900 feet (from topographic map).

Records available.- July 1912 to June 1944.

Average discharge.- 25 years (1919-44), 5.74 million gallons a day (8.88 second-feet).

Extremes.- Maximum daily discharge during year, 18.5 million gallons a day (28.6 second-feet) Dec. 28; minimum daily, 2.95 million gallons a day (4.56 second-feet) Sept. 16.
1912-32: Maximum discharge, 76 million gallons a day (118 second-feet) Aug. 11, 1929 (gage height, 2.17 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Ditch diverts water for power and irrigation from Honokawai Stream just above station. Flow regulated by head gates at intake.

Cooperation.- Records of daily discharges since July 1932 furnished by Pioneer Mill Co.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.1	5.0	3.35	4.2	3.0	3.65	3.3	3.4	3.3	3.9	3.15	3.85
2	3.35	5.5	4.0	3.5	3.0	3.3	3.35	3.4	3.25	16.2	3.15	3.6
3	3.7	12.5	3.4	3.05	3.0	8.0	4.7	3.4	4.5	11.9	3.15	4.8
4	10.2	11.7	3.2	3.0	3.0	11.0	3.9	3.4	14.4	4.0	3.1	4.2
5	8.5	4.7	3.15	3.1	3.0	8.4	4.2	3.4	6.8	3.9	3.1	4.9
6	12.1	5.1	3.1	3.1	3.0	3.45	4.4	3.3	3.55	3.55	4.2	3.6
7	15.7	4.5	3.0	3.1	3.0	3.1	3.6	7.1	6.4	3.5	4.6	3.35
8	8.7	3.25	3.0	3.45	3.0	3.1	3.35	3.55	3.45	3.65	3.75	3.25
9	7.4	3.15	3.0	3.15	3.0	3.1	3.15	3.4	3.45	3.95	8.4	3.25
10	7.4	3.05	4.9	3.05	3.0	3.1	3.15	3.4	3.5	4.2	5.9	3.25
11	3.55	4.3	6.8	3.0	3.0	3.1	3.15	3.55	3.45	5.2	3.6	3.26
12	7.9	3.4	3.15	3.0	3.1	3.1	3.8	4.4	3.4	3.65	5.4	3.25
13	7.8	3.2	3.1	3.0	3.1	3.1	3.5	3.6	3.4	3.45	10.8	3.15
14	3.5	3.1	3.05	3.0	3.1	5.2	3.45	5.0	3.4	5.5	12.5	3.15
15	4.0	3.95	3.0	3.15	3.05	17.2	3.35	5.7	3.4	7.2	3.8	3.15
16	3.5	3.3	2.95	3.6	3.0	3.8	3.3	3.4	3.4	6.6	5.2	3.3
17	5.8	3.15	3.0	3.0	3.0	3.3	3.3	3.4	3.4	7.7	6.2	3.25
18	9.1	3.0	3.0	3.0	3.0	3.2	3.4	3.4	3.55	11.5	13.6	3.25
19	3.45	3.05	3.2	3.0	9.1	3.1	3.3	5.8	3.4	7.5	14.2	3.25
20	3.7	3.15	3.2	3.0	4.7	3.1	3.4	3.75	3.4	3.8	7.6	9.8
21	3.2	11.6	3.1	3.0	3.2	3.1	3.4	11.2	8.0	4.4	6.1	14.2
22	4.0	6.0	3.1	3.0	3.15	3.1	3.45	4.6	4.0	6.1	3.7	13.1
23	4.2	3.5	3.15	3.0	3.1	3.05	3.4	3.95	6.5	4.0	3.55	4.0
24	3.3	6.1	3.15	3.0	3.0	3.05	3.4	3.65	3.7	3.5	3.4	3.45
25	3.25	6.1	3.1	3.05	3.0	3.05	3.4	3.6	3.45	3.3	3.35	3.3
26	7.3	3.45	3.0	3.05	3.0	3.55	3.4	3.45	3.4	3.3	3.4	3.25
27	7.2	3.35	5.0	3.0	3.05	13.2	3.3	3.3	3.4	7.7	3.4	3.25
28	3.3	3.3	7.6	3.0	3.1	18.5	3.35	3.3	3.4	6.9	6.5	6.6
29	3.1	9.9	4.3	3.0	3.1	10.0	3.4	3.3	5.0	3.95	6.8	4.1
30	3.0	11.4	3.9	3.0	3.6	3.6	3.4	-	8.4	3.3	3.8	10.1
31	5.7	3.65	-	3.0	-	3.4	3.4	-	4.6	-	6.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	15.7	3.0	5.84	9.04	181	555
August	12.5	3.0	5.30	8.20	164	505
September	7.6	2.95	3.60	5.57	108	331
October	4.2	3.0	3.11	4.81	96.6	296
November	9.1	3.0	3.32	5.14	99.4	305
December	18.5	3.05	5.35	8.28	166	509
Calendar year 1943	18.5	2.95	4.69	7.25	1,710	5,250
January	4.7	3.15	3.50	5.42	108	333
February	11.2	3.3	4.14	6.41	120	369
March	14.4	3.25	4.54	7.02	141	432
April	16.2	3.3	5.58	8.63	167	515
May	14.2	3.1	5.67	8.77	176	540
June	14.2	3.15	4.74	7.33	142	436
Fiscal year 1943-44	18.5	2.95	4.56	7.06	1,670	5,120

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Olowalu ditch near Olowalu

Location.- Parshall flume control, lat. 20°49'40", long. 156°36'40", 114 feet upstream from intake of pipe line to hydroelectric plant, 1¼ miles northeast of Olowalu, and 7 miles east of Lahaina.

Records available.- August 1911 to June 1944.

Average discharge.- 26 years (1917-20, 1921-44), 5.03 million gallons a day (7.78 second-feet).

Extremes.- Maximum daily discharge during year, 10.2 million gallons a day (15.8 second-feet) Dec. 28, Apr. 2, May 19; minimum daily, 2.15 million gallons a day (3.33 second-feet) Nov. 30 to Dec. 3.

1911-32: Maximum discharge, 18 million gallons a day (28 second-feet) Dec. 25, 1920 (gage height, 1.53 feet, site and datum then in use); no flow occasionally, when water was shut out of ditch.

Remarks.- Ditch diverts water from Olowalu Stream at altitude of about 450 feet. Water used for power and irrigation. Regulated by head gates.

Cooperation.- Records of daily discharges since January 1932 furnished by Pioneer Mill Co.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.4	4.8	5.5	3.7	2.3	2.15	5.1	2.35	3.1	6.2	4.5	3.95
2	3.55	4.4	5.2	3.2	2.3	2.15	4.4	2.4	3.0	10.2	4.2	3.95
3	3.45	6.1	4.9	3.1	2.3	2.2	4.1	2.4	3.3	9.1	4.2	4.8
4	5.7	9.4	4.3	3.0	2.3	3.55	3.85	2.3	8.1	8.1	4.0	4.6
5	6.0	6.6	4.1	2.9	2.3	4.8	3.7	2.3	8.1	7.8	3.95	4.8
6	9.3	5.3	3.8	2.9	2.3	2.4	4.3	2.3	8.1	7.6	4.1	4.4
7	9.8	4.8	3.65	2.9	2.3	2.3	3.6	2.65	5.9	7.5	4.0	4.0
8	7.8	4.4	3.55	2.9	2.3	2.3	3.3	2.3	5.3	7.3	3.9	3.85
9	7.7	4.0	3.45	2.85	2.35	2.3	3.15	2.3	6.1	7.2	4.2	3.95
10	10.1	4.0	3.9	2.85	2.3	2.3	3.1	2.35	5.8	7.0	4.3	4.3
11	9.0	4.3	5.1	2.95	2.2	2.3	3.0	4.3	4.8	7.1	3.8	4.7
12	8.5	3.9	3.55	2.95	2.25	2.3	3.25	4.6	4.1	6.6	3.75	4.4
13	9.3	3.65	3.35	2.85	2.25	2.3	3.05	2.95	3.5	6.4	4.3	4.0
14	8.0	3.55	3.2	2.85	2.2	3.25	2.95	2.9	3.8	6.6	5.0	3.7
15	6.4	3.65	3.15	2.8	2.2	9.9	2.9	2.65	4.3	6.9	4.0	3.65
16	5.6	3.4	3.1	2.6	2.2	7.2	2.9	2.55	4.1	6.8	4.3	3.55
17	6.0	3.25	3.05	2.45	2.2	5.2	2.8	2.5	4.1	6.7	5.1	3.4
18	7.9	3.15	3.1	2.45	2.3	4.1	2.7	2.4	4.0	7.9	9.1	3.3
19	5.7	3.15	3.4	2.45	3.35	3.6	2.65	5.4	3.8	7.8	10.2	3.3
20	5.4	3.05	3.0	2.45	2.7	3.25	2.65	5.3	5.8	7.3	9.7	4.6
21	4.9	7.9	2.95	2.45	2.2	3.05	2.6	7.2	8.6	7.0	8.9	6.4
22	5.1	9.6	3.15	2.45	2.2	2.95	2.55	6.1	8.6	6.9	6.8	8.1
23	4.8	6.6	2.8	2.45	2.2	2.9	2.55	3.9	9.4	5.9	6.8	5.9
24	4.4	6.6	2.9	2.45	2.2	2.9	2.55	3.25	8.1	5.2	5.3	4.6
25	4.2	8.3	2.95	2.45	2.2	2.85	2.45	3.85	7.6	4.9	4.8	4.1
26	5.3	6.2	2.9	2.45	2.2	2.9	2.45	3.55	5.8	4.6	4.7	3.75
27	5.7	5.1	3.9	2.45	2.2	3.4	2.45	2.8	4.6	4.8	4.4	3.55
28	4.6	4.5	4.3	2.45	2.2	10.2	2.35	2.8	4.0	4.5	4.7	3.7
29	4.2	6.3	5.3	3.15	2.2	9.5	2.35	2.75	6.2	4.2	4.6	3.4
30	3.95	9.2	3.95	2.55	2.15	6.4	2.35	-	6.5	4.4	4.2	5.3
31	4.5	6.5	-	2.45	-	6.1	2.35	-	6.0	-	4.4	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.1	3.4	6.14	9.50	190	584
August	9.6	3.05	5.34	8.26	166	508
September	5.5	2.8	3.72	5.76	111	342
October	3.7	2.45	2.74	4.24	84.8	260
November	3.35	2.15	2.30	3.56	68.8	211
December	10.2	2.15	4.04	6.25	125	384
Calendar year 1943	10.9	2.15	4.88	7.55	1,780	5,460
January	5.1	2.35	3.05	4.72	94.4	290
February	7.2	2.3	3.26	5.04	94.4	290
March	9.4	3.0	5.63	8.71	174	536
April	10.2	4.2	6.68	10.3	200	615
May	10.2	3.75	5.14	7.95	159	489
June	8.1	3.3	4.33	6.70	130	399
Fiscal year 1943-44	10.2	2.15	4.37	6.76	1,600	4,910

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Oheo Stream below diversion dam, near Kipahulu

Location.- Lat. 20°41'05", long. 156°04'10", just downstream from old diversion dam at elevation 1,550 feet, 2 miles northwest of Kipahulu, and 2½ miles upstream from mouth.

Drainage area.- 5.8 square miles.

Records available.- February 1927 to September 1929, December 1931 to June 1944.

Extremes.- Maximum discharge during year, 4,000 million gallons a day (6,190 second-feet) Mar. 4 (gage height, 10.20 feet), from rating curve extended above 750 million gallons a day by test on model of station site; minimum, 0.04 million gallons a day (0.06 second-foot) Oct. 20, Nov. 25-27, Jan. 22, Feb. 12, 13.
1927-29, 1931-44: Maximum discharge, 6,190 million gallons a day (9,580 second-feet) Jan. 4, 1933 (gage height, 11.95 feet), from rating curve extended above 400 million gallons a day; no flow in dry periods.

Remarks.- Records good except those for July 3-21, which are poor. Small quantity of water is diverted for domestic supply and livestock.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.04	0.8	4.0	3.0	136
.2	.14	1.0	7.5	4.0	254
.3	.33	1.3	15.3	5.0	465
.4	.63	1.6	27.5	6.0	760
.5	1.08	2.0	51	7.0	1,010
.6	1.79	2.5	91	8.0	1,240

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.3	10.9	6.7	45	3.2	3.8	6.5	0.06	121	0.20	0.31	12.8
2	4.8	2.3	16.7	3.95	.42	.47	132	.07	411	126	.20	3.6
3	2.5	70	8.2	.27	.22	49	111	.07	181	64	.12	10.8
4	5.0	199	1.54	.81	5.3	188	67	.06	1,140	3.5	.08	5.6
5	15	45	25	3.65	52	116	27	.06	100	1.32	.06	14.2
6	50	14.4	3.4	.33	1.00	6.7	12.9	.06	31.5	.57	42	3.85
7	100	12.6	.81	.18	.45	226	1.39	.80	86	.36	25.5	10.1
8	30	1.98	.56	4.2	2.15	6.9	.54	6.7	4.4	12.0	26.6	8.0
9	35	.86	.42	9.5	8.3	1.18	.36	.59	e1.08	5.1	69	34
10	12	22	1.13	1.27	2.1	.42	.27	.06	e1.62	10.1	92	13.8
11	3.0	72	12.1	5.5	.20	.24	.20	.05	e4.8	10.2	19.9	8.2
12	55	27.5	.81	25	.18	.12	.13	.04	e1.04	.64	48	2.0
13	70	10.4	1.24	1.11	.10	.08	.21	.04	e.76	20	156	.99
14	4.5	3.1	.27	.42	.07	13.0	.11	21.5	e.72	43	111	.68
15	2.5	10.5	.16	1.75	.07	91	.06	21	e.63	72	17.1	48
16	2.0	11.5	.10	.43	.07	36	.05	.13	e.57	42	23.5	10.0
17	9.0	2.25	.07	.26	.07	18.7	.05	4.1	e.36	182	28	17.0
18	13	.54	.22	.22	.08	1.62	.66	21.5	e1.16	70	213	16.0
19	1.5	.31	14.1	.06	77	.72	.09	2.9	e1.45	135	361	12.8
20	3.5	.22	2.05	.06	30.5	.39	.06	.71	e.73	19.5	61	77
21	.8	214	.12	8.8	.28	.22	.05	.56	247	18.1	52	294
22	7.5	24.5	25	21	.07	.13	.04	.39	34	24	5.2	187
23	6.5	8.0	.71	19.7	.06	.20	.06	.48	194	24	1.66	17.8
24	.90	25.5	.22	.88	.05	4.1	13.8	3.65	4.8	3.45	.94	4.2
25	.39	38.5	.14	.07	.04	.91	35	4.5	e.86	.73	1.08	10.1
26	12.5	3.6	.11	.06	.04	3.3	30.5	91	e.57	.54	.72	24.5
27	101	1.29	.17	.06	.04	145	.64	341	e.54	8.8	3.8	23.5
28	3.9	3.9	.42	.07	.06	416	.27	246	e.42	6.6	.63	63
29	.72	122	2.6	19.4	.08	82	.14	42	e.53	2.95	69	31.5
30	.39	236	.10	20.5	8.9	6.8	.08	-	6.8	.36	16.5	59
31	5.3	25.5	-	97	-	5.4	.07	-	.53	-	78	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	101	0.39	18.4	28.5	570	1,750
August	236	.22	39.4	61.0	1,220	3,740
September	25	.07	4.17	6.45	125	384
October	97	.06	9.40	14.5	292	895
November	77	.04	6.44	9.96	193	593
December	416	.08	45.9	71.0	1,420	4,370
Calendar year 1943	465	.04	24.7	38.2	9,000	27,660
January	132	.04	14.2	22.0	441	1,350
February	341	.04	27.9	43.2	810	2,490
March	1,140	.36	70.1	108	2,170	6,670
April	182	.20	30.2	46.7	907	2,780
May	361	.06	49.1	76.0	1,520	4,680
June	294	.68	34.3	53.1	1,030	3,160
Fiscal year 1943-44	1,140	.04	29.3	45.3	10,700	32,860

e Recorded gage height not representative of average for day; discharge computed on basis of records for Right Branch Kahalawe Stream.
Note.- No gage-height record July 3-21; discharge computed on basis of records for Right Branch Kahalawe Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Right Branch Kahalawe Stream near Kipahulu

Location.- Columbus control, lat. 20°41'05", long. 156°03'00", at old ditch intake, 2 miles north of Kipahulu. Altitude of gage, 1,100 feet.

Drainage area.- 0.1 square mile.

Records available.- February 1927 to June 1944.

Average discharge.- 14 years (1927-34, 1935-36, 1938-44), 3.58 million gallons a day (5.54 second-feet).

Extremes.- Maximum discharge during year, 253 million gallons a day (391 second-feet) probably June 21 (gage height, 3.16 feet), from rating curve extended above 15 million gallons a day by test on model of station site; minimum, 0.55 million gallons a day (0.85 second-foot) Feb. 13.

1927-44: Maximum discharge, 1,940 million gallons a day (3,000 second-feet) Apr. 29, 1937 (gage height, 15.74 feet, datum then in use), from rating curve extended above 22 million gallons a day; minimum, 0.15 million gallons a day (0.23 second-foot) Dec. 18, 1929.

Remarks.- Records good. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.8	0.35	1.2	2.3	1.6	9.3
.9	.62	1.3	3.3	1.7	12.4
1.0	1.01	1.4	4.8	1.9	23
1.1	1.54	1.5	6.8	2.1	37

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.95	2.3	2.75	6.4	1.47	1.40	1.73	0.79	2.35	1.15	1.10	3.3
2	2.4	1.87	4.5	1.87	1.15	1.65	3.45	1.25	1.35	14.1	.97	2.0
3	2.2	6.9	2.55	1.41	.97	4.1	2.9	1.00	3.05	5.4	.92	3.0
4	3.2	14.5	2.1	1.85	3.65	6.1	4.0	.79	12.5	1.87	.87	2.5
5	5.1	3.9	7.2	4.3	2.85	3.6	2.2	.83	12.9	2.2	.87	3.5
6	8.4	3.0	2.1	1.41	1.35	1.73	1.80	.75	2.65	1.41	2.6	2.2
7	10.2	2.4	1.87	1.41	1.62	8.1	1.54	1.21	2.8	1.25	1.19	2.9
8	6.1	1.87	1.60	3.05	2.6	2.2	1.35	1.68	1.54	1.32	1.34	2.7
9	7.0	1.66	1.47	2.4	3.65	1.47	1.25	1.18	1.30	1.20	2.05	6.0
10	4.0	2.7	2.05	1.73	1.60	1.10	1.20	.83	1.68	1.36	5.0	3.5
11	2.55	4.5	3.0	2.55	1.35	1.01	1.10	.71	2.55	1.54	3.5	2.8
12	7.1	3.15	1.80	3.4	1.37	.97	1.10	.65	1.30	1.20	2.85	1.9
13	8.4	2.4	1.60	1.60	1.35	.87	1.42	.58	1.15	1.64	5.1	1.6
14	2.85	1.87	1.47	1.30	1.15	5.4	1.10	.66	1.01	3.45	4.1	1.5
15	2.4	4.3	1.30	1.78	1.01	8.7	1.05	1.71	.97	5.0	1.95	7.0
16	2.3	3.0	1.20	1.35	.97	5.4	.97	3.15	.92	3.0	2.7	3.5
17	3.1	2.05	1.10	1.30	.87	3.15	.92	3.9	.83	3.45	3.75	3.9
18	3.5	1.73	1.48	1.20	.97	1.80	1.30	3.8	2.1	5.0	11.4	3.8
19	2.2	1.54	2.65	1.10	5.1	1.41	.92	1.64	1.95	4.8	8.2	3.4
20	2.45	1.41	1.77	1.01	1.49	1.25	.97	1.15	1.34	2.3	5.0	9.0
21	1.80	19.6	1.95	2.1	1.25	1.10	.83	1.01	16.3	1.95	3.7	25
22	2.9	3.45	5.3	2.15	1.01	1.01	.75	.96	5.4	2.2	2.2	15
23	2.4	2.95	1.41	1.50	.92	1.05	.75	.87	8.6	2.0	1.73	4.0
24	1.87	5.8	1.25	1.30	.83	3.35	1.52	.85	2.05	1.60	1.47	2.4
25	1.60	4.6	1.20	1.10	.79	2.15	2.5	.88	1.47	1.35	2.0	2.35
26	1.57	2.4	1.10	.97	.75	1.77	2.6	.71	1.25	1.20	1.60	3.2
27	6.0	1.87	1.44	.97	.75	7.9	1.15	1.96	1.10	1.90	2.7	2.6
28	1.80	1.66	1.53	1.08	.75	17.7	.87	5.7	1.05	1.35	1.5	5.5
29	1.54	12.2	1.41	3.8	.97	3.5	.75	2.45	2.35	1.25	8.0	3.15
30	1.35	13.7	2.5	1.68	2.55	2.05	.71	-	3.4	1.15	4.0	5.5
31	3.1	4.3	-	3.55	-	1.98	.68	-	1.30	-	9.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.2	1.35	3.69	5.71	114	351
August	19.6	1.41	4.50	6.96	140	428
September	7.2	1.10	2.16	3.34	64.7	198
October	5.4	.97	2.02	3.13	62.7	192
November	5.1	.75	1.57	2.43	47.1	145
December	17.7	.87	3.39	5.25	105	322
Calendar year 1943	25	.53	2.81	4.35	1,020	3,140
January	4.0	.68	1.47	2.27	45.5	140
February	5.7	.58	1.51	2.54	43.6	134
March	16.3	.83	3.24	5.01	101	308
April	14.1	1.15	2.65	4.10	79.6	244
May	11.4	.87	3.33	5.15	103	317
June	25	1.5	4.62	7.15	139	426
Fiscal year 1943-44	25	.58	2.85	4.41	1,050	3,200

Note.- No gage-height record May 27 to June 28; discharge computed on basis of records for Ohao Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hana flume near Hana

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 20°45'10", long. 156°01'50", on Hana flume, 13 feet downstream from end of wooden flume, 2.5 miles south of Kaeleku, and 2.7 miles west of Hana.

Records available.- February 1940 to June 1944. Records prior to July 1940 unpublished.

Extremes.- Maximum discharge during year, 2.35 million gallons a day (3.64 second-feet) Feb. 29 (gage height, 1.27 feet); no flow many times.
1940-44: Maximum discharge, 3.0 million gallons a day (4.6 second-feet) Sept. 19, 1941 (gage height, 1.41 feet); no flow occasionally, when water was shut out of flume.

Remarks.- Records good. Water used for fluming cane and for domestic supply near Hana.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	-	0.11	0.08	0.96	0	0.07	0.02	0.02	0.12	0	-	0.48
2	-	.03	.17	.30	0	.23	.09	.08	.04	.71	-	.14
3	-	.36	.01	.06	0	.73	.05	.02	.08	.64	-	.14
4	-	.25	.02	.01	.05	1.06	.05	0	.73	.20	-	.04
5	-	.26	.23	.06	.03	1.17	.01	0	.14	.20	-	.12
6	-	.11	.02	.01	.01	.75	.01	.01	.11	.02	-	.22
7	-	.02	0	.02	.01	1.26	0	.23	.16	0	-	.43
8	-	.01	0	.05	.01	.77	0	.42	.03	0	-	.23
9	-	.01	0	.01	.52	.47	0	.18	0	0	-	.13
10	-	.09	.02	.06	.05	.10	0	.01	.09	.01	-	.21
11	-	.08	.03	.11	.01	0	0	0	.15	.02	.03	.09
12	-	.02	0	.04	.49	0	.03	0	0	0	.06	.01
13	-	.01	.01	0	.34	0	.04	0	0	.04	.23	.01
14	-	.01	0	0	.04	.64	0	.35	0	.07	.03	.01
15	-	.18	0	.01	.09	1.12	0	.33	0	.17	0	.48
16	-	.02	0	.01	.01	.63	0	.17	0	.15	.05	.08
17	-	.01	0	.01	0	.22	0	.22	0	.23	.02	.09
18	-	0	0	0	.01	.05	0	.22	0	.34	.57	.02
19	-	0	.01	0	.65	0	0	.02	.01	.21	.42	.05
20	-	0	0	0	.42	0	0	.05	0	.06	.27	.19
21	-	.32	0	0	.14	0	0	.45	.48	.05	.41	.38
22	.52	.01	.05	.04	.03	0	0	.13	.13	.10	.38	.30
23	.24	.01	0	.05	0	0	.01	.01	.50	-	.13	.11
24	0	.09	.16	0	0	.15	.11	.02	.03	-	.01	.05
25	0	.04	.02	0	0	.04	.30	.01	0	-	.06	.04
26	.11	.01	0	0	0	.01	.35	.01	0	-	.12	.05
27	.29	0	.19	0	0	.43	.01	.11	.01	-	.16	.09
28	.01	.01	.30	.02	0	.57	0	.52	.25	-	.01	.12
29	0	.47	.28	.23	0	.17	0	.26	.54	-	.32	.06
30	0	.57	.81	.58	.23	.01	0	-	.15	-	.25	.37
31	.23	.17	-	.02	-	.04	0	-	0	-	.73	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	-	-	-	-	-	-
August	0.57	0	0.106	0.164	3.28	10
September	.81	0	.080	.124	2.41	7.4
October	.96	0	.086	.133	2.66	8.2
November	.65	0	.105	.162	3.14	9.6
December	1.26	0	.345	.534	10.7	33
Calendar year 1943	-	-	-	-	-	-
January	.35	0	.035	.054	1.08	3.3
February	.52	0	.133	.206	3.85	12
March	.73	0	.115	.178	3.55	11
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	.48	.01	.158	.244	4.74	15
Fiscal year 1943-44	-	-	-	-	-	-

Note.- Data insufficient to compute discharge for days for which no figures are given.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kaeleku flume near Kaeleku

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 20°46'00", long. 156°03'25", on Kaeleku flume, just downstream from its intake from Hana flume, 2.5 miles southwest of Kaeleku, and 5.5 miles west of Hana.

Records available.- February 1940 to June 1944.

Extremes.- Maximum discharge during year, 7.4 million gallons a day (11.4 second-feet) Feb. 29 (gage height, 2.07 feet); no flow many times.
1940-44: Maximum discharge, 8.1 million gallons a day (12.5 second-feet) May 6, 1943 (gage height, 2.16 feet); no flow many times.

Remarks.- Records good. Water used for fluming cane and domestic water supply near Kaeleku.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.22	1.05			-	0	0.80	0	0.74	0.03	0.02	0
2	.89	.63			-	.04	2.4	0	.01	4.1	0	.57
3	1.05	2.2			-	.81	2.45	0	.25	3.65	0	1.45
4	2.0	1.83			-	1.24	2.25	0	3.9	.85	0	1.06
5	2.6	1.26			-	.94	1.28	0	.68	.93	0	2.1
6	3.0	.94			-	.28	1.11	0	1.10	.17	1.03	.67
7	2.9	.37			-	1.49	.52	0	3.0	.02	.74	.02
8	2.75	.14			-	.05	.36	.17	.29	1.02	1.09	.05
9	2.05	.14			-	.01	.12	0	.03	.63	2.55	.15
10	2.25	-			-	0	.01	0	.29	.61	3.45	.12
11	1.06	-			-	0	0	0	.53	.70	.86	.08
12	2.9	-			-	0	.94	0	0	.17	2.6	0
13	3.1	-			-	0	.56	0	0	1.05	3.7	0
14	1.24	-			-	1.00	.10	.38	0	2.6	2.7	0
15	1.12	-			-	1.81	0	.40	0	2.9	.77	1.58
16	1.18	-			-	1.24	0	0	0	2.1	2.65	.30
17	1.03	-			-	1.23	0	.02	0	2.75	2.9	.68
18	.92	-			-	.68	0	.92	0	3.6	4.6	.79
19	.27	-			-	.24	0	.55	0	3.0	4.2	.84
20	.60	-			0.24	.04	0	.25	0	.83	2.8	2.5
21	.02	-			0	0	0	2.75	2.25	1.00	1.92	4.0
22	.32	-			0	0	0	2.05	.92	1.62	.01	3.7
23	.34	-			0	.01	.11	.99	2.55	.90	.12	1.19
24	.27	-			0	1.29	.17	1.65	.43	.06	.15	.63
25	.07	-			0	.29	.69	1.14	.07	.18	.38	.98
26	1.30	-			0	.80	.32	1.83	0	.25	.54	1.41
27	2.05	-			0	2.6	0	4.1	0	1.32	1.27	1.74
28	.38	-			0	4.5	0	4.5	1.02	.78	.51	2.7
29	.05	-			0	2.75	0	3.2	2.3	.34	2.85	1.57
30	0	-			.01	.96	0	-	.97	.15	.46	2.9
31	1.17	-			-	.89	0	-	.23	-	.91	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.1	0	1.29	2.00	40.1	123
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November	-	-	-	-	-	-
December	4.5	0	.813	1.26	25.2	77
Calandar year 1943	-	-	-	-	-	-
January	2.45	0	.458	.709	14.2	44
February	4.5	0	.869	1.33	24.9	76
March	3.9	0	.695	1.08	21.6	66
April	4.1	.02	1.28	1.98	38.5	118
May	4.6	0	1.48	2.29	45.8	140
June	4.0	0	1.13	1.75	33.8	104
Fiscal year 1943-44	-	-	-	-	-	-

Note.- Data insufficient to compute discharge for days for which no figures are given.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Makapipi Stream near Nahiku

Location.- Concrete control, lat. 20°48'35", long. 156°05'55", 100 feet upstream from highway crossing, 1¼ miles south of Nahiku, and 4⅝ miles southeast of Keanae post office.

Drainage area.- 5.0 square miles.

Records available.- July 1932 to June 1944. Records at same site collected by East Maui Irrigation Co. June 1930 to June 1932.

Average discharge.- 12 years, 6.62 million gallons a day (10.2 second-feet).

Extremes.- Maximum discharge during year, 772 million gallons a day (1,190 second-feet) Aug. 21 (gage height, 4.60 feet), from rating curve extended above 70 million gallons a day by test on model of station site; no flow many times.
1932-44: Maximum discharge, 1,430 million gallons a day (2,210 second-feet) Dec. 14, 1942 (gage height, 6.42 feet), from rating curve extended above 70 million gallons a day by test on model of station site; no flow occasionally during dry weather.

Remarks.- Records good except those for Aug. 29, 30, which are poor. Koolau ditch diverts water 1 mile above station for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

-0.2	0	0.2	1.2	0.6	12.5
-.1	.1	.3	2.9	.8	23.5
0	.3	.4	5.3	1.0	45
.1	.6	.5	8.5	1.2	65

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.2	1.0	3.1	0.4		0		0	42	0	0	0.5
2	1.2	1.0	2.7	.4		0		0	1.7	22	0	.5
3	1.5	1.0	2.7	.3		0		0	1.0	12.9	0	.5
4	1.7	1.5	2.4	.3		0		0	.4	2.2	0	.5
5	1.9	1.7	2.1	.2		0		0	.1	1.2	0	.5
6	4.1	1.7	1.9	.2		0		0	0	.7	0	.4
7	21	1.7	1.7	0		0		0	3.0	0	0	.4
8	11.3	1.7	1.5	0		2.3		0	0	0	0	.4
9	9.5	1.7	1.4	0		.4		0	0	0	0	.4
10	9.9	1.7	1.2	0		0		0	0	0	0	.4
11	6.3	1.7	1.1	0		0		0	0	0	0	.4
12	5.1	1.8	1.1	0		0		0	0	0	0	.3
13	10.8	1.5	1.0	0		0		0	0	0	0	.3
14	5.6	1.5	1.0	0		0		0	0	0	0	.3
15	4.1	1.5	.9	0		0		0	0	0	0	.3
16	3.1	1.4	.8	0		0		0	0	0	0	.2
17	10.8	1.4	.8	0		0		0	0	0	0	.2
18	7.2	1.4	.8	0		0		0	0	0	6.5	.2
19	3.1	1.4	.7	0		0		0	0	0	36	.1
20	2.7	1.4	.6	0		0		0	0	0	6.3	.2
21	2.0	53	.6	0		0		0	0	0	3.9	.3
22	1.7	4.1	.5	0		0		0	0	0	3.1	.7
23	1.4	2.9	.5	0		0		0	0	0	2.4	.8
24	1.2	2.7	.5	0		0		0	0	0	1.7	.8
25	1.1	5.2	.4	0		0		0	0	0	1.1	.7
26	1.4	2.6	.4	0		0		11.2	0	0	1.0	.7
27	1.1	2.4	.3	0		0		11.1	0	0	.8	.7
28	1.0	2.4	.3	0		26		3.1	0	0	.7	.6
29	1.0	a5.0	.3	0		15.2		.7	0	0	.6	.6
30	1.0	a8.0	.3	0		4.0		-	0	0	.5	.6
31	1.0	3.6	-	0		.5		-	0	-	.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	21	1.0	4.39	6.79	136	417
August	53	1.0	3.91	6.05	121	372
September	3.1	.3	1.12	1.73	33.6	103
October	.4	0	.058	.090	1.8	5.5
November	0	0	0	0	0	0
December	26	0	1.56	2.41	48.4	149
Calendar year 1943	64	0	2.46	3.81	897	2,760
January	0	0	0	0	0	0
February	11.2	0	.900	1.39	26.1	80
March	42	0	1.55	2.40	48.2	148
April	22	0	1.30	2.01	39.0	120
May	36	0	2.10	3.25	65.1	200
June	.e	.1	.450	.698	13.5	41
Fiscal year 1943-44	53	0	1.46	2.26	533	1,640

a No gage-height record; discharge computed on basis of records for Kapaula Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

West Makapipi Spring near Nahiku

Location.- Parshall flume, lat. 20°48'20", long. 156°06'20", half a mile upstream from highway, 1.7 miles south of Nahiku, and 4¼ miles southeast of Keanae post office.

Records available.- July 1932 to June 1944. Records at same site collected by East Maui Irrigation Co. June 1931 to June 1932.

Average discharge.- 12 years, 0.614 million gallons a day (0.950 second-foot).

Extremes.- Maximum discharge during year, 4.3 million gallons a day (6.6 second-feet) Aug. 21 (gage height, 1.05 feet); no flow many times.
1932-44: Maximum discharge, 32 million gallons a day (50 second-feet) Feb. 25, 1935 (gage height, 2.93 feet, control then in use), from rating curve extended above 1.5 million gallons a day by weir formulas; no flow in dry weather.

Remarks.- Records good. No diversions.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.47	0.47	0.75	0.32	a0.12						0	0.27
2	.47	.54	.75	.30	a.12						0	.27
3	.47	.54	.71	.30	a.12						0	.27
4	.47	.62	.71	.30	a.10						0	.27
5	.47	.66	.66	.30	a.10						0	.30
6	.50	.66	.62	.27	a.10						0	.32
7	.58	.71	.62	.27	a.05						0	.32
8	.58	.71	.62	.25	f.02						0	.32
9	.54	.75	.58	.25	.01						0	.32
10	.54	.75	.58	.25	0						0	.32
11	.50	.79	.54	.23	0						0	.32
12	.47	.79	.54	.23	0						0	.35
13	.50	.79	.50	.23	0						0	.35
14	.47	.79	.50	.23	0						0	.35
15	.44	.79	.50	.23	0						0	.35
16	.40	.79	.47	.21	0						0	.35
17	.40	.79	.47	.21	0						0	.35
18	.44	.79	.44	.19	0						.11	.35
19	.38	.79	.44	.19	0						.25	.38
20	.38	.79	.40	.19	0						.17	.38
21	.38	1.05	.40	.17	0						.17	.38
22	.35	.88	.38	.17	0						.16	.38
23	.35	.84	.38	.17	0						.16	.38
24	.35	.79	.38	.16	0						.17	.35
25	.35	.84	.38	.16	0						.17	.36
26	.35	.79	.35	.16	0						.19	.35
27	.35	.79	.32	.16	0						.19	.35
28	.35	.79	.32	f.14	0						.21	.35
29	.38	.79	.32	a.14	0						.23	.35
30	.40	.79	.32	a.14	0						.26	.35
31	.44	.75	-	a.14	-						.27	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.58	0.35	0.436	0.675	13.5	.41
August	1.05	.47	.755	1.17	23.4	72
September	.75	.32	.498	.771	15.0	46
October	.32	.14	.215	.333	6.66	20
November	.12	0	.025	.039	.74	2.3
December	0	0	0	0	0	0
Calendar year 1943	1.05	0	.312	.483	114	350
January	0	0	0	0	0	0
February	0	0	0	0	0	0
March	0	0	0	0	0	0
April	0	0	0	0	0	0
May	.27	0	.087	.135	2.70	8.3
June	.38	.27	.337	.521	10.1	31
Fiscal year 1943-44	1.05	0	.197	.306	72.1	221

a No gage-height record; discharge computed on basis of recorded range in stage and probable decrease in flow.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

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Hanawi Stream near Nahiku

Location.- Lat. 20°48'35", long. 156°06'50", 200 feet upstream from Koolau ditch intake and trail, 1¾ miles southwest of Nahiku, and 4¾ miles southeast of Keanae.

Drainage area.- 0.8 square mile.

Records available.- January 1914 to January 1916, November 1921 to June 1944.

Average discharge.- 22 years (1922-44), 13.0 million gallons a day (20.1 second-feet).

Extremes.- Maximum discharge during year, 672 million gallons a day (1,040 second-feet) Dec. 4 (gage height, 5.64 feet), from rating curve extended above 260 million gallons a day by logarithmic plotting; minimum, 1.1 million gallons a day (1.7 second-feet) Feb. 19, 20.

1914-16, 1921-44: Maximum gage height, about 20 feet during flood of Jan. 18, 1916, from floodmarks; minimum discharge, that of Feb. 19, 20, 1944.

