

NORTH WAIEHU
STREAM FLOW
SUMMARIES

**North Waiehu Stream Flow
(1910-1915)
USGS Station # 16609500 and # 16609000**

North Waiehu Stream Flow for 1910-1911 as calculated
by adding the Stream Post-Diversion Flow to the Ditch Flow⁵

in millions of gallons per day		1910												For the Year			
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.				
Stream Post Diversion	Max	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Mean	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ditch	Max	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.00	--
	Min	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	--
	Mean	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.19	--
Total Flow		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

in millions of gallons per day		1911												For the Year
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	
Stream Post Diversion	Max	--	7.80	4.30	5.40	6.30	4.00	4.70	5.90	6.50	2.90	3.70	2.50	80.00
	Min	--	2.60	0.90	0.90	1.10	1.30	2.50	2.00	2.00	2.00	2.00	2.00	0.30
	Mean	8.7 (1 day)	4.05	2.90	1.50	2.07	2.53	2.63	2.55	2.93	2.08	2.17	2.11	5.45
Ditch	Max	1.50	1.50	3.10	2.70	2.00	1.50	2.00	2.70	3.50	2.30	2.70	2.70	7.10
	Min	0.00	0.00	0.00	1.10	1.10	1.10	1.50	1.50	2.00	1.50	2.30	2.00	2.90
	Mean	0.60	0.56	0.98	1.99	1.45	1.23	1.52	1.80	2.40	1.95	2.34	2.33	4.47
Total Flow		--	5.01	3.38	3.49	3.52	3.76	4.15	4.35	5.33	4.03	4.51	4.44	10.40

⁵ "Stream post-diversion" data from W. Martin & C. Pierce, USGS, Water Resources of Hawai'i 1909-1911 (1913) ("Martin & Pierce") at 210-12. Data originally collected by USGS station called "North Waiehu Stream Near Wailuku, Maui" in Martin & Pierce at 210, and identified as Station No. 16609500 in Fontaine, USGS, Evaluation of the Surface-Water Quantity, Surface-Water Quality, and Rainfall Data-Collection Programs in Hawai'i, 1994 (1996) ("Fontaine") at 94. "The discharge at this point gives the total flow of the stream exclusive of the amount diverted through the upper North Waiehu ditch." Martin & Pierce at 211.

"Ditch" data from Territorial Planning Board, Surface Water Resources of the Territory of Hawai'i 1901-1938 (1939) ("Surface Water Resources") at 217-18. Data originally collected by USGS station called "North Waiehu Ditch Near Wailuku, Maui" in Martin & Pierce at 212, and identified as Station No. 16609000 in Fontaine at 94.

Martin & Pierce explain at 213, "[t]o obtain the total flow of North Waiehu Stream add the discharge at [the ditch] station to the discharge at the station on the stream."

**North Waiehu Stream Flow
(1910-1915)
USGS Station # 16608000**

North Waiehu Stream Flow for 1912-1915 as measured
by the USGS gage located above all diversions ⁶

in millions of gallons per day		1912												For the Year
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul. (23 days)	Aug.	Sept.	Oct.	Nov.	Dec.	
North	Max	--	--	--	--	--	4.40	3.55	4.10	8.50	6.50	6.10	--	
Waiehu	Min	--	--	--	--	--	2.70	2.70	2.70	2.70	3.10	2.70	--	
	Mean	--	--	--	--	--	3.03	2.82	2.84	3.94	3.96	3.12	--	

in millions of gallons per day		1913												For the Year
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov. (10 days)	Dec.	
North	Max	3.05	6.40	7.70	7.70	5.60	9.00	3.90	7.00	4.80	13.00	15.00	15.00	
Waiehu	Min	2.70	2.70	2.70	2.30	2.70	2.70	2.50	2.50	2.50	2.50	3.90	2.30	
	Mean	2.75	3.34	3.08	3.49	2.96	3.30	2.78	2.81	2.90	4.28	4.92	3.28	

in millions of gallons per day		1914												For the Year
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	
North	Max	7.00	4.80	8.10	8.10	11.00	32.00	15.00	245.00	22.00	29.00	17.00	245.00	
Waiehu	Min	3.90	3.90	3.90	3.90	4.80	8.10	9.60	7.10	5.80	5.40	7.10	3.90	
	Mean	4.93	3.93	4.59	5.38	7.05	11.00	11.10	18.20	9.81	9.26	11.00	8.96	

**North Waiehu Stream Flow
(1910-1915)
USGS Station # 16608000**

North Waiehu Stream Flow for 1912-1915 as measured
by the USGS gage located above all diversions⁶

in millions of gallons per day		1915												For the Year
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	
North	Max	10.00	21.00	4.70	13.00	13.00	9.50	7.50	5.50	5.50	12.00	10.00	16.00	21.00
Waiehu	Min	4.50	4.10	1.60	3.10	4.70	4.70	3.80	3.80	3.80	3.80	3.80	3.80	1.60
	Mean	6.70	5.93	2.81	6.51	8.08	5.27	5.29	3.85	4.22	5.81	4.44	5.03	5.33

⁶ Territorial Planning Board, Surface Water Resources of the Territory of Hawaii 1901-1938 (1939) ("Surface Water Resources") at 217. Data originally collected by USGS station called "North Waiehu Stream Near Wailuku Maui" (see, e.g., C. Pierce & G. Larrison, Water Resources of Hawaii 1912 (1914) ("Pierce & Larrison") at 135), and identified as Station No. 16608000 in Fontaine at 94.

Station located "50 feet above the intake of the North Waiehu ditch." C. Pierce & G. Larrison, Water Resources of Hawaii 1912 (1914) at 135. See also C. Larrison, Water Resources of Hawaii 1913 (1915) at 109 (reporting location as "50 feet above the uppermost diversion" and "diversions" as "[i]n one above station").

**North Waiehu Stream Flow
(1910-1915)
USGS Station # 16608000**

Approximate baseflow
of North Waiehu Stream for 1912-1915

in millions of gallons per day	<u>Q 90</u>	<u>Q75</u>	<u>Q50</u>
1912 (176 days)	2.5 to 3	2.5 to 3	2.5 to 3
1913	2.5 to 3	2.5 to 3	2.5 to 3
1914	3.5 to 4	4 to 5	8 to 10
1915	3.5 to 4	3.5 to 4	4 to 5
Total (1271 days)	2.5 to 3	2.5 to 3	3.5 to 4

Data from Surface Water Resources at 217; see note 6.

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