

16240500 WIAKEAKUA STREAM AT HONOLULU

LOCATION.--Lat $21^{\circ}19'52''$, long $157^{\circ}48'08''$, Old Hawaiian Datum, Hydrologic Unit 20060000, on right bank 5 ft downstream from bridge on Waaloa Way, 500 ft upstream from confluence with Waihi Stream, and 4.2 mi northeast of Honolulu Post Office.

DRAINAGE AREA.--1.06 mi².

PERIOD OF RECORD.--May 1913 to January 1921, August 1925 to current year. Prior to July 1960, published as East Branch Manoa Stream near Honolulu.

REVISED RECORDS.--WSP 1319: 1919(M), 1930-33(M). WSP 1569: Drainage area. WSP 1937: 1949(M), 1960(M). WDR HI-04-1: 1961-72(P), 1974-2000(P).

GAGE.--Water-stage recorder and combination Parshall flume and concrete weir. Datum of gage is 294.50 ft above mean sea level (Honolulu Board of Water Supply benchmark). Prior to May 20, 1914, nonrecording gage at site 200 ft upstream at different datum. May 20, 1914 to January 16, 1921, water-stage recorder at site 30 ft upstream at different datum. August 18, 1925 to March 15, 1928, water-stage recorder at present site at datum 2.99 ft lower. March 16, 1928 to October 18, 1933, water-stage recorder at present site at datum 0.41 ft higher.

REMARKS.--Records computed by H.A. Jeppesen. Records fair. Honolulu Board of Water Supply at times diverts a small amount of ground water from tunnel upstream of station. Occasional small diversions for irrigation upstream of station.

AVERAGE DISCHARGE.--86 years (water years 1914-20, 1926-2004), 4.83 ft³/s (3,500 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,090 ft³/s, January 16, 1921, gage height, 10.4 ft, from floodmarks, site and datum then in use, from rating curve extended above 58 ft³/s; minimum, 0.6 ft³/s, June 7, 8, 1926.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 310 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov 29	1400	601	3.60	May 11	2115	499	3.43
Feb 27	1500	392	3.22	Aug 4	0545	*607	*3.61
May 7	0245	511	3.45				

Minimum discharge, 0.75 ft³/s, Oct. 6, gage height, 0.14 ft.

REVISIONS.--The maximum annual discharges for water years 1961 to 1972 and 1974 to 2000 have been revised as shown in the following table. These figures supercede those published in Annual Data Reports 1961-1972 and 1974-2000.

WATER YEAR	DATE	PEAK	GAGE
		DISCHARGE (CFS)	HEIGHT (FT)
1961	Dec. 30, 1960	2400	5.28
1962	Oct. 31, 1961	717	3.78
	Nov. 02, 1961	383	3.20
1963	May 14, 1963	1910	4.96
1964	Jul. 24, 1964	696	3.75
1965	Feb. 04, 1965	3890	6.06
	Dec. 10, 1964	1090	4.25
	Dec. 15, 1964	601	3.60
	Dec. 19, 1964	483	3.40
	Jul. 12, 1965	451	3.34
1966	Nov. 14, 1965	2110	5.10
	Oct. 13, 1965	683	3.73
	Nov. 10, 1965	488	3.41
	Nov. 12, 1965	619	3.63
	Dec. 10, 1965	619	3.63
	Dec. 14, 1965	1060	4.21
	Jan. 20, 1966	451	3.34
1967	Oct. 11, 1966	1260	4.42
	Oct. 10, 1966	406	3.25
	Mar. 22, 1967	564	3.54
	Aug. 09, 1967	773	3.86
1968	Dec. 18, 1967	1670	4.78
	Dec. 09, 1967	879	4.00
	Jan. 04, 1968	802	3.90
	Jan. 16, 1968	564	3.54
	Mar. 14, 1968	582	3.57
	Mar. 16, 1968	1200	4.36
	Apr. 15, 1968	456	3.35
1969	Nov. 29, 1968	1280	4.44
	Mar. 16, 1969	788	3.88
1970	Nov. 14, 1969	388	3.21
1971	Mar. 25, 1971	1470	4.61
	Apr. 23, 1971	1190	4.35
1972	Apr. 14, 1972	632	3.65
1974	Mar. 12, 1974	416	3.27
1975	Nov. 21, 1974	1080	4.24