Remarks.- Records good except those for July 30 to Sept. 15, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.8	1.0	9.2	3.0	88
.2	1.3	1.3	13.7	3.5	137
.3	1.9	1.6	19.3	4.0	198
.5	3.4	2.0	29.5		
.7	5.4	2.5	52		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	7.2	4.2	6.3	1.4	1.4	2.45	1.5	16.3	2.05	3.0	7.9
2	5.5	5.4	3.9	3.3	1.3	1.7	9.0	1.5	3.75	83	2.9	5.4
3	4.7	6.0	4.7	2.6	1.2	10.9	8.8	1.4	2.85	50	2.9	5.9
4	14.7	12	3.7	2.3	1.3	63	4.6	1.4	46	7.2	2.85	5.4
5	14.3	10	3.2	2.25	1.3	41	4.1	1.3	3.15	4.3	2.85	5.6
6	31	6.0	3.0	2.2	1.2	3.0	4.6	1.4	2.2	3.25	3.0	4.3
7	88	5.8	2.8	2.1	1.2	7.8	2.75	1.6	66	2.95	2.85	3.85
8	14.9	4.3	2.7	2.05	1.2	3.85	2.4	1.4	3.15	8.7	2.85	3.5
9	42	4.0	2.6	2.0	1.7	3.5	2.1	1.3	2.3	6.9	3.4	3.3
10	19.8	3.9	2.9	1.9	1.4	2.45	2.0	1.3	2.05	5.2	4.6	3.25
11	7.2	4.8	3.5	1.9	1.2	2.1	1.8	1.3	1.9	7.7	3.0	3.1
12	11.9	4.0	3.0	1.8	3.6	1.9	3.0	1.2	1.8	3.5	3.75	2.9
13	39	3.9	2.6	1.7	2.7	1.8	2.1	1.2	1.7	2.9	14.6	2.75
14	7.7	3.8	2.4	1.7	1.6	12.3	1.8	1.5	1.6	3.4	14.7	2.7
15	7.6	9.0	2.3	1.8	1.5	34	1.8	1.5	1.5	3.4	5.2	2.75
16	6.6	5.0	2.25	1.7	1.4	3.8	1.7	1.2	1.5	4.6	19.9	2.55
17	30.5	4.1	2.25	1.7	1.3	2.7	1.7	1.2	1.4	11.5	12.3	2.55
18	36.5	3.6	2.25	1.6	1.3	2.4	1.7	1.2	1.4	19.5	53	2.45
19	8.5	3.3	3.5	1.5	25.5	2.05	1.7	1.2	1.3	17.5	61	2.4
20	7.8	3.1	2.9	1.5	7.8	1.9	1.7	1.2	1.3	7.8	11.4	4.3
21	7.1	150	2.3	1.5	2.1	1.8	1.6	8.6	24.5	11.4	9.6	23
22	6.8	14	2.25	1.5	2.05	1.7	1.6	12.9	3.8	15.6	6.2	18.7
23	6.2	8.0	2.3	1.5	1.6	1.7	1.7	3.1	67	10.4	5.2	5.4
24	5.9	9.0	2.25	1.5	1.5	1.6	1.6	2.1	2.3	5.6	4.5	4.0
25	5.6	19	2.2	1.5	1.4	1.5	1.6	2.2	1.8	4.3	4.5	3.75
26	5.8	6.0	2.05	1.4	1.4	1.7	1.6	43	1.7	3.85	4.1	3.65
27	6.7	5.4	3.2	1.4	1.3	19.0	1.5	48	1.6	3.6	5.0	4.3
28	5.3	6.6	2.7	1.4	1.4	133	1.5	27.5	4.6	3.5	4.4	5.8
29	5.0	25	2.85	1.4	1.7	29	1.5	6.9	17.2	3.3	10.1	6.0
30	4.8	26	6.0	1.4	1.5	4.0	1.5	-	3.45	3.15	5.5	10.4
31	7.0	6.4	-	2.3	-	2.85	1.5	-	2.3	-	18.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	88	4.7	15.2	23.5	472	1,450
August	150	3.1	12.4	19.2	385	1,180
September	6.0	2.05	2.96	4.58	88.8	272
October	6.3	1.4	1.96	3.03	60.7	186
November	25.5	1.2	2.57	3.98	77.0	236
December	133	1.4	12.9	20.0	401	1,230
Calendar year 1943	150	1.2	9.34	14.5	3,410	10,460
January	9.0	1.5	2.55	3.95	79.0	242
February	48	1.2	6.24	9.65	181	556
March	67	1.3	9.46	14.6	293	900
April	83	2.05	10.7	16.6	320	982
May	61	2.85	9.91	15.3	307	943
June	23	2.4	5.40	8.36	162	497
Fiscal year 1943-44	150	1.2	7.72	11.9	2,830	8,670

Note.- No gage-height record July 30 to Sept. 15; discharge computed on basis of records for Hanawi Stream below Government Road, and Kapaula Stream near Nahiku.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hanawi Stream below Government Road, near Nahiku

Location.- Concrete control, lat. 20°49'15", long. 156°06'25", three-quarters of a mile southwest of Nahiku and 4 miles southeast of Keanae post office. Altitude of gage, 500 feet (by barometer).
Drainage area.- 1.6 square miles.
Records available.- July 1932 to June 1944. Records at same site collected by East Maui Irrigation Co. January 1927 to June 1932.
Average discharge.- 12 years, 28.1 million gallons a day (43.5 second-feet).
Extremes.- Maximum discharge during year, 2,240 million gallons a day (3,470 second-feet) Aug. 21 (gage height, 7.66 feet), from rating curve extended above 15 million gallons a day; minimum, 10.6 million gallons a day (16.4 second-feet) Feb. 5.
1932-44: Maximum discharge, 7,180 million gallons a day (11,100 second-feet) Mar. 21, 1937 (gage height, 9.54 feet), from rating curve extended above 28 million gallons a day; minimum, 8.2 million gallons a day (12.7 second-feet) Feb. 25, 26, 1936.
Flood that destroyed gage shelter Apr. 6 or 7, 1938, probably reached a higher stage than 9.54 feet, the maximum given.
Remarks.- Records good except those above 50 million gallons a day, which are fair. Entire flow of stream above station up to 25 million gallons a day is diverted by the East Maui Irrigation Co.'s ditch at altitude 1,300 feet for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.2	9.0	1.8	37.5
1.3	12.2	2.0	52
1.4	16.0	2.3	81
1.5	20.5	2.6	117
1.6	25.5	2.9	160

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.3	13.0	13.7	13.3	11.9	11.2	12.6	11.2	36.5	11.6	11.6	11.9
2	13.3	13.0	13.3	12.6	11.9	11.2	12.6	10.9	14.1	75	11.2	11.6
3	13.0	13.3	13.7	12.6	11.9	12.9	13.0	10.9	13.3	45	11.2	11.9
4	13.7	14.1	13.3	12.2	11.9	46	12.6	10.9	29.5	14.5	11.2	11.9
5	14.5	13.7	13.3	12.2	11.9	32.5	12.6	10.9	12.6	13.0	11.2	11.9
6	22	13.7	13.0	12.2	11.9	12.2	12.2	10.9	12.2	12.2	11.2	11.9
7	75	13.7	13.0	12.2	11.9	13.9	12.2	10.9	59	11.9	11.2	11.6
8	22	13.3	13.0	12.2	11.9	14.7	12.2	10.9	12.2	11.9	11.2	11.6
9	32	13.3	13.0	12.2	11.9	13.3	11.9	10.9	11.9	11.6	11.2	11.6
10	28	13.3	13.0	12.2	11.6	12.6	11.9	10.9	11.9	11.6	11.2	11.6
11	15.6	13.3	13.0	12.6	11.6	12.2	11.9	10.9	11.6	11.9	11.2	11.6
12	16.0	13.3	13.0	12.2	11.9	12.2	11.9	10.9	11.6	11.6	11.2	11.6
13	36	13.3	13.0	12.2	11.9	11.9	11.9	10.9	11.6	11.6	11.9	11.9
14	16.0	13.3	13.0	12.2	11.6	15.4	11.6	11.2	11.6	11.9	11.9	11.9
15	14.9	13.3	13.0	12.2	11.6	32.6	11.6	11.2	11.6	12.2	11.6	11.9
16	14.1	13.3	13.0	12.2	11.6	13.3	11.6	11.2	11.6	12.2	11.4	11.6
17	31.5	13.3	13.0	12.2	11.6	13.0	11.6	11.2	11.6	12.2	11 2	11.6
18	31	13.3	13.0	12.2	11.6	12.6	11.6	11.2	11.2	13.3	36	11.6
19	14.5	13.3	13.0	12.2	15.0	12.2	11.6	10.9	11.2	15.2	66	11.6
20	14.1	13.3	13.0	12.2	12.8	12.2	11.6	10.9	11.2	13.0	16.0	11.9
21	13.7	133	12.6	12.2	11.6	11.9	11.2	13.8	22	12.6	14.1	14.2
22	13.7	a22	12.6	12.2	11.6	11.9	11.2	15.8	11.6	12.6	13.3	15.8
23	13.3	f14.1	12.6	12.2	11.6	11.9	11.2	11.6	53	12.2	12.6	12.6
24	13.3	13.7	12.6	12.2	11.2	11.9	11.2	11.6	11.6	11.9	12.2	12.2
26	13.0	17.8	12.6	12.2	11.2	11.9	11.2	11.6	11.6	11.9	11.9	11.9
26	13.3	13.7	12.6	12.2	11.2	11.9	11.2	37	11.2	11.9	11.9	11.9
27	13.3	13.7	12.6	12.2	11.2	13.4	11.2	39	11.2	11.9	11.6	11.9
28	13.0	13.7	12.6	12.2	11.2	120	11.2	23.5	11.6	11.6	11.6	11.6
29	13.0	17.3	12.6	12.2	11.2	34.5	11.2	15.3	16.8	11.6	11.9	11.6
30	13.0	22	13.0	12.2	11.2	13.3	11.2	-	13.0	11.6	11.6	11.6
31	13.3	14.8	-	12.2	-	13.0	11.2	-	11.9	-	13.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	75	13.0	19.2	29.7	596	1,830
August	133	13.0	18.2	28.2	563	1,730
September	13.7	12.6	13.0	20.1	389	1,190
October	13.3	12.2	12.3	19.0	380	1,170
November	15.0	11.2	11.8	18.3	353	1,080
December	120	11.2	19.1	29.6	594	1,820
Calendar year 1943	153	11.2	16.8	26.0	6,130	18,820
January	13.0	11.2	11.7	18.1	364	1,120
February	39	10.9	13.7	21.2	397	1,220
March	59	11.2	16.6	25.7	514	1,580
April	75	11.6	15.4	23.8	463	1,420
May	66	11.2	14.6	22.6	452	1,390
June	15.8	11.6	12.0	18.6	360	1,100
Fiscal year 1943-44	133	10.9	14.8	22.9	5,420	16,650

a No gage-height record; discharge computed on basis of probable decrease in flow.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapaula Stream near Nahiku

Location.- Lat. 20°48'50", long. 156°07'05", 40 feet upstream from intake to Koolau ditch, 300 feet upstream from ditch trail, 1¾ miles southwest of Nahiku, and 4 miles southeast of Keanae.

Drainage area.- 0.2 square mile.

Records available.- November 1921 to June 1944.

Average discharge.- 22 years (1922-44), 10.7 million gallons a day (16.6 second-feet).

Extremes.- Maximum discharge during year, 1,020 million gallons a day (1,580 second-feet) Aug. 21 (gage height, 6.30 feet), from rating curve extended above 140 million gallons a day; minimum, 0.60 million gallons a day (0.93 second-foot) Feb. 12, 19, 20, 21.
1921-44: Maximum discharge, 1,780 million gallons a day (2,750 second-feet) Apr. 6, 1938 (gage height, 8.40 feet), from rating curve extended above 140 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) Nov. 23-25, 1933, Oct. 2-5, 1938.

Remarks.- Records good. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.22	.8	5.0	1.8	32
.4	.70	1.0	8.8	2.0	41
.5	1.40	1.2	13.4	2.4	68
.6	2.35	1.4	18.6	2.8	106
.7	3.5	1.6	25		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.9	5.4	3.5	9.2	1.12	1.26	1.97	0.84	11.5	1.68	1.68	9.2
2	6.8	3.15	3.15	3.4	.91	1.33	8.3	.84	2.6	72	1.59	3.95
3	4.7	4.6	3.5	2.05	.91	15.4	11.5	.70	1.68	44	1.50	4.4
4	16.6	11.5	2.6	1.68	.84	44	5.4	.70	1.33	7.2	1.40	3.95
5	18.5	9.3	2.35	1.59	.91	24.5	4.2	.70	1.26	3.4	1.40	4.6
6	33	5.0	2.05	1.40	.84	3.3	7.0	.70	1.93	2.6	1.59	3.05
7	66	5.0	1.88	1.40	.84	10.0	3.05	.84	55	2.4	1.50	2.6
8	15.7	2.8	1.78	1.33	.77	4.6	2.35	.84	3.9	8.4	1.40	2.15
9	33	2.45	1.68	1.33	1.33	3.35	1.97	.70	1.88	8.0	1.91	2.05
10	21.5	2.45	2.05	1.26	1.12	1.97	1.59	.65	1.40	7.0	2.7	1.88
11	6.3	3.9	2.6	1.40	.91	1.30	1.40	.65	1.19	10.7	1.78	1.78
12	12.7	3.15	2.15	1.26	4.3	1.40	2.8	.60	1.12	4.1	2.25	1.68
13	30	3.5	1.88	1.19	2.5	1.26	1.97	.65	1.05	2.8	13.6	1.68
14	6.8	3.5	1.68	1.19	1.33	17.4	1.50	.96	.98	3.25	17.5	1.59
15	7.0	8.4	1.59	1.19	1.26	36.5	1.33	.98	.91	3.3	4.3	1.68
16	4.6	4.0	1.59	1.19	1.12	5.5	1.26	.77	.91	4.5	15.5	1.59
17	22	2.6	1.59	1.19	.98	2.35	1.19	.70	.91	10.4	13.9	1.59
18	33	2.15	1.59	1.12	.91	1.97	1.19	.65	.84	23.5	43	1.50
19	7.4	2.15	3.25	1.05	30.5	1.59	1.12	.60	.84	22	50	1.50
20	5.4	2.05	2.35	1.05	11.6	1.40	1.05	.60	.77	8.5	10.7	3.35
21	3.8	76	1.68	1.05	2.35	1.26	.98	10.9	19.2	14.4	8.6	24.5
22	3.8	12.7	2.65	1.05	1.59	1.19	.98	12.9	7.6	19.0	3.95	21
23	3.15	7.0	1.97	1.05	1.26	1.19	.98	3.6	40	12.0	3.05	4.3
24	2.8	8.4	1.68	1.12	1.12	1.12	.91	1.68	3.4	5.9	2.6	2.7
25	2.7	10.1	1.59	1.05	1.05	1.05	.91	1.50	1.59	3.5	2.45	2.35
26	2.7	4.6	1.40	.98	.98	2.3	.84	39	1.19	2.7	2.6	2.15
27	5.0	4.2	2.9	.98	.98	14.2	.84	27	1.12	2.45	3.4	2.7.
28	2.8	5.1	2.25	.91	1.03	96	.84	18.3	7.6	2.25	3.05	f4.7
29	2.45	23	2.45	.98	1.50	28.5	.84	5.7	22	2.15	10.2	f4.7
30	2.25	24.5	7.5	1.14	1.26	4.2	.77	-	4.0	1.88	5.2	12.1
31	5.2	5.9	-	2.35	-	2.45	.77	-	2.15	-	16.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	66	2.25	12.9	20.0	399	1,220
August	76	2.05	8.92	13.8	277	849
September	7.5	1.40	2.36	3.65	70.9	218
October	9.2	.91	1.58	2.44	49.1	151
November	30.5	.77	2.60	4.02	78.1	240
December	96	1.05	10.8	16.7	334	1,030
Calendar year 1943	96	.77	7.73	12.0	2,820	8,670
January	11.5	.77	2.32	3.59	71.8	220
February	39	.60	4.66	7.21	135	415
March	55	.77	6.51	10.1	202	619
April	72	1.68	10.5	16.2	316	970
May	50	1.40	8.09	12.5	251	770
June	24.5	1.50	4.57	7.07	137	420
Fiscal year 1943-44	96	.60	6.34	9.81	2,320	7,120

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapaula Stream below Government Road, near Nahiku

Location.- Concrete control, lat. 20°49'25", long. 156°06'55", 3,000 feet downstream from highway, 1.3 miles southwest of Nahiku, and 3.8 miles southeast of Keanae post office. Altitude of gage, 620 feet (by barometer).

Drainage area.- 0.5 square mile.

Records available.- July 1932 to June 1944. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.

Average discharge.- 12 years, 8.21 million gallons a day (12.7 second-feet).

Extremes.- Maximum discharge during year, 574 million gallons a day (888 second-feet) Aug. 21 (gage height, 3.95 feet), from rating curve extended above 10 million gallons a day by logarithmic plotting; minimum, 1.2 million gallons a day (1.9 second-feet) on many days.

1932-44: Maximum discharge, 960 million gallons a day (1,490 second-feet) Apr. 7, 1938 (gage height, 5.00 feet), from rating curve extended above 10 million gallons a day by logarithmic plotting; minimum, 1.1 million gallons a day (1.7 second-feet) several days in August 1934, January 1935, and Feb. 24, 1941.

Remarks.- Records good except those above 30 million gallons a day and those for periods of no gage-height record, which are fair. Koolau ditch diverts water 4,000 feet above station, at 1,300 feet altitude, for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.7	0.6	8.0	1.2	39
.3	1.6	.7	11.4	1.4	55
.4	3.2	.8	15.6	1.6	74
.5	5.3	1.0	26		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a2.3	1.8	1.9	3.0	1.2	1.2	1.5	1.2	12.4	a1.8	1.4	3.1
2	a2.2	1.5	1.8	1.8	1.2	1.2	2.4	1.2	2.2	a50	1.4	1.8
3	a2.0	1.7	2.1	1.3	1.2	4.9	3.2	1.2	1.9	a15	1.4	1.6
4	a3.5	3.4	1.6	1.2	1.2	35.5	2.1	1.2	2.1	a3.5	1.3	1.6
5	a4.0	5.5	1.5	1.2	1.2	15.6	1.9	1.2	1.8	a2.5	1.3	1.6
6	a25	1.9	1.5	1.2	1.2	1.8	1.9	1.2	1.6	a2.2	1.3	1.5
7	54	1.8	1.4	1.2	1.2	4.4	1.8	1.2	36.5	a2.0	1.3	1.5
8	16.5	1.5	1.4	1.2	1.2	3.9	1.5	1.2	2.1	a2.0	1.3	1.4
9	22	1.4	1.4	1.2	1.3	2.2	1.4	1.2	1.8	a2.0	1.4	1.4
10	19.0	1.4	1.4	1.2	1.3	1.8	1.4	1.2	1.6	a1.0	1.5	1.4
11	3.0	1.4	1.4	1.3	1.3	1.6	1.4	1.2	1.6	a1.9	1.3	1.4
12	7.9	1.3	1.3	1.2	1.4	1.5	1.4	1.2	1.6	1.9	1.3	1.4
13	21	1.3	1.3	1.2	1.4	1.5	1.4	1.2	1.5	1.6	3.0	1.4
14	3.2	1.3	1.3	1.3	1.3	8.9	1.4	1.3	1.4	1.6	7.5	1.4
15	2.6	1.9	1.3	1.3	1.3	22.5	1.3	1.2	1.3	1.8	1.6	1.4
16	2.2	1.5	1.3	1.2	1.3	2.4	1.3	1.2	1.3	1.8	10.0	1.3
17	13.9	1.4	1.3	1.2	1.3	1.8	1.3	1.2	1.3	3.5	4.0	1.3
18	26.5	1.4	1.3	1.2	1.3	1.6	1.3	1.2	1.3	12.2	45	1.3
19	2.7	1.4	1.3	1.2	12.1	1.6	1.3	1.2	1.3	18.4	40	1.3
20	2.0	1.3	1.3	1.2	5.0	1.5	1.2	1.2	1.3	2.7	6.2	1.6
21	1.8	68	1.2	1.2	1.5	1.4	1.2	5.7	10.8	3.6	3.6	14.1
22	1.6	5.3	1.2	1.2	1.4	1.4	1.2	8.1	2.2	8.0	2.1	25.5
23	1.5	2.1	1.2	1.2	1.3	1.3	1.2	1.9	36.5	3.7	1.9	2.6
24	1.5	1.9	1.2	1.2	1.2	1.3	1.2	1.4	1.8	2.4	1.8	1.8
26	1.4	9.7	1.2	1.2	1.2	1.3	1.2	1.3	1.6	1.8	1.6	1.6
26	1.4	1.9	1.2	1.2	1.2	1.3	1.2	26.5	1.5	1.5	1.6	1.6
27	1.9	1.6	1.3	1.2	1.2	4.4	1.2	21.6	1.5	1.5	1.6	1.6
28	1.5	1.6	1.3	1.2	1.2	66	1.2	11.8	3.1	1.5	1.5	1.6
29	1.4	10.7	1.3	1.3	1.2	15.2	1.2	2.6	15.0	1.4	2.4	1.8
30	1.3	16.2	1.7	1.3	1.2	2.1	1.2	-	2.2	1.4	1.9	2.2
31	1.5	2.4	-	1.3	-	1.6	1.2	-	1.8	-	7.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	54	1.3	8.14	12.6	252	774
August	68	1.3	5.08	7.86	158	483
September	2.1	1.2	1.40	2.17	41.9	129
October	3.0	1.2	1.30	2.01	40.3	124
November	12.1	1.2	1.75	2.71	52.5	161
December	66	1.2	6.87	10.6	213	653
Calendar year 1943	79	1.2	4.93	7.63	1,800	5,520
January	3.2	1.2	1.47	2.27	45.6	140
February	26.6	1.2	3.62	6.60	105	322
March	36.5	1.3	5.02	7.77	156	478
April	50	1.4	5.24	8.11	167	482
May	46	1.3	5.18	8.01	161	493
June	25.5	1.3	2.84	4.39	85.1	261
Fiscal year 1943-44	68	1.2	4.01	6.20	1,470	4,500

a No gage-height record; discharge computed on basis of records for other station on this stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Koolau ditch at Nahiku weir, near Nahiku

Location.- Sharp-crested weir, lat. 20°48'55", long. 156°07'15", between Kapaula and Waiohue Streams, 3½ miles southwest of Nahiku and 4 miles southeast of Keanae. Datum of gage is 1,289.14 feet above mean sea level.

Records available.- February 1919 to June 1944.

Average discharge.- 25 years, 21.6 million gallons a day (33.4 second-feet).

Extremes.- Maximum discharge during year, 58 million gallons a day (90 second-feet) Dec. 4 (gage height, 1.66 feet); no flow Mar. 23, Apr. 19, May 19, June 22, when water was shut out of ditch.
1919-44: Maximum discharge, 62 million gallons a day (96 second-feet) Oct. 22, 1941, Dec. 14, 1942; no flow occasionally, when intake gates are closed.

Remarks.- Records excellent. Flow regulated by spillways and gates. Ditch diverts water from nearly all streams from the Makapipi west to the Alo. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	31.5	22	22.5	19.5	5.4	5.6	15.6	5.4	40	10.8	10.8	29.5
2	24	18.4	21	12.0	5.2	6.3	26	5.2	19.5	40	10.1	22
3	21	21.5	20.5	9.5	4.9	24	33.5	4.9	15.0	50	9.8	23.5
4	36.5	33.5	17.0	8.6	4.9	25	23	4.7	37.5	36	9.2	21.5
5	42	27.5	16.0	8.1	5.2	37.5	21	4.7	12.7	23.5	9.2	23.5
6	52	23.5	14.6	7.9	4.7	14.0	22.5	4.7	11.3	18.8	9.5	19.2
7	50	22	13.3	7.6	4.7	31	16.0	5.2	39.5	16.7	8.9	17.0
8	50	18.4	12.7	7.3	4.5	22	14.0	4.9	15.6	28	8.9	15.6
9	48	17.0	11.7	7.1	6.1	17.8	12.7	4.7	12.0	24.5	10.4	14.3
10	48	16.7	12.7	7.1	5.2	13.0	11.7	4.7	10.8	22	13.3	13.3
11	40	18.8	13.3	7.1	4.9	11.4	10.8	4.5	9.8	26.5	9.5	12.7
12	45	17.0	11.4	6.6	12.1	10.1	13.6	4.5	8.9	17.0	11.7	12.0
13	50	17.4	10.8	6.3	9.2	9.2	11.1	4.5	8.4	14.6	35.5	11.1
14	38	16.4	9.8	6.3	6.3	21.5	9.8	5.4	7.9	15.5	38	10.8
15	35.5	22	9.2	6.6	6.1	48	9.2	5.4	7.6	16.4	18.8	11.1
16	28	17.0	8.9	6.3	5.6	22	8.6	4.7	7.1	19.2	31.5	9.8
17	34.5	14.6	8.6	6.1	5.2	16.2	8.1	4.5	6.8	33	38	9.5
18	52	13.6	8.6	5.8	5.2	13.6	7.9	4.5	6.6	48	52	9.2
19	35.5	13.3	11.4	5.8	31	12.0	7.6	4.2	6.3	30	32	8.9
20	31	12.7	9.8	5.6	21.5	11.1	7.3	4.0	6.1	31	48	14.8
21	26.5	38.5	8.4	5.6	8.1	10.1	7.1	27.5	25	38	45	45
22	25.5	34	8.6	5.4	7.1	9.2	6.8	25	14.5	40	33.5	26
23	23	20.5	8.4	5.4	6.3	8.6	6.6	12.3	23	33.5	25.5	25
24	21	26.5	8.1	5.4	5.8	8.4	6.6	8.6	11.7	22	22	18.4
25	20.5	39.5	8.1	5.4	5.6	7.6	6.3	8.2	8.9	17.8	20.5	16.4
26	20.5	22.5	7.6	5.2	5.4	8.6	6.1	19.5	7.9	15.6	19.2	15.3
27	25.5	20.5	9.7	5.2	5.2	21	5.8	50	7.3	14.3	21	16.4
28	19.9	22	8.9	4.9	5.6	46	5.6	45	18.2	13,3	19.2	19.2
29	18.4	45	9.5	5.2	6.6	35.5	5.6	25	36	12.3	33.5	19.5
30	17.0	48	16.4	5.4	6.1	21.5	5.4	-	17.4	11.4	23	33.5
31	22	28	-	8.4	-	18.1	5.2	-	12.7	-	42	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	52	17.0	33.3	51.5	1,030	3,170
August	48	12.7	23.5	36.4	728	2,240
September	22.5	7.6	11.9	18.4	358	1,100
October	19.5	4.9	7.05	10.9	219	671
November	31	4.5	7.32	11.3	220	674
December	48	5.6	18.3	28.3	566	1,740
Calendar year 1943	55	4.5	20.1	31.1	7,350	22,560
January	33.5	5.2	11.5	17.8	357	1,100
February	50	4.0	10.9	16.9	316	971
March	40	6.1	15.2	23.5	472	1,450
April	50	10.8	24.7	38.2	740	2,270
May	52	8.9	23.2	35.9	720	2,210
June	45	8.9	18.1	28.0	544	1,670
Fiscal year 1943-44	52	4.0	17.1	26.5	6,270	19,270

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiaaka Stream near Nahiku

Location.- Concrete control, lat. 20°49'25", long. 156°07'00", 3,000 feet downstream from Government Road, 1½ miles west of Nahiku, and 3½ miles southeast of Keanae post office. Altitude of gage, 650 feet (by barometer).

Drainage area.- 0.1 square mile.

Records available.- July 1932 to June 1944. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.

Average discharge.- 12 years, 0.809 million gallons a day (1.25 second-feet).

Extremes.- Maximum discharge during year, 20.5 million gallons a day (31.7 second-feet) Feb. 29 (gage height, 1.64 feet), from rating curve extended above 14 million gallons a day by test on model of station site; minimum, 0.35 million gallons a day (0.54 second-foot) many times.

1932-44: Maximum discharge, 73 million gallons a day (113 second-feet) Mar. 6, 1933 (gage height, 1.87 feet, site and datum then in use), from rating curve extended above 1 million gallons a day by formula for V-notch weirs; minimum, 0.30 million gallons a day (0.46 second-foot) several days in October, November, 1933, and April, May, and June 1934.

Remarks.- Records good except those for period of no gage-height record, which are fair. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.24	0.7	3.15
.4	.58	.8	4.4
.5	1.14	1.0	7.5
.6	2.0		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a0.74	0.54	0.72	0.65	0.35	0.35	0.58	0.42	2.1	0.62	0.50	0.62
2	a.70	.54	.67	.50	.35	.35	.58	.38	.83	1.87	.50	.58
3	a.60	.75	.83	.46	.35	.44	.67	.38	.77	4.2	.46	.54
4	a.90	.83	.67	.46	.35	.66	.67	.38	.72	1.02	.46	.54
5	a1.0	.75	.62	.46	.35	1.06	.64	.38	.67	.89	.46	.58
6	a2.5	.67	.62	.46	.35	.46	.62	.38	.62	.77	.46	.54
7	4.9	.64	.58	.42	.35	.85	.58	.38	1.90	.72	.46	.50
8	1.30	.62	.58	.42	.35	1.05	.58	.38	.62	.72	.46	.50
9	2.95	.58	.54	.42	.38	.72	.54	.38	.58	.67	.46	.50
10	4.9	.58	.54	.42	.35	.58	.54	.35	.54	.62	.46	.50
11	1.08	.58	.54	.46	.35	.54	.54	.35	.50	.58	.42	.46
12	1.86	.58	.50	.39	.42	.54	.54	.35	.50	.58	.50	.46
13	2.05	.58	.50	.38	.38	.50	.50	.38	.47	.54	.67	.46
14	1.14	.54	.47	.38	.35	.66	.50	.42	.46	.54	.58	.46
15	1.02	.58	.46	.38	.35	1.07	.50	.36	.46	.64	.54	.46
16	.95	.54	.46	.38	.35	.67	.46	.35	.46	.62	.60	.42
17	1.21	.51	.46	.38	.35	.62	.46	.35	.46	.77	.72	.42
18	1.02	.50	.46	.38	.35	.58	.44	.35	.42	.83	2.3	.42
19	.89	.50	.50	.38	.42	.54	.42	.35	.42	1.70	5.2	.42
20	.79	.50	.46	.38	.38	.54	.42	.35	.42	.72	2.5	.50
21	.72	2.2	.42	.38	.38	.51	.42	1.10	.68	.72	.95	.76
22	.72	.72	.42	.38	.35	.50	.42	.62	.52	.67	.83	2.75
23	.67	.62	.42	.35	.35	.50	.42	.50	1.99	.67	.77	.62
24	.62	.58	.42	.35	.35	.50	.42	.46	.58	.58	.72	.58
25	.62	.77	.42	.35	.35	.46	.42	.38	.54	.58	.67	.54
26	.58	.62	.42	.35	.35	.46	.42	.81	.50	.58	.62	.54
27	.71	.58	.42	.35	.35	.98	.42	1.18	.50	.58	.62	.54
28	.58	.58	.38	.35	.35	7.0	.42	1.00	.75	.54	.58	.54
29	.54	.93	.46	.36	.35	.72	.42	.71	1.15	.54	.62	.54
30	.54	.95	.50	.38	.38	.62	.42	-	.72	.50	.58	.67
31	.58	.72	-	.38	-	.58	.42	-	.62	-	.67	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	4.9	0.54	1.27	1.96	39.4	121
August	2.2	.50	.683	1.06	21.2	65
September	.63	.38	.515	.797	15.5	47
October	.65	.35	.405	.627	12.6	39
November	.42	.35	.360	.557	10.8	33
December	7.0	.35	.826	1.28	25.6	79
Calendar year 1943	7.4	.35	.745	1.15	272	836
January	.67	.42	.497	.769	15.4	47
February	1.18	.35	.489	.757	14.2	44
March	2.1	.42	.725	1.12	22.5	69
April	4.2	.50	.853	1.32	25.6	79
May	5.2	.42	.850	1.32	26.3	81
June	2.75	.42	.599	.927	18.0	55
Fiscal year 1943-44	7.0	.35	.675	1.04	247	759

a No gage-height record; discharge computed on basis of records for Paakea Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Paakea Stream near Nahiku

Location.- Concrete control, lat. 20°49'25", long. 156°07'05", 3,000 feet downstream from highway, 1¼ miles west of Nahiku, and 3½ miles southeast of Keanae post office. Altitude of gage, 650 feet (by barometer).

Drainage area.- 0.5 square mile.

Records available.- July 1932 to June 1944. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.

Average discharge.- 12 years, 4.29 million gallons a day (6.64 second-feet).

Extremes.- Maximum discharge during year, 138 million gallons a day (214 second-feet) Aug. 21 (gage height, 3.85 feet), from rating curve extended above 20 million gallons a day by logarithmic plotting; minimum, 1.88 million gallons a day (2.91 second-feet) several days in October, November, and February.

1932-44: Maximum discharge, 236 million gallons a day (365 second-feet) Mar. 9, 1943 (gage height, 5.52 feet), from rating curve extended above 20 million gallons a day by logarithmic plotting; minimum, 1.29 million gallons a day (2.00 second-feet) Oct. 5, 1942.

Remarks.- Records good. Koolau ditch diverts all low flow at altitude of about 1,200 feet for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day

0.4	1.50	0.7	6.7	1.0	15.8
.5	2.9	.8	9.2	1.2	23
.6	4.6	.9	12.3	1.4	30

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.05	2.7	2.9	3.05	2.0	2.0	2.55	2.1	8.8	2.7	2.25	2.7
2	2.9	2.7	2.7	2.25	2.0	2.0	2.7	2.1	3.4	23.5	2.25	2.55
3	2.7	3.15	3.25	2.25	2.0	3.0	2.9	2.0	3.05	11.0	2.25	2.4
4	4.2	4.1	2.7	2.1	2.0	8.6	2.7	2.0	2.7	3.9	2.25	2.4
5	4.7	4.4	2.7	2.1	2.0	3.95	2.7	2.0	2.55	3.25	2.25	2.7
6	11.2	3.05	2.55	2.1	2.0	2.4	2.55	2.0	2.4	2.9	2.25	2.55
7	21	2.9	2.55	2.0	2.0	4.1	2.55	2.1	8.0	2.7	2.25	2.4
8	7.0	2.7	2.55	2.0	1.88	3.6	2.4	2.0	2.55	2.7	2.25	2.4
9	9.4	2.7	2.4	2.0	2.1	2.7	2.4	1.88	2.4	2.7	2.4	2.4
10	5.0	2.7	2.55	2.0	2.1	2.4	2.4	1.88	2.25	2.55	2.4	2.25
11	3.4	2.7	2.55	2.1	2.0	2.4	2.25	1.88	2.25	2.55	2.25	2.25
12	7.0	2.7	2.4	2.0	2.9	2.4	2.55	1.88	2.0	2.4	2.4	2.25
13	13.4	2.7	2.4	2.0	2.4	2.4	2.4	1.88	2.0	2.55	3.4	2.25
14	3.9	2.55	2.4	2.1	2.25	6.1	2.25	2.1	2.0	2.55	4.0	2.25
15	3.6	2.7	2.4	2.1	2.1	8.6	2.25	2.0	2.0	2.7	2.9	2.25
16	3.25	2.55	2.4	2.1	2.1	2.7	2.25	2.0	2.0	2.9	4.9	2.25
17	9.6	2.55	2.4	2.1	2.0	2.55	2.25	2.0	2.0	4.3	3.9	2.25
18	7.1	2.55	2.4	2.1	2.1	2.4	2.1	2.0	2.0	5.9	21	2.25
19	3.25	2.55	2.4	1.88	3.2	2.4	2.1	2.0	2.0	4.0	19.2	2.25
20	2.9	2.55	2.4	1.88	2.55	2.4	2.25	2.0	2.0	2.9	4.1	2.55
21	2.9	22	2.4	1.88	2.25	2.25	2.1	6.7	5.2	2.7	3.75	9.5
22	2.9	3.25	2.25	1.88	2.1	2.25	2.1	5.3	2.75	2.9	3.4	13.8
23	2.9	2.9	2.1	1.88	2.0	2.25	2.1	2.55	8.2	2.55	2.9	3.4
24	2.7	4.1	2.1	1.88	2.0	2.25	2.1	2.25	2.55	2.55	2.7	3.05
25	2.7	6.1	2.1	1.88	2.0	2.25	2.1	2.25	2.4	2.4	2.7	2.7
26	2.7	2.7	2.1	1.92	2.0	2.25	2.1	10.8	2.25	2.4	2.55	2.55
27	3.35	2.7	2.6	2.0	1.88	5.2	2.1	7.3	2.25	2.55	2.55	2.55
28	2.7	2.7	2.25	2.0	1.88	24.5	2.0	5.3	3.95	2.4	2.55	2.55
29	2.55	6.6	2.4	2.1	1.88	9.8	2.0	2.9	7.8	2.4	2.9	2.55
30	2.55	7.7	2.55	2.1	2.0	2.9	2.0	-	3.05	2.25	2.55	3.2
31	2.7	3.05	-	2.25	-	2.7	2.0	-	2.7	-	3.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	21	2.55	5.14	7.95	159	489
August	22	2.55	3.90	6.03	121	371
September	3.25	2.1	2.46	3.81	73.8	227
October	3.05	1.88	2.06	3.19	64.0	198
November	3.2	1.88	2.12	3.28	63.7	195
December	24.5	2.0	4.12	6.37	128	392
Calendar year 1943	44	1.88	3.65	5.65	1,330	4,090
January	2.9	2.0	2.30	3.56	71.2	219
February	10.8	1.88	2.94	4.55	85.2	261
March	8.8	2.0	3.27	6.06	101	311
April	23.5	2.25	3.86	5.97	116	355
May	21	2.25	3.97	6.14	123	378
June	13.8	2.25	3.11	4.81	93.4	287
Fiscal year 1943-44	24.5	1.88	3.28	5.07	1,200	3,680

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiohue Stream near Nahiku

Location.- Lat. 20°49'05", long. 156°07'40", 200 feet upstream from intake to Koolau ditch, 300 feet upstream from ditch trail, 2½ miles southwest of Nahiku, and 3⅝ miles southeast of Keanae.

Drainage area.- 1.5 square miles.

Records available.- October 1921 to June 1944.

Average discharge.- 22 years (1922-44), 8.09 million gallons a day (12.5 second-feet).

Extremes.- Maximum discharge during year, 685 million gallons a day (1,060 second-feet) Aug. 21 (gage height, 5.94 feet), from rating curve extended above 50 million gallons a day; minimum, 1.37 million gallons a day (2.12 second-feet) Feb. 21.
1921-44: Maximum discharge, 760 million gallons a day (1,180 second-feet) Apr. 7, 1938 (gage height, 6.24 feet), from rating curve extended above 50 million gallons a day; minimum, that of Feb. 21, 1944.

Remarks.- Records good. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.4	1.03	0.9	5.1	1.6	24
.5	1.45	1.0	6.6	1.8	33.5
.6	2.05	1.1	8.4	2.0	45
.7	2.85	1.2	10.6	2.3	67
.8	3.8	1.4	16.3		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.9	4.1	3.6	4.9	1.57	1.69	2.7	1.81	6.5	2.2	3.15	4.6
2	4.2	3.7	3.5	3.05	1.51	1.87	4.7	1.75	2.55	39.5	3.05	4.1
3	3.95	5.3	4.3	2.6	1.51	6.2	5.8	1.63	2.2	19.8	2.85	4.4
4	10.0	6.1	3.4	2.35	1.51	20.5	3.95	1.57	2.05	3.95	2.75	4.4
5	8.8	6.7	3.3	2.3	1.51	10.1	3.7	1.57	1.93	3.25	2.75	4.8
6	17.5	4.5	3.25	2.3	1.45	2.45	4.4	1.57	1.95	2.85	2.75	3.8
7	32.5	4.1	3.15	2.2	1.45	6.8	3.05	1.69	23	2.9	2.7	3.3
8	9.6	3.6	3.05	2.2	1.45	3.65	2.75	1.57	2.3	4.7	2.6	3.15
9	17.3	3.4	2.85	2.2	1.96	2.85	2.7	1.51	2.05	3.95	3.2	2.95
10	11.9	3.4	3.15	2.15	1.63	2.35	2.6	1.51	1.99	3.75	3.3	2.85
11	5.7	4.2	3.15	2.3	1.51	2.15	2.6	1.45	1.93	5.0	2.6	2.75
12	11.2	3.6	2.95	2.15	4.0	2.05	3.05	1.45	1.87	3.05	3.2	2.7
13	18.7	3.6	2.85	2.05	2.4	1.99	2.7	1.45	1.81	2.95	6.9	2.6
14	6.0	3.55	2.7	2.05	1.75	9.3	2.55	1.69	1.81	3.6	8.6	2.55
15	6.8	4.5	2.6	2.05	1.75	16.6	2.45	1.57	1.75	3.85	3.3	2.6
16	5.6	3.5	2.55	1.99	1.63	3.15	2.35	1.45	1.75	4.1	7.8	2.45
17	16.4	3.25	2.45	1.99	1.57	2.6	2.35	1.45	1.75	7.1	6.5	2.45
18	14.9	3.05	2.6	1.93	1.57	2.45	2.3	1.45	1.75	12.1	24.5	2.45
19	5.6	2.95	3.05	1.87	12.1	2.3	2.2	1.45	1.75	11.2	24	2.35
20	5.2	2.85	2.7	1.81	4.0	2.2	2.15	1.41	1.75	5.2	5.8	4.4
21	4.8	49	2.45	1.81	1.99	2.15	2.05	8.4	8.2	6.8	5.4	11.9
22	5.1	4.7	2.55	1.81	1.81	2.05	2.05	7.7	2.75	8.4	4.1	12.9
23	4.4	3.4	2.45	1.75	1.69	1.99	1.99	2.3	17.9	6.2	3.7	3.8
24	4.2	4.3	2.35	1.81	1.63	1.99	1.99	1.87	2.35	4.1	3.5	3.15
25	4.1	9.4	2.3	1.75	1.57	1.99	1.93	1.81	2.05	3.6	3.3	2.95
26	4.1	3.6	2.2	1.69	1.57	2.3	1.93	21	1.93	3.4	3.3	2.85
27	5.6	3.4	2.4	1.63	1.51	10.1	1.87	12.3	1.87	3.3	3.9	3.05
28	3.8	4.0	2.7	1.57	1.65	40	1.81	8.5	6.1	3.4	4.2	3.5
29	3.6	12.8	2.65	1.57	1.88	11.8	1.75	2.75	11.6	3.3	6.6	3.4
30	3.4	11.3	4.2	1.60	1.75	3.3	1.75	-	3.5	3.25	3.95	6.4
31	4.5	4.1	-	2.1	-	2.85	1.75	-	2.45	-	8.9	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	32.5	3.4	8.53	13.2	264	811
August	49	2.85	6.13	9.48	190	583
September	4.3	2.2	2.91	4.50	87.4	268
October	4.9	1.57	2.11	3.26	65.5	201
November	12.1	1.45	2.16	3.34	64.9	199
December	40	1.69	5.93	9.18	184	564
Calendar year 1943	50	1.45	5.41	8.37	1,970	6,050
January	5.8	1.75	2.64	4.08	81.9	251
February	21	1.41	3.37	5.21	97.6	300
March	23	1.75	4.04	6.25	125	384
April	39.5	2.2	6.36	9.84	191	585
May	24.5	2.6	5.59	8.65	173	531
June	12.9	2.35	3.98	6.16	120	367
Fiscal year 1943-44	49	1.41	4.49	6.95	1,640	5,040

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

West Kopiliula Stream near Keanae

Location.- Lat. 20°49'10", long. 156°08'15", 600 feet upstream from Koolau ditch crossing and highway bridge and 3 miles southeast of Keanae post office. Datum of gage is 1,292.30 feet above mean sea level.

