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GEOLOGICAL SURVEY
W. E. WRATHER, Director

Water-Supply Paper 965

SURFACE WATER SUPPLY *of* HAWAII

JULY 1, 1941, *to* JUNE 30, 1942

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In cooperation with the
TERRITORY OF HAWAII

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SURFACE WATER SUPPLY OF HAWAII, JULY 1, 1941, TO JUNE 30, 1942

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, 1942. 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 31 years. In addition, hundreds of miscellaneous measurements have been made, and, in the Kau district, island of Hawaii,[1] and on the islands of Oahu,[2] Maui,[3] Molokai, Lanai,[4] and Kahoolawe,[4] rather extensive studies of ground water have been made.

In this volume are given the records of daily flow obtained at stations that were operated during the year ending June 30, 1942, and the results of miscellaneous measurements of stream flow made during that year. The results of ground-water studies will be 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.

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1 Stearns, H. T., and Clark, W. O., Geology and water resources of the Kau district, Hawaii: U. S. Geol. Survey Water-Supply Paper 616, 1930.

2 Stearns, H. T., and Vaksvik, K. N., Geology and ground-water resources of Oahu, Hawaii: T. H. Division of Hydrography Bull. 1, 1935. Stearns, H. T., Geologic map and guide of Oahu, Hawaii: T. H. Division of Hydrography Bull. 2, 1939. Stearns, N. D., Annotated bibliography and index of geology and water supply of the island of Oahu, Hawaii: T. H. Division of Hydrography Bull. 3, 1935. Stearns, H. T., and Vaksvik, K. N., Records of the drilled wells on the island of Oahu, Hawaii: T. H. Division of Hydrography Bull. 4, 1938. Stearns, H. T. Supplement to Geology and ground-water resources of Oahu, Hawaii: T. H. Division of Hydrography Bull. 5, 1940.

3 Stearns, H. T., and Macdonald, G. A., Geology and ground-water resources of Maui, Hawaii: T. H. Division of Hydrography Bull. 7, 1942.

4 Stearns, H. T., Geology and ground-water resources of Lanai and Kahoolawe, Hawaii: T. H. Division of Hydrography Bull. 6, 1940.

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 diecharge 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 ratings 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 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 of 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.

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. This made February 9 a 23-hour day. Time prior to 2 a.m. February 9 as given herein refers to standard time; time after 2 a.m. February 9 refers to war time. To convert war time to standard time, subtract 1 hour.

Records of daily discharge prior to February 9, 1942, published herein have been computed on the basis of standard time. Records subsequent to that date have been computed on the basis of war time. The discharge given for February 9 is the mean for 23 hours. The mean discharge and runoff for the month of February have been computed from the total million gallons for the month without adjustment for the fact that February 9 was a 23-hour day. The small error resulting from this procedure has been disregarded.

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 1903-42 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, 1903-42

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

* 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 1941 to June 1942 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

Stream	Location	Period	Operated by
ISLAND OF KAUAI			
East Lawai ditch.....	Near Government Road, near Kalaheo.	1924-42	McBryde Sugar Co.
Eleele ditch.....	Near Government Road, near Kalaheo.	1924-42	Do.
Hanalei ditch.....	Above Kalihiwai Reservoir, near Kilauea.	1923-42	Kilauea Sugar Plantation Co.
Hanamaulu ditch.....	Below intake, near Hanamaulu..	1925-42	Lihue Plantation Co.
Kowla (Hanapepe) ditch..	At Olokele Plantation boundary, near Makaweli.	1926-42	Olokele Sugar Co.
Hanapepe Field ditch....	Below Hanapepe River intake, near Eleele.	1924-42	McBryde Sugar Co.
Hanapepe Stream.....	At tidewater near Eleele.....	1924-42	McBryde Sugar Co.
Lamoolca ditch.....	Near Koloa boundary, near Koloa.	1924-42	Do.
Kapaia River diversion to field 8 reservoir.	Near Hanamaulu.....	1928-42	Lihue Plantation Co.
Kapaia River diversion to field 29.	Near Lihue.....	1927-42	Do.
East Lawai Stream.....	½ mile above cannery near Kalaheo.	1924-42	McBryde Sugar Co.
Lihue lower ditch.....	Below intake, near Lihue.....	1925-42	Lihue Plantation Co.
Lihue upper ditch.....	....do.....	1925-42	Do.
Olokele ditch.....	At powerhouse near Makaweli...	1926-42	Olokele Sugar Co.
Wahiawa Stream.....	Above Alexander Reservoir, near Kalaheo.	1924-42	McBryde Sugar Co.
Wahiawa Stream, East Branch.	....do.....	1929-42	Do.
West Lawai ditch.....	Near camp 12, near Kalaheo....	1924-42	Do.
ISLAND OF OAHU			
Alewa Heights Spring....	Below reservoir 3.....	1932-42*	Board of Water Supply City and County of Honolulu.
Booth Springs.....	In Pauao Valley, at altitude 685 feet.	1929-42*	Do.
Helemano ditch.....	About 3 miles below Upper Helemano Reservoir.	1933-42	Waialua Agricultural Co.
Hering Springs.....	In Makiki Valley, at altitude 970 feet.	1925-42*	Board of Water Supply City and County of Honolulu.
Kahuawai Springs.....	In Pauao Valley, at altitude 615 feet.	1925-42*	Do.
Kalihi tunnels.....	At diversion, at altitude 650 feet.	1926-42*	Do.
Kamananui ditch.....	In Kawailoa Gulch about 500 yards above third siphon from Government Road.	1934-42	Waialua Agricultural Co.
Kipapa Stream.....	At altitude 375 feet.....	1917-42	Waiahole Water Co.
Makiki Springs.....	In Makiki Valley, at altitude 350 feet.	1926-42*	Board of Water Supply City and County of Honolulu.
Manoa tunnels.....	Upper Manoa Valley.....	1925-42*	Do.
Nuuanu tunnels.....	At Lower Luakaha.....	1926-42*	Do.
Nuuanu tunnel 3.....	At overflow, in upper Nuuanu Valley.	1931-42*	Do.
Palolo tunnel.....	Upper Palolo Valley.....	1926-42*	Do.
Wahiawa Reservoir Outlet	About 1,200 feet below dam....	1912-42*	Wahiawa Water Co.
Waiahole Stream.....	At altitude 250 feet.....	1919-42	Do.
Waiahole tunnel.....	At adit 8.....	1916-42	Do.
Waiawa Stream.....	At altitude 750 feet.....	1917-42	Do.
Waikakalau Stream.....	....do.....	1917-42	Do.

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

COOPERATION

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

ISLAND OF MAUI (West Maui)

Stream	Location	Period	Operated by
Everett ditch	Below intake, near Wailuku	1935-42	Wailuku Sugar Co.
Iao-Waikapu ditch	At lower end of tunnels, near Wailuku.	1923-42	Do.
Kama ditch	Below intake, near Wailuku	1933-42	Do.
Maniania ditch	....do	1923-42	Do.
North Waiehu	Near end of Waiehu Camp road, near Wailuku.	1922-42	Do.
South Waikapu ditch	Above first lateral, near Waikapu.	1935-42	Do.
Do	Below tunnel sections, near Waikapu.	1923-42	Do.
Spreckels ditch	Below intake, near Waihee	1931-42	Do.
Waihee ditch	....do	1922-42	Do.
Honokohau tunnel	At outlet of tunnel, at Mahinahina Camp.	1917-42	Pioneer Mill Co.
Kahoma tunnel	2,000 feet upstream from outlet above Lahaina.	1920-42	Do.
Kanaha ditch	At intake, above Lahainaluna School.	1921-42	Do.
Kaunala tunnel	At outlet, above Lahaina	1920-42	Do.
Launiupoko ditch	....do	1921-42	Do.
Ukumehame ditch	At outlet, near Olowalu	1931-42	Do.

ISLAND OF MAUI (East Maui)

Banana Spring	Near east wall of Keanae Valley, at altitude 700 feet.	1933-42	East Maui Irrigation Co.
Hanawi Spring upper high-level.	On east side of pali in Hanawi Gulch near Nahiku, at altitude 675 feet.	1932-42	Do.
Hanawi Spring lower high-level.	On east side of pali in Hanawi Gulch near Nahiku, at altitude 575 feet.	1932-42	Do.
Makapipi ditch	At west edge of Makapipi Gulch near Nahiku, at altitude 1,300 feet.	1933-42	Do.

ISLAND OF HAWAII

Kohala ditch	At Awini weir in Honokane, near Niulii.	1917-42†	Kohala Ditch Co.
Do	At Niulii weir, near Niulii	1917-42†	Do.
Pololu Inlet 1	At Pololu, near Niulii	1929-42	Do.
Pololu Inlet 2	In Waiakalae Gulch at Pololu, near Niulii.	1929-42	Do.
Pololu Inlet 3	In Opaepilau Gulch, above Kohala ditch, near Niulii.	1937-42	Do.
Waiapuka Stream	Above Kohala ditch, near Niulii	1929-42	Do.
Pololu Inlet 5	In Niulii Gulch, above Kohala ditch, near Niulii.	1937-42	Do.
Pololu Inlet 6	In Waikane Gulch, above Kohala ditch, near Niulii.	1937-42	Do.
Waipuhi Stream	Above Kohala ditch, near Halawa	1933-42	Do.
Makapala ditch	....do	1929-42	Do.
Waipunalau Stream	....do	1929-42	Do.
Puwaiole Stream	....do	1937-42	Do.
Moaula Gulch	Below all development tunnels.	1929-42	Hawaiian Agricultural Co.
Hionamoa Gulch	....do	1926-42	Do.
Keaiwa Gulch	....do	1926-42	Do.
Noguchi tunnel 19	5.3 miles from Pahala, at altitude 3,500 feet.	1928-42	Do.
Makakupu tunnel 13	In Waiakaloa Gulch, at altitude 3,750 feet, 6.1 miles from Pahala.	1926-42	Do.
Upper Hamakua ditch and Reservoir 3 weir.	At base of Puu Lala, near Honokaa.	1907-12, 1921-42‡	Hawaiian Irrigation Co.
Lower Hamakua ditch	At main weir, near Kukuihaele	1921-42†	Do.
Honokaape ditch	At Kukuihaele Village	1923-42	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, 1942, 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. Carsor, 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 1942.
Average discharge.- 17 years (1925-42), 38.7 million gallons a day (59.9 second-feet).
Extremes.- Maximum discharge during year, 4,240 million gallons a day (6,560 second-feet) Feb. 19 (gage height, 13.22 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.
1921-42: 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 above 5 million gallons a day and poor below. Kokee and Kekaha ditches divert above station, taking practically all the water at low and medium stages for irrigation near Waimea and Kekaha.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

4.5	0	5.5	6.0	7.5	301
4.7	.2	5.7	18.0	8.0	430
4.8	.4	6.0	46	8.5	595
5.0	1.2	6.3	81	9.0	805
5.2	2.2	6.6	125	9.5	1,050
5.4	4.0	7.0	195		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	42	0	30	0.2	0.2	8.8	0.2	1.0	92	0.2	1.2	24.5
2	5.5	0	120	2.6	.2	3.8	9.1	.4	5.9	.2	.6	2.1
3	18.7	0	67	.6	.2	16.5	.2	.2	.6	.2	13.4	.2
4	57	0	1.9	2.6	2.9	209	.2	.2	14.3	0	.4	0
5	3.6	.2	.2	.4	3.9	59	.2	.2	24	1.4	.2	0
6	.2	39	105	.2	17.6	122	.2	.2	11.4	8.2	.2	2.1
7	.2	1.2	36	303	.8	11.7	.2	.2	3.6	.2	.2	0
8	0	.2	2.4	49	.2	75	2.4	.2	555	.2	.2	0
9	0	80	.2	27.5	.2	128	.6	.2	274	.2	.2	.8
10	1.3	38	.2	16.7	14.8	13.2	.2	.4	42	29.5	.2	.6
11	.2	4.3	1.5	3.2	2.5	72	.2	.2	370	753	.2	.2
12	0	.2	.2	18.2	.2	31.5	.2	.2	291	432	.2	6.6
13	0	.2	.2	41	.2	.8	0	.2	64	147	0	1.0
14	0	.2	.2	44	.2	.2	0	.2	12.2	34.5	0	0
15	0	.2	0	18.7	.6	.2	0	.2	123	49	0	158
16	0	.2	.2	34.5	3.7	.2	0	.2	218	12.8	0	213
17	1.8	0	.2	39.5	.2	.2	0	.2	74	.6	0	13.6
18	.4	0	.2	19.2	.2	.2	0	.2	12.0	.2	0	1.2
19	4.8	0	0	26.5	.2	4.5	0	535	1.0	0	0	3.4
20	37.5	22	0	1.4	4.3	109	0	26.5	92	.2	.2	.2
21	.4	27	0	.4	.2	14.2	0	.4	66	.6	.2	.2
22	.2	7.0	0	.4	129	.4	0	0	41	.2	.2	0
23	0	.4	.8	83	6.2	.2	0	0	.8	0	.2	0
24	0	.2	.4	612	11.6	.2	0	0	4.4	534	0	0
25	0	.2	2.4	167	1.1	.2	0	0	11.3	864	0	0
26	0	.2	32	58	.2	.2	0	320	258	480	0	0
27	0	.2	2.0	5.3	.2	.2	.2	288	71	108	.2	61
28	0	.2	.4	.8	.2	.2	.2	281	5.5	88	.2	9.6
29	0	0	.2	25	.2	.2	.2	-	32.5	27	0	27
30	0	.2	.2	30.5	3.8	.2	279	-	4.6	12	0	.2
31	0	.2	-	.6	-	.2	56	-	.2	-	0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	57	0	5.61	8.66	174	533
August	80	0	7.15	11.1	222	680
September	120	0	13.5	20.9	404	1,240
October	612	.2	52.6	81.4	1,630	5,010
November	129	.2	6.87	10.6	206	632
December	209	.2	28.5	44.1	882	2,710
Calendar year 1941	612	0	13.5	20.9	4,940	15,150
January	279	0	11.3	17.5	350	1,070
February	535	0	52.0	80.5	1,460	4,470
March	555	.2	89.5	138	2,780	8,520
April	864	0	119	184	3,580	11,000
May	13.4	0	.594	.919	18.4	56
June	213	0	17.5	27.1	526	1,610
Fiscal year 1941-42	864	0	33.5	51.8	12,230	37,530

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. July 1917 to July 1919 (unpublished).
Average discharge.- 23 years (1919-42), 21.4 million gallons a day (33.1 second-feet).
Extremes.- Maximum discharge during year, 2,880 million gallons a day (4,460 second-feet) Feb. 19 (gage height, 9.53 feet), from rating curve extended above 180 million gallons a day; minimum, 2.1 million gallons a day (3.2 second-feet) Aug. 18.
1909-42: 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 excellent except those for July 30 to Aug. 3, Aug. 28, 29, which are good, and those for period of no gage-height record, which are poor. No diversions above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.9	1.8	2.5	11.4	3.7	93
2.0	2.7	2.6	14.4	4.0	141
2.1	3.8	2.8	21.5	4.5	241
2.2	5.1	3.0	30.5	5.0	355
2.3	6.8	3.2	42	5.5	500
2.4	8.9	3.4	59		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	22.5	2.1	35.5	2.2	7.8	25	32.5	6.0	33.5	12.5	12.6	9.8
2	14.2	2.0	56	2.2	6.5	14	24.5	4.3	17.4	12.3	11.2	6.8
3	61	2.0	16.2	2.2	5.6	24	6.6	3.6	25	12.8	10.6	4.8
4	49	6.8	7.0	19.3	6.0	120	5.0	3.4	36	17.8	9.6	6.6
5	11.4	7.7	5.6	5.0	8.6	50	8.9	9.1	27.5	14.4	8.7	7.8
6	7.4	6.5	29.5	2.9	30	70	6.6	6.0	20.5	15.1	8.5	5.1
7	5.4	6.0	14.0	8.5	10	21	9.0	4.1	63	12.6	11.2	4.4
8	10.2	5.4	7.0	11.7	7.4	60	7.4	3.5	166	12.5	8.9	4.2
9	12.7	38.5	4.7	28.5	9.4	100	5.4	3.1	87	25.5	7.6	4.7
10	6.5	21.5	7.3	20.5	35	25	4.4	3.0	37	12?	7.0	4.8
11	5.8	9.1	11.3	32.5	12	60	4.2	2.9	283	44?	6.8	5.8
12	4.1	4.3	5.1	38.5	6.2	15	3.9	8.5	120	184	6.5	5.1
13	3.5	3.4	4.1	27.5	5.4	15	4.3	11.5	44	8?	6.3	6.1
14	3.2	2.9	3.5	48	5.0	13	4.3	9.1	34	55	6.1	11.8
15	3.0	2.6	3.1	28	30	13	3.8	10.0	72	6?	5.8	111
16	6.1	2.4	3.0	55	32	20	3.6	11.7	121	28	5.6	80
17	23.5	2.2	3.2	25.5	10	11	3.4	19.1	45	18.5	5.4	15.8
18	14.0	2.2	3.0	19.6	10	9.2	3.2	23	21	15.1	5.6	8.7
19	5.7	2.2	2.7	18.6	11	9.0	3.1	409	18.8	13.8	19.3	6.3
20	4.2	48	2.6	7.4	7.7	12	3.1	23	24	33.5	32.5	5.3
21	3.7	29.5	2.5	5.4	6.2	9.0	3.0	10.6	119	17.4	14.2	4.8
22	3.2	11.6	2.3	24.5	12	7.5	2.9	7.8	28	12.3	7.8	4.4
23	3.4	6.0	2.2	119	10	5.8	2.8	6.3	22.6	10.4	9.7	4.0
24	7.5	9.4	2.2	347	18	5.6	2.8	5.6	35	128	13.0	3.7
25	4.3	4.7	2.2	91	10	5.1	2.9	21.5	32	141	6.8	3.6
26	3.4	3.5	2.2	31	6.2	5.0	2.9	147	199	51	5.4	3.6
27	2.9	3.5	2.2	14.7	5.0	4.7	2.8	128	33.5	23	6.1	33
28	2.7	3.2	2.5	11.2	20	4.6	7.0	137	48	20	6.0	20.5
29	2.5	4.0	2.8	15	12	4.4	4.2	-	40	16.4	5.0	18.1
30	2.3	17.7	2.2	17	30	13.4	39.5	-	19.6	14.4	4.7	7.8
31	2.1	20.5	-	10	-	6.3	16.2	-	15.1	-	6.8	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	61	2.1	10.0	15.5	311	956
August	48	2.0	9.40	14.5	291	894
September	56	2.2	8.26	12.8	248	760
October	347	2.2	35.1	54.3	1,090	3,340
November	35	5.0	12.8	19.8	385	1,180
December	120	4.4	24.4	37.8	758	2,320
Calendar year 1941	394	2.0	15.2	23.5	5,570	17,080
January	39.5	2.8	7.55	11.7	234	719
February	409	2.9	37.1	57.4	1,040	3,180
March	283	15.1	60.9	94.2	1,890	5,790
April	445	10.4	54.5	84.3	1,640	5,020
May	32.5	4.7	9.07	14.0	281	863
June	111	3.6	13.9	21.5	418	1,280
Fiscal year 1941-42	445	2.0	23.5	36.4	8,690	26,300

Note.- No gage-height record Oct. 29 to Dec. 23; discharge computed on basis of records for Moihi Stream and Kokee ditch.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Mohihi Stream at altitude 3,500 feet, near Waimea

Location.- Boulder concrete control, 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 1942. April 1909 to December 1912 at site 2 miles downstream (fragmentary).
Average discharge.- 11 years (1920-26, 1937-42), 5.04 million gallons a day (7.80 second-feet).
Extremes.- Maximum discharge during year, 204 million gallons a day (316 second-feet) Feb. 19 (gage height, 4.20 feet), from rating curve extended above 21 million gallons a day; minimum, 0.20 million gallons a day (0.31 second-foot) Aug. 2, 3.
1920-26, 1936-42: 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 above 40 million gallons a day, which are poor. No diversions above station.

Rating table, fiscal year 1941-42 (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	3.6	2.8	41
1.1	.88	1.6	5.0	3.2	68
1.2	1.38	1.8	8.2		
1.3	2.0	2.0	12.4		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.6	0.29	5.0	0.58	1.75	4.4	1.23	1.93	14.0	3.3	3.6	3.45
2	2.35	.23	10.5	.65	1.44	3.15	5.2	1.18	5.0	2.95	2.25	2.55
3	7.1	f.22	3.65	.61	1.33	8.3	1.75	.92	3.6	2.7	2.4	1.44
4	9.6	a1.76	1.80	1.22	2.5	22	1.18	.80	8.7	2.7	3.05	1.23
5	2.7	f1.43	1.23	1.37	3.05	12.7	1.21	.77	10.4	3.6	2.6	1.18
6	1.57	2.4	8.4	.80	6.8	16.9	1.66	.77	7.5	5.4	2.35	1.08
7	1.08	f1.63	5.2	18.0	2.5	6.8	1.92	.77	5.5	3.25	2.15	1.03
8	.80	f1.18	2.3	8.3	1.63	11.5	2.6	.65	52	2.85	2.1	.93
9	1.03	12.1	1.28	5.9	1.43	16.8	1.86	.61	28	3.4	2.0	1.03
10	1.23	5.6	1.00	6.1	8.8	5.3	1.28	.58	11.7	12.9	1.94	1.28
11	1.36	2.3	2.1	3.0	2.95	12.5	1.08	.54	37.5	59	1.81	1.28
12	.84	1.08	1.23	4.6	1.63	6.7	.98	.50	27	38.5	1.75	1.18
13	.61	.77	.88	5.4	1.33	3.4	.93	.65	11.7	20.5	1.69	1.50
14	.50	.61	.73	8.0	1.18	2.4	.88	.50	7.3	11.0	1.63	1.41
15	.44	.50	.65	4.4	5.7	2.1	.84	.73	15.5	14.4	1.57	f29
16	.41	.44	.58	5.0	4.6	3.1	.80	.69	19.8	7.7	1.44	f33.5
17	1.70	.38	.80	5.6	2.1	2.15	.77	.85	11.8	4.5	1.38	4.3
18	2.5	.35	.69	3.15	1.50	1.75	.73	2.4	5.9	3.5	1.38	2.55
19	1.28	.32	.58	2.6	1.33	1.69	.69	44	4.4	2.95	1.63	1.75
20	1.23	1.14	.54	1.75	1.28	7.7	.65	7.2	15.2	4.1	2.55	1.57
21	1.32	5.4	.50	1.57	1.28	3.95	.65	2.5	12.1	3.9	2.35	1.33
22	.90	2.9	.44	2.5	7.0	2.0	.61	1.57	9.1	3.05	1.81	1.13
23	.69	1.28	.41	20.5	2.65	1.55	.61	1.23	5.8	2.5	1.63	1.03
24	.77	.93	.47	53	4.6	1.38	.58	1.08	6.6	31.5	1.57	.93
25	.84	.80	.50	24	2.4	1.23	.58	1.59	6.5	48	1.38	.93
26	.65	.61	.57	9.7	1.44	1.18	.61	42	33	24.5	1.23	.98
27	.50	.93	.84	3.7	1.18	1.13	.61	31.5	13.6	9.8	1.33	7.1
28	.44	.65	.93	2.7	1.82	1.08	.65	40	7.2	9.4	1.44	4.2
29	.38	.61	.93	5.7	1.89	1.03	.95	-	13.3	6.0	1.18	3.95
30	.32	1.13	.69	5.3	5.9	1.52	21	-	6.0	4.4	1.13	1.90
31	.39	1.75	-	2.4	-	1.50	6.5	-	3.8	-	1.23	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	9.6	0.29	1.55	2.40	47.9	147
August	12.1	.22	1.67	2.58	51.7	159
September	10.5	.41	1.85	2.86	55.4	170
October	53	.58	7.04	10.9	218	669
November	8.8	1.18	2.83	4.38	85.0	261
December	22	1.03	5.45	8.43	169	518
Calendar year 1941	53	.06	2.72	4.21	991	3,040
January	21	.58	1.99	3.08	61.6	189
February	44	.50	6.73	10.4	189	579
March	52	3.5	13.5	20.9	419	1,290
April	59	2.5	11.7	18.1	352	1,080
May	3.6	1.13	1.92	2.97	59.6	183
June	33.5	.93	3.89	6.02	117	358
Fiscal year 1941-42	59	.22	5.00	7.74	1,830	5,600

a No gage-height record; discharge computed on basis of records for Kawaikoi Stream.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 15 years (1927-42), 17.9 million gallons a day (27.7 second-feet).

Extremes.- Maximum discharge during year, 61 million gallons a day (94 second-feet) Oct. 24 (gage height, 2.40 feet); no flow Sept. 22, Nov. 12, Dec. 11, when water was shut out of ditch.

1926-42: 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 record for Mar. 7, which is 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	21	2.4	34.5	2.1	9.6	28	8.8	10.8	19.2	22	22	12.5
2	16.2	2.3	46	2.1	8.3	18.2	36.5	8.7	28	21	18.2	11.9
3	44	2.3	23.5	2.1	7.4	30	11.6	6.6	33	19.5	21.5	8.7
4	49	4.8	9.8	14.9	8.3	54	8.1	6.1	30.5	24.6	21	9.1
5	18.1	8.5	7.1	6.8	11.7	37	13.1	10.3	39.5	20.5	19.5	11.2
6	10.0	6.0	20.5	3.65	37.5	50	11.2	9.2	30.5	26	18.2	8.3
7	7.3	7.0	19.0	8.8	12.8	28.5	14.7	6.9	d28	21	20	7.4
8	10.6	6.3	9.8	11.4	8.9	22.5	13.2	5.8	19.5	21	18.2	6.9
9	14.0	23	6.3	26	12.0	22	9.6	5.3	27.5	26.5	15.8	6.9
10	8.1	29.5	5.9	24.5	41	18.7	7.6	5.0	19.5	48	15.3	7.6
11	7.4	13.2	12.9	15.5	15.2	29	6.8	4.8	39	47	14.6	8.1
12	5.3	6.3	6.4	29	7.7	17.9	6.3	6.9	33.5	37	13.9	7.3
13	4.2	4.2	4.6	33	6.9	19.5	8.2	16.5	19.5	33.5	13.4	8.7
14	3.8	3.65	3.8	38.5	6.3	15.8	6.9	11.4	26.5	25.5	12.8	11.6
15	3.5	3.25	3.4	30.5	33.5	15.3	6.3	13.4	38	38.5	12.1	47
16	3.4	2.9	3.15	41	36	24	5.5	11.5	27.5	29	11.7	52
17	25	2.65	3.15	33	12.0	13.4	5.3	19.8	24.5	29	11.2	34.5
18	17.2	2.55	3.15	22	13.3	11.2	5.2	25	30.5	26	11.2	17.9
19	8.3	2.3	2.8	21	14.6	10.6	5.0	50	29	23	15.4	11.9
20	6.0	22	2.65	9.7	9.4	19.5	5.0	34.5	35	41	37	10.2
21	4.9	34.5	2.55	6.8	7.6	15.4	4.7	19.5	34.5	29	21	8.9
22	3.95	15.2	2.3	8.4	19.5	10.0	4.4	13.9	21	21	13.7	8.0
23	3.8	8.0	2.1	48	12.2	8.5	4.2	11.5	25	18.2	13.0	7.4
24	7.4	9.9	2.2	52	25	8.1	4.2	10.2	33.5	25.5	18.9	7.3
25	5.3	5.8	2.2	58	12.7	7.4	4.2	26.5	36.5	22	11.9	7.1
26	3.95	4.2	2.1	41	7.8	7.3	4.2	58	35.5	17.0	10.2	6.9
27	3.25	4.4	2.1	20.5	6.4	6.9	4.2	61	25	17.0	10.4	33.5
28	3.0	3.8	2.2	15.8	27	6.6	9.9	32	36	27	10.6	25
29	2.8	3.25	2.65	20.5	14.4	6.3	6.6	-	30	22.5	9.2	28
30	2.65	15.2	2.4	24	32.5	15.5	43	-	20.5	19.5	8.7	12.5
31	2.55	17.8	-	12.8	-	10.0	23.5	-	24.5	-	9.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	49	2.55	10.5	16.2	326	1,000
August	34.5	2.3	8.94	13.8	277	851
September	46	2.1	8.37	13.0	251	771
October	58	2.1	22.0	34.0	683	2,100
November	41	6.3	15.9	24.6	478	1,470
December	54	6.3	18.9	29.2	587	1,800
Calendar year 1941	58	2.1	13.6	21.0	4,980	15,280
January	43	4.2	9.94	15.4	308	946
February	61	4.8	17.9	27.7	501	1,540
March	39.5	19.2	29.0	44.9	900	2,760
April	48	17.0	26.6	41.2	797	2,450
May	37	8.7	15.5	24.0	481	1,480
June	52	6.9	14.8	22.9	444	1,360
Fiscal year 1941-42	61	2.1	16.5	25.6	6,030	18,530

d Doubtful gage-height record; discharge computed on basis of records for Kawaiko' Stream.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. July 1918 to November 1920 at same site (fragmentary and unreliable; unpublished).

Average discharge.- 17 years (1925-42), 28.0 million gallons a day (43.3 second-feet).

Extremes.- Maximum discharge during year, 1,290 million gallons a day (2,000 second-feet) Feb. 19 (gage height, 6.60 feet), from rating curve extended above 400 million gallons a day; minimum, 5.9 million gallons a day (9.1 second-feet) Aug. 19.
1916, 1917-18, 1925-42: 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 good except those for Aug. 9 to Feb. 19, which are fair. Kokee ditch diverts water above station for irrigation near Kekaha.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.8	7.3	12.5	6.3	9.1	12.4	12.2	14.0	69	10.9	15.5	9.9
2	11.7	7.3	30.5	6.3	8.7	11.8	38	10.0	17.8	10.3	13.9	11.5
3	30.5	7.3	12.6	6.5	8.3	14.6	10.0	8.9	12.1	10.0	13.1	9.5
4	54	7.5	8.7	6.3	10.9	125	8.5	8.5	28.5	9.7	12.7	9.1
5	13.0	7.9	7.5	7.7	12.7	45	8.1	8.3	19.6	10.6	11.8	8.9
6	9.3	8.5	14.7	6.9	30	87	8.5	8.8	18.1	13.2	11.2	8.9
7	8.7	9.7	16.0	23.5	11.4	17.7	10.6	8.5	29	10.6	10.9	8.7
8	8.3	9.3	9.5	16.2	9.1	70	10.6	7.9	307	10.0	12.6	8.5
9	8.1	37	7.9	13.6	8.5	111	9.7	7.7	184	10.0	10.6	8.5
10	8.7	22	7.1	13.5	22.5	28.5	8.7	9.4	64	63	12.6	9.1
11	8.7	9.7	9.4	9.1	13.0	80	8.1	8.7	330	512	12.9	8.9
12	8.3	7.9	7.9	18.1	9.8	37.5	7.9	8.1	218	310	12.3	8.7
13	7.9	7.1	7.1	24.5	8.9	13.4	7.7	7.9	64	137	12.3	8.9
14	7.7	6.7	6.7	22	8.3	10.3	7.7	8.1	30	48	12.0	8.7
15	7.5	6.5	6.5	14.0	15.4	9.7	7.5	7.9	72	72	9.7	118
16	7.5	6.3	6.7	10.6	20.5	10.6	7.5	7.9	146	27.5	9.5	152
17	7.7	6.1	6.5	24.5	10.3	10.0	7.3	7.9	66	13.1	9.5	20
18	10.5	6.1	6.5	9.1	8.9	9.3	7.3	9.8	24	10.9	9.7	12.4
19	9.7	6.1	6.5	8.7	8.5	8.9	7.3	341	13.5	10.0	9.7	12.0
20	8.7	11.8	6.3	8.1	8.3	13.3	7.3	41	25	11.2	15.4	10.0
21	8.7	16.3	6.3	7.3	8.1	14.0	7.1	11.5	100	11.8	12.1	9.3
22	8.1	10.6	6.3	7.3	15.2	9.8	7.1	9.5	44	10.3	12.6	8.9
23	7.9	8.1	6.3	91	11.4	8.7	7.1	8.3	14.3	9.7	12.0	8.5
24	7.7	7.3	6.3	358	11.7	8.5	7.1	7.9	18.9	343	9.7	8.5
25	7.9	7.1	6.1	119	11.0	8.3	6.9	8.3	17.7	130	9.5	8.3
26	7.9	7.7	6.1	40	8.9	8.3	7.1	207	213	221	9.3	8.3
27	7.7	7.4	6.3	13.0	8.3	8.1	7.1	217	65	62	9.5	13.3
28	7.5	6.9	6.5	11.2	8.7	8.1	7.3	241	27	38	9.5	13.5
29	7.3	6.5	6.7	14.1	10.5	8.1	8.3	-	63	23.5	9.3	12.4
30	7.3	6.7	6.5	23.5	23.5	8.3	102	-	22.5	18.1	9.1	10.3
31	7.3	7.7	-	10.6	-	9.1	34	-	11.8	-	9.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	54	7.3	10.6	16.4	330	1,010
August	37	6.1	9.37	14.5	290	891
September	30.5	6.1	8.68	13.4	260	799
October	358	6.3	30.7	47.5	950	2,920
November	30	8.1	12.0	18.6	360	1,110
December	125	8.1	26.6	41.2	825	2,530
Calendar year 1941	358	6.1	15.9	24.6	5,810	17,850
January	102	6.9	13.0	20.1	402	1,230
February	341	7.7	44.7	69.2	1,250	3,840
March	330	11.8	74.9	116	2,320	7,130
April	512	9.7	79.2	123	2,380	7,300
May	15.5	9.1	10.8	16.7	334	1,020
June	152	8.3	18.4	28.5	554	1,700
Fiscal year 1941-42	512	6.1	28.1	43.5	10,260	31,480

Peak discharge.- Oct. 24 (8 a.m.) 720 m.g.d. (1,110 sec.-ft.); Oct. 24 (9:30 a.m.) 717 m.g.d. (1,110 sec.-ft.); Feb. 19 (8 a.m.) 792 m.g.d. (1,230 sec.-ft.); Feb. 19 (9 a.m.) 1,290 m.g.d. (2,000 sec.-ft.); Feb. 19 (9:30 a.m.) 1,140 m.g.d. (1,760 sec.-ft.); Apr. 11 (12 m.) 807 m.g.d. (1,250 sec.-ft.).
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 23 years (1918-24, 1925-42), 36.8 million gallons a day (56.9 second-feet).

Extremes.- Maximum discharge during year, 67 million gallons a day (104 second-feet) Oct. 13 (gage height, 3.86 feet); minimum, 0.5 million gallons a day (0.8 second-foot) June 6.

1907-42: 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 except those for period of backwater from gravel deposits, which are good. 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	47	18.4	48	29	29.5	32	21	34	48	34	50	41
2	45	18.4	53	43	26.5	32	38.5	31	45	31	50	43
3	50	18.4	50	38.5	25.5	38.5	23.5	24.5	41	28.5	53	28.5
4	53	23	48	48	43	43	19.4	22.5	48	27.5	48	25.5
5	43	38.5	34	34	41	45	19.4	21.5	48	38.5	43	24.5
6	34	50	36.5	24.5	43	43	19.4	21.5	48	45	38.5	19.1
7	28.5	38.5	53	37.5	34	45	34	21.5	45	34	38.5	22.5
8	24.5	36	50	48	26.5	45	41	19.4	36.5	31	40	22.5
9	26.5	50	36	45	24.5	45	32	18.4	43	32	36	32
10	38	53	27.5	45	38.5	45	23.5	23.5	48	45	41	45
11	34	45	41	43	36	45	20.5	20.5	50	41	38.5	36
12	24.5	29.5	31	45	26.5	43	19.4	18.4	45	50	34	41
13	21.5	24.5	25.5	48	23.5	41	18.4	18.4	48	50	34	38.5
14	20.5	22.5	23.5	48	20.5	34	17.5	17.5	48	50	32	31
15	20.5	20.5	22.5	45	34	28.5	17.5	17.5	50	50	29.5	45
16	20.5	20.5	23.5	48	38.5	36	16.6	16.6	48	50	27.5	45
17	34	19.4	24.5	48	28.5	31	16.6	17.5	48	45	26.5	45
18	41	18.4	22.5	48	23.5	27.5	16.6	21.5	45	38.5	28.5	45
19	31.5	18.4	21.5	48	21.5	34	15.7	37.5	45	34	32	38.5
20	53	31.5	20.5	41	35.5	48	15.7	43	50	41	36	38.5
21	38.5	53	20.5	31	27.5	45	15.7	32	48	50	38.5	34
22	25.5	50	22.5	31	36	36	15.7	24.5	48	41	34	27.5
23	22.5	38.5	27.5	48	34	28.5	15.7	21.5	45	32	32	25.5
24	22.5	29.5	35	43	34	25.5	15.7	19.4	45	36	28.5	24.5
25	22.5	28.5	41	48	32	23.5	15.7	24	48	38.5	26.5	23.5
26	21.5	24.5	45	45	25.5	21.5	16.6	45	48	38.5	25.5	24.5
27	20.5	29.5	45	45	22.5	20.5	16.6	45	48	43	34	43
28	19.4	23.5	41	43	23.5	20.5	16.6	50	48	50	31	49
29	19.4	21.5	32	41	23.5	19.4	19.0	-	50	50	25.5	48
30	18.4	28.5	25.5	38.5	34	21.5	34	-	45	48	25.5	36
31	18.4	34	-	34	-	20.5	36	-	38.5	-	26.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	53	18.4	30.3	46.9	940	2,880
August	53	18.4	30.8	47.7	955	2,930
September	53	20.5	34.2	52.9	1,030	3,150
October	48	24.5	42.0	65.0	1,300	4,000
November	43	20.5	30.4	47.0	912	2,800
December	48	19.4	34.3	53.1	1,060	3,260
Calendar year 1941	53	18.4	31.0	48.0	11,300	34,680
January	41	15.7	21.4	33.1	664	2,040
February	50	16.6	26.0	40.2	728	2,230
March	50	36.5	46.2	71.8	1,440	4,420
April	50	27.5	40.8	63.1	1,220	3,750
May	53	25.5	35.0	54.2	1,080	3,330
June	49	19.1	34.8	53.8	1,040	3,200
Fiscal year 1941-42	53	15.7	33.9	52.5	12,370	37,990

Note.- Gage-height record affected by backwater from gravel deposit Oct. 7 to June 30.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. August 1910 to December 1916 at site half a mile upstream; records not equivalent.
Average discharge.- 18 years (1917-20, 1927-42), 54.3 million gallons a day (84.0 second-feet).
Extremes.- Maximum discharge during year, 1,900 million gallons a day (2,940 second-feet) Aug. 9 (gage height, 4.99 feet); minimum, 8.3 million gallons a day (12.8 second-feet) Aug. 2.
1910-21, 1926-42: 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. Hanapepe ditch diverts water from river 3 miles above station for irrigation in vicinity of Makaweli.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.2	7.0	0.7	32.5	1.6	148
.3	10.2	.8	41	2.0	238
.4	14.3	1.0	60	2.4	360
.5	19.4	1.2	84	2.8	515
.6	25.5	1.4	114	3.2	700

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	257	9.6	101	42	21.5	11.8	12.2	21	15.0	11.8	50	59
2	49	8.6	225	168	17.9	11.4	12.2	13.9	12.2	11.4	120	20
3	42	10.0	376	156	16.3	25	12.2	12.7	10.2	11.8	101	13.1
4	57	53	87	136	98	59	11.8	17.0	10.2	22	53	12.2
5	23.5	37	44	45	42	62	11.8	12.3	10.2	20.5	33	11.4
6	18.1	219	487	29	26	37.5	11.4	21.5	10.2	15.2	28.5	10.6
7	13.5	56	475	97	17.9	23	17.8	17.2	10.1	11.0	29.5	11.0
8	24	93	293	115	14.8	73	17.7	11.4	38	10.2	22.5	10.2
9	20.5	387	80	153	15.7	71	11.8	10.6	15.7	10.6	42	59
10	36	224	60	68	25	26	11.0	42	10.2	23	27	191
11	15.3	56	38	75	13.9	23	10.6	22.5	15.8	118	43	45
12	11.0	24	28.5	59	12.7	16.3	10.6	41	20.5	67	27	113
13	10.2	16.8	22.5	58	12.2	13.1	9.9	34	13.1	30.5	22.5	36
14	9.6	13.5	18.9	44	11.8	12.2	9.6	13.9	36	19.9	25	29
15	9.6	12.0	16.8	37	14.2	15.8	10.2	11.4	156	19.1	18.9	71
16	13.5	11.9	20.5	126	16.3	15.9	10.4	11.0	284	13.8	13.9	158
17	43	10.2	17.1	82	12.2	12.2	9.6	10.6	64	11.4	13.5	47
18	13.4	9.5	14.9	46	11.4	12.2	9.6	16.3	31	10.6	14.7	41
19	23	13.4	13.9	102	12.3	49	9.9	101	198	10.6	16.7	124
20	127	81	12.7	44	39.5	345	10.2	18.9	276	12.9	31	52
21	20.5	84	30.5	29.5	22.5	84	9.9	12.2	70	17.2	17.8	27
22	11.8	45	12.7	80	308	32.5	10.2	10.6	32.5	15.6	20	20.5
23	10.6	84	13.0	52	39.5	22	10.2	10.2	22.5	11.4	13.9	16.8
24	11.0	74	45	140	110	16.8	10.2	9.9	26.5	132	13.1	14.5
25	9.9	23	39.5	40	26	14.3	9.9	10.2	55	390	11.8	17.1
26	9.6	14.8	184	26.5	16.8	24	12.2	16.7	80	562	11.8	14.8
27	9.6	12.7	99	27	13.9	21	11.0	44	34	224	69	152
28	12.0	11.0	91	30	12.7	13.9	10.2	23	19.4	291	14.5	144
29	9.9	24.5	36	81	12.2	13.5	11.9	-	16.3	132	21.5	125
30	9.2	28	26	35	11.4	13.1	325	-	13.5	70	12.2	42
31	10.2	26	-	22	-	12.2	73	-	12.2	-	13.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	257	9.2	30.3	46.9	940	2,890
August	387	8.6	57.2	88.5	1,770	5,440
September	487	12.7	100	155	3,010	9,230
October	168	22	72.5	112	2,250	6,890
November	308	11.4	34.2	52.9	1,020	3,140
December	345	11.4	38.1	58.9	1,180	3,630
Calendar year 1941	487	7.0	35.6	55.1	13,000	39,890
January	325	9.6	23.4	36.2	724	2,220
February	101	9.9	21.3	33.0	597	1,830
March	284	10.1	52.3	80.9	1,620	4,970
April	562	10.2	76.9	119	2,310	7,080
May	120	11.8	30.8	47.7	953	2,930
June	191	10.2	56.2	87.0	1,690	5,180
Fiscal year 1941-42	562	8.6	49.5	76.6	18,060	55,430

Peak discharge.- Aug. 9 (3 p.m.) 1,060 m.g.d. (1,640 sec.-ft.); Aug. 9 (9:30 p.m.) 1,900 m.g.d. (2,940 sec.-ft.); Sept. 5 (11:30 a.m.) 1,850 m.g.d. (2,860 sec.-ft.); Nov. 22 (8:15 a.m.) 1,450 m.g.d. (2,240 sec.-ft.); Jan. 30 (8:15 a.m.) 1,210 m.g.d. (1,870 sec.-ft.); Apr. 26 (2:30 a.m.) 1,700 m.g.d. (2,630 sec.-ft.).
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Hanapepe ditch at Koula, near Eleele

Location.- Lat. 21°57'10", long. 195°33'00", at first flume downstream from siphon at Koula, 3 miles downstream from intake and 4 miles north of Eleele. Altitude of gage, 490 feet (by barometer).

Records available.- January 1910 to June 1921, March 1927 to June 1942.

Average discharge.- 25 years (1910-20, 1927-42), 25.7 million gallons a day (39.8 second-feet).

Extremes.- Maximum discharge during year, 31 million gallons a day (48 second-feet) Sept. 6 (gage height, 2.99 feet); no flow Aug. 3, 4, Oct. 2, 16, 17, when water was shut out of ditch.

1910-21, 1927-42: 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. Ditch diverts water from Hanapepe River 3 milee above station for irrigation in vicinity of Makeweli. Flow regulated by head gates.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	29	18.8	27	25	25	21.5	20	22	21.5	21.5	23	25
2	27	17.6	29	24.5	23	21.5	20	20	17.6	21.5	25	25
3	25.5	18.8	29	27	23	23	20	18.8	18.8	21.5	23	23
4	23	23	19.5	27	25	22	20	19.6	18.8	23	23	23
5	25	25	20	25	25	22	20	18.8	18.8	23	23	23
6	23	29	27.5	23	25	25	20	19.8	18.8	21.5	23	21.5
7	21.5	27	23.5	25	23	23	23	21.5	19.2	20	23	21.5
8	23	27	23.5	25	23	20.5	23	18.8	23	20	23	21.5
9	23	27	25	27	21.5	17.2	20	17.6	21.5	20	23	25
10	25	23.5	25	27	23	25	20	21	18.8	23	21.5	27
11	23	27	25	27	21.5	25	20	20	22	25	23	27
12	21.5	27	23	25	21.5	25	18.8	21	25	22.5	23	27
13	20	25	23	27	20	23	20	23	23	25	23	25
14	20	25	23	25	20	23	20	21.5	23	23	23.5	25
15	18.8	22	23	25	23	23	18.9	20	25	23.5	21	27
16	20	23	23	15.5	19.2	23	18.1	18.8	27	23	23	29
17	25	21.5	25	19.6	20	21.5	18.9	18.8	25	21.5	23	27
18	21.5	20	25	25	20	21.5	18.8	21	25	20	23	27
19	21.5	21.5	23	23	21.5	23	17.6	25	25	20	23	27
20	23	25	23	24	24.5	24	17.6	23	27	21.5	23	27
21	23	27	25	25	23	23	17.6	21.5	24.5	21.5	23	25
22	23	27	23	25	25	25	17.6	20	25	21.5	23	25
23	21.5	27	23	27	25	23	17.6	18.8	25	20	23	23
24	21.5	25	25	27	27	23	17.6	18.8	25	23	23	25
25	20	25	25	27	26	23	17.6	18.8	25	25	21.5	25
26	18.8	25	27	25	25	23	20	21.5	25	23	21.5	25
27	17.6	23	25	25	25	23	17.6	25	25	25	25	27
28	20	23	25	25	23	21.5	17.6	25	25	27	25	27
29	18.8	25	23	18.5	23	21.5	18.4	-	23	25	25	27
30	17.6	27	25	27	21.5	20	21	-	23	25	23	25
31	20	25	-	25	-	20	23.5	-	21.5	-	23	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	29	17.6	22.0	34.0	681	2,090
August	29	17.6	24.3	37.6	753	2,310
September	29	19.5	24.4	37.8	731	2,240
October	27	15.5	24.8	38.4	768	2,360
November	27	19.2	23.0	35.6	691	2,120
December	25	17.2	22.5	34.8	699	2,140
Calendar year 1941	31	15.2	22.3	34.5	8,140	24,960
January	23.5	17.6	19.4	30.0	601	1,840
February	25	17.6	20.7	32.0	579	1,780
March	27	17.6	22.9	35.4	711	2,180
April	27	20	22.5	34.8	676	2,070
May	25	21	23.1	35.7	715	2,190
June	29	21.5	25.2	39.0	758	2,320
Fiscal year 1941-42	29	15.5	22.9	35.4	8,360	25,640

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

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 1942. December 1911 to November 1918, at site a third of a mile upstream.
Average discharge.- 20 years (1921-24, 1925-42), 67.6 million gallons a day (105 second-feet).
Extremes.- Maximum discharge during year, 1,640 million gallons a day (2,540 second-feet) June 16 (gage height, 5.34 feet); minimum, 2.15 million gallons a day (3.33 second-feet) July 27-29.
1911-42: 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. Lihue and Hanamaulu ditches divert water above station, at altitudes of 600 and 500 feet, respectively, for irrigation in vicinity of Lihue.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used June 16-30)

July 1 to Oct. 23

0.8	1.75	1.5	13.0	3.0	200
.9	2.4	1.8	26	3.5	380
1.0	3.3	2.2	56	4.0	640
1.2	6.0	2.6	112		

Oct. 24 to June 30

0.9	4.1	1.6	22	3.0	220
1.0	5.6	1.8	31.5	3.5	390
1.1	7.4	2.0	47	4.0	640
1.2	9.5	2.3	80		
1.4	14.9	2.6	128		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	301	2.45	69	5.2	205	10.7	5.2	37	28	13.8	102	22.5
2	48	2.35	105	49	99	7.2	5.3	11.0	9.6	16.2	187	13.4
3	31.5	2.4	233	32	76	7.0	5.2	26	8.9	31.5	184	8.4
4	54	9.4	36	166	169	13.2	4.8	26.5	8.9	106	124	8.0
5	7.7	7.8	15.9	40	136	7.8	5.0	25.5	8.2	96	73	8.0
6	25.5	99	406	6.8	108	9.4	5.2	301	7.8	89	43	7.6
7	6.2	17.8	358	23	87	6.5	5.4	134	6.8	54	51	7.2
8	3.8	35.5	368	41	78	57	5.3	74	86	47	33.5	7.0
9	3.55	208	88	104	64	81	5.0	64	55	44	61	13.0
10	3.55	317	25	41	50	17.2	5.0	46	34.5	50	62	231
11	3.65	77	16.9	64	48	12.0	5.2	35.5	26.5	193	77	37.5
12	3.1	17.7	24.5	60	28.5	9.8	5.3	22	31.5	174	52	60
13	2.75	5.0	16.4	13.7	15.2	6.9	5.8	64	32.5	65	60	14.0
14	2.6	3.8	29	5.6	15.6	6.1	5.8	44	30	36.5	69	11.6
15	2.6	3.4	61	4.5	54	6.5	5.8	38.5	110	50	32	24
16	2.95	2.95	11.5	5.6	49	6.7	5.6	28	195	32.5	25.5	229
17	5.6	2.65	13.6	37.5	12.9	6.0	5.5	17.5	82	18.6	37.5	32
18	4.5	2.5	4.8	30.5	10.0	5.8	5.4	32	23.5	15.6	45	48
19	3.05	2.5	4.5	64	10.0	11.9	5.2	35	205	22.5	49	142
20	74	4.2	4.4	11.8	22.5	205	5.0	38	366	28	39	72
21	51	21	16.4	6.7	10.5	86	4.9	32	164	13.4	21.5	45
22	31	7.3	11.6	147	220	14.6	5.0	31	132	14.0	26	19.0
23	2.95	57	11.0	269	46	7.6	4.6	13.6	56	12.0	21	18.1
24	2.85	86	9.5	533	137	6.5	4.2	10.5	48	159	30	13.9
25	2.65	10.4	8.7	136	23.5	6.1	4.6	8.4	74	422	20.5	7.6
26	2.4	4.5	30.5	103	11.1	6.7	44	9.3	173	598	22	5.8
27	2.2	4.1	25.5	157	30	12.2	10.5	10.0	115	203	81	56
28	2.2	3.8	91	88	15.9	21.5	6.1	10.8	69	238	17.6	68
29	2.25	4.0	22	261	13.6	9.3	6.1	-	70	158	15.2	79
30	2.25	5.6	5.9	133	39	5.6	170	-	42	104	15.6	12.0
31	2.6	8.0	-	149	-	5.2	65	-	31	-	14.3	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	301	2.2	22.4	34.7	694	2,130
August	317	2.35	33.4	51.7	1,040	3,180
September	406	4.4	70.8	110	2,120	6,510
October	533	4.5	89.9	139	2,790	8,560
November	220	10.0	62.8	97.2	1,880	5,780
December	205	5.2	21.8	33.7	675	2,070
Calendar year 1941	533	2.15	30.2	46.7	11,040	33,870
January	170	4.2	13.9	21.5	431	1,320
February	301	8.4	45.5	70.4	1,280	3,910
March	366	7.8	75.2	116	2,330	7,160
April	598	12.0	104	161	3,110	9,550
May	184	14.3	54.4	84.2	1,690	5,170
June	231	5.8	44.3	68.5	1,330	4,070
Fiscal year 1941-42	598	2.2	53.0	82.0	19,370	59,410

Peak discharge.- Oct. 24 (12:15 a.m.) 1,370 m.g.d. (2,120 sec.-ft.); Apr. 26 (3:30 a.m.) 1,170 m.g.d. (1,810 sec.-ft.); June 16 (2:45 a.m.) 1,640 m.g.d. (2,540 sec.-ft.).
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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", 1½ miles upstream from intake of Kanaha ditch and 7⅞ miles northwest of Lihue. Altitude of gage, 650 feet (from topographic map).
Drainage area.- 6.6 square miles.
Records available.- August 1910 to June 1942. December 1910 to September 1914, at site 300 feet downstream from confluence of main and east branches; records not equivalent.
Average discharge.- 21 years (1921-42), 52.6 million gallons a day (81.4 second-feet).
Extremes.- Maximum discharge during year, 1,400 million gallons a day (2,170 second-feet) Oct. 29 (gage height, 5.68 feet), from rating curve extended above 600 million gallons a day by test on model of station site; minimum, undetermined due to faulty gage-height record.
1910-42: Maximum discharge, 3,720 million gallons a day (5,760 second-feet) Mar. 19, 1937 (gage height, 8.67 feet); minimum, 0.75 million gallons a day (1.16 second-feet) Sept. 3, 1938.
Remarks.- Records good except those for periods of no gage-height record and those for Apr. 27 to May 27, which are fair. Since 1925 Hanalei tunnel has discharged its water into river, and North Wailua and Stable Storm ditches have diverted water above station for irrigation in vicinity of Lihue.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Apr. 27 to May 27)

-0.7	3.0	0.0	16.5	1.5	126
-.6	4.2	.2	24	2.0	198
-.5	5.5	.5	38.5	2.5	302
-.3	8.9	.8	57	3.0	436
-.2	10.8	1.1	81		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	213	5.6	90	82	71	42	30	a23	44	38.5	68	70
2	75	3.95	166	101	64	36	29.5	22	35	36	118	38.5
3	68	4.9	178	117	54	61	26	21	28	55	103	16.4
4	68	34.5	89	100	109	69	11.7	21	15.5	103	76	9.7
5	48	42	57	64	91	63	4.7	29	11.e	81	54	5.3
6	41	106	287	50	73	49	4.5	95	7.7	50	50	4.4
7	33.5	59	331	149	54	41	4.6	39.5	46	36	68	4.6
8	39.5	133	287	119	44	63	4.3	27.5	198	32.5	47	3.0
9	36	231	108	112	54	68	3.95	25	101	43	79	99
10	53	213	81	81	63	47	3.85	23	57	79	44	213
11	30.5	89	62	81	41	44	3.85	23.5	118	248	45	73
12	16.1	60	77	66	36	36	4.1	35	114	172	38.5	104
13	10.6	50	57	56	32.5	31	3.95	30.5	68	126	36	54
14	6.4	41	47	53	34.5	29.5	3.7	26	83	99	57	59
15	4.1	33.5	43	47	52	35	3.7	25.5	138	96	38.5	98
16	6.5	35	84	102	41	31	3.6	23.5	163	64	32.5	121
17	12.3	28	57	66	32.5	29	3.5	25	107	47	30	71
18	4.8	19.9	31	61	31.5	33	3.4	27.5	72	41	50	90
19	29.5	9.9	12.3	71	25	77	3.4	59	214	36	44	226
20	153	24	8.8	60	37	172	3.4	12.4	216	41	79	100
21	38.5	44	62	41	48	92	3.4	9.8	198	53	55	68
22	15.8	27.5	51	78	136	50	3.4	9.1	116	44	44	57
23	13.8	96	60	202	61	41	a3.4	8.7	76	32.5	36	47
24	12.4	89	79	278	107	36	a3.3	11.5	76	218	33	44
25	6.0	50	95	120	54	33.5	a4.0	26	101	294	30	41
26	4.2	18.7	137	137	41	64	a40	83	171	369	26	35.5
27	3.95	13.0	125	145	41	43	a25	98	91	149	132	138
28	5.0	9.4	110	92	44	33	a20	92	68	167	44	147
29	4.6	18.5	76	175	41	29	a30	-	80	108	47	104
30	3.7	17.8	64	81	38.5	30	a130	-	50	76	36	64
31	10.9	32.5	-	86	-	26.5	a30	-	41	-	38.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	213	3.7	34.4	53.2	1,070	3,280
August	231	3.95	52.9	81.8	1,640	5,030
September	331	8.8	100	155	3,010	9,240
October	278	41	99.1	153	3,070	9,430
November	136	25	55.0	85.1	1,650	5,070
December	172	26.5	49.5	76.6	1,530	4,710
Calendar year 1941	331	1.34	44.7	69.2	16,290	50,040
January	130	3.3	14.6	22.6	452	1,390
February	98	8.7	34.0	52.6	952	2,920
March	216	7.7	93.7	145	2,900	8,920
April	369	32.5	101	156	3,030	9,310
May	132	26	54.2	83.9	1,680	5,150
June	226	3.0	73.5	114	2,210	6,770
Fiscal year 1941-42	369	3.0	63.6	98.4	23,190	71,220

a No gage-height record; discharge computed on basis of records for stations on East Branch and South Fork.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Hanalei tunnel outlet near Lihue

Location.- Sharp-crested brass weir, lat. 22°05'10", 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 1942.

Average discharge.- 10 years, 26.1 million gallons a day (40.4 second-feet).

Extremes.- Maximum discharge during year, 74 million gallons a day (114 second-feet) Mar. 19 (gage height, 1.77 feet); no flow Feb. 27, when water was shut out of ditch. 1932-42: Maximum discharge, 78 million gallons a day (121 second-feet) Mar. 19, 1937, Apr. 27, 1939 (gage height, 1.83 feet); no flow occasionally, when water was shut out of ditch.

Remarks.- Records excellent. 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	41	19.2	28	26.5	24	24.5	19.5	17.2	26.5	19.9	32	32
2	26	17.2	36.5	31.5	23.5	23.5	19.4	16.4	21	19.5	45	20.5
3	27	19.9	34	32	21.5	28.5	18.0	16.0	22.5	26	39	19.5
4	26.5	27	26.5	29.5	30	28	17.8	16.6	26.5	33.5	32	20.5
5	23.5	28	23.5	24	31	28.5	18.7	21.5	23.5	29.5	25	19.5
6	20.5	33	41	22.5	28	25.5	18.0	23	19.9	22.5	25.5	19.7
7	18.7	28	47	36.5	23.5	25.5	17.8	19.1	30	19.5	38.5	19.9
8	21	33.5	43	32	21.5	28	18.0	17.6	61	19.1	27	19.5
9	19.4	39	29	32	26.5	29.5	17.2	16.8	41	23.5	41	47
10	26	39	28	27	27	26.5	17.2	16.8	25.5	37	25.5	52
11	19.5	27	24	28.5	21.5	27	17.2	16.8	50	64	23.5	32
12	17.8	23	25	26	19.9	23.5	17.6	19.9	48	61	21.5	41
13	17.2	21.8	22.5	23.5	19.5	21	17.6	18.4	34.5	55	21.5	25.5
14	16.8	19.9	21	24.5	20.5	20.5	16.8	17.2	37.5	42	21.5	31.5
15	16.4	18.9	20.5	23	27	23	16.8	17.6	47	44	19.7	44
16	20.5	19.9	25.5	30	23.5	21	16.8	16.8	58	29	18.7	39
17	23.5	17.8	22.5	26	19.9	20.5	16.8	19.0	41	24.5	19.1	28
18	18.0	17.6	20.5	27	21	21.5	16.8	13.6	28.5	22.5	24.5	31.5
19	26	21	20.5	f29	23	31	16.4	.84	53	21.5	24.5	49
20	34.5	26	21.5	27.5	26.5	44	16.4	.36	56	24	36	35.5
21	22	27.5	25	17.5	29	31	16.0	.36	57	28	28.5	27
22	19.5	23.5	19.7	30	41	25.5	16.0	.36	42	23	23.5	25
23	21	32.5	23.5	41	28.5	22	16.4	.36	31	19.5	21.5	22.5
24	19.4	27	27.5	46	33.5	21.5	16.4	4.4	32	49	19.9	22
25	17.6	21	27	36.5	24.5	21.5	17.6	17.2	41	64	19.1	21.5
26	17.2	19.1	34.5	36	22.5	27	23	36	52	64	21	22.5
27	17.2	18.4	31	37	24.5	22	16.8	38.5	32	58	42	46
28	19.1	18.4	29.5	30.5	26	19.9	16.8	f47	28.5	58	23	46
29	18.4	22.5	24	33.5	24.5	19.5	19.5	-	34.5	44	24	38.5
30	16.4	23	24	26.5	24	20.5	27	-	23.5	34.5	21	26.5
31	23.5	24.5	-	25.5	-	18.7	19.1	-	21	-	21.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	41	16.4	21.6	33.4	671	2,060
August	39	17.2	24.3	37.6	754	2,310
September	47	19.7	27.5	42.5	826	2,530
October	46	17.5	29.7	46.0	922	2,830
November	41	19.5	25.2	39.0	757	2,320
December	44	18.7	24.8	38.4	770	2,360
Calendar year 1941	47	14.9	23.3	36.1	8,520	26,140
January	27	16.0	17.9	27.7	555	1,700
February	47	.36	16.6	25.7	465	1,430
March	61	19.9	36.9	57.1	1,150	3,520
April	64	19.1	36.0	55.7	1,080	3,310
May	45	18.7	26.6	41.2	826	2,530
June	52	19.5	30.8	47.7	925	2,840
Fiscal year 1941-42	64	.36	26.6	41.2	9,700	29,740

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 8⅝ 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 1942. Records from 1926 to June 1932 collected by Lihue Plantation Co.

Average discharge.- 10 years, 13.1 million gallons a day (20.3 second-feet).

Extremes.- Maximum discharge during year, 39 million gallons a day (60 second-feet) Aug. 7 (gage height, 1.37 feet); no flow Sept. 2, when water was shut out of ditch.
1932-42: 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.2	14.4	2.8	1.93	5.5	11.8	12.2	11.9	16.2	12.6	8.3	6.0
2	2.8	13.8	.37	.15	4.3	11.6	11.6	11.2	13.3	12.9	4.1	9.2
3	3.05	13.6	.71	.17	5.9	7.0	11.3	11.0	13.3	9.2	4.9	11.7
4	3.1	21	3.0	.15	3.25	6.9	11.3	10.9	17.5	3.25	7.3	13.0
5	11.1	22	9.6	4.7	3.15	6.5	11.3	11.9	18.0	5.0	8.5	12.6
6	8.2	15.2	3.2	7.8	4.9	8.6	11.3	9.9	13.8	8.3	8.5	12.9
7	10.7	23	.31	2.2	7.8	11.7	12.1	11.4	17.7	11.4	9.9	12.7
8	12.6	15.2	.25	.25	9.5	7.5	11.8	11.5	18.4	12.8	11.5	12.8
9	11.7	.25	.11	.22	8.3	7.5	11.0	11.3	11.1	12.1	9.4	5.3
10	19.2	.38	6.9	.15	6.1	9.5	10.7	11.2	11.6	12.4	all.3	2.8
11	14.3	1.60	8.6	.15	9.7	11.7	10.9	11.2	6.7	3.5	all.0	8.2
12	12.2	4.9	3.5	4.7	11.3	12.1	10.8	11.7	4.2	2.4	all.3	6.3
13	11.4	6.5	4.9	7.9	11.1	12.8	10.7	11.9	11.3	5.7	11.8	9.3
14	11.0	8.5	7.2	8.9	11.8	12.4	10.6	11.3	11.2	7.4	10.2	11.8
15	10.7	11.8	10.5	8.7	11.0	13.1	10.6	11.1	6.0	8.0	all.3	11.3
16	14.3	15.2	7.2	2.05	11.4	12.7	10.5	10.7	4.6	8.3	all.3	11.3
17	17.1	12.4	6.2	2.8	11.3	12.6	10.5	10.8	8.8	11.0	all.3	11.6
18	11.9	12.3	8.9	7.4	12.3	12.0	10.5	10.9	9.2	11.7	all.6	9.2
19	15.4	15.0	11.2	5.3	12.9	6.8	10.3	8.5	2.55	12.8	all.3	3.5
20	15.0	17.9	14.2	5.8	10.8	3.7	10.2	12.3	f.15	13.1	a7.7	8.1
21	13.4	19.2	8.9	8.8	12.5	2.65	10.2	11.4	a5.4	12.2	a8.5	7.8
22	13.4	16.8	5.1	6.6	4.9	8.8	10.2	11.0	a8.5	12.4	all.3	9.7
23	14.2	12.4	4.1	1.24	6.4	10.6	10.2	10.7	a8.5	12.4	all.3	11.4
24	13.4	.26	4.6	.27	3.2	12.8	10.0	10.7	a8.5	4.3	all.3	11.3
25	11.6	6.2	1.56	.11	6.8	13.9	11.3	12.0	f4.9	.48	all.3	11.4
26	11.2	14.2	.19	2.25	9.3	9.6	15.2	9.3	3.5	.58	al2.8	11.9
27	11.2	13.4	.15	1.01	11.6	10.1	11.1	16.1	7.9	1.64	8.3	8.5
28	13.8	13.2	.15	4.5	11.6	11.5	10.6	24.5	8.2	1.07	9.8	2.2
29	12.4	16.2	2.3	5.2	11.6	12.7	15.0	-	9.1	4.6	11.2	5.8
30	10.8	16.9	5.9	6.0	11.6	12.5	7.7	-	11.3	6.9	11.2	8.0
31	18.3	15.2	-	5.8	-	12.1	7.8	-	12.4	-	11.4	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	19.2	2.8	11.8	18.3	365	1,120
August	23	.25	12.5	19.3	388	1,190
September	14.2	.11	4.75	7.35	143	438
October	8.9	.11	3.65	5.65	113	347
November	12.9	3.15	8.73	13.5	262	803
December	13.9	2.65	10.2	15.8	316	969
Calendar year 1941	36	.11	10.2	15.8	3,720	11,410
January	15.2	7.7	11.0	17.0	340	1,040
February	24.5	8.5	11.7	18.1	328	1,010
March	18.4	.15	9.80	15.2	304	932
April	13.1	.48	8.01	12.4	240	738
May	12.8	4.1	10.0	15.5	311	953
June	13.0	2.2	9.15	14.2	275	843
Fiscal year 1941-42	24.5	.11	9.27	14.3	3,380	10,380

a No gage-height record; discharge computed on basis of ditchman's twice-daily report.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. 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, 45 million gallons a day (70 second-feet) July 20 (gage height, 1.69 feet); no flow at times, when water was shut out of ditch.
1936-42: Maximum discharge, 66 million gallons a day (102 second-feet) Apr. 2, 1940 (gage height, 2.13 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	22	0.07	0.07	0.18	0.05	0	0.02	0.07	0	0.12	0.07
2	0	20	.07	.07	.12	.02	0	.07	.07	0	.12	.07
3	0	22	.04	.07	.19	.07	0	.07	6.2	0	.12	15.8
4	0	15.6	.05	.07	.12	.07	13.7	.07	23	.07	.12	21.5
5	.02	12.8	.07	.07	.12	.07	22	.12	22.5	.02	.12	24
6	.02	11.2	.54	.02	.12	.02	20.5	.18	22	0	.07	27
7	0	8.5	.18	.37	.12	.02	21	.12	11.4	0	.12	27
8	0	.05	.17	.07	.12	.02	21	.12	.32	0	.02	24
9	0	.60	.04	.07	.12	.02	19.9	.07	.12	0	.02	14.0
10	0	.41	.01	.07	.12	.02	19.6	.07	.07	.01	0	.32
11	0	.12	4.3	.07	.07	0	19.3	.07	.12	.42	0	.02
12	11.2	.07	.02	.07	.07	0	19.9	.07	.12	.12	0	.02
13	14.7	.07	0	.02	.07	0	19.6	0	.12	.12	0	.02
14	19.0	0	0	.02	.07	0	19.0	0	.12	.07	.08	0
15	20.5	.02	0	.02	.07	0	19.0	0	.12	.02	0	.02
16	23.5	0	0	.07	.07	0	18.8	0	.18	.02	0	.12
17	27	0	0	.42	.07	0	18.8	.02	.12	.01	0	.02
18	22	7.8	13.8	.12	.07	0	18.5	.02	.12	0	.03	0
19	26	20.5	25.5	.07	14.7	.02	18.5	.07	.62	0	.07	.22
20	8.9	27	28.5	.07	22	.42	18.3	.02	.38	0	.07	.02
21	.02	21.5	9.4	.07	22	.12	18.2	.02	.22	0	.07	.02
22	12.5	13.9	.98	.12	27	.07	18.2	0	.07	0	.07	.02
23	16.4	13.5	.98	1.66	8.2	.07	18.2	0	.02	0	.02	0
24	16.4	.02	.90	2.15	.12	.07	17.9	0	.02	.76	0	0
25	19.9	0	.58	1.25	.07	.02	19.7	.07	.07	1.00	0	0
26	20.5	11.2	.42	1.32	.07	.02	30	.12	.18	1.25	0	6.4
27	20.5	15.0	.52	.53	.07	0	21	.06	.07	.12	1.19	6.7
28	22	18.5	.42	.18	.12	0	19.9	.10	.07	.12	.12	.02
29	22	23.5	.32	.88	.02	0	23	-	.02	.12	.07	.02
30	19.9	25	.18	.22	.02	0	9.9	-	0	.12	.12	.02
31	25	16.7	-	.18	-	0	.02	-	0	-	.07	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	27	0	11.9	18.4	368	1,130
August	27	0	10.6	16.4	328	1,010
September	28.5	0	2.95	4.56	88.6	272
October	2.15	.02	.338	.523	10.5	32
November	27	.02	3.21	4.97	96.3	295
December	.42	0	.038	.059	1.19	3.7
Calendar year 1941	30.5	0	8.65	13.4	3,160	9,690
January	30	0	16.9	26.1	523	1,610
February	.18	0	.055	.085	1.55	4.8
March	23	0	2.86	4.43	88.5	272
April	1.25	0	.146	.226	4.37	13
May	1.19	0	.091	.141	2.81	8.6
June	27	0	5.58	8.63	167	514
Fiscal year 1941-42	30	0	4.60	7.12	1,680	5,170

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 22 years (1916-22, 1926-42), 6.90 million gallons a day (10.7 second-feet).

Extremes.- Maximum discharge during year, 1.58 million gallons a day (2.44 second-feet) Oct. 9 (gage height, 0.13 foot); no flow at times, when intake gate was closed.
1910-42: 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.31	0.31	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.26	0.21	0.31
2	.21	.37	.26	.16	.16	.26	.21	.31	.31	.31	.21	.37
3	.21	.43	.21	.16	.16	.26	.21	.31	.31	.31	.21	.31
4	.21	.37	.21	.21	.16	.21	.21	.31	.31	.21	.21	.26
5	.21	.21	.21	.16	.21	.21	.21	.21	.31	.21	.21	.31
6	.21	.21	.26	.16	.21	.21	.21	.16	.31	.21	.21	.31
7	.21	.21	.21	.16	.21	.21	.26	.21	.26	.31	.21	.31
8	.31	.26	.21	.21	.21	.21	.26	.21	.19	.31	.21	.25
9	.31	.21	.21	.21	.21	.21	.21	.26	.37	.21	.21	.21
10	.31	.32	.21	.21	.21	.21	.21	.26	.31	.21	.21	.16
11	.31	.17	.26	.21	.21	.16	.21	.21	.31	.26	.21	.21
12	.31	.17	.21	.21	.21	.21	.21	.21	.37	.31	.21	.21
13	.31	.21	.21	.21	.16	.21	.21	.21	.31	.21	.21	.21
14	.31	.26	.21	.21	.16	.16	.21	.31	.31	.21	.21	.21
15	.31	.26	.21	.26	.16	.21	.16	.21	.31	.21	.21	.21
16	.31	.26	.21	.26	.15	.21	.16	.21	.31	.21	.21	.21
17	.31	.37	.21	.26	.16	.26	.16	.21	.37	.21	.26	.21
18	.21	.31	.21	.21	.21	.21	.16	.21	.31	.21	.21	.21
19	.31	.31	.31	.26	.21	.21	.21	.31	.31	.21	.21	.21
20	.43	.21	.26	.21	.21	.16	.21	.37	.31	.21	.21	.21
21	.43	.21	.21	.21	.21	.16	.21	.31	.37	.21	.21	.21
22	.43	.26	.21	.26	.21	.21	.21	.37	.37	.21	.21	.21
23	.31	.31	.21	.26	.17	.21	.21	.37	.31	.21	.16	.16
24	.26	.21	.31	.21	.21	.21	.26	.21	.21	.21	.21	.16
25	.26	.31	.21	.21	.21	.16	.21	.31	.31	.21	.21	.16
26	.21	.37	.21	.16	.21	.16	.16	.31	.31	.21	.21	.16
27	.31	.31	.21	.16	.17	.21	.21	.31	.26	.21	.21	.16
28	.31	.26	.21	.16	.17	.31	.21	.31	.21	.16	.21	.12
29	.16	.21	.21	.21	.17	.31	.31	-	.26	.21	.26	.16
30	.21	.21	.21	.21	.21	.21	.31	-	.26	.31	.21	.16
31	.26	.21	-	.21	-	.21	.21	-	.26	-	.21	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.43	0.21	0.283	0.438	8.77	27
August	.43	.17	.268	.415	8.30	25
September	.31	.21	.223	.345	6.70	21
October	.26	.16	.207	.320	6.41	20
November	.21	.16	.191	.296	5.74	18
December	.31	.16	.212	.328	6.56	20
Calendar year 1941	.49	0	.267	.413	97.6	300
January	.31	.16	.213	.330	6.61	20
February	.37	.16	.265	.410	7.41	23
March	.37	.19	.298	.461	9.24	28
April	.31	.16	.232	.359	6.96	21
May	.26	.16	.212	.328	6.56	20
June	.37	.12	.219	.339	6.56	20
Fiscal year 1941-42	.43	.12	.236	.364	85.8	263

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. 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, 32 million gallons a day (50 second-feet) Sept. 23-27 (gage height, 3.03 feet); minimum, 0.2 million gallons a day (0.3 second-foot) June 22.
1936-42: 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.