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REVISIONS.--continued

	Oct. 15, 1974	516	3.46
	Jan. 11, 1975	411	3.26
1976	Nov. 26, 1975	505	3.44
1977	Apr. 19, 1977	832	3.94
	May 12, 1977	825	3.93
	Jun. 08, 1977	564	3.54
1978	May 23, 1978	1020	4.17
1979	Feb. 03, 1979	832	3.94
1980	Dec. 25, 1979	730	3.80
	Jan. 08, 1980	664	3.70
	May 25, 1980	676	3.72
1981	May 07, 1981	632	3.65
	Aug. 04, 1981	431	3.30
1982	Aug. 25, 1982	879	4.00
	Oct. 28, 1981	494	3.42
	Nov. 01, 1981	817	3.92
	Dec. 25, 1981	500	3.43
	Mar. 23, 1982	710	3.77
	Apr. 02, 1982	540	3.50
	Aug. 16, 1982	730	3.80
	Sep. 01, 1982	446	3.33
1983	Oct. 27, 1982	352	3.13
1984	Apr. 19, 1984	239	2.83
1985	Feb. 14, 1985	626	3.64
1986	Oct. 19, 1985	558	3.53
1987	Jun. 12, 1987	411	3.26
1988	Dec. 31, 1987	987	4.13
	Dec. 12, 1987	802	3.90
	Mar. 24, 1988	619	3.63
1989	Dec. 06, 1988	690	3.74
	Feb. 11, 1989	426	3.29
	Mar. 02, 1989	406	3.25
	Apr. 24, 1989	552	3.52
	Jun. 01, 1989	467	3.37
	Jul. 20, 1989	505	3.44
1990	Oct. 03, 1989	516	3.46
1991	Mar. 19, 1991	456	3.35
	Nov. 16, 1990	411	3.26
	Feb. 18, 1991	451	3.34
	Aug. 08, 1991	416	3.27
1992	Sep. 16, 1992	528	3.48
1993	Dec. 30, 1992	944	4.08
	Dec. 25, 1992	402	3.24
1994	Mar. 24, 1994	1010	4.16
1995	Feb. 28, 1995	505	3.44
	Oct. 16, 1994	365	3.16
1996	Jan. 25, 1996	717	3.78
	Dec. 01, 1995	456	3.35
	Aug. 31, 1996	456	3.35
1997	Nov. 14, 1996	421	3.28
1998	Oct. 09, 1997	284	2.96
1999	Apr. 02, 1999	200	2.70
2000	Jan. 19, 2000	411	3.26
	Dec. 02, 1999	397	3.23