Drainage area.- 3.9 square miles.

Records available.- January 1914 to September 1917, October 1921 to June 1944.

Average discharge.- 20 years (1922-34, 1936-44), 18.7 million gallons a day (28.9 second-feet).

Extremes.- Maximum discharge during year, 3,200 million gallons a day (4,950 second-feet) Aug. 21 (gage height, 7.95 feet), from rating curve extended above 10 million gallons a day; minimum, 1.06 million gallons a day (1.64 second-feet) Feb. 19-21.
1914-17, 1921-44: Maximum discharge, 4,020 million gallons a day (6,220 second-feet) Apr. 6, 1938 (gage height, 9.12 feet), from rating curve extended above 75 million gallons a day; minimum, 0.6 million gallons a day (0.9 second-foot) Sept. 15-17, 1917.

Remarks.- Records fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.52	0.7	9.0	1.8	77
.3	1.20	.8	12.3	2.2	122
.4	2.15	.9	15.8	2.6	185
.5	3.65	1.1	25		
.6	6.0	1.4	43		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.8	5.4	5.6	9.4	1.48	1.77	3.5	1.58	6.9	3.2	3.35	9.3
2	5.7	4.0	5.4	3.85	1.39	2.15	11.2	1.48	3.35	98	3.2	5.4
3	4.7	5.5	4.7	3.2	1.30	18.5	11.5	1.39	2.9	67	3.05	6.0
4	21	10.4	3.8	3.05	1.30	94	5.4	1.39	2.6	12.7	2.9	5.2
5	21	7.4	3.5	2.9	1.30	56	5.2	1.39	2.45	6.3	2.9	5.2
6	40	4.8	3.2	2.6	1.30	5.3	11.4	1.39	5.1	4.5	2.75	4.0
7	96	4.6	3.0	2.45	1.30	9.0	4.3	2.25	156	4.2	2.75	3.65
8	19.4	3.65	2.9	2.3	1.20	4.5	3.65	1.48	7.9	10.7	2.6	3.35
9	44	3.35	3.0	2.3	2.15	3.8	3.2	1.39	3.65	11.0	3.75	3.2
10	30	3.35	3.85	2.15	1.58	2.9	3.05	1.30	3.05	10.6	4.2	3.2
11	9.2	4.4	3.85	2.15	1.30	2.45	2.9	1.30	2.6	15.8	2.6	3.05
12	17.2	3.5	2.9	1.96	6.9	2.15	5.2	1.20	2.3	6.3	3.5	2.9
13	48	4.0	2.75	1.86	3.1	1.96	3.05	1.20	1.96	4.7	16.0	2.75
14	10.0	3.95	2.45	1.86	1.58	20	2.6	1.65	1.77	4.9	19.6	2.6
15	9.0	6.8	2.45	1.96	1.48	40	2.45	1.58	1.68	4.6	4.4	2.9
16	6.9	3.5	2.3	1.86	1.39	5.2	2.3	1.20	1.58	5.9	20	2.6
17	29	3.2	2.15	1.86	1.30	3.35	2.15	1.13	1.48	13.6	16.4	2.45
18	33.5	3.05	2.6	1.68	1.30	3.05	2.15	1.13	2.9	27	47	2.45
19	8.7	3.2	5.5	1.58	35.5	2.6	2.05	1.06	2.4	28	54	2.45
20	7.5	2.75	3.2	1.58	14.0	2.3	1.96	1.06	1.68	11.7	12.6	5.6
21	6.0	100	2.45	1.58	2.6	2.05	1.96	14.0	32	20.5	10.3	26.5
22	6.0	20	4.3	1.48	2.05	1.86	1.86	19.2	15.1	26.5	5.2	21.5
23	4.9	6.0	2.9	1.48	1.96	1.86	1.86	4.5	110	17.3	4.5	4.6
24	4.5	9.0	2.75	1.48	1.77	1.77	1.77	2.6	6.8	8.7	4.3	3.65
25	4.5	22	2.9	1.58	1.68	1.68	1.68	2.45	3.65	6.3	3.85	3.5
26	4.5	6.6	2.6	1.48	1.48	3.55	1.68	37.5	3.05	4.9	3.65	3.35
27	5.9	6.5	5.1	1.48	1.48	20.5	1.58	28	2.75	4.3	4.7	3.85
28	3.85	6.0	3.5	1.39	1.52	130	1.58	27	9.7	4.3	4.7	4.9
29	3.65	25	3.3	1.39	2.85	33.5	1.48	6.8	29	3.65	11.9	5.1
30	3.5	27	9.2	1.48	1.96	6.4	1.48	-	6.1	3.5	5.2	14.7
31	6.8	7.3	-	2.3	-	3.85	1.48	-	3.7	-	21	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	96	3.5	16.9	26.1	525	1,610
August	100	2.75	10.5	16.2	326	1,000
September	9.2	2.15	3.60	5.57	108	332
October	9.4	1.39	2.25	3.48	69.7	214
November	35.5	1.20	3.38	5.23	102	311
December	130	1.68	15.7	24.3	488	1,500
Calendar year 1943	153	1.20	11.1	17.2	4,040	12,380
January	11.5	1.48	3.47	5.37	108	330
February	37.5	1.06	5.85	9.05	170	520
March	156	1.48	14.1	21.8	436	1,340
April	98	3.2	15.0	23.2	451	1,380
May	54	2.6	9.90	15.3	307	942
June	26.5	2.45	5.66	8.76	170	521
Fiscal year 1943-44	156	1.06	8.90	13.8	3,260	10,000

Note.- No gage-height record Aug. 21 to Sept. 9; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Wailuaiki Stream near Keanae

Location.- Lat. 20°49'05", long. 156°08'25", 1,000 feet upstream from Koolau ditch crossing and trail and 3 miles southeast of Keanae post office.

Drainage area.- 3.7 square miles.

Records available.- December 1913 to October 1917, July 1922 to June 1944.

Average discharge.- 22 years (1922-44), 19.7 million gallons a day (30.5 second-feet).

Extremes.- Maximum discharge during year, 1,380 million gallons a day (2,140 second-feet) Aug. 21 (gage height, 7.24 feet), from rating curve extended above 300 million gallons a day; minimum, 1.1 million gallons a day (1.7 second-feet) Nov. 8.
1913-17, 1922-44: Maximum discharge, 3,060 million gallons a day (4,730 second-feet) Apr. 6, 1938 (gage height, 9.26 feet), from rating curve extended above 300 million gallons a day; minimum, 1.0 million gallons a day (1.6 second-feet) Oct. 22, 23, 1917, Aug. 1, 2, 1922.

Remarks.- Records fair except those for Mar. 7-30, which are poor. No diversions above station. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.6	6.3	4.9	8.9	1.4	1.6	3.5	1.8	4.8	3.1	3.4	8.9
2	6.1	4.7	4.8	3.8	1.3	2.6	11.8	1.6	2.7	140	3.2	5.7
3	5.2	5.8	5.1	2.6	1.3	23	11.6	1.4	2.3	99	3.1	6.4
4	25.5	13.6	3.8	2.4	1.3	71	5.8	1.4	2.1	13.5	3.0	5.7
5	22.5	8.7	3.6	2.2	1.3	51	5.5	1.4	2.1	6.6	2.9	5.7
6	54	5.5	3.2	2.1	1.3	4.8	10.7	1.5	2.0	4.6	3.0	4.5
7	126	5.4	3.1	2.1	1.3	9.0	4.3	2.9	120	4.5	2.8	4.0
8	21.5	4.3	3.0	2.1	1.2	3.7	3.6	1.6	6.0	12.3	2.8	3.7
9	60	4.1	3.2	2.1	2.4	3.2	3.0	1.4	3.5	11.1	4.1	3.6
10	36	4.2	4.4	2.0	1.5	2.4	2.8	1.8	2.8	8.3	4.8	3.4
11	9.6	5.8	4.6	2.1	1.3	2.0	2.7	1.7	2.3	14.1	2.8	3.3
12	19.8	4.4	3.1	1.9	12.0	1.8	6.0	1.3	2.0	5.9	4.4	3.2
13	56	5.0	2.9	1.8	3.7	1.7	3.2	1.3	1.8	4.6	23	3.0
14	10.5	5.4	2.6	1.9	1.5	28.5	2.6	1.7	1.6	4.0	23.5	2.9
15	9.8	10.9	2.4	2.0	1.5	57	2.4	1.8	1.5	4.7	4.8	3.3
16	7.2	4.7	2.4	1.8	1.3	5.0	2.4	1.2	1.4	6.3	30	2.8
17	59.5	3.9	2.4	1.9	1.2	3.2	2.3	1.2	1.4	18.2	18.5	2.8
18	44	3.7	2.9	1.6	1.2	2.6	2.2	1.2	13	37	67	2.8
19	9.0	4.1	7.0	1.6	47	2.2	2.1	1.2	4.0	35	82	2.8
20	7.9	3.5	3.6	1.5	14.5	2.0	2.1	1.2	1.5	10.4	12.1	7.4
21	6.6	127	2.5	1.5	2.4	1.9	2.0	24	25	17.5	9.8	37.5
22	6.5	15.3	4.0	1.5	1.7	1.8	1.9	28.5	10	30.5	5.6	29.5
23	5.3	5.2	3.1	1.5	1.5	1.7	1.9	4.7	100	15.7	5.4	5.1
24	4.9	9.2	2.5	1.5	1.4	1.7	1.9	2.2	6.0	7.8	5.0	3.9
25	4.9	27.5	2.5	1.6	1.3	1.6	1.9	1.9	3.5	6.0	4.2	3.6
26	5.2	5.6	2.1	1.5	1.3	3.6	1.8	36.5	2.8	5.1	4.0	3.6
27	6.6	5.5	5.0	1.5	1.3	27.5	1.7	27.5	2.5	4.6	5.3	4.6
28	4.4	5.5	3.7	1.4	1.6	173	1.7	26.5	13	4.5	5.9	6.2
29	4.1	33.5	3.7	1.4	3.1	51	1.6	5.0	40	3.9	16.1	6.2
30	3.9	35	9.6	1.4	1.9	6.4	1.6	-	7.5	3.6	5.9	15.6
31	8.2	6.8	-	2.4	-	4.0	1.6	-	4.3	-	28	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	126	3.9	20.7	32.0	640	1,970
August	127	3.5	12.6	19.5	390	1,200
September	9.6	2.1	3.72	5.76	112	343
October	8.9	1.4	2.12	3.28	65.6	201
November	47	1.2	3.90	6.03	117	359
December	173	1.6	17.8	27.5	552	1,700
Calendar year 1943	173	1.2	12.3	19.0	4,500	13,820
January	11.8	1.6	3.55	5.49	110	338
February	36.5	1.2	6.46	10.0	187	575
March	120	1.4	12.7	19.6	393	1,210
April	140	3.1	18.1	28.0	543	1,670
May	82	2.8	12.8	19.8	396	1,220
June	37.5	2.8	6.72	10.4	202	619
Fiscal year 1943-44	173	1.2	10.1	15.6	3,710	11,400

Note.- No gage-height record Mar. 7-30; discharge computed on basis of records for stations on nearby streams.
Time basis.- Hawaiian war time. To convert war time to standard time, subtract 1 hour.

West Wailuaiki Stream near Keanae

Location.- Lat. 20°49'20", long. 156°08'35", 500 feet upstream from Koolau ditch crossing and trail bridge and 2½ miles south of Keanae post office.
Drainage area.- 3.6 square miles.
Records available.- January 1914 to October 1917, November 1921 to June 1944.
Average discharge.- 22 years (1922-44), 25.0 million gallons a day (38.7 second-feet).
Extremes.- Maximum discharge during year, 1,900 million gallons a day (2,940 second-feet) Aug. 21 (gage height, 8.81 feet), from rating curve extended above 420 million gallons a day; minimum, 1.22 million gallons a day (1.89 second-feet) Feb. 17-21.
1914-17, 1921-44: Maximum discharge, 4,500 million gallons a day (6,960 second-feet) Jan. 14, 1923 (gage height, about 13.5 feet, from floodmarks), from rating curve extended above 420 million gallons a day; minimum, 0.3 million gallons a day (0.5 second-foot) July 26, 1922.
Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.2	1.01	0.6	2.65	1.2	10.4	2.0	40
.3	1.31	.7	3.4	1.4	15.0	2.5	73
.4	1.65	.8	4.4	1.6	22	3.0	121
.5	2.1	1.0	7.0	1.8	30	4.0	270

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.8	6.2	6.7	11.8	1.48	1.88	4.8	1.62	4.8	4.4	3.8	11.5
2	7.5	4.4	6.2	4.9	1.45	2.7	11.6	1.51	3.2	161	3.5	7.3
3	5.7	4.8	5.9	3.4	1.41	25	10.9	1.48	2.6	119	3.25	7.5
4	24	12.4	4.3	2.9	1.38	131	6.3	1.48	2.25	18.7	3.0	6.4
5	25	7.3	3.8	2.6	1.31	48	6.2	1.45	2.25	9.6	2.95	6.2
6	58	4.8	3.4	2.4	1.25	6.8	13.6	1.48	2.05	6.9	2.8	4.9
7	143	5.0	3.1	2.25	1.28	9.3	6.2	2.95	137	6.3	2.6	4.2
8	29	3.7	2.95	2.2	1.25	5.0	4.5	1.58	8.0	12.7	2.6	3.8
9	62	3.3	3.1	2.2	1.78	4.2	3.7	1.38	4.0	13.5	3.6	3.6
10	49	3.4	4.3	2.1	1.41	3.1	3.25	1.62	2.95	12.2	4.7	3.4
11	12.5	4.4	4.5	2.1	1.25	2.65	3.0	1.58	2.55	19.9	2.6	3.25
12	21.5	3.4	2.95	1.96	10.8	2.45	6.8	1.31	2.3	9.0	4.2	3.0
13	68	4.0	2.65	1.83	3.65	2.25	3.7	1.31	2.15	6.4	23.5	2.9
14	13.1	4.6	2.45	1.88	1.62	29	2.95	1.47	1.96	6.0	24.5	2.65
15	10.9	8.6	2.3	2.05	1.62	66	2.65	1.48	1.88	5.9	6.2	3.15
16	8.0	3.95	2.2	1.83	1.51	8.0	2.45	1.25	1.78	7.4	32	2.6
17	30.5	3.2	2.15	1.92	1.41	5.0	2.3	1.22	1.70	17.5	24.5	2.5
18	54	3.0	2.6	1.70	1.31	4.0	2.2	1.22	18.1	41	70	2.45
19	11.2	3.2	7.6	1.65	54	3.1	2.05	1.22	4.7	43	89	2.55
20	9.3	2.6	4.3	1.62	20.5	2.7	2.0	1.22	2.2	15.0	17.1	a7.2
21	7.2	170	2.65	1.62	3.9	2.45	1.94	31	32	22.5	12.7	a46
22	6.4	18.2	5.3	1.58	2.55	2.3	1.83	28.5	12.8	36.5	8.0	a33.5
23	5.4	6.7	4.6	1.58	2.1	2.2	1.78	6.0	112	20.5	9.4	a7.5
24	4.9	9.7	3.0	1.58	1.83	2.15	1.74	3.0	8.2	11.4	8.0	a4.8
25	4.6	30.5	3.3	d1.70	1.65	2.0	1.70	2.25	4.4	8.6	5.6	a4.1
26	4.6	7.5	2.6	d1.45	1.65	4.2	1.65	24	3.2	6.9	5.2	a4.2
27	5.2	7.5	5.4	d1.34	1.65	20.5	1.58	20.5	2.65	5.9	6.2	a5.6
28	3.7	6.7	3.95	d1.31	1.78	197	1.51	31.5	17.5	5.5	6.2	a7.0
29	3.4	39.5	3.95	d1.34	3.4	60	1.51	6.8	47	4.6	16.0	a6.7
30	3.2	41	10.0	1.41	2.15	10.1	1.51	-	10.5	4.2	7.6	17.2
31	7.2	9.6	-	1.74	-	6.2	1.51	-	6.2	-	28.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	143	3.2	22.9	35.4	711	2,180
August	170	2.6	14.3	22.1	443	1,360
September	10.0	2.15	4.07	6.30	122	375
October	11.8	1.31	2.32	3.59	71.9	221
November	54	1.25	4.48	6.93	134	412
December	197	1.88	21.7	33.6	671	2,060
Calendar year 1943	197	1.25	15.0	23.2	5,460	16,750
January	13.6	1.51	3.85	5.96	119	366
February	31.5	1.22	6.32	9.78	183	563
March	137	1.70	15.0	23.2	465	1,430
April	161	4.2	22.1	34.2	662	2,030
May	89	2.6	14.2	22.0	440	1,350
June	46	2.45	7.59	11.7	228	699
Fiscal year 1943-44	197	1.22	11.6	17.9	4,250	13,050

a No gage-height record; discharge computed on basis of records for stations on East Wailuaiki and West Kopiliula Streams.
d Doubtful gage-height record; discharge computed on basis of probable decrease in flow.
Time basis.- Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Wailuanui Stream near Keanae

Location.- Concrete weir control, lat. 20°50'20", long. 156°08'30", 500 feet downstream from highway, 1.6 miles southeast of Keanae post office, and 3 miles northwest of Nahiku. Altitude of gage, 620 feet (by barometer).
Drainage area.- 1.8 square miles.
Records available.- July 1932 to March 1936, November 1938 to June 1944. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.
Extremes.- Maximum discharge during year, 791 million gallons a day (1,220 second-feet) Aug. 21 (gage height, 6.92 feet), from rating curve extended above 90 million gallons a day by logarithmic plotting; minimum, 0.12 million gallons a day (0.19 second-foot) Nov. 8.
1932-36, 1938-44: Maximum discharge, 1,190 million gallons a day (1,840 second-feet) Dec. 14, 1942 (gage height, 8.09 feet), from rating curve extended above 90 million gallons a day by logarithmic plotting; minimum, 0.12 million gallons a day (0.19 second-foot) Oct. 10-12, 1933, Nov. 8, 1943.
Remarks.- Records good. Koolau ditch diverts all low flow, at altitude of about 1,200 feet, for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.10	0.8	4.8	2.0	42
.4	.28	.9	7.1	2.5	57
.5	.69	1.1	12.1	3.0	98
.6	1.45	1.3	18.0	3.5	145
.7	2.75	1.6	27		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.42	0.81	1.31	1.53	0.18	0.25	0.84	0.28	2.45	0.87	0.54	1.66
2	.84	.69	1.17	.59	.16	.22	1.83	.31	1.17	94	.49	.69
3	.69	1.35	3.15	.45	.15	8.5	1.40	.22	.87	57	.45	.75
4	14.0	7.6	1.17	.38	.16	30.5	1.01	.20	.81	4.8	.45	.64
5	12.8	3.3	1.01	.34	.18	25.5	.87	.20	.69	1.66	.45	.90
6	39	1.17	.94	.34	.15	.49	.81	.21	.64	1.26	.49	.64
7	84	1.06	.81	.34	.13	5.7	.69	.41	46	1.17	.49	.54
8	15.0	.81	.81	.34	.13	1.68	.59	.22	.75	1.26	.45	.54
9	37	.75	.75	.34	.31	1.03	.54	.20	.59	1.09	.59	.49
10	25	.81	.81	.28	.20	.59	.64	.18	.59	.87	.64	.45
11	1.77	.87	.87	.38	.16	.49	.54	.18	.54	2.1	.45	.45
12	24	.69	.69	.28	11.2	.45	.69	.16	.49	.69	.60	.45
13	45	.75	.59	.22	.56	.38	.54	.20	.45	.75	12.0	.41
14	2.45	.75	.59	.25	.22	19.7	.45	.28	.41	.87	12.1	.38
15	2.1	1.37	.54	.31	.22	42	.45	.25	.38	.94	.69	.54
16	1.55	.64	.49	.28	.20	1.17	.41	.16	.38	1.26	15.6	.38
17	28.5	.59	.49	.25	.18	.87	.41	.16	.34	10.1	8.1	.38
18	22	.54	.54	.22	.18	.69	.38	.16	2.15	21.5	70	.38
19	1.45	.54	.59	.20	19.0	.59	.38	.16	.44	17.6	63	.41
20	1.26	.64	.49	.18	4.7	.54	.38	.16	.34	1.33	3.6	.75
21	1.17	79	.38	.18	.28	.49	.34	19.7	15.0	3.65	2.85	24.5
22	1.17	6.6	.41	.20	.22	.45	.34	11.4	2.0	11.6	1.26	22.5
23	.90	1.09	.34	.20	.20	.45	.34	.67	46	4.3	1.01	1.09
24	.87	1.96	.41	.20	.18	.49	.34	.38	1.02	.81	.87	.81
25	.81	17.4	.41	.20	.16	.41	.31	.31	.69	.69	.81	.69
26	.81	1.17	.34	.20	.16	.56	.31	25	.59	.69	.87	.69
27	1.28	.87	.41	.22	.16	13.3	.28	13.4	.54	.69	.81	.81
28	.75	.87	.45	.20	.18	104	.28	17.7	9.3	.69	.69	.81
29	.64	25.5	.54	.18	.25	28.5	.28	1.26	31.5	.59	6.0	.69
30	.59	23	1.35	.20	.31	1.09	.25	-	1.91	.54	.69	5.7
31	1.01	1.35	-	.28	-	.87	.22	-	1.01	-	14.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	84	0.59	11.9	18.4	370	1,130
August	79	.54	5.89	9.11	182	560
September	3.15	.34	.762	1.18	22.8	70
October	1.53	.18	.315	.487	9.75	30
November	19.0	.13	1.35	2.09	40.5	124
December	104	.22	9.42	14.6	292	896
Calendar year 1943	113	.13	6.51	10.1	2,380	7,290
January	1.83	.22	.550	.851	17.0	52
February	25	.16	3.25	5.03	94.1	289
March	46	.34	6.49	8.49	170	522
April	94	.54	8.51	13.2	255	784
May	70	.45	7.15	11.1	222	680
June	24.5	.38	2.34	3.62	70.1	215
Fiscal year 1943-44	104	.13	4.77	7.38	1,750	5,360

Time basis.- Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Wailuanui Stream near Keanae

Location.- Lat. 20°49'25", long. 156°08'40", 125 feet upstream from Koolau ditch intake, 250 feet upstream from trail, and 2⅛ miles south of Keanae post office.
Drainage area.- 0.6 square mile.
Records available.- November 1921 to June 1944. January 1914 to October 1917 at site 500 feet upstream.
Average discharge.- 22 years (1922-44), 5.81 million gallons a day (8.99 second-feet).
Extremes.- Maximum discharge during year, 600 million gallons a day (928 second-feet) Aug. 31 (gage height, 5.50 feet), from rating curve extended above 50 million gallons a day; minimum, 0.30 million gallons a day (0.46 second-foot) Feb. 18-20.
1914-17, 1921-44: Maximum discharge, 1,050 million gallons a day (1,620 second-feet) Feb. 12, 1925 (gage height, 6.96 feet), from rating curve extended above 100 million gallons a day; minimum, 0.1 million gallons a day (0.2 second-foot) Apr. 11, 1926.
Remarks.- Records good except those for Nov. 21 to Dec. 16, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.30	0.8	9.2
.4	.89	.9	12.5
.5	2.3	1.1	22
.6	4.2	1.3	33
.7	6.3	1.5	46

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.3	2.65	2.45	4.6	0.47	0.75	1.77	0.53	2.05	1.45	1.32	4.3
2	3.2	1.77	2.3	1.93	.42	1.0	4.3	.53	1.32	38.5	1.20	2.8
3	2.65	2.45	2.75	1.20	.42	6.0	5.4	.42	1.09	26	1.20	3.2
4	9.1	7.3	1.77	1.09	.42	20	3.0	.42	.99	3.85	1.09	3.0
5	8.3	4.9	1.61	.99	.42	17	3.0	.42	.89	2.8	.99	3.0
6	19.4	2.8	1.45	.89	.38	2.8	3.2	.42	.80	2.05	.99	2.3
7	35.5	2.65	1.32	.89	.38	5.6	1.93	1.05	10.9	2.15	.89	1.93
8	9.4	1.93	1.20	.89	.38	2.3	1.61	.47	1.32	6.0	.89	1.77
9	16.3	1.77	1.20	.89	.94	1.7	1.45	.42	.99	4.9	1.40	1.61
10	11.3	1.77	1.93	.80	.59	1.2	1.32	.42	.89	3.2	1.77	1.45
11	4.0	2.65	2.05	.89	.42	1.0	1.20	.38	.80	3.75	.89	1.45
12	12.9	1.77	1.20	.72	8.3	.90	3.0	.38	.80	2.45	2.15	1.32
13	18.6	2.3	1.09	.65	2.25	.86	1.45	.38	.72	1.93	10.0	1.20
14	4.2	2.65	.99	.72	.72	8.0	1.09	.47	.65	2.3	8.1	1.09
15	4.5	4.9	.99	.80	.65	15	1.09	.47	.59	2.75	1.93	1.32
16	3.4	2.05	.89	.65	.59	2.9	.99	.38	.53	3.5	11.2	1.09
17	16.2	1.61	.89	.72	.53	1.93	.89	.34	.53	9.6	7.4	.99
18	12.0	1.45	1.09	.65	.53	1.61	.89	.34	.53	16.3	36	.99
19	3.8	1.61	3.2	.59	11.6	1.32	.80	.30	.53	12.0	28.5	.99
20	3.6	1.32	1.63	.53	3.45	1.09	.80	.34	.53	4.9	5.4	4.4
21	2.8	38.5	.89	.53	1.4	1.09	.72	9.5	4.7	4.5	4.6	14.0
22	2.8	3.6	.99	.53	.95	.99	.72	8.6	2.2	6.2	2.8	18.6
23	2.45	2.45	.89	.53	.78	.89	.65	1.65	13.4	4.9	2.45	3.2
24	2.05	4.1	.89	.53	.70	.89	.65	.89	1.45	3.2	1.93	2.05
25	2.05	9.3	.99	.59	.65	.80	.65	.72	1.09	2.65	1.77	1.93
26	2.3	2.65	.72	.53	.62	1.78	.59	12.3	.89	2.05	1.61	1.77
27	3.05	2.45	1.77	.53	.60	11.0	.53	7.5	.80	1.77	2.3	2.05
28	1.77	2.65	1.84	.47	.72	41	.53	9.1	6.9	1.77	3.4	3.0
29	1.45	11.6	1.56	.47	1.5	15.4	.53	2.05	15.8	1.45	7.2	2.85
30	1.45	10.7	3.75	.47	.94	2.8	.53	-	4.2	1.45	2.8	7.6
31	3.35	3.2	-	.65	-	1.93	.47	-	1.93	-	11.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	35.5	1.45	7.36	11.4	228	700
August	38.5	1.32	4.63	7.16	144	440
September	3.75	.72	1.54	2.38	46.3	142
October	4.6	.47	.868	1.34	26.9	83
November	11.6	.38	1.42	2.20	42.7	131
December	41	.75	5.53	8.56	172	526
Calendar year 1943	41	.38	4.50	6.96	1,640	5,040
January	5.4	.47	1.48	2.29	45.8	140
February	12.3	.30	2.11	3.26	61.2	188
March	15.8	.53	2.61	4.04	80.8	248
April	38.5	1.45	6.01	9.30	180	553
May	36	.89	5.35	8.28	166	509
June	18.6	.99	3.24	5.01	97.2	298
Fiscal year 1943-44	41	.30	3.53	5.46	1,290	3,960

Note.- No gage-height record Nov. 21 to Dec. 16; discharge computed on basis of records for West Wailuanui Stream.
Time basis.- Hawaiian war time. To convert war time to standard time, subtract 1 hour.

West Wailuanui Stream near Keanae

Location.- Columbus type control, lat. 20°49'40", long. 156°08'55", 150 feet upstream from Koolau ditch crossing and intake and 2¼ miles south of Keanae post office.
Drainage area.- 0.7 square mile.
Records available.- December 1913 to October 1917, July 1922 to June 1944.
Average discharge.- 22 years (1922-44), 9.27 million gallons a day (14.3 second-feet).
Extremes.- Maximum discharge during year, 782 million gallons a day (1,210 second-feet) Aug. 21 (gage height, 5.33 feet), from rating curve extended above 130 million gallons a day; minimum, 0.25 million gallons a day (0.39 second-foot) Feb. 18.
1913-17, 1922-44: Maximum discharge, 1,500 million gallons a day (2,320 second-feet) Aug. 12, 1940 (gage height, 6.89 feet), from rating curve extended above 58 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) July 16-21, 1922.
Remarks.- Records good. No diversions above station. Water used for irrigation of sugarcane in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.22	1.0	2.0	1.4	8.0	1.8	22
.7	.42	1.1	2.95	1.5	10.5	2.0	33.5
.8	.75	1.2	4.2	1.6	13.7	2.2	49
.9	1.30	1.3	5.8	1.7	17.5	2.5	82

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.5	2.85	3.2	4.9	0.57	0.75	2.3	0.56	1.90	2.1	1.60	4.4
2	3.3	2.1	2.95	1.83	.35	1.14	4.9	.50	1.30	63	1.42	3.1
3	2.65	3.05	3.45	1.36	.32	7.7	5.6	.42	1.05	47	1.36	3.6
4	9.8	7.1	2.2	1.17	.35	30	2.95	.42	.95	8.3	1.30	3.1
5	9.1	4.8	1.90	1.05	.35	25.5	3.15	.42	.90	4.4	1.23	3.2
6	19.6	2.8	1.67	1.00	.30	3.05	3.75	.45	.85	3.1	1.23	2.4
7	52	2.6	1.54	1.00	.32	5.8	2.4	1.28	38.5	3.05	1.11	2.0
8	11.7	1.90	1.48	.95	.30	2.9	1.90	.47	3.05	6.4	1.17	1.82
9	24	1.74	1.54	.95	.99	2.25	1.67	.37	1.54	5.8	1.68	1.67
10	18.3	1.74	2.25	.85	.53	1.48	1.48	.35	1.17	3.95	2.25	1.54
11	6.0	2.75	2.45	.98	.35	1.30	1.44	.37	1.00	4.9	1.11	1.48
12	13.9	1.90	1.42	.80	8.8	1.17	3.55	.35	.85	3.1	2.3	1.36
13	27	2.25	1.30	.70	2.3	1.11	1.67	.37	.75	2.5	10.4	1.23
14	6.1	2.5	1.11	.80	.70	11.0	1.36	.51	.66	2.85	8.5	1.17
15	5.6	4.9	1.11	.90	.70	23.5	1.23	.44	.66	3.15	2.3	1.38
16	3.95	1.97	1.00	.75	.50	3.4	1.17	.30	.63	3.8	11.3	1.11
17	17.1	1.60	1.00	.75	.42	2.2	1.05	.29	.56	9.2	8.2	1.08
18	13.8	1.54	1.23	.63	.47	1.82	1.00	.29	7.4	14.9	33	1.05
19	5.0	1.67	3.6	.53	11.8	1.48	.95	.29	2.25	12.8	26.5	1.05
20	4.4	1.30	1.71	.50	4.6	1.36	.90	.27	.85	5.7	6.7	4.4
21	3.6	60	1.05	.50	1.36	1.23	.80	9.9	11.4	6.0	5.3	13.5
22	3.3	8.0	1.24	.47	.90	1.11	.75	7.9	5.5	8.6	3.3	14.4
23	2.65	3.2	1.11	.50	.75	1.05	.70	1.72	41	6.5	2.75	2.75
24	2.5	4.5	1.11	.50	.66	1.00	.66	.90	3.9	4.2	2.5	2.1
25	2.4	9.9	1.17	.53	.59	.90	.63	.75	2.0	3.3	2.2	1.82
26	2.4	3.1	.85	.47	.56	2.15	.59	10.8	1.48	2.85	2.1	1.74
27	3.3	2.85	2.05	.47	.63	12.2	.56	6.7	1.23	2.5	2.7	2.2
28	1.90	3.05	2.05	.39	.70	64	.50	9.8	6.6	2.4	3.65	3.05
29	1.67	13.1	1.78	.39	1.79	18.4	.50	2.0	20	2.0	7.3	2.9
30	1.60	13.9	4.0	.40	.96	4.2	.50	-	6.1	1.67	2.95	7.5
31	3.85	4.2	-	.62	-	2.85	.47	-	2.9	-	11.6	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	52	1.60	9.26	14.3	287	881
August	60	1.30	5.77	8.93	179	549
September	4.0	.85	1.82	2.82	54.5	167
October	4.9	.39	.892	1.38	27.6	85
November	11.8	.30	1.45	2.24	43.6	134
December	64	.75	7.68	11.9	238	730
Calendar year 1943	64	.30	5.79	8.96	2,110	6,490
January	5.6	.47	1.65	2.55	51.1	157
February	10.8	.27	2.04	3.16	59.2	182
March	41	.56	5.45	8.43	169	518
April	63	1.67	8.33	12.9	250	767
May	33	1.11	5.52	8.54	171	525
June	14.4	1.05	3.14	4.86	94.0	289
Fiscal year 1943-44	64	.27	4.44	6.87	1,620	4,980

Time basis.- Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Taro patch feeder ditch at Keanae

Location.- Concrete Parshall flume, lat. 20°51'40", long. 156°09'00", 500 feet northwest of highway bridge over Piinaau Stream at Keanae, 4¼ miles northwest of Nahiku, and 4¾ miles southeast of Kailua.

Records available.- September 1934 to June 1944.

Extremes.- Maximum discharge during year, 14.0 million gallons a day (21.7 second-feet) Aug. 21 (gage height, 2.37 feet), from rating curve extended above 4.5 million gallons a day by logarithmic plotting; minimum, 1.35 million gallons a day (2.09 second-feet) Nov. 11-14.

1934-44: Maximum discharge, 19.4 million gallons a day (30.0 second-feet) Feb. 25, 1935, Oct. 8, 1941 (gage heights, 2.86 feet and 2.92 feet, respectively), from rating curves extended above 4.5 million gallons a day by Parshall flume formula and logarithmic plotting, respectively; minimum, 0.05 million gallons a day (0.08 second-foot) Feb. 28, 1935, Apr. 7, 8, 1938, Mar. 5, 6, 1939.

Remarks.- Records excellent except those for periods of no gage-height record, which are fair.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.15	2.2	2.2	1.82	1.52	1.78	1.92	1.69	2.0	1.87	2.1	2.25
2	2.2	2.15	2.1	1.78	1.52	1.78	1.92	1.69	1.78	3.7	2.1	2.15
3	2.1	2.15	2.2	1.78	1.47	2.25	1.96	1.69	1.69	3.55	2.1	2.15
4	2.5	2.4	2.05	1.78	1.47	2.4	1.96	1.69	1.69	2.45	2.1	2.1
5	2.5	2.3	2.05	1.78	1.47	3.0	1.92	1.69	1.69	2.05	2.05	2.1
6	3.0	2.2	2.05	1.74	1.47	2.2	1.92	1.69	1.69	2.0	2.05	2.1
7	3.65	2.15	2.05	1.74	1.47	2.3	1.87	1.64	2.4	1.96	2.05	2.1
8	2.55	2.1	2.05	1.69	1.47	2.1	1.87	1.64	1.78	1.96	2.05	2.05
9	2.95	2.05	2.05	1.64	1.43	2.05	f1.87	1.64	1.74	2.2	2.05	2.05
10	2.85	2.05	2.05	1.64	1.39	1.87	1.87	1.60	1.74	2.05	2.05	2.05
11	2.5	2.05	2.05	1.60	1.39	1.78	1.87	1.60	1.69	2.1	2.05	2.05
12	2.65	2.05	f2.0	1.60	1.39	1.74	1.87	1.60	1.64	2.05	2.05	2.05
13	3.2	2.05	a2.0	1.60	1.39	1.74	1.87	1.60	1.64	2.05	2.4	2.05
14	2.55	2.05	a2.0	1.60	f1.39	2.2	f1.87	1.64	1.64	2.05	2.5	2.05
15	2.5	2.15	a2.0	1.60	a1.4	3.3	1.87	1.60	1.64	2.05	2.1	2.05
16	2.45	2.05	a2.0	1.60	a1.4	2.3	1.87	1.60	1.60	2.05	2.5	2.05
17	2.8	2.05	a2.0	1.60	a1.4	1.87	1.87	1.60	1.60	2.3	2.4	2.05
18	2.85	2.0	a1.9	1.60	a1.4	1.82	1.87	1.60	1.60	2.8	3.3	2.0
19	2.45	2.0	a1.9	1.60	a2.5	1.78	1.78	1.56	1.60	2.8	5.45	2.0
20	2.45	2.0	a1.9	1.60	a2.1	1.78	1.78	1.56	1.60	2.25	2.4	2.0
21	2.4	3.4	a1.9	1.60	1.92	1.78	1.78	2.65	2.1	2.45	2.25	2.7
22	2.4	2.35	a1.9	1.60	1.82	1.78	1.74	2.55	2.05	2.45	2.15	2.5
23	2.35	2.0	a1.9	1.60	1.82	1.78	1.78	1.96	2.85	2.3	2.5	2.1
24	2.3	2.0	f1.92	1.60	1.82	1.78	1.74	1.78	1.96	2.15	2.1	2.05
25	2.25	2.3	1.87	1.60	1.82	1.78	1.74	1.69	1.82	2.15	2.1	2.05
26	2.2	2.0	1.87	1.50	1.82	1.74	1.74	1.82	1.74	2.15	2.1	2.05
27	2.2	2.05	1.87	1.60	1.82	2.25	1.74	2.3	1.74	2.1	2.1	1.96
28	2.15	2.0	1.82	1.56	1.82	4.2	1.74	2.5	2.05	2.1	2.1	1.96
29	2.15	2.45	1.82	1.56	1.78	3.3	1.74	1.87	2.8	2.1	2.25	1.96
30	2.15	2.6	1.82	1.52	1.82	2.75	1.74	-	2.2	2.1	2.15	2.05
31	2.15	2.25	-	1.52	-	1.96	1.69	-	1.92	-	2.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.65	2.1	2.50	3.87	77.6	238
August	3.4	2.0	2.18	3.37	67.6	207
September	2.2	1.82	1.98	3.06	69.3	182
October	1.82	1.52	1.64	2.54	50.8	156
November	2.5	1.39	1.62	2.51	48.7	149
December	4.2	1.74	2.17	3.36	67.1	206
Calendar year 1943	4.2	1.39	2.23	3.45	815	2,500
January	1.96	1.69	1.83	2.83	56.8	174
February	2.65	1.56	1.78	2.75	51.7	159
March	2.85	1.60	1.86	2.88	57.7	177
April	3.7	1.87	2.28	3.53	68.3	210
May	3.45	2.05	2.36	3.50	70.2	215
June	2.7	1.96	2.09	3.23	62.8	193
Fiscal year 1943-44	4.2	1.39	2.02	3.13	739	2,270

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Koolau ditch near Keanae

Location.- Lat. 20°49'55", long. 156°10'30", on west side of Keanae Valley, 2¾ miles southwest of Keanae post office and 5.1 miles southeast of Kailua.