Remarks.- Records excellent. 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	21	25	6.9	26.5	4.7	3.2	3.1	3.8	15.3	3.6	1.1	15.9
2	17.5	24	19.9	18.7	4.8	3.1	3.1	3.6	19.7	3.7	.7	14.2
3	16.2	21	25	21	4.6	4.1	3.1	3.5	24	3.8	.7	14.2
4	16.9	23	25	19.9	5.0	5.0	3.1	3.6	17.5	3.7	.7	14.2
5	17.1	24	24	17.5	5.0	5.1	3.0	3.5	13.1	3.8	.7	14.2
6	8.1	26.5	12.5	24	5.0	5.1	2.9	3.7	16.4	3.7	8.4	6.1
7	19.2	26.5	3.2	25	4.9	5.1	2.7	3.2	18.0	3.5	13.6	1.5
8	25	19.9	3.2	26.5	4.9	5.0	2.7	3.1	9.6	3.4	13.1	5.6
9	26.5	14.0	4.9	24.5	4.9	5.0	2.7	3.2	9.5	3.3	8.0	5.4
10	26.5	6.0	27.5	10.6	4.8	5.1	2.7	3.2	5.9	3.3	4.7	5.4
11	25	10.7	29	4.1	4.8	5.9	2.7	3.2	6.0	2.9	10.4	8.7
12	17.1	13.6	27.5	4.1	4.8	7.1	5.8	3.3	6.0	2.6	4.4	12.6
13	13.6	14.2	17.5	8.9	4.8	5.5	13.6	3.3	5.5	2.2	4.5	10.6
14	29.5	14.2	16.4	11.6	4.8	4.3	13.6	3.3	4.9	2.3	4.5	8.8
15	27.5	13.6	25	11.7	4.8	3.8	13.6	3.2	4.9	2.3	4.5	13.7
16	24	9.4	26.5	11.6	6.1	5.0	13.6	3.8	4.8	2.3	3.1	13.1
17	25	13.2	22.5	11.1	13.6	10.6	8.0	4.6	8.6	1.5	1.4	13.1
18	26.5	25	22.5	8.8	13.6	13.6	3.5	4.6	11.1	1.1	4.3	7.0
19	18.2	25	22.5	7.0	13.6	13.6	10.7	4.5	11.4	1.5	4.3	.9
20	8.6	25	16.6	19.9	13.6	9.0	14.2	4.4	5.9	9.5	2.2	.8
21	15.6	25	12.1	19.9	7.6	4.2	17.5	2.3	9.6	16.7	6.9	.7
22	17.4	25	22.5	14.0	4.3	4.0	19.9	2.0	9.1	18.7	10.1	1.6
23	21	22.5	30.5	4.5	4.2	4.0	9.2	2.1	3.7	18.7	4.6	7.6
24	23	15.3	32	4.5	4.2	3.4	4.0	5.6	2.7	13.8	.9	11.1
25	25	18.7	32	4.4	4.1	3.2	4.0	14.0	3.5	1.9	.9	12.6
26	25	29	32	4.5	4.2	3.2	4.0	21	3.5	1.5	5.6	15.3
27	24	30.5	26.5	4.5	6.6	3.4	4.0	18.7	3.5	1.5	12.6	14.9
28	24	24	22.5	4.7	8.1	3.3	3.6	15.3	3.4	1.5	16.4	8.1
29	25	15.9	26.5	4.9	4.9	3.1	3.9	-	3.4	1.6	16.4	6.0
30	26.5	7.0	26.5	4.7	3.2	3.1	4.0	-	3.4	1.7	10.0	7.9
31	25	3.9	-	4.7	-	3.1	3.9	-	3.5	-	5.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	29.5	8.1	21.3	33.0	660	2,030
August	30.5	3.9	19.1	29.6	591	1,810
September	32	3.2	21.4	33.1	641	1,970
October	26.5	4.1	12.5	19.3	388	1,190
November	13.6	3.2	6.16	9.53	185	567
December	13.6	3.1	5.23	8.09	162	498
Calendar year 1941	33.5	3.1	15.6	24.1	5,710	17,580
January	19.9	2.7	6.66	10.3	206	633
February	21	2.0	5.49	8.49	154	471
March	24	2.7	8.63	13.4	267	821
April	18.7	1.1	4.79	7.41	144	441
May	16.4	.7	5.96	9.22	185	567
June	15.9	.7	9.06	14.0	272	834
Fiscal year 1941-42	32	.7	10.6	16.4	3,890	11,830

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 22 years (1920-42), 30.8 million gallons a day (47.7 second-feet).

Extremes.- Maximum discharge during year, 568 million gallons a day (879 second-feet) Oct. 23 (gage height, 5.47 feet), from rating curve extended above 270 million gallons a day; minimum, 9.5 million gallons a day (14.7 second-feet) Jan. 24, 29, Feb. 3, 4.
1912-42: 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 except those for period of no gage-height record, which are fair. No diversions above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.0	7.4	1.7	35.5
1.1	10.0	1.9	50
1.2	12.8	2.1	67
1.3	16.4	2.5	112
1.5	24.5	3.0	167

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	105	11.9	32	29.5	36.5	14.8	14.8	10.6	25	24	34.5	23.5
2	30.5	10.6	62	25.5	30	14.2	19.8	10.2	18.5	22.5	41	18.0
3	28.5	10.8	47	36	27	24	14.2	9.7	17.1	23.5	58	17.2
4	29	28.5	31.5	36.5	61	26.5	13.9	9.7	17.2	36.5	39	17.6
5	23	20	25.5	24.5	47	22.5	15.3	11.4	15.0	45	30.5	17.6
6	20	38	78	22	33	19.6	13.5	116	13.9	26	30	17.6
7	17.2	27.5	75	59	26	17.2	15.3	29	29.5	21.5	32	15.7
8	20.5	42	92	31.5	23.5	22.5	13.2	18.0	124	19.7	27	14.6
9	17.6	37.5	42	41	25.5	35	12.5	a15.7	52	22.5	27	23
10	24.5	71	37.5	31.5	29.5	22	11.7	a14.0	29.5	47	24	49
11	16.4	32	31.5	28	21.5	21.5	11.7	a13	71	167	29.5	23
12	14.2	22	30.5	25	19.7	16.8	11.4	a12.5	54	102	23.5	34.5
13	13.5	19.3	24.5	23	18.4	15.3	11.7	19.2	37	72	23.5	21
14	12.5	17.2	21.5	21.5	18.1	14.6	11.1	13.9	34.5	55	31	21.5
15	12.5	15.3	20.5	20.5	28	18.3	11.1	13.5	55	54	23	47
16	14.6	15.7	29.5	43	22	15.7	10.8	12.2	88	37.5	20.5	87
17	21	13.5	23	28.5	18.0	13.9	10.6	12.2	56	30.5	19.7	50
18	15.3	12.8	20.5	22	17.2	14.6	10.6	16.0	40	27	31	30
19	17.8	13.9	20	22.5	16.8	22.5	10.3	50	89	24.5	26.5	104
20	30.5	24.5	18.0	21.5	20.5	59	10.3	17.6	95	24.5	40	48
21	15.7	31.5	22	21	17.5	36	10.3	14.2	92	24	27	34.5
22	13.9	22.5	23	34.5	37	21	10.0	12.8	54	29	23.5	28
23	14.2	28	23	125	23	18.4	10.0	12.2	39.5	21.5	22	25
24	14.2	28.5	19.9	153	53	16.8	9.7	11.7	37	85	20	23.5
25	12.5	17.2	20.5	62	21.5	16.8	10.3	12.5	38	120	18.9	22.5
26	12.0	15.3	26	74	18.9	22.5	32	24	110	130	18.4	21.5
27	11.7	13.9	31.5	76	17.6	24	11.4	48	52	54	34	40
28	12.0	13.5	39.5	44	18.4	17.6	10.0	48	40	60	19.3	57
29	11.4	17.0	24.5	99	16.8	16.0	11.7	-	43	44	19.7	40
30	10.6	20.5	21.5	46	16.0	17.6	20.5	-	30	37	18.0	29
31	12.5	24.5	-	45	-	14.6	12.8	-	26.5	-	18.4	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	105	10.6	20.2	31.3	625	1,920
August	71	10.6	23.1	35.7	716	2,200
September	92	18.0	33.8	52.3	1,010	3,110
October	153	20.5	44.3	68.5	1,370	4,210
November	61	16.0	26.0	40.2	779	2,390
December	59	13.9	21.0	32.5	652	2,000
Calendar year 1941	153	7.3	21.6	33.4	7,880	24,200
January	32	9.7	13.0	20.1	402	1,240
February	116	9.7	21.7	33.6	608	1,870
March	124	13.9	49.1	76.0	1,520	4,670
April	167	19.7	49.6	76.7	1,490	4,560
May	58	18.0	27.4	42.4	850	2,610
June	104	14.6	33.4	51.7	1,000	3,070
Fiscal year 1941-42	167	9.7	30.2	46.7	11,020	33,850

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Kapaa River at Kapahi ditch intake, near Kapaa

Location.- Concrete and masonry dam, lat. 22°06'05", long. 159°22'30", 4 miles northwest of Kapaa and 4.5 miles northwest of Wailua. Altitude of gage, 365 feet (by barometer).

Drainage area.- 3.3 square miles.

Records available.- December 1936 to June 1942. July 1910 to May 1915 at site half a mile upstream, published as Kapaa River at Kapaa, June 1915 to April 1920 at site three-quarters of a mile upstream, published as Kapaa River near Kealia.

Extremes.- Maximum discharge during year, at least 2,810 million gallons a day (4,350 second-feet) Feb. 6 (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.
1936-42: 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 good except those for periods of no gage-height record, which are fair. Entire low flow is diverted into several ditches above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

-0.05	0	0.5	21	1.1	111
0.0	.2	.6	30.5	1.3	166
.1	.9	.7	42	1.5	234
.2	3.2	.8	55	1.8	365
.3	7.2	.9	70	2.1	530
.4	13.2	1.0	88	2.5	810

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	47	0	9.9	1.7	18.9	4.4	10.5	9.0	3.8	a7.8	19.4	7.7
2	1.4	0	14.0	1.5	15.5	5.6	11.2	8.4	.1	9.0	28.5	.5
3	6.6	0	5.4	2.8	14.0	11.9	5.2	8.4	2.4	25.5	38.5	4.4
4	14.7	6.2	3.5	.1	41	13.6	4.4	8.4	5.2	92	22	4.5
5	9.7	0	.6	0	26	14.1	7.1	12.2	1.0	45	9.6	3.3
6	7.8	1.9	49	0	19.6	11.4	4.8	a796	0	21	5.4	2.9
7	4.8	5.6	21	3.5	14.0	12.6	7.9	a87	26.5	15.5	8.5	4.0
8	8.7	36.5	14.7	.2	12.0	19.6	5.2	a33.5	62	13.2	2.2	0
9	5.0	22.5	6.1	.2	18.0	25	4.4	24.5	13.9	22	.5	4.3
10	9.7	35	1.6	1.7	19.8	16.7	4.4	14.8	4.9	55	9.0	23
11	.5	2.5	.3	4.0	12.6	11.3	4.0	19.6	32.5	131	9.0	11.3
12	0	.7	3.3	4.0	1.8	8.4	4.0	17.2	25.5	46	8.3	14.1
13	0	2.8	1.0	.3	3.7	10.2	4.0	12.0	11.0	37	5.0	4.6
14	0	3.6	5.8	1.1	6.0	10.2	.4	5.6	14.4	32	9.2	10.9
15	0	2.3	5.0	1.3	25	10.4	0	6.0	31	28.5	13.2	31
16	0	3.0	2.3	19.4	16.2	5.2	0	4.8	50	19.4	12.0	45
17	1.0	.7	.2	5.1	1.9	.9	0	5.2	24	16.3	11.4	26.5
18	0	0	.1	2.1	1.3	1.6	0	6.8	15.5	14.8	34	17.9
19	.7	0	1.3	4.4	1.3	11.8	0	26.5	113	7.4	22	24
20	.8	.9	0	.4	6.9	41	0	6.4	51	9.4	38	19.4
21	0	0	0	0	3.2	21	0	6.0	64	6.9	21	17.1
22	0	0	0	34.5	9.3	1.2	0	4.8	21	10.0	15.5	10.0
23	0	0	0	136	7.6	0	0	4.8	5.0	.2	17.1	1.6
24	0	8.7	0	70	16.4	0	1.0	1.9	7.2	40	10.5	.4
25	0	.2	0	29.5	0	1.6	5.1	.3	12.7	97	3.7	0
26	0	0	2.6	22	0	9.5	29.5	7.0	57	84	5.2	.6
27	0	0	.5	21.5	3.0	15.0	4.4	26	20	26.5	10.7	11.1
28	0	.7	5.1	15.5	3.5	7.8	3.2	22.5	23	29.5	1.8	43
29	0	3.5	0	93	6.7	6.0	6.2	-	30.5	19.4	6.1	21.5
30	0	3.7	0	23	7.2	9.6	14.1	-	a15.5	18.7	4.4	16.0
31	0	7.4	-	24.5	-	5.2	11.4	-	a10.8	-	7.0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	47	0	3.82	5.91	118	363
August	36.5	0	4.79	7.41	148	455
September	49	0	5.11	7.91	153	470
October	136	0	16.9	26.1	523	1,610
November	41	0	11.1	17.2	332	1,020
December	41	0	10.4	16.1	323	991
Calendar year 1941	136	0	7.17	11.1	2,620	8,040
January	29.5	0	4.92	7.61	152	468
February	796	.3	42.3	65.4	1,190	3,640
March	113	.1	24.3	37.6	754	2,320
April	131	.2	32.6	50.4	978	3,000
May	38.5	.5	13.2	20.4	409	1,250
June	45	0	12.7	19.6	381	1,170
Fiscal year 1941-42	796	0	15.0	23.2	5,460	16,760

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 24 years (1917-20, 1921-42), 6.24 million gallons a day (9.65 second-feet).

Extremes.- Maximum discharge during year, 61 million gallons a day (94 second-feet) Aug. 7 (gage height, 3.10 feet); no flow Jan. 9-13.
1909-14, 1915-42: 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.4	3.2	1.33	5.5	0.08	1.68	0.23	0.16	3.1	0.10	0.07	8.7
2	6.3	3.35	11.6	2.35	.10	.79	.17	.16	3.9	.07	.10	9.8
3	3.7	2.15	6.2	5.0	.13	3.35	.19	.16	2.45	.07	.10	5.9
4	.23	17.5	5.7	5.8	.16	1.46	.16	.19	.19	.13	.10	3.75
5	1.13	7.7	4.2	3.05	.10	1.30	.16	.19	2.75	.02	5.7	4.4
6	.27	19.4	2.25	3.45	.10	1.00	.19	.29	3.35	.02	10.8	4.3
7	.23	14.4	.31	5.5	.10	.35	.17	.07	2.35	.07	11.6	2.95
8	.23	5.1	.27	5.5	.10	.35	.04	.16	.16	.07	12.5	5.8
9	.19	2.7	1.80	7.9	.10	.27	.01	.13	.07	.07	12.7	12.4
10	4.9	.21	5.1	3.3	.04	.27	0	.13	2.6	.07	3.65	11.3
11	3.75	5.7	5.1	.16	.02	3.35	0	.13	2.15	.18	5.9	6.7
12	3.05	3.5	4.3	.19	7.3	3.7	.02	.13	1.55	.10	6.5	8.4
13	2.65	.90	4.7	2.9	5.2	1.04	.04	.13	4.0	.10	8.0	8.4
14	2.45	.23	3.7	2.15	4.8	.56	1.99	.13	3.0	.10	5.9	3.6
15	2.85	1.06	4.1	1.95	.23	3.65	2.15	.13	1.84	.08	.35	6.4
16	4.8	.38	2.8	3.95	.19	6.2	2.1	.07	6.1	.07	.35	6.3
17	5.7	1.85	4.0	1.19	5.2	5.2	1.99	.07	9.0	.07	.31	2.15
18	4.1	2.35	4.0	1.30	4.9	4.4	1.99	.07	7.6	.07	.31	.40
19	3.6	2.55	4.0	.19	4.9	5.1	1.99	.07	6.3	4.7	.23	.40
20	4.7	5.3	3.15	3.35	3.7	3.4	1.99	.04	3.65	5.0	.27	1.61
21	4.2	9.9	3.55	2.95	3.2	1.92	1.99	.02	5.4	4.0	.23	.45
22	3.8	4.2	3.6	2.05	3.75	6.6	2.1	.02	1.21	7.3	.23	3.8
23	4.1	23.5	4.0	.34	2.4	5.2	2.1	.02	6.4	6.7	.23	9.6
24	4.2	5.9	3.7	.16	6.1	3.45	1.36	2.0	7.2	4.2	3.15	9.9
25	3.6	5.0	3.8	.13	4.2	3.45	.16	3.15	4.5	1.20	7.3	7.3
26	2.55	3.8	4.4	.13	3.6	2.85	.81	2.05	.13	.19	5.8	6.0
27	1.99	3.25	5.6	.13	3.45	.35	.19	2.45	.13	.13	5.7	10.9
28	2.85	2.7	7.1	.10	2.7	.27	.16	2.55	.13	.13	8.8	3.8
29	2.95	2.35	3.45	.17	.16	.23	.16	-	.13	.10	6.8	6.0
30	2.7	2.55	2.95	.13	.13	.19	.16	-	.13	.10	6.6	6.5
31	3.5	.19	-	.10	-	.19	.16	-	.10	-	5.2	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	6.3	0.19	3.12	4.83	96.7	297
August	23.5	.19	5.25	8.12	163	500
September	11.6	.27	4.03	6.24	121	371
October	7.9	.10	2.29	3.54	71.1	218
November	7.3	.02	2.24	3.47	67.1	206
December	6.2	.19	2.34	3.62	72.6	223
Calendar year 1941	24.5	.02	3.33	5.15	1,220	3,740
January	2.15	0	.804	1.24	24.9	77
February	3.15	.02	.531	.822	14.9	46
March	9.0	.07	2.95	4.56	91.6	281
April	7.3	.02	1.18	1.83	35.2	108
May	12.7	.07	4.37	6.76	135	416
June	12.4	.40	5.93	9.18	178	546
Fiscal year 1941-42	23.5	0	2.93	4.53	1,070	3,290

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. Equivalent records for July 1925 to November 1936, at site 150 feet downstream, collected by East Kauai Water Co.

Extremes.- Maximum discharge during year, 23.5 million gallons a day (36.4 second-feet) Feb. 6 (gage height, 2.62 feet); minimum, 0.05 million gallons a day (0.08 second-foot) several days in October, November, and June.

1936-42: Maximum discharge, 25 million gallons a day (39 second-feet) Aug. 12, 1940 (gage height, 2.73 feet); minimum, 0.03 million gallons a day (0.05 second-foot) several days in November and December 1936, January 1937, February 1938.

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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.7	5.6	10.7	9.0	0.05	3.2	4.3	0.19	7.7	5.0	0.10	0.07
2	9.7	3.1	12.4	8.4	.05	3.15	4.5	.19	5.9	3.6	.10	.05
3	8.4	5.6	11.2	9.6	.05	3.2	4.2	.17	6.4	.26	.10	.05
4	4.6	11.0	10.2	9.2	.06	3.15	4.2	.17	7.4	2.45	.08	2.15
5	4.4	11.2	8.8	6.8	.06	3.1	4.4	3.5	5.9	1.45	.06	3.6
6	4.3	12.4	11.0	4.5	.06	1.94	4.2	9.5	5.2	.70	.06	3.55
7	5.0	9.3	11.2	6.2	.05	.26	4.4	1.75	7.2	.37	.07	3.55
8	9.9	12.3	11.2	8.4	.05	.28	4.1	.83	12.4	.26	.07	3.5
9	8.4	12.4	5.5	9.7	.05	.30	4.1	.40	11.2	.26	.06	3.2
10	11.8	12.4	7.9	8.2	.05	.25	4.0	.23	8.2	.24	.06	.21
11	7.8	10.2	9.4	7.2	.05	.25	4.0	.19	8.6	.49	.26	.16
12	5.9	7.2	8.0	6.8	.06	.22	4.1	.17	6.4	.58	.21	.15
13	4.9	5.9	5.1	5.9	.06	.21	4.9	3.85	6.1	.37	.19	.11
14	4.5	5.4	.30	5.0	.05	.19	4.3	6.8	5.9	.26	.19	.11
15	3.85	5.0	4.5	5.0	.05	.21	4.2	7.2	6.4	.23	.17	.52
16	3.9	5.9	6.8	11.0	.06	.21	4.1	5.9	3.05	.21	.16	.73
17	10.2	4.6	5.4	9.0	2.7	2.7	4.0	6.4	.58	.18	.16	.38
18	6.4	4.2	5.9	7.5	4.6	4.5	4.0	7.2	.46	.16	.62	.23
19	5.0	4.8	6.6	8.2	4.6	4.8	3.9	9.2	1.55	.14	.41	.19
20	8.8	9.3	5.4	7.4	4.8	4.6	3.85	6.7	6.7	.12	.64	.21
21	3.5	11.2	6.4	6.3	4.6	4.4	3.8	5.4	9.7	3.1	.40	.16
22	3.0	9.0	5.1	8.6	6.9	4.1	3.7	4.8	8.7	5.4	.29	.14
23	3.8	10.9	4.1	7.0	8.7	4.5	3.7	4.6	7.7	4.9	.21	.11
24	4.9	11.3	6.0	.14	11.6	5.4	3.7	4.4	5.3	5.6	.12	.11
25	3.3	5.0	5.4	.10	6.8	6.9	6.0	5.3	6.2	4.4	.10	3.5
26	3.85	4.3	8.3	.08	5.4	10.7	10.2	8.2	8.2	1.62	.10	5.3
27	4.1	4.1	10.2	.08	6.9	7.5	5.4	9.1	5.1	.45	.12	5.9
28	3.4	3.55	11.2	.07	8.9	4.6	4.4	9.2	.34	.08	.08	6.2
29	4.6	7.3	7.2	.11	4.9	4.4	5.0	-	.34	.08	.08	.30
30	3.6	9.1	5.9	.06	3.3	4.7	5.7	-	.28	.08	.07	.23
31	7.2	10.2	-	.05	-	4.3	.21	-	3.05	-	.06	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.8	3.0	5.96	9.22	185	567
August	12.4	3.1	7.86	12.2	244	748
September	12.4	.30	7.58	11.7	227	698
October	11.0	.05	5.73	8.87	178	545
November	11.6	.05	2.92	4.52	87.6	269
December	10.7	.19	3.17	4.90	98.2	301
Calendar year 1941	12.9	.05	5.08	7.86	1,850	5,690
January	10.2	.21	4.37	6.76	136	416
February	9.5	.17	4.34	6.71	122	373
March	12.4	.28	5.75	8.90	178	547
April	5.6	.08	1.43	2.21	43.0	132
May	.64	.06	.174	.269	5.40	17
June	6.2	.05	1.49	2.31	44.7	137
Fiscal year 1941-42	12.4	.05	4.24	6.56	1,550	4,750

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, 4½ 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 1942.
Average discharge.- 23 years (1919-42), 13.5 million gallons a day (20.9 second-feet).
Extremes.- Maximum discharge during year, 1,480 million gallons a day (2,290 second-feet) Feb. 6 (gage height, 5.62 feet), from rating curve extended above 230 million gallons a day; minimum, 2.7 million gallons a day (4.2 second-feet) Aug. 2.
1910, 1912-42: 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 fair except those for periods of no gage-height record, which are poor. Anahola ditch diverts water 3 miles above station for irrigation in vicinity of Kealia.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Feb. 6, Apr. 25 to June 30

0.8	2.4	1.4	8.0	2.3	59
.9	3.15	1.6	13.5	2.6	95
1.0	3.95	1.8	23	3.0	162
1.2	5.8	2.0	34.5	3.4	254

Feb. 7 to Apr. 24

1.0	3.55	1.6	11.7	2.2	50
1.2	5.1	1.8	22	2.4	69
1.4	7.1	2.0	34.5	2.7	110

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	42	2.85	5.6	6.1	9.5	5.7	9.0	5.2	5.3	6.7	10.3	10.2
2	7.3	2.8	10.1	4.4	8.8	5.5	9.4	4.8	4.5	6.3	11.0	6.1
3	7.8	2.85	6.8	3.95	8.4	6.4	5.0	f4.3	4.5	10.5	11.0	5.3
4	9.3	8.4	5.0	6.9	12.2	7.0	4.5	4.4	4.5	62	9.1	5.4
5	5.7	6.2	4.9	4.1	20.5	7.0	11.8	16.5	4.2	33	8.4	5.1
6	4.7	12.2	40	3.7	12.2	6.5	5.6	229	4.0	15.4	9.0	5.3
7	4.4	10.0	8.6	3.55	7.0	5.5	5.1	29	7.7	10.4	9.1	4.9
8	7.2	21.5	7.0	4.9	6.6	6.8	4.5	f14.2	46	8.3	8.0	4.6
9	6.5	14.1	5.5	5.5	12	8.5	4.3	11.7	8.2	11.5	7.2	7.7
10	6.8	14.1	6.1	5.2	10	6.4	4.2	8.1	5.8	18.1	6.8	12.6
11	4.8	7.0	5.9	4.3	6.6	5.6	4.7	7.8	9.5	66	6.6	6.5
12	4.0	4.8	9.6	3.7	6.0	5.1	5.0	7.8	10.7	30	6.5	7.4
13	3.7	4.3	8.7	3.4	5.7	4.6	8.1	10.4	7.2	27.5	6.2	5.5
14	3.55	3.95	5.3	3.25	6.2	4.5	4.4	7.8	6.3	22	6.8	5.7
15	3.45	4.4	7.0	3.1	20	5.6	4.3	7.3	10.9	18.7	6.3	7.2
16	3.7	3.7	12.1	7.9	11	5.9	4.1	6.6	41	13.6	5.7	28
17	7.1	3.4	7.1	6.6	6.0	4.5	3.85	6.2	15.0	10.7	5.5	55
18	4.8	3.25	5.5	4.3	9.6	4.4	3.7	6.3	10.1	9.5	24.5	23
19	4.4	3.15	5.5	3.85	6.0	4.9	3.7	19.5	70	8.5	25.5	11.3
20	5.8	3.95	5.1	4.2	8.2	15.0	3.65	6.7	33	8.3	27	9.5
21	3.7	6.8	5.1	3.45	8.0	9.7	3.45	5.6	54	7.7	14.8	8.4
22	3.4	5.8	5.2	136	17	5.2	3.45	5.3	17.0	10.7	9.1	7.3
23	3.4	7.2	4.5	86	12	4.6	3.4	5.0	12.2	7.3	11.2	6.5
24	4.2	10.4	4.2	34.5	29	4.5	3.4	4.9	10.7	56	8.0	6.1
25	3.4	4.6	4.0	14.8	6.6	5.0	20.5	4.8	10.4	102	7.0	6.3
26	3.15	3.8	4.2	16.9	6.0	8.2	26.5	5.3	19.4	68	6.6	6.5
27	3.0	3.45	4.7	45	7.4	6.8	7.0	8.6	8.8	19.4	15.0	8.2
28	2.9	3.3	7.5	13.8	7.0	4.9	5.9	8.6	8.5	16.9	7.0	12.0
29	2.9	5.5	4.8	69	8.2	9.2	5.4	-	13.9	13.9	6.6	9.8
30	2.85	6.3	3.8	15.2	7.4	23	9.0	-	7.6	11.6	5.9	11.5
31	2.9	4.7	-	10.7	-	6.0	6.6	-	7.1	-	7.0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	42	2.85	5.90	9.13	183	561
August	21.5	2.8	6.41	9.92	199	610
September	40	3.8	7.31	11.3	219	673
October	136	3.1	17.4	26.9	538	1,650
November	29	5.7	10.0	15.5	301	924
December	23	4.4	6.85	10.6	212	652
Calendar year 1941	136	2.8	8.80	13.6	3,210	9,850
January	26.5	3.4	6.56	10.1	204	625
February	229	4.3	16.5	25.5	462	1,420
March	70	4.0	15.4	23.8	478	1,470
April	102	6.3	23.7	36.7	710	2,180
May	27	6.5	9.96	15.4	309	947
June	55	4.8	10.3	15.9	309	949
Fiscal year 1941-42	229	2.8	11.3	17.5	4,120	12,660

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Nov. 7 to Dec. 1, Dec. 29 to Jan. 1, Feb. 1, 2; discharge computed on basis of records for Anahola ditch wasteway and Kapaa River below Kapahi ditch intake near Kapaa.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 19 years (1921-25, 1927-42), 5.35 million gallons a day (5.18 second-feet).

Extremes.- Maximum discharge during year, 49 million gallons a day (76 second-feet) Oct. 23 (gage height, 2.66 feet); no flow Feb. 8-16, when water was turned out of ditch. 1915-42: 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 turned 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	22	1.75	8.4	6.8	0.02	0.04	0.09	2.1	1.01	2.25	0.02	9.1
2	7.3	1.49	14.1	4.5	.02	.04	.06	1.83	2.5	3.25	.02	3.05
3	11.9	2.2	9.9	6.2	.02	.06	.04	1.55	2.95	8.5	.02	2.5
4	12.7	15.5	6.6	13.0	.04	.06	.04	1.74	3.45	6.8	.02	2.6
5	4.9	8.5	5.4	4.0	.06	.06	.06	8.8	2.2	.12	.02	2.45
6	3.9	16.5	20	3.05	.04	.06	.04	1.02	1.92	.02	.02	2.5
7	3.8	13.2	11.3	5.2	.02	.06	.04	.01	5.6	.01	.02	2.2
8	6.7	19.4	10.0	6.2	.02	.06	.04	0	12.2	.01	3.85	2.1
9	5.1	17.4	5.3	10.3	.02	.06	1.42	0	.04	.02	4.5	10.3
10	7.2	15.7	6.2	7.2	.02	.06	1.92	0	.02	.06	3.6	17.9
11	3.4	7.4	6.2	5.3	.02	.06	1.92	0	.06	.19	4.0	5.0
12	2.7	4.5	7.8	4.0	.02	.04	2.8	0	.06	.04	3.8	8.6
13	2.3	3.5	5.5	3.45	.02	1.67	4.3	0	.04	.04	3.15	3.7
14	2.1	3.05	3.7	2.95	.02	2.5	1.92	0	.04	.04	5.9	4.6
15	1.92	3.1	6.1	2.6	.06	5.0	1.83	0	.04	.04	3.25	11.6
16	2.6	2.7	6.9	10.6	.06	3.7	1.65	1.90	.08	.04	2.7	11.2
17	10.6	2.3	5.1	5.0	.04	2.1	1.57	3.45	.04	.04	4.1	.04
18	4.6	2.1	3.9	4.4	.04	2.6	1.49	4.5	.02	1.90	13.9	.02
19	7.0	2.0	3.7	4.6	.04	5.7	1.65	7.7	.25	4.4	8.0	.02
20	9.9	5.0	3.15	4.5	.04	6.8	1.57	.04	.04	5.7	6.9	.02
21	3.05	11.2	6.4	2.95	2.3	.10	1.33	.04	.12	4.6	.04	.02
22	2.4	5.5	3.25	16.8	11.5	.06	1.33	.04	.04	4.4	2.95	.02
23	3.6	12.4	2.6	30	7.5	.04	1.25	1.32	.04	.06	7.5	.02
24	5.7	11.2	2.7	7.7	7.3	.04	1.25	1.92	.04	.21	3.0	1.45
25	2.4	3.9	3.05	.06	.06	.04	10.2	2.1	.04	.30	3.35	3.6
26	2.1	2.95	5.2	.06	2.8	.08	16.2	3.9	.08	.06	2.95	4.1
27	1.92	2.6	5.5	.06	9.4	.08	3.15	4.0	.04	.04	9.4	10.5
28	1.92	2.5	10.4	.04	4.6	.06	2.7	.06	.04	.02	3.35	4.4
29	1.92	6.8	3.8	.17	.10	.06	2.4	-	.04	.02	3.85	.04
30	1.57	7.6	3.05	.04	.06	.14	5.2	-	.04	.02	2.95	.04
31	1.74	7.7	-	.02	-	.06	3.05	-	.04	-	5.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	22	1.57	5.19	8.03	161	494
August	19.4	1.49	7.15	11.1	222	680
September	20	2.6	6.51	10.1	195	599
October	30	.02	5.54	8.57	172	527
November	11.5	.02	1.54	2.38	46.3	142
December	6.8	.04	1.03	1.59	31.8	98
Calendar year 1941	34.5	.02	4.18	6.47	1,530	4,680
January	16.2	.04	2.34	3.62	72.5	223
February	8.8	0	1.72	2.66	48.1	148
March	12.2	.02	1.07	1.66	33.2	102
April	8.5	.01	1.44	2.23	43.1	132
May	13.9	.02	3.67	5.68	114	349
June	17.9	.02	4.12	6.37	124	380
Fiscal year 1941-42	30	0	3.46	5.35	1,260	3,870

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Lower Anahola ditch near Kealia

Location.- Parshall flume, lat. 22°08'00", long. 159°19'50", 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 1942. 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, 9.9 million gallons a day (15.3 second-feet) Feb. 27 (gage height, 1.49 feet); no flow many times, when water was turned out of ditch.

1936-42: 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.6	2.45	5.1	4.4	0	3.2	0	0	0	0	0	0
2	5.7	2.25	6.1	4.0	0	4.8	0	0	0	0	0	0
3	5.6	2.25	4.9	3.6	0	5.1	0	0	0	0	0	0
4	5.7	3.65	2.45	4.5	0	1.47	0	0	0	0	2.45	0
5	5.2	4.8	4.6	3.75	0	0	0	0	0	0	6.2	0
6	4.4	4.9	1.86	3.35	0	0	1.10	0	0	0	4.6	0
7	4.1	5.3	0	3.2	0	0	.01	0	0	0	2.05	0
8	5.0	5.9	2.9	4.1	0	0	0	0	0	0	.01	2.75
9	5.3	7.0	5.0	4.4	0	0	3.3	0	0	0	0	5.2
10	5.1	6.1	5.0	4.5	0	0	3.3	0	0	0	0	5.2
11	4.4	6.0	5.1	3.75	0	0	3.2	.85	0	0	0	4.0
12	3.8	4.7	4.8	3.3	0	0	3.65	3.7	0	0	0	4.1
13	3.45	4.3	5.9	3.1	1.12	0	5.5	5.4	0	0	0	1.37
14	3.2	4.0	4.8	2.85	3.5	0	4.3	4.8	0	0	3.1	0
15	3.2	4.0	4.6	2.75	5.6	2.2	4.1	5.6	0	0	4.6	0
16	3.35	3.5	6.6	3.65	2.3	4.8	4.1	6.1	0	2.1	3.8	0
17	4.7	3.1	6.0	4.9	3.45	4.2	3.8	6.6	3.75	1.27	1.37	0
18	4.2	2.85	5.0	3.75	4.2	4.1	3.75	6.6	5.6	0	.01	0
19	3.75	2.85	4.8	3.35	4.6	4.2	3.8	7.5	2.7	0	.98	0
20	4.5	3.2	4.6	3.6	5.3	6.6	3.6	3.8	0	0	1.00	0
21	3.45	4.6	4.4	3.2	4.7	8.5	3.5	0	0	0	.06	0
22	3.0	4.7	4.5	1.78	1.78	7.0	3.45	0	0	0	0	0
23	2.95	4.5	4.1	0	1.40	7.0	3.3	4.0	0	0	0	0
24	3.35	5.6	3.8	0	5.1	3.95	3.3	5.6	0	0	0	0
25	2.95	4.2	3.6	0	5.7	0	5.4	5.6	0	0	0	.98
26	2.8	3.6	3.65	0	6.0	0	7.0	5.8	0	0	0	.95
27	2.6	3.35	4.0	0	2.2	0	5.9	7.1	0	0	3.75	0
28	2.55	3.3	5.1	0	0	0	2.15	2.7	0	0	4.3	0
29	2.5	4.3	4.4	0	0	0	0	-	0	0	3.9	0
30	2.5	5.2	3.45	0	0	0	0	-	0	0	1.39	0
31	2.45	4.6	-	0	-	0	0	-	0	-	-	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.7	2.45	3.91	6.05	121	372
August	7.0	2.25	4.23	6.54	131	402
September	6.6	0	4.38	6.78	131	403
October	4.9	0	2.57	3.98	79.8	245
November	6.0	0	1.90	2.94	57.0	175
December	8.5	0	2.17	3.36	67.1	206
Calendar year 1941	8.5	0	3.33	5.15	1,210	3,730
January	7.0	0	2.63	4.07	81.5	250
February	7.5	0	2.92	4.52	81.8	251
March	5.6	0	.389	.602	12.0	37
April	2.1	0	.112	.173	3.37	10
May	6.2	0	1.41	2.18	43.6	134
June	5.2	0	.818	1.27	24.6	75
Fiscal year 1941-42	8.5	0	2.29	3.54	834	2,560

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

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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 3½ miles southeast of Kilauea. Altitude of gage, 750 feet (from topographic map).

Records available.- August 1932 to June 1942.

Extremes.- Maximum discharge during year, 62 million gallons a day (96 second-feet) June 17 (gage height, 3.11 feet); minimum, 1.09 million gallons a day (1.69 second-feet) Nov. 14.

1932-42: 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 excellent. Ditch diverts water from Moloaa and Puu Ka Ele Streams, half a mile southeast and 1½ 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	11.5	1.39	3.05	3.7	2.35	2.35	2.6	2.05	2.55	2.85	4.5	4.9
2	3.9	1.39	6.2	2.45	2.05	2.25	3.1	1.98	2.35	2.75	5.4	2.65
3	4.0	1.31	3.9	2.35	1.89	2.95	1.98	1.89	2.25	4.9	5.9	2.35
4	4.9	4.2	2.75	3.55	3.2	3.25	1.89	1.89	2.25	13.1	4.3	2.65
5	2.85	2.85	2.45	2.25	6.2	3.55	4.0	6.7	2.15	7.0	3.7	2.25
6	2.45	3.5	13.0	1.98	3.2	2.95	2.35	30	2.15	4.6	5.0	2.65
7	2.05	5.6	4.0	1.98	1.89	2.45	2.05	6.2	2.7	3.35	4.4	2.25
8	3.2	10.7	3.35	2.75	1.54	3.25	2.05	3.9	9.5	3.05	3.9	2.25
9	2.95	6.3	2.55	2.55	1.89	3.7	1.98	3.8	3.25	4.6	3.95	5.1
10	3.95	5.9	2.9	2.46	1.69	2.7	1.69	2.95	2.55	6.8	3.15	7.5
11	2.25	3.15	3.15	2.15	1.39	2.55	2.35	2.75	3.8	8.6	2.85	3.35
12	1.89	2.25	5.0	1.89	1.23	2.25	3.6	3.15	3.5	5.8	2.85	4.3
13	1.71	1.98	4.4	1.80	1.16	2.15	4.3	4.0	2.65	6.0	2.85	2.85
14	1.63	1.89	2.65	1.80	1.69	2.15	2.25	3.25	2.75	5.1	3.3	2.85
15	1.54	2.35	3.4	1.71	5.1	2.35	2.25	2.85	5.5	4.7	2.65	4.1
16	1.70	1.80	5.4	5.7	4.3	2.05	2.05	2.55	11.8	3.8	2.45	13.5
17	3.5	1.63	3.25	3.6	2.55	1.80	1.98	2.65	5.2	3.55	2.45	22
18	2.15	1.54	2.65	2.35	4.8	1.80	1.89	2.95	4.6	3.35	13.7	13.2
19	1.98	1.54	2.75	2.35	3.25	2.15	1.89	6.8	15.5	3.25	7.4	5.0
20	2.55	2.15	2.95	2.35	3.25	7.0	1.89	2.95	11.2	3.25	10.2	5.2
21	1.71	4.1	3.25	1.89	2.65	4.1	1.89	2.45	11.5	3.15	6.2	4.7
22	1.54	3.05	3.25	14.3	3.15	2.26	1.89	2.35	5.8	3.8	3.55	3.7
23	1.63	5.9	2.85	16.0	3.65	1.98	1.80	2.25	4.5	2.95	3.95	3.25
24	2.0	7.3	2.45	8.0	6.8	1.89	1.86	2.15	4.6	12.5	2.95	2.95
25	1.63	2.75	2.35	3.9	2.85	2.3	8.6	2.15	4.5	14.9	2.75	3.05
26	1.54	2.15	2.45	3.4	2.45	3.85	7.5	2.65	4.9	4.1	2.85	2.95
27	1.47	1.98	2.6	11.1	4.0	2.75	2.85	3.35	3.7	4.1	5.4	4.9
28	1.47	1.89	5.0	5.1	4.2	2.05	2.55	3.8	3.7	5.4	2.95	6.6
29	1.47	2.95	2.55	10.2	3.5	1.98	2.15	-	5.0	4.9	2.85	5.2
30	1.39	3.35	2.25	4.1	2.65	5.1	3.5	-	3.25	4.6	2.45	6.4
31	1.47	2.9	-	2.65	-	2.15	2.75	-	2.95	-	3.85	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.5	1.39	2.58	3.99	80.0	245
August	10.7	1.31	3.28	5.07	102	312
September	13.0	2.25	3.62	5.60	109	334
October	16.0	1.71	4.28	6.62	133	407
November	6.8	1.16	3.03	4.69	91.0	279
December	7.0	1.80	2.78	4.30	86.0	264
Calendar year 1941	22	1.16	3.17	4.90	1,160	3,550
January	8.6	1.80	2.76	4.27	85.7	263
February	30	1.89	4.16	6.44	116	357
March	15.5	2.15	4.93	7.63	153	469
April	14.9	2.75	5.36	8.29	161	493
May	13.7	2.45	4.32	6.68	134	411
June	22	2.25	5.15	7.97	155	474
Fiscal year 1941-42	30	1.16	3.85	5.96	1,410	4,310

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 86 million gallons a day (133 second-feet) Feb. 6 (gage height, 2.58 feet); no flow at times, when water was turned out of ditch.
1936-42: 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1				0	6.2	3.4	6.2	0	2.6	1.21	6.0	0
2				0	5.3	2.95	6.6	0	0	0	11.9	0
3				0	3.7	4.9	3.1	0	0	1.06	8.0	0
4				0	7.6	5.4	2.95	0	0	17.5	4.9	0
5				0	10.8	6.9	9.3	5.1	0	1 .3	4.2	0
6				0	6.5	4.7	3.3	30	0	4.9	6.7	0
7				0	3.95	3.4	3.4	8.6	0	3.95	15.1	0
8				0	3.25	6.6	2.8	4.8	11.6	3.95	2.8	0
9				0	10.9	9.2	.88	7.2	5.e	16	0	0
10				0	7.5	5.0	0	3.25	3.4	14.4	0	0
11				0	3.8	5.4	0	3.25	18.0	29.5	0	0
12				0	3.1	3.4	0	3.3	12.5	21	0	0
13				0	2.95	1.04	0	4.7	8.9	23	0	0
14				0	3.45	0	0	3.8	6.0	19.2	0	0
15				0	17.3	0	0	6.6	13.6	18.3	0	0
16				0	9.8	0	0	1.06	26.5	9.2	0	4.5
17				0	4.6	0	0	0	13.9	6.2	0	21
18				0	9.3	0	0	0	7.7	3.1	0	10.4
19				0	5.2	0	0	7.1	18.8	0	0	15.7
20				0	e.0	15.1	0	3.8	19.5	0	12.7	7.5
21				0	2.05	10.3	0	2.8	26	0	10.3	4.9
22				0	0	3.95	0	2.3	10.3	5.0	2.1	3.8
23				0	0	3.25	0	.76	7.1	3.9	0	3.25
24				11.6	8.4	2.95	0	0	7.1	18.0	0	1.45
25				12.1	4.8	3.45	0	0	7.3	33	0	0
26				13.0	1.14	10.4	0	0	16.4	28.5	0	0
27				18.5	0	7.2	0	9.6	6.4	12.7	0	0
28				9.5	4.5	3.1	0	11.4	7.2	17.3	0	11.7
29				16.3	8.3	2.8	0	-	12.4	8.1	0	9.2
30				8.2	4.8	13.0	0	-	4.7	6.2	0	11.5
31				6.5	-	3.6	0	-	3.8	-	0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	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	18.5	0	3.09	4.78	95.7	294
November	17.3	0	5.57	8.62	167	513
December	15.1	0	4.56	7.06	141	434
Calendar year 1941	25	0	1.91	2.96	697	2,140
January	9.3	0	1.24	1.92	38.5	118
February	30	0	4.26	6.59	119	366
March	26.5	0	8.95	13.8	278	852
April	33	0	11.2	17.3	336	1,030
May	13.1	0	2.67	4.13	82.7	254
June	21	0	3.50	5.42	105	322
Fiscal year 1941-42	33	0	3.74	5.79	1,360	4,180

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 26 million gallons a day (40 second-feet) Oct. 22 (gage height, 1.80 feet); no flow during several periods in year.
1932-42: Maximum discharge, 32.5 million gallons a day (50.3 second-feet) Mar. 7, 1938 (gage height, 2.06 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.6	1.31	3.25	4.1	0	0	3.05	2.15	2.35	3.25	0	2.85
2	3.55	1.23	7.2	2.75	2.95	0	3.5	2.05	2.15	3.15	0	2.85
3	3.35	1.47	6.0	3.05	5.6	1.26	2.45	2.05	2.15	4.6	0	2.75
4	3.7	2.9	4.0	3.45	7.5	3.6	2.35	2.35	2.15	11.1	0	2.85
5	2.75	2.8	3.35	2.75	4.7	3.7	4.6	6.4	2.05	6.2	0	2.65
6	2.65	3.3	10.6	2.35	.12	3.15	2.55	6.6	1.98	5.0	0	3.35
7	2.25	5.5	5.2	2.45	0	2.75	2.45	1.90	2.7	3.7	0	2.55
8	2.85	10.5	4.3	3.25	2.1	2.95	2.35	4.0	9.4	3.35	0	2.35
9	2.85	7.0	3.8	3.6	5.5	3.55	2.25	2.45	3.15	4.9	1.40	5.0
10	4.4	7.6	3.8	2.85	3.55	2.95	2.15	0	2.35	4.9	3.25	7.0
11	2.65	4.0	3.9	2.55	0	2.65	2.65	0	4.2	3.5	3.15	3.55
12	2.35	2.95	5.9	2.35	0	2.65	3.6	0	4.1	2.25	3.05	5.9
13	2.15	2.65	5.5	2.35	0	2.55	4.6	0	2.95	3.8	2.95	3.35
14	2.05	2.35	3.45	2.25	1.37	2.45	2.55	0	3.4	5.9	4.1	2.85
15	2.05	3.05	3.55	2.05	4.8	2.5	2.7	0	3.7	4.6	3.15	3.55
16	2.15	2.15	4.7	6.1	2.4	2.65	2.45	0	.90	.98	2.85	7.0
17	3.05	1.98	3.25	4.6	0	2.35	2.25	0	0	0	2.75	7.2
18	1.98	1.89	3.05	3.15	.15	2.35	2.15	0	0	0	7.9	1.48
19	2.05	1.89	3.05	3.35	0	2.55	2.15	.54	.52	0	5.0	0
20	2.75	2.25	3.25	3.05	0	5.9	1.98	0	.36	2.1	.76	0
21	1.80	3.3	3.55	2.85	0	4.5	1.98	.10	.27	1.06	0	0
22	1.53	3.75	2.75	9.2	0	2.75	1.89	2.35	0	0	.04	0
23	1.63	6.8	2.55	11.6	2.1	2.55	1.80	2.25	0	1.95	1.33	0
24	1.80	8.2	2.45	.75	8.2	2.55	1.86	2.25	0	3.6	1.54	0
25	1.63	3.25	2.45	.09	3.8	2.65	9.0	2.15	0	2.7	2.35	0
26	1.54	2.65	2.65	.06	3.45	3.55	6.3	2.35	0	.16	1.51	0
27	1.54	2.45	2.8	1.67	4.3	3.15	2.95	2.65	0	0	.47	2.4
28	1.47	2.25	4.0	.33	3.95	2.55	2.85	3.05	1.53	0	1.12	8.9
29	1.47	2.95	2.75	1.20	0	2.45	2.45	-	6.4	0	1.63	2.75
30	1.31	3.15	2.35	.15	0	5.8	2.95	-	3.8	0	2.55	4.8
31	1.39	2.65	-	0	-	2.75	2.55	-	3.45	-	2.85	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.6	1.31	2.56	3.96	79.4	244
August	10.5	1.23	3.55	5.49	110	338
September	10.6	2.35	4.00	6.19	120	368
October	11.6	0	2.91	4.50	90.3	277
November	8.2	0	2.22	3.43	66.5	204
December	5.9	0	2.83	4.38	87.9	270
Calendar year 1941	13.9	0	2.84	4.39	1,040	3,180
January	9.0	1.80	2.95	4.56	91.4	280
February	6.6	0	1.70	2.63	47.6	146
March	9.4	0	2.13	3.30	65.9	202
April	11.1	0	2.76	4.27	82.6	254
May	7.9	0	1.80	2.79	55.7	171
June	8.9	0	2.93	4.53	87.9	270
Fiscal year 1941-42	11.6	0	2.70	4.18	985	3,020

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 44 million gallons a day (68 second-feet) Sept. 6 (gage height, 2.50 feet); minimum, 0.09 million gallons a day (0.14 second-foot Mar. 26.

1934-42: 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. 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 discharged into Kalihiwai Reservoir, where it is stored for irrigation in vicinity of Kilauea.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	19.6	1.98	6.3	4.8	0.19	1.23	2.25	2.05	1.73	1.89	0.36	0.19
2	6.0	1.89	11.8	4.1	.19	1.16	2.4	2.05	1.98	1.98	.41	1.13
3	6.2	1.98	7.6	6.0	1.15	1.39	2.05	1.98	1.80	1.17	.36	1.63
4	7.2	4.3	5.0	4.4	2.1	1.59	1.98	2.05	1.71	.63	.36	1.63
5	5.1	4.3	4.3	1.66	1.71	1.65	2.65	5.3	1.63	.46	.36	1.47
6	4.1	6.3	10.0	2.9	1.31	1.47	1.61	1.00	1.54	.46	.36	1.47
7	3.35	7.6	1.95	4.2	1.02	1.31	2.15	.52	1.86	.41	.32	1.47
8	3.9	10.4	.65	3.15	.81	1.47	2.05	1.22	2.8	.41	.27	1.39
9	3.8	8.4	1.52	3.8	.81	1.80	2.05	2.35	.27	.41	.27	2.05
10	7.2	8.8	2.85	3.15	1.21	1.31	2.15	2.55	.59	.46	.19	2.55
11	3.9	2.85	2.9	2.45	1.16	1.31	2.45	2.65	1.98	.75	.19	2.35
12	3.25	1.23	3.0	1.98	.88	1.23	2.95	4.7	1.16	.63	1.37	4.4
13	2.95	1.80	2.9	3.2	.68	1.16	3.05	4.4	.36	.52	2.15	3.35
14	2.75	1.54	1.08	3.7	.93	1.54	2.35	3.25	1.14	.52	1.98	2.95
15	2.65	1.39	.52	3.35	2.25	2.15	2.25	2.15	1.39	1.10	1.89	3.25
16	2.75	1.96	1.55	9.4	1.90	2.05	2.15	2.2	.75	1.55	1.89	2.1
17	4.4	2.45	1.02	6.8	.61	1.98	2.15	2.95	.57	1.98	1.80	.89
18	2.95	2.45	.46	4.7	1.11	1.98	2.05	4.1	1.62	2.25	2.45	.54
19	3.1	2.35	3.0	4.4	1.54	2.05	2.05	6.5	1.55	2.45	.75	.52
20	5.5	3.0	3.8	2.15	1.63	3.4	1.98	.81	.27	2.35	.81	.36
21	2.95	6.4	3.35	1.89	1.47	1.54	1.98	1.18	.23	2.25	.41	.36
22	2.65	6.7	3.05	5.0	2.15	1.43	1.89	2.25	.19	1.62	.32	.32
23	2.55	7.5	2.85	3.6	1.95	2.15	1.89	2.55	.16	1.43	.27	.27
24	2.85	9.0	2.95	.68	2.6	2.05	2.0	2.45	.16	1.50	.27	.27
25	2.45	3.9	2.85	.52	1.63	2.15	7.4	1.87	.12	1.16	.27	.23
26	2.55	3.15	3.45	.45	1.39	2.45	8.1	1.39	.33	1.02	.23	.19
27	2.25	2.85	4.6	.46	1.63	2.35	3.05	1.63	.52	.63	.32	.23
28	2.15	2.65	6.0	.27	1.63	2.05	2.75	1.71	.52	.57	.23	.32
29	2.15	3.6	4.0	.32	1.47	2.05	2.35	-	.52	.41	.19	.23
30	2.05	3.7	3.15	.23	1.31	3.55	2.45	-	1.28	.36	.19	.19
31	2.05	4.7	-	.23	-	2.25	2.25	-	1.98	-	.19	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	19.6	2.05	4.11	6.36	127	391
August	10.4	1.23	4.23	6.54	131	402
September	11.8	.46	3.62	5.60	108	333
October	9.4	.23	3.03	4.69	93.9	288
November	2.6	.19	1.35	2.09	40.6	125
December	3.55	1.16	1.85	2.86	57.2	176
Calendar year 1941	19.6	.19	3.08	4.77	1,120	3,450
January	8.1	1.61	2.61	4.04	80.9	248
February	6.5	.52	2.49	3.85	69.8	214
March	2.8	.12	1.06	1.64	32.7	100
April	2.45	.36	1.11	1.72	33.3	102
May	2.45	.19	.691	1.07	21.4	66
June	3.35	.19	1.28	1.98	38.3	118
Fiscal year 1941-42	19.6	.12	2.29	3.54	834	2,560

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 24 years (1918-42), 47.4 million gallons a day (73.3 second-feet).

Extremes.- Maximum discharge during year, 1,890 million gallons a day (2,920 second-feet) Oct. 29 (gage height, 5.79 feet), from rating curve extended above 200 million gallons a day; minimum, 9.1 million gallons a day (14.1 second-feet) Aug. 2, 3.
1914-42: 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 for period of no gage-height record, which are poor. Since 1925 Hanalei tunnel has been diverting an average of about 25 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 table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Oct. 23-29)

0.3	7.4	1.0	35.5	2.0	132
.5	12.8	1.3	56	2.5	212
.7	20.5	1.6	84	3.0	318

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	186	10.3	60	46	33.5	19.7	26.5	10.4	28.5	25	37	30.5
2	35.5	9.3	117	59	28	18.0	24.5	10.1	20.5	24	58	17.1
3	38	11.5	102	81	23.5	37	15.6	9.8	20	25	80	15.8
4	39.5	40	41	79	77	40	14.6	9.6	18.4	45	40	15.6
5	25	29	28	32.5	91	40	16.9	19.6	18.0	58	25	15.6
6	21	82	203	25.5	51	32.5	14.2	42	15.6	30	24	16.0
7	17.1	36.5	253	198	27.5	24	13.8	16.9	88	24	25	14.6
8	19.2	72	214	80	23.5	37.5	13.2	11.9	130	21	21	13.2
9	16.3	178	59	95	31.5	62	12.5	11.3	38	25	21	27
10	28	180	51	56	35.5	32	12.5	10.4	32	45	18	94
11	15.2	48	34.5	54	21.5	36	12.2	9.8	110	170	22	22
12	13.2	26	56	39.5	19.2	23.5	12.2	24	61	150	18	38.5
13	12.2	21	28	32	18.0	19.7	12.5	16.5	40	90	17.6	20.5
14	11.3	17.6	23	35.5	20.5	18.0	11.6	14.9	66	62	28.5	22.5
15	11.0	15.6	21.5	27	35	23	11.6	14.6	82	60	17.1	57
16	15.6	17.1	54	73	23.5	19.0	11.3	11.3	135	42	15.6	70
17	27	15.8	28	40	18.4	16.3	11.0	12.8	54	35	15.2	29
18	14.9	12.8	23.5	28	22.5	16.7	10.7	52	40	29	31	25.5
19	42	16.7	22	35	20	36.5	10.4	137	160	26	26.5	221
20	100	41	21	24.5	33	162	10.4	43	121	31	38	50
21	18.6	55	36.5	30	55	56	10.1	34.5	195	25	32.5	31.5
22	14.9	27.5	18.8	73	146	25	9.8	31.5	58	31	23.5	25.5
23	15.2	60	41	242	37.5	20.5	9.8	29.5	41	26	20.5	22.5
24	14.6	41	59	240	79	18.7	9.8	25	38	120	17.6	20
25	11.9	18.8	39	90	25	18.6	11.3	22	40	190	15.6	19.7
26	11.0	16.6	92	117	21.5	33	33.5	51	130	250	15.6	20.5
27	10.4	14.2	62	170	30	22	11.3	95	60	80	91	66
28	10.4	13.5	70	63	30	17.6	10.4	69	42	90	21.5	82
29	10.4	19.1	34.5	142	26	16.3	10.4	-	44	54	22.5	48
30	9.8	22	29	50	22	17.6	25	-	31	40	18.0	29.5
31	13.0	35.5	-	39.5	-	15.2	12.8	-	27	-	19.7	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	186	9.8	26.7	41.3	828	2,540
August	180	9.3	38.7	59.9	1,200	3,680
September	253	18.8	64.0	99.0	1,920	5,900
October	242	24.5	77.3	120	2,400	7,360
November	146	18.0	37.5	58.0	1,130	3,450
December	162	15.2	31.4	48.6	974	2,990
Calendar year 1941	253	8.2	33.8	52.3	12,330	37,820
January	33.5	9.8	13.9	21.5	432	1,330
February	137	9.6	30.2	46.7	815	2,590
March	195	15.6	64.0	99.0	1,920	6,090
April	250	21	64.1	99.2	1,920	5,900
May	91	15.2	28.1	43.5	872	2,570
June	221	13.2	39.3	60.8	1,190	3,620
Fiscal year 1941-42	253	9.3	43.0	66.5	15,670	48,120

Note.- Discharge for period of no gage-height record, Mar. 25 to May 12; computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.
Average discharge.- 10 years (1932-42), 11.8 million gallons a day (18.3 second-feet).
Extremes.- Maximum discharge during year, 442 million gallons a day (684 second-feet) Feb. 19 (gage height, 4.20 feet), from rating curve extended above 60 million gallons a day; minimum, 2.85 million gallons a day (4.41 second-feet) Sept. 30 to Oct. 3.
1931-42: 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, 2.35 million gallons a day (3.64 second-feet) probably Sept. 22, 1940.
Remarks.- Records good except those for Jan. 2 to May 9, which are fair. No diversions above station.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Jan. 2 to May 9)

July 1 to Nov. 5				Nov. 6 to June 30			
0.3	2.65	1.2	18.5	0.4	2.9	1.6	32
.4	3.55	1.5	28.5	.5	4.0	1.9	48
.6	6.0	1.8	42	.7	6.7	2.1	62
.8	9.2	2.1	62	.9	10.3	2.5	96
1.0	13.4	2.4	87	1.1	14.9	2.9	144
				1.3	20.5	3.3	206

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	29.5	3.35	23.5	3.0	4.2	7.9	32.5	4.1	16.5	7.7	6.6	8.2
2	12.1	3.2	29.5	3.0	4.1	5.7	15.2	3.8	8.8	7.6	6.4	5.7
3	31	3.55	10.6	3.1	3.8	12.8	6.6	3.55	16.4	6.8	6.1	5.2
4	37	8.0	6.3	15.6	4.0	29.5	5.4	3.85	18.4	13.3	5.6	6.4
5	11.6	6.6	5.2	4.0	27.5	31	23	9.4	15.2	13.5	5.3	5.7
6	7.9	8.6	30	3.2	12.2	17.0	6.8	5.1	9.7	10.4	7.1	4.9
7	5.7	7.2	10.1	3.1	5.3	11.5	6.3	3.9	29.5	7.7	9.0	4.6
8	9.1	15.3	6.0	4.2	4.0	36	5.2	3.65	57	7.6	6.0	4.5
9	10.6	23	4.7	11.4	15.1	29.5	4.6	3.55	36	12.0	5.3	5.4
10	7.4	12.9	7.6	10.4	13.9	9.0	4.1	3.35	20	47	5.2	6.2
11	5.6	6.4	6.7	22	5.3	15.3	4.6	3.45	147	171	5.2	5.4
12	4.5	4.5	4.5	22	4.0	7.4	8.4	17.1	59	80	5.2	6.2
13	4.0	4.0	3.9	12.4	3.45	5.3	7.5	19.1	25	48	5.2	5.3
14	3.8	3.65	3.55	32	9.5	4.6	4.8	10.3	27.5	28	5.2	8.9
15	3.65	3.45	3.35	15.0	33	6.8	4.1	8.0	54	31	5.0	43
16	10.9	3.3	3.45	29	12.0	6.6	4.0	8.2	72	17.6	5.2	26
17	21	3.2	3.45	15.1	5.6	4.4	3.9	11.0	26	8.8	5.0	9.4
18	10.6	3.1	3.2	10.8	12.1	4.0	3.8	13.0	12.7	7.2	8.6	6.9
19	6.2	3.3	3.1	14.5	6.3	4.8	3.9	78	19.1	6.7	10.8	5.9
20	4.2	23	3.1	6.0	5.6	13.9	3.8	12.3	22.5	17.4	21.5	5.4
21	3.65	17.0	3.1	4.7	3.9	5.7	3.55	6.7	69	8.8	10.2	5.0
22	3.45	9.4	3.1	21	10.5	4.4	3.55	5.3	20.5	6.6	6.7	4.8
23	4.0	7.4	3.0	74	4.8	3.9	3.55	4.6	13.7	8.0	9.2	4.5
24	5.7	9.1	2.9	63	11.3	3.65	4.7	4.4	24.5	38	7.4	4.5
25	3.65	4.6	2.9	37.5	4.5	f3.45	7.6	11.3	28	52	5.9	4.6
26	3.45	5.1	3.1	14.8	3.45	f3.9	4.6	41	65	18.2	5.3	5.3
27	3.35	4.4	3.1	8.0	12.2	3.55	3.9	62	19.2	8.9	5.7	23.5
28	3.3	3.55	3.1	6.2	11.0	3.45	20.5	63	29.5	8.4	5.2	23
29	3.2	5.3	3.0	9.9	23.5	3.3	5.3	-	35.5	7.6	5.0	14.1
30	3.2	9.2	2.9	6.2	8.4	24.5	9.9	-	12.1	6.9	5.6	8.8
31	4.8	13.5	-	4.7	-	5.0	5.4	-	9.0	-	9.0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	37	3.2	8.93	13.8	277	850
August	23	3.1	7.68	11.9	238	751
September	30	2.9	6.73	10.4	202	620
October	74	3.0	15.8	24.4	490	1,500
November	33	3.45	9.48	14.7	284	873
December	36	3.3	10.6	16.4	328	1,010
Calendar year 1941	167	2.9	10.1	15.6	3,680	11,290
January	32.5	3.55	7.45	11.5	231	709
February	78	3.35	15.1	23.4	423	1,300
March	147	8.8	32.8	50.7	1,020	3,130
April	171	6.0	23.8	36.8	715	2,190
May	21.5	5.0	6.93	10.7	215	659
June	43	4.5	9.24	14.3	277	851
Fiscal year 1941-42	171	2.9	12.9	20.0	4,700	14,420

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 7½ miles west of Hanalei. Altitude of gage, 470 feet (by barometer).

Drainage area.- 1.1 square miles.

Records available.- December 1931 to June 1942.

Average discharge.- 10 years (1932-42), 3.71 million gallons a day (5.74 second-feet).

Extremes.- Maximum discharge during year, 208 million gallons a day (322 second-feet) Feb. 19 (gage height, 3.75 feet), from rating curve extended above 30 million gallons a day; minimum, 0.40 million gallons a day (0.62 second-foot) Aug. 2, 3, 17-19.
1931-42: 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 good. No diversions above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.9	0.10	1.3	3.9	2.1	31.5
1.0	.47	1.4	5.8	2.4	49
1.05	.79	1.5	8.2	2.7	71
1.1	1.20	1.7	14.2	3.0	101
1.2	2.35	1.9	22		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.65	0.43	5.3	0.43	1.20	2.8	17.5	0.79	6.3	2.1	1.71	1.11
2	1.40	.40	7.8	.47	1.11	1.96	6.0	.65	2.8	1.83	1.60	.79
3	8.3	.47	2.3	.43	1.02	4.8	1.60	.53	4.7	1.83	1.40	.65
4	11.4	.94	1.30	1.98	1.20	16.0	1.20	.59	5.6	2.1	1.30	.72
5	2.1	.65	1.02	.59	13.4	13.9	9.0	1.20	4.4	5.1	1.20	.79
6	1.30	.65	6.4	.47	4.2	8.2	1.71	.72	2.8	2.65	1.40	.65
7	.94	.65	1.83	.43	1.71	4.5	1.71	.59	19.0	1.83	1.40	.59
8	1.41	1.47	1.11	.53	1.20	15.9	1.20	.53	28	1.71	1.11	.59
9	1.75	4.3	.87	1.71	3.2	15.7	1.02	.53	16.8	4.0	1.02	.72
10	1.02	1.68	1.20	1.56	4.7	3.75	.79	.53	8.4	18.4	.94	.72
11	.79	.87	1.02	6.4	1.60	7.0	.87	.53	81	91	.94	.72
12	.65	.53	.72	6.1	1.20	2.95	2.5	5.1	32.5	46	.94	.72
13	.59	.47	.65	3.2	1.02	2.1	2.2	6.0	8.5	19.9	.94	.72
14	.53	.47	.65	12.9	2.15	1.71	1.02	2.4	7.5	9.2	.87	1.23
15	.47	.43	.59	4.3	10.2	2.3	.79	1.50	15.5	10.0	.87	14.3
16	1.75	.43	.59	7.9	4.3	1.94	.72	1.32	28	4.6	.87	11.6
17	4.1	.40	.65	4.2	1.83	1.30	.65	2.35	7.8	3.1	.87	2.1
18	1.80	.40	.53	2.8	2.1	1.20	.59	2.5	3.75	2.35	1.28	1.40
19	.87	.43	.53	3.95	1.50	1.30	.65	41	3.85	2.2	1.20	1.02
20	.72	6.0	.53	1.60	1.40	2.8	.59	3.8	3.95	4.6	2.5	.87
21	.59	2.85	.53	1.20	1.02	1.40	.63	1.96	15.9	2.5	1.83	.79
22	.53	1.50	.47	4.4	2.65	1.11	.47	1.40	4.6	1.96	.94	.72
23	.53	.94	.47	27.5	1.20	.94	.47	1.11	3.3	1.71	1.02	.65
24	.72	1.02	.47	46	2.4	.87	.60	1.02	5.8	25	.94	.65
25	.53	.65	.47	19.1	1.20	.79	1.10	1.98	6.8	28.5	.79	.65
26	.47	1.50	.47	6.1	.94	.79	.59	19.8	32	8.3	.72	.72
27	.43	.87	.47	2.8	2.35	.87	.47	20.5	6.7	3.6	.87	4.2
28	.43	.53	.47	2.2	2.1	.79	7.6	36.5	6.9	2.5	.72	5.3
29	.43	.92	.47	3.05	12.4	.72	1.02	-	9.5	2.2	.65	3.45
30	.43	1.50	.43	1.96	3.05	11.6	2.55	-	3.3	1.83	.79	1.40
31	.43	2.9	-	1.40	-	1.30	1.20	-	2.35	-	1.26	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.4	0.43	1.65	2.55	51.1	157
August	6.0	.40	1.20	1.86	37.2	114
September	7.8	.43	1.34	2.07	40 3	124
October	46	.43	5.73	8.87	178	545
November	13.4	.94	2.98	4.61	89.6	275
December	16.0	.72	4.30	6.65	133	409
Calendar year 1941	74	.40	2.95	4.56	1,080	3,310
January	17.5	.47	2.22	3.43	68.9	211
February	41	.53	5.62	8.70	157	483
March	81	2.35	12.5	19.3	388	1,190
April	91	1.71	10.4	16.1	313	959
May	2.5	.65	1.13	1.75	34.9	107
June	14.3	.59	2.02	3.13	60.5	186
Fiscal year 1941-42	91	.40	4.25	6.58	1,550	4,760

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 10 years (1932-42), 4.34 million gallons a day (6.71 second-feet).