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16240500 WAIAKEAKUA STREAM AT HONOLULU—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.84	1.3	12	15	3.8	4.8	8.1	4.3	4.7	5.9	3.6	3.8
2	0.84	1.4	4.6	54	3.3	5.7	13	4.3	5.4	5.2	8.6	3.8
3	0.89	1.1	5.0	8.3	3.4	4.0	14	4.4	4.7	4.8	7.1	3.6
4	0.88	1.2	22	5.7	3.4	5.1	8.3	8.0	4.4	4.5	50	3.6
5	0.86	1.6	47	4.8	4.6	4.0	6.8	5.9	4.2	5.7	5.7	3.6
6	0.86	1.3	23	4.1	5.2	3.8	6.2	11	4.2	5.3	4.6	3.7
7	0.91	1.5	38	3.9	9.9	4.7	6.2	22	4.3	4.4	8.5	3.5
8	2.5	1.6	13	3.5	4.9	4.9	5.9	5.5	4.3	4.7	4.7	3.5
9	1.6	1.1	8.4	3.2	3.7	3.6	5.8	4.8	6.6	5.3	4.7	3.6
10	1.2	1.2	13	3.1	3.4	3.8	9.6	4.8	7.2	4.3	4.1	3.6
11	5.2	1.3	8.3	3.0	3.3	3.4	6.8	25	6.0	16	5.6	3.6
12	2.6	1.1	5.7	3.1	3.1	3.3	12	9.3	4.9	6.7	5.8	4.4
13	1.8	1.3	7.4	3.0	3.1	8.0	6.4	5.2	4.5	5.5	4.7	3.9
14	4.0	1.3	4.9	3.5	3.0	6.1	6.0	6.4	4.2	4.5	4.3	5.8
15	2.6	1.8	4.1	3.0	2.9	3.7	6.6	7.3	4.1	4.3	4.1	3.7
16	2.0	1.9	3.7	3.0	2.9	3.4	7.3	5.7	8.9	4.5	4.1	3.5
17	2.1	1.8	4.2	2.8	2.8	3.3	5.5	4.9	6.7	4.4	3.9	3.4
18	1.7	4.1	3.4	2.9	2.8	3.2	5.2	4.5	5.9	4.4	3.7	3.5
19	1.6	2.4	3.2	3.0	2.7	3.1	5.4	4.5	4.8	4.1	3.6	5.3
20	1.4	1.6	3.0	7.2	2.7	4.3	6.5	4.6	8.5	3.9	3.6	3.5
21	1.3	1.3	2.9	3.6	2.7	56	5.3	4.4	5.1	3.8	6.3	3.6
22	1.3	1.3	2.8	13	2.7	29	5.1	4.3	6.5	3.8	4.0	3.7
23	1.3	1.6	2.9	8.2	2.9	27	4.9	4.4	7.5	3.7	5.1	5.4
24	1.3	1.8	2.8	3.5	2.9	9.8	4.8	4.2	5.3	3.8	5.4	3.9
25	1.3	1.7	2.8	6.1	3.0	14	4.7	4.2	4.5	3.7	4.6	3.6
26	1.3	1.3	2.7	4.9	17	16	9.1	4.1	4.3	4.0	12	3.5
27	1.3	1.2	2.7	3.5	38	8.6	5.0	4.4	4.1	4.2	6.5	3.4
28	1.2	1.2	6.2	3.6	9.9	6.9	4.6	4.4	7.1	4.9	4.9	3.7
29	1.2	30	3.0	3.2	5.4	30	4.5	4.6	5.7	3.7	4.5	3.3
30	1.2	10	11	6.1	---	39	4.4	4.5	7.5	3.7	4.1	8.3
31	1.2	---	8.3	4.0	---	10	---	6.4	---	3.7	3.9	---
TOTAL	50.28	83.3	282.0	199.8	159.4	332.5	204.0	202.3	166.1	151.4	206.3	119.3
MEAN	1.62	2.78	9.10	6.45	5.50	10.7	6.80	6.53	5.54	4.88	6.65	3.98
MAX	5.2	30	47	54	38	56	14	25	8.9	16	50	8.3
MIN	0.84	1.1	2.7	2.8	2.7	3.1	4.4	4.1	4.1	3.7	3.6	3.3
AC-FT	100	165	559	396	316	660	405	401	329	300	409	237

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2004, BY WATER YEAR (WY)

MEAN	4.11	5.16	5.28	4.92	4.43	5.38	5.57	5.08	4.12	4.85	4.77	4.14
MAX	10.7	18.1	15.5	14.8	15.6	19.5	17.5	13.3	10.3	12.3	13.6	13.3
(WY)	(1915)	(1928)	(1988)	(1988)	(1955)	(1942)	(1989)	(1988)	(1938)	(1958)	(1958)	(1914)
MIN	1.18	1.17	1.42	1.28	1.03	1.14	1.16	0.87	1.19	0.87	1.07	1.27
(WY)	(1946)	(1934)	(1920)	(1977)	(1920)	(1926)	(1926)	(1926)	(2003)	(1926)	(2003)	(1984)

SUMMARY STATISTICS			FOR 2003 CALENDAR YEAR			FOR 2004 WATER YEAR			WATER YEARS 1913 - 2004		
ANNUAL TOTAL		958.20			2,156.68					4.83	
ANNUAL MEAN		2.63			5.89					8.23	1988
HIGHEST ANNUAL MEAN										1.94	1920
LOWEST ANNUAL MEAN											
HIGHEST DAILY MEAN		72	Sep 11		56	Mar 21			183	Mar 24, 1994	
LOWEST DAILY MEAN		0.74	Sep 6		0.84	Oct 1			0.62	Feb 26, 1920	
ANNUAL SEVEN-DAY MINIMUM		0.84	Aug 31		0.87	Oct 1			0.75	May 23, 1926	
ANNUAL RUNOFF (AC-FT)		1,900			4,280				3,500		
10 PERCENT EXCEEDS		3.8			9.4				8.0		
50 PERCENT EXCEEDS		1.3			4.3				3.5		
90 PERCENT EXCEEDS		0.95			1.5				1.7		