Records available.- January 1910 to December 1912 (staff gage), November 1917 to June 1944.

Average discharge.- 26 years (1918-44), 66.9 million gallons a day (104 second-feet).

Extremes.- Maximum capacity of ditch during year, limited to 141 million gallons a day (218 second-feet) by downstream conditions, was reached frequently; minimum discharge, 12.1 million gallons a day (18.7 second-feet) Feb. 19-21.
1910-12, 1917-44: Maximum discharge, 175 million gallons a day (271 second-feet) Jan. 4, 1922 (gage height, 6.36 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent except those above 100 million gallons a day, which are good. Flow regulated by gates and spillways. Ditch diverts water at altitude 1,200 feet from nearly all streams from the Makapipi west to the Alo for power and irrigation in central Maui. No diversions above station except from several spillways.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	96	64	62	92	16.2	18.7	44	17.4	79	35	33	90
2	68	48	57	42	14.6	23	87	16.2	41	95	33	64
3	57	59	62	31	14.4	95	113	15.0	33	128	31	72
4	110	106	44	28	14.2	87	68	14.8	52	117	29.5	64
5	132	82	41	26	14.4	118	62	14.6	29.5	76	28	68
6	141	60	37	24.5	13.7	51	88	14.8	24.5	55	29.5	51
7	138	59	35	23	13.5	87	48	24	129	50	28	44
8	137	46	33	23	13.1	57	41	16.2	58	108	28	41
9	124	41	33	23	21	51	35	14.4	33	98	35	37
10	137	41	44	21.5	16.8	33	31	14.6	28	83	48	37
11	106	56	45	23	14.2	29.5	29.5	14.8	26	103	29.5	35
12	121	46	31	21.5	58	26	56	13.5	23	59	39.5	33
13	137	50	29.5	20	43	24.5	35	13.7	21.5	46	124	31
14	110	50	28	20	18.7	62	28	16.6	20	53	126	29.5
15	101	82	26	21.5	18.7	134	26	16.2	20	54	55	33
18	79	46	24.5	20	16.2	67	24.5	13.5	18.7	72	91	28
17	98	37	24.5	20	15.0	44	24.5	12.9	18.7	102	129	26
18	137	35	28	18.7	15.0	37	23	12.5	28	141	140	26
19	99	37	59	17.4	107	31	21.5	12.5	26.5	138	138	26
20	87	33	36	17.4	83	29.5	21.5	12.3	18.7	109	129	58
21	72	108	26	16.2	29.5	26	20	90	68	131	115	140
22	72	96	35	16.2	23	24.5	20	100	81	135	76	129
23	59	57	29.5	16.2	20	23	20	47	125	120	68	64
24	53	83	26	16.2	18.7	23	18.7	26	52	79	57	48
25	53	117	28	17.4	17.4	21.5	18.7	23	31	62	51	41
28	53	64	23	16.2	16.2	36.5	17.4	44	26	53	48	39
27	72	62	42	16.2	16.2	75	17.4	126	23	48	58	46
28	46	62	36.5	15.0	17.5	122	17.4	127	55	46	60	59
29	44	137	37	15.0	31	128	16.2	60	131	41	108	60
30	39	130	75	15.0	21.5	67	16.2	-	81	37	68	112
31	73	79	-	24	-	51	16.2	-	43	-	120	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	141	39	92.0	142	2,850	8,750
August	137	33	66.9	104	2,070	6,360
September	75	23	37.9	58.6	1,140	3,490
October	92	15.0	23.1	35.7	717	2,200
November	107	13.1	25.1	38.8	752	2,310
December	134	18.7	54.9	84.9	1,700	5,230
Calendar year 1943	141	13.1	60.8	94.1	22,180	68,070
January	113	16.2	35.6	55.1	1,100	3,390
February	127	12.3	32.5	50.3	944	2,900
March	131	18.7	46.6	72.1	1,440	4,430
April	141	35	82.5	128	2,470	7,590
May	140	28	69.5	108	2,150	6,610
June	140	26	54.4	84.2	1,630	5,010
Fiscal year 1943-44	141	12.3	51.9	80.3	18,960	58,270

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honomanu Stream near Keanae

Location.- Columbus type control, lat. 20°50'10", long. 156°11'20", 500 feet upstream from Spreckels ditch intake and trail bridge and 3 miles by trail northwest of Keanae.

Drainage area.- 3.3 square miles.

Records available.- November 1913 to June 1944.

Average discharge.- 28 years (1916-44) 15.7 million gallons a day (24.3 second-feet).

Extremes.- Maximum discharge during year, 698 million gallons a day (1,080 second-feet) Dec. 4 (gage height, 5.16 feet), from rating curve extended above 300 million gallons a day; minimum, 0.12 million gallons a day (0.19 second-foot) Feb. 19.
1913-44: Maximum discharge, 1,770 million gallons a day (2,740 second-feet) Aug. 12, 1940 (gage height, 8.37 feet), from rating curve extended above 300 million gallons a day; minimum, 0.08 million gallons a day (0.12 second-foot) Mar. 24, 1928.

Remarks.- Records good except those for period of no gage-height record, which are fair. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.10	0.9	1.35	1.8	26
.5	.18	1.0	2.0	2.0	41
.6	.32	1.2	3.95	2.3	70
.7	.53	1.4	7.9	2.6	104
.8	.86	1.6	15.0	3.0	162

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.1	5.8	3.25	14	0.32	1.06	2.1	0.49	1.48	1.87	1.54	7.3
2	4.2	2.8	2.8	5.4	.28	1.22	3.75	.49	1.10	129	1.42	3.85
3	2.8	3.0	2.95	2.8	.24	20	4.2	.38	.83	109	1.35	4.4
4	25	20.5	2.15	2.3	.21	104	2.4	.34	.70	11.5	1.25	3.6
5	18.5	3.85	1.94	1.9	.21	45	2.45	.32	1.32	5.4	1.15	3.6
6	53	2.8	1.74	1.6	.18	3.9	8.9	.35	1.18	2.8	1.10	4.2
7	115	3.0	1.61	1.5	.24	3.55	2.9	2.75	55	2.65	1.06	2.55
8	20.5	2.15	1.48	1.9	.19	2.15	2.15	.87	2.75	6.1	1.01	2.4
9	62	1.80	1.99	1.5	.59	1.74	1.68	.49	1.15	9.8	1.44	2.0
10	34.5	1.74	4.5	1.2	.49	1.48	1.42	.36	.79	8.4	2.7	6.0
11	6.1	2.2	4.5	1.2	.29	1.25	1.30	.34	.66	14.1	2.1	4.4
12	19.5	1.80	2.0	1.1	13.3	1.10	7.0	.29	.53	4.5	3.2	1.87
13	70	2.4	1.61	.96	4.7	.96	2.85	.26	.47	2.7	26	1.48
14	7.3	3.0	1.35	.96	1.48	32	1.68	.26	.40	2.55	28	1.25
15	4.9	7.5	1.20	1.2	1.48	64	1.35	.29	.34	3.2	3.7	2.15
16	3.6	3.05	1.10	.90	.91	6.7	1.20	.22	.29	5.0	33.5	2.1
17	31.5	2.0	1.10	.90	.63	3.45	1.06	.19	.28	14.2	22.5	2.0
18	41	1.74	1.59	.85	.51	2.15	.95	.18	1.43	35	61	2.2
19	5.7	1.68	9.2	.70	59	1.68	.86	.16	1.72	34.5	70	1.54
20	6.4	1.35	3.6	.63	13.3	1.35	.83	.16	.76	10.3	10.1	7.6
21	3.85	98	1.61	.60	2.2	1.20	.76	32.5	12.5	14.4	7.9	55
22	8.6	10.8	1.74	.53	1.30	1.06	.73	25.5	14.1	21	3.6	22
23	6.4	3.8	1.6	.51	1.01	1.01	.66	3.7	51	13	2.8	4.2
24	2.65	9.4	1.6	.49	.76	.96	.63	5.4	2.7	5.6	3.4	2.65
25	2.5	32	3.0	.56	.66	.83	.63	2.2	1.42	3.7	2.25	2.15
26	7.0	4.2	1.6	.49	.56	2.35	.66	1.22	1.06	2.8	4.8	2.0
27	7.0	3.4	4.4	.47	.51	19.6	.56	1.27	.86	2.4	5.3	2.3
28	2.25	3.75	4.8	.42	1.22	152	.51	17.0	8.5	2.15	7.3	4.2
29	1.87	48	5.8	.38	3.35	41	.49	2.5	58	1.87	14.3	4.1
30	1.68	45	8.6	.36	1.35	4.6	.45	-	9.5	1.68	5.5	17.6
31	6.7	5.4	-	.38	-	2.55	.42	-	2.6	-	25.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	115	1.68	19.1	29.6	592	1,820
August	98	1.35	10.9	16.9	337	1,040
September	9.2	1.10	2.88	4.46	86.4	265
October	14	.36	1.57	2.43	48.7	149
November	59	.18	3.72	5.76	111	342
December	152	.83	17.0	26.3	526	1,610
Calendar year 1943	152	.18	11.4	17.6	4,170	12,810
January	8.9	.42	1.86	2.88	57.5	177
February	325	.16	3.46	5.35	100	308
March	58	.28	7.59	11.7	235	722
April	129	1.68	16.1	24.9	482	1,480
May	70	1.01	11.5	17.8	357	1,090
June	55	1.25	6.09	9.42	183	561
Fiscal year 1943-44	152	.16	8.51	13.2	3,120	9,560

Note.- No gage-height record Sept. 23 to Oct. 18; discharge computed on basis of records for Puohokamoa and Haipuaena Streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Haipuaena Stream near Huelo

Location.- Lat. 20°51'05", long. 156°11'30", 200 feet upstream from inflow of Spreckels ditch, 3.3 miles southeast of Kailua, and 4.7 miles southeast of Huelo. Datum of gage is 1,512.22 feet above mean sea level (East Maui Irrigation Co. bench mark).

Drainage area.- 1.1 square miles.

Records available.- October 1913 to June 1944.

Average discharge.- 28 years (1916-44), 10.1 million gallons a day (15.6 second-feet).

Extremes.- Maximum discharge during year, 1,050 million gallons a day (1,620 second-feet) Aug. 21 (gage height, 4.90 feet), from rating curve extended above 150 million gallons a day; minimum, slightly more than 0.1 million gallons a day (about 0.2 second-foot) several days in November and February.
1913-44: Maximum discharge, 6,100 million gallons a day (9,440 second-feet) Aug. 12, 1940 (gage height, 6.91 feet), from rating curve extended above 150 million gallons a day; minimum, 0.10 million gallons a day (0.16 second-foot) June 18, 1940.

Remarks.- Records fair. Haipuaena diversion ditch diverts water above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

-0.2	0.1	0.4	1.5	1.5	14.5
-.1	.2	.5	2.0	1.8	22.5
0.0	.3	.7	3.2	2.2	38.5
.1	.5	.9	5.0	2.6	67
.2	.8	1.1	7.4	2.9	103
.3	1.2	1.3	10.4		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.1	2.8	2.6	7.7	0.2	0.4	1.6	0.2	0.8	1.3	0.8	5.5
2	3.2	1.7	2.3	2.7	.2	.3	2.2	.2	.5	86	.7	2.9
3	2.2	2.4	3.1	1.4	.2	11.4	3.6	.2	.4	68	.6	3.5
4	13.1	12.1	1.6	1.4	.2	50	1.9	.1	.3	7.1	.5	2.7
5	10.3	4.0	1.4	1.0	.1	33.5	1.8	.1	.9	3.9	.4	2.5
6	27.5	2.5	1.3	.8	.1	2.9	5.5	.2	.6	2.4	.4	2.6
7	73	2.4	1.1	.8	.1	3.3	2.0	1.2	18.8	1.9	.4	1.5
8	14.1	1.6	1.0	1.2	.1	1.5	1.5	.3	1.7	5.8	.4	1.4
9	33.5	1.4	.3	.9	.4	1.3	1.1	.2	.5	6.9	.6	1.0
10	22.5	1.4	2.2	.7	.2	.9	.8	.1	.3	5.7	1.4	1.6
11	4.8	1.9	2.6	.8	.2	.7	.7	.1	.2	8.0	.8	2.1
12	12.5	1.4	1.1	.6	8.8	.5	4.2	.1	.2	3.6	1.6	.9
13	46	1.4	.9	.5	3.0	.4	1.9	.2	.2	2.2	16.0	.7
14	5.1	1.9	.7	.6	.6	17.3	1.0	.2	.2	2.2	17.7	.5
15	3.9	4.5	.7	.8	.6	46	.7	.2	.2	2.4	2.6	1.1
16	2.7	2.0	.6	.5	.2	4.3	.6	.2	.2	4.8	20.5	1.0
17	17.9	1.3	.5	.5	.2	2.6	.5	.2	.2	10.0	15.3	.7
18	26	1.1	.9	.4	.2	1.5	.4	.1	.2	24	51	.7
19	4.1	1.2	3.5	.4	30	1.1	.3	.1	.7	24	51	.7
20	4.2	.9	2.2	.3	10.3	.9	.3	.2	.2	7.0	8.3	4.0
21	2.8	75	.8	.3	1.4	.7	.3	21	6.5	9.1	6.2	34.5
22	3.8	5.3	.7	.3	.7	.6	.2	14.3	5.6	12.3	2.8	21.5
23	3.6	2.7	.8	.3	.4	.5	.2	2.4	25.5	9.7	2.1	4.2
24	1.8	5.2	.8	.3	.3	.5	.2	2.6	1.8	4.4	1.6	2.3
25	1.6	16.1	2.0	.3	.2	.4	.2	1.2	.7	2.8	1.3	1.6
26	3.2	2.8	.7	.3	.2	1.4	.2	.5	.4	2.2	1.8	1.6
27	3.9	2.4	2.6	.3	.2	9.1	.2	1.1	.3	1.6	2.6	1.8
28	1.4	2.5	2.9	.2	.2	103	.2	10.6	5.1	1.6	6.1	3.4
29	1.2	23.5	3.5	.2	2.2	27	.2	1.7	34	1.2	9.3	2.9
30	1.0	25	6.3	.2	.6	3.9	.2	-	7.0	1.0	3.7	12.9
31	3.6	3.7	-	.2	-	2.2	.2	-	1.9	-	16.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	73	1.0	11.6	17.9	361	1,110
August	75	.9	6.91	10.7	214	657
September	6.3	.3	1.72	2.66	51.7	159
October	7.7	.2	.868	1.34	26.9	83
November	30	.1	2.08	3.22	62.3	191
December	103	.3	10.6	16.4	330	1,010
Calendar year 1943	103	.1	7.49	11.6	2,730	8,390
January	5.5	.2	1.13	1.75	34.9	107
February	21	.1	2.06	3.19	59.8	184
March	34	.2	3.75	5.80	116	356
April	86	1.0	10.8	16.7	323	992
May	51	.4	7.91	12.2	245	752
June	34.5	.5	4.14	6.41	124	381
Fiscal year 1943-44	103	.1	5.33	8.25	1,950	5,980

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Haipuaena diversion ditch at Kolea Gulch, near Keanae

Location.- Parshall flume, lat. 20°50'50", long. 156°11'40", on Haipuaena diversion ditch, 15 feet downstream from end of tunnel in Kolea Gulch, 3.1 miles southwest of Keanae, and 3.7 miles southeast of Kailua. Altitude of gage, 1,800 feet (from topographic map).

Records available.- March 1938 to June 1944.

Extremes.- Maximum discharge during year, 18.4 million gallons a day (28.5 second-feet) Aug. 21 (gage height, 2.03 feet); minimum, 0.39 million gallons a day (0.60 second-foot) Feb. 20.
1938-44: Maximum discharge, 25 million gallons a day (39 second-feet) Aug. 12, 1940 (gage height, 2.43 feet); minimum, 0.02 million gallons a day (0.03 second-foot) Apr. 29, 1941.

Remarks.- Records excellent. Ditch diverts water from Haipuaena Stream for East Maui Irrigation Co.'s hydroelectric plant about 1 mile downstream.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.51	1.13	1.07	1.68	0.45	1.01	1.31	0.70	1.07	1.31	1.19	2.05
2	1.19	.95	1.01	1.07	.45	1.01	1.45	.70	1.01	5.2	1.19	1.72
3	1.01	.99	1.07	.85	.45	2.4	1.58	.65	.95	5.3	1.13	1.78
4	1.09	2.1	.90	.80	.45	3.6	1.38	.56	.90	2.2	1.07	1.65
5	2.05	1.19	.85	.75	.45	3.2	1.39	.56	1.16	1.78	1.07	1.58
6	3.55	1.07	.80	.70	.45	1.58	1.98	.56	1.01	1.51	1.01	1.58
7	5.3	1.01	.80	.70	.48	1.58	1.45	1.26	2.7	1.45	.95	1.45
8	2.35	.90	.80	.75	.45	1.26	1.31	.85	1.31	1.92	1.01	1.38
9	2.8	.85	.80	.70	.81	1.19	1.19	.65	1.01	2.05	1.13	1.31
10	3.4	.80	.95	.65	.70	1.13	1.19	.56	.90	1.98	1.38	1.45
11	1.51	.90	1.07	.65	.52	1.07	1.13	.52	.85	2.2	1.19	1.61
12	2.1	.80	.80	.65	1.71	1.01	1.92	.52	.80	1.72	1.40	1.25
13	3.45	.85	.75	.60	1.48	.95	1.45	.52	.70	1.51	2.9	1.19
14	1.51	.95	.70	.60	1.07	2.25	1.25	.52	.65	1.45	3.0	1.13
15	1.38	1.27	.70	.65	1.01	4.3	1.13	.56	.65	1.51	1.58	1.31
16	1.19	.95	.70	.60	.90	1.85	1.07	.48	.60	1.85	2.9	1.25
17	2.0	.85	.65	.60	.75	1.51	1.07	.48	.60	2.3	2.9	1.19
18	3.25	.80	.75	.56	.70	1.31	1.01	.45	.79	3.45	4.6	1.19
19	1.31	.80	1.17	.56	3.75	1.19	.95	.45	1.07	3.4	4.9	1.13
20	1.31	.70	1.01	.52	2.3	1.13	.95	.42	.75	2.2	2.35	1.76
21	1.13	3.8	.75	.52	1.38	1.07	.90	2.7	1.80	2.35	2.2	4.2
22	1.26	1.51	.70	.52	1.19	1.01	.90	2.8	2.0	2.55	1.72	3.2
23	1.25	1.07	.70	.48	1.07	1.01	.85	1.58	3.35	2.4	1.51	1.85
24	.95	1.38	.75	.48	1.01	.95	.85	1.52	1.45	1.92	1.45	1.51
25	.95	2.4	.95	.48	.95	.90	.80	1.25	1.13	1.65	1.38	1.45
26	1.15	1.13	.70	.48	.90	1.19	.85	1.01	1.01	1.51	1.45	1.45
27	1.20	1.01	1.00	.48	.85	2.2	.80	1.01	.90	1.45	1.65	1.45
28	.90	1.02	1.14	.48	.94	6.4	.75	2.35	1.52	1.38	1.98	1.65
29	.85	3.05	1.12	.48	1.45	3.4	.70	1.38	4.0	1.31	2.4	1.65
30	.80	3.0	1.45	.48	1.07	1.78	.65	-	2.05	1.25	1.78	2.7
31	1.18	1.25	-	.48	-	1.45	.65	-	1.51	-	2.95	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.3	0.80	1.80	2.79	56.8	171
August	3.8	.70	1.31	2.03	40.5	124
September	1.45	.65	.887	1.37	26.6	82
October	1.68	.48	.645	.998	20.0	61
November	3.75	.45	1.00	1.55	30.1	92
December	6.4	.90	1.80	2.79	56.9	171
Calendar year 1943	6.4	.45	1.35	2.09	494	1,510
January	1.98	.65	1.12	1.73	34.8	107
February	2.8	.42	.951	1.47	27.6	85
March	4.0	.60	1.30	2.01	40.2	123
April	5.3	1.25	2.14	3.31	64.2	197
May	4.9	.95	1.91	2.96	59.3	182
June	4.2	1.13	1.67	2.58	50.0	153
Fiscal year 1943-44	6.4	.42	1.38	2.14	505	1,550

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Spreckels ditch at Haipuaena weir, near Huelo

Location.- Sharp-crested weir, lat. 20°51'20", long. 156°11'25", on Spreckels ditch trail between Haipuaena and Puohokamoa Streams, 3½ miles southeast of Kailua and 5.1 miles southeast of Huelo. Datum of gage is 1,470.96 feet above mean sea level (East Maui Irrigation Co. bench mark).

Records available.- April 1922 to June 1944. February 1930 to October 1935 at site 100 feet upstream.

Average discharge.- 21 years (1922-29, 1930-44), 14.5 million gallons a day (22.4 second-feet).

Extremes.- Maximum discharge during year, 92 million gallons a day (142 second-feet) Aug. 21 (gage height, 2.22 feet); minimum, 0.10 million gallons a day (0.16 second-foot) Feb. 10-12, 17-20.

1922-44: Maximum discharge, 139 million gallons a day (215 second-feet) Mar. 5, 1933 (gage height, 5.03 feet); no flow at times, when water was turned out of ditch.

Remarks.- Records excellent except those for periods of no gage-height record, which are fair. Regulated by gates and spillways. Spreckels ditch diverts water from all streams between the Nuailua and the Kailua, above Koolau ditch east of the Puohokamoa and below Koolau ditch west of the Puohokamoa. About 4 million gallons a day is diverted from Spreckels ditch to East Maui Irrigation Co.'s hydroelectric plant at Kolea Gulch. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.8	10.4	8.0	21	0.15	0.35	3.5	0.15	1.04	2.8	1.80	15.1
2	10.8	5.4	7.1	8.5	.14	.14	5.0	.16	.51	f52	.97	9.8
3	7.1	8.4	10.2	3.45	.11	12	10	.14	.31	58	.83	12.4
4	25.5	26	4.5	3.45	.11	30	6.0	.12	.23	19.3	f.51	9.8
5	25.5	14.8	3.3	1.25	.13	30	5.0	.12	.83	12.1	.43	9.8
6	44	8.8	2.35	1.04	.12	3.0	7.0	.14	.51	f6.5	.43	9.0
7	62	8.0	1.69	1.00	.12	10	.80	3.6	22.5	f6.3	.35	4.8
8	29.5	4.3	1.47	2.3	.12	3.0	.50	.23	3.55	18.8	.35	4.1
9	35	2.95	1.58	1.04	.22	2.8	.45	.11	.43	18.6	2.0	2.65
10	36.5	2.8	7.4	.90	.22	.90	.30	.11	.27	17.1	5.0	5.9
11	14.8	7.1	8.9	.90	.15	.70	.30	.10	.16	20	1.36	7.1
12	27.5	3.45	1.69	.76	13	.45	5.6	.10	.16	10.8	6.5	2.15
13	40	4.2	1.18	.76	3.0	.40	.70	.12	.14	f6.5	28.5	1.11
14	17.1	7.1	1.17	.76	.27	25	.45	.16	.12	f6.4	29.5	.76
15	12.7	15.9	.90	.90	.26	48	.40	.14	.12	f8.9	8.1	3.5
16	9.0	6.0	.76	.74	.20	13.0	.35	.11	.12	14.4	27	2.55
17	25.5	2.65	.76	.50	f.14	7.6	.30	.10	.12	f22	29	1.91
18	37.5	1.91	1.79	.50	.16	4.1	.30	.10	.96	38.5	53	1.91
19	13.4	2.35	12.4	.50	36.5	2.0	f.27	.10	1.19	36	55	1.25
20	13.1	1.18	6.6	.50	18.7	1.11	.27	.10	.15	19.8	21.5	13.3
21	9.2	40	1.04	.50	f3.6	.83	.19	30	12.2	23	17.6	48
22	11.8	12.7	1.04	.50	.30	.62	.16	27	15.0	25	9.2	34
23	11.5	6.5	1.25	.50	.20	.47	.16	7.4	34	23	7.1	11.8
24	5.4	15.6	2.45	.23	.13	.43	.16	5.5	f4.2	13.4	6.2	7.1
25	4.7	29.5	6.2	.23	.11	.39	.15	2.4	f.83	f9.2	3.75	5.2
26	7.9	9.5	.90	.23	.11	5.0	.15	1.22	f.47	7.1	6.5	5.0
27	13.7	8.0	7.6	.23	.11	18.0	.14	4.3	f.31	5.0	9.4	6.5
28	3.75	9.5	8.4	.16	.13	73	.14	24.5	f11.1	4.8	12.2	12.0
29	2.35	40	10.0	.16	1.1	40	.12	4.8	46	3.45	21	10.0
30	1.69	36	15.0	.16	.40	12	.12	-	17.2	2.5	12.6	25
31	11.5	12.1	-	.16	-	6.0	.12	-	f5.6	-	29.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	62	1.69	19.0	29.4	589	1,810
August	40	1.18	11.8	18.3	367	1,130
September	15.0	.76	4.61	7.13	138	424
October	21	.16	1.74	2.69	53.8	165
November	36.5	.11	2.67	4.13	80.0	246
December	73	.14	11.3	17.5	351	1,080
Calendar year 1943	73	.11	11.3	17.5	4,130	12,690
January	10	.12	1.58	2.44	49.1	151
February	30	.10	3.90	6.03	113	347
March	46	.12	5.82	9.00	180	553
April	58	2.5	17.0	26.3	511	1,570
May	55	.35	13.1	20.3	407	1,250
June	48	.76	9.45	14.6	283	870
Fiscal year 1943-44	73	.10	8.63	13.2	3,120	9,600

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Oct. 13-26, Nov. 3-16, Nov. 22 to Dec. 14, Dec. 29 to Jan. 18, Mar. 25-27, Apr. 1, Apr. 25 to May 3; discharge computed on basis of records for stations on nearby ditches.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Koolau ditch at Haipuaena, near Huelo

Location.- Parshall flume, lat. 20°51'15", long. 156°11'15", 1,000 feet upstream from intake at Puohokamoa Stream, 3⅛ miles southeast of Kailua, and 4.7 miles southeast of Huelo.

Records available.- April 1932 to June 1944.

Average discharge.- 12 years, 80.4 million gallons a day (124 second-feet).

Extremes.- Maximum discharge during year, 199 million gallons a day (308 second-feet) Apr. 2 (gage height, 4.93 feet); minimum, 9.2 million gallons a day (14.2 second-feet) Oct. 29.
1932-44: Maximum discharge, 226 million gallons a day (350 second-feet) Nov. 23, 1941 (gage height, 5.32 feet); no flow when water was shut out of ditch.

Remarks.- Records excellent except those for May 17-29, which are good. Flow regulated by flood gates. No diversions above station. Water used for domestic supply and irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	106	67	67	101	16.8	22	52	19.4	81	41	41	92
2	72	55	63	48	15.6	27.5	76	18.1	48	149	39	67
3	63	63	72	35.5	14.5	111	119	16.8	37	183	35.5	76
4	133	130	52	32.5	14.3	96	76	15.6	56	125	34	67
5	147	90	48	31	14.5	157	67	15.6	34	90	32.5	72
6	183	67	44	28	13.8	58	91	15.6	29.5	85	32.5	55
7	190	67	41	26.5	13.8	96	55	29.5	144	57	31	50
8	155	52	39	28	12.9	61	48	18.1	62	115	31	46
9	143	50	41	26.5	24.5	57	42	15.6	39	107	41	42
10	169	50	50	25	18.1	41	39	15.6	32.5	89	52	46
11	108	59	52	26.5	14.5	35.5	35.5	15.6	29.5	113	34	41
12	143	58	39	25	80	32.5	62	14.0	26.5	67	48	37
13	169	55	35.5	23.5	47	29.5	42	14.3	23.5	52	156	35.5
14	119	55	32.5	23.5	23.5	70	35.5	18.1	22	59	151	34
15	108	91	31	25	23.5	170	32.5	18.1	22	60	59	37
16	85	52	29.5	22	18.1	78	31	14.0	20.5	80	113	34
17	118	44	29.5	22	16.8	50	28	13.1	19.4	124	a150	32.5
18	169	42	32.5	20.5	16.8	44	28	12.9	32	176	a170	32.5
19	103	44	63	19.4	146	39	26.5	12.7	30	176	a160	32.5
20	94	39	44	18.1	93	34	25	12.7	20.5	119	a145	63
21	76	143	31	18.1	34	31	23.5	125	88	143	a125	179
22	76	108	38	16.8	26.5	29.5	23.5	130	93	155	a86	159
23	67	63	34.5	16.8	23.5	28	22	54	153	125	a75	70
24	59	91	31	16.8	20.5	28	22	31	60	85	a55	52
25	59	138	34	18.1	19.4	25	20.5	29.5	39	67	a58	48
26	59	72	28	16.8	18.1	39.5	20.5	44	31	59	a54	46
27	79	67	52	16.8	18.1	77	19.4	125	28	55	a52	52
28	55	72	45	16.8	22	190	19.4	141	74	52	a62	63
29	50	174	42	15.6	34	174	18.1	67	176	48	a140	63
30	48	164	87	16.8	25	78	18.1	-	94	44	72	135
31	79	85	-	26.5	-	59	16.8	-	52	-	150	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	190	48	106	164	3,280	10,080
August	174	39	77.5	120	2,400	7,370
September	87	28	44.3	68.5	1,330	4,080
October	101	15.6	25.9	40.1	802	2,460
November	146	12.9	29.3	45.3	879	2,700
December	190	22	66.7	103	2,070	6,350
Calendar year 1943	190	12.9	70.7	109	25,790	79,190
January	119	16.8	39.8	61.6	1,230	3,790
February	141	12.7	37.0	57.2	1,070	3,290
March	176	19.4	54.7	84.6	1,700	5,210
April	183	41	96.3	149	2,890	8,870
May	170	31	80.8	126	2,500	7,690
June	179	32.5	62.0	95.9	1,860	5,710
Fiscal year 1943-44	190	12.7	60.2	93.1	22,010	67,600

a No gage-height record; discharge computed on basis of records for station at Keanae.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Puohokamoa Stream near Huelo

Location.- Masonry dam control, lat. 20°51'20", long. 156°11'25", 650 feet upstream from Sprecklels ditch inflow and trail crossing, 3 miles southeast of Kailua, and 4.4 miles southeast of Huelo. Datum of gage is 1,322.04 feet above mean sea level (East Maui Irrigation Co. bench mark).

Drainage area.- 2.6 square miles.

Records available.- December 1910 to June 1944.

Average discharge.- 27 years (1917-44), 21.7 million gallons a day (33.6 second-feet).

Extremes.- Maximum discharge during year, 964 million gallons a day (1,490 second-feet) Aug. 21 (gage height, 5.98 feet), from rating curve extended above 400 million gallons a day; minimum, 0.8 million gallons a day (1.2 second-feet) Feb. 20.
1910-44: Maximum discharge, 1,600 million gallons a day (2,480 second-feet) Aug. 12, 1940 (gage height, 7.81 feet), from rating curve extended above 400 million gallons a day; minimum, 0.1 million gallons a day (0.2 second-foot) Nov. 17, 1929, site and datum then in use.

Remarks.- Records good. Kula pipe line diverts small amount of water above station, at altitude 4,300 feet, for domestic supply.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.6	1.1	11.4	1.9	74
.7	1.4	1.2	15.8	2.1	100
.8	2.8	1.3	21	2.4	147
.9	5.0	1.5	36	2.7	205
1.0	7.8	1.7	53		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.6	10.2	9.2	21	1.2	2.2	6.1	1.7	3.0	4.1	3.9	15.3
2	11.4	6.7	8.0	8.9	1.1	2.0	7.9	1.8	2.4	151	3.5	9.2
3	8.2	7.9	11.0	5.0	1.0	24	11.6	1.4	1.8	120	3.2	11.4
4	30.5	30	6.4	4.3	1.0	73	7.0	1.4	1.7	17.2	3.0	8.9
5	28.5	12.6	5.6	3.5	1.0	44	6.7	1.3	3.3	11.2	2.8	8.5
6	63	7.9	4.8	3.0	1.0	7.3	17.4	1.3	2.5	7.2	2.8	8.2
7	144	7.5	4.6	2.8	1.1	8.6	7.2	4.5	26	6.6	2.7	6.1
8	36.5	5.6	4.3	3.7	1.0	5.0	5.8	2.0	4.0	16.1	2.8	5.6
9	78	4.8	4.3	3.2	1.8	4.3	4.6	1.4	2.4	18.5	3.8	4.8
10	54	4.8	7.2	2.7	1.7	3.5	4.1	1.2	1.8	15.4	6.1	6.0
11	16.8	6.4	9.2	2.7	1.1	3.0	3.7	1.2	1.7	19.0	3.2	6.7
12	34	4.8	4.6	2.5	18.5	2.7	13.3	1.1	1.5	10.6	6.4	4.3
13	91	5.0	3.9	2.2	8.6	2.4	6.6	1.2	1.4	7.0	36.5	3.7
14	17.4	6.1	3.2	2.2	2.8	33	4.6	1.2	1.3	6.7	37	3.5
15	14.2	12.3	3.0	2.8	2.5	90	3.7	1.2	1.2	7.5	8.7	5.0
16	11.0	6.6	2.8	2.2	2.0	12.6	3.5	1.0	1.2	12.7	48	4.1
17	46	4.8	2.7	2.2	1.4	8.7	a3.0	1.0	1.2	22.6	33	3.7
18	59	3.9	3.6	2.0	1.4	5.6	a2.8	.9	2.8	46	105	3.7
19	14.9	4.1	9.9	1.8	56	4.6	2.5	.9	2.6	46	104	3.5
20	14.9	3.5	7.1	1.7	23	3.9	2.4	.9	1.3	17.6	22.5	11.9
21	11.0	116	3.5	1.7	5.0	3.5	2.2	42	19.2	21.5	17.5	69
22	11.9	13.6	3.0	1.5	3.0	3.2	2.1	28	11.4	26	10.3	43
23	12.0	7.8	3.0	1.4	2.4	2.8	2.1	6.6	50	24	8.5	11.6
24	7.8	16.5	3.1	1.4	2.1	2.7	2.1	6.5	5.2	12.7	6.7	7.2
25	7.2	37	6.2	1.7	1.8	2.5	2.0	4.8	3.0	8.9	5.8	5.8
26	6.9	9.6	3.0	1.4	1.7	4.9	2.1	2.8	2.2	7.2	6.4	5.6
27	11.6	8.9	8.4	1.4	1.5	20.5	1.8	3.4	2.0	6.1	8.6	6.1
28	6.1	9.8	9.0	1.3	1.5	188	1.7	22	12.0	5.6	18.3	9.6
29	5.3	50	10.0	1.2	7.2	58	1.7	5.2	61	4.8	25	8.9
30	4.8	54	12.3	1.2	2.7	12.8	1.5	-	14.6	4.3	11.7	26
31	11.2	12.8	-	1.2	-	8.2	1.4	-	5.8	-	39.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	144	4.8	28.6	44.3	888	2,720
August	116	3.5	15.8	24.4	491	1,610
September	12.3	2.7	5.90	9.13	177	543
October	21	1.2	3.09	4.78	95.8	294
November	66	1.0	5.27	8.15	158	485
December	188	2.0	20.9	32.3	648	1,990
Calendar year 1943	188	1.0	16.0	24.8	5,840	17,910
January	17.4	1.4	4.68	7.24	145	446
February	42	.9	6.18	8.01	150	461
March	61	1.2	8.11	12.5	262	772
April	151	4.1	22.8	35.3	684	2,100
May	105	2.7	19.3	29.9	598	1,830
June	69	3.5	10.9	16.9	327	1,000
Fiscal year 1943-44	188	.9	12.6	19.5	4,610	14,150

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Manuel Luis ditch at Puohokamoa Gulch, near Huelo

Location.- Sharp-crested weir, lat. 20°51'50", long. 156°11'00", in Puohokamoa Gulch at lower portal of tunnel between Haipuaena and Puohokamoa Streams, 3 miles southeast of Kailua, and 4.4 miles southeast of Huelo.

Records available.- December 1917 to June 1944.

Average discharge.- 25 years (1918-24, 1925-44), 5.91 million gallons a day (9.14 second-feet).

Extremes.- Maximum discharge during year, 68 million gallons a day (105 second-feet) July 7, Aug. 21 (gage height, 3.10 feet); minimum, 0.11 million gallons a day (0.17 second-foot) Nov. 2-4, 7-9, Feb. 20.

1917-44: Maximum discharge, 116 million gallons a day (179 second-feet) Jan. 14, 1923 (gage height, 4.93 feet), from rating curve extended above 10 million gallons a day by weir and orifice formulas; no flow Jan. 8, 1937, Oct. 2-5, 1939.