Extremes.- Maximum discharge during year, 74 million gallons a day (114 second-feet) Apr. 11 (gage height, 2.43 feet), from rating curve extended above 18 million gallons a day; minimum recorded, 2.5 million gallons a day (3.9 second-feet) Feb. 9, 10.
1931-42: 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 good except those for Dec. 4 to June 30, which are fair. No diversions.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.9	2.7	3.05	2.6	2.7	3.2	11	2.7	10.6	4.1	4.1	3.3
2	2.9	2.7	3.2	2.6	2.6	3.05	6.0	2.7	5.8	3.95	3.95	3.3
3	3.3	2.8	2.9	2.6	2.6	3.6	4.0	2.7	5.3	3.75	3.75	3.3
4	3.3	2.8	2.9	2.6	2.7	5.3	3.2	2.7	5.6	3.75	3.6	3.45
5	3.05	2.8	2.8	2.6	5.1	5.0	4.5	2.7	4.9	4.5	3.45	3.45
6	2.9	2.8	2.9	2.6	4.2	4.2	3.5	2.7	4.3	4.3	3.45	3.45
7	2.9	2.8	2.9	2.6	3.2	3.5	3.2	2.7	5.9	4.1	3.45	3.45
8	2.9	2.9	2.8	2.6	2.9	4.8	3.1	2.7	18.1	3.95	3.45	3.45
9	2.9	3.4	2.8	2.6	3.05	4.7	2.9	2.7	16.9	4.3	3.45	3.45
10	2.9	2.9	2.8	2.6	3.05	3.7	2.8	2.6	8.3	7.8	3.3	3.45
11	2.9	2.8	2.8	2.7	2.8	3.9	2.9	2.6	38	49	3.2	3.45
12	2.9	2.8	2.8	2.8	2.7	3.6	3.3	4.7	27	20.5	3.2	3.45
13	2.9	2.8	2.8	2.8	2.7	3.3	3.2	5.9	10.6	7.8	3.2	3.45
14	2.9	2.8	2.7	3.4	2.8	3.0	3.0	4.9	7.4	5.1	3.2	3.6
15	2.9	2.8	2.7	3.05	3.3	2.9	2.9	3.45	6.9	4.3	3.2	4.6
16	2.9	2.8	2.7	3.3	3.2	2.8	2.8	3.2	8.2	3.75	3.2	5.0
17	3.05	2.8	2.7	3.05	2.9	2.7	2.8	3.05	6.4	3.6	3.2	5.0
18	2.9	2.8	2.7	2.8	2.8	2.7	2.8	2.9	5.1	3.45	3.3	3.95
19	2.9	2.8	2.7	2.9	2.7	2.7	2.8	26	4.7	3.3	3.3	3.75
20	2.9	3.05	2.7	2.8	2.7	2.9	2.8	7.4	4.3	3.45	3.3	3.6
21	2.9	2.9	2.7	2.7	2.6	2.7	2.7	4.7	4.9	3.3	3.2	3.45
22	2.9	2.8	2.6	2.9	2.7	2.7	2.7	3.75	4.5	3.2	3.2	3.45
23	2.9	2.8	2.6	4.3	2.6	2.7	2.7	3.3	4.1	3.2	3.2	3.45
24	2.9	2.8	2.6	12.4	2.6	2.7	2.7	3.2	4.3	19.3	3.2	3.45
25	2.9	2.8	2.6	7.4	2.6	2.7	2.8	3.2	4.3	37	3.2	3.45
26	2.9	2.8	2.6	5.2	2.6	2.7	2.7	7.7	9.4	19.1	3.2	3.45
27	2.9	2.8	2.6	3.6	2.8	2.7	2.7	14.3	6.8	7.6	3.3	3.75
28	2.8	2.8	2.6	3.2	2.7	2.7	3.5	28	5.6	5.6	3.3	3.75
29	2.8	2.8	2.6	3.2	4.1	2.7	2.8	-	5.1	4.7	3.3	3.95
30	2.7	2.8	2.6	2.9	3.45	6.0	2.9	-	4.6	4.3	3.3	3.6
31	2.7	2.9	-	2.8	-	3.5	2.7	-	4.3	-	3.3	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.3	2.7	2.92	4.52	90.4	277
August	3.4	2.7	2.83	4.38	87.8	270
September	3.2	2.6	2.75	4.25	82.4	253
October	12.4	2.6	3.43	5.31	106	326
November	5.1	2.6	2.98	4.61	89.4	275
December	6.0	2.7	3.40	5.26	105	323
Calendar year 1941	23	2.6	3.47	5.37	1,270	3,890
January	11	2.7	3.37	5.21	104	320
February	28	2.6	5.68	8.79	159	488
March	38	4.1	8.45	13.1	262	804
April	49	3.2	8.54	13.2	256	786
May	4.1	3.2	3.35	5.18	104	319
June	5.0	3.3	3.66	5.66	110	337
Fiscal year 1941-42	49	2.6	4.27	6.61	1,560	4,780

Note.- No gage-height record Dec. 4 to Feb. 9; discharge computed on basis of records for Hanakoa Stream.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Right Branch of North Fork Kaukonahau Stream near Wahiawa

Location.- Masonry dam control, lat. 21°31'15", long. 157°56'55", 200 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.- 1.2 square miles.
Records available.- May 1913 to January 1933, February 1934 to June 1942.
Average discharge.- 23 years (1915-24, 1926-32, 1934-42), 7.77 million gallons a day (12.0 second-feet).
Extremes.- Maximum discharge during year, 592 million gallons a day (916 second-feet) Oct. 3 (gage height, 6.74 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. 3, 4.
1913-42: Maximum discharge, 1,500 million gallons a day (2,320 second-feet) Aug. 12, 1940 (gage height, 9.34 feet), from rating curve extended above 40 million gallons a day by test on model of station site; minimum, 0.09 million gallons a day (0.15 second-foot) Mar. 22, 1926.
Remarks.- Records good except those for period of no gage-height record, which are fair. No diversions above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

2.5	0.10	3.0	3.9	3.9	42
2.6	.30	3.1	5.8	4.2	64
2.7	.75	3.2	8.3	4.5	88
2.8	1.35	3.4	15.1	4.8	118
2.9	2.45	3.6	24	5.1	159

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24	1.46	12.0	11.2	2.7	1.5	1.05	0.86	0.44	4.1	4.8	5.3
2	4.1	1.29	18.5	6.6	2.5	1.3	.99	.26	.34	3.75	30	1.90
3	3.2	1.23	33.5	142	2.3	1.3	.87	.24	.30	4.5	18.5	1.57
4	3.45	10.8	6.3	53	2.2	1.8	.81	.24	.30	16.1	7.7	1.90
5	2.6	15.9	4.8	11.8	2.1	6.6	.75	6.4	.28	19.1	5.2	1.35
6	6.8	18.9	147	8.0	2.4	2.8	.70	40	.30	5.8	5.4	1.90
7	3.2	22	43	44	1.8	1.9	.70	1.66	15.5	3.75	8.6	1.90
8	8.7	43	12.1	22	1.6	2.4	.66	.81	20.8	5.3	4.6	2.5
9	7.1	17.4	8.0	15.6	1.5	1.7	.62	.57	43	3.05	4.1	14.9
10	10.8	8.5	6.3	7.6	1.4	1.3	.62	.44	12.9	11.0	3.9	8.2
11	3.3	4.8	5.4	6.6	1.4	1.1	.57	.39	91	31	3.2	11.7
12	2.6	3.75	4.5	5.8	1.3	.97	.52	.30	17.6	18.6	2.75	15.5
13	2.25	3.2	3.75	9.4	1.2	.86	.32	.86	10.7	23.5	2.45	4.1
14	2.25	2.9	3.45	6.4	1.4	.76	.52	1.67	14.4	7.6	2.25	6.6
15	2.25	2.9	3.05	5.0	1.6	.90	.89	.57	82	7.6	2.1	3.75
16	4.4	3.0	2.75	4.5	4.0	1.0	.93	.30	25	5.4	2.0	7.0
17	7.8	2.1	2.45	6.7	1.9	.80	.52	.30	12.1	4.5	1.90	8.2
18	2.9	1.90	2.6	10.8	6.8	.62	.48	.34	10.8	3.9	1.68	23.5
19	30	4.4	2.45	5.8	6.4	2.9	.44	5.4	79	3.46	1.68	21.5
20	18.8	2.9	10.4	4.7	5.0	36.5	.39	.78	60	3.6	1.46	4.7
21	4.1	12.6	15.4	3.75	8.0	7.3	.34	.39	25	4.1	1.35	3.75
22	3.2	3.5	2.75	13.3	7.4	2.35	.34	.28	15.0	4.4	1.79	3.2
23	2.75	34.5	2.25	19.8	3.0	1.90	.30	.26	9.2	2.75	1.29	2.6
24	2.6	4.8	5.0	52	3.5	2.6	.30	.26	7.6	2.6	1.23	2.45
25	2.1	3.2	8.6	10	2.0	1.57	.30	1.06	8.8	2.1	1.17	3.25
26	1.90	2.6	25	7.0	1.7	6.6	.88	7.4	23	3.75	11.0	3.35
27	1.79	2.25	18.3	7.4	1.4	7.0	.52	1.23	6.6	12.8	7.3	13.3
28	3.55	2.0	8.1	4.5	2.3	1.68	.34	.57	10.4	25.5	1.46	24
29	6.4	2.35	4.3	5.5	1.8	1.35	.30	-	13.8	6.7	18.4	7.4
30	1.90	2.75	5.0	3.5	1.6	1.35	.30	-	6.0	12.9	2.6	24.5
31	1.68	12.2	-	3.0	-	1.17	.28	-	4.7	-	3.3	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	30	1.68	5.89	9.11	183	560
August	43	1.23	8.22	12.7	255	782
September	147	2.25	14.1	21.8	423	1,300
October	142	3.0	16.7	25.8	517	1,590
November	8.0	1.2	2.81	4.35	64.2	258
December	36.5	.62	3.35	5.18	104	318
Calendar year 1941	147	.18	5.71	8.83	2,080	6,400
January	1.05	.28	.573	.887	17.8	54
February	40	.24	2.62	4.05	73.3	225
March	91	.28	19.2	29.7	597	1,830
April	31	2.1	8.71	13.6	261	802
May	30	1.17	5.22	8.08	162	497
June	24.5	1.35	7.79	12.1	234	717
Fiscal year 1941-42	147	.24	7.97	12.3	2,910	8,930

Note.- No gage-height record Oct. 24 to Dec. 17; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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", 100 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 1942.
Average discharge.- 25 years (1915-24, 1926-42), 11.3 million gallons a day (17.5 second-feet).
Extremes.- Maximum discharge during year, 936 million gallons a day (1,450 second-feet) Oct. 4 (gage height, 6.44 feet), from rating curve extended above 43 million gallons a day by test on model of station site; minimum, 0.18 million gallons a day (0.28 second-foot) Feb. 3, 4.
1913-42: 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.4	0.14	2.0	2.7	2.8	26.5
1.5	.27	2.1	3.75	3.0	42
1.6	.48	2.2	5.1	3.3	74
1.7	.79	2.3	6.9	3.6	115
1.8	1.24	2.4	9.1	4.0	185
1.9	1.84	2.6	16.0	4.5	300

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	40	2.1	23	17.1	3.75	2.1	1.42	0.20	0.76	5.6	6.2	6.7
2	6.9	2.45	18.1	6.7	3.55	1.9	1.42	.19	.54	5.0	45	2.55
3	5.0	2.1	16.7	111	3.2	1.9	1.24	.18	.44	7.1	20.5	1.93
4	6.4	25.5	6.4	98	3.0	2.5	1.15	.18	.42	14.9	11.0	4.1
5	4.8	11.3	5.1	12.0	2.9	16.5	1.06	10.7	.35	23	7.4	2.0
6	11.0	24	207	8.2	3.3	3.5	1.02	93	.29	7.7	9.0	2.0
7	4.6	33	40	17.5	2.55	2.5	.97	2.85	24	4.8	13.0	2.45
8	17.0	56	12.2	47	2.35	3.5	.97	1.34	28	4.3	6.0	4.6
9	20.5	46	8.4	16.1	2.2	2.1	.79	.84	54	4.0	5.3	31
10	26.5	17.3	6.9	8.4	2.0	1.7	.73	.64	18.0	14.0	5.3	14.5
11	6.2	7.3	7.1	7.1	1.84	1.4	.70	.48	169	54	4.2	16.0
12	4.6	5.5	5.1	8.4	1.78	1.3	.64	.42	24.5	30.5	3.65	29
13	3.75	4.7	4.4	14.9	1.66	1.2	.60	.47	16.5	28	3.35	7.0
14	3.65	3.9	3.9	9.0	1.81	1.1	.57	2.05	28.5	9.8	3.0	11.1
15	4.6	3.55	3.55	7.6	2.1	1.4	.67	.60	97	9.1	2.9	7.2
16	10.4	3.9	3.2	8.2	6.2	1.5	.76	.40	77	6.9	2.6	13.4
17	14.3	2.8	3.1	17.4	2.4	1.2	.54	.64	23	5.5	2.55	15.7
18	4.2	2.6	3.45	29.5	16.0	1.02	.44	.70	29.5	4.8	2.45	37.5
19	27	8.9	8.8	10.6	16.7	11.1	.40	12.2	154	4.2	2.1	15.0
20	17.2	4.5	18.4	8.0	8.0	38	.35	1.49	136	5.5	2.0	5.3
21	4.7	33	16.6	6.2	20	8.4	.31	.64	42	6.3	1.84	4.6
22	3.75	5.8	4.0	24	17.7	2.9	.27	.44	20.5	5.9	2.35	3.75
23	3.35	42	3.75	35	3.65	3.75	.27	.33	13.2	3.75	1.72	3.2
24	3.1	6.5	3.65	75	4.8	3.2	.24	.27	11.5	3.65	1.60	3.55
25	2.7	4.4	6.9	11.2	2.45	2.2	.24	1.51	18.0	3.1	1.48	7.0
26	2.55	3.55	18.9	8.0	2.1	11.4	1.26	16.8	30.5	3.2	4.0	7.8
27	2.35	3.1	18.3	9.0	1.78	8.5	.88	3.0	9.1	5.7	3.25	21.5
28	5.6	2.9	17.1	6.0	3.65	2.55	.31	1.19	11.1	14.0	1.48	18.8
29	15.5	3.5	5.8	8.3	2.5	2.0	.24	-	22	6.8	31.5	10.2
30	2.9	5.3	9.2	4.8	2.2	2.1	.24	-	8.4	26.5	3.1	45
31	2.55	23	-	4.2	-	1.66	.23	-	6.5	-	8.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	40	2.35	9.28	14.4	288	883
August	56	2.1	12.9	20.0	400	1,230
September	207	3.1	17.0	26.3	509	1,560
October	111	4.2	21.1	32.6	654	2,010
November	20	1.66	5.00	7.74	150	461
December	38	1.02	4.71	7.29	146	448
Calendar year 1941	207	.08	8.31	12.9	3,030	9,310
January	1.42	.23	.665	1.03	20.6	63
February	93	.18	5.49	8.49	154	472
March	169	.29	34.7	53.7	1,070	3,300
April	54	3.1	10.9	16.9	328	1,010
May	45	1.48	7.05	10.9	218	670
June	45	1.93	11.9	18.4	356	1,090
Fiscal year 1941-42	207	.18	11.8	18.3	4,290	13,200

Note.- No gage-height record Nov. 29 to Dec. 17; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Puhawai Stream at Lualualei, near Waianae

Location.- Parshall flume, 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 June 1942.

Average discharge.- 11 years (1931-42), 0.243 million gallons a day (0.376 second-foot).

Extremes.- Maximum discharge during year, 2.55 million gallons a day (3.95 second-feet) Apr. 5 (gage height, 1.47 feet for 6-inch flume), from rating curve extended above 3.2 million gallons a day by test on model of station site; minimum, 0.02 million gallons a day (0.03 second-foot) Sept. 22.

1930-42: 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; minimum, 0.01 million gallons a day (0.02 second-foot) several times during period of record.

Remarks.- Records good except those for period of no gage-height record, which are fair. Continuous rainfall records are obtained at station.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.10	0.06	0.06	0.04	0.08	0.09	0.07	0.08	0.10	0.07	0.06	0.06
2	.08	.06	.06	.04	.07	.06	.10	.07	.08	.07	.06	.06
3	.08	.06	.06	.04	.07	.06	.06	.07	.08	.08	.06	.06
4	.08	.06	.06	.06	.07	.14	.06	.06	.09	.07	.06	.06
5	.09	.06	.06	.05	.07	.09	.09	.11	.08	.40	.06	.06
6	.08	.06	.17	.05	.08	.09	.07	.09	.09	.32	.06	.06
7	.08	.06	.06	.10	.07	.08	.08	.08	.24	.16	.06	.06
8	.08	.10	.06	.08	.06	a.08	.10	.08	.25	.12	.06	.06
9	.08	.07	.04	.08	.06	a.07	.08	.07	1.22	.10	.06	.06
10	.09	.05	.05	.04	.06	a.06	.08	.08	.40	.12	.09	.06
11	.08	.05	.05	.04	.06	a.06	.07	.08	.27	.23	.08	.06
12	.08	.05	.05	.04	.06	a.05	.06	.08	.21	.20	.08	.06
13	.08	.05	.05	.04	.06	a.04	.09	.39	.15	.15	.07	.05
14	.08	.05	.05	.05	.06	a.04	.06	.28	.13	.13	.07	.05
15	.09	.05	.05	.04	.06	a.04	.07	.10	.12	.10	.08	.05
16	.09	.05	.05	.05	.06	.05	.07	.10	.12	.09	.06	.05
17	.09	.05	.05	.05	.08	.05	.07	.10	.11	.08	.06	.32
18	.08	.04	.05	.05	.06	.05	.06	.10	.10	.09	.07	.15
19	.08	.04	.05	.04	.06	.05	.08	.22	.12	.08	.07	.07
20	.08	.05	.05	.05	.06	.08	.07	.12	.13	.09	.06	.06
21	.08	.05	.05	.05	.06	.07	.06	.10	.13	.08	.06	.06
22	.05	.04	.04	.40	.06	.06	.06	.08	.12	.07	.06	.06
23	.06	.04	.05	.89	.06	.06	.07	.08	.10	.06	.06	.06
24	.06	.04	.04	.64	.06	.06	.06	.08	.12	.07	.06	.06
25	.06	.04	.04	.26	.06	.06	.06	.10	.12	.08	.06	.06
26	.06	.04	.04	.12	.06	.06	.07	.13	.11	.06	.06	.06
27	.06	.04	.04	.09	.06	.06	.06	.10	.10	.06	.06	.06
28	.06	.04	.04	.10	.06	.06	.07	.10	.08	.06	.06	.06
29	.06	.04	.04	.09	.06	.06	.07	-	.10	.06	.06	.06
30	.06	.04	.04	.09	.09	.15	.08	-	.08	.06	.06	.06
31	.06	.05	-	.08	-	.07	.09	-	.08	-	.06	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.10	0.06	0.075	0.116	2.34	7.2
August	.10	.04	.051	.079	1.58	4.8
September	.17	.04	.053	.082	1.60	4.9
October	.89	.04	.124	.192	3.84	12
November	.09	.06	.064	.099	1.92	5.9
December	.15	.04	.068	.105	2.10	6.4
Calendar year 1941	.89	.04	.082	1.27	29.9	91.7
January	.10	.06	.072	.111	2.23	6.8
February	.39	.06	.112	.173	3.13	9.6
March	1.22	.08	.169	.261	5.25	16
April	.40	.06	.114	.176	3.41	10
May	.09	.06	.064	.099	1.99	6.1
June	.32	.05	.071	.110	2.12	6.5
Fiscal year 1941-42	1.22	.04	.086	.133	31.5	96.2

a No gage-height record; discharge computed on basis of records for stations on North Fork Kaukonahua Stream.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Pearl Harbor Springs at Waiawa, near Pearl City

Location.- Sharp-crested weir, lat. 21°23'35", long. 157°59'15", at rear of Oahu Sugar Co.'s pumping plant 9, on right bank of Waiawa 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 1942.

Extremes.- Maximum daily discharge during year, 13.2 million gallons a day (20.4 second-feet) Nov. 2-4, Dec. 10-15; minimum daily recorded, 6.5 million gallons a day (10.1 second-feet) July 16-19, 22-26, 29, 30.
1931-34, 1937-42: 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 Aug. 6, 13, 14, 31, Sept. 1, 2, 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.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.8	4.7	2.0	10.3
1.9	7.3	2.1	13.6

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.6	6.7	11.9	6.7	12.9	8.7	12.2	7.9	11.9	12.2	11.5	8.7
2	11.2	6.7	8.1	6.7	13.2	8.7	9.3	7.9	11.9	12.2	11.5	8.7
3	11.2	6.7	6.7	7.9	13.2	8.7	8.1	7.9	12.2	12.2	11.5	8.7
4	11.2	6.7	6.7	6.7	13.2	8.5	8.1	7.9	11.9	12.2	11.5	8.7
5	11.2	6.7	6.7	7.0	12.9	8.5	8.1	7.9	12.2	12.2	11.5	8.7
6	11.2	7.9	6.7	7.3	12.9	8.5	8.1	7.9	11.9	12.2	11.5	8.7
7	10.6	6.7	6.7	7.3	12.9	11.5	8.1	7.9	11.9	12.2	11.5	8.7
8	f9.8	6.7	6.7	7.3	12.9	12.9	8.1	7.9	12.2	11.9	11.5	8.7
9	7.3	6.7	6.7	7.3	12.9	12.9	8.1	7.6	11.9	11.9	11.5	8.7
10	7.3	6.7	6.7	7.3	12.9	13.2	8.1	7.3	12.2	11.9	11.5	8.7
11	7.0	6.7	6.7	7.3	12.9	13.2	8.1	7.6	12.2	11.9	11.5	8.7
12	7.0	6.7	6.7	7.6	12.9	13.2	7.9	7.6	12.2	11.9	11.5	8.7
13	7.9	8.1	6.7	7.6	12.9	13.2	7.9	7.6	12.5	11.9	11.5	8.7
14	7.0	10.3	6.7	7.6	12.9	13.2	7.9	7.6	12.2	11.9	11.5	8.7
15	6.7	6.7	6.7	7.6	12.9	13.2	7.9	7.9	12.5	11.5	11.5	8.7
16	6.5	6.7	7.0	7.3	12.9	12.9	7.6	7.9	12.2	11.5	11.2	8.7
17	6.5	6.7	7.0	7.3	12.9	12.5	7.6	7.9	12.2	11.2	11.2	8.6
18	6.5	6.7	f7.0	7.3	f10.3	12.2	7.9	7.9	12.5	11.2	11.2	8.7
19	6.5	6.7	7.0	7.6	8.5	12.2	7.9	7.9	12.2	11.2	11.2	8.7
20	7.3	6.7	7.3	7.6	8.7	12.2	7.9	7.9	12.2	11.2	11.2	9.0
21	6.7	6.7	7.6	7.6	8.5	12.2	7.9	7.9	12.2	11.5	11.2	9.0
22	6.5	6.7	7.0	7.9	8.7	12.2	7.9	8.1	12.2	11.5	11.2	9.0
23	6.5	6.7	7.0	10.6	8.7	12.2	7.9	8.1	12.5	11.5	11.5	9.0
24	6.5	6.7	7.0	f12.9	8.7	12.2	7.9	8.1	12.5	11.5	11.5	9.0
25	6.5	6.7	7.0	11.9	8.7	12.2	7.9	8.1	12.5	11.5	8.7	9.0
26	6.5	6.7	7.0	11.5	8.7	12.2	7.9	10.9	12.2	11.5	8.5	8.7
27	7.3	6.7	6.7	11.5	8.7	12.2	7.9	11.9	12.2	11.5	8.7	8.5
28	6.7	6.7	7.0	11.9	8.7	12.2	7.9	11.9	12.2	11.5	8.7	8.5
29	6.5	6.7	7.0	11.9	8.7	12.2	7.9	-	12.2	11.5	8.7	8.5
30	6.5	6.7	6.7	11.9	8.7	12.2	7.9	-	12.2	11.5	8.7	8.5
31	6.7	11.9	-	11.9	-	11.9	7.9	-	12.2	-	8.7	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.2	6.5	7.81	12.1	242	743
August	11.9	6.7	7.07	10.9	219	672
September	11.9	6.7	7.08	11.0	212	652
October	12.9	6.7	8.64	13.4	268	822
November	13.2	8.5	11.2	17.3	334	1,030
December	13.2	8.5	11.7	18.1	364	1,120
Calendar year 1941	13.6	6.0	9.88	15.3	3,610	11,080
January	12.2	7.6	8.12	12.6	252	773
February	11.9	7.3	8.25	12.8	231	709
March	12.5	11.9	12.2	18.9	378	1,160
April	12.2	11.2	11.7	18.1	352	1,080
May	11.5	8.5	10.8	16.7	335	1,030
June	9.0	8.5	8.73	13.5	262	803
Fiscal year 1941-42	13.2	6.5	9.45	14.6	3,450	10,590

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

Note.- No gage-height record Aug. 1 to Sept. 17; discharge computed on basis of records for stations on nearby springs.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 10 years (1931-35, 1936-42), 4.04 million gallons a day (6.25 second-feet).

Extremes.- Maximum daily discharge during year, 3.65 million gallons a day (5.65 second-feet) Mar. 3-5; minimum daily, 2.7 million gallons a day (4.2 second-feet) Aug. 26-29. 1931-42: 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 except those for periods of no gage-height record, which are fair. About a million gallons a day is occasionally diverted from stream. Surface runoff from floods not included in figures of discharge given below.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.9	2.25
2.0	3.1
2.1	4.0

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.95	2.75	2.85	2.85	3.3	3.2	3.35	3.3	3.55	3.3	f3.1	3.1
2	2.95	2.85	2.85	2.85	3.3	3.2	3.35	3.2	3.55	3.3	3.1	3.1
3	2.95	2.85	2.85	2.85	3.3	3.2	3.35	3.2	3.65	3.3	3.1	3.1
4	2.95	2.85	2.85	2.85	f3.3	3.2	3.35	3.2	3.65	3.3	3.1	3.1
5	2.95	2.85	2.85	2.85	3.2	3.2	3.35	3.2	3.65	3.3	3.1	3.1
6	2.95	2.75	2.95	2.85	3.2	3.2	3.45	3.2	3.45	3.3	3.1	3.1
7	2.95	2.75	2.95	2.95	3.2	3.3	3.35	3.2	3.35	3.3	3.1	3.1
8	2.95	2.85	2.95	2.95	3.2	3.3	3.35	3.2	3.35	3.3	3.1	3.1
9	2.95	2.85	2.95	2.95	3.2	3.35	3.35	3.2	3.35	3.3	3.1	3.1
10	2.95	2.85	2.95	2.95	3.2	3.35	3.3	3.2	3.3	3.3	3.1	3.1
11	2.95	2.85	2.95	2.95	3.2	3.35	3.3	3.1	3.3	3.3	3.1	3.1
12	2.95	2.75	2.95	2.95	3.2	3.35	3.3	3.1	3.3	3.3	3.1	3.1
13	2.95	2.85	2.95	2.95	3.2	3.3	3.3	3.1	3.3	3.3	3.1	3.1
14	2.95	2.85	2.95	2.95	3.2	3.3	3.3	3.1	3.3	3.3	3.1	3.1
15	2.95	2.75	2.95	2.95	3.2	3.3	3.3	3.1	3.3	3.3	3.1	3.1
16	2.95	2.75	2.95	2.95	3.3	3.3	3.3	3.1	3.3	3.3	3.1	3.1
17	2.95	2.75	2.95	2.95	3.2	3.35	3.3	3.2	3.3	3.3	3.2	3.0
18	2.95	2.75	2.95	2.95	3.2	3.35	3.3	3.3	3.3	3.3	3.2	3.0
19	2.95	2.75	2.95	3.0	3.1	3.35	3.3	3.45	3.3	3.3	3.1	3.0
20	2.95	2.75	2.95	3.0	3.1	3.35	3.2	3.35	3.3	3.3	3.1	3.1
21	2.95	2.75	2.95	3.0	3.2	3.35	3.2	3.35	3.3	3.3	3.1	3.1
22	2.95	2.75	2.95	3.1	3.2	3.35	3.3	3.35	3.3	3.3	3.1	3.1
23	2.85	2.75	2.95	3.2	3.2	3.35	3.35	3.35	3.3	3.3	3.1	3.1
24	2.85	2.75	2.95	3.2	3.2	3.35	3.3	3.35	3.3	3.3	3.1	3.1
25	2.85	2.75	2.95	3.2	3.2	3.35	3.3	3.35	3.3	3.3	3.1	3.1
26	2.85	2.7	2.95	3.2	3.2	3.35	3.3	3.55	3.3	3.3	3.2	3.1
27	2.85	2.7	2.85	3.2	3.2	3.35	3.3	3.35	3.3	3.2	3.1	3.1
28	2.85	2.7	2.85	3.3	3.2	3.35	3.3	3.55	3.3	3.2	3.1	3.1
29	2.85	2.7	2.85	3.3	3.2	3.35	3.3	-	3.3	3.2	3.1	3.1
30	2.85	2.75	2.85	3.3	3.3	3.35	3.3	-	3.3	3.1	3.1	3.1
31	2.75	2.75	-	3.3	-	3.35	3.3	-	3.3	-	3.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	2.95	2.75	2.92	4.52	90.4	278
August	2.85	2.7	2.78	4.30	86.0	264
September	2.95	2.85	2.92	4.52	87.6	269
October	3.3	2.85	3.03	4.69	93.8	288
November	3.3	3.1	3.21	4.97	96.4	296
December	3.35	3.2	3.31	5.12	103	315
Calendar year 1941	3.65	2.6	3.09	4.78	1,130	3,460
January	3.45	3.2	3.31	5.12	103	315
February	3.55	3.1	3.26	5.04	91.2	280
March	3.65	3.3	3.36	5.20	104	320
April	3.3	3.1	3.28	5.07	98.5	302
May	3.2	3.1	3.11	4.81	96.4	296
June	3.1	3.0	3.09	4.78	92.7	284
Fiscal year 1941-42	3.65	2.7	3.13	4.84	1,140	3,510

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

Note.- No gage-height record Mar. 21 to Apr. 24, Apr. 27-30; discharge computed on basis of records for stations on nearby springs.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 10 years (1931-35, 1936-42), 2.65 million gallons a day (4.10 second-feet).

Extremes.- Maximum daily discharge during year, 2.05 million gallons a day (3.17 second-feet) Mar. 22, Apr. 11; minimum daily, 1.60 million gallons a day (2.48 second-feet) Aug. 31, Sept. 3, 4, Nov. 19.
1931-42: 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 Aug. 31, Sept. 3, 4, Nov. 19, 1941.

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

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

2.0	1.06
2.1	1.75
2.2	2.55

Discharge, in million gallons, fiscal year July 1941 to June 1942

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

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.90	1.75	1.79	2.77	55.5	171
August	1.98	1.60	1.80	2.79	55.9	172
September	1.75	1.60	1.71	2.65	51.4	158
October	1.90	1.75	1.78	2.75	55.2	170
November	1.75	1.60	1.71	2.65	51.4	158
December	1.90	1.68	1.81	2.80	56.3	173
Calendar year 1941	2.4	1.60	1.91	2.96	696	2,140
January	1.90	1.68	1.79	2.77	55.5	170
February	1.98	1.75	1.86	2.88	52.0	160
March	2.05	1.90	1.93	2.99	59.9	184
April	2.05	1.82	1.92	2.97	57.5	176
May	1.98	1.68	1.84	2.85	57.2	175
June	1.82	1.68	1.74	2.69	52.3	160
Fiscal year 1941-42	2.05	1.60	1.81	2.80	660	2,080

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 8.9 miles northwest of Honolulu. Datum of gage is 0.64 foot above mean sea level.

Records available.- October 1939 to June 1942.

Extremes.- Maximum discharge during year, 29 million gallons a day (45 second-feet) Nov. 19 (gage height, 2.20 feet); minimum, 5.2 million gallons a day (8.0 second-feet) Aug. 3.
1939-42: Maximum discharge, that of Nov. 19, 1941; 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.7	8.3	9.6	10.5	10.7	10.8	9.5	12.4	11.1	12.0		
2	6.7	6.8	12.6	10.6	10.6	13.3	11.5	12.6	10.9	12.1		
3	6.7	6.0	12.4	12.3	10.0	11.2	9.2	13.4	10.8	10.0		
4	7.2	7.9	14.0	12.0	13.2	10.6	11.3	11.6	11.7	11.8		
5	6.7	9.6	11.9	9.1	9.3	10.6	12.2	11.1	11.8	11.9		
6	7.9	9.0	10.7	-	9.2	10.8	11.0	10.8	11.7	12.3		
7	6.9	10.7	9.7	-	9.3	11.7	11.4	10.7	9.5	12.0		
8	6.7	10.5	12.0	-	9.5	11.4	11.6	10.3	10.2	12.3		
9	6.7	11.0	12.0	-	11.1	12.6	11.3	11.9	10.2	11.7		
10	6.7	7.2	11.1	-	11.9	12.6	11.5	11.9	10.2	11.5		
11	6.7	10.2	13.4	-	11.4	12.6	12.5	11.5	10.5	12.3		
12	6.7	10.2	13.9	-	12.5	13.0	11.9	11.9	10.8	11.1		
13	6.7	10.1	13.7	-	11.3	12.6	11.8	12.0	10.8	13.3		
14	8.5	10.2	13.6	-	11.8	13.0	12.4	11.7	10.8	12.9		
15	10.2	10.2	13.3	10.5	10.2	11.1	12.6	9.2	10.8	13.4		
16	11.0	9.8	13.0	10.5	10.4	10.8	12.0	11.3	10.8	12.8		
17	10.3	9.7	12.8	10.2	12.8	10.0	12.5	11.2	10.8	12.4		
18	9.6	10.4	11.6	10.0	13.2	9.8	11.4	10.8	10.8	12.5		
19	9.5	10.5	12.0	10.4	16.0	10.2	12.5	10.6	10.8	12.3		
20	7.1	10.5	11.6	10.0	11.3	10.2	12.5	10.7	10.8	12.4		
21	9.6	10.2	10.6	10.2	12.3	10.2	12.0	11.7	10.8	11.8		
22	9.9	10.7	11.3	9.9	11.1	9.5	12.6	9.5	10.8	11.8		
23	9.2	11.2	11.6	9.5	10.4	9.5	11.4	11.3	11.4	12.5		
24	9.4	10.8	12.0	10.3	11.0	10.4	11.1	11.3	12.0	12.0		
25	9.2	11.2	10.3	9.5	12.8	9.8	8.9	12.0	10.2	12.3		
26	8.6	11.6	10.3	9.8	11.6	10.4	9.5	11.6	9.5	12.3		
27	7.0	12.1	10.6	10.6	12.7	9.5	8.9	11.4	11.4	12.7		
28	9.8	12.0	9.8	13.4	11.1	9.5	9.2	10.9	11.3	12.8		
29	8.2	12.1	11.1	12.8	11.0	9.5	9.4	-	10.5	12.8		
30	7.3	11.0	11.1	10.6	10.2	9.2	12.3	-	10.5	12.8		
31	6.9	9.3	-	10.1	-	10.8	12.3	-	12.3	-		

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.0	6.7	8.07	12.5	250	768
August	12.1	6.0	10.0	15.5	311	954
September	14.0	9.6	11.8	18.3	354	1,090
October	-	-	-	-	-	-
November	16.0	9.2	11.3	17.5	340	1,040
December	13.3	9.2	10.9	16.9	337	1,030
Calendar year	-	-	-	-	-	-
January	12.6	8.9	11.3	17.5	350	1,070
February	13.4	9.2	11.3	17.5	317	974
March	12.3	9.5	10.9	16.9	336	1,030
April	13.4	10.0	12.2	18.9	367	1,130
May	-	-	-	-	-	-
June	-	-	-	-	-	-
Fiscal year	-	-	-	-	-	-

Note.- Data insufficient to compute discharge for days for which no figures are given.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 Kalauao 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 1942.

Average discharge.- 11 years, 16.7 million gallons a day (25.8 second-feet) (unadjusted for pumpage).

Extremes.- Maximum daily discharge during year, 18.0 million gallons a day (27.9 second-feet) Dec. 14; minimum daily, 10.7 million gallons a day (16.6 second-feet) Sept. 29.
1931-42: 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 excellent except those for periods of no gage-height record, which are 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.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.9	8.1
2.0	11.3
2.2	18.7

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.3	11.3	16.0	11.7	a17.2	11.7	15.6	16.0	16.8	17.2	16.8	14.2
2	12.3	12.7	15.3	13.1	a17.2	11.3	14.5	13.1	16.8	14.9	14.2	13.8
3	12.3	15.6	16.0	11.0	a16.8	11.3	14.2	13.1	16.8	16.8	16.8	13.8
4	16.8	11.3	16.0	12.7	f16.8	15.6	14.5	15.6	16.8	16.8	16.8	13.4
5	13.1	11.3	16.0	15.6	16.8	13.1	14.9	14.9	16.8	16.8	14.2	13.8
6	16.8	11.3	16.0	12.0	12.3	12.3	15.3	16.0	16.8	17.2	16.4	14.2
7	12.3	11.3	16.0	13.1	12.3	16.8	14.2	16.0	16.8	17.2	16.0	16.0
8	12.3	14.2	16.0	16.0	13.1	16.8	14.9	16.0	16.8	14.9	16.0	14.5
9	13.8	15.3	16.0	16.4	16.4	16.8	14.5	14.2	16.8	15.6	16.0	13.4
10	14.5	16.4	16.0	16.4	12.3	17.6	14.9	13.8	16.8	16.8	16.4	13.8
11	13.1	13.1	12.3	16.4	11.3	17.6	16.8	14.9	16.8	16.8	16.4	14.2
12	a12.7	12.3	12.0	16.8	11.7	17.6	14.2	16.4	16.8	16.8	13.8	13.8
13	a16.4	11.7	11.3	16.8	16.4	17.6	14.5	13.8	16.8	16.8	16.0	13.8
14	a12.3	15.6	16.0	16.8	12.0	18.0	13.4	16.8	16.8	16.8	14.9	16.0
15	a12.3	11.7	12.3	16.8	14.9	17.2	13.8	16.8	16.8	16.8	16.0	14.2
16	13.4	12.0	11.7	16.8	16.4	16.8	14.2	15.3	16.8	16.8	14.2	16.0
17	14.2	16.4	11.0	16.8	12.0	16.8	14.2	16.4	16.8	14.9	16.0	15.3
18	12.0	12.3	14.9	16.8	12.0	16.8	14.9	16.8	16.8	16.8	14.2	16.4
19	12.3	11.3	12.0	16.8	12.0	16.8	13.8	16.4	16.8	16.8	16.0	14.2
20	16.0	12.7	11.3	16.8	16.4	16.8	13.8	16.8	16.8	14.9	13.8	14.5
21	12.3	13.4	15.6	16.8	11.7	17.2	13.4	16.8	16.8	16.8	15.6	16.8
22	12.0	11.7	11.3	16.8	12.3	17.6	13.4	16.8	16.8	15.3	13.8	14.5
23	14.9	14.9	11.3	16.8	16.4	14.9	13.4	16.8	16.8	15.3	13.4	13.8
24	13.4	15.6	11.3	16.8	12.0	14.9	13.4	16.8	16.8	16.4	16.0	13.8
25	12.0	11.7	11.3	16.8	12.3	16.8	16.4	16.4	16.8	14.9	13.8	14.2
26	12.0	11.7	11.7	17.2	12.7	14.5	14.9	16.8	17.2	16.8	13.8	14.2
27	15.6	11.3	11.0	17.2	16.4	13.8	16.4	16.8	17.2	14.2	15.6	13.8
28	12.7	14.5	14.9	17.6	11.7	13.8	13.4	16.8	17.2	16.8	13.4	15.3
29	11.7	12.3	10.7	17.6	12.0	14.2	14.2	-	17.2	16.8	13.4	13.1
30	13.1	11.3	11.3	17.2	16.4	14.2	13.1	-	17.6	14.5	14.2	13.1
31	14.2	15.6	-	17.6	-	14.2	13.4	-	17.2	-	16.0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	16.8	11.7	13.4	20.7	415	1,270
August	16.4	11.3	13.0	20.1	404	1,240
September	16.0	10.7	13.5	20.9	404	1,240
October	17.6	11.0	15.9	24.6	494	1,520
November	17.2	11.3	14.0	21.7	420	1,290
December	18.0	11.3	15.5	24.0	481	1,480
Calendar year 1941	19.5	10.7	14.7	22.7	5,360	16,460
January	16.8	13.1	14.4	22.3	446	1,370
February	16.8	13.1	15.8	24.4	443	1,360
March	17.6	16.8	16.9	26.1	524	1,610
April	17.2	14.2	16.2	25.1	486	1,490
May	16.8	13.4	15.2	23.5	470	1,440
June	16.8	13.1	14.4	22.3	431	1,320
Fiscal year 1941-42	18.0	10.7	14.8	22.9	5,420	16,630

a No gage-height record; discharge computed on basis of records for stations on nearby springs.
f Computed on basis of partly estimated gage-height record.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.
Average discharge.- 16 years, 2.56 million gallons a day (3.96 second-feet).
Extremes.- Maximum discharge during year, 771 million gallons a day (1,190 second-feet) Aug. 8 (gage height, 6.37 feet), from rating curve extended above 71 million gallons a day by test on model of station site; no flow for several periods during year.
1926-42: Maximum discharge, 2,960 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 except those for period of no gage-height record, which are fair. Continuous records of rainfall are obtained at station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.7	2.55	1.4	17.0
.2	.07	.8	3.75	1.6	24.5
.3	.22	.9	5.1	1.8	34.5
.4	.51	1.0	6.8	2.0	46
.5	.99	1.1	8.8	2.4	78
.6	1.66	1.2	11.1	2.8	120

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.7	0	0.01	0	0.24			0	0	0.69	1.23	0
2	1.32	0	.15	0	.12			0	0	.42	4.4	0
3	.26	0	.69	1.54	.12			0	0	.36	2.8	0
4	.05	0	.28	20.5	.05			0	0	15.2	1.21	0
5	.03	0	.09	2.65	.03			4.1	0	13.5	.64	0
6	.01	0	66	.76	.03			51	0	6.5	.42	0
7	.01	0	26.5	4.5	.02			2.75	0	2.0	.34	0
8	0	47	7.2	10.7	.02			.24	5.3	1.07	.19	0
9	0	5.7	3.25	8.3	.01			.01	46	.69	.31	0
10	.47	2.95	1.78	4.8	.01			.01	11.1	.45	.36	.33
11	.18	.87	1.75	1.53	.01			0	102	23.5	.25	0
12	.03	.15	.69	.79	0			0	14.9	15.8	.09	0
13	.01	.04	.28	.42	0			0	6.3	13.1	.04	0
14	.01	.03	.11	1.28	0			0	6.3	5.1	.03	.34
15	0	.01	.04	1.14	0			0	13.3	2.8	.02	.52
16	0	.01	.02	.87	0			0	18.5	2.3	.01	7.2
17	0	0	.02	1.14	0			0	9.2	1.35	.01	1.17
18	0	0	.01	.84	0			0	5.7	.89	.01	a4.5
19	0	0	.01	.48	0			0	29	.64	0	a.8
20	0	0	.01	.31	0			0	41	.58	0	a.3
21	0	0	0	.15	0			0	16.3	.39	0	a.1
22	0	0	0	4.2	2.9			0	9.2	4.2	0	a.04
23	0	5.7	0	32	.44			0	4.8	.90	0	a.03
24	0	1.10	0	74	.05			0	3.05	.42	0	a.02
25	0	.11	0	14.1	.02			0	2.4	.25	0	a.01
26	0	.03	0	5.0	.01			0	5.7	.71	0	a0
27	0	.02	0	3.4	0			0	2.8	.97	0	a.3
28	0	.01	0	2.1	0			0	1.70	1.38	0	a.9
29	0	0	0	1.14	0			-	2.4	.95	.64	a2.0
30	0	0	0	.64	0			-	1.86	1.72	.02	a7.0
31	0	0	-	.36	-			-	1.00	-	0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	14.7	0	0.551	0.853	17.1	52
August	47	0	2.06	3.19	63.7	196
September	66	0	3.63	5.62	109	334
October	74	0	6.44	9.96	200	613
November	2.9	0	.136	.210	4.0	13
December	0	0	0	0	0	0
Calendar year 1941	74	0	1.22	1.89	444	1,360
January	0	0	0	0	0	0
February	51	0	2.08	3.22	58.1	178
March	102	0	11.6	17.9	360	1,100
April	23.5	.25	3.96	6.13	119	365
May	4.4	0	.420	.650	13.0	40
June	7.2	0	.852	1.32	25.6	78
Fiscal year 1941-42	102	0	2.66	4.10	970	2,970

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

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Kalihi Stream near Honolulu

Location.- Lat. 21°22'10", long. 157°50'25", at Kioi Pool, three-eighths of a mile upstream from Catholic Orphanage and 4.4 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 1942.
Average discharge.- 25 years (1916-20, 1921-42), 5.11 million gallons a day (7.91 second-feet).
Extremes.- Maximum discharge during year, 550 million gallons a day (851 second-feet) Feb. 6 (gage height, 7.80 feet), from rating curve extended above 220 million gallons a day by test on model of station site; minimum, 0.72 million gallons a day (1.11 second-feet) Feb. 4.
1913-42: 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 June 9, 10, which are fair. Water for domestic use diverted from stream above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.8	0.60	1.4	8.7	2.9	50
.9	1.28	1.7	14.e	3.2	62
1.0	2.2	2.0	22	3.5	74
1.1	3.5	2.3	30.5	4.0	98
1.2	5.1	2.6	40		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	16.2	1.37	7.1	1.82	4.1	1.73	1.20	0.78	1.28	5.1	3.65	1.37
2	4.8	1.37	3.25	1.91	3.65	1.64	1.46	.78	1.21	4.6	6.5	a1.30
3	3.8	1.37	4.1	7.2	3.5	1.64	1.21	.78	1.13	5.1	4.0	a1.30
4	4.1	2.85	2.85	14.0	3.25	1.64	1.13	.72	1.28	20.5	3.35	a1.40
5	2.85	1.82	2.45	3.5	3.1	2.2	1.21	16.8	1.05	35	3.0	a1.30
6	3.1	1.91	65	2.6	3.1	1.73	1.13	55	1.05	11.0	3.0	a1.20
7	2.6	5.3	28.5	6.6	2.7	1.55	1.13	6.5	9.2	6.5	3.1	a1.13
8	3.1	44	10.2	12.0	2.6	1.82	1.21	3.5	31.5	5.3	2.6	a1.13
9	5.0	9.3	6.8	7.9	2.45	1.46	1.05	2.7	46	4.6	2.6	a4.5
10	9.3	6.1	5.6	4.8	2.35	1.37	1.05	2.2	31	4.8	2.6	a3.0
11	4.6	4.1	5.5	3.65	2.2	1.37	.97	2.2	89	47	2.35	1.73
12	3.25	3.25	4.3	3.1	2.2	1.28	.97	1.91	17.0	17.0	2.2	1.73
13	2.7	2.85	3.8	3.0	2.1	1.21	.97	2.4	10.2	20.5	2.1	1.94
14	2.6	2.6	3.35	3.1	2.2	1.13	.90	1.91	10.8	9.8	2.0	2.9
15	2.45	2.45	3.0	2.85	2.0	1.21	1.70	1.64	14.8	7.9	1.91	4.1
16	2.45	2.2	2.85	2.6	2.45	1.28	1.21	1.64	25	7.4	1.91	6.6
17	2.45	2.1	2.85	3.1	2.1	1.13	1.05	1.95	13.9	6.0	1.82	7.6
18	2.0	2.0	2.85	2.7	2.1	1.13	.90	1.64	12.2	5.3	1.73	4.9
19	3.25	2.35	2.85	2.45	2.1	1.28	.90	2.8	42	4.8	1.73	2.6
20	2.45	2.2	2.6	2.7	2.1	5.2	.84	1.91	39.5	4.9	1.64	2.1
21	2.0	4.8	2.45	2.35	4.7	2.25	.84	1.64	29.5	4.3	1.64	1.82
22	1.82	2.45	2.2	37	4.4	1.55	.84	1.55	15.9	5.7	1.55	1.64
23	1.82	10.8	2.45	36.5	2.35	1.37	.64	1.46	11.6	4.0	1.55	1.55
24	1.82	4.1	2.2	98	2.0	1.28	.84	1.37	9.5	3.5	1.55	1.55
25	2.0	3.0	2.2	14.8	1.82	1.28	.84	1.55	8.1	3.35	1.46	1.55
26	2.0	2.45	2.2	9.5	1.73	2.3	1.22	2.1	16.7	3.65	2.16	1.55
27	2.0	2.2	2.0	11.3	2.55	2.1	.90	1.82	8.9	4.5	1.64	1.73
28	2.0	2.1	2.1	7.0	2.8	1.64	.84	1.37	7.2	5.6	1.46	2.5
29	1.82	2.1	1.82	5.8	1.91	1.37	.84	-	9.3	3.65	1.82	4.1
30	1.73	2.0	1.91	4.9	1.73	1.55	.84	-	6.8	4.7	1.55	4.5
31	1.46	2.7	-	4.5	-	1.28	.84	-	5.6	-	1.46	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	16.2	1.46	3.34	5.17	104	318
August	44	1.37	4.52	6.99	140	430
September	65	1.82	6.38	9.87	191	587
October	98	1.82	10.4	16.1	323	992
November	4.7	1.73	2.61	4.04	78.3	240
December	5.2	1.13	1.64	2.54	51.0	156
Calendar year 1941	98	.60	3.31	5.12	1,210	3,709
January	1.70	.84	1.03	1.59	32.0	98
February	55	.72	4.38	6.78	123	376
March	89	1.05	17.0	26.3	528	1,620
April	47	3.35	9.20	14.2	276	847
May	6.5	1.46	2.31	3.57	71.6	220
June	7.6	1.13	2.54	3.93	76.3	234
Fiscal year 1941-42	98	.72	5.46	8.45	1,900	6,120

a No gage-height record; discharge computed on basis of records for stations on all nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 7.5 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 1942.
Average discharge.- 23 years (1917-20, 1922-42), 5.65 million gallons a day (8.74 second-feet).
Extremes.- Maximum discharge during year, 203 million gallons a day (314 second-feet) Oct. 24 (gage height, 4.08 feet), from rating curve extended above 300 million gallons a day on basis of weir formulas and test on model of station site; minimum, 0.60 million gallons a day (0.93 second-foot) Feb. 3.
1913-42: Maximum discharge, 1,600 million gallons a day (2,480 second-feet) Jan. 16, 1921 (gage height, 8.74 feet, from floodmarks), from rating curve extended above 300 million gallons a day on basis of weir formulas and test on model of station site; minimum, 0.06 million gallons a day (0.09 second-foot) Sept. 10, 11, 1925.
Remarks.- Records excellent except those for periods of backwater or no gage-height record, which are good. 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.90	0.8	2.6	1.2	6.5	1.9	32.5
.5	1.25	.9	3.1	1.3	8.8	2.2	49
.6	1.65	1.0	3.65	1.4	11.6	2.6	75
.7	2.1	1.1	4.6	1.6	18.7	3.0	105

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.3	1.22	2.55	2.05	4.8	2.65	1.92	1.00	1.45	5.6	3.35	1.74
2	2.2	1.22	3.4	2.25	4.6	2.3	2.0	.97	1.43	5.2	4.5	1.65
3	1.88	1.25	4.5	8.9	4.5	2.5	1.78	.93	1.37	5.0	3.3	1.65
4	1.97	1.37	2.05	11.0	4.2	2.5	1.78	.90	1.60	28.5	3.1	1.78
5	1.57	1.41	1.92	3.45	3.95	2.8	16.8	4.5	1.41	25.5	3.05	1.70
6	1.82	1.49	27	3.0	4.1	2.4	14.4	47	1.41	27.5	3.05	a1.74
7	1.57	1.84	10.3	6.2	3.65	2.3	2.15	17.5	3.3	19.4	3.0	a1.7
8	1.57	8.7	5.2	10.9	3.55	2.5	2.05	2.25	30.5	4.2	2.9	a1.7
9	2.15	3.15	4.4	5.7	3.45	2.3	1.96	1.96	55	4.6	2.85	a2.7
10	3.2	2.3	3.8	4.2	3.4	2.3	1.92	1.92	48	4.0	2.85	a1.70
11	1.78	1.78	3.5	3.75	3.25	2.25	1.88	1.88	88	29	2.7	2.25
12	1.57	1.65	3.05	3.5	3.35	2.1	1.74	2.0	49	24	2.6	2.0
13	1.49	1.74	3.1	3.25	3.0	2.05	1.74	1.89	21.5	39	2.6	1.79
14	1.53	1.61	2.95	3.45	3.0	2.0	1.65	1.83	8.3	c14.9	2.55	2.15
15	1.49	1.57	3.2	3.4	2.95	2.05	1.53	1.70	10.8	c5.6	2.55	3.9
16	1.61	1.61	2.7	3.1	3.1	2.1	1.29	1.74	20.5	c5.5	1.89	3.8
17	1.67	1.57	2.6	3.45	2.95	1.92	1.14	1.88	9.8	4.5	1.66	2.25
18	1.37	1.57	2.95	3.15	3.05	1.92	1.29	1.70	8.3	4.2	2.1	2.15
19	1.72	1.70	2.55	2.95	3.05	2.05	1.29	2.2	27.5	3.95	2.2	2.25
20	1.74	1.70	2.8	2.95	2.95	8.4	1.22	1.74	52	4.2	2.45	1.96
21	1.53	2.8	2.6	2.75	3.8	3.4	1.22	1.61	60	3.8	2.3	1.92
22	1.78	1.78	2.4	9.8	4.8	2.4	1.18	1.57	20.5	4.2	2.2	1.88
23	1.57	4.9	2.6	20	3.05	2.25	1.14	1.53	10.8	3.6	2.3	1.83
24	1.25	2.3	2.35	80	2.85	2.2	1.18	1.57	30.5	3.45	2.2	1.83
25	1.22	1.83	2.5	49	2.7	2.05	1.11	1.65	23	3.2	2.1	1.83
26	1.14	1.78	2.55	43	2.6	2.4	1.29	2.0	12.0	3.4	3.2	1.94
27	1.33	1.70	2.4	21.5	2.8	2.0	1.08	1.76	7.9	5.3	2.35	2.1
28	1.33	1.70	2.35	5.7	3.0	2.0	1.08	1.58	6.7	5.9	2.05	3.15
29	1.25	1.65	2.35	5.6	2.55	2.0	1.09	-	5.2	3.85	2.4	2.65
30	1.25	1.70	2.4	5.2	2.45	2.0	1.08	-	6.4	3.95	2.05	3.1
31	1.22	1.83	-	5.0	-	1.92	1.04	-	5.8	-	1.70	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.3	1.14	1.91	2.96	59.1	181
August	8.7	1.22	2.08	3.22	64.4	198
September	27	1.92	3.97	6.14	119	365
October	80	2.05	10.9	16.9	338	1,040
November	4.8	2.45	3.38	5.23	101	311
December	8.4	1.92	2.45	3.79	76.0	233
Calendar year 1941	80	.42	2.72	4.21	992	3,050
January	16.8	1.04	2.39	3.70	74.0	227
February	47	.90	3.96	6.13	111	340
March	88	1.37	20.0	31.9	639	1,960
April	39	3.2	10.2	15.8	305	936
May	4.5	1.66	2.58	3.99	80.1	246
June	3.9	1.65	2.16	3.34	64.8	199
Fiscal year 1941-42	88	.90	5.57	8.62	2,030	6,240

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
c Backwater from debris.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. May 1913 to January 1921 at site 200 feet upstream.
Average discharge.- 23 years (1913-20, 1926-42), 2.88 million gallons a day (4.46 second-feet).
Extremes.- Maximum discharge during year, 194 million gallons a day (300 second-feet) Feb. 6 (gage height, 3.12 feet), from rating curve extended above 33 million gallons a day by test on model of station site; minimum, 0.25 million gallons a day (0.39 second-foot) Feb. 4.
1913-21, 1925-42: 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-fset, 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. 15, 22, 1926.
Remarks.- Records good. No diversions above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.25	0.6	3.8	1.1	15.7
.2	.62	.7	5.4	1.2	19.5
.3	1.11	.8	7.4	1.4	29
.4	1.78	.9	9.7	1.6	40
.5	2.65	1.0	12.5	1.8	55

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.9	0.67	4.9	0.91	1.65	0.47	0.77	0.40	0.55	1.95	1.95	0.82
2	3.55	.67	3.05	.86	1.44	.47	1.21	.36	.47	1.78	2.95	.62
3	2.65	.94	7.2	9.8	1.38	.51	.72	.32	.44	2.45	2.05	.58
4	2.75	3.85	3.1	16.8	1.24	.58	.67	.32	.68	5.5	1.51	.72
5	1.87	1.43	2.05	3.7	1.18	1.24	1.12	6.3	.44	3.9	1.31	.58
6	2.7	1.31	36.5	2.05	1.24	.86	.72	34	.40	2.5	1.24	.55
7	1.71	5.1	14.4	7.4	1.06	.72	.62	3.3	5.5	1.78	1.44	.51
8	2.45	14.6	6.2	22.5	.96	1.60	.67	1.31	18.0	1.51	1.11	.51
9	3.6	8.5	3.8	9.1	.96	.96	.62	.96	25	1.44	1.06	3.95
10	5.8	4.6	3.0	4.3	.91	.91	.55	.77	10.3	1.66	1.24	2.05
11	2.65	2.4	2.55	3.2	.86	.86	.55	.72	48	25	1.01	1.57
12	1.97	1.71	2.15	2.65	.82	.62	.51	.58	11.7	8.3	.91	1.89
13	1.51	1.38	1.78	2.15	.77	.67	.51	.77	5.9	7.5	.86	1.55
14	1.44	1.18	1.51	2.7	.77	.62	.51	.74	8.2	3.8	.66	2.4
15	1.38	1.11	1.38	2.3	.72	.62	1.13	.51	10.0	3.1	.86	5.2
16	1.58	1.06	1.24	2.05	.82	1.09	.58	.51	15.2	2.75	.82	3.3
17	1.38	.96	1.18	3.55	.72	.62	.51	1.00	9.5	2.2	.82	4.3
18	1.06	.86	1.24	2.65	.82	.58	.47	.55	7.9	1.95	.77	3.15
19	2.45	1.64	1.41	2.05	.86	.92	.44	1.72	24	1.71	.77	3.0
20	2.25	1.19	2.1	2.15	.91	8.2	.44	.91	34	2.1	.77	1.11
21	1.31	9.4	1.31	1.58	1.37	4.2	.44	.67	19.9	1.71	.77	1.11
22	1.06	2.9	1.18	3.2	1.83	1.71	.40	.55	10.2	1.78	.72	.96
23	1.06	7.5	1.24	9.2	.82	1.51	.36	.47	6.3	1.38	.67	.91
24	.91	2.6	1.11	40	.72	1.65	.36	.44	4.6	1.31	.67	.91
25	.82	1.71	1.40	7.3	.62	1.06	.36	.55	3.9	1.24	.62	1.20
26	.72	1.36	1.31	4.9	.55	2.9	.90	1.72	7.6	1.57	1.84	1.12
27	.82	1.16	1.01	6.3	.55	1.90	.40	1.08	3.7	2.25	.95	1.63
28	1.14	1.06	1.23	2.9	.78	1.18	.36	.67	3.0	2.35	.67	4.3
29	1.05	1.01	.96	2.5	.51	1.01	.36	-	3.55	1.87	1.63	3.5
30	.72	1.06	1.14	2.05	.47	1.29	.36	-	2.5	2.86	.82	5.1
31	.67	1.94	-	1.78	-	.86	.40	-	2.15	-	.77	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	13.9	0.67	2.22	3.43	68.8	211
August	14.6	.67	2.80	4.33	86.9	267
September	36.5	.96	3.75	5.80	113	346
October	40	.86	5.95	9.21	185	566
November	1.83	.47	.944	1.46	28.3	87
December	8.2	.47	1.37	2.12	42.6	131
Calendar year 1941	40	.15	2.11	3.26	770	2,360
January	1.21	.36	.581	.899	18.0	55
February	34	.32	2.22	3.43	62.2	191
March	48	.40	9.79	15.1	304	932
April	25	1.24	3.37	5.21	101	311
May	2.95	.62	1.11	1.72	34.4	106
June	5.2	.51	1.98	3.06	59.4	182
Fiscal year 1941-42	48	.32	3.02	4.67	1,100	3,380

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 23 years (1913-20, 1926-42), 3.23 million gallons a day (5.00 second-feet).

Extremes.- Maximum discharge during year, 280 million gallons a day (433 second-feet) Feb. 6 (gage height, 3.58 feet), from rating curve extended above 5.7 million gallons a day by test on model of station site; minimum, 1.50 million gallons a day (2.32 second-feet) Jan. 8, Feb. 2, 3.

1913-21, 1925-42: 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. East Manoa ditch diverts water from stream about 1,500 feet above station. Board of Water Supply, at times, diverts a small amount of ground water from tunnels in drainage area.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	8.8	1.93	4.9	2.1	3.2	2.1	1.94	1.57	2.2	3.2	3.1	2.5
2	3.8	1.85	3.2	2.1	3.1	2.05	2.35	1.57	2.1	3.2	4.0	2.3
3	3.55	2.1	5.4	7.1	3.0	2.05	1.94	1.50	2.05	4.9	3.55	2.3
4	3.65	4.0	3.3	13.7	2.85	2.2	1.94	1.50	2.55	10.0	3.0	2.4
5	2.85	2.25	2.9	3.2	2.75	3.8	2.2	16.4	2.05	5.7	2.85	2.3
6	4.7	2.1	f35	2.75	3.0	2.4	1.85	41	1.94	3.9	2.85	2.2
7	3.1	5.0	8.1	7.1	2.55	2.2	1.85	4.6	11.6	3.0	3.65	2.2
8	3.9	f11.6	4.2	f14.5	2.55	2.85	1.94	3.0	30.5	2.85	2.85	2.2
9	6.6	6.5	3.45	7.2	2.5	2.5	1.85	2.55	30.5	3.0	2.75	7.7
10	3.3	4.3	3.2	4.6	2.5	2.3	1.85	2.5	18.0	5.3	3.1	5.5
11	3.8	2.9	3.2	3.95	2.3	2.3	1.78	2.5	65	34.5	2.65	3.5
12	3.1	2.5	2.75	3.55	2.3	2.2	1.78	2.3	13.4	10.6	2.65	4.1
13	2.95	2.4	2.75	3.2	2.3	2.1	1.78	2.75	8.6	12.2	2.5	4.1
14	2.85	2.35	2.5	3.55	2.4	2.1	1.78	2.5	10.5	5.4	2.3	4.6
15	2.85	2.35	2.4	3.1	2.2	2.3	2.9	2.1	12.2	4.6	2.3	8.1
16	3.2	2.25	2.35	3.0	2.4	2.6	1.94	2.05	16.5	4.4	2.2	6.1
17	2.85	2.15	2.35	3.8	2.2	2.1	1.85	3.45	10.7	3.8	2.2	4.4
18	2.5	2.15	2.5	3.3	2.4	2.05	1.78	2.2	10.7	3.65	2.2	4.9
19	a5.0	2.8	2.55	3.0	2.75	2.3	1.78	4.7	32	3.45	2.1	4.3
20	2.65	2.25	3.2	3.2	2.75	8.0	1.78	2.5	24.5	4.0	2.1	3.2
21	2.1	7.0	2.5	2.75	3.65	3.75	1.78	2.1	22	3.45	2.1	3.2
22	2.0	2.75	2.25	f6.7	4.5	2.5	1.64	2.1	9.5	3.2	2.05	3.0
23	2.15	f8.3	2.25	f13.4	2.5	2.65	1.57	2.1	6.5	3.0	1.94	2.85
24	2.0	3.1	2.35	f35	2.3	3.0	1.57	2.05	5.1	3.0	1.94	2.85
25	1.93	2.5	2.4	6.5	2.2	2.2	1.57	2.5	4.5	3.0	1.85	3.65
26	1.85	2.35	2.35	6.4	2.1	4.9	2.1	5.2	12.9	3.1	4.1	3.2
27	2.1	2.25	2.25	6.1	2.55	3.1	1.57	3.1	4.6	3.65	2.5	4.4
28	2.0	2.15	2.4	4.0	2.8	2.2	1.57	2.3	3.9	4.3	2.3	6.8
29	2.0	2.15	2.15	3.55	2.2	2.1	1.57	-	5.4	3.2	3.55	5.6
30	1.85	2.25	2.25	3.45	2.1	2.5	1.57	-	3.8	3.9	2.5	7.7
31	1.85	3.35	-	3.3	-	2.05	1.64	-	3.3	-	2.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	8.8	1.85	3.31	5.12	103	315
August	11.6	1.85	3.36	5.18	104	319
September	35	2.15	4.11	6.36	123	379
October	35	2.1	6.10	9.44	189	580
November	4.5	2.1	2.63	4.07	78.9	242
December	8.0	2.05	2.69	4.16	83.4	256
Calendar year 1941	35	1.50	3.19	4.94	1,160	3,570
January	2.9	1.57	1.84	2.85	57.0	175
February	41	1.50	4.45	6.89	125	383
March	65	1.94	12.6	19.5	389	1,190
April	34.5	2.85	5.52	8.54	165	508
May	4.1	1.35	2.65	4.10	82.2	252
June	8.1	2.2	4.07	6.30	122	375
Fiscal year 1941-42	65	1.50	4.44	6.87	1,620	4,970

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 standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 4¾ 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 1942. April 1912 to September 1913, above present site and just below Mahoe Springs.
Average discharge.- 16 years (1926-42), 1.45 million gallons a day (2.24 second-feet).
Extremes.- Maximum discharge during year, 352 million gallons a day (545 second-feet) Mar. 11 (gage height, 4.81 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) Feb. 4, 5.
1912-13, 1926-42: 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. A 2-inch pipe diverts water from stream above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.0	0.08	1.5	2.7	2.0	12.5
1.1	.28	1.6	3.9	2.2	19.0
1.2	.60	1.7	5.5	2.4	27
1.3	1.10	1.8	7.4	2.6	36
1.4	1.76	1.9	9.7	3.0	60

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.25	0.26	0.38	0.24	0.95	0.38	0.38	0.18	0.31	1.43	0.78	0.34
2	.57	.26	.34	.24	.85	.38	.38	.18	.28	1.36	.75	.34
3	.50	.26	1.06	1.25	.85	.38	.34	.18	.28	1.39	.75	.34
4	.50	.24	.44	3.8	.80	.38	.31	.16	.28	2.2	.75	.34
5	.50	.24	.38	.44	.70	.44	.31	5.0	.28	2.0	.70	.31
6	.54	.24	12.3	.34	.65	.38	.31	23.5	.28	1.56	.70	.31
7	.54	.43	2.25	1.83	.60	.34	.31	1.22	1.75	1.17	.65	.31
8	.50	3.35	.90	4.0	.57	.34	.31	.38	22.5	1.10	.60	.31
9	.65	1.40	.60	1.50	.54	.34	.28	.31	33	1.05	.57	1.34
10	2.7	.90	.60	.65	.54	.34	.28	.34	9.6	1.05	.60	1.30
11	.80	.47	.60	.60	.50	.34	.28	.38	60	27.5	.57	.41
12	.60	.44	.57	.60	.44	.31	.28	.38	8.4	5.9	.54	.38
13	.60	.44	.54	.57	.44	.31	.28	.38	3.65	4.7	.50	.38
14	.60	.44	.54	.57	.44	.31	.26	.34	3.6	2.3	.50	.41
15	.60	.44	.50	.54	.41	.34	.26	.34	7.5	1.69	.50	.82
16	.57	.44	.44	.54	.41	.31	.24	.31	9.4	1.53	.47	.78
17	.54	.41	.41	.50	.41	.31	.24	.31	5.8	1.43	.47	.67
18	.54	.38	.38	.47	.41	.31	.24	.31	4.1	1.36	.47	.57
19	.50	.34	.38	.44	.41	.28	.24	.34	26.5	1.30	.44	.57
20	.44	.54	.38	.44	.41	1.12	.22	.28	18.4	1.23	.44	.57
21	.44	.87	.34	.41	.34	.54	.20	.28	8.4	1.17	.44	.57
22	.41	.38	.31	2.9	.55	.34	.20	.28	5.0	1.10	.41	.54
23	.41	2.1	.31	6.0	.41	.31	.20	.28	3.2	1.10	.41	.54
24	.38	.57	.28	44	.38	.31	.20	.28	2.4	1.03	.41	.50
25	.34	.41	.28	3.3	.38	.31	.20	.28	2.15	1.00	.41	.47
26	.34	.41	.28	1.68	.41	.48	.20	.46	4.6	.93	.41	.44
27	.34	.41	.28	1.36	.41	.34	.20	.50	2.25	.95	.38	.44
28	.31	.41	.26	1.00	.41	.34	.20	.34	1.69	.90	.34	1.14
29	.31	.41	.24	.95	.38	.34	.20	-	2.1	.80	.34	.57
30	.28	.41	.24	1.00	.38	.38	.20	-	1.69	.80	.34	1.37
31	.28	.38	-	.95	-	.38	.20	-	1.50	-	.34	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	2.7	0.28	0.609	0.942	18.9	58
August	3.35	.24	.596	.922	18.5	57
September	12.3	.24	.894	1.38	26.8	82
October	44	.24	2.68	4.15	83.1	255
November	.95	.34	.513	.794	15.4	47
December	1.12	.28	.378	.585	11.7	36
Calendar year 1941	44	.14	.718	1.11	2[illegible]	806
January	.38	.20	.256	.396	7.95	24
February	23.5	.16	1.34	2.07	37.5	115
March	60	.28	8.09	12.5	251	770
April	27.5	.60	2.43	3.76	72.9	224
May	.75	.34	5.15	7.97	16.0	49
June	1.37	.31	5.76	8.91	17.3	53
Fiscal year 1941-42	60	.16	1.58	2.44	577	1,770

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. April 1911 to December 1912 at highway bridge below present site.
Average discharge.- 16 years (1926-42), 1.31 million gallons a day (2.03 second-feet).
Extremes.- Maximum discharge during year, 231 million gallons a day (357 second-feet) Feb. 6 (gage height, 4.55 feet), from rating curve extended above 45 million gallons a day by test on model of station site; minimum, 0.01 million gallons a day (0.02 second-foot) Feb. 4, 5, May 25, 26.
1911-12, 1926-42: 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. Board of Water Supply diverts ground water from tunnels in drainage area.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.0	0.01	1.6	2.7	2.2	15.5
1.1	.10	1.7	3.85	2.4	24
1.2	.30	1.8	5.3	2.6	33.5
1.3	.63	1.9	7.2	2.8	44
1.4	1.15	2.0	9.4	3.0	55
1.5	1.83	2.1	12.0		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.75	0.02	0.81	0.06	0.28	0.12	0.22	0.06	0.28	0.46	0.33	0.12
2	.84	.01	.68	.05	.26	.08	.54	.05	.18	.40	.51	.08
3	.60	.01	1.89	2.5	.20	.07	.24	.02	.12	1.12	.33	.06
4	.68	.67	.63	4.0	.18	.14	.18	.01	.22	3.05	.24	.06
5	.40	.22	.43	.68	.14	.81	.68	10.6	.14	1.60	.20	.05
6	.82	.12	21	.33	.24	.43	.33	37	.10	1.91	.18	.03
7	.56	1.25	3.45	2.15	.16	.20	.24	3.05	1.60	.79	.22	.01
8	.85	6.8	1.35	5.3	.10	.39	.61	1.15	26.5	.50	.18	.03
9	1.73	3.3	.73	2.0	.08	.26	.26	.68	34	.40	.14	2.35
10	4.5	2.0	.56	.89	.08	.20	.18	.46	9.2	.61	.44	3.45
11	1.15	.79	.46	.56	.07	.16	.14	.94	48	27.5	.24	.68
12	.60	.43	.33	.43	.06	.22	.10	.46	7.5	6.2	.16	.94
13	.43	.28	.28	.28	.06	.12	.08	.37	3.3	4.8	.12	.53
14	.43	.22	.22	.41	.05	.09	.07	.50	3.05	2.0	.10	.68
15	.50	.20	.20	.28	.05	.08	.36	.26	7.0	1.35	.08	1.56
16	.53	.20	.14	.22	.08	.24	.30	.22	10.2	1.15	.08	1.42
17	.43	.16	.12	.28	.07	.09	.24	.33	5.8	.79	.06	.63
18	.28	.12	.14	.28	.07	.06	.14	.26	4.0	.53	.06	.43
19	.28	.23	.10	.20	.09	.10	.10	.75	23	.40	.05	.40
20	.30	.24	.14	.30	.18	1.81	.08	.37	19.0	.46	.03	.28
21	.24	1.81	.12	.22	.41	1.22	.07	.22	8.8	.40	.05	.24
22	.20	.46	.07	3.8	1.18	.40	.06	.18	4.8	.33	.05	.20
23	.18	4.1	.07	11.3	.33	.26	.05	.12	2.2	.28	.04	.16
24	.16	.89	.06	47	.24	.26	.03	.10	1.49	.24	.01	.14
25	.12	.43	.09	3.9	.14	.20	.01	.27	1.15	.20	.01	.27
26	.09	.30	.10	1.76	.10	1.18	.31	1.52	4.1	.22	.37	.22
27	.08	.22	.06	1.63	.10	.89	.08	1.24	1.49	.28	.43	.35
28	.10	.20	.09	.94	.61	.40	.05	.43	.94	.51	.16	1.95
29	.10	.18	.06	.60	.20	.26	.03	-	1.54	.33	.27	1.13
30	.06	.18	.05	.46	.14	.94	.02	-	1.10	.43	.22	1.87
31	.04	.33	-	.33	-	.37	.07	-	.63	-	.14	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	4.5	0.04	0.678	1.05	21.0	65
August	6.8	.01	.851	1.32	26.4	81
September	21	.05	1.15	1.78	34.4	106
October	47	.05	3.00	4.64	93.1	286
November	1.10	.05	.198	.306	5.95	18
December	1.81	.06	.389	.602	12.1	37
Calendar year 1941	47	0	.823	1.27	300	923
January	.68	.01	.189	.292	5.87	18
February	37	.01	2.20	3.40	61.6	189
March	48	.10	7.47	11.6	231	710
April	27.5	.20	1.97	3.05	59.2	182
May	.51	.01	.177	.274	5.50	17
June	3.45	.01	.677	1.05	20.3	62
Fiscal year 1941-42	48	.01	1.58	2.44	576	1,770

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 miles.

Records available.- January 1914 to October 1919, July 1939 to June 1942.

Extremes.- Maximum discharge during year, 436 million gallons a day (675 second-feet) June 17 (gage height, 3.98 feet), from rating curve extended above 13 million gallons a day by test on model of station site; minimum, 1.20 million gallons a day (1.86 second-feet) July 26, 27.
1914-19, 1939-42: Maximum discharge, that of June 17, 1942; minimum 1.20 million gallons a day (1.86 second-feet) Feb. 8, July 28, 27, 1941.

Remarks.- Records good. No diversions above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.1	1.20	1.6	5.9
1.2	1.54	1.7	9.2
1.3	2.0	1.8	13.3
1.4	2.8	1.9	23
1.5	3.95	2.0	30.5

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	f6.4	2.0	1.63	1.54	2.0	1.59	1.63	1.68	1.72	1.91	1.86	1.82
2	6.9	2.36	1.51	1.54	1.91	1.59	1.63	1.68	f1.77	1.86	1.95	1.77
3	5.7	2.15	1.47	1.89	1.86	1.59	1.63	1.54	a1.7	1.95	1.91	1.77
4	5.5	3.15	1.47	2.55	1.77	1.59	1.59	1.54	a1.7	13.0	1.86	1.77
5	5.5	2.3	1.47	1.72	1.77	1.72	1.63	5.8	f1.68	8.8	1.86	1.77
6	5.5	2.95	16.0	1.68	1.77	1.59	1.59	26.5	1.59	3.5	1.86	1.77
7	5.5	3.25	2.75	1.72	1.77	1.59	1.63	21.5	3.5	2.4	1.86	1.77
8	5.7	16.0	1.82	2.06	1.72	1.59	1.59	2.1	5.4	2.1f	1.77	1.77
9	5.7	3.35	1.68	1.82	1.72	1.59	1.54	1.91	9.8	2.0	1.58	2.1
10	5.9	1.95	1.63	1.68	1.68	1.54	1.54	1.82	4.9	2.1	1.91	2.0
11	5.9	2.95	1.68	1.59	1.68	1.54	1.54	1.77	29.5	3.7	1.77	1.82
12	5.7	2.25	1.59	1.54	1.68	1.54	1.54	1.77	4.7	3.7	1.77	1.77
13	5.7	2.2	1.59	1.66	1.68	1.54	1.59	3.3	2.9	2.8	1.77	1.77
14	5.7	3.1	1.54	1.63	1.78	1.54	1.59	3.15	2.65	2.4	1.77	1.77
15	6.6	1.93	1.54	1.59	1.68	1.54	1.63	2.5	5.15	2.1f	1.77	1.82
16	6.2	1.34	1.59	1.59	2.3	1.54	1.63	2.1	3.95	2.1f	1.95	4.5
17	7.6	1.34	1.54	1.76	1.77	1.54	1.59	1.86	2.65	2.1	1.91	24.5
18	7.6	1.34	1.59	1.63	1.72	1.54	1.59	1.68	2.55	2.0	1.77	13.6
19	7.9	1.37	1.59	1.59	1.68	1.59	1.59	1.68	5.4	2.0	1.54	2.9
20	7.6	1.37	1.54	1.63	1.63	1.63	1.54	1.92	4.2	2.0	1.54	2.25
21	4.2	1.82	1.54	1.59	1.72	1.59	1.54	1.77	2.9	1.91	1.59	2.05
22	2.6	1.47	1.54	20	1.82	1.59	1.54	1.68	2.65	2.85	1.54	1.78
23	1.97	2.3	1.54	15.1	1.72	1.59	1.54	1.68	2.4	2.0	1.54	2.1
24	3.25	1.54	1.54	26.5	1.63	1.59	1.54	1.68	2.15	1.9f	1.63	2.0
25	2.7	1.44	1.54	4.2	1.63	1.59	1.63	1.72	2.0	1.91	1.63	1.91
26	1.26	1.40	1.54	3.6	1.63	1.68	1.68	1.68	2.6	1.91	1.68	1.91
27	1.20	1.40	1.54	6.1	1.91	1.63	1.63	1.68	2.1	1.86	1.77	1.95
28	1.99	1.40	1.54	2.7	1.88	1.63	1.54	1.68	1.91	1.86	1.77	1.95
29	2.7	1.44	1.54	2.4	1.68	1.63	1.63	-	1.95	1.86	2.45	3.1
30	2.1	1.44	1.54	2.1	1.63	1.72	1.63	-	1.91	1.86	1.86	2.65
31	2.15	1.51	-	2.15	-	1.63	1.63	-	1.86	-	1.82	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	7.9	1.20	4.84	7.49	150	460
August	15.0	1.34	2.41	3.73	74.8	230
September	16.0	1.47	2.09	3.23	62.6	192
October	26.5	1.54	3.87	5.99	120	368
November	2.3	1.63	1.76	2.72	52.7	162
December	1.72	1.54	1.59	2.46	49.4	152
Calendar year 1941	26.5	1.20	4.14	6.41	1,510	4,640
January	1.68	1.54	1.59	2.46	49.4	151
February	26.5	1.54	3.62	5.60	101	311
March	29.5	1.59	3.86	5.97	120	367
April	13.0	1.86	2.82	4.36	84.6	260
May	2.45	1.54	1.79	2.77	55.5	170
June	24.5	1.73	3.21	4.97	96.4	296
Fiscal year 1941-42	29.5	1.20	2.78	4.30	1,020	3,120

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 standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 69 million gallons a day (107 second-feet) Oct. 22 (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, 0.26 million gallons a day (0.40 second-foot) Nov. 15.
1940-42: Maximum discharge, that of Oct. 22, 1941; minimum, that of Nov. 15, 1941.

