

## HAWAII, ISLAND OF OAHU

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## 16216000 WAIWAIA STREAM NEAR PEARL CITY

LOCATION.--Lat 21°23'57", long 157°58'51", Old Hawaiian Datum, Hydrologic Unit 20060000, on left bank 100 ft upstream from lower bridge on Highway 90, 0.6 mi northwest of Pearl City, and 2.0 mi northeast of Waipahu.

DRAINAGE AREA.--26.4 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1952 to September 2004 (discontinued).

REVISED RECORDS.--WSP 1569: Drainage area, WDR HI-90-1: 1982-89 (M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1.81 ft above mean sea level (State of Hawaii benchmark).

REMARKS.--Records computed by V.E. Kunishige. Records poor. Occasional small irrigation diversion and return flow upstream.

AVERAGE DISCHARGE.--52 years (water years 1953-2004), 32.7 ft<sup>3</sup>/s (23,690 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,900 ft<sup>3</sup>/s, October 28, 1981, gage height, 22.46 ft, from rating curve extended above 1,100 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 17.1 ft and 20.56 ft; minimum, e0.70 ft<sup>3</sup>/s, October 5, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft<sup>3</sup>/s and maximum (\*):

|  | Date   | Time | Discharge<br>(ft <sup>3</sup> /s) | Gage height<br>(ft) |
|--|--------|------|-----------------------------------|---------------------|
|  | Nov 29 | 1600 | 7,220                             | 15.47               |
|  | Dec 7  | 2215 | 9,530                             | 17.09               |
|  | Jan 2  | 1745 | 4,220                             | 12.78               |
|  | Feb 27 | 1600 | 7,920                             | 15.99               |
|  | May 11 | 2130 | 5,280                             | 13.84               |
|  | Aug 4  | 0715 | *10,000                           | *17.39              |

Minimum daily discharge, 0.70 ft<sup>3</sup>/s, Oct 5.

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     | e0.80  | e0.91    | 454     | 108     | 12      | 79    | 59    | 21      | e3.5  | 8.7   | 2.8     | 4.2   |
| 2     | e0.90  | e0.98    | 82      | 1,190   | 12      | 85    | 53    | 21      | e2.6  | 5.2   | 15      | 3.6   |
| 3     | e1.0   | e1.3     | 28      | 485     | 7.5     | 56    | 70    | 21      | e2.4  | 4.4   | 16      | 4.2   |
| 4     | e0.83  | e1.2     | 177     | 57      | 6.0     | 47    | 50    | 22      | 2.9   | 3.8   | 1,500   | 3.5   |
| 5     | e0.70  | e1.0     | 494     | 25      | 22      | 47    | 42    | 33      | 2.9   | 3.3   | 48      | 3.1   |
| 6     | e0.78  | e0.99    | 154     | 15      | 22      | 39    | 37    | 53      | 3.0   | 4.1   | e13     | 12    |
| 7     | e1.9   | e0.92    | 1,360   | 10      | 262     | 34    | 35    | 84      | 3.0   | 4.6   | e15     | 5.3   |
| 8     | e1.8   | e2.0     | 493     | e6.1    | 147     | 54    | 33    | 38      | 3.0   | 8.4   | e12     | 3.6   |
| 9     | 8.9    | e1.5     | 95      | e5.1    | 16      | 47    | 31    | 29      | 2.9   | 11    | e6.8    | 3.3   |
| 10    | 3.4    | e1.1     | 122     | e4.4    | 9.6     | 37    | 87    | 24      | 17    | 6.4   | e5.2    | 3.2   |
| 11    | 2.9    | e0.95    | 103     | e3.9    | 7.2     | 33    | 51    | 341     | 12    | 4.0   | e11     | 3.5   |
| 12    | 27     | e0.92    | 50      | 4.7     | 5.6     | 34    | 82    | 89      | 9.8   | 6.1   | e9.1    | 7.7   |
| 13    | 5.6    | e0.94    | 45      | 3.5     | 4.7     | 32    | 65    | e10     | 7.3   | 5.9   | e5.5    | 6.7   |
| 14    | 26     | e2.7     | 29      | 15      | 4.4     | 47    | 42    | e14     | 6.8   | 3.8   | e5.4    | 5.8   |
| 15    | 25     | e3.0     | e12     | 11      | e3.8    | 36    | 67    | 252     | 5.4   | 3.1   | e4.1    | 5.4   |
| 16    | 34     | e2.1     | e7.4    | 4.1     | e3.5    | 30    | 75    | 57      | 3.8   | 2.9   | e2.9    | 3.7   |
| 17    | 7.8    | e2.9     | e5.8    | 3.2     | e3.2    | 27    | 48    | e9.6    | 12    | 2.9   | e7.1    | 3.2   |
| 18    | 5.9    | e6.4     | e4.9    | 2.9     | e2.8    | 25    | 36    | e6.7    | 8.2   | 3.0   | e4.1    | 3.5   |
| 19    | 3.1    | 8.0      | 5.6     | 2.9     | e2.5    | 25    | 31    | e5.0    | 4.8   | 3.0   | 4.2     | 3.9   |
| 20    | e1.6   | 5.1      | 4.8     | 4.8     | 2.0     | 24    | 52    | e4.5    | 4.4   | 2.9   | 4.0     | 5.1   |
| 21    | e1.4   | 2.4      | 4.3     | 4.4     | 2.0     | 329   | 55    | e3.9    | 7.0   | 2.9   | 4.2     | 3.4   |
| 22    | e1.3   | 2.4      | 3.9     | 67      | 2.0     | 298   | 37    | e3.4    | 11    | 2.9   | 6.2     | 4.4   |
| 23    | e1.2   | 4.5      | 3.7     | 24      | 2.0     | 147   | 34    | e3.3    | 14    | 2.9   | 5.6     | 34    |
| 24    | e2.4   | 7.8      | 3.5     | 9.0     | 1.9     | 96    | 30    | e3.2    | 10    | 2.9   | 13      | 9.3   |
| 25    | e1.6   | 6.3      | 3.2     | 76      | 1.9     | 79    | 26    | e2.8    | 6.2   | 2.9   | 14      | 4.8   |
| 26    | e1.2   | 6.2      | 3.2     | 89      | 64      | 101   | 51    | e2.6    | 4.3   | 2.9   | 15      | 3.5   |
| 27    | e1.1   | 7.1      | 3.1     | 24      | 1,690   | 89    | 37    | e3.0    | 3.5   | 2.9   | 13      | 2.9   |
| 28    | e0.97  | 8.0      | 3.8     | 13      | 208     | 58    | 26    | e3.2    | 3.1   | 3.4   | 8.3     | 2.7   |
| 29    | e0.87  | 1,240    | 3.1     | 9.4     | 85      | 85    | 23    | e3.6    | 3.0   | 2.8   | 13      | 2.4   |
| 30    | e0.85  | 729      | 3.7     | 14      | ---     | 249   | 22    | e3.0    | 3.7   | 2.8   | 7.8     | 2.2   |
| 31    | e0.82  | ---      | 101     | 12      | ---     | 84    | ---   | e3.5    | ---   | 2.8   | 5.3     | ---   |
| TOTAL | 173.62 | 2,058.61 | 3,863.0 | 2,303.4 | 2,612.6 | 2,453 | 1,387 | 1,170.3 | 183.5 | 129.6 | 1,796.6 | 164.1 |
| MEAN  | 5.60   | 68.6     | 125     | 74.3    | 90.1    | 79.1  | 46.2  | 37.8    | 6.12  | 4.18  | 58.0    | 5.47  |
| MAX   | 34     | 1,240    | 1,360   | 1,190   | 1,690   | 329   | 87    | 341     | 17    | 11    | 1,500   | 34    |
| MIN   | 0.70   | 0.91     | 3.1     | 2.9     | 1.9     | 24    | 22    | 2.6     | 2.4   | 2.8   | 2.8     | 2.2   |
| AC-FT | 344    | 4,080    | 7,660   | 4,570   | 5,180   | 4,870 | 2,750 | 2,320   | 364   | 257   | 3,560   | 325   |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2004, BY WATER YEAR (WY)