Remarks.- Records excellent except those for period of no gage-height record, which are poor. Ditch is extension of Center ditch and picks up water at altitude of 500 feet from streams between the Kolea and the Waiakamoi. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.85	1.83	2.55	2.45	0.14	0.25	1.23	0.20	1.15	1.08	0.51	1.79
2	1.56	1.08	2.45	.88	.11	.20	1.30	.22	.85	42	.45	.87
3	1.08	3.1	a4.0	.39	.11	7.2	2.7	.20	.74	40	.39	1.47
4	7.6	8.4	a1.3	.34	.11	16.6	1.46	.17	.62	4.6	.39	.85
5	4.7	3.55	a1.0	.28	.17	16.4	1.31	.14	.56	2.9	.34	1.33
6	25.5	1.66	a.80	.28	.14	1.09	1.58	.14	.51	1.70	.39	.94
7	50	1.71	a.72	.28	.14	2.55	.85	.22	8.2	1.46	.39	.56
8	11.5	1.08	a.64	.34	.14	1.06	.74	.20	.68	3.1	.34	.51
9	25	.93	a.70	.28	.25	.95	.68	.17	.45	2.35	.68	.45
10	16.9	.93	a2.6	.28	.25	.56	.56	.14	.39	2.1	.79	.70
11	4.0	1.49	a3.2	.28	.17	.51	.55	.14	.28	2.1	.45	1.01
12	11.4	.93	a.80	.28	5.0	.39	1.62	.14	.28	1.23	.37	.39
13	22.5	.93	a.60	.28	1.00	.34	.74	.20	.25	.85	5.5	.34
14	3.95	1.24	a.60	.28	.28	10.6	.56	.20	.22	1.08	7.0	.28
15	3.4	3.25	a.50	.34	.28	30.5	.45	.22	.22	1.19	1.08	.68
16	2.35	1.00	a.45	.28	.25	2.15	.39	.17	.22	1.97	13.9	.51
17	17.5	.68	a.45	.25	.17	1.08	.34	.14	.20	2.4	4.7	.45
18	16.0	.56	a1.0	.25	.20	.79	.34	.14	.20	11.6	35	.45
19	3.0	.62	a5.0	.25	16.0	.58	.28	.14	.22	11.1	35	.45
20	2.95	.51	a2.0	.25	3.5	.56	.28	.14	.20	2.65	4.8	1.93
21	1.89	27.5	.39	.25	.34	.56	.28	15.5	2.5	2.75	4.0	22
22	2.15	2.75	.39	.25	.25	.45	.25	4.5	1.55	3.0	1.89	13.8
23	2.05	1.61	.39	.25	.20	.39	.25	1.06	15.8	2.75	1.46	2.2
24	1.23	2.35	.39	.20	.17	.39	.25	.65	.85	1.70	1.23	1.31
26	1.08	12.4	.64	.20	.14	.34	.25	.39	.56	1.08	.93	1.15
26	1.22	1.89	.28	.20	.14	.51	.22	1.22	.45	.85	1.08	1.08
27	3.25	1.90	.97	.20	.14	6.9	.22	2.55	.45	.74	1.31	1.15
28	1.00	2.8	1.09	.20	.17	64	.22	9.1	5.3	.68	1.23	1.70
29	.79	18.7	1.22	.17	.56	20.5	.22	1.61	25.5	.68	2.5	1.46
30	.68	21.5	1.59	.17	.28	2.15	.20	-	3.55	.56	1.34	3.7
31	1.86	3.3	-	.22	-	1.38	.17	-	1.38	-	5.9	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	50	0.68	8.10	12.5	251	770
August	27.5	.51	4.26	6.59	132	406
September	5.0	.28	1.28	2.00	38.7	119
October	2.45	.17	.350	.542	10.8	33
November	16.0	.11	1.03	1.59	30.8	95
December	64	.20	6.19	9.58	192	589
Calendar year 1943	64	.11	4.33	6.70	1,580	4,860
January	2.7	.17	.665	1.03	20.6	63
February	15.5	.14	1.38	2.14	40.0	123
March	25.5	.20	2.40	3.71	74.3	228
April	42	.56	5.08	7.86	152	467
May	35	.34	4.38	6.78	136	417
June	22	.28	2.18	3.37	65.5	201
Fiscal year 1943-44	64	.11	3.13	4.84	1,140	3,510

a No gage-height record; discharge computed on basis of records for stations on nearby ditches.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiakamoi Stream above Wailoa ditch, near Huelo

Location.- Lat. 20°51'45", long. 156°11'55", 500 feet upstream from intake of Wailoa ditch, a quarter of a mile upstream from Spreckels ditch trail, and 3.8 miles southeast of Huelo. Datum of gage is 1,293.59 feet above mean sea level.

Drainage area.- 4.4 square miles.

Records available.- January 1922 to June 1944.

Average discharge.- 22 years, 16.4 million gallons a day (25.4 second-feet).

Extremes.- Maximum discharge during year, 895 million gallons a day (1,380 second-feet) Aug. 21 (gage height, 5.69 feet), from rating curve extended above 370 million gallons a day by logarithmic plotting; minimum, 0.22 million gallons a day (0.34 second-foot) Feb. 19, 20.
1922-44: Maximum discharge, 4,660 million gallons a day (7,210 second-feet) Oct. 16, 1924 (gage height, 10.45 feet), from rating curve extended above 370 million gallons a day; minimum, that of Feb. 19, 20, 1944.

Remarks.- Records good. Haleakala ranch and Kula pipe lines divert small quantities of water above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.24	1.1	1.52	2.3	39
.7	.42	1.3	2.9	2.6	61
.8	.62	1.5	6.1	3.0	102
.9	.88	1.7	11.2	3.5	177
1.0	1.18	2.0	23		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.7	6.1	5.0	12.9	0.33	1.20	3.05	0.67	1.94	2.4	1.84	8.3
2	5.6	3.65	4.3	5.3	.31	.93	3.85	.76	1.38	123	1.63	4.3
3	4.0	4.2	6.0	2.5	.29	14.0	6.9	.58	1.09	103	1.49	4.8
4	20.5	22.5	3.46	2.16	.29	68	3.6	.52	.94	12.6	1.33	4.2
5	19.2	7.3	2.8	1.73	.31	53	3.3	.50	3.45	6.9	1.11	4.0
6	49	4.2	2.5	1.45	.28	6.0	11.7	.50	2.05	4.2	1.07	4.7
7	133	3.9	2.15	1.35	.29	4.4	4.2	2.2	67	3.6	1.15	3.2
8	25.5	2.8	2.05	1.89	.40	2.3	3.06	1.25	5.6	7.1	1.12	2.9
9	66	2.5	1.94	1.68	.95	2.55	2.3	.65	1.78	9.3	1.24	2.3
10	43	2.4	3.8	1.38	.69	1.94	1.94	.50	1.25	9.8	2.9	2.9
11	9.2	2.8	5.3	1.32	.35	1.63	1.73	.41	1.06	12.8	2.15	4.3
12	15.9	2.3	2.5	1.18	6.1	1.42	6.5	.33	.94	5.7	2.35	2.4
13	85	2.2	1.89	1.00	4.5	1.32	3.6	.33	.83	3.75	18.5	1.89
14	9.4	2.85	1.52	.97	1.97	17.1	2.15	.40	.75	3.45	25.5	1.63
15	6.8	5.6	1.42	1.28	1.19	74	1.73	.37	.70	3.65	5.0	2.35
16	5.0	3.7	1.28	1.00	.70	9.9	1.49	.31	.62	6.4	22	2.3
17	20.5	2.15	1.18	.94	.56	6.0	1.35	.26	.66	9.3	20	1.84
18	51	1.78	1.54	.85	.56	3.3	1.26	.24	.72	24	61	1.78
19	8.0	1.84	5.0	.72	45	2.5	1.12	.23	1.98	31.5	65	1.73
20	7.9	1.45	5.0	.66	16.4	2.05	1.06	.26	.94	10.4	12.5	3.9
21	5.4	101	1.78	.60	2.6	1.78	.97	29.5	14.3	15.0	9.7	52
22	6.8	12.3	1.38	.56	1.49	1.57	.91	26	7.5	17.3	5.2	25
23	8.4	4.5	1.45	.54	1.09	1.45	.85	5.3	58	14.9	4.0	6.8
24	4.0	10.0	1.27	.50	.91	1.42	.83	8.5	4.8	7.6	3.3	4.0
25	3.45	32	3.45	.58	.78	1.25	.83	5.2	1.96	4.7	2.75	3.3
26	3.3	6.1	1.58	.54	.70	1.94	.94	2.3	1.42	3.9	2.8	2.8
27	7.4	5.0	3.9	.56	.65	8.1	.72	2.1	1.18	3.2	4.8	3.3
28	3.3	4.8	4.7	.48	.70	157	.56	11.5	6.6	2.9	5.7	4.7
29	2.5	46	6.6	.38	3.35	42	.52	3.75	38	2.4	13.0	4.7
30	2.15	51	6.6	.37	1.52	7.1	.50	-	11.9	2.65	6.3	16.2
31	4.9	8.2	-	.38	-	4.0	.48	-	4.0	-	21.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	133	2.16	20.9	32.3	648	1,990
August	101	1.45	11.8	18.3	367	1,130
September	6.6	1.18	3.11	4.81	93.3	286
October	12.9	.37	1.54	2.38	47.7	146
November	45	.28	3.14	4.86	94.2	289
December	157	.93	16.2	25.1	601	1,540
Calendar year 1943	157	.28	11.2	17.3	4,110	12,600
January	11.7	.48	2.35	3.64	73.0	224
February	29.5	.23	3.63	5.62	105	323
March	67	.56	7.91	12.2	245	753
April	123	2.05	15.6	24.1	467	1,430
May	66	1.07	10.6	16.4	328	1,010
June	62	1.63	6.28	9.72	189	579
Fiscal year 1943-44	157	.23	8.63	13.4	3,160	9,700

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Alo Stream near Huelo

Location.- Lat. 20°51'50", long. 156°11'45", just upstream from Spreckels ditch inflow and trail crossing and 3.8 miles southeast of Huelo. Datum of gage is 1,248.38 feet above mean sea level.

Drainage area.- 0.2 square mile.

Records available.- December 1910 to June 1944.

Average discharge.- 33 years (1911-44), 5.00 million gallons a day (7.74 second-feet).

Extremes.- Maximum discharge during year, 380 million gallons a day (588 second-feet) Aug. 21 (gage height, 3.65 feet), from rating curve extended above 50 million gallons a day; minimum, 0.28 million gallons a day (0.43 second-foot) Nov. 3-9, Feb. 18-20.
1910-44: Maximum discharge, 1,600 million gallons a day (2,480 second-feet) Nov. 18, 1930 (gage height, 6.90 feet), from rating curve extended above 15 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) Nov. 22, 23, 1932.

Remarks.- Records good except those for periods of no gage-height record, which are poor. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.20	0.9	2.3	1.4	13.8
.5	.35	1.0	3.5	1.5	18.5
.6	.60	1.1	5.2	1.6	24
.7	1.00	1.2	7.4	1.9	46
.8	1.55	1.3	10.2		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.95	3.0	2.3	2.65	0.30	0.52	1.44	0.45	0.92	1.11	0.84	2.35
2	2.2	f1.28	2.6	1.02	.29	.48	1.99	.42	.76	37	.76	1.53
3	1.55	4.8	6.5	.72	.29	6.5	4.0	.35	.64	20.5	.72	2.7
4	8.5	f8.1	1.70	.64	.29	11.0	2.25	.34	.60	3.9	.64	1.70
5	6.7	3.5	1.44	.58	.30	6.2	2.1	.34	.64	2.8	.60	2.85
6	14.6	2.4	1.22	.55	.28	1.16	2.5	.34	.52	1.78	.60	1.50
7	32.5	2.2	1.06	.58	.29	3.95	1.33	.56	3.4	2.15	.55	1.16
8	9.1	1.6	1.00	.55	.28	1.67	1.16	.35	.72	5.5	.60	1.00
9	15.8	1.4	.92	.55	.64	1.18	.96	.32	.55	4.0	1.29	.96
10	10.5	1.3	1.43	.50	.43	.88	.88	.30	.50	2.7	1.40	1.62
11	3.5	1.6	2.45	.59	.32	.76	.84	.30	.48	2.5	.64	1.10
12	9.9	f1.28	.88	.45	4.2	.68	f5.5	.29	.45	1.92	1.58	.80
13	18.7	1.22	.80	.42	1.08	.60	2.3	.38	.42	1.50	10.0	.76
14	3.25	2.15	.72	.45	.52	12.1	1.2	.49	.40	2.05	7.1	.68
15	3.5	4.3	.64	.60	.52	19.6	.85	.38	.40	3.1	1.56	1.39
16	2.15	1.16	.60	.52	.40	2.55	.70	.30	.38	3.7	7.8	.76
17	9.8	.96	.60	.42	.35	1.61	.66	.29	.35	6.2	6.0	.68
18	f13.4	.88	.72	.40	.40	1.16	.62	.29	.38	11.2	36.5	.64
19	3.5	1.00	1.56	.38	7.0	.96	.56	.28	.35	8.5	17.0	.72
20	3.5	.84	.80	.35	2.2	.88	.54	.30	.36	3.65	5.6	4.5
21	2.5	32	.60	.35	.72	.80	.52	16.1	5.2	4.1	4.0	15.2
22	3.3	2.6	.58	.34	.52	.76	.50	4.9	1.29	4.5	2.3	15.2
23	4.5	1.82	.52	.34	.48	.72	.48	1.09	9.7	4.2	1.78	2.65
24	2.1	3.35	.55	.34	.42	.68	.47	.68	.96	2.55	1.44	1.78
25	1.8	7.5	.55	.35	.40	.60	.47	.70	.68	1.92	1.22	1.44
26	1.7	2.1	.50	.34	.38	.80	f.52	1.15	.58	1.55	1.16	1.33
27	4.0	2.2	1.77	.34	.35	9.4	.42	2.7	.55	1.38	1.25	1.82
28	2.0	4.7	2.35	.32	.50	34	.40	10.7	6.7	1.48	1.56	2.55
29	1.4	13.5	1.32	.32	.62	12.4	.40	1.34	19.8	1.11	4.3	2.0
30	1.2	10.9	2.2	.32	.67	2.7	.38	-	4.9	.92	1.68	6.9
31	2.5	2.8	-	.34	-	1.70	.35	-	1.50	-	6.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	32.5	1.2	6.54	10.1	203	622
August	32	.84	4.14	6.41	128	394
September	6.5	.50	1.36	2.10	40.9	125
October	2.65	.32	.556	.859	16.6	51
November	7.0	.28	.848	1.31	25.4	78
December	34	.48	4.48	6.93	139	427
Calendar year 1943	48	.28	3.67	5.68	1,340	4,130
January	5.5	.35	1.20	1.86	37.3	114
February	16.1	.28	1.60	2.48	46.4	142
March	19.8	.35	2.10	3.25	65.1	200
April	37	.92	4.98	7.71	149	459
May	36.5	.55	4.17	6.45	129	396
June	15.2	.64	2.68	4.15	80.3	246
Fiscal year 1943-44	37	.28	2.90	4.49	1,060	3,250

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record July 1 to Aug. 1, Aug. 5-11, Jan. 13-25, discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kaaiea Stream near Huelo

Location.- Concrete weir control, lat. 20°52'05", long. 156°12'15", 700 feet upstream from Hamakua ditch trail crossing, 2 miles southeast of Kailua, and 3¼ miles southeast of Huelo.

Drainage area.- 0.5 square mile.

Records available.- December 1921 to June 1944.

Average discharge.- 22 years (1922-44), 4.79 million gallons a day (7.41 second-feet).

Extremes.- Maximum discharge during year, 383 million gallons a day (593 second-feet) Aug. 21 (gage height, 3.85 feet), from rating curve extended above 130 million gallons a day on basis of broad-crested weir formula; minimum, 0.24 million gallons a day (0.37 second-foot) Nov. 8, Feb. 20.
1921-44: Maximum discharge, 2,300 million gallons a day (3,560 second-feet) Nov. 18, 1930 (gage height, 7.93 feet, site and datum then in use), from rating curve extended above 50 million gallons a day; minimum, that of Nov. 8, 1943, Feb. 20, 1944.

Remarks.- Records good except those for May 6-16, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.08	0.5	2.4	0.9	11.5
.2	.26	.6	4.0	1.0	15.2
.3	.60	.7	6.1	1.2	24.5
.4	1.30	.8	8.7	1.4	36.5

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.95	1.68	2.15	2.95	0.28	0.56	1.30	0.44	1.12	1.12	0.88	2.6
2	2.0	1.30	2.15	1.25	.28	.47	1.58	.44	.88	34.5	.61	1.68
3	1.47	3.35	5.6	.75	.26	6.0	3.5	.37	.75	19.1	.75	2.8
4	7.5	8.5	1.68	.65	.26	10.3	2.0	.33	.70	3.3	.70	1.91
5	6.0	5.1	1.39	.60	.28	7.2	1.80	.33	.75	2.3	.65	2.55
6	13.3	2.15	1.12	.56	.26	1.47	2.9	.30	.60	1.47	a.64	1.68
7	29	2.2	1.04	.56	.26	3.25	1.30	.68	3.8	1.78	a.60	1.39
8	9.0	1.39	.95	.56	.24	1.47	1.12	.40	.81	5.7	a.64	1.12
9	14.0	1.20	.88	.56	.52	1.30	.95	.33	.65	4.1	a1.0	1.04
10	11.4	1.12	1.20	.52	.52	.95	.81	.30	.56	2.55	a1.6	1.48
11	3.15	2.1	2.3	.56	.33	.81	.75	.28	.52	2.4	a.80	1.20
12	9.1	1.30	.88	.48	4.9	.70	3.5	.28	.48	2.0	a1.2	.88
13	17.8	1.20	.75	.44	1.66	.65	1.20	.33	.44	1.47	a9.0	.81
14	3.0	2.1	.70	.44	.65	9.5	.88	.37	.40	1.68	a7.0	.75
15	3.15	3.7	.60	.60	.65	22	.75	.37	.40	2.85	a2.0	1.35
16	1.91	1.20	.60	.52	.48	2.8	.65	.28	.37	3.8	a4.5	.95
17	15.4	.95	.56	.44	.37	1.91	.60	.26	.37	6.2	6.8	.75
18	7.6	.88	.65	.40	.40	1.30	.56	.26	.37	11.6	33.5	.70
19	2.8	.95	1.57	.37	8.1	1.04	.52	.26	.40	9.6	16.4	.75
20	3.0	.81	.88	.33	3.65	.88	.52	.26	.37	3.5	4.7	4.2
21	1.80	31.5	.60	.33	.88	.70	.48	16.0	5.3	3.8	3.7	15.3
22	2.0	2.8	.60	.33	.60	.70	.44	5.3	1.42	4.5	2.0	14.3
23	1.58	1.80	.56	.33	.52	.65	.40	1.35	11.5	4.4	1.58	2.8
24	1.30	3.65	.56	.30	.48	.60	.44	.81	1.20	2.4	1.30	1.80
25	1.12	8.1	.60	.33	.44	.56	.44	.75	.81	1.80	1.12	1.47
26	1.30	2.15	.48	.30	.40	.70	.44	1.13	.70	1.58	1.04	1.20
27	4.0	2.0	1.71	.30	.40	8.5	.40	1.99	.65	1.30	1.12	1.47
28	1.30	4.2	2.3	.30	.40	35	.40	9.4	5.4	1.30	2.3	2.4
29	1.04	11.7	1.44	.30	.75	12.1	.40	1.58	18.5	1.12	4.9	2.0
30	.88	11.3	1.68	.30	.56	2.55	.37	-	4.5	.95	1.91	6.3
31	2.0	2.8	-	.33	-	1.58	.37	-	1.58	-	7.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	29	0.88	5.87	9.08	182	558
August	31.5	.81	4.04	6.25	125	384
September	5.6	.48	1.27	1.96	38.2	117
October	2.95	.30	.548	.848	17.0	52
November	8.1	.24	.993	1.54	29.8	91
December	35	.47	4.46	6.90	138	424
Calendar year 1943	41	.24	3.49	5.40	1,270	3,910
January	3.5	.37	1.02	1.58	31.6	97
February	16.0	.26	1.56	2.41	45.2	139
March	18.5	.37	2.14	3.31	66.3	203
April	34.5	.95	4.81	7.44	144	442
May	33.5	.60	4.01	6.20	124	382
June	15.3	.70	2.65	4.10	79.6	244
Fiscal year 1943-44	35	.24	2.79	4.32	1,020	3,130

a No gage-height record; discharge computed on basis of records for Opuola Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Oopuola Stream near Huelo

Location.- Concrete weir control, lat. 20°52'15", long. 156°12'30", between Kaaiea and Nailiilihaele Streams, 100 feet upstream from Wailoa ditch intake, 300 feet upstream from ditch trail, and 4 miles southeast of Huelo.

Drainage area.- 0.2 square mile.

Records available.- August 1930 to June 1944. December 1910 to June 1915 at site half a mile downstream; records not equivalent.

Average discharge.- 13 years (1931-44), 1.81 million gallons a day (2.80 second-feet).

Extremes.- Maximum discharge during year, 185 million gallons a day (286 second-feet) Aug. 21 (gage height, 4.02 feet), from rating curve extended above 20 million gallons a day by test on model of station site; minimum, 0.04 million gallons a day (0.06 second-foot) Oct. 29, 30.

1930-44: Maximum discharge, 324 million gallons a day (501 second-feet) Jan. 18, 1932 (gage height, 5.12 feet), from rating curve extended above 20 million gallons a day by test on model of station site; minimum, that of Oct. 29, 30, 1943.

Remarks.- Records good except those for Oct. 8-27, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.5	0	1.9	1.32	2.3	8.2
1.6	.05	2.0	2.35	2.4	11.2
1.7	.23	2.1	3.75	2.5	14.7
1.8	.65	2.2	5.7	2.6	18.8

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.26	0.98	0.94	0.87	0.10	0.19	0.55	0.14	0.50	0.50	0.28	0.81
2	.93	.78	1.03	.36	.10	.15	.70	.14	.40	15.1	.25	.50
3	.78	2.35	2.95	.25	.09	2.3	1.70	.12	.32	6.0	.23	.81
4	3.15	3.95	.70	.21	.09	4.0	1.10	.10	.28	1.44	.21	.65
5	2.25	2.5	.60	.21	.10	3.0	.81	.10	.28	1.10	.21	1.18
6	5.2	1.15	.50	.19	.09	.50	.70	.10	.23	.60	.21	.65
7	13.5	1.09	.45	.19	.09	1.37	.50	.21	1.36	.80	.19	.50
8	4.0	.83	.45	.19	.09	.64	.40	.14	.36	1.76	.21	.40
9	5.0	.78	.36	.19	.26	.58	.36	.10	.25	1.10	.46	.36
10	4.4	.78	.52	.17	.18	.36	.32	.09	.23	.89	.72	.85
11	1.46	1.12	.81	.19	.10	.25	.28	.09	.21	.70	.25	.57
12	3.3	.83	.36	.16	1.10	.23	.86	.09	.19	.55	.54	.28
13	6.2	.78	.32	.12	.82	.21	.50	.10	.19	.45	4.0	.25
14	1.38	.83	.28	.12	.21	2.9	.32	.16	.18	.65	2.85	.23
15	1.30	2.05	.23	.22	.28	7.6	.28	.18	.18	1.04	.65	.57
16	1.03	.78	.23	.17	.14	1.10	.23	.10	.18	1.34	1.41	.32
17	5.3	.64	.23	.12	.10	.70	.23	.09	.18	1.97	2.1	.25
18	2.95	.60	.25	.10	.12	.50	.21	.07	.18	3.95	14.2	.23
19	1.22	.60	.60	.09	1.95	.36	.21	.07	.18	3.3	7.1	.23
20	1.56	.56	.40	.09	.98	.28	.19	.05	.18	1.02	1.96	1.45
21	.93	13.0	.21	.09	.23	.25	.19	8.4	2.4	1.02	1.69	5.9
22	1.10	1.13	.21	.09	.18	.25	.19	2.35	.69	1.10	.81	6.6
23	.83	.65	.21	.09	.14	.23	.18	.50	5.6	1.04	.65	1.02
24	.73	.99	.21	.06	.12	.23	.19	.28	.60	.75	.55	.55
25	.68	4.0	.21	.09	.12	.21	.18	.28	.40	.55	.50	.55
26	.73	1.11	.19	.05	.10	.23	.18	.64	.32	.45	.45	.50
27	2.7	.84	.49	.05	.10	3.9	.14	1.63	.28	.40	.50	.60
28	.83	1.63	.90	.05	.12	11.5	.14	5.3	3.15	.45	.40	.81
29	.68	5.1	.67	.04	.21	4.5	.14	.75	5.4	.40	1.19	.65
30	.64	4.8	.55	.06	.19	1.10	.12	-	1.50	.32	.55	1.98
31	.84	1.10	-	.14	-	.65	.12	-	.65	-	2.25	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	13.5	0.64	2.48	3.84	76.9	236
August	13.0	.56	1.88	2.91	58.3	179
September	2.95	.19	.535	.828	16.1	49
October	.87	.04	.162	.251	5.02	15
November	1.95	.09	.283	.438	8.50	26
December	11.5	.15	1.62	2.51	50.3	154
Calendar year 1943	20	.04	1.45	2.24	530	1,630
January	1.70	.12	.394	.610	12.2	38
February	8.4	.05	.771	1.19	22.4	69
March	5.6	.18	.873	1.35	27.0	83
April	15.1	.32	1.69	2.61	50.7	156
May	14.2	.19	1.53	2.37	47.6	146
June	6.6	.23	1.01	1.56	30.4	93
Fiscal year 1943-44	15.1	.04	1.11	1.72	405	1,240

Note.- No gage-height record Oct. 8-27; discharge computed on basis of records for Kaaiea Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Nailiilihaele Stream near Huelo

Location.- Masonry dam control, lat. 20°52'30", long. 156°13'05", 200 feet upstream from Walloa ditch intake, 700 feet upstream from New Hamakua ditch trail, 1½ miles south of Kailua, and 2½ miles southeast of Huelo.

Drainage area.- 2.8 square miles.

Records available.- December 1910 to June 1918, August 1919 to June 1944.

Average discharge.- 23 years (1920-24, 1925-44), 24.1 million gallons a day (37.3 second-feet).

Extremes.- Maximum discharge recorded during year, 1,420 million gallons a day (2,200 second-feet) July 13 (gage height, 6.04 feet), from rating curve extended above 130 million gallons a day; minimum, 1.16 million gallons a day (1.79 second-feet) Nov. 8. 1910-18, 1919-44: Maximum discharge, 4,750 million gallons a day (7,350 second-feet) Aug. 12, 1940 (gage height, 8.64 feet), from rating curve extended above 130 million gallons a day; minimum, 0.45 million gallons a day (0.70 second-foot) July 14, 1920.

Remarks.- Records good except those for period of no gage-height record and those above 200 million gallons a day, which are poor. No diversions. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.7	0.60	2.1	7.1	2.5	24	3.0	73
1.8	1.30	2.2	10.2	2.6	31	3.3	120
1.9	2.7	2.3	14.0	2.7	39.5	3.6	181
2.0	4.6	2.4	18.6	2.8	50	3.9	260

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	17.1	9.6	13	15.3	1.72	3.25	8.3	2.55	6.4	6.8	6.4	17.0
2	12.5	7.4	11	7.8	1.58	3.4	10.0	2.55	5.4	258	5.8	11.0
3	9.6	14.7	13	5.4	1.44	27	16.1	2.15	4.6	149	5.4	14.5
4	43	48	9.0	4.5	1.30	77	10.6	2.0	4.4	18.4	6.1	11.3
5	33	20.5	8.2	4.2	1.44	36	9.6	2.0	5.8	13.3	4.8	12.6
6	98	9.9	7.4	4.2	1.30	8.6	18.0	2.0	4.4	10.0	4.6	9.6
7	258	9.8	6.6	4.0	1.30	11.8	8.6	4.3	21	10.4	4.4	8.6
8	55	7.7	6.4	4.0	1.23	7.4	7.7	2.55	6.4	26.5	4.4	7.8
9	125	6.8	6.0	3.85	2.35	6.8	6.6	2.0	4.6	24.5	6.4	7.1
10	85	6.6	6.4	3.65	2.15	5.6	6.1	1.86	4.2	17.0	8.2	8.7
11	18.6	9.4	10	3.65	1.44	4.8	5.4	1.72	4.0	17.9	4.8	9.6
12	53	7.1	5.9	3.45	15.6	4.4	17.0	1.58	3.65	12.4	6.9	6.6
13	145	6.6	5.2	3.25	9.0	4.0	8.0	1.86	3.25	9.6	62	5.8
14	16.9	7.6	4.8	3.25	3.6	55	6.4	2.15	3.1	9.9	49	5.4
15	16.1	11	4.4	3.85	3.25	135	5.4	2.0	3.1	13.0	10.5	7.5
16	12.1	7.0	4.2	3.45	2.55	13.8	4.8	1.58	2.9	20.5	59	6.1
17	118	5.6	4.0	3.1	2.35	9.9	4.6	1.44	2.7	30	37	5.4
18	62	4.9	4.4	2.9	2.3	7.7	4.2	1.30	3.45	60	216	4.8
19	16.3	4.9	8.4	2.7	57	6.6	4.2	1.30	4.2	62	133	5.1
20	18.2	4.5	5.8	2.55	19.6	6.8	4.0	1.23	3.1	19.6	26.5	14.7
21	12.1	220	4.0	2.4	6.4	5.1	3.65	93	31.5	21.5	21	101
22	12.6	22	3.85	2.4	4.5	4.8	3.25	27	9.6	26	12.9	78
23	11.2	13	3.65	2.3	3.85	4.5	3.1	7.5	82	29.5	10.9	15.0
24	9.3	20	3.45	2.3	3.45	4.2	3.1	4.8	7.4	15.6	9.3	10.2
25	8.6	50	4.0	2.3	3.1	4.0	3.1	7.6	5.4	12.1	8.6	9.3
26	8.6	11	3.25	2.3	2.9	5.2	2.9	7.4	4.6	10.2	8.0	8.0
27	17.8	10	8.5	2.15	2.7	44	2.55	8.0	4.2	9.3	8.0	9.3
28	8.3	11	11.6	2.0	2.65	243	2.55	43	16.6	9.0	17.7	12.1
29	7.1	90	8.4	1.86	6.3	70	2.4	8.6	98	7.7	31.5	11.4
30	6.6	110	9.0	1.86	3.65	13.8	2.3	-	22	6.8	13.2	27
31	11.0	18	-	2.0	-	9.6	2.3	-	8.6	-	49	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	258	6.6	42.8	66.2	1,330	4,070
August	220	4.5	25.3	39.1	785	2,410
September	13	3.25	6.79	10.5	204	625
October	15.3	1.86	3.64	5.63	113	347
November	57	1.23	5.73	8.87	172	528
December	243	3.25	27.2	42.1	842	2,580
Calendar year 1943	285	1.23	22.5	34.8	8,200	25,150
January	18.0	2.3	6.35	9.82	197	604
February	93	1.23	8.52	13.2	247	758
March	98	2.7	12.6	19.5	391	1,200
April	258	6.8	31.2	48.3	936	2,870
May	216	4.4	27.1	41.9	840	2,580
June	101	4.8	15.4	23.8	460	1,410
Fiscal year 1943-44	258	1.23	17.8	27.5	6,520	19,980

Note.- No gage-height record Aug. 14 to Sept. 13; discharge computed on basis of records for Kailua Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kailua Stream near Huelo

Location.- Lat. 20°52'35", long. 156°13'25", just upstream from Wailoa ditch intake, 1¼ miles southwest of Kailua, and 2½ miles south of Huelo. Datum of gage is 1,252.99 feet above mean sea level.

Drainage area.- 3.0 square miles.

Records available.- December 1910 to June 1918, July 1919 to June 1944.

Average discharge.- 25 years (1919-44), 18.9 million gallons a day (29.2 second-feet).

Extremes.- Maximum discharge during year, 1,800 million gallons a day (2,790 second-feet) Aug. 21 (gage height, 7.24 feet), from rating curve extended above 150 million gallons a day; minimum, 0.79 million gallons a day (1.22 second-feet) Nov. 8, 9, Feb. 20, 21.
1910-18, 1919-44: Maximum discharge, 4,580 million gallons a day (7,090 second-feet) Apr. 7, 1938 (gage height, 9.10 feet), from rating curve extended above 150 million gallons a day; minimum, 0.07 million gallons a day (0.11 second-foot) June 27, 1921.

Remarks.- Records good except those for Aug. 3-9, which are poor. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.6	0.51	2.0	5.4	2.4	16.4	3.0	48
1.7	1.20	2.1	7.6	2.5	20	3.4	85
1.8	2.2	2.2	10.1	2.6	24.5	3.8	134
1.9	3.6	2.3	13.0	2.8	34	4.2	196

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.9	5.6	7.2	9.5	0.92	1.60	5.0	1.20	3.2	3.6	3.2	12.7
2	7.4	4.5	6.1	5.6	.92	1.50	5.5	1.20	2.5	131	2.9	6.3
3	5.2	a8.0	7.6	3.05	.86	11.8	7.8	1.13	2.1	112	2.75	6.9
4	24.5	a32	4.7	2.5	.86	83	5.2	1.06	2.0	16.1	2.5	6.1
5	24	a15	4.1	2.2	.92	52	4.7	1.06	7.3	8.7	2.35	5.6
6	55	a5.6	3.8	2.0	.86	6.8	12.1	1.06	3.6	6.1	2.35	5.0
7	164	a5.4	3.3	1.90	.86	5.8	5.6	1.90	35.5	5.2	2.2	4.5
8	37.5	a4.3	3.2	1.90	.86	3.8	4.5	1.40	6.0	11.9	2.1	3.95
9	79	a3.7	3.05	1.90	1.13	3.2	3.6	1.13	3.2	15.2	2.35	3.6
10	60	3.4	3.45	1.80	1.06	2.75	3.2	1.06	2.35	12.4	3.2	4.7
11	13.2	3.8	4.8	1.70	.86	2.2	2.9	.99	2.0	15.1	2.35	5.2
12	21	3.3	3.2	1.70	5.7	2.0	9.8	.92	1.80	8.4	2.8	3.6
13	104	3.2	2.75	1.60	4.6	1.90	4.6	.99	1.60	5.6	25.5	3.2
14	12.8	3.6	2.5	1.60	2.0	17.4	3.3	.99	1.50	5.0	33.5	2.9
15	9.4	5.3	2.35	1.70	1.70	92	2.9	.92	1.40	5.3	6.8	3.45
16	7.2	3.45	2.2	1.50	1.40	11.8	2.6	.92	1.30	9.2	29	3.2
17	29.5	2.9	2.1	1.40	1.13	6.7	2.35	.86	1.20	11.1	27	2.75
18	55	2.6	2.2	1.40	1.13	4.3	2.2	.86	1.32	29	76	2.6
19	10.4	2.6	3.7	1.30	47	3.45	2.1	.86	1.90	39.5	89	2.6
20	10.9	2.36	3.8	1.20	21	2.9	2.0	.79	1.40	12.3	17.4	5.4
21	7.6	137	2.5	1.20	4.0	2.6	1.90	44	20	15.8	12.1	65
22	7.3	15.5	2.1	1.13	2.5	2.35	1.80	33.5	9.9	18.8	7.2	39.5
23	8.5	5.8	2.0	1.13	1.90	2.2	1.70	7.6	6.5	22	5.8	9.7
24	5.6	11.8	1.90	1.05	1.60	2.0	1.60	8.7	65	10.4	4.9	6.1
25	5.0	34.5	2.1	1.13	1.40	1.90	1.60	9.1	3.3	7.2	4.1	4.9
26	4.9	7.6	1.90	1.06	1.30	2.4	1.50	5.4	2.5	5.6	3.95	4.3
27	8.2	7.2	3.9	1.06	1.20	14.4	1.40	3.3	2.2	4.9	3.8	4.5
28	4.9	7.9	4.5	1.06	1.20	183	1.30	15.1	4.1	4.5	8.0	5.6
29	3.95	47	5.8	1.06	3.9	57	1.30	5.4	38	3.8	20.5	6.1
30	3.6	60	4.3	.99	1.90	10.9	1.20	-	15.4	3.45	8.3	18.6
31	5.0	10.1	-	.99	-	6.5	1.20	-	5.0	-	34.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	164	3.6	26.1	40.4	808	2,490
August	137	2.35	15.0	23.2	465	1,430
September	7.6	1.90	3.57	5.52	107	329
October	9.5	.99	1.91	2.96	59.3	182
November	47	.86	3.86	5.97	116	355
December	183	1.50	19.4	30.0	602	1,850
Calendar year 1943	183	.86	13.6	21.0	4,950	15,200
January	12.1	1.20	3.50	5.42	108	333
February	44	.79	5.29	8.18	153	471
March	65	1.20	8.23	12.7	255	783
April	131	3.45	18.6	28.8	559	1,720
May	89	2.1	14.5	22.4	448	1,380
June	65	2.8	8.62	13.3	259	793
Fiscal year 1943-44	183	.79	10.8	16.7	3,940	12,110

a No gage-height record; discharge computed on basis of records for Waiiliilinaele Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hoolawaliilii Stream near Huelo

Location.- Concrete weir control, lat. 20°53'15", long. 156°14'35", just upstream from Wailoa ditch intake, 2 miles west of Kailua, and 2 miles southwest of Huelo.

Records available.- April 1911 to June 1944.

Average discharge.- 32 years (1911-15, 1916-44), 4.99 million gallons a day (7.72 second-feet).

Extremes.- Maximum discharge during year, 214 million gallons a day (331 second-feet) Aug. 21 (gage height, 4.08 feet), from rating curve extended above 85 million gallons a day by broad-crested weir formula; minimum, 0.75 million gallons a day (1.16 second-feet) Nov. 8, 10-12, 17, 18.

1911-44: Maximum discharge, 787 million gallons a day (1,220 second-feet) Feb. 7, 1939 (gage height, 5.42 feet), from rating curve extended above 220 million gallons a day; minimum, 0.2 million gallons a day (0.3 second-foot) June 8, 1926.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.3	0.75	1.6	4.2	1.9	11.7
1.4	1.50	1.7	6.2	2.0	15.2
1.5	2.7	1.8	8.7	2.2	24

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.45	2.45	3.75	1.62	0.87	0.87	3.45	1.40	1.86	2.4	2.35	3.0
2	2.45	2.35	3.45	1.50	.87	.87	3.45	1.40	1.74	19	2.2	2.7
3	2.2	3.1	4.3	1.40	.81	1.80	3.9	1.23	1.62	17	2.1	2.7
4	4.3	5.3	3.0	1.40	.81	3.35	3.45	1.23	1.74	6.2	1.98	2.7
5	4.1	3.8	2.85	1.31	.81	3.0	3.15	1.23	1.98	5.0	1.86	2.85
6	8.0	2.85	2.6	1.31	.81	1.62	3.0	1.23	1.62	4.4	1.86	2.6
7	20	2.6	2.45	1.31	.81	1.74	2.7	1.40	2.55	4.1	1.86	2.45
8	9.2	2.45	2.35	1.31	.75	1.74	2.6	1.23	1.86	5.4	1.86	2.35
9	12.8	2.35	2.35	1.31	.94	1.74	2.45	1.15	1.74	5.6	1.86	2.2
10	13.5	2.35	2.35	1.31	.81	1.40	2.35	1.08	1.62	4.7	1.86	2.35
11	6.2	2.45	2.45	1.31	.75	1.31	2.2	1.08	1.50	4.0	1.62	2.2
12	6.2	2.2	2.1	1.23	1.12	1.31	2.7	1.08	1.50	3.5	1.86	2.1
13	11.9	2.1	2.1	1.23	1.08	1.23	2.2	1.15	1.40	3.0	3.15	1.98
14	5.0	2.2	1.98	1.23	.94	2.85	2.1	1.15	1.40	2.8	4.4	1.86
15	4.6	2.6	1.86	1.31	.94	12.3	1.98	1.08	1.31	2.8	2.45	2.1
16	3.9	2.1	1.74	1.23	.87	3.45	1.86	1.01	1.3	3.3	3.1	1.98
17	8.5	1.98	1.74	1.15	.81	2.7	1.86	.94	1.3	3.7	3.75	1.86
18	6.7	1.86	1.74	1.15	.81	2.45	1.86	.87	1.3	6.2	18.5	1.86
19	4.2	1.86	1.98	1.15	1.85	2.2	1.74	.87	1.2	6.6	14.2	1.74
20	4.0	1.74	1.74	1.08	1.70	2.1	1.74	.87	1.2	4.2	6.7	2.2
21	3.6	18.7	1.62	1.08	1.23	1.98	1.74	4.7	3.5	3.9	5.2	6.4
22	3.6	3.6	1.62	1.01	1.08	1.86	1.62	3.5	1.5	3.9	4.2	9.1
23	3.15	2.7	1.50	1.01	1.08	1.86	1.50	1.86	10	3.9	3.75	3.75
24	3.0	3.15	1.50	.94	1.01	1.86	1.50	1.62	2.0	3.6	3.45	3.15
25	2.85	5.6	1.50	.94	1.01	1.74	1.50	1.84	1.8	3.3	3.15	2.85
26	3.0	3.15	1.40	.94	.94	1.74	1.50	1.74	1.7	3.15	3.0	2.7
27	3.75	3.0	1.50	.94	.87	3.6	1.50	1.86	1.7	3.0	2.7	2.7
28	2.7	3.3	1.74	.94	.94	17.6	1.40	4.9	2.3	2.85	2.6	2.6
29	2.6	6.7	1.52	.87	.94	9.6	1.40	2.2	9.0	2.6	3.3	2.45
30	2.45	9.1	1.74	.87	.87	4.8	1.40	-	4.5	2.45	2.7	3.15
31	2.45	4.0	-	.94	-	3.9	1.40	-	2.7	-	4.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	20	2.2	5.59	8.65	173	532
August	18.7	1.74	3.67	5.68	114	349
September	4.3	1.40	2.15	3.33	64.6	198
October	1.62	.87	1.17	1.81	36.3	111
November	1.85	.75	.971	1.50	29.1	89
December	17.6	.87	3.24	5.01	101	309
Calendar year 1943	29	.75	3.40	5.26	1,240	3,810
January	3.9	1.40	2.17	3.36	67.2	206
February	4.9	.87	1.62	2.51	46.9	144
March	10	1.2	2.34	3.62	72.4	222
April	19	2.4	4.68	7.55	147	450
May	18.5	1.62	3.79	5.86	118	361
June	9.1	1.74	2.82	4.36	84.6	260
Fiscal year 1943-44	20	.75	2.88	4.46	1,050	3,230

Note.- No gage-height record Mar. 16 to Apr. 3, Apr. 5-15; discharge computed on basis of records for Hoolawamui Stream.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Hoolawanui Stream near Huelo

Location.- Concrete weir control, lat. 20°53'15", long. 156°14'55", just upstream from intake of Wailoa ditch, 2 miles west of Kailua, and 2 miles southwest of Huelo. Datum of gage is 1,219.42 feet above mean sea level (East Maui Irrigation Co. bench mark).