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

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.5	0.16	1.0	2.05
.6	.29	1.1	3.0
.7	.49	1.2	4.3
.8	.82	1.3	6.0
.9	1.32	1.4	8.2

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.79	0.39	0.56	0.33	0.39	0.29	0.29	0.29	0.29	0.33	0.37	0.29
2	.45	.39	.49	.33	.39	.29	.29	.29	.29	.37	.39	.29
3	.39	.39	.47	.48	.39	.29	.28	.29	.29	.43	.39	.29
4	.35	.43	.45	.93	.37	.29	.28	.29	.29	2.9	.35	.29
5	.35	.39	.47	.37	.37	.31	.28	1.02	.29	2.2	.35	.29
6	.42	.39	4.2	.37	.35	.29	.28	5.2	.29	.92	.35	.29
7	.35	.49	.66	.39	.35	.29	.28	.49	1.50	.52	.33	.29
8	.37	5.2	.43	.49	.33	.29	.28	.35	2.45	.45	.33	.29
9	.39	1.17	.39	.39	.29	.29	.28	.29	2.8	.41	.33	.37
10	.45	.62	.37	.37	.29	.29	.28	.29	2.0	.41	.35	.33
11	.35	.49	.37	.35	.29	.29	.28	.29	5.0	.79	.35	.31
12	.35	.45	.35	.33	.29	.29	.28	.29	1.12	.98	.33	.31
13	.35	.45	.35	.35	.29	.29	.28	.39	.75	.62	.33	.29
14	.35	.45	.33	.35	.28	.29	.28	.33	.66	.45	.33	.31
15	.35	.45	.33	.33	.28	.29	.28	.29	.87	.43	.33	.32
16	.35	.45	.33	.33	.38	.29	.28	.29	1.07	.41	.35	.66
17	.39	.45	.33	.35	.31	.29	.28	.29	.69	.39	.35	1.34
18	.39	.45	.33	.31	.31	.29	.28	.29	.72	.37	.35	1.57
19	.37	.47	.33	.31	.29	.29	.28	.29	1.41	.37	.35	.33
20	.37	.49	.33	.31	.29	.31	.28	.29	.82	.37	.35	.29
21	.37	.69	.33	.31	.29	.29	.28	.29	.49	.37	.35	.29
22	.37	.56	.33	6.2	.33	.29	.28	.29	.39	.61	.35	.29
23	.37	.92	.33	3.95	.31	.29	.29	.29	.39	.43	.35	.29
24	.37	.62	.33	f7.5	.29	.29	.29	.29	.35	.43	.35	.29
25	.37	.52	.33	.92	.29	.29	.31	.29	.33	.39	.35	.29
26	.37	.49	.33	1.09	.29	.31	.31	.29	.47	.39	.35	.29
27	.39	.49	.33	1.93	.31	.31	.29	.29	.39	.37	.35	.29
28	.39	.49	.33	.72	.37	.29	.28	.29	.37	.37	.35	.29
29	.39	.49	.33	.49	.31	.29	.29	-	.37	.37	.45	.31
30	.39	.49	.33	.45	.29	.31	.29	-	.37	.39	.31	.39
31	.39	.52	-	.41	-	.31	.29	-	.37	-	.31	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.79	0.35	0.390	0.603	12.1	37
August	5.2	.39	.669	1.04	20.7	64
September	4.2	.33	.506	.783	15.2	47
October	7.5	.31	1.02	1.58	31.7	97
November	.39	.28	.320	.495	9.61	29
December	.31	.29	.294	.455	9.11	28
Calendar year 1941	7.5	.28	.569	.880	208	637
January	.31	.28	.285	.441	8.83	27
February	5.2	.29	.506	.783	14.2	43
March	5.0	.29	.900	1.39	27.9	86
April	2.9	.33	.608	.941	18.2	56
May	.45	.31	.349	.540	10.8	33
June	1.57	.29	.392	.607	11.8	36
Fiscal year 1941-42	7.5	.28	.521	.806	190	583

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Sept. 6-10, Feb. 5 to Mar. 5, Mar. 9 to Apr. 3, June 16-30; discharge computed on basis of records for stations on Kahaluu and Haiku Streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 96 million gallons a day (149 second-feet) Aug. 8 (gage height, 3.67 feet), from rating curve extended above 8.4 million gallons a day by test on model of station site; minimum, 2.45 million gallons a day (3.79 second-feet) Sept. 3-5.

1935-42: 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, 2.35 million gallons a day (3.64 second-feet) Sept. 2-5, 1936.

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

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.6	2.7	1.0	7.5
.7	3.75	1.2	10.7
.8	4.8	1.4	14.5
.9	6.0		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.4	2.7	2.6	2.55	2.7	2.7	2.55	2.55	2.55	2.6	2.55	2.55
2	2.9	2.7	2.55	2.55	2.7	2.6	2.55	2.55	2.55	2.6	2.8	2.55
3	2.75	2.7	2.45	3.4	2.7	2.6	2.55	2.55	2.55	2.6	2.6	2.55
4	2.75	2.7	2.45	3.75	2.7	2.6	2.55	2.55	2.55	8.2	2.55	2.55
5	2.75	2.7	2.45	2.6	2.7	2.6	2.55	5.5	2.55	3.4	2.55	2.55
6	2.7	2.7	10.5	2.6	2.7	2.6	2.55	8.2	2.55	2.6	2.55	2.55
7	2.6	2.9	3.1	2.6	2.7	2.6	2.55	2.7	5.2	2.7	2.6	2.55
8	2.7	9.1	2.7	2.9	2.7	2.6	2.55	2.6	4.1	2.6	2.6	2.55
9	2.9	3.45	2.6	2.7	2.7	2.6	2.55	2.55	4.5	2.6	2.6	2.7
10	3.2	2.9	2.6	2.6	2.7	2.6	2.55	2.55	3.45	2.6	2.6	2.55
11	2.7	2.6	2.6	2.55	2.7	2.6	2.55	2.55	12.5	3.1	2.6	2.55
12	2.65	2.6	2.55	2.55	2.7	2.6	2.55	2.55	3.1	4.5	2.6	2.55
13	2.6	2.6	2.55	2.55	2.7	2.55	2.55	2.6	2.7	2.6	2.6	2.55
14	2.7	2.6	2.55	2.55	2.7	2.55	2.55	2.6	2.6	2.7	2.55	2.55
15	2.7	2.6	2.55	2.55	2.7	2.55	2.55	2.55	2.7	2.7	2.55	2.8
16	2.7	2.6	2.55	2.55	2.9	2.55	2.55	2.55	3.0	2.7	2.55	3.9
17	2.8	2.55	2.55	2.55	2.7	2.55	2.55	2.55	2.7	2.7	2.55	6.3
18	2.7	2.55	2.6	2.55	2.7	2.55	2.55	2.55	2.7	2.6	2.55	6.1
19	3.0	2.55	2.55	2.55	2.7	2.55	2.55	2.55	6.8	2.6	2.55	2.8
20	2.7	2.55	2.55	2.55	2.7	2.55	2.55	2.55	3.5	2.6	2.55	2.6
21	2.6	2.8	2.55	2.55	2.7	2.55	2.55	2.55	2.9	2.6	2.55	2.55
22	2.6	2.6	2.55	7.9	2.7	2.55	2.55	2.55	2.7	3.0	2.55	2.55
23	2.6	3.35	2.55	5.7	2.7	2.55	2.55	2.55	2.6	2.6	2.55	2.55
24	2.6	2.6	2.55	9.2	2.7	2.55	2.55	2.55	2.55	2.55	2.55	2.7
25	2.7	2.55	2.55	2.8	2.7	2.55	2.55	2.55	2.55	2.55	2.55	2.7
26	2.7	2.55	2.55	2.6	2.7	2.6	2.55	2.55	3.15	2.55	2.55	2.7
27	2.7	2.55	2.55	3.5	2.7	2.6	2.55	2.55	2.7	2.55	2.55	2.7
28	2.7	2.55	2.55	2.9	2.7	2.55	2.55	2.55	2.6	2.55	2.55	2.7
29	2.7	2.55	2.55	2.7	2.7	2.55	2.55	-	2.6	2.55	2.55	3.05
30	2.7	2.55	2.55	2.7	2.7	2.55	2.55	-	2.6	2.55	2.55	3.65
31	2.7	2.55	-	2.7	-	2.55	2.55	-	2.6	-	2.55	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.4	2.6	2.75	4.25	85.2	261
August	9.1	2.55	2.89	4.47	89.6	275
September	10.5	2.45	2.84	4.39	85.1	261
October	9.2	2.55	3.19	4.94	99.0	304
November	2.9	2.7	2.71	4.19	81.2	249
December	2.7	2.55	2.58	3.99	79.8	245
Calendar year 1941	10.5	2.45	2.94	4.55	1,070	3,290
January	2.55	2.55	2.55	3.95	79.0	243
February	8.2	2.55	2.87	4.44	80.3	246
March	12.5	2.55	3.36	5.20	104	320
April	8.2	2.55	2.93	4.53	88.0	270
May	2.8	2.55	2.57	3.98	79.7	245
June	6.3	2.55	2.94	4.55	88.2	271
Fiscal year 1941-42	12.5	2.45	2.85	4.41	1,040	3,190

Note.- No gage-height record July 1-25, Oct. 27, 28; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 268 million gallons a day (415 second-feet) June 18 (gage height, 5.05 feet), from rating curve extended above 50 million gallons a day by test on model of station site; minimum, 4.4 million gallons a day (6.8 second-feet) July 13-15, 18, 21, 22, 23.
1935-42: 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 July 13-15, 18, 21, 22, 23, 1941.

Remarks.- Records good. No diversions above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.7	3.5	1.0	7.5	1.4	15.1
.8	4.6	1.1	9.0	1.7	22.5
.9	6.0	1.2	11.0	2.1	35.5

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.7	4.6	6.1	4.6	5.9	5.4	5.4	5.4	5.3	6.0	6.3	6.0
2	4.9	4.6	5.2	4.6	5.7	5.4	5.4	5.4	5.3	6.0	6.8	6.0
3	4.6	4.6	4.9	7.7	5.6	5.4	5.3	5.4	5.3	6.2	6.3	6.0
4	4.6	4.9	4.9	7.4	5.6	5.6	5.3	5.3	5.3	16.4	6.3	6.0
5	4.6	4.7	5.0	5.3	5.6	5.6	5.3	13.1	5.3	9.2	6.2	6.0
6	4.6	4.7	35.5	5.0	5.6	5.6	5.3	30.5	5.3	7.5	6.2	6.0
7	4.5	5.7	9.3	5.2	5.4	5.4	5.3	7.5	9.4	6.9	6.2	6.0
8	4.7	28	6.6	6.2	5.4	5.7	5.3	6.3	9.6	6.4	6.2	6.0
9	4.9	9.9	5.9	5.4	5.4	5.4	5.3	5.9	13.4	6.3	6.2	6.3
10	5.3	6.8	5.6	5.2	5.4	5.4	5.2	5.7	8.9	6.4	6.2	6.4
11	4.6	5.7	5.3	5.0	5.4	5.4	5.2	5.7	32.5	7.5	6.2	6.2
12	4.5	5.3	5.2	4.9	5.4	5.4	5.2	5.7	9.9	10.5	6.2	6.2
13	4.4	5.2	5.2	4.9	5.4	5.3	5.3	6.2	7.4	7.2	6.2	6.3
14	4.5	5.0	5.0	5.0	5.4	5.3	5.3	5.9	6.9	6.9	6.2	6.3
15	4.5	5.0	5.0	4.9	5.4	5.3	5.4	5.7	8.5	6.6	6.2	8.1
16	4.5	4.9	4.9	4.9	6.3	5.3	5.4	5.7	8.1	6.4	6.0	8.9
17	4.7	4.9	4.9	4.9	5.4	5.3	5.4	5.6	7.0	6.3	6.2	24
18	4.5	4.9	4.9	4.9	5.4	5.3	5.4	5.6	6.9	6.2	6.2	32.5
19	5.2	5.0	4.9	4.9	5.4	5.3	5.3	5.6	21	6.2	6.0	7.9
20	4.5	4.9	4.9	4.9	5.6	5.4	5.3	5.4	11.1	6.2	6.0	6.8
21	4.4	5.7	4.9	4.9	5.7	5.4	5.3	5.3	8.0	6.0	6.2	6.3
22	4.4	5.4	4.9	17.2	5.7	5.4	5.3	5.3	7.0	7.7	6.2	6.0
23	a4.4	8.0	4.9	17.1	5.6	5.4	5.4	5.3	6.6	6.4	6.2	5.9
24	a4.5	5.4	4.7	25.5	5.6	5.4	5.4	5.3	6.4	6.3	6.0	5.7
25	a4.6	5.2	4.7	8.1	5.6	5.4	5.6	5.4	6.3	6.3	6.0	5.7
26	4.6	4.9	4.7	6.6	5.4	5.6	5.6	5.4	7.9	6.3	6.2	5.7
27	4.6	4.9	4.7	8.9	5.6	5.6	5.4	5.3	6.4	6.2	6.0	5.7
28	4.6	4.7	4.9	6.6	5.6	5.4	5.3	5.3	6.3	6.2	6.0	5.9
29	4.6	4.7	4.7	6.4	5.6	5.4	5.3	-	6.2	6.2	6.0	5.9
30	4.6	4.7	4.6	5.9	5.4	5.6	5.3	-	6.0	6.4	6.0	6.4
31	4.6	5.3	-	6.3	-	5.4	5.4	-	6.0	-	6.0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.7	4.4	4.65	7.19	144	443
August	28	4.6	6.07	9.39	188	578
September	35.5	4.6	6.23	9.64	187	574
October	25.5	4.6	7.07	10.9	219	673
November	6.3	5.4	5.55	8.59	166	511
December	5.7	5.3	5.43	8.40	168	516
Calendar year 1941	35.5	4.4	5.63	8.71	2,050	6,300
January	5.6	5.2	5.34	8.26	166	508
February	30.5	5.3	6.79	10.5	190	584
March	32.5	5.3	8.56	13.2	265	814
April	16.4	6.0	7.04	10.9	211	648
May	6.8	6.0	6.16	9.53	191	586
June	32.5	5.7	7.78	12.0	234	717
Fiscal year 1941-42	35.5	4.4	6.38	9.87	2,330	7,150

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

MISCELLANEOUS DISCHARGE MEASUREMENTS

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

Miscellaneous discharge measurements on Oahu during fiscal year July 1941 to June 1942

Date	Stream	Tributary to--	Locality	Discharge	
				Second-feet	Million gallons a day
Aug. 7	Pearl Harbor Springs.	Pacific Ocean.....	At ditch levee, 1,000 feet west of Puukapu gaging station.	1.69	1.09
Nov. 5	....do.....	....do.....	....do.....	2.24	1.45
Jan. 28	....do.....	....do.....	....do.....	1.37	.885
May 4	....do.....	....do.....	....do.....	.842	.544
July 28	Haiku Stream....	Heeia Stream.....	At altitude 550 feet, near Heeia.	0	0
Oct. 29	....do.....	....do.....	....do.....	.509	.329
July 28	Right Branch Haiku Stream.	Haiku Stream.....	At altitude 500 feet, near Heeia.	.501	.324
Oct. 29	....do.....	....do.....	....do.....	1.04	.672

Halawa Stream near Halawa

Location.- Concrete and masonry dam, lat. 21°09'30", long. 156°46'00", about 500 feet downstream from confluence of two main branches, 1¾ 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 1942.

Average discharge.- 18 years (1918-32, 1938-42), 19.3 million gallons a day (29.9 second-feet).

Extremes.- Maximum discharge during year, 2,350 million gallons a day (3,640 second-feet) Oct. 22 (gage height, 9.70 feet), from rating curve extended above 100 million gallons a day by logarithmic plotting; minimum, 1.3 million gallons a day (2.0 second-feet) Feb. 4, 5.

1917-32, 1937-42: Maximum discharge, 2,430 million gallons a day (3,760 second-feet) Oct. 23, 1939 (gage height, 9.86 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.

A greater discharge may have occurred Jan. 20, 1929.

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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.7	0.6	2.2	11.0	3.3	108
1.8	1.5	2.3	15.2	3.6	160
1.9	2.9	2.5	26.5	4.0	242
2.0	5.0	2.7	41	5.0	470
2.1	7.7	2.9	59	6.0	750

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	38	6.9	40	15.6	12.7	12.0	7.4	1.9	5.9	11.8	13.8	2.9
2	17.3	5.6	10.6	11.0	10.3	8.7	21.5	1.6	6.4	10.0	19.6	2.5
3	18.2	31	21	65	9.0	8.1	7.6	1.5	5.1	96	11.1	2.2
4	18.3	50	14.6	82	7.7	31.5	5.8	1.4	115	293	9.0	2.6
5	11.8	10.3	15.3	14.6	6.9	55	38	33.5	26	135	12.2	2.3
6	45	34	141	29	46	36.5	10.8	63	10.3	65	83	1.9
7	20.5	35.5	111	39	16.2	25	7.2	18.9	25.5	21.5	30	1.6
8	28.5	178	21	98	10.0	30.5	5.3	5.9	461	16.8	17.0	2.9
9	97	107	13.1	90	7.7	23.5	4.6	3.7	381	13.9	29	43
10	59	31	11.4	21	6.4	13.9	4.0	3.1	334	15.5	17.2	17.0
11	17.3	18.1	23.5	16.3	5.8	23	3.5	2.6	288	201	10.3	5.9
12	11.8	12.3	9.4	12.3	5.3	15.6	3.3	2.3	53	34.5	8.0	22
13	9.4	9.1	6.9	10.7	9.7	9.7	3.1	2.2	77	47	6.9	6.2
14	22.5	8.0	6.1	37.5	12.4	7.7	3.7	3.1	41	31	6.4	23.5
15	14.0	7.7	8.0	17.3	7.6	6.9	35.5	2.1	45	18.9	7.5	16.3
16	10.9	6.1	5.5	16.3	11.8	10.1	12.0	2.6	73	15.2	9.3	11.3
17	12.4	5.0	5.8	29	9.8	6.1	5.6	2.9	43	12.3	5.0	8.8
18	14.5	4.6	8.0	20	10.1	5.0	4.0	25.5	58	14.4	4.2	14.0
19	51	5.0	9.4	13.3	15.8	4.8	3.3	90	123	10.0	3.7	46
20	14.9	5.5	9.3	10.7	26.5	13.1	2.8	12.6	40	12.9	3.3	8.6
21	8.7	35.5	14.7	10.0	37.5	19.7	2.6	6.1	76	12.4	3.1	5.5
22	13.3	24.5	33	175	20.5	9.4	2.3	4.0	100	22.5	2.8	4.2
23	10.8	79	10.3	474	12.4	18.8	2.2	3.1	23.5	43	2.5	3.1
24	7.2	11.3	8.5	419	11.0	25	2.1	2.6	20	10.7	2.3	2.8
25	10.8	7.2	17.0	47	7.2	11.0	2.1	6.4	16.9	22	2.2	2.6
26	5.8	6.1	17.2	55	5.1	36.5	12.4	88	64	12.4	5.4	2.3
27	5.0	4.8	11.8	85	6.3	17.1	8.4	25	22.6	17.9	6.3	4.1
28	14.7	4.2	10.6	34	104	8.4	5.9	7.2	21	21	2.9	10.7
29	20	4.4	6.4	18.9	12.1	5.4	3.3	-	80	18.5	19.4	11.9
30	10.6	7.1	6.4	22.5	60	63	2.5	-	25	21.5	4.8	23.5
31	5.8	14.7	-	16.3	-	12.2	2.1	-	14.8	-	3.3	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	97	5.0	20.8	32.2	645	1,980
August	178	4.2	24.8	38.4	770	2,360
September	141	5.5	20.9	32.3	627	1,920
October	474	10.0	64.7	100	2,010	6,150
November	104	5.3	17.5	27.1	525	1,610
December	63	4.8	18.5	28.5	574	1,760
Calendar year 1941	474	2.6	24.1	37.3	8,780	26,940
January	38	2.1	7.58	11.7	235	721
February	90	1.4	15.1	23.4	423	1,300
March	461	5.1	86.4	134	2,680	8,220
April	293	10.0	42.6	65.9	1,280	3,920
May	83	2.2	11.7	18.1	362	1,110
June	46	1.6	10.4	16.1	313	961
Fiscal year 1941-42	474	1.4	28.6	44.3	10,440	32,010

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

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 1942.

Average discharge.- 13 years (1920-29, 1938-42), 7.97 million gallons a day (12.3 second-feet).

Extremes.- Maximum discharge during year, 243 million gallons a day (376 second-feet) Mar. 9 (gage height, 4.48 feet), from rating curve extended above 140 million gallons a day by logarithmic plotting; minimum, 1.90 million gallons a day (2.94 second-feet) Feb. 1-5, 12, 13, 15-17.

1919-29, 1937-42: Maximum discharge, 951 million gallons a day (1,470 second-feet) Aug. 24, 1938 (gage height, 8.26 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 fair. No diversions.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.9	3.4	9.3	5.9	3.8	4.4	4.5	1.90	3.85	5.9	5.6	2.95
2	7.8	3.25	4.4	4.5	3.7	3.85	15	1.90	3.25	5.5	6.9	2.8
3	8.6	7.3	5.3	13.7	3.6	5.1	5.0	1.90	3.1	8.7	5.0	2.8
4	7.1	7.e	4.6	15.8	3.6	10.6	4.0	1.90	35	25	5.1	3.1
5	6.2	3.85	5.4	5.7	3.5	16.4	6.0	6.2	10.2	10.2	6.3	2.8
6	19.0	10.1	33	5.8	10	9.9	4.2	5.5	5.5	9.2	22	2.8
7	9.2	9.6	29	7.2	4.5	10.3	3.7	3.1	4.6	5.9	14.4	2.8
8	9.9	29	8.4	22	4.0	9.6	3.4	2.25	41	5.3	7.1	3.1
9	21	23.5	6.1	38.5	3.5	7.8	3.2	2.15	120	5.1	10.1	15.2
10	14.9	11.2	5.5	10.1	3.4	6.5	3.1	2.15	80	73	6.8	5.2
11	7.6	7.6	6.1	8.3	3.3	8.4	3.1	2.0	75	45	5.7	4.0
12	6.4	5.9	4.6	6.6	3.3	6.1	3.0	2.0	29.5	13.1	5.3	6.6
13	5.5	5.1	4.2	7.5	3.3	5.3	3.5	2.0	34.5	23	5.0	4.7
14	5.6	4.8	3.85	21	3.4	5.0	3.4	2.0	16.5	13.7	4.8	8.6
15	7.4	4.4	3.7	9.0	3.3	4.8	3.8	2.0	14.4	9.5	4.8	6.5
16	4.8	3.85	3.55	7.0	3.2	5.0	3.2	2.15	23	8.1	4.4	5.1
17	5.0	3.7	3.55	8.0	3.2	4.4	2.9	2.65	14.5	7.3	4.0	4.2
18	5.1	3.7	4.0	10	3.3	4.0	2.7	7.2	16.7	7.5	3.85	4.2
19	11.0	3.7	5.2	7.0	4.8	3.85	2.5	15.5	30	6.4	3.7	4.0
20	5.1	3.75	4.8	5.2	4.5	6.0	2.4	4.0	13.8	7.3	3.7	4.0
21	4.4	12.8	4.2	4.5	4.3	5.7	f2.4	3.1	18.9	6.1	3.55	3.8
22	5.2	8.3	4.4	10	5.7	4.2	2.4	2.65	19.2	5.9	3.4	3.8
23	4.2	12.2	3.7	60	4.6	5.9	2.25	2.5	9.2	5.7	3.4	3.6
24	4.1	5.0	3.4	80	4.0	6.2	2.25	2.4	8.4	5.1	3.25	3.4
25	4.4	4.4	4.8	15	3.55	4.3	2.15	3.2	7.3	5.3	3.25	3.2
26	3.55	4.0	5.6	8.0	3.4	4.5	2.25	22	11.9	5.0	4.1	3.1
27	3.7	3.7	4.2	6.0	3.35	4.0	2.25	6.2	7.8	5.9	3.55	3.2
28	4.0	3.55	3.7	5.0	5.9	3.7	2.15	4.2	8.2	7.1	3.25	3.1
29	6.5	3.55	3.55	4.5	3.95	3.5	2.0	-	18.1	6.1	4.3	3.0
30	4.0	4.2	3.4	4.0	11.3	11	2.0	-	8.0	8.5	3.25	3.5
31	3.55	5.4	-	4.0	-	5.0	2.0	-	6.6	-	3.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	21	3.55	7.35	11.4	228	699
August	29	3.25	7.18	11.1	223	683
September	33	3.4	6.52	10.1	196	600
October	80	4.0	13.5	20.9	420	1,290
November	11.3	3.2	4.31	6.67	129	397
December	16.4	3.5	6.30	9.75	195	599
Calendar year 1941	80	2.5	7.09	11.0	2,590	7,940
January	15	2.0	3.44	5.32	107	327
February	22	1.90	4.17	6.45	117	358
March	120	3.1	22.5	34.8	698	2,140
April	45	5.0	9.66	14.9	290	889
May	22	3.1	5.58	8.63	173	531
June	15.2	2.8	4.30	6.65	129	396
Fiscal year 1941-42	120	1.90	7.96	12.3	2,900	8,910

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

Note.- No gage-height record Oct. 14 to Nov. 21, Dec. 24 to Jan. 20, June 16-30; discharge computed on basis of records for stations on Lanipuni and Pulena Streams.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 Walakeakua 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 1942.
Average discharge.- 12 years (1920-28, 1938-42), 21.7 million gallons a day (33.6 second-feet).
Extremes.- Maximum discharge during year, 1,680 million gallons a day (2,600 second-feet) Mar. 9 (gage height, 5.48 feet), from rating curve extended above 220 million gallons a day by logarithmic plotting; minimum, 3.4 million gallons a day (5.3 second-feet) Feb. 4, 5.
1919-28, 1937-42: Maximum discharge, 5,950 million gallons a day (9,210 second-feet) Nov. 20, 1940 (gage height, 8.97 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 fair.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Aug. 16				Aug. 17 to June 30					
0.9	4.5	1.7	36.5	0.9	3.5	1.5	22.5	2.9	235
1.0	6.6	1.9	52	1.0	5.0	1.7	35.5	3.2	330
1.1	9.0	2.1	69	1.1	7.0	1.9	53	3.5	445
1.3	15.7			1.2	9.7	2.1	76	4.0	670
1.5	24.5			1.3	13.2	2.3	104	4.5	950
				1.4	17.5	2.6	158		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	53	6.2	43	19.6	11.8	14.5	8.1	3.6	20.5	18.5	19.8	4.8
2	28.5	5.8	17.5	11.8	11.1	9.7	21	3.5	12.8	16.2	28	4.6
3	31	10.5	18.8	16.7	10.0	12.2	9.4	3.5	12.2	15.4	14.5	4.8
4	33.5	12.2	13.2	17.7	9.2	31	8.1	3.5	156	20.5	12.2	5.6
5	22	6.8	12.9	10.3	8.6	53	11.7	27	61	41	12.8	4.4
6	43	15.8	105	9.4	15.6	48	8.4	8.2	29.5	36	44	4.2
7	27.5	24	72	17.6	9.7	43	7.3	5.0	19.5	17.5	31.5	4.4
8	27.5	41	29.5	48	8.4	45	6.8	4.4	185	15.4	12.5	6.8
9	42	25.5	19.5	134	7.5	38	6.4	4.1	841	13.2	12.0	25
10	37	22.5	18.3	44	7.0	28	6.0	3.8	425	21	14.1	10.8
11	21.5	17.2	16.6	32	6.8	38	5.8	3.6	441	132	11.4	6.2
12	17.4	11.5	11.8	25	6.8	24	5.6	3.6	215	71	10.4	11.0
13	14.6	9.9	10.4	25	6.6	17.1	6.0	3.7	234	87	9.4	9.2
14	13.2	8.8	9.7	54	6.6	13.6	6.6	5.4	112	50	9.2	24.5
15	13.2	8.5	8.9	32.5	6.2	12.5	8.4	3.8	83	32	11.1	19.5
16	10.6	7.7	8.1	23.5	6.2	15.0	5.8	4.2	148	25.5	9.2	10.4
17	11.2	8.6	7.8	29	6.2	10.8	5.2	9.6	102	23	7.8	7.5
18	10.5	7.3	9.5	28.5	7.8	9.2	5.0	38	86	24	7.3	6.4
19	14.2	7.8	20.5	19.0	8.3	8.6	4.8	87	92	16.2	7.0	6.2
20	9.6	14.2	16.8	17.5	8.9	21	4.7	18.0	61	25	6.6	5.4
21	8.3	52	9.2	14.1	9.7	17.6	4.6	9.7	60	18.4	6.4	5.0
22	9.9	18.9	8.1	24.5	11.2	9.7	4.4	7.5	102	15.4	6.2	4.7
23	8.3	25	7.3	133	9.4	12.3	4.2	6.4	43	12.5	6.0	4.6
24	7.6	12.2	6.8	213	8.6	14.3	4.2	5.8	38	11.4	5.8	4.4
25	7.6	9.4	10.7	56	6.0	10.0	4.2	14.0	31.5	11.8	5.6	4.2
26	6.6	8.4	13.9	33.5	5.4	13.0	4.1	97	32.5	10.4	9.3	5.7
27	6.8	7.5	10.7	28.5	6.1	8.9	4.1	40	32	18.6	7.9	8.4
28	8.3	7.3	8.4	25.5	24	8.1	4.2	23.5	29	21	5.4	6.6
29	12.3	7.5	9.2	17.5	9.9	7.3	4.0	-	55	24	7.4	6.7
30	7.1	13.4	8.9	15.4	47	20	3.8	-	33	31.5	5.4	9.4
31	6.2	29	-	13.2	-	9.7	3.6	-	22.5	-	5.2	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	53	6.2	18.4	28.5	570	1,750
August	52	5.8	14.9	23.1	462	1,420
September	105	6.8	18.8	29.1	563	1,730
October	213	9.4	38.4	59.4	1,190	3,650
November	47	5.4	10.2	15.8	306	940
December	53	7.3	20.1	31.1	623	1,910
Calendar year 1941	340	3.6	18.4	28.5	6,710	20,590
January	21	3.6	6.34	9.81	196	603
February	97	3.5	16.0	24.8	447	1,370
March	841	12.2	123	190	3,820	11,710
April	132	10.4	29.2	45.2	875	2,690
May	44	5.2	12.1	18.7	374	1,150
June	25	4.2	8.04	12.4	241	740
Fiscal year 1941-42	841	3.5	26.5	41.0	9,670	29,660

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.
Average discharge.- 12 years (1920-28, 1938-42), 11.1 million gallons a day (17.2 second-feet).
Extremes.- Maximum discharge during year, 410 million gallons a day (634 second-feet) Mar. 9 (gage height, 3.10 feet), from rating curve extended above 15 million gallons a day by logarithmic plotting; minimum, 2.5 million gallons a day (3.9 second-feet) Aug. 2, Feb. 2-4.
1919-29, 1937-42: 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, 1.8 million gallons a day (2.8 second-feet) Mar. 7, July 13, 1920.
Remarks.- Records poor. No diversions.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.6	2.0	1.1	18.5	2.0	117
.7	3.6	1.2	24.5	2.4	200
.8	6.0	1.4	39.5	3.0	375
.9	9.2	1.6	60		
1.0	13.3	1.8	86		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	21	2.65	16.4	6.7	6.3	6.6	4.4	2.6	11	12.1	11.8	3.6
2	12.9	2.65	7.9	4.3	5.8	5.0	10.7	2.6	8.4	8.9	16.0	3.6
3	13.2	3.6	8.3	7.7	5.5	6.1	5.5	2.5	7.6	8.6	9.6	3.45
4	13.8	3.9	5.8	6.1	5.0	14.2	4.8	2.5	80	8.9	8.2	3.45
5	9.6	3.1	5.6	4.3	4.8	26.5	6.2	40	35	16.2	7.9	3.45
6	14.4	5.5	38.5	3.85	8.6	21.5	4.6	10	20	18.6	19.2	3.3
7	11.2	8.2	29	6.3	5.5	20	4.1	4.5	15	10.8	16.4	3.3
8	9.6	10.7	13.6	15.8	4.8	25	3.85	4.0	40	9.6	11.2	4.3
9	11.9	7.0	9.2	28	4.3	20.5	3.6	3.3	250	8.6	10.8	6.6
10	10.4	6.3	8.8	15.2	4.1	14.9	3.45	2.8	110	12.4	8.6	4.9
11	7.6	4.8	7.9	12.6	3.85	21.5	3.3	2.6	120	53	7.6	3.45
12	6.6	3.45	5.8	11.6	3.85	14.0	3.3	2.6	60	39.5	6.6	4.1
13	5.8	3.3	5.0	12.0	3.6	10.0	3.6	2.7	64	33	6.0	3.9
14	5.3	3.1	5.0	28	3.6	8.2	3.45	3.2	40	22.5	6.0	7.3
15	4.8	3.1	4.3	21.5	3.6	7.5	4.3	2.8	35	16.4	8.1	6.1
16	4.3	2.8	3.85	14.3	3.6	7.9	3.3	3.0	50	12.5	6.6	4.6
17	4.3	2.8	3.6	14.7	3.45	6.0	3.1	7.0	43	11.7	5.5	3.6
18	4.1	2.8	4.1	17.1	3.45	5.3	2.95	18	37	13.4	5.0	3.6
19	4.6	3.1	7.6	12.1	4.6	4.8	2.95	35	40	9.2	4.8	3.45
20	3.85	5.2	5.3	9.6	5.0	13.0	2.95	10	34	11.8	4.8	3.3
21	3.45	13.6	3.6	7.9	4.3	9.5	2.8	6.4	32	9.7	4.6	3.3
22	3.85	6.0	3.3	8.4	4.6	5.8	2.8	5.0	43	8.6	4.3	2.95
23	3.45	6.7	3.3	48	3.85	6.2	2.8	4.3	28	7.3	4.3	2.95
24	3.3	4.3	3.1	78	3.6	6.6	2.8	4.0	23	6.6	4.1	2.95
25	3.1	3.45	4.4	30	3.1	5.0	2.8	15	21	6.3	4.1	2.8
26	2.95	3.3	4.8	17.5	2.95	5.0	2.8	47	23	6.0	4.8	3.6
27	2.95	3.1	4.6	13.8	3.15	4.3	2.8	25	19.1	10.6	4.3	4.3
28	3.3	3.1	4.0	13.0	11.1	4.1	2.95	13	13.8	11.6	3.85	3.45
29	4.1	3.3	4.0	8.9	4.9	3.85	2.8	-	20	13.5	4.3	3.45
30	2.95	4.6	4.3	7.9	20	10.8	2.65	-	15.4	15.9	3.85	4.1
31	2.8	10.3	-	7.3	-	5.0	2.65	-	11.7	-	3.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	21	2.8	6.96	10.8	215	661
August	13.6	2.65	4.85	7.47	150	460
September	38.5	3.1	7.83	12.1	235	721
October	78	3.85	15.9	24.6	492	1,510
November	20	2.95	5.16	7.98	155	475
December	26.5	3.85	10.5	16.2	325	997
Calendar year 1941	174	2.65	8.21	12.7	3,000	9,200
January	10.7	2.65	3.71	5.74	115	353
February	47	2.5	10.0	15.5	281	864
March	250	7.6	43.5	67.3	1,350	4,140
April	53	6.0	14.5	22.4	434	1,330
May	19.2	3.6	7.32	11.3	227	696
June	7.3	2.8	3.91	6.05	117	360
Fiscal year 1941-42	250	2.5	11.2	17.3	4,100	12,570

Note.- No gage-height record Feb. 1 to Mar. 26; discharge computed on basis of records for Pulena and Waiakeakua Streams near Wailau.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Lanipuni Stream near Pelekunu

Location.- Concrete and boulder control, 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 1919 to September 1929, September 1937 to June 1942.

Average discharge.- 13 years (1920-29, 1938-42), 10.3 million gallons a day (15.9 second-feet).

Extremes.- Maximum discharge during year, 2,560 million gallons a day (3,960 second-feet) Mar. 9 (gage height, 6.26 feet), from rating curve extended above 35 million gallons a day by logarithmic plotting; minimum, 2.3 million gallons a day (3.6 second-feet) Feb. 11, 12.

1919-29, 1937-42: Maximum discharge, that of Mar. 9, 1942; minimum, 1.66 million gallons a day (2.57 second-feet) Oct. 4, 1938.

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

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Feb. 6, Mar. 27 to June 30)

0.4	2.3	1.0	16.1	2.3	120
.5	3.5	1.2	23.5	2.6	174
.6	5.2	1.4	32.5	3.0	261
.7	7.5	1.7	52	3.4	377
.8	10.2	2.0	81	3.8	542

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	16.8	3.4	17.4	6.7	4.5	5.0	5.0	2.65	9.0	8.3	9.9	4.7
2	8.8	3.25	7.5	4.7	4.4	4.5	17.5	2.65	7.0	7.8	13.3	4.7
3	10.4	6.5	6.8	5.2	4.2	5.5	5.2	2.55	6.4	7.5	8.0	4.5
4	11.8	5.0	5.4	4.9	4.2	10.4	4.5	2.55	100	7.8	7.3	4.7
5	7.5	4.4	6.2	4.2	4.0	21	7.6	48	30	12.6	8.4	4.5
6	18.4	8.1	41	4.0	10.5	14.0	4.7	5.2	15	10.2	45	4.5
7	10.2	11.3	19.7	5.6	4.9	16.5	4.2	4.0	10	7.5	25	4.7
8	8.4	11.2	8.0	14.3	4.4	17.3	4.0	3.3	80	7.3	10.8	5.4
9	17.1	7.6	5.9	30	4.2	12.4	3.65	2.7	450	7.0	9.7	10.2
10	10.8	8.0	8.7	9.6	3.85	8.6	3.5	2.5	200	17.3	7.8	5.6
11	6.8	6.1	7.0	8.9	3.65	13.2	3.5	2.3	210	119	7.0	4.9
12	5.7	4.7	5.0	8.4	3.5	8.3	3.4	2.3	110	53	6.6	5.0
13	5.0	4.4	4.7	9.6	3.5	6.4	4.0	2.4	120	35.5	6.4	6.6
14	4.9	4.0	4.7	19.4	3.65	5.4	4.0	3.0	60	18.5	6.1	8.2
15	4.7	3.85	4.4	11.5	3.5	5.3	4.4	2.5	40	11.3	6.0	8.5
16	4.4	3.5	4.2	8.0	3.4	5.7	3.5	2.8	60	9.1	6.1	6.1
17	4.7	3.5	4.0	10.0	3.4	4.7	3.25	6.0	45	9.7	5.9	5.2
18	4.8	3.65	5.1	12.5	3.65	4.4	3.15	20	40	11.5	5.7	4.9
19	4.9	4.2	9.2	7.8	5.0	4.2	3.15	40	42	8.0	5.4	4.7
20	4.2	8.8	6.6	6.1	4.8	9.7	3.0	8.0	30	10.9	5.4	4.5
21	3.85	17.9	4.5	5.2	4.5	7.2	2.9	6.0	29	8.8	5.2	4.4
22	5.0	8.3	4.4	17.1	5.0	5.0	2.9	5.2	40	7.8	5.2	4.4
23	4.0	7.0	4.0	72	4.5	5.2	2.9	4.6	25	7.0	5.0	4.4
24	4.0	4.9	3.65	92	4.5	5.7	2.9	4.2	22	6.6	5.0	4.4
25	4.0	4.4	5.5	14.2	3.65	4.5	2.9	8.0	20	6.6	5.0	4.2
26	3.65	4.0	4.7	8.3	3.5	4.9	2.9	50	22	6.1	5.4	6.2
27	3.55	3.65	4.5	7.0	4.4	4.2	2.8	20	18.7	7.7	5.0	7.1
28	4.0	3.85	4.2	6.1	11.1	4.0	2.9	10	13.6	9.9	4.9	5.9
29	5.6	3.85	5.0	5.4	4.9	3.65	2.8	-	25	14.4	5.4	5.7
30	3.85	8.2	4.9	5.0	11.4	12.8	2.8	-	12.7	17.5	4.9	7.3
31	3.5	11.1	-	4.9	-	5.4	2.65	-	9.1	-	449	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	18.4	3.5	6.95	10.8	215	661
August	17.9	3.25	6.21	9.61	193	591
September	41	3.65	7.56	11.7	227	696
October	92	4.0	13.8	21.4	429	1,320
November	11.4	3.4	4.82	7.46	145	444
December	21	3.65	7.90	12.2	245	752
Calendar year 1941	317	3.0	8.95	13.8	3,270	10,030
January	17.5	2.65	4.08	6.31	127	388
February	50	2.3	9.76	15.1	273	839
March	450	6.4	61.0	94.4	1,890	5,800
April	119	6.1	15.7	24.3	472	1,450
May	45	4.9	8.47	13.1	262	806
June	10.2	4.2	5.54	8.57	166	510
Fiscal year 1941-42	450	2.3	12.7	19.6	4,640	14,260

Note.- No gage-height record Feb. 7 to Mar. 26; discharge computed on basis of records for Pulena and Waiakeakua Streams near Wailau.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. June 1919 to November 1930 at site 500 feet upstream.

Extremes.- Maximum discharge during year, 1,480 million gallons a day (2,290 second-feet) Mar. 9 (gage height, 5.98 feet), from rating curve extended above 42 million gallons a day by logarithmic plotting; minimum, 6.3 million gallons a day (9.8 second-feet) Sept. 17.

1919-32, 1937-42: 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, 1926.

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

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.3	5.8	2.0	40	3.8	370
1.4	8.5	2.2	58	4.2	510
1.5	11.9	2.6	106	4.6	670
1.6	16.0	3.0	172		
1.8	26.5	3.4	258		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	20.5	8.2	25	8.8	8.0	12.8	8.2	6.9	17.5	17.5	20.5	13.5
2	11.2	7.7	10.2	7.7	7.7	9.5	33.5	6.9	10.0	17.0	20.5	13.5
3	15.5	8.4	9.5	7.4	7.7	9.2	8.8	6.9	8.8	16.5	17.0	13.5
4	16.4	8.2	8.2	8.8	7.7	25.5	8.0	6.9	168	16.5	16.0	13.5
5	10.5	8.0	8.0	7.4	7.7	39	18.2	74	33.5	27	19.2	12.7
6	26.5	10.2	31	7.4	23	34	9.9	13.3	13.3	30	58	12.3
7	16.4	13.3	21	7.2	10.3	35	8.2	8.2	16.9	18.0	34	12.3
8	11.9	14.2	9.2	14.2	8.5	44	8.0	7.7	210	17.5	18.5	12.7
9	17.9	10.5	7.7	26	8.0	20.5	8.0	7.4	538	16.5	18.0	13.5
10	13.2	11.2	13.9	10.8	7.7	16.1	7.7	7.2	240	25	17.0	14.0
11	10.2	10.2	12.3	8.3	7.7	51	7.7	7.2	216	125	16.0	12.7
12	9.5	8.5	8.2	17.0	7.4	16.4	7.4	7.2	131	52	15.6	12.3
13	9.2	8.2	7.7	12.1	7.4	10.2	7.7	7.6	106	46	15.6	12.3
14	8.8	8.0	7.7	32	7.4	9.2	8.2	10.0	48	25	15.6	16.9
15	8.8	7.4	7.7	22	7.4	8.5	8.2	7.4	31	20.5	15.6	15.7
16	8.8	7.4	7.4	12.0	7.2	9.2	8.0	7.2	37	18.0	15.6	13.5
17	8.8	7.4	7.2	12.1	7.2	8.5	7.7	15.7	33	18.0	15.2	12.3
18	8.8	7.4	7.2	20.6	7.2	8.5	7.4	50	29	24	14.8	11.9
19	8.8	7.4	8.8	12.2	7.4	8.2	7.2	87	28.5	17.5	14.8	11.9
20	8.5	7.7	8.0	8.2	7.7	15.2	7.2	14.0	21	18.5	14.6	11.6
21	8.5	15.0	7.4	7.7	8.0	15.0	7.2	8.8	42	20	14.8	11.6
22	8.8	11.2	7.2	22.5	10.2	9.5	7.2	8.0	64	17.5	14.4	11.6
23	9.2	9.5	7.2	128	8.5	8.5	6.9	7.4	28	16.5	14.4	11.2
24	8.8	8.0	7.2	116	8.2	8.8	6.9	7.2	30	16.0	14.4	11.2
25	8.8	7.7	7.2	16.2	7.7	8.5	7.4	35	32	16.0	14.0	11.2
26	8.5	7.4	7.4	10.2	7.7	8.2	7.2	60	24	15.6	14.0	11.9
27	8.5	7.4	8.0	9.5	9.4	8.2	7.2	24	36.5	20	14.0	12.3
28	8.2	7.2	8.5	9.5	29	8.0	7.2	12.1	34	24	14.0	12.7
29	8.2	7.2	7.4	8.5	9.2	8.0	7.2	-	55	30	14.0	11.9
30	8.2	10.4	8.5	8.2	29	32	6.9	-	25	24.5	13.5	12.3
31	8.2	15.8	-	8.0	-	10.4	6.9	-	18.6	-	13.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	26.5	8.2	11.1	17.2	344	1,060
August	15.8	7.2	9.24	14.3	286	879
September	31	7.2	10.1	15.6	302	926
October	128	7.2	19.6	30.3	606	1,860
November	29	7.2	9.91	15.3	297	912
December	51	8.0	16.6	25.7	516	1,580
Calendar year 1941	179	7.2	13.5	20.9	4,930	15,140
January	33.5	6.9	8.82	13.6	273	839
February	87	6.9	18.6	28.8	521	1,600
March	538	8.8	74.8	116	2,320	7,120
April	125	15.6	25.5	39.5	766	2,350
May	58	13.5	17.7	27.4	547	1,680
June	16.9	11.2	12.7	19.6	380	1,170
Fiscal year 1941-42	538	6.9	19.6	30.3	7,150	21,980

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 35 million gallons a day (54 second-feet) Oct. 22 (gage height, 2.44 feet), from rating curve extended above 5 million gallons a day by broad-crested weir formula; minimum, 0.02 million gallons a day (0.03 second-foot) Nov. 15-17, Jan. 28 to Feb. 5, Feb. 12, 15, 16, June 25.

1940-42: Maximum discharge, 42 million gallons a day (65 second-feet) Nov. 20, 1940 (gage height, 2.57 feet), from rating curve extended above 5 million gallons a day by broad-crested weir formula; minimum, 0.01 million gallons a day (0.02 second-foot) Aug. 1-5, 1940.

Remarks.- Records good except those for July 1 to Jan. 19, June 12-15, which are fair. No diversions.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.01	0.7	0.61	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	1.7	8.8
.6	.43	1.2	2.05	1.8	11.2

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.46	0.04	0.29	0.03	0.05	0.03	0.05	0.02	0.06	0.21	0.30	0.05
2	.17	.05	.07	.03	.04	.03	.05	.02	.04	.19	.21	.05
3	.12	.45	.04	.03	.04	.04	.05	.02	.05	.19	.12	.05
4	.16	.12	.04	.03	.04	.84	.05	.02	.52	.17	.12	.05
5	.20	.08	.04	.03	.04	1.24	.89	2.55	.08	1.62	1.23	.05
6	f1.98	1.12	2.8	.03	f1.21	f.35	.09	1.35	.04	.81	2.0	.05
7	.21	1.39	.64	.03	.05	.50	.04	.06	1.94	.17	.72	.04
8	.21	1.05	.09	.05	.03	1.05	.04	.03	8.7	.16	.16	.04
9	1.93	.54	.07	.62	.03	.33	.04	.03	8.4	.16	.13	.07
10	.24	.20	.08	.07	.03	f.12	.04	.03	9.9	.17	.12	.05
11	.12	.08	.37	.03	.03	a.47	.04	.03	7.4	4.3	.12	.04
12	.10	.06	.07	.21	.03	.17	.03	.02	4.9	1.17	.10	.05
13	.10	.06	.05	.10	.03	.05	.04	.03	7.8	2.35	.10	.03
14	.10	.06	.05	.76	.03	.04	.06	.06	1.40	.63	.10	.03
15	.08	.06	.05	.34	.02	.04	.16	.02	1.12	.27	.09	.03
16	.08	.05	.04	.11	.02	.04	.03	.02	1.19	.25	.09	.03
17	.07	.05	.04	f.30	.02	.04	.02	.37	2.2	1.04	.08	.04
18	.07	.05	.04	2.7	.03	.03	.02	1.32	1.75	.38	.08	.03
19	.07	.06	.04	.23	.03	.03	.02	1.78	1.22	.16	.07	.03
20	.06	.19	.04	.06	.03	.03	.02	.08	.96	1.47	.07	.03
21	.06	f2.75	.04	.05	.03	.03	.02	.04	1.95	.42	.07	.03
22	.06	a.22	.04	2.5	.03	.03	.02	.03	2.95	.16	.07	.03
23	.06	f.16	.03	10.8	.03	.04	.02	.03	.56	.15	.07	.03
24	.05	.06	.03	a7.1	.03	.14	.02	.03	.81	.14	.06	.03
25	.05	.05	.03	.35	.03	.06	.02	.15	1.10	.13	.06	.02
26	.05	.05	.03	.16	.03	.20	.03	1.66	.65	.12	.08	.03
27	.05	.05	.03	.11	f.47	.06	.03	.20	.34	.19	.07	.03
28	.05	.04	.03	.09	f1.47	.05	.02	.05	.82	.11	.06	.03
29	.05	.04	.03	.07	a.05	.05	.02	-	1.63	3.65	.05	.03
30	.05	.04	.03	.06	a.13	.83	.02	-	.39	.74	.05	.03
31	.05	.04	-	.05	-	.08	.02	-	.24	-	.05	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.98	0.05	0.229	0.354	7.11	22
August	2.75	.04	.299	.463	9.26	28
September	2.8	.03	.176	.272	5.27	16
October	10.8	.03	.875	1.35	27.1	83
November	1.47	.02	.138	.214	4.13	13
December	1.24	.03	.227	.351	7.04	22
Calendar year 1941	10.8	.02	.337	.521	123	378
January	.89	.02	.065	.101	2.02	6.2
February	2.55	.02	.359	.555	10.0	31
March	9.9	.04	.229	.354	71.1	218
April	4.3	.11	.723	1.12	21.7	67
May	2.0	.05	.216	.334	6.70	21
June	.07	.02	.038	.059	1.13	3.5
Fiscal year 1941-42	10.8	.02	.473	.732	173	531

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 standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Waialala Springs near Kalae

Location.- Right angle V-notch 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 1942.

Extremes.- Maximum daily discharge during year, 0.275 million gallons a day (0.425 second-foot) Mar. 11; minimum daily, 0.021 million gallons a day (0.032 second-foot) Oct. 17.
1940-42: Maximum daily discharge, that of Mar. 11, 1942; minimum daily, 0.018 million gallons a day (0.028 second-foot) Dec. 4-7, 9, 10, 1940.

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

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.16	0.018	1.28	0.070	1.40	0.169
1.20	.031	1.32	.098	1.45	.227
1.24	.048	1.36	.131	1.50	.294

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.031	0.028	0.025	0.022	0.028	0.024	0.028	0.027	0.030	0.075	0.070	0.053
2	.031	.028	.025	.022	.028	.024	.028	.027	.030	.073	.069	.053
3	.030	.028	.024	.022	.027	.024	.029	.027	.029	.073	.067	.053
4	.030	.028	.024	.022	.027	.024	.028	.027	.029	.073	.067	.053
5	.030	.028	.024	.022	.026	.025	.029	.031	.029	.074	.067	.052
6	.030	.028	.024	.024	.027	.024	.029	.034	.029	.077	.069	.052
7	.030	.028	.024	.024	.027	.028	.029	.031	.030	.072	.065	.051
8	.030	.027	.024	.023	.025	.028	.029	.030	.082	.071	.064	.050
9	.030	.027	.024	.023	.025	.027	.028	.155	.070	.070	.064	.050
10	.030	.027	.024	.023	.025	.027	.027	.028	.137	.070	.064	.049
11	.030	.027	.024	.022	.025	.027	.027	.028	.275	.082	.064	.048
12	.029	.027	.024	.022	.025	.027	.027	.028	.149	.080	.064	.048
13	.029	.027	.023	.022	.025	.027	.027	.028	.160	.077	.063	.048
14	.029	.027	.023	.022	.025	.026	.027	.028	.157	.077	.062	.048
15	.029	.027	.023	.022	.025	.026	.027	.028	.149	.075	.062	.048
16	.029	.027	.023	.022	.025	.026	.027	.028	.138	.072	.061	.048
17	.029	.026	.023	.021	.025	.026	.027	.028	.125	.072	.060	.048
18	.029	.026	.023	.022	.026	.026	.027	.030	.114	.071	.060	.048
19	.029	.026	.023	.022	.025	.026	.027	.030	.106	.070	.060	.048
20	.029	.026	.023	.022	.028	.025	.027	.030	.098	.071	.058	.048
21	.029	.026	.023	.022	.025	.025	.027	.028	.096	.071	.058	.047
22	.029	.026	.023	.023	.024	.025	.027	.028	.097	.071	.058	.046
23	.029	f.025	.022	.083	.024	.025	.027	.028	.090	.070	.058	.046
24	.029	.025	.022	.096	.026	.025	.027	.028	.084	.070	.057	.044
25	.028	.025	.022	.053	.026	.025	.027	.028	.083	.070	.057	.043
26	.028	f.025	.022	.037	.027	.025	.027	.033	.082	.070	.057	.043
27	.028	.025	.022	.032	.027	.025	.027	.031	.080	.070	.056	.043
28	.028	.025	.022	.031	.025	.025	.027	.030	.077	.070	.055	.042
29	.028	.025	.022	.030	.024	.025	.027	-	.080	.072	.055	.041
30	.028	.025	.022	.029	.024	.025	.027	-	.078	.070	.055	.041
31	.028	.025	-	.028	-	.028	.027	-	.076	-	.054	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.031	0.028	0.029	0.045	0.905	2.8
August	.028	.025	.026	.040	.820	2.5
September	.025	.022	.023	.036	.684	2.1
October	.096	.021	.029	.045	.910	2.8
November	.028	.024	.026	.040	.771	2.4
December	.028	.024	.026	.040	.785	2.4
Calendar year 1941	.096	.021	.030	.046	10.8	33.2
January	.029	.027	.027	.042	.851	2.6
February	.034	.027	.029	.045	.810	2.5
March	.275	.029	.096	.149	2.97	9.1
April	.082	.070	.073	.113	2.18	6.7
May	.070	.054	.061	.094	1.90	5.8
June	.053	.051	.048	.074	1.43	4.4
Fiscal year 1941-42	.275	.021	.041	.063	15.0	46.1

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

Note.- No gage-height record July 7 to Aug. 22, Aug. 27 to Sept. 30; discharge computed on basis of probable decrease in flow.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge recorded during year, 24 million gallons a day (37 second-feet) Apr. 11 (gage height, 2.79 feet), from rating curve extended above 4.2 million gallons a day by broad-crested weir formula; minimum, 0.02 million gallons a day (0.03 second-foot) Oct. 5, Feb. 3, 4, 5, June 22.

1940-42: Maximum discharge, that of Apr. 11, 1942; minimum, 0.01 million gallons a day (0.02 second-foot) July 27, 1940.

Remarks.- Records excellent except those for period affected by backwater, 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.01	0.6	0.43	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
.5	.29	1.2	2.05		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.89	0.06	3.45	0.03	0.10	0.12	0.10	0.03	0.58	0.37	1.00	0.12
2	.79	.06	.38	.03	.08	.07	.77	.03	.27	.31	.55	.10
3	2.05	.83	.19	.03	.07	.07	.12	.02	.19	.27	.37	.10
4	.91	.36	.29	.03	.07	1.53	.09	.02	3.95	.25	.31	.10
5	.36	.10	.21	.02	.06	2.8	.77	2.7	1.46	.84	1.38	.09
6	4.2	.63	2.1	.03	1.75	2.35	.22	.40	.53	.97	4.1	.08
7	1.43	1.23	.77	.03	.27	2.5	.10	.11	.40	.27	2.05	.08
8	.80	.79	.22	.16	.12	f4.7	.10	.06	4.7	.21	.79	.14
9	2.9	.53	.15	.74	.08	2.15	.08	.05	8.1	.18	.45	1.17
10	.72	.72	.18	.18	.07	.88	.07	.04	6.2	.55	.36	.39
11	.37	.29	.37	.11	.06	f4.3	.06	.04	6.3	6.0	.31	.14
12	.28	.13	.17	.79	.06	1.06	.06	.03	6.8	3.15	.28	.10
13	.22	.10	.10	.36	.05	.43	.06	.05	6.7	3.2	.26	.11
14	.20	.08	.09	1.61	.05	.27	.08	.39	2.65	1.06	.24	.70
15	.17	.08	.09	1.31	.05	.21	.10	.07	1.49	.55	.25	.22
16	.16	.07	.07	.35	.04	.29	.07	.12	2.95	.35	.21	.15
17	.16	.06	.06	.46	.04	.16	.05	.48	2.95	.38	.20	.06
18	.17	.07	.06	1.06	.04	.13	.05	3.45	2.75	.69	.19	.05
19	.25	.11	.13	.38	.05	.12	.04	3.9	1.92	.27	.18	.04
20	.13	.54	.10	.16	.04	.12	.04	.56	.67	.80	.17	.03
21	.12	1.99	.06	.12	.03	.11	.04	.22	1.33	.47	.16	.03
22	.26	1.08	.05	.36	.45	.10	.03	.15	2.9	.24	.16	.02
23	.18	.44	.05	5.9	.39	.10	.03	.11	.60	.19	.16	.03
24	.19	.17	.04	5.9	.17	.24	.03	.09	1.51	.17	.15	.03
25	.36	.13	.04	.70	.07	.11	.03	.64	1.70	.16	.14	.03
26	.12	.10	.04	.31	.04	.18	.04	2.4	.80	.14	.14	.43
27	.09	.08	.03	.22	.14	.10	.03	.83	1.74	.16	.14	.37
28	.08	.08	.03	.24	1.70	.08	.06	.55	2.7	.14	.13	.22
29	.10	.07	.03	.16	.13	.07	.05	-	3.2	3.8	.13	.14
30	.08	.22	.03	.13	.62	1.18	.03	-	1.02	1.79	.12	.44
31	.07	1.36	-	.10	-	.18	.03	-	.48	-	.12	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	4.2	0.07	0.607	0.939	18.8	58
August	1.99	.06	.405	.627	12.6	39
September	3.45	.03	.319	.494	9.58	29
October	5.9	.02	.710	1.10	22.0	68
November	1.75	.03	.230	.356	6.89	21
December	4.7	.07	.861	1.33	26.7	82
Calendar year 1941	8.6	.02	.539	.834	197	603
January	.77	.03	.111	.172	3.43	11
February	3.9	.02	.626	.969	17.5	54
March	8.1	.19	2.57	3.98	79.5	244
April	6.0	.14	.924	1.43	27.7	85
May	4.1	.12	.490	.758	15.2	47
June	1.17	.02	.190	.294	5.71	18
Fiscal year 1941-42	8.1	.02	.673	1.04	246	756

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

Note.- Backwater from debris Dec. 13 to Jan. 19.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 10.0 million gallons a day (15.5 second-feet) Mar. 11 (gage height, 2.00 feet); minimum, 0.01 million gallons a day (0.02 second-foot) for long periods.
1940-42: Maximum discharge, that of Mar. 11, 1942; minimum, 0.01 million gallons a day (0.02 second-foot) at times each year.

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

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.01	0.5	0.29	1.0	1.35
.2	.05	.6	.43	1.2	2.05
.3	.10	.7	.61	1.4	2.95
.4	.18	.8	.82	1.6	4.4

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.04	0.22	0.13	0.08
2	.02	.02	.01	.01	.02	.01	.02	.01	.04	.21	.12	.07
3	.02	.02	.01	.01	.02	.01	.02	.01	.04	.20	.12	.07
4	.02	.02	.01	.01	.01	.01	.02	.01	.18	.19	.12	.07
5	.02	.02	.01	.01	.01	.01	.02	.02	.22	.18	.12	.07
6	.02	.02	.01	.01	.01	.02	.02	.02	.16	.19	.12	.07
7	.02	.02	.01	.01	.01	.02	.02	.02	.14	.19	.12	.07
8	.02	.02	.01	.01	.01	.03	.02	.02	.71	.18	.12	.07
9	.02	.02	.01	.01	.01	.04	.02	.02	3.8	.18	.12	.07
10	.02	.02	.01	.01	.01	.05	.02	.02	2.25	.17	.12	.07
11	f.02	.02	.01	.01	.01	.05	.02	.02	3.15	.17	.12	.07
12	.02	.02	.01	.01	.01	.06	.02	.02	.91	.28	.12	.06
13	.02	.02	.01	.01	.01	.06	.01	.02	.92	.28	.12	.06
14	.02	.02	.01	.01	.01	.05	.01	.02	.61	.21	.11	.06
15	.02	.02	.01	.01	.01	.05	.01	.02	.48	.20	.11	.06
16	.02	.02	.01	.01	.01	.04	.01	.02	.40	.18	.10	.06
17	.02	.02	.01	.01	.01	.04	.01	.02	.36	.17	.10	.06
18	.02	.02	.01	.01	.01	.03	.01	.02	.33	.16	.10	.06
19	.02	.02	.01	.01	.01	.03	.01	.04	.32	.16	.10	.06
20	.02	.02	.01	.01	.01	.03	.01	.07	.29	.16	.10	.06
21	.02	.02	.01	.01	.01	.02	.01	.07	.28	.16	.09	.05
22	.02	.02	.01	.01	.01	.02	.01	.06	.32	.15	.09	.05
23	.02	f.02	.01	.01	.01	.02	.01	.05	.28	.14	.09	.05
24	.02	.02	.01	.02	.01	.02	.01	.05	.27	.14	.09	.05
25	.02	.02	.01	.02	.01	.02	.01	.04	.26	.14	.09	.05
26	.02	.02	.01	.02	.01	.02	.01	.04	.25	.13	.08	.05
27	.02	.02	.01	.02	.01	.02	.01	.04	.24	.13	.08	.05
28	.02	.02	.01	.02	.01	.02	.01	.04	.24	.13	.08	.05
29	.02	.02	.01	.02	.01	.02	.01	-	.24	.13	.08	.05
30	.02	.01	.01	.02	.01	.02	.01	-	.24	.13	.08	.05
31	.02	.01	-	.02	-	.02	.01	-	.24	-	.08	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.02	0.02	0.020	0.031	0.62	1.9
August	.02	.01	.019	.029	.60	1.8
September	.01	.01	.010	.016	.30	.9
October	.02	.01	.013	.020	.39	1.2
November	.02	.01	.011	.017	.33	1.0
December	.06	.01	.028	.043	.87	2.7
Calendar year 1941	.10	.01	.030	.046	10.8	33.3
January	.02	.01	.014	.022	.43	1.3
February	.07	.01	.029	.045	.82	2.5
March	3.8	.04	.587	.908	18.2	56
April	.22	.13	.171	.265	5.14	15.8
May	.13	.08	.104	.161	3.22	9.9
June	.08	.05	.061	.094	1.82	5.6
Fiscal year 1941-42	3.8	.01	.090	.139	32.7	101

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

Note.- No gage-height record July 12 to Aug. 22; discharge computed on basis of recorded range in stage.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

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 1942.

Extremes.- Maximum discharge during year, 189 million gallons a day (292 second-feet) Mar. 8 (gage height, 3.87 feet), from rating curve extended above 20 million gallons a day by test on model of station site; minimum, 0.69 million gallons a day (1.07 second-feet) Feb. 4.
1939-42: Maximum discharge, that of Mar. 8, 1942; minimum, 0.55 million gallons a day (0.85 second-foot) July 28, 1940.

Remarks.- Records good except those for periods of backwater from debris, which are fair. Marshall Ranch diversion ditch diverts water from gage pool for watering stock.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.3	0.60	1.8	4.5	2.3	26
1.4	.72	1.9	6.8	2.5	41
1.5	1.09	2.0	10.0	2.8	61
1.6	1.90	2.1	14.3		
1.7	3.0	2.2	19.5		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.45	0.86	3.4	1.73	2.1	2.0	1.22	0.77	2.25	2.55	2.45	0.86
2	2.1	.86	2.25	1.03	2.0	1.71	3.0	.72	1.71	2.45	2.35	.82
3	1.90	1.08	2.25	1.09	1.90	1.62	1.29	.72	1.37	14.2	2.25	.80
4	2.2	2.45	1.71	1.62	1.71	2.0	1.09	.71	9.8	15.9	2.0	.80
5	1.62	.94	1.53	1.22	1.62	2.6	2.45	3.25	2.95	7.2	3.15	.80
6	3.6	3.1	4.6	5.8	7.1	3.4	1.37	4.4	1.90	9.1	12.1	.77
7	2.1	8.3	2.7	1.98	3.4	3.75	1.09	1.48	10.5	3.75	8.3	.77
8	1.53	8.4	1.90	5.5	2.35	3.2	1.03	.94	42	3.15	2.65	.80
9	3.1	6.6	1.69	3.45	2.45	2.55	.94	.86	57	2.9	2.45	1.36
10	2.25	3.9	1.71	2.2	1.90	2.5	.90	.82	42	4.6	2.0	1.42
11	1.62	3.9	4.1	2.45	1.62	3.5	.90	.80	34.5	15.1	1.80	.86
12	1.37	2.0	1.71	1.90	1.53	2.75	.86	.86	13.8	5.4	1.62	1.59
13	1.22	1.80	1.45	1.71	1.91	2.0	.82	.82	11.6	9.2	1.53	.86
14	1.22	2.95	1.53	2.0	2.3	1.80	1.27	.80	6.6	6.4	1.45	1.03
15	1.15	1.99	1.37	1.80	2.0	1.62	1.96	.77	6.8	4.5	1.71	2.2
16	1.09	1.53	1.39	1.71	1.62	1.71	.98	.82	6.3	3.45	1.53	4.1
17	1.29	1.45	1.29	1.71	1.45	1.45	.86	.92	7.7	3.5	1.29	1.72
18	1.80	1.29	2.0	1.71	1.45	1.37	.82	3.65	7.1	3.0	1.15	1.49
19	2.4	1.29	3.3	1.45	2.6	1.29	.80	7.9	11.6	2.65	1.09	.80
20	1.29	1.92	2.4	1.76	1.62	1.29	.80	1.80	5.6	3.0	1.09	.98
21	1.03	1.90	1.45	1.68	1.45	1.29	.77	1.29	14.6	2.65	1.03	.94
22	2.05	4.8	1.22	5.2	2.2	1.22	.75	1.03	12.2	2.45	1.03	.90
23	1.29	2.1	2.35	39	1.65	1.22	.72	.98	5.0	2.25	.98	.86
24	1.24	1.62	1.37	53	1.62	1.45	.72	.94	4.5	2.1	.98	.82
25	1.27	1.29	1.15	7.4	1.29	1.45	1.19	1.75	4.0	2.0	.94	.80
26	.94	1.86	1.15	25.5	1.29	2.45	1.54	6.8	8.8	1.90	1.15	.80
27	.90	1.37	1.09	14.7	1.28	1.45	.82	3.15	3.9	2.0	.94	1.04
28	1.05	1.15	1.09	4.2	4.9	1.15	.90	4.3	4.5	2.1	.90	1.51
29	2.35	1.45	.98	3.0	1.71	1.09	.86	-	4.4	4.9	.98	1.05
30	1.03	2.35	1.39	2.65	3.05	4.0	.75	-	3.6	2.55	.86	1.72
31	.86	6.1	-	2.35	-	1.67	1.01	-	2.9	-	.86	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.6	0.86	1.69	2.61	52.3	161
August	8.4	.86	2.66	4.12	82.6	253
September	4.6	.98	1.92	2.97	57.5	177
October	53	1.03	6.53	10.1	202	621
November	7.1	1.28	2.18	3.37	65.2	200
December	4.0	1.09	2.02	3.13	62.6	192
Calendar year 1941	53	.68	2.59	4.01	946	2,900
January	3.0	.72	1.11	1.72	34.5	106
February	7.9	.71	1.93	2.99	54.0	166
March	57	1.37	11.3	17.5	351	1,080
April	15.9	1.90	4.90	7.58	147	451
May	12.1	.86	2.08	3.22	64.6	198
June	4.1	.77	1.18	1.83	35.3	108
Fiscal year 1941-42	57	.71	3.31	5.12	1,210	3,710

Note.- Backwater from debris July 28 to Aug. 28, Oct. 6-9, Oct. 27 to Nov. 25, Dec. 31, Jan. 1, 2, Mar. 27-31, May 8-13.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Kahakuloa Stream near Honokohau

Location.- Concrete control, lat. 20°58'50", long. 156°33'25", just downstream from confluence with lowest tributary, 1.3 miles south of Kahakuloa, and 2 miles west of Puu Makawana.
Drainage area.- 3.4 square miles.
Records available.- July 1939 to June 1942. Fragmentary records at site about 1 mile upstream January 1913 to December 1914.
Extremes.- Maximum discharge during year, 851 million gallons a day (1,320 second-feet) Mar. 9 (gage height, 4.17 feet), from rating curve extended above 55 million gallons a day by test on model of station site; minimum, 4.1 million gallons a day (6.3 second-feet) Feb. 4, 5.
1939-42: Maximum discharge, 861 million gallons a day (1,330 second-feet) Nov. 20, 1940 (gage height, 3.77 feet), from rating curve extended above 55 million gallons a day by test on model of station site; minimum, 3.15 million gallons a day (4.87 second-feet) Mar. 21, 1940.
Remarks.- Records good except those for period of backwater from boulders, which are fair, and those for periods of no gage-height record, which are poor. No diversion.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Oct. 8				Oct. 9 to June 30					
0.6	3.8	1.2	27.5	0.6	3.9	1.1	22.5	1.9	113
.7	5.9	1.4	42	.7	6.2	1.2	28.5	2.3	234
.8	8.6	1.6	61	.8	9.2	1.3	35.5	3.0	482
.9	12.0	1.8	86	.9	12.9	1.5	54		
1.0	16.2			1.0	17.4	1.7	77		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	15.9	6.6	18.1	10.9	7.4	9.6	5.7	4.4	12.5	c8.9	14.7	6.6
2	7.8	6.2	11.9	5.7	6.8	8.0	10.4	4.4	7.4	c8.7	10.7	6.4
3	7.8	18.0	15.3	10.5	6.5	8.0	6.0	4.4	6.3	c60	13.3	6.4
4	11.0	20.5	6.7	12.7	6.2	13.8	5.5	4.1	116	c88	10.3	6.2
5	7.4	4.6	6.3	6.7	6.2	14.5	8.5	13.5	18.5	c24.5	22	6.2
6	30	33	50	34.5	33	26	6.8	24	8.3	c49	90	6.0
7	10.3	80	33.5	9.8	16.0	25	5.3	7.6	25.5	c12.2	62	6.0
8	6.2	65	8.6	66	9.8	19.0	5.0	5.0	275	c9.9	14.2	6.2
9	22	56	6.7	22.5	13.9	13.1	5.0	4.6	411	c10.3	13.7	9.0
10	11.3	47	7.2	9.2	7.4	11.9	5.0	4.6	450	c21.5	10.3	12
11	6.4	30.5	26.5	10.8	7.7	26	4.8	4.4	270	c132	8.9	6.8
12	5.3	8.9	7.2	11.0	6.5	14.2	4.8	4.4	110	c26.5	8.3	12
13	5.1	7.2	5.9	8.3	6.5	8.0	4.6	4.4	90	c79	f8.3	6.8
14	5.3	7.5	6.2	10.3	8.2	6.8	14.6	4.4	60	c43	f8.3	8.0
15	5.3	7.6	6.4	9.6	10.4	6.5	19.9	4.4	66	c20	8.3	12
16	5.7	5.9	5.7	7.7	7.7	8.6	6.0	4.8	58	c12.5	7.8	21
17	7.8	5.5	5.7	7.4	6.2	6.5	5.0	4.6	68	15.2	7.5	9.4
18	16.6	5.5	9.0	10.1	6.8	6.2	4.8	29.5	52	14.2	7.2	8.0
19	18.5	5.3	21	7.1	21.5	5.7	4.8	62	90	10.3	7.0	7.0
20	7.3	12.5	23.5	17.2	8.0	5.7	4.6	8.6	45	14.7	6.8	6.6
21	5.5	14.1	7.2	8.3	6.5	5.7	4.6	5.7	100	14.4	6.6	6.3
22	15.0	38	5.7	32	24	5.5	4.6	5.0	50	10.3	6.6	6.2
23	8.1	11.8	14.2	158	13.2	5.5	4.4	4.6	19	8.9	6.6	6.0
24	7.4	7.5	6.7	213	10.5	7.8	4.4	4.6	23	8.6	6.6	f6.0
25	8.2	5.9	5.9	22	6.5	7.1	4.6	11.0	30	8.3	6.6	f5.7
26	5.3	15.5	5.9	149	5.7	14.9	5.5	47	42	8.0	20	7.2
27	4.8	6.7	5.7	80	5.5	7.1	4.8	20.5	70	9.6	8.0	8.6
28	6.9	5.9	5.7	15.6	20.5	5.7	5.0	30.5	38	11.9	7.2	11
29	25	7.2	5.1	11.0	6.8	5.3	4.8	-	20	38	7.6	7.0
30	7.2	11.4	6.5	8.9	18.1	17.3	4.4	-	16	13.8	6.8	9.4
31	6.2	35	-	8.0	-	7.4	4.6	-	13	-	6.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	30	4.8	10.1	15.6	315	965
August	80	4.6	19.1	29.6	592	1,820
September	50	5.1	11.7	18.1	350	1,070
October	213	5.7	32.1	49.7	994	3,050
November	33	5.5	10.7	16.6	320	982
December	26	5.3	10.7	16.6	332	1,020
Calendar year 1941	213	3.5	14.9	23.1	5,450	16,710
January	19.9	4.4	6.09	9.42	189	579
February	62	4.1	12.0	18.6	337	1,030
March	450	6.3	85.8	133	2,660	8,160
April	132	8.0	26.4	40.8	792	2,430
May	90	6.6	13.8	21.4	429	1,320
June	21	5.7	8.07	12.5	242	743
Fiscal year 1941-42	450	4.1	20.7	32.0	7,550	23,170

c Backwater from boulders.
f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Mar. 10-31, May 11, 12, May 16 to June 23, June 26-30; discharge computed on basis of records for Honokahau and Left Branch Makamakaole Streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Honokahau Stream near Honokahau

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

Drainage area.- 4.2 square miles.