|      |        |        |        |        |        |        |        |        |        |        |        |        |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| MEAN | 27.2   | 51.7   | 43.9   | 45.0   | 36.6   | 49.9   | 39.5   | 24.0   | 14.4   | 25.0   | 20.9   | 13.9   |
| (WY) | (1967) | (1997) | (1988) | (1969) | (208)  | (336)  | (241)  | (131)  | (72.9) | (149)  | (128)  | (104)  |
| MAX  | 131    | 295    | 351    | 199    | 208    | 329    | 87     | 341    | 17     | 11     | (1982) | (1992) |
| (WY) | (1985) | (1990) | (2003) | (2001) | (1986) | (2000) | (1992) | (2000) | (1984) | (1984) | (2003) | (1984) |

## HAWAII, ISLAND OF OAHU

## 16216000 WAIWA Stream NEAR PEARL CITY—Continued

| SUMMARY STATISTICS       | FOR 2003 CALENDAR YEAR | FOR 2004 WATER YEAR | WATER YEARS 1952 - 2004 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL             | 9,117.31               | 18,295.33           |                         |
| ANNUAL MEAN              | 25.0                   | 50.0                | 32.7                    |
| HIGHEST ANNUAL MEAN      |                        |                     | 80.8                    |
| LOWEST ANNUAL MEAN       |                        |                     | 7.56                    |
| HIGHEST DAILY MEAN       | 1,360                  | Dec 7               | 5,150 Mar 24, 1994      |
| LOWEST DAILY MEAN        | 0.70                   | Oct 5               | 0.70 Oct 5, 2003        |
| ANNUAL SEVEN-DAY MINIMUM | 0.85                   | Sep 30              | 0.85 Sep 30, 2003       |
| ANNUAL RUNOFF (AC-FT)    | 18,080                 | 36,290              | 23,690                  |
| 10 PERCENT EXCEEDS       | 26                     | 84                  | 46                      |
| 50 PERCENT EXCEEDS       | 1.6                    | 6.2                 | 6.1                     |
| 90 PERCENT EXCEEDS       | 0.99                   | 2.0                 | 1.8                     |

e Estimated