Records available.- December 1910 to June 1944.

Average discharge.- 32 years (1911-15, 1916-44), 8.04 million gallons a day (12.4 second-feet).

Extremes.- Maximum discharge during year, 854 million gallons a day (1,320 second-feet) Aug. 21 (gage height, 3.72 feet), from rating curve based on weir rating between 100 and 375 million gallons a day and extended above; minimum, 0.43 million gallons a day (0.66 second-foot) Nov. 6-9, 11, 12, 17, 18.

1910-44: Maximum discharge, 2,980 million gallons a day (4,610 second-feet) Feb. 7, 1939 (gage height, 5.72 feet), from rating curve based on weir rating between 100 and 375 million gallons a day and extended above; minimum, 0.15 million gallons a day (0.23 second-foot) Oct. 25, 1917.

Remarks.- Records good. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.16	0.7	5.6	1.2	28.5
.3	.48	.8	8.5	1.4	45
.4	1.13	.9	12.1	1.6	67
.5	2.15	1.0	16.6		
.6	3.6	1.1	22		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a2.6	2.8	4.0	1.48	0.48	0.48	4.2	1.13	1.58	2.65	2.8	5.5
2	a2.4	2.65	3.8	1.48	.48	.53	4.2	1.05	1.48	33	2.8	4.0
3	a2.2	3.4	4.7	1.13	.48	1.85	4.6	.97	1.28	29.5	2.55	4.4
4	7.2	6.2	3.45	1.13	.48	9.3	3.8	.97	1.58	8.9	2.4	4.0
5	6.7	4.1	3.1	1.05	.48	6.8	3.6	.90	2.25	6.5	2.25	4.0
6	13.9	2.8	2.95	.97	.43	1.58	4.2	.90	1.48	5.2	2.15	3.6
7	49	2.65	2.8	.97	.43	1.48	3.25	1.38	3.65	5.0	2.15	3.25
8	16.6	2.4	2.65	.90	.43	1.43	2.95	.90	1.79	6.5	2.0	2.95
9	29.5	2.25	2.55	.90	.64	1.30	2.8	.83	1.48	6.8	2.3	2.95
10	26.5	2.25	2.65	.83	.53	1.05	2.55	.76	1.38	5.9	2.25	3.35
11	10.3	2.55	2.65	.63	.43	.97	2.4	.76	1.28	5.6	1.79	2.8
12	10.5	2.16	2.15	.76	1.46	.90	4.0	.76	1.22	5.0	1.89	2.65
13	34	2.15	2.0	.76	1.16	.83	2.65	.90	1.13	4.4	5.2	2.65
14	8.2	2.25	1.90	.83	.58	4.7	2.4	.90	1.13	4.0	7.8	2.25
15	7.0	2.95	1.79	.90	.58	23	2.15	.76	1.13	4.0	3.1	2.55
16	5.6	1.90	1.68	.76	.48	4.0	2.0	.76	1.05	4.8	6.2	2.15
17	18.e	1.79	1.58	.70	.48	2.8	1.90	.70	1.05	4.7	7.9	2.0
18	12.0	1.68	1.79	.64	.48	2.4	1.79	.64	1.05	8.9	28.5	1.90
19	6.5	1.68	2.0	.58	3.9	2.15	1.68	.64	.97	11.3	30	1.79
20	6.9	1.58	1.68	.58	3.15	1.90	1.58	.64	.97	6.2	9.9	2.8
21	5.6	51	1.48	.58	.90	1.79	1.56	10.6	4.3	5.9	7.6	12.5
22	5.4	4.4	1.38	.58	.64	1.58	1.48	5.3	2.05	6.2	5.9	11.6
23	4.e	2.8	1.28	.58	.58	1.58	1.38	1.90	12.1	7.9	5.0	4.6
24	4.4	4.0	1.28	.58	.53	1.48	1.38	1.48	2.15	5.4	4.6	3.6
25	4.0	9.2	1.28	.64	.48	1.38	1.28	2.15	1.68	4.6	4.0	3.45
26	4.0	3.8	1.13	.58	.48	1.48	1.28	1.58	1.58	4.2	3.8	3.1
27	4.6	3.45	1.38	.58	.48	3.4	1.22	1.48	1.48	3.8	3.6	3.1
28	3.45	4.0	1.60	.58	.53	39.5	1.13	5.1	2.4	3.6	3.95	3.25
29	3.1	10.2	1.48	.53	.64	16.5	1.13	2.0	11.2	3.45	6.5	3.1
30	2.8	13.4	1.68	.53	.53	6.5	1.13	-	6.0	3.1	4.4	4.9
31	3.1	4.6	-	.33	-	4.8	1.05	-	2.95	-	9.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	49	2.2	10.3	15.9	321	984
August	51	1.58	5.26	8.14	163	500
September	4.7	1.13	2.19	3.39	65.8	202
October	1.48	.53	.789	1.22	24.5	75
November	3.9	.43	.778	1.20	23.4	72
December	39.5	.48	4.82	7.46	149	459
Calendar year 1943	88	.43	5.33	8.25	1,950	5,970
January	4.6	1.05	2.35	3.64	72.7	223
February	10.6	.64	1.68	2.60	48.8	150
March	12.1	.97	2.48	3.84	76.8	236
April	33	2.65	7.23	11.2	217	666
May	30	1.79	5.94	9.19	184	566
June	12.5	1.79	3.82	5.91	115	352
Fiscal year 1943-44	51	.43	3.99	6.17	1,460	4,480

a No gage-height record; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honopou Stream near Huelo

Location.- Concrete masonry and weir dam, lat. 20°53'20", long. 156°15'05", just upstream from Wailoa ditch intake, 2½ miles southwest of Huelo, and 2¾ miles west of Kailua. Altitude of gage, about 1,250 feet.

Drainage area.- 1.0 square mile.

Records available.- December 1910 to June 1944.

Average discharge.- 31 years (1911-14, 1916-44), 3.17 million gallons a day (4.90 second-feet).

Extremes.- Maximum discharge during year, 156 million gallons a day (241 second-feet) Aug. 21 (gage height, 3.26 feet), from rating curve extended above 70 million gallons a day; minimum, 0.20 million gallons a day (0.31 second-foot) Nov. 8.
1910-44: Maximum discharge, 1,220 million gallons a day (1,890 second-feet) Nov. 18, 1930 (gage height, 7.28 feet), from rating curve extended above 70 million gallons a day; minimum, 0.01 million gallons a day (0.02 second-foot) several days in 1933 and 1934.

Remarks.- Records excellent above 1 million gallons a day, good below. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.09	0.9	5.3
.5	.56	1.0	7.1
.6	1.33	1.2	11.5
.7	2.4	1.4	16.5
.8	3.7	1.7	25

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.06	1.24	1.97	0.63	0.30	0.25	2.3	0.45	0.70	1.33	1.24	1.65
2	.91	1.15	1.86	.56	.30	.30	2.2	.45	.63	16.3	1.15	1.33
3	.84	1.57	2.7	.50	.25	1.02	2.55	.45	.56	11.6	1.15	1.44
4	3.2	3.5	1.54	.45	.25	1.92	1.97	.40	.84	5.0	1.06	1.33
5	2.3	2.1	1.44	.45	.25	1.42	1.76	.40	1.28	3.7	.98	1.44
6	5.5	1.15	1.33	.45	.25	.50	1.65	.40	.63	3.06	.98	1.33
7	17.4	1.06	1.24	.45	.25	.63	1.44	.56	1.85	2.9	.91	1.24
8	6.6	.98	1.15	.45	.20	.67	1.33	.40	.77	3.3	.91	1.15
9	12.3	.91	1.15	.45	.30	.63	1.24	.35	.63	3.0	.98	1.15
10	11.4	.91	1.15	.40	.25	.45	1.15	.35	.56	2.4	.98	1.64
11	5.0	1.06	1.24	.40	.25	.40	1.06	.35	.56	2.2	.77	1.15
12	4.8	.91	.98	.40	.56	.35	1.44	.30	.56	1.97	.88	1.06
13	9.8	.91	.91	.40	.50	.35	1.06	.40	.50	1.86	2.0	.98
14	3.7	1.00	.91	.40	.30	2.65	.98	.40	.50	1.86	2.65	.91
15	3.3	1.39	.84	.45	.30	9.8	.91	.35	.50	2.0	.98	.98
16	2.8	.84	.84	.40	.30	1.65	.91	.30	.45	2.15	1.44	.91
17	7.1	.77	.77	.40	.60	1.24	.84	.30	.45	2.4	2.15	.84
18	5.2	.77	.84	.35	.30	.98	.84	.30	.45	3.7	12.0	.84
19	3.05	.77	.91	.35	1.19	.91	.77	.30	.45	3.55	10.1	.84
20	3.0	.70	.77	.35	.83	.84	.77	.25	.45	2.2	4.5	1.31
21	2.4	15.4	.70	.35	.35	.77	.70	5.8	2.85	2.3	3.55	4.9
22	1.86	1.73	.70	.35	.30	.70	.70	2.65	.84	2.3	2.8	5.8
23	2.1	1.24	.63	.30	.30	.70	.63	.84	6.3	2.4	2.4	1.86
24	1.86	1.85	.63	.30	.30	.63	.63	.63	.91	2.1	2.1	1.65
25	1.76	3.95	.56	.30	.25	.63	.56	.78	.77	1.86	1.86	1.54
26	1.86	1.76	.56	.30	.25	.63	.56	.70	.70	1.76	1.86	1.33
27	2.4	1.40	.63	.30	.25	2.3	.56	.63	.70	1.65	1.65	1.33
28	1.54	1.84	.70	.30	.25	13.9	.50	3.2	1.55	1.54	1.54	1.44
29	1.33	4.5	.70	.30	.30	7.4	.50	.77	5.2	1.44	2.1	1.33
30	1.33	5.7	.77	.30	.30	3.3	.50	-	2.55	1.33	1.54	1.86
31	1.33	2.1	-	.30	-	2.56	.45	-	1.54	-	2.75	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	17.4	0.84	4.16	6.44	129	396
August	15.4	.70	2.11	3.26	65.5	201
September	2.7	.56	1.04	1.61	31.1	96
October	.63	.30	.390	.603	12.1	37
November	1.19	.20	.343	.531	10.3	32
December	13.9	.25	1.96	3.02	60.5	186
Calendar year 1943	21.5	.20	2.24	3.47	817	2,610
January	2.55	.45	1.08	1.67	33.5	103
February	5.8	.25	.809	1.25	23.5	72
March	6.3	.45	1.20	1.86	37.2	114
April	16.3	1.33	3.17	4.90	95.2	292
May	12.0	.77	2.32	3.59	72.0	221
June	5.8	.84	1.55	2.40	46.6	143
Fiscal year 1943-44	17.4	.20	1.68	2.60	616	1,890

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honopou Stream at Lowrie ditch siphon, near Huelo

Location.- Concrete weir control, lat. 20°54'50", long. 156°15'10", half a mile upstream from Government Road and 1.7 miles west of Huelo. Datum of gage is 556.95 feet above mean sea level.

Drainage area.- 2.0 square miles.

Records available.- July 1932 to June 1944. Records at same site collected by East Maui Irrigation Co. April 1930 to June 1932.

Average discharge.- 12 years, 1.37 million gallons a day (2.12 second-feet).

Extremes.- Maximum discharge during year, 305 million gallons a day (472 second-feet) Aug. 21 (gage height, 3.22 feet), from rating curve extended above 80 million gallons a day by logarithmic plotting; minimum, 0.04 million gallons a day (0.06 second-foot) Nov. 26, 27, Feb. 12.

1932-44: Maximum discharge, 766 million gallons a day (1,190 second-feet) Feb. 7, 1939 (gage height, 4.69 feet), from rating curve extended above 80 million gallons a day by logarithmic plotting; minimum, 0.03 million gallons a day (0.05 second-foot) Dec. 7, 1940.

Remarks.- Records fair. Wailoa, New Hamakua, and Old Hamakua ditches divert most of flow above this station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.02	0.5	2.2	0.9	11.6
.2	.16	.6	3.75	1.0	15.2
.3	.51	.7	5.8	1.2	24.5
.4	1.15	.8	8.6		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.10	0.10	0.12	0.10	0.08	0.05	0.08	0.07	0.10	0.12	0.12	0.10
2	.10	.10	.12	.10	.08	.05	.08	.07	.08	6.9	.10	.10
3	.10	.10	.14	.10	.07	.05	.08	.07	.08	.88	.10	.10
4	.10	.12	.12	.10	.08	.07	.08	.07	.08	.16	.10	.10
5	.10	.12	.14	.10	.07	.07	.08	.05	.10	.16	.10	.10
6	.46	.12	.14	.10	.07	.07	.08	.05	.10	.16	.08	.10
7	11.3	.12	.14	.10	.08	.07	.08	.05	.10	.14	.08	.10
8	.52	.12	.14	.10	.08	.07	.07	.05	.08	.14	.08	.10
9	6.1	.12	.14	.10	.08	.07	.05	.05	.08	.14	.10	.10
10	3.1	.12	.16	.10	.10	.07	.05	.07	.08	.14	.10	.10
11	.12	.12	.16	.10	.10	.05	.07	.05	.08	.14	.08	.10
12	.12	.12	.16	.10	.10	.05	.07	.05	.08	.14	.10	.10
13	3.7	.12	.16	.10	.10	.05	.07	.08	.07	.14	.10	.10
14	.12	.10	.14	.10	.10	.07	.08	.08	.07	.14	.10	.10
15	.12	.10	.14	.10	.10	1.39	.07	.07	.07	.14	.08	.10
16	.12	.10	.12	.08	.10	.07	.07	.07	.07	.14	.08	.10
17	1.56	.10	.12	.08	.10	.07	.07	.07	.07	.14	.10	.10
18	.99	.10	.10	.08	.10	.05	.07	.07	.07	.14	1.60	.08
19	.12	.10	.10	.10	.08	.05	.07	.05	.07	.14	1.44	.08
20	.14	.10	.10	.10	.07	.05	.08	.05	.07	.14	.10	.10
21	.16	19.9	.10	.10	.07	.05	.08	.10	.23	.14	.10	.10
22	.16	.10	.10	.10	.07	.05	.08	.07	.10	.14	.10	.70
23	.14	.08	.10	.10	.05	.05	.08	.07	3.45	.14	.10	.10
24	.12	.08	.10	.10	.05	.07	.08	.05	.16	.14	.10	.10
25	.12	.10	.10	.10	.05	.07	.08	.07	.14	.14	.10	.10
26	.12	.10	.12	.10	.05	.07	.08	.07	.14	.14	.10	.10
27	.14	.10	.10	.10	.05	.08	.08	.07	.12	.14	.10	.10
28	.12	.10	.10	.10	.05	1.08	.08	.26	.12	.12	.10	.10
29	.12	.36	.12	.10	.05	.34	.08	.10	.14	.12	.10	.10
30	.12	1.03	.12	.08	.05	.08	.08	-	.18	.12	.10	.10
31	.10	.12	-	.08	-	.08	.08	-	.12	-	.10	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.3	0.10	1.02	1.58	31.5	97
August	19.9	.08	.783	1.21	24.3	74
September	.16	.10	.124	.192	3.72	11
October	.10	.08	.097	.150	3.00	9.2
November	.10	.05	.076	.118	2.28	7.0
December	1.39	.05	.147	.227	4.56	14
Calendar year 1943	38	.05	.771	1.19	281	865
January	.08	.05	.075	.116	2.33	7.2
February	.26	.05	.072	.111	2.10	6.4
March	3.45	.07	.210	.325	6.50	20
April	6.9	.12	.389	.602	11.7	36
May	1.60	.08	.188	.291	5.84	18
June	.70	.08	.119	.184	3.56	11
Fiscal year 1943-44	19.9	.05	.277	.429	101	311

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honopou Stream above Haiku ditch, near Huelo

Location.- Concrete weir control, lat. 20°55'05", long. 156°14'55", 110 feet upstream from New Government Road, 1¼ miles west of Huelo, and 5.0 miles east of Haiku. Datum of gage is 440.76 feet above mean sea level. Prior to Mar. 3, 1941, at site 120 feet downstream at different datum.
Drainage area.- 2.2 square miles.
Records available.- July 1932 to June 1944. Records at former site collected by East Maui Irrigation Co. November 1926 to June 1932.
Average discharge.- 12 years, 1.59 million gallons a day (2.46 second-feet).
Extremes.- Maximum discharge during year, 130 million gallons a day (201 second-feet) Aug. 21 (gage height, 2.78 feet), from rating curve extended above 15 million gallons a day by logarithmic plotting; minimum, 0.16 million gallons a day (0.25 second-foot) Feb. 12, 13.
1932-44: Maximum discharge, 422 million gallons a day (653 second-feet) Oct. 22, 1941 (gage height, 4.61 feet), from rating curve extended above 15 million gallons a day by logarithmic plotting; minimum, 0.08 million gallons a day (0.12 second-foot) Dec. 1, 2, 1938.
Remarks.- Records good. Wailoa, New Hamakua, and Old Hamakua ditches divert most of flow above this station. Water used for irrigation in central Maui.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.18	0.8	3.6
.4	.40	1.0	7.5
.5	.75	1.2	13.7
.6	1.36	1.4	21.5
.7	2.3	1.6	31

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.55	0.42	0.70	0.32	0.22	0.18	0.42	0.17	0.48	0.62	0.37	0.55
2	.45	.40	.62	.32	.20	.18	.37	.18	.45	6.8	.37	.48
3	.42	.42	.62	.32	.20	.28	.32	.17	.40	1.96	.34	.42
4	.58	.62	.58	.32	.20	.50	.30	.20	.42	.86	.34	.37
5	.70	.58	.51	.30	.20	.62	.26	.20	.40	.75	.34	.37
6	1.51	.48	.48	.30	.20	.48	.26	.18	.34	.66	.34	.32
7	11.6	.45	.48	.32	.20	.48	.24	.20	.52	.62	.37	.32
8	1.59	.42	.45	.30	.20	.37	a.22	.18	.42	.62	.34	.32
9	5.2	.42	.42	.28	.24	.32	a.20	.18	.40	.58	.40	.32
10	5.6	.40	.48	.28	.22	.28	a.19	.18	.32	.56	.32	.32
11	.80	.40	.45	.28	.22	.26	.20	.17	.30	.51	.32	.30
12	.86	.37	.40	.28	.24	.24	.24	.17	.28	.48	.36	.28
13	4.8	.37	.40	.26	.26	.22	.20	2.85	.26	.48	.55	.28
14	.70	.34	.40	.26	.24	.24	.18	.26	.28	.48	.80	.26
15	.66	.37	.37	.28	.22	1.63	.16	.22	.24	.45	.51	.30
16	.58	.34	.37	.26	.22	.62	.18	.18	.24	.45	.48	.30
17	1.84	.32	.37	.24	.22	.42	.18	.17	.26	.45	.82	.28
18	1.80	.32	.37	.24	.18	.40	.18	.17	.26	.86	2.7	.28
19	.58	.32	.40	.24	.24	.37	.18	.17	.26	1.23	3.15	.28
20	.55	.30	.37	.24	.26	.32	.18	.17	.26	.80	.92	.28
21	.55	10.0	.34	.24	.26	.30	.18	.76	1.14	.66	.75	1.86
22	.51	.71	.34	.24	.26	.28	.18	.77	.58	.62	.58	3.1
23	.48	.55	.32	.24	.24	.26	.18	.48	6.8	.62	.51	.66
24	.45	.51	.32	.22	.24	.24	.18	.40	.86	.51	.42	.55
25	.42	.90	.32	.22	.22	.20	.20	.34	.66	.48	.42	.45
26	.42	.62	.32	.22	.22	.20	.20	.30	.58	.42	.42	.40
27	.48	.51	.32	.22	.22	.34	.17	.36	.51	.40	.40	.40
28	.40	.48	.37	.22	.22	1.77	.17	1.82	.74	.40	.34	.34
29	.40	1.12	.34	.22	.22	1.30	.17	.51	.92	.40	.50	.32
30	.40	2.2	.37	.22	.18	.75	.17	-	1.03	.37	.45	.71
31	.40	.80	-	.24	-	.55	.17	-	.66	-	.80	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.6	0.40	1.49	2.31	46.1	141
August	10.0	.30	.854	1.32	26.5	81
September	.70	.32	.420	.650	12.6	39
October	.32	.22	.263	.407	8.14	25
November	.26	.18	.222	.343	6.66	20
December	1.77	.18	.471	.729	14.6	45
Calendar year 1943	29	.18	1.06	1.64	388	1,190
January	.42	.17	.215	.333	6.65	20
February	2.85	.17	.418	.647	12.1	37
March	5.8	.24	.654	1.01	20.3	62
April	6.8	.37	.836	1.29	25.1	77
May	3.15	.32	.636	.984	19.7	61
June	3.1	.26	.514	.795	15.4	47
Fiscal year 1943-44	11.6	.17	.584	.904	214	655

a No gage-height record; discharge computed on basis of records for stations below Haiku ditch.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Honopou Stream below Haiku ditch, near Huelo

Location.- Concrete weir control, lat. 20°55'05", long. 156°14'50", an eighth of a mile downstream from Government Road and 1¾ miles west of Huelo. Datum of gage is 383.41 feet above mean sea level.
Drainage area.- 2.3 square miles.
Records available.- July 1932 to June 1944. Records at same site collected by East Maui Irrigation Co. November 1926 to June 1932.
Average discharge.- 12 years, 5.38 million gallons a day (8.32 second-feet).
Extremes.- Maximum discharge during year, 393 million gallons a day (608 second-feet) Aug. 21 (gage height, 3.64 feet), from rating curve extended above 44 million gallons a day by logarithmic plotting; minimum, 0.02 million gallons a day (0.03 second-foot) Dec. 6.
1932-44: Maximum discharge recorded, 2,200 million gallons a day (3,400 second-feet) Feb. 7, 1939 (gage height, 6.50 feet), from rating curve extended above 44 million gallons a day by logarithmic plotting; minimum discharge, 0.02 million gallons a day (0.03 second-foot) Nov. 27, 1933, Dec. 6, 1943.
Remarks.- Records good except those above 50 million gallons a day, which are fair. Wailoa, New Hamakua, Old Hamakua, and Haiku ditches divert most of flow above this station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.02	0.6	4.1	1.2	23.5
.2	.22	.7	6.1	1.4	34
.3	.67	.8	8.6	1.7	54
.4	1.41	.9	11.6		
.5	2.55	1.0	15.1		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.30	0.88	0.99	1.41	0.50	0.37	0.19	0.29	0.37	0.19	0.41	0.41
2	1.05	1.07	1.05	1.32	.61	.37	.19	.29	.37	28	41	.37
3	1.24	1.32	1.41	1.07	.56	.51	.22	.29	.37	34	.41	.33
4	6.3	5.8	1.07	1.07	.51	1.92	.33	.29	.41	4.9	.41	.33
5	3.4	.99	1.07	1.07	.56	9.9	.37	.29	.46	.10	.37	.33
6	15.9	.98	1.03	.99	.45	.07	.41	.29	.46	.08	.33	.33
7	41	1.05	1.41	.92	.22	.33	.37	.33	8.3	.19	.33	.33
8	18.2	.82	1.41	.99	.19	.29	.37	.33	.26	.41	.33	.29
9	12.3	.99	1.41	.71	.31	.29	.33	.29	.37	.44	.37	.33
10	27.5	.99	1.46	.12	.37	.29	.29	.29	.37	.41	.33	.29
11	.94	.99	1.30	.14	.29	.29	.29	.29	.41	.46	.33	.29
12	4.2	1.07	1.41	.16	.33	.29	.37	.29	.37	.41	.33	.29
13	19.5	1.07	1.24	.18	.34	.29	.46	.33	.33	.41	.86	.29
14	.80	.99	1.24	.19	.41	.48	.46	.33	.33	.46	10.2	.29
15	.67	1.15	1.15	.16	.37	18.8	.46	.29	.33	.51	.19	.29
16	.64	1.07	1.07	.16	.37	.03	.46	.25	.33	.46	.62	.31
17	4.4	.99	1.07	.16	.37	.17	.46	.25	.33	2.0	7.4	.33
18	18.9	.99	1.07	.16	.37	.29	.46	.25	.33	10.8	26.5	.33
19	.61	.92	1.24	.16	2.5	.29	.41	.25	.33	7.0	32.5	.33
20	.46	.92	1.24	.16	5.0	.29	.41	.35	.33	.10	1.00	.33
21	.41	28.5	1.07	.19	.33	.29	.41	7.2	.61	.12	.10	15.1
22	.51	2.45	1.07	.37	.33	.29	.41	.84	.41	.61	.41	16.2
23	.37	.41	1.07	.33	.37	.29	.33	.36	16.3	.56	.41	.13
24	.41	.59	1.07	.29	.37	.29	.33	.29	.18	.39	.41	.37
25	.46	6.2	1.07	.37	.37	.29	.33	.31	.46	.37	.37	.37
26	.46	.92	1.07	.46	.37	.29	.33	.33	.46	.33	.41	.37
27	.41	.86	1.07	.46	.37	.33	.33	.37	.46	.33	.37	.37
28	.69	.86	1.07	.46	.37	25	.29	11.6	.51	.33	.37	.37
29	1.15	9.4	1.24	.61	.37	16.0	.29	.41	13.0	.41	.51	.33
30	1.15	21.5	1.15	.56	.37	.25	.29	-	8.4	.41	.41	.51
31	1.13	1.07	-	.25	-	.19	.29	-	.19	-	2.15	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	41	0.37	6.01	9.30	186	572
August	28.5	.41	3.16	4.89	97.8	300
September	1.46	.99	1.18	1.83	35.3	108
October	1.41	.12	.505	.781	15.6	48
November	5.0	.19	.608	.941	18.2	56
December	25	.03	2.55	3.95	79.1	243
Calendar year 1943	76	.03	3.82	5.91	1,390	2,290
January	.46	.19	.353	.546	10.9	34
February	11.6	.25	.951	1.47	27.6	85
March	16.3	.18	1.81	2.82	56.1	172
April	34	.08	3.17	4.90	95.2	292
May	32.5	.10	2.89	4.47	89.5	275
June	15.2	.13	1.32	2.04	39.6	121
Fiscal year 1943-44	41	.03	2.05	3.17	761	2,310

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Wailoa ditch at Honopou, near Huelo

Location.- Lat. 20°53'20", long. 156°15'05", 100 feet downstream from intake at Honopou Stream, half a mile west of Lupi, and 2.2 miles southwest of Huelo.

Records available.- November 1922 to June 1944.

Average discharge.- 21 years (1923-44), 115 million gallons a day (178 second-feet).

Extremes.- Maximum discharge during year, 185 million gallons a day (286 second-feet) Aug. 21 (gage height, 6.10 feet); minimum, 20 million gallons a day (31 second-feet) Feb. 20.
1922-44: Maximum discharge, 188 million gallons a day (291 second-feet) June 25, 1941 (gage height, 6.06 feet); minimum, 11 million gallons a day (17 second-feet) Feb. 12, 1932.

Remarks.- Records excellent. Wailoa ditch receives the water from Koolau ditch at Alo Stream and from all streams from the Alo west to the Halehaku at altitude of about 1,200 feet. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	160	128	136	156	26	38	97	32	107	76	69	160
2	136	101	128	97	23.5	40	137	32	69	135	66	128
3	112	123	132	63	23.5	142	168	27.5	56	136	63	148
4	145	168	101	59	22	156	128	26	72	136	59	128
5	168	156	90	53	23.5	172	116	26	69	160	56	136
5	176	120	82	47	21	105	154	26	53	120	56	112
7	176	120	76	47	22	129	101	52	148	110	53	93
8	176	93	72	50	21	94	86	32	101	172	53	86
9	172	82	69	47	36.5	90	76	26	63	168	66	79
10	176	82	93	44	31	66	66	25	50	168	96	90
11	168	109	110	44	23.5	56	63	26	47	168	59	92
12	172	86	69	41	75	50	133	23.5	44	140	77	69
13	176	90	66	38	94	47	86	25	41	104	168	66
14	168	92	59	38	41	97	66	29	38	112	172	59
15	168	156	53	44	41	178	56	29	35	116	120	75
16	166	97	53	41	32	144	53	23.5	33.5	152	132	66
17	160	76	50	38	27.5	104	50	22	32	152	172	59
18	172	69	56	35	27.5	82	47	21	41	176	176	69
19	164	72	110	32	130	69	47	21	54	176	176	59
20	164	63	87	30.5	136	59	44	21	35	172	176	120
21	148	155	53	30.5	64	56	41	123	96	172	168	176
22	148	164	58	29	47	53	41	172	143	172	152	176
23	140	124	56	29	38	50	38	103	155	172	128	144
24	112	141	50	27.5	35	47	38	72	90	160	116	108
25	104	168	66	30.5	32	44	36.5	72	66	132	97	93
26	110	136	47	27.5	30.5	67	36.5	67	53	112	97	86
27	150	124	84	27.5	29	123	33.5	156	47	101	116	97
28	101	136	88	26	31	176	32	168	83	93	116	128
29	86	172	98	25	68	176	32	109	156	86	164	124
30	79	172	111	25	44	152	30.5	-	148	76	140	168
31	120	156	-	35	-	116	29	-	97	-	172	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	176	79	147	227	4,560	14,000
August	172	63	120	186	3,730	11,450
September	136	47	80.1	124	2,400	7,370
October	156	26	43.8	67.8	1,360	4,160
November	136	21	43.2	66.8	1,300	3,980
December	178	38	96.1	149	2,980	9,140
Calendar year 1945	180	21	103	159	37,760	115,900
January	168	29	69.7	108	2,160	6,630
February	172	21	54.7	84.6	1,590	4,870
March	156	32	74.9	116	2,320	7,130
April	176	76	137	212	4,120	12,660
May	176	53	114	176	3,530	10,840
June	176	59	106	164	3,180	9,770
Fiscal year 1943-44	178	21	90.8	140	33,230	102,000

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

New Hamakua ditch at Honopou, near Huelo

Location.- Concrete control, lat. 20°53'30", long. 156°15'10", 15 feet upstream from tunnel portal, 600 feet downstream from Honopou Stream crossing, and 2.1 miles southwest of Huelo.

Records available.- January 1918 to June 1944.

Average discharge.- 26 years, 28.6 million gallons a day (44.3 second-feet).

Extremes.- Maximum discharge during year, 114 million gallons a day (176 second-feet) Aug. 21 (gage height, 5.52 feet); minimum, 0.08 million gallons a day (0.12 second-foot) Oct. 30.

1918-44: Maximum discharge, 143 million gallons a day (221 second-feet) Feb. 27, 1932 (gage height, 5.90 feet); no flow at times, when water was shut out of ditch.

Remarks.- Records good except those for period of no gage-height record, which are poor. Ditch diverts water from streams between the Waiakamoi and the Halehaku above Center and Lowrie ditches. Flow regulated by gates and spillways. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	49	9.9	70	41	0.13	0.17	1.25	0.28	1.08	0.97	0.66	42
2	6.7	.97	17	7.4	.10	.17	7.1	.28	.76	64	.66	1.08
3	.92	3.16	18	.43	.10	40	37.5	.28	.66	102	.66	2.7
4	56	83	11	.32	.13	50	3.0	.26	.66	67	.62	.97
5	93	34.5	7.0	.32	.13	89	1.58	.24	.66	12.0	.62	1.96
6	101	1.64	4.0	.28	.13	4.8	28	.24	.58	2.0	.58	.97
7	104	2.3	1.6	.28	.13	22.5	1.08	.35	58	1.78	.58	.71
8	101	1.13	1.5	.32	.10	1.02	.97	.24	7.9	58	.51	.66
9	85	.97	1.4	.26	.17	1.89	.87	.19	.62	45	.58	.66
10	102	.92	1.8	.24	.28	.58	.71	.17	.51	21.5	.76	.72
11	69	.97	3.0	.26	.17	.43	.66	.17	.47	41	.56	1.25
12	66	.87	1.4	.21	22.5	.39	13.7	.17	.47	1.59	.45	.66
13	102	.82	1.4	.21	18.6	.36	.92	.19	.43	1.08	74	.58
14	66	.82	1.3	.21	.28	16.3	.71	.19	.43	1.08	91	.55
15	42	20.5	1.2	.32	.24	102	.62	.19	.43	1.12	2.4	.71
16	4.0	.92	1.1	.28	.21	28	.58	.17	.39	28	25.5	.66
17	26	.66	1.1	.26	.15	3.7	.55	.17	.36	30.5	91	.55
18	101	.62	1.2	.21	.15	.87	.56	.16	.36	101	102	.51
19	46	.58	1.6	.19	54	.76	.65	.15	.32	101	102	.47
20	28.5	.55	.80	.17	51	.71	.47	.13	.32	52	89	9.1
21	3.5	60	.60	.15	.39	.62	.47	63	36	80	74	97
22	3.6	90	.50	.15	.24	.58	.43	93	28	87	5.1	101
23	7.0	80	.46	.16	.19	.58	.43	13.5	92	69	1.72	15.5
24	1.31	70	.43	.15	.17	.58	.43	.55	14.2	18.3	1.52	1.38
25	1.18	90	.39	.15	.13	.55	.39	.55	.71	1.18	1.38	1.13
26	1.16	55	.36	.13	.13	.58	.36	.62	.62	.97	1.31	1.02
27	29	3.0	4.3	.13	.13	23.5	.32	19.2	.58	.92	1.25	1.08
28	1.38	2.5	3.3	.13	.15	104	.32	77	20	.87	18.9	1.13
29	1.08	80	7.4	.13	.21	101	.28	2.75	97	.76	65	1.08
30	.92	90	12.0	.10	.19	14.8	.28	-	51	.71	10.6	55
31	10.8	75	-	.19	-	1.58	.28	-	1.18	-	69	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	104	0.92	42.2	65.3	1,310	4,020
August	90	.65	27.8	43.0	861	2,640
September	70	.36	5.90	9.13	177	544
October	41	.10	1.77	2.74	54.7	168
November	64	.10	5.02	7.77	151	462
December	104	.17	19.7	30.5	611	1,880
Calendar year 1943	104	.10	22.6	35.0	8,260	25,340
January	37.5	.28	3.40	6.26	105	323
February	93	.13	9.46	14.6	274	842
March	97	.32	13.4	20.7	417	1,280
April	102	.71	33.7	52.1	1,010	3,110
May	102	.43	26.6	41.2	824	2,530
June	101	.47	11.4	17.6	343	1,050
Fiscal year 1943-44	104	.10	16.8	26.0	6,140	18,850

Note.- No gage-height record Aug. 21 to Sept. 23; discharge computed on basis of records for stations on nearby ditches.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Old Hamakua ditch at Honopou, near Huelo

Location.- Parshall flume, lat. 20°53'30", long. 156°15'05", in Honopou Gulch, 400 feet downstream from Honopou Stream and Wailoa ditch trail crossing, 2.0 miles southwest of Huelo, and 5.0 miles east of Haiku.

Records available.- January 1918 to June 1922, November 1936 to June 1944.

Average discharge.- 11 years (1918-22, 1937-44), 2.88 million gallons a day (4.46 second-feet).

Extremes.- Maximum discharge during year, 38 million gallons a day (59 second-feet) Aug. 21, (gage height, 2.74 feet); no flow many times.
1918-22, 1936-44: Maximum discharge, 58 million gallons a day (90 second-feet) Jan. 16, 1921, and Feb. 7, 1939 (gage heights, 3.25 and 3.55 feet, respectively, different sites); no flow for short periods.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Wailoa and New Hamakua ditches divert most of flow above this station. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a4.0	0.02	0.04	0.04	0	0	0.02	0	0.03	a0.10	0.02	0.40
2	a.10	.02	.03	.05	0	0	.02	0	.02	a9.0	.02	.04
3	a.01	.03	.30	.02	0	.05	.04	0	.02	a16	.02	.03
4	2.55	3.8	.03	.01	0	2.7	.05	0	.03	13.6	.02	.03
5	2.45	.11	.02	.01	0	2.9	.04	0	.04	.09	.02	.03
6	11.5	.04	.02	.01	0	.05	.04	0	.03	.05	.02	.03
7	25.5	.02	.02	.01	0	.03	.04	.01	2.45	.04	.02	.03
8	12.3	.02	.02	.01	0	.04	.03	.02	.11	.06	.02	.03
9	8.3	.01	.02	.01	0	.02	.03	.01	.03	.37	.02	.03
10	20.5	.01	.02	.01	0	.02	.02	0	.02	.06	.02	.04
11	.79	.01	.02	.01	0	.01	.02	0	.02	.08	.02	.03
12	2.7	.01	.02	.01	0	.01	.03	0	.02	.05	.02	.03
13	11.4	.01	.01	.01	.01	.01	.03	0	.02	.04	.88	.03
14	.74	.01	.01	.01	0	1.39	.02	.02	.02	.03	4.6	.03
15	.05	.02	.01	.01	0	a25	.02	.01	.02	.03	.06	.03
16	.04	.02	.01	.01	0	a1.0	.02	0	.02	.05	2.4	.03
17	4.8	.01	.01	.01	0	a.10	.02	0	.02	.32	3.95	.03
18	11.5	.01	.01	0	0	a.03	.02	0	.02	7.6	22	.03
19	.16	.01	.01	0	.41	a.02	.02	0	.01	9.3	22.5	.02
20	.04	.01	.01	0	.57	a.02	.01	0	.01	.28	2.7	.05
21	.04	10.0	.01	0	.01	a.02	.01	8.7	1.26	.23	1.16	9.5
22	.03	1.61	.01	0	.01	a.01	.01	2.65	.14	.87	.06	9.9
23	.02	.04	.01	0	0	a.01	.01	.08	a.03	1.74	.04	.12
24	.02	.08	.01	0	0	.01	.01	.03	a.03	.11	.04	.04
25	.02	5.7	.01	0	0	.01	.01	.02	a.03	.04	.05	.03
26	.02	.06	.01	0	0	.02	.01	.02	a.02	.03	.03	.03
27	.09	.03	.01	0	0	.76	.01	.02	a.02	.02	.03	.03
28	.04	.04	.01	0	0	26.5	0	3.05	a1.5	.02	.03	.03
29	.02	7.0	.01	0	0	8.2	0	.05	a15	.02	.98	.03
30	.02	12.1	.02	0	0	.17	0	-	a.90	.02	.08	.19
31	.02	.11	-	0	-	.04	0	-	a.12	-	3.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	25.5	0.01	3.86	5.97	120	368
August	12.1	.01	1.32	2.04	41.0	126
September	.30	.01	.025	.039	.75	2.3
October	.05	0	.008	.012	.25	.8
November	.57	0	.034	.053	1.01	3.1
December	26.5	0	2.23	3.45	69.2	212
Calendar year 1943	26.5	0	1.56	2.41	570	1,750
January	.05	0	.020	.031	.61	1.9
February	e.7	0	.506	.783	14.7	45
March	15	.01	.710	1.10	22.0	68
April	16	.02	2.01	3.11	60.2	185
May	22.6	.02	2.11	3.26	65.5	201
June	9.9	.02	.696	1.08	20.9	64
Fiscal year 1943-44	26.5	0	1.14	1.76	416	1,280

a No gage-height record; discharge computed on basis of records for stations on nearby ditches.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Lowrie ditch at Honopou Gulch, near Huelo

Location.- Concrete control, lat. 20°54'55", long. 156°15'05", a quarter of a mile downstream from siphon across Honopou Stream and 1.6 miles west of Huelo. Datum of gage is 598.0 feet above mean sea level.