Records available.- March 1913 to September 1920, May 1922 to June 1942.

Average discharge.- 24 years (1916-20, 1922-42), 26.7 million gallons a day (41.3 second-feet).

Extremes.- Maximum discharge during year, 716 million gallons a day (1,110 second-feet) Sept. 6 (gage height, 5.39 feet), from rating curve extended above 120 million gallons a day; minimum, 7.1 million gallons a day (11.0 second-feet) Feb. 24, 25.
1913-20, 1922-42: Maximum discharge, 2,200 million gallons a day (3,400 second-feet) Feb. 13, 1924 (gage height, 7.92 feet), from rating curve extended above 100 million gallons a day; minimum, 6.2 million gallons a day (9.6 second-feet) June 30, 1926.

Remarks.- Records good. No diversions above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

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	4.5	398
2.3	18.9	3.3	114		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	42	14.6	33.5	46	16.9	25.5	13.9	11.5	27.5	24	51	22
2	19.4	13.9	80	26.5	16.9	21.5	15.3	11.5	13.9	23.5	36.5	20.5
3	24.5	52	65	46	16.5	22.5	13.5	11.2	11.5	27.5	32.5	20.5
4	42	41	17.3	32	16.5	49	13.2	11.2	121	38	27	19.8
5	26.5	40	27	18.1	16.5	41	14.2	13.5	38.5	28	80	20.5
6	80	77	242	24	27.5	77	13.9	16.9	16.5	66	135	19.8
7	21	116	109	35.5	20.5	73	13.5	12.2	11.4	25	110	19.4
8	18.5	75	21	106	17.7	42	13.2	11.2	109	23	31.5	30.5
9	86	95	18.1	77	25	53	13.2	11.2	268	25	53	74
10	30.5	84	18.9	26.5	17.3	25.5	13.2	11.2	261	48	25	46
11	16.1	35.5	40	42	19.4	71	13.2	10.9	153	176	23.5	31
12	14.2	18.1	17.7	29.5	16.5	32.5	13.2	10.7	188	99	23	46
13	13.5	16.5	16.1	28	16.1	18.5	13.2	10.7	211	117	22.5	20.5
14	13.9	16.1	16.1	29.5	16.1	16.5	23.5	10.7	136	56	22.5	41
15	14.6	15.7	16.1	29.5	22	16.1	35	10.7	179	38.5	26.5	35.5
16	15.5	14.9	15.7	22.5	19.8	32.5	14.2	13.2	139	28	23.5	23
17	18.5	14.9	16.1	20.5	16.1	19.8	13.2	17.1	103	42	22	19.8
18	30.5	15.3	26.5	48	21	16.5	13.2	77	90	32.5	22	18.9
19	45	18.9	59	18.9	49	15.3	13.2	100	85	24.5	21.5	19.8
20	21	71	106	22	23.5	17.3	13.2	25	85	42	21.5	18.5
21	15.7	64	21	17.3	24.5	17.3	12.9	14.2	128	47	21.5	19.4
22	27.5	56	16.9	30.5	68	14.9	12.2	10.1	60	32	21	18.1
23	17.3	25	31.5	103	33.5	14.9	12.2	7.3	28.5	23.5	21	17.7
24	17.5	16.9	17.7	169	34.5	21.5	12.2	7.1	45	23	21	17.7
25	17.3	16.1	24.5	30.5	16.9	18.9	12.2	23	59	22.5	21.5	17.3
26	13.5	30.5	31.5	70	16.1	22.5	11.8	70	58	23.5	83	18.9
27	13.5	18.1	36.5	80	15.3	14.9	11.8	46	86	43	25	28.5
28	26	16.1	24.5	23	23	14.2	12.2	61	71	78	21	39.5
29	53	17.7	18.3	18.5	16.5	13.9	11.8	-	38	92	24	25
30	21	44	24.5	17.7	31.5	22.5	11.5	-	32.5	66	24.5	34.5
31	16.1	64	-	17.7	-	15.7	11.5	-	25.5	-	23.5	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	86	13.5	26.8	41.5	83?	2,550
August	116	13.9	39.2	60.7	1,210	3,730
September	242	15.7	40.3	62.4	1,210	3,710
October	169	17.3	42.1	65.1	1,310	4,010
November	68	15.3	23.0	35.6	691	2,120
December	77	13.9	28.3	43.8	877	2,690
Calendar year 1941	242	10.1	30.6	47.3	11,16?	34,240
January	35	11.5	14.0	21.7	43?	1,330
February	100	7.1	23.1	35.7	64?	1,980
March	268	11.4	92.9	144	2,88?	8,850
April	176	22.5	47.8	74.0	1,43?	4,400
May	135	21	36.0	55.7	1,12?	3,450
June	74	17.3	26.8	41.5	80?	2,470
Fiscal year 1941-42	268	7.1	36.8	56.9	13,44?	41,250

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, 2½ miles upstream from Pioneer Mill Co.'s powerhouse, and 7⅞ miles northeast of Lahaina. Altitude of gage, about 1,900 feet (from topographic map).

Records available.- July 1912 to June 1942.

Average discharge.- 23 years (1919-42), 5.82 million gallons a day (9.00 second-feet).

Extremes.- Maximum daily discharge during year, 20 million gallons a day (31 second-feet) Sept. 6; minimum daily, 2.9 million gallons a day (4.5 second-feet) Aug. 17.
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.- Records good. Ditch diverts water for power and irrigation from Honokawai Stream just above station. Flow regulated by head gates at intake.

Cooperation.- Records of daily discharge furnished by Pioneer Mill Co.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Juns
1	10.1	3.2	7.5	11.4	3.15	5.1	3.65	3.65	6.2	3.8	10.8	3.8
2	4.2	3.1	14.3	4.5	3.15	4.6	3.55	3.65	4.3	3.65	7.7	3.8
3	5.7	7.8	11.6	5.8	3.15	5.1	3.6	3.65	4.0	3.65	4.7	3.8
4	10.9	8.6	3.35	6.1	3.15	11.4	3.6	3.65	13.4	3.65	4.0	3.7
5	6.4	8.7	4.4	3.55	3.2	9.2	3.55	3.65	6.7	3.8	7.5	3.8
6	11.7	9.4	20	3.2	3.2	13.4	3.5	3.65	4.3	9.0	12.4	3.8
7	6.3	13.6	14.0	6.7	3.4	12.4	3.55	3.65	3.75	4.4	12.1	3.8
8	5.0	9.9	4.0	13.1	3.35	8.6	3.55	3.7	9.5	3.95	5.4	6.5
9	10.9	13.2	3.45	14.8	3.75	11.1	3.55	3.65	19.5	3.8	9.5	9.1
10	8.2	8.5	3.35	5.4	3.65	6.4	3.55	3.65	19.3	7.8	4.5	8.7
11	3.8	5.6	6.7	7.1	3.0	12.1	3.55	3.65	16.3	16.2	3.95	5.8
12	3.3	3.15	3.45	6.9	3.3	8.7	3.55	3.65	17.1	14.4	3.85	9.0
13	3.15	3.0	3.25	5.8	3.25	4.0	3.55	3.65	18.0	13.6	3.8	4.5
14	3.15	3.0	3.25	7.3	3.25	3.6	3.55	3.75	17.7	6.2	3.8	7.5
15	3.1	3.0	3.2	7.5	3.3	3.55	4.6	3.7	17.5	6.7	4.0	7.0
16	3.1	2.95	3.05	4.8	3.9	8.2	3.8	3.8	17.5	4.5	4.2	4.8
17	3.25	2.9	2.95	4.7	3.4	5.4	3.65	4.5	15.8	6.4	3.8	4.3
18	3.85	3.0	4.2	10.6	3.8	3.9	3.65	15.6	15.0	5.4	3.65	4.2
19	6.4	3.6	14.7	4.4	10.6	3.7	3.65	14.5	11.1	4.1	3.65	4.2
20	5.5	13.6	15.1	3.6	5.5	4.2	3.65	7.3	9.7	6.6	3.65	4.2
21	3.55	16.1	4.0	3.6	5.4	4.5	3.65	4.5	12.8	8.6	3.65	4.2
22	4.0	8.8	3.25	4.8	7.3	3.85	3.65	3.85	7.8	6.2	3.65	4.2
23	3.6	4.4	5.7	14.8	7.6	3.65	3.65	3.75	5.1	3.95	3.65	4.2
24	3.2	3.3	3.45	19.9	6.2	4.8	3.65	3.65	10.9	3.8	3.65	4.2
25	3.5	3.15	6.9	6.7	3.65	4.2	3.66	4.9	13.2	4.0	3.65	4.2
26	3.1	4.4	7.7	6.2	3.4	4.2	3.65	13.6	9.0	4.1	10.8	4.2
27	2.95	3.2	9.5	9.3	3.35	3.65	3.65	11.6	14.0	8.6	5.2	6.3
28	3.05	3.15	5.5	4.0	3.3	3.55	3.6	11.2	e.9	12.0	3.85	7.2
29	6.0	3.4	3.6	3.45	3.35	3.55	3.65	-	4.4	14.6	4.2	5.2
30	3.7	6.8	4.8	3.25	5.1	3.75	3.65	-	4.7	12.4	3.8	5.7
31	3.2	13.1	-	3.2	-	3.9	3.65	-	4.0	-	3.7	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	11.7	2.95	5.09	7.88	158	484
August	16.1	2.9	6.44	9.96	200	613
September	20	2.95	6.64	10.3	199	611
October	19.9	3.2	6.98	10.8	216	664
November	10.6	3.0	4.17	6.45	125	384
December	13.4	3.55	6.07	9.39	188	578
Calendar year 1941	20	2.9	5.66	8.76	2,060	6,340
January	4.6	3.5	3.64	5.63	113	347
February	15.6	3.65	5.63	8.71	158	484
March	19.5	3.75	11.0	17.0	341	1,050
April	16.2	3.65	7.00	10.8	210	644
May	12.4	3.65	5.38	8.32	167	512
June	9.1	3.7	5.20	8.05	156	478
Fiscal year 1941-42	20	2.9	6.11	9.45	2,230	6,850

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 milee northeast of Olowalu, and 7 miles east of Lahaina.

Records available.- August 1911 to June 1942.

Average discharge.- 24 years (1917-20, 1921-42), 5.05 million gallons a day (7.81 second-feet).

Extremes.- Maximum daily discharge during year, 10.5 million gallons a day (16.2 second-feet) Sept. 6; minimum daily, 2.55 million gallons a day (3.95 second-feet) Feb. 15. 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.- Records good. 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 discharge furnished by Pioneer Mill Co.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.3	4.3	7.4	7.0	6.8	4.7	3.6	2.8	8.2	7.9	7.8	4.7
2	8.8	3.95	6.9	5.7	6.3	4.3	3.55	2.8	7.7	7.6	7.7	4.6
3	8.4	5.0	9.2	5.2	6.0	4.3	3.45	2.8	6.4	7.4	7.5	4.5
4	8.3	8.1	7.2	5.6	5.6	5.7	3.45	2.7	8.1	7.2	7.0	4.3
5	7.8	5.7	6.0	4.8	5.3	4.9	3.45	3.35	8.2	7.0	7.1	4.4
6	9.1	5.8	10.5	4.5	5.2	8.9	3.35	3.4	7.4	7.2	8.1	4.3
7	9.5	9.6	10.2	4.6	5.1	8.9	3.3	2.85	6.0	7.5	8.0	4.3
8	9.0	9.8	9.7	6.4	4.9	8.7	3.3	2.8	6.2	7.3	8.0	5.1
9	9.0	9.6	9.7	10.1	4.9	8.7	3.2	2.8	9.7	7.0	7.8	5.4
10	9.5	9.7	9.2	9.8	4.6	8.5	3.2	2.75	7.1	7.3	7.7	6.4
11	8.9	9.6	9.0	9.1	4.9	8.7	3.15	2.6	6.4	7.9	7.6	5.2
12	7.4	9.3	7.9	9.4	4.4	8.8	3.1	2.6	6.2	7.9	7.3	5.9
13	6.4	8.2	6.7	7.7	4.3	8.6	3.05	2.6	8.8	7.8	6.9	5.3
14	6.0	6.8	6.2	7.6	4.3	7.9	3.3	2.6	8.7	7.7	6.6	6.4
15	5.6	6.0	5.9	9.1	4.3	6.8	4.6	2.55	8.5	7.6	7.0	5.6
16	5.1	5.4	5.5	7.5	4.2	7.6	3.36	2.8	7.6	7.5	5.7	5.1
17	5.0	5.0	5.3	6.4	4.1	6.2	3.2	3.0	7.2	7.6	6.3	4.8
18	5.2	4.8	5.4	8.0	4.3	5.6	3.1	7.5	6.9	7.7	6.1	4.5
19	5.8	4.8	7.9	7.0	5.5	5.2	3.05	8.2	6.6	7.6	5.8	4.3
20	5.4	7.1	10.1	6.0	4.6	4.9	2.95	7.6	6.5	7.6	5.6	4.1
21	4.6	9.3	8.8	5.4	4.2	4.8	2.95	5.3	6.8	7.7	5.5	3.95
22	5.6	9.3	6.9	5.4	4.9	4.6	2.9	4.0	6.3	7.6	5.4	3.9
23	5.1	8.4	7.1	9.5	8.0	4.4	2.9	3.45	6.1	7.3	5.3	3.85
24	4.6	6.5	6.2	9.6	6.7	4.7	3.0	3.15	6.0	7.0	5.2	3.8
25	4.4	5.6	5.8	9.4	5.2	4.5	2.95	3.75	6.2	6.6	5.2	3.75
26	4.0	5.8	5.6	9.3	4.6	4.7	2.9	7.7	7.5	6.4	5.9	3.95
27	3.85	4.9	7.5	9.3	4.3	4.2	2.8	8.6	8.4	7.0	5.5	3.9
28	4.1	4.5	6.8	9.4	4.2	4.0	2.95	8.4	8.3	7.7	5.1	3.6
29	7.1	4.4	5.9	9.2	4.0	3.9	2.8	-	8.1	7.8	5.0	4.0
30	5.7	4.5	5.8	8.6	3.75	3.95	2.7	-	8.1	7.8	4.8	4.1
31	4.8	9.2	-	7.7	-	3.7	2.7	-	8.0	-	4.8	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	9.5	3.85	6.56	10.1	203	624
August	9.8	3.95	6.80	10.5	211	647
September	10.5	5.3	7.41	11.5	222	682
October	10.1	4.5	7.56	11.7	234	719
November	8.0	3.75	4.98	7.71	149	459
December	8.9	3.7	5.98	9.25	185	569
Calendar year 1941	10.5	2.3	5.70	8.82	2,080	6,390
January	4.6	2.7	3.17	4.90	98.2	302
February	8.6	2.55	4.12	6.37	115	354
March	8.8	6.0	7.33	11.3	227	697
April	7.9	6.4	7.44	11.5	223	685
May	8.1	4.8	6.46	10.0	200	615
June	6.4	3.75	4.61	7.13	138	424
Fiscal year 1941-42	10.5	2.55	6.06	9.36	2,210	6,780

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 3,060 million gallons a day (4,730 second-feet) June 18 (gage height, 9.79 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) Feb. 1-6, June 4.

1927-29, 1931-42: 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. Small quantity of water is diverted for domestic supply and livestock.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.04	0.5	1.08	1.3	15.3	3.0	136
.2	.14	.6	1.79	1.6	27.6	4.0	254
.3	.33	.8	4.0	2.0	51	5.0	465
.4	.63	1.0	7.5	2.5	91	6.0	760

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	68	3.6	42	181	0.76	0.14	0.11	0.04	70	0.20	25.5	0.16
2	8.9	.41	178	68	.54	.12	.07	.04	5.6	.14	35	.08
3	19.8	8.5	111	310	.42	.58	.06	.04	.76	.12	21	.07
4	28	35.5	4.1	136	.33	140	.06	.04	2.9	5.6	25	.06
5	11.7	1.30	74	9.5	.25	114	.05	.04	.81	21	18.7	.06
6	11.9	37.5	719	396	.21	174	.05	.09	.18	73	51	.06
7	2.3	53	325	358	.16	152	.12	1.44	.08	2.35	54	.08
8	.99	300	18.6	508	.12	88	.06	.10	5.8	.60	7.2	1.97
9	6.4	238	3.05	197	.11	207	.06	.10	589	.36	178	24
10	6.4	41	1.53	108	.10	69	.06	.06	218	.40	33	32
11	.82	9.3	2.1	218	.08	303	.06	.06	79	41	4.6	12.1
12	.33	1.28	.70	150	.08	52	.06	.05	161	93	1.44	44
13	.24	.63	.45	130	.09	4.6	.06	.06	306	75	1.00	27
14	.16	.46	.62	254	.62	1.28	.06	.05	469	17.3	56	50
15	.38	146	25	185	.32	.75	.07	.06	221	5.0	21	14.0
16	.14	3.75	.82	86	19.0	20.5	.07	.07	193	1.38	2.9	7.4
17	.09	.48	.42	32	1.32	11.4	.06	.11	89	12.8	1.08	24
18	.09	.57	.66	118	10.8	2.55	.06	109	57	6.6	.86	243
19	20.5	1.42	46	46	46	.51	.06	206	71	.55	.48	31.5
20	10.1	23.5	37.5	17.6	78	46	.06	14.2	20.5	12.2	.31	3.3
21	.20	56	12.0	115	178	90	.06	.62	155	23.5	.22	1.25
22	.12	6.0	2.0	13.2	114	16.4	.06	.11	16.4	32.5	.16	.72
23	.10	11.5	.84	27.5	24	9.6	.06	.06	2.5	38	.11	.60
24	.07	.72	8.0	127	9.1	25	.06	.06	46	23	.07	9.9
25	.07	.36	215	16.3	1.14	3.2	.07	.07	44	58	.07	.45
26	.08	.33	302	60	.54	2.7	.07	65	12.3	30	1.26	.33
27	.09	.25	133	132	.39	.69	.05	233	24.5	122	1.18	16.0
28	.11	.24	31	6.4	.25	.39	.05	82	9.0	87	.06	2.45
29	.13	.27	16.0	3.4	.20	.27	9.3	-	.68	65	21	1.12
30	.18	.27	11.4	1.58	.18	.20	.28	-	.36	44	3.5	.20
31	.10	96	-	1.51	-	.14	.05	-	.27	-	2.2	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	68	0.07	6.40	9.90	198	609
August	300	.24	32.5	50.3	1,010	3,090
September	719	.42	77.4	120	2,320	7,130
October	508	1.51	129	200	4,010	12,310
November	178	.08	16.2	25.1	487	1,490
December	303	.12	49.5	76.6	1,540	4,710
Calendar year 1941	719	.05	34.5	53.4	12,600	38,670
January	9.3	.05	.371	.574	11.5	35
February	233	.04	25.4	39.3	712	2,180
March	589	.08	92.6	143	2,870	8,810
April	122	.12	29.8	46.1	895	2,750
May	178	.06	18.1	28.0	562	1,720
June	243	.06	18.3	28.3	548	1,680
Fiscal year 1941-42	719	.04	41.5	64.2	15,100	46,510

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 and 2 miles north of Kipahulu. Altitude of gage, 1,100 feet.

Drainage area.- 0.1 square mile.

Records available.- February 1927 to June 1942.

Average discharge.- 12 years (1927-34, 1935-36, 1938-42), 3.69 million gallons a day (5.71 second-feet).

Extremes.- Maximum discharge during year, 241 million gallons a day (373 second-feet) June 18 (gage height, 3.12 feet), from rating curve extended above 12 million gallons a day by test on model of station site; minimum, 0.32 million gallons a day (0.50 second-foot) Feb. 15, 16.

1927-42: 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.26	1.2	2.25	1.8	17.4
.9	.51	1.3	3.3	2.0	29.5
1.0	.89	1.4	4.8	2.2	47
1.1	1.46	1.6	9.3		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.85	1.51	3.3	10.4	2.15	0.89	1.04	0.57	4.1	1.39	4.3	1.32
2	2.9	1.09	5.8	3.95	1.82	.89	.99	.47	2.05	1.32	3.7	1.09
3	2.55	4.8	6.0	29	1.60	1.40	.89	.40	1.32	1.63	3.55	.94
4	3.4	3.2	1.90	18.4	1.39	5.1	.84	.38	1.09	13.7	4.3	1.04
5	3.15	1.53	4.5	5.7	1.32	6.3	.80	.38	1.04	15.6	5.1	.94
6	5.1	2.85	17.7	21	1.20	7.5	1.13	.76	.89	8.8	7.8	.94
7	2.65	8.6	33	10.4	1.14	4.9	1.93	1.72	.80	2.9	8.3	1.61
8	2.85	26.5	8.5	27	1.09	3.2	.84	.64	2.55	1.98	3.7	1.68
9	3.9	16.0	2.95	11.5	1.04	5.8	.80	1.52	85.5	1.67	13.7	5.4
10	3.4	5.9	2.8	10.5	.94	2.85	.72	.57	28.5	2.35	4.8	5.6
11	2.25	3.7	5.65	9.8	.89	5.4	.68	.45	9.6	10.2	3.2	4.2
12	1.88	2.15	2.15	4.5	.84	2.5	.64	.52	18.3	10.5	2.45	6.3
13	1.60	1.82	1.82	4.2	.80	1.74	.60	.86	18.6	11.2	2.16	3.1
14	1.53	1.60	3.65	5.0	3.1	1.39	.97	.40	10.3	7.3	15.2	3.6
15	2.55	5.1	6.2	7.1	2.5	1.26	1.09	.38	7.7	3.7	5.3	1.82
16	1.60	1.67	2.05	3.2	3.8	2.05	.75	.40	9.2	2.65	2.85	2.05
17	1.46	1.46	1.67	3.55	1.46	1.63	.82	1.22	9.8	3.5	2.45	8.2
18	2.1	1.59	2.0	5.4	3.5	1.39	.97	3.25	6.9	3.4	2.85	21.5
19	4.4	1.67	2.85	3.05	2.65	1.26	.51	6.4	7.6	2.15	1.82	7.0
20	2.15	4.7	3.85	2.55	3.7	2.8	.48	1.60	7.1	4.8	1.67	2.35
21	1.67	5.0	2.75	3.85	6.3	2.9	.45	1.14	18.3	2.35	1.53	1.82
22	2.2	1.90	3.45	2.45	6.5	2.35	.42	.80	4.0	4.4	1.39	1.60
23	1.60	2.5	2.05	3.5	3.35	2.7	.40	.64	2.95	6.5	1.32	1.46
24	1.39	1.53	2.65	12.0	2.6	4.8	.38	.54	3.05	10.4	1.20	1.46
25	1.14	1.26	4.1	3.15	1.57	2.05	.38	.51	2.85	10.0	1.14	1.46
26	1.09	1.39	6.1	7.5	1.32	3.75	.52	3.85	4.5	3.3	1.39	1.32
27	1.04	1.14	4.6	11.0	1.14	1.82	.83	11.9	4.9	3.55	1.14	2.4
28	1.63	1.26	2.75	2.95	1.04	1.46	.42	5.4	2.9	5.2	1.14	1.92
29	2.85	1.26	2.15	2.45	.99	1.26	14.5	-	2.15	7.3	5.8	1.68
30	1.83	1.44	2.45	2.25	.94	1.14	.98	-	1.74	6.4	1.46	1.39
31	1.32	4.8	-	4.2	-	1.04	.68	-	1.53	-	1.60	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.1	1.04	2.33	3.61	72.4	222
August	26.8	1.09	3.83	5.93	119	364
September	33	1.67	4.92	7.61	148	453
October	29	2.25	7.86	12.2	244	748
November	6.5	.80	2.09	3.25	62.8	193
December	7.5	.89	2.76	4.27	85.4	262
Calendar year 1941	33	.18	3.21	4.97	1,170	3,600
January	14.5	.38	1.18	1.83	36.6	112
February	11.9	.38	1.71	2.65	47.9	147
March	35.5	.80	7.31	11.3	227	696
April	15.6	1.32	5.67	8.77	170	522
May	15.2	1.14	3.81	5.89	118	362
June	21.5	.94	3.24	5.01	97.2	298
Fiscal year 1941-42	35.5	.38	3.91	6.05	1,430	4,380

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. Records prior to July 1940 unpublished.

Extremes.- Maximum discharge during year, 3.0 million gallons a day (4.6 second-feet) Sept. 19 (gage height, 1.41 feet); no flow many times.
1940-42: Maximum discharge, that of Sept. 19, 1941; no flow occasionally, when water was shut out of flume.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Water used for fluming cane and for domestic supply near Hana.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.02	0.14	0.26	1.32	0.07	0.35	0.01	0.01	0.53	0.15	1.05	0.02
2	.56	.02	.47	1.12	.02	.50	.43	0	.45	.05	.94	.01
3	.56	.58	.71	1.66	.01	.68	.02	0	.15	.89	.60	0
4	.64	.80	.13	1.42	0	.96	.01	0	1.32	1.55	.75	0
5	.53	.22	.56	1.09	0	.94	.02	0	1.07	1.34	.82	0
6	.97	.61	1.62	1.06	.28	1.09	.12	.10	.83	.91	1.50	.01
7	.52	1.28	1.75	1.09	.30	1.07	.06	.19	.48	.15	1.40	.02
8	.28	1.51	a.30	1.34	.05	1.04	.02	.02	.97	.15	.87	.03
9	.78	1.33	a.16	1.32	.43	1.04	.01	.02	1.79	.07	1.47	.55
10	.55	1.07	a.15	1.23	.02	.99	.01	0	1.78	.40	.93	.81
11	.14	.67	a.20	1.26	.01	.99	.01	0	1.46	1.87	.42	.70
12	.02	.35	a.07	1.15	0	.94	.01	.05	1.26	1.35	.13	.66
13	0	.09	a.01	1.07	0	.63	0	.01	1.07	1.72	.10	.18
14	0	.01	a.10	1.01	.06	.29	.06	0	.99	1.63	1.44	.26
15	.08	.19	a1.5	1.11	.64	.17	.22	0	.92	1.23	.43	.18
16	.05	.01	a.01	.82	.58	.82	.02	0	.95	.80	.14	1.10
17	.38	0	a0	.69	.12	.80	.01	0	.92	.80	.04	.54
18	.43	0	a.01	.92	.49	.59	.01	.48	.91	.85	.02	1.53
19	.69	.02	1.63	.62	.88	.32	.01	.82	.88	.35	.01	1.09
20	.23	.33	1.32	.50	.69	.82	0	.35	.70	.85	.01	.38
21	.08	.74	.64	.80	.93	1.09	0	.04	1.23	.43	.01	.09
22	.59	.61	a.82	.74	.99	.96	0	.02	1.16	.73	.01	0
23	.06	.46	a.15	1.19	.82	.99	0	.01	.72	1.03	.01	0
24	.14	.09	.36	1.52	.51	1.17	0	0	.59	1.18	0	0
25	.05	.01	.88	1.04	.13	1.01	.05	.28	.10	1.23	0	0
26	.01	.14	1.23	1.26	.02	1.12	.11	.88	.04	.64	.13	0
27	.03	.01	1.15	1.18	0	.57	.03	.90	.23	.61	.12	.31
28	.34	.01	1.04	.63	.55	.15	.01	.77	.37	1.03	.01	.18
29	.60	.02	.91	.77	.04	.02	.49	-	.36	1.41	.50	.09
30	.05	.11	.93	.38	.50	.51	.03	-	.39	1.26	.25	.19
31	.01	.66	-	.36	-	.12	.01	-	.36	-	.06	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	1.02	0	0.335	0.518	10.4	32
August	1.51	0	.390	.603	12.1	37
September	1.75	0	.636	.984	19.1	59
October	1.66	.36	1.02	1.58	31.7	97
November	.99	0	.305	.472	9.14	28
December	1.17	.02	.734	1.14	22.7	70
Calendar year 1941	-	-	-	-	-	-
January	.49	0	.058	.090	1.79	5.5
February	.90	0	.177	.274	4.95	15
March	1.79	.04	.806	1.25	25.0	77
April	1.87	.05	.896	1.39	26.9	82
May	1.50	0	.457	.707	14.2	43
June	1.53	0	.301	.466	9.03	28
Fiscal year 1941-42	1.87	0	.512	.792	187	574

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Kaeleku flume near Kaeleku

Location.- Soil Comservation 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 1942.

Extremes.- Maximum discharge during year, 7.8 million gallons a day (12.1 second-feet) Mar. 10 (gage height, 2.11 feet); no flow many times.
1940-42: Maximum discharge, that of Mar. 10, 1942; no flow occasionally, when water was shut out of flume.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Water used for fluming cane and for domestic water supply near Kaeleku.

Discharge, in million gallons, fiacal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.05	0.86	1.68	1.44	0	0	0.02	0	2.0	0.08	2.0	0.02
2	2.5	.60	2.05	.88	0	.02	.99	0	.45	.06	1.59	.01
3	2.7	2.4	1.70	1.57	0	.03	.17	0	1.14	.86	2.05	0
4	3.1	2.95	.43	1.69	0	.07	.02	0	2.8	3.5	2.5	0
5	2.8	1.85	.57	.33	0	.09	.26	.03	2.45	2.25	2.05	.01
6	3.5	2.5	1.39	.88	.26	.13	.17	.22	.57	1.44	3.25	.88
7	2.2	4.0	1.27	.50	.23	.09	.06	.27	.40	.24	2.8	1.05
8	1.24	4.2	.60	.99	.23	.03	0	0	2.75	.57	1.58	1.69
9	2.7	4.1	.40	.32	.33	.07	0	0	4.7	.85	3.2	2.3
10	2.5	4.1	.35	.03	.26	.04	0	0	5.7	2.6	2.0	1.19
11	.55	3.0	.45	.01	.16	.12	0	0	2.95	5.0	.56	1.42
12	.09	1.56	.35	0	0	.01	0	.01	3.4	3.5	.32	2.15
13	.02	.42	.25	0	0	0	.02	0	3.35	4.0	.10	.77
14	.11	.26	.60	0	.12	0	.90	0	2.6	3.8	1.83	1.29
15	.21	1.92	1.3	0	.28	.01	1.92	0	2.2	2.5	1.77	1.38
16	.01	.98	.30	0	.12	.01	.18	0	2.25	1.1	.63	3.4
17	.81	.34	.20	0	.06	0	0	.20	2.25	1.1	.47	1.92
18	1.64	.46	.30	0	.06	0	0	2.3	1.87	1.4	.30	4.5
19	2.8	1.58	1.5	0	.15	0	0	2.05	1.95	.16	.06	3.1
20	1.63	2.4	1.2	0	.06	.03	0	1.59	1.04	2.0	.02	1.24
21	1.27	2.4	.38	.01	.15	.08	0	1.16	2.9	.35	.01	.61
22	3.0	2.75	.80	0	.16	.01	0	.56	2.2	1.1	0	.36
23	.30	2.35	.30	.03	.06	.03	0	.14	.56	2.3	0	.50
24	.64	.78	.34	0	.58	.11	0	.07	.39	2.7	0	1.51
25	.66	.27	.49	0	.46	.02	0	1.48	.30	3.0	0	.69
26	.13	.74	1.30	.01	.08	.06	.08	2.95	1.49	1.4	1.16	1.01
27	.07	.47	1.14	0	0	.01	.04	2.8	1.09	1.6	.82	3.25
28	1.79	.64	.48	0	.04	0	0	2.6	.99	2.5	.11	2.45
29	2.6	.77	.31	0	0	0	.27	-	2.3	2.9	2.5	1.63
30	1.66	1.23	.44	0	.04	.17	.02	-	2.7	3.75	1.1	1.28
31	.59	2.2	-	0	-	.20	0	-	.47	-	.2	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.5	0.01	1.51	2.34	46.9	144
August	4.2	.26	1.78	2.75	55.1	169
September	2.05	.20	.762	1.18	22.9	70
October	1.69	0	.277	.429	8.59	26
November	.58	0	.130	.201	3.89	12
December	.20	0	.046	.071	1.44	4.4
Calendar year 1941	-	-	-	-	-	-
January	1.92	0	.165	.255	5.12	16
February	2.95	0	.658	1.02	18.4	57
March	5.7	.30	2.01	3.11	62.2	191
April	5.0	.06	1.96	3.02	58.6	180
May	3.25	0	1.13	1.75	35.0	107
June	4.5	0	1.39	2.15	41.6	128
Fiscal year 1941-42	5.7	0	.986	1.53	360	1,100

Note.- No gage-height record Sept. 8-23, Apr. 10-29, May 29 to June 6; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Makapipi Stream near Nahiku

Location.- Concrete control, lat. 20°48'35", long. 156°05'35", 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 1942. Records at same site collected by East Maui Irrigation Co. June 1930 to June 1932.
Average discharge.- 10 years, 7.56 million gallons a day (11.7 second-feet).
Extremes.- Maximum discharge during year, 924 million gallons a day (1,430 second-feet) Mar. 8 (gage height, 5.07 feet), from rating curve extended above 70 million gallons a day by test on model of station site; minimum, 0.90 million gallons a day (1.39 second-feet) Sept. 19, 20, 24, 25.
1932-42: Maximum discharge, 1,220 million gallons a day (1,890 second-feet) Apr. 7, 1938 (gage height, 5.90 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 periods of no gage-height record, which are poor. Koolau ditch diverts water 1 mile above station for irrigation in central Maui.

Rating table, fiscal year 1941-42 (height, in feet, and discharge, in million gallons a day)

0.2	0.9	0.8	23.5	2.0	166
.3	2.3	1.0	45	2.5	250
.4	4.6	1.2	65	3.0	350
.5	7.8	1.4	86	3.5	460
.6	12.0	1.6	109		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	19.0	1.6	2.2	2.0	6.4	4.6	3.7	2.2	5.6	13	12.0	3.7
2	8.6	1.6	3.1	2.3	5.6	4.6	3.9	2.0	3.2	11	10.3	3.4
3	7.2	1.7	7.8	7.0	5.6	4.6	3.9	2.0	2.3	14	9.9	3.2
4	7.8	2.0	4.1	11.8	f5.6	4.9	f3.7	1.9	22	12	9.5	3.2
5	6.2	1.9	14.2	5.6	5.6	4.9	3.4	1.9	8.8	f10	11.2	3.0
6	4.9	1.9	59	26.5	7.3	11.5	3.4	2.0	4.9	13	39.5	2.8
7	4.4	6.0	24	29	6.2	13.4	3.4	1.7	3.9	10	72	2.8
8	3.9	48	9.5	128	6.2	8.2	3.4	1.7	203	e.6	14.4	2.8
9	3.7	21	5.6	68	6.2	22.5	f3.4	f1.7	340	8.0	12.0	2.8
10	3.2	19.2	4.4	22	6.2	12.1	3.4	1.7	362	16	10.3	3.0
11	3.0	9.6	3.7	34.5	6.2	27	3.4	1.7	170	76	9.5	2.8
12	2.5	5.6	3.0	34.5	6.2	12.5	3.4	1.7	180	76	8.2	2.8
13	2.2	4.6	2.3	23.5	6.2	8.6	3.4	1.7	174	50	7.5	2.5
14	1.9	3.9	1.9	33	6.2	7.2	3.4	1.8	179	24	7.5	2.5
15	1.6	3.7	1.6	42	6.2	6.2	3.4	1.7	97	15	6.8	2.8
16	1.5	3.2	1.5	27.5	6.2	5.6	3.4	2.3	80	11	6.5	4.6
17	1.5	3.0	1.2	17.2	6.2	4.9	3.4	6.0	80	15	5.9	3.2
18	1.3	2.5	1.0	34.5	6.2	4.6	3.2	27	63	12	5.9	3.2
19	1.3	2.3	.9	10.4	6.2	4.1	3.2	23	48	9.0	4.9	3.0
20	1.6	2.2	5.3	6.2	6.2	3.9	3.2	6.0	41	16	4.9	2.8
21	1.5	2.2	1.3	4.6	6.2	3.7	3.0	1.8	113	17	4.6	2.5
22	1.6	3.95	1.0	18.0	6.5	3.4	3.0	1.5	70	10	4.4	2.3
23	1.6	3.0	.9	102	6.8	3.4	2.8	1.3	35	8.0	4.4	2.3
24	1.6	2.5	.9	112	7.2	3.4	2.5	1.3	56	7.0	4.4	2.2
25	1.6	2.3	.9	43	6.5	3.4	2.5	1.6	f54	6.4	4.1	2.0
26	1.6	2.2	1.2	60	6.2	3.4	2.5	3.75	54	6.0	4.1	1.9
27	1.6	2.0	1.7	96	5.9	3.4	2.5	17.4	100	f8.2	4.1	1.9
28	1.6	2.0	1.9	40	5.9	3.4	2.5	10.3	28	9.5	3.9	1.7
29	1.6	1.9	1.7	21	5.2	3.4	2.3	-	27	14.1	3.9	1.7
30	1.6	1.7	1.7	9.0	4.9	3.7	2.3	-	f28	12.5	3.9	1.7
31	1.6	2.2	-	6.8		3.7	2.3	-	16	-	3.7	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	19.0	1.3	3.38	5.23	105	322
August	48	1.6	5.53	8.56	171	526
September	59	.9	5.65	8.74	170	520
October	128	2.0	34.8	53.8	1,080	3,310
November	7.3	4.9	6.14	9.50	184	565
December	27	3.4	6.91	10.7	214	657
Calendar year 1941	128	0	7.04	10.9	2,570	7,890
January	3.9	2.3	3.14	4.86	97.2	298
February	27	1.3	4.67	7.23	131	401
March	362	2.3	85.4	132	2,650	8,130
April	76	6.0	17.3	26.8	518	1,590
May	72	3.7	10.1	15.6	314	964
June	4.6	1.7	2.70	41.8	81.1	249
Fiscal year 1941-42	362	.9	15.6	24.1	5,720	17,530

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Oct. 28 to Nov. 3, Nov. 29 to Dec. 1, Jan. 5-8, Feb. 10-23, Mar. 11, 12, 26-29, Apr. 6-26; discharge computed on basis of records for Kapaula Stream below Government Road.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 4¾ miles southeast of Keanae post office.

Records available.- July 1932 to June 1942. Records at same site collected by East Maui Irrigation Co. June 1931 to June 1932.

Average discharge.- 10 years, 0.690 million gallons a day (1.07 second-feet).

Extremes.- Maximum discharge during year, 2.05 million gallons a day (3.17 second-feet) Apr. 11, 13 (gage height, 0.66 foot); minimum, 0.27 million gallons a day (0.42 second-foot) Mar. 8.

1932-42: 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.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.17	0.5	1.26
.3	.40	.6	1.75
.4	.79	.7	2.25

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.66	0.88	0.62	0.44	1.50	1.46	1.36	1.02	0.44	1.70	1.85	1.46
2	.62	.88	.62	.47	1.50	1.46	1.41	.98	.39	1.75	1.85	1.41
3	.62	.88	.66	.50	1.55	1.46	1.41	.93	.35	1.78	1.85	1.36
4	.58	.93	.62	.66	1.60	1.46	1.41	.93	.38	1.80	1.85	1.36
5	.58	.93	.60	.62	1.60	1.41	1.41	.88	.38	1.85	1.85	1.36
6	.58	.93	.84	.64	1.60	1.46	1.41	.88	.35	1.85	1.85	1.31
7	.58	1.02	.75	.66	1.65	1.46	1.41	.84	.30	1.85	1.90	1.31
8	.58	1.19	.62	.66	1.65	1.41	1.41	.79	.46	1.85	1.88	1.26
9	.58	1.12	.54	.66	1.65	1.46	1.41	.75	.66	1.85	1.85	1.26
10	.54	1.07	.50	.66	1.6	1.41	1.38	.75	.75	1.85	1.80	1.26
11	.58	1.02	.47	.66	1.6	1.41	1.38	.75	.9	2.0	1.75	1.26
12	.54	.98	.47	.66	1.6	1.36	1.38	.71	1.0	2.0	1.75	1.21
13	.54	.93	.44	.66	1.6	1.31	1.38	.66	1.0	2.0	1.75	1.17
14	.54	.88	.44	.66	1.6	1.21	1.36	.66	1.1	2.0	1.70	1.17
15	.47	.88	.44	.75	1.6	1.17	1.36	.62	1.1	2.05	1.65	1.17
16	.47	.84	.40	.75	1.6	1.17	1.36	.62	1.2	2.0	1.65	1.17
17	.47	.84	.40	.75	1.6	1.12	1.31	.58	1.2	1.95	1.65	1.12
18	.47	.82	.40	.75	1.65	1.12	1.31	.66	1.2	1.95	1.60	1.07
19	.52	.79	.40	.79	1.65	1.07	1.26	.66	1.2	1.95	1.55	1.07
20	.58	.75	.44	.79	1.65	1.02	1.26	.58	1.2	1.90	1.55	1.02
21	.58	.75	.40	.79	1.65	1.02	1.26	.54	1.3	1.95	1.55	.98
22	.62	.79	.40	.88	1.65	1.02	1.21	.50	1.4	1.90	1.50	.93
23	.71	.79	.38	1.07	1.65	1.02	1.17	.47	1.4	1.90	1.50	.93
24	.75	.75	.38	1.21	1.65	1.07	1.17	.40	1.5	1.85	1.46	.88
25	.79	.75	.38	1.17	1.65	1.12	1.17	.40	1.6	1.85	1.50	.84
26	.82	.68	.38	1.26	1.60	1.17	1.12	.44	1.6	1.80	1.50	.79
27	.84	.66	.40	1.41	1.55	1.21	1.12	.50	1.6	1.80	1.46	.79
28	.84	.66	.40	1.36	1.55	1.26	1.12	.47	1.6	1.85	1.46	.79
29	.88	.62	.40	1.36	1.50	1.31	1.07	-	1.6	1.85	1.46	.75
30	.88	.62	.40	1.41	1.50	1.36	1.07	-	1.65	1.85	1.46	.71
31	.88	.62	-	1.46	-	1.36	1.02	-	1.65	-	1.46	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	0.88	0.47	0.635	0.982	19.7	60
August	1.19	.62	.847	1.31	26.2	81
September	.84	.38	.486	.752	14.6	45
October	1.46	.44	.857	1.33	26.6	82
November	1.65	1.50	1.60	2.48	48.0	147
December	1.46	1.02	1.27	1.96	39.3	121
Calendar year 1941	1.65	0	.606	.938	221	679
January	1.41	1.02	1.29	2.00	39.9	122
February	1.02	.40	.678	1.05	19.0	58
March	1.65	.30	1.05	1.62	32.6	100
April	2.05	1.70	1.88	2.91	56.5	173
May	1.90	1.46	1.66	2.57	51.4	158
June	1.46	.71	1.11	1.72	33.2	102
Fiscal year 1941-42	2.05	.30	1.11	1.72	407	1,250

Note.- No gage-height record Oct. 7-12, Nov. 10-17, Mar. 11-29; discharge computed on basis of probable increase in flow from ground water.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Hanawi Stream near Nahiku

Location.- Lat. 20°48'35", long. 156°06'50", 200 feet upstream from Koolau ditch intake and trail, 1⅞ miles southwest of Nahiku, and 4⅛ miles southeast of Keanae.
Drainage area.- 0.8 square mile.
Records available.- January 1914 to January 1916, November 1921 to June 1942.
Average discharge.- 20 years (1922-42), 13.4 million gallons a day (20.7 second-feet).
Extremes.- Maximum discharge during year, 1,040 million gallons a day (1,610 second-feet) Oct. 6 (gage height, 9.46 feet), from rating curve extended above 260 million gallons a day by logarithmic plotting; minimum, 1.5 million gallons a day (2.3 second-feet) Feb. 13.
1914-16, 1921-42: Maximum gage height, about 20 feet during flood of Jan. 18, 1916, from floodmarks; minimum discharge, 1.2 million gallons a day (1.9 second-feet) Feb. 19, 1936.
Remarks.- Records good except those above 200 million gallons a day, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.2	1.3	1.3	13.7	3.5	137
.3	1.9	1.6	19.3	4.0	188
.5	3.4	2.0	29.5	5.0	311
.7	5.4	2.5	52	6.0	451
1.0	9.2	3.0	88		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	25.5	3.65	13.2	17.4	8.6	5.1	5.2	1.9	63	11.4	16.3	2.9
2	11.4	3.5	26	9.2	8.2	5.6	7.6	1.9	7.4	11.4	10.0	2.75
3	23	7.0	19.7	16.1	7.9	8.0	5.2	1.8	5.0	12.0	7.7	2.7
4	21	7.6	7.1	14.5	7.4	58	4.6	1.8	85	11.4	7.4	2.6
5	11.3	4.4	33	7.7	7.0	38.5	5.2	2.6	47	9.8	18.3	2.6
6	12.1	5.9	153	94	16.7	72	4.5	2.3	7.9	10.8	92	2.55
7	10.1	35.5	21	81	9.0	94	4.0	1.8	5.4	e.9	142	3.1
8	8.4	65	8.5	131	7.4	48	3.75	1.8	153	8.2	12.2	3.95
9	11.0	29	6.4	233	10.1	99	3.6	1.7	377	7.6	12.3	5.1
10	8.9	32.5	5.5	46	7.0	55	3.4	1.7	343	11.2	7.9	5.9
11	7.8	13.6	8.4	98	7.0	102	3.25	1.7	151	113	7.0	3.15
12	7.3	7.3	4.8	88	5.9	24	3.1	1.7	209	140	6.1	4.2
13	7.0	5.9	4.3	49	5.3	9.2	3.6	1.6	210	74	5.4	7.1
14	7.0	6.6	4.5	82	5.1	7.6	9.0	1.8	270	27	21	12.2
15	7.0	8.3	4.6	76	9.7	7.4	5.8	1.7	138	17.1	7.4	30
16	6.2	4.8	4.0	32	7.4	16.6	3.65	2.0	107	12.1	5.5	12.9
17	6.5	4.1	4.0	12.9	5.1	15.3	3.3	4.7	80	18.1	5.0	7.7
18	7.1	4.0	6.0	63	5.1	10.6	3.15	101	66	13.2	4.6	7.9
19	7.9	5.1	20.5	24	7.5	10.3	3.1	129	a34	9.2	4.4	5.0
20	6.9	19.2	31.5	12.9	6.1	9.8	2.9	16.1	f34.5	23	4.1	3.65
21	5.9	12.6	6.7	11.4	7.2	10.6	2.75	5.6	96	19.0	4.0	3.15
22	9.4	13.6	5.5	18.3	13.7	8.9	2.6	3.3	129	9.8	3.85	2.9
23	6.6	6.7	6.9	118	11.6	8.5	2.55	2.75	25	8.5	3.75	3.7
24	6.7	5.0	5.3	166	15.8	10.0	2.45	2.45	64	7.6	3.6	5.5
25	6.0	4.4	19.9	45	5.9	8.5	2.55	25.5	61	7.1	3.6	2.85
26	4.8	5.0	11.0	44	5.0	7.4	2.45	75	59	6.7	3.5	7.0
27	4.3	3.85	9.6	77	4.5	6.7	2.4	150	354	9.1	3.25	10.5
28	4.4	3.6	8.1	13.7	7.0	6.2	2.25	94	25.5	10.3	3.15	4.4
29	6.2	4.1	8.1	11.4	4.3	5.8	2.2	-	25	24.5	3.8	3.3
30	5.7	9.7	11.3	10.0	7.6	7.8	2.1	-	22.5	20.5	4.1	3.6
31	4.0	14.9	-	9.2	-	6.0	2.0	-	12.9	-	3.0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	25.5	4.0	8.95	13.8	277	851
August	65	3.5	11.5	17.8	356	1,090
September	153	4.0	15.9	24.6	478	1,470
October	233	7.7	55.2	85.4	1,710	5,250
November	16.7	4.3	7.87	12.2	236	725
December	102	5.1	25.2	39.0	782	2,400
Calendar year 1941	233	1.7	17.0	26.3	6,190	18,990
January	9.0	2.0	3.68	5.69	114	350
February	150	1.6	22.8	35.3	639	1,960
March	377	5.0	105	162	3,270	10,030
April	140	6.7	22.4	34.7	672	2,060
May	142	3.0	14.1	21.8	436	1,340
June	30	2.55	5.83	9.02	175	537
Fiscal year 1941-42	377	1.6	25.1	38.8	9,140	28,060

a No gage-height record; discharge computed on basis of records for station below Government Road.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. Records at same site collected by East Maui Irrigation Co. January 1927 to June 1932.
Average discharge.- 10 years, 30.4 million gallons a day (47.0 second-feet).
Extremes.- Maximum discharge during year, 5,430 million gallons a day (8,400 second-feet) Oct. 6 (gage height, at least 8.57 feet), from rating curve extended above 28 million gallons a day; minimum, 10.0 million gallons a day (15.5 second-feet) May 13.
1932-42: Maximum discharge, 7,180 million gallons a day (11,100 second-feet) Mar. 21, 1937 (gage height, 9.54 feet); minimum, 8.2 million gallons a day (12.7 second-feet Feb. 25, 26, 1936.
Flood that destroyed 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 and those for periods of no gage-height record, 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Oct. 6				Oct. 7 to June 30					
0.8	7.9	2.0	100	-0.4	9.4	0.7	41	3.0	30[illegible]
1.0	14.8	2.5	183	-.3	11.3	1.1	62	3.5	465
1.2	24.5	3.0	300	-.2	13.3	1.5	92	4.0	66[illegible]
1.4	37.5	3.5	465	0.0	18.0	2.0	142	4.5	93[illegible]
1.7	64			.3	26.5	2.5	210	5.0	1,24[illegible]

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	73	11.5	13.0	13.0	13.5	14.0	12.5	11.3	40	10.4	12.5	10.4
2	21	11.5	20.5	13.0	13.1	14.0	13.1	11.3	13.1	10.2	11.3	10.4
3	18.4	11.8	25.5	13.7	12.9	14.0	13.1	11.3	12.5	10.4	10.9	10.4
4	21	12.2	14.4	23	12.7	27.5	12.5	11.1	67	10.2	10.7	10.4
5	13.3	11.5	56	14.4	12.5	17.9	12.5	11.7	33.5	10.2	15.2	10.4
6	13.3	11.5	272	303	17.4	56	12.5	11.5	13.8	10.7	61	10.4
7	13.0	53	67	161	14.4	58	12.1	11.3	12.9	10.4	191	10.4
8	12.6	172	20.5	354	14.2	28	11.5	11.3	521	10.4	20.5	10.4
9	13.0	76	13.7	430	14.4	65	11.3	11.3	1,060	10.4	15.5	10.4
10	12.6	66	13.0	50	14.0	33	11.3	11.3	900	10.9	10.9	10.4
11	12.2	32	13.0	110	13.8	81	11.3	11.3	200	67	10.5	10.4
12	12.2	15.0	12.2	90	13.3	31.5	11.3	11.5	230	81	10.2	10.4
13	12.2	12.2	11.8	35	12.9	13.8	11.3	11.3	230	50	10.0	10.4
14	12.2	12.2	11.8	90	14.0	13.5	11.5	11.5	494	20.5	16.3	11.2
15	11.8	11.8	11.8	85	14.2	13.3	11.7	11.3	132	13.1	12.3	22
16	11.8	11.8	11.5	35	14.0	14.0	11.3	11.3	104	11.5	10.7	17.0
17	11.8	11.8	11.5	15	13.8	13.3	11.3	11.5	88	13.7	10.7	13.5
18	11.8	11.8	12.2	66	14.2	13.3	11.3	127	65	11.1	10.7	13.5
19	12.2	11.8	13.7	35	14.2	12.9	11.3	108	28	10.7	10.7	13.3
20	12.2	14.4	27	18	14.2	13.3	11.3	13.5	40	15.0	10.5	13.1
21	11.8	14.4	12.2	16	14.2	13.8	11.3	12.1	108	11.7	10.5	13.1
22	12.2	14.5	11.8	20	15.0	13.3	11.3	11.9	100	10.9	10.5	13.1
23	11.8	13.0	11.8	90	14.4	13.3	11.3	11.9	30	10.7	10.5	13.1
24	11.8	12.6	11.5	80	14.9	13.5	11.3	11.9	56	10.5	10.5	13.1
25	11.8	12.6	17.0	25	14.0	13.6	11.3	22	54	10.4	10.5	13.1
26	11.5	12.6	12.2	18	13.5	13.5	11.3	43	52	10.4	10.4	13.1
27	11.8	12.2	12.2	41	13.3	13.3	11.3	111	130	10.4	10.4	13.5
28	11.8	12.2	12.2	17	14.4	12.9	11.3	58	21	11.1	10.4	13.8
29	12.2	12.2	12.2	15.1	13.8	12.3	11.3	-	20	10.5	10.7	13.5
30	11.8	12.2	12.2	14.4	14.2	13.1	11.3	-	19	13.8	10.5	13.5
31	11.8	13.7	-	14.2	-	13.3	11.3	-	10.9	-	10.4	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	73	11.5	14.9	23.1	462	1,420
August	172	11.5	23.3	36.1	722	2,220
September	272	11.5	25.9	40.1	777	2,390
October	430	13.0	74.3	115	2,300	7,070
November	17.4	12.5	14.0	21.7	419	1,290
December	81	12.3	22.4	34.7	693	2,130
Calendar year 1941	52.5	10.5	27.4	42.4	10,000	30,760
Jannary	13.1	11.3	11.6	17.9	360	1,110
February	127	11.1	25.8	39.9	722	2,220
March	1,060	10.9	158	244	4,890	14,990
April	81	10.2	17.2	26.6	516	1,580
May	101	10.0	16.0	24.8	497	1,530
June	22	10.4	12.4	19.2	372	1,140
Fiscal year 1941-42	1,060	10.0	34.9	54.0	12,730	39,090

Note.- No gage-height record Oct. 10-28, Mar. 10-12, 22-30, Apr. 13; discharge computed on basis of records for station above Government Road.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, 1½ miles southwest of Nahiku, and 4 miles southeast of Keanae.
Drainage area.- 0.2 square mile.
Records available.- November 1921 to June 1942.
Average discharge.- 20 years (1922-42), 11.1 million gallons a day (17.2 second-feet).
Extremes.- Maximum discharge during year, 1,410 million gallons a day (2,180 second-feet) Oct. 6 (gage height, 7.42 feet), from rating curve extended above 140 million gallons a day; minimum, 1.12 million gallons a day (1.73 second-feet) Feb. 13.
1921-42: 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 excellent except those above 100 million gallons a day and those for period of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.70	1.2	13.4	2.8	106
.5	1.40	1.4	18.6	3.0	130
.6	2.35	1.6	25	3.3	176
.7	3.5	1.8	32	3.6	232
.8	5.0	2.0	41	4.0	320
1.0	8.8	2.4	68		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	25.5	2.35	15.4	17.1	5.6	4.7	3.4	1.50	37.5	9.0	14.3	2.05
2	9.5	2.25	22.5	8.8	5.0	4.9	6.9	1.40	6.8	8.0	8.2	1.97
3	22.5	5.7	20.5	10.1	5.0	8.7	3.5	1.40	4.0	9.5	5.0	1.88
4	23.5	7.6	5.2	17.5	5.0	49	3.05	1.40	67	8.6	5.2	1.88
5	11.2	3.5	22.5	5.9	5.0	29.5	3.4	2.4	40	6.4	15.0	1.88
6	11.2	5.0	89	80	20	60	3.15	2.1	8.0	9.1	73	1.78
7	9.0	33	20.5	47	8.0	67	2.7	1.40	4.6	6.3	90	2.1
8	6.1	68	6.3	97	5.7	39.5	2.45	1.26	165	5.5	10.2	3.7
9	9.2	26	4.1	83	9.1	70	2.25	1.26	304	5.0	10.7	5.1
10	6.3	27.5	3.5	36.5	5.5	42	2.15	1.26	267	9.4	5.5	5.8
11	4.1	14.5	9.8	69	5.4	75	2.05	1.19	108	93	4.2	2.6
12	3.4	5.2	3.95	55	3.8	22	2.05	1.26	155	96	3.8	3.8
13	3.15	3.9	3.25	37.5	3.35	9.0	2.5	1.19	137	60	3.4	8.1
14	3.4	5.8	3.15	57	3.4	5.7	8.8	1.54	213	25.5	15.1	15.5
15	3.4	8.6	3.05	50	8.9	4.7	6.7	1.19	80	16.5	6.9	26.5
16	3.05	3.95	2.7	18.6	7.3	18.3	2.8	1.56	63	11.5	4.1	13.3
17	3.5	3.05	2.45	8.2	3.65	12.8	2.35	7.3	50	17.2	3.5	8.5
18	4.7	2.8	5.8	46	3.4	6.9	2.15	106	39.5	14.1	2.9	12.8
19	6.5	3.95	26	16.2	7.3	5.4	2.05	97	19.3	8.4	2.9	6.0
20	4.6	17.5	29	5.9	5.2	4.4	1.97	17.9	24	19.8	2.6	3.15
21	3.5	15.6	5.4	4.8	6.1	6.6	1.88	7.2	66	21	2.25	2.7
22	8.1	14.8	3.5	17.1	10.5	4.7	1.88	2.8	84	7.9	2.25	2.25
23	4.4	6.8	4.8	96	11.0	4.4	1.78	2.05	19.2	5.5	2.15	3.5
24	4.9	3.65	3.4	90	17.3	7.6	1.78	1.68	48	4.6	2.15	5.4
25	3.5	3.05	12.8	35	4.8	6.3	1.78	29.5	46	3.65	2.05	2.6
26	2.8	4.4	11.9	45	3.4	5.0	1.97	53	45	3.65	2.25	7.9
27	2.6	2.9	9.1	70	3.05	4.2	2.05	69	92	8.5	2.05	11.9
28	2.8	2.6	6.2	25	6.8	3.8	1.78	60	22.5	9.6	1.97	5.3
29	5.0	3.15	5.7	15	3.25	3.5	1.68	-	21.5	23	2.7	3.25
30	4.3	7.0	9.3	7.0	7.2	6.6	1.59	-	22.5	18.6	3.6	3.5
31	2.8	20.5	-	5.8	-	4.4	1.50	-	11.2	-	2.25	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minisum	Mean		Million gallons	Acre-feet
July	25.5	2.6	7.05	10.9	218	671
August	68	2.25	10.8	16.7	335	1,030
September	89	2.45	12.4	19.2	371	1,140
October	97	4.8	38.0	58.8	1,180	3,610
November	20	3.05	6.63	10.3	199	611
December	75	3.5	19.2	29.7	597	1,830
Calendar year 1941	165	1.19	13.1	20.3	4,780	14,680
January	8.8	1.50	2.78	4.30	86.0	264
February	106	1.19	17.0	26.3	477	1,460
March	304	4.0	73.2	113	2,270	6,970
April	96	3.65	18.2	28.2	545	1,670
May	90	1.97	10.1	15.6	312	958
June	26.5	1.78	5.89	9.11	177	542
Fiscal year 1941-42	304	1.19	18.5	28.6	6,770	20,760

Note.- No gage-height record Oct. 23 to Nov. 7; discharge computed on basis of records for station below Government Road.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.

Average discharge.- 10 years, 8.94 million gallons a day (13.8 second-feet).

Extremes.- Maximum discharge during year, 688 million gallons a day (1,060 second-feet) Oct. 6 (gage height, 4.28 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) Aug. 2, Jan. 24, 25, 30, 31.

1932-42: 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.7	0.6	8.0	1.2	39	2.0	123
.3	1.6	.7	11.4	1.4	55	2.2	153
.4	3.2	.8	15.6	1.6	74	2.6	223
.5	5.3	1.0	26	1.8	97	3.0	305

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	19.6	1.4	5.6	10.6	1.8	1.8	1.4	1.3	37.5	5.3	13.6	1.4
2	9.1	1.3	16.4	3.6	1.6	1.6	2.0	1.3	a4.5	2.4	3.6	1.3
3	21.5	2.6	22.5	4.7	1.6	1.6	1.4	1.3	a3.0	4.0	2.4	1.3
4	21	2.5	2.7	17.2	1.6	42	1.4	1.3	a66	3.4	2.2	1.3
5	7.9	1.6	20.5	2.6	1.6	22	1.5	1.6	36.5	2.4	11.2	1.3
6	7.5	2.9	77	53	11.7	49	1.4	1.5	a7.0	3.4	61	1.3
7	3.6	18.8	17.9	39	2.5	46	1.4	1.3	a5.0	2.1	69	1.4
8	1.9	51	4.2	96	1.8	32	1.4	1.3	171	2.1	3.6	1.4
9	3.4	10.2	2.6	77	1.9	52	1.3	1.3	261	1.9	5.0	1.5
10	2.2	21.5	2.2	32.5	1.6	41	1.3	1.3	282	2.4	2.4	1.8
11	1.9	4.5	4.0	50	1.6	54	1.3	1.3	a130	73	2.1	1.5
12	1.8	2.4	2.2	43	1.5	11.8	1.3	1.3	a150	73	1.9	1.6
13	1.6	2.1	1.9	29	1.5	3.8	1.3	1.3	142	52	1.9	1.5
14	1.6	2.1	1.3	45	1.5	2.2	2.3	1.4	172	31	13.1	8.3
15	1.6	3.4	1.6	39.5	1.9	2.1	3.5	1.3	59	19.5	2.3	7.0
16	1.6	2.1	1.6	12.5	2.1	11.0	1.6	1.3	45	7.5	1.9	12.0
17	1.6	1.6	1.5	5.4	1.5	4.6	1.4	1.3	35	13.4	1.8	2.1
18	1.6	1.6	2.3	34	1.6	2.1	1.4	85	27	10.6	1.6	3.8
19	2.1	1.5	11.2	9.5	2.1	1.8	1.4	73	25	3.0	1.6	1.9
20	2.1	7.4	22.5	4.1	1.8	1.6	1.4	8.8	28	18.8	1.6	1.5
21	1.6	8.0	2.4	1.9	2.1	1.9	1.4	2.1	69	19.4	1.6	1.6
22	1.8	8.5	1.9	12.2	5.9	1.6	1.3	1.8	70	3.8	1.6	1.5
23	1.6	2.6	1.9	97	3.8	1.6	1.3	1.6	23	2.4	1.5	1.5
24	1.5	1.9	1.8	91	11.1	2.3	1.2	1.6	42	2.1	1.4	1.5
25	1.5	1.6	8.4	23	2.2	1.6	1.2	17.8	41	1.9	1.4	1.4
26	1.5	2.1	3.9	36	1.8	1.6	1.3	35.5	a41	1.9	1.4	1.8
27	1.5	1.8	2.9	50	1.8	1.5	1.3	61	a80	3.3	1.4	2.6
28	1.6	1.5	2.2	11.4	2.4	1.5	1.3	50	a23	6.8	1.4	1.9
29	1.6	1.5	2.1	5.8	1.8	1.5	1.3	-	a22	26	1.5	1.5
30	1.5	2.1	2.1	2.6	1.9	1.8	1.2	-	a23	22	1.5	1.5
31	1.4	13.2	-	1.9	-	1.6	1.2	-	a13	-	1.4	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	21.5	1.4	4.27	6.61	132	406
August	51	1.3	6.04	9.35	187	575
September	77	1.5	8.39	13.0	252	773
October	97	1.9	30.4	47.0	941	2,890
November	11.7	1.5	2.65	4.10	79.6	244
December	54	1.5	13.0	20.1	402	1,240
Calendar year 1941	134	1.2	8.86	13.7	3,230	9,930
January	3.6	1.2	1.46	2.26	45.4	139
February	85	1.3	12.9	20.0	361	1,110
March	282	3.0	68.8	106	2,130	6,550
April	73	1.9	14.0	21.7	421	1,290
May	69	1.4	7.09	11.0	220	675
June	12.0	1.3	2.40	3.71	71.9	221
Fiscal year 1941-42	282	1.2	14.4	22.3	5,240	16,110

a No gage-height record; discharge computed on basis of records for Kapaula Stream.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 23 years, 21.9 million gallons a day (33.9 second-feet).

Extremes.- Maximum discharge during year, 62 million gallons a day (96 second-feet) Oct. 22 (gage height, 1.73 feet); no flow Oct. 9, Mar. 13, 14, when water was shut out of ditch.

1919-42: Maximum discharge, that of Oct. 22, 1941; 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	48	15.6	48	50	35.5	21.5	20.5	7.6	52	48	52	10.8
2	48	14.6	50	40	33.5	21	29.5	7.3	33.5	48	48	10.1
3	50	22	50	42	30.5	27.5	20.5	7.1	24	48	38	9.5
4	50	28	38	50	28.5	33.5	18.4	7.1	50	45	35.5	9.2
5	48	18.8	38	38	27	48	19.5	10.5	55	40	39.5	9.2
6	48	24	55	35.5	35.5	39	17.8	10.2	40	42	55	8.9
7	45	48	50	45	38	55	16.0	7.6	30	35.5	55	9.2
8	38	42	48	30.5	29.5	52	15.0	7.3	38	33.5	48	13.6
9	42	45	38	30	38	55	14.0	7.1	45	31	50	16.7
10	38	48	30	50	27.5	55	13.3	6.8	40	39	40	20
11	31	48	35.5	50	26	55	12.7	6.8	42	58	33.5	12.0
12	28	38	25	50	22	50	12.0	7.1	50	55	28.5	15.3
13	25.5	30	21.5	50	20.5	45	13.0	6.6	27	56	25	18.3
14	25	31	20.5	50	19.5	38	27.5	7.9	28	55	31	29
15	25	35.5	19.5	52	33.5	33.5	25.5	6.8	42	52	31.5	36.5
16	23	24.5	17.8	48	30	45	15.6	7.6	38	52	23.5	38.5
17	23	20.5	16.7	48	20.5	45	13.8	11.8	45	52	21	27
18	25	19.2	22.5	50	19.2	38	12.3	52	45	50	19.2	28.5
19	30	21	45	48	29	33.5	11.7	52	52	42	18.4	21.5
20	27.5	42	48	48	24.5	33.5	11.4	42	35.5	50	17.0	18.0
21	23	42	27	45	27.5	38	10.8	24	42	52	16.0	14.3
22	33.5	45	22	45	33.5	33.5	10.4	14.6	55	45	15.3	13.3
23	25.5	35.5	24.5	52	38	31	9.8	12.3	55	38	14.3	13.8
24	24.5	25.5	20.5	52	45	38	9.5	10.8	55	33.5	14.0	19.2
25	22	22	33.5	45	27	33.5	9.5	22.5	55	30	13.6	12.7
26	19.2	25	40	50	22.5	30.5	9.8	52	55	28	13.5	20
27	17.8	20.5	40	50	19.9	26.5	9.2	56	55	38	12.0	31.5
28	18.1	18.1	33.5	50	29.5	24.5	8.6	55	52	45	11.4	19.5
29	23.5	18.4	29.5	50	19.5	23	8.4	-	52	55	13.9	15.0
30	21.5	23	35.5	45	27.5	29	8.1	-	52	52	15.9	15.6
31	17.0	48	-	40	-	23.5	7.9	-	50	-	11.7	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	50	17.0	31.1	48.1	964	2,960
August	48	14.6	30.3	46.9	939	2,880
September	55	16.7	34.1	52.8	1,020	3,140
October	52	30	46.1	71.3	1,430	4,390
November	45	19.2	28.6	44.3	858	2,630
December	55	21	37.3	57.7	1,160	3,540
Calendar year 1941	55	6.0	28.4	43.9	10,360	31,780
January	29.5	7.9	14.3	22.1	442	1,360
February	55	6.6	18.8	29.1	525	1,610
March	55	24	44.8	69.3	1,390	4,270
April	58	28	44.9	69.5	1,350	4,140
May	55	11.4	27.8	43.0	861	2,640
June	38.5	8.9	17.8	27.5	535	1,640
Fiscal year 1941-42	58	6.6	31.4	48.6	11,470	35,200

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, 1¼ miles west of Nahiku, and 3½ miles southeast of Keanae post office. Altitude of gage, about 650 feet (by barometer).
Drainage area.- 0.1 square mile.
Records available.- July 1932 to June 1942. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.
Average discharge.- 10 years, 0.832 million gallons a day (1.29 second-feet).
Extremes.- Maximum discharge during year, 53 million gallons a day (82 second-feet) Mar. 9 (gage height, 2.70 feet), from rating curve extended above 14 million gallons a day by test on model of station site; minimum, 0.38 million gallons a day (0.59 second-foot) Feb. 1-4, 10-12, June 4-7.
1932-42: 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 Aug. 22-25, which are fair. No diversions.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Aug. 8		Aug. 9 to June 30			
0.3	0.23	0.3	0.24	0.7	3.15
.4	.53	.4	.58	.8	4.4
.5	1.01	.5	1.14	1.0	7.5
.6	1.72	.6	2.0	1.3	12.8
.7	2.7				

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1.13	0.46	0.83	0.95	0.83	0.72	0.58	0.38	0.95	0.83	1.14	0.42
2	.90	.46	1.08	.77	.77	.62	.58	.38	.83	.77	.95	.42
3	.90	.57	1.10	1.01	.72	.72	.58	.38	.77	1.08	.89	.42
4	.90	.57	.83	1.52	.62	.89	.54	.38	1.58	.95	.83	.38
5	.85	.49	1.73	.83	.62	.94	.58	.55	1.14	.83	1.14	.38
6	.90	.66	2.7	1.76	.99	1.30	.50	.50	.95	1.11	3.35	.38
7	.80	1.28	1.92	2.3	.77	1.02	.50	.42	.83	.83	2.05	.38
8	.75	2.4	1.22	5.5	.67	1.01	.46	.42	7.9	.72	1.14	.46
9	.85	1.30	1.02	2.7	.67	1.19	.46	.42	9.2	.72	1.14	.50
10	.80	1.14	.95	1.37	.62	1.26	.46	.38	11.2	.72	.95	.50
11	.70	1.02	.95	1.50	.58	1.61	.46	.38	7.4	2.45	.89	.46
12	.65	.89	.77	1.14	.58	1.02	.46	.42	4.6	1.08	.83	.58
13	.65	.83	.72	1.14	.54	.89	.42	.42	6.2	2.05	.83	.46
14	.61	.83	.67	1.22	.54	.83	.50	.46	6.2	1.53	1.04	.50
15	.57	.83	.62	1.08	.67	.77	.54	.42	6.3	1.14	.89	.71
16	.57	.77	.58	.89	.67	.77	.46	.42	7.0	.95	.67	.83
17	.57	.72	.58	.83	.58	.72	.42	.46	2.45	1.33	.67	.62
18	.53	.67	.75	1.22	.58	.72	.42	1.23	2.1	.95	.62	.62
19	.70	.62	.83	.89	.77	.67	.42	1.40	2.15	.83	.62	.62
20	.65	.72	.83	.77	.67	.67	.42	.77	2.4	1.08	.58	.54
21	.53	.83	.67	.72	.85	.77	.42	.62	5.8	1.20	.58	.54
22	.61	1.3	.62	2.75	.86	.67	.42	.58	2.4	.95	.58	.54
23	.53	a.83	.62	5.8	.83	.62	.42	.58	1.30	.83	.50	.54
24	.49	a.77	.58	3.9	.90	.76	.42	.54	1.02	.77	.50	.54
25	.49	a.73	.62	3.05	.77	.67	.42	.87	1.14	.72	.46	.54
26	.49	.67	.79	3.25	.72	.62	.46	1.45	1.73	.72	.46	.54
27	.46	.62	.72	2.6	.67	.58	.42	1.33	.95	.91	.46	.62
28	.49	.62	.67	1.30	.98	.58	.42	1.14	a.89	1.19	.46	.62
29	.53	.58	.67	1.14	.72	.58	.42	-	a.89	1.22	.50	.54
30	.49	.71	.67	1.02	.83	.77	.42	-	a.89	1.14	.50	.54
31	.49	.95	-	.89	-	.58	.42	-	.89	-	.46	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maxisum	Minimum	Mean		Million gallons	Acre-feet
July	1.13	0.46	0.664	1.03	20.6	63
August	2.4	.46	.834	1.29	25.8	79
September	2.7	.58	.910	1.41	27.3	84
October	5.8	.72	1.80	2.79	55.8	171
November	.99	.54	.720	1.11	21.6	66
December	1.61	.58	.825	1.28	25.6	78
Calendar year 1941	5.8	.34	.803	1.24	293	898
January	.58	.42	.465	.719	14.4	44
February	1.45	.38	.625	.967	17.5	54
March	11.2	.77	3.23	5.00	100	307
April	2.45	.72	1.05	1.62	31.6	97
May	3.35	.46	.861	1.33	26.7	82
June	.83	.38	.525	.812	15.7	48
Fiscal year 1941-42	11.2	.38	1.05	1.62	383	1,170

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, 1⅛ miles west of Nahiku, and 3¼ 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 1942. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.
Average discharge.- 10 years, 4.46 million gallons a day (6.90 second-feet).
Extremes.- Maximum discharge during year, 216 million gallons a day (334 second-feet) Mar. 8 (gage height, 5.19 feet), from rating curve extended above 20 million gallons a day by logarithmic plotting; minimum, 2.0 million gallons a day (3.1 second-feet) Jan. 24-27.

1932-42: Maximum discharge, 234 million gallons a day (362 second-feet) May 2, 1937 (gage height, 5.48 feet), from rating curve extended above 20 million gallons a day; minimum, 1.8 million gallons a day (2.8 second-feet) Feb. 18, 19, 1936.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Koolau ditch diverts all low flow at altitude of about 1,200 feet for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.4	1.50	0.9	12.3	1.8	44
.5	2.9	1.0	15.8	2.0	52
.6	4.6	1.2	23	2.5	72
.7	6.7	1.4	30	3.0	95
.8	9.2	1.6	37		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.8	2.25	4.2	4.7	3.05	2.9	2.7	2.25	3.8	2.9	5.2	2.1
2	3.75	2.25	8.0	3.4	2.9	2.55	3.05	2.25	3.05	2.7	3.75	2.1
3	4.1	5.0	9.6	4.2	2.7	2.9	2.55	2.25	2.9	3.8	3.4	2.1
4	4.4	2.7	3.4	7.1	2.55	8.2	2.55	2.25	13.0	3.4	3.25	2.1
5	3.25	2.55	13.4	3.6	2.55	5.5	2.55	2.7	8.8	2.9	9.0	2.1
6	3.4	4.5	27.5	13.2	7.4	11.4	2.55	2.9	3.25	3.8	26	2.1
7	3.25	21	9.7	10.6	3.25	7.0	2.4	2.4	3.05	2.9	24.5	2.1
8	3.05	21.5	4.1	40	2.9	4.9	2.4	2.4	72	2.7	3.9	2.25
9	3.95	11.6	3.6	21	2.9	11.8	2.4	2.25	76	2.55	4.4	2.6
10	3.4	9.3	3.25	5.3	2.7	8.6	2.4	2.25	80	3.5	3.6	2.7
11	3.05	3.6	4.0	8.3	2.7	13.2	2.4	2.25	33	18	3.4	2.4
12	2.9	3.4	3.05	5.2	2.55	4.4	2.4	2.25	43	7.0	2.9	2.7
13	2.7	3.4	2.9	4.6	2.55	3.4	2.1	2.25	40	13	2.7	2.75
14	2.7	3.4	2.9	4.9	2.55	3.05	4.9	2.4	40	5.0	5.6	3.7
15	2.7	3.7	2.7	5.4	3.05	3.05	3.55	2.25	30	4.1	3.4	4.3
16	2.7	3.05	2.7	4.8	3.05	3.05	2.4	2.25	21	3.6	2.7	4.5
17	2.7	2.9	2.55	3.4	2.7	2.9	2.1	2.4	13	7.2	2.55	2.9
18	2.7	2.7	3.8	12.8	2.7	2.9	2.1	21	11	3.7	2.4	2.7
19	3.35	2.7	6.9	3.6	3.6	2.7	2.1	13.9	9.0	3.05	2.4	2.7
20	3.05	5.5	8.2	3.25	3.05	2.7	2.1	4.3	10	7.2	2.4	2.55
21	2.7	4.6	2.9	2.9	3.25	2.9	2.1	2.7	38	5.0	2.4	2.4
22	2.9	7.6	2.9	11.6	5.0	2.7	2.1	2.55	16	3.4	2.4	2.4
23	2.7	3.4	2.9	39.5	3.6	2.55	2.1	2.4	6.0	3.05	2.25	2.25
24	2.55	3.05	2.7	35	4.5	3.3	2.0	2.25	5.0	2.9	2.25	2.4
25	2.55	2.9	3.9	9.1	3.05	2.9	2.0	4.1	6.6	2.9	2.1	2.4
26	2.55	3.2	3.6	19.8	2.9	2.9	2.1	11.6	11	2.7	2.1	2.55
27	2.55	2.7	3.25	23	2.9	2.7	2.2	8.6	4.0	3.95	2.1	3.2
28	2.7	2.7	3.05	4.3	3.7	2.7	2.25	7.8	3.3	5.3	2.1	2.7
29	2.7	2.55	2.9	3.75	2.9	2.55	2.25	-	3.0	14.0	2.4	2.4
30	2.4	3.6	3.05	3.4	3.25	3.1	2.25	-	3.0	7.3	2.65	2.4
31	2.25	5.8	-	3.05	-	2.9	2.25	-	f2.9	-	2.25	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	7.8	2.25	3.14	4.86	97.4	299
August	21.5	2.25	5.13	7.94	159	488
September	27.5	2.55	5.25	8.12	158	484
October	40	2.9	10.5	16.2	325	997
November	7.4	2.55	3.22	4.98	96.4	296
December	13.2	2.55	4.46	6.90	138	424
Calendar year 1941	40	2.1	4.82	7.46	1,730	5,400
January	4.9	2.0	2.43	3.76	75.3	231
February	21	2.25	4.33	6.70	121	372
March	80	2.9	19.8	30.6	615	1,890
April	18	2.55	5.12	7.92	154	471
May	26	2.1	4.60	7.12	143	438
June	4.5	2.1	2.62	4.05	78.6	241
Fiscal year 1941-42	80	2.0	5.92	9.16	2,160	6,630

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

Note.- No gage-height record Mar. 8-12, 17-30, Apr. 11-14; discharge computed on basis of records for Kapaula and Waiaaka Streams.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, 2¾ miles southwest of Nahiku, and 3½ miles southeast of Keanae.

Drainage area.- 1.5 square miles.

Records available.- October 1921 to June 1942.

Average discharge.- 20 years (1922-42), 8.39 million gallons a day (13.0 second-feet).

Extremes.- Maximum discharge during year, 628 million gallons a day (972 second-feet) Mar. 8 (gage height, 5.71 feet), from rating curve extended above 50 million gallons a day; minimum, 1.93 million gallons a day (2.99 second-feet) Feb. 13.
1921-42: 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, 1.4 million gallons a day (2.2 second-feet) Nov. 25, 1933.

Remarks.- Records good except those for period of no gage-height record, which are fair, and those above 100 million gallons a day, which are poor. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.6	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	2.6	93
.9	5.1	1.6	24	3.0	137
1.0	6.6	1.8	33.5	3.5	203

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	14.3	3.3	9.7	12.4	5.7	4.4	4.2	2.35	18.8	7.9	10.2	3.6
2	7.7	3.15	14.4	6.2	5.2	4.3	6.2	2.3	4.6	7.1	7.3	3.5
3	14.7	6.6	14.1	8.4	5.0	5.8	4.2	2.3	3.7	9.2	5.7	3.4
4	14.5	5.2	5.1	12.4	4.7	20.5	3.8	2.2	34	7.5	6.3	3.3
5	9.3	4.2	18.3	5.8	4.4	15.7	4.2	2.45	22.5	6.2	13.1	3.3
6	10.2	6.4	46.	31	10.6	26.5	3.95	3.95	6.0	7.8	39	3.3
7	8.2	23	14.9	29.5	6.2	28.5	3.6	2.3	5.3	5.7	49	4.0
8	6.6	30	6.4	74	4.8	20.5	3.5	2.2	95	5.4	7.7	4.7
9	9.5	14.5	5.7	42	6.5	33.5	3.4	2.15	159	5.1	9.2	5.4
10	6.8	19.6	5.4	20.5	4.6	25	3.25	2.15	172	7.9	5.8	6.2
11	5.7	8.1	8.8	33	4.6	37	3.15	2.05	71	49	5.4	4.0
12	5.2	5.0	5.1	26.5	3.95	13.7	3.05	2.3	88	43	5.1	5.2
13	5.0	4.4	4.7	21.5	3.8	8.6	3.7	2.05	77	33	5.0	8.0
14	5.0	6.5	4.8	29	3.95	7.3	10.2	2.65	103	17.5	10	12
15	4.7	6.9	4.6	25.5	7.0	7.5	5.9	2.05	44	11.4	7.0	18
16	4.4	4.4	4.2	14.0	5.7	12.5	3.7	2.3	37	9.1	5.6	7.0
17	4.4	4.2	4.1	9.5	3.95	10.4	3.3	3.85	33.5	13.8	4.9	5.0
18	4.7	3.95	6.3	27.5	4.1	6.6	3.15	49	25.5	10.4	4.5	6.6
19	6.7	4.3	15.0	11.9	6.9	6.2	3.05	40	17.0	7.1	4.4	3.8
20	5.1	11.2	14.9	7.9	5.0	5.7	2.95	9.0	19.2	16.1	4.3	3.25
21	4.3	8.5	4.7	7.0	5.6	6.7	2.85	4.5	48	13.6	4.1	3.05
22	6.5	11.0	4.3	14.6	9.6	5.4	2.75	2.95	44	7.3	4.0	2.85
23	4.4	5.4	4.4	67	7.1	5.1	2.7	2.7	11.8	6.2	3.9	3.05
24	4.4	4.4	4.1	58	10.3	6.9	2.6	2.55	23	5.7	3.8	3.6
25	4.1	4.4	8.0	16.4	4.6	5.8	2.75	15.2	23	5.4	3.8	3.15
26	3.6	6.1	7.4	37	4.2	5.2	2.95	30	26	5.1	3.7	4.4
27	3.4	4.6	7.4	35	3.95	4.8	2.7	33	43	9.2	3.6	6.5
28	4.2	4.1	5.6	8.6	6.7	4.4	2.7	26.5	14.8	9.9	3.5	4.6
29	5.5	4.3	5.2	7.5	4.2	4.3	2.55	-	14.9	20.5	4.2	3.8
30	4.3	5.9	6.4	6.6	5.9	6.1	2.45	-	14.4	13.8	4.5	4.1
31	3.6	12.3	-	6.2	-	4.6	2.45	-	8.8	-	3.7	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	14.7	3.4	6.48	10.0	201	617
August	30	3.15	7.93	12.3	246	755
September	46	4.1	9.0	13.9	270	829
October	74	5.8	23.0	35.6	712	2,190
November	10.6	3.8	5.63	8.71	169	518
December	37	4.3	11.6	17.9	360	1,100
Calendar year 1941	81	1.99	9.15	14.2	3,340	10,250
January	10.2	2.45	3.61	5.59	112	343
February	49	2.05	9.18	14.2	257	789
March	172	3.7	42.2	65.3	1,310	4,010
April	49	5.1	12.6	19.5	377	1,160
May	49	3.5	8.14	12.6	252	774
June	18	2.85	5.09	7.88	153	468
Fiscal year 1941-42	172	2.05	12.1	18.7	4,420	13,550

Note.- No gage-height record May 13 to June 17; discharge computed on basis of records for Kapaula Stream near Nahiku.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

West Kopiliula Stream near Keanae

Location.- Lat. 20°40'10", 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 1942.
Average discharge.- 18 years (1922-34, 1936-42), 19.6 million gallons a day (30.3 second-feet).
Extremes.- Maximum discharge during year, 3,250 million gallons a day (5,030 second-feet) Mar. 9 (gage height, 8.00 feet), from rating curve extended above 10 million gallons a day; minimum, 1.58 million gallons a day (2.44 second-feet) Feb. 13.
1914-17, 1921-42: 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 except those for periods of no gage-height record, which are poor. No diversions above station. Water used for irrigation in central Maui.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Dec. 9

0.4	1.95	0.9	14.3	1.8	73
.5	3.2	1.0	18.2	2.0	95
.6	5.5	1.2	27.5	2.4	149
.7	8.3	1.4	40	2.8	225
.8	11.0	1.6	55		

Dec. 10 to June 30

0.3	1.20	0.9	15.8	3.0	265
.4	2.15	1.1	25	3.8	400
.5	3.65	1.4	43	4.0	555
.6	6.0	1.8	77	4.5	750
.7	9.0	2.2	122		
.8	12.3	2.6	185		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	36.5	2.95	22	23	6.3	6.3	4.7	1.86	89	11	17.5	2.9
2	15.5	2.6	29	10.4	5.8	7.0	f10.0	1.86	16.6	10	9.3	2.75
3	33	9.0	23	12.8	5.2	f16.2	4.7	1.86	10.2	13	6.9	2.6
4	31.5	7.9	7.7	20.5	4.9	70	4.3	1.77	123	11.5	7.2	2.6
5	15.5	4.2	28	8.6	4.3	42	5.5	3.3	63	9.0	16.7	2.75
6	15.1	6.6	115	98	18.0	100	4.5	2.8	16.7	15.2	89	2.6
7	12.9	42	25.5	122	9.6	110	4.0	1.96	11.4	8.8	186	3.45
8	9.6	55	9.6	188	6.6	f62	3.85	1.86	292	8.1	16.9	5.4
9	12.5	30	7.4	139	10.5	116	3.65	1.68	750	7.5	14.3	6.8
10	8.8	40	6.3	54	6.3	83	3.5	1.68	400	13.8	8.1	7.6
11	6.9	17.8	18.4	108	6.6	128	3.35	1.68	210	132	6.9	3.2
12	6.1	8.0	7.1	86	4.9	39	3.35	1.91	240	170	6.0	5.0
13	5.8	6.6	6.3	51	4.1	16.2	4.5	1.68	200	78	5.4	9.3
14	5.8	10.5	6.6	82	4.3	10.7	17	2.8	270	33	13.6	23.5
15	5.5	10.7	6.6	77	10.8	8.9	9.0	1.86	110	21.5	10.7	35
16	5.2	6.1	4.9	29.5	7.4	26.5	3.5	2.9	80	17.5	7.0	19.9
17	6.1	4.9	4.3	14.0	4.1	18.4	3.2	10.7	60	21.5	6.0	13.8
18	6.5	4.6	10.9	50	4.3	9.9	3.05	228	47	18.2	5.4	25
19	7.8	6.4	39.5	22	8.1	9.3	2.9	179	39	11.3	4.7	10.9
20	6.2	24.5	41	10.2	5.5	7.8	2.75	37	27	25	4.5	5.2
21	4.9	20.5	8.6	8.3	6.0	9.0	2.6	14.6	130	24.5	4.3	4.0
22	10.5	18.4	6.6	13.9	f13.2	6.6	2.45	6.3	140	9.9	3.85	3.65
23	5.8	8.3	7.4	189	f10.2	6.3	2.3	4.3	35	8.7	3.65	5.7
24	7.3	6.1	6.1	175	f15.6	9.4	2.15	3.65	56	7.5	3.65	7.6
25	4.9	5.7	16.2	42	5.8	7.2	3.45	58	54	6.9	3.5	3.5
26	3.7	7.2	13.3	47	4.6	6.1	3.75	110	62	6.6	3.65	12.6
27	3.35	4.6	10.9	61	3.9	5.4	2.6	198	160	10.2	3.35	16.0
28	4.2	4.1	8.6	11.7	8.9	5.2	2.45	123	35	10.9	3.2	6.2
29	6.5	5.6	8.7	8.8	4.1	4.7	2.15	-	26	25.5	4.7	4.3
30	5.6	10.7	13.7	8.0	9.4	f9.5	2.05	-	27	20	4.2	4.6
31	3.2	31	-	6.9	-	5.6	2.05	-	13	-	3.2	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	36.5	3.2	10.1	15.6	313	960
August	55	2.8	13.6	21.0	423	1,300
September	115	4.3	17.3	26.8	519	1,590
October	189	6.9	57.3	88.7	1,780	5,460
November	18.0	3.9	7.31	11.3	219	673
December	128	4.7	31.0	48.0	962	2,950
Calendar year 1941	421	1.57	20.5	31.7	7,490	22,980
January	17	2.05	4.17	6.45	129	397
February	228	1.68	35.9	55.5	1,010	3,090
March	750	10.2	122	189	3,790	11,640
April	170	6.6	25.6	39.6	767	2,350
May	186	3.2	15.6	24.1	483	1,480
June	35	2.6	8.61	13.3	258	793
Fiscal year 1941-42	750	1.68	29.2	45.2	10,650	32,680

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Dec. 4-7, Jan. 14, 15, Mar. 9 to Apr. 3; discharge computed on basis of records for stations on all nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.
Average discharge.- 20 years (1922-42), 20.4 million gallons a day (31.6 second-feet).
Extremes.- Maximum discharge during year, not determined due to faulty gage-height record; minimum, 1.98 million gallons a day (3.06 second-feet) Feb. 13, 14.
1913-17, 1922-42: 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.
Flood of Dec. 24, 1921, may have reached a higher stage than 9.26 feet, the maximum given, but owing to destruction of station no data are available for this peak.
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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.5	2.1	1.6	16.0	4.0	213
.6	2.7	2.0	28	4.5	310
.8	4.1	2.4	46	5.0	425
1.0	6.0	2.8	72	5.5	570
1.2	8.6	3.2	105	6.0	760
1.4	11.5	3.6	151	6.5	980

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	46	4.1	24	27	7.5	7.1	5.1	2.65	98	12.3	22	3.6
2	14.8	3.9	35	9.6	7.0	7.5	10.1	2.6	18.0	10.7	10.7	3.35
3	45	13.4	31.5	12.1	6.5	14.4	5.3	2.6	9.4	13.3	7.8	3.2
4	40	11.0	7.8	19.7	6.1	82	4.8	2.5	100	11.7	8.1	3.2
5	17.2	5.3	37	7.6	5.9	50	6.4	3.5	35	9.6	31	3.3
6	16.8	8.2	141	55	30	110	5.1	3.7	17	15.0	137	3.15
7	13.1	70	32.5	114	11.4	123	4.6	2.45	11	9.8	176	4.7
8	9.3	66	9.8	171	8.0	70	4.3	2.4	300	9.1	18.5	6.1
9	14.1	43	7.2	169	12.7	126	4.2	2.3	800	8.4	21.5	9.3
10	8.8	57	6.2	72	7.3	89	4.0	2.3	500	20	9.2	9.4
11	7.0	22.5	20	113	7.7	142	4.0	2.2	250	184	7.7	4.0
12	6.2	8.0	6.7	99	5.8	47	3.8	2.4	290	197	6.8	6.3
13	5.9	6.6	5.6	65	5.5	17.6	4.5	2.1	230	110	6.4	13.9
14	6.1	12.5	6.4	88	5.6	11.2	19.9	3.5	340	45	12.9	28
15	5.8	9.6	5.6	88	11	9.1	10.5	2.1	150	24.5	8.7	28
16	5.4	5.9	4.7	38	8.0	31	4.3	3.35	100	17.8	6.6	23
17	6.2	5.0	4.5	16.8	6.0	21	3.8	13.8	80	30	6.2	12.8
18	7.0	5.0	10.2	69	5.8	10.1	3.6	206	60	20.5	5.9	17.0
19	8.7	6.7	49	29	8.0	8.6	3.4	180	45	12.7	5.2	9.5
20	6.9	33	51	11.7	6.8	7.8	3.35	44	34	37	4.8	4.8
21	5.4	23	7.7	9.7	7.0	8.6	3.2	14.7	150	32	4.6	4.0
22	12.6	25	5.8	19.0	19.5	6.7	3.15	6.0	160	11.5	4.5	3.6
23	6.5	8.2	6.1	182	14.5	6.5	3.0	4.0	38	9.9	4.4	5.7
24	11.0	5.7	5.2	207	27	10.2	2.95	3.35	70	8.8	4.1	8.7
25	6.2	5.4	15.0	55	7.0	7.7	4.9	51	66	8.1	4.1	3.9
26	4.8	8.2	11.0	62	5.8	6.6	4.6	108	76	7.5	4.3	18.0
27	4.6	5.1	10.4	117	5.3	5.7	3.4	203	183	11.1	3.8	16.3
28	5.0	4.7	7.9	14.0	10.5	5.5	3.15	125	43	12.3	3.7	6.6
29	7.9	6.2	7.2	10.7	5.5	5.3	2.9	-	31	43	5.5	4.7
30	7.4	12.5	13.1	9.2	12.1	10.9	2.75	-	33.5	28	4.4	5.1
31	4.5	38	-	8.1	-	6.4	2.7	-	15.5	-	3.65	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	46	4.5	11.8	18.3	366	1,120
August	70	3.9	17.4	26.9	539	1,650
September	141	4.5	19.5	30.2	585	1,800
October	207	7.6	63.5	98.2	1,970	6,040
November	30	5.3	9.56	14.8	287	880
December	142	5.3	34.3	53.1	1,060	3,270
Calendar year 1941	318	1.98	22.7	35.1	8,280	25,410
January	19.9	2.7	4.90	7.58	152	466
February	206	2.1	35.8	55.4	1,000	3,070
March	800	9.4	140	217	4,330	13,300
April	197	7.5	32.4	50.1	971	2,980
May	176	3.65	18.1	28.0	560	1,720
June	28	3.15	9.11	14.1	273	838
Fiscal year 1941-42	800	2.1	33.2	51.4	12,090	37,130

Note.- No gage-height record Nov. 15-21, Mar. 4-26, Apr. 4-7; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 20 years (1922-42), 26.1 million gallons a day (40.4 second-feet).

Extremes.- Maximum discharge during year, 2,700 million gallons a day (4,180 second-feet) Mar. 14 (gage height, 10.64 feet), from rating curve extended above 420 million gallons a day; minimum, 1.58 million gallons a day (2.44 second-feet) Feb. 14.
1914-17, 1921-42: 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 poor. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.3	1.31	1.0	7.0	2.5	73
.4	1.65	1.2	10.4	3.0	121
.5	2.1	1.4	15.0	4.0	270
.6	2.65	1.6	22	5.0	510
.7	3.4	1.8	30	6.0	835
.8	4.4	2.0	40	7.0	1,190

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	65	3 6	26.5	27	7.5	8.1	4.6	1.92	r160	15.0	22.5	2.55
2	18.4	3.25	34	11.2	6.7	8.0	3.7	1.88	39.5	12.5	10.4	2.4
3	53	12.0	38	12.1	6.0	18.0	4.8	1.83	18.0	15.2	7.5	2.25
4	46	9.4	10.0	21.5	5.5	98	4.2	1.74	f140	17.2	7.2	2.2
5	19.6	4.8	42	9.9	5.2	59	5.6	2.8	a40	13.0	30	2.4
6	17.7	7.8	174	70	53	131	4.6	3.25	f21	26	177	2.2
7	14.5	83	49	144	12.8	152	3.9	1.88	13.2	11.0	224	3.1
8	11.0	93	13.2	280	8.8	84	3.6	1.74	364	9.5	24	4.7
9	13.6	60	9.0	253	13.2	159	3.3	1.70	1,070	8.1	17.7	7.3
10	9.9	76	7.3	99	8.0	117	3.2	1.62	767	18.2	10.0	8.0
11	8.3	32.5	24	159	7.6	167	3.0	1.62	347	214	8.3	2.95
12	6.7	11.0	8.1	146	5.6	87	2.9	1.62	x55	234	7.0	5.1
13	5.7	8.4	7.2	81	5.1	20.5	3.2	1.62	269	128	6.2	17.5
14	6.0	13.6	7.2	116	5.0	13.0	15.8	2.8	590	56	10.0	36.5
15	5.5	10.4	8.1	110	11.8	10.2	8.8	1.65	214	32.5	8.4	28
16	5.0	7.0	5.6	48	8.4	31.5	6.8	2.95	a150	23	7.2	36
17	6.0	5.7	5.0	20.5	5.4	20.5	6.25	21.5	a100	31	6.0	17.0
18	6.3	5.4	10.0	81	5.2	11.0	2.95	331	a80	26.5	5.7	22
19	8.1	6.9	60	40	6.4	9.5	2.8	241	a50	15.3	4.8	11.6
20	6.6	34.5	59	14.8	6.2	8.0	2.65	68	a36	35	4.3	5.6
21	5.5	25.5	10.4	11.4	6.3	8.0	2.55	18.9	a172	34	4.0	4.2
22	11.2	25	7.8	28	20	6.4	2.45	8.4	a194	15.5	3.7	3.6
23	6.4	9.5	7.8	201	15.6	5.9	2.4	5.4	a45	11.0	5.4	5.7
24	11.8	6.9	7.2	253	28	6.5	2.25	4.4	a84	9.1	3.25	9.2
25	6.3	6.4	14.8	81	8.0	6.7	3.95	65	a80	8.0	3.1	4.1
26	4.8	7.6	11.9	81	6.0	5.7	3.45	142	a90	6.9	3.3	20
27	4.2	5.4	10.6	127	5.1	5.1	2.6	f280	240	8.9	2.8	17.9
28	4.5	4.8	9.0	19.6	10.4	4.8	2.55	160	a67	9.6	2.65	7.9
29	6.8	6.5	9.4	12.8	5.6	4.4	2.3	-	a42	36	4.6	9.8
30	6.5	13.0	14.6	10.2	13.2	9.4	2.1	-	a40	28	3.2	5.7
31	3.9	49	-	8.6	-	6.3	2.0	-	20	-	2.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	65	3.9	13.1	20.3	405	1,240
August	93	3.25	20.9	32.5	648	1,990
September	174	5.0	23.4	36.2	700	2,150
October	291	8.6	86.0	133	2,670	8,190
November	33	5.0	9.79	15.1	294	901
December	167	4.4	40.2	62.2	1,250	3,830
Calendar year 1941	527	1.70	28.3	43.8	10,350	31,660
January	15.8	2.0	4.00	6.19	124	381
February	331	1.62	46.8	78.8	1,320	4,190
March	1,070	13.2	196	303	5,850	18,620
April	234	6.9	56.9	87.1	1,710	5,390
May	224	2.6	20.5	31.7	635	1,950
June	36	2.2	10.1	15.6	303	931
Fiscal year 1941-42	1,070	1.62	42.6	65.9	15,370	47,770

a No gage-height record; discharge computed on basis of records for West Wailuanui Stream.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. Records at same site collected by East Maui Irrigation Co. March 1927 to June 1932.

Extremes.- Maximum discharge during year, 770 million gallons a day (1,190 second-feet) Mar. 8 (gage height, 6.85 feet), from rating curve extended above 90 million gallons a day by logarithmic plotting; minimum, 0.28 million gallons a day (0.43 second-foot) Feb. 4, 5.

1932-36, 1938-42: Maximum discharge, 1,010 million gallons a day (1,560 second-feet) Mar. 4, 1939 (gage height, 7.03 feet), from rating curve based on standard Hofmann weir curve from 10 to 100 million gallons a day and extended above; minimum, 0.12 million gallons a day (0.19 second-foot) Oct. 10-12, 1933, datum then in use.

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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.28	0.8	4.8	1.6	27	3.5	145
.5	.69	.9	7.1	2.0	42	4.0	203
.6	1.45	1.1	12.1	2.5	67	4.5	271
.7	2.75	1.3	18.0	3.0	98	5.0	355

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	37.5	0.64	15.2	16	1.55	1.17	0.69	0.31	67	1.66	14.7	0.45
2	3.1	.59	27.5	1.8	1.35	1.01	2.8	.31	4.8	1.45	2.6	.41
3	25	9.2	32	3.8	1.17	2.45	.64	.31	1.17	5.6	1.77	.38
4	27	5.0	1.4	11	1.09	30	.54	.28	78	4.1	1.77	.38
5	7.5	.87	35	1.5	1.01	32.5	.64	1.33	57	1.66	23.5	.45
6	6.4	2.7	94	36	24.5	63	.64	2.45	6.5	11.3	81	.38
7	3.15	69	34	62	2.85	82	.54	.49	1.55	1.55	112	.38
8	1.55	60	2.8	170	1.26	44	.49	.41	155	1.35	12.4	.54
9	5.7	38	1.7	125	3.45	81	.45	.38	291	1.26	8.0	2.1
10	1.89	56	1.3	52	1.09	68	.45	.34	310	3.7	1.77	1.76
11	1.46	18.2	8.8	68	1.01	85	.45	.34	158	110	1.45	.49
12	1.26	2.0	1.2	58	.87	34.5	.41	.49	202	94	1.26	1.31
13	1.09	1.66	1.1	44	.81	6.4	.45	.34	179	74	1.09	2.7
14	1.09	8.2	1.4	54	.81	1.66	14.8	.61	190	30.5	2.65	9.9
15	1.01	2.4	1.2	56	4.2	1.45	5.4	.34	109	17.2	1.48	13.8
16	.94	1.35	.96	29	1.72	13.4	.59	.38	76	5.0	.87	10.9
17	.94	1.17	.92	5.6	.81	9.9	.49	5.2	77	18.1	.81	1.67
18	.94	1.09	2.7	56	.87	1.26	.45	122	54	10.7	.75	4.3
19	2.75	1.01	30	11	3.2	1.01	.41	97	32.5	1.66	.69	1.22
20	1.71	18.2	34	1.9	1.26	.94	.41	29	22.5	24.5	.64	.64
21	.94	12.3	2.6	1.4	1.26	1.17	.38	2.05	103	21.5	.64	.59
22	2.5	19.6	1.3	6.0	14.7	.87	.38	.81	79	2.25	.59	.54
23	.94	1.77	1.4	160	7.3	.81	.38	.75	18.1	1.66	.54	.49
24	.81	1.26	1.1	140	15.1	2.4	.34	.64	44	1.45	.49	.54
25	.75	1.10	5.6	37	1.26	.87	.38	14.5	46	1.26	.45	.45
26	.64	4.5	1.7	62	1.01	.87	.69	75	55	1.26	.59	3.95
27	.68	1.17	3.8	5.6	.94	.75	.49	110	93	3.7	.45	3.6
28	1.01	1.09	1.3	88	4.1	.69	.54	89	34.5	6.5	.45	1.00
29	1.62	1.01	1.7	2.5	1.17	.64	.45	-	23	43	.70	.64
30	.87	5.8	5.6	2.0	3.85	3.55	.38	-	24	23.5	.76	.64
31	.69	24	-	1.77	-	.87	.34	-	3.45	-	.54	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	37.5	0.64	4.63	7.16	143	440
August	69	.59	12.0	18.6	371	1,140
September	94	.92	11.8	18.3	353	1,080
October	170	1.4	44.2	68.4	1,370	4,200
November	24.5	.81	3.52	5.45	106	324
December	85	.64	18.6	28.6	574	1,760
Calendar year 1941	189	.22	13.4	20.7	4,900	15,020
January	14.8	.34	1.18	1.83	36.5	112
February	122	.28	19.8	30.6	555	1,700
March	310	1.17	83.7	130	2,600	7,960
April	110	1.26	17.5	27.1	525	1,610
May	112	.45	8.95	13.8	277	851
June	13.8	.38	2.22	3.43	66.6	204
Fiscal year 1941-42	310	.28	19.1	29.6	6,980	21,380

Note.- No gage-height record Sept. 3 to Oct. 29; discharge computed on basis of records for East and West Wailuanui Streams.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 2½ miles south of Keanae post office.

Drainage area.- 0.6 square mile.

Records available.- November 1921 to June 1942. January 1914 to October 1917 at site 500 feet upstream.

Average discharge.- 20 years (1922-42), 5.98 million gallons a day (9.25 second-feet).

Extremes.- Maximum discharge during year, 646 million gallons a day (1,000 second-feet) Mar. 8 (gage height, 5.73 feet), from rating curve extended above 50 million gallons a day; minimum, 0.59 million gallons a day (0.91 second-foot) Feb. 4, 5, June 4, 6, 7 1914-17, 1921-42: 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. No diversions above station. Water used for irrigation in central Maui.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Oct. 8

0.4	1.00
.5	2.5
.6	4.4
.7	6.3

Note.- Same as following table above 0.7 foot.

Oct. 9 to June 30

0.3	0.30	0.8	9.2	1.8	66
.4	.89	.9	12.5	2.2	102
.5	2.3	1.1	22	2.6	143
.6	4.2	1.3	33		
.7	6.3	1.5	46		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.8	1.94	10.1	11.3	2.8	3.0	1.61	0.65	9.8	3.6	9.5	0.80
2	5.2	1.76	17.1	4.9	2.65	3.2	5.2	.65	3.8	3.2	4.8	.72
3	11.6	7.6	18.6	6.6	2.3	4.5	1.93	.59	3.4	4.8	3.2	.65
4	12.7	4.7	4.4	8.0	2.3	14.4	1.61	.59	26	4.1	3.4	.65
5	7.1	2.9	16.4	4.2	2.05	11.7	2.3	1.27	17.7	2.8	14.5	.72
6	7.7	5.3	40	12.2	12.6	21	1.77	2.25	4.3	6.2	36	.65
7	6.0	34.5	15.4	19.6	4.6	18.2	1.61	.72	3.4	2.8	36.5	1.15
8	4.4	27	4.6	64	3.25	12.1	1.32	.65	86	2.45	5.4	2.15
9	6.8	16.8	3.65	40	5.6	24.5	1.20	.65	107	2.3	6.6	5.7
10	4.5	28.5	3.05	16.2	3.2	15.0	1.20	.59	135	6.7	3.6	4.4
11	3.45	9.6	6.9	18.2	3.7	24	1.09	.65	54	39	2.8	1.32
12	2.9	4.2	2.7	14.5	2.45	8.3	.99	.80	73	21.5	2.45	3.1
13	2.5	3.65	2.5	14.0	2.3	4.4	1.35	.65	60	30	2.3	4.2
14	2.8	7.4	3.5	14.6	2.3	3.6	13.1	2.15	64	16.0	4.3	5.0
15	2.5	4.8	2.75	14.0	6.7	3.2	5.2	.72	43	7.2	2.7	10.4
16	2.2	3.25	2.3	10.1	4.3	7.2	1.77	.99	31	5.0	1.93	5.2
17	2.7	2.9	2.1	5.8	2.45	6.7	1.61	4.8	32	10.9	1.61	3.0
18	3.3	2.7	4.3	27	2.3	3.6	1.32	30.5	23.5	6.4	1.45	2.65
19	4.5	3.35	14.3	8.1	5.1	3.0	1.20	21	11.1	4.0	1.32	2.05
20	3.6	12.2	17.0	4.6	3.2	2.8	1.09	5.8	9.1	13.9	1.32	1.77
21	2.7	8.8	3.65	3.8	3.25	3.2	.99	3.4	51	10.5	1.20	1.45
22	6.0	13.6	3.05	8.3	11.1	2.45	.89	2.3	27.5	4.2	1.09	1.32
23	3.05	4.7	3.05	59	6.7	2.3	.80	1.77	6.8	3.2	.99	2.3
24	5.7	3.25	2.5	47	9.1	4.2	.80	1.61	17.0	2.8	.89	3.05
25	2.7	3.1	6.6	11.9	3.2	2.95	2.1	5.0	21	2.45	.89	1.32
26	2.1	5.7	4.6	35.5	2.65	2.45	1.45	17.0	22	2.05	1.09	3.35
27	1.94	3.05	5.7	44	2.05	2.05	.99	18.2	21.5	3.8	.80	6.7
28	2.2	2.5	4.3	5.7	5.4	1.93	.99	14.7	10.3	5.3	.72	3.05
29	4.5	3.2	4.8	4.2	2.45	1.77	.80	-	12.3	25	1.68	2.05
30	3.8	6.3	6.8	3.6	5.1	4.8	.72	-	10.3	13.9	1.07	2.45
31	2.1	9.7	-	3.2	-	2.05	.72	-	4.8	-	.80	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	13.8	1.94	4.74	7.33	147	451
August	34.5	1.76	8.04	12.4	249	765
September	40	2.1	7.89	12.2	237	726
October	64	3.2	17.6	27.2	544	1,670
November	12.6	2.05	4.24	6.56	127	390
December	24.5	1.77	7.24	11.2	225	689
Calendar year 1941	71	.45	7.15	11.1	2,610	8,010
January	13.1	.72	1.93	2.99	59.7	183
February	30.5	.59	5.02	7.77	141	432
March	135	3.4	32.3	50.0	1,000	3,070
April	39	2.05	8.87	13.7	266	816
May	36.5	.72	5.06	7.83	157	482
June	10.4	.65	2.78	4.30	83.3	256
Fiscal year 1941-42	135	.59	8.87	13.7	3,240	9,930

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 and July 1922 to June 1942.

Average discharge.- 20 years (1922-42), 9.64 million gallons a day (14.9 second-feet).

Extremes.- Maximum discharge during year, 994 million gallons a day (1,540 second-feet) Mar. 8 (gage height, 5.86 feet), from rating curve extended above 130 million gallons a day; minimum, 0.66 million gallons a day (1.02 second-feet) Feb. 11.
1913-17, 1922-42: 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 except those for period of no gage-height record, which are fair. No diversions above station. Water used for irrigation of sugarcane in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.7	0.42	1.3	5.8	2.0	33.5
.8	.76	1.4	8.0	2.2	49
.9	1.30	1.5	10.5	2.5	82
1.0	2.0	1.6	13.7	3.0	152
1.1	2.95	1.7	17.5	3.5	245
1.2	4.2	1.8	22	4.0	357

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24	2.0	11.4	12.1	5.2	4.1	2.2	1.42	66	8.0	10.5	1.36
2	9.5	1.82	17.2	5.4	4.8	4.0	6.2	1.42	15.1	7.6	6.5	1.23
3	16.5	7.5	17.3	7.0	4.6	6.5	2.4	1.42	8.0	8.6	5.3	1.11
4	17.2	4.8	4.8	9.0	4.3	24.5	2.2	1.36	58	8.2	5.5	1.06
5	9.8	2.95	17.4	4.7	4.0	23	3.15	2.25	39.5	7.3	15.1	1.17
6	10.0	5.7	53	24	13	50	2.35	3.65	12.8	11.9	55	1.00
7	7.3	35	18.1	43	7.8	63	2.0	1.23	7.3	6.7	84	1.68
8	5.3	28	7.1	104	5.4	31	1.90	1.00	105	6.0	10.0	2.7
9	8.1	20.5	4.8	87	7.4	59	1.90	.80	310	5.5	8.1	6.3
10	5.2	31.5	3.95	36.5	4.6	50	1.82	.75	268	9.6	5.2	4.6
11	3.8	12.9	9.7	49	4.8	66	1.74	.70	140	67	4.2	1.60
12	3.3	5.6	3.95	45	4.1	25	1.67	1.05	159	73	3.6	3.55
13	3.1	4.7	3.45	30	3.9	10.5	1.91	.75	148	48	3.2	5.1
14	3.3	8.6	4.1	39	4.0	6.7	13.8	2.9	174	23.5	5.3	7.7
15	3.1	5.4	3.8	43	7.0	5.3	7.0	.75	88	13.1	3.75	12.2
16	2.7	3.7	2.75	18.9	5.0	11.8	2.2	1.47	54	9.0	2.95	12.5
17	3.2	3.1	2.5	9.8	3.9	9.6	1.82	6.7	42	13.9	2.55	5.8
18	3.75	3.1	5.2	28.5	4.0	5.3	1.67	119	30	10.0	2.4	5.9
19	5.1	3.85	20	12	6.4	4.4	1.67	99	16.4	7.3	2.2	4.6
20	3.85	13.6	20	6.4	3.6	3.8	1.60	30	13.6	15.3	2.0	2.65
21	2.85	9.9	5.0	5.0	3.75	4.1	1.60	11.0	49	13.2	1.90	2.2
22	6.7	14.6	3.8	8.0	11.9	3.2	1.60	5.6	54	7.1	1.82	1.82
23	3.3	4.8	4.8	100	7.9	2.95	1.60	3.95	13.1	6.2	1.67	3.05
24	5.7	3.6	3.6	95	10.5	5.3	1.60	3.45	27.5	5.8	1.60	3.85
25	2.95	4.1	7.7	25	3.8	3.85	2.75	18.6	25.5	5.3	1.67	1.82
26	2.4	5.8	5.8	27	2.95	3.1	2.05	62	28	5.3	1.74	4.8
27	2.2	3.1	6.1	45	2.65	2.5	1.60	124	72	6.9	1.48	7.7
28	2.6	2.65	4.6	10	6.9	2.4	1.74	79	22.5	7.3	1.42	3.85
29	5.0	3.65	5.5	7.0	2.95	2.2	1.54	-	18.1	22	2.7	2.65
30	3.95	6.5	7.5	6.4	6.3	5.8	1.54	-	16.4	14.3	1.74	2.85
31	2.2	13.4	-	5.6	-	2.9	1.42	-	9.0	-	1.36	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	24	2.2	6.06	9.38	188	577
August	35	1.82	8.92	13.8	276	848
September	53	2.5	9.50	14.7	285	874
October	104	4.7	30.6	47.3	948	2,910
November	13	2.65	5.58	8.63	167	514
December	66	2.2	16.2	25.1	502	1,540
Calendar year 1941	152	.53	10.9	16.9	3,970	12,180
January	13.8	1.42	2.59	4.01	80.2	246
February	124	.70	20.9	32.3	585	1,800
March	310	7.3	67.4	104	2,090	6,410
April	73	5.3	15.1	23.4	453	1,390
May	84	1.36	8.27	12.8	256	787
June	12.5	1.00	3.95	6.11	118	363
Fiscal year 1941-42	310	.70	16.3	25.2	5,950	18,260

Note.- No gage-height record Oct. 19 to Nov. 18; discharge computed on basis of records for East and West Wailauiki and East Wailuanui Streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, 4½ miles northwest of Nahiku, and 4⅝ miles southeast of Kailua. Prior to Apr. 10, 1939, wooden Parshall flume at same site and datum.

Records available.- September 1934 to June 1942.

Extremes.- Maximum discharge during year, 19.4 million gallons a day (30.0 second-feet) Oct. 8 (gage height, 2.92 feet), from rating curve extended above 4.5 million gallons a day by logarithmic plotting; minimum, 1.15 million gallons a day (1.78 second-feet) Oct. 12.

1934-42: Maximum discharge, 19.4 million gallons a day (30.0 second-feet) Feb. 25, 1935, Oct. 8, 1941 (gage height, 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 (0.09 second-foot) Feb. 28, 1935, Apr. 7, 8, 1938, Mar. 5, 6, 1939.

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

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.05	2.8	3.05	3.15	3.4	3.4	2.9	2.4	4.2	2.4	2.7	3.05
2	3.25	2.75	3.3	2.55	3.3	3.3	3.05	2.4	2.9	2.4	2.6	3.05
3	3.9	2.95	3.6	2.6	3.25	3.5	2.9	2.4	2.75	2.45	2.55	3.05
4	3.95	3.25	2.8	2.9	3.2	4.2	2.85	2.35	5.0	2.45	2.55	3.05
5	3.3	2.95	3.3	2.55	3.15	3.6	2.8	2.45	4.2	2.4	2.85	3.05
6	3.3	2.95	5.1	2.5	3.85	4.6	2.8	2.45	3.0	2.55	4.0	3.0
7	3.4	4.8	3.4	4.3	3.25	4.8	2.65	2.35	2.8	2.35	4.3	2.95
8	3.3	4.7	2.9	5.2	3.2	4.0	2.6	2.3	4.5	2.35	2.55	2.95
9	3.4	4.1	2.9	4.7	3.4	5.0	2.55	2.3	5.2	2.3	2.6	3.0
10	3.3	4.8	2.9	2.4	3.2	4.5	2.55	2.3	5.4	2.45	2.55	3.1
11	3.25	3.5	3.35	2.7	3.3	5.4	2.55	2.3	3.05	4.2	2.6	3.0
12	3.2	2.95	2.85	2.8	3.2	3.7	2.55	2.35	4.8	4.1	2.7	3.0
13	3.15	2.9	2.8	3.15	3.2	3.45	2.5	2.3	4.2	3.6	2.7	3.15
14	3.1	3.0	2.8	4.5	3.2	3.4	3.15	2.35	4.7	2.75	2.75	3.2
15	3.05	2.95	2.75	4.8	3.5	3.4	3.05	2.3	3.5	2.5	2.7	3.3
16	3.0	2.9	2.7	3.65	3.3	3.7	2.65	2.3	3.0	2.4	2.7	3.25
17	2.95	2.8	2.65	3.25	3.2	3.45	2.5	2.45	2.65	2.55	2.7	3.0
18	2.95	2.8	2.7	4.8	3.2	3.3	2.5	5.4	2.4	2.45	2.65	2.95
19	3.0	2.7	3.4	3.5	3.3	3.3	2.5	5.2	2.0	2.4	2.65	2.95
20	3.05	3.5	3.65	3.2	3.2	3.25	2.5	3.15	1.92	2.6	2.65	2.95
21	2.95	3.2	2.75	3.2	3.3	3.2	2.5	2.65	3.0	2.65	2.6	2.95
22	3.05	3.35	2.65	3.5	4.0	3.15	2.5	2.5	3.1	2.5	2.75	2.95
23	3.0	2.85	2.7	6.4	3.7	3.1	2.5	2.35	1.78	2.6	3.1	3.0
24	3.15	2.8	2.6	5.7	3.9	3.15	2.5	2.3	2.3	2.6	3.1	3.05
25	3.0	2.7	2.85	2.6	3.5	3.05	2.5	2.95	2.45	2.55	3.1	2.9
26	2.95	2.9	2.6	3.2	3.4	3.05	2.55	4.5	2.25	2.55	3.1	3.15
27	2.9	2.7	2.6	4.3	3.3	3.0	2.5	5.1	3.4	2.55	3.1	3.15
28	2.95	2.65	2.55	1.82	3.4	2.95	2.45	4.5	2.0	2.65	3.1	2.95
29	3.0	2.55	2.6	1.82	3.3	2.9	2.45	-	1.87	2.95	3.1	2.9
30	2.95	2.75	2.7	2.4	3.5	3.05	2.45	-	2.15	2.8	3.1	2.85
31	2.9	3.4	-	3.45	-	2.95	2.4	-	2.4	-	3.05	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.95	2.9	3.15	4.87	97.6	300
August	4.8	2.55	3.16	4.89	97.9	300
September	5.1	2.55	2.98	4.61	89.5	275
October	6.4	1.82	3.47	5.37	108	330
November	4.0	3.15	3.37	5.21	101	310
December	5.4	2.9	3.57	5.52	111	340
Calendar year 1941	7.9	1.82	3.12	4.83	1,140	3,500
January	3.15	2.4	2.63	4.07	81.4	250
February	5.4	2.3	2.88	4.46	80.6	248
March	5.4	1.78	3.19	4.94	98.9	303
April	4.2	2.3	2.67	4.13	80.0	246
May	4.3	2.55	2.88	4.46	89.2	274
June	3.3	2.85	3.03	4.69	90.8	279
Fiscal year 1941-42	6.4	1.78	3.08	4.77	1,130	3,460

Note.- No gage-height record Nov. 8 to Dec. 4; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Koolau ditch near Keanae

Location.- Concrete weir control, 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 1942.

Average discharge.- 24 years (1918-42), 67.6 million gallons a day (105 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, 0.6 million gallons a day (0.9 second-foot) Oct. 15.
1910-12, 1917-42: 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 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	138	41	140	140	83	72	51	23	110	133	140	31
2	140	37	140	111	76	72	89	21.5	129	122	118	29.5
3	138	65	141	111	72	117	53	21.5	88	129	90	28
4	134	82	97	137	66	137	46	21.5	122	133	94	26
5	141	56	100	101	62	138	58	33	122	111	102	28
6	140	74	134	92	97	134	48	43	140	130	134	26
7	133	140	141	122	118	122	41	23	101	101	122	30.5
8	104	140	115	120	87	134	39	21.5	109	90	140	55
9	122	140	94	134	115	134	37	20	122	83	137	75
10	104	134	76	134	76	122	35	20	122	124	104	82
11	83	141	112	134	79	122	33	18.7	127	122	87	37
12	72	104	72	122	59	134	33	21.5	134	122	76	60
13	64	83	62	134	53	140	37.5	18.7	134	122	64	59
14	68	105	68	122	53	111	114	34	13	138	88	114
15	64	103	64	91	110	94	85	20	140	138	94	111
16	57	68	51	134	90	140	44	28.5	140	141	68	137
17	68	57	48	141	55	137	37	55	140	140	57	101
18	70	55	82	138	55	104	35	122	140	140	53	93
19	84	68	140	138	98	90	33	122	140	125	48	80
20	78	127	133	133	72	83	31	138	116	137	44	48
21	59	140	83	111	77	94	29.5	110	122	140	41	41
22	109	137	68	108	93	76	28	55	122	125	39	35
23	68	101	76	122	113	72	28	41	140	101	37	47
24	87	68	62	110	128	97	26	35	117	87	37	74
25	62	61	101	130	76	85	35.5	81	122	79	35	37
26	48	86	118	134	59	72	35	122	122	72	37	72
27	46	57	115	119	53	62	29.5	110	110	102	33	125
28	50	51	96	140	105	57	28	110	122	115	31	73
29	82	66	86	125	53	53	26	-	134	136	48	51
30	72	73	122	108	98	91	24.5	-	134	140	45	54
31	46	140	-	97	-	64	23	-	141	-	33	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	141	46	88.1	136	2,730	8,380
August	141	37	90.3	140	2,800	8,590
September	141	48	97.9	151	2,940	9,010
October	141	91	122	189	3,790	11,640
November	128	53	81.0	125	2,430	7,460
December	140	53	102	158	3,190	9,700
Calendar year 1941	141	17.4	83.0	128	30,300	93,010
January	114	23	41.7	64.5	1,290	3,970
February	138	18.7	53.2	82.3	1,490	4,570
March	141	88	126	195	3,900	11,960
April	141	72	119	184	3,530	10,980
May	140	31	73.4	114	2,280	6,980
June	137	26	62.0	95.9	1,860	5,710
Fiscal year 1941-42	141	18.7	88.3	137	32,250	98,950

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

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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 1942.

Average discharge.- 26 years (1916-42), 16.1 million gallons a day (24.9 second-feet).

Extremes.- Maximum discharge during year, 987 million gallons a day (1,530 second-feet) Oct. 8 (gage height, 6.12 feet), from rating curve extended above 300 million gallons a day; minimum, 0.42 million gallons a day (0.65 second-foot) Feb. 11, 12.
1913-42: Maximum discharge, 1,770 million gallons a day (2,700 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.6	0.32	1.0	2.0	1.8	26	3.0	162
.7	.53	1.2	3.95	2.0	41	3.5	260
.8	.86	1.4	7.9	2.3	70	4.0	375
.9	1.35	1.6	15.0	2.6	104	4.5	505

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	42	2.0	17.4	28	3.2	9.5	2.15	0.63	99	10.1	21	1.30
2	16.6	1.80	22.5	8.0	2.8	6.4	5.9	.56	16.3	7.7	5.1	1.10
3	51	12.7	29.5	9.9	2.5	19.0	2.5	.53	S.0	10.9	3.7	1.01
4	26.5	13.1	5.8	23.5	2.3	79	2.0	.49	124	19.1	3.85	.96
5	14.6	3.1	32.5	6.2	2.2	56	3.35	.68	74	9.7	32	1.01
6	17.3	7.1	119	27.5	23	99	2.8	1.10	17.1	40	143	.91
7	11.8	88	48	64	8.0	118	2.0	.94	6.6	S.0	156	1.59
8	6.4	96	11.0	158	5.4	68	1.74	.63	138	5.4	14.S	2.8
9	12.1	58	4.6	172	9.0	110	1.54	.60	419	4.5	8.4	10.0
10	6.3	97	3.4	64	4.1	94	1.42	.49	43S	23	5.1	10.2
11	3.95	35.5	22.5	107	4.2	130	1.30	.45	201	168	3.6	2.5
12	3.15	S.5	5.7	104	2.7	39.5	1.25	.64	292	175	2.9	6.5
13	2.8	4.8	3.05	66	2.4	13.2	1.38	.70	272	87	2.65	19.9
14	2.9	5.4	10.0	98	2.4	7.2	1S.1	6.6	229	41	18.8	43
15	2.75	3.85	S.2	82	15	5.0	7.6	1.25	166	22	13.3	14.7
16	3.7	2.7	2.9	28	6.2	27.5	2.2	2.35	124	14.2	5.9	21
17	5.5	2.3	2.55	14	2.8	12.4	1.68	26.5	7S	29	2.8	7.7
18	5.6	2.35	S.4	84	2.7	5.2	1.48	17S	64	19.6	2.4	S.2
19	6.6	6.4	50	3S	7.6	3.95	1.25	156	2S	S.2	2.15	5.0
20	5.3	39.5	40	11	3.9	3.25	1.20	36	15.7	20.5	1.94	2.4
21	2.9	29	7.8	6.6	3.4	3.15	1.10	10.0	75	1S.6	1.S0	1.94
22	8.4	26	4.6	11	40	2.65	1.01	3.4	S8	6.5	1.68	1.68
23	4.2	7.S	22.5	190	20	2.4	.96	2.1	17.5	4.6	1.54	6.S
24	9.6	3.95	6.5	170	33	4.7	.86	1.74	61	3.7	1.48	6.S
25	4.9	3.85	14.4	54	6.4	3.5	.96	24	58	3.25	1.48	2.4
26	2.65	4.7	S.5	76	3.3	2.65	1.01	81	70	2.S	1.70	17.4
27	2.25	2.7	11.S	110	2.S	2.3	.86	18S	186	2.S	1.35	19.3
28	2.35	2.55	6.7	15	S.0	2.0	1.29	129	37	3.35	1.25	5.7
29	5.7	4.0	7.2	6.6	3.05	1.87	.94	-	3S.5	2S	2.85	4.9
30	4.3	1S.3	14.2	5.0	33	6.S	.76	-	36.5	24	1.80	5.7
31	2.3	47	-	4.0	-	3.9	.66	-	11.6	-	1.42	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	51	2.25	9.8S	15.3	306	940
August	97	1.80	20.6	31.9	640	1,960
September	119	2.55	1S.4	2S.5	551	1,690
October	190	4.0	59.4	91.9	1,840	5,650
November	40	2.2	S.84	13.7	265	S14
December	130	1.87	30.4	47.0	942	2,890
Calendar year 1941	371	.38	21.7	33.6	7,910	24,280
January	1S.1	.66	2.36	3.65	73.2	225
February	188	.45	30.5	47.2	S54	2,620
March	438	6.6	113	175	3,490	10,710
April	175	2.8	27.4	42.4	821	2,520
May	156	1.25	15.1	23.4	468	1,440
June	43	.91	7.81	12.1	234	719
Fiscal year 1941-42	438	.45	2S.7	44.4	10,480	32,180

Note.- No gage-height record Oct. 15 to Nov. 2S; discharge computed on basis of records for Haipuaena Stream near Huelo.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 26 years (1916-42), 10.3 million gallons a day (15.9 second-feet).

Extremes.- Maximum discharge during year, 1,000 million gallons a day (1,550 second-feet) Oct. 8 (gage height, 4.58 feet), from rating curve extended above 150 million gallons a day; minimum, 0.54 million gallons a day (0.84 second-foot) Feb. 12.
1913-42: 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 good. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.0	0.48	1.0	7.8	2.2	56
.1	.78	1.2	11.0	2.4	77
.2	1.23	1.4	15.5	2.6	103
.4	2.2	1.6	21	2.8	135
.6	3.55	1.8	28.5	3.0	175
.8	5.3	2.0	40	3.3	256

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	21	2.05	10.8	17.6	2.9	5.2	2.1	0.75	37.5	5.1	14.1	1.14
2	8.6	1.85	16.1	6.8	2.6	4.3	5.0	.69	7.0	4.5	5.3	.96
3	20.5	6.9	21	6.8	2.35	9.3	2.35	.66	4.2	5.6	4.1	.87
4	19.5	7.4	5.6	11.9	2.2	35.5	1.95	.63	70	8.2	4.4	.78
5	10.8	3.2	18.9	4.8	2.05	23	2.95	1.08	32.5	5.6	20	1.00
6	11.0	5.9	68	8.0	11.2	54	2.45	1.55	7.6	18.4	81	.78
7	9.2	55	23.5	33	5.8	59	1.95	1.05	4.2	4.9	101	.92
8	5.8	48	6.8	109	4.0	27.5	1.70	.72	99	4.1	8.5	2.9
9	9.4	29.5	4.2	76	6.7	54	1.61	.69	231	3.55	6.9	6.0
10	6.0	55	3.5	29.5	3.7	37	1.46	.63	247	8.1	4.4	6.7
11	4.1	17.6	9.1	44	4.0	64	1.37	.57	107	95	3.55	2.1
12	3.25	5.8	3.8	48	2.65	19.5	1.28	1.09	161	91	3.05	4.9
13	2.85	4.2	2.9	30.5	2.35	7.8	1.57	.78	144	51	2.7	8.0
14	2.95	4.9	3.55	41	2.35	4.8	15.2	3.95	130	20.5	7.0	22.5
15	2.85	3.65	4.5	35	8.0	4.1	5.8	1.18	93	12.2	6.1	7.2
16	2.0	2.85	2.6	17.7	4.7	12.7	2.4	2.05	62	7.8	3.55	15.7
17	3.75	2.45	2.4	7.7	2.7	8.2	1.95	8.2	43	14.7	2.6	5.0
18	4.9	2.35	5.1	36	2.65	4.4	1.70	86	32.5	11.0	2.25	3.35
19	5.6	4.1	22	15.8	6.1	3.8	1.51	78	16.6	5.8	2.0	3.0
20	4.4	20.5	23.5	6.5	3.7	3.25	1.42	14.3	11.2	12.4	1.80	2.15
21	2.9	14.1	5.2	4.4	3.25	3.2	1.28	6.0	41	13.1	1.70	1.85
22	6.7	16.9	4.0	6.4	16.9	2.7	1.18	3.25	43	5.4	1.61	1.65
23	3.8	5.8	9.2	110	11.5	2.5	1.10	2.45	8.6	4.3	1.46	3.7
24	5.1	3.8	4.1	92	15.0	4.3	1.05	2.1	26.5	3.7	1.42	4.8
25	3.65	4.4	8.0	21	4.3	3.5	1.10	9.0	31	3.2	1.37	2.1
26	2.45	9.6	6.4	34	3.15	2.85	1.23	31	30.5	2.85	1.80	7.6
27	2.15	3.55	8.7	59	2.65	2.4	1.05	f91	92	3.35	1.28	9.5
28	2.55	2.9	5.6	7.4	6.2	2.15	1.37	53	27.5	4.1	1.18	5.2
29	5.5	3.6	5.5	4.9	2.9	1.95	1.14	-	14.6	22.5	2.15	3.35
30	3.9	9.1	7.9	4.0	15.0	5.0	.87	-	15.9	15.8	1.42	3.65
31	2.35	20.5	-	3.4	-	3.15	.78	-	6.5	-	1.10	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	21	2.15	6.46	10.0	200	615
August	55	1.85	12.2	18.9	377	1,160
September	68	2.4	10.7	16.6	322	990
October	110	3.4	30.1	46.6	932	2,860
November	18.9	2.05	5.52	8.54	166	508
December	64	1.95	15.3	23.7	475	1,460
Calendar year 1941	284	.11	11.7	18.1	4,270	13,110
January	15.2	.78	2.25	3.48	69.8	214
February	91	.57	14.4	22.3	402	1,230
March	247	4.2	60.6	93.8	1,880	5,760
April	95	2.85	15.6	24.1	468	1,440
May	101	1.10	9.70	15.0	301	923
June	22.5	.78	4.68	7.24	140	430
Fiscal year 1941-42	247	.57	15.7	24.3	5,730	17,590

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, about 1,800 feet (from topographic map).

Records available.- March 1938 to June 1942.

Extremes.- Maximum discharge during year, 15.4 million gallons a day (23.8 second-feet) Mar. 8 (gage height, 1.83 feet); minimum, 0.25 million gallons a day (0.39 second-foot) Feb. 11.
1938-42: 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 good. 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	2.3	0.48	1.72	2.4	0.52	0.90	0.45	0.27	3.65	1.19	1.90	0.36
2	1.25	.48	2.1	1.14	.48	.75	.94	.27	1.08	1.07	.95	.33
3	2.2	1.11	2.65	1.17	.45	1.34	.48	.27	.79	1.12	.75	.33
4	2.2	1.41	1.01	1.84	.45	3.5	.45	.27	4.8	1.60	.80	.33
5	1.45	.65	1.93	.95	.39	2.45	.56	.29	3.3	1.16	2.15	.31
6	1.50	.92	5.5	1.38	1.33	4.1	.48	.33	1.23	2.6	5.2	.31
7	1.35	4.8	3.1	3.65	1.00	4.8	.39	.31	.80	1.07	5.4	.39
8	.95	4.4	1.26	4.7	.70	3.0	.39	.27	3.8	.90	1.46	.54
9	1.33	3.5	.80	5.0	1.02	4.4	.36	.27	8.1	.85	1.14	1.25
10	1.03	5.0	.70	3.2	.60	3.8	.36	.27	8.7	1.70	.80	1.13
11	.80	2.8	1.52	3.6	.60	5.0	.35	.27	5.6	6.4	.70	.48
12	.70	1.19	.80	3.95	.45	2.4	.33	.29	7.6	6.5	.60	.85
13	.60	.85	.60	3.15	.42	1.25	.39	.29	7.6	4.6	.56	1.21
14	.65	.85	.75	3.8	.42	.90	1.65	.73	7.2	2.7	1.22	2.3
15	.60	.75	.87	3.35	1.24	.80	.95	.33	6.4	1.98	1.10	1.17
16	.68	.60	.56	2.25	.83	1.81	.45	.39	5.5	1.51	.70	1.79
17	.80	.56	.52	1.25	.52	1.25	.42	1.14	4.7	2.15	.52	.95
18	.84	.56	.95	3.2	.45	.85	.36	5.4	4.0	1.81	.48	.70
19	.94	.89	2.95	2.0	.85	.70	.39	5.2	2.4	1.19	.45	.60
20	.80	2.75	2.85	1.11	.60	.60	.36	1.96	1.80	1.86	.45	.48
21	.65	2.25	.99	.80	.52	.86	.33	1.02	4.2	1.85	.42	.42
22	1.23	2.35	.75	.92	1.90	.52	.33	.60	4.4	1.07	.42	.39
23	.80	1.19	1.45	4.7	1.46	.48	.33	.48	1.78	.85	.42	.78
24	1.05	.80	.82	5.7	1.93	.75	.31	.45	3.55	.75	.39	.97
25	.85	.79	1.29	2.45	.75	.66	.31	1.34	3.8	.65	.39	.48
26	.60	1.25	1.07	2.7	.52	.52	.31	3.2	3.8	.60	.42	.78
27	.56	.70	1.40	3.9	.45	.48	.29	5.0	6.5	.57	.39	1.55
28	.56	.60	.95	1.19	.87	.45	.33	4.6	2.85	.65	.36	.80
29	.95	.65	.96	.85	.48	.45	.31	-	2.35	2.7	.48	.60
30	.78	1.28	1.28	.70	1.55	.86	.29	-	2.5	2.2	.39	.65
31	.52	2.85	-	.60	-	.60	.29	-	1.38	-	.33	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	2.3	0.52	1.02	1.58	31.5	97
August	5.0	.48	1.59	2.46	49.3	151
September	5.5	.52	1.47	2.27	44.1	135
October	5.7	.60	2.50	3.87	77.6	238
November	1.93	.39	.802	1.24	24.0	74
December	5.0	.45	1.65	2.55	51.0	157
Calendar year 1941	7.0	.39	1.70	2.63	621	2,060
January	1.66	.29	.450	.696	14.0	43
February	5.4	.27	1.27	1.96	35.5	109
March	8.7	.79	4.07	6.30	126	387
April	6.5	.57	1.86	2.88	55.8	171
May	5.4	.33	1.02	1.58	31.7	97
June	2.3	.31	.774	1.20	23.2	71
Fiscal year 1941-42	8.7	.27	1.55	2.40	564	1,730

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 (revised) above mean sea level (East Maui Irrigation Co. bench mark).

Records available.- April 1922 to June 1942. February 1930 to October 1935 at site 100 feet upstream.

Average discharge.- 19 years (1922-29, 1930-42), 14.9 million gallons a day (23.1 second-feet).

Extremes.- Maximum discharge during year, 85 million gallons a day (132 second-feet) Mar. 8 (gage height, 2.14 feet); minimum, 0.51 million gallons a day (0.79 second-foot) Feb. 12.

1922-42: 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 Nuaailua 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	22.5	3.75	25.5	33	6.0	17.1	3.6	0.76	49	17.5	35	1.1
2	18.4	2.65	30.5	17.5	4.8	13.2	15.4	.69	21	14.8	15	.97
3	34	12.1	39	16.4	4.1	24	4.8	.62	12.7	18.3	7.0	.83
4	34.5	14.2	16.1	25.5	3.3	48	2.8	.55	57	23.5	5.0	.83
5	23	8.9	20	13.4	2.5	36	7.6	2.55	49	30	20	1.11
6	24	15.3	58	17.6	19.8	50	5.8	3.35	21.5	58	56	.83
7	20.5	49	41	45	18.4	56	2.95	.97	12.4	15	60	2.2
8	14.8	46	18.8	47	12.7	43	1.91	.69	36	20	45	8.1
9	22	36	10.8	51	19.6	55	1.58	.69	55	17	30	18.1
10	15.2	47	8.2	46	11.2	51	1.47	.55	65	14	15	17.4
11	9.9	32	20.5	45	12.4	62	1.25	.55	54	50	7.0	4.6
12	8.5	17.2	10.4	44	5.4	36.5	1.25	1.32	62	60	5.4	15.4
13	6.9	12.6	6.2	43	4.1	21.5	2.05	.83	62	62	4.7	14.0
14	7.8	15.9	7.7	51	4.3	14.6	30	7.7	62	60	5.6	32
15	7.9	11.2	12.3	46	20.5	11.0	17.2	1.11	58	45	17	21
16	6.3	7.1	5.2	37	13.4	29	4.8	3.95	58	15	10.5	29.5
17	10.3	5.4	4.3	22	5.8	23.5	2.65	11.9	54	25	5.0	16.0
18	12.9	4.8	14.1	43	6.6	12.4	1.91	62	51	45	2.9	11.8
19	13.7	11.2	36	30.5	19.0	9.8	1.58	65	34.5	13	2.6	9.2
20	10.8	34	35.5	18.0	10.2	7.6	1.36	30.5	27	30	2.3	4.3
21	7.8	29.5	14.4	12.1	9.0	7.3	1.25	16.4	51	50	2.0	2.8
22	14.5	33	10.2	14.7	24.5	5.2	1.16	7.1	49	25	1.6	19.1
23	9.2	17.6	17.6	53	23.5	4.5	1.11	3.75	23.5	13	1.5	15.7
24	10.9	10.4	11.2	54	31	12.4	1.04	2.35	46	7.0	1.4	13.3
25	9.3	9.7	18.8	34	11.8	9.4	1.04	19.2	48	6.0	1.4	3.75
26	5.8	22.5	18.8	40	7.6	6.7	1.25	40	48	5.4	1.4	13.1
27	4.5	9.4	21	41	5.2	4.3	1.11	58	62	5.0	1.3	24
28	6.7	6.9	15.8	16.7	18.5	3.1	1.70	58	35.5	25	1.2	15.5
29	13.7	10.0	14.6	13.4	6.9	2.35	1.18	-	32	45	1.3	9.5
30	9.3	14.3	19.8	10.2	28.5	13.3	.83	-	33	60	1.2	11.2
31	5.2	39	-	8.0	-	15.0	.76	-	20.5	-	1.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	34.5	4.5	13.6	21.0	421	1,290
August	49	2.65	19.0	29.4	589	1,810
September	58	4.3	19.4	30.0	582	1,790
October	54	8.0	31.9	49.4	989	3,040
November	31	2.5	12.4	19.2	371	1,140
December	62	2.35	22.9	35.4	709	2,180
Calendar year 1941	71	.12	16.8	26.0	6,140	18,850
January	30	.76	4.01	6.20	124	382
February	65	.55	14.3	22.1	401	1,230
March	65	12.4	43.9	67.9	1,360	4,170
April	62	5.0	29.2	45.2	874	2,680
May	60	1.1	11.8	18.3	366	1,120
June	32	.83	11.2	17.3	337	1,030
Fiscal year 1941-42	65	.55	19.5	30.2	7,120	21,860

Note.- No gage-height record Apr. 10 to May 15, May 17 to June 1; discharge computed on basis of records for stations on all nearby ditches.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 from Puohokamoa Stream, 3½ miles southeast of Kailua, and 4.7 miles southeast of Huelo.

Records available.- April 1932 to June 1942.

Average discharge.- 10 years, 82.9 million gallons a day (128 second-feet).

Extremes.- Maximum discharge during year, 226 million gallons a day (350 second-feet) Nov. 23 (gage height, 5.32 feet); minimum, 3.0 million gallons a day (4.6 second-feet) Oct. 15.
1932-42: Maximum discharge, that of Nov. 23, 1941; no flow when water was shut out of ditch.

Remarks.- Records excellent. Flow regulated by floodgates. No diversions above station. Water used for domestic supply and irrigation in central Maui.

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	169	46	162	169	89	80	59	25	190	137	162	35.5
2	149	44	169	113	80	76	96	25	137	125	125	32.5
3	175	145	169	116	76	130	59	23.5	94	137	94	31
4	170	101	103	155	72	171	52	23.5	183	149	99	29.5
5	162	61	110	99	67	176	65	33	186	119	123	31
6	162	83	183	113	111	172	55	51	149	157	190	29.5
7	149	182	176	182	128	184	48	26.5	103	108	190	35
8	113	177	125	169	89	165	46	23.5	142	94	155	59
9	140	176	94	183	126	169	44	22	183	85	149	94
10	112	174	103	176	80	183	41	22	169	137	108	95
11	85	162	125	176	85	183	39	20.5	149	190	89	42
12	76	113	76	176	67	169	37	25	155	190	80	67
13	67	85	67	176	59	149	41	20.5	154	190	72	72
14	72	109	75	183	59	113	159	46	155	183	104	133
15	72	103	74	135	119	99	102	23.5	155	162	103	123
16	63	76	55	169	100	155	50	34	155	155	72	155
17	72	63	52	155	63	149	44	62	155	162	63	107
18	82	59	88	169	63	108	41	183	162	162	59	97
19	95	76	176	160	105	94	37	190	155	131	55	87
20	90	155	169	137	80	85	35.5	169	133	149	50	55
21	63	162	89	113	80	99	34	118	190	162	48	46
22	120	155	72	113	116	80	32.5	63	183	125	46	42
23	76	107	94	183	130	76	32.5	48	155	103	44	56
24	95	76	67	183	148	102	31	41	183	89	42	81
25	72	70	61	169	80	89	38.5	87	190	80	41	44
26	55	105	125	176	67	76	41	176	183	76	44	85
27	52	63	124	169	59	67	34	185	190	103	37	143
28	55	55	99	149	114	63	34	190	169	119	35.5	81
29	97	67	93	131	63	59	31	-	169	182	53	59
30	81	81	131	113	125	96	28	-	176	176	50	59
31	52	176	-	99	-	72	26.5	-	149	-	37	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	175	52	99.8	154	3,090	9,490
August	182	44	107	166	3,310	10,150
September	183	52	110	170	3,310	10,150
October	183	99	152	235	4,710	14,450
November	148	59	90.0	139	2,700	8,290
December	184	59	119	184	3,690	11,320
Calendar year 1941	184	19.4	96.7	150	35,300	108,300
January	139	26.5	48.2	74.6	1,490	4,580
February	190	20.5	69.9	108	1,960	6,000
March	190	94	151	240	4,990	15,320
April	190	76	138	214	4,140	12,700
May	190	35.5	84.5	131	2,620	8,040
June	155	29.5	70.2	109	2,110	6,480
Fiscal year 1941-42	190	20.5	104	161	38,120	117,000

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 (revised) upstream from Spreckels 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 1942.

Average discharge.- 25 years (1917-42), 22.3 million gallons a day (34.5 second-feet).

Extremes.- Maximum discharge during year, 1,070 million gallons a day (1,660 second-feet) Oct. 8 (gage height, 6.33 feet), from rating curve extended above 400 million gallons a day; minimum, 1.4 million gallons a day (2.2 second-feet) Feb. 11, 12.
1910-42: 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.7	1.5	1.1	11.1	1.7	53	2.7	205
.8	2.6	1.2	15.5	1.9	74	3.0	252
.9	4.6	1.3	21	2.1	100	3.5	340
1.0	7.5	1.5	36	2.4	147	4.0	440

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	55	4.2	28	42	8.2	13.3	5.2	1.9	58	16.0	34	2.6
2	24	3.8	40	15.5	7.2	11.1	14.5	1.9	16.6	13.7	14.2	2.4
3	52	15.0	51	14.3	6.6	21.6	6.0	1.8	10.4	14.6	10.4	2.3
4	53	20	14.2	24.5	6.3	72	4.6	1.7	127	22.5	11.5	2.2
5	29.5	6.9	48	11.5	5.8	53	7.6	2.5	70	16.9	43	2.4
6	29	12.4	155	13.1	29	103	6.0	3.2	20.5	44	145	2.2
7	23	131	59	64	15.4	104	4.6	2.0	12.0	15.1	175	2.66
8	15.5	101	18.8	184	11.1	58	4.0	1.8	164	11.5	23	7.4
9	26	73	12.4	146	18.4	109	3.8	1.7	375	10.0	19.9	18.7
10	15.5	139	10.0	70	9.7	74	3.6	1.6	430	23	12.9	17.6
11	11.1	50	22.5	90	10.0	.124	3.4	1.5	195	187	10.4	4.9
12	9.3	18.2	10.0	100	6.3	45	3.2	2.2	278	169	8.6	13.1
13	7.5	13.3	7.5	69	5.5	20.5	3.4	1.8	277	111	6.9	17.4
14	7.5	13.7	8.0	86	5.2	14.2	33.5	8.1	259	52	13.7	39
15	7.2	10.4	9.3	73	21	12.0	20.5	2.4	206	33.5	14.0	18.2
16	6.9	7.9	6.3	42	12.0	31	5.8	4.0	146	23	8.6	39
17	9.3	6.6	5.8	21	6.3	23	4.4	15.1	100	38	6.6	12.2
18	12.6	6.3	12.9	88	5.8	12.9	3.8	135	80	27.5	5.5	7.2
19	14.3	11.1	55	35	14.9	10.4	3.4	139	44	17.2	4.9	6.6
20	11.7	54	54	16.6	8.6	8.6	3.2	29.5	29	33	4.4	4.6
21	6.9	37	12.4	12.9	7.2	8.5	3.0	12.0	85	35	4.2	4.0
22	17.8	46	9.7	15.4	44	7.2	2.8	6.6	103	15.5	3.8	3.4
23	10.1	17.4	18.7	187	25	6.6	2.6	4.9	26	12.0	3.6	9.7
24	13.1	10.7	9.7	186	36	11.7	2.5	4.2	68	10.0	3.4	12.4
25	9.7	11.0	20	49	10.4	9.5	2.5	16.2	84	8.6	3.4	4.4
26	6.0	26.5	15.1	82	7.5	7.2	2.6	52	71	7.2	4.2	17.1
27	5.2	9.7	21	132	6.0	6.0	2.4	112	160	8.6	3.0	24.5
28	6.7	7.9	13.3	21	16.1	8.2	2.6	84	69	10.7	2.6	13.0
29	13.4	9.7	13.2	14.6	6.6	4.9	2.4	-	39	56	4.9	8.2
30	8.8	20	20	11.5	31	12.7	2.0	-	42	41	3.2	8.2
31	4.9	49	-	9.7	-	8.4	2.0	-	19.9	-	2.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	55	4.9	16.8	26.0	522	1,600
August	139	3.8	30.4	47.0	944	2,900
September	155	5.8	26.0	40.2	781	2,400
October	187	9.7	52.1	96.1	1,930	5,910
November	44	5.2	13.4	20.7	403	1,240
December	124	4.9	32.5	50.3	1,010	3,090
Calendar year 1941	414	2.0	27.6	42.7	10,070	30,890
January	33.5	2.0	5.55	8.59	172	528
February	139	1.5	23.2	35.9	651	2,000
March	430	10.4	118	183	3,660	11,280
April	187	7.2	36.1	55.9	1,080	3,320
May	175	2.6	19.7	30.5	611	1,880
June	39	2.2	10.9	16.9	328	1,010
Fiscal year 1941-42	430	1.5	33.1	51.2	12,090	37,130

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 23 years (1918-24, 1925-42), 6.10 million gallons a day (9.44 second-feet).