Records available.- February 1930 to June 1944. January 1910 to March 1927 at site 1½ miles downstream.

Average discharge.- 30 years (1910-26, 1930-44), 32.0 million gallons a day (49.5 second-feet).

Extremes.- Maximum discharge during year, 66 million gallons a day (102 second-feet) Aug. 21 (gage height, 4.91 feet); minimum, 0.48 million gallons a day (0.74 second-foot) Nov. 24, 27.
1930-44: Maximum discharge, 88 million gallons a day (136 second-feet) Mar. 21, 1937 (gage height, 5.44 feet); no flow at times.

Remarks.- Records excellent. Lowrie ditch diverts water from all streams between the Kailua and the Halehaku. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	45	11.6	38	5.2	0.90	0.72	8.9	2.15	19.2	16.8	6.0	38
2	8.3	2.4	21	2.9	.84	.72	8.7	2.4	16.8	38	5.7	27
3	2.15	3.2	25	1.50	.84	13.9	15.2	2.05	8.4	46	5.3	10.3
4	20	46	15.5	1.41	.84	38	6.5	1.81	7.8	43	5.2	8.7
5	50	43	13.0	1.32	.84	50	1.41	1.70	8.4	29	5.0	9.8
6	53	7.8	10.5	1.32	.84	33	4.3	1.70	6.9	23	5.3	8.2
7	56	5.3	2.9	1.50	.78	23	1.23	2.5	27.5	23	5.0	6.7
8	53	8.5	2.75	1.41	.78	7.5	1.06	2.05	15.5	33	4.6	6.0
9	40	2.5	2.6	1.32	.98	9.6	.98	1.70	6.4	33	5.4	5.6
10	56	2.5	3.45	1.25	.64	5.3	.98	1.60	4.3	25	6.2	6.0
11	43	2.6	6.9	1.23	.78	4.3	.98	1.60	3.7	27	4.8	7.3
12	43	2.4	2.6	1.25	5.7	3.9	1.58	1.41	4.5	18.0	5.2	5.3
13	53	2.25	2.5	1.23	10.7	3.6	.98	3.5	4.2	9.4	38	5.0
14	43	2.25	2.4	1.14	.84	8.2	.90	3.15	17.7	8.2	53	4.6
15	46	4.6	2.25	1.32	.64	53	.84	2.7	4.2	7.9	29	7.2
16	28	2.15	2.05	1.14	.78	33	.84	1.81	4.0	15.5	28	5.3
17	22.5	1.92	2.05	1.06	.72	27	.84	1.70	3.9	11.5	46	4.6
18	53	1.92	2.15	1.06	.78	5.7	.84	1.60	3.75	40	53	4.6
19	34.5	1.81	2.4	.98	20.5	5.0	.78	1.50	3.6	53	56	4.3
20	38	1.70	2.15	.98	40	4.5	.78	1.41	3.6	33	46	6.4
21	25.5	31.5	1.92	.98	22.5	4.2	.78	31	20.5	43	40	44
22	11.8	43	1.81	.98	1.94	3.9	1.55	44	19.9	43	33	53
23	14.2	27	1.70	.98	.78	3.6	2.5	29	50	33	26	33
24	8.5	23.5	1.70	.98	.72	3.9	3.05	24	17.4	22	12.2	30.5
25	4.8	43	1.60	1.06	.72	3.45	2.9	9.4	18.0	9.8	10.8	9.8
26	4.8	33	1.60	.98	.67	3.6	2.6	5.8	14.5	8.7	11.2	8.8
27	23.5	19.2	1.60	.98	.67	13.1	2.4	17.3	15.5	8.4	11.0	9.8
28	6.2	14.2	1.92	.90	.67	53	2.25	45	24	7.8	12.9	9.4
29	2.4	45	2.05	.90	.78	53	2.25	18.0	48	7.1	29	8.4
30	2.25	53	2.15	.90	.72	33	2.15	-	38	6.7	17.4	28
31	4.6	38	-	1.06	-	28	2.15	-	16.8	-	33	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	56	2.15	28.9	44.7	896	2,750
August	53	1.70	17.0	26.3	528	1,620
September	38	1.60	6.01	9.30	180	553
October	5.2	.90	1.33	2.06	41.2	126
November	40	.67	4.01	6.20	120	369
December	53	.72	17.2	26.6	533	1,650
Calendar year 1943	59	.67	16.2	25.1	5,930	18,170
January	15.2	.78	2.68	4.15	83.2	255
February	45	1.41	9.08	14.0	263	808
March	50	5.6	14.7	22.7	457	1,400
April	53	6.7	24.0	37.1	721	2,210
May	56	4.6	21.0	32.5	650	2,000
June	53	4.5	13.9	21.5	416	1,280
Fiscal year 1943-44	56	.67	13.4	20.7	4,890	15,000

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Haiku ditch at Honopou Gulch, near Kailua

Location.- Concrete restriction in ditch, lat. 20°55'05", long. 156°14'55", on right side of Haiku ditch and west side of Honopou Gulch, 160 feet below new Government Road, 2.5 miles northwest of Kailua, and 5 miles east of Haiku. Datum of gage is 421.54 feet above mean sea level.

Records available.- February 1940 to June 1944. January 1910 to October 1914, at site at Peahi weir on old Haiku ditch. October 1914 to December 1928, at site in Manawai Gulch, 2.9 miles downstream. February 1930 to February 1940, at site in Kapalalaea Gulch, 0.9 mile downstream.

Average discharge.- 32 years (1910-28, 1930-44), 24.7 million gallons a day (38.2 second-feet).

Extremes.- Maximum discharge during year, 86 million gallons a day (133 second-feet) Aug. 21 (gage height, 3.56 feet); minimum, 0.30 million gallons a day (0.46 second-foot) Feb. 12.

1910-28, 1930-44: Maximum discharge, 195 million gallons a day (302 second-feet) Mar. 23, 1937 (gage height, 5.80 feet, site and datum then in use); no flow occasionally.

Remarks.- Records excellent. Haiku ditch diverts water from all streams between the Kailua Stream and the Maliko Gulch. Flow regulated by gates. Water used for irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.8	2.4	2.85	13.4	1.88	2.2	1.32	0.44	2.2	3.15	1.19	3.9
2	4.7	7.7	6.3	7.7	1.53	1.88	1.19	.51	1.81	39	1.13	1.81
3	6.2	13.8	15.0	3.95	1.39	11.3	1.01	.44	1.39	74	1.07	1.60
4	37.5	32.5	2.95	3.4	1.46	13.3	5.3	.40	1.32	46	1.07	1.39
5	36.5	10.0	2.6	3.2	1.39	41	8.3	.40	1.46	5.0	1.01	1.39
6	65	6.8	3.5	3.05	1.39	1.64	12.1	.40	1.13	4.2	1.01	1.25
7	76	7.7	9.3	3.15	1.60	1.52	6.8	.48	11.0	3.5	.95	1.13
8	63	2.56	8.8	3.3	1.67	.89	6.0	.44	2.05	3.3	.95	1.07
9	25	7.6	8.3	3.2	2.35	.65	5.6	.40	1.32	4.8	1.16	1.01
10	73	7.7	11.0	3.5	2.6	.54	5.0	.37	2.35	2.85	1.01	1.07
11	9.0	8.3	7.8	3.6	1.74	.48	4.8	.37	2.55	5.4	.89	1.07
12	19.8	7.3	7.9	3.3	11.3	.44	7.5	.34	1.25	2.95	1.22	1.01
13	66	7.3	6.9	3.05	6.5	.40	5.6	.83	1.07	4.2	30.5	.89
14	8.1	6.8	6.3	3.05	2.45	8.0	4.7	.71	1.07	4.2	55	.89
15	3.15	12.9	6.0	3.6	2.1	62	4.2	.58	.89	5.3	3.05	1.25
16	2.65	7.3	5.6	3.3	1.88	4.4	3.8	.44	.83	2.5	10.6	1.01
17	11.7	6.0	5.3	3.2	1.53	1.32	3.6	.40	.77	13.2	38	.89
18	66	5.6	5.6	2.85	1.60	.83	3.4	.37	.77	66	64	.89
19	6.0	5.5	6.9	2.65	28.5	.62	3.2	.37	.71	62	79	.83
20	2.75	5.0	6.0	2.5	29	.54	3.15	.37	.71	4.8	22	.89
21	2.5	42	4.8	2.35	.89	.48	2.95	38	15.0	4.4	8.5	59
22	6.9	19.4	4.5	2.2	1.76	.48	1.75	33.5	5.0	18.3	2.65	57
23	2.5	2.35	4.3	2.25	2.25	.44	.65	2.75	53	13.3	2.25	6.3
24	5.3	3.25	4.1	2.2	1.95	.44	.71	1.19	5.5	3.55	1.88	2.05
25	7.6	33	4.3	2.2	1.74	.40	.62	1.14	2.95	1.81	1.67	1.67
26	7.4	2.2	3.6	1.88	1.60	.51	.54	.95	2.45	1.60	1.81	1.53
27	3.95	1.60	3.95	1.95	1.53	2.25	.48	1.41	2.25	1.53	1.60	1.53
28	5.5	1.46	5.2	2.05	1.53	65	.48	16.2	3.7	1.46	1.39	1.32
29	7.9	46	6.0	1.60	2.35	59	.48	2.85	55	1.25	13.4	1.19
30	7.3	67	6.8	1.60	1.95	3.25	.48	-	30.5	1.25	3.25	8.0
31	7.0	4.1	-	3.25	-	1.74	.44	-	3.4	-	26.5	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	76	2.5	21.3	33.0	660	2,020
August	67	1.46	12.7	19.6	393	1,210
September	16.0	2.6	6.08	9.41	182	560
October	13.4	1.60	3.31	5.12	102	314
November	29	1.39	4.05	6.27	121	373
December	65	.40	9.29	14.4	288	884
Calendar year 1943	76	.40	12.8	19.8	4,690	14,390
January	12.1	.44	3.42	5.29	106	326
February	38	.34	3.69	5.71	107	329
March	55	.71	6.95	10.8	215	661
April	74	1.25	13.5	20.9	405	1,240
May	79	.89	12.2	18.9	380	1,170
June	59	.83	5.49	8.49	165	506
Fiscal year 1943-44	79	.34	8.54	13.2	3,120	9,590

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiakea Stream at middle flume house, near Mountain View

Location.- Parshall flume and concrete dam control, lat. 19°38'25", long. 155°10'35", at middle flume house, 800 feet upstream from Olaa Sugar Co.'s main flume and 7½ miles northwest of Mountain View.
Records available.- September 1930 to June 1944.
Average discharge.- 13 years (1931-44), 7.06 million gallons a day (10.9 second-feet).
Extremes.- Maximum discharge during year, 109 million gallons a day (169 second-feet) July 12 (gage height, 3.98 feet), from rating curve extended above 38 million gallons a day on basis of weir formulas; minimum, 0.09 million gallons a day (0.14 second-foot) Nov. 17-19.
1930-44: Maximum discharge, 166 million gallons a day (257 second-feet) Mar. 14, 1942 (gage height, 4.43 feet), from rating curve extended above 38 million gallons a day on basis of weir formulas; no flow at times, when tunnels and stream cease flowing during very dry periods.
Remarks.- Records good except those above 15 million gallons a day, which are fair, and those for periods of no gage-height record, which are poor. No diversions above station. Large part of flow comes from three tunnels. Water is used for fluming sugarcane.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.5	1.70	1.6	9.9
.1	.15	.6	2.25	2.0	14.6
.2	.42	.7	2.85	2.5	23.5
.3	.78	.9	4.1	3.0	39
.4	1.21	1.2	6.4		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	16.0	4.4	6.4	2.85	0.30	0.16	1.65	0.25	15	0.20	8.1	6.6
2	15.3	4.1	6.8	3.1	.28	.16	1.94	.22	12	.20	7.2	6.0
3	14.6	4.3	6.4	2.95	.23	.36	2.75	.20	10	4.2	6.4	5.6
4	18.5	5.6	6.0	2.8	.23	.98	2.6	.17	8.0	1.63	5.6	5.4
5	16.8	4.9	6.0	2.6	.30	2.05	2.65	.15	7.0	1.65	5.0	5.2
6	16.8	4.6	5.4	2.55	.20	.95	3.95	.14	5.6	1.37	4.4	5.1
7	25	4.4	4.9	2.3	.18	1.37	3.45	.14	4.8	2.1	3.95	5.0
8	22.5	4.4	4.4	2.15	.16	.95	3.25	.14	4.2	3.9	3.8	10
9	20.5	4.2	4.1	1.92	.18	.78	3.1	.17	3.5	5.3	3.95	9.0
10	18.6	4.1	3.8	1.76	.20	.71	2.95	2.1	3.0	5.8	4.4	7.6
11	16.8	4.0	3.95	1.60	.18	.60	2.85	1.2	2.9	7.2	4.5	6.6
12	23	3.95	4.4	1.46	.13	.49	2.8	.90	2.7	7.2	4.5	6.0
13	23	3.95	4.2	1.31	.13	.42	2.65	.64	2.5	6.8	6.0	5.4
14	20.5	3.8	3.95	1.21	.11	.37	2.55	.70	2.25	7.2	10	5.2
15	18.6	3.8	3.65	1.12	.11	1.08	2.45	1.0	2.05	7.8	9.0	5.2
16	16.8	3.65	3.35	1.00	.11	.49	2.2	1.7	1.76	11.4	8.0	5.2
17	16.0	3.4	3.1	.91	.09	.49	2.05	1.8	1.50	14.7	11	5.4
18	14.6	3.2	3.05	.78	.09	.42	1.86	1.7	1.31	16.0	15	5.6
19	13.3	3.05	2.95	.71	1.13	.37	1.65	1.6	1.17	19.5	22	5.8
20	12.1	2.85	2.8	.67	1.02	.35	1.46	1.4	1.04	20.5	14	6.0
21	10.9	2.95	2.55	.60	.30	.30	1.31	1.2	1.00	20.5	12	8.0
22	9.9	2.6	2.45	.61	.25	.28	1.12	1.1	.87	19.5	10	18
23	9.4	2.65	2.2	.97	.25	.25	1.00	1.2	.74	18.6	9.0	13
24	8.6	2.7	3.45	.71	.23	.25	.90	1.0	.64	17.6	7.6	11
25	7.6	6.7	3.35	.53	.18	.23	.92	.90	.56	16.0	7.0	10
26	7.2	4.8	2.95	.53	.18	.20	.70	1.1	.46	14.6	6.2	9.0
27	6.8	4.4	2.8	.60	.14	.23	.56	25	.37	13.3	5.6	8.2
28	6.4	4.2	2.75	.42	.14	3.1	.50	22	.32	11.5	5.2	7.6
29	5.6	4.2	2.6	.37	.16	4.2	.41	20	.30	10.4	5.2	7.2
30	5.2	7.7	2.95	.35	.18	2.45	.35	-	.28	9.0	5.6	7.0
31	4.7	6.8	-	.30	-	1.92	.30	-	.23	-	6.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	25	4.7	14.2	22.0	442	1,360
August	7.7	2.6	4.20	6.50	130	400
September	6.8	2.2	3.92	6.07	118	361
October	3.1	.30	1.35	2.09	41.7	128
November	1.13	.09	.246	.381	7.37	23
December	4.2	.16	.870	1.35	27.0	83
Calendar year 1943	25	.09	4.81	7.44	1,760	5,390
January	3.95	.30	1.90	2.94	58.9	181
February	*25	.14	3.10	4.80	89.8	276
March	15	.23	3.16	4.89	98.0	301
April	20.5	.20	9.85	15.3	296	907
May	22	3.8	7.62	11.8	236	725
June	15	5.0	7.26	11.2	218	669
Fiscal year 1943-44	25	.09	4.81	7.44	1,760	5,410

Note.- No gage-height record Jan. 24 to Mar. 13, May 12 to June 30; discharge estimated on basis of records for Wailuku River.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Wailuku River above Hilo Boarding School ditch intake, near Hilo

Location.- Lat. 19°42'55", long. 155°09'10", 1,000 feet upstream from intake of Hilo Boarding School ditch, three-quarters of a mile west of reservoir 1, and 4 miles west of Hilo. Altitude of gage, 1,060 feet (by barometer).
Drainage area.- 124.5 square miles.
Records available.- July 1928 to June 1944.
Average discharge.- 14 years (1929-40, 1941-44), 177 million gallons a day (274 second-feet).
Extremes.- Maximum discharge during year, 5,510 million gallons a day (8,530 second-feet) July 7 (gage height, 14.96 feet), from rating curve extended above 3,400 million gallons a day by logarithmic plotting; minimum, 2.4 million gallons a day (3.7 second-feet) Mar. 18, 19.
1928-44: Maximum discharge, 41,000 million gallons a day (63,400 second-feet). Aug. 11, 1940 (gage height, 28.6 feet, from floodmarks), from rating curve extended above 3,400 million gallons a day by logarithmic plotting; minimum, 0.16 million gallons a day (0.25 second-foot) Mar. 9, 1941.
Remarks.- Records good. Hilo Water Works diverts about 1 million gallons a day above station for domestic supply, and water passing station is used for power by Hilo Electric Light Co.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

1.5	2.0	2.1	16.5	3.5	90	8.0	774
1.6	3.1	2.3	24	4.0	130	9.0	1,100
1.7	4.9	2.5	33	5.0	233	10.0	1,490
1.8	7.1	2.7	43	6.0	370	11.0	2,020
1.9	9.9	3.0	58	7.0	534		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	436	33	113	40	11.1	5.1	40	4.7	319	8.2	48	149
2	284	30.5	97	37.5	7.2	4.7	94	4.2	149	6.7	40	80
3	297	39	67	32.5	4.5	10.9	186	3.5	94	142	35.5	67
4	969	409	53	25.5	4.7	40	73	3.1	61	58	31	58
5	721	154	64	22.5	15.6	121	70	3.0	48	71	27	64
6	325	94	48	22	11.5	35.5	216	3.0	37.5	35.5	25.5	50
7	1,930	94	37.5	18.6	6.9	48	80	3.3	31	43	40	43
8	654	78	33	17.9	5.1	33	58	3.1	26	130	27.5	540
9	356	56	28.5	15.8	4.5	21.5	43	4.4	22.5	169	76	254
10	245	48	26	14.2	6.6	16.5	35.5	107	20	133	97	199
11	169	67	48	11.9	9.1	13.2	30.5	37	23	179	124	170
12	263	64	80	12.2	5.3	11.2	28.5	12.9	19.6	139	76	94
13	654	70	92	9.9	4.5	9.3	28.5	7.7	16.2	86	140	67
14	311	50	46	9.9	3.8	8.2	24	11.3	13.2	104	528	53
15	297	43	35	9.3	3.1	47	20.5	31.5	11.6	101	353	70
16	189	40	29.5	8.2	2.9	25	17.6	84	10.6	447	199	61
17	258	33	28.5	7.9	2.8	21	15.8	87	10.2	692	284	67
18	489	28.5	27.5	7.1	2.7	15.8	21	50	16.2	574	495	67
19	210	26	51	6.2	56	12.5	16.5	38	12.2	1,090	1,530	83
20	149	23	53	5.3	226	9.6	13.2	26	11.6	669	490	83
21	117	24	31	5.3	42	7.4	11.2	20	11.2	394	470	355
22	101	22.5	27	7.7	25	6.4	9.6	15.5	17.3	439	284	959
23	90	24	23	21	18.2	5.8	8.5	24.5	36.5	420	169	378
24	76	36	121	19.3	13.9	6.2	9.1	21.5	31.5	297	130	210
25	61	287	83	15.8	10.9	5.8	23	14.5	15.5	210	113	149
26	53	145	43	9.9	9.1	5.3	16.2	19.3	9.9	149	83	113
27	125	80	40	10.6	7.4	4.9	10.6	140	9.1	113	90	105
28	58	70	48	8.5	6.0	133	7.7	2,030	8.2	101	61	80
29	46	101	40	7.4	5.3	787	6.7	490	9.1	73	76	70
30	40	527	31	6.4	5.3	99	6.2	-	17.8	58	67	56
31	37	189	-	5.6	-	53	5.6	-	11.9	-	109	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1,930	37	323	500	10,010	30,720
August	527	22.5	96.2	149	2,980	9,160
September	121	23	51.5	79.7	1,540	4,740
October	40	5.3	14.6	22.6	452	1,390
November	226	2.7	17.9	27.7	538	1,650
December	787	4.7	52.3	80.9	1,620	4,980
Calendar year 1943	2,510	2.7	114	176	41,580	127,500
January	216	5.6	39.5	61.1	1,230	3,760
February	2,030	3.0	114	176	3,300	10,130
March	319	8.2	36.5	56.5	1,130	3,470
April	1,090	6.7	238	368	7,130	21,890
May	1,530	25.5	204	316	6,340	19,450
June	959	43	160	248	4,790	14,690
Fiscal year 1943-44	2,030	2.7	112	173	41,060	126,000

Peak discharge.- July 7 (3 p.m.) 5,510 m.g.d. (8,530 sec.-ft.); Feb. 28 (10 a.m.) 4,530 m.g.d. (7,010 sec.-ft.); Feb. 28 (8 p.m.) 2,850 m.g.d. (4,410 sec.-ft.); Apr. 19 (5:30 a.m.) 2,330 m.g.d. (3,610 sec.-ft.); May 19 (4 a.m.) 3,140 m.g.d. (4,860 sec.-ft.); June 8 (6 p.m.) 4,210 m.g.d. (6,510 sec.-ft.).
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kapehu ditch near Hilo

Location.- Soil Conservation Service type H (De Fabritis) flume, lat. 19°43'40", long. 155°11'00", 0.9 mile downstream from intake, 3 miles west of Pihonua, and 6 miles west of Hilo.

Records available.- March 1938 to June 1944. July 1941 to June 1942 (unpublished).

Extremes.- Maximum discharge during year, not determined due to faulty gage-height record; no flow July 1 to Nov. 18, when water was shut out of ditch.
1938-44: Maximum discharge, 28 million gallons a day (43 second-feet) Jan. 31, 1939 (gage height, 3.51 feet); no flow at times, when water was shut out of ditch.

Remarks.- Records excellent except those for periods of faulty or no gage-height record, which are poor. Water used to supplement the municipal supply of Hilo during dry periods.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1					0	1.6	1.7	1.60	2.0	1.6	1.49	1.39
2					0	1.6	1.7	1.60	2.0	1.6	1.46	1.39
3					0	1.6	1.8	1.56	2.0	1.7	1.46	1.3
4					0	1.7	1.8	1.5	2.05	1.6	1.46	1.3
5					0	1.8	1.8	1.5	2.05	1.6	1.42	1.3
6					0	1.7	1.9	1.5	2.05	1.6	1.42	1.3
7					0	1.7	1.9	1.5	2.0	1.6	1.46	1.3
8					0	1.7	1.9	1.5	2.0	1.60	1.49	1.3
9					0	1.7	1.9	1.6	1.96	1.60	1.53	1.36
10					0	1.6	1.9	1.9	1.96	1.60	1.42	1.32
11					0	1.6	1.9	1.9	1.96	1.6	1.42	1.32
12					0	1.6	1.9	1.7	1.96	1.6	1.42	1.32
13					0	1.6	1.9	1.7	1.9	1.6	1.53	1.32
14					0	1.6	1.9	1.7	1.9	1.6	1.53	1.32
15					0	1.7	1.9	1.9	1.9	1.6	1.46	1.32
16					0	1.7	1.9	1.9	1.8	1.6	1.46	1.29
17					0	1.6	1.9	1.9	1.8	1.6	1.5	1.29
18					0	1.6	1.9	1.9	2.0	1.6	1.5	1.29
19					.5	1.6	1.9	1.9	1.9	1.6	1.4	1.29
20					1.8	1.6	1.9	1.8	1.8	1.6	1.4	1.29
21					1.7	1.6	1.92	1.7	1.8	1.5	1.4	1.50
22					1.6	1.6	1.84	1.7	1.9	1.53	1.46	1.45
23					1.6	1.6	1.84	1.8	2.0	1.56	1.39	1.13
24					1.6	1.6	2.0	1.8	1.96	1.49	1.39	1.13
25					1.6	1.6	2.15	1.7	1.84	1.49	1.39	1.1
26					1.6	1.6	2.1	1.8	1.72	1.49	1.39	1.1
27					1.6	1.6	1.96	2.0	1.64	1.49	1.42	1.1
28					1.6	1.7	1.84	2.0	1.72	1.49	1.39	1.0
29					1.6	1.9	1.76	2.0	1.84	1.49	1.42	1.05
30					1.6	1.8	1.68	-	1.76	1.49	1.42	1.05
31					-	1.7	1.64	-	1.60	-	1.42	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0	0	0	0	0	0
August	0	0	0	0	0	0
September	0	0	0	0	0	0
October	0	0	0	0	0	0
November	1.8	0	.613	.948	18.4	56
December	1.9	1.6	1.65	2.55	51.2	157
Calendar year 1943	1.9	0	.378	.685	138	423
January	2.15	1.64	1.87	2.89	58.0	178
February	2.0	1.5	1.74	2.69	50.6	155
March	2.05	1.60	1.90	2.94	58.8	180
April	1.7	1.49	1.57	2.43	47.1	145
May	1.53	1.39	1.44	2.23	44.7	137
June	1.60	1.0	1.26	1.95	37.9	116
Fiscal year 1943-44	2.16	0	1.00	1.55	367	1,120

Note.- Faulty or no gage-height record Nov. 11 to Jan. 20, Feb. 4 to Mar. 1, Mar. 13-23, Apr. 1-7, 11-21, May 17-21, June 3-8, 25-28; discharge computed on basis of records for nearby station.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiilikahi Stream near Waimanu.
(Formerly published as Waimanuliilii Stream near Waimanu)

Location.- Lat. 20°07'40", long. 155°39'55", 30 feet upstream from Waimanu trail bridge, 1.7 miles upstream from confluence with Waimanu Stream, 1.9 miles southeast of the head of Awini ditch, and 2.2 miles southwest of Waimanu. Altitude of gage, 2,740 feet (by barometer).

Drainage area.- 0.4 square mile.

Records available.- March 1939 to June 1944.

Extremes.- Maximum discharge during year, 146 million gallons a day (226 second-feet) July 7 (gage height, 3.25 feet), from rating curve extended above 10 million gallons a day by test on model of station site; minimum, 0.15 million gallons a day (0.23 second-foot) Mar. 17, 18.
1939-44: Maximum discharge, 410 million gallons a day (634 second-feet) June 30, 1941 (gage height, 4.54 feet), from rating curve extended above 10 million gallons a day by test on model of station site; minimum, that of Mar. 17, 18, 1944.

Remarks.- Records fair. No diversions above station.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used July 1-6)

0.3	0.10	0.7	2.1	1.4	16.8
.4	.30	.8	3.2	1.7	30
.6	.69	1.0	6.3	2.0	47
.6	1.28	1.2	10.7	2.3	66

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.1	1.35	3.0	2.45	0.37	0.69	0.91	0.25	0.74	0.56	1.83	19.4
2	2.2	1.50	7.0	1.15	.30	.65	.74	.28	.69	9.1	1.50	2.5
3	4.4	16.0	4.3	.80	.28	14.4	.74	.25	.69	44	1.35	4.7
4	26	16.5	1.79	.65	.41	11.3	.80	.21	.41	2.95	1.37	24
5	15.3	13.8	1.35	.56	.48	6.1	.74	.19	.75	6.5	2.15	23
6	49	3.55	1.21	.52	.41	1.29	4.4	.32	.52	2.25	1.28	9.6
7	55	8.4	1.08	.52	.28	.80	3.0	6.0	1.75	14.7	1.02	2.85
8	10.9	2.9	1.02	.52	.23	.60	2.4	1.00	1.11	22.5	.96	4.2
9	3.8	1.43	1.03	.48	5.3	.69	1.28	.69	.48	23.5	3.65	2.6
10	3.55	1.15	2.7	.85	4.8	.65	.91	.44	.37	13.2	10.7	1.50
11	1.83	.96	20	.65	1.21	.52	.69	.37	.30	22	3.25	1.21
12	4.1	3.6	8.8	.48	6.0	.44	24	.41	.23	6.3	1.35	1.02
13	15.9	6.6	9.1	.41	7.4	.37	4.1	4.3	.21	4.3	1.27	.96
14	2.8	1.75	1.58	.84	3.85	5.7	1.28	11.1	.19	31	9.7	.85
15	2.0	1.15	1.08	1.28	1.68	38	.80	2.45	.21	10.2	6.7	4.0
16	2.1	1.02	.91	.85	1.89	2.4	.65	.85	.19	25	17.3	4.3
17	18.5	.85	.85	.56	1.08	2.15	.52	.52	.17	54	25.5	6.9
18	13.2	f8.6	.85	.41	.69	2.15	.48	.37	1.59	26	36.5	9.2
19	2.3	f20.5	1.08	.33	47	1.15	.44	.30	.61	13.9	44	5.6
20	6.2	3.5	2.0	.30	23	.80	.44	.23	.30	13.8	12.0	3.25
21	9.4	f16.4	1.08	.28	2.9	.60	.41	7.8	.21	12.5	9.1	29
22	9.1	4.4	.85	.25	1.35	.48	.37	4.7	1.64	25	3.0	61
23	6.6	7.0	.69	.25	.96	1.99	.30	1.72	8.4	15.7	1.75	12.8
24	3.3	8.6	8.7	.25	.69	5.3	.30	1.20	1.29	10.4	1.35	3.1
25	1.75	f21.5	2.45	.28	.60	1.02	.28	.65	.60	5.3	1.15	1.93
26	5.0	3.4	1.08	.28	.48	7.7	.25	.44	.30	2.45	1.33	1.85
27	5.5	1.68	14.6	1.19	.48	1.76	.23	.33	.28	8.7	2.15	3.3
28	2.8	5.7	5.8	4.8	.44	26.5	.25	1.28	.39	7.8	2.95	9.5
29	1.50	f25.5	2.95	1.91	.78	25	.23	2.0	6.2	5.8	5.2	3.05
30	1.21	14.7	1.33	.74	1.34	2.3	.21	-	3.0	3.5	6.3	11.8
31	1.08	3.8	-	.48	-	1.21	.19	-	.98	-	16.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	55	1.08	9.66	14.9	299	919
August	25.5	.85	7.35	11.4	228	699
September	20	.69	3.68	5.69	110	338
October	4.8	.25	.817	1.26	25.3	78
November	47	.23	3.89	6.02	117	358
December	38	.37	5.31	8.22	165	506
Calendar year 1943	69	.23	5.73	8.87	2,090	6,420
January	24	.19	1.69	2.61	52.3	161
February	11.1	.19	1.75	2.71	50.6	155
March	8.4	.17	1.13	1.75	35.0	107
April	54	.56	14.8	22.9	443	1,360
May	44	.96	7.56	11.7	234	720
June	61	.85	8.96	13.9	269	824
Fiscal year 1943-44	61	.17	5.54	8.57	2,030	6,220

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kaimu Stream near Waimanu

Location.- Lat. 20°08'30", long. 155°39'40", 300 feet upstream from Waimanu trail, 1.3 miles southeast from head of Awini ditch, 1.4 miles upstream from mouth, and 1.5 miles west of Waimanu. Altitude of gage, 1,980 feet (by barometer).

Drainage area.- 0.5 square mile.

Records available.- March 1939 to June 1944.

Extremes.- Maximum discharge during year, 208 million gallons a day (322 second-feet) July 7 (gage height, 2.88 feet), from rating curve extended above 7 million gallons a day by test on model of station site; minimum, 0.23 million gallons a day (0.36 second-foot) Nov. 9.

1939-44: Maximum discharge, 3,050 million gallons a day (4,720 second-feet) June 30, 1941 (gage height, 9.6 feet, from floodmarks), from rating curve extended above 7 million gallons a day by test on model of station site; minimum, 0.15 million gallons a day (0.23 second-foot) Feb. 16, 17, 1942, Feb. 1, 1943.

Remarks.- Records fair. No diversions.

Rating tables, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Sept. 27				Sept. 28 to June 30			
0.4	0.70	1.0	7.3	0.2	0.09	0.8	3.15
.5	1.28	1.2	12.0	.3	.26	1.0	5.5
.6	2.15	1.4	17.8	.4	.54	1.2	8.8
.7	3.25	1.7	28.5	.5	.95	1.4	13.5
.8	4.5	2.0	43	.6	1.50	1.5	20
				.7	2.2	1.9	35

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	4.2	1.15	3.6	1.85	0.40	0.62	0.90	0.34	0.58	0.58	1.7	10
2	1.96	1.15	6.2	.87	.34	.55	.70	.37	.48	4.1	1.4	2.1
3	3.15	6.9	4.1	.66	.29	7.0	.70	.37	.51	21	1.3	2.5
4	12.3	10.6	2.05	.58	.32	4.8	.75	.32	.40	2.75	1.2	13
5	8.4	9.5	1.52	.51	.40	3.9	.65	.32	.56	4.2	1.6	13
6	23	3.8	1.28	.48	.34	1.2	2.0	.37	.46	2.1	1.2	5.5
7	36	6.0	1.21	.46	.29	.75	1.2	3.6	1.27	6.5	1.1	2.2
8	12.2	3.1	1.03	.46	.24	.58	1.4	.83	.85	11.1	1.0	3.0
9	4.8	1.52	1.03	.43	2.3	.80	.90	.58	.46	11.8	2.5	1.9
10	3.9	1.15	1.94	.58	2.75	.60	.70	.46	.34	7.2	6.2	1.3
11	2.5	.97	11.8	.58	.91	.50	.60	.43	.32	10.9	2.5	1.1
12	4.1	3.05	6.9	.46	3.25	.45	11	.40	.29	4.8	1.4	1.0
13	10.8	5.4	7.0	.40	5.0	.40	3.5	2.58	.24	2.85	1.2	.90
14	3.15	1.68	1.77	.48	2.5	3.0	1.06	7.0	.24	14.1	5.0	.80
15	2.25	1.09	1.15	.79	1.22	22	.74	1.80	.23	6.4	4.5	2.1
16	2.7	.91	.97	.58	1.39	2.5	.62	.79	.24	15.8	8.0	2.2
17	9.6	.80	.85	.43	.87	1.8	.58	.48	.21	22	14	6.0
18	9.6	4.1	.85	.40	.62	1.8	.54	.43	1.06	12	18	7.2
19	2.6	12.8	1.00	.37	23	1.1	.51	.40	.78	7.5	18.9	5.0
20	4.5	3.6	2.25	.32	11.6	.80	.51	.34	.40	6.5	6.0	2.8
21	7.8	10.8	1.09	.32	2.35	.60	.48	4.4	.26	7.0	5.4	10
22	5.8	4.6	.80	.29	1.22	.50	.46	3.1	1.13	11	2.3	35
23	5.8	6.5	.70	.29	.87	.55	.46	1.50	4.9	8.0	1.57	12
24	3.4	7.2	5.8	.26	.70	4.5	.43	.91	1.00	6.0	1.22	3.0
25	1.66	12.5	2.55	.29	.62	.90	.43	.58	.51	3.7	1.00	1.8
26	4.2	3.6	1.03	.32	.54	4.0	.40	.46	.37	2.3	1.07	1.7
27	5.8	1.96	7.1	.70	.51	1.5	.37	.40	.47	3.3	1.50	3.0
28	3.35	3.4	3.9	3.2	.48	12	.34	.82	.50	3.8	1.44	6.0
29	1.68	15.7	2.2	1.42	.55	15	.34	1.49	5.0	3.8	3.0	2.8
30	1.21	10.6	1.12	.62	.85	2.3	.32	-	2.6	2.8	4.2	5.8
31	1.09	3.9	-	.43	-	1.2	.32	-	.87	-	8.0	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	36	1.09	6.57	10.2	204	625
August	15.7	.80	5.16	7.98	160	491
September	11.8	.70	2.83	4.38	84.8	260
October	3.2	.26	.640	.990	19.8	61
November	23	.24	2.22	3.43	66.7	205
December	22	.40	3.20	4.95	99.2	304
Calendar year 1943	65	.15	3.98	6.16	1,450	4,460
January	11	.32	1.09	1.69	33.9	104
February	7.0	.32	1.24	1.92	35.8	110
March	5.0	.21	.888	1.37	27.5	84
April	22	.58	7.53	11.7	226	693
May	18.9	1.00	4.17	6.45	129	397
June	35	.80	5.49	8.49	165	505
Fiscal year 1943-44	36	.21	3.42	5.29	1,250	3,840

Note.- No gage-height record Nov. 26 to Jan. 13, Apr. 18 to May 18, June 1-30; discharge computed on basis of records for Punalulu and Waililkahi Streams.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Punalulu Stream near Waimanu