Extremes.- Maximum discharge during year, 86 million gallons a day (133 second-feet) Oct. 8 (gage height, 3.53 feet), from rating curve extended above 62 million gallons a day by weir and orifice formulas; minimum, 0.22 million gallons a day (0.34 second-foot) Feb. 4, 5.

1917-42: 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. 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	30	0.68	4.8	9.3	1.38	2.25	0.68	0.28	17.9	2.25	9.6	0.39
2	4.1	.56	13.4	2.5	1.15	1.46	1.42	.25	2.8	1.70	4.5	.34
3	10.1	5.7	21	2.35	1.08	2.75	.74	.25	1.76	3.75	2.65	.28
4	12.0	4.3	2.35	4.4	.93	28	.62	.25	43	4.6	3.1	.28
5	3.2	1.29	13.9	1.89	.85	11.7	1.25	1.05	27	2.35	15.6	.68
6	3.7	4.2	57	3.6	12.3	31	.79	2.7	3.9	15.8	43	.39
7	2.45	42	26.5	28	2.35	41	.56	.45	2.25	2.9	51	.34
8	1.80	39.5	4.6	40	1.38	19.5	.51	.34	29.5	1.99	5.5	1.87
9	2.9	26.5	2.55	51	2.15	39	.45	.28	68	1.61	5.0	2.55
10	2.45	42	1.89	14.4	1.15	24.5	.45	.28	68	3.4	2.65	2.65
11	1.53	14.4	6.1	20	1.54	48	.39	.25	38.5	62	1.89	.62
12	1.31	2.75	1.53	34	.74	12.1	.39	.66	61	60	1.61	3.0
13	1.15	1.99	1.15	29	.68	3.55	.39	.34	61	49	1.38	2.6
14	1.15	5.1	1.08	41	.68	2.65	11.6	1.25	52	19.8	2.85	10.9
15	1.00	2.35	1.23	39	2.5	2.15	5.1	.39	44	5.8	2.75	4.0
16	.85	1.53	.79	19.8	2.1	7.1	.68	.68	32.5	4.0	1.80	16.0
17	.85	1.31	.74	3.55	.74	4.1	.56	6.2	15.9	12.8	1.00	3.2
18	2.35	1.23	1.44	39.5	.79	2.25	.45	50	7.9	4.2	.85	1.99
19	2.45	1.31	18.9	9.9	4.1	1.61	.39	48	6.0	2.65	.79	1.61
20	1.88	13.9	25	2.9	1.57	1.31	.39	3.6	10.0	12.3	.74	1.00
21	.93	8.3	1.61	2.1	1.38	1.46	.34	2.05	22.5	8.2	.68	.85
22	1.87	11.1	1.31	8.0	15.0	1.00	.34	.93	21.5	3.2	.62	.74
23	1.15	2.45	1.90	47	4.9	.85	.28	.74	3.55	2.1	.56	.85
24	.85	1.31	1.23	68	8.8	2.8	.28	.68	21	1.61	.51	1.38
25	.79	1.26	3.2	12.3	1.38	1.31	.34	3.35	25.5	1.38	.51	.62
26	.74	10.3	2.75	31.5	.93	1.23	.74	19.3	29	1.31	.62	1.61
27	.74	1.63	2.35	27.5	.85	.79	.51	39.5	59	3.8	.45	2.75
28	2.0	1.15	1.89	2.75	3.7	.68	.39	36	16.1	5.0	.45	2.95
29	2.5	1.31	1.74	2.4	1.08	.68	.34	-	13.5	21	.85	1.23
30	1.08	4.7	2.2	2.25	7.6	2.3	.28	-	7.6	10.8	.51	1.31
31	.74	18.4	-	1.70	-	1.16	.28	-	2.75	-	.45	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	30	0.74	3.25	5.03	101	309
August	42	.56	8.85	13.7	274	842
September	57	.74	7.47	11.6	224	668
October	68	1.70	19.4	30.0	602	1,850
November	15.0	.68	2.86	4.43	85.8	263
December	48	.68	9.69	15.0	300	921
Calendar year 1941	68	.17	7.34	11.4	2,680	8,220
January	11.6	.28	1.03	1.59	31.9	98
February	50	.25	7.86	12.2	220	675
March	68	1.76	26.3	40.7	815	2,500
April	62	1.51	11.0	17.0	331	1,020
May	51	.45	5.51	8.22	164	505
June	16.0	.28	2.30	3.56	69.0	212
Fiscal year 1941-42	68	.25	8.82	13.6	3,220	9,880

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.
Average discharge.- 20 years, 17.0 million gallons a day (26.3 second-feet).
Extremes.- Maximum discharge during year, 1,530 million gallons a day (2,370 second-feet) Oct. 8 (gage height, 6.62 feet), from rating curve extended above 370 million gallons a day by logarithmic plotting; minimum, 0.32 million gallons a day (0.50 second-foot) Feb. 12.
1922-42: 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, 0.32 million gallons a day (0.50 second-foot) Feb. 3, 4, 1940, Feb. 12, 1942.
Remarks.- Records good except those for period of no gage-height record, which are fair. Haleakala ranch and Kula pipe lines divert small quantities of water above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)
(Shifting-control method used Nov. 26 to Dec. 5)

0.7	0.28	1.1	1.45	2.0	23	3.5	177
.8	.49	1.3	2.9	2.3	39	4.0	277
.9	.76	1.5	6.1	2.6	61	4.5	410
1.0	1.07	1.7	11.2	3.0	102	5.0	590

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	39	2.3	18.2	31.5	4.5	13.2	2.75	0.60	93	9.5	23.5	1.22
2	13.5	1.99	22	10.8	3.9	8.9	6.3	.52	15.8	8.2	7.9	1.01
3	40	5.9	30	10.4	3.4	21	3.3	.49	7.2	7.5	5.9	.88
4	36.5	16.0	7.9	20	3.2	79	2.4	.45	116	10.5	5.9	.82
5	16.0	4.1	25.5	7.2	3.1	48	3.4	.78	68	9.3	25.5	1.07
6	14.8	5.9	140	7.0	25	110	3.7	1.66	17.0	43	164	.82
7	13.6	77	50	55	10	124	2.4	.68	8.0	11.4	163	.87
8	7.9	90	13.6	180	6.2	64	1.93	.52	135	7.7	17.1	3.3
9	13.3	58	6.8	146	11	106	1.69	.45	490	6.1	11.0	7.4
10	8.5	76	4.8	62	6.0	88	1.51	.38	482	13.3	8.7	10.5
11	5.4	36	14.2	92	10	136	1.34	.36	212	163	6.1	2.8
12	4.3	9.7	6.1	112	3.9	40	1.26	.68	266	166	4.8	6.8
13	3.75	6.1	4.0	58	3.5	15.4	1.27	.58	247	84	4.2	11.0
14	3.75	6.1	3.65	99	3.2	9.0	14.8	3.1	245	36.5	9.4	46
15	3.45	5.0	4.5	75	15	7.0	12.2	1.20	160	24	9.2	13.6
16	3.2	3.75	3.2	38	8.0	25	3.2	1.98	120	16.0	6.3	26
17	5.7	3.05	2.75	12.8	3.8	14.3	2.2	11.1	73	26	4.0	8.0
18	6.3	2.75	5.3	56	3.5	7.2	1.75	147	57	23.5	3.05	4.7
19	7.7	5.0	42	36	15	5.7	1.45	194	33	11.9	2.65	5.1
20	6.5	33	35.5	9.8	5.0	4.7	1.34	36	22.5	19.7	2.4	3.2
21	3.9	27	8.6	6.8	4.5	4.5	1.15	10.4	54	24.5	2.05	2.5
22	7.8	26	5.2	7.4	23	3.6	1.07	4.4	78	9.8	1.93	2.05
23	5.4	9.8	27	182	11	3.3	.98	2.8	16.8	7.0	1.69	4.2
24	5.9	5.2	8.6	175	28	5.9	.88	2.3	55	5.7	1.57	8.2
25	5.6	4.2	12.4	46	6.4	4.7	.92	10.8	58	4.8	1.51	2.9
26	3.2	13.2	10.5	50	4.5	3.6	1.04	58	57	4.2	2.35	13.2
27	2.75	4.3	13.7	82	3.6	2.9	.92	198	161	5.0	1.41	15.6
28	3.0	3.3	8.2	12	9.5	2.5	.97	105	44	6.4	1.26	8.8
29	6.2	4.0	6.4	8.0	4.7	2.3	.98	-	23	28.5	2.55	5.2
30	4.3	10.2	11.7	6.0	36	6.6	.73	-	34	25	1.95	5.0
31	2.75	41	-	5.2	-	5.4	.65	-	13.2	-	1.26	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	40	2.75	9.80	15.2	304	933
August	90	1.99	19.2	29.7	596	1,830
September	140	2.75	18.4	28.5	552	1,690
October	182	5.2	55.1	85.3	1,710	5,240
November	36	3.1	9.28	14.4	278	854
December	136	2.3	31.3	48.4	972	2,980
Calendar year 1941	580	.43	21.8	33.7	7,960	24,400
January	14.8	.65	2.60	4.02	80.5	247
February	198	.36	28.4	43.9	794	2,440
March	490	7.2	112	173	3,460	10,620
April	166	4.2	27.3	42.2	818	2,510
May	164	1.26	16.3	25.2	504	1,550
June	46	.82	7.42	11.5	223	684
Fiscal year 1941-42	490	.36	28.2	43.6	10,290	31,580

Note.- No gage-height record Oct. 28 to Nov. 26; discharge computed on basis of records for Puohokamoa Stream.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Alo Stream near Huelo

Location (revised).- Lat. 20°51'50", long. 156°11'45", 300 feet upstream from Wailoa ditch intake 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 1942.

Average discharge.- 31 years (1911-42), 5.11 million gallons a day (7.91 second-feet).

Extremes.- Maximum discharge during year, 380 million gallons a day (588 second-feet) Mar. 8 (gage height, 3.65 feet), from rating curve extended above 50 million gallons a day; minimum, 0.34 million gallons a day (0.53 second-foot) Feb. 11.
1910-42: 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. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.5	0.35	0.9	2.3	1.3	10.2	1.9	46
.6	.60	1.0	3.5	1.4	13.8	2.2	76
.7	1.00	1.1	5.2	1.5	18.5	2.5	120
.8	1.55	1.2	7.4	1.6	24	2.8	172

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	10.0	1.22	7.4	10.0	1.44	2.25	0.96	0.40	4.8	2.8	9.1	0.52
2	4.0	1.06	15.6	4.2	1.22	1.74	2.8	.40	2.3	2.15	4.9	.48
3	4.3	6.2	15.0	4.1	1.06	4.4	1.00	.38	1.91	3.85	3.35	.45
4	8.7	3.5	3.4	5.3	.96	10.6	.88	.38	29	5.6	4.4	.42
5	8.6	3.75	15.9	2.4	.88	8.4	1.95	1.20	10.1	2.5	11.6	.77
6	7.4	8.7	29.5	2.55	7.9	17.6	1.10	2.75	3.15	13.0	27.5	.50
7	5.3	31.5	16.5	13.5	2.9	11.8	.80	.50	2.15	2.9	30.5	.50
8	3.45	26	4.0	59	1.81	6.3	.72	.42	73	2.15	4.8	2.8
9	6.9	11.6	2.8	17.9	3.55	13.9	.68	.40	63	1.78	6.1	6.2
10	4.4	23.5	2.15	11.3	1.83	7.6	.64	.38	121	4.2	2.9	3.8
11	2.55	9.1	4.7	10.0	3.55	14.8	.60	.35	42	34	2.2	.94
12	1.92	3.65	1.92	7.6	1.28	7.8	.55	.92	62	12.8	1.78	4.2
13	1.55	3.0	1.50	7.7	1.06	3.5	.64	.45	59	23	1.50	2.7
14	1.61	5.3	1.55	11.5	1.28	2.65	16.6	1.76	35	14.2	2.75	4.4
15	1.76	2.9	1.74	9.5	6.8	2.2	5.0	.50	25	6.3	3.8	7.4
16	1.18	1.85	1.11	5.5	2.95	6.0	1.30	1.27	16.9	4.4	1.64	16.1
17	1.83	1.50	1.00	4.77	1.28	6.6	.96	3.15	23.5	17.4	1.16	3.05
18	5.6	1.38	2.25	19.9	1.60	2.5	.84	14.0	16.1	5.4	1.00	1.78
19	8.3	1.44	11.1	4.8	8.0	1.92	.76	17.4	12.6	3.25	.92	1.44
20	3.55	6.7	19.3	3.15	2.5	1.55	.68	3.0	15.7	12.5	.84	1.16
21	1.78	8.5	2.5	2.4	2.55	1.76	.64	1.62	35	9.9	.80	.96
22	5.2	12.9	2.25	5.9	6.7	1.28	.58	1.11	12.9	3.95	.72	.84
23	2.7	3.65	2.3	54	3.5	1.16	.55	.92	4.9	2.65	.64	.91
24	2.1	2.15	1.62	41	8.0	3.95	.52	.84	8.9	2.1	.60	1.76
25	1.62	7.7	4.3	8.1	2.15	1.87	.58	3.6	15.1	1.70	.60	.80
26	1.22	16.5	4.9	48	1.62	1.74	.69	9.3	16.5	1.44	1.15	.85
27	1.26	3.4	5.3	45	1.38	1.11	.55	10.9	10.9	3.95	.58	3.3
28	3.25	2.0	3.4	4.2	5.6	1.00	.50	10.8	8.1	6.1	.55	5.1
29	7.1	2.45	3.6	2.9	1.50	.92	.50	-	6.3	23	1.30	1.71
30	3.0	3.35	4.0	2.15	5.5	4.6	.45	-	5.4	11.9	.60	2.2
31	1.44	9.1	-	1.78	-	1.43	.42	-	3.5	-	.52	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	10.0	1.18	3.92	6.07	122	373
August	31.5	1.06	7.28	11.3	226	692
September	29.5	1.00	6.42	9.93	193	591
October	59	1.78	13.9	21.5	430	1,320
November	8.0	.88	3.08	4.77	92.4	283
December	17.6	.92	5.00	7.74	156	475
Calendar year 1941	70	.35	6.01	9.30	2,200	6,740
January	16.6	.42	1.47	2.27	45.4	139
February	17.4	.35	3.18	4.92	89.1	273
March	121	1.91	24.1	37.3	746	2,290
April	34	1.44	7.80	12.1	234	718
May	30.5	.52	4.22	6.63	131	401
June	16.1	.42	2.60	4.02	78.0	239
Fiscal year 1941-42	121	.35	6.96	10.8	2,540	7,790

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 3½ miles southeast of Huelo.

Drainage area.- 0.5 square mile.

Records available.- December 1921 to June 1942.

Average discharge.- 20 years (1922-42), 4.96 million gallons a day (7.67 second-feet).

Extremes.- Maximum discharge during year, 450 million gallons a day (696 second-feet) Oct. 27 (gage height, 4.07 feet), from rating curve extended above 130 million gallons a day on basis of broad-crested weir formula; minimum, 0.30 million gallons a day (0.46 second-foot) Feb. 4.

1921-42: Maximum discharge, 3,300 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, 0.26 million gallons a day (0.40 second-foot) Feb. 4, 1940.

Remarks.- Records good except those for period of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.26	0.7	6.1	1.4	36.5
.3	.60	.8	8.7	1.6	49
.4	1.30	.9	11.5	1.9	71
.5	2.4	1.0	15.2	2.2	96
.6	4.0	1.2	24.5	2.5	126

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.2	1.20	7.7	9.8	1.47	2.3	1.12	0.37	5.0	2.55	9.9	0.56
2	3.65	1.04	15.2	4.1	1.30	1.80	3.45	.37	2.4	2.15	4.6	.56
3	5.1	1.27	16.5	3.6	1.12	4.4	1.20	.33	1.78	2.7	5.3	.48
4	8.9	8.2	3.3	4.5	1.04	11.6	.95	.33	29	5.0	4.4	.48
5	8.2	2.15	13.5	2.3	.95	9.0	2.2	.71	11.1	2.7	11.8	.70
6	7.7	3.85	28.5	2.15	8.5	17.7	1.40	1.72	3.0	12.6	26.5	.56
7	5.3	25	15.1	12.0	3.0	12.5	.95	.48	2.0	2.8	31.5	.56
8	3.15	a27	3.65	51	1.91	6.8	.75	.40	70	2.15	4.6	2.95
9	7.1	a24	2.4	17.9	3.9	14.5	.70	.37	67	1.91	5.7	6.6
10	4.0	a33	1.91	12.4	2.05	8.5	.65	.33	115	4.3	2.8	4.3
11	2.4	a18	3.7	10.1	3.65	15.4	.60	.33	47	35	2.15	1.20
12	1.80	a5.2	1.68	9.5	1.39	8.2	.56	.70	57	15.0	1.80	3.95
13	1.47	a3.0	1.47	8.6	1.20	3.5	.60	.48	60	22.5	1.58	2.95
14	1.39	a3.0	1.62	12.2	1.30	2.4	14.8	1.73	34	13.2	2.45	4.8
15	1.47	a2.5	1.79	10.4	7.0	2.0	4.8	.60	28	6.6	3.05	5.7
16	1.04	a1.7	1.20	6.4	2.95	5.8	1.47	1.37	17.8	4.2	1.74	16.0
17	1.58	a1.2	1.12	4.4	1.47	5.8	1.12	2.4	22	9.9	1.20	5.3
18	3.9	a1.2	2.1	21	1.68	2.4	.95	14.2	16.3	5.8	1.12	1.91
19	4.6	a3.7	11.9	5.6	7.4	1.91	.81	17.7	10.6	3.5	.95	1.47
20	4.3	a9.4	16.1	3.15	2.7	1.58	.70	3.35	10.7	10.6	.81	1.20
21	1.58	8.8	2.55	2.4	2.55	1.58	.65	1.80	33	10.5	.75	1.04
22	5.0	12.6	2.0	4.6	7.0	1.20	.56	1.12	14.6	4.0	.70	.88
23	2.8	3.65	2.7	52	4.4	1.12	.52	.88	4.4	2.7	.65	1.25
24	2.4	2.15	1.80	41	8.7	3.55	.48	.81	9.8	2.15	.60	2.4
25	2.05	2.7	4.3	9.8	2.3	2.2	.52	3.35	15.4	1.80	.60	.95
26	1.30	17.1	4.6	30	1.80	1.68	.56	8.2	15.1	1.47	1.09	.98
27	1.12	3.1	5.9	61	1.47	1.12	.48	12.0	12.8	2.65	.65	3.65
28	1.76	1.91	3.3	4.2	5.1	1.04	.44	10.7	8.8	5.4	.56	3.95
29	6.6	2.4	3.7	2.8	1.68	.88	.44	-	6.2	24.5	1.20	1.81
30	2.75	3.05	3.75	2.15	5.7	4.4	.40	-	5.7	12.0	.65	1.94
31	1.47	9.3	-	1.80	-	1.65	.37	-	3.15	-	.56	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	9.2	1.04	3.71	5.74	115	353
August	33	1.04	7.82	12.1	242	744
September	28.5	1.12	6.17	9.55	185	568
October	61	1.80	13.6	21.0	423	1,300
November	8.7	.95	3.22	4.98	96.7	297
December	17.7	.88	5.11	7.91	159	486
Calendar year 1941	64	.37	5.85	9.05	2,140	6,550
January	14.8	.37	1.46	2.26	45.2	139
February	17.7	.33	3.11	4.81	87.1	267
March	115	1.78	23.8	36.8	739	2,270
April	35	1.47	7.75	12.9	233	714
May	31.5	.56	4.19	6.48	130	399
June	16.0	.48	2.64	4.08	79.1	243
Fiscal year 1941-42	115	.33	6.94	10.7	2,530	7,780

a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 milee southeast of Huelo.
Drainage area.- 0.2 square mile.
Records available.- August 1930 to June 1942. December 1910 to June 1915, at site half a mile downstream, records not equivalent.
Average discharge.- 11 years (1931-42), 1.91 million gallons a day (2.96 second-feet).
Extremes.- Maximum discharge during year, 316 million gallons a day (489 second-feet) Mar. 8 (gage height, 4.97 feet), from rating curve extended above 20 million gallons a day by test on model of station site; minimum, 0.16 million gallons a day (0.25 second-foot) Feb. 11, 12.
1930-42: 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, 0.09 million gallons a day (0.14 second-foot) Feb. 18, 19, 1936.
Remarks.- Records good except those for period of no gage-height record, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.6	0.05	2.1	3.75	2.6	18.8
1.7	.23	2.2	5.7	2.8	30
1.8	.65	2.3	8.2	3.0	45
1.9	1.32	2.4	11.2	3.2	63
2.0	2.35	2.5	14.7		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.8	0.44	2.6	3.5	0.60	0.75	0.40	0.18	1.67	0.87	3.4	0.23
2	1.32	.40	4.6	1.34	.55	.60	.78	.18	.81	.70	2.0	.21
3	1.41	1.1	4.1	1.20	.45	1.28	.40	.18	.60	1.19	1.25	.21
4	2.45	3.0	1.02	1.66	.40	3.25	.36	.18	8.4	2.15	1.69	.21
5	2.95	.74	6.0	.81	.40	2.45	.74	.61	3.15	1.02	3.95	.36
6	2.5	1.3	11.4	.71	2.75	6.9	.55	1.55	1.10	5.4	13.4	.23
7	1.61	8.6	6.2	4.4	1.13	4.4	.36	.28	.75	1.10	11.4	.23
8	.94	9.6	1.41	24	.65	2.1	.32	.21	48	.81	1.90	1.22
9	1.95	8.6	.87	6.7	1.11	4.4	.28	.19	33.5	.70	2.45	1.68
10	1.58	11	.70	4.0	.60	3.15	.28	.18	59	1.72	1.10	1.57
11	.81	6.0	1.08	3.5	1.13	4.7	.25	.16	18.9	12.9	.87	.32
12	.65	1.5	.65	2.2	.50	2.55	.25	.35	21.5	3.9	.75	1.71
13	.55	.92	.50	1.89	.40	1.18	.25	.21	24.5	8.2	.65	1.00
14	.50	.92	.40	5.0	.55	.81	4.9	1.01	10.5	5.4	1.01	1.31
15	.50	.80	.40	3.05	2.7	.68	1.91	.36	7.2	2.25	1.32	3.25
16	.40	.64	.36	1.61	1.25	2.2	.55	.60	5.0	1.32	.75	8.2
17	.40	.50	.32	1.51	.55	2.85	.40	.46	8.1	4.6	.55	1.26
18	1.34	.45	.46	6.1	.75	.94	.36	5.1	4.9	2.1	.40	.70
19	1.87	1.2	3.65	1.71	3.4	.70	.32	6.2	5.5	1.10	.36	.55
20	1.40	3.5	5.0	1.02	1.22	.60	.28	1.02	11.8	4.7	.36	.45
21	.55	3.2	.70	.81	1.20	.70	.28	.60	17.4	3.6	.36	.40
22	1.8	4.1	.65	2.8	2.25	.55	.25	.40	5.1	1.44	.32	.36
23	1.0	1.36	.86	28.5	1.13	.45	.23	.32	1.61	.94	.32	.36
24	1.0	.75	.60	18.3	3.0	1.69	.23	.28	2.2	.75	.28	.40
25	.66	.96	1.12	3.55	.81	.65	.25	1.69	5.5	.65	.28	.32
26	.50	6.8	1.57	20.5	.65	.70	.36	3.2	6.0	.55	.50	.35
27	.45	1.29	1.60	27	9.55	.50	.25	2.95	3.15	2.15	.28	1.30
28	.58	.70	1.00	1.61	2.2	.40	.21	2.55	2.05	3.2	.25	2.25
29	1.7	1.08	1.01	1.10	.65	.36	.21	-	1.25	7.0	.57	.80
30	.90	1.45	1.41	.81	2.3	1.97	.19	-	1.52	5.4	.32	.95
31	.54	3.3	-	.70	-	.68	.19	-	.94	-	.25	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.8	0.40	1.25	1.93	38.6	118
August	11	.40	2.78	4.30	86.2	265
September	11.4	.32	2.08	3.22	62.4	192
October	28.5	.70	5.86	9.07	182	557
November	3.4	.40	1.19	1.84	35.8	110
December	6.9	.36	1.78	2.75	55.1	169
Calendar year 1941	28.5	.14	2.20	3.40	803	2,460
January	4.9	.19	.535	.828	16.6	51
February	6.2	.16	1.11	1.72	31.2	96
March	59	.60	10.4	16.1	322	987
April	12.9	.55	2.93	4.53	87.8	269
May	13.4	.25	1.72	2.66	53.3	164
June	8.2	.21	1.09	1.69	32.6	100
Fiscal year 1941-42	59	.16	2.75	4.25	1,000	3,080

Note.- No gage-height record July 22 to Aug. 20; discharge computed on basis of records for Kaaiea and Waiakamoi Streams.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Naililihaele Stream near Huelo

Location.- Masonry dam control, lat. 20°52'30", long. 156°13'05", 200 feet upstream from Wailoa ditch intake, 700 feet upstream from New Hamakua ditch trail, 1⅛ miles south of Kailua, and 2⅛ miles southeast of Huelo.
Drainage area.- 2.8 square miles.
Records available.- December 1910 to June 1918 and August 1919 to June 1942.
Average discharge.- 21 years (1920-24, 1925-42), 24.5 million gallons a day (37.9 second-feet).
Extremes.- Maximum discharge during year, 2,720 million gallons a day (4,210 second-feet) Mar. 8 (gage height, 7.29 feet), from rating curve extended above 130 million gallons a day; minimum, 2.3 million gallons a day (3.6 second-feet) Feb. 10, 11.
1910-18, 1919-42: 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 above 200 million gallons a day, which are poor. No diversions. Water used for irrigation in central Maui.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Dec. 6						Dec. 7 to June 30					
2.0	5.2	2.5	26	3.3	119	1.8	1.30	2.4	18.6	3.5	120
2.1	8.0	2.7	41	3.6	179	1.9	2.7	2.5	24	3.6	181
2.2	11.4	2.9	61	3.9	260	2.0	4.6	2.6	31	3.9	280
2.3	15.4	3.1	87	4.2	355	2.1	7.1	2.7	39.5	4.3	390
						2.2	10.2	2.8	50	4.7	560
						2.3	14.0	3.0	73	5.1	760

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	65	7.7	37	53	11.8	14.2	8.0	3.45	34.5	16.8	52	4.0
2	25.5	6.9	68	21	10.7	12.2	18.3	3.25	14.0	14.0	a23	a3.85
3	40	29	79	17.4	10.0	25.5	9.0	3.25	12.0	14.0	a21.5	3.65
4	61	22.5	19.0	21	9.4	73	7.4	3.1	195	23	a19.1	3.45
5	42	13.3	76	13.8	8.7	59	12.1	4.3	66	15.8	85	4.0
6	41	31	182	15.6	46	116	9.3	6.8	17.2	87	230	3.45
7	30	202	80	63	18.5	83	7.1	3.1	12.1	16.3	264	3.65
8	20.5	108	22	285	13.0	48	6.4	2.9	399	13.2	25.5	11.8
9	42	74	15.9	120	22.5	99	6.1	2.55	491	11.7	27.5	30.5
10	24	159	13.4	74	12.6	60	5.8	2.4	719	21	16.8	20.5
11	15.4	51	20	68	17.7	108	5.4	2.4	257	287	13.2	6.8
12	13.4	19.5	11.8	78	10.2	50	5.4	3.25	371	146	11.3	17.2
13	11.4	15.0	10.4	63	9.0	22.5	5.1	2.7	385	151	10.2	17.6
14	11.4	15.4	10.0	88	9.4	16.8	69	7.2	269	65	13.4	32
15	11.1	12.6	9.7	65	34	14.0	29.5	3.25	230	36	14.0	23.5
16	9.4	10.0	8.7	43	17.0	35	8.6	6.1	141	24.5	10.2	48
17	10.4	9.4	8.0	26	10.4	30	7.1	15.7	130	54	8.3	13.6
18	17.7	8.7	10.2	140	9.7	14.5	6.4	117	101	31	7.4	9.6
19	24	10.7	64	34	28.5	12.1	6.1	144	56	19.7	6.8	8.3
20	17.6	56	81	21	13.8	11.0	5.6	18.6	67	51	6.4	7.1
21	10.0	44	13.8	16.9	12.2	11.0	5.4	10.2	168	51	6.1	6.6
22	27	64	11.4	22.5	46	9.3	5.1	7.1	108	20	5.6	6.1
23	14.9	19.2	16.6	306	24.5	8.6	4.8	6.1	27	15.8	5.4	10.9
24	16.4	13.0	11.4	234	47	18.4	4.6	5.6	99	13.2	5.1	15.3
25	11.8	12.8	21.5	53	13.4	13.9	4.4	16.0	118	11.7	5.1	7.1
26	9.0	62	19.7	139	11.1	10.2	4.6	52	92	10.2	6.8	10.4
27	8.3	15.0	29.5	250	10.0	8.6	4.4	89	140	13.6	4.8	20
28	10.2	11.1	17.4	26	25.5	8.0	4.2	64	72	21.5	4.4	16.9
29	25	13.0	17.2	19.5	10.7	7.4	4.0	-	38	142	6.1	9.3
30	13.0	18.2	22.5	15.9	33	24.5	3.65	-	39	62	4.6	9.3
31	8.7	48	-	13.8	-	11.3	3.45	-	20	-	4.2	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	65	8.3	22.2	34.3	687	2,110
August	202	6.9	38.1	58.9	1,180	3,630
September	182	8.0	33.6	52.0	1,010	3,090
October	306	13.8	77.6	120	2,410	7,380
November	47	8.7	18.5	28.6	556	1,710
December	116	7.4	33.4	51.7	1,040	3,180
Calendar year 1941	540	2.8	34.7	53.7	12,700	38,920
January	69	3.45	9.24	14.3	286	879
February	144	2.4	21.6	33.4	605	1,860
March	719	12.0	158	244	4,890	15,000
April	287	10.2	48.6	75.2	1,460	4,480
May	264	4.2	29.8	46.1	924	2,840
June	48	3.45	12.8	19.8	384	1,180
Fiscal year 1941-42	719	2.4	42.2	65.3	15,430	47,340

a No gage-height record; discharge computed on basis of records for Kailua Stream.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 2⅛ 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 1942.

Average discharge.- 23 years (1919-42), 19.4 million gallons a day (30.0 second-feet).

Extremes.- Maximum discharge during year, 2,090 million gallons a day (3,230 second-feet) Oct. 8 (gage height, 7.53 feet), from rating curve extended above 150 million gallons a day; minimum, 1.20 million gallons a day (1.86 second-feet) Feb. 4, 10, 11, 13.
1910-18, 1919-42: 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. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.7	1.20	2.2	10.1	2.8	34	4.6	274
1.8	2.2	2.3	13.0	3.0	48	5.0	370
1.9	3.6	2.4	16.4	3.4	85	5.4	490
2.0	5.4	2.5	20	3.8	134	5.8	640
2.1	7.6	2.6	24.5	4.2	196		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	53	3.3	21	37.5	6.7	13.9	4.1	1.50	80	12.4	31.5	2.0
2	18.2	3.05	27	11.4	5.8	10.3	10.7	1.50	18.1	10.1	11.0	1.90
3	a45	9.0	43	8.3	5.2	22.5	4.9	1.40	9.4	9.1	8.4	1.80
4	a50	16.4	9.8	12.7	4.7	85	3.8	1.30	162	10.1	7.9	1.80
5	a33	5.0	34.5	7.2	4.3	59	5.3	1.60	82	9.6	32	1.90
6	a25	7.2	169	10.4	23.5	140	5.5	2.0	20.5	59	147	1.70
7	a18.2	94	61	41	12.3	137	3.8	1.60	10.4	13.9	182	1.70
8	11.4	102	15.8	200	8.1	73	3.3	1.40	210	9.4	21.5	3.55
9	24	54	9.1	143	12.5	119	3.2	1.40	472	8.1	16.1	9.7
10	13.2	82	7.2	73	6.9	92	2.9	1.30	637	12.7	11.9	11.8
11	8.4	39	12.3	86	7.6	155	2.6	1.20	208	169	8.4	3.2
12	6.9	11.3	6.9	119	5.2	58	2.6	1.50	a316	162	7.2	6.3
13	5.8	8.1	5.6	76	5.0	21.5	2.6	1.40	a297	98	6.1	7.1
14	5.6	7.4	5.0	110	5.0	13.6	24.5	2.2	246	44	8.8	40
15	5.0	6.3	4.9	91	13.7	10.7	17.5	1.50	188	26	8.6	13.7
16	4.5	5.0	4.3	45	9.6	29	4.5	2.3	143	17.5	6.7	19.6
17	4.9	4.5	3.95	16.8	5.8	20.5	3.3	12.4	91	30.5	5.0	8.2
18	6.3	4.1	4.2	81	5.2	11.0	2.9	166	72	24	4.5	5.2
19	8.6	4.8	38.5	40	9.2	9.4	2.6	195	40	13.3	3.95	5.2
20	7.9	35.5	43	13.4	7.0	8.1	2.5	33.5	30.5	27.5	3.6	3.95
21	4.7	31	8.2	9.8	6.1	7.6	2.2	11.1	69	31.5	3.3	3.3
22	9.8	35	6.1	10.6	23	6.5	2.2	6.1	83	12.7	3.05	2.9
23	7.0	12.0	22.5	253	24	6.1	2.0	4.3	22	9.6	2.9	6.1
24	7.2	6.9	8.9	204	33	9.0	2.0	3.6	70	8.4	2.75	12.2
25	6.8	5.5	13.2	58	9.0	7.9	2.0	13.3	81	7.2	2.6	4.1
26	4.3	17.2	10.4	46	6.5	5.6	2.0	59	64	6.5	3.3	8.8
27	3.95	5.8	15.6	124	5.4	4.9	1.90	167	150	6.8	2.5	14.8
28	4.1	4.7	9.1	16.5	13.9	4.3	1.80	101	60	8.1	2.35	9.3
29	7.2	5.0	7.8	11.3	6.8	3.95	1.80	-	29.5	51	2.6	5.4
30	4.9	6.4	13.1	9.1	40	10.6	1.60	-	38.5	36.5	2.35	4.9
31	3.6	38.5	-	7.6	-	7.2	1.50	-	16.1	-	2.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	53	3.6	13.5	20.5	418	1,280
August	102	3.05	21.6	33.4	670	2,060
September	169	3.95	21.4	33.1	641	1,970
October	253	7.2	63.6	98.4	1,970	6,050
November	40	4.3	11.0	17.0	331	1,020
December	155	3.95	37.5	58.0	1,160	3,570
Calendar year 1941	836	1.53	27.3	42.2	9,940	30,540
January	24.5	1.50	4.33	6.70	134	412
February	195	1.20	28.5	44.1	797	2,450
March	637	9.4	130	201	4,020	12,320
April	169	6.5	31.5	48.7	944	2,900
May	182	2.1	18.1	28.0	562	1,720
June	40	1.70	7.40	11.4	222	682
Fiscal year 1941-42	637	1.20	32.5	50.3	11,870	36,430

a No gage-height record; discharge computed on basis of records for Nailiilihaele Stream.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter.
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 1942.

Average discharge.- 30 years (1911-15, 1916-42), 5.12 million gallons a day (7.92 second-feet).

Extremes.- Maximum discharge during year, 300 million gallons a day (464 second-feet) Mar. 8 (gage height, 4.50 feet), from rating curve extended above 85 million gallons a day by broad-crested weir formula; minimum, 0.94 million gallons a day (1.45 second-feet) May 28.

1911-42: 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 excellent. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

1.3	0.75	1.8	8.7	2.6	47
1.4	1.50	1.9	11.7	3.0	79
1.5	2.7	2.0	15.2	3.5	133
1.6	4.2	2.2	24		
1.7	6.2	2.4	34.5		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12.4	2.1	5.6	6.0	3.9	3.15	2.35	1.50	4.2	4.4	9.9	1.62
2	7.2	1.98	9.3	4.4	3.6	2.85	2.6	1.50	3.45	3.9	6.7	1.50
3	6.4	3.35	11.4	3.9	3.3	3.3	2.2	1.50	3.15	3.75	5.6	1.50
4	7.8	3.0	5.6	3.75	3.0	6.1	2.1	1.50	18.8	3.9	5.0	1.40
5	8.4	2.6	12.0	3.45	2.85	6.2	2.5	1.86	7.9	3.45	9.7	1.62
6	7.4	4.8	24	3.15	6.3	14.4	2.2	2.2	4.8	13.3	22.5	1.40
7	6.0	16.9	15.0	10.4	3.6	11.4	2.1	1.50	3.9	4.4	23	1.40
8	4.8	15.8	7.7	31	3.15	7.0	1.98	1.40	57	3.75	8.2	1.74
9	6.4	9.3	6.0	12.8	3.15	10.1	1.98	1.31	60	3.45	7.4	2.1
10	5.4	14.6	5.0	9.6	2.85	8.7	1.86	1.31	116	4.0	5.4	2.2
11	4.2	9.5	5.1	8.5	3.3	13.2	1.86	1.31	44	19.5	4.4	1.62
12	3.75	6.2	4.2	7.4	2.7	8.7	1.86	1.50	48	10.4	3.9	2.2
13	3.45	5.2	3.9	6.6	2.7	5.8	1.74	1.31	56	17.5	3.6	2.4
14	3.3	4.6	3.6	12.4	2.85	4.8	5.3	1.62	23.5	11.5	3.6	2.65
15	3.0	3.9	3.3	9.6	3.85	4.2	4.1	1.31	21	8.0	3.75	6.1
16	2.7	3.6	3.15	7.0	3.3	5.4	2.45	1.40	15.6	6.2	3.15	4.6
17	2.7	3.3	3.0	5.8	2.85	6.0	2.2	1.50	18.1	9.0	2.85	2.85
18	3.0	3.15	3.15	14.5	2.85	4.0	2.1	7.1	14.5	7.0	2.7	2.6
19	3.4	3.0	7.3	7.0	4.0	3.75	2.1	11.6	11.8	5.4	2.6	2.35
20	3.2	4.2	7.5	5.8	3.15	3.45	2.1	3.15	18.8	8.4	2.35	2.2
21	2.6	5.4	3.6	4.8	3.15	3.45	1.98	2.35	29.5	9.2	2.35	2.1
22	3.15	7.4	3.6	17.1	3.65	3.0	1.98	2.1	13.5	6.0	2.2	2.1
23	2.85	4.0	3.6	63	3.45	2.85	1.98	1.86	7.7	5.0	2.1	1.98
24	2.45	3.45	f3.15	41	5.2	3.9	1.86	1.86	8.2	4.2	2.1	2.1
25	2.35	4.6	f3.15	12.9	3.3	3.15	1.86	3.05	13.8	3.9	1.98	1.86
26	2.2	8.4	3.3	21.5	3.15	2.85	1.86	5.4	13.6	3.6	2.2	1.86
27	2.2	4.4	3.9	59	3.0	2.7	1.86	7.3	11.6	4.0	1.86	2.2
28	2.6	3.6	3.45	9.0	4.2	2.6	1.74	5.8	9.6	5.4	1.74	2.45
29	3.15	3.75	3.3	6.7	3.0	2.45	1.62	-	7.0	13.8	1.86	1.98
30	2.45	4.3	3.75	5.2	4.0	3.65	1.50	-	6.2	11.0	1.74	2.1
31	2.2	6.7	-	4.4	-	2.6	1.50	-	5.0	-	1.74	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	12.4	2.2	4.29	6.64	133	408
August	16.9	1.98	5.71	8.83	177	543
September	24	3.0	6.02	9.31	181	554
October	63	3.15	13.5	20.9	418	1,280
November	6.3	2.7	3.44	5.32	103	317
December	14.4	2.45	5.35	8.28	166	509
Calendar year 1941	63	1.31	5.62	8.70	2,050	6,290
January	5.3	1.50	2.17	3.36	67.4	207
February	11.6	1.31	2.75	4.25	77.1	237
March	116	3.15	21.8	3.37	676	2,080
April	19.5	3.45	7.24	11.2	217	667
May	23	1.74	5.10	7.89	158	485
June	6.1	1.40	2.23	3.45	66.8	205
Fiscal year 1941-42	116	1.31	6.69	10.4	2,440	7,490

f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 30 years (1911-15, 1916-42), 8.26 million gallons a day (12.8 second-feet).

Extremes.- Maximum discharge during year, 782 million gallons a day (1,210 second-feet) Mar. 8 (gage height, 3.61 feet), from rating curve based on weir rating between 100 and 375 million gallons a day and extended above; minimum, 1.05 million gallons a day (1.62 second-feet) Feb. 11-16.

1910-42: 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.4	1.13	0.8	8.5	1.2	28.5	2.1	152
.5	2.15	.9	12.1	1.4	45	2.4	230
.6	3.6	1.0	16.6	1.6	67	2.7	325
.7	5.6	1.1	22	1.8	95	3.0	440

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	35	2.55	7.9	10.3	7.0	4.4	3.1	1.48	12.1	9.2	14.2	1.90
2	14.4	2.4	12.0	5.6	6.2	4.0	4.4	1.38	7.6	7.9	9.2	1.79
3	14.0	3.9	10.7	5.0	5.6	5.6	3.1	1.36	5.9	6.6	7.6	1.68
4	19.4	4.8	7.9	5.0	5.0	15.6	2.8	1.28	60	6.8	6.8	1.58
5	15.0	3.1	16.3	4.2	4.6	15.2	3.25	1.58	22	5.9	14.4	1.68
6	13.4	4.6	52	4.0	11.1	38	2.95	1.79	10.7	25.5	45	1.48
7	11.4	31.5	26	8.4	6.2	29	2.65	1.28	7.6	7.9	58	1.58
8	8.9	28	11.7	62	5.2	18.2	2.55	1.22	151	6.5	14.8	2.15
9	12.2	14.8	8.9	33.5	5.6	31.5	2.4	1.13	198	5.9	12.6	3.15
10	9.2	27	7.3	23.5	4.6	23.5	2.25	1.13	379	7.0	9.6	3.55
11	7.0	15.7	7.3	19.2	5.2	37.5	2.15	1.13	129	53	7.9	1.90
12	6.2	9.6	5.6	26.5	4.0	23	2.15	1.28	143	35	6.5	2.7
13	5.4	7.6	5.2	22	3.6	13.0	2.0	1.13	152	40	5.9	3.06
14	5.2	6.5	4.6	35	3.8	9.9	8.1	1.58	103	21.5	5.9	5.7
15	4.8	5.6	4.2	26	5.4	8.5	7.1	1.13	88	15.2	6.2	6.7
16	4.2	5.0	4.0	18.4	4.4	10.3	3.1	1.28	59	11.4	5.2	5.4
17	4.2	4.4	3.6	12.1	3.6	9.6	2.65	1.28	46	14.4	4.4	3.25
18	4.4	4.2	3.6	42	3.45	7.0	2.4	17.5	34	11.4	4.2	2.65
19	4.6	4.0	9.9	15.6	4.8	6.2	2.25	44	22.5	9.2	3.8	2.4
20	4.6	8.6	16.3	11.4	3.6	5.4	2.15	5.6	26	13.3	3.45	2.15
21	3.6	9.2	5.0	9.2	3.45	5.2	2.15	3.6	48	14.7	3.1	2.0
22	4.6	12.1	4.6	20	3.0	4.6	2.0	2.8	32	9.2	2.95	1.90
23	4.0	6.2	4.8	127	6.0	4.4	1.90	2.4	15.2	7.9	2.8	1.89
24	3.6	5.0	4.2	96	8.9	5.4	1.79	2.25	23.5	7.0	2.65	3.6
25	3.6	5.1	4.8	27.5	4.4	5.0	1.90	4.2	34.5	6.2	2.55	2.0
26	2.95	9.4	4.8	25.5	3.8	4.2	1.90	10.0	25	5.4	2.95	1.90
27	2.8	5.0	5.6	104	3.45	3.8	1.79	22	41	5.6	2.4	2.8
28	3.25	4.2	4.8	15.2	5.9	3.45	1.68	17.1	29	6.5	2.15	2.95
29	4.0	4.4	4.6	11.4	3.8	3.25	1.68	-	16.6	24	2.25	2.15
30	3.1	4.9	5.6	9.6	7.4	5.3	1.58	-	15.2	15.7	2.0	2.0
31	2.65	8.6	-	7.9	-	3.8	1.48	-	11.0	-	1.90	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	35	2.65	7.80	12.1	242	742
August	31.5	2.4	8.64	13.4	268	822
September	52	3.6	9.39	14.5	282	865
October	127	4.0	27.2	42.1	843	2,590
November	11.1	3.45	5.20	8.05	156	479
December	38	3.25	11.7	18.1	364	1,120
Calendar year 1941	310	.97	10.8	16.7	3,930	12,060
January	8.1	1.48	2.69	4.16	83.4	256
February	44	1.13	5.50	8.51	154	472
March	379	5.9	62.8	97.2	1,950	5,970
April	53	5.4	13.9	21.5	416	1,280
May	58	1.90	8.82	13.6	273	839
June	6.7	1.48	2.65	4.10	79.6	244
Fiscal year 1941-42	379	1.13	14.0	21.7	5,110	15,680

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, 2¼ miles southwest of Huelo, and 2¼ miles west of Kailua. Altitude of gage, about 1,250 feet.
Drainage area.- 1.0 square mile.
Records available.- December 1910 to June 1942.
Average discharge.- 29 years (1911-14, 1916-42), 3.25 million gallons a day (5.03 second-feet).
Extremes.- Maximum discharge during year, 191 million gallons a day (296 second-feet) Mar. 8 (gage height, 3.49 feet), from rating curve extended above 70 million gallons a day; minimum, 0.45 million gallons a day (0.70 second-foot) Feb. 11-17.
1910-42: 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 except those for periods of no gage-height record and those affected by backwater, which are fair. No diversions above station. Water used for irrigation in central Maui.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.09	0.9	5.3	2.0	37
.5	.56	1.0	7.1	2.3	54
.6	1.33	1.2	11.5	2.6	80
.7	2.4	1.4	16.5	3.0	122
.8	3.7	1.7	25		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	c13.0	0.91	3.0	3.7	3.7	1.8	1.15	0.50	2.8	4.2	6.8	0.98
2	7.3	.91	5.4	2.1	3.2	1.7	1.54	.50	2.3	3.55	4.5	.91
3	6.2	2.05	9.1	1.65	2.8	2.2	1.06	.50	2.2	3.2	3.55	.91
4	7.0	1.75	3.7	1.65	2.55	4.3	.98	.45	18.5	3.2	3.3	.84
5	c7.9	1.15	8.0	1.54	2.3	4.6	1.38	.56	6.0	2.65	7.7	.84
6	6.4	2.6	19.1	1.44	5.7	11.9	1.06	.98	3.9	11.8	17.8	.77
7	c5.4	12.3	11.9	3.05	2.65	10.9	.91	.50	3.05	3.05	18.4	.77
8	c4.8	10.0	6.2	19.7	2.2	5.7	.77	.45	40	2.55	7.5	1.06
9	c6.8	5.6	4.8	8.1	2.2	8.4	.77	.50	52	2.4	7.2	1.32
10	c5.0	9.8	3.9	7.3	1.86	7.7	.77	.50	96	2.9	5.0	1.38
11	c3.7	6.4	3.95	6.8	2.35	11.7	.70	.45	48	16.5	4.2	.77
12	c3.3	4.3	2.9	6.8	1.65	7.6	.70	.56	53	8.4	3.7	1.19
13	c2.9	3.55	2.55	5.2	1.54	5.3	.70	.45	62	15.4	3.3	1.44
14	c2.65	3.2	2.2	11.7	1.7	4.3	3.5	.66	31.5	9.7	3.2	1.77
15	c2.4	2.7	1.97	9.3	2.4	3.7	3.35	.45	26	6.6	3.4	5.3
16	c1.97	2.3	1.86	6.3	1.7	4.8	.98	.50	20.5	5.1	2.65	2.55
17	c1.86	2.1	1.65	5.2	1.1	4.9	.91	.62	20.5	7.5	2.3	1.24
18	1.97	1.86	1.65	13.8	1.0	2.9	.77	6.6	16.8	5.3	2.2	.98
19	2.25	1.65	4.1	6.6	2.0	2.65	.77	9.8	13.4	3.9	1.97	.91
20	2.2	2.95	6.8	5.1	1.0	2.4	.77	1.97	17.1	6.6	1.73	.77
21	1.54	3.5	1.97	4.2	.98	2.4	.77	1.24	26.5	6.8	1.65	.77
22	1.76	4.5	1.76	12.8	1.7	2.1	.77	.98	14.7	4.2	1.54	.77
23	1.65	2.1	1.86	43	1.7	1.86	.77	.91	8.8	3.55	1.54	.77
24	1.33	1.76	1.54	38	3.2	3.0	.70	.84	8.8	3.2	1.44	.84
25	1.24	2.4	1.65	14.0	1.54	2.25	.70	2.15	13.8	2.8	1.33	.70
26	1.06	5.9	1.76	16.2	1.4	1.76	.70	4.4	12.2	2.55	1.65	.70
27	1.06	2.15	2.25	38	1.3	1.54	.70	6.2	11.8	2.8	1.24	.91
28	1.33	1.65	1.65	9.7	2.5	1.44	.63	4.4	9.7	3.65	1.15	1.13
29	1.98	1.76	1.54	6.9	1.6	1.33	.56	-	6.9	11.6	1.24	.77
30	1.24	2.3	1.97	5.5	2.9	2.3	.56	-	6.2	8.0	1.06	.70
31	.98	4.0	-	4.5	-	1.33	.56	-	4.8	-	.98	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	13.0	0.98	3.55	5.49	110	338
August	12.3	.91	3.55	5.49	110	338
September	19.1	1.54	4.09	6.33	123	376
October	43	1.44	10.3	15.9	319	978
November	5.7	.98	2.15	3.33	64.4	198
December	11.9	1.33	4.22	6.53	131	401
Calendar year 1941	67	.45	4.09	6.33	1,490	4,580
January	3.5	.56	.999	1.55	31.0	95
February	9.8	.45	1.74	2.69	48.6	149
March	96	2.2	21.3	33.0	660	2,020
April	16.5	2.4	5.79	8.96	174	533
May	18.4	.98	4.04	6.25	125	384
June	5.3	.70	1.16	1.79	34.8	107
Fiscal year 1941-42	96	.45	5.29	8.18	1,930	5,920

c Backwater from debris.
Note.- No gage-height record Nov. 14-24, Nov. 26 to Dec. 3; discharge computed on basis of records for Hoolawanui Stream.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. Records at same site collected by East Maui Irrigation Co. April 1930 to June 1932.
Average discharge.- 10 years, 1.52 million gallons a day (2.35 second-feet).
Extremes.- Maximum discharge during year, 466 million gallons a day (721 second-feet) Oct. 23 (gage height, 3.82 feet), from rating curve extended above 80 million gallons a day by logarithmic plotting; minimum, 0.05 million gallons a day (0.08 second-foot) Aug. 3.
1932-42: 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 good except those for periods of no gage-height record, which are poor. 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.02	0.5	2.2	0.9	11.6	1.6	50
.2	.16	.6	3.75	1.0	15.2	1.8	67
.3	.51	.7	5.9	1.2	24.5	2.0	88
.4	1.15	.8	8.6	1.4	36	2.3	127

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	5.7	0.10	0.23	0.16	0.34	0.16	0.16	0.10	0.46	0.40	1.08	0.23
2	.20	.08	.20	.16	.26	.12	.14	.10	.16	.40	.40	.23
3	.20	.10	.86	.14	.26	.10	.14	.10	.16	.40	.40	.23
4	.92	.14	.16	.12	.26	.12	.14	.12	12.9	.40	.40	.23
5	.47	.10	3.3	.12	.26	.12	.14	.12	.78	.40	3.0	.23
6	.86	.12	18.2	.14	.96	4.7	.14	.23	.20	12.6	18.2	.23
7	.16	5.4	4.3	.16	.34	3.9	.12	.16	.16	.48	15.1	.26
8	.14	5.6	.34	26.5	.26	2.45	.12	.14	69	.44	.64	.30
9	.20	1.23	.30	1.90	.23	1.68	.12	.12	37.5	.44	.51	.30
10	.16	.57	.30	.40	.23	1.99	.12	.12	115	.44	.37	.30
11	.16	.28	.30	a.58	.23	7.5	.12	.12	38.5	10.1	.34	.30
12	.14	.14	.26	a.46	.20	2.65	.12	.14	15.2	1.38	.34	.30
13	.16	.14	.26	f.30	.20	1.57	.12	.14	36.5	8.8	.34	.26
14	.14	.14	.23	3.25	.20	1.36	.12	.12	32.5	2.6	.34	.26
15	.14	.14	.23	1.11	.20	1.01	.36	.12	27	.77	.37	.70
16	.12	.14	.23	.34	.20	.43	.16	.10	19.0	.57	.37	.49
17	.12	.14	.23	.30	.20	.16	.14	.10	22	2.1	.34	.26
18	.12	.14	.23	5.0	.16	.16	.14	1.00	16.3	1.81	.34	.23
19	.12	.14	.26	.48	.16	.20	.14	7.6	15.4	.77	.30	.20
20	.12	.14	1.64	.26	.16	.20	.14	.20	26	1.38	.30	.20
21	.12	.14	.26	.26	.16	.20	.14	.12	59	.62	.30	.20
22	.12	.52	.23	28.5	.16	.20	.14	.12	19.4	.70	.26	.20
23	.10	.16	.23	102	.16	.20	.14	.12	2.6	.40	.26	.20
24	.10	.16	.20	61	.16	.20	.14	.12	1.09	.40	.26	.23
25	.10	.18	.20	a17	.14	.16	.14	.12	12.6	.40	.26	.23
26	.08	.47	.20	a32	.12	.16	.14	1.58	13.1	.40	.26	.23
27	.08	.14	.16	a50	.12	.16	.14	.95	1.97	.40	.26	.23
28	.12	.16	.16	2.75	.12	.16	.12	.94	5.7	.67	.26	.26
29	.12	.16	.16	1.09	.12	.16	.10	-	.48	1.80	.26	.26
30	.12	.16	.16	.70	.14	.16	.10	-	1.94	2.16	.26	.23
31	.10	.20	-	.48	-	.16	.10	-	.44	-	.23	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	5.7	0.08	0.371	0.574	11.5	35
August	5.6	.08	.562	.870	17.4	53
September	18.2	.16	1.13	1.75	34.0	104
October	102	.12	10.9	16.9	338	1,040
November	.96	.12	.224	.347	6.71	21
December	7.5	.10	1.05	1.62	32.5	100
Calendar year 1941	102	.07	1.90	2.94	694	2,130
January	.36	.10	.139	.215	4.30	13
February	7.6	.10	.536	.829	15.0	46
March	115	.16	19.5	30.2	603	1,850
April	12.6	.40	1.82	2.82	54.6	168
May	18.2	.23	1.50	2.32	46.4	142
June	.70	.20	.267	.413	8.01	25
Fiscal year 1941-42	115	.08	3.21	4.97	1,170	3,600

a No gage-height record; discharge computed on basis of records for stations above and below Haiku ditch.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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, 1⅛ 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 1942. Records at same site collected by East Maui Irrigation Co. November 1926 to June 1932.

Average discharge.- 10 years, 1.73 million gallons a day (2.68 second-feet).

Extremes.- Maximum discharge during year, 422 million gallons a day (653 second-feet) Oct. 22 (gage height, 4.61 feet), from rating curve extended above 15 million gallons a day by logarithmic plotting; minimum, 0.26 million gallons a day (0.40 second-foot) Jan. 25, Feb. 15, 16.

1932-42: Maximum discharge, that of Oct. 22, 1941; minimum, 0.08 million gallons a day (0.12 second-foot) Dec. 1, 2, 1938.

Remarks.- Records good except those for periods of no gage-height record, which are poor. 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.3	0.18	0.8	3.6	1.8	44
.4	.40	1.0	7.5	2.0	59
.5	.75	1.2	13.7	2.5	101
.6	1.36	1.4	21.5	3.0	154
.7	2.3	1.6	31		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	7.2	0.37	0.75	0.58	1.09	0.45	0.48	0.30	1.11	1.30	1.93	0.45
2	.92	.34	.80	.51	.86	.40	.48	.30	.75	1.03	.92	.45
3	.88	.42	1.58	.45	.75	.40	.45	.30	.58	.98	.80	.45
4	1.91	.53	.66	.48	.70	.55	.42	.30	13.5	a.92	.75	.45
5	1.54	.45	3.4	.45	.66	.57	.45	.37	1.69	a.92	3.6	.45
6	2.35	.52	19.9	.42	1.72	5.4	.42	.46	.95	a13	18.2	.45
7	a1.0	5.8	f5.5	.62	.88	5.2	.40	.32	.62	a1.4	18.0	.45
8	a.50	7.1	1.08	16.4	.66	2.9	.37	.30	30.5	a1.2	1.72	.45
9	a.70	3.15	.92	2.95	.62	2.1	.37	.30	28	a1.1	1.39	.45
10	a.56	1.40	.80	1.16	.58	2.5	.37	.30	68	1.08	.86	.45
11	a.56	1.44	.80	1.20	.55	f7.5	.34	.30	29	12.0	.75	.45
12	.48	.92	.70	1.03	.55	3.2	.37	.41	16.4	1.93	.70	.51
13	.42	.75	.66	.86	.55	2.2	.40	.30	32.5	11.0	.66	.48
14	.51	.70	.58	3.9	.55	1.81	.40	.30	32.5	3.7	.71	.55
15	.48	.58	.55	1.91	.55	1.45	.74	.28	28	1.54	.75	1.12
16	.48	.51	.51	.86	.58	.96	.45	.28	21.5	1.23	.70	1.39
17	.48	.51	.51	.75	.51	.62	.40	.32	24	2.9	.66	.70
18	.48	.48	.55	5.3	.51	.58	.40	2.15	19.2	2.6	.62	.58
19	.51	.45	.75	.90	.55	.55	.40	10.3	18.2	1.16	.58	.55
20	.48	.45	2.7	.75	.48	.51	.37	.80	15.6	2.05	.58	.55
21	.45	.62	.62	.70	.55	.48	.34	.51	47	1.20	.55	.51
22	.48	1.18	.58	15.8	.51	.48	.32	.45	24	.92	.55	.48
23	.48	.66	.55	117	.51	.48	.30	.42	5.2	.86	.55	.48
24	.42	.55	.51	50	.51	.59	.28	.40	3.0	.86	.51	.45
25	.45	.55	.51	20	.48	.48	.29	.40	12.6	.80	.51	.45
26	.40	.97	.51	35	.42	.48	.34	3.1	13.1	.75	.51	.42
27	.40	.55	.51	60	.40	.45	.37	2.25	3.6	.75	.48	.48
28	.41	.48	a.48	6.9	.51	.42	.32	1.73	7.1	1.10	.51	.45
29	.42	.48	f.45	3.2	.44	.45	.30	-	1.81	2.7	.48	.45
30	.40	.45	.45	1.90	.62	.55	.30	-	3.7	3.3	.48	.42
31	.40	.78	-	1.36	-	.51	.30	-	2.0	-	.48	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	7.2	0.40	0.876	1.36	27.2	83
August	7.1	.34	1.10	1.70	34.1	105
September	19.9	.45	1.63	2.52	48.9	150
October	117	.42	11.4	17.6	353	1,080
November	1.72	.40	.628	.972	18.8	58
December	7.5	.40	1.46	2.26	45.2	139
Calendar year 1941	117	-	2.12	3.28	772	8,370
January	.74	.28	.385	.596	11.9	37
February	10.3	.28	.998	1.54	28.0	86
March	68	.58	16.3	25.2	506	1,550
April	13	.75	2.54	3.93	76.3	234
May	18.2	.48	1.95	3.02	60.5	186
June	1.39	.42	.532	.823	16.0	49
Fiscal year 1941-42	117	.28	3.36	5.20	1,230	3,760

a No gage-height record; discharge computed on basis of records for stations at Lowrie ditch siphon and below Haiku ditch.

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

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1½ 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 1942. Records at same site collected by East Maui Irrigation Co. November 1926 to June 1932.

Average discharge.- 10 years, 5.86 million gallons a day (9.07 second-feet).

Extremes.- Maximum discharge during year, 1,200 million gallons a day (1,860 second-feet) Oct. 22 (gage height, 5.29 feet), from rating curve extended above 44 million gallons a day by logarithmic plotting; minimum, 0.03 million gallons a day (0.05 second-foot) June 17.

1932-42: 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.

Remarks.- Records good except those above 50 million gallons a day and those for July 12, 13, which are fair. Wailoa, New Hamakua, Old Hamakua, and Haiku ditches divert most of flow above this station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.02	0.5	2.55	0.9	11.6	1.7	54
.2	.22	.6	4.1	1.0	15.1	2.0	80
.3	.67	.7	5.1	1.2	23.5	2.5	138
.4	1.41	.8	8.6	1.4	34	2.9	197

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	18.3	0.99	1.98	7.3	1.32	0.33	0.86	0.73	36	0.55	8.2	0.80
2	.16	.92	9.4	1.24	1.24	.29	.86	.67	3.55	1.07	.37	.73
3	3.3	.86	27.5	.92	1.15	.41	.86	.67	.86	1.32	.37	.73
4	18.6	5.4	.86	1.48	1.32	17.3	.86	.67	33	1.41	.33	.73
5	6.4	.92	6.4	.92	1.24	S.3	.80	.73	16.7	1.15	4.6	.73
6	2.8	.86	64	.86	6.2	16.4	.80	.80	1.78	32.5	35.5	.73
7	.76	33	38.5	11.3	1.66	9.1	.80	.73	.41	1.15	33.5	.73
8	.06	45	2.75	44	.80	2.85	.SO	.73	69	1.07	4.3	.73
9	2.7	26	.61	34	.80	6.0	.SO	.73	74	1.07	.24	.73
10	.33	33.5	.56	20	.61	6.6	.80	.73	145	.99	.29	1.18
11	.99	19.0	.67	14.6	.61	13.1	.SO	.73	75	2S.5	.99	.73
12	a.92	.08	.56	24.5	.61	7.3	.80	.80	37.5	14.8	.99	.67
13	a.92	.70	.67	16.1	.61	4.8	.80	.73	61	26	.99	.67
14	.92	1.07	.92	31	.61	11.3	2.3	.80	49	15.9	.99	1.54
15	.92	.99	.92	24.5	.73	5.1	5.5	.73	42	7.3	1.15	.23
16	.92	.99	.86	11.4	.56	6.9	.73	.73	36	.99	1.07	3.2
17	.92	.92	.86	.86	.46	3.9	.73	.80	34.5	5.7	.99	.33
18	.92	.86	.86	24.5	.46	1.48	.67	18.4	7.6	5.0	.92	.86
19	a.99	.86	5.6	12.3	.61	.99	.67	24	4.2	.86	.92	.80
20	al.2	3.7	21.5	.67	.56	.92	.73	12.5	18.3	6.4	.86	.80
21	.86	9.5	1.07	.61	.56	.92	.80	.86	96	10.0	.86	.80
22	.86	13.7	.92	63	1.23	.86	.73	.80	39.5	.73	.86	.80
23	.92	1.57	1.17	177	4.5	.86	.80	.73	4.7	.61	.86	.80
24	.86	.99	.99	101	4.9	.92	.SO	.73	9.0	.61	.86	.80
25	.SO	.86	1.15	10.7	.37	.92	.73	.73	29	.61	.86	.80
26	.80	8.5	.99	25.6	.37	.86	.73	8.5	36	.46	.86	.73
27	.80	.86	1.15	120	.33	.86	.73	41	16.2	.46	.86	1.07
28	.SO	.SO	.92	3.65	.41	.86	.73	50	17.4	.61	.80	.92
29	.99	.80	.86	.19	.37	.80	.73	-	.16	10.8	.80	.80
30	.99	.80	.86	.16	3.15	.98	.73	-	5.3	9.2	.80	.73
31	.99	15.6	-	.72	-	1.07	.73	-	.16	-	.80	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	18.6	0.06	2.18	3.37	67.7	208
August	45	.08	7.44	11.5	231	708
September	64	.56	6.54	10.1	196	602
October	177	.16	25.3	39.1	785	2,410
November	6.2	.33	1.28	1.98	38.4	118
December	17.3	.29	4.27	6.61	132	406
Calendar year 1941	177	.06	6.51	10.1	2,380	7,290
January	5.5	.67	.975	1.51	30.2	93
February	50	.67	6.10	9.44	171	524
March	145	.16	32.2	49.8	998	3,070
April	32.5	.46	6.25	9.67	188	575
May	35.5	.24	3.44	5.32	107	328
June	3.2	.23	.863	1.34	25.9	79
Fiscal year 1941-42	177	.06	8.14	12.6	2,970	9,120

a No gage-height record; discharge computed on basis of range of stage from recorder chart and records for station above Haiku ditch.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 19 years (1923-42), 117 million gallons a day (181 second-feet).

Extremes.- Maximum discharge during year, 182 million gallons a day (282 second-feet) Apr. 6 (gage height, 6.05 feet); minimum, 31.5 million gallons a day (48.7 second-feet) Feb. 12.

1922-42: 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	176	79	172	176	152	160	93	41	172	172	176	58
2	176	72	172	168	136	144	143	38	168	168	172	53
3	176	96	176	164	124	172	101	38	152	168	164	50
4	176	146	168	168	112	176	86	36.5	176	168	168	47
5	176	114	164	164	108	172	106	49	176	168	164	53
6	176	136	176	156	148	176	102	91	172	176	176	87
7	172	176	176	172	168	160	79	41	164	168	176	88
8	168	176	172	172	152	164	76	38	172	164	176	107
9	172	176	168	176	164	164	69	35	176	152	172	134
10	168	176	156	176	144	164	66	33.5	176	172	168	141
11	160	172	168	176	152	164	63	32	180	180	164	78
12	144	168	144	176	112	164	59	41	180	180	148	131
13	128	164	120	176	97	164	65	36.5	180	180	128	104
14	124	160	124	176	101	160	155	84	180	180	144	168
15	127	161	130	176	151	160	153	41	180	180	164	180
16	104	124	101	176	152	164	90	62	180	176	140	168
17	132	108	93	176	108	164	76	78	180	176	116	160
18	124	101	135	176	108	160	69	172	180	176	101	140
19	148	128	172	176	152	160	66	176	180	172	92	138
20	148	172	172	172	144	148	59	168	176	176	88	90
21	116	172	156	168	136	152	56	156	180	176	79	76
22	148	172	132	168	148	132	53	106	180	172	76	69
23	144	164	144	176	168	120	53	79	176	168	72	83
24	128	140	136	176	170	137	80	69	180	164	69	131
25	128	125	152	176	148	148	88	136	176	148	66	76
26	97	160	168	176	120	132	63	172	180	136	79	101
27	86	136	168	176	104	108	53	176	180	152	68	164
28	104	108	164	176	159	101	53	176	176	168	59	144
29	148	132	156	172	116	93	50	-	176	180	66	108
30	137	127	168	166	163	128	44	-	176	176	78	112
31	93	172	-	164	-	126	41	-	172	-	59	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	176	86	142	220	4,400	13,510
August	176	72	142	220	4,410	13,540
September	176	93	153	237	4,600	14,130
October	176	156	172	266	5,340	16,400
November	170	97	137	212	4,110	12,620
December	176	93	150	232	4,660	14,290
Calendar year 1941	186	32	133	206	48,370	148,500
January	165	41	76.1	118	2,360	7,240
February	176	32	85.8	133	2,400	7,370
March	180	152	176	272	5,460	16,730
April	180	136	170	263	5,090	15,630
May	176	59	122	189	3,780	11,590
June	168	47	104	161	3,120	9,580
Fiscal year 1941-42	180	32	136	210	49,720	152,600

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 24 years, 29.4 million gallons a day (45.5 second-feet).

Extremes.- Maximum discharge during year, 118 million gallons a day (183 second-feet) Oct. 23 (gage height, 5.77 feet); minimum, 0.21 million gallons a day (0.32 second-foot) Feb. 4, 5.
1918-42: 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 excellent. 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	102	0.62	97	99	3.25	e.5	1.08	0.28	52	55	101	0.43
2	101	.58	101	59	2.65	2.7	35	.26	66	54	77	.39
3	101	10.9	102	26	2.35	56	1.13	.24	3.75	49	20.5	.36
4	102	48	44	63	2.0	90	.92	.21	93	91	28	.32
5	102	1.96	13.5	18.9	1.85	99	8.3	.43	102	60	37.5	.43
6	102	14.6	104	22.5	32	43	2.3	9.0	88	99	104	.36
7	93	102	104	95	60	54	.87	.62	15.9	82	104	.36
8	51	102	82	100	16.4	91	.76	.32	48	26.5	101	7.7
9	68	102	27	102	58	95	.71	.28	84	3.15	97	25.5
10	46	102	3.9	102	24.5	45	.66	.28	104	55	45	50
11	10.7	102	52	102	17.3	32	.66	.28	74	104	8.5	.68
12	1.85	61	9.6	102	1.25	31	.66	.36	73	102	2.5	21
13	1.45	10.9	5.2	102	1.08	45	.58	.32	92	104	2.0	6.0
14	1.45	36.5	2.55	104	1.19	35	56	3.6	106	102	25	74
15	1.45	25	8.2	98	53	23.5	58	.32	106	102	44	54
16	1.25	5.8	1.52	102	39.5	70	1.02	.32	104	99	5.7	95
17	1.25	4.2	1.31	96	1.13	55	.66	.32	104	101	1.45	32
18	16.4	1.52	6.9	95	1.25	32	.62	96	104	101	1.18	7.9
19	24	2.45	94	101	48	11.5	.55	95	104	73	1.08	8.8
20	35.5	67	99	72	15.7	1.85	.51	90	89	76	.97	.82
21	1.02	99	24.5	38	5.6	7.0	.47	41	106	102	.92	.62
22	42	97	7.0	21	24.5	1.72	.47	.92	104	76	.92	.58
23	16.4	54	30.5	106	59	1.45	.43	.66	86	32	.76	3.25
24	17.2	11.7	6.1	106	90	34.5	.43	.58	101	8.4	.66	36
25	12.9	1.60	28	102	9.3	12.0	.43	22.5	103	2.1	.66	1.04
26	.66	57	52	102	1.52	1.65	.62	97	104	1.78	.71	15.5
27	.66	3.7	70	106	1.31	1.25	.55	90	104	23	.62	74
28	1.53	1.45	31	99	50	1.13	.43	47	101	69	.55	31
29	39	1.97	6.7	69	1.65	1.02	.39	-	83	91	.76	1.21
30	8.7	3.2	69	35.5	58	35.5	.32	-	95	102	.62	.71
31	.71	99	-	15.2	-	17.6	.28	-	64	-	.55	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	102	0.66	35.6	55.1	1,100	3,390
August	102	.58	39.7	61.4	1,230	3,780
September	104	1.31	42.8	66.2	1,280	3,940
October	106	15.2	80.0	124	2,480	7,610
November	90	1.08	22.8	35.3	683	2,100
December	99	1.02	33.4	51.7	1,040	3,180
Calendar year 1941	106	.26	35.7	55.2	13,010	39,980
January	58	.28	5.67	8.77	176	540
February	97	.21	21.4	33.1	598	1,840
March	106	3.75	86.9	133	2,660	8,170
April	104	1.78	67.6	104	2,030	6,220
May	104	.56	26.3	40.7	815	2,500
June	95	.32	18.3	28.3	550	1,690
Fiscal year 1941-42	106	.21	40.1	62.0	14,640	44,960

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 38.5 million gallons a day (59.6 second-feet) Oct. 23 (gage height, 2.77 feet); no flow Feb. 13-17.
1918-22, 1936-42: 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. 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	22	0.02	2.15	4.3	0.06	0.05	0.02	0.01	11.6	0.06	11.1	0.03
2	5.0	.02	6.3	.30	.05	.03	.03	.01	3.25	.05	.25	.02
3	6.0	.39	15.1	.05	.05	.05	.02	.01	.04	.05	.09	.02
4	14.1	1.28	.13	.21	.05	S.6	.02	.01	20	.21	.05	.02
5	S.8	.04	3.7	.06	.04	6.7	.02	.03	15.2	.1	7.6	.02
6	7.4	1.42	28.5	.04	4.8	8.2	.02	.05	1.73	14.7	23.5	.09
7	2.S	20	21.5	3.5	.76	.72	.01	.02	.05	.20	26.5	.02
8	.10	19.5	2.3	15.7	.05	.68	.01	.01	11.3	.05	8.0	.02
9	3.95	10.6	.17	20.5	.06	.68	.01	.01	9.1	.04	4.7	.02
10	1.25	19.4	.06	17.8	.04	.6S	.01	.01	2.9	.17	.18	.22
11	.06	10.1	.14	10.7	.02	.68	.01	.01	2.25	24	.05	.05
12	.04	.19	.07	15.1	.02	.6S	.01	.01	2.25	22	.05	.03
13	.04	.05	.05	12.2	.02	.6S	.01	.01	2.25	26.5	.04	.04
14	.04	.05	.05	19.7	.02	.68	4.9	0	2.3	22.5	.15	1.78
15	.03	.05	.05	17.5	.42	.21	3.3	0	2.25	11.9	.17	3.45
16	.03	.04	.04	10.2	.11	S.1	.04	.01	2.25	3.95	.05	3.8
17	.03	.04	.04	1.53	.03	.68	.02	.01	2.25	9.2	.04	.17
18	.03	.04	.04	17.6	.03	.32	.02	10.5	1.92	5.5	.04	.04
19	.05	.04	3.35	6.4	.13	.04	.01	18.3	1.07	.33	.04	.02
20	.13	.83	9.8	.10	.05	.04	.01	1.4S	.56	9.1	.02	.02
21	.04	3.15	.08	.05	.04	.03	.01	.05	.0S	11.0	.02	.02
22	.05	6.9	.04	5.3	.80	.03	.01	.03	.05	1.10	.02	.02
23	.07	.43	.08	24	1.47	.02	.01	.02	.23	.07	.03	.02
24	.03	.04	.05	4.1	3.85	.06	.01	.01	15.1	.05	.03	.04
25	.04	.04	.06	3.4	.06	.03	.01	.02	17.5	.05	.03	.03
26	.02	7.4	.10	3.5	.03	.02	.01	4.2	16.2	.04	.03	.02
27	.02	.06	.47	3.85	.03	.02	.01	11.S	23.5	.05	.03	.09
28	.02	.05	.07	2.15	.09	.02	.01	.68	9.2	1.04	.02	.10
29	.08	.04	.04	.25	.04	.01	.01	-	3.25	18.7	.02	.03
30	.03	.03	.13	.16	1.05	.14	.01	-	4.7	14.8	.02	.02
31	.02	5.3	-	.10	-	.08	.01	-	.10	-	.02	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	22	0.02	2.33	3.61	72.3	222
August	20	.02	3.47	5.37	108	330
September	28.5	.04	3.16	4.89	94.7	291
October	24	.04	7.11	11.0	220	676
November	4.S	.02	.476	.736	14.3	44
December	S.6	.01	1.26	1.95	39.0	120
Calendar year 1941	28.5	0	2.71	4.19	990	3,040
January	4.9	.01	.278	.430	8.61	26
February	18.3	0	1.69	2.61	47.3	146
March	23.5	.04	5.95	9.21	184	566
April	26.5	.04	6.58	10.2	198	606
May	26.5	.03	2.67	4.13	82.9	254
June	3.8	.02	.339	.525	10.2	31
Fiscal year 1941-42	28.6	0	2.96	4.58	1,080	3,310

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942. January 1910 to March 1927 at site 1½ miles downstream.

Average discharge.- 28 years (1910-26, 1930-42), 33.2 million gallons a day (51.4 second-feet).

Extremes.- Maximum discharge during year, 82 million gallons a day (127 second-feet) Oct. 22 (gage height, 5.48 feet); minimum, 1.73 million gallons a day (2.68 second-feet) Jan. 22, 23.
1930-42: 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	56	4.8	53	48	19.2	35.5	9.4	4.0	29.5	53	56	7.2
2	53	4.8	53	48	22	23	19.0	4.0	43	33	46	6.7
3	53	7.6	56	35.5	38	35.5	9.1	3.9	29	28	29	6.3
4	56	48	43	46	20.5	48	8.0	3.2	50	50	43	5.9
5	53	25.5	40	18.0	13.0	53	10.3	4.9	53	40	43	6.5
6	56	15.7	58	14.7	26.5	48	10.3	19.1	50	58	58	5.7
7	53	53	58	48	40	40	7.8	5.0	33	46	58	5.7
8	46	56	56	56	19.2	43	7.2	4.2	40	24	56	8.4
9	48	53	43	56	29	28	6.9	3.05	38	20.5	56	9.1
10	48	53	43	53	19.2	30.5	5.6	3.2	40	35.5	46	43
11	38	53	48	53	25.5	30.5	5.9	3.2	15.9	56	46	12.5
12	20.5	46	38	53	22	35	4.7	4.5	20.5	56	38	17.1
13	15.5	33	20.5	53	19.2	50	4.3	3.6	30.5	58	23	8.2
14	15.5	38	16.8	56	9.8	17.5	28.6	5.3	46	56	24	47
15	13.8	32	16.8	56	28	13.9	50	4.3	58	56	33	43
16	12.5	15.1	14.0	53	35.5	46	27	3.45	58	53	20.5	53
17	11.8	14.5	13.0	53	11.9	35.5	7.2	3.6	58	53	15.5	40
18	15.6	13.5	14.2	50	12.0	33	6.3	46	58	56	14.5	35.5
19	20.5	13.0	61	53	33	35.5	5.7	56	58	48	13.5	13.8
20	32	33	56	46	24	18.0	4.3	53	58	27	12.6	10.0
21	10.3	53	38	38	14.2	15.2	4.0	28	56	33	11.8	8.9
22	18.3	56	33	31.5	17.4	12.5	3.6	15.5	53	40	11.0	8.2
23	21	50	29	61	46	11.8	3.45	28	56	38	10.3	7.6
24	9.4	38	27	58	48	25.5	4.2	10.7	56	35.5	9.6	13.0
25	12.7	14.0	18.9	56	33	13.5	4.2	15.5	58	28	9.4	7.8
26	7.7	48	30.5	56	24	12.5	6.5	53	58	18.0	10.0	9.9
27	7.5	38	43	58	10.9	10.3	5.9	53	56	23	8.7	33
28	10.4	13.8	19.2	56	35.5	9.4	3.9	15.6	58	40	8.2	24
29	26	14.8	13.5	53	10.8	8.9	4.3	-	56	48	9.8	10.5
30	7.0	13.0	25.5	48	38	23	4.0	-	58	56	8.2	8.4
31	5.2	51	-	25.5	-	20	3.9	-	56	-	7.8	-

Month	Million gallons a day			Second-feet (sean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	56	5.2	27.5	42.5	863	2,620
August	56	4.8	32.3	50.0	1,000	3,080
September	58	13.0	35.6	55.1	1,070	3,280
October	61	14.7	48.1	74.4	1,490	4,570
November	48	9.8	24.8	38.4	745	2,290
December	53	8.9	27.8	43.0	862	2,650
Calendar year 1941	61	3.75	28.1	43.5	10,260	31,490
January	50	3.45	9.21	14.2	285	876
February	56	3.05	16.3	25.2	457	1,400
March	58	15.9	48.0	74.3	1,490	4,560
April	58	18.0	42.2	65.3	1,270	3,890
May	58	7.8	27.0	41.8	837	2,570
June	53	5.7	17.2	26.6	516	1,580
Fiscal year 1941-42	61	3.05	29.8	46.1	10,880	33,370

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

Haiku ditch at Honopou Gulch, near Kailua

Location.- Concrete weir, 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 (revised) 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 1942. 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 Kapualaea Gulch, 0.9 mile downstream.

Average discharge.- 30 years (1910-28, 1930-42), 25.7 million gallons a day (39.8 second-feet).

Extremes.- Maximum discharge during year, 112 million gallons a day (173 second-feet) Oct. 22 (gage height, 4.68 feet); minimum, 0.30 million gallons a day (0.46 second-foot) Feb. 15.

1910-28, 1930-42: 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 good except those for periods of no gage-height record, which are poor. 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Deo.	Jan.	Feb.	Mar.	Apr.	May	June
1	74	3.25	50	57	11.5	2.85	1.19	0.48	33.5	9.9	64	1.13
2	29.5	2.6	58	7.5	5.2	2.5	1.39	.44	20.5	4.7	8.9	1.07
3	48	3.9	69	1.95	4.3	13.1	1.13	.40	2.45	14.0	4.3	a1.0
4	74	30.5	5.3	18.3	11.2	52	1.01	.67	55	16.4	3.8	a1.0
5	49	2.1	11.0	1.60	7.3	57	1.35	1.50	74	4.7	20.5	a1.4
6	53	1.96	82	1.32	28	23.5	1.13	1.87	24.5	68	84	a1.1
7	36	76	76	59	17.9	2.05	1.01	1.36	3.4	8.0	84	a2.5
8	5.5	79	34	53	3.7	1.88	.95	.58	29	12.0	57	a6.0
9	29.5	76	5.6	74	4.7	1.88	.89	1.25	76	10.0	41	a25
10	13.2	76	4.9	74	3.2	1.88	1.48	.88	79	7.6	7.1	a23
11	3.3	66	14.0	74	2.85	2.1	1.01	.76	76	74	4.8	a3.0
12	2.85	8.2	4.1	74	2.75	1.88	1.64	1.83	76	82	4.2	a7.0
13	2.5	3.35	3.15	74	2.65	4.9	3.8	.91	76	84	3.6	1.25
14	2.6	5.1	2.5	76	5.2	10.5	15.2	1.80	76	82	5.0	31
15	2.2	2.9	2.2	66	14.9	75	29	.37	74	76	5.6	21.5
16	2.05	3.2	2.05	57	4.4	25.5	1.39	1.17	74	20.5	3.05	56
17	2.2	1.95	1.88	11.3	2.6	5.6	1.01	1.08	74	31.5	2.75	6.7
18	2.05	1.81	2.05	42	2.5	3.15	.89	60	65	62	2.6	2.0
19	3.0	1.74	49	53	12.4	2.2	.83	31	52	8.6	2.35	1.39
20	9.8	33	63	5.0	2.85	2.05	1.40	33	36	38.5	2.1	1.13
21	1.67	52	3.1	3.6	2.6	2.05	1.53	2.35	76	70	1.81	1.01
22	2.6	52	2.35	13.6	13.0	1.60	1.80	1.39	74	20	1.74	.89
23	3.15	12.5	10.8	79	30.5	1.60	1.91	1.19	65	4.9	1.60	.83
24	1.53	2.35	2.6	79	44	3.05	1.01	2.1	68	4.3	1.53	.83
25	1.53	1.81	9.8	65	3.35	1.60	1.01	1.39	74	3.95	1.46	.83
26	1.32	33	3.35	67	2.45	1.60	1.20	35	74	3.6	1.60	1.34
27	1.32	2.6	7.5	79	2.1	1.32	1.16	30	74	3.5	1.39	5.6
28	1.39	1.95	1.67	64	11.5	1.25	1.42	2.1	66	16.7	1.32	3.7
29	4.5	2.05	1.39	24.5	4.2	1.19	.62	-	48	65	1.53	1.01
30	3.55	1.81	1.81	9.0	30	6.6	.58	-	60	79	1.25	.95
31	3.35	65	-	14.0	-	4.0	.58	-	36	-	1.19	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	74	1.32	15.2	23.5	470	1,440
August	79	1.74	22.8	35.3	706	2,170
September	82	1.39	19.5	30.2	584	1,790
October	79	1.32	44.4	68.7	1,380	4,230
November	44	2.1	9.79	15.1	294	902
December	75	1.19	10.2	15.8	317	974
Calendar year 1941	82	.28	16.7	25.8	6,100	18,710
January	29	.58	2.60	4.02	80.5	247
February	60	.37	7.75	12.0	217	666
March	79	2.45	57.8	89.4	1,790	5,500
April	84	3.5	32.8	50.7	985	3,020
May	84	1.19	13.8	21.4	427	1,310
June	56	.83	7.04	10.9	211	648
Fiscal year 1941-42	84	.37	20.4	31.6	7,460	22,900

a No gage-height record; discharge computed on basis of records for stations on all nearby ditches.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 7⅛ miles northwest of Mountain View.

Records available.- September 1930 to June 1942.

Average discharge.- 11 years (1931-42), 7.51 million gallons a day (11.6 second-feet).

Extremes.- Maximum discharge during year, 166 million gallons a day (257 second-feet) Mar. 14 (gage height, 4.43 feet), from rating curve based on weir formulas; minimum, 0.16 million gallons a day (0.25 second-foot) Feb. 10-18.
1930-42: Maximum discharge, that of Mar. 14, 1942; 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 period of faulty 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 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.0	0	0.4	1.21	0.9	4.1	2.5	23.5
.1	.18	.5	1.70	1.2	6.4	3.0	39
.2	.42	.6	2.25	1.6	9.9	3.5	65
.3	.78	.7	2.85	2.0	14.6	4.0	111

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	16.8	3.1	5.6	19.5	12.1	6.8	4.1	0.25	4.1	13.3	11.5	5.4
2	16.8	2.85	7.6	18.6	10.4	6.4	3.85	.23	3.8	11.5	10.9	5.3
3	16.8	2.85	a13	17.6	9.4	6.0	3.6	.20	3.65	10.4	11.5	4.9
4	16.8	3.95	a9.9	16.8	8.6	7.6	3.35	.20	3.6	11.5	12.7	4.5
5	16.8	3.55	a10.4	17.6	7.6	7.6	3.1	.20	3.6	9.9	14.0	4.4
6	16.8	4.2	a45	17.6	6.8	8.1	2.9	.23	3.6	9.0	f15.3	4.2
7	16.8	f8.0	a100	20.5	6.4	8.6	2.75	.20	3.6	8.1	f18.6	3.95
8	15.3	f8.8	a50	19.5	5.6	10.2	2.5	.20	3.5	7.6	17.6	3.8
9	13.3	10.7	32	19.5	5.6	17.8	2.3	.20	8.4	6.8	17.6	3.7
10	12.1	f14.4	26	23.5	5.0	19.5	2.15	.16	11.6	6.4	16.0	3.85
11	10.4	14.6	20.5	25	4.6	25	1.98	.16	11.5	7.6	15.3	3.7
12	9.9	16.0	16.8	31	4.2	26	1.76	.16	25	17.3	14.0	3.5
13	9.0	16.8	13.3	29	3.95	25	1.60	.16	46	18.6	12.7	3.85
14	8.1	15.3	12.1	29	3.7	21.5	1.46	.16	77	19.5	12.7	3.95
15	7.2	14.0	10.4	27.5	10.7	17.6	1.41	.16	69	20.5	10.9	3.9
16	7.2	12.1	9.4	25	8.6	16.8	1.21	.16	56	19.5	10.4	3.85
17	6.8	10.4	8.6	22.5	8.1	15.3	1.12	.16	46	19.5	9.9	3.8
18	6.8	9.9	8.4	21.5	7.2	14.0	1.04	.29	34	19.5	9.0	4.1
19	6.4	9.4	8.9	20.5	6.4	12.7	.95	4.0	25	18.6	8.6	4.0
20	6.4	9.0	8.1	19.5	9.0	11.5	.82	1.38	19.5	17.6	8.1	3.95
21	6.0	9.0	7.6	18.6	9.0	10.4	.74	.78	16.8	17.6	7.2	3.85
22	5.6	8.6	7.2	16.8	9.9	9.9	.71	.60	16.8	16.0	6.8	3.7
23	5.3	8.6	7.6	16.0	10.4	9.0	.64	.56	16.0	15.3	6.4	3.85
24	4.8	8.1	7.2	16.0	11.5	8.1	.56	.60	15.3	13.3	6.0	3.9
25	4.5	7.6	14.9	15.3	10.9	7.6	.49	.74	14.0	12.1	5.5	3.7
26	4.2	7.2	16.7	21.5	10.4	6.8	.42	1.49	f16.8	10.9	5.1	3.95
27	3.95	6.8	18.6	19.5	9.9	6.4	.37	4.0	f16.8	10.9	4.7	4.5
28	3.8	6.4	19.5	19.5	9.4	6.0	.35	3.1	16.8	9.9	4.4	4.5
29	3.5	6.0	20.5	18.6	8.6	5.4	.32	-	16.8	10.4	6.1	4.3
30	3.4	5.6	19.5	16.0	7.6	5.0	.32	-	16.0	10.4	5.7	4.0
31	3.25	5.6	-	14.0	-	4.5	.30	-	15.3	-	6.0	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	16.8	3.25	9.19	14.2	285	874
August	16.8	2.85	8.69	13.4	269	827
September	100	5.6	18.5	28.6	555	1,700
October	31	14.0	20.4	31.6	633	1,940
November	12.1	3.7	8.05	12.5	242	741
December	26	4.5	11.7	18.1	363	1,110
Calendar year 1941	100	.04	8.42	13.0	3.070	9,420
January	4.1	.30	1.59	2.46	49.2	151
February	4.0	.16	.740	1.14	20.7	64
March	77	3.5	20.5	31.7	636	1,950
April	20.5	6.4	13.3	20.6	400	1,230
May	18.6	4.4	10.4	16.1	321	986
June	5.4	3.5	4.10	6.34	123	377
Fiscal year 1941-42	100	.16	10.7	16.6	3.900	11,950

a Faulty gage-height record; discharge computed on basis of records for Wailuku River.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter.
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 1942. Station was not in operation for three months owing to destruction of recorder shelter by flood of August 1940.

Average discharge.- 12 years (1929-40, 1941-42), 189 million gallons a day (292 second-feet).

Extremes.- Maximum discharge during year, 18,400 million gallons a day (28,500 second-feet) Sept. 6 (gage height, 21.95 feet), from rating curve extended above 3,400 million gallons a day by logarithmic plotting; minimum, 4.9 million gallons a day (7.6 second-feet) Feb. 15-18.

1928-42: 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 except those for periods of faulty and no gage-height record, which are poor. 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.

Revisions.- Revised figures of discharge for period Oct. 13, 1940 to June 30, 1941, superseding those published in Water-Supply Paper 935 are given herein.

Rating table, Oct. 13, 1940, to June 30, 1942 (gage height, in feet, and discharge, in million gallons a day)

1.3	0.6	2.1	16.5	5.0	233	12.0	2,690
1.4	1.20	2.3	24	6.0	370	13.0	3,510
1.5	2.0	2.5	33	7.0	534	14.0	4,460
1.6	3.1	2.7	43	8.0	774	15.0	5,560
1.7	4.9	3.0	58	9.0	1,110	16.0	6,840
1.8	7.1	3.5	90	10.0	1,490		
1.9	9.9	4.0	130	11.0	2,020		

Discharge, in million gallons a day, 1940-42

1940-41

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1				-	495	64	e7.4	5.6	0.9	50	20	70
2				-	233	46	109	7.1	.7	46	19.6	67
3				-	210	38	87	7.4	.6	70	19.0	82
4				-	334	34	89	6.7	.6	132	35	109
5				-	233	31	68	5.3	2.2	76	36	94
6				-	149	29.5	43	4.2	2.2	58	27	73
7				-	113	29	33	4.2	1.3	85	23	64
8				-	117	61	27	3.8	.9	105	19.3	53
9				-	371	37.5	24	3.1	.6	70	21	56
10				-	184	28.5	21.5	2.9	.6	53	19.3	43
11				-	113	26	18.2	2.0	1.1	46	22.5	38
12				-	86	23.5	17.2	2.0	4.0	38	69	36.5
13				58	80	22	19.0	2.2	4.5	37	90	34.5
14				50	192	21	26.5	1.9	2.4	37	80	28.5
15				48	664	19.6	22	2.3	1.0	70	58	26
16				43	306	18.6	17.6	3.3	1.0	53	58	24
17				36.5	234	17.9	15.5	2.8	181	38	58	21.5
18				31.5	159	17.2	13.9	1.9	178	32	133	20
19				28.5	130	15.5	11.9	1.8	207	33	221	41
20				31.5	214	14.2	12.2	1.4	110	40	221	40
21				1,100	595	13.2	11.9	1.1	139	31.5	159	31.5
22				341	444	12.5	e10.9	1.1	105	25.5	90	67
23				221	221	11.6	e9.6	1.1	90	29	67	48
24				121	159	11.6	e8.8	1.0	107	43	59	1,900
25				101	130	e10.9	7.7	.9	372	30.5	1,800	3,120
26				73	95	e10.9	7.1	.9	159	24	986	541
27				64	80	e9.9	7.1	.9	86	21.5	416	385
28				70	64	e9.3	6.7	.8	83	21	271	245
29				58	56	e8.8	6.7	-	130	19.6	169	413
30				53	57	e8.5	6.4	-	97	17.9	117	6,090
31				722	-	e7.7	6.0		64	-	86	-

e Faulty gage-height record; discharge computed on basis of estimated gage heights.
Note.- Discharge for July 13 to Oct. 12 not computed because of insufficient data.

Discharge, in million gallons a day, of Wailuku River above Hilo Boarding School ditch intake, near Hilo, 1940-42--Continued

1941-42

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	1,440	25.5	134	390	86	33	26	6.7	85	97	398	36.6
2	570	23	130	502	73	30	24	6.0	48	76	245	29
3	386	21	233	385	64	40	21.5	5.8	33	67	221	24.5
4	667	93	139	311	53	330	20	5.6	28	179	189	26
5	370	56	260	233	56	382	19.3	5.3	24	154	179	24.5
6	258	224	6,440	336	53	221	19.6	6.1	21	105	260	22
7	233	283	1,300	746	43	199	23.5	19.4	17.9	76	652	19.0
8	159	273	604	477	38	461	18.2	18.0	15.8	61	258	16.8
9	130	1,070	356	815	50	843	16.2	39.5	174	53	658	16.5
10	130	620	233	1,110	48	1,060	16.5	14.2	884	50	314	47
11	105	523	345	525	37	1,000	16.2	9.0	266	117	199	26
12	80	258	227	352	28.5	807	14.8	6.7	1,430	1,000	149	28
13	64	159	149	1,080	24.5	385	13.6	5.8	4,220	689	113	40
14	56	113	153	666	23	258	13.9	5.1	5,850	464	130	75
15	50	154	153	574	a400	189	19.3	4.9	1,620	311	104	46
16	53	114	101	623	a200	189	16.5	4.9	774	258	80	33.6
17	64	76	80	325	a100	221	13.2	4.9	618	325	90	240
18	46	70	66	588	a60	179	11.9	7.5	517	297	76	192
19	48	117	164	814	a35	169	10.2	155	370	189	58	160
20	64	124	130	371	a300	117	9.6	80	284	149	50	94
21	43	139	97	284	292	105	9.1	32	416	325	43	73
22	38	109	73	210	210	101	8.2	19.6	271	233	37	58
23	34.5	101	83	363	220	76	7.4	13.6	169	189	31.5	53
24	30	70	90	421	159	64	7.1	10.2	197	159	28	96
25	26.5	56	459	311	105	56	7.1	9.1	297	149	26	56
26	24	48	1,170	458	80	48	7.4	15.2	369	159	26	53
27	23	43	977	746	61	43	7.4	166	340	159	22.5	48
28	22	40	432	284	50	38	7.1	66	416	130	22.5	40
29	22.5	43	366	311	46	33	7.1	-	245	189	74	35.5
30	23.5	38	258	139	38	31	13.5	-	169	262	56	30.5
31	33.5	50	-	113	-	29	7.9	-	121	-	46	-

Peak discharge.- Sept. 6 (9:45 p.m.) 18,400 m.g.d. (28,600 sec.-ft.); Mar. 13 (8 a.m.) 8,910 m.g.d. (13,800 sec.-ft.); Mar. 14 (4 p.m.) 16,500 m.g.d. (25,500 sec.-ft.).

a No gage-height record; discharge computed on basis of range in stage from recorder chart and records for Waiakea Stream.

Monthly discharge, in million gallons, 1940-42

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November 1940	664	56	217	336	6,520	20,000
December	64	7.7	22.9	35.4	709	2,180
Calendar year	-	-	-	-	-	-
January 1941	109	6.0	24.9	38.5	772	2,370
February	7.4	.8	2.85	4.41	79.7	245
March	372	.6	68.8	106	2,130	6,540
April	132	17.9	47.8	74.0	1,430	4,400
May	1,800	19.0	176	272	5,470	16,790
June	6,090	20	462	715	13,860	42,540
Fiscal year	-	-	-	-	-	-
July 1941	1,440	22	171	265	5,290	16,250
August	1,070	21	166	257	5,130	15,750
September	6,440	66	513	794	15,390	47,250
October	1,110	113	495	766	15,330	47,060
November	400	23	101	156	3,030	9,310
December	1,060	29	250	387	7,740	23,740
Calendar year 1941	6,440	.6	207	320	75,650	232,200
January 1942	26	7.1	14.0	21.7	433	1,330
February	156	4.9	26.5	41.0	742	2,280
March	5,850	15.8	651	1,010	20,190	61,960
April	1,000	50	222	343	6,670	20,470
May	652	22.6	163	237	4,740	14,530
June	240	16.5	57.9	89.6	1,740	5,330
Fiscal year 1941-42	6,440	4.9	237	367	86,420	265,200

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 Awaini 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 1942.

Extremes.- Maximum discharge during year, 338 million gallons a day (523 second-feet) Mar. 10 (gage height, 4.25 feet), from rating curve extended above 10 million gallons a day by test on model of station site; minimum, 0.30 million gallons a day (0.46 second-foot) Feb. 16, 17.

1939-42: 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, 0.19 million gallons a day (0.29 second-foot) Feb. 4, 1940.

Remarks.- Records fair. No diversions above station.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.4	0.30	1.0	6.3	2.3	66
.5	.69	1.2	10.7	2.6	87
.6	1.28	1.4	16.8	3.0	120
.7	2.1	1.7	30	3.4	164
.8	3.2	2.0	47	3.8	228

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	31	2.65	4.4	7.1	1.26	7.5	1.75	0.41	15.5	3.1	55	10.4
2	8.9	1.58	7.3	2.25	1.21	3.25	5.1	.41	5.6	2.45	18.9	3.95
3	10.5	11.2	16.9	2.3	1.08	6.0	2.25	.41	2.75	2.1	12.5	1.58
4	25.5	15.4	4.1	7.4	1.02	17.7	1.28	.37	52	6.7	6.7	1.28
5	23.5	14.4	29.5	1.83	.96	7.2	1.67	.37	29.5	5.0	4.1	1.15
6	8.4	25.5	25.5	1.94	2.0	3.35	6.9	.41	5.6	2.45	41	.96
7	26.5	73	6.6	1.54	9.8	11.3	2.15	.37	2.15	2.1	53	.85
8	7.5	8.6	3.15	1.65	9.2	16.40	1.15	.37	35	3.75	5.9	.80
9	28.5	26	1.75	13.0	21.5	39.5	.96	.37	137	7.2	3.35	5.7
10	40	26	1.45	25	11.6	39.5	.80	.37	211	11.8	2.8	7.7
11	8.5	26.5	2.75	6.6	4.4	21	.69	.37	85	20.5	2.0	1.66
12	11.9	4.5	1.61	14.1	2.7	19.9	.65	.37	111	74	1.66	2.65
13	3.35	2.55	1.15	9.0	1.50	8.5	.69	.33	114	56	1.50	12.4
14	4.5	2.2	1.21	9.0	1.28	4.3	37.5	.33	94	30	1.50	9.0
15	4.8	1.66	1.21	6.5	26.5	3.35	12.3	.33	18.8	25	1.35	4.2
16	13.7	1.43	.91	6.7	5.8	12.8	1.60	.33	26.5	23.5	1.21	2.5
17	7.4	1.28	.91	1.66	1.75	36.5	1.08	.36	37	36	3.65	1.66
18	11.6	8.0	2.2	37.5	1.25	18.4	.85	5.2	20	28.5	2.95	1.72
19	18.8	10.2	20.5	26	1.21	25.5	.69	22	5.0	6.6	1.43	3.35
20	15.9	16.7	10.5	2.2	1.72	2.9	.65	5.0	6.8	19.8	1.15	1.66
21	7.5	13.5	1.75	1.43	2.1	1.83	.56	1.51	16.0	40	1.02	4.2
22	21	29	1.15	1.21	9.6	1.50	.52	.91	31	8.0	.91	3.75
23	4.2	14.9	1.73	20.5	5.0	1.50	.52	.69	5.2	3.1	.85	8.6
24	3.6	4.2	2.1	58	27	18.6	.52	.52	27	2.2	.85	7.4
25	3.05	1.93	3.2	20	3.85	21	.48	2.3	18.5	1.83	19.7	2.25
26	1.66	1.43	5.0	32	1.66	5.7	.44	24.5	42	1.58	11.5	5.5
27	3.3	12.7	9.7	44	1.21	2.1	.48	42	38	2.7	3.8	3.75
28	5.2	6.5	3.55	3.05	10.5	1.43	.48	10.3	36.5	24	4.7	4.4
29	11.3	3.25	1.43	2.0	2.15	1.21	.44	-	6.4	48	5.4	7.1
30	8.2	3.1	1.28	1.66	6.6	9.7	.41	-	13.0	51	5.9	2.1
31	4.7	8.2	-	1.43	-	7.0	.41	-	4.3	-	3.15	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	40	1.66	12.4	19.2	385	1,180
August	73	1.28	12.2	18.9	378	1,160
September	29.5	.91	5.82	9.00	174	535
October	58	1.21	11.9	18.4	369	1,130
November	27	.96	5.92	9.16	177	545
December	39.5	1.21	12.1	18.7	376	1,160
Calendar year 1941	145	.25	10.2	15.8	3,720	11,430
January	37.5	.41	2.77	4.29	86.0	264
February	42	.33	4.33	6.70	121	372
March	211	2.15	40.4	62.5	1,250	3,840
April	74	1.58	18.3	28.3	549	1,680
May	55	.85	9.01	13.9	279	858
June	12.4	.80	4.14	6.41	124	381
Fiscal year 1941-42	211	.33	11.7	18.1	4,270	13,100

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 1,060 million gallons a day (1,640 second-feet) Mar. 9 (gage height, 5.13 feet), 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.

1939-42: Maximum discharge (revised), 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, that of Feb. 16, 17, 1942.

Remarks.- Records fair. No diversions.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Aug. 7				Aug. 8 to June 30							
0.5	0.95	1.2	8.8	0.2	0.10	0.8	4.5	2.3	69	3.1	350
.6	1.50	1.4	13.5	.3	.31	1.0	7.3	2.4	100	3.2	480
.7	2.2	1.6	20	.4	.70	1.2	12.0	2.5	150	3.6	600
.8	3.15	1.9	36	.5	1.28	1.4	17.8	2.7	181	3.9	670
1.0	5.5	2.1	48	.6	2.15	1.7	28.5	2.9	212		
				.7	3.25	2.0	43	3.0	240		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	22	1.99	4.0	7.0	1.8	6.7	2.25	0.32	8.7	3.75	32	7.1
2	4.0	1.39	5.6	2.8	1.6	3.6	5.5	.31	5.1	3.05	13.8	4.3
3	7.0	5.1	11.1	2.7	1.4	6.1	2.9	.28	3.1	2.6	10.8	1.68
4	13	6.7	4.1	7.4	1.3	11.6	1.68	f.25	36	7.7	7.2	1.35
5	11	6.5	21	2.7	1.2	6.2	3.35	.23	15.0	5.0	11.1	1.15
6	5.0	10.2	12.9	2.8	2.3	4.1	8.2	.25	5.7	2.9	35	.97
7	12	46	6.0	2.5	8.4	8.5	2.8	.25	2.7	2.5	66	.85
8	4.5	7.6	3.6	2.3	7.6	10.1	1.60	.21	87	4.7	6.7	.80
9	14	15.8	2.15	10	14	23	1.35	.21	413	7.0	5.3	2.05
10	19	15.9	1.77	16	8.0	20.5	1.28	.21	665	8.9	3.9	6.3
11	6.0	15.8	3.55	9.0	5.0	13.4	1.21	.19	227	13.3	2.8	1.60
12	6.6	5.4	1.96	11	3.2	11.8	1.15	.19	277	61	2.25	1.96
13	2.6	3.6	1.35	7.4	1.9	8.2	1.15	.17	295	35	1.96	7.0
14	3.0	3.05	1.21	8.4	1.6	4.9	22	.17	111	17.8	1.86	7.8
15	4.0	2.25	1.15	6.0	18	4.0	9.0	.17	14.5	15.3	1.60	4.5
16	6.4	1.77	1.03	6.2	6.2	10.0	2.35	.17	18.5	14.2	1.35	2.6
17	4.8	1.52	1.03	2.5	2.3	18.7	1.52	.25	22.5	21.5	4.3	1.6
18	6.0	4.3	1.03	22	1.8	14.2	1.28	4.1	13.4	19.8	3.55	1.7
19	11	7.0	11	16	1.6	14.1	1.21	12.3	6.6	7.0	1.52	3.0
20	7.5	9.7	7.0	3.0	1.9	4.1	1.2	3.55	6.8	14	1.21	1.6
21	4.8	8.4	1.8	1.9	2.3	2.9	1.0	1.21	13.1	25	1.03	4.0
22	9.3	15.8	1.3	1.6	7.4	2.35	.84	.70	26	8.2	.91	3.6
23	3.3	10.5	1.9	25	6.4	2.15	.74	.53	6.1	4.5	.85	7.4
24	2.8	4.4	2.3	40	17	11.0	.68	.41	17.4	3.4	.91	6.0
25	2.75	2.5	3.4	25	4.1	13.3	.62	3.15	14.3	2.7	12.7	2.55
26	1.44	1.86	4.5	32	2.05	6.3	.56	14.8	26.5	2.25	7.7	4.4
27	2.3	7.9	6.4	37	1.52	2.8	.50	20.5	19.6	2.55	3.2	3.65
28	3.8	5.6	4.0	4.0	10.0	1.96	.54	8.2	22	15.4	3.45	2.15
29	6.3	3.3	1.8	2.7	2.75	1.60	.44	-	7.3	24	4.7	6.6
30	5.2	2.5	1.5	2.3	7.4	8.3	.40	-	10.0	31	4.3	1.77
31	3.25	6.8	-	2.0	-	6.3	.37	-	4.8	-	3.05	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	22	1.44	6.92	10.7	215	659
August	46	1.39	7.78	12.0	241	740
September	21	1.03	4.38	6.78	131	403
October	40	1.6	10.4	16.1	321	986
November	18	1.2	5.07	7.84	152	467
December	23	1.60	8.46	13.1	262	805
Calendar year 1941	230	.41	8.38	13.0	3,060	9,390
January	22	.37	2.57	3.98	79.7	244
February	20.5	.17	2.62	4.05	73.3	225
March	665	2.7	77.4	120	2,400	7,370
April	61	2.25	12.9	20.0	386	1,180
May	66	.85	8.29	12.8	257	789
June	7.8	.80	3.40	5.26	102	313
Fiscal year 1941-42	665	.17	12.7	19.6	4,660	14,180

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

Note.- No gage-height record July 1-9, Sept. 19 to Nov. 24, Jan. 20 to Feb. 3, Apr. 19-21, June 15-24; discharge computed on basis of records for Punalulu and Waimanuliiii Streams.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 817 million gallons a day (1,260 second-feet) Oct. 27 (gage height, 4.79 feet), from rating curve extended above 4 million gallons a day by test on model of station site; minimum, 0.10 million gallons a day (0.16 second-foot) Feb. 16, 17

1939-42: 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, 0.10 million gallons a day (0.16 second-foot) Oct. 3-5, 1939, Feb. 16, 17, 1942.

Remarks.- Records good. No diversions.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.11	0.8	4.0	2.5	54
.3	.29	1.0	6.6	3.0	86
.4	.68	1.2	9.9	3.5	135
.5	1.22	1.4	13.7	4.0	185
.6	1.93	1.7	21.5	4.5	448
.7	2.85	2.0	30		

Discharge, in million gallons, fiscal year July 1941to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	24.5	2.2	2.75	4.6	1.10	5.1	1.41	0.17	10.6	2.75	33.5	6.4
2	4.7	1.48	5.8	1.74	.93	2.45	4.2	.19	3.95	2.2	13.6	3.0
3	7.6	6.7	12.7	1.70	.83	4.6	2.05	.17	2.1	1.85	8.4	1.28
4	16.8	9.8	3.35	4.8	.73	11.4	1.10	.16	54	6.1	5.0	1.04
5	13.6	8.0	30	1.82	.68	4.8	3.3	.14	21.5	4.4	7.4	.83
6	5.8	13.9	12.9	1.89	1.43	2.75	6.9	.16	5.0	2.3	25.5	.73
7	15.4	66	5.0	1.51	7.4	7.1	2.05	.14	2.2	1.93	39	.63
8	5.2	8.1	2.55	1.33	6.6	9.6	1.16	.14	25.5	3.65	4.8	.59
9	16.4	19.5	1.82	6.6	14.4	29	.93	.13	152	5.7	3.75	1.95
10	23.5	19.0	1.41	17.6	7.5	22	.78	.13	201	8.4	2.4	4.7
11	6.7	19.2	2.5	3.75	3.2	12.9	.68	.12	123	14.3	1.77	1.10
12	7.6	4.8	1.35	9.6	1.93	8.8	.63	.12	116	61	1.48	1.22
13	2.85	2.85	1.04	5.8	1.22	6.1	.63	.11	124	41	1.28	5.9
14	3.4	2.5	.93	7.7	1.04	3.1	28	.11	69	20	1.35	5.3
15	4.9	1.93	.93	5.0	17.9	2.3	8.1	.11	13.4	16.1	1.16	3.15
16	8.1	1.48	.78	5.2	4.2	7.4	1.55	.11	16.6	14.8	.99	2.35
17	5.5	1.28	.73	1.70	1.55	19.6	1.04	.15	22.5	25	3.0	1.22
18	7.5	3.7	1.12	25	1.16	12.5	.83	3.0	12.8	22	2.55	.94
19	11.9	7.1	12.0	17.9	1.04	15.1	.73	12.6	4.6	6.0	1.10	2.05
20	10.8	10.6	6.7	2.3	1.17	2.65	.63	3.05	4.9	15.0	.88	.99
21	5.6	7.5	1.46	1.55	1.50	1.70	.54	1.08	12.2	28	.73	1.67
22	13.4	19.0	.93	1.28	5.2	1.41	.46	.54	24.5	7.2	.68	2.1
23	3.6	11.0	.92	37	4.1	1.22	.42	.39	5.1	3.4	.63	6.7
24	2.95	3.55	1.34	48	17.1	10.4	.39	.27	17.5	2.4	.63	4.7
25	3.1	2.0	2.05	16.2	2.9	13.5	.36	1.76	13.8	1.85	12.4	1.56
26	1.70	1.55	3.35	39	1.41	4.6	.33	20	30	1.55	6.5	3.15
27	2.3	8.9	5.6	51	1.04	1.77	.29	24	20.5	1.68	2.3	2.5
28	4.9	4.4	2.45	3.4	10.8	1.22	.33	7.2	25	17.2	2.15	2.4
29	8.0	2.4	1.10	2.1	1.92	1.04	.24	-	6.4	27	3.4	4.9
30	6.2	1.77	1.04	1.62	7.5	7.8	.22	-	8.9	34	2.9	1.55
31	3.4	5.2	-	1.28	-	5.0	.19	-	3.65	-	2.1	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	24.5	1.70	8.29	12.8	257	789
August	66	1.28	8.95	13.8	277	851
September	30	.73	4.21	6.51	126	388
October	51	1.28	10.6	16.4	330	1,010
November	17.9	.68	4.32	6.68	129	397
December	29	1.04	7.71	11.9	239	733
Calendar year 1941	182	.22	7.49	11.6	2,730	8,380
January	28	.19	2.27	3.51	70.5	216
February	24	.11	2.72	4.21	76.2	234
March	201	2.1	37.2	57.6	1,150	3,540
April	61	1.55	13.3	20.6	399	1,220
May	39	.63	6.24	9.65	193	593
June	6.7	.59	2.55	3.95	76.6	235
Fiscal year 1941-42	201	.11	9.11	14.1	3,320	10,210

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Extremes.- Maximum discharge during year, 65 million gallons a day (101 second-feet) Oct. 24 (gage height, 3.73 feet), from rating curve extended above 0.7 million gallons a day by test on model of station site; minimum, 0.21 million gallons a day (0.32 second-foot) Feb. 23-25.

1939-42: Maximum discharge, 67 million gallons a day (104 second-feet) Feb. 22, 1940 (gage height, 3.83 feet), from rating curve extended above 0.7 million gallons a day by test on model of station site; minimum, 0.14 million gallons a day (0.22 second-foot) Mar. 22, 1940.

Remarks.- Records fair. No diversions.

Rating tables, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

July 1 to Oct. 27

0.2	0.15	0.5	1.15
.3	.33	.6	1.89
.4	.64		

Note.- Same as following table above 0.6 foot.

Oct. 28 to June 30

0.2	0.18	0.8	4.3	2.0	25
.3	.39	.9	6.0	2.5	35
.4	.72	1.0	8.2	3.0	49
.5	1.17	1.2	13.4	3.5	60
.6	1.89	1.4	17.3		
.7	2.9	1.6	20		

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	3.1	0.64	0.64	0.33	0.68	0.80	0.42	0.31	0.87	1.5	2.9	0.92
2	1.45	.60	1.02	.33	.65	.65	.48	.31	.51	1.2	1.67	.55
3	1.28	.78	2.1	.33	.61	.65	.42	.31	.48	1.0	1.12	.45
4	2.25	.83	.72	.36	.58	1.08	.39	.29	11.5	3.0	.98	.45
5	1.60	.72	3.7	.36	.55	.68	1.71	.29	2.95	2.5	.89	.42
6	1.03	.72	1.72	.33	.69	.61	1.95	.27	.89	1.2	2.3	.42
7	1.53	11.0	.97	.31	1.25	.76	.80	.27	.61	1.0	3.15	.42
8	.97	1.79	.81	.31	.95	.68	.65	.27	5.4	1.8	1.03	.42
9	2.1	2.05	.72	.33	2.35	2.45	.58	.27	40	2.7	.98	.42
10	2.35	2.7	.64	1.66	.89	1.90	.55	.27	50	3.8	.80	.42
11	1.30	3.4	.68	.41	.65	1.16	.51	.27	35	5.2	.72	.39
12	1.03	1.30	.57	.76	.61	.80	.48	.27	33	15	.68	.39
13	.97	1.03	.57	.50	.55	.72	.48	.25	35	9.0	.65	.54
14	.81	1.06	.57	.88	.55	.65	2.8	.25	15	4.5	.65	.51
15	1.47	.86	.47	.57	2.8	.61	1.58	.23	4.5	3.5	.61	.94
16	1.19	.77	.44	.53	.80	.65	.61	.23	5.6	3.2	.58	.60
17	.88	.72	.44	.44	.65	.80	.55	.29	7.0	5.0	.80	.39
18	1.14	.77	.41	1.60	.61	1.12	.51	.29	4.5	4.3	.61	.37
19	1.52	.77	.39	2.4	.55	1.13	.48	.55	2.0	1.5	.55	.34
20	1.25	1.12	.68	.64	.55	.68	.48	.27	2.1	2.6	.51	.34
21	.91	.72	.44	.53	.51	.61	.45	.23	3.8	5.0	.51	.31
22	1.80	2.2	.41	.47	.70	.58	.42	.23	8.0	2.0	.51	.31
23	.91	2.05	.41	5.3	.65	.55	.42	.21	2.2	1.3	.48	.52
24	.91	1.03	.38	11.8	1.93	.76	.39	.21	5.4	1.1	.48	.42
25	.86	.81	.38	4.2	.58	1.20	.39	.45	4.5	.89	.87	.31
26	.77	.77	.41	3.45	.51	.61	.39	3.25	8.0	.84	.55	.37
27	.77	1.29	.44	9.3	.48	.51	.37	2.45	6.0	.72	.45	.34
28	.77	.72	.36	1.39	3.45	.51	.37	1.11	7.0	2.1	.42	.37
29	1.05	.64	.36	.98	.72	.48	.34	-	2.6	2.35	.48	.39
30	.97	.64	.33	.84	2.2	1.02	.34	-	3.5	2.45	.51	.31
31	.68	.68	-	.72	-	.55	.34	-	2.2	-	.51	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	3.1	0.68	1.28	1.98	39.6	122
August	11.0	.60	1.46	2.26	45.2	139
September	3.7	.33	.759	1.17	22.8	70
October	11.8	.31	1.69	2.61	52.4	161
November	3.45	.48	.975	1.51	29.2	90
December	2.45	.48	.837	1.30	26.0	80
Calendar year 1941	17.3	.27	1.08	1.67	393	1,210
January	2.8	.34	.666	1.03	20.6	63
February	3.25	.21	.496	.767	13.9	43
March	50	.48	10.0	15.5	310	952
April	15	.72	3.08	4.77	92.2	283
May	3.15	.42	.902	1.40	28.0	86
June	.94	.31	.445	.689	13.4	41
Fiscal year 1941-42	50	.21	1.90	2.94	69[illegible]	2,130

Note.- Faulty gage-height record Mar. 9 to Apr. 24; discharge computed on basis of records for Punelulu Stream.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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.- 0.55 square mile.

Records available.- February 1939 to June 1942.

Extremes.- Not determined owing to faulty gage-height rscord.
1939-42: 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, 0.14 million gallons a day (0.22 second-foot) Feb. 8, 1940.

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

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.2	0.20	0.6	2.4	1.4	18.4
.25	.34	.7	3.65	1.7	28.5
.3	.49	.8	5.1	2.0	41
.4	.89	1.0	8.7	2.5	68
.5	1.48	1.2	13.1	3.0	98

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	9.8	0.94	0.90	1.0	0.80	2.2	0.84	0.31	3.5	1.5	15.3	3.6
2	2.5	.72	4.0	.52	.66	1.09	2.7	.31	1.0	1.2	6.9	1.14
3	3.2	3.2	8.0	.48	.58	1.95	.96	.31	.74	1.1	3.65	.60
4	7.1	3.4	1.4	1.2	.54	5.1	.68	.28	33	4.5	2.2	.53
5	6.6	2.2	11	1.0	.50	1.76	2.85	.26	10	2.5	1.41	.46
6	2.45	4.1	4.5	.70	1.6	1.26	4.8	.26	3.5	1.4	13.5	.43
7	6.6	32	2.2	.54	4.5	3.25	1.23	.26	1.0	.96	16.5	.46
8	2.1	3.85	1.3	.45	2.5	3.6	.80	.26	30	1.8	2.1	.43
9	7.9	8.2	1.0	1.9	7.6	13.1	.72	.26	84	2.5	2.15	.72
10	9.7	10.6	.80	7.6	3.0	10.1	.64	.26	90	4.5	1.27	1.47
11	2.95	10.9	.80	1.1	1.5	5.1	.57	.23	60	9.0	.94	.53
12	2.95	2.3	.66	3.5	.90	2.3	.53	.23	47	30	.84	.53
13	1.50	1.48	.62	1.5	.62	2.65	.57	.23	48	25	.76	2.7
14	1.80	1.27	.58	3.8	.62	1.15	14.5	.23	25	10.7	.76	1.89
15	4.3	1.10	.54	2.2	8.6	.99	4.4	.23	8.0	7.2	.68	1.53
16	3.25	.89	.53	2.0	2.0	2.9	.89	.23	9.0	6.9	.60	1.59
17	1.79	.80	.53	.80	1.0	7.2	.72	.40	9.6	12.9	2.4	.64
18	3.25	1.43	.57	9.0	.62	6.0	.64	1.0	5.0	11.5	1.32	.57
19	6.6	2.9	4.8	6.0	.62	5.7	.57	3.3	2.5	2.6	.64	.93
20	4.6	4.5	3.1	2.5	.54	1.21	.53	.90	4.0	6.3	.60	.49
21	2.05	2.45	.64	.90	.50	.94	.49	.45	7.0	15.1	.57	.57
22	6.3	9.4	.53	.80	2.3	.84	.46	.22	14	3.5	.53	.84
23	1.51	5.9	.49	20	1.0	.76	.43	.22	3.0	1.76	.49	2.55
24	1.32	1.74	.60	31	8.5	4.2	.43	.20	7.0	1.21	.53	1.85
25	1.50	1.04	.64	12	1.05	6.6	.40	2.0	6.6	.99	5.6	.60
26	.84	.89	1.34	18	.72	2.3	.40	11	15	.84	2.15	1.12
27	1.28	4.2	1.89	25	.64	.84	.37	12	8.0	.76	.78	.76
28	1.83	1.63	.83	4.0	8.4	.72	.40	4.2	8.4	8.7	.78	1.16
29	3.5	.94	.46	1.8	1.08	.64	.37	-	4.5	11.7	1.12	1.95
30	2.7	.80	.46	1.1	5.9	6.1	.34	-	4.2	12.8	1.13	.64
31	1.27	2.1	-	.90	-	2.8	.34	-	2.3	-	.72	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	9.8	0.84	3.71	5.74	115	353
August	32	.72	4.12	6.37	128	392
September	11	.46	1.86	2.88	55.7	171
October	31	.45	5.27	8.15	163	501
November	8.6	.50	2.31	3.57	69.4	213
December	13.1	.64	3.40	5.26	105	323
Calendar year 1941	60	.20	3.36	5.20	1,230	3,760
January	14.5	.34	1.44	2.23	44.6	137
February	12	.20	1.43	2.21	40.0	123
March	90	.74	17.9	27.7	555	1,700
April	30	.76	6.71	10.4	201	618
May	16.5	.49	2.87	4.44	88.9	273
June	3.6	.43	1.11	1.72	33.4	102
Fiscal year 1941-42	90	.20	4.38	6.78	1,600	4,910

Note.- No gage-height record Sept. 1-16, Sept. 30 to Nov. 23, Feb. 14 to Apr. 13; discharge computed on basis of records for Kukui Stream.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

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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, about 1,940 feet (by barometer).

Drainage area.- 0.4 square mile.

Records available.- February 1939 to June 1942.

Extremes.- Maximum discharge during year, 116 million gallons a day (179 second-feet) Oct. 23 (gage height, 3.97 feet), from rating curve extended above 1.8 million gallons a day by test on model of station site; minimum, 0.20 million gallons a day (0.31 second-foot) Feb. 24.

1939-42: Maximum discharge, that of Oct. 23, 1941; minimum, 0.15 million gallons a day (0.23 second-foot) Jan. 25, 26, Feb. 6, 7, 1940.

Remarks.- Records fair. No diversions.

Rating table, fiscal year 1941-42 (gage height, in feet, and discharge, in million gallons a day)

0.1	0.06	0.6	2.05	1.7	15.2
.2	.24	.8	3.6	2.0	21
.3	.54	1.0	5.5	2.5	32
.4	.94	1.2	7.8	2.8	40
.5	1.45	1.4	10.5	3.2	56

Discharge, in million gallons, fiscal year July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	6.5	0.94	0.94	0.66	0.78	1.62	0.82	0.33	2.05	1.25	8.7	1.75
2	2.45	.86	2.4	.51	.70	.90	1.48	.36	.90	1.09	4.0	.92
3	2.7	1.77	4.2	.48	.62	1.17	.82	.33	.72	1.04	2.5	.62
4	4.5	2.05	1.25	.77	.58	2.55	.66	.33	16.9	2.75	1.75	.54
5	3.9	1.57	6.3	.66	.54	1.30	2.35	.33	5.1	1.62	1.30	.51
6	2.1	2.0	2.95	.54	.89	1.04	2.95	.33	1.51	1.09	5.2	.51
7	3.95	17.2	1.51	.48	2.5	1.72	1.17	.30	.94	.94	8.8	.48
8	1.93	3.3	1.04	.42	1.89	1.76	.82	.30	10.3	1.25	1.99	.45
9	4.8	4.7	.90	.90	4.2	5.6	.74	.30	40	1.83	1.75	.51
10	5.7	6.2	.82	4.3	1.68	5.1	.66	.30	41	2.4	1.25	.78
11	2.7	6.8	.86	.85	.94	3.1	.62	.24	29.5	5.4	1.04	.51
12	2.35	2.2	.70	2.05	.74	1.57	.58	.24	23.5	15.2	.90	.48
13	1.63	1.63	.66	1.26	.62	1.51	.58	.24	24	12.8	.86	1.23
14	1.63	1.67	.62	2.2	.62	1.04	a8.0	.24	12.6	6.4	.86	1.14
15	3.05	1.25	.58	1.35	4.9	.94	a2.0	.24	4.3	4.4	.78	1.05
16	2.4	1.04	.58	1.24	1.13	1.52	a.90	.24	5.0	4.1	.70	1.18
17	1.67	.94	.58	.74	.78	2.9	a.74	.31	5.4	7.2	1.40	.58
18	2.2	1.32	.54	5.1	.66	3.15	a.66	.57	2.95	7.0	.99	.54
19	3.55	1.70	1.72	3.65	.66	3.1	a.60	1.89	1.93	2.5	.70	.62
20	3.0	2.55	1.96	1.13	.58	1.14	a.56	.51	2.85	4.2	.66	.48
21	1.74	1.69	.62	.86	.54	.94	a.50	.30	4.4	8.4	.58	.52
22	3.75	5.4	.51	.78	1.39	.86	a.48	.24	7.6	3.05	.54	.60
23	1.57	3.8	.51	9.5	.94	.78	a.45	.24	2.3	1.81	.54	1.17
24	1.45	1.63	.51	15.4	4.3	1.82	a.44	.22	4.1	1.35	.54	1.12
25	1.35	1.20	.51	5.6	.87	3.35	a.42	.69	3.85	1.14	2.15	.54
26	1.04	1.04	.74	e.0	.70	1.36	a.42	5.9	8.4	.99	1.26	.74
27	1.26	2.55	.90	11.1	.62	.82	f.39	6.2	4.6	.90	.66	f.50
28	1.40	1.28	.60	1.81	5.3	.74	.42	2.4	5.0	4.1	.58	a.60
29	2.15	.94	.45	1.25	1.02	.66	.39	-	2.95	7.0	.70	a1.0
30	1.96	.90	.45	.99	3.3	3.55	.36	-	2.7	6.2	.90	a.50
31	1.09	1.35	-	.86	-	1.76	.36	-	1.63	-	.54	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	6.5	1.04	2.63	4.07	81.5	250
August	17.2	.86	2.69	4.16	83.5	256
September	6.3	.45	1.23	1.90	36.8	113
October	15.4	.42	2.76	4.27	85.4	262
November	5.3	.54	1.50	2.32	45.0	138
December	5.6	.66	1.92	2.97	59.4	182
Calendar year 1942	27	.30	2.03	3.14	740	2,270
January	e.0	.36	1.04	1.61	32.3	99
February	6.2	.22	.861	1.33	24.1	74
March	41	.72	9.00	13.9	279	856
April	15.2	.90	3.98	6.16	119	366
May	8.8	.54	1.78	2.75	55.1	169
June	1.75	.45	.738	1.14	22.2	68
Fiscal year 1941-42	41	.22	2.53	3.91	923	2,830

a No gage-height record; discharge computed on basis of records for Paopao Stream.
f Computed on basis of partly estimated gage-height record.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 13 years (1928-38, 1939-42), 12.1 million gallons a day (18.7 second-feet).

Extremes.- Maximum discharge during year, 30 million gallons a day (46 second-feet) Nov. 15 (gage height, 3.55 feet); minimum, 0.06 million gallons a day (0.09 second-foot) Oct. 25.

1927-42: 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 July 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	15.1	14.3	21	14.8	1.05	27	12	3.05	22	13	16	17.2
2	15.0	11.0	19.0	15.2	.93	17.4	17	2.9	18.2	11	15	18.0
3	18.0	12.8	25	9.7	.79	23	14	2.8	15.8	12	14	11.0
4	20.5	25	22	14.3	.73	25	10	2.55	22.5	14	12	8.5
5	18.2	22	19.2	15.2	.63	25	16	2.4	25	18	13	6.9
6	15.0	25	25	15.1	3.05	24	17	2.35	23	19	21	6.0
7	19.0	27	22	12.3	12.2	25	12	2.25	18.2	14	19	5.3
8	15.0	24	16.6	8.6	15.0	25	10	2.15	15.0	17	13	4.8
9	24	24	12.2	12.2	21	25	9	2.05	17.4	20	21	5.1
10	25	25	10.3	25	27	21	8	1.93	20	21	17	16.3
11	25	25	11.6	18.2	22	21	6	1.82	16	23	19	9.1
12	25	18.2	11.0	23	15.8	20	6	1.77	17	26	23	8.6
13	17.4	13.6	9.7	22	11.6	18	6	1.63	16	22	23	16.5
14	17.4	14.1	8.6	23	9.7	16	27	1.58	15	20	17	21
15	18.7	15.8	8.0	24	21	15	18	1.49	14	20	15	17.4
16	23	14.3	7.4	23	21.5	19	11	1.44	15	19	14	15.2
17	21	12.2	6.4	14.3	13.6	22	9	1.49	12	20	15	9.7
18	23.5	12.4	6.9	18.8	12	18	8	7.7	10	20	15.8	6.9
19	21	24	17.5	23	10	17	7	18.3	12	15	10.3	8.6
20	24	22	21	14.3	12	15	7	17.9	13	18	8.6	6.4
21	22	24	12.0	12.9	15	14	6	10.6	14	22	7	5.7
22	25	27	8.0	11.6	13	13	6	6.4	14	16	7	9.7
23	18.4	25	6.4	11.9	19.0	12	5	4.6	12	14	6	14.2
24	14.3	22	8.0	.10	26	19	5	3.55	10	13	9	21
25	16.6	15.8	11.2	.09	19.7	23	4.4	3.56	10	12	17	12.9
26	15.6	12.9	14.3	2.05	12.2	14	4.2	16.8	15	11	18	14.3
27	12.2	16.4	19.0	.40	9.1	11	4.0	25	12	10	16	14.3
28	18.2	22	16.4	.85	23.5	10	4.1	21	10	17	19	11.3
29	23	16.6	9.1	1.93	18.5	9	3.9	-	9	22	21	16.6
30	23	15.0	8.6	1.58	20	16	3.6	-	10	21	17	11.0
31	18.2	21	-	1.26	-	18	3.2	-	11	-	13.6	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	25	12.2	19.5	30.2	603	1,850
August	27	11.0	19.3	29.9	599	1,840
September	25	6.4	13.8	21.4	413	1,270
October	25	.09	12.6	19.5	391	1,200
November	27	.63	13.6	21.0	408	1,250
December	27	9	18.6	28.8	577	1,770
Calendar year 1941	27	.09	15.6	24.1	5,680	17,420
January	27	3.2	9.01	13.9	279	857
February	23	1.44	6.04	9.35	169	519
March	25	9	15.0	23.2	464	1,420
April	26	10	17.3	26.8	520	1,600
May	23	6	15.2	23.5	472	1,450
June	21	4.8	11.7	18.1	350	1,070
Fiscal year 1941-42	27	.09	14.4	22.3	5,240	16,100

Note.- No gage-height record Nov. 17-22, Dec. 12 to Jan. 24, Mar. 11 to May 17, May 21-30; discharge computed on basis of records for stations on nearby streams.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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°48'15", 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 1942.

Average discharge.- 11 years (1928-36, 1937-38, 1939-40, 1941-42), 1.28 million gallons a day (1.98 second-feet).

Extremes.- Maximum discharge during year, 9.0 million gallons a day (13.9 second-feet) Sept. 5 (gage height, 1.52 feet); no flow Feb. 9-17.
1927-38, 1939-42: Maximum discharge, that of Sept. 5, 1941; 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0.06	0.52	2.0	1.95	0.41	2.8	0.83	0.04	2.4	2.8	2.2	1.75
2	.03	.38	2.25	.97	.48	1.29	2.55	.03	1.65	1.0	1.7	1.38
3	1.28	1.87	4.9	.32	.41	2.5	1.32	.03	1.17	1.2	1.30	.48
4	4.6	3.55	1.66	.56	.35	3.5	.60	.02	4.0	1.8	1.11	.32
5	3.65	2.15	2.35	2.0	.29	2.55	1.80	.02	5.15	3.0	1.30	.23
6	3.2	3.5	2.25	2.2	.52	2.3	1.96	.01	2.0	3.5	4.7	.20
7	3.8	3.1	1.40	.94	2.2	4.0	.79	.01	1.30	1.0	3.6	.17
8	2.7	.03	1.11	.38	2.3	3.8	.44	.01	1.61	4.0	1.21	.14
9	3.3	.17	.92	1.13	4.0	4.8	.35	0	5.0	1.3	1.01	.24
10	3.85	.12	.92	5.4	3.0	3.9	.29	0	3.5	1.6	.58	1.63
11	2.8	.14	.76	2.1	1.70	3.4	.23	0	2.4	1.9	.38	.38
12	2.7	.03	.48	4.1	.97	2.75	.23	0	2.5	5.0	.23	.32
13	1.4	.03	.38	2.9	.48	2.45	.23	0	2.5	1.8	.14	2.55
14	1.3	.08	.32	4.0	.35	1.80	5.5	0	2.4	1.6	.10	3.8
15	2.5	.97	.29	3.8	3.2	1.25	3.0	0	2.2	1.5	.04	1.96
16	4.0	.83	.23	3.3	2.4	2.8	.97	0	2.3	1.4	.03	1.20
17	2.45	.64	.20	.87	.58	3.65	.60	0	1.9	1.4	.55	.48
18	3.6	.78	.20	3.45	.41	2.75	.44	.46	1.5	1.4	f.89	.89
19	3.0	3.1	2.3	1.92	.35	2.6	.38	5.2	1.8	1.0	f.08	.28
20	3.6	3.35	2.55	1.16	.46	1.60	.35	1.73	2.1	2.0	.04	.20
21	2.65	3.1	.44	.92	1.04	1.25	.29	.46	2.3	4.5	.03	.17
22	4.4	5.7	.23	.75	.58	.92	.26	.14	2.5	1.8	.08	.28
23	1.70	3.85	.17	1.15	1.35	.83	.23	.08	2.1	1.1	.02	2.25
24	1.06	1.48	.23	.48	4.8	3.4	.20	.03	1.3	.8	.01	4.0
25	.97	.79	.60	.48	1.31	4.7	.14	.03	2.1	.7	1.71	.87
26	.64	.60	1.04	2.2	.52	2.0	.12	3.25	2.6	.8	3.5	1.47
27	.60	1.86	1.80	1.30	.35	.92	.12	3.35	2.1	.7	1.28	1.18
28	.83	2.3	1.03	.41	3.9	.64	.12	2.4	1.8	3.0	1.04	.68
29	1.85	.99	.32	.35	1.23	.48	.12	-	1.2	4.5	2.5	1.45
30	1.76	.75	.32	.32	3.0	2.45	.08	-	1.7	4.0	1.79	.52
31	.75	1.90	-	.29	-	2.8	.06	-	2.1	-	.64	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	4.6	0.03	2.29	3.54	71.0	218
August	5.7	.03	1.57	2.45	48.7	149
September	4.9	.17	1.12	1.73	33.6	103
October	5.4	.29	1.68	2.60	52.1	160
November	4.8	.29	1.43	2.21	43.0	132
December	4.8	.48	2.48	3.84	77.0	236
Calendar year 1941	5.7	.02	1.61	2.49	587	1,800
January	5.5	.06	.794	1.23	24.6	75
February	5.2	0	.618	.956	17.3	53
March	5.0	1.17	2.23	3.45	69.2	212
April	5.0	.6	2.06	3.19	61.7	189
May	4.7	.01	1.08	1.67	33.4	103
June	4.0	.14	1.02	1.58	30.7	94
Fiscal year 1941-42	5.7	0	1.54	2.38	562	1,730

f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record July 13-16, Mar. 9 to May 2; discharge computed on basis of records for stations on Awini and Kehena ditches.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 13 years (1928-38, 1939-42), 25.5 million gallons a day (39.5 second-feet).

Extremes.- Maximum discharge during year, 50 million gallons a day (77 second-feet) Jan. 14 (gage height, 3.29 feet); no flow occasionally, when water was shut out of ditch. 1927-42: 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 fair 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	26	28	32.5	31	15	39	24	15.6	34.5	21	24	30
2	20	24	34.5	30	16	32.5	22	14.7	31	19.2	23	31
3	34.5	18.4	36.5	24	16	34.5	21	14.7	22	20	22	23
4	30	34.5	34.5	24	15.6	29	19	14.7	22	23	22	22
5	22.5	32.5	32	27	14.7	29	24	13.8	15.6	27	22	22
6	25	34.5	30	32.5	15.6	30	26	13.8	13.9	28	23	21
7	29	39	31	29	24	28	21	13.0	19.2	23	22	19.2
8	23	34	28	23	23	32	20	12.2	23	30	24	20
9	30	34	27	22	31	32	19	13.0	25	30	24	21
10	31	35	23	43	30	32.5	18	13.0	21	29	23	31
11	27	35	24	34.5	32.5	32.5	17	13.0	18	30	23	26
12	27	32	24	26	32.5	31	17	13.0	19	34.5	29	25
13	26	29	24	35.5	25	25	17	13.0	18	31	29	32.5
14	25	26	23	43	22	22	34	13.0	17	27	26	34.5
15	25	29	22	43	24	22	27	13.0	6.7	27	25	32.5
16	26	28	20	43	29	24	26	12.2	16.5	26	24	31
17	25	25	20	29	26	27	24	13.0	11.7	27	26	26
18	28	24	20	27	23	23	23	20	7.4	27	26	24
19	30	30	31	28	21	21	22	34.5	10.9	22	25	24
20	31	32.5	36.5	31	24	20	21	26	14.0	26	24	23
21	30	36.5	24	28	29	19.2	20	15.6	16.6	28	22	22
22	34.5	36.5	21	27	25	22	19.2	16.5	21	24	14.4	25
23	31	36.5	20	27.5	30	26	19.2	15.6	17.4	25	0	28
24	26	33	21	12.2	39	30	18.3	14.7	15.0	24	7.6	39
25	27	30	25	16.2	34.5	28	17.4	14.7	15.0	22	22	31
26	24	27	29	19.0	24	25	17.4	36.5	21	21	28	32.5
27	23	27	34.5	15	20	23	17.4	43	17.0	22	28	32.5
28	27	34.5	32.5	16	31.5	22	17.4	34.5	14.5	25	30	28
29	31	29	23	15	31	19.2	16.5	-	13.8	25	34.5	32.5
30	32.5	30	23	14	32.5	20	15.6	-	15.6	25	30	28
31	29	30	-	12	-	26	15.6	-	18.3	-	27	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	34.5	20	27.6	42.7	856	2,630
August	39	18.4	30.8	47.7	954	2,930
September	36.5	20	26.9	41.6	806	2,480
October	43	12	26.7	41.3	827	2,540
November	39	14.7	25.3	39.1	758	2,330
December	39	19.2	26.7	41.3	826	2,540
Calendar year 1941	48	12	26.9	41.6	9,810	30,130
January	34	15.6	20.5	31.7	636	1,950
February	43	12.2	17.9	27.7	500	1,540
March	34.5	6.7	17.8	27.5	552	1,690
April	34.5	19.2	25.6	39.6	759	2,360
May	34.5	0	23.5	36.4	730	2,240
June	39	19.2	27.2	42.1	817	2,510
Fiscal year 1941-42	43	0	24.7	38.2	9,030	27,740

Note.- No gage-height record July 8-11, Aug. 8-12, Sept. 29 to Oct. 2, Oct. 27-31, Dec. 7-9, Jan. 3-19, Mar. 10-14; discharge computed on basis of records for Awini ditch and East Honokaneiki intake to Awini ditch.

Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. 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 1942.

Average discharge.- 14 years (1928-42), 7.65 million gallons a day (11.8 second-feet).

Extremes.- Maximum discharge during year, 39 million gallons a day (60 second-feet) Mar. 9 (gage height, 1.08 feet); no flow Feb. 12-18.
1917-19, 1928-42: 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 fair. 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 1941 to June 1942

Day	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	13.1	2.25	19.0	14.0	0.98	24.5	2.65	0.20	31	4.9	12.1	3.7
2	a11	1.41	11.5	8.2	.84	10.8	3.1	.20	15.0	3.7	11.4	4.1
3	a15	1.36	19.2	4.1	.72	19.6	3.3	.20	9.4	2.85	11.0	1.90
4	a24	18.3	7.2	8.0	.61	27	1.57	.10	23.5	2.45	8.8	1.26
5	18.8	7.9	12.3	5.8	.50	22.5	1.41	.10	28	2.25	5.2	.98
6	16.8	21.5	24	3.7	.50	14.3	1.73	.20	16.6	8.6	11.4	.72
7	20.5	26.5	20	2.1	.84	22	1.57	.20	6.8	6.6	11.7	.61
8	11.8	21.5	10.8	1.41	.98	16.4	1.12	.20	4.7	6.4	9.2	1.26
9	13.3	15.5	3.5	6.1	11.5	13.6	.98	.30	33	8.4	5.1	1.26
10	22.5	17.6	2.1	27	13.1	10.0	.72	.30	26	12.1	3.45	9.8
11	13.1	19.9	1.73	12.8	8.6	10.0	.61	.30	21.5	13.7	2.45	3.05
12	10.6	6.1	1.41	23.5	5.0	9.6	.61	.12	22	30.5	1.90	4.1
13	4.4	3.25	1.12	18.8	2.25	9.2	.50	0	21.5	29	1.57	18.1
14	3.45	2.1	.98	19.6	1.26	9.2	7.3	0	21	20.5	1.26	24
15	2.65	1.57	.84	17.0	11.8	8.6	13.0	0	19.7	17.2	1.12	11.1
16	4.3	1.26	.61	19.4	13.9	9.2	2.65	0	19.7	17.6	.98	4.3
17	9.6	1.26	.61	4.0	3.0	10.0	1.41	0	20	17.9	.84	2.26
18	4.4	1.36	.72	17.7	1.41	9.6	.98	3.85	19.2	17.2	.98	1.41
19	6.6	12.5	12.0	22.5	1.12	9.2	.72	22	11.7	13.9	.72	1.12
20	14.9	18.6	13.8	6.1	15.0	7.4	.61	23.5	6.8	11.8	.50	.98
21	8.9	22	3.1	3.05	10.4	4.4	.50	9.4	7.6	17.2	.40	.72
22	20	30	1.12	1.90	3.8	3.05	.50	4.4	16.4	13.3	.30	.72
23	7.7	18.2	1.26	9.5	8.5	2.45	.40	2.85	13.1	5.8	.30	6.7
24	3.45	6.1	1.57	33	23	4.8	.40	2.1	18.5	3.45	.20	22.5
25	3.05	2.85	7.9	24	7.5	8.6	.30	2.1	20.5	2.45	.84	6.1
26	2.1	1.73	9.9	13.8	3.05	7.7	.30	12.0	24	1.90	7.2	4.6
27	1.57	2.25	13.7	17.7	1.73	3.8	.30	33	23	1.90	2.65	5.6
28	2.1	7.6	9.8	5.0	10.9	2.25	.40	23.5	16.8	10.6	1.90	3.45
29	4.9	7.5	3.5	2.65	4.0	1.57	.30	-	10.0	16.8	9.4	3.7
30	5.2	5.3	3.05	1.90	9.1	3.75	.30	-	12.1	16.1	5.4	2.25
31	3.9	16.0	-	1.41	-	6.7	.30	-	8.0	-	3.7	-

Month	Million gallons a day			Second-feet (mean)	Total run-off	
	Maximum	Minimum	Mean		Million gallons	Acre-feet
July	24	1.57	9.80	15.2	304	932
August	30	1.26	10.4	16.1	321	986
September	24	.61	7.24	11.2	217	667
October	33	1.41	11.5	17.8	356	1,090
November	23	.50	5.86	9.07	176	540
December	27	1.57	10.4	16.1	322	987
Calendar year 1941	34.5	.02	8.92	13.8	3,260	10,000
January	13.0	.30	1.63	2.52	50.5	155
February	33	0	5.04	7.80	141	433
March	33	4.7	17.7	27.4	549	1,690
April	30.5	1.90	11.2	17.3	337	1,030
May	12.1	.20	4.32	6.68	134	411
June	24	.61	5.08	7.86	152	468
Fiscal year 1941-42	33	0	8.38	13.0	3,060	9,390

a No gage-height record; discharge computed on basis of records for stations on nearby ditches.
Time basis: Hawaiian standard time prior to 2 a.m., Feb. 9, 1942; Hawaiian war time thereafter. To convert war time to standard time, subtract 1 hour.

MISCELLANEOUS DISCHARGE MEASUREMENTS

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

Miscellaneous discharge measurements on Hawaii during fiscal year July 1941 to June 1942

Date	Stream	Tributary to--	Locality	Discharge	
				Second-feet	Million gallons a day
July 18	Lahomene Stream*...	Waihilau Stream.....	At altitude 3,250 feet (revised), near Waimanu.	17	11
Sept.12	....do.....	....do.....	....do.....	2.51	1.62
Jan. 26	....do.....	....do.....	....do.....	.506	.327
June 14	....do.....	....do.....	....do.....	†8.5	†5.5
July 18	Kakaauki Stream‡...	....do.....	At altitude 2,930 feet, near Waimanu.	9.30	6.01
Sept.12	....do.....	....do.....	....do.....	1.19	.769
Jan. 26	....do.....	....do.....	....do.....	.196	.127
Apr. 22	....do.....	....do.....	....do.....	6.92	4.47
June 14	....do.....	....do.....	....do.....	3.64	2.35

* Formerly published as Third Branch of Waimanu Stream.
† Estimated.
‡ Formerly published as Second Branch of Waimanu Stream.

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