Location.- Lat. 20°08'50", long. 155°39'40", 200 feet upstream from Waimanu trail, 1.0 mile southeast from head of Awini ditch, 1.5 miles upstream from mouth, and 1.5 miles west of Waimanu. Altitude of gage, 1,870 feet (by barometer).
Drainage area.- 1.4 square miles.
Records available.- March 1939 to June 1944.
Extremes.- Maximum discharge during year, 99 million gallons a day (153 second-feet) July 7 (gage height, 3.37 feet), from rating curve extended above 4 million gallons a day by test on model of station site; minimum, 0.08 million gallons a day (0.12 second-foot) Mar. 14-17.
1939-44: Maximum discharge, 980 million gallons a day (1,520 second-feet) June 30, 1941 (gage height, 4.90 feet), from rating curve extended above 4 million gallons a day by test on model of station site; minimum, 0.08 million gallons a day (0.12 second-foot) Jan. 31, Feb. 1, 1943, Mar. 14-17, 1944.
Remarks.- Records good except those for July 1-13, which are fair. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.04	0.6	1.93	1.4	13.7
.2	.11	.7	2.85	1.7	20.5
.3	.29	.8	4.0	2.0	28
.4	.68	1.0	6.6	2.4	42
.5	1.22	1.2	9.9		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a2.8	0.68	2.4	1.70	0.14	0.33	0.68	0.12	0.33	0.29	1.35	9.3
2	a1.9	.63	4.5	.78	.13	.27	.50	.13	.19	3.8	1.04	1.62
3	a2.5	4.9	2.95	.54	.11	7.0	.42	.11	.17	19.8	.93	2.25
4	a8.0	8.8	1.48	.42	.12	4.9	.42	.11	.13	2.3	.88	11.3
5	a4.0	7.9	1.16	.36	.16	4.0	.36	.10	.16	3.45	1.22	12.1
6	a20	2.8	.99	.29	.16	.83	1.76	.14	.19	1.67	.83	6.4
7	a30	4.2	.93	.27	.12	.50	1.09	3.3	.87	6.7	.63	2.1
8	a6.0	2.1	.83	.29	.10	.36	1.20	.56	.59	11.6	.59	2.35
9	a2.5	.99	.81	.24	1.90	.72	.63	.24	.19	10.9	1.70	1.84
10	a1.6	.78	1.32	.42	3.0	.39	.42	.16	.13	6.8	5.9	1.10
11	a1.2	.63	10.2	.45	.76	.29	.33	.13	.12	10.7	1.80	.83
12	a1.7	1.80	5.1	.27	2.55	.22	10.4	.12	.10	3.9	.83	.73
13	a7.0	3.5	5.5	.22	5.0	.17	2.95	2.25	.10	2.05	.68	.63
14	1.93	1.14	1.35	.29	2.2	2.5	.83	6.8	.09	14.2	4.7	.54
15	1.28	.68	.88	.59	1.04	21	.50	1.72	.08	5.7	4.2	1.93
16	1.49	.59	.73	.39	1.27	1.90	.39	.46	.09	11.7	7.4	1.99
17	8.4	.46	.63	.24	.63	1.41	.29	.24	.08	21.5	12.5	4.3
18	7.6	3.7	.68	.17	.39	1.55	.24	.14	.48	13.5	18.2	5.0
19	1.55	10.4	.73	.16	21	.83	.22	.13	.37	8.2	19.9	3.5
20	4.0	2.35	1.48	.14	12.6	.54	.19	.11	.14	6.3	6.1	1.62
21	5.3	9.3	.78	.13	2.15	.39	.19	4.7	.10	7.1	5.2	11.2
22	4.4	3.55	.50	.13	.93	.33	.16	3.3	.80	10.4	2.1	30
23	3.95	4.7	.39	.12	.63	.35	.16	1.22	4.9	7.5	1.28	7.6
24	1.93	5.6	4.6	.11	.46	4.4	.14	.63	.79	5.8	.99	2.3
25	1.16	11.1	1.70	.12	.36	.73	.13	.33	.27	3.45	.83	1.41
26	2.35	2.55	.63	.14	.27	3.4	.13	.19	.16	1.85	.83	1.10
27	3.95	1.41	5.6	.47	.24	1.05	.12	.14	1.30	2.95	1.10	1.29
28	2.2	2.35	4.2	2.9	.22	10.6	.12	.38	.58	3.6	1.16	4.1
29	1.10	13.5	2.2	1.30	.27	14.6	.12	1.12	4.6	3.6	2.5	1.46
30	.83	9.4	1.11	.36	.59	1.88	.11	-	2.1	2.5	4.4	4.2
31	.68	2.85	-	.22	-	.93	.11	-	.60	-	8.7	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	30	0.68	4.62	7.15	143	439
August	13.5	.46	4.04	6.25	125	385
September	10.2	.39	2.21	3.42	65.4	204
October	2.9	.11	.459	.710	14.2	44
November	21	.10	1.98	3.06	59.5	183
December	21	.17	2.85	4.41	88.4	271
Calendar year 1943	39.5	.08	3.16	4.89	1,150	3,540
January	10.4	.11	.816	1.26	25.3	78
February	6.8	.10	1.00	1.55	29.1	89
March	4.9	.08	.671	1.04	20.8	64
April	21.5	.29	7.13	11.0	214	656
May	19.9	.59	3.89	6.02	120	370
June	30	.54	4.54	7.02	136	418
Fiscal year 1943-44	30	.08	2.85	4.41	1,040	3,200

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Waiaalala Stream near Waimanu

Location.- Lat. 20°09'05", long. 155°39'55", 0.7 mile east from head of Awini ditch, 1.3 miles upstream from mouth, and 1.8 miles west of Waimanu. Altitude of gage, 1,880 feet (by barometer).
Drainage area.- 0.2 square mile.
Records available.- March 1939 to June 1944.
Extremes.- Maximum discharge during year, 15.7 million gallons a day (24.3 second-feet) July 7 (gage height, 1.31 feet), from rating curve extended above 1.0 million gallons a day by test on model of station site; minimum, 0.10 million gallons a day (0.16 second-foot) Mar. 15.
1939-44: Maximum discharge, 67 million gallons a day (104 second-feet) Feb. 22, 1940 (gage height, 3.83 feet), from rating curve extended above 1.0 million gallons a day by test on model of station site; minimum, that of Mar. 15, 1944.
Remarks.- Records fair. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.03	0.5	1.53
.2	.14	.6	2.4
.3	.40	.7	3.5
.4	.89	.8	4.8

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.30	0.30	0.60	0.27	0.15	0.14	0.24	0.15	0.11	0.15	0.35	1.13
2	.44	.30	.77	.24	.15	.15	.23	.14	.11	.85	.30	.35
3	.40	.23	.55	.23	.14	.43	.23	.14	.11	2.25	.30	.30
4	1.05	.69	.50	.23	.14	.36	.23	.14	.12	.40	.30	.87
5	.70	.99	.45	.23	.14	.23	.21	.14	.12	.30	.30	1.74
6	2.45	.45	.40	.23	.14	.17	.21	.15	.12	.23	.27	.94
7	4.1	.50	.40	.23	.14	.15	.21	.25	.15	.34	.27	.60
8	1.21	.35	.35	.23	.14	.16	.19	.14	.11	.67	.27	.55
9	.74	.30	.35	.23	.22	.37	.19	.14	.11	.68	.27	.50
10	.64	.30	.35	.23	.19	.15	.17	.14	.12	.57	.40	.40
11	.55	.30	1.02	.39	.19	.14	.17	.14	.11	.91	.27	.40
12	.63	.30	.50	.23	.17	.14	1.70	.14	.11	.40	.24	.35
13	.92	.40	.45	.21	.63	.14	.32	.20	.11	.30	.27	.35
14	.50	.30	.30	.23	.19	.30	.21	1.17	.12	.98	.40	.30
15	.45	.27	.30	.21	.15	3.8	.21	.22	.10	.50	.43	.35
16	.45	.24	.30	.19	.15	.45	.19	.14	.11	1.46	.91	.30
17	1.22	.24	.27	.19	.14	.30	.19	.14	.13	1.31	1.01	.40
18	1.01	.62	.30	.19	.14	.35	.17	.14	.12	1.22	2.65	.50
19	.50	.83	.30	.19	1.89	.24	.17	.13	.11	.86	1.94	.40
20	.96	.30	.30	.17	.92	.23	.17	.13	.11	.64	.78	.30
21	.64	1.57	.30	.17	.24	.21	.17	.31	.11	.64	.64	.88
22	.64	.55	.27	.17	.21	.21	.15	.36	.17	.64	.50	4.2
23	.55	.55	.27	.17	.19	.19	.15	.17	.45	.60	.40	1.06
24	.45	.76	.89	.17	.19	.21	.15	.14	.13	.60	.40	.69
25	.45	1.25	.30	.17	.17	.19	.15	.13	.12	.45	.35	.60
26	.40	.55	.27	.17	.17	.21	.15	.12	.11	.40	.35	.50
27	.57	.50	.30	.17	.17	.19	.15	.12	1.15	.40	.30	.50
28	.45	.53	.45	.30	.15	1.37	.15	.11	.36	.40	.30	.50
29	.40	1.30	.36	.19	.15	1.57	.15	.12	1.18	.40	.27	.40
30	.35	1.45	.27	.17	.15	.35	.15	-	.30	.35	.54	.40
31	.35	.64	-	.15	-	.27	.15	-	.19	-	.51	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	4.1	0.30	0.789	1.22	24.5	75
August	1.57	.23	.576	.891	17.9	55
September	1.02	.27	.415	.642	12.4	38
October	.39	.15	.211	.325	6.55	20
November	1.89	.14	.260	.402	7.81	24
December	3.8	.14	.431	.667	13.4	41
Calendar year 1943	10.0	.11	.586	.907	214	656
January	1.70	.15	.235	.364	7.28	22
February	1.17	.11	.195	.302	5.66	17
March	1.18	.10	.212	.328	6.58	20
April	2.25	.15	.663	1.03	19.9	61
May	2.65	.24	.532	.823	16.5	51
June	4.2	.30	.690	1.07	20.7	64
Fiscal year 1943-44	4.2	.10	.435	.673	159	488

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Paopao Stream near Waimanu

Location.- Lat. 20°09'05", long. 155°40'05", 150 feet upstream from Waimanu trail, 0.6 mile east of intake to Awini ditch, and 1.9 miles west of Waimanu. Altitude of gage, 1,910 feet (by barometer).

Drainage area.- 0.6 square mile.

Records available.- February 1939 to June 1944.

Extremes.- Maximum discharge during year, 54 million gallons a day (84 second-feet) July 7 (gage height, 2.27 feet), from rating curve extended above 8 million gallons a day by test on model of station site; minimum, 0.09 million gallons a day (0.14 second-foot) sometime in March.
1939-44: Maximum discharge, 264 million gallons a day (408 second-feet) Feb. 22, 1940 (gage height, 4.53 feet), from rating curve extended above 8 million gallons a day by test on model of station site; minimum, that of March 1944.

Remarks.- Records good except those for period of no gage-height record, which are fair. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.05	0.4	0.89	1.0	8.7
.15	.10	.5	1.48	1.2	13.1
.2	.20	.6	2.4	1.4	18.4
.25	.34	.7	3.65		
.3	.49	.8	5.1		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.81	0.40	1.02	0.88	0.16	0.18	0.40	0.14	0.18	0.26	0.60	4.9
2	.83	.37	1.92	.37	.14	.18	.37	.14	.14	1.10	.49	.68
3	.85	1.45	1.08	.34	.14	2.65	.34	.12	.12	10.6	.46	.60
4	4.3	2.95	.64	.28	.14	1.24	.31	.12	.14	.91	.43	5.1
5	1.76	3.95	.53	.26	.14	1.34	.28	.12	.18	1.17	.49	7.1
6	12.5	.85	.49	.26	.12	.34	.34	.14	.16	.73	.43	2.85
7	15.3	1.67	.46	.23	.12	.23	.34	.80	.28	2.6	.40	.89
8	4.9	.68	.46	.23	.12	.18	.34	.23	a.23	5.1	.37	1.18
9	1.10	.46	.49	.23	1.06	.54	.31	.16	a.12	4.4	.57	.86
10	.80	.43	.64	.28	.93	.28	.26	.12	a.12	2.6	2.1	.60
11	.68	.40	5.0	.30	.44	.20	.26	.12	a.10	4.9	.57	.53
12	1.03	.53	1.50	.26	.92	.16	4.7	.10	a.10	.99	.40	.46
13	3.56	1.20	1.89	.23	2.1	.16	1.11	.79	a.09	.64	.37	.43
14	.68	.49	.53	.28	.60	.39	.37	2.7	a.10	4.6	1.92	.40
15	.57	.37	.43	.31	.31	13.0	.26	.56	a.10	1.87	1.60	.79
16	.72	.34	.37	.23	.37	.85	.23	.23	a.10	5.2	4.4	.66
17	5.9	.31	.37	.20	.23	.68	.20	.16	a.09	7.8	6.0	1.44
18	3.35	2.55	.37	.18	.16	.83	.20	.14	a.31	6.9	11.4	1.67
19	.68	5.2	.40	.18	4.9	.46	.20	.12	a.31	3.7	10.2	1.20
20	2.6	.76	.61	.18	5.1	.37	.18	.10	.20	1.54	2.15	.57
21	1.66	5.5	.37	.16	.65	.31	.18	1.69	.16	2.35	1.69	5.4
22	1.59	1.92	.31	.16	.37	.31	.18	1.36	.65	3.35	.80	18.2
23	1.23	2.2	.28	.16	.28	.28	.18	.48	2.3	2.1	.64	3.7
24	.68	2.45	2.35	.16	.23	1.82	.16	.26	.37	1.88	.57	1.04
25	.53	5.1	.59	.16	.23	.40	.16	.18	.20	.94	.49	.76
26	1.24	.89	.34	.16	.20	.90	.16	.14	.16	.76	.49	.64
27	1.90	.68	2.3	.16	.18	.43	.16	.12	.71	.76	.49	.64
28	.84	1.01	1.51	1.12	.18	3.65	.16	.18	.52	.78	.46	1.44
29	.53	6.5	.98	.43	.18	7.9	.16	.38	3.7	1.49	.60	.60
30	.43	4.3	.59	.23	.18	.70	.14	-	1.11	1.04	2.05	1.23
31	.43	.94	-	.18	-	.46	.14	-	.37	-	3.8	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	15.3	0.43	2.36	3.68	73.9	227
August	6.5	.31	1.83	2.83	56.8	174
September	5.0	.28	.961	1.49	28.8	88
October	1.12	.16	.284	.439	8.79	27
November	5.1	.12	.696	1.08	20.9	64
December	13.0	.16	1.34	2.07	41.4	127
Calendar year 1943	65	.12	1.93	2.99	704	2,160
January	4.7	.14	.412	.637	12.8	39
February	2.7	.10	.417	.645	12.1	37
March	3.7	.09	.433	.670	13.4	41
April	10.6	.26	2.77	4.29	83.0	265
May	11.4	.37	1.85	2.86	57.4	176
June	18.2	.40	2.23	3.45	66.8	205
Fiscal year 1943-44	18.2	.09	1.30	2.01	476	1,460

a No gage-height record; discharge computed on basis of records for Kukui Stream.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kukui Stream near Waimanu

Location.- Lat. 20°09'10", long. 155°40'10", 300 feet upstream from Waimanu trail crossing, 0.4 mile east from head of Awini ditch, and 2.1 miles west of Waimanu. Altitude of gage, 1,940 feet (by barometer).

Drainage area.- 0.4 square mile.

Records available.- February 1939 to June 1944.

Extremes.- Maximum discharge during year, 27.5 million gallons a day (42.5 second-feet) July 7 (gage height, 2.32 feet), from rating curve extended above 1.8 million gallons a day by test on model of station site; minimum, 0.15 million gallons a day (0.23 second-foot) Mar. 17.

1939-44: Maximum discharge, 116 million gallons a day (179 second-feet) Oct. 23, 1941 (gage height, 3.97 feet), from rating curve extended above 1.8 million gallons a day by test on model of station site; minimum, 0.15 million gallons a day (0.23 second-foot) Jan. 25, 26, Feb. 6, 7, 1940, Jan. 29 to Feb. 2, 1943, Mar. 17, 1944.

Remarks.- Records fair. No diversions.

Rating table, fiscal year 1943-44 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.06	0.5	1.45	1.2	7.8
.2	.24	.6	2.05	1.4	10.5
.3	.54	.8	3.6	1.7	15.2
.4	.94	1.0	5.5		

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.62	0.54	0.94	0.62	0.20	0.24	0.45	0.19	0.20	0.30	0.58	3.1
2	.78	.48	1.43	.42	.20	.27	.42	.19	.20	1.94	.51	.70
3	.82	.67	.94	.39	.20	1.35	.39	.19	.19	5.6	.48	.66
4	2.5	1.88	.74	.36	.20	.96	.36	.19	.20	.76	.48	2.2
5	1.44	2.25	.66	.36	.20	.75	.33	.19	.20	.70	.45	4.3
6	7.1	.90	.62	.33	.19	.36	.39	.20	.20	.54	.45	2.15
7	9.0	1.07	.62	.30	.19	.27	.33	.48	.31	1.34	.42	.99
8	3.0	.74	.58	.30	.19	.27	.33	.22	.20	2.35	.42	1.02
9	1.20	.62	.54	.30	.60	.57	.30	.20	.19	2.2	.45	.86
10	.94	.54	.66	.33	.53	.33	.30	.19	.20	1.49	.96	.70
11	.82	.51	2.55	.36	.39	.24	.30	.19	.20	2.5	.48	.66
12	.94	.58	.99	.33	.42	.24	2.25	.19	.19	.82	.39	.62
13	2.15	.88	1.11	.24	1.13	.22	.73	.31	.19	.66	.42	.58
14	.86	.54	.56	.33	.51	.59	.39	2.05	.19	3.0	.96	.54
15	.74	.48	.51	.33	.36	8.4	.33	.45	.19	1.20	.95	.66
16	.78	.45	.48	.24	.34	.82	.33	.24	.19	3.15	2.3	.66
17	2.4	.45	.45	.24	.24	.62	.30	.20	.19	3.7	3.15	.92
18	2.75	1.16	.51	.24	.24	.66	.27	.20	1.01	3.4	6.3	1.09
19	.86	2.85	.48	.24	5.8	.45	.27	.19	.38	1.48	5.4	.95
20	1.76	.66	.54	.22	2.7	.39	.27	.19	.24	1.25	1.60	.66
21	1.46	2.95	.45	.22	.66	.36	.24	1.08	.20	1.33	1.24	2.8
22	.95	1.25	.42	.22	.45	.33	.24	.84	.41	1.69	.82	11.2
23	1.20	1.49	.39	.22	.39	.39	.24	.44	1.25	1.32	.70	2.55
24	.78	1.74	1.48	.22	.33	.77	.28	.27	.33	1.22	.62	1.14
25	.70	2.9	.58	.22	.30	.39	.22	.22	.22	.82	.56	.94
26	.74	.99	.42	.22	.30	.56	.22	.20	.20	.78	.54	.82
27	1.25	.78	.60	.22	.27	.39	.20	.20	1.07	.74	.54	.78
28	.88	.76	.98	.54	.27	3.25	.20	.27	.62	.66	.51	1.05
29	.62	3.45	.79	.33	.30	4.4	.20	.30	2.15	.88	.54	.74
30	.58	3.2	.51	.22	.27	.74	.20	-	.73	.72	1.28	.82
31	.54	1.04	-	.20	-	.51	.19	-	.39	-	1.47	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	9.0	0.54	1.65	2.55	51.2	157
August	3.45	.45	1.25	1.93	38.8	119
September	2.55	.39	.758	1.17	22.8	70
October	.62	.20	.300	.464	9.31	29
November	5.8	.19	.612	.947	18.4	56
December	8.4	.22	.971	1.50	30.1	92
Calendar year 1943	16.8	.15	1.13	1.75	412	1,260
January	2.25	.19	.368	.569	11.4	35
February	2.05	.19	.354	.548	10.3	32
March	2.15	.19	.407	.630	12.6	39
April	5.6	.30	1.62	2.51	48.6	149
May	6.3	.39	1.16	1.79	36.0	110
June	11.2	.54	1.56	2.41	46.9	144
Fiscal year 1943-44	11.2	.19	.919	1.42	336	1,030

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Awini ditch at East Honokaneiki Gulch, near Niulii

Location.- Lat. 20°09'55", long. 155°43'10", at flume across East Honokaneiki Gulch, 4½ miles southeast of Niulii.

Records available.- October 1927 to June 1944.

Average discharge.- 15 years (1928-38, 1939-44), 11.9 million gallons a day (18.4 second-feet).

Extremes.- Maximum discharge during year, 31 million gallons a day (48 second-feet) Dec. 29 (gage height, 3.60 feet); minimum, 0.57 million gallons a day (0.88 second-foot) several days in March.
1927-44: Maximum discharge, 34 million gallons a day (53 second-feet) Jan. 9, 1935. (gage height, 3.76 feet); no flow when ditch was dry or water was turned out.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Awini ditch diverts water at altitude 2,000 feet from all streams between the Waikaloa and the Honokane. Flow regulated by head gates and spillways. Water used for irrigation in vicinity of Kohala.

Discharge, in million gallons, fiscal year July1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	16.2	6.9	15.0	11.6	1.66	3.3	7.4	1.22	4.2	3.1	12.9	25
2	15.6	6.9	17.4	6.4	1.4	2.9	6.4	1.35	2.9	6.5	10.3	15.8
3	18.2	13.5	15.8	4.9	1.3	16.5	5.9	1.26	2.6	27	8.6	15.5
4	25	23	12.2	4.1	1.0	21	5.7	1.14	1.88	16.0	8.0	27
5	25	16.0	9.1	3.5	.93	21.5	5.1	1.01	3.75	15.8	8.6	27
6	27	6.3	8.0	3.1	.93	8.3	13.6	1.18	3.1	14.3	7.4	25
7	27	9.1	6.9	2.9	.93	5.2	9.8	13.0	7.2	15.8	6.4	18.4
8	24	8.2	6.4	2.85	.89	3.8	11.6	5.6	6.6	27	5.8	12.2
9	19.0	7.4	5.6	2.55	.83	7.5	7.4	3.55	3.3	27	9.7	10.3
10	19.0	7.4	6.4	2.95	7.3	4.9	5.6	2.55	2.5	27	22	8.6
11	15.0	6.4	17.6	2.9	4.5	3.7	4.5	2.05	2.1	27	14.8	7.4
12	14.9	11.4	21	2.65	5.3	2.9	19.6	1.93	1.7	24	8.0	6.9
13	24	15.0	21.5	2.2	18.2	2.4	18.2	6.6	1.4	17.2	6.4	6.0
14	17.4	10.3	11	2.65	14.3	5.4	8.6	18.4	1.2	27	22	5.6
15	12.9	7.4	7.4	3.55	8.0	29	5.8	12.3	1.1	25	22.5	7.1
16	12.9	6.0	6.0	3.2	7.4	18.5	4.7	5.0	.93	25	17.0	8.5
17	15.4	5.4	5.3	2.5	4.8	12.2	3.9	3.2	.83	27	27	14.3
18	24	6.8	5.2	2.05	3.05	11.6	3.4	2.35	1.0	27	29	18.2
19	15.6	23	5.5	1.77	16.4	8.0	3.05	1.98	1.64	27	29	18.5
20	17.1	13.6	8.8	1.63	27	5.7	2.85	1.58	1.18	25	25	14.6
21	22	21	6.4	1.44	17.2	4.6	2.7	10.1	.83	25	25	25
22	18.2	20	4.9	1.30	9.1	3.9	2.35	21.5	3.75	27	18.2	29
23	19.0	20	4.1	1.22	6.4	3.4	2.2	11.0	19.1	26	12.9	25
24	15.8	22	12.0	1.14	4.8	18.0	2.05	7.4	11.0	25	10.3	20
25	11.6	24	6.2	1.14	3.8	7.5	1.93	4.5	5.1	23	8.6	14.3
26	12.2	16.6	6.0	1.05	3.2	14.6	1.77	3.1	2.85	20	8.0	12.2
27	18.2	11.6	10.5	2.35	2.9	12.0	1.63	2.35	4.2	19.0	8.6	12.9
28	14.3	11.0	19.0	3.5	2.6	19.6	1.54	4.1	3.35	24	8.0	23
29	10.3	25	14.5	5.4	2.85	27	1.49	9.2	11.2	23	15.0	16.6
30	8.0	25	7.7	3.1	3.85	19.4	1.35	-	9.7	20	21	23
31	7.4	17.4	-	2.2	-	11.0	1.22	-	4.9	-	25	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	27	7.4	17.6	27.2	544	1,670
August	25	5.4	13.7	21.2	424	1,300
September	21.5	4.1	10.1	15.6	303	931
October	11.6	1.05	3.03	4.69	93.8	288
November	27	.83	6.11	9.45	183	563
December	29	2.4	10.8	16.7	335	1,030
Calendar year 1943	29	.83	10.9	16.9	3,990	12,260
January	19.6	1.22	5.59	8.65	173	532
February	21.5	1.01	5.53	8.55	160	493
March	19.1	.83	4.10	6.34	127	390
April	27	3.1	22.1	34.2	662	2,030
May	29	5.8	14.9	23.1	461	1,410
June	29	5.6	16.4	25.4	493	1,510
Fiscal year 1943-44	29	.83	10.8	16.7	3,960	12,150

Note.- No gage-height record Sept. 13-17, Nov. 2-12, Mar. 10-18; discharge computed on basis of records for East Honokaneiki intake and Kohala ditch.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

East Honokaneiki intake to Awini ditch at East Honokaneiki Gulch, near Niulii

Location.- Sharp-crested weir, lat. 20°09'55", long. 155°43'15", on intake tunnel delivering water from East Honokaneiki Gulch to Awini ditch, on west side of gulch, and 4½ miles southeast of Niulii.

Records available.- October 1927 to June 1938, July 1939 to June 1944.

Average discharge.- 13 years (1928-36, 1937-38, 1939-40, 1941-44), 1.20 million gallons a day (1.86 second-feet).

Extremes.- Maximum discharge during year, 9.0 million gallons a day (13.9 second-feet) July 18 (gage height, 1.52 feet); no flow occasionally when water was shut out of ditch.

1927-38, 1939-44: Maximum discharge, 9.1 million gallons a day (14.1 second-feet) Jan. 4, 1943 (gage height, 1.54 feet); no flow occasionally.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Intake diverts water from East Honokaneiki Gulch to Awini ditch for irrigation in vicinity of Kohala. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.31	0.17	0.68	0.38	0	0.06	0.52	0.01	0.32	0.12	0.75	3.9
2	1.07	.14	1.16	.17	0	.04	.38	.01	.17	1.13	.56	.87
3	1.50	1.17	.92	.08	0	3.05	.41	.01	.12	2.5	.44	.85
4	5.4	4.8	.48	.06	0	2.5	.32	.01	.06	1.16	.38	4.8
5	4.0	3.0	.32	.03	0	2.75	.26	.01	.56	.97	.38	4.2
6	5.4	1.13	.26	.03	0	.51	1.29	.02	.26	1.12	.32	2.05
7	3.2	1.27	.20	.02	0	.23	.64	1.19	.39	2.5	.29	.95
8	1.41	.90	.17	.02	0	.14	.71	.35	.38	3.95	.26	.60
9	.75	.32	.14	.01	0	1.28	.38	.20	.10	3.0	.32	.48
10	.68	.23	.17	.02	.42	.35	.26	.10	a.06	2.1	2.2	.38
11	.68	.17	2.05	.01	.26	.17	.17	.04	a.03	2.4	.78	.35
12	a.72	.83	1.71	0	.25	.10	4.3	.03	a.01	1.65	.38	.32
13	a1.9	1.49	2.45	0	1.94	.06	1.48	1.31	a0	1.73	.29	.29
14	a.68	.49	.42	.01	1.11	.73	.52	2.0	a0	6.0	2.3	.23
15	a.60	.23	.23	.02	.42	5.1	.32	.86	a0	3.0	2.3	.26
16	a.56	.14	.12	.01	.35	1.75	.20	.29	a0	3.3	2.1	.23
17	2.6	.10	.10	0	.14	.92	.14	.12	a0	4.8	5.2	.32
18	4.0	.32	.10	0	.06	.71	.12	.06	0	3.5	5.4	.59
19	.92	3.8	.06	0	3.5	.44	.10	.04	0	2.5	4.2	1.05
20	2.2	.64	.17	0	4.0	.32	.08	.03	0	2.35	2.0	1.10
21	2.6	3.75	.14	0	1.38	.23	.06	2.5	0	2.4	1.85	5.0
22	1.17	2.4	.08	0	.48	.17	.06	2.6	.74	2.8	1.21	3.55
23	1.41	1.60	.04	0	.29	.14	.04	1.25	1.11	2.4	.75	1.45
24	.75	2.75	.86	0	.17	1.95	.03	.68	.75	2.25	.60	1.21
25	.44	3.9	.59	0	.12	.49	.03	.29	.48	1.70	.44	.83
26	.41	1.07	.14	0	.08	1.66	.03	.17	.20	1.60	.41	.68
27	.97	.52	2.4	0	.06	.83	.03	.10	.17	1.52	.38	.64
28	.56	.71	2.15	0	.04	3.25	.02	.71	.20	2.75	.32	1.50
29	.32	4.1	.93	0.01	.06	3.85	.02	.98	.58	1.97	.44	.87
30	.26	3.75	.26	.03	.06	1.55	.01	-	.52	1.25	2.65	2.75
31	.20	1.14	-	.01	-	.79	.01	-	.26	-	4.2	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.4	0.20	1.57	2.43	48.7	149
August	4.8	.10	1.51	2.34	46.8	144
September	2.45	.04	.650	1.01	19.5	60
October	.38	0	.030	.046	.92	2.8
November	4.0	0	.506	.783	15.2	47
December	5.1	.04	1.17	1.81	36.1	111
Calendar year 1943	5.6	0	1.06	1.64	385	1,180
January	4.3	.01	.417	.645	12.9	40
February	2.6	.01	.551	.853	16.0	49
March	1.11	0	.241	.373	7.47	23
April	6.0	.12	2.35	3.64	70.4	216
May	5.4	.26	1.42	2.20	44.1	135
June	5.0	.23	1.41	2.18	42.3	130
Fiscal year 1943-44	6.0	0	.985	1.52	360	1,110

a No gage-height record; discharge computed on basis of records for Awini ditch.

Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kohala ditch at Pololu, near Niulii

Location.- Lat. 20°10'20", long. 155°44'15", on open section of ditch in Pololu Valley just downstream from boundary between land of Honokane and land of Pololu, 2¾ miles upstream from mouth of Pololu Stream, and 4 miles south of Niulii.

Records available.- August 1927 to June 1944.

Average discharge.- 15 years (1928-38, 1939-44), 25.4 million gallons a day (39.3 second-feet).

Extremes.- Maximum discharge during year, 55 million gallons a day (85 second-feet) Apr. 10 (gage height, 3.50 feet); minimum, 9.6 million gallons a day (14.9 second-feet) Feb. 4, 5.

1927-44: Maximum discharge, 76 million gallons a day (118 second-feet) Dec. 2, 1932 (gage height, 4.33 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records good except those for period of no gage-height record, which are poor. Flow regulated by head gates. Kohala ditch receives flow of Awini ditch at Honokane Gulch and diverts water at altitude of about 1,200 feet from all streams west of the Honokane. Water is used for irrigation in vicinity of Kohala.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	34.5	20.5	29	23	14.1	14.1	19.5	12.2	16.2	14.8	26	46
2	27	20.5	31	18.5	13.4	13.4	17.0	12.2	14.8	15.1	24	30
3	30	25	30	17.0	12.8	27	17.e	12.2	14.1	48	22	28
4	39	43	26	16.2	12.8	34.5	18.5	11.5	a13	32.5	21	43
5	39	34.5	20.5	15.5	12.8	37	17.0	11.5	a30	29	21	48
6	43	25	20.5	14.8	12.8	22	34	11.5	a18	28	20.5	39
7	32	23	20.5	14.8	12.2	17.0	22	21	a24	29.5	18.5	31
8	34	24	19.5	14.8	12.2	15.5	24	16.2	a17	48	17.8	26
9	34.5	20.5	18.5	14.8	12.8	19.5	18.5	15.5	a16	46	21	24
10	35	21	19.5	14.8	18.5	16.2	17.0	13.4	a15	46	34.5	22
11	29	20.5	28	14.8	17.0	14.8	16.2	13.4	a14	46	29	20.5
12	27	24	34.5	14.8	15.5	14.1	39	12.8	a14	43	21	19.5
13	39	31	39	14.1	27	13.4	31	17.3	a13	34.5	19.5	18.5
14	31	26	25	14.8	26	14.8	21	32.5	a13	46	26	17.8
15	26	19.5	20.5	15.5	20.5	46	17.8	25	a12	43	36.5	18.5
16	25	19.5	19.5	14.8	19.5	32.5	16.2	17.0	a12	39	29	20.5
17	27	18.5	18.5	14.1	17.0	27	15.5	14.8	11.5	50	48	24
18	39	18.5	17.8	14.1	14.8	25	14.8	13.4	11.5	48	50	28
19	30	34.5	18.5	14.1	30.5	20.5	14.8	12.8	12.2	46	46	30
20	30	26	21	13.4	43	17.8	14.1	12.8	14.2	43	43	28.5
21	36.5	34.5	19.5	13.4	30	16.2	14.1	22	11.5	46	43	46
22	32.5	32.5	17.8	13.4	23	15.5	13.4	39	14.9	48	34.5	53
23	32.5	32.5	17.0	12.8	19.5	14.8	13.4	26	40	46	28	43
24	29	36.5	22	12.2	17.8	26.5	12.8	21	29	46	25	34.5
25	25	41	24	12.2	16.2	19.5	12.8	17.0	19.5	39	22	28
26	25	31	18.5	12.2	14.8	27.5	12.8	14.8	15.5	34.5	21	26
27	30	26	22.5	13.4	13.4	25	12.8	14.1	14.8	34.5	21	27
28	29	25	34.5	14.1	13.4	35	12.2	15.5	15.5	41	20.5	36.5
29	25	41	27	17.0	14.1	43	12.2	22	20.5	39	26	30
30	22	43	20.5	15.5	14.1	32.5	12.2	-	21	34.5	32.5	39
31	21	32.5	-	14.1	-	23	12.2	-	17.0	-	43	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	43	21	30.9	47.8	958	2,940
August	43	18.5	28.1	43.5	870	2,670
September	39	17.0	23.4	36.2	701	2,150
October	23	12.2	14.8	22.9	459	1,410
November	43	12.2	18.0	27.9	542	1,660
December	46	13.4	23.2	35.9	721	2,210
Calendar year 1943	46	12.2	25.1	38.8	9,150	28,080
January	39	12.2	17.6	27.2	547	1,680
February	39	11.5	17.3	26.8	500	1,540
March	40	11.5	16.9	26.1	525	1,610
April	50	14.8	39.5	61.1	1,180	3,630
May	50	17.8	28.7	44.4	891	2,730
June	55	17.8	30.9	47.8	926	2,840
Fiscal year 1943-44	55	11.5	24.1	37.3	8,820	27,070

a No gage-height record; discharge computed on basis of records for Awini and Kehena ditches.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

Kehena ditch near Kohala

Location.- Three sharp-crested weirs, lat. 20°07'25", long. 155°45'05", at old Honokane weir, near head of West Branch of Honokanenui Gulch, and 8½ miles southeast of Kohala.

Records available.- December 1917 to November 1919, April 1928 to June 1944.

Average discharge.- 16 years (1928-44), 7.48 million gallons a day (11.6 second-feet).

Extremes.- Maximum discharge during year, 39 million gallons a day (60 second-feet) Mar. 23 (gage height, 1.08 feet); no flow Oct. 18, Nov. 9, 10, Jan. 27 to Feb. 2, Feb. 4-7, Mar. 22.
1917-19, 1928-44: Maximum discharge, 86 million gallons a day (133 second-feet) Jan. 27, 1918 (gage height, 2.16 feet, datum then in use); no flow during dry periods.

Remarks.- Records good except those below 2 million gallons a day, which are fair, and those for July 1-11, which are poor. Flow regulated by several gates above station. Intake on Honokanenui Stream 2 miles upstream from station, at altitude of about 4,200 feet. No diversions. Water used for irrigation in vicinity of Hawi.

Discharge, in million gallons, fiscal year July 1943 to June 1944

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	a4.5	3.05	4.6	2.1	0.98	0.30	1.73	0	1.73	0.72	3.05	22.5
2	a4.0	4.1	7.6	1.73	.84	.30	1.12	0	4.2	.66	2.1	5.7
3	a4.5	17.1	7.7	1.41	.72	13.6	3.7	.10	3.7	31	1.41	5.6
4	a6.5	33.5	4.1	1.12	.72	14.5	3.25	0	1.41	8.0	1.12	22
5	a6.5	15.6	3.05	.98	.72	12.8	2.25	0	15.1	7.4	1.12	25
6	a7.0	7.4	2.45	.98	.84	3.4	20	0	4.0	4.6	.84	8.2
7	a5.8	9.3	2.25	.98	.84	1.41	11.6	4.1	13.2	11.8	.72	4.1
8	a4.5	7.3	1.90	.84	.72	.84	9.9	4.5	5.8	34.5	.61	2.25
9	a3.5	3.25	1.73	.72	.13	.72	4.3	7.4	1.90	31	2.95	1.73
10	a3.2	2.65	1.57	.84	2.75	.61	2.25	2.1	.98	24.5	14.7	2.25
11	a3.2	2.25	10.5	.84	1.73	.40	1.41	1.41	.72	28	8.1	1.41
12	3.45	11.3	13.8	.84	1.68	.30	18.8	2.25	.50	26.5	2.65	1.26
13	10.6	14.8	17.8	.72	7.3	.20	7.5	3.55	.30	10.0	1.73	.98
14	4.1	5.6	4.4	.84	6.5	3.4	2.65	8.0	.20	20.5	18.2	.84
15	3.2	3.45	2.65	1.12	3.85	30.5	1.41	4.5	.20	16.5	13.8	.72
16	2.85	3.25	1.90	1.26	2.85	7.1	.98	1.90	.10	11.6	7.6	.98
17	7.5	2.45	1.57	1.12	1.57	7.6	.72	.98	.10	31.5	24	1.41
18	22	2.25	1.41	.98	.84	3.7	.61	.84	.10	27.5	32	4.2
19	6.6	7.1	1.41	.98	18.0	2.25	.50	1.12	.10	24	33	6.8
20	6.3	3.7	2.65	.84	26.5	1.26	.30	.72	.10	20	18.0	9.8
21	15.3	23.5	1.73	.84	7.0	.84	.20	7.8	.10	24	17.5	28.5
22	8.4	10.2	1.26	.72	2.65	.61	.20	16.6	3.6	28	5.6	32
23	7.1	5.6	.84	.72	1.26	.40	.20	6.0	21.5	27.5	2.65	14.8
24	4.9	14.1	1.21	.72	.72	.84	.10	4.6	16.5	22	1.73	4.9
25	5.25	29.5	2.85	.98	.50	.72	.10	2.1	4.3	9.0	1.26	3.05
26	3.45	8.2	1.26	.84	.20	10.9	.10	1.12	1.57	5.1	.98	4.1
27	6.2	3.9	6.4	2.4	.10	5.4	0	.72	.84	8.5	.98	7.4
28	3.7	6.1	14.1	.88	.10	22	0	1.49	.72	17.0	.98	12.2
29	2.45	29.5	4.1	1.88	.20	31	0	4.8	.72	12.2	3.75	6.7
30	1.73	27.5	2.25	1.73	.30	7.4	0	-	1.12	4.4	9.6	23
31	1.57	9.2	-	1.26	-	3.05	0	-	1.12	-	24	-

Month	Million gallons a day			Second-feet (mean)	Total runoff	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	22	1.57	5.74	8.88	178	546
August	33.5	2.25	10.5	16.2	326	1,000
September	17.8	.84	4.37	6.76	131	402
October	2.4	.72	1.10	1.70	34.2	105
November	26.5	.10	3.10	4.80	93.1	286
December	31	.20	6.06	9.41	188	578
Calendar year 1943	33.5	.10	6.49	10.0	2,370	7,270
January	20	0	3.09	4.78	95.9	294
February	16.6	0	3.06	4.73	88.7	272
March	21.5	.10	3.44	5.32	107	327
April	34.5	.66	17.6	27.2	528	1,620
May	33	.61	8.28	12.8	257	788
June	32	.72	8.81	13.6	264	811
Fiscal year 1943-44	34.5	0	6.26	9.69	2,290	7,030

a No gage-height record; discharge computed on basis of records for Kohala ditch.
Time basis: Hawaiian war time. To convert war time to standard time, subtract 1 hour.

MISCELLANEOUS DISCHARGE MEASUREMENTS

Measurements of streams and ditches on the island of Hawaii at other than regular gaging stations are listed below:

Miscellaneous discharge measurements on Hawaii during fiscal year July 1943 to June 1944

Date	Stream	Tributary to--	Locality	Discharge	
				Second-feet	Million gallons a day
July 14	Lahomene*	Waimanu Stream	At altitude 3,250 feet, near Waimanu	3.63	2.35
Sept. 20	do	do	do	2.65	1.71
Nov. 14	do	do	do	5.34	3.45
Jan. 15	do	do	do	.95	.61
Mar. 20	do	do	do	.481	.311
May 17	do	do	do	†9.9	†6.4
July 14	Kakaauki‡	do	At altitude 2,930 feet, near Waimanu	2.23	1.44
Sept. 20	do	do	do	1.62	1.05
Nov. 14	do	do	do	3.00	1.94
Jan. 15	do	do	do	.363	.235
Mar. 20	do	do	do	.226	.146
May 17	do	do	do	7.69	4.97

* Formerly published as Third Branch of Waimanu Stream.
† Estimated.
‡ Formerly published as Second Branch of Waimanu Stream